Wauwatosa, WI
Common Council
Meeting Agenda

7725 W. North Avenue
Wauwatosa, WI 53213

Tuesday, June 23, 2026 **7:00 PM** **Common Council Chambers and Zoom: https://servetosa.zoom.us/j/273225010, Meeting ID: 273 225 010**

Regular Meeting

HYBRID MEETING INFORMATION

Members of the public may observe the meeting in-person or via Zoom at the link above. To access the Zoom meeting via phone, call 1-312-626-6799 and enter the Meeting ID.

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

APPROVAL OF MINUTES

1. Approval of minutes of the May 19, 2026 regular meeting — **26-1175**

PUBLIC HEARING

1. Public Hearing for a Conditional Use Permit to establish an eating establishment with drive-through in the General Commercial and Mayfair Corridor Overlay (C2/MAY) zone at 151 N. Mayfair Road, KP&J Architects & Engineers LLC, applicant — **26-1046**

2. Public Hearing for a Conditional Use Permit for a bank drive-through in the General Commercial and Planned Unit Development Overlay (C2/PUD) zone at 7501 W. North Avenue, Luther Group LLC, applicant — **26-1048**

3. Public Hearing regarding proposed ordinance amending Zoning Code Sections 24.06.070 SP-RP, Research Park District and 24.07.030 Use Table related to the Milwaukee County Research Park Master Plan implementation — **26-1078**

APPOINTMENTS BY THE MAYOR

1. Reappointment by Mayor McBride of Kathy Ehley (District 1) as a member of the Wauwatosa Board of Review, term ending March 31, 2031 — **26-1000**

2. Reappointment by Mayor McBride of Monica Deluhery (District 7) as a member of the Wauwatosa Library Board, term ending June 30, 2029 **26-1001**

3. Reappointments by Mayor McBride of Megan Tanel, (District 2), Daniel Underberg (District 5), and Frankie Garr (District 7) as members of the Wauwatosa Tourism Commission, terms ending July 31, 2027 **26-1002**

4. Appointments by Mayor McBride of Aiden Fera (District 12), Catherine Riley (District 7), Nicholas Watson (District 1) as members of the Wauwatosa Youth Commission, terms ending May 31, 2028 **26-1173**

5. Appointment by Mayor McBride of Timothy Nordvall (District 5) as a member of the Wauwatosa Board of Health, term ending January 1, 2030 **26-1174**

APPLICATIONS, COMMUNICATIONS, ETC.

1. Claim - Kathleen Benavides **26-1051**

Recommendation: Refer to City Attorney

2. Claim - Julie Lucey **26-1067**

Recommendation: Refer to City Attorney

3. Notice of Claim - Jada Carter **26-1050**

Recommendation: Refer to City Attorney

4. Summons and Complaint - S. Griffin - 2026CV005594 **26-1171**

Recommendation: Refer to City Attorney

FROM THE PLAN COMMISSION

1. Resolution approving a Conditional Use Permit to establish an eating establishment in the Midtown-Mixed (MID-MIX) zoning district at 8820 W. North Avenue, Ransom Htoo, applicant **26-1077**

Recommendation: Approve 6-0

FROM THE GOVERNMENT AFFAIRS COMMITTEE

1. Resolution approving application for Fireworks User Permit by Greg Pappas, Blue Mound Golf and Club, for the property address located at 10122 W. North Avenue for a 10-minute fireworks display for a wedding on August 1, 2026, from 9:15 P.M. - 9:25 P.M. **26-1085**

Recommendation: Approve 6-0

2. Resolution approving Special Event Permit application - Applicant: Wauwatosa Village Business Improvement District (BID); Event Name: Tosa Village Classic (Tour of America's Dairyland); Location: Village of Wauwatosa - State Street, Harmonee Avenue, Wauwatosa Avenue, Blanchard Street, 72nd Street; Date/Time: June 28, 2026, 8:00 AM - 8:00 PM **26-1087**

Recommendation: Approve 6-0

3. Resolution approving Special Event Permit application - Applicant: Wauwatosa Village Business Improvement District (BID), Event Name: Village Al Fresco, Location: W. State Street between Underwood and Wauwatosa Avenue, Date/Time: July 28, 2026, 6:00 PM to 9:00 PM **26-1088**

Recommendation: Approve 6-0

4. Resolution approving application for temporary extension of licensed premises by DRI 7 Tosa Village LLC, d/b/a Café Hollander, 7677 W. State Street, for the Village Al Fresco event on July 28, 2026, from 6:00 PM - 9:00 PM **26-1089**

Recommendation: Approve 6-0

5. Resolution approving application for a new Class "B" Beer and Reserve "Class B" Liquor license by W Group West LLC, d/b/a Staybridge Suites, 1401 N. Mayfair Road, Manpreet Kaur - Agent, for the period ending June 30, 2027 **26-1092**

Recommendation: Approve 6-0

6. Resolution approving application for a new Class "B" Beer and "Class C" Wine license by What's On Your Agenda, 2222 North Mayfair Road, Suite 200, Aisha Strickland - Agent, for the period ending June 30, 2027 **26-1093**

Recommendation: Approve 6-0

7. Resolution approving various alcohol license renewal applications for the 2026-2027 license period **26-1094**

Recommendation: Approved 6-0

8. Resolution amending the September 2026 Common Council meeting calendar **26-1090**

Recommendation: Approve 6-0

9. Resolution establishing an annual reporting and disclosure process to provide transparency regarding the portion of the Wauwatosa School District levy attributable to private school voucher and 2R independent charter school programs **26-1179**

Recommendation: Approve 5-1

10. Ordinance amending various sections of the Wauwatosa Municipal Code to conform to the twelve-district, one-alder-per-district Common Council structure **26-1083**

Recommendation: Adopt 6-0

11. Ordinance amending Section 6.08.250 of the Wauwatosa Municipal Code related to provisional retail alcohol licenses **26-1086**

Recommendation: Adopt 6-0

12. Ordinance amending various sections of Section 2.04.020 of the Wauwatosa Municipal Code related to the vacation of the office of alderperson and selection of replacement **26-1180**

Recommendation: Adopt 6-0

FROM THE FINANCIAL AFFAIRS COMMITTEE

1. Resolution authorizing advance purchase of 2027 fleet vehicles and equipment, waiving competitive bidding for one Prentice 2124 log loader dump body, and directing staff to include 2028 fleet procurement authority in the 2027 budget resolution **26-1102**

Recommendation: Approve 6-0

2. Resolution approving a contract with Single Source, Inc. for professional real estate services on the Blue Mound Road USH 18 project, CIP Project No. 1123, in the amount of $121,225 and approving an associated Level III fund transfer **26-1181**

Recommendation: Approve 6-0

3. Resolution approving a multi-year agreement with Vaisala Inc. to join a regional winter weather pavement sensor network in the Greater Milwaukee Area **26-1182**

Recommendation: Approve 6-0

4. Resolution approving an amended State Municipal Agreement with the Wisconsin Department of Transportation for the STH 181 resurfacing project (CIP #1126) **26-1183**

Recommendation: Approve 6-0

5. Resolution waiving the competitive bidding process to approve a contract with Premier Design and Build Group for construction management services in the amount of $279,292, awarding a demolition contract to Johler Demolition in the amount of $1,596,700 for demolition of the Linneage warehouse in Tax Increment District No. 7, and approving a Level Three fund transfer of $1,975,992 **26-1184**

Recommendation: Approve 6-0

6. Ratification of Comptroller's Office bills and claim report, May 20, 2026 through June 23, 2026 **26-1176**

FROM THE BOARD OF PUBLIC WORKS

1. Resolution approving an encroachment agreement within the public right-of-way adjacent to the proposed Medical College of Wisconsin Student Housing Development at 8701 Watertown Plank Road **26-1052**

Recommendation: Approve 6-0

2. Resolution approving a grade crossing surface construction and maintenance agreement with Soo Line Railroad Company, d/b/a CPKC, at N. 115th Street north of Underwood Parkway, related to Contract 25-07 Watertown Plank Road & N. 115th Street Utilities & Paving **26-1053**

Recommendation: Approve 6-0

3. Resolution approving a sign encroachment request at 7603 W. State Street for Jake Schindler of Green Hill Metal Werks, LLC **26-1185**

Recommendation: Approve 6-0

4. Resolution approving a sign encroachment at 6517 W. North Avenue for Jkayla Hodges of Sign Effectz, Inc. **26-1186**

Recommendation: Approve 6-0

5. Resolution approving a contract modification for Contract 26-01, Flood Damage Maintenance Repairs, in the amount of $41,324.60 **26-1187**

Recommendation: Approve 6-0

6. Resolution approving the execution of a Green Infrastructure Funding Agreement (G98005P192) with the Milwaukee Metropolitan Sewerage District (MMSD) for a Green Alley project at N. 102nd Street and North Avenue, Project 10262 **26-1188**

Recommendation: Approve 6-0

7. Resolution accepting the Wisconsin Department of Natural Resources (WDNR) 2025 Compliance Maintenance Annual Report (CMAR) for the City's wastewater collection system **26-1189**

Recommendation: Approve 6-0

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

1. Future Council Committee Agenda Items **26-1177**

ADJOURNMENT

NOTICE TO PERSONS WITH A DISABILITY
Persons with a disability who need assistance to participate in this meeting should call the City Clerk's office at (414) 479-8917 or send an email to tclerk@wauwatosa.net, with as much advance notice as possible.

City of Wauwatosa Common Council Meeting Minutes
Full Version on file in the City Clerk's Office and on the City website at wauwatosa.net.
Tuesday, May 19, 2026, Zoom and Common Council Chambers, City Hall, 7725 W. North Avenue. Mayor McBride called the regular Common Council meeting to order at 8:02 PM.
9 Alderpersons present (Excused: Gustafson, Saso).
Special Presentation:
Historic Preservation Commission Preservation of Properties Award presentation.
Presentation of Mayoral proclamation designating May 17-23, 2026, as National Public Works Week in the City of Wauwatosa
MOTION by Franzen/Stluka to approve minutes of the April 28, 2026 regular meeting. Motion carried 9-0.
The following public hearing was held:

- Public Hearing for a Conditional Use Permit to establish an eating establishment in the Midtown Mixed-Use (MID-MIX) zoning district at 8820 W. North Avenue, Ransom Htoo, applicant

MOTION by Phillips/Foley to approve the following appointments:

- Reappointment by Mayor McBride of C.J. Dykstra (District 12) as a member of the Wauwatosa Library Board, term ending June 30, 2029
- Reappointment by Mayor McBride of Matthew Jaworski (District 7) as a student member of the Wauwatosa Youth Commission, term ending May 31, 2028
- Appointment by Mayor McBride of Tamarra Royal (District 2) as a member of the Wauwatosa Commission for Persons with Disabilities, term ending May 31, 2029
- Appointment by Mayor McBride of Tammy Szudy to the position of Interim Development Director, effective May 19, 2026

Five Claims were referred to the City Attorney.
MOTION by Fuerst/ Phillips Resolution approving a Conditional Use Permit to establish a retail store with special event space in the Neighborhood Village Trade and North Avenue Overlay (C1/NOR) zone at 6528 W. North Avenue, Carly Hurley, applicant. Motion carried 9-0.
MOTION Brannin/Stluka Resolution supporting exploration of Amtrak service in Wauwatosa
MOTION Brannin/Stluka Resolution expressing Common Council support for sustainable transportation funding solutions for Wisconsin local governments. Motion carried 9-0.
MOTION Brannin/Stluka Resolution authorizing the installation of stop signs on the Forest Street approaches to Woodland Avenue. Motion carried 9-0.
MOTION Brannin/Stluka Resolution authorizing the installation of all-way stop signs at the 114th Street intersection with Clarke Street, 115th Street intersection with Clarke Street, and 115th Street intersection with Meinecke Street. Motion carried 9-0.
MOTION Brannin/Stluka Ordinance amending Section 11.32.080 of the Wauwatosa Municipal Code to prohibit parking at any time on the south side of Gridley Avenue from Glenview Avenue to 62 feet west thereof, and to prohibit parking on school days from 7:30-9:00 a.m. and 2:00-4:30 p.m. on the north side of Gridley Avenue from Glenview Avenue to 92 feet west thereof, and from 380 feet west of Glenview Avenue to 400 feet west of Glenview Avenue. Motion carried 9-0.
MOTION Brannin/Stluka Ordinance amending Section 11.32.080 of the Wauwatosa Municipal Code to prohibit parking from 7:30-9:00 a.m. and 2:00-4:30 p.m. on school days on the north side of Portland Avenue from Glenview Avenue to 100 feet west thereof, and on the north side of Portland Avenue in front of 8202 Portland Avenue. Motion carried 9-0.

MOTION Brannin/Stluka Ordinance amending Section 11.32.080 of the Wauwatosa Municipal Code to prohibit parking at any time on the west side of 85th Street from Hawthorne Avenue to the north property line of 169 N. 85th Street. Motion carried 9-0.
MOTION Brannin/Stluka Ordinance amending Section 11.28.035(10) of the Wauwatosa Municipal Code to prohibit right turns on red on the southbound approach at Harwood and Glenview Avenues. Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving application for Fireworks User Permit by Greg Pappas, Blue Mound Golf and Country Club, for the property address located at 10122 W. North Avenue for a fireworks display on June 20, 2026 from 9:15 p.m-9:30 p.m. Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving renewal Amusement Arcade and Theatre license applications for the 2026-2027 license period. Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving various alcohol license renewal applications for the 2026-2027 license period. Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving applications for temporary extensions of licensed premise by Lowlands 6, LLC, d/b/a Buckatabon Tavern & Supper Club, and DRI 7 Tosa Village, LLC, d/b/a Café Hollander, for events on June 5-6, June 28, and September 11-12, 2026. Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving an intergovernmental agreement with the Milwaukee County Office of Emergency Management EMS Division for emergency medical services (2026-2031). Motion carried 9-0.
MOTION Franzen/Fuerst Resolution approving a memorandum of understanding for mutual aid and fire suppression services with the State of Wisconsin Department of Natural Resources (DNR). Motion carried 9-0.
MOTION Franzen/Fuerst Ordinance amending Section 6.08.320 of the Wauwatosa Municipal Code extending the application deadline for Temporary Class B Picnic Permits from two to ten days before the event. Motion carried 9-0.
MOTION Franzen/Fuerst Ordinance repealing and amending various sections of the Wauwatosa Municipal Code to dissolve the Board of Parks and Forestry Commissioners. Motion carried 9-0.
MOTION Brannin/Franzen Resolution approving agreement with Grow Solar Milwaukee-Waukesha for use of the City of Wauwatosa logo for the 2026 solar group purchasing program. Motion carried 9-0.
MOTION Brannin/Franzen Resolution approving an agreement between the City of Wauwatosa and City of Wauwatosa VFW Post 1465 for the construction and dedication of a Veterans Memorial located on City-owned land at Harwood Avenue and Milwaukee Avenue. Motion carried 8-1 (Nay: Foley).
MOTION Brannin/Franzen Resolution terminating the development agreement with TI Investors of Wauwatosa LLC for the property located at 1425 Discovery Parkway. Motion carried 8-1 (Nay: Small)
MOTION Foley/Fuerst Resolution approving intergovernmental cooperation agreement with the City of Milwaukee for repair and maintenance of fire, rescue, and emergency medical equipment and materials. Motion carried 9-0.
MOTION Foley/Fuerst Resolution creating Tax Incremental District No. 17, approving its Project Plan and establishing its boundaries. Motion carried 9-0.
MOTION Foley/Fuerst Resolution approving a Level Three fund transfer in the amount of $121,000 for the Firefly Grove Wetland grant. Motion carried 7-0-2 (Recused: Brannin, Fuerst)

MOTION Foley/Fuerst Resolution approving 2025 capital project carryovers and amending the 2026 budget in the amount of $22,683,209. Motion carried 9-0.
MOTION Foley/Fuerst Resolution approving a Level Three fund transfer in the amount of $205,973 for issuance of an employee health insurance dividend. Motion carried 9-0.
MOTION Foley/Fuerst to ratify Comptroller's Office bills and claims report, April 29 through May 19, 2026. Motion carried 9-0.
MOTION Dolan/Stluka Resolution approving application for sidewalk café permit by Jordan Cole, North 48 MKE LLC, d/b/a North 48 Bar, 7603 W. State Street. Motion carried 9-0.
MOTION Dolan/Stluka Resolution approving the Relocation Order and Acquisition Plat for the reconstruction of W. North Avenue from Met to Wee Lane to Wauwatosa Avenue, including two bridge replacements over the Menomonee River (CIP Projects #2301 & #1127). Motion carried 9-0.
MOTION Dolan/Stluka Resolution approving a contract modification for Contract 25-01, Wisconsin Avenue & 70th Street Improvements, in the amount of $691,778.47. Motion carried 9-0.
MOTION Dolan/Stluka Resolution approving the final payment for Contract 24-61 / Project 6216, DPW Incinerator Building Demolition, in the amount of $12,511.16. Motion carried 9-0.
MOTION Dolan/Stluka Resolution waiving the competitive bidding process and approving Contract Change Order #1 to Contract 25-18 with Scott Construction, Inc., for the 2026 Aggregate Sealcoating Program in the amount of $203,941.98. Motion carried 9-0.
Meeting adjourned 8:43 PM.

Deyanira Nevarez
Wauwatosa City Clerk

To be published June 24, 2026

File #: 26-1046 **Agenda Date:** 6/23/2026 **Agenda #:** 1.

Public Hearing for a Conditional Use Permit to establish an eating establishment with drive-through in the General Commercial and Mayfair Corridor Overlay (C2/MAY) zone at 151 N. Mayfair Road, KP&J Architects & Engineers LLC, applicant



151 N Mayfair Rd.

City of Wauwatosa

March 27, 2026

Arthur Piñon
Principal Planner
Planning Division
City of Wauwatosa
7725 W. North Avenue
Wauwatosa, WI 53213

KP & J Architects & Engineers, LLC
828 Davis St
Suite 300
Evanston, IL 60201
(224) 830-7206
www.kpenr.com

Re: Dunkin'
Conditional Use Application
151 N. Mayfair Road
Wauwatosa, WI 53226

Mr. Piñon:

Please accept this correspondence as the narrative required for the Conditional Use application requesting a drive-thru for the project referenced above.

The project consists of transforming the existing single tenant building, originally built as a Starbucks, into a Dunkin'. The building will receive minor exterior upgrades (mostly paint and signage), the interior will be completely redone to reflect the latest "Next Gen" design offering Dunkin' is currently promoting. Please refer to the attached Test Fit for the proposed layout.

The drive-thru will be used as it is currently designed for queueing with the addition of a Dunkin' menu board, height limitation bar and road graphics as shown on the attached Site Plan. The overall traffic pattern and parking layout will remain as it is now.

Dunkin' operates primarily as a franchise-based quick-service concern, focusing on coffee, espresso beverages, and baked goods. This location will operate between 4:00 AM and 10:00 PM seven days a week. The full staff will be approximately 15 employees with 4-5 on site during peak hours, scaling down to 2-3 during off-peak hours.

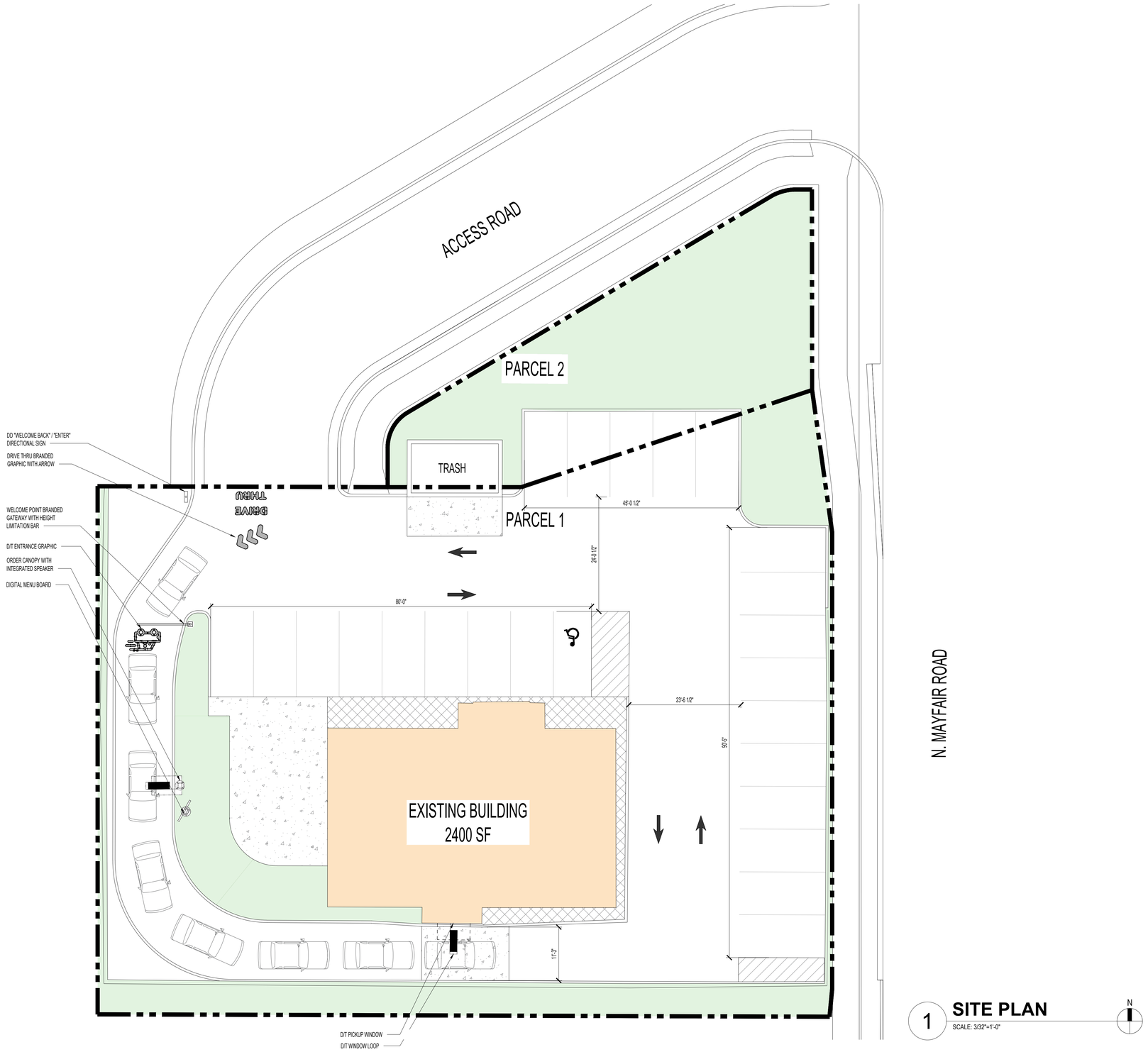
We respectfully request a Conditional Use approval allowing for the use of the drive-thru configuration for the Dunkin' as shown on the Site Plan.

If you've any questions or comments, please feel free to contact me directly.

Respectfully submitted,



Steven Kolber
(Principal Architect)
KP&J Architects and Engineers, LLC.
skolber@kpenr.com
630-300-4699

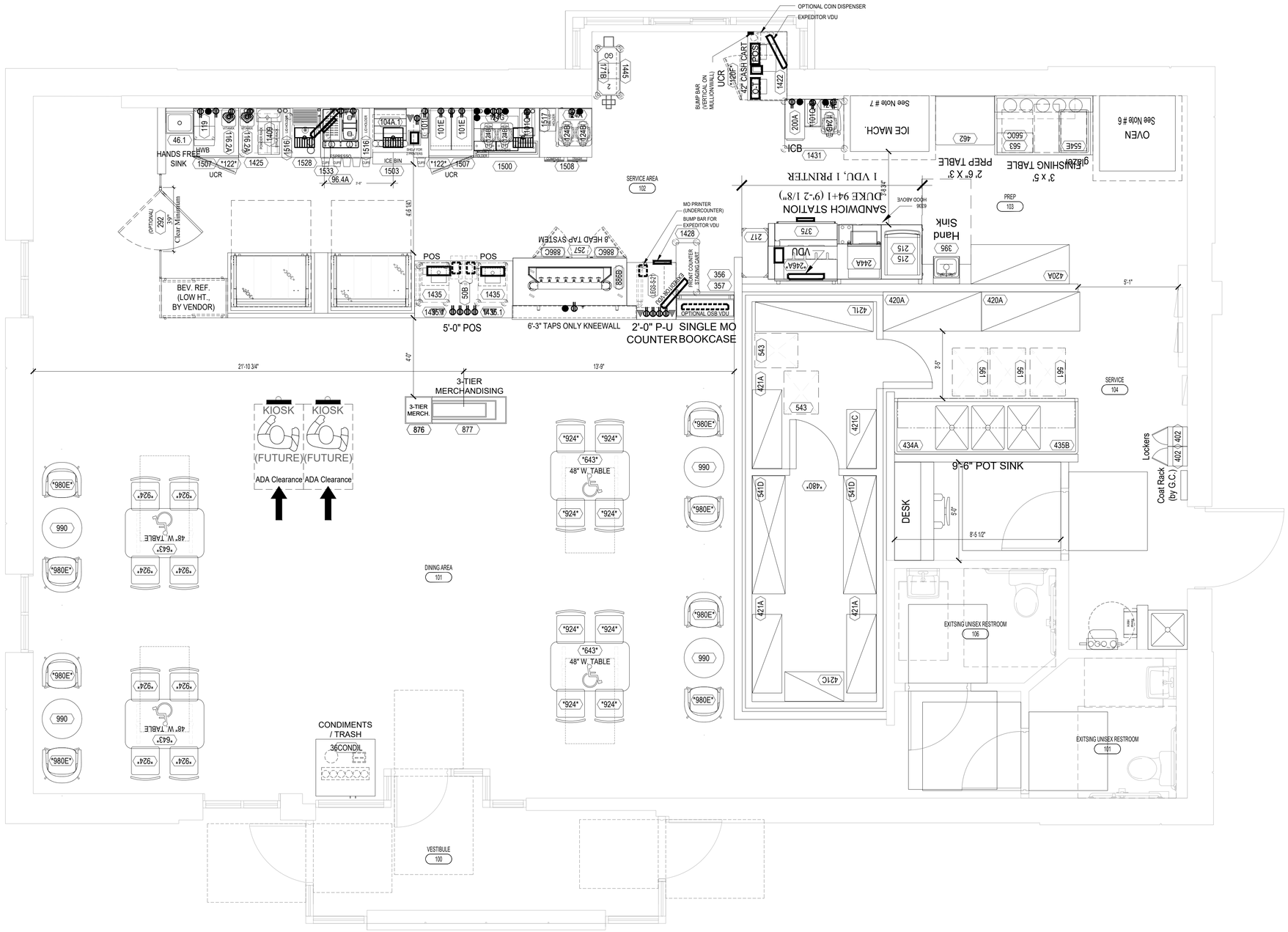


1 **SITE PLAN**
SCALE: 3/32"=1'-0"

KPJ ARCHITECTS ENGINEERS
828 DAVIS ST. SUITE 300
EVANSTON, IL-60201
847-497-8159

SITE PLAN
151 N MAYFAIR RD, WAUWATOSA, WI

DATE : 05/27/2026



1 **TEST FIT**
SCALE: 3/8"=1'-0"

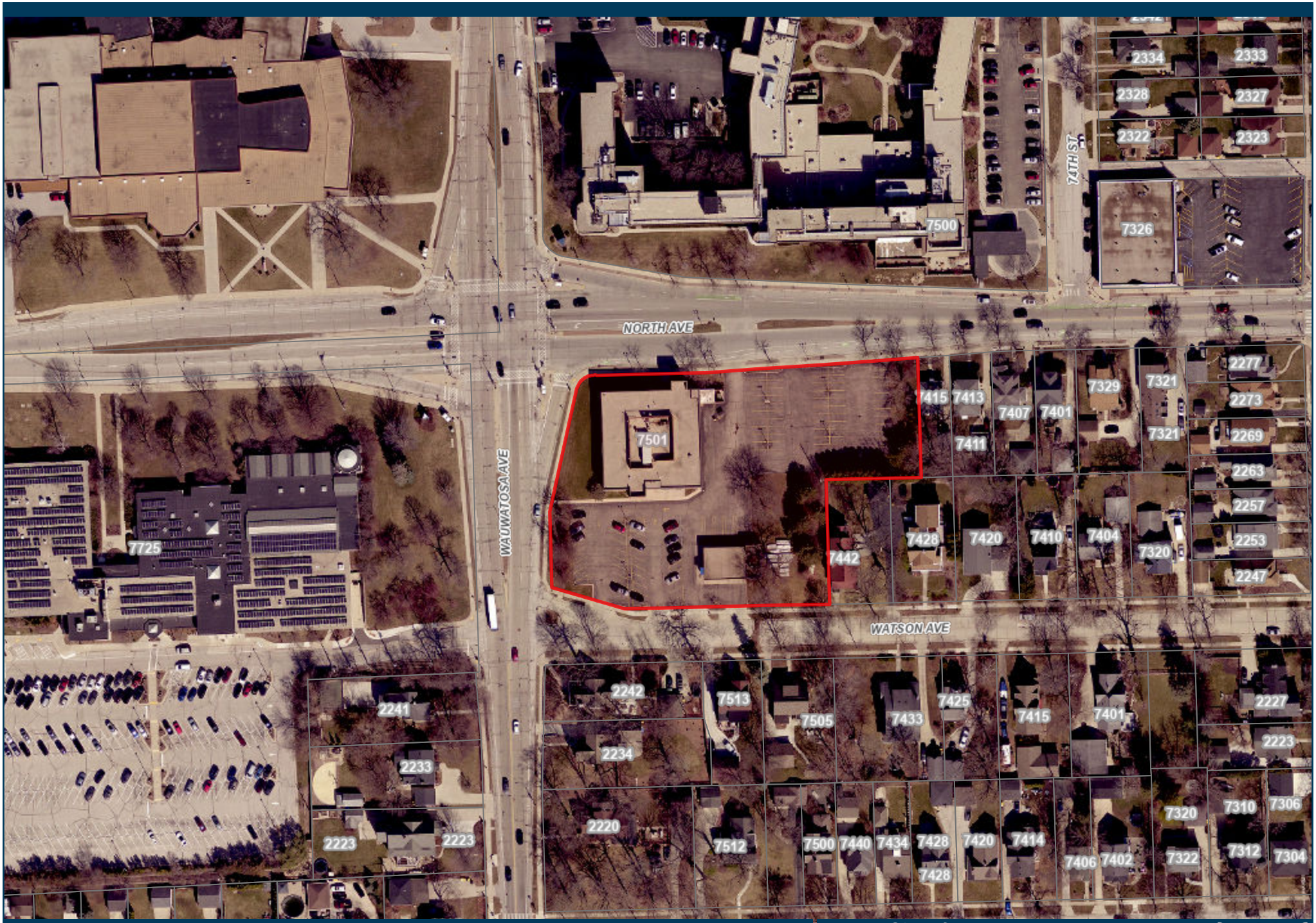
828 DAVIS ST. SUITE 300
EVANSTON, IL 60201
847-497-8159

TEST FIT
151 N MAYFAIR RD , WAUWATOSA, WI

DATE : 05/27/2026

File #: 26-1048 **Agenda Date:** 6/23/2026 **Agenda #:** 2.

Public Hearing for a Conditional Use Permit for a bank drive-through in the General Commercial and Planned Unit Development Overlay (C2/PUD) zone at 7501 W. North Avenue, Luther Group LLC, applicant



7501 W North Ave.

City of Wauwatosa

CITY OF WAUWATOSA | 7725 N. NORTH AVE | WAUWATOSA WI, 53213 | WAUWATOSA.NET

1" = 137'

Friday, May 22, 2

Executive Summary – Conditional Use Permit Application
7501 W. North Avenue, Wauwatosa, Wisconsin

Luther Group respectfully requests approval of a Conditional Use Permit for a proposed drive-thru in connection with the redevelopment of 7501 W. North Avenue in the City of Wauwatosa.

The proposed redevelopment includes construction of an approximately 5,000 square foot BMO branch designed to provide full-service retail banking services with convenient customer access. The new facility will modernize an important existing banking location while maintaining continued service to the surrounding community.

The proposed bank use and associated drive-thru are not anticipated to create significant adverse impacts related to traffic, noise, lighting, or operations. The site has been designed to provide efficient vehicular circulation, safe ingress and egress, and adequate on-site parking. Access points are configured to minimize disruption to surrounding roadways while maintaining convenient customer access. Finally, the drive-thru component represents a continuation of an existing condition currently operating on the site today.

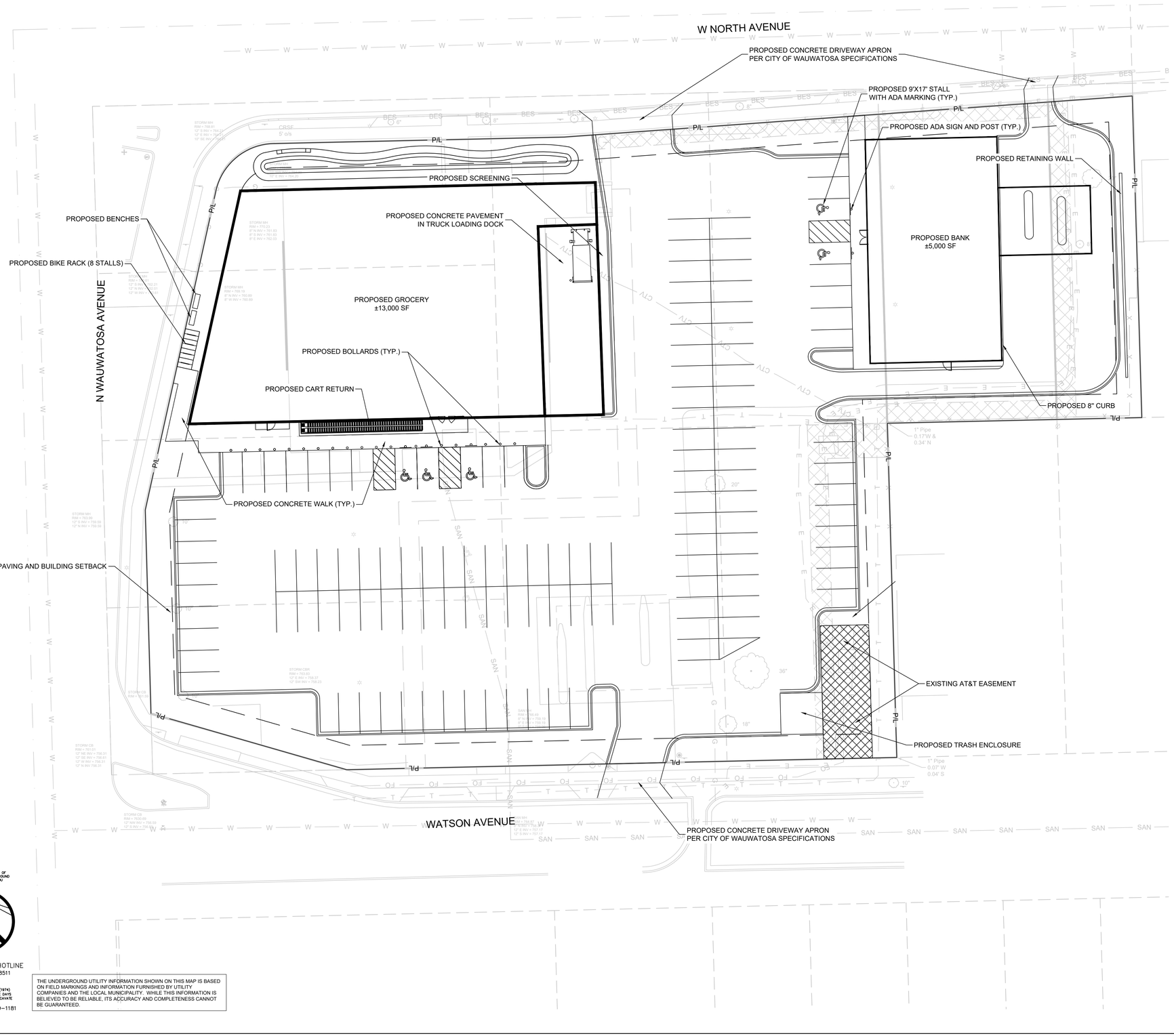
Hours of operation for the BMO branch are anticipated to be Monday through Friday from 9:00 a.m. to 5:00 p.m. and Saturdays from 9:00 a.m. to 12:00 p.m. Approximately 10 employees are expected at the location.

We appreciate our longstanding relationship with the City of Wauwatosa and look forward to continuing to work collaboratively throughout the review process.

Best regards,

Luther Group

2026.05.13



SITE INFORMATION			
SITE AREA	89631	2.058 AC	
SITE DISTURBED AREA	89631	2.058 AC	
EXISTING IMPERVIOUS AREA	61224	1.406 AC	68.3 %
PROPOSED IMPERVIOUS AREA	73797	1.694 AC	82.3 %
TOTAL PARKING SPACES	124		
ADA PARKING SPACES	5		

LEGEND:

- 5" THICK CONCRETE WALK
- CONCRETE PAVEMENT
- ASPHALT SURFACE
- HEAVY-DUTY ASPHALT SURFACE
- CURB & GUTTER (ACCEPT)
- 5 — EXISTING CONTOUR

GRAPHIC SCALE
0 20 40

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
6. WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND RAMPS, PAVING, AND CURB AND GUTTER SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS.
7. EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

SITE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE

NO. REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.13
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C100

PIMIG
C100
25057

I:\Luther Group\25057 - Wauwatosa Grocery\060 CAD\030_Production Sheets\100_Civil\C100 Site Plan.dwg



D-Series Size 0
LED Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

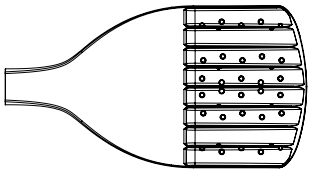
Introduction

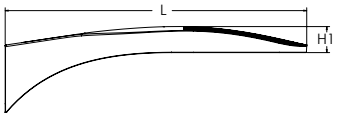
The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

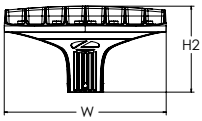
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Specifications

EPA:	0.44 ft² (0.04 m²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)







Design Select options indicated by this color background.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature [2]	Color Rendering Index [2]	Distribution		Voltage	Mounting
DSX0 LED	**Forward optics** P1 P5 P2 P6 P3 P7 P4 **Rotated optics** P10 [1] P12 [1] P11 [1] P13 [1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare [3] T4M Type IV medium T4LG Type IV low glare [3] TFTM Forward throw medium	T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control [3] BLC4 Type IV backlight control [3] LCCO Left corner cutoff [3] RCCO Right corner cutoff [3]	MVOLT (120V-277V) [4] HVOLT (347V-480V) [5,6] XVOLT (277V-480V) [7,8] 120 [16,24] 208 [16,24] 240 [16,24] 277 [16,24] 347 [16,24] 480 [16,24]	**Shipped included** SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling. 3" min. SQ pole) [9] RPA5 Round pole mounting (#5 drilling, 3" min. RND pole) [9] SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket [10] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options

Shipped installed

NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. [11,12,18,19]
PIR	High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc [13,18,19]
PER	NEMA twist-lock receptacle only (controls ordered separate) [14]
PER5	Five-pin receptacle only (controls ordered separate) [14,19]
PER7	Seven-pin receptacle only (controls ordered separate) [14,19]
FAO	Field adjustable output [15,19]
BL30	Bi-level switched dimming, 30% [16,19]
BL50	Bi-level switched dimming, 50% [16,19]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) [17]

Other options

Shipped installed

HS	Houseside shield (black finish standard) [20]
L90	Left rotated optics [1]
R90	Right rotated optics [1]
CCE	Coastal Construction [21]
HA	50°C ambient operation [22]
BAA	Buy America(n) Act and/or Build America Buy America Qualified
SF	Single fuse (120, 277, 347V) [24]
DF	Double fuse (208, 240, 480V) [24]

Shipped separately

EGSR	External Glare Shield (reversible, field install required, matches housing finish)
BSDB	Bird Spikes (field install required)

Finish *(required)*

DDBXD	Dark Bronze
DBLXD	Black
DNAXD	Natural Aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

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Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [23]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [23]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [23]
DSHORT SBK	Shorting cap [23]
DSX0HS P#	House-side shield (enter package number P1-7, P10-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPA5 (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGSR (FINISH)	External glare shield (specify finish)
DSX0BSDB (FINISH)	Bird spike deterrent bracket (specify finish)

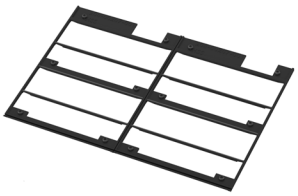
NOTES

1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
6 HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
8 XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
9 SPA5 and RPA5 for use with #5 drilling only (Not for use with #8 drilling).
10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT. NLTAIR2 PIRHN not available with P1 using MVOLT.
13 PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT. PIR not available with P1 using MVOLT.
14 PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify 120 or 277V.
17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
18 Reference Motion Sensor Default Settings table on page 4 to see functionality.
19 Reference Controls Options table on page 4.
20 Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
21 CCE option not available with option BS and EGSR. Contact Technical Support for availability.
22 Option HA not available with performance packages P6, P7, P12 and P13.
23 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
24 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories



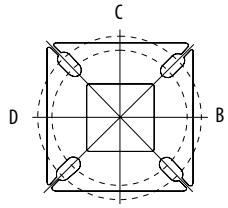
External Glare Shield (EGSR)

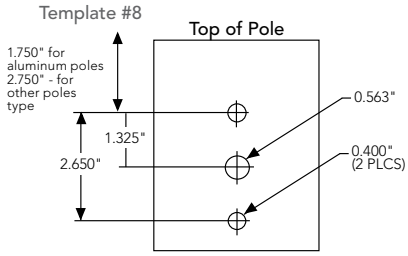


House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION
(from top of pole)





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
		Minimum Acceptable Outside Pole Dimension					
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPA5	#5	3"	3"	3"	3"		3"
RPA5	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPA5, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPA5	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

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Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's homepage.

Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').



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Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°C**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

	Performance Package	LED Count	Drive Current (mA)	Wattage	Current (A) 120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Phototcell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	33W	20	530	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157
P2	45W	20	700	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
				T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
				T3M	5,930	1	0	3	131	6,180	1	0	3	137	6,301	1	0	3	140
				T3LG	5,297	1	0	1	117	5,521	1	0	1	122	5,628	1	0	1	125
				T4M	6,018	1	0	3	133	6,272	1	0	3	139	6,395	1	0	3	142
				T4LG	5,474	1	0	1	121	5,705	1	0	1	126	5,816	1	0	1	129
				TFTM	6,060	1	0	3	134	6,316	1	0	3	140	6,439	1	0	3	143
				T5M	6,192	3	0	1	137	6,453	3	0	2	143	6,579	3	0	2	146
				T5W	6,293	3	0	2	139	6,558	3	0	2	145	6,686	3	0	2	148
				T5LG	6,210	2	0	1	138	6,472	3	0	1	143	6,598	3	0	1	146
				BLC3	4,313	0	0	2	96	4,495	0	0	2	100	4,583	0	0	2	102
				BLC4	4,455	0	0	2	99	4,643	0	0	2	103	4,733	0	0	2	105
				RCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				LCCO	4,352	0	0	2	96	4,536	0	0	2	100	4,624	0	0	2	102
				AFR	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
P3	69W	20	1050	T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
				T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
P4	93W	20	1400	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
				T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
				T3M	10,680	2	0	3	115	11,130	2	0	3	120	11,347	2	0	3	122
				T3LG	9,540	1	0	2	103	9,942	1	0	2	107	10,136	1	0	2	109
				T4M	10,839	2	0	3	117	11,296	2	0	3	121	11,516	2	0	4	124
				T4LG	9,858	1	0	2	106	10,274	1	0	2	110	10,474	1	0	2	113
				TFTM	10,914	2	0	3	117	11,374	2	0	3	122	11,596	2	0	3	125
				T5M	11,152	4	0	2	120	11,622	4	0	2	125	11,849	4	0	2	127
				T5W	11,332	4	0	3	122	11,811	4	0	3	127	12,041	4	0	3	129
				T5LG	11,184	3	0	1	120	11,656	3	0	2	125	11,883	3	0	2	128
				BLC3	7,768	0	0	2	83	8,096	0	0	2	87	8,254	0	0	2	89
				BLC4	8,023	0	0	3	86	8,362	0	0	3	90	8,524	0	0	3	92
				RCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				LCCO	7,838	1	0	2	84	8,169	1	0	2	88	8,328	1	0	2	90
				AFR	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79.
Contact factory for performance data on any configurations not shown here.

Forward Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	90W	40	700	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140
				T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145
				T5LG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146
P6	137W	40	1050	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
				T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
				T3M	16,442	2	0	4	120	17,135	3	0	4	125	17,469	3	0	4	128
				T3LG	14,687	2	0	2	107	15,306	2	0	2	112	15,605	2	0	2	114
				T4M	16,687	2	0	4	122	17,391	3	0	5	127	17,730	3	0	5	129
				T4LG	15,177	2	0	2	111	15,817	2	0	2	115	16,125	2	0	2	118
				TFTM	16,802	2	0	4	123	17,511	2	0	4	128	17,852	2	0	5	130
				T5M	17,168	4	0	2	125	17,893	5	0	3	131	18,241	5	0	3	133
				T5W	17,447	5	0	3	127	18,183	5	0	3	133	18,537	5	0	3	135
				T5LG	17,218	4	0	2	126	17,944	4	0	2	131	18,294	4	0	2	134
				BLC3	11,959	0	0	3	87	12,464	0	0	3	91	12,707	0	0	3	93
				BLC4	12,352	0	0	4	90	12,873	0	0	4	94	13,124	0	0	4	96
				RCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				LCCO	12,067	1	0	3	88	12,576	1	0	3	92	12,821	1	0	3	94
				AFR	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
P7	171W	40	1300	T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
				T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129

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Performance Data

Lumen Output

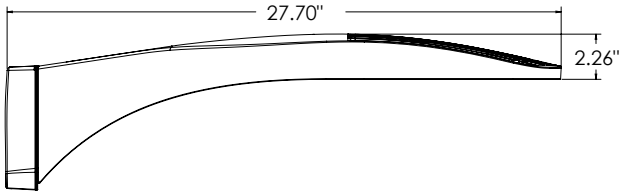
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

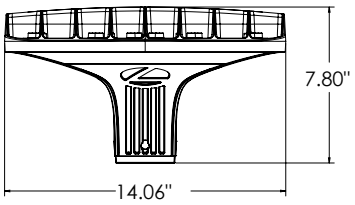
Rotated Optics

Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	51W	30	530	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
P11	68W	30	700	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
				T2M	8,669	3	0	3	127	9,034	3	0	3	133	9,211	3	0	3	135
				T3M	8,768	3	0	3	129	9,138	3	0	3	134	9,316	3	0	3	137
				T3LG	7,833	3	0	3	115	8,164	3	0	3	120	8,323	3	0	3	122
				T4M	8,899	3	0	3	131	9,274	3	0	3	136	9,455	3	0	3	139
				T4LG	8,093	3	0	3	119	8,435	3	0	3	124	8,599	3	0	3	126
				TFTM	8,962	3	0	3	132	9,340	3	0	3	137	9,522	3	0	3	140
				T5M	9,156	4	0	2	135	9,542	4	0	2	140	9,728	4	0	2	143
				T5W	9,304	4	0	2	137	9,696	4	0	2	143	9,885	4	0	2	145
				T5LG	9,182	3	0	1	135	9,569	3	0	1	141	9,756	3	0	1	143
				BLC3	6,378	3	0	3	94	6,647	3	0	3	98	6,777	3	0	3	100
				BLC4	6,587	3	0	3	97	6,865	3	0	3	101	6,999	3	0	3	103
				RCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				LCCO	6,436	0	0	2	95	6,707	0	0	2	99	6,838	0	0	2	101
				AFR	9,358	3	0	3	138	9,753	3	0	3	143	9,943	3	0	3	146
P12	103W	30	1050	T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
P13	129W	30	1300	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130
				T2M	14,547	4	0	4	113	15,161	4	0	4	118	15,457	4	0	4	120
				T3M	14,714	4	0	4	114	15,335	4	0	4	119	15,634	4	0	4	121
				T3LG	13,145	3	0	3	102	13,700	3	0	3	106	13,967	3	0	3	108
				T4M	14,933	4	0	4	116	15,563	4	0	4	121	15,867	4	0	4	123
				T4LG	13,582	3	0	3	105	14,155	3	0	3	110	14,431	3	0	3	112
				TFTM	15,039	4	0	4	117	15,673	4	0	4	122	15,979	4	0	4	124
				T5M	15,364	4	0	2	119	16,013	4	0	2	124	16,325	4	0	2	127
				T5W	15,613	5	0	3	121	16,272	5	0	3	126	16,589	5	0	3	129
				T5LG	15,409	3	0	2	120	16,059	3	0	2	125	16,372	4	0	2	127
				BLC3	10,703	4	0	4	83	11,155	4	0	4	87	11,372	4	0	4	88
				BLC4	11,054	4	0	4	86	11,520	4	0	4	89	11,745	4	0	4	91
				RCCO	10,800	1	0	2	84	11,256	1	0	2	87	11,475	1	0	3	89
				LCCO	10,800	1	0	2	84	11,255	1	0	2	87	11,475	1	0	3	89
				AFR	15,704	3	0	3	122	16,366	3	0	3	127	16,685	4	0	4	130

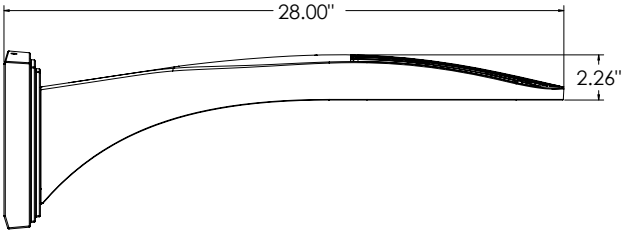
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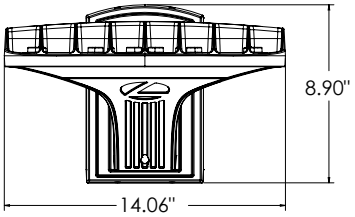
Dimensions



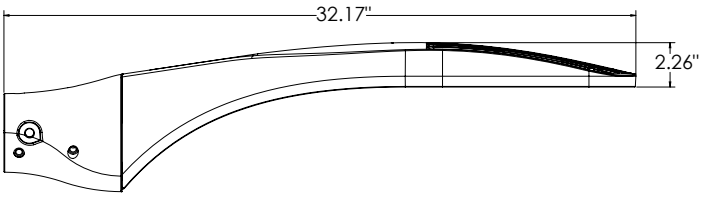


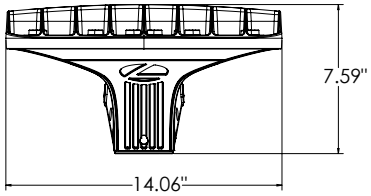
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs





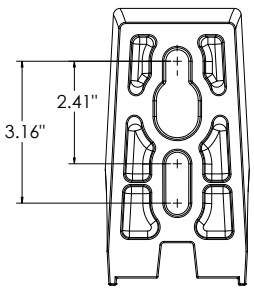
DSX0 with WBA mount
Weight: 27 lb



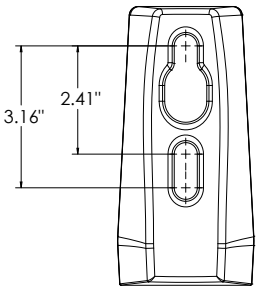


DSX0 with MA mount
Weight: 28 lbs

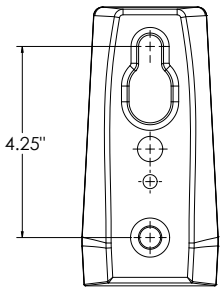
SPA (STANDARD ARM)



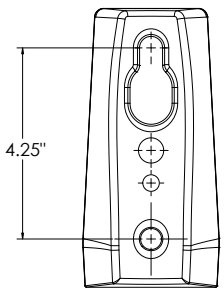
RPA



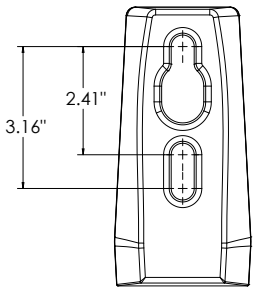
SPA5



RPA5



SPA8N

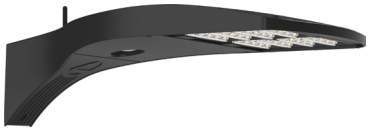


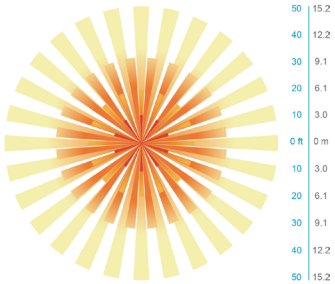
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nLight Control - Sensor Coverage and Settings

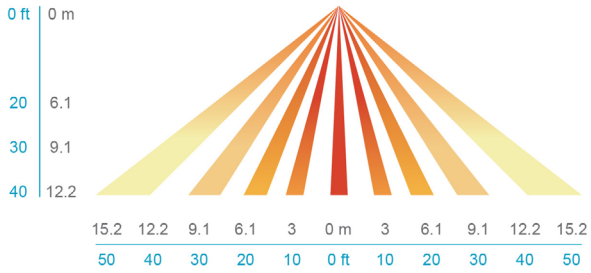
nLight Sensor Coverage Pattern

NLTAIR2 PIRHN





Top



Side

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programing and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.
BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — **These specifications are for USA standards only.** Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION —

Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, 0.120"), or 50 KSI (7-gauge, 0.179"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include 4" tenon top, drilled for side mount fixture, tenon with drilling (includes extra handhole) and open top. Side drilled and open top poles include a removable top cap.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE — All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

GROUNDING — Provision located immediately inside handhole rim. Grounding hardware not included (provided by others).

FINISH — Exterior of pole and base plate is protected by a zinc-infused TGIC (Triglycidyl Isocyanurate) powder coat finish that provides superior resistance to corrosion and weathering and meets 5A and 5B classifications of ASTM D3359. A tightly controlled multi-stage process ensures superior adhesion as well as a minimum finish thickness of 3 mils. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes.

GOVERNEMENT PROCUREMENT —

BAA – Buy America(n) Act: Product qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product also qualifies as manufactured in the United States under DOT Buy America regulations.

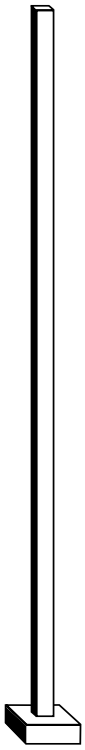
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.

Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — **Do not** erect poles without having fixtures installed. Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates. If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage. Lithonia Lighting is not responsible for the foundation design.

WARRANTY — 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application.
Specifications subject to change without notice.



Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL

BAA BABA

SSS Square Straight Steel Poles

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM28AS DDBXD

SSS					
Series	**Nominal fixture mounting height**	**Nominal shaft base size/wall thickness[1]**	**Mounting[2]**	**Options**	**Finish**
SSS	10'-39' (for 1/2 ft increments, add -6 to the pole height. **Ex:** 20-6 equals 20ft 6in.) (See technical information table for complete ordering information.)	4C 4" 11g (0.120") 4G 4" 7g (0.179") 5C 5" 11g (0.120") 5G 5" 7g (0.179") 6G 6" 7g (0.179") (See technical information table for complete ordering information.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) DSX/RSX/EAX Drill mounting[3] DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° RAD drill mounting[3] DM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 90° DM39RAD 3 at 90° DM49RAD 4 at 90° Arm drill mounting To be added as series + drill orientations **EX:** SMAC19 for SMAC arm drilling 1 at 90°	Shipped installed VD Vibration damper[4] JHxy J-Hook for cable strain relief[5] HAxy Horizontal arm bracket (1 fixture)[5,6] FDLxy Festoon outlet less electrical[5,7] FDLGFCIxy Festoon with GFCI outlet and in-use cover[5,8] CPL12/xy 1/2" coupling[5] CPL34/xy 3/4" coupling[5] CPL1/xy 1" coupling[5] NPL12/xy 1/2" threaded nipple[5] NPL34/xy 3/4" threaded nipple[5] NPL1/xy 1" threaded nipple[5] EHHxy Extra handhole[5,9] STLTMP Steel anchor bolt template (standard is paper) STLHHC Steel handhole cover (standard is plastic, finish is smooth)[10] FBCSTL2PC 2 Piece steel base cover (standard is plastic)[10] IC Interior coating[11] L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) UL UL listed with label (Includes NEC compliant cover) BAA Buy America(n) Act Compliant[12] VM/original order# Match pole to prior order or project[13]	Super durable paint colors DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DGCXD Charcoal gray DTGXD Tennis green DBRXD Bright red DSBXD Steel blue DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white Other finishes GALV Galvanized finish Architectural colors and special finishes[14] [PAINT] GALV Paint over galvanizing VP30 3 year warranty extension VP53 5 year warranty extension RAL#### Use designated Lithonia Lighting nomenclature in brochure Custom color Nomenclature assigned through Customer Care "Custom Color Process"

Accessories: *Order as separate catalog number.*

PL DT20	Plugs for RAD drillings
PL DT8	Plugs for DMxxAS drillings
FVD xxFT	Field installed vibration damper (snake style)[4]

NOTES:

1. Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.120" | "G" - 0.179".
2. PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, specify as drilling option/tenon option. The combination includes a required extra handhole.
   Example: DM28/T20.
3. Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
4. On 4" and 5" poles, VD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height. Use FVD accessory instead.
   Example: Pole height is 25ft, A provision cannot be placed above 16ft.
5. Specify location and orientation when ordering option.
   For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".
   Example: 5ft = 5 and 20ft 3in = 20-3
   For "y": Specify orientation from handhole (A,B,C,D) Refer to the Handhole Orientation diagram below.
   Example: 1/2" coupling at 5' 8 ", orientation C = CPL12/5-8C
6. Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAxyy.
   Example: HA20BD.
7. FDL does not come with GFCI outlet or handhole cover. These must be supplied by contractor or electrician.
8. Festoon option that comes with GFCI and in-use cover. GFCI and in-use cover ship separately from pole.
9. Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
10. Plastic hand hole cover and base covers come standard with all poles. Items ship separately. Additional parts can be ordered as replacements.
11. N/A with GALV.
12. Use when mill certifications are required.
13. Must add original order number. Not for replacement parts or post sales issues, contact tech support or post sales teams. VM is used to ensure poles match in appearance exactly from order to order, on a single project site. A common use case would be a multi-phase project with multiple orders. *Example: VM/010-36784*
14. Must be quoted through AQD. Finishes do not require RFA. RAL colors available are shown in "Architectural Colors brochure". Lead times may be extended up to 2 weeks due to paint procurement.

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TECHNICAL INFORMATION — EPA (ft^2) with 1.3 gust

Catalog Number	Nominal Shaft Length (ft.)*	Pole Shaft Size (Base in. x Top in. x ft.)	Wall thick (in.)	Gauge	EPA (ft^2) with 1.3 gust						Approximate ship weight (lbs.)
					80 MPH	Max. weight	90 MPH	Max. weight	100 MPH	Max. weight	
SSS 10 4C	10	4.0 x 10.0	0.120"	11	30.6	765	23.8	595	18.9	473	75
SSS 12 4C	12	4.0 x 12.0	0.120"	11	24.4	610	18.8	470	14.8	370	90
SSS 14 4C	14	4.0 x 14.0	0.120"	11	19.9	498	15.1	378	11.7	293	100
SSS 16 4C	16	4.0 x 16.0	0.120"	11	15.9	398	11.8	295	8.9	223	115
SSS 18 4C	18	4.0 x 18.0	0.120"	11	12.6	315	9.2	230	6.7	168	125
SSS 20 4C	20	4.0 x 20.0	0.120"	11	9.6	240	6.7	167	4.5	150	140
SSS 20 4G	20	4.0 x 20.0	0.179"	7	14	350	11	275	8	200	198
SSS 20 5C	20	5.0 x 20.0	0.120"	11	17.7	443	12.7	343	9.4	235	185
SSS 20 5G	20	5.0 x 20.0	0.179"	7	28.1	703	21.4	535	16.2	405	265
SSS 25 4C	25	4.0 x 25.0	0.120"	11	4.8	150	2.6	100	1	50	170
SSS 25 4G	25	4.0 x 25.0	0.179"	7	10.8	270	7.7	188	5.4	135	245
SSS 25 5C	25	5.0 x 25.0	0.120"	11	9.8	245	6.3	157	3.7	150	225
SSS 25 5G	25	5.0 x 25.0	0.179"	7	18.5	463	13.3	333	9.5	238	360
SSS 30 4G	30	4.0 x 30.0	0.179"	7	6.7	168	4.4	110	2.6	65	295
SSS 30 5C	30	5.0 x 30.0	0.120"	11	4.7	150	2	50	--	--	265
SSS 30 5G	30	5.0 x 30.0	0.179"	7	10.7	267	6.7	167	3.9	100	380
SSS 30 6G	30	6.0 x 30.0	0.179"	7	19	475	13.2	330	9	225	520
SSS 35 5G	35	5.0 x 35.0	0.179"	7	5.9	150	2.5	100	--	--	440
SSS 35 6G	35	6.0 x 35.0	0.179"	7	12.4	310	7.6	190	4.2	105	540
SSS 39 6G	39	6.0 x 39.0	0.179"	7	7.2	180	3	75	--	--	605

NOTE: EPA values are based ASCE 7-93 wind map.
* For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

TECHNICAL INFORMATION — EPA (ft^2) WITH 3-SECOND GUST PER AASHTO 2013

Series	Mounting Height (ft.)*	Shaft Base Size	90 MPH	Max. weight	100 MPH	Max. weight	110 MPH	Max. weight	120 MPH	Max. weight	130 MPH	Max. weight	140 MPH	Max. weight	150 MPH	Max. weight	Approximate ship weight (lbs.)
SSS	10	4C	20	500	16	400	13	325	10.5	263	8.5	213	7	175	6	150	75
SSS	12	4C	16	400	13	325	10	250	8	200	6.5	163	5	125	4	100	90
SSS	14	4C	13.5	338	10	250	7.5	188	6	150	4.5	113	3.5	88	2.5	63	100
SSS	16	4C	10.5	263	7.5	188	5.5	138	4	100	3	75	1.5	38	1	25	115
SSS	18	4C	8	200	5.5	138	4	100	2.5	63	1.5	38	0.5	13	-	-	125
SSS	18	4G	13	325	9.5	238	7	175	5	125	3.5	88	2.5	63	1.5	38	185
SSS	18	5C	13	325	9.5	238	6.5	163	4.5	113	3	75	1.5	38	.5	13	170
SSS	20	4C	6	150	4	100	2.5	63	1	25	-	-	-	-	-	-	140
SSS	20	4G	10.5	263	7.5	188	5.5	138	3.5	88	2	50	1	25			205
SSS	20	5C	10	250	7	175	4.5	113	2.5	63	1	25	-	-	-	-	185
SSS	20	5G	20	500	15	375	11.5	288	8.5	213	6	150	4.5	113	3	75	265
SSS	25	4C	2	50	0.5	13	-	-	-	-	-	-	-	-	-	-	170
SSS	25	4G	5.5	138	3	75	1.5	38	-	-	-	-	-	-	-	-	245
SSS	25	5C	4.5	113	2	50	-	-	-	-	-	-	-	-	-	-	225
SSS	25	5G	12	300	8.5	213	5.5	138	3	75	1.5	38	-	-	-	-	360
SSS	25	6G	19	475	13.5	338	9	225	5.5	138	3	75	1	25			445
SSS	30	4G	1.5	38	-	-	-	-	-	-	-	-	-	-	-	-	291
SSS	30	5C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
SSS	30	5G	6.5	163	3.5	88	1	25	-	-	-	-	-	-	-	-	380
SSS	30	6G	11	275	6	150	2.5	63	-	-	-	-	-	-	-	-	520
SSS	35	5G	2	50	-	-	-	-	-	-	-	-	-	-	-	-	440
SSS	35	6G	4	100	-	-	-	-	-	-	-	-	-	-	-	-	540
SSS	39	6G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	605

NOTE: AASHTO 2013 design criteria is the most common EPA and uses wind map ASCE7-05. Please review the project Spec document to determine the correct design criteria for the poles on your jobsite.
*For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

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TECHNICAL INFORMATION - EPA (ft^2) PER FLORIDA BULIDING CODE 2023																		
Series	**Mounting Height (ft.)**	**Shaft Base Size**	**115 MPH**	**Max. weight**	**120 MPH**	**Max. weight**	**130 MPH**	**Max. weight**	**140 MPH**	**Max. weight**	**150 MPH**	**Max. weight**	**160 MPH**	**Max. weight**	**170 MPH**	**Max. weight**	**180 MPH**	**Max. weight**	**Approximate ship weight (lbs.)**
SSS	10	4C	17.2	430	16	400	14	350	12	300	10.2	255	9	225	7.9	198	7	175	75
SSS	12	4C	15	375	13.9	348	11.8	295	10	250	8.6	215	7.4	185	6.2	155	5.4	135	90
SSS	14	4C	12.5	325	11	275	9.6	240	8.2	205	6.6	165	5.8	145	4.6	115	3.6	90	100
SSS	16	4C	10.4	260	9.5	238	8	200	6.5	163	5	125	4	100	3	75	2	50	115
SSS	18	4C	8.4	210	8	100	6	150	4.5	113	3.5	88	2.5	63	1.5	38	1	25	125
SSS	20	4C	7	175	6	150	4.5	113	3	75	2	50	1	25	-	-	-	-	140
SSS	20	4G	12	300	9.5	238	7.5	188	5.5	138	4.5	113	3	75	2	50	1.5	38	205
SSS	20	5C	W/t Ratio Exceeded																
SSS	20	5G	22	550	20	500	16.8	420	14	350	11.6	290	9.4	235	7.6	190	6	150	265
SSS	25	4C	3	75	2	50	0.8	20	-	-	-	-	-	-	-	-	-	-	170
SSS	25	4G	6	150	5	125	3.2	80	2	50	0.8	20	-	-	-	-	-	-	245
SSS	25	5C	W/t Ratio Exceeded																
SSS	25	5G	15	375	13.2	330	10.2	255	7.6	190	5.6	140	4	100	2.4	60	1.2	30	360
SSS	30	4G	2	50	1	25	-	-	-	-	-	-	-	-	-	-	-	-	291
SSS	30	5C	W/t Ratio Exceeded																
SSS	30	5G	8.8	220	7.4	185	4.8	120	2.8	70	1	25	-	-	-	-	-	-	380
SSS	30	6G	13	325	11.5	288	8	200	5	125	2.5	63	1	25	-	-	-	-	520
SSS	35	5G	3.8	95	2.6	65	0.6	15	-	-	-	-	-	-	-	-	-	-	440
SSS	35	6G	7	175	5	125	2	50	-	-	-	-	-	-	-	-	-	-	540
SSS	39	6G	2.4	60	0.8	20	-	-	-	-	-	-	-	-	-	-	-	-	605

NOTE:

1) Listed capacities assume the location of the design loads are a maximum of 2'-6" above the pole top and 2'-0" eccentric to the pole centerline.

2) Design capacities are in acccordance with 2023 FBC category II wind loading (ASCE 7-22 wind maps) and exposure category C. Contact Product Support Outdoor for criteria outside of these conditions.

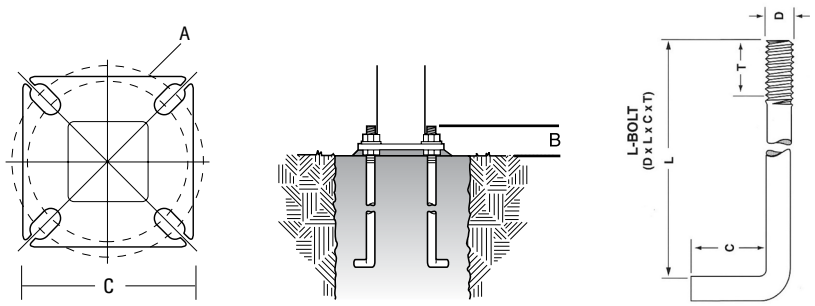
3) The listed capacities are only valid for applications installed in the state of FL. Contact Product Support Outdoor for applications in other states or jurisdictions.

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ANCHORAGE AND TEMPLATE INFORMATION

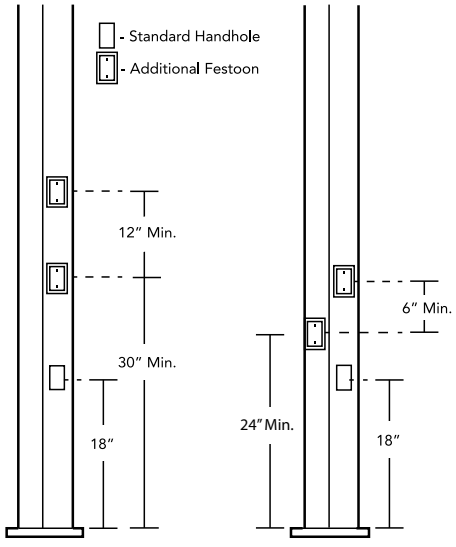
Shaft base size	Bolt circle A	Bolt projection B	Base square C	Base plate thickness	Template description *	Anchor bolt description	Bolt size (in.) D x L x C	Anchor bolt/ Template Combo
4"C	8" – 9"	3.25"- 3.75"	8"- 8.25"	0.75"	ABTEMPLATE PJ50004	AB18-0	3/4 x 18 x 3	ABSSS-4C
4"G	8" – 9"	3.38"- 3.75"	8"- 8.25"	0.875"	ABTEMPLATE PJ50004	AB30-0	3/4 x 30 x 3	ABSSS-4G
5"	10" – 12"	3.5"- 4"	11"	1"	ABTEMPLATE PJ50010	AB36-0	1 x 36 x 4	ABSSS-5
6"	11" – 13"	4"- 4.50"	12.5"	1"	ABTEMPLATE PJ50011	AB36-0	1 x 36 x 4	N/A

BASE & BOLT DETAIL

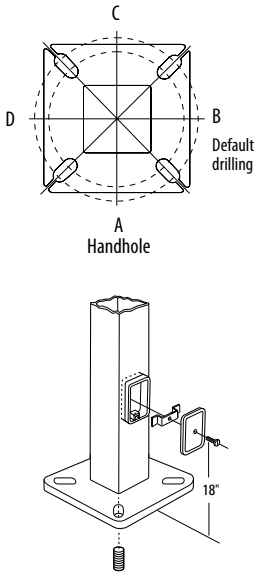


* Paper template standard. Add STL to end of description for the steel template.

SQUARE STEEL HANDHOLE AND FESTOON - PLACEMENT RULES



HANDHOLE DETAIL



IMPORTANT INSTALLATION NOTES:

- **Do not** erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.
- Bolt circles have +/- 1/2" tolerance.

CAUTION: These specifications are intended for general purposes only. Lithonia Lighting reserves the right to change material or design, without prior notice, in a continuing effort to upgrade its products.

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WDGE2 LED

Architectural Wall Sconce
Precision Refractive Optic

Catalog Number

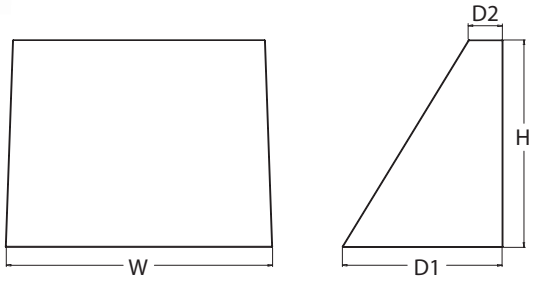
Notes

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Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: (without options) 13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 with industry leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	--	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI T3M MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE2 LED	P0[1]	27K 2700K	70CRI[4]	T1S Type I Short	MVOLT	**Shipped included**
	P1[2]	30K 3000K	80CRI	T2M Type II Medium	347[5]	SRM Surface mounting bracket
	P2[2]	40K 4000K	LW[3] Limited Wavelength	T3M Type III Medium	480[5]	ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only)[6]
	P3[2]	50K 5000K		T4M Type IV Medium		**Shipped separately**
	P4[2]	AMB[3] Amber		TFTM Forward Throw Medium		AWS 3/8inch Architectural wall spacer[7]
						PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available[7]

Options

E10WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C min)
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)
PE	Photocell, Button Type[8]
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[9]
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.
CCE	Coastal Construction[7]

Standalone Sensors/Controls

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls

NLTAIR2 PIR	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights.
NLTAIR2 PIRH	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights.
NLTAIREM2 PIR	Embedded wireless controls by nLight with UL924 listed emegency operation, Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights
NLTAIREM2 PIRH	Embedded wireless controls by nLight with UL924 listed emegency operation, Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

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Accessories

Ordered and shipped separately.

WDGEAWS DDBXD U	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE2PBBW DDBXD U	WDGE2 surface-mounted back box (specify finish)

NOTES

1 P0 option not available with sensors/controls.
2 P1-P4 not available with AMB and LW.
3 AMB and LW always go together.
4 70CRI only available with T3M and T4M.
5 347V and 480V not available with E10WH or E20WC.
6 Not qualified for DLC. Not available with emergency battery backup or sensors/controls.
7 For PBBW and AWS with CCE option, require an RFA.
8 PE not available in 480V or with sensors/controls.
9 DMG option not available with sensors/controls.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	27K (2700K, 80 CRI)					30K (3000K, 80 CRI)					40K (4000K, 80 CRI)					50K (5000K, 80 CRI)					Amber (Limited Wavelength)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	7W	T1S	636	92	0	0	0	666	97	0	0	0	699	101	0	0	1	691	100	0	0	1	712	47	0	0	1
		T2M	662	96	0	0	0	693	101	0	0	0	728	106	0	0	0	719	104	0	0	0	741	48	0	0	0
		T3M	662	96	0	0	0	693	101	0	0	0	728	106	0	0	0	719	104	0	0	0	741	48	0	0	0
		T4M	648	94	0	0	0	679	98	0	0	0	712	103	0	0	0	704	102	0	0	0	726	47	0	0	0
		TFTM	652	95	0	0	0	683	99	0	0	0	717	104	0	0	0	708	103	0	0	0	730	48	0	0	1
P1	11W	T1S	1,105	99	0	0	1	1,157	104	0	0	1	1,215	109	0	0	1	1,200	107	0	0	1					
		T2M	1,150	103	0	0	1	1,204	108	0	0	1	1,264	113	0	0	1	1,249	112	0	0	1					
		T3M	1,150	103	0	0	1	1,205	108	0	0	1	1,265	113	0	0	1	1,250	112	0	0	1					
		T4M	1,126	101	0	0	1	1,179	106	0	0	1	1,238	111	0	0	1	1,223	110	0	0	1					
		TFTM	1,133	101	0	0	1	1,186	106	0	0	1	1,245	112	0	0	1	1,230	110	0	0	1					
P2	19W	T1S	1,801	95	1	0	1	1,886	99	1	0	1	1,981	104	1	0	1	1,957	103	1	0	1					
		T2M	1,875	99	1	0	1	1,963	103	1	0	1	2,061	109	1	0	1	2,037	107	1	0	1					
		T3M	1,876	99	1	0	1	1,964	103	1	0	1	2,062	109	1	0	1	2,038	107	1	0	1					
		T4M	1,836	97	1	0	1	1,922	101	1	0	1	2,018	106	1	0	1	1,994	105	1	0	1					
		TFTM	1,847	97	1	0	1	1,934	102	1	0	1	2,030	107	1	0	1	2,006	106	1	0	1					
P3	32W	T1S	2,809	87	1	0	1	2,942	92	1	0	1	3,089	96	1	0	1	3,052	95	1	0	1					
		T2M	2,924	91	1	0	1	3,062	95	1	0	1	3,215	100	1	0	1	3,176	99	1	0	1					
		T3M	2,925	91	1	0	1	3,063	95	1	0	1	3,216	100	1	0	1	3,177	99	1	0	1					
		T4M	2,862	89	1	0	1	2,997	93	1	0	1	3,147	98	1	0	1	3,110	97	1	0	1					
		TFTM	2,880	90	1	0	1	3,015	94	1	0	1	3,166	99	1	0	1	3,128	97	1	0	1					
P4	47W	T1S	3,729	80	1	0	1	3,904	84	1	0	1	4,099	88	1	0	1	4,051	87	1	0	1					
		T2M	3,881	83	1	0	1	4,063	87	1	0	1	4,267	91	1	0	1	4,216	90	1	0	1					
		T3M	3,882	83	1	0	1	4,065	87	1	0	1	4,268	91	1	0	1	4,217	90	1	0	1					
		T4M	3,799	81	1	0	1	3,978	85	1	0	1	4,177	90	1	0	1	4,127	88	1	0	1					
		TFTM	3,822	82	1	0	1	4,002	86	1	0	1	4,202	90	1	0	1	4,152	89	1	0	1					

Performance Package	System Watts	Dist. Type	27K (2700K, 70 CRI)					30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	7W	T3M	737	107	0	0	0	763	111	0	0	0	822	119	0	0	0	832	121	0	0	1
		T4M	721	105	0	0	0	746	108	0	0	0	804	117	0	0	1	814	118	0	0	1
P1	11W	T3M	1,280	115	0	0	1	1,325	119	0	0	1	1,427	128	1	0	1	1,445	129	1	0	1
		T4M	1,253	112	0	0	1	1,297	116	0	0	1	1,397	125	0	0	1	1,415	127	0	0	1
P2	19W	T3M	2,087	110	1	0	1	2,160	114	1	0	1	2,327	123	1	0	1	2,357	124	1	0	1
		T4M	2,042	108	1	0	1	2,114	111	1	0	1	2,278	120	1	0	1	2,306	121	1	0	1
P3	32W	T3M	3,254	101	1	0	1	3,369	105	1	0	1	3,629	113	1	0	1	3,675	114	1	0	1
		T4M	3,185	99	1	0	1	3,297	103	1	0	1	3,552	111	1	0	1	3,597	112	1	0	1
P4	47W	T3M	4,319	93	1	0	1	4,471	96	1	0	1	4,817	103	1	0	2	4,878	105	1	0	2
		T4M	4,227	91	1	0	1	4,376	94	1	0	2	4,714	101	1	0	2	4,774	102	1	0	2

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Electrical Load

Performance Package	System Watts	Current (A)					
		120Vac	208Vac	240Vac	277Vac	347Vac	480Vac
P0	7.0	0.061	0.042	0.04	0.039	--	--
	9.0	--	--	--	--	0.031	0.021
P1	11.0	0.100	0.064	0.059	0.054	--	--
	14.1	--	--	--	--	0.046	0.031
P2	19.0	0.168	0.106	0.095	0.083	--	--
	22.8	--	--	--	--	0.067	0.050
P3	32.0	0.284	0.163	0.144	0.131	--	--
	37.1	--	--	--	--	0.107	0.079
P4	47.0	0.412	0.234	0.207	0.185	--	--
	53.5	--	--	--	--	0.153	0.112

Lumen Output in Emergency Mode (4000K, 80 CRI, T3M)

Option	Lumens
E10WH	1,358
E20WC	2,230

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.03
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.96	>0.93	>0.87

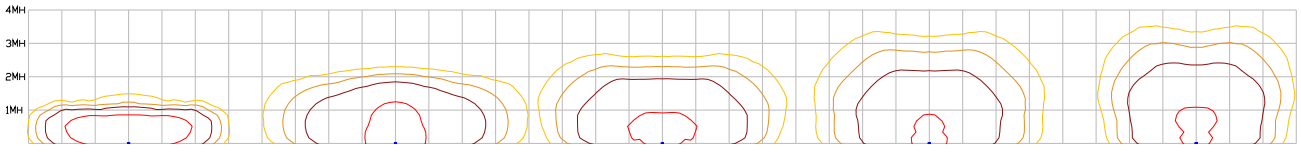
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

LEGEND

0.25 fc
0.5 fc
1.0 fc
3.0 fc

MH = 10ft
Grid = 10ft x 10ft



"P3 40K 80CRI T1S" "P3 40K 80CRI T2M" "P3 40K 80CRI T3M" "P3 40K 80CRI T4M" "P3 40K 80CRI TFTM"

Emergency Egress Options

Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain a minimum of 60% of the light output at the end of 90minutes.

Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

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Control / Sensor Options

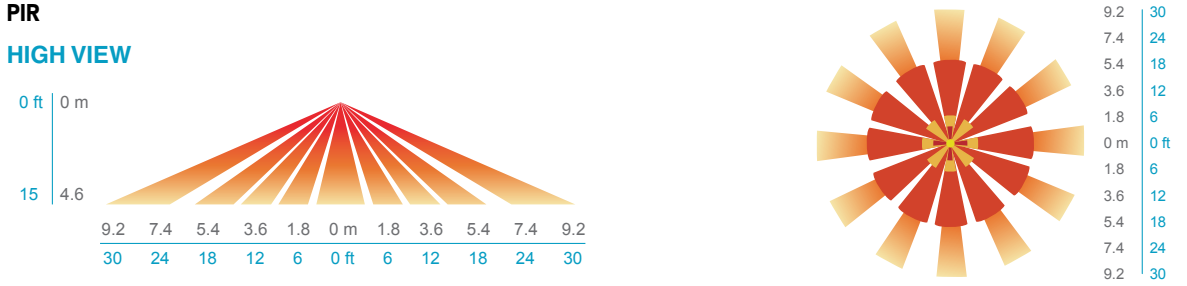
Motion/Ambient Sensor (PIR_, PIRH_)

Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

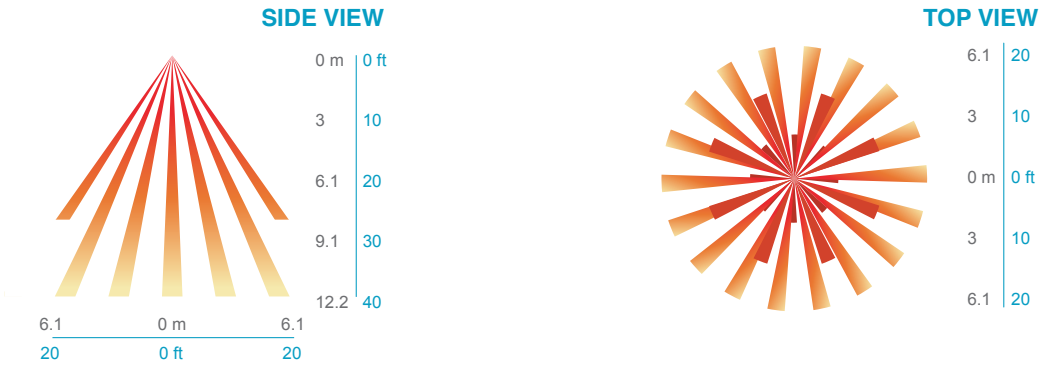
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR



PIRH



Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH, NLTAIREM2 PIR, NLTAIREM2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

UL 924 Response – nLight AIR Devices with EM Option

- NLTAIREM2 devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.
- Using the CLAIRITY+ mobile app, NLTAIREM2 devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.
- The non-emergency devices, NLTAIR2 PIR and NLTAIR2 PIRH, with version 3.4 or later firmware can be used for normal power sensing.

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Motion/Ambient Sensor

D = 7"

H = 9" (Standalone controls)
11" (nLight AIR controls, 2" antenna will be pointing down behind the sensor)

W = 11.5"



PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"

H = 9"

W = 11.5"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP66 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Individually formed acrylic lenses are engineered for superior application efficiency which maximizes the light in the areas where it is most needed. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L91/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS
CSA certified to U.S. and Canadian standards. Luminaire is IP66 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 2700K and 3000K color temperature only and SRM mounting only.

GOVERNMENT PROCUREMENT
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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WDGE3 LED

Architectural Wall Sconce

Catalog Number

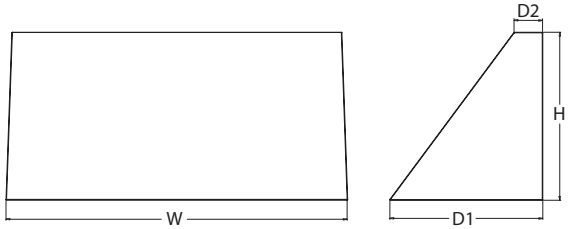
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Depth (D1):	8"
Depth (D2):	1.5"
Height:	9"
Width:	18"
Weight: (without options)	19.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE3 has been designed to deliver up to 12,000 lumens through a precision refractive lens with wide distribution, perfect for augmenting the lighting from pole mounted luminaires.

design select

Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE3 LED P3 40K 70CRI R3 MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE3 LED	P0 P1 P2 P3 P4	30K 3000K 40K 4000K 50K 5000K	70CRI 80CRI	R2 Type 2 R3 Type 3 R4 Type 4 RFT Forward Throw	MVOLT 347[1] 480[1]	**Shipped included** SRM Surface mounting bracket ICW Indirect Canopy/Ceiling Washer bracket (dry/damp locations only)[2] **Shipped separately** AWS 3/8 inch Architectural wall spacer[3] PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.[3]

Options

E15WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (15W, 5°C min)
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)
PE	Photocell, Button Type[4]
DMG	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[5]
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.
SPD10KV	10kV Surge pack[6]
CCE	Coastal Construction[3]

Standalone Sensors/Controls

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15'mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30'mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls

NLTAIR2 PIR	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights.
NLTAIR2 PIRH	Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 15'-30' mounting heights.
NLTAIREM2 PIR	Embedded wireless controls by nLight with UL924 listed emegency operation, Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights[7]
NLTAIREM2 PIRH	Embedded wireless controls by nLight with UL924 listed emegency operation, Passive Infrared Occ sensor and on/off photocell for 15'-30' mounting heights

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

Accessories

Ordered and shipped separately.

WDGEAWS DDBXD	WDGE 3/8inch Architectural Wall Spacer (specify finish)
WDGE3PBBW DDBXD U	WDGE3 surface-mounted back box (specify finish)

NOTES

1. 347V and 480V not available with E15WH and E20WC.
2. Not qualified for DLC. Not available with emergency battery backup or sensors/controls.
3. For PBBW and AWS with CCE option, require an RFA.
4. PE not available in 480V and with sensors/controls.
5. DMG option not available with sensors/controls.
6. Not available with E20WC option.
7. Available with MVOLT only and only rated to 25C ambient.

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	30K (3000K, 70 CRI)					40K (4000K, 70 CRI)					50K (5000K, 70 CRI)				
			Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
P0	41W	R2	6,172	151	1	0	1	6,104	149	2	0	1	6,394	156	2	0	1
		R3	6,071	148	1	0	2	6,004	146	1	0	2	6,290	153	1	0	2
		R4	6,256	153	1	0	2	6,187	151	1	0	2	6,481	158	1	0	2
		RFT	6,126	149	1	0	2	6,058	148	1	0	2	6,347	155	1	0	2
P1	52W	R2	7,037	136	1	0	1	7,649	148	2	0	1	7,649	148	2	0	1
		R3	6,922	134	1	0	2	7,524	145	1	0	2	7,524	145	1	0	2
		R4	7,133	138	1	0	2	7,753	150	1	0	2	7,753	150	1	0	2
		RFT	6,985	135	1	0	2	7,592	147	1	0	2	7,592	147	1	0	2
P2	59W	R2	7,968	135	2	0	1	8,661	147	2	0	1	8,661	147	2	0	1
		R3	7,838	133	1	0	2	8,519	144	1	0	2	8,519	144	1	0	2
		R4	8,077	137	1	0	2	8,779	149	1	0	2	8,779	149	1	0	2
		RFT	7,909	134	1	0	2	8,597	146	2	0	2	8,597	146	2	0	2
P3	71W	R2	9,404	132	2	0	1	10,221	143	2	0	1	10,221	143	2	0	1
		R3	9,250	130	2	0	2	10,054	141	2	0	2	10,054	141	2	0	2
		R4	9,532	134	2	0	2	10,361	145	2	0	2	10,361	145	2	0	2
		RFT	9,334	131	2	0	2	10,146	142	2	0	2	10,146	142	2	0	2
P4	88W	R2	11,380	129	2	0	1	12,369	140	2	0	1	12,369	140	2	0	1
		R3	11,194	127	2	0	2	12,167	138	2	0	2	12,167	138	2	0	2
		R4	11,535	131	2	0	2	12,538	142	2	0	2	12,538	142	2	0	2
		RFT	11,295	128	2	0	2	12,277	139	2	0	2	12,277	139	2	0	2

Lumen Output in Emergency Mode (4000K, 70 CRI)

Option	Dist. Type	Lumens
E15WH	R2	3,185
	R3	3,133
	R4	3,229
	RFT	3,162
E20WC	R2	3,669
	R3	3,609
	R4	3,719
	RFT	3,642

Electrical Load

Performance Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	52W	0.437	0.246	0.213	0.186	0.150	0.110
P2	59W	0.498	0.287	0.251	0.220	0.175	0.126
P3	71W	0.598	0.344	0.300	0.262	0.210	0.152
P4	88W	0.727	0.424	0.373	0.333	0.260	0.190

Lumen Multiplier for 80CRI

CCT	Multiplier
30K	0.891
40K	0.906
50K	0.906

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	>0.98	>0.97	>0.92

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Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting WDGE LED homepage. Tested in accordance with IESNA LM-79 and LM-80 standards.

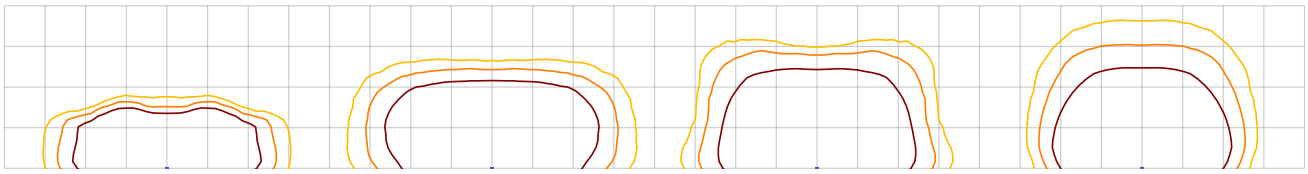
LEGEND

0.25 fc

0.5 fc

1.0 fc

MH = 15ft
Grid = 15ft x 15ft



WDGE3 LED P3 40K 70CRI R2 | WDGE3 LED P3 40K 70CRI R3 | WDGE3 LED P3 40K 70CRI R4 | WDGE3 LED P3 40K 70CRI RFT

Emergency Egress Options

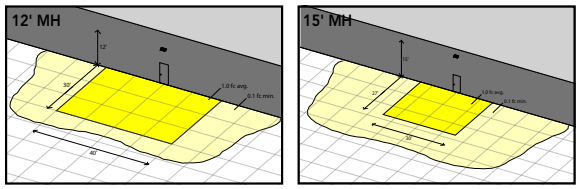
Emergency Battery Backup

The emergency battery backup is integral to the luminaire — no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All emergency battery backup configurations include an independent secondary driver with an integral relay to immediately detect loss of normal power and automatically energize the luminaire. The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time normal power is lost and maintain, minimum of 60% of the light output at the end of 90minutes.

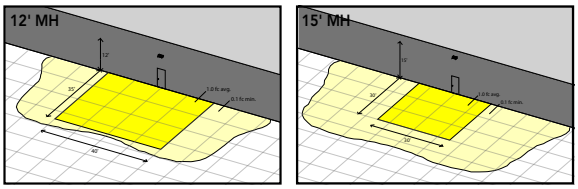
Applicable codes: NFPA 70/NEC – section 700.16, NFPA 101 Life Safety Code Section 7.9

The examples below show illuminance of 1 fc average and 0.1 fc minimum in emergency mode with E15WH or E20WC and R4 distribution.

Grid = 10ft x 10ft



WDGE3 LED xx 40K 70CRI R4 MVOLT E15WH



WDGE3 LED xx 40K 70CRI R4 MVOLT E20WC

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Control / Sensor Options

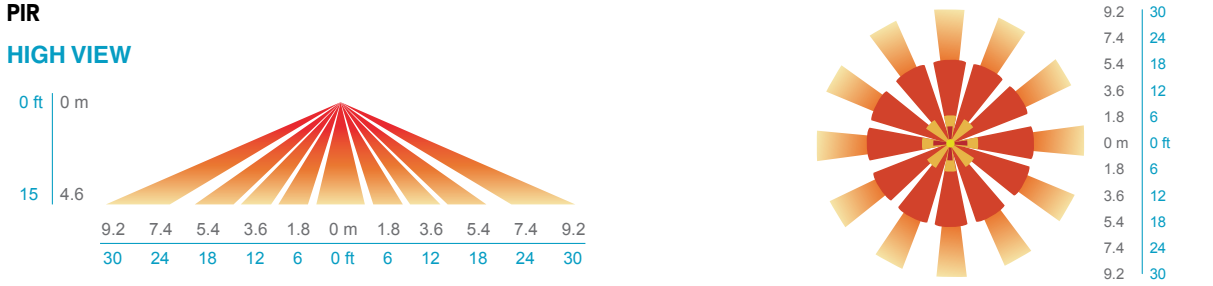
Motion/Ambient Sensor (PIR_, PIRH_)

Motion/Ambeint sensor (Sensor Switch MSOD) is integrated into the the luminaire. The sensor provides both Motion and Daylight based dimming of the luminaire. For motion detection, the sensor utilizes 100% Digital Passive Infrared (PIR) technology that is tuned for walking size motion while preventing false tripping from the environment. The integrated photocell enables additional energy savings during daytime periods when there is sufficient daylight. Optimize sensor coverage by either selecting PIR or PIRH option. PIR option comes with a sensor lens that is optimized to provide maximum coverage for mounting heights between 8-15ft, while PIRH is optimized for 15-40ft mounting height.

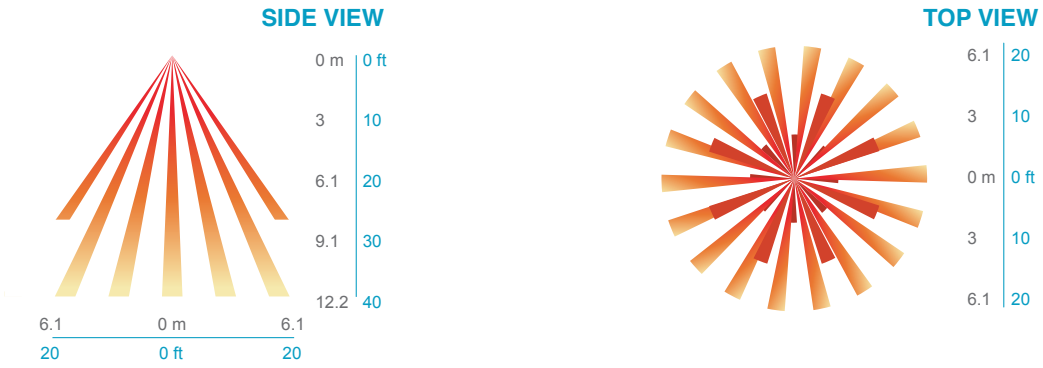
Networked Control (NLTAIR2)

nLight® AIR is a wireless lighting controls platform that allows for seamless integration of both indoor and outdoor luminaires. Five-tier security architecture, 900 MHz wireless communication and app (CLAIRITY™ Pro) based configurability combined together make nLight® AIR a secure, reliable and easy to use platform.

PIR



PIRH



Motion/Ambient Sensor Default Settings

Option	Dim Level	High Level (when triggered	Photocell Operation	Motion Time Delay	Ramp-down Time	Ramp-up Time
PIR or PIRH	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
PIR1FC3V, PIRH1FC3V	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 1fc	5 min	5 min	Motion - 3 sec Photocell - 45 sec
NLTAIR2 PIR, NLTAIR2 PIRH, NLTAIREM2 PIR, NLTAIREM2 PIRH (out of box)	Motion - 3V (37% of full output) Photocell - 0V (turned off)	10V (100% output)	Enabled @ 5fc	7.5 min	5 min	Motion - 3 sec Photocell - 45 sec

UL 924 Response - nLight AIR Devices with EM Option

- NLTAIREM2 devices will remain at their high-end trim and ignore wireless lighting control commands, unless a normal-power-sensed (NPS) broadcast is received at least every 8 seconds.
- Using the CLAIRITY+ mobile app, NLTAIREM2 devices must be associated with a group that includes a normal power sensing device to receive NPS broadcasts.
- The non-emergency devices, NLTAIR2 PIR and NLTAIR2 PIRH, with version 3.4 or later firmware can be used for normal power sensing.

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Mounting, Options & Accessories



NLTAIR2 PIR – nLight AIR Motion/Ambient Sensor

D = 8"

H = 11"

W = 18"



PBBW – Surface-Mounted Back Box
Use when there is no junction box available.

D = 1.75"

H = 9"

W = 18"



AWS – 3/8inch Architectural Wall Spacer

D = 0.38"

H = 4.4"

W = 7.5"

FEATURES & SPECIFICATIONS

INTENDED USE
Common architectural look, with clean rectilinear shape, of the WDGE LED was designed to blend with any type of construction, whether it be tilt-up, frame or brick. Applications include commercial offices, warehouses, hospitals, schools, malls, restaurants, and other commercial buildings.

CONSTRUCTION
The single-piece die-cast aluminum housing to optimize thermal transfer from the light engine and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH
Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS
Individually formed acrylic lenses are engineered for superior application efficiency which maximizes the light in the areas where it is most needed. Light engines are available in 3000 K, 4000 K or 5000 K configurations. The WDGE LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine consists of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L92/100,000 hours at 25°C). The electronic driver has a power factor of >90%, THD <20%. Luminaire comes with built in 6kV surge protection, which meets a minimum Category C low exposure (per ANSI/IEEE C62.41.2). Fixture ships standard with 0-10v dimmable driver.

INSTALLATION
A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections. The 3/8" Architectural Wall Spacer (AWS) can be used to create a floating appearance or to accommodate small imperfections in the wall surface. The ICW option can be used to mount the luminaire inverted for indirect lighting in dry and damp locations. Design can withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS
CSA certified to U.S. and Canadian standards. Light engines are IP66 rated; luminaire is IP65 rated. PIR options are rated for wet location. Rated for -40°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature and SRM mounting only.

GOVERNMENT PROCUREMENT
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

5CCT Switchable White Downlight

WF4/WF6/WF8 SWW5 Series





Brushed Nickel

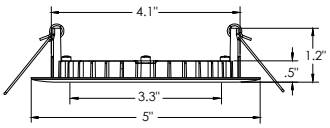


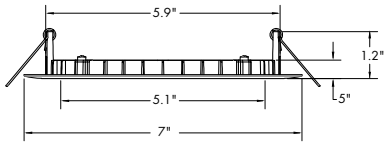
Oil Rubbed Bronze

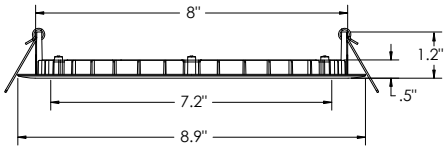


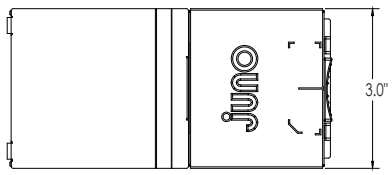
Matte Black

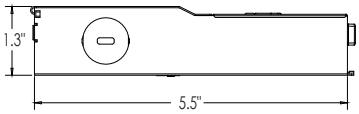
Dimensions











Project:
Fixture Type:
Location:
Contact/Phone:

Product Features

The 4",6"& 8" round smooth with 5CCT Switchable White technology provide high-quality light output and efficiency featuring a switch for easy color temperature adjustment to choose between 2700K, 3000K, 3500K, 4000K, or 5000K - while eliminating the need for recessed housings.

- Round smooth lens trim designed to distribute precise even illumination for general purpose areas
- Canless - no can required; equals easy to install and less labor
- 5 selectable color temperatures to choose with a switch ranging from warm (2700K) to daylight (5000K) allowing customization for endless applications

Applications

- Residential and light commercial applications including multi-family, hospitality, assisted living, dormitories and other multi-level construction
- Shallow slim profile allows for easy remodel or new construction insulated and drop ceiling installations
- Wet rated and airtight: perfect for showers, bathrooms, and outdoor soffits

Performance

Delivered Lumens	700L (WF4), 950L (WF6) and 1640L (WF8) Nominal at 3000K
LED Color Temperature	Switchable White (27K, 30K, 35K, 40K, 50K) Default set at 3000K
CRI	90+
Voltage	Dedicated 120V
Dimming	Dimmable to 10% with triac (120v) or 0-10v (MVOLT) dimmers

For a list of compatible dimmers see JUNO-WAFERS-DIM

Specifications

	WF4	WF6	WF8
Aperture:	3.3"	5.1"	7.2"
Hole Cutout Size:	4.25"	6.25"	8.25"
Overlap Trim:	5"	7"	8.9"
Height:	1.2"	1.2"	1.2"

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

5CCT Switchable White Downlight



ORDERING INFORMATION

Downlight

Example: WF4 SWW5 90CRI MW M6

Series		Trim Style		Color Temperature		Rendering Index		Finish	
WF4	4" Wafer-Thin LED Downlight	**(BLANK)**	Round	**SWW5**	Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI**	90+ CRI	**MW**	Matte White
WF6	6" Wafer-Thin LED Downlight							**MB**	Matte Black
WF8[1]	8" Wafer-Thin LED Downlight							**BN**	Brushed Nickel
								ORB	Oil Rubbed Bronze

1. WF8 only offered in a Matte White finish.

Accessories: Order as separate catalog number.

Series	
WF8643 PAN	Universal New Construction Pan
WF4 PAN R12	4" New construction pan, retail pack of 12
WF4GR MW JZ	4" Wafer Goof Ring 4.2" ID x 6.2" OD
WF6 PAN R12	6" New construction pan, retail pack of 12
WF6GR MW JZ	6" Wafer Goof Ring 6" ID x 8" OD
WF8GR MW JZ	8" Wafer Goof Ring 8.1" ID x 10.1 OD
WFJB U	Remodel Joist Bar
WFEXC6 SW3PIN FT4	3-Pin 6ft Cable
WFEXC10 SW3PIN FT4	3-Pin 10ft Cable
WFEXC20 SW3PIN FT4	3-Pin 20ft Cable

*Goof rings are made of 22 gauge steel and painted white.



WF8643 UNIVERSAL
New Construction Pan



WF4 PAN
4" New Construction Pan



Remodel Joist Bar



WFEXC_
3-Pin Extension
Cable



WF6 PAN
6" New Construction Pan

PERFORMANCE DATA

	WF4 SWW5	WF6 SWW5	WF8 SWW5
Input Voltage	120V	120V	120V
Input Power Typical	9W (+/-5%)	13W (+/-5%)	19W (+/-5%)
Frequency	60 Hz	60Hz	60Hz
EMI/RFI	FCC Title 47, Part 15 Class B (consumer)	FCC Title 47, Part 15 Class B (consumer)	FCC Title 47, Part 15 Class B (consumer)
Minimum Starting Temp	-40°F (-40°C)	-40°F (-40°C)	-40°F (-40°C)

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C.

LIGHTING PERFORMANCE DATA
DONNÉES DE PERFORMANCE DE L'ÉCLAIRAGE

Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white | blanc doux	
668 lumens | 76 lumens per watt	
3000K warm white | blanc chaud	
705 lumens | 80 lumens per watt	
3500K neutral white | blanc neutre	
727 lumens | 83 lumens per watt	
4000K cool white | blanc froid	
742 lumens | 84 lumens per watt	
5000K daylight | lumière du jour	
742 lumens | 84 lumens per watt	
Watts	9
Color Accuracy (CRI) Précision des couleurs (CRI)	90

LIGHTING PERFORMANCE DATA
DONNÉES DE PERFORMANCE DE L'ÉCLAIRAGE

Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white | blanc doux	
900 lumens | 75 lumens per watt	
3000K warm white | blanc chaud	
950 lumens | 79 lumens per watt	
3500K neutral white | blanc neutre	
980 lumens | 82 lumens per watt	
4000K cool white | blanc froid	
1000 lumens | 83 lumens per watt	
5000K daylight | lumière du jour	
1000 lumens | 83 lumens per watt	
Watts	12
Color Accuracy (CRI) Précision des couleurs (CRI)	90

LIGHTING PERFORMANCE DATA
DONNÉES SUR LE RENDEMENT DE L'ÉCLAIRAGE

Light Appearance (CCT) Aspect de la lumière (CCT)	
2700K soft white | blanc doux	
1615 lumens | 85 lumens per watt	
3000K warm white | blanc chaud	
1640 lumens | 86 lumens per watt	
3500K neutral white | blanc neutre	
1670 lumens | 88 lumens per watt	
4000K cool white | blanc froid	
1690 lumens | 89 lumens per watt	
5000K daylight | blanc neutre	
1700 lumens | 89 lumens per watt	
Watts	19
Color Accuracy (CRI) Précision des couleurs (CRI)	90

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Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

5CCT Switchable White Downlight



Specifications

Housing
Polycarbonate injection molded outer frame, with steel back plate. Non-conductive dead-front trim design suitable for a wide range of applications and codes requiring a non-conductive lens • FT4 3-pin plenum rated cable connector to connect from module to remote driver box • Steel spring clip for easy installation. 4", 6" or 8" cut out template is provided to ensure a correct sized hole is cut into ceiling for proper installation of the trim. Size of hole should not exceed 4-1/4" for the WF4, 6-1/4" for the WF6 and 8-1/4" for the WF8 • Can be installed from 3/8" to 1 ½" ceiling thickness • Can be removed from below the ceiling for service or replacement.

LED Light Engine
Switchable white color temperature from 2700K, 3000K, 3500K, 4000K, 5000K • 90 CRI minimum • Color accuracy within 4 step McAdams Ellipse at the end CCT (2700K and 5000K), within 6 step McAdams Ellipse in the middle CCT (3000K, 3500K, and 4000K) • Dimming 100% to 10% with most standard incandescent dimers (see list of approved dimmers).

Driver
Connect directly to 120V Class-2 (CAN ICES-005 (B) / NMB-005 (B)) LED driver • 120V 60 Hz constant current driver provides noise free operation • IC rated driver with convenience of a switch to choose between 5 selectable color temperature options ranging from 2700K (warm white), 3000K, 3500K, 4000K, or 5000K (daylight) • The isolated driver integrated inside steel remote box with four 7/8" knockouts with slots for pryout. Suitable for pulling wires with the 12 cubic-inch wiring compartment to accommodate up to (6) 14 gauge insulated conductor or (4) 12 gauge insulated conductors, making the Wafer LED Downlights much easier to wire in 2in/2out (plus ground) daisy-chain applications and contractor friendly • 2" plenum space required for the installation of the WF6 and WF8 driver boxes; 3"plenum space required for the installation of the WF4 driver box • Suitable for installation in t-grid and drop ceiling applications with universal new construction pan.

Optical System
Edge-lit LED technology uses light guided plate to distribute light • Polycarbonate lens provides even illumination throughout the space • Efficient system that can produce over 700 lumens while using 9W (WF4), 950 lumens while using 13W (WF6) and 1640 lumens while using 19W (WF8) • Replaces 65W incandescent (WF4), 75W incandescent (WF6) and 100W incandescent (WF8).

Life
Rated for 50,000 hours at 70% lumen maintenance.

Labels
CSA certified to US and Canadian safety standards • ENERGY STAR® certified product • Suitable for wet location, covered ceiling • Air-Loc certified in accordance with ASTM E283-2004 • NOM Certified • Can be used to comply with California Title 24 Part 6 High Efficacy LED light Source Requirements • U.S. Patent No. 10,681,784.

Testing
All reports are based on published industry procedures; field performance may differ from laboratory performance.

Warranty
3-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

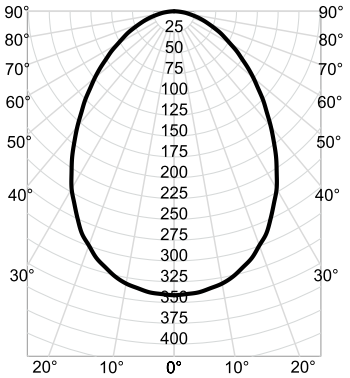
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30″ Above Floor for a Single Luminaire**

WF4 SWW5 90CRI 2700K Input Watts: 8.9, Delivered Lumens: 670, LPW: 75.3, S/MH: 1.09, Test No: ISF 202630P1



CP Summary

0°	
0°	341
5°	339
15°	319
25°	275
35°	214
45°	151
55°	99
65°	61
75°	31
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	243	36%
0° - 40°	369	55%
0° - 60°	568	85%
0° - 90°	670	100%
90° - 180°	0	0%
0° - 180°	670	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

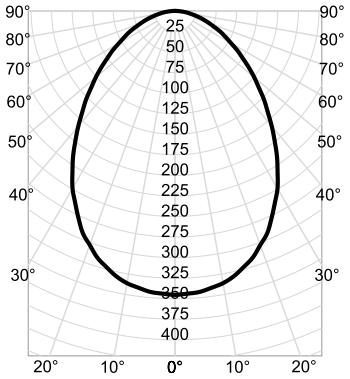
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	9.5	10.7
8.0	5.3	14.2
10.0	3.4	17.8
12.0	2.4	21.3
14.0	1.7	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

Average Luminance	
0°	42,950
45°	26,951
55°	21,820
65°	18,172
75°	14,836
85°	11,422

WF4 SWW5 90CRI 3000K Input Watts: 8.9, Delivered Lumens: 678, LPW: 76.2, S/MH: 1.09, Test No: ISF 202630P2



CP Summary

0°	
0°	345
5°	343
15°	322
25°	278
35°	216
45°	153
55°	101
65°	62
75°	31
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	246	36%
0° - 40°	374	55%
0° - 60°	575	85%
0° - 90°	678	100%
90° - 180°	0	0%
0° - 180°	678	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

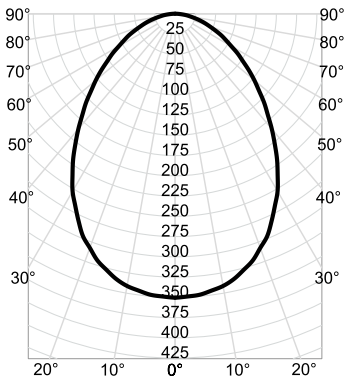
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	9.6	10.7
8.0	5.4	14.2
10.0	3.5	17.8
12.0	2.4	21.3
14.0	1.8	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

Average Luminance	
0°	43,464
45°	27,273
55°	22,081
65°	18,389
75°	15,014
85°	11,559

WF4 SWW5 90CRI 3500K Input Watts: 8.9, Delivered Lumens: 688, LPW: 77.3, S/MH: 1.09, Test No: ISF 202630P3



CP Summary

0°	
0°	350
5°	348
15°	327
25°	282
35°	219
45°	156
55°	102
65°	63
75°	31
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	249	36%
0° - 40°	379	55%
0° - 60°	583	85%
0° - 90°	688	100%
90° - 180°	0	0%
0° - 180°	688	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	9.7	10.7
8.0	5.5	14.2
10.0	3.5	17.8
12.0	2.4	21.3
14.0	1.8	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

Average Luminance	
0°	44,106
45°	27,676
55°	22,407
65°	18,661
75°	15,235
85°	11,730

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

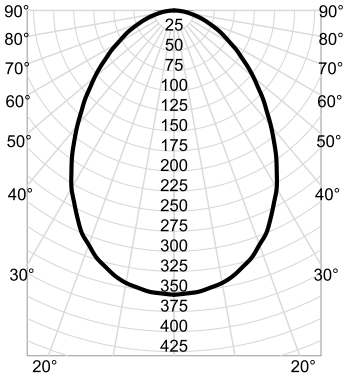
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30" Above Floor for a Single Luminaire**

WF4 SWW5 90CRI 4000K Input Watts: 8.9, Delivered Lumens: 695, LPW: 78.1, S/MH: 1.09, Test No: ISF 202630P4



CP Summary

0°	
0°	354
5°	352
15°	331
25°	285
35°	222
45°	157
55°	103
65°	63
75°	32
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	252	36%
0° - 40°	383	55%
0° - 60°	589	85%
0° - 90°	695	100%
90° - 180°	0	0%
0° - 180°	695	100%

Coefficients of Utilization

ρf	80%			20%			50%		
ρc	70%			70%			50%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

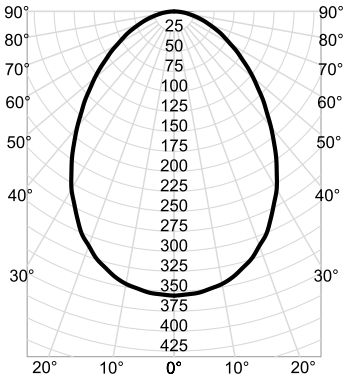
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	9.8	10.7
8.0	5.5	14.2
10.0	3.5	17.8
12.0	2.5	21.3
14.0	1.8	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	44,555
45°	27,958
55°	22,635
65°	18,851
75°	15,391
85°	11,849

WF4 SWW5 90CRI 5000K Input Watts: 8.9, Delivered Lumens: 698, LPW: 78.4, S/MH: 1.09, Test No: ISF 202630P5



CP Summary

0°	
0°	356
5°	353
15°	332
25°	286
35°	223
45°	158
55°	104
65°	64
75°	32
85°	8
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	253	36%
0° - 40°	385	55%
0° - 60°	592	85%
0° - 90°	698	100%
90° - 180°	0	0%
0° - 180°	698	100%

Coefficients of Utilization

ρf	80%			20%			50%		
ρc	70%			70%			50%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	9.9	10.7
8.0	5.6	14.2
10.0	3.6	17.8
12.0	2.5	21.3
14.0	1.8	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	44,748
45°	28,079
55°	22,733
65°	18,933
75°	15,457
85°	11,901

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

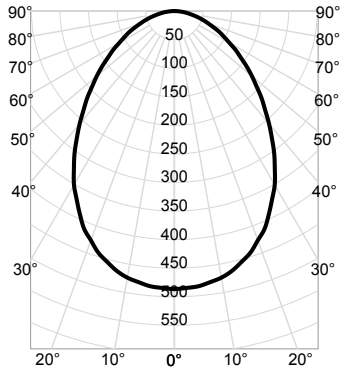
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30″ Above Floor for a Single Luminaire**

WF6 SWW5 90CRI 2700K Input Watts: 12, Delivered Lumens: 955, LPW: 72.9, S/MH: 1.09, Test No: ISF 202630P6



CP Summary

0°	
0°	487
5°	483
15°	454
25°	392
35°	305
45°	216
55°	142
65°	87
75°	44
85°	11
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	346	36%
0° - 40°	527	55%
0° - 60°	810	85%
0° - 90°	955	100%
90° - 180°	0	0%
0° - 180°	955	100%

Coefficients of Utilization

ρf / ρc	80%			20%			50%		
	70%			70%			70%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

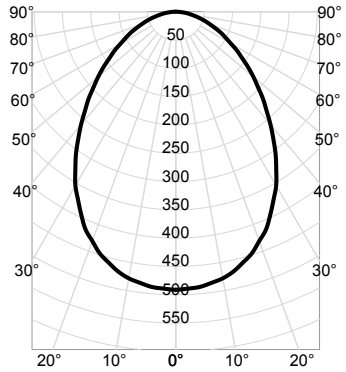
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	13.5	10.7
8.0	7.6	14.2
10.0	4.9	17.8
12.0	3.4	21.3
14.0	2.5	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	61,247
45°	38,433
55°	31,115
65°	25,913
75°	21,157
85°	16,288

WF6 SWW5 90CRI 3000K Input Watts: 12, Delivered Lumens: 964, LPW: 73.6, S/MH: 1.09, Test No: ISF 202630P7



CP Summary

0°	
0°	491
5°	488
15°	459
25°	395
35°	307
45°	218
55°	143
65°	88
75°	44
85°	11
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	350	36%
0° - 40°	531	55%
0° - 60°	817	85%
0° - 90°	964	100%
90° - 180°	0	0%
0° - 180°	964	100%

Coefficients of Utilization

ρf / ρc	80%			20%			50%		
	70%			70%			70%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

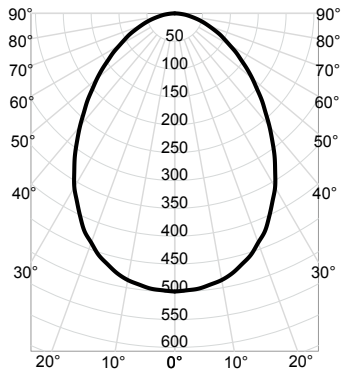
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	13.6	10.7
8.0	7.7	14.2
10.0	4.9	17.8
12.0	3.4	21.3
14.0	2.5	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	61,825
45°	38,795
55°	31,409
65°	26,158
75°	21,356
85°	16,442

WF6 SWW5 90CRI 3500K Input Watts: 12, Delivered Lumens: 980, LPW: 74.8, S/MH: 1.09, Test No: ISF 202630P8



CP Summary

0°	
0°	499
5°	496
15°	466
25°	402
35°	313
45°	222
55°	146
65°	89
75°	45
85°	12
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	355	36%
0° - 40°	540	55%
0° - 60°	831	85%
0° - 90°	980	100%
90° - 180°	0	0%
0° - 180°	980	100%

Coefficients of Utilization

ρf / ρc	80%			20%			50%		
	70%			70%			70%		
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	13.9	10.7
8.0	7.8	14.2
10.0	5.0	17.8
12.0	3.5	21.3
14.0	2.5	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	62,852
45°	39,440
55°	31,930
65°	26,592
75°	21,711
85°	16,715

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Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

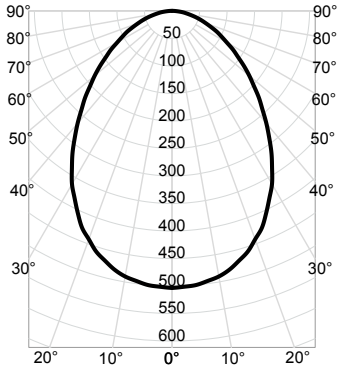
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30" Above Floor for a Single Luminaire**

WF6 SWW5 90CRI 4000K Input Watts: 12, Delivered Lumens: 988, LPW: 75.4, S/MH: 1.09, Test No: ISF 202630P9



CP Summary

0°	
0°	504
5°	500
15°	470
25°	405
35°	315
45°	223
55°	147
65°	90
75°	45
85°	12
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	358	36%
0° - 40°	545	55%
0° - 60°	838	85%
0° - 90°	988	100%
90° - 180°	0	0%
0° - 180°	988	100%

Coefficients of Utilization

ρf	80%			20%			50%		
ρc	50%	30%	10%	50%	30%	10%	50%	30%	10%
ρw									
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

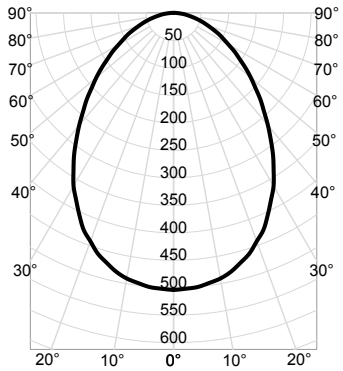
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	14.0	10.7
8.0	7.9	14.2
10.0	5.0	17.8
12.0	3.5	21.3
14.0	2.6	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	63,366
45°	39,762
55°	32,191
65°	26,810
75°	21,888
85°	16,852

WF6 SWW5 90CRI 5000K Input Watts: 12, Delivered Lumens: 989, LPW: 75.5, S/MH: 1.09, Test No: ISF 202630P10



CP Summary

0°	
0°	504
5°	501
15°	471
25°	406
35°	315
45°	224
55°	147
65°	90
75°	45
85°	12
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	359	36%
0° - 40°	545	55%
0° - 60°	838	85%
0° - 90°	989	100%
90° - 180°	0	0%
0° - 180°	989	100%

Coefficients of Utilization

ρf	80%			20%			50%		
ρc	50%	30%	10%	50%	30%	10%	50%	30%	10%
ρw									
0	119	119	119	116	116	116	111	111	111
1	106	102	98	104	100	97	99	96	94
2	94	88	82	92	86	81	88	84	80
3	84	76	70	82	75	70	79	73	68
4	75	67	61	74	66	60	71	65	60
5	68	60	53	67	59	53	65	58	53
6	62	53	47	61	53	47	59	52	47
7	57	48	43	56	48	42	54	47	42
8	52	44	39	51	44	38	50	43	38
9	48	40	35	48	40	35	46	40	35
10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	14.0	10.7
8.0	7.9	14.2
10.0	5.0	17.8
12.0	3.5	21.3
14.0	2.6	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	63,430
45°	39,802
55°	32,224
65°	26,837
75°	21,911
85°	16,869

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

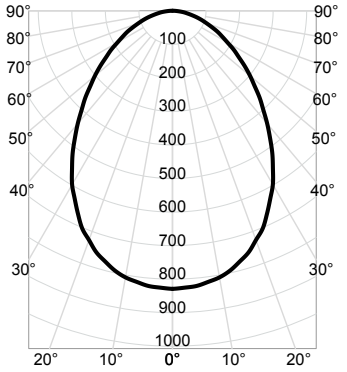
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30" Above Floor for a Single Luminaire**

WF8 SWW5 90CRI 2700K Input Watts: 19.7, Delivered Lumens: 1627, LPW: 82.6, S/MH: 1.09, Test No: ISF 202630P11



CP Summary

0°	
0°	829
5°	823
15°	774
25°	667
35°	519
45°	368
55°	242
65°	148
75°	74
85°	19
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	590	36%
0° - 40°	897	55%
0° - 60°	1,379	85%
0° - 90°	1,627	100%
90° - 180°	0	0%
0° - 180°	1,627	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	119	119	119	116	116	116	111	111	111
	1	106	102	98	104	100	97	99	96	94
	2	94	88	82	92	86	81	88	84	80
	3	84	76	70	82	75	70	79	73	68
	4	75	67	61	74	66	60	71	65	60
	5	68	60	53	67	59	53	65	58	53
	6	62	53	47	61	53	47	59	52	47
	7	57	48	43	56	48	42	54	47	42
	8	52	44	39	51	44	38	50	43	38
	9	48	40	35	48	40	35	46	40	35
	10	45	37	32	44	37	32	43	37	32

Cone of Light

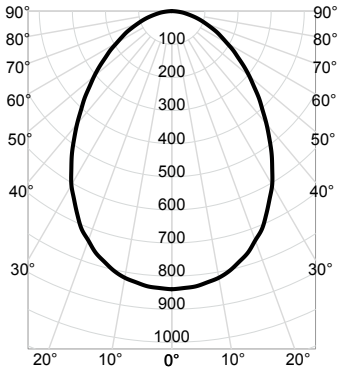
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	23.0	10.7
8.0	13.0	14.2
10.0	8.3	17.8
12.0	5.8	21.3
14.0	4.2	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	104,326
45°	65,464
55°	53,000
65°	44,140
75°	36,037
85°	27,745

WF8 SWW5 90CRI 3000K Input Watts: 19.7, Delivered Lumens: 1648, LPW: 83.7, S/MH: 1.09, Test No: ISF 202630P12



CP Summary

0°	
0°	840
5°	834
15°	784
25°	676
35°	525
45°	373
55°	245
65°	150
75°	75
85°	19
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	598	36%
0° - 40°	908	55%
0° - 60°	1,397	85%
0° - 90°	1,648	100%
90° - 180°	0	0%
0° - 180°	1,648	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	119	119	119	116	116	116	111	111	111
	1	106	102	98	104	100	97	99	96	94
	2	94	88	82	92	86	81	88	84	80
	3	84	76	70	82	75	70	79	73	68
	4	75	67	61	74	66	60	71	65	60
	5	68	60	53	67	59	53	65	58	53
	6	62	53	47	61	53	47	59	52	47
	7	57	48	43	56	48	42	54	47	42
	8	52	44	39	51	44	38	50	43	38
	9	48	40	35	48	40	35	46	40	35
	10	45	37	32	44	37	32	43	37	32

Cone of Light

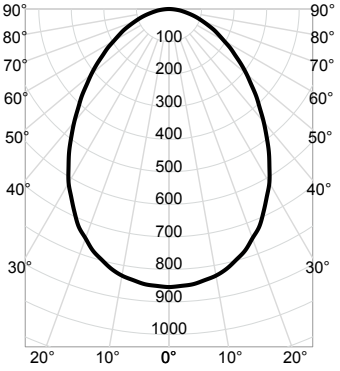
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	23.3	10.7
8.0	13.1	14.2
10.0	8.4	17.8
12.0	5.8	21.3
14.0	4.3	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	105,674
45°	66,310
55°	53,685
65°	44,710
75°	36,503
85°	28,104

WF8 SWW5 90CRI 3500K Input Watts: 19.7, Delivered Lumens: 1677, LPW: 85.1, S/MH: 1.09, Test No: ISF 202630P13



CP Summary

0°	
0°	854
5°	849
15°	798
25°	688
35°	535
45°	379
55°	249
65°	153
75°	76
85°	20
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	608	36%
0° - 40°	924	55%
0° - 60°	1,422	85%
0° - 90°	1,677	100%
90° - 180°	0	0%
0° - 180°	1,677	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	119	119	119	116	116	116	111	111	111
	1	106	102	98	104	100	97	99	96	94
	2	94	88	82	92	86	81	88	84	80
	3	84	76	70	82	75	70	79	73	68
	4	75	67	61	74	66	60	71	65	60
	5	68	60	53	67	59	53	65	58	53
	6	62	53	47	61	53	47	59	52	47
	7	57	48	43	56	48	42	54	47	42
	8	52	44	39	51	44	38	50	43	38
	9	48	40	35	48	40	35	46	40	35
	10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	23.7	10.7
8.0	13.4	14.2
10.0	8.5	17.8
12.0	5.9	21.3
14.0	4.4	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	107,536
45°	67,478
55°	54,631
65°	45,498
75°	37,146
85°	28,599

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JUNO

Juno Wafer™ LED Downlight Series

4", 6" & 8" LED Ultra-Thin Wafer Switchable Downlight

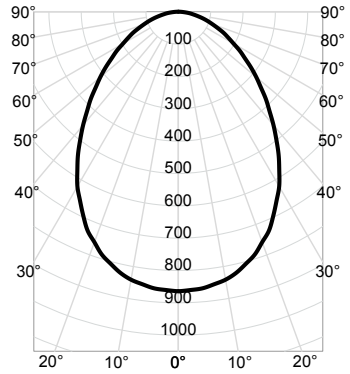
5CCT Switchable White Downlight



PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30″ Above Floor for a Single Luminaire**

WF8 SWW5 90CRI 4000K Input Watts: 19.7, Delivered Lumens: 1696, LPW: 86.1, S/MH: 1.09, Test No: ISF 202630P14



CP Summary

0°	
0°	864
5°	858
15°	807
25°	695
35°	541
45°	383
55°	252
65°	155
75°	77
85°	20
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	615	36%
0° - 40°	935	55%
0° - 60°	1,438	85%
0° - 90°	1,696	100%
90° - 180°	0	0%
0° - 180°	1,696	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	119	119	119	116	116	116	111	111	111
	1	106	102	98	104	100	97	99	96	94
	2	94	88	82	92	86	81	88	84	80
	3	84	76	70	82	75	70	79	73	68
	4	75	67	61	74	66	60	71	65	60
	5	68	60	53	67	59	53	65	58	53
	6	62	53	47	61	53	47	59	52	47
	7	57	48	43	56	48	42	54	47	42
	8	52	44	39	51	44	38	50	43	38
	9	48	40	35	48	40	35	46	40	35
	10	45	37	32	44	37	32	43	37	32

Cone of Light

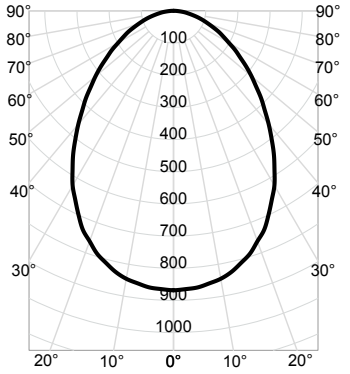
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	24.0	10.7
8.0	13.5	14.2
10.0	8.6	17.8
12.0	6.0	21.3
14.0	4.4	24.9

Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	108,755
45°	68,244
55°	55,250
65°	46,014
75°	37,567
85°	28,923

WF8 SWW5 90CRI 5000K Input Watts: 19.7, Delivered Lumens: 1705, LPW: 86.5, S/MH: 1.09, Test No: ISF 202630P15



CP Summary

0°	
0°	869
5°	863
15°	811
25°	699
35°	544
45°	385
55°	253
65°	155
75°	78
85°	20
90°	0

Zonal Lumen Summary

Zone	Lumens	% Fixture
0° - 30°	618	36%
0° - 40°	940	55%
0° - 60°	1,445	85%
0° - 90°	1,705	100%
90° - 180°	0	0%
0° - 180°	1,705	100%

Coefficients of Utilization

ρf	ρc	80%			20%			50%		
	ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%
	0	119	119	119	116	116	116	111	111	111
	1	106	102	98	104	100	97	99	96	94
	2	94	88	82	92	86	81	88	84	80
	3	84	76	70	82	75	70	79	73	68
	4	75	67	61	74	66	60	71	65	60
	5	68	60	53	67	59	53	65	58	53
	6	62	53	47	61	53	47	59	52	47
	7	57	48	43	56	48	42	54	47	42
	8	52	44	39	51	44	38	50	43	38
	9	48	40	35	48	40	35	46	40	35
	10	45	37	32	44	37	32	43	37	32

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	24.1	10.7
8.0	13.6	14.2
10.0	8.7	17.8
12.0	6.0	21.3
14.0	4.4	24.9

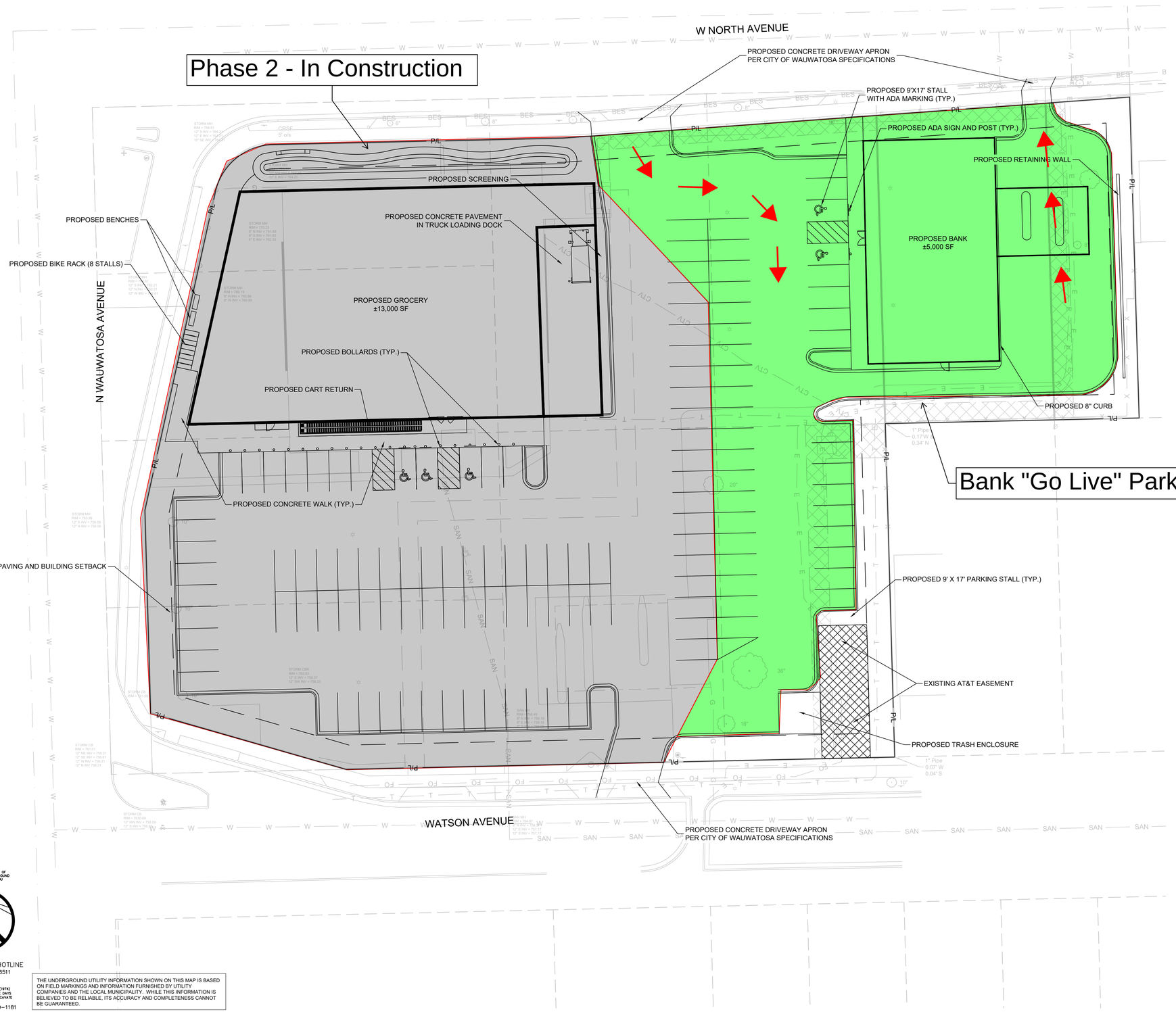
Beam Angle: 83.2°
Field Angle: 147.3°

Luminance (cd/sq.m)

	Average Luminance
0°	109,333
45°	68,606
55°	55,544
65°	46,258
75°	37,767
85°	29,077

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2026.05.13



SITE INFORMATION			
SITE AREA	89631	2.058 AC	
SITE DISTURBED AREA	89631	2.058 AC	
EXISTING IMPERVIOUS AREA	61224	1.406 AC	68.3 %
PROPOSED IMPERVIOUS AREA	73797	1.694 AC	82.3 %
TOTAL PARKING SPACES	124		
ADA PARKING SPACES	5		

LEGEND:

- 5" THICK CONCRETE WALK
- CONCRETE PAVEMENT
- ASPHALT SURFACE
- HEAVY-DUTY ASPHALT SURFACE
- CURB & GUTTER (ACCEPT)
- 5 — EXISTING CONTOUR

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
6. WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND RAMPS, PAVING, AND CURB AND GUTTER SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS.
7. EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

TO OBTAIN LOCATIONS OF PARTICIPATING UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

N

GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

SITE PLAN

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUANCE	DATE

NO.	REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.13
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C100

PJMG
C100
25057

I:\Luther Group\25057 - Wauwatosa Grocery\060 CAD\030_Production Sheets\100_Civil\C100 Site Plan.dwg

Phase 1 – BMO Bank Construction Staging Plan

1. Construction Fencing and Construction Limits

Temporary construction fencing will be installed around the Phase 1 work area on the east side of the site, generally surrounding the proposed BMO Bank building footprint, drive aisle work, and associated construction staging area.

The fenced construction limits will include:

Proposed BMO Bank building area
Immediate building perimeter work zone
Drive aisle and site work areas serving the bank
Construction material storage area
Dumpster area
Contractor parking area
Controlled construction entrance and exit points

The Phase 1 logistics plan shows the temporary construction fencing wrapping the proposed bank building and extending south toward Watson Avenue while maintaining separation from existing site areas outside the active construction zone.

2. Construction Access, Gates, and Haul Routes

Construction access for Phase 1 will be provided through controlled gate locations shown on the logistics plan.

The primary construction access points are:

Construction entrance gate from W. North Avenue
Construction exit gate near W. North Avenue
Supplemental site circulation through the fenced construction area as needed

Temporary construction signage will be provided at the construction entrance and exit gates. Truck traffic will be directed to use approved routes and avoid unnecessary circulation through adjacent residential or non-construction areas.

Haul routes will generally utilize W. North Avenue and Watson Avenue for delivery access, depending on the type of delivery and site condition at the time of work.

3. Dumpster Location

The construction dumpster will be located within the fenced construction area, near the Phase 1 building and site work limits. The dumpster will remain inside the secured construction limits and will be positioned to allow service access without blocking public streets, sidewalks, or adjacent drive aisles.

Dumpster haulers will enter and exit through the designated construction gate locations.

4. Material Storage

Material storage will occur within the fenced Phase 1 construction limits. Materials will be staged near the proposed bank building and within designated areas shown on the logistics plan.

Stored materials will be kept clear of:

Public sidewalks
Public streets
Adjacent travel lanes
Required emergency access routes
Existing utility access points where feasible

5. Contractor Parking Plan

Contractor parking for Phase 1 will be located within the designated construction parking area shown on the logistics plan, generally south and southwest of the proposed bank construction area.

Contractors will be instructed to park within the designated on-site construction parking area only. Contractor parking will not be allowed to block public streets, sidewalks, drive aisles, fire lanes, or neighboring properties.

6. Impacts to Travel Lanes, Parking, and Adjacent Streets

Phase 1 work is intended to be maintained within the project site limits. Based on the logistics plan, no long-term closure of Watson Avenue, 76th Street / N. Wauwatosa Avenue, or W. North Avenue is anticipated.

Potential short-term impacts may occur for:

Material deliveries
Dumpster servicing
Crane or large equipment setup
Utility tie-ins
Concrete pours
Site work adjacent to public right-of-way

Any activity requiring temporary occupation of the public right-of-way, sidewalk, curb lane, parking lane, or travel lane along Watson Avenue, 76th Street / N. Wauwatosa Avenue, or W. North Avenue will be coordinated in advance with the City of Wauwatosa, and the contractor will obtain the required occupancy permit prior to the work.

7. Preliminary Private Utility Relocation and Service Plan

Existing private and public utilities are shown on the survey and logistics plan, including electric, gas, water, sanitary sewer, storm sewer, telecommunications, and utility easements. The contractor will coordinate private utility relocations, temporary utility support, and permanent service connections with the appropriate utility providers before work begins.

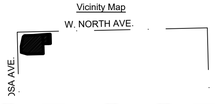
Known utility considerations include:

Existing electric service and electric pads
Existing gas, water, sanitary, and storm sewer locations
Existing telecommunications / fiber / cable routes
Utility easements shown across portions of the property
Continued protection of utilities serving properties or facilities not immediately within the active Phase 1 construction limits

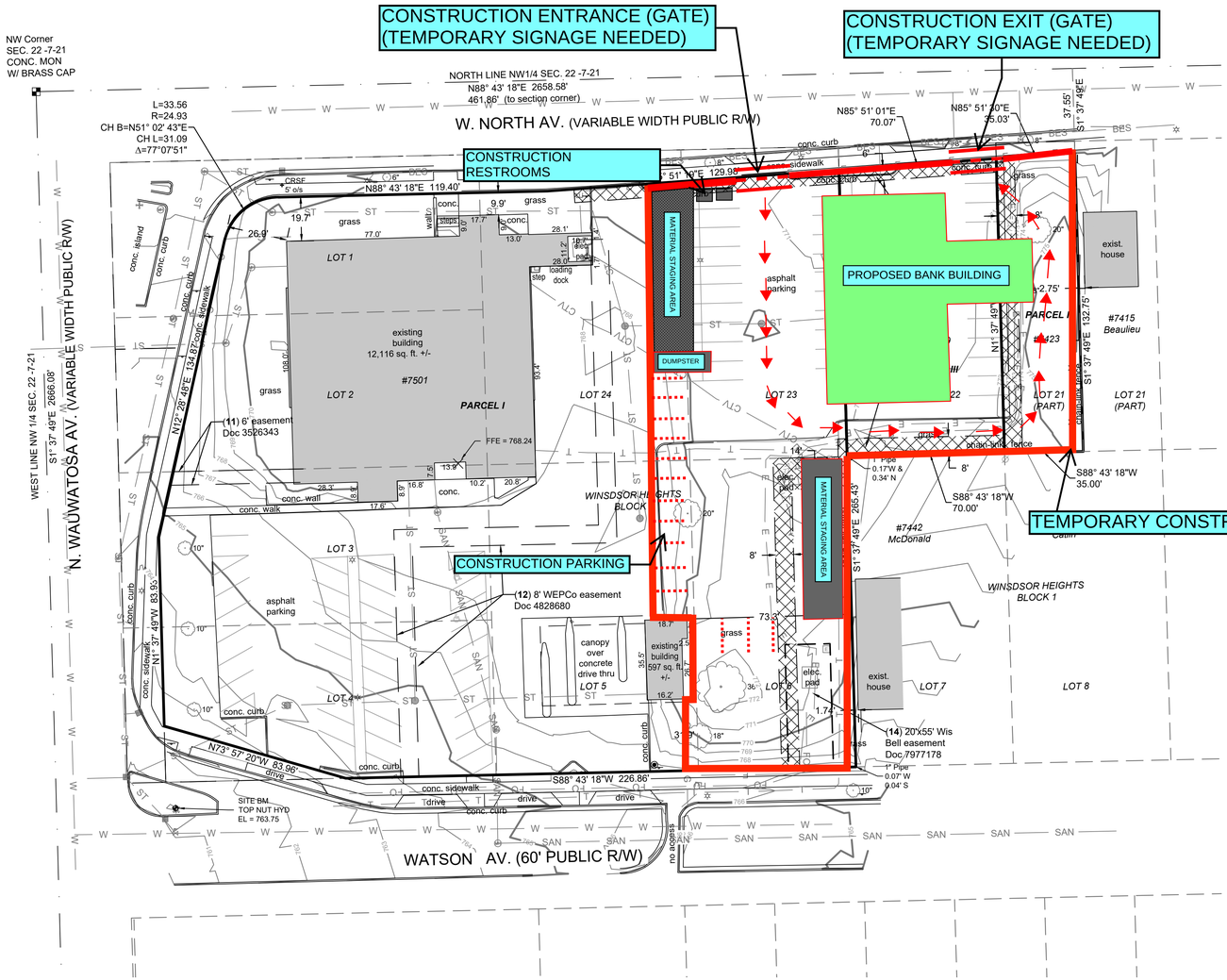
Any private utility relocation or service work with potential impact to adjacent properties, existing bank service, off-site service, or sites not immediately adjacent to the subject property will be reviewed and coordinated with the utility provider, owner, design team, and City as required.

PHASE 1: BMO BANK PROPOSED SITE LOGISTIC PLAN

Vicinity Map



Scale: 1" = 1000'



THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

LEGEND

SECTION 1/4 SECTION LINE
PROPERTY LINE
EASEMENT
CHAIN LINK FENCE
GUARD RAIL
METAL FENCE
WOOD FENCE
TREE LINE
OVERHEAD UTILITY LINE
ELECTRIC
TELEPHONE
FIBER OPTIC
CABLE TV
SANITARY SEWER
FORCE MAIN
STORM SEWER
WATER MAIN
GAS
EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
MANHOLE
CATCH BASIN
CATCH BASIN (ROUND)
ROOF DRAIN
HYDRANT
WATER VALVE
GAS VALVE
UTILITY POLE
GUY WIRE
GUY POLE
GAS METER
ELECTRIC METER
UTILITY PEDESTAL
HANDHOLE
TRAFFIC SIGNAL
IRON PIPE FOUND/SET
REBAR FOUND/SET
CHISELED CROSS FOUND/SET
PK NAIL FOUND/SET
SPIKE/NAIL
MONUMENT
BENCHMARK
SIGN
DECIDUOUS TREE (Diameter)
CONIFEROUS TREE (Diameter)
BUSH
POST
SOIL BORING
MONITORING WELL
CULVERT END
LIGHT POLE

7501 W. NORTH AVE.
WAUWATOSA, WISCONSIN

ALTA/NSPS LAND TITLE SURVEY

0 30' 60'

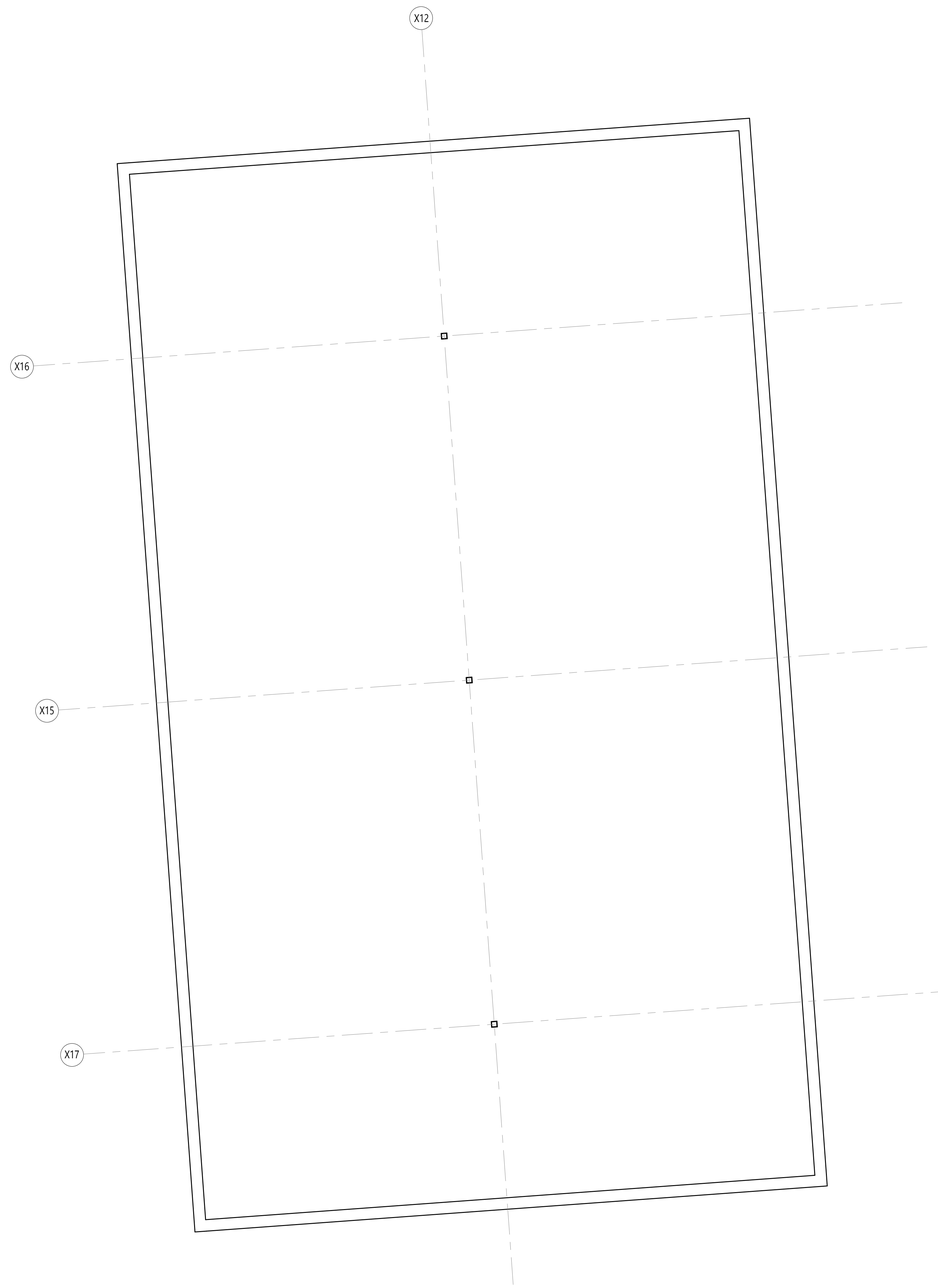
2) revise bldg areas 6/14/2021 KAS

1) New title referenced, site visit, ALTA update, 5/07/2021, BMR

NO.	REVISION	DATE	BY

DRAWING NO.	20140 ALTA.dwg
DRAWN BY:	BMR
DATE:	9/01/2017
PROJECT NO:	#20146
CHECKED BY:	KAS
APPROVED BY:	BMR
SHEET NO.:	

1 OF 1



1 A101.2 LEVEL 1 - BANK FLOOR PLAN

3/16" = 1'-0"

N
W
E
S

GROTH Design Group

N58 W6181 COLUMBIA RD.
P.O. BOX 332
CEDARBURG, WISCONSIN 53012

PH. (262) 377-8001
FX. (262) 377-8003

PROJECT

CLIENT
PROJECT NAME

ADDRESS
CITY, STATE ZIP

ISSUE

NO. REV. DATE DESCRIPTION

PROGRESS DOCUMENTS

These documents reflect progress and intent and may be subject to change, including additional detail. These are not final construction documents and should not be used for final bidding or construction-related purposes.

PROJECT INFO

Date
XX.XX.XXXX

Project No.
16.0XX

SHEET TITLE

FLOOR PLAN - LEVEL 1 - BANK

SCHEMATIC DESIGN SET

A101.2

3/23/2026 3:53:06 PM

© Groth Design Group, Inc.

2026.05.27

NW Corner
SEC. 22 -7-21
CONC. MON
W/ BRASS CAP

NORTH LINE NW1/4 SEC. 22 -7-21
N88° 43' 18"E 2658.58'
461.86' (to section corner)

W. NORTH AV. (WIDTH VARIES)

L=33.56
R=24.93
CH B=N51° 02' 43"E
CH L=31.09
Δ=77°07'51"

N85° 51' 01"E
70.07'

N85° 51' 30"E
35.03'

37.55'
S1° 37' 49"E

N88° 43' 18"E 119.40'

N85° 51' 19"E 129.98'

conc. curb
conc. sidewalk
conc. curb
conc. curb

CRSE
5' o/s

conc. island
conc. curb
conc. curb
conc. sidewalk

N. WAUWATOSA AV. (WIDTH VARIES)

WEST LINE NW 1/4 SEC. 22 -7-21
S1° 37' 49"E 2666.08'

N12° 28' 48"E 134.87'

PROPERTY TAX KEY: 3441001000

LOT 1

grass
conc.
steps
wall
grass
conc.
elec. pad
step
loading dock

existing building
127,120 sq. ft. +/-

#7501

LOT 2

LOT 24

LOT 23

LOT 22

LOT 21 (PART)

LOT ; (PAR

asphalt parking

#7429

#7423

#7415
Hecimov
Revocab
Trust

exist. house

N1° 37' 49"W 131.00'

S1° 37' 49"E 132.75'

chain-link fence

grass

chain-link fence

S88° 43' 18"W
35.00'

S88° 43' 18"W
70.00'

1" Pipe
0.17'W &
0.34' N

elec. pad

WINSDSOR HEIGHTS
BLOCK 1

chain-link fence
S1° 37' 49"E 265.43'

#7442
Sean &
Colleen
McDonald

(12) WEPCo
easement Doc
6618921
(hatched)

WINSDSOR HEIGHTS
BLOCK 1

grass

canopy over concrete drive thru

existing building 12,713 sq ft. +/-

LOT 5

LOT 6

elec. pad

exist. house

LOT 7

LOT 8

(13) 20'x55' Wis
Bell easement
Doc 7977178

grass

conc. walk

LOT 3

asphalt parking

N1° 37' 49"W 83.93'

conc. curb

conc. sidewalk

LOT 4

conc. curb

N73° 57' 20"W 83.96'

conc. curb

S88° 43' 18"W 226.86'

conc. sidewalk

drive

drive

drive

conc. curb

1" Pipe
0.07' W
0.44' S

(11) 8' WEPCo easement
Doc 4828680

WATSON AV. (60' R/W)

no access

LEGEND:

	SECTION 1/4 SECTION LINE
	PROPERTY LINE
	EASEMENT
X X	CHAIN LINK FENCE
	GUARD RAIL
	METAL FENCE
	WOOD FENCE
	TREE LINE
OH	OVERHEAD UTILITY LINE
E	ELECTRIC
T	TELEPHONE
FO	FIBER OPTIC
CTV	CABLE TV
SAN	SANITARY SEWER
FS	FORCE MAIN
ST	STORM SEWER
W	WATER MAIN
G	GAS
670	EXISTING CONTOUR
WET	WETLAND
FP	FLOODPLAIN

UNKNOWN MANHOLE	IRON PIPE FOUND/SET
SANITARY MANHOLE	REBAR FOUND/SET
STORM MANHOLE	CHISELED CROSS FOUND/SET
ELECTRIC MANHOLE	PK NAIL FOUND/SET
MMSD MANHOLE	SPIKE/NAIL
TELEPHONE MANHOLE	MONUMENT
CLEANOUT	BENCHMARK
CATCH BASIN	SIGN
CATCH BASIN (ROUND)	PARKING METER
ROOF DRAIN	FLAG POLE
CULVERT END	8" DECIDUOUS TREE
HYDRANT	8" CONIFEROUS TREE
WATER VALVE	BUSH
GAS VALVE	POST
GAS METER	SOIL BORING
ELECTRIC METER	TRAFFIC SIGNAL
UTILITY PEDESTAL	LIGHT POLE
HANDHOLE	UTILITY POLE
VENT	GUY WIRE
MONITORING WELL	GUY POLE

GRAPHIC SCALE
0 20 40

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

3. DRAWING IS BASED ON FIELD SURVEY COMPLETED BY THE SIGMA GROUP ON 08/25/2017.

4. DATUM FOR THE PROJECT SURVEY IS NVGD 1929. BENCHMARK FOR THE PROJECT SURVEY IS THE TOP NUT ON THE HYDRANT SOUTHWEST OF THE SITE; ELEV=183.47.

5. CONTRACTOR TO VERIFY EXISTING CONDITIONS, CONTACT ENGINEER WITH DISCREPANCIES.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

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Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

SITE SURVEY

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO. REVISION	DATE

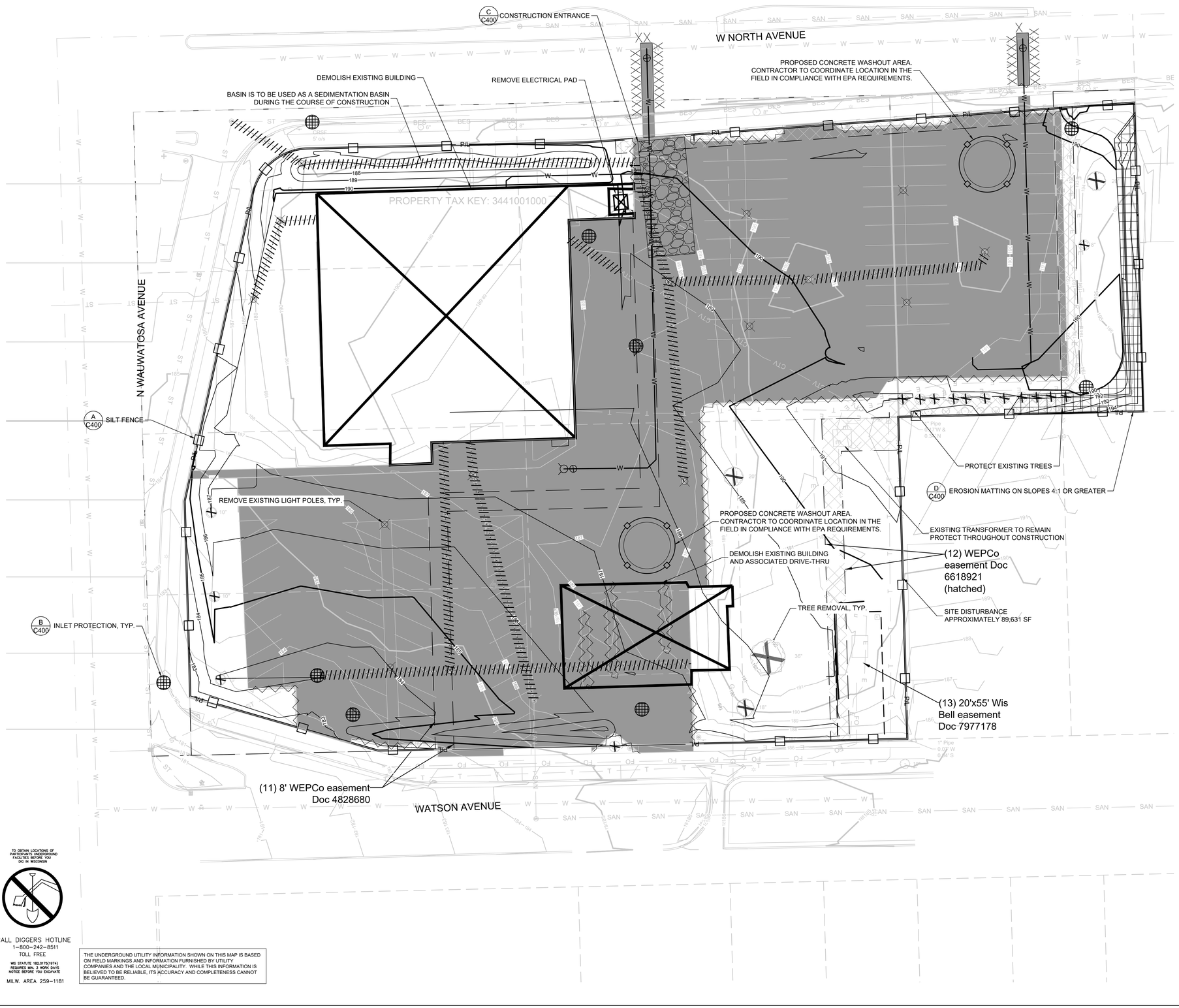
PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C001

JJAROS
C001
25057

i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\C001 Site Survey.dwg

2026.05.27



LEGEND:

- A C400 PROPOSED SILT FENCE
- B C400 PROPOSED INLET PROTECTION
- C C400 PROPOSED TRACKING PAD
- D C400 PROPOSED EROSION MATTING WISDOT APPROVED CLASS 1 TYPE B
- 5 EXISTING CONTOUR
- 5 PROPOSED CONTOUR
- UTILITY REMOVAL
- CURB REMOVAL
- SAWCUT
- STRUCTURE REMOVAL
- TREE REMOVAL
- PAVEMENT REMOVAL

CONSTRUCTION SEQUENCE:

1. EARTHWORK FOR NEW BANK - START 10/2026
2. NEW BANK - START 11/2026
3. NEW BANK - COMPLETE 07/2027
4. DEMO OLD BANK - START 07/2027
5. NEW GROCERY - START 08/2027
6. NEW GROCERY COMPLETE 06/2028

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4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. SEE SHEET C400 FOR A COMPLETE LIST OF EROSION CONTROL NOTES AND DETAILS. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO START OF LAND DISTURBING ACTIVITIES.
6. DO NOT BEGIN LAND DISTURBING ACTIVITIES UNTIL AN EROSION CONTROL PERMIT IS OBTAINED FROM LOCAL JURISDICTION.
7. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY REQUIRES A STREET OCCUPANCY PERMIT FROM THE CITY.

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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

SITE PREPARATION AND EROSION CONTROL PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO.	REVISION	DATE

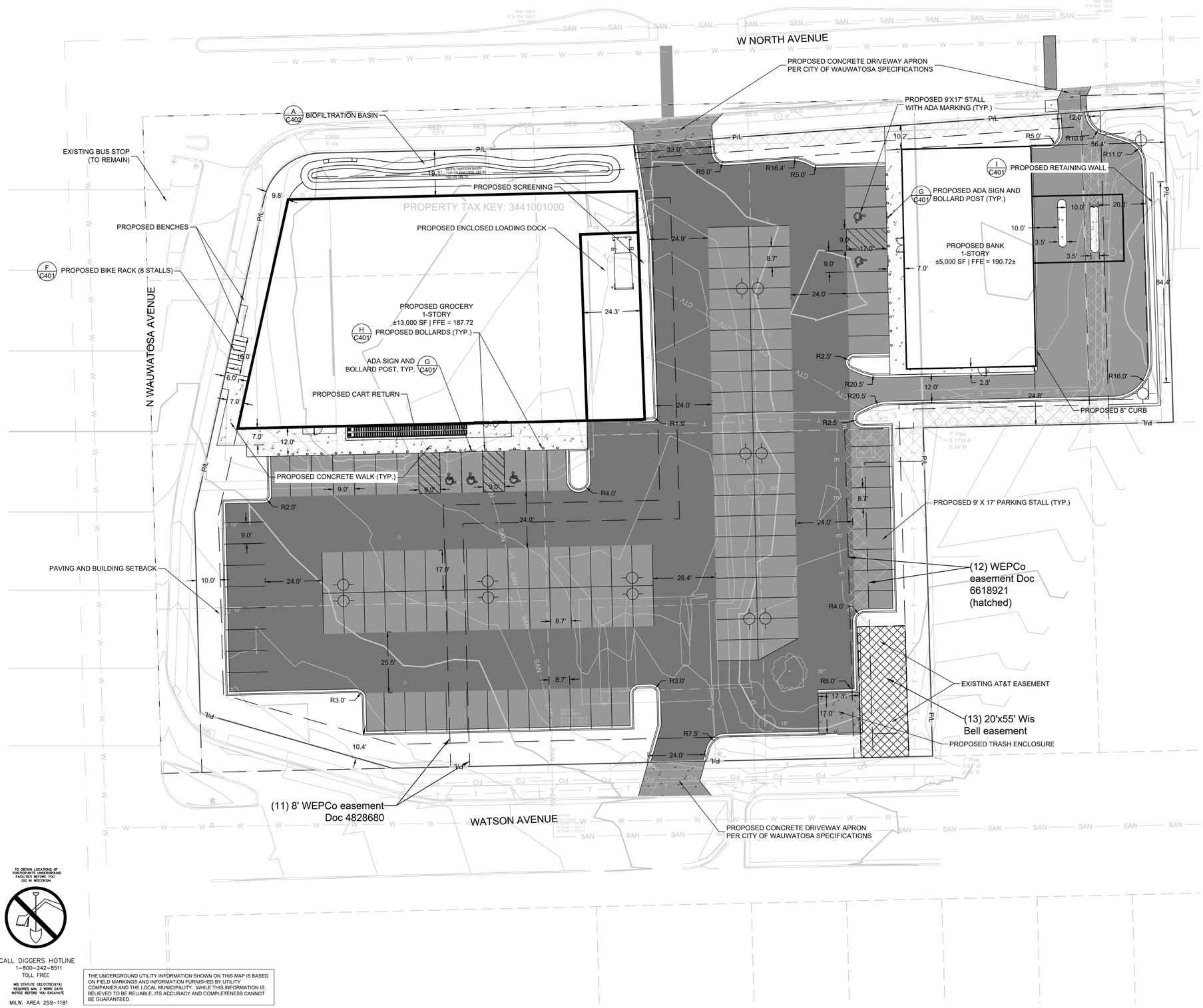
PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C002

JJAROS
C002
25057

i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\C002 Site Preparation and Erosion Control.dwg

2026.05.27



SITE INFORMATION			
SITE AREA	89631	2.058 AC	
SITE DISTURBED AREA	89631	2.058 AC	
EXISTING IMPERVIOUS AREA	61224	1.406 AC	68.3 %
PROPOSED IMPERVIOUS AREA	73161	1.680 AC	81.6 %
EXISTING PARKING SPACES	88		
TOTAL PARKING SPACES	124		
ADA PARKING SPACES	5		

LEGEND:

- A C401 — 5" THICK CONCRETE WALK
- B C401 — CONCRETE PAVEMENT
- C C401 — ASPHALT SURFACE
- D C401 — HEAVY-DUTY ASPHALT SURFACE
- E C401 — CURB & GUTTER (ACCEPT)

GRAPHIC SCALE 0 20 40

GENERAL NOTES:

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5. DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
6. WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND RAMPS, PAVING, AND CURB AND GUTTER SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS.
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WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

SITE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

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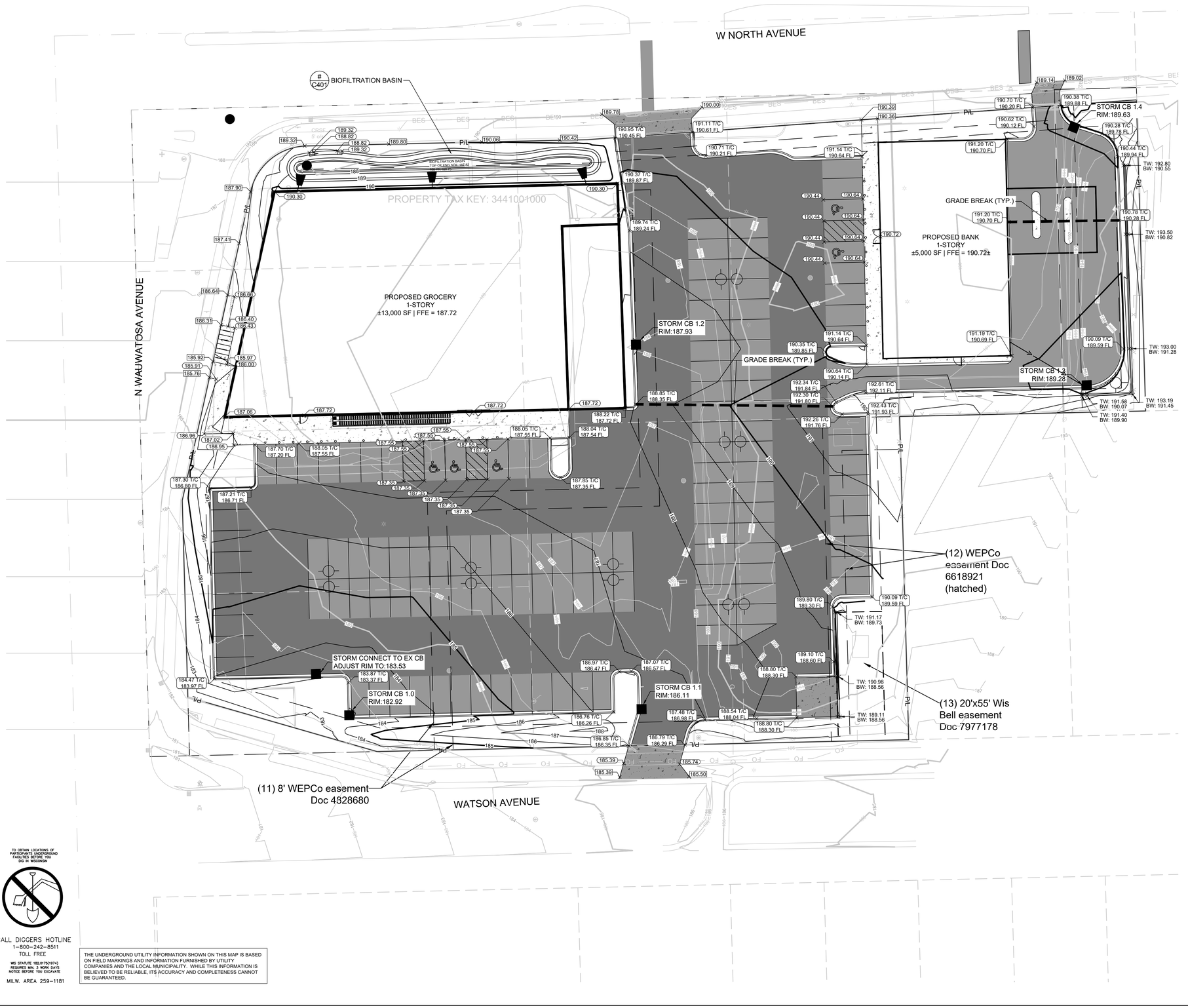
PROJECT NO:	25057
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PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO: C100

JJAROS C100 25057

i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\C100 Site Plan.dwg

2026.05.27



LEGEND:

- A C401 — 5" THICK CONCRETE WALK
- B C401 — CONCRETE PAVEMENT
- C C401 — ASPHALT SURFACE
- D C401 — HEAVY-DUTY ASPHALT SURFACE
- E C401 — CURB & GUTTER (ACCEPT)
- 5 — EXISTING CONTOUR
- 5 — PROPOSED CONTOUR
- 100.50 T/C 100.00 FL — PROPOSED CURB & GUTTER SPOT GRADE T/C: TOP OF CURB GRADE FL: FLOW LINE CURB GRADE
- 100.00 — PROPOSED SURFACE SPOT GRADE
- 100.00 — EXISTING SURFACE SPOT GRADE (MATCH)
- GRADE BREAK LINE
- TW: 100.00 BW: 100.00 — PROPOSED TOP OF WALL AT FINISHED GRADE / PROPOSED BOTTOM OF WALL AT FINISHED GRADE

GRAPHIC SCALE
0 20 40

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WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

GRADING PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO.	REVISION	DATE

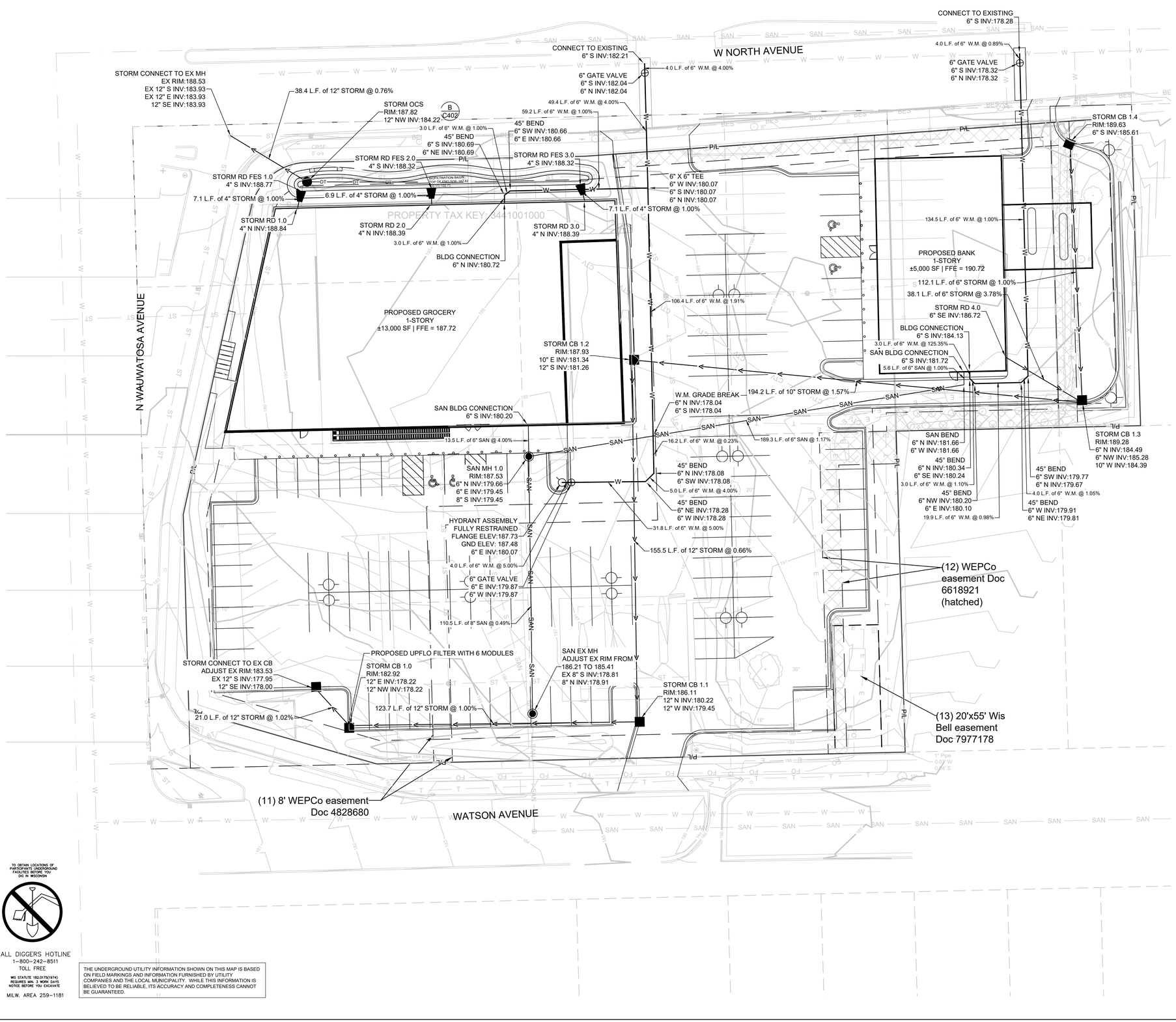
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PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C200

JJAROS
C200
25057

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2026.05.27



LEGEND:

- W — PROPOSED WATER SERVICE
- SAN — PROPOSED SANITARY SERVICE
- PROPOSED STORM SEWER
- DT — PROPOSED DRAIN TILE (UNDERDRAIN)
- C C402 — PROPOSED STORM INLET
- B C402 — PROPOSED OUTLET CONTROL STRUCTURE
- J C401 — PROPOSED SANITARY MANHOLE

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5. ALL UTILITIES WITHIN 5 FEET OF PAVED AREAS SHALL REQUIRE GRANULAR BACKFILL. SLURRY BACKFILL IS REQUIRED FOR ALL WORK IN PUBLIC RIGHT OF WAY.
6. PRIVATE STORM INLETS IN PAVEMENT SHALL REQUIRE DRAIN TILE STUBS OF 10 FEET IN TWO DIRECTIONS FOR SUBDRAINAGE. RIM GRADE FOR STORM INLETS IN CURB AND GUTTER ARE FLOW LINE GRADES.
7. WORK IN PUBLIC RIGHT OF WAY SHALL FOLLOW MATERIAL AND INSTALLATION REQUIREMENTS PER MUNICIPAL AND/OR COUNTY.
8. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY REQUIRES A STREET OCCUPANCY PERMIT FROM THE CITY.
9. PRIVATE STORM SEWER 12-INCH DIAMETER OR LARGER SHALL BE HDPE. BELOW 12-INCH DIAMETER SHALL BE PVC SDR-35 ASTM D3034. PRIVATE WATER MAIN SHALL BE CLASS 235 DR 18 PVC CONFORMING TO AWWA C-900. PRIVATE SANITARY SEWER SHALL BE PVC SDR-35 ASTM D3034.
10. COORDINATE FINAL LOCATION AND DESIGN OF PRIVATE UTILITY SERVICES (ELECTRIC, GAS, PHONE, CABLE) WITH UTILITY COMPANIES.
11. IF PROJECT IS DESIGN BUILD MEP, THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE FINAL SEWER AND WATER DESIGN SHOWING LOCATION, INVERTS AND SIZES TO THE ENGINEER FOR FINAL REVIEW AND VERIFICATION PRIOR TO STARTING UNDERGROUND UTILITY CONSTRUCTION.
12. WATER MAIN CONNECTION: TAP WATER MAIN WITH SIZE AND LOCATION INDICATED ON PLAN IN ACCORDANCE WITH LOCAL WATER UTILITY REQUIREMENTS. COORDINATE CONNECTION WITH LOCAL WATER UTILITY. ALL JOINTS SHALL BE RESTRAINED FROM CONNECTION OF WATER MAIN TO BUILDING WALL. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS. INSTALL MEGA-LUG OR APPROVED EQUAL TIGHT TO WALL FOR RESTRAINT FOR ALL BUILDING WALL PENETRATIONS AS APPROVED BY LOCAL PLUMBING INSPECTOR AND WATER UTILITY. INSTALL THRUST BLOCKING AND MEGA-LUG AT BEND BELOW FLOOR FOR ALL FLOOR PENETRATIONS.
13. INSTALL JOINT RESTRAINT AND CONCRETE THRUST BLOCKS AT ALL OFFSET FITTINGS (TEES, BENDS, DEAD ENDS, VALVES, REDUCERS) USING MEGA-LUG OR APPROVED EQUAL. CONCRETE THRUST BLOCKS SHALL BE INSTALLED PER FILE NO'S:44,45,46 FROM THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. SEE DETAIL FOR MINIMUM LENGTH OF RESTRAINED JOINT REQUIRED. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS.

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GRAPHIC SCALE
0 20 40

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UTILITY PLAN

PRELIMINARY NOT FOR CONSTRUCTION

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DRB SUBMITTAL	05/27/2026

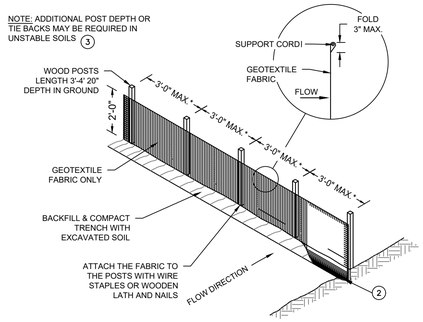
NO.	REVISION	DATE

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PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C300

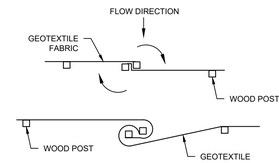
JJAROS
C300
25057

i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\C300 Utility Plan.dwg

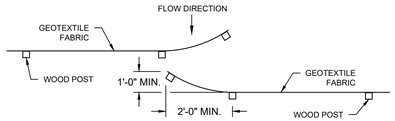


* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

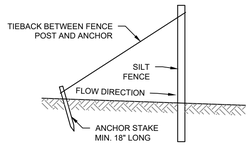


TWIST METHOD

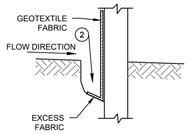


HOOK METHOD (5)

JOINING TWO LENGTHS OF SILT FENCE



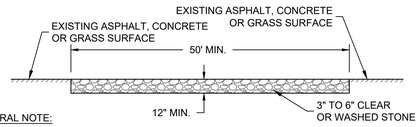
SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)



TRENCH DETAIL

GENERAL NOTES
1. HORIZONTAL BRACE REQUIRED WITH 2"X4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1-1/8" X 1-1/8" OF OAK OR HICKORY.
4. WHERE SILT FENCE CROSSES A CULVERT, EITHER GAP SILT FENCE OR ROUTE SILT FENCE OVER TOP OF CULVERT TO AVOID RESTRICTING FLOW OF WATER.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ON THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST OR ROTATE, AT LEAST 180 DEGREES. B) HOOK THE END OF EACH SILT FENCE LENGTHS.
6. SILT FENCE SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1056
7. THIS DRAWING IS BASED ON WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD DETAIL DRAWING 8 E 9.

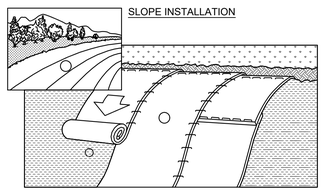
A SILT FENCE - WDNR TS-1056
SCALE:NTS



GENERAL NOTE:

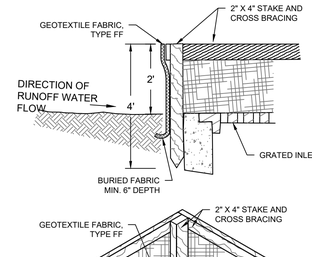
1. STONE TRACKING PAD SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1057
2. AN APPROVED MANUFACTURED TRACKOUT CONTROL DEVICE SYSTEM CONFORMING TO WDNR TECHNICAL STANDARD #1057 MAY BE USED AS AN ALTERNATIVE TO A STONE TRACKING PAD

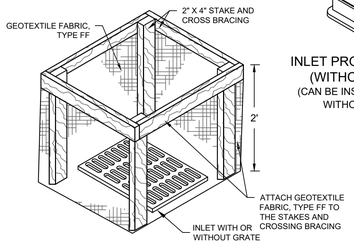
C CONSTRUCTION ENTRANCE - WDNR TS-1057
SCALE:NTS



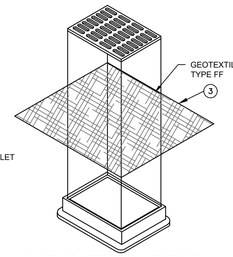
NOTES:
1. ECRMs (EROSION CONTROL REVEGATIVE MATS) SHALL BE INSTALLED AFTER ALL TOPSOILING, FERTILIZING, LIMING, AND SEEDING IS COMPLETE.
2. THE MAT SHALL BE IN FIRM AND INTIMATE CONTACT WITH THE SOIL. IT SHALL BE INSTALLED AND ANCHORED PER THE MANUFACTURER'S RECOMMENDATION.
3. TRMs (TURF-REINFORCEMENT MAT) SHALL BE INSTALLED INCONJUCTION WITH THE TOPSOILING OPERATION AND SHALL BE FOLLOWED BY ECRM INSTALLATION.
4. AT TIME OF INSTALLATION, DOCUMENT THE MANUFACTURER AND MAT TYPE BY RETENTION OF MATERIAL LABELS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. RETAIN THIS DOCUMENTATION UNTIL THE SITE HAS BEEN STABILIZED.
5. EROSION MATTING SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1052.
6. INSTALL PER MANUFACTURERS SPECIFICATIONS.
7. TRM MAT INSTALLED LOCATION SHALL BE ASBUILT PRIOR TO TOPSOIL AND ECRM MAT PLACEMENT.

D EROSION MATTING - WDNR TS-1052
SCALE:NTS

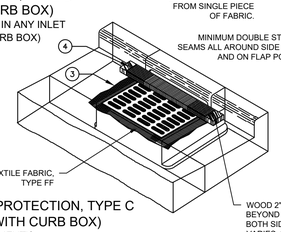




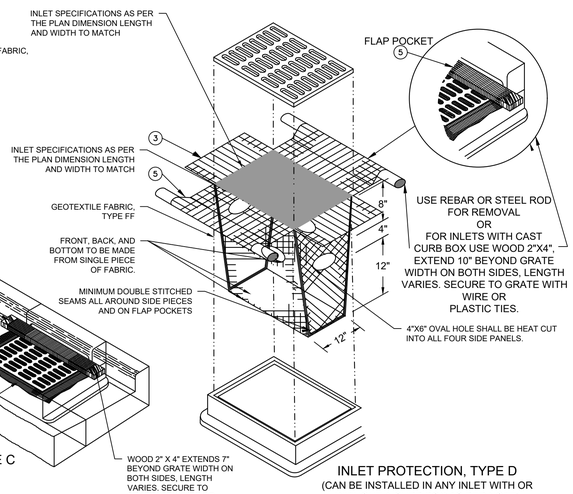
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C
(WITH CURB BOX)



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUT A CURB BOX AS PER NOTE) (4)

GENERAL NOTES:

1. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.
2. WHEN REMOVING OR MAINTAINING INLET PROTECTION. CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
3. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL
4. FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
5. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.
6. INLET PROTECTION SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1060
7. THIS DRAWING IS BASE ON WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD DETAIL DRAWING 8 E 10-2

INSTALLATION NOTES

TYPE B & C
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACES AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

B INLET PROTECTION - WDNR TS-1060
SCALE:NTS

CONSTRUCTION SEQUENCE FOR EROSION CONTROL INCLUDES:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCING AND INLET PROTECTION.
3. INITIATE STOCKPILING OF IMPORTED MATERIAL. PLACE SILT FENCE AROUND STOCKPILE(S).
4. STRIP TOPSOIL FROM STORM WATER BASIN LOCATION AND STOCKPILE.
5. CONSTRUCT STORM WATER BASIN AND INSTALL TEMPORARY OUTLET AND EMERGENCY OVERFLOW. BASIN IS TO BE USED AS A SEDIMENTATION BASIN DURING THE COURSE OF CONSTRUCTION.
6. STRIP TOPSOIL FROM REMAINDER OF SITE IN A PROGRESSIVE MANNER, AND STOCKPILE.
7. PERFORM ROUGH SITE GRADING. STABILIZE FINISHED AREAS AS THE WORK PROGRESSES. USE EROSION MATTING WHERE CALLED FOR ON THE PLANS. PER WDNR TECHNICAL STANDARD 1059: AREAS THAT RECEIVE TEMPORARY SEEDING SHALL HAVE A MINIMUM TOPSOIL DEPTH OF 2 INCHES. AREAS THAT RECEIVE PERMANENT SEEDING SHALL HAVE A MINIMAL TOPSOIL DEPTH OF 4 INCHES.
8. PREPARE BUILDING PAD AND BEGIN FOUNDATIONS WORK FOR BUILDING.
9. INSTALL UTILITIES. INSTALL ANY ADDITIONAL INLET PROTECTION ON NEW STORM SEWER AND INSTALL RIP-RAP AT NEW STORM SEWER OUTFALLS.
10. REMOVE TEMPORARY OUTLET CONTROL STRUCTURE ON BASIN INSTALL PAVEMENTS.
11. STABILIZE AREAS REMAINING AREAS WITHIN 7 DAYS OF COMPLETION OF FINAL GRADING AND TOPSOILING.
12. REMOVE EXCESS SEDIMENT FROM STORMWATER BASINS AND RETURN BASINS TO THEIR DESIGN DIMENSIONS AND VOLUMES.
13. REMOVE EROSION CONTROL MEASURES ONLY WHEN SITE IS FULLY STABILIZED.

EROSION CONTROL NOTES:

1. CONSTRUCTION SITE EROSION CONTROL AND SEDIMENTATION CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF WAUWATOSA AND SHALL EMPLOY EROSION CONTROL METHODS AS SHOWN AND SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS.
2. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION AFTER A RAINFALL OF 0.5 INCHES OR MORE, BUT NO LESS THAN ONCE EVERY WEEK. MAINTENANCE OF ALL EROSION CONTROL STRUCTURES SHALL BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SEDIMENT WHEN LEAVING PROPERTY. EROSION CONTROL MEASURES MUST BE IN WORKING CONDITION AT END OF EACH WORK DAY. DOCUMENT AND MAINTAIN RECORDS OF INSPECTIONS IN ACCORDANCE WITH WDNR NR216 REQUIREMENTS.
4. SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN DEPOSITS REACH A DEPTH OF 6 INCHES. THE SILT FENCE SHALL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
5. FILTER FABRIC SHALL BE INSTALLED BENEATH INLET COVERS TO TRAP SEDIMENT PER INLET PROTECTION DETAIL IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL SITE IS FULLY STABILIZED.
7. PERIODIC STREET SWEEPING SHALL BE COMPLETED TO MAINTAIN ADJACENT STREETS FREE OF DUST AND DIRT.
8. SILT FENCE SHALL BE INSTALLED IN HORSESHOE FASHION AROUND ANY TOPSOIL AND FILL STOCKPILES.
9. SITE DEWATERING. WATER PUMPED FROM THE SITE SHALL BE TREATED BY SEDIMENT BASINS OR OTHER APPROPRIATE MEASURES SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS. WATER MAY NOT BE DISCHARGED IN A MANNER THAT CAUSES EROSION OF THE SITE, ADJACENT SITES, OR RECEIVING CHANNELS.
10. WASTE AND MATERIAL DISPOSAL. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
11. TRACKING. EACH SITE SHALL HAVE GRAVELED ROADS, ACCESS DRIVES AND PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING, TO THE SATISFACTION OF THE CITY OF WAUWATOSA, BEFORE THE END OF EACH WORKDAY. FLUSHING MAY NOT BE USED UNLESS SEDIMENT WILL BE CONTROLLED BY A SEDIMENT BASIN OR PRACTICE SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS. NOTIFY MUNICIPALITY OF ANY CHANGES IN STABILIZED CONSTRUCTION ENTRANCE LOCATION.
12. SEDIMENT CLEANUP. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF A STORM EVENT SHALL BE CLEANED UP BY THE END OF THE NEXT WORKDAY. ALL OTHER OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE CLEANED UP BY THE END OF THE WORKDAY.
13. ALL DISTURBED GROUND LEFT INACTIVE FOR SEVEN OR MORE DAYS SHALL BE STABILIZED BY TEMPORARY OR PERMANENT SEEDING, MULCHING, SODDING, COVERING WITH TARPS, OR EQUIVALENT PRACTICE FOUND IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARD. IF TEMPORARY SEEDING IS USED, A PERMANENT COVER SHALL ALSO BE REQUIRED AS PART OF THE FINAL SITE STABILIZATION. SEEDING OR SODDING SHALL BE REQUIRED AS PART OF THE FINAL SITE STABILIZATION.
14. SOIL OR DIRT STORAGE PILES SHALL BE LOCATED A MINIMUM OF TWENTY-FIVE FEET FROM ANY DOWNSLOPE ROAD, LAKE, STREAM, WETLAND, OR DRAINAGE CHANNEL. STRAW BALE OR FILTER FABRIC FENCES SHALL BE PLACED ON THE DOWN SLOPE SIDE OF THE PILES. IF REMAINING FOR MORE THAN THIRTY DAYS, PILES SHALL BE STABILIZED BY MULCHING, VEGETATIVE COVER, TARPS OR OTHER MEANS.
15. WHEN THE DISTURBED AREA HAS BEEN STABILIZED BY PERMANENT VEGETATION OR OTHER MEANS, TEMPORARY PRACTICES, SUCH AS FILTER FABRIC FENCES, STRAW BALES, SEDIMENT AND SEDIMENT TRAPS, FOUND IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS SHALL BE REMOVED.
16. NOTIFY THE CITY OF WAUWATOSA HAVING JURISDICTION WITHIN TWO WORKING DAYS OF COMMENCING ANY LAND DEVELOPMENT OR LAND DISTURBING ACTIVITY.
17. OBTAIN PERMISSION FROM THE LOCAL MUNICIPALITY HAVING JURISDICTION PRIOR TO MODIFYING THE EROSION CONTROL PLAN.
18. REPAIR ANY SILTATION OR EROSION DAMAGE TO ADJOINING SURFACES AND DRAINAGE WAYS RESULTING FROM LAND DEVELOPMENT OR LAND DISTURBING ACTIVITIES.
19. KEEP A COPY OF THE EROSION CONTROL PLAN ON SITE.
20. CONTRACTOR SHALL, TO THE EXTENT POSSIBLE, MINIMIZE DISTURBANCE OF EXISTING VEGETATION DURING CONSTRUCTION.
21. CONTRACTOR SHALL, TO THE EXTENT POSSIBLE, MINIMIZE COMPACTION OF TOPSOIL AND PRESERVE TOPSOIL IN GREENSPACE AREAS.
22. WASH WATER FROM VEHICLES AND WHEEL WASHING SHALL BE CONTAINED AND TREATED PRIOR TO DISCHARGE.
23. CONTRACTOR SHALL MAINTAIN SPILL KITS ON-SITE.
24. PERMAMENT TURF SEEDING OF DISTURBED AREA MUST OCCUR PRIOR TO SEPTEMBER 15TH. IF ADEQUATE TIME IS NOT AVAILABLE TO APPLY PERMANENT SEEDING PRIOR TO SEPTEMBER 15TH, THEN DISTURBED AREAS SHALL BE TEMPORARILY SEEDED WITH AN ANNUAL RYE GRASS PER WDNR TECHNICAL STANDARD 1059, WHERE THE TEMPORARY SEEDING MUST OCCUR PRIOR TO OCTOBER 15TH.
25. IF TEMPORARY SEEDING IS NOT COMPLETED BY OCTOBER 15TH, APPLY SOIL STABILIZERS AND DORMANT SEED TO DISTURBED AREA PER WDNR TECHNICAL STANDARD 1050. INSPECT ANIONIC PAM APPLICATION AT A MINIMUM FREQUENCY OF EVERY TWO MONTHS AND REAPPLY AS NECESSARY

THE SIGMA GROUP
Single Source. Sound Solutions.
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WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

EROSION CONTROL DETAILS

PRELIMINARY
NOT FOR
CONSTRUCTION

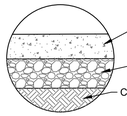
ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO.	REVISION	DATE

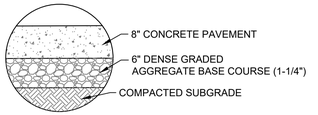
PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C400

2026.05.27

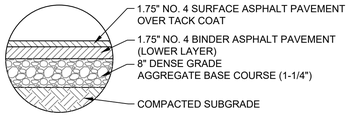


A CONCRETE SIDEWALK SECTION
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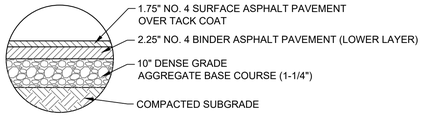


*CONTRACTOR SHALL PREPARE AND SUBMIT A CONCRETE POUR PLAN SHOWING ALL PLANNED CONTRACTION AND CONSTRUCTION JOINTS. LENGTH OF PANELS SHOULD NOT BE MORE THAN 25% GREATER THAN ITS WIDTH. JOINT SPACING (IN FEET) SHOULD NOT EXCEED 2.5 TIMES THE THICKNESS (IN INCHES) OF PAVEMENT. TIE BARS OR DOWEL BARS SHALL BE PLACED AT CONSTRUCTION JOINTS AS APPROPRIATE.

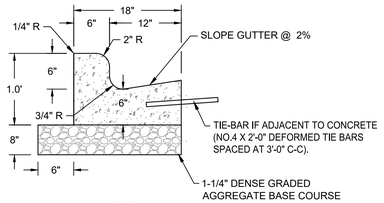
B CONCRETE PAVEMENT SECTION
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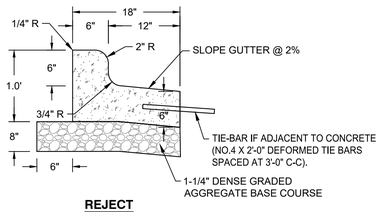
C ASPHALT PAVEMENT SECTION
SCALE:NTS



D ASPHALT PAVEMENT SECTION - HEAVY DUTY
SCALE:NTS



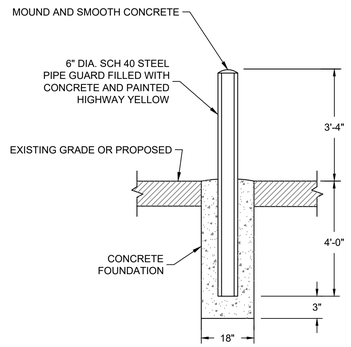
ACCEPT



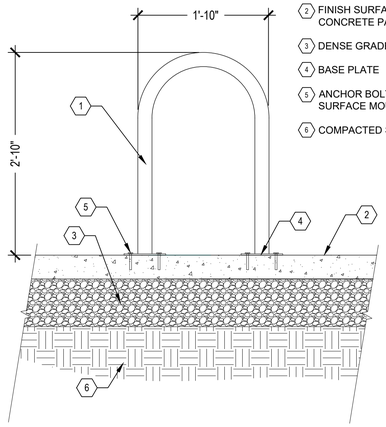
REJECT

NOTES:
1. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

E 18 INCH CONCRETE CURB AND GUTTER
SCALE:NTS



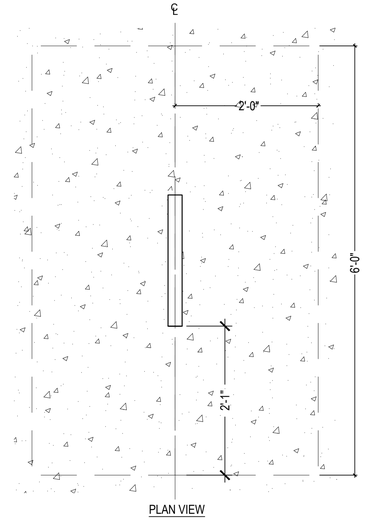
H BOLLARD
SCALE:NTS



1. BIKE RACK
2. FINISH SURFACE OF CONCRETE PAVING
3. DENSE GRADED BASE
4. BASE PLATE
5. ANCHOR BOLTS FOR SURFACE MOUNT
6. COMPACTED SUBGRADE

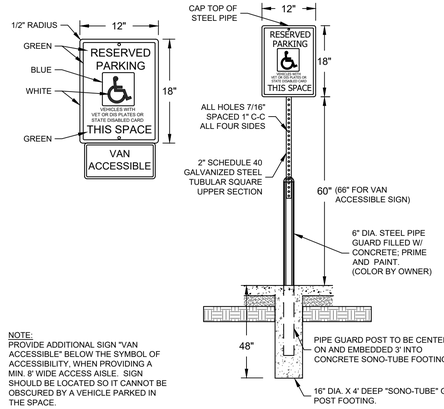
SECTION VIEW - SURFACE MOUNT

NOTE:
1. BASIS OF DESIGN: 1 LOOP WAVE STYLE BIKE RACK AS MANUFACTURED BY ULINE
2. COLOR AND FINISH : GALVANIZED BLACK POWDER COAT
3. MOUNTING: SURFACE MOUNT.
4. INSTALL PRE MANUFACTURER'S RECOMMENDATION.
5. BIKE STALLS SHALL BE A MINIMUM OF 2' BY 6'. PLACEMENT SHALL NOT RESULT IN A BICYCLE OBSTRUCTING A WALKWAY.
6. RACKS SHALL BE SPACED MIN. 3'-0" APART & 3'-0" FROM EDGE OF PAVEMENT



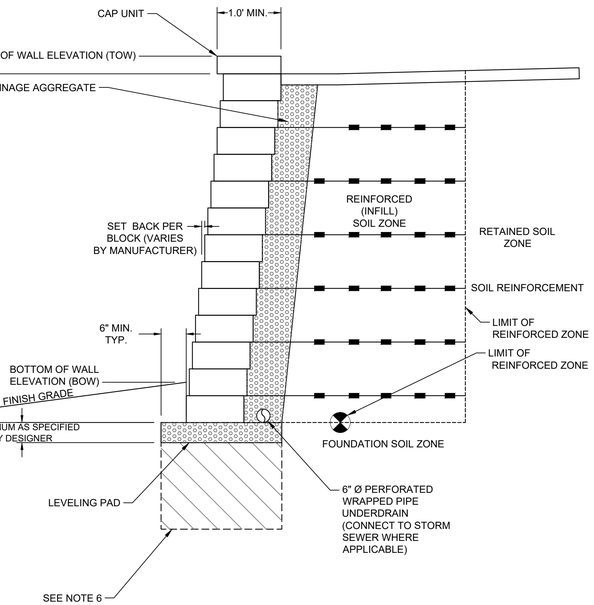
PLAN VIEW

F BIKE RACK
SCALE:NTS



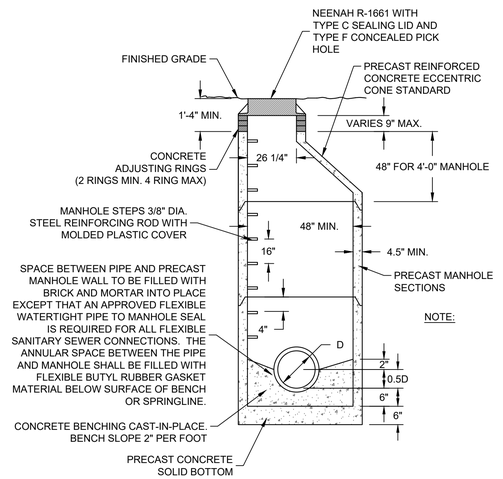
NOTE:
PROVIDE ADDITIONAL SIGN "VAN ACCESSIBLE" BELOW THE SYMBOL OF ACCESSIBILITY, WHEN PROVIDING A MIN. 8' WIDE ACCESS AISLE. SIGN SHOULD BE LOCATED SO IT CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

G ADA SIGN AND BOLLARD POST
SCALE:NTS



I MODULAR BLOCK MSE WALL
SCALE:NTS

NOTES:
1. RETAINING WALL SYSTEM SHALL BE KEYSTONE, ROCKWOOD, OR APPROVED EQUAL.
2. TYPICAL SECTION IS FOR CONCEPTUAL DESIGN ONLY.THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND STAMPED AND SEALED SHOP DRAWINGS AND STABILITY CALCULATIONS FOR THE RETAINING WALLS TO THE ENGINEER. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF THESE ITEMS SHALL BE INCLUDED.
3. STAMPED AND SEALED RETAINING WALL DESIGN, PLANS, DETAILS AND CALCULATIONS SHALL BE PROVIDED TO THE CITY.
4. GEOGRID REINFORCEMENT SPACING AND LENGTH PER MANUFACTURER'S ENGINEER RECOMMENDATIONS.
5. GEOTECHNICAL ENGINEER MAY REQUIRE THAT ADDITIONAL DRAIN PIPING IS NEEDED DEPENDENT UPON SOILS ENCOUNTERED DURING WALL CONSTRUCTION.
6. WALL LEVELING BASE TO BE VERIFIED WITH GEOTECHNICAL ENGINEER.
7. ANY SPECIAL TREATMENT SOILS BELOW LEVELING PAD WHICH ARE SUBJECT TO FROST HEAVE SHALL BE DESIGNED BY WALL ENGINEER OF RECORD.
8. PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.
9. THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET AND GRADING PLAN SHEETS.
10. STYLE AND COLOR OF THE MODULAR BLOCK SHALL BE SELECTED BY THE OWNER AND ARCHITECT



NOTE:

NOTES:
1. CONSTRUCT MANHOLE IN ACCORDANCE WITH FILE NO. 12 OF THE STATE STANDARD SPECIFICATIONS FOR SEWER AND WATER.
2. CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY RINGS SHALL BE GROOVED TO RECEIVE STEP.
3. CONCRETE AND REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-478.
4. JOINTS BETWEEN RINGS AND STRUCTURE SECTIONS SHALL BE WATERTIGHT AND SHALL BE MADE USING FLEXIBLE RUBBER TYPE GASKETS OR MORTAR.
5. AREA OF CIRCUMFERENTIAL STEEL = 0.12 SQ. INCH PER LINEAL FOOT MIN.
6. 3" MIN OF BEDDING STONE UNDER BASE. ADDITIONAL BEDDING STONE MAY BE REQUIRED ON WET SUBGRADE.
7. ALL SANITARY MANHOLES SHALL BE PROVIDED WITH EXTERNAL CHIMNEY SEALS AND SELF-SEALING LIDS WITH CONCEALED PICK HOLES.
8. UNLESS NOTED ON THE PLANS, THE CONTRACTOR IS RESPONSIBLE FOR ALL MANHOLE SIZING AND SHALL PROVIDE A SHOP DRAWING TO THE SIGMA GROUP, INC. BEFORE THEY ARE RELEASED FOR PRODUCTION.
9. MASTIC SEALS BETWEEN BARREL AND CONE SECTIONS

J PRECAST SANITARY MANHOLE
SCALE:NTS

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

DETAILS

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

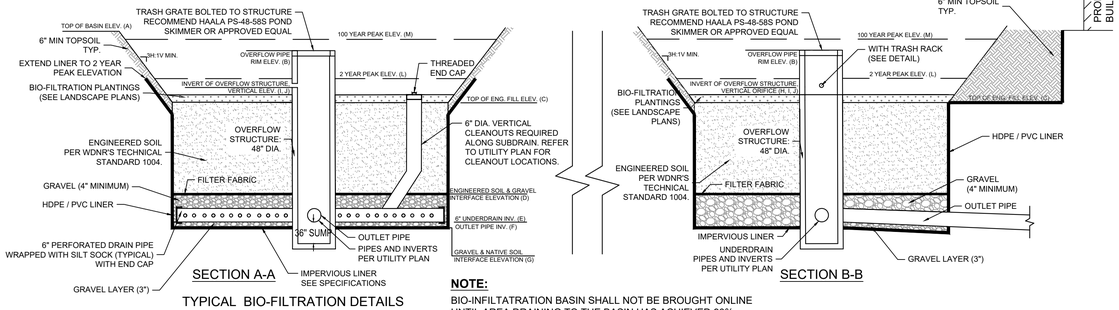
NO.	REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
C401

JJAROS
C401
25057

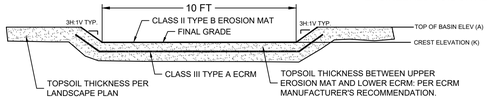
i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\C401 Details.dwg



TYPICAL BIO-FILTRATION DETAILS
(BIO-FILTRATION BASIN 1)

NOTE:

BIO-INFILTATRATION BASIN SHALL NOT BE BROUGHT ONLINE UNTIL AREA DRAINING TO THE BASIN HAS ACHIEVED 90% STABILIZATION FROM EROSION (I.E. DO NOT PLACE ENGINEERED SOIL UNTIL SITE HAS BEEN STABILIZED).



SPILLWAY SECTION VIEW

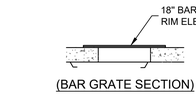
NOTE:

1. BIO-FILTRATION BASINS THAT HAVE MULTIPLE VERTICAL ORIFICES SHALL BE INSTALLED AT THE SAME ELEVATION AS IDENTIFIED IN THE TABLE.
2. MULTIPLE VERTICAL ORIFICES SHALL HAVE A MINIMUM OF 12 INCHES HORIZONTAL SEPARATION.

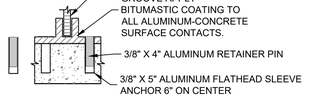
BIO-FILTRATION SUMMARY TABLE

	(A)	(B)	(C)	(D)	(E)		(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
BIO-FILTRATION AREA	TOP OF POND (CURB FLOW LINE)	18" OVERFLOW RIM ELEVATION	TOP OF ENGINEERED FILL ELEVATION	ENGINEERED SOIL AND GRAVEL INTERFACE ELEVATION	6" DIAMETER UNDERDRAIN ELEVATION	OUTLET PIPE SIZE	OUTLET PIPE ELEVATION	GRAVEL AND NATIVE SOIL INTERFACE ELEVATION	1.5" VERTICAL ORIFICE ELEVATION WITHIN WEIR	6" VERTICAL ORIFICE ELEVATION WITHIN WEIR	# OF VERTICAL ORIFICES	SPILLWAY CREST ELEVATION	2 YR WATER ELEVATION	100 YR WATER ELEVATION
BIO 1	189.32	188.57	187.82	186.02	184.22	12"	184.22	184.22	184.22	185.72	1	188.82	186.78	188.75

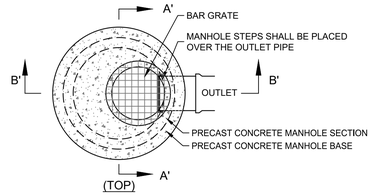
A BIOFILTRATION BASIN
SCALE:NTS



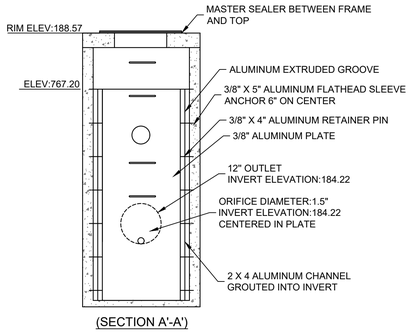
(BAR GRATE SECTION)



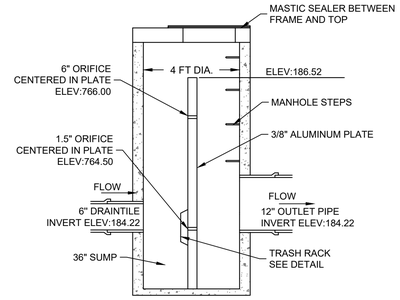
(ALUMINUM EXTRUDED GROOVE)



(TOP)

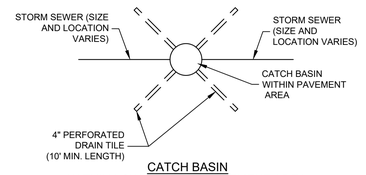


(SECTION A'-A')

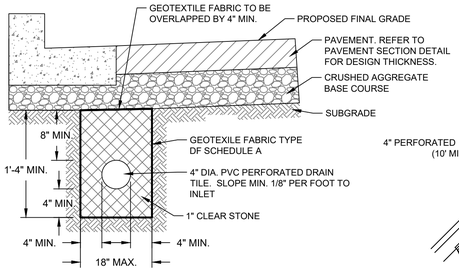


(SECTION B'-B')

B OUTLET CONTROL STRUCTURE - ALUMINUM PLATE
SCALE:NTS



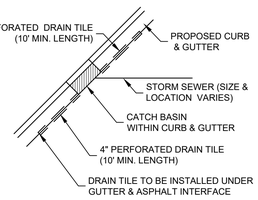
CATCH BASIN
WITHIN LOW POINT OF PAVEMENT AREA



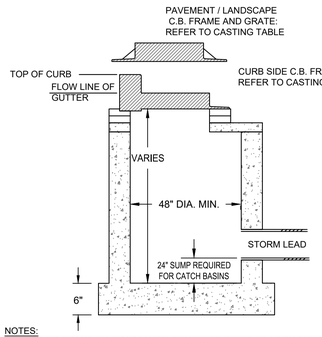
CURB INLET LOCATION
SECTION

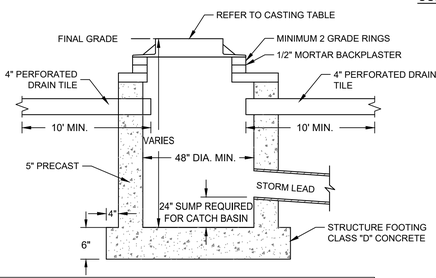
NOTE:

DRAIN TILE SHALL HAVE TWO (2) SEGMENTS POSITIONED ALONG THE GUTTER & ASPHALT INTERFACE.



CURB INLET WITHIN CURB & GUTTER
PLAN





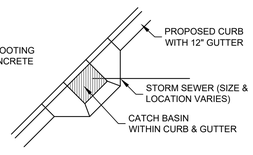
NOTES:

1. ADJUST FRAME TO GRADE WITH CONCRETE RINGS OF VARIABLE THICKNESS. MAXIMUM RING HEIGHT = 6". MINIMUM RING HEIGHT = 2". CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING.
2. CONCRETE AND REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-478.
3. 3" MIN. BEDDING OF STONE UNDER BASE REQUIRED , ADDITIONAL BEDDING STOME MAY BE REQUIRED ON WET SUB-GRADE.
4. UNLESS NOTED ON THE PLANS CONTRACTOR IS RESPONSIBLE FOR ALL CATCH BASIN SIZING AND SHALL PROVIDE A SHOP DRAWING TO THE SIGMA GROUP, INC. BEFORE THEY ARE RELEASED FOR PRODUCTION.

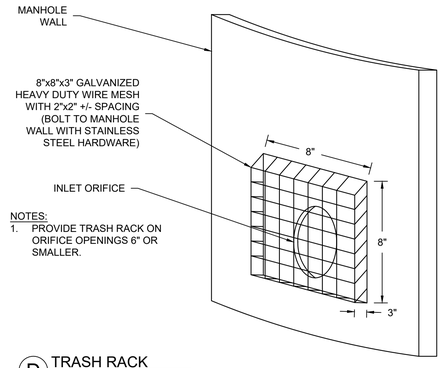
CATCH BASIN / INLET CASTING TABLE

	IF 18" CURB & GUTTER		IF 24" CURB & GUTTER		IF 30" CURB AND GUTTER	
	CASTING	GRATE	CASTING	GRATE	CASTING	GRATE
CURB INLET	NEENAH R-3067	A	NEENAH R-3067	A	NEENAH R-3228H	C
AREA INLET	NEENAH R-2050	C				

C INLET AND CATCH BASIN
SCALE:NTS



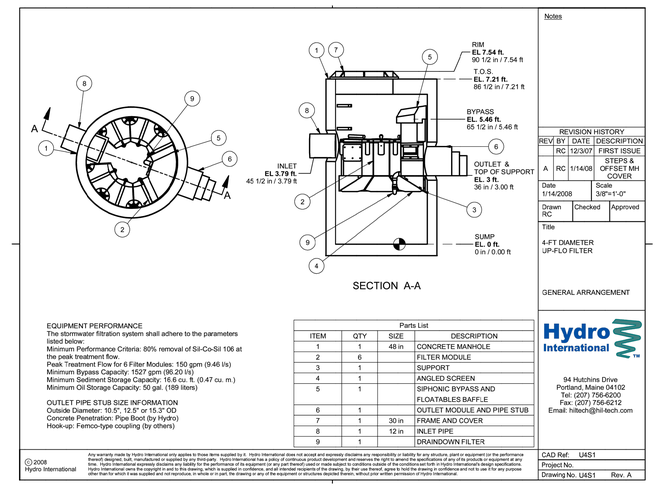
CONCRETE BUMP OUT TO BE
APPLIED FOR 12" GUTTER PAN



NOTES:

1. PROVIDE TRASH RACK ON ORIFICE OPENINGS 6" OR SMALLER.

D TRASH RACK
SCALE:NTS



SECTION A-A

EQUIPMENT PERFORMANCE
The stormwater filtration system shall adhere to the parameters listed below:
Minimum Performance Criteria: 80% removal of Sil-Co-Sil 106 at the peak treatment flow.
Peak Treatment Flow for 6 Filter Modules: 150 gpm (9.46 l/s)
Minimum Bypass Capacity: 1527 gpm (96.20 l/s)
Minimum Sediment Storage Capacity: 16.6 cu. ft. (0.47 cu. m.)
Minimum Oil Storage Capacity: 50 gal. (189 liters)

OUTLET PIPE STUB SIZE INFORMATION
Outside Diameter: 10.5", 12.5" or 15.3" OD
Concrete Penetration: Pipe Boot (by Hydro)
Hook-up: Femco-type coupling (by others)

Parts List

ITEM	QTY	SIZE	DESCRIPTION
1	1	48 in	CONCRETE MANHOLE
2	6		FILTER MODULE
3	1		SUPPORT
4	1		ANGLED SCREEN
5	1		SIPHONIC BYPASS AND FLOATABLES BAFFLE
6	1		OUTLET MODULE AND PIPE STUB
7	1	30 in	FRAME AND COVER
8	1	12 in	INLET PIPE
9	1		DRAINDOWN FILTER

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Notes

REVISION HISTORY

REV.	BY	DATE	DESCRIPTION
	RC	12/3/07	FIRST ISSUE
A	RC	1/14/08	STEPS & OFFSET MH COVER

Date 1/14/2008 | Scale 3/8"=1'-0"
Drawn RC | Checked | Approved

Title
4-FT DIAMETER UP-FLO FILTER

GENERAL ARRANGEMENT

Hydro International
94 Hutchins Drive
Portland, Maine 04102
Tel: (207) 756-6200
Fax: (207) 756-6212
Email: hiltech@hil-tech.com

CAD Ref: U4S1
Project No.
Drawing No. U4S1 Rev. A

E UPFLO FILTER MANHOLE - 6 MODULES
SCALE:NTS

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

DETAILS

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO. REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----
SHEET NO:	C402

JJAROS
C402
25057

2026.05.27

GENERAL:

1. EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY, AND NO RESPONSIBILITY IS ASSUMED BY THE OWNER OR ENGINEER FOR THEIR ACCURACY OR COMPLETENESS.
2. CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTRACTOR SHALL HAVE SITE MARKED BY DIGGER'S HOTLINE AND SHALL HAVE PRIVATE UTILITIES MARKED BY A PRIVATE UTILITY LOCATOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL ELEVATIONS, LOCATIONS, AND SIZES OF EXISTING UTILITIES AND SHALL CHECK ALL UTILITY CROSSINGS AND PROPOSED CONNECTIONS FOR CONFLICTS/DISCREPANCIES PRIOR TO INITIATING CONSTRUCTION. REPORT ANY CONFLICTS OR DISCREPANCIES TO THE ENGINEER SO REDESIGN MAY OCCUR IF NEEDED.
3. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLANS. LENGTHS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

SITE CLEARING:

1. EXCEPT FOR STRIPPED TOPSOIL OR OTHER MATERIALS INDICATED TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.
2. MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.
3. SALVABLE IMPROVEMENTS: CAREFULLY REMOVE ITEMS INDICATED TO BE SALVAGED AND STORE ON OWNER'S PREMISES WHERE INDICATED.
4. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.
5. DO NOT COMMENCE SITE CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE.
6. PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.
7. LOCATE AND CLEARLY FLAG TREES AND VEGETATION TO REMAIN OR TO BE RELOCATED.
8. PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION; RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.
9. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITIES INDICATED TO BE REMOVED; ARRANGE WITH UTILITY COMPANIES TO SHUT OFF INDICATED UTILITIES.
10. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED BY THE OWNER AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES.
11. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIAL UNLESS FURTHER EXCAVATION OR EARTHWORK IS INDICATED; PLACE FILL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 8 INCHES, AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.
12. REMOVE SOD AND GRASS BEFORE STRIPPING TOPSOIL.
13. STRIP TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
14. STOCKPILE TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
15. REMOVE EXISTING ABOVE- AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.
16. SAWCUT ALL PAVEMENTS FULL DEPTH PRIOR TO REMOVAL; SAWCUTS SHALL BE IN STRAIGHT LINES PERPENDICULAR AND/OR PARALLEL TO EXISTING PAVEMENT JOINTS AND PAVEMENT EDGES.
17. REMOVE SURPLUS SOIL MATERIAL, UNSUITABLE TOPSOIL, OBSTRUCTIONS, DEMOLISHED MATERIALS, AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
18. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO RECYCLING FACILITIES.

SITE WATER SERVICE:

1. COMPLY WITH STANDARDS OF STATE PLUMBING CODE (SPS CH. 382, 384), LOCAL WATER UTILITY REQUIREMENTS AND STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR FIRE-SUPPRESSION AND WATER SERVICE PIPING INCLUDING MATERIALS, FITTINGS, APPURTENANCES, INSTALLATION, TESTING, SERVICE TAPS, ETC. IN CASE OF CONFLICT BETWEEN THESE SPECIFICATIONS AND STATE PLUMBING CODE OR LOCAL JURISDICTIONAL AUTHORITY, STATE PLUMBING CODE AND LOCAL JURISDICTIONAL AUTHORITY REQUIREMENTS GOVERN.
2. DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED BY OWNERS OF SUCH FACILITIES AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY WATER-DISTRIBUTION SERVICE.
3. WATER SERVICE PIPING MAY BE EITHER DUCTILE IRON WATER PIPE OR PVC WATER PIPE AS ALLOWED BY THE LOCAL WATER UTILITY.
4. DUCTILE IRON WATER PIPE CONFORMING TO THE REQUIREMENTS OF THE AMERICAN NATIONAL STANDARD FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST, AWWA C151/A21.51 - LATEST REVISION AND REQUIREMENTS OF CHAPTER 8.18.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
   a. CLASS 52
   b. CEMENT MORTAR LINING AND INTERNAL AND EXTERNAL BITUMINOUS COATS IN ACCORDANCE WITH SECTION 51.8 OF AWWA C151.
   c. PUSH-ON GASKET PIPE
   d. PLAIN RUBBER GASKETS
   e. BONDING STRAPS TO PROVIDE ELECTRICAL CONDUCTIVITY WITHOUT FIELD TESTING
5. JOINTS FOR DUCTILE IRON PIPE: JOINTS SHALL BE RUBBER GASKET JOINTS; CONFORM TO THE REQUIREMENTS OF AMERICAN NATIONAL STANDARD FOR RUBBER GASKET JOINTS FOR DUCTILE IRON PRESSURE PIPE AND FITTINGS (ANSI/AWWA C111/A21.11, LATEST EDITION)
6. FITTINGS FOR DUCTILE IRON PIPE: CONFORM TO THE REQUIREMENTS OF AMERICAN NATIONAL STANDARD FOR DUCTILE IRON AND GRAY IRON FITTINGS, 3" THROUGH 48" FOR WATER ANSI/AWWA C110/A21.10, LATEST EDITION); CLASS 250 MECHANICAL JOINT PIPE FITTINGS; CEMENT LINED; ALL BELLS; ENTIRE FITTING TARRED; CONDUCTIVE MECHANICAL JOINT (NO LEAD) RUBBER GASKETS, FLANGES, AND BOLTS.
7. PVC AWWA PIPE: AWWA C900, CLASS 235 WITH BELL END WITH GASKET AND WITH SPIGOT END AND MEETING REQUIREMENTS OF CHAPTER 8.20.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. FITTINGS SHALL BE IN ACCORDANCE WITH CHAPTER 8.22.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. MECHANICAL -JOINT, DUCTILE IRON FITTINGS: AWWA C153, DUCTILE-IRON COMPACT PATTERN. GLANDS, GASKETS AND BOLTS: AWWA C111, DUCTILE IRON GLANDS, RUBBER GASKETS AND STEEL BOLTS.
8. GATE VALVES: CONFORM TO AWWA C-500 AND STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN SUITABLE FOR DIRECT BURY.
9. VALVE BOXES: CAST IRON CONFORMING TO ASTM DESIGNATION A-48, CLASS 20 AND STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
10. FIRE HYDRANTS: TO MEET LOCAL STANDARDS.
11. WATER MAIN CONNECTION: TAP WATER MAIN WITH SIZE AND LOCATION INDICATED ON PLAN IN ACCORDANCE WITH LOCAL WATER UTILITY REQUIREMENTS. COORDINATE CONNECTION WITH LOCAL WATER UTILITY. ALL JOINTS HALL BE RESTRAINED FROM CONNECTION OF WATER MAIN TO BUILDING WALL. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS. INSTALL MEGA-LUG OR APPROVED EQUAL TIGHT TO WALL FOR RESTRAINT FOR ALL BUILDING WALL PENETRATIONS AS APPROVED BY LOCAL PLUMBING INSPECTOR AND WATER UTILITY. INSTALL THRUST BLOCKING AND MEGA-LUG AT BEND BELOW FLOOR FOR ALL FLOOR PENETRATIONS
12. GENERAL WATER PIPE INSTALLATION: IN ACCORDANCE WITH CHAPTER 4.3.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
13. INSTALL DUCTILE-IRON, WATER-SERVICE PIPING ACCORDING TO AWWA C600 AND CHAPTER 4.4.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
14. ALL DUCTILE IRON PIPE SHALL BE ENCASED IN POLYETHYLENE PER AWWA C105, LATEST EDITION AND IN ACCORDANCE WITH CHAPTER 4.4.4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. ALL JOINTS AND FITTINGS SHALL HAVE POLYETHYLENE ENCASEMENT INSTALLED PER MANUFACTURER'S REQUIREMENTS AND PROCEDURES.
15. INSTALL PVC AWWA PIPE ACCORDING TO ASTM F645 AND AWWA M23 AND CHAPTER 4.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
16. INSTALL JOINT RESTRAINT AND CONCRETE THRUST BLOCKS AT ALL OFFSET FITTINGS (TEES, BENDS, DEAD ENDS, VALVES, REDUCERS) USING MEGA-LUG OR APPROVED EQUAL. CONCRETE THRUST BLOCKS SHALL BE INSTALLED PER FILE NO'S:44,45,46 FROM THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. SEE DETAIL FOR MINIMUM LENGTH OF RESTRAINED JOINT REQUIRED. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS.INSTALL WATER SERVICE PIPING SUCH THAT THERE IS A MINIMUM OF 6' OF COVER OVER THE TOP OF THE WATER SERVICE PIPING.

SITE WATER SERVICE CONT.:

17. BEDDING AND COVER FOR WATER SERVICE PIPING SHALL BE IN ACCORDANCE WITH SECTION 4.3.3 AND FILE NO. 36 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. TRENCH BACKFILL SHALL BE GRANULAR B BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION ON-SITE.
18. INSTALL TRACER WIRE FOR NON-METALLIC WATER SERVICES IN ACCORDANCE WITH SPS SECTION 382.40(8)(K). TRACER WIRE INSULATION COLOR SHALL BE BLUE FOR POTABLE WATER SERVICE PIPING.
19. DUCTILE-IRON PIPING, RUBBER GASKETED JOINTS IN ACCORDANCE WITH SECTION 4.4.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
20. PVC PIPING GASKETED JOINTS: USING JOINING MATERIALS ACCORDING TO AWWA C900. CONSTRUCT JOINTS WITH ELASTOMERIC SEALS AND LUBRICANTS ACCORDING TO ASTM D2774 OR ASTM D3139 AND PIPE MANUFACTURER'S WRITTEN INSTRUCTIONS.
21. CONDUCT HYDROSTATIC TESTS IN ACCORDANCE WITH CHAPTER 4.15.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
22. CLEAN AND DISINFECT WATER SERVICE PIPING IN ACCORDANCE WITH SPS CHAPTER 82.40(8)(I) AND AWWA C651.

SANITARY SEWERAGE:

1. ALL PRIVATE SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES (DSPS) PLUMBING CODE - CHAPTERS SPS 382 AND SPS 384 AND LOCAL MUNICIPAL REQUIREMENTS.
2. ALL PUBLIC SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION (STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS.
3. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.
4. MANHOLES: STANDARD PRECAST REINFORCED CONCRETE MANHOLES CONFORMING TO ASTM C478, SECTION 8.39.0 OF THE STANDARD SPECIFICATIONS AND CONFORMING TO FILE NOS. 12, 13 AND 15 OF THE STANDARD SPECIFICATIONS. DIAMETER AND DEPTH AS INDICATED ON PLANS. MANHOLE SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
5. MANHOLES DEEPER THAN FOUR FEET SHALL BE PROVIDED WITH MANHOLE STEPS CONFORMING TO SECTION 8.40.0 OF THE STANDARD SPECIFICATIONS.
6. SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 3.2.0 OF THE STANDARD SPECIFICATIONS. INSTALL PROPER SIZE INCREASERS, REDUCERS AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. INSTALL TRACER PIPE OVER NON-METALLIC PIPING IN ACCORANCE WITH SPS SECTION 382.30(11)(H) AND 382.36(7)(D).
7. PIPE JOINT CONSTRUCTION: FOLLOW PIPING MANUFACTURER'S RECOMMENDATIONS; JOIN PVC SEWER PIPE ACCORDING TO ASTM D2321 AND ASTM D 3212 FOR ELASTOMERIC GASKET JOINTS. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE, FLEXIBLE COUPLINGS
7. PROVIDE AND INSTALL CLEANOUTS IN ACCORDANCE WITH SPS CHAPTER 382.35. INSTALL CLEANOUTS AND RISER EXTENSIONS FORM SEWER PIPES TO PROPOSED GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE. USE LIGHT DUTY, TOP LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT TRAFFIC AREAS; USE MEDIUM DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT TRAFFIC AREAS; USE HEAVY DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICULAR TRAFFIC AREAS. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT AREAS FLUSH WITH PAVEMENT SURFACE.
8. CLASS B COMPACTED TRENCH SECTION (FILE NO. NO. 4 OF STANDARD SPECIFICATIONS) SHALL BE UTILIZED. BEDDING AND COVER MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 8.43.0 OF THE STANDARD SPECIFICATIONS.
9. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
10. MANHOLE INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS. SET MANHOLE RIMS TO ELEVATIONS INDICATED ON PLANS.
11. AFTER INSTALLATION OF SEWER PIPE CLEAN ALL DEBRIS FROM SEWER AND INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS; REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TESTING USING NEW PIPE MATERIALS. TEST NEW BUILDING SEWER IN ACCORDANCE WITH SECTION 5.4.0 OF THE STANDARD SPECIFICATIONS. REPLACE LEAKING PIPE USING NEW PIPE MATERIALS AAND REPEAT TESTING UNTIL LEAKAGE IS WITHIN ALLOWANCES SPECIFIED.

STORM DRAINAGE:

1. ALL PRIVATE STORM SEWER WORK SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES (DSPS) PLUMBING CODE - CHAPTERS SPS 382 AND SPS 384 AND LOCAL MUNICIPAL REQUIREMENTS.
2. ALL PUBLIC STORM SEWER WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION (STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS.
3. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.
4. REINFORCED CONCRETE PIPE: ASTM C76 WITH BELL AND SPIGOT ENDS AND GASKETED JOINTS WITH ASTM C443 RUBBER GASKETS IN ACCORDANCE WITH CHAPTER 8.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
5. HDPE PIPE: ADS N12 PIPE AS APPROVED ON THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES PLUMBING PRODUCT REGISTER.
6. CATCH BASINS: STANDARD PRECAST CONCRETE CATCH BASINS CONFORMING TO CHAPTER 3.6.0 OF THE STANDARD SPECIFICATIONS AND IN GENERAL CONFORMANCE WITH FILE NO. 26 OF THE STANDARD SPECIFICATIONS. DEPTH AND DIAMETER AS INDICATED ON PLANS. CATCH BASIN SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
7. FRAMES AND GRATES: AS INDICATED ON PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING SPECIFIED FRAME/GRATE IS COMPATIBLE WITH STRUCTURE; IF NOT, NOTIFY ENGINEER.
8. MANHOLES: STANDARD PRECAST REINFORCED CONCRETE MANHOLES CONFORMING TO ASTM C478, SECTION 8.39.0 OF THE STANDARD SPECIFICATIONS AND CONFORMING TO FILE NOS. 12, 13 AND 15 OF THE STANDARD SPECIFICATIONS. DIAMETER AND DEPTH AS INDICATED ON PLANS. MANHOLE SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
9. MANHOLES AND CATCH BASINS DEEPER THAN FOUR FEET SHALL BE PROVIDED WITH MANHOLE STEPS CONFORMING TO SECTION 8.40.0 OF THE STANDARD SPECIFICATIONS.
10. SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 3.2.0 OF THE STANDARD SPECIFICATIONS. INSTALL PROPER SIZE INCREASERS, REDUCERS AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. INSTALL TRACER PIPE OVER NON-METALLIC PIPING IN ACCORDANCE WITH SPS SECTION 382.30(11)(H) AND 382.36(7)(D).
11. PROVIDE AND INSTALL CLEANOUTS IN ACCORDANCE WITH SPS CHAPTER 382.35. INSTALL CLEANOUTS AND RISER EXTENSIONS FORM SEWER PIPES TO PROPOSED GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE. USE LIGHT DUTY, TOP LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT TRAFFIC AREAS; USE MEDIUM DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT TRAFFIC AREAS; USE HEAVY DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICULAR TRAFFIC AREAS. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT AREAS FLUSH WITH PAVEMENT SURFACE.
12. CLASS B COMPACTED TRENCH SECTION (FILE NO. NO. 4 OF STANDARD SPECIFICATIONS) SHALL BE UTILIZED. BEDDING AND COVER MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 8.43.0 OF THE STANDARD SPECIFICATIONS.
13. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
14. MANHOLE INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS. SET MANHOLE RIMS TO ELEVATIONS INDICATED ON PLANS.
15. CATCH BASIN INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.6 OF THE STANDARD SPECIFICATIONS. CATCH BASIN EXCAVATION AND PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.4(A) AND (B) OF THE STANDARD SPECIFICATIONS. FRAMES AND GRATES SHALL BE SET TO THE ELEVATIONS SHOWN ON THE PLANS.
16. AFTER INSTALLATION OF SEWER PIPE CLEAN ALL DEBRIS FROM SEWER AND INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS; REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TESTING USING NEW PIPE MATERIALS.

EARTH MOVING:

1. ALL EARTH WORK SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER PRESENTED IN THE SITE GEOTECHNICAL REPORT, GEOTECHNICAL ENGINEER RECOMMENDATIONS MADE IN THE FIELD AND THESE SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN THESE SPECIFICATIONS AND THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER, THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER SHALL GOVERN.
2. CONTRACTOR SHALL PROVIDE MATERIAL TEST REPORTS FROM A QUALIFIED TESTING AGENCY INDICATING TEST RESULTS FOR CLASSIFICATION ACCORDING TO ASTM D2487 AND LABORATORY COMPACTION CURVES ACCORDING TO ASTM D 1557 FOR EACH ON-SITE AND OFF-SITE SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
3. CONTRACTOR SHALL PROVIDE PREEXCAVATION PHOTOS OR VIDEOS SHOWING EXISTING CONDITIONS OF ADJOINING STRUCTURES AND SITE IMPROVEMENTS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY EARTHWORK OPERATIONS.
4. OLD BUILDING FOUNDATIONS, BUILDING REMNANTS OR UNSUITABLE BACKFILL MATERIAL SHALL BE COMPLETELY REMOVED FROM WITHIN AND A MINIMUM OF 10 FEET BEYOND THE NEW BUILDING PAD AREAS. THE RESULTING EXCAVATION SHALL BE BACKFILLED WITH COMPACTED ENGINEERED FILL.
5. FOUNDATIONS, FOUNDATION WALLS OR CONCRETE FLOOR SLABS SHALL BE REMOVED TO A MINIMUM OF TWO FEET BELOW PROPOSED SUBGRADE WITHIN PROPOSED PARKING AND GREENSPACE AREAS. BASEMENT SLABS LOCATED BELOW 2 FEET FROM PLANNED SUBGRADE ELEVATION MAY BE LEFT IN PLACE BUT SHALL BE BROKEN INTO MAXIMUM 6 INCH PIECES TO FACILITATE DRAINAGE.
6. SATISFACTORY SOILS FOR FILL: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER OR ANY SOIL GROUP OR COMBINATION OF GROUPS APPROVED OF BY THE PROJECT GEOTECHNICAL ENGINEER.
7. UNSATISFACTORY SOILS FOR FILL: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT ACCORDING TO ASTM D 2487 OR A COMBINATION OF THESE GROUPS UNLESS DEEMED SATISFACTORY BY THE PROJECT GEOTECHNICAL ENGINEER. UNSATISFACTORY SOILS ALSO INCLUDE SOILS NOT MAINTAINED WITHIN 3 PERCENT OF OPTIMUM SOIL MOISTURE CONTENT AT THE TIME OF COMPACTION.
8. AGGREGATE BASE COURSE BENEATH PAVEMENTS: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
9. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE OR ANY SOIL DEEMED ACCEPTABLE FOR ENGINEERED FILL BY THE PROJECT GEOTECHNICAL ENGINEER. ENGINEERED FILL SHALL BE FREE OF ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIAL AND HAVE A MAXIMUM PARTICLE SIZE LESS THAN 3 INCHES. CLAY FILLS SHALL HAVE A LIQUID LIMIT OF LESS THAN 49 AND PLASTICITY INDEX BETWEEN 11 AND 25.
10. BEDDING COURSE FOR SEWERS AND WATER SERVICE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND CONFORMING TO THE REQUIREMENTS OF SECTION 8.43.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
11. DRAINAGE COURSE BENEATH BUILDING SLABS: NARROWLY GRADED MIXTURE OF WASHED, CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 57; WITH 100 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.
12. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
13. PIPE COVER MATERIAL: CONFORM TO SECTION 8.43.3 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
14. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.
15. SHORING, SHEETING AND BRACING: SHORE, BRACE OR SLOPE BANKS OF EXCAVATION TO PROTECT WORKMEN, BANKS, ADJACENT PAVING, STRUCTURES, AND UTILITIES TO MEET OSHA REQUIREMENTS. DESIGN OF TEMPORARY SUPPORT OF EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
16. EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS.
17. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH FULLY LOADED TANDEM AXLE DUMP TRUCK OR RUBBER TIRED VEHICLE OF SIMILAR SIZE AND WEIGHT, TYPICALLY 9 TONS/AXLE, WHERE COHESIVE SOILS ARE ENCOUNTERED OR WITH A SMOOTH DRUMMED VIBRATORY ROLLER WHERE GRANULAR SOILS ARE PRESENT. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES AND PROOFROLL IN DRY WEATHER. PROOF ROLL IN PRESENCE OF PROJECT GEOTECHNICAL ENGINEER OR TECHNICIAN. SOILS THAT ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD (TYPICALLY >1") SHALL BE UNDERCUT AND REPLACED WITH PROPERLY COMPACTED ENGINEERED FILL. IN PAVEMENT AREAS WHERE UNDERCUTS ARE PERFORMED, THE EDGES OF THE OVEREXCAVATIONS SHALL BE FEATHERED INOT THE SURROUNDING SUITABLE SOIL SO THAT EDGE FAILURE OF THE OVEREXCAVATED AREA DOES NOT OCCUR.
18. DUE TO CLAYEY SOILS, IF UNDERCUTS OCCUR WITHIN PAVEMENT AREAS AND THEY ARE BACKFILLED WITH GRANULAR SOILS, THE BOTTOM OF THE OVEREXCAVATION SHALL BE SLOPED TO A DRAINTILE THAT IS IN KIND SLOPED TOWARD THE NEAREST STORM SEWER. MINIMUM SLOPES OF SUCH DRAINTILES SHALL BE 0.5%.
19. CONVENTIONAL DISKING AND AERATION TECHNIQUES SHALL BE USED TO DRY SOILS BEFORE PROOF ROLLING. ALLOT FOR PROPER DRYING TIME IN PROJECT SCHEDULE.
20. ENGINEERED FILL SHALL BE PLACED IN MAXIMUM LIFTS OF EIGHT INCHES OF LOOSE MATERIAL AND COMPACTED WITHIN 3% OF OPTIMUM SOIL MOISTURE CONTENT VALUE AND A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST ASTM D1557. EACH LIFT OF COMPACTED ENGINEERED FILL SH

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CONCRETE PAVING:

1. THE COMPOSITION, PLACING AND CONSTRUCTION OF CONCRETE PAVEMENTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTIONS 415, 416, 501, 601, AND 602 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS AND SPECIFICATIONS.
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED - INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES; JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS; AND MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS.
3. MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT AND APPROVED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
4. CONCRETE GRADE: GRADE A, CONFORMING TO SECTION 501.3.2.2.1 OF THE WISDOT STANDARD SPECIFICATIONS
5. AGGREGATES: CONFORM TO SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS. PROVIDE AGGREGATES FROM A SINGLE SOURCE.
6. WATER: ASTM C 94/C 94M AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
7. AIR-ENTRAINING ADMIXTURE: ASTM C 260 AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
8. CHEMICAL ADMIXTURES: PER SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
9. CURING MATERIALS IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
10. EXPANSION JOINT MATERIAL: CONFORM TO SECTION 415.2.3 OF THE WISDOT STANDARD SPECIFICATIONS.
11. MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE IN ACCORDANCE WITH SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
12. GENERAL EXECUTION: CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS.
13. PROOFROLL SUBGRADE AND AGGREGATE BASE AS OUTLINED IN EARTH MOVING SPECIFICATION PRIOR TO PLACEMENT OF PAVEMENTS.
14. SET, BRACE, AND SECURE EDGE FORMS, BULKHEADS, AND INTERMEDIATE SCREED GUIDES FOR PAVEMENT TO REQUIRED LINES, GRADES, AND ELEVATIONS. INSTALL FORMS TO ALLOW CONTINUOUS PROGRESS OF WORK AND SO FORMS CAN REMAIN IN PLACE AT LEAST 24 HOURS AFTER CONCRETE PLACEMENT.
15. CLEAN FORMS AFTER EACH USE AND COAT WITH FORM-RELEASE AGENT TO ENSURE SEPARATION FROM CONCRETE WITHOUT DAMAGE.
16. JOINTS GENERAL: FORM CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGINGS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS
17. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.
18. ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.
19. CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT.
20. EDGING: TOOL EDGES OF PAVEMENT, GUTTERS, CURBS, AND JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE TOOL MARKS ON CONCRETE SURFACES.
21. CURBING: COMPLY WITH SECTION 601 OF THE WISDOT STANDARD SPECIFICATIONS.
22. SIDEWALKS: COMPLY WITH SECTION 602 OF THE WISDOT STANDARD SPECIFICATIONS.
23. MOISTEN AGGREGATE TO PROVIDE A UNIFORM DAMPENED CONDITION AT TIME CONCRETE IS PLACED.
24. FINISH CURBING IN ACCORDANCE WITH SECTION 601.3.5 OF THE WISDOT STANDARD SPECIFICATIONS.
25. FINISH SIDEWALK AND PATIO IN ACCORDANCE WITH SECTION 602.3.2.3 OF THE WISDOT STANDARD SPECIFICATIONS (LIGHT BROOM FINISH).
26. FINISH CONCRETE VEHICULAR PAVEMENTS AND PADS IN ACCORDANCE WITH SECTION 415.3.8 OF THE WISDOT STANDARD SPECIFICATIONS (ARTIFICIAL TURF DRAG FINISH).
27. PROTECT AND CURE SIDEWALK IN ACCORDANCE WITH SECTION 602.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
28. PROTECT AND CURE CURBING IN ACCORDANCE WITH SECTION 601.3.7 OF THE WISDOT STANDARD SPECIFICATIONS.
29. PROTECT AND CURE VEHICULAR CONCRETE PAVING IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
30. REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.
31. PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 7 DAYS AFTER PLACEMENT.
32. MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL. SWEEP CONCRETE PAVEMENT NOT MORE THAN TWO DAYS BEFORE DATE SCHEDULED FOR SUBSTANTIAL COMPLETION INSPECTIONS.

ASPHALTIC PAVING:

1. THE COMPOSITION, PLACING AND CONSTRUCTION OF ASPHALTIC PAVEMENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460, 465, AND 475 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS).
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED - INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES; JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS; AND MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS.
3. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL BE REGISTERED WITH AND APPROVED BY THE DOT OF THE STATE IN WHICH PROJECT IS LOCATED.
4. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF BASE COURSE IS WET OR EXCESSIVELY DAMP OR IF THE FOLLOWING CONDITIONS ARE NOT MET: APPLY TACK COAT WHEN AMBIENT TEMPERATURE IS ABOVE 50 DEGREES FAHRENHEIT AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35 DEGREES FAHRENHEIT FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION; PLACE ASPHALTIC CONCRETE SURFACE COURSE WHEN TEMPERATURE IS ABOVE 40 DEGREES FAHRENHEIT; BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30 DEGREES FAHRENHEIT AND RISING. PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES. DO NOT APPLY BELOW THE MINIMUM PAVEMENT TEMPERATURE AS RECOMMENDED BY THE MANUFACTURER.
5. AGGREGATES SHALL BE IN ACCORDANCE WITH SECTION 460.2.2 OF THE WISDOT STANDARD SPECIFICATIONS.
6. ASPHALT MATERIALS SHALL BE IN ACCORDANCE WITH CHAPTER 455 OF THE WISDOT STANDARD SPECIFICATIONS.
7. PAVEMENT MARKING PAINT: PROVIDE PAINT FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCTS LIST. COLOR SHALL BE WHITE UNLESS INDICATED OTHERWISE ON PLANS.
8. HOT-MIX ASPHALT: ASPHALTIC BINDER COURSE AND SURFACE COURSE SHALL BE MIXTURE LT FOR REGULAR DUTY PAVEMENT AND LT FOR HEAVY DUTY PAVEMENT COMPLYING WITH THE WISDOT STANDARD SPECIFICATIONS. ASPHALTIC BINDER SHALL BE 58-28 S UNLESS NOTED.
9. AGGREGATE BASE COURSE BENEATH PAVEMENTS: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE WISDOT STANDARD SPECIFICATIONS.
10. PAVEMENT PLACEMENT GENERAL: ASPHALT CONCRETE PAVING EQUIPMENT, WEATHER LIMITATIONS, JOB-MIX FORMULA, MIXING, CONSTRUCTION METHODS, COMPACTION, FINISHING, TOLERANCE AND PROTECTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE SECTIONS OF THE WISDOT STANDARD SPECIFICATIONS.
11. PREPARE AND PROOFROLL SUBGRADES AND AGGREGATE BASE COURSE AS OUTLINED IN EARTH MOVING SPECIFICATIONS PRIOR TO PLACEMENT OF ASPHALT PAVEMENTS.
12. SWEEP LOOSE GRANULAR PARTICLES FROM SURFACE OF AGGREGATE BASE COURSE PRIOR TO PAVEMENT PLACEMENT. DO NOT DISLODGE OR DISTURB AGGREGATE EMBEDDED IN COMPACTED SURFACE OF BASE COURSE.
13. SPREAD AND FINISH ASPHALTIC MIXTURE IN ACCORDANCE WITH SECTION 450.3.2.5 OF THE WISDOT STANDARD SPECIFICATIONS. PAVEMENT THICKNESSES SHALL BE AS INDICATED ON THE PLANS.
14. PROMPTLY CORRECT SURFACE IRREGULARITIES IN PAVING COURSE BEHIND PAVER. USE SUITABLE HAND TOOLS TO REMOVE EXCESS MATERIAL FORMING HIGH SPOTS. FILL DEPRESSIONS WITH HOT-MIX ASPHALT TO PREVENT SEGREGATION OF MIX; USE SUITABLE HAND TOOLS TO SMOOTH SURFACE.
15. COMPACT ASPHALTIC PAVEMENT IN ACCORDANCE WITH SECTION 450.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
16. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.
17. THICKNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE THE THICKNESS INDICATED WITHIN PLUS/MINUS ¼ INCH FOR BINDER COURSE AND PLUS ¼ INCH FOR SURFACE COURSE, NO MINUS.
18. SURFACE SMOOTHNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE A SURFACE SMOOTHNESS WITHIN THE FOLLOWING TOLERANCES AS DETERMINED BY USING A 10-FOOT STRAIGHTEDGE APPLIED TRANSVERSELY OR LONGITUDINALLY TO PAVED AREAS: BINDER COURSE: ¼ INCH; SURFACE COURSE: 1/8 INCH. REMOVE AND REPLACE ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCES.
19. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH ENGINEER.
20. APPLY MARKINGS TO A DRY SURFACE FREE FROM FROST. REMOVE DUST, DIRT, OIL, GREASE, GRAVEL, DEBRIS OR OTHER MATERIAL THAT MAY PREVENT BONDING TO THE PAVEMENT.
21. APPLY PAINT AS THE MANUFACTURER SPECIFIES WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS, OF DIMENSIONS INDICATED, WITH UNIFORM, STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES AT A MINIMUM RATE OF 17.6 GALLONS/MILE FOR A CONTINUOUS 4" LINE.
22. TESTING AGENCY: CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.

SEGMENTAL RETAINING WALL:

1. WORK SHALL CONSIST OF FURNISHING DETAILED DESIGN, MATERIALS, LABOR, EQUIPMENT AND SUPERVISION TO INSTALL A SEGMENTAL RETAINING WALL SYSTEM IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON PLANS.
2. MATERIALS SUBMITTALS: THE CONTRACTOR SHALL SUBMIT MANUFACTURERS' CERTIFICATIONS TWO WEEKS PRIOR TO START OF WORK STATING THAT THE SRW UNITS AND GEOSYNTHETIC REINFORCEMENT MEET THE REQUIREMENTS OF THE DESIGN.
3. DESIGN SUBMITTAL: THE CONTRACTOR SHALL SUBMIT TWO SETS OF DETAILED DESIGN CALCULATIONS AND FINAL RETAINING WALL PLANS FOR APPROVAL AT LEAST TWO WEEKS PRIOR TO THE BEGINNING OF WALL CONSTRUCTION. ALL CALCULATIONS AND DRAWINGS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL CIVIL ENGINEER (P.E.) - (WALL DESIGN ENGINEER) EXPERIENCED IN SRW DESIGN AND LICENSED IN THE STATE WHERE THE WALL IS TO BE BUILT.
4. SEGMENTAL RETAINING WALL (SRW) UNITS SHALL BE MACHINE FORMED, PORTLAND CEMENT CONCRETE BLOCKS SPECIFICALLY DESIGNED FOR RETAINING WALL APPLICATIONS. SRW UNITS SHALL BE VERSA-LOK STANDARD RETAINING WALL UNITS, KEYSTONE RETAINING WALL UNITS, ROCKWOOD RETAINING WALL UNITS OR APPROVED EQUAL.
5. COLOR AND STYLE OF SRW UNITS SHALL BE AS SELECTED BY ARCHITECT AND OWNER FROM MANUFACTURER'S FULL RANGE.
6. SRW UNITS SHALL BE CAPABLE OF BEING ERECTED WITH THE HORIZONTAL GAP BETWEEN ADJACENT UNITS NOT EXCEEDING 1/8 INCH.
7. SRW UNITS SHALL BE SOUND AND FREE OF CRACKS OR OTHER DEFECTS THAT WOULD INTERFERE WITH THE PROPER PLACING OF THE UNIT OR SIGNIFICANTLY IMPAIR THE STRENGTH OR PERMANENCE OF THE STRUCTURE. ANY CRACKS OR CHIPS OBSERVED DURING CONSTRUCTION SHALL FALL WITHIN THE GUIDELINES OUTLINED IN ASTM C 1372.
8. CONCRETE SRW UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM 1372 AND HAVE A MINIMUM NET AVERAGE 28 DAYS COMPRESSIVE STRENGTH OF 3000 PSI. COMPRESSIVE STRENGTH TEST SPECIMENS SHALL CONFORM TO THE SAW-CUT COUPON PROVISIONS OF ASTM C140.
9. SRW UNITS' MOLDED DIMENSIONS SHALL NOT DIFFER MORE THAN ± 1/8 INCH FROM THAT SPECIFIED, AS MEASURED IN ACCORDANCE WITH ASTM C 140. THIS TOLERANCE DOES NOT APPLY TO ARCHITECTURAL SURFACES, SUCH AS SPLIT FACES.
10. SRW UNITS SHALL BE INTERLOCKED WITH CONNECTION PINS. THE PINS SHALL CONSIST OF GLASS-REINFORCED NYLON MADE FOR THE EXPRESSED USE WITH THE SRW UNITS SUPPLIED.
11. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF HIGH-TENACITY PET GEOGRIDS, HDPE GEOGRIDS, OR GEOTEXTILES MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS. THE TYPE, STRENGTH AND PLACEMENT OF THE GEOSYNTHETIC REINFORCEMENT SHALL BE DETERMINED BY PROCEDURES OUTLINED IN THIS SPECIFICATION AND THE NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS (3RD EDITION 2009) AND MATERIALS SHALL BE SPECIFIED BY WALL DESIGN ENGINEER IN THEIR FINAL WALL PLANS AND SPECIFICATIONS. THE MANUFACTURERS/SUPPLIERS OF THE GEOSYNTHETIC REINFORCEMENT SHALL HAVE DEMONSTRATED CONSTRUCTION OF SIMILAR SIZE AND TYPES OF SEGMENTAL RETAINING WALLS ON PREVIOUS PROJECTS.
12. THE TYPE, STRENGTH AND PLACEMENT OF THE REINFORCING GEOSYNTHETIC SHALL BE AS DETERMINED BY THE WALL DESIGN ENGINEER, AS SHOWN ON THE FINAL, P.E.-STAMPED RETAINING WALL PLANS.
13. MATERIAL FOR LEVELING PAD SHALL CONSIST OF COMPACTED SAND, GRAVEL, OR COMBINATION THEREOF (USCS SOIL TYPES GP,GW, SP, & SW) AND SHALL BE A MINIMUM OF 6 INCHES IN DEPTH. LEAN CONCRETE WITH A STRENGTH OF 200-300 PSI AND 3 INCHES THICK MAXIMUM MAY ALSO BE USED AS A LEVELING PAD MATERIAL. THE LEVELING PAD SHOULD EXTEND LATERALLY AT LEAST A DISTANCE OF 6 INCHES FROM THE TOE AND HEEL OF THE LOWERMOST SRW UNIT.
14. DRAINAGE AGGREGATE SHALL BE ANGULAR, CLEAN STONE OR GRANULAR FILL MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D422:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
3/4 INCH	75-100
NO. 4	0-60
NO. 40	0-50
NO. 200	0-5

15. THE DRAINAGE COLLECTION PIPE SHALL BE A PERFORATED OR SLOTTED PVC, OR CORRUGATED HDPE PIPE. THE DRAINAGE PIPE MAY BE WRAPPED WITH A GEOTEXTILE TO FUNCTION AS A FILTER. DRAINAGE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM F 405 OR ASTM F 758.
16. THE REINFORCED SOIL MATERIAL SHALL BE FREE OF DEBRIS. UNLESS OTHERWISE NOTED ON THE FINAL, P.E.-SEALED, RETAINING WALL PLANS PREPARED BY THE WALL DESIGN ENGINEER, THE REINFORCED MATERIAL SHALL CONSIST OF THE INORGANIC USCS SOIL TYPES GP, GW, SW, SP, SM, MEETING THE FOLLOWING GRADATION, AS DETERMINED IN ACCORDANCE WITH ASTM D422:

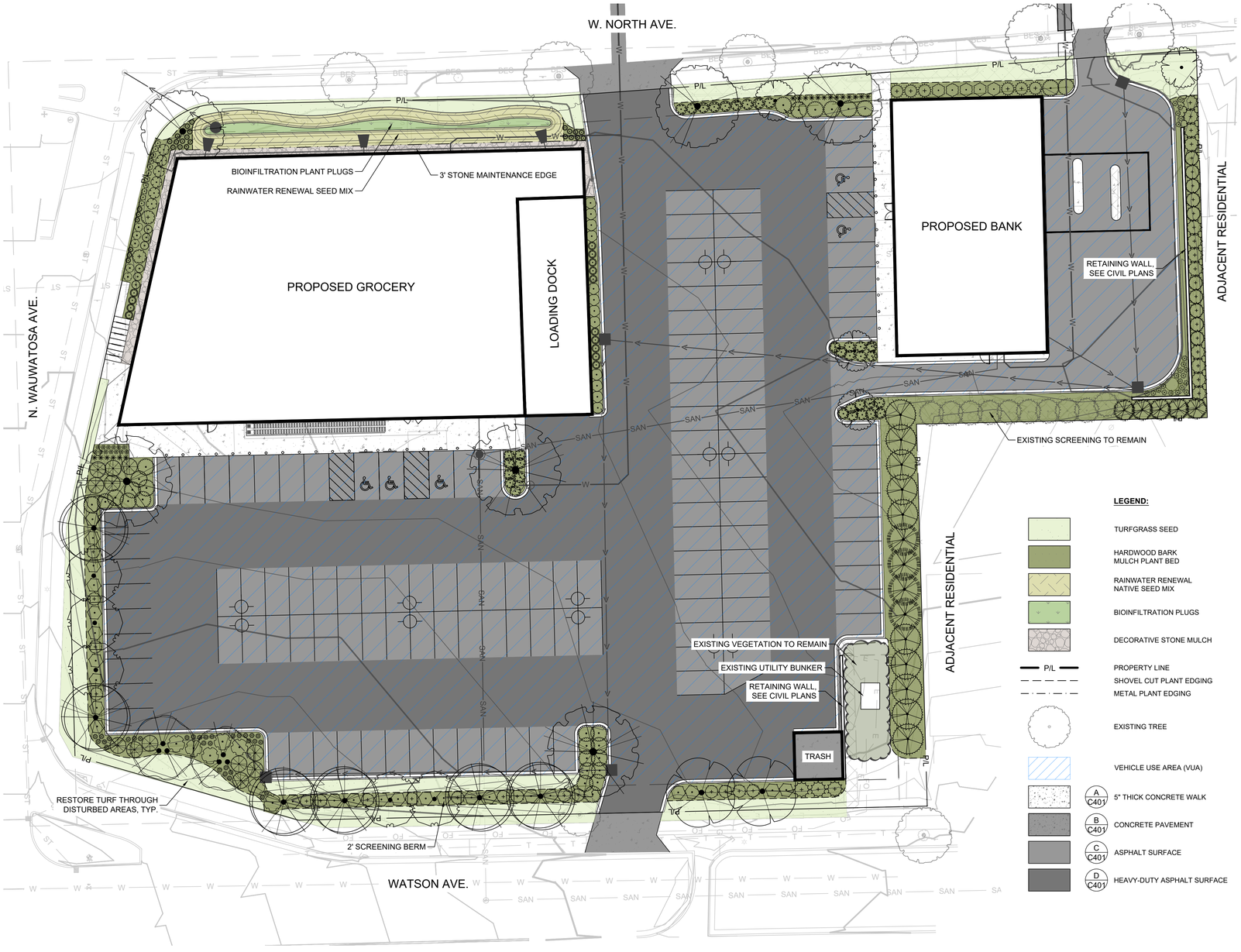
SIEVE SIZE	PERCENT PASSING
1 INCH	100
NO. 4	20-100
NO. 40	0-60
NO. 200	0-35

17. THE MAXIMUM PARTICLE SIZE OF POORLY-GRADED GRAVELS (GP) (NO FINES) SHOULD NOT EXCEED 3/4 INCH UNLESS EXPRESSLY APPROVED BY THE WALL DESIGN ENGINEER AND THE LONG-TERM DESIGN STRENGTH (LTDS) OF THE GEOSYNTHETIC IS REDUCED TO ACCOUNT FOR ADDITIONAL INSTALLATION DAMAGE FROM PARTICLES LARGER THAN THIS MAXIMUM.
18. THE PLASTICITY OF THE FINE FRACTION SHALL BE LESS THAN 20.
19. THE PH OF THE BACKFILL MATERIAL SHALL BE BETWEEN 3 AND 9 WHEN TESTED IN ACCORDANCE WITH ASTM G 51.
20. DRAINAGE GEOTEXTILE SHALL CONSIST OF GEOSYNTHETIC SPECIFICALLY MANUFACTURED FOR USE AS A PERMEABLE SOIL FILTER THAT RETAINS SOIL WHILE STILL ALLOWING WATER TO PASS THROUGHOUT THE LIFE OF THE STRUCTURE. THE TYPE AND PLACEMENT OF THE GEOTEXTILE FILTER MATERIAL SHALL BE AS REQUIRED BY THE WALL DESIGN ENGINEER IN THEIR FINAL WALL PLANS AND SPECIFICATIONS.
21. THE DESIGN ANALYSIS FOR THE FINAL, P.E.-STAMPED RETAINING WALL PLANS PREPARED BY THE WALL DESIGN ENGINEER SHALL CONSIDER THE EXTERNAL STABILITY AGAINST SLIDING AND OVERTURNING, INTERNAL STABILITY AND FACIAL STABILITY OF THE REINFORCED SOIL MASS, AND SHALL BE IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICE AND THESE SPECIFICATIONS. THE INTERNAL AND EXTERNAL STABILITY ANALYSIS SHALL BE PERFORMED IN ACCORDANCE WITH THE "NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, 3RD EDITION" USING THE RECOMMENDED MINIMUM FACTORS OF SAFETY IN THIS MANUAL.
22. EXTERNAL STABILITY ANALYSIS FOR BEARING CAPACITY, GLOBAL STABILITY, AND TOTAL AND DIFFERENTIAL SETTLEMENT SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE OWNER'S GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PERFORM BEARING CAPACITY, SETTLEMENT ESTIMATES, AND GLOBAL STABILITY ANALYSIS BASED ON THE FINAL WALL DESIGN PROVIDED BY THE WALL DESIGN ENGINEER AND COORDINATE ANY REQUIRED CHANGES WITH THE WALL DESIGN ENGINEER.
23. THE GEOSYNTHETIC PLACEMENT IN THE WALL DESIGN SHALL HAVE 100% CONTINUOUS COVERAGE PARALLEL TO THE WALL FACE. GAPPING BETWEEN HORIZONTALLY ADJACENT LAYERS OF GEOSYNTHETIC (PARTIAL COVERAGE) WILL NOT BE ALLOWED.
24. CONTRACTOR'S FIELD CONSTRUCTION SUPERVISOR SHALL HAVE DEMONSTRATED EXPERIENCE AND BE QUALIFIED TO DIRECT ALL WORK AT THE SITE.
25. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE PROJECT GRADING PLANS. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE OVER-EXCAVATION. OVER-EXCAVATION SHALL BE FILLED WITH COMPACTED INFILL MATERIAL, OR AS DIRECTED BY THE WALL DESIGN ENGINEER, AT THE CONTRACTOR'S EXPENSE.
26. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING STRUCTURES AND UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL ENSURE ALL SURROUNDING STRUCTURES ARE PROTECTED FROM THE EFFECTS OF WALL EXCAVATION. EXCAVATION SUPPORT, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR.
27. FOLLOWING THE EXCAVATION, THE FOUNDATION SOIL SHALL BE EXAMINED BY THE OWNER'S ENGINEER TO ASSURE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN BEARING STRENGTH. SOILS NOT MEETING THE REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH INFILL SOILS, AS DIRECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER.
28. FOUNDATION SOIL SHALL BE PROOF-ROLLED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY AND INSPECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF LEVELING PAD MATERIALS.
29. LEVELING PAD SHALL BE PLACED AS SHOWN ON THE FINAL, P.E.-SEALED RETAINING WALL PLANS WITH A MINIMUM THICKNESS OF 6 INCHES. THE LEVELING PAD SHOULD EXTEND LATERALLY AT LEAST A DISTANCE OF 6 INCHES FROM THE TOE AND HEEL OF THE LOWERMOST SRW UNIT.
30. GRANULAR LEVELING PAD MATERIAL SHALL BE COMPACTED TO PROVIDE A FIRM, LEVEL BEARING SURFACE ON WHICH TO PLACE THE FIRST COURSE OF UNITS. WELL-GRADED SAND CAN BE USED TO SMOOTH THE TOP 1/4 INCH TO 1/2 INCH OF THE LEVELING PAD. COMPACTION WILL BE WITH MECHANICAL PLATE COMPACTORS TO ACHIEVE 95% OF MAXIMUM STANDARD PROCTOR DENSITY (ASTM D 698).
31. ALL SRW UNITS SHALL BE INSTALLED AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE FINAL, P.E.-SEALED WALL PLANS AND DETAILS OR AS DIRECTED BY THE WALL DESIGN ENGINEER. THE SRW UNITS SHALL BE INSTALLED IN GENERAL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE SPECIFICATIONS AND DRAWINGS SHALL GOVERN IN ANY CONFLICT BETWEEN THE TWO REQUIREMENTS.
32. FIRST COURSE OF SRW UNITS SHALL BE PLACED ON THE LEVELING PAD. THE UNITS SHALL BE LEVELED SIDE-TO-SIDE, FRONT-TO-REAR AND WITH ADJACENT UNITS, AND ALIGNED TO ENSURE INTIMATE CONTACT WITH THE LEVELING PAD. THE FIRST COURSE IS THE MOST IMPORTANT TO ENSURE ACCURATE AND ACCEPTABLE RESULTS. NO GAPS SHALL BE LEFT BETWEEN THE FRONT OF ADJACENT UNITS. ALIGNMENT MAY BE DONE BY MEANS OF A STRING LINE OR OFFSET FROM BASE LINE TO THE BACK OF THE UNITS.
33. ALL EXCESS DEBRIS SHALL BE CLEANED FROM TOP OF UNITS AND THE NEXT COURSE OF UNITS INSTALLED ON TOP OF THE UNITS BELOW.

SEGMENTAL RETAINING WALL CONT.:

34. CONNECTION PINS SHALL BE INSERTED THROUGH THE PIN HOLES OF EACH UPPER-COURSE UNIT INTO RECEIVING SLOTS IN LOWER-COURSE UNITS. PINS SHALL BE FULLY SEATED IN THE PIN SLOT BELOW. UNITS SHALL BE PUSHED FORWARD TO REMOVE ANY LOOSENESS IN THE UNIT-TO-UNIT CONNECTION.
35. PRIOR TO PLACEMENT OF NEXT COURSE, THE LEVEL AND ALIGNMENT OF THE UNITS SHALL BE CHECKED AND CORRECTED WHERE NEEDED.
36. LAYOUT OF CURVES AND CORNERS SHALL BE INSTALLED IN ACCORDANCE WITH THE WALL PLAN DETAILS OR IN GENERAL ACCORDANCE WITH SRW MANUFACTURER'S INSTALLATION GUIDELINES. WALLS MEETING AT CORNERS SHALL BE INTERLOCKED BY OVERLAPPING SUCCESSIVE COURSES.
37. PROCEDURES ABOVE SHALL BE REPEATED UNTIL REACHING TOP OF WALL UNITS, JUST BELOW THE HEIGHT OF THE CAP UNITS. GEOSYNTHETIC REINFORCEMENT, DRAINAGE MATERIALS, AND REINFORCED BACKFILL SHALL BE PLACED IN SEQUENCE WITH UNIT INSTALLATION.
38. ALL GEOSYNTHETIC REINFORCEMENT SHALL BE INSTALLED AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE FINAL P.E.-SEALED RETAINING WALL PLAN PROFILES AND DETAILS, OR AS DIRECTED BY THE WALL DESIGN ENGINEER.
39. AT THE ELEVATIONS SHOWN ON THE FINAL PLANS, (AFTER THE UNITS, DRAINAGE MATERIAL AND BACKFILL HAVE BEEN PLACED TO THIS ELEVATION) THE GEOSYNTHETIC REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED INFILL AND ON TOP OF THE CONCRETE SRW UNITS, TO WITHIN 1 INCH OF THE FRONT FACE OF THE UNIT BELOW. EMBEDMENT OF THE GEOSYNTHETIC IN THE SRW UNITS SHALL BE CONSISTENT WITH SRW MANUFACTURER'S RECOMMENDATIONS. CORRECT ORIENTATION OF THE GEOSYNTHETIC REINFORCEMENT SHALL BE VERIFIED BY THE CONTRACTOR TO BE IN ACCORDANCE WITH THE GEOSYNTHETIC MANUFACTURER'S RECOMMENDATIONS. THE HIGHEST-STRENGTH DIRECTION OF THE GEOSYNTHETIC MUST BE PERPENDICULAR TO THE WALL FACE.
40. GEOSYNTHETIC REINFORCEMENT LAYERS SHALL BE ONE CONTINUOUS PIECE FOR THEIR ENTIRE EMBEDMENT LENGTH. SPLICING OF THE GEOSYNTHETIC IN THE DESIGN-STRENGTH DIRECTION (PERPENDICULAR TO THE WALL FACE) SHALL NOT BE PERMITTED. ALONG THE LENGTH OF THE WALL, HORIZONTALLY ADJACENT SECTIONS OF GEOSYNTHETIC REINFORCEMENT SHALL BE BUTTED IN A MANNER TO ASSURE 100% COVERAGE PARALLEL TO THE WALL FACE.
41. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOSYNTHETIC REINFORCEMENT. A MINIMUM OF 6 INCHES OF BACKFILL IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOSYNTHETIC. TURNING SHOULD BE KEPT TO A MINIMUM. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOSYNTHETIC REINFORCEMENT AT SLOW SPEEDS (LESS THAN 5 MPH).
42. THE GEOSYNTHETIC REINFORCEMENT SHALL BE FREE OF WRINKLES PRIOR TO PLACEMENT OF SOIL FILL. THE NOMINAL TENSION SHALL BE APPLIED TO THE REINFORCEMENT AND SECURED IN PLACE WITH STAPLES, STAKES OR BY HAND TENSIONING UNTIL REINFORCEMENT IS COVERED BY 6 INCHES OF FILL.
43. DRAINAGE AGGREGATE SHALL BE INSTALLED TO THE LINE, GRADES AND SECTIONS SHOWN ON THE FINAL P.E.-SEALED RETAINING WALL PLANS. DRAINAGE AGGREGATE SHALL BE PLACED TO THE MINIMUM THICKNESS SHOWN ON THE CONSTRUCTION PLANS BETWEEN AND BEHIND UNITS (A MINIMUM OF 1 CUBIC FOOT FOR EACH EXPOSED SQUARE FOOT OF WALL FACE UNLESS OTHERWISE NOTED ON THE FINAL WALL PLANS).
44. DRAINAGE COLLECTION PIPES SHALL BE INSTALLED TO MAINTAIN GRAVITY FLOW OF WATER OUTSIDE THE REINFORCED-SOIL ZONE. THE DRAINAGE COLLECTION PIPE SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE FINAL CONSTRUCTION DRAWINGS. THE DRAINAGE COLLECTION PIPE SHALL DAYLIGHT INTO A STORM SEWER OR ALONG A SLOPE, AT AN ELEVATION BELOW THE LOWEST POINT OF THE PIPE WITHIN THE AGGREGATE DRAIN. DRAINAGE LATERALS SHALL BE SPACED AT A MAXIMUM 50-FOOT SPACING ALONG THE WALL FACE.
45. THE REINFORCED BACKFILL SHALL BE PLACED AS SHOWN IN THE FINAL WALL PLANS IN THE MAXIMUM COMPACTED LIFT THICKNESS OF 8 INCHES AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D 698) AT A MOISTURE CONTENT WITHIN -1% POINT TO +3% POINTS OF OPTIMUM. THE BACKFILL SHALL BE PLACED AND SPREAD IN SUCH A MANNER AS TO ELIMINATE WRINKLES OR MOVEMENT OF THE GEOSYNTHETIC REINFORCEMENT AND THE SRW UNITS.
46. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE BACK OF THE WALL UNITS. COMPACTION WITHIN THE 3 FEET BEHIND THE WALL UNITS SHALL BE ACHIEVED BY AT LEAST THREE PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, PLATE, OR ROLLER.
47. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LEVEL OF BACKFILL AWAY FROM THE WALL FACING AND REINFORCED BACKFILL TO DIRECT WATER RUNOFF AWAY FROM THE WALL FACE.
48. AT COMPLETION OF WALL CONSTRUCTION, BACKFILL SHALL BE PLACED LEVEL WITH FINAL TOP OF WALL ELEVATION. IF FINAL GRADING, PAVING, LANDSCAPING AND/OR STORM DRAINAGE INSTALLATION ADJACENT TO THE WALL IS NOT PLACED IMMEDIATELY AFTER WALL

2026.05.27



LEGEND:

- TURFGRASS SEED
- HARDWOOD BARK MULCH PLANT BED
- RAINWATER RENEWAL NATIVE SEED MIX
- BIOINFILTRATION PLUGS
- DECORATIVE STONE MULCH
- P/L — PROPERTY LINE
- SHOVEL CUT PLANT EDGING
- METAL PLANT EDGING
- EXISTING TREE
- VEHICLE USE AREA (VUA)
- A C401 — 5" THICK CONCRETE WALK
- B C401 — CONCRETE PAVEMENT
- C C401 — ASPHALT SURFACE
- D C401 — HEAVY-DUTY ASPHALT SURFACE

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY
DECIDUOUS TREES					
	AA	Acer x freemanii 'Jeffersred' / Autumn Blaze® Freeman Maple	2.5" Cal.	B&B	3
	CW	Carpinus caroliniana 'Wisconsin Red' / Wisconsin Red Musclewood	2.5" Cal.	B&B	6
	GA	Ginkgo biloba 'Autumn Gold' / Autumn Gold Maidenhair Tree	2.5" Cal.	B&B	2
	GD	Gymnocladus dioica 'Espresso' / Kentucky Coffeetree	2.5" Cal.	B&B	3
	TG	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	2.5" Cal.	B&B	5
EVERGREEN TREES					
	JC	Juniperus chinensis 'Mountbatten' / Mountbatten Juniper	6` Ht.	B&B	15
	JV	Juniperus virginiana / Eastern Redcedar	6` Ht.	B&B	10
	TB	Thuja occidentalis 'Bail John' / Technito® Arborvitae	6` Ht.	B&B	5
	TN	Thuja occidentalis 'Nigra' / Black Arborvitae	6` Ht.	B&B	10
	TT	Thuja occidentalis 'Techny' / Techny Arborvitae	6` Ht.	B&B	4
ORNAMENTAL TREES					
	CC	Cercis canadensis / Eastern Redbud	8` Ht. (Multi-Stem)	B&B	2
	SR	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2.5" Cal.	B&B	4
BROADLEAF EVERGREEN SHRUBS					
	BG	Buxus x 'Green Mountain' / Green Mountain Boxwood	3 gal.	Cont.	6
DECIDUOUS SHRUBS					
	AI	Aronia melanocarpa 'Morton' / Iroquois Beauty™ Black Chokeberry	3 gal.	Cont.	25
	DJ	Diervilla lonicera `Jewel` / Jewel Bush Honeysuckle	3 gal.	Cont.	34
	FC	Forsythia x 'Courtasol' / Gold Tide® Forsythia	3 gal.	Cont.	5
	HA	Hydrangea arborescens 'Annabelle' / Annabelle Hydrangea	3 gal.	Cont.	5
	HB	Hydrangea macrophylla 'PIIHM-II' / BloomStruck® Hydrangea	3 gal.	Cont.	6
	RA	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	3 gal.	Cont.	28
	RL	Rosa rugosa 'Purple Pavement' / Purple Pavement Rose	3 gal.	Cont.	12
	SM	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	3 gal.	Cont.	7
EVERGREEN SHRUBS					
	JP	Juniperus chinensis 'Kallays Compact' / Kallay Compact Pfitzer Juniper	3 gal.	Cont.	17
	PP	Pinus mugo 'Pumilio' / Dwarf Mugo Pine	3 gal.	Cont.	12
	TE	Taxus x media 'Everlow' / Everlow Anglo-Japanese Yew	3 gal.	Cont.	6
	TH	Taxus x media 'Hicksii' / Hicks Anglo-Japanese Yew	3 gal.	Cont.	2
ORNAMENTAL GRASSES					
	CO	Calamagrostis x acutiflora 'Overdam' / Overdam Feather Reed Grass	1 gal.	Cont.	23
	DG	Deschampsia cespitosa 'Goldtau' / Gold Dew Tufted Hair Grass	1 gal.	Cont.	26
	PN	Panicum virgatum 'Northwind' / Northwind Switch Grass	1 gal.	Cont.	14
	SS	Schizachyrium scoparium 'Standing Ovation' / Standing Ovation Little Bluestem	1 gal.	Cont.	31
	SH	Sporobolus heterolepis 'Tara' / Tara Prairie Dropseed	1 gal.	Cont.	19
PERENNIALS					
	NW	Nepeta x faassenii 'Walker's Low' / Walker's Low Catmint	1 gal.	Cont.	11
	SA	Sedum x 'Autumn Fire' / Autumn Fire Sedum	1 gal.	Cont.	13

Site Landscaping Requirements
Zoning: General Commerical (C2)

Category	Requirements			
Perimeter Vehicle Use Area (VUA)	**Requirement**	**Public VUA Frontage**	**Quantity Required**	**Quantity Provided**
	2 Deciduous Trees per 50 LF	444 LF	18 Trees	18 Trees
	8 Shrubs per 50 LF		72 Shrubs	72 Shrubs
Interior Vehicle Use Area (VUA)	**Requirement**	**Interior VUA**	**Landscaping Required**	**Landscaping Provided**
	10% of Interior VUA Landscaped	48,103 SF	4,810 SF	1,659 SF*
	Requirement	**Interior Landscape Area**	**Quantity Required**	**Quantity Provided**
	1 Shade Tree per 180 SF of Interior Landscape Area	4,810 SF	27 Trees	6 Trees*

*NOTE: INTERIOR VUA LANDSCAPING PROVIDED TO GREATEST EXTENT POSSIBLE DUE TO SITE RESTRICTIONS

LANDSCAPE GENERAL NOTES:

1. VERIFY EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES, AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION.
2. INSPECT THE SITE PRIOR TO COMMENCING WORK. DOCUMENT IN WRITING AND PHOTOGRAPH EXISTING CONDITIONS WITHIN, AND IN AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES NOT DOCUMENTED IN THE PHOTOGRAPHS PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES.
3. COORDINATE THE INSTALLATION OF PLANT MATERIAL WITH INSTALLATION OF ADJACENT PAVEMENTS, DRAINAGE, CURB RELATED STRUCTURES WITH OTHER TRADES.
4. RESTORE AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED. DAMAGE CAUSED DURING LANDSCAPE INSTALLATION TO EXISTING CONDITIONS AND IMPROVEMENTS IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
5. CONTRACTOR SHALL THOROUGHLY REVIEW ALL SPECIFICATIONS RELATED TO TREE PROTECTION, SOIL PREPARATION, TURF, GRASSES AND PLANTS. THESE SECTIONS PROVIDE ADDITIONAL INFORMATION ON MATERIALS AND SET STANDARDS FOR QUALITY AND INSTALLATION REQUIREMENTS.
6. PROVIDE 3" DOUBLE SHREDDED BARK MULCH FOR ALL PLANTED TREES, SHRUBS AND LANDSCAPE BEDS.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 259-1181

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

THE SIGMA GROUP
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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

LANDSCAPE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
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DRB SUBMITTAL	05/27/2026

NO.	REVISION	DATE

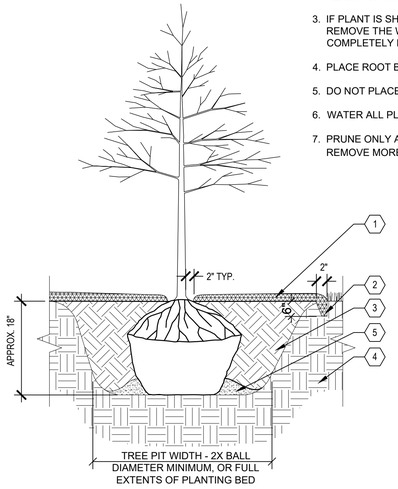
PROJECT NO:	25057
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DRAWN BY:	AJR
CHECKED BY:	PJI
APPROVED BY:	----
SHEET NO:	L100

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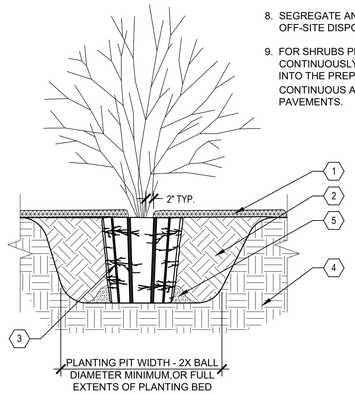
NOTES:
1. PLANT EACH TREE SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
2. DEPTH OF THE PLANTING HOLE SHOULD BE DETERMINED AND DUG AFTER THE ROOT FLARE IS LOCATED. PLANTING HOLE MUST BE NO DEEPER THAN THE HEIGHT OF THE ROOT BALL.
3. IF PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, CUT AND REMOVE THE WIRE BASKET ENTIRELY. REMOVE ALL TWINE, ROPE, AND BURLAP COMPLETELY FROM ALL ROOT BALLS.
4. PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.
5. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
6. WATER ALL PLANTS WITHIN 2 HOURS OF INSTALLATION.
7. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY BRANCHES. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.



KEYED LEGEND
1. 3" DEPTH SHREDDED HARDWOOD BARK MULCH. PROVIDE 4'-0" DIAMETER MULCH RINGS AT THE BASE OF ANY TREES PLANTED IN LAWN.
2. PROVIDE SPADED EDGE, 2" WIDE, 6" DEEP FOR ENTIRE PERIMETER OF BARK MULCH RINGS AT BASE OF TREES PLANTED IN LAWNS
3. PLANTING SOIL, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED.
4. PREPARED SUBGRADE
5. TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT BALL DOES NOT SHIFT

A TYPICAL TREE PLANTING
SCALE: N.T.S.

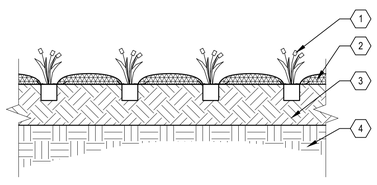
NOTES:
1. MAKE 1" TO 2" DEEP VERTICAL CUTS EVERY 6" AROUND THE CIRCUMFERENCE OF THE ROOT BALL BEFORE PLANTING TO LOOSEN POT-BOUND ROOTS.
2. PLANT EACH SHRUB SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
3. PLANTING HOLE MUST NOT BE DEEPER THAN THE HEIGHT OF THE ROOT BALL.
4. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
5. PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.
6. WATER ALL PLANTS WITHIN 2 HOURS OF INSTALLATION.
7. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY BRANCHES. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.
8. SEGREGATE ANY SOIL FROM BELOW WARNING LAYER EXCAVATED DURING PLANTING FOR OFF-SITE DISPOSAL. COORDINATE DISPOSAL WITH ENVIRONMENTAL CONSULTANT.
9. FOR SHRUBS PLANTED WITHIN PLANTING BEDS, CONTRACTOR SHALL PROVIDE PLANTING SOIL CONTINUOUSLY FOR THE ENTIRE PLANTING BED AND INDIVIDUAL SHRUBS SHALL BE PLANTED INTO THE PREPARED PLANTING SOIL. MULCH SURFACE FOR PLANTING BEDS SHALL ALSO BE CONTINUOUS ACROSS THE ENTIRE SURFACE AND HELD ½" MIN. TO 1" MAX. BELOW ADJACENT PAVEMENTS.



KEYED LEGEND
1. 3" DEPTH TWICE-SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE INDICATED, KEEP 2" CLEAR OF STEMS
2. PLANTING SOIL AS SPECIFIED, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED
3. 1" TO 2" DEEP VERTICAL CUTS EVERY 6" AROUND PERIMETER
4. PREPARED SUBGRADE
5. TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT BALL DOES NOT SHIFT

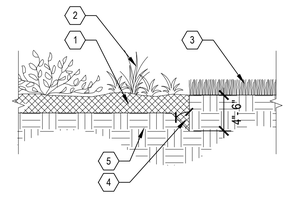
B TYPICAL SHRUB PLANTING
SCALE: N.T.S.

NOTES:
1. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
2. PLANTING HOLE MUST NOT BE DEEPER THAN THE HEIGHT OF THE ROOT BALL.
3. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
4. WATER ALL PLANTS THOROUGHLY WITHIN 2 HOURS OF INSTALLATION.
5. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY OR DEAD PLANT PARTS. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.
6. FOR PLANTS PLANTED WITHIN PLANTING BEDS, CONTRACTOR SHALL PROVIDE PLANTING SOIL CONTINUOUSLY FOR THE ENTIRE PLANTING BED AND INDIVIDUAL SHRUBS SHALL BE PLANTED INTO THE PREPARED PLANTING SOIL. MULCH SURFACE FOR PLANTING BEDS SHALL ALSO BE CONTINUOUS ACROSS THE ENTIRE SURFACE AND HELD ½" MIN. TO 1" MAX. BELOW ADJACENT PAVEMENTS.



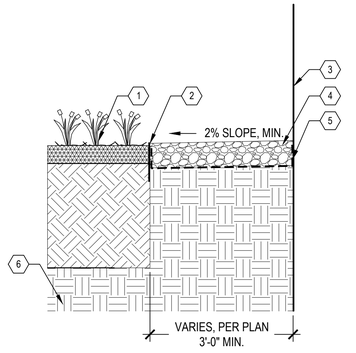
KEYED LEGEND
1. PERENNIAL, ORNAMENTAL GRASS, OR GROUNDCOVER PLUG, SEE LANDSCAPE PLAN SHEETS L100-L103
2. 3" DEPTH TWICE-SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE INDICATED, KEEP 3" CLEAR OF STEMS
3. PLANTING SOIL, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED
4. PREPARED SUBGRADE

C TYPICAL PERENNIAL & ORNAMENTAL GRASS PLANTING
SCALE: N.T.S.



KEYED LEGEND
1. 3" DEPTH OF MULCH LAYER
2. SHRUB PLANTING BED
3. LAWN ADJACENT TO PLANTING BED
4. 45 DEGREE ANGLE SHOVEL CUT EDGE TOWARD PLANTING BED
5. COMPACTED SUBGRADE

D SHOVEL CUT PLANT EDGE
SCALE: N.T.S.



KEYED LEGEND
1. ADJACENT PLANTING BED
2. BLACK ANODIZED ALUMINUM EDGING
3. BUILDING FACE
4. 3" DEPTH STONE MULCH
5. WOVEN GEOTEXTILE FILTER FABRIC, WRAP UP SIDES OF BUILDING AND EDGING
6. PREPARED SUBGRADE

E STONE MAINTENANCE EDGE
SCALE: N.T.S.

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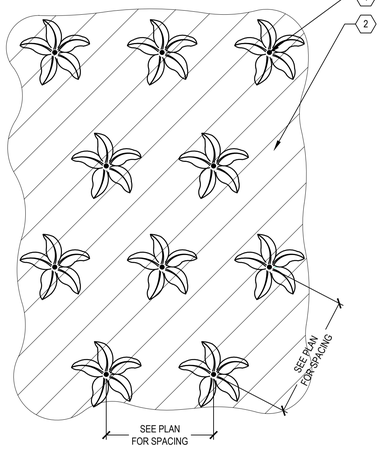
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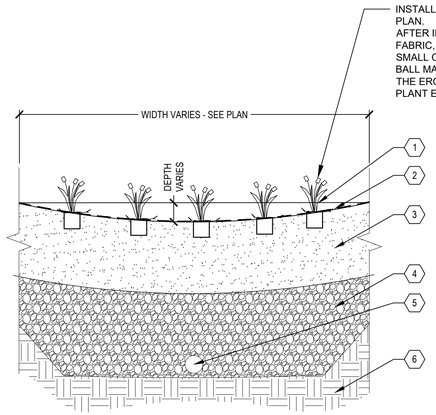
KEYED LEGEND

1. BIOFILTRATION BASIN PERENNIAL PLUGS (SEE PERENNIAL PLUGS PLANT LIST)
2. STRAW MULCH

PERENNIAL PLUG SPACING
1 PLUG PER 2.25 SQUARE FEET
(18" SPACING O.C.)
PLANT IN CLUSTERS OF 5-12 PLANTS PER SPECIES



PLAN VIEW



SECTION VIEW

KEYED LEGEND

1. BIOFILTRATION BASIN PLANTING (SEE PERENNIAL PLUGS PLANT LIST)
2. BIODEGRADABLE EROSION CONTROL MATTING ON BOTTOM AND SLOPES OF BASIN
3. ENGINEERED SOIL MIX - SEE CIVIL FOR DEPTH
4. STONE STORAGE LAYER - SEE CIVIL FOR DEPTH
5. PVC DRAIN TILE, SEE CIVIL PLAN.
6. PREPARED SUBGRADE

A BIOFILTRATION PLUG PLANTING
SCALE: N.T.S.

Botanical Name	Common Name	Quantity	Size	Comments	%	Total Quantity	Total Trays	Total Plants
Asclepias incarnata	Marsh Milkweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Aster Novae-angliae	New England Aster	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Carex stipdata	Common Fox Sedge	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Carex vulpinoidea	Brown Fox Sedge	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Eupatorium maculatum	Spotted Joe Pye Weed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Helenium autumnale	Sneezeweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Liatris spicata	Marsh Blazingstar	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Lobelia cardinalis	Cardinal Flower	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Monarda fistulosa	Wild Bergamot	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Panicum virgatum	Switchgrass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Ratibida pinnata	Yellow Coneflower	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Rudbeckia hirta	Black-Eyed Susan	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Scirpus atrovirens	Dark-Green Bulrush	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Scirpus cyperinus	Wool Grass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Spartina pactinata	Prairie Cordgrass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Tradescantia ohiensis	Ohio Spiderwort	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Verbena hastata	Blue Vervain	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Vernonia fasciculata	Ironweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
					100%	150		

C BIOINFILTRATION PLANTING PLUGS LIST
SCALE: N.T.S.

Botanical Name	Common Name	PLS Ounces/Acre
Wildflower Forbs:		
Asclepias incarnata	Marsh (Red) Milkweed	3.00
Aster ericoides	Heath Aster	0.10
Aster novae-angliae	New England Aster	1.50
Baptisia leucantha (alba)	White Wild Indigo	4.00
Eupatorium maculatum	Spotted Joe Pye Weed	0.80
Eupatorium perfoliatum	Boneset	0.50
Liatris pycnostachya	Prairie Blazing Star	2.50
Liatris spicata	Marsh Blazing Star	5.00
Lobelia cardinalis	Cardinal Flower	0.25
Lobelia siphilitica	Great Blue Lobelia	0.50
Monarda fistulosa	Wild Bergamot	1.50
Physostegia virginiana	Obedient Plant	1.50
Pycnanthemum virginianum	Mountain Mint	0.30
Ratibida pinnata	Yellow Coneflower	2.25
Rudbeckia hirta	Black-Eyed Susan	2.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	2.00
Solidago ohioensis	Ohio Goldenrod	0.50
Tradescantia ohiensis	Ohio Spiderwort	1.25
Verbena hastata	Blue Vervain	1.00
Vernonia fasciculata	Ironweed	1.00
	Totals =	31.45
Perennial Grasses, Sedges & Rushes:		
Bromus ciliatus	Fringed Brome	20.00
Calamagrostis canadensis	Blue Joint Grass	1.00
Carex bebbii	Bebb's Oval Sedge	2.00
Carex crawfordii	Crawford's Sedge	1.00
Carex crinita	Fringed Sedge	0.75
Carex stipata	Common Fox Sedge	1.50
Carex vulpinoidea	Brown Fox Sedge	1.00
Elymus canadensis	Canada Wild Rye	24.00
Elymus virginicus	Virginia Wild Rye	32.00
Glyceria grandis	Reed Manna Grass	1.00
Panicum virgatum	Switchgrass	3.50
Scirpus atrovirens	Dark-Green Bulrush	0.50
Scirpus cyperinus	Wool Grass	0.30
Sorghastrum nutans	Indian Grass	5.00
Spartina pectinata	Prairie Cordgrass	3.00
	Totals =	96.55

B RAINWATER RENEWAL NATIVE SEED MIX
SCALE: N.T.S.

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LANDSCAPE DETAILS

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2026.05.27

PLANTING QUALITY ASSURANCE

1. PLANTS ARE TO BE INSPECTED UPON DELIVERY TO PROJECT SITE AND THE LANDSCAPE ARCHITECT OR OWNER'S PROJECT REPRESENTATIVE MAY REJECT ANY SPECIMENS NO LONGER MEETING THE SPECIFIED STANDARDS OR THAT HAVE BEEN DAMAGED IN TRANSIT.
2. ALL PLANT MATERIAL SHALL BE TRUE TO SPECIES AND VARIETY/HYBRID/CULTIVAR SPECIFIED, AND NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES, AND UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE OF THE SITE LOCATION. SPECIMENS NURSERY-DUG TO BE REPLANTED SHALL HAVE BEEN FRESHLY DUG AND PROPERLY PREPARED FOR PLANTING.
3. TREES:
   - 3.1. SHALL BE TRAINED IN DEVELOPMENT AND APPEARANCE AS TO BE SUPERIOR IN FORM, COMPACTNESS AND SYMMETRY. TREES WITH MULTIPLE LEADERS, UNLESS SPECIFIED OTHERWISE, AND SHRUBS WITH DAMAGED OR CUT MAINSTEM(S), WILL BE REJECTED.
   - 3.2. WITH A DAMAGED, CUT OR CROOKED LEADER, ABRASION OF BARK, SUNSCALD, FROST CRACK, DISFIGURING KNOTS, INSECTS (INCLUDING EGGS AND LARVAE) OR INSECT DAMAGE, CANKERS/CANKEROUS LESIONS OR FUNGAL MATS, MOLD, PREMATURELY-OPENED BUDS, OR CUTS OF LIMBS OVER ¾" DIAMETER THAT ARE NOT COMPLETELY CALLUSED WILL BE REJECTED.
   - 3.3. SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS, AND BE FREE FROM PHYSICAL DAMAGE OR OTHER HINDRANCES TO HEALTHY GROWTH.
   - 3.4. BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH SOLID BALLS OF A DIAMETER NOT LESS THAN THAT RECOMMENDED BY THE AMERICAN STANDARDS FOR NURSERY STOCK, AND OF SUFFICIENT DEPTH TO INCLUDE BOTH FIBROUS AND FEEDING ROOTS. BALLS SHALL BE SECURELY WRAPPED WITH BURLAP, AND TIGHTLY BOUND WITH ROPE OR TWINE. NO PLANTS SHALL BE BOUND WITH ROPE OR WIRE IN SUCH A MANNER AS TO DAMAGE BARK OR BREAK BRANCHES. THE ROOT FLARE SHOULD BE WITHIN THE TOP 2" OF THE SOIL BALL. BALLED AND BURLAPPED PLANTS WILL NOT BE ACCEPTED IF THE BALL IS DRY, CRACKED, OR BROKEN BEFORE OR DURING PLANTING.
4. PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED WITHIN THE PLANT SCHEDULE.

PLANTING PROJECT CONDITIONS:

1. VERIFY SERVICE AND UTILITY LOCATIONS, AND DIMENSIONS OF CONSTRUCTION CONTIGUOUS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK.
2. INTERRUPTION OF EXISTING SERVICES OR UTILITIES; DO NOT INTERRUPT SERVICES OR UTILITIES UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SERVICES OR UTILITIES ACCORDING TO REQUIREMENTS INDICATED:
   - 2.1. NOTIFY OWNER'S PROJECT REPRESENTATIVE NO FEWER THAN TWO DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF EACH SERVICE OR UTILITY.
   - 2.2. DO NOT PROCEED WITH INTERRUPTION OF SERVICES OR UTILITIES WITHOUT REPRESENTATIVE'S WRITTEN PERMISSION.
3. PLANTING RESTRICTIONS: PLANTING SHALL OCCUR DURING THE FOLLOWING ACCEPTABLE INSTALLATION PERIODS:
   - 3.1. DECIDUOUS TREES AND SHRUBS - APRIL 15 TO OCTOBER 15.
   - 3.2. NATIVE SEEDING AND TURFGRASS: APRIL 15 - OCTOBER 15
4. WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
5. CONTRACTOR SHALL PROTECT ALL EXISTING AND/OR NEWLY INSTALLED PLANTS, LAWNS, AND GRASS AREAS FROM DAMAGE AT ALL TIMES. DAMAGED PLANTS, LAWNS OR GRASS AREAS SHALL BE REPLACED OR TREATED AS REQUIRED TO CONFORM TO SPECIFICATIONS HEREIN FOR FRESH STOCK. WORK AREA SHALL BE KEPT CLEAN AND ORDERLY DURING THE INSTALLATION PERIOD. UNDER NO CONDITION SHALL DEBRIS FROM PLANTING ACTIVITIES RESULT IN A SAFETY HAZARD ON-SITE OR ADJACENT OFF-SITE PROPERTY. DAMAGE TO SITE IMPROVEMENTS OR ADJACENT LANDSCAPES INCURRED AS A RESULT OF PLANTING OR REPLACEMENT OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR THAT CAUSES THE DAMAGE AT NO COST TO THE OWNER.
6. EXAMINE AREAS TO RECEIVE PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
   - 6.1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN PLANTING AREAS.
   - 6.2. DO NOT MIX OR PLACE SOILS IN FROZEN, WET, OR MUDDY CONDITIONS.

PLANTING DELIVERY, STORAGE, & HANDLING:

1. BULK MATERIALS;
   - 1.1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
2. DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, WIND BURN, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF PLANTS DURING SHIPPING AND DELIVERY. DO NOT DROP PLANTS DURING DELIVERY AND HANDLING.
3. HANDLE PLANTING STOCK BY ROOT BALL.
4. DELIVER PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY, SET PLANTS AND TREES IN SHADED LOCATION, PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
   - 4.1. SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, PEAT MOSS, SAWDUST, OR OTHER ACCEPTABLE MATERIAL.
   - 4.2. WATER ROOT SYSTEMS OF PLANTS STORED ON-SITE DEEPLY AND THOROUGHLY WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST, BUT NOT OVERLY WET CONDITION.

EXCAVATION FOR TREES & SHRUBS

1. EXCAVATE CIRCULAR PLANTING PITS AS INDICATED IN DRAWINGS. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM RAISED SLIGHTLY TO SUPPORT ROOT BALL AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARRED OR SMOOTHED DURING EXCAVATION.
   - 1.1. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED STOCK.
   - 1.2. DO NOT EXCAVATE DEEPER THAN DEPTH OF THE ROOT BALL, MEASURED FROM THE ROOT FLARE TO THE BOTTOM OF THE ROOT BALL.
   - 1.3. IF AREA UNDER THE PLANT WAS INITIALLY DUG TOO DEEP, ADD SOIL TO RAISE IT TO CORRECT LEVEL AND THOROUGHLY TAMP THE ADDED SOIL TO PREVENT SETTLING.
   - 1.4. MAINTAIN REQUIRED ANGELS OF REPOSE OF ADJACENT MATERIALS AS SHOWN IN DRAWINGS. DO NOT EXCAVATE SUBGRADES OF ADJACENT PAVING, STRUCTURES, HARDSCAPES, OR OTHER NEW OR EXISTING IMPROVEMENTS.
   - 1.5. MAINTAIN SUPERVISION OF EXCAVATIONS DURING WORKING HOURS.
   - 1.6. KEEP EXCAVATIONS COVERED OR OTHERWISE PROTECTED WHEN UNATTENDED BY INSTALLER'S PERSONNEL.
2. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY BE USED AS PLANTING SOIL IF THEY CONFORM TO THE REQUIREMENTS LISTED IN THESE SPECIFICATIONS.
3. NOTIFY OWNER'S PROJECT REPRESENTATIVE IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.
4. NOTIFY OWNER'S PROJECT REPRESENTATIVE IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PLANTING PITS.

TREE & SHRUB PLANTING

1. BEFORE PLANTING VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS. PLANT MATERIAL WITHOUT ROOT FLARE VISIBLE OR PLANTED TOO LOW WILL BE RE-PLANTED AT THE REQUEST OF THE LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
2. PLANTS FOUND TO HAVE STEM GIRDLING ROOTS AND/OR KINKED ROOTS AT THE TIME OF PLANTING WILL BE REJECTED AND REPLACEMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
3. REMOVE ALL TWINE, STRING, WIRE, AND ALL OTHER NON-BIODEGRADABLE MATERIAL ENTIRELY FROM ROOT BALL AREA.
4. REMOVE ONLY DEAD, DYING, OR BROKEN BRANCHES. DO NOT PRUNE FOR SHAPE. DO NOT CUT TREE LEADERS.
5. SET BALLED AND BURLAPPED STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 2 INCHES ABOVE ADJACENT FINISH GRADES.
   - 5.1. USE SOIL MATERIALS FROM EXCAVATION FOR BACKFILL.
   - 5.2. CAREFULLY CUT AND REMOVE BURLAP, ROPE, AND WIRE BASKETS FROM THE ENTIRE ROOT BALL. REMOVE PALLETS, IF ANY, BEFORE SETTING. DO NOT USE PLANTING STOCK IF ROOT BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.
   - 5.3. BACKFILL AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED.
   - 5.4. CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL.

TREE & SHRUB MATERIAL:

1. GENERAL: FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT SCHEDULE SHOWN AND DRAWINGS.; AND WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
   - 1.1. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK"); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN ¾" IN DIAMETER; OR WITH STEM GIRDLING ROOTS WILL BE REJECTED.
   - 1.2. COLLECTED STOCK: DO NOT USE PLANTS HARVESTED FROM THE WILD, FROM NATIVE STANDS, FROM AN ESTABLISHED LANDSCAPE PLANTING, OR NOT GROWN IN A STATE CERTIFIED NURSERY.
   - 1.3. PLANT MATERIAL SHALL BE PROVIDED IN THE CONTAINER TYPE INDICATED IN THE DRAWINGS (B&B, CONTAINER, BARE ROOT, ETC.), UNLESS THE CONTRACTOR RECEIVES WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT THAT SUBSTITUTION OF CONTAINER TYPE IS ACCEPTABLE.
2. FURNISH TREES WITH ROOT BALLS MEASURED FROM TOP OF ROOT BALL. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.
3. SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD.

PLANTING SOIL:

PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE WIDTH OF LANDSCAPE AREAS, AND A MINIMUM OF 3X THE DIAMETER OF THE ROOT BALL LENGTHWISE

1. INSTALL PLANTING SOIL FOR PLANT BEDS IN 6" LIFTS, MINIMUM 8" DEPTH.
2. DO NOT APPLY PLANTING SOIL TO SATURATED OR FROZEN SUBGRADES.
3. PLANTING SOIL SHALL BE A MIX OF 6-PARTS TOPSOIL, 1-PART COMPOST (APPROVED FOR USE ON THE PROJECT). THOROUGHLY BLEND PLANTING SOIL OFF-SITE BEFORE SPREADING.
   - 3.1. THE PROJECT WILL ACCEPT ONLY CLEAN, SALVAGED OR IMPORTED TOPSOIL CAPABLE OF PASSING THE 1" SIEVE, FREE OF ROCKS, DEBRIS, AND OF NOXIOUS WEEDS.
   - 3.2. STRIPPED, SALVAGED, OR MINED TOPSOIL MUST BE TAKEN FROM THE TOP 6-INCHES OF THE A-HORIZON, HAVING A DARK BROWN TO BLACK COLOR WITH A GRANULAR STRUCTURE AND CLAY CONTENT OF LESS THAN 25%, VERIFIED WITH A RIBBON TEST THAT YIELDS NO MORE THAN 1-INCH.

METAL EDGING

1. STANDARD PROFILE, COMMERCIAL-GRADE, EXTRUDED ALUMINUM EDGING, FABRICATED IN STANDARD LENGTHS WITH INTERLOCKING SECTIONS WITH LOOPS STAMPED FROM FACE OF SECTIONS TO RECEIVE STAKES.
   - 1.1. BASIS OF DESIGN: CLEANLINE BY PERMALOC OR APPROVED EQUAL.
   - 1.2. EDGING SIZE: 3/16-INCH-WIDE BY 5.5 INCHES DEEP
   - 1.3. STAKES: ALUMINUM, ASTM 221, ALLOY 6061-T6, 18-INCHES LONG.
   - 1.4. FINISH: BLACK DURAFLEX
   - 1.5. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: CURV-RITE, INC., PERMALOC CORPORATION, RUSSELL, J.D. COMPANY (THE), SURE-LOC EDGING CORPORATION
2. INSTALL METAL EDGE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ENSURE THAT METAL EDGING IS PROPERLY INSTALLED AND SECURED BEFORE INSTALLING STONE MULCH.

STONE MULCH MATERIAL & INSTALLATION:

1. SHALL BE HARD, DURABLE, STONE, WASHED FREE OF LOAM, SAND, CLAY, AND OTHER FOREIGN SUBSTANCES, OF THE FOLLOWING TYPE, SIZE RANGE, AND COLOR:
   - 1.1. MATERIAL: ANGULAR WASHED STONE.
   - 1.2. SIZE: 1-1/2" DIAMETER
   - 1.3. DEPTH: 3" MINIMUM DEPTH PLACED IN ONE LIFT
   - 1.4. COLOR RANGE: BLEND OF DARK GREY & BLUE TONES
   - 1.5. BASIS OF DESIGN: 1-1/2" 'AMERICAN HERITAGE' AGGREGATE BY COUNTY MATERIALS.
2. LIGHTLY COMPACT AREAS TO RECEIVE STONE MULCH
3. INSTALL WEED BARRIER FABRIC IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS; COMPLETELY COVER AREA TO BE MULCHED, OVERLAPPING EDGES OF FABRIC LENGTHS A MINIMUM OF 6-INCHES AND SECURING SEAMS WITH GALVANIZED PINS. WEED BARRIER FABRIC SHALL BE WRAPPED VERTICALLY UP THE OUTSIDE EDGES OF SURROUNDING CONCRETE FLATWORK OR CURB AND SECURED IN PLACE. HOLD FABRIC 2" CLEAR OF TOP OF ADJACENT CURB AND CONCRETE FLATWORK SO IT IS NOT VISIBLE FROM SURFACE.
4. PLACE AND FINISH STONE MULCH AS INDICATED IN DRAWINGS, ENSURING A SMOOTH, LEVEL TOP SURFACE FOR ALL STONE MULCH AREAS HELD APPROXIMATELY 1/2" BELOW THE TOP SURFACE OF ADJACENT PAVED AREAS OR METAL EDGING.

BARK MULCH MATERIAL & INSTALLATION

1. TWICE-SHREDDED HARDWOOD BARK MULCH TO BE PROVIDED AS TOP-DRESSING FOR ALL AT-GRADE PLANTING BEDS IN LOCATIONS INDICATED ON PLANTING PLANS.
   - 1.1. SIZE RANGE: MAXIMUM 2.5" TO 3"
   - 1.2. COLOR: NATURAL, UN-DYED
   - 1.3. PROVIDE 3" DEPTH MULCH FOR ALL PLANTING BEDS INDICATED AS BARK MULCH PLANTING BED.
2. KEEP BARK MULCH 2" CLEAR OF ALL STEMS OF PLANT MATERIAL.

TURF SEEDING:

1. DELIVERY:
   - 1.1. DELIVER PACKAGED SEED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS LABELED AS TO NAME AND ADDRESS OF SUPPLIER; SPECIFIC BLEND OF SEED; AND INDICATION OF CONFORMANCE WITH STATE AND FEDERAL LAWS, AS APPLICABLE.
2. PROJECT CONDITIONS:
   - 2.1. SEED DURING ONE OF THE FOLLOWING PERIODS.
     - 2.1.1. SPRING SEEDING SEASON: APRIL 1 TO JUNE 15.
     - 2.1.2. FALL SEEDING SEASON: AUGUST 15 TO OCTOBER 1.
3. PRODUCTS
   - 3.0.1. PROVIDE THE FOLLOWING FOR TURFGRASS SEED BASIS OF DESIGN: REINDEERS DELUXE 50 SEED MIX OR APPROVED EQUAL
   - 3.0.2. TURFGRASS SEED MIX TO BE FERTILIZED WITH 'SCOTT'S STARTER FERTILIZER' BY THE 'SCOTTS MIRACLE-GRO COMPANY' OR APPROVED EQUAL.
4. PROCEED WITH INSTALLATION ONLY AFTER SATISFACTORY CONDITIONS HAVE BEEN MET.
5. REMOVE ANY AND ALL UNDESIRABLE VEGETATION THAT HAS GERMINATED IN THE AREAS TO BE SEEDED OR SODDED. CONTRACTOR SHALL EVALUATE THE USE OF A BROAD SPECTRUM, NON-PERSISTENT GLYSOPHATE-BASED HERBICIDE BASED ON SITE CONDITIONS.
   - 5.1. DO NOT APPLY SEED UNTIL FIVE TO SEVEN DAYS AFTER LAST HERBICIDE TREATMENT.
6. FINISH GRADING: GRADE AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS ½ INCH OF FINISH ELEVATION. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISH GRADING TO AREAS THAT CAN BE IMMEDIATELY SEEDED AND STABILIZED WITH EROSION CONTROL MATERIAL
7. MOISTEN PREPARED AREA BEFORE SEEDING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE DRY BEFORE SEEDING OR SODDING. DO NOT CREATE MUDDY SOIL.
8. NO SEEDING SHALL OCCUR ON FROZEN GROUND OR AT TEMPERATURES LOWER THAN 32 DEGREES FARENHEIT OR IN THE FOLLOWING 5 DAYS AFTER PLANNED SEEDING OR SODDING.
9. SEEDING RATES TO BE PERFORMED IN ACCORDANCE WITH SEED SUPPLIER RECOMMENDATIONS.

NATIVE SEEDING:

1. PROVIDE THE FOLLOWING SEED TYPES FROM: AGRECOL LLC 10101 N. CASEY ROAD EVANSVILLE, WISCONSIN 53536:
   - 1.1.1. AGRECOL'S 'RAINWATER RENEWAL SEED MIX' FOR AREAS SHOWN AS 'RAINWATER RENEWAL NATIVE SEED MIX'
   - 1.2. REFER TO DETAIL B ON SHEET L201, FOR SEED MIX COMPOSITION.
2. REFER TO CIVIL PLANS FOR LOCATIONS AND EXTENTS OF EROSION CONTROL MAT. IN GENERAL, PROVIDE CURLEX NET FREE FOR SEEDED AREAS WITH SLOPES OF 4:1 OR LESS AND CURLEX II EROSION CONTROL MAT IN ALL OTHER SEEDED AREAS. PROVIDE MANUFACTURER'S STANDARD BIODEGRADABLE ANCHORING STAKES (OR ALTERNATIVE SOURCE FOR BIODEGRADABLE STAKES, IF APPROVED IN WRITING BY OWNER'S REPRESENTATIVE). INSTALL PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
3. WITHIN 4 WEEKS FOLLOWING THE ISSUANCE OF THE NOTICE TO PROCEED, SUBMIT NAME AND LOCATION OF SEED SUPPLIER(S) AND A COMPLETE LIST OF EACH SEED MIX BY WEIGHT AND PROPORTION THAT IS BEING SUPPLIED BEFORE THE SEED MIX IS ORDERED. SUBSTITUTIONS WILL NOT BE PERMITTED. PROVIDE GEOGRAPHIC ORIGINS OF EACH SEED SPECIES.
4. ALL SEED MATERIAL SHALL ORIGINATE FROM LOCAL SOURCES TO THE EXTENT POSSIBLE, SPECIFICALLY FROM USDA PLANT HARDINESS ZONE 4 OR LOWER.
5. ALL SEEDING ZONE BOUNDARIES SHALL BE SURVEYED AND STAKED ON THE PROJECT SITE BY THE CONTRACTOR. NO SEED MIX SHALL BE INSTALLED UNTIL THE GRADE PREPARATION AND LAYOUT HAVE BEEN APPROVED.
6. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST SEED LIMITS WITHOUT ADJUSTING TOTAL SEEDED AREAS, TO MEET FIELD CONDITIONS, AT NO ADDITIONAL COST TO THE OWNER.
7. COORDINATION IS REQUIRED TO ENSURE RAINFALL/GROUNDWATER SEEPAGE DOES NOT RESULT IN SOIL MOISTURE CONDITIONS THAT WILL CAUSE EXCESSIVE RUTTING DURING SEEDING AND MULCHING OPERATIONS. FAILURE TO MEET THIS REQUIREMENT WILL NOT BE AN ACCEPTABLE REASON FOR NOT INSTALLING THE SEED AS SPECIFIED.
8. WHERE SEEDING OCCURS IN CLOSE PROXIMITY TO OTHER SITE IMPROVEMENTS OR AREAS TO REMAIN UNDISTURBED SUCH AS EXISTING WETLANDS AND UPLANDS AREAS, CARE SHALL BE TAKEN TO NOT DISTURB THE EXISTING CONDITIONS. ANY AREAS DAMAGED DURING PLANTING OPERATIONS SHALL BE PROMPTLY RESTORED TO THEIR ORIGINAL CONDITION AT NO COST TO THE OWNER.
9. FOLLOWING NATIVE SEED MIX INSTALLATION, THE LANDSCAPE ARCHITECT AND CONTRACTOR SHALL CONDUCT A SUBSTANTIAL COMPLETION INSPECTION ON ALL SEEDED AREAS. (SEE WARRANTY, MAINTENANCE AND ACCEPTANCE PERIOD)
10. GENERAL INSTALLATION:
    - 10.1. SEEDING OF NATIVE SEED MIXES SHALL OCCUR IN THE EARLY SPRING:
      - 10.1.1. APRIL 15 THROUGH MAY 31.
    - 10.2. DO NOT SOW SEED DURING ADVERSE WEATHER OR WHEN WIND SPEEDS EXCEED TEN MILES PER HOUR.
    - 10.3. DO NOT SOW SEED IN AREAS WHERE STANDING WATER IS PRESENT.
11. GRADE PREPARATION:
    - 11.1. SUBGRADE AND FINISH GRADE PREPARATION SHALL BE IN ACCORDANCE WITH SITE EARTHWORK REQUIREMENTS, AND TOPSOIL SHALL BE A MINIMUM 4 INCHES DEEP IN NON-BIORETENTION AREAS AFTER LIGHT COMPACTION TO PREVENT SETTLEMENT. BIORETENTION AREAS SHALL HAVE SOIL MIX PLACED PER DETAIL.
    - 11.2. PRIOR TO SEEDING, REPAIR ANY RUTS, RILLS, OR GULLIES GREATER THAN 2 INCHES IN DEPTH TO CREATE SMOOTH CONTINUOUS GRADES.
    - 11.3. IF THE PREPARED GRADE IS ERODED OR COMPACTED BY RAINFALL OR OTHER REASONS, REWORK THE TOPSOIL TO THE FULL 4-INCH DEPTH.
    - 11.4. IMMEDIATELY BEFORE SEEDING, SCARIFY, LOOSEN, FLOAT, AND DRAG TOPSOIL AS NECESSARY TO BRING IT TO THE PROPER CONDITION. REMOVE FOREIGN MATTER LARGER THAN 1-INCH DIAMETER.
    - 11.5. NO FURTHER GRADE PREPARATION IS REQUIRED.
12. IF REQUIRED DUE TO CONSTRUCTION SEQUENCING, SEED THE SITE WITH A TEMPORARY COVER CROP TO HOLD IT FOR SPRING SEEDING AS FOLLOWS:
    - 12.1. IF SEEDED MAY 15 THROUGH SEPTEMBER 1: MIX OF 32 POUNDS PER ACRE OF SEED OATS (AVENA SATIVA) AND 5 POUNDS PER ACRE OF ANNUAL RYE (LOLLIUM MULTIFLORUM).
    - 12.2. IF SEEDED SEPTEMBER 1 THROUGH OCTOBER 15: 20 POUNDS PER ACRE WINTER WHEAT (TRITICUM AESTIVUM) OR REGREEN STERILE WHEAT/WHEATGRASS HYBRID (TRITICUM AESTIVUM X ELYTRIGIA ELONGATAFROM).
13. BROADCASTING:
    - 13.1. FOR SPRING SEEDING OF NATIVE SEED, SOW SEED DIRECTLY ONTO BARE GROUND OR GROUND WHERE THE PREVIOUS YEAR'S PLANT STUBBLE HAS BEEN CUT TO 2-INCH HEIGHT.
    - 13.2. INCREASE THE VOLUME OF THE BROADCASTED SEED MIX BY MIXING IT WITH AN APPROVED CARRIER. ACCEPTABLE CARRIER MATERIAL INCLUDES MOISTENED COMPOST, PEAT MOSS, CORN COB BLAST MEDIA, OR COARSE-GRADE VERMICULITE. SAND AND SAWDUST ARE UNACCEPTABLE CARRIER MATERIALS. USE ONE BUSHEL BASKET OF CARRIER PER 1,000 SQUARE FEET OF AREA TO BE SEEDED (A BUSHEL EQUALS 8 GALLONS OR 1.24 CUBIC FEET).
      - 13.2.1. USE HALF OF THE TOTAL SEED QUANTITY AND CROSS THE ENTIRE AREA TO BE SEEDED, EVENLY SPREADING THE SEED. WALK PERPENDICULAR TO THE ORIGINAL SEEDING AND EVENLY BROADCAST THE SECOND HALF OF THE SEED.
      - 13.2.2. LIGHT SEEDS, AWNED SEEDS, OR BEARDED SEEDS TEND TO RISE TO THE TOP OF THE SPREADER, THEREFORE, MIX SEED ACCORDINGLY AS PLANTING COMMENCES.
      - 13.2.3. RAKE OR DRAG THE SEED INTO THE SOIL, BUT NOT MORE THAN 1/4-INCH DEEP. ROLL THE AREA WITH A ROLLER TO FIRM THE SEED INTO THE SOIL. ROLLING IS NOT NECESSARY ON DORMANT SEEDINGS.
14. DRILL SEEDER OR DROP SEEDER/SPREADER:
    - 14.1. FOR SPRING DRILL SEEDING, SOW SEED DIRECTLY ONTO BARE GROUND OR GROUND WHERE THE PREVIOUS YEAR'S PLANT STUBBLE HAS BEEN CUT TO 2-INCH HEIGHT; FOR SPRING DROP SEEDING, CULTIVATE THE GROUND BEFORE INSTALLING SEED MIX.
    - 14.2. CHECK THE EQUIPMENT FREQUENTLY TO ENSURE THE SEED IS DISPERSING EVENLY AND IS NOT CLOGGING.
    - 14.3. IF THE EQUIPMENT IS NOT EQUIPPED WITH A ROLLER, PASS OVER THE SEEDED AREA WITH A ROLLER TO FIRM THE SEED INTO THE SOIL. ROLLING IS NOT NECESSARY WITH DORMANT SEEDING.
      - 14.3.1. DO NOT MIX THE NATIVE SEED WITH ANY CARRIER MATERIAL.
      - 14.3.2. EVENLY DISTRIBUTE THE SEED ACROSS THE ENTIRE SITE TO BE SEEDED.
    - 14.4. KEEP THE TOPSOIL MOIST (TO A DEPTH OF 3 INCHES) FOR 3-6 WEEKS FOLLOWING SEEDING; AFTERWARD, APPLY ONE INCH OF WATER DURING THE GROWING SEASON IF RAIN HAS NOT OCCURRED FOR MORE THAN ONE WEEK. DO NOT APPLY WATER WITH SUCH A FORCE AS TO DISTURB SEED, SEEDLINGS, AND/OR TOPSOIL, OR THAT WOULD RUN OFF SOIL SURFACE.
15. ALL AREAS OVER WHICH HAULING OPERATIONS HAVE BEEN CONDUCTED SHALL BE KEPT CLEAN ON A DAILY BASIS. PROMPTLY REMOVE ALL MATERIALS SPILLED ON PAVEMENT.
16. UPON COMPLETION OF SEED INSTALLATION, REMOVE FROM THE SITE AND LEGALLY DISPOSE OF ALL TRASH AND DEBRIS INCLUDING ANY MATERIAL REMOVED DURING GRADE PREPARATION.
17. RESTORE ANY EXISTING AREAS DAMAGED BY OPERATIONS UNDER THE CONTRACT. RESTORATION SHALL INCLUDE FINISH GRADING AND SEEDING AS REQUIRED TO MATCH EXISTING GRADE AND/OR WETLANDS, AND MAINTENANCE OF RESTORED AREAS.
18. ANY DAMAGE BY THE CONTRACTOR TO ESTABLISHED OR NEWLY SEEDED AREAS NOT WITHIN THE PROJECT SCOPE OF WORK SHALL BE REPAIRED AND RESEEDED AT NO COST TO THE OWNER.

CLEAN-UP AND PROTECTION

1. DURING PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
2. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.
3. AFTER INSTALLATION REMOVE ALL NURSERY TAGS, NURSERY STAKES, TIE TAPE, LABELS, WIRE, STRING, AND OTHER DEBRIS FROM PLANT MATERIAL, PLANTING AREAS, AND PROJECT SITE.

VEGETATION MONITORING AND MANAGEMENT

MANAGEMENT AND MONITORING:
THE MANAGEMENT AND MONITORING OF NATIVE PLANTINGS (INCLUDING SEED MIXES, FORBS AND PLUGS) SHOULD BE DIRECTED TOWARD THE GOAL OF CREATING A STABLE, NATIVE PLANT COMMUNITY. INVASIVE AND WEEDY PLANT SPECIES WILL NEED TO BE CONTROLLED UNTIL THE DESIRED NATIVE PLANT COMMUNITIES ARE ESTABLISHED. THIS TYPICALLY WILL TAKE THREE (3) TO FIVE (5) YEARS AFTER SOWING OR PLUG INSTALLATION.

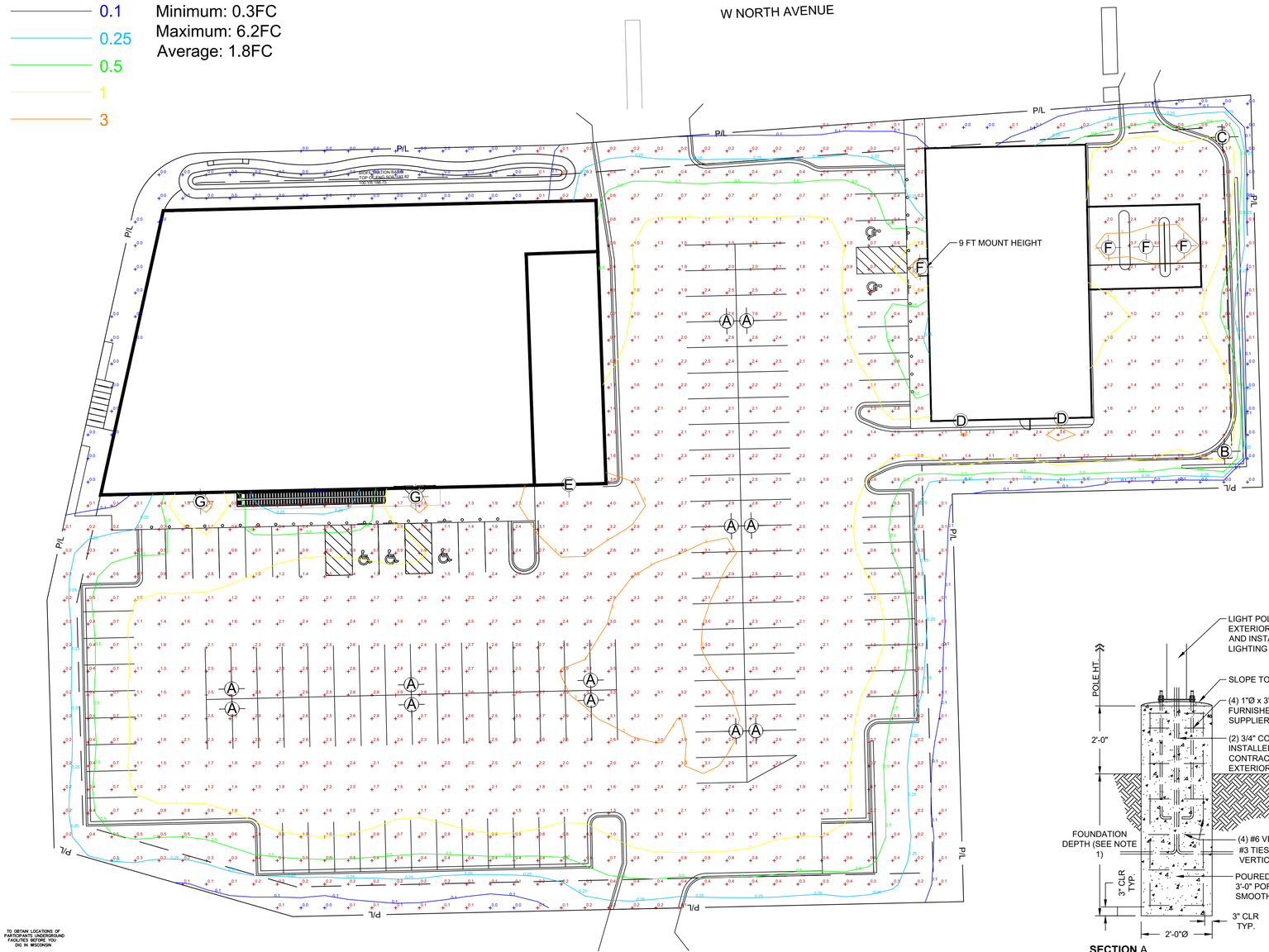
UNDESIRABLE PLANT CONTROL:
OVERALL MANAGEMENT OF VEGETATED AREAS MAY INCLUDE, BUT ARE NOT LIMITED TO: RESEEDING OR REPLANTING DAMAGED OR NON-ACTIVE GROWTH AREAS, IRRIGATION, STRATEGIC MOWING TO REDUCE WEED COVER AND PREVENT WEED SEED SET, REMOVAL OF TREE SEEDLINGS, TARGETED HERBICIDE APPLICATION(S), AND MECHANICAL WEED CONTROL (HAND PULLING AND SEED HEAD REMOVAL). SELECTED HERBICIDE APPLICATIONS SHOULD BE DONE SPARINGLY AND ONLY WHEN NECESSARY. SEL

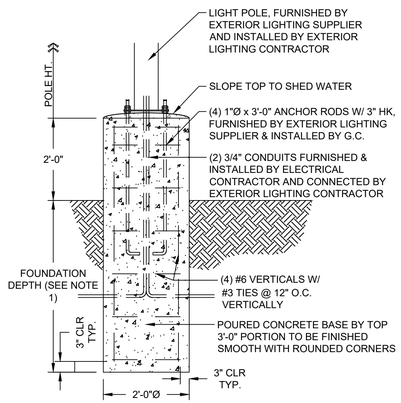
2026.05.27

Label	Quantity	Catalog Number	Description	Lamp	Mount Height	Lamp Lumens	Watts
A	12	DSX0 LED P2 40K 70CRI T5LG	D-Series Size 0 Area Luminaire P2 Performance Package Type 5 Low G Rating	4000K CCT 70 CRI	23FT Pole, 2FT Base	6472.1	45.1
B	1	DSX0 LED P2 40K 70CRI LCCO	D-Series Size 0 Area Luminaire P2 Performance Package Left Corner Cutoff Extreme Backlight Control	4000K CCT 70 CRI	23FT Pole, 2FT Base	4535.9	45.1
C	1	DSX0 LED P2 40K 70CRI RCCO	D-Series Size 0 Area Luminaire P2 Performance Package Right Corner Cutoff Extreme Backlight Control	4000K CCT 70 CRI	23FT Pole, 2FT Base	4535.9	45.1
D	2	WDGE2 LED P1 40K 70CRI T2M	WDGE2 LED WITH P1 - PERFORMANCE PACKAGE TYPE 2 MEDIUM OPTIC	4000K CCT 70 CRI	8FT	1426.9	11.2
E	1	WDGE3 LED P1 40K 70CRI R4	WDGE3 LED WITH P1 - PERFORMANCE PACKAGE TYPE 4 OPTIC	4000K CCT 70 CRI	16FT	7752.9	51.2
F	4	WF4 SWW5 90CRI 4000K	WF 4 SWW5 4in Flat Wafer	4000K 5CCT 90CRI	11FT	693.6	8.9
G	2	WF6 SWW5 90CRI 4000K	WF 6 SWW5 6in Flat Wafer	4000K 5CCT 90CRI	11FT	986.5	13.1

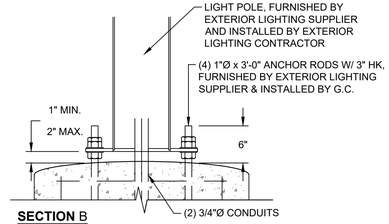
0.1
0.25
0.5
1
3

Minimum: 0.3FC
Maximum: 6.2FC
Average: 1.8FC

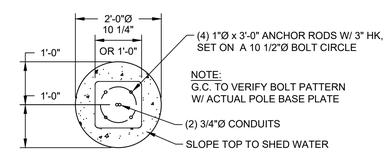




SECTION A



SECTION B



PLAN

NOTES:
1. FOUNDATION DEPTH AS REQUIRED BY CODE OR TO ACHIEVE ADEQUATE SOIL BEARING CAPACITY AS DETERMINED IN A SOILS REPORT BY A LICENSED GEOTECHNICAL ENGINEER, 5'-0" DEPTH MINIMUM. IF THE EXISTING EARTH IS NON-VIRGIN FILL MATERIAL OR OTHERWISE UNSUITABLE CONSULT A LICENSED GEOTECHNICAL ENGINEER.
2. PROVIDE CONCRETE MIXTURE IN ACCORDANCE WITH ACI301.
   -f'c = 3000psi
   -AIR ENTRAINMENT = 6% +/- 1%
   -WATER TO CEMENT RATIO = 0.45 MAX.
3. ANCHOR RODS SHALL BE SET IN ACCORDANCE WITH THE AISC "CODE OF STANDARD PRACTICE."
4. COMPLY WITH THE FOLLOWING ACI GUIDES:
   -ACI304 FOR CONCRETE PLACEMENT
   -ACI306.1 FOR COLD WEATHER PLACEMENT
   -ACI301 FOR HOT WEATHER PLACEMENT
   -ACI308.1 FOR CONCRETE CURING
5. COMPLY WITH CRSI's "MANUAL OF STANDARD PRACTICE" AND ACI318 FOR PLACING REINFORCEMENT.

TO OBTAIN LOCATIONS OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

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1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

LIGHTING PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO.	REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

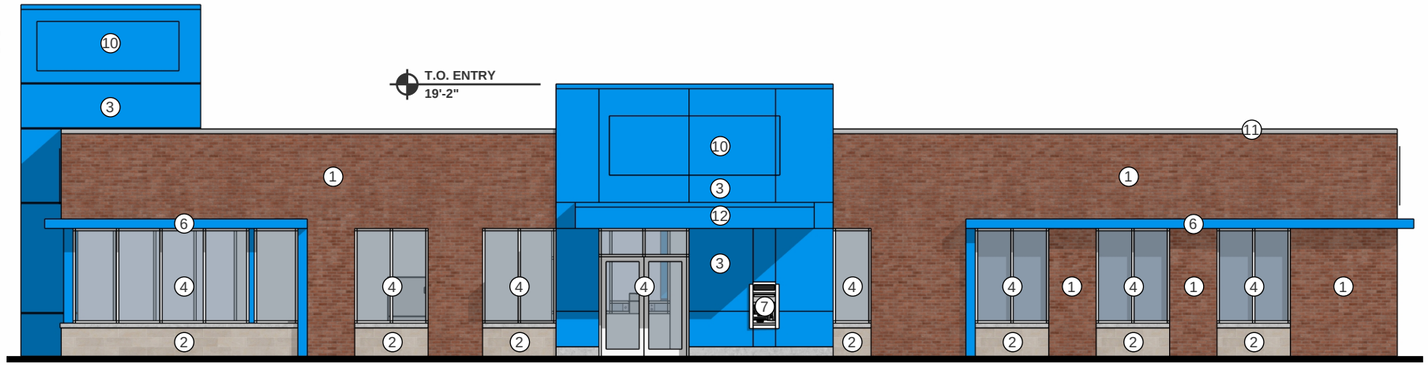
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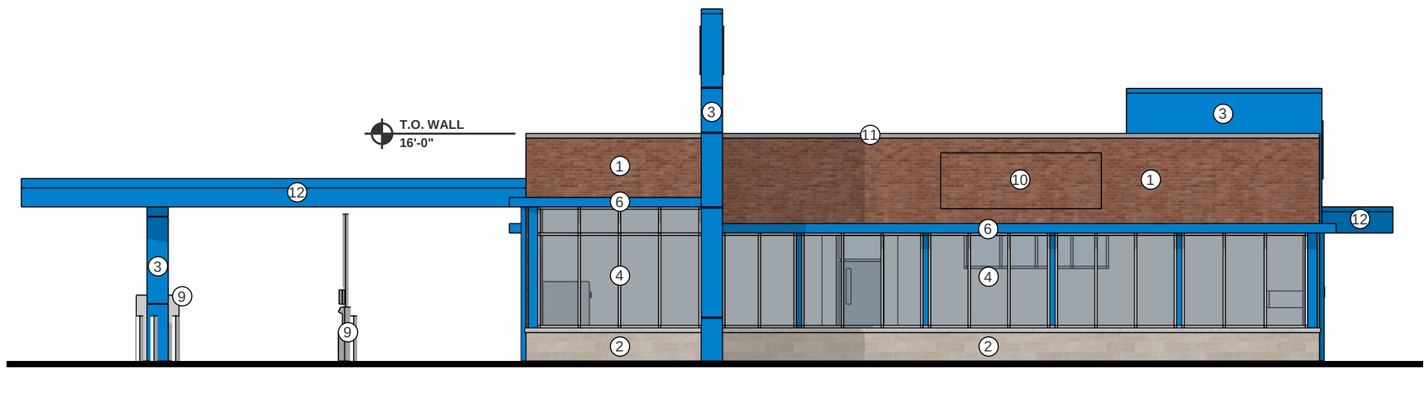
i:\luther group\25057 - wauwatosa grocery\060 CAD\030_Production Sheets\100_Civil\LT-100 Lighting Plan.dwg

BUILDING 2

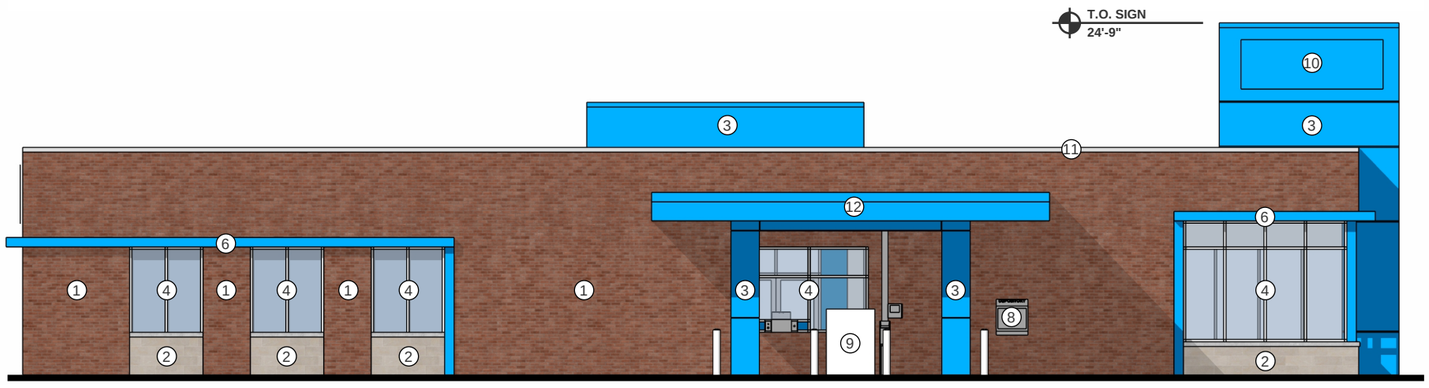
West
3/32" = 1'-0"



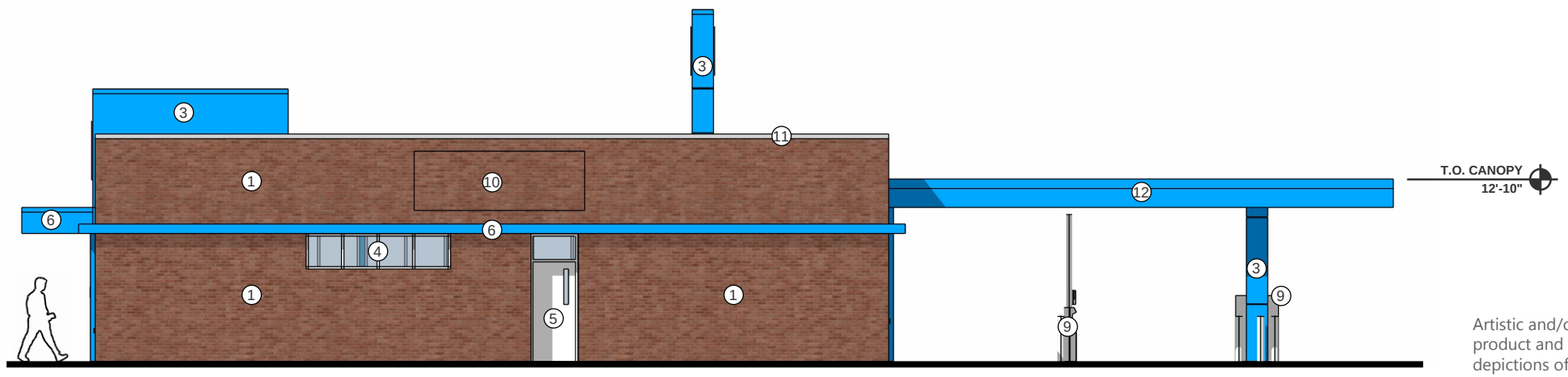
North
3/32" = 1'-0"



East
3/32" = 1'-0"



South
3/32" = 1'-0"



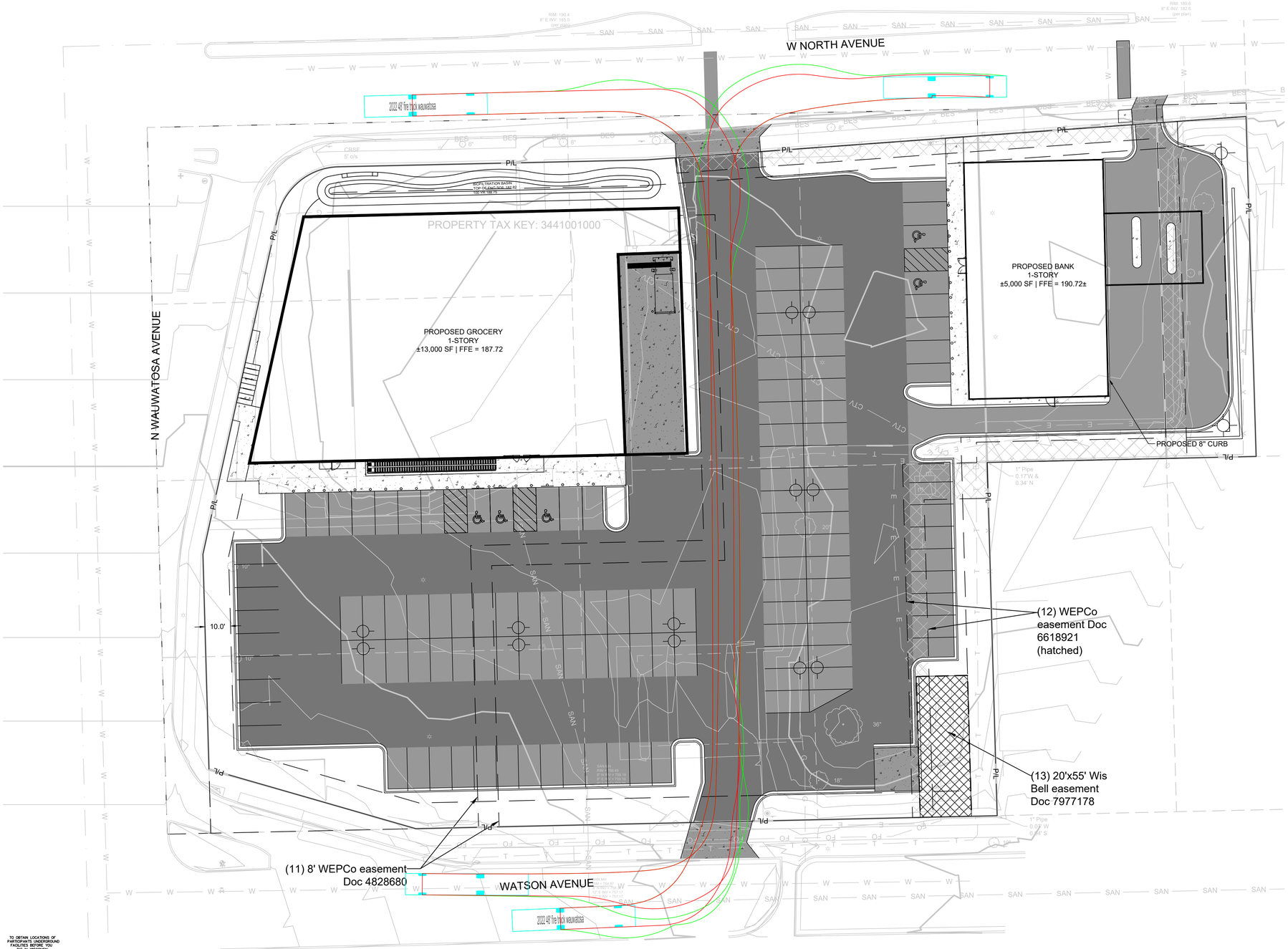
BUILDING 2 - ELEVATION NOTES

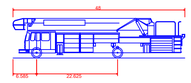
1 Brick: color red
2 Burnished stone block w/ stone sill: color cream
3 Architectural metal panel: color blue
4 Aluminum storefront window system w/ clear glass: clear anodized
5 Painted hollow metal door w/ vision panel: color white
6 Metal accent brow: color blue
7 Walk-up ATM
8 Depository
9 Bank drive-thru equipment by owner
10 Tenant signage for approximate location, final approval at later date
11 Brake metal coping: color silver
12 Metal canopy: color blue

Notes do not align between buildings
Scale does not align between buildings

Artistic and/or computer renderings are not a contractual representation of the finished product and GROTH Design Group makes no warranties and representations that the depictions of such renderings will be replicated in the finished product. Client acknowledges and agrees that the terms of the contract, not the renderings shall control.

2026.05.20





2022 48' fire truck wauwatosa

Overall Length	48.000ft
Overall Width	8.330ft
Overall Body Height	11.051ft
Min Body Ground Clearance	0.920ft
Track Width	8.333ft
Lock-to-lock time	5.033s
Curb to Curb Turning Radius	36.333ft

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GRAPHIC SCALE
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WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

FIRETRUCK TURNING MOVEMENTS

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026

NO.	REVISION	DATE

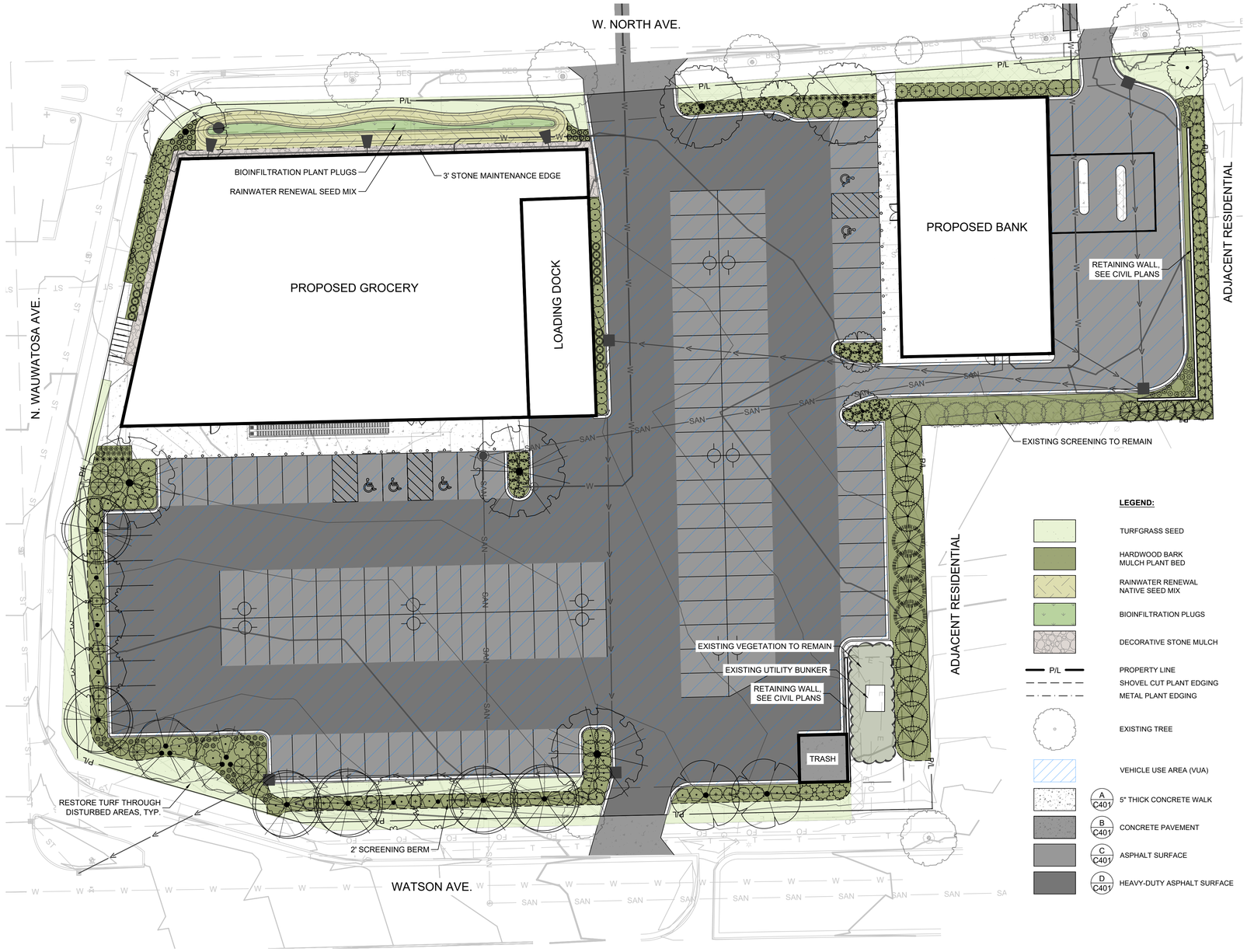
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CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
EX 2

CMUELLER
EX 2
25057

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2026.05.20



LEGEND:

- TURFGRASS SEED
- HARDWOOD BARK MULCH PLANT BED
- RAINWATER RENEWAL NATIVE SEED MIX
- BIOINFILTRATION PLUGS
- DECORATIVE STONE MULCH
- PROPERTY LINE
- SHOVEL CUT PLANT EDGING
- METAL PLANT EDGING
- EXISTING TREE
- VEHICLE USE AREA (VUA)
- A C401 — 5" THICK CONCRETE WALK
- B C401 — CONCRETE PAVEMENT
- C C401 — ASPHALT SURFACE
- D C401 — HEAVY-DUTY ASPHALT SURFACE

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY
DECIDUOUS TREES					
	AA	Acer x freemanii 'Jeffersred' / Autumn Blaze® Freeman Maple	2.5" Cal.	B&B	3
	CW	Carpinus caroliniana 'Wisconsin Red' / Wisconsin Red Musclewood	2.5" Cal.	B&B	6
	GA	Ginkgo biloba 'Autumn Gold' / Autumn Gold Maidenhair Tree	2.5" Cal.	B&B	2
	GD	Gymnocladus dioica 'Espresso' / Kentucky Coffeetree	2.5" Cal.	B&B	3
	TG	Tilia cordata 'Greenspire' / Greenspire Littleleaf Linden	2.5" Cal.	B&B	5
EVERGREEN TREES					
	JC	Juniperus chinensis 'Mountbatten' / Mountbatten Juniper	6` Ht.	B&B	15
	JV	Juniperus virginiana / Eastern Redcedar	6` Ht.	B&B	10
	TB	Thuja occidentalis 'Bail John' / Technito® Arborvitae	6` Ht.	B&B	5
	TN	Thuja occidentalis 'Nigra' / Black Arborvitae	6` Ht.	B&B	10
	TT	Thuja occidentalis 'Techny' / Techny Arborvitae	6` Ht.	B&B	4
ORNAMENTAL TREES					
	CC	Cercis canadensis / Eastern Redbud	8` Ht. (Multi-Stem)	B&B	2
	SR	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	2.5" Cal.	B&B	4
BROADLEAF EVERGREEN SHRUBS					
	BG	Buxus x 'Green Mountain' / Green Mountain Boxwood	3 gal.	Cont.	6
DECIDUOUS SHRUBS					
	AI	Aronia melanocarpa 'Morton' / Iroquois Beauty™ Black Chokeberry	3 gal.	Cont.	25
	DJ	Diervilla lonicera `Jewel` / Jewel Bush Honeysuckle	3 gal.	Cont.	34
	FC	Forsythia x 'Courtasol' / Gold Tide® Forsythia	3 gal.	Cont.	5
	HA	Hydrangea arborescens 'Annabelle' / Annabelle Hydrangea	3 gal.	Cont.	5
	HB	Hydrangea macrophylla 'PIIHM-II' / BloomStruck® Hydrangea	3 gal.	Cont.	6
	RA	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	3 gal.	Cont.	28
	RL	Rosa rugosa 'Purple Pavement' / Purple Pavement Rose	3 gal.	Cont.	12
	SM	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	3 gal.	Cont.	7
EVERGREEN SHRUBS					
	JP	Juniperus chinensis 'Kallays Compact' / Kallay Compact Pfitzer Juniper	3 gal.	Cont.	17
	PP	Pinus mugo 'Pumilio' / Dwarf Mugo Pine	3 gal.	Cont.	12
	TE	Taxus x media 'Everlow' / Everlow Anglo-Japanese Yew	3 gal.	Cont.	6
	TH	Taxus x media 'Hicksii' / Hicks Anglo-Japanese Yew	3 gal.	Cont.	2
ORNAMENTAL GRASSES					
	CO	Calamagrostis x acutiflora 'Overdam' / Overdam Feather Reed Grass	1 gal.	Cont.	23
	DG	Deschampsia cespitosa 'Goldtau' / Gold Dew Tufted Hair Grass	1 gal.	Cont.	26
	PN	Panicum virgatum 'Northwind' / Northwind Switch Grass	1 gal.	Cont.	14
	SS	Schizachyrium scoparium 'Standing Ovation' / Standing Ovation Little Bluestem	1 gal.	Cont.	31
	SH	Sporobolus heterolepis 'Tara' / Tara Prairie Dropseed	1 gal.	Cont.	19
PERENNIALS					
	NW	Nepeta x faassenii 'Walker's Low' / Walker's Low Catmint	1 gal.	Cont.	11
	SA	Sedum x 'Autumn Fire' / Autumn Fire Sedum	1 gal.	Cont.	13

Site Landscaping Requirements
Zoning: General Commerical (C2)

Category	Requirements			
Perimeter Vehicle Use Area (VUA)	**Requirement**	**Public VUA Frontage**	**Quantity Required**	**Quantity Provided**
	2 Deciduous Trees per 50 LF	444 LF	18 Trees	18 Trees
	8 Shrubs per 50 LF		72 Shrubs	72 Shrubs
Interior Vehicle Use Area (VUA)	**Requirement**	**Interior VUA**	**Landscaping Required**	**Landscaping Provided**
	10% of Interior VUA Landscaped	48,103 SF	4,810 SF	1,659 SF*
	Requirement	**Interior Landscape Area**	**Quantity Required**	**Quantity Provided**
	1 Shade Tree per 180 SF of Interior Landscape Area	4,810 SF	27 Trees	6 Trees*

*NOTE: INTERIOR VUA LANDSCAPING PROVIDED TO GREATEST EXTENT POSSIBLE DUE TO SITE RESTRICTIONS

LANDSCAPE GENERAL NOTES:

1. VERIFY EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES, AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION.
2. INSPECT THE SITE PRIOR TO COMMENCING WORK. DOCUMENT IN WRITING AND PHOTOGRAPH EXISTING CONDITIONS WITHIN, AND IN AREAS ADJACENT TO THE LIMITS OF CONSTRUCTION. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES NOT DOCUMENTED IN THE PHOTOGRAPHS PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES.
3. COORDINATE THE INSTALLATION OF PLANT MATERIAL WITH INSTALLATION OF ADJACENT PAVEMENTS, DRAINAGE, CURB RELATED STRUCTURES WITH OTHER TRADES.
4. RESTORE AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED. DAMAGE CAUSED DURING LANDSCAPE INSTALLATION TO EXISTING CONDITIONS AND IMPROVEMENTS IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
5. CONTRACTOR SHALL THOROUGHLY REVIEW ALL SPECIFICATIONS RELATED TO TREE PROTECTION, SOIL PREPARATION, TURF, GRASSES AND PLANTS. THESE SECTIONS PROVIDE ADDITIONAL INFORMATION ON MATERIALS AND SET STANDARDS FOR QUALITY AND INSTALLATION REQUIREMENTS.
6. PROVIDE 3" DOUBLE SHREDDED BARK MULCH FOR ALL PLANTED TREES, SHRUBS AND LANDSCAPE BEDS.

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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

LANDSCAPE PLAN

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
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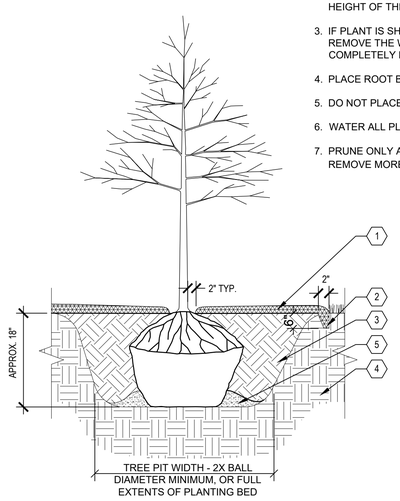
NO.	REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.20
DRAWN BY:	AJR
CHECKED BY:	PJI
APPROVED BY:	----
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25057

2026.05.20

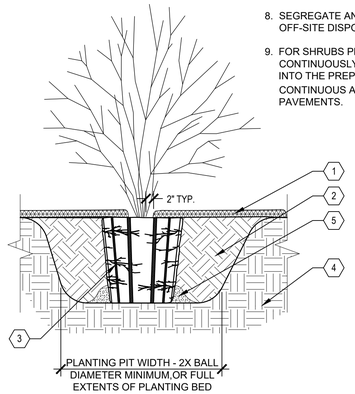
NOTES:
1. PLANT EACH TREE SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
2. DEPTH OF THE PLANTING HOLE SHOULD BE DETERMINED AND DUG AFTER THE ROOT FLARE IS LOCATED. PLANTING HOLE MUST BE NO DEEPER THAN THE HEIGHT OF THE ROOT BALL.
3. IF PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, CUT AND REMOVE THE WIRE BASKET ENTIRELY. REMOVE ALL TWINE, ROPE, AND BURLAP COMPLETELY FROM ALL ROOT BALLS.
4. PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.
5. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
6. WATER ALL PLANTS WITHIN 2 HOURS OF INSTALLATION.
7. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY BRANCHES. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.



KEYED LEGEND
1. 3" DEPTH SHREDDED HARDWOOD BARK MULCH. PROVIDE 4'-0" DIAMETER MULCH RINGS AT THE BASE OF ANY TREES PLANTED IN LAWN.
2. PROVIDE SPADED EDGE, 2" WIDE, 6" DEEP FOR ENTIRE PERIMETER OF BARK MULCH RINGS AT BASE OF TREES PLANTED IN LAWNS
3. PLANTING SOIL, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED.
4. PREPARED SUBGRADE
5. TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT BALL DOES NOT SHIFT

A TYPICAL TREE PLANTING
SCALE: N.T.S.

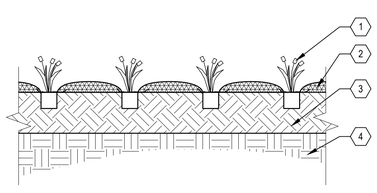
NOTES:
1. MAKE 1" TO 2" DEEP VERTICAL CUTS EVERY 6" AROUND THE CIRCUMFERENCE OF THE ROOT BALL BEFORE PLANTING TO LOOSEN POT-BOUND ROOTS.
2. PLANT EACH SHRUB SUCH THAT THE ROOT FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
3. PLANTING HOLE MUST NOT BE DEEPER THAN THE HEIGHT OF THE ROOT BALL.
4. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
5. PLACE ROOT BALL ON UNEXCAVATED OR TAMPED SOIL.
6. WATER ALL PLANTS WITHIN 2 HOURS OF INSTALLATION.
7. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY BRANCHES. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.
8. SEGREGATE ANY SOIL FROM BELOW WARNING LAYER EXCAVATED DURING PLANTING FOR OFF-SITE DISPOSAL. COORDINATE DISPOSAL WITH ENVIRONMENTAL CONSULTANT.
9. FOR SHRUBS PLANTED WITHIN PLANTING BEDS, CONTRACTOR SHALL PROVIDE PLANTING SOIL CONTINUOUSLY FOR THE ENTIRE PLANTING BED AND INDIVIDUAL SHRUBS SHALL BE PLANTED INTO THE PREPARED PLANTING SOIL. MULCH SURFACE FOR PLANTING BEDS SHALL ALSO BE CONTINUOUS ACROSS THE ENTIRE SURFACE AND HELD ¼" MIN. TO 1" MAX. BELOW ADJACENT PAVEMENTS.



KEYED LEGEND
1. 3" DEPTH TWICE-SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE INDICATED, KEEP 2" CLEAR OF STEMS
2. PLANTING SOIL AS SPECIFIED, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED
3. 1" TO 2" DEEP VERTICAL CUTS EVERY 6" AROUND PERIMETER
4. PREPARED SUBGRADE
5. TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT BALL DOES NOT SHIFT

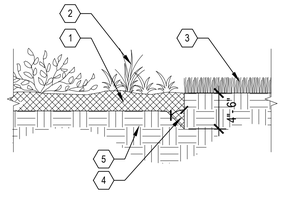
B TYPICAL SHRUB PLANTING
SCALE: N.T.S.

NOTES:
1. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL.
2. PLANTING HOLE MUST NOT BE DEEPER THAN THE HEIGHT OF THE ROOT BALL.
3. DO NOT PLACE MULCH IN CONTACT WITH STEMS.
4. WATER ALL PLANTS THOROUGHLY WITHIN 2 HOURS OF INSTALLATION.
5. PRUNE ONLY AS NECESSARY TO REMOVE UNHEALTHY OR DEAD PLANT PARTS. DO NOT REMOVE MORE THAN ⅓ OF THE ORIGINAL PLANT MASS.
6. FOR PLANTS PLANTED WITHIN PLANTING BEDS, CONTRACTOR SHALL PROVIDE PLANTING SOIL CONTINUOUSLY FOR THE ENTIRE PLANTING BED AND INDIVIDUAL SHRUBS SHALL BE PLANTED INTO THE PREPARED PLANTING SOIL. MULCH SURFACE FOR PLANTING BEDS SHALL ALSO BE CONTINUOUS ACROSS THE ENTIRE SURFACE AND HELD ¼" MIN. TO 1" MAX. BELOW ADJACENT PAVEMENTS.



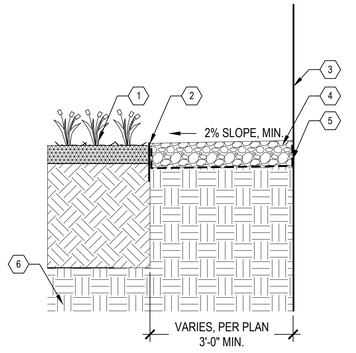
KEYED LEGEND
1. PERENNIAL, ORNAMENTAL GRASS, OR GROUNDCOVER PLUG, SEE LANDSCAPE PLAN SHEETS L100-L103
2. 3" DEPTH TWICE-SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE INDICATED, KEEP 3" CLEAR OF STEMS
3. PLANTING SOIL, PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE ENTIRE AREA OF ANY GIVEN PLANT BED
4. PREPARED SUBGRADE

C TYPICAL PERENNIAL & ORNAMENTAL GRASS PLANTING
SCALE: N.T.S.



KEYED LEGEND
1. 3" DEPTH OF MULCH LAYER
2. SHRUB PLANTING BED
3. LAWN ADJACENT TO PLANTING BED
4. 45 DEGREE ANGLE SHOVEL CUT EDGE TOWARD PLANTING BED
5. COMPACTED SUBGRADE

D SHOVEL CUT PLANT EDGE
SCALE: N.T.S.



KEYED LEGEND
1. ADJACENT PLANTING BED
2. BLACK ANODIZED ALUMINUM EDGING
3. BUILDING FACE
4. 3" DEPTH STONE MULCH
5. WOVEN GEOTEXTILE FILTER FABRIC, WRAP UP SIDES OF BUILDING AND EDGING
6. PREPARED SUBGRADE

E STONE MAINTENANCE EDGE
SCALE: N.T.S.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
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WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

LANDSCAPE DETAILS

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026

NO. REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.20
DRAWN BY:	AJR
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
L200

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L200
25057

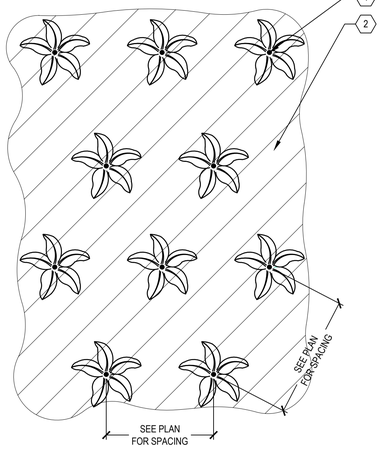
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2026.05.20

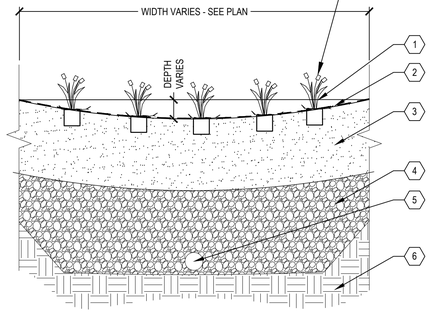
KEYED LEGEND

1. BIOFILTRATION BASIN PERENNIAL PLUGS (SEE PERENNIAL PLUGS PLANT LIST)
2. STRAW MULCH

PERENNIAL PLUG SPACING
1 PLUG PER 2.25 SQUARE FEET
(18" SPACING O.C.)
PLANT IN CLUSTERS OF 5-12 PLANTS PER SPECIES



PLAN VIEW



SECTION VIEW

KEYED LEGEND

1. BIOFILTRATION BASIN PLANTING (SEE PERENNIAL PLUGS PLANT LIST)
2. BIODEGRADABLE EROSION CONTROL MATTING ON BOTTOM AND SLOPES OF BASIN
3. ENGINEERED SOIL MIX - SEE CIVIL FOR DEPTH
4. STONE STORAGE LAYER - SEE CIVIL FOR DEPTH
5. PVC DRAIN TILE, SEE CIVIL PLAN.
6. PREPARED SUBGRADE

A BIOFILTRATION PLUG PLANTING
SCALE: N.T.S.

Botanical Name	Common Name	Quantity	Size	Comments	%	Total Quantity	Total Trays	Total Plants
Asclepias incarnata	Marsh Milkweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Aster Novae-angliae	New England Aster	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Carex stipdata	Common Fox Sedge	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Carex vulpinoidea	Brown Fox Sedge	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Eupatorium maculatum	Spotted Joe Pye Weed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Helenium autumnale	Sneezeweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Liatris spicata	Marsh Blazingstar	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Lobelia cardinalis	Cardinal Flower	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Monarda fistulosa	Wild Bergamot	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Panicum virgatum	Switchgrass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Ratibida pinnata	Yellow Coneflower	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Rudbeckia hirta	Black-Eyed Susan	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Scirpus atrovirens	Dark-Green Bulrush	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Scirpus cyperinus	Wool Grass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Spartina pactinata	Prairie Cordgrass	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Tradescantia ohiensis	Ohio Spiderwort	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	6%	9	0.28	32.00
Verbena hastata	Blue Vervain	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
Vernonia fasciculata	Ironweed	32.00	Round Tapered Plug	18" O.C. in clusters of 5-12 plants per species	4%	6	0.19	32.00
					100%	150		

C BIOINFILTRATION PLANTING PLUGS LIST
SCALE: N.T.S.

Botanical Name	Common Name	PLS Ounces/Acre
Wildflower Forbs:		
Asclepias incarnata	Marsh (Red) Milkweed	3.00
Aster ericoides	Heath Aster	0.10
Aster novae-angliae	New England Aster	1.50
Baptisia leucantha (alba)	White Wild Indigo	4.00
Eupatorium maculatum	Spotted Joe Pye Weed	0.80
Eupatorium perfoliatum	Boneset	0.50
Liatris pycnostachya	Prairie Blazing Star	2.50
Liatris spicata	Marsh Blazing Star	5.00
Lobelia cardinalis	Cardinal Flower	0.25
Lobelia siphilitica	Great Blue Lobelia	0.50
Monarda fistulosa	Wild Bergamot	1.50
Physostegia virginiana	Obedient Plant	1.50
Pycnanthemum virginianum	Mountain Mint	0.30
Ratibida pinnata	Yellow Coneflower	2.25
Rudbeckia hirta	Black-Eyed Susan	2.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	2.00
Solidago ohioensis	Ohio Goldenrod	0.50
Tradescantia ohiensis	Ohio Spiderwort	1.25
Verbena hastata	Blue Vervain	1.00
Vernonia fasciculata	Ironweed	1.00
	Totals =	31.45
Perennial Grasses, Sedges & Rushes:		
Bromus ciliatus	Fringed Brome	20.00
Calamagrostis canadensis	Blue Joint Grass	1.00
Carex bebbii	Bebb's Oval Sedge	2.00
Carex crawfordii	Crawford's Sedge	1.00
Carex crinita	Fringed Sedge	0.75
Carex stipata	Common Fox Sedge	1.50
Carex vulpinoidea	Brown Fox Sedge	1.00
Elymus canadensis	Canada Wild Rye	24.00
Elymus virginicus	Virginia Wild Rye	32.00
Glyceria grandis	Reed Manna Grass	1.00
Panicum virgatum	Switchgrass	3.50
Scirpus atrovirens	Dark-Green Bulrush	0.50
Scirpus cyperinus	Wool Grass	0.30
Sorghastrum nutans	Indian Grass	5.00
Spartina pectinata	Prairie Cordgrass	3.00
	Totals =	96.55

B RAINWATER RENEWAL NATIVE SEED MIX
SCALE: N.T.S.

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25057

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PLANTING QUALITY ASSURANCE

1. PLANTS ARE TO BE INSPECTED UPON DELIVERY TO PROJECT SITE AND THE LANDSCAPE ARCHITECT OR OWNER'S PROJECT REPRESENTATIVE MAY REJECT ANY SPECIMENS NO LONGER MEETING THE SPECIFIED STANDARDS OR THAT HAVE BEEN DAMAGED IN TRANSIT.
2. ALL PLANT MATERIAL SHALL BE TRUE TO SPECIES AND VARIETY/HYBRID/CULTIVAR SPECIFIED, AND NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES, AND UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE OF THE SITE LOCATION. SPECIMENS NURSERY-DUG TO BE REPLANTED SHALL HAVE BEEN FRESHLY DUG AND PROPERLY PREPARED FOR PLANTING.
3. TREES:
   - 3.1. SHALL BE TRAINED IN DEVELOPMENT AND APPEARANCE AS TO BE SUPERIOR IN FORM, COMPACTNESS AND SYMMETRY. TREES WITH MULTIPLE LEADERS, UNLESS SPECIFIED OTHERWISE, AND SHRUBS WITH DAMAGED OR CUT MAINSTEM(S), WILL BE REJECTED.
   - 3.2. WITH A DAMAGED, CUT OR CROOKED LEADER, ABRASION OF BARK, SUNSCALD, FROST CRACK, DISFIGURING KNOTS, INSECTS (INCLUDING EGGS AND LARVAE) OR INSECT DAMAGE, CANKERS/CANKEROUS LESIONS OR FUNGAL MATS, MOLD, PREMATURELY-OPENED BUDS, OR CUTS OF LIMBS OVER ¾" DIAMETER THAT ARE NOT COMPLETELY CALLUSED WILL BE REJECTED.
   - 3.3. SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS, AND BE FREE FROM PHYSICAL DAMAGE OR OTHER HINDRANCES TO HEALTHY GROWTH.
   - 3.4. BALLED AND BURLAPPED PLANTS SHALL BE DUG WITH SOLID BALLS OF A DIAMETER NOT LESS THAN THAT RECOMMENDED BY THE AMERICAN STANDARDS FOR NURSERY STOCK, AND OF SUFFICIENT DEPTH TO INCLUDE BOTH FIBROUS AND FEEDING ROOTS. BALLS SHALL BE SECURELY WRAPPED WITH BURLAP, AND TIGHTLY BOUND WITH ROPE OR TWINE. NO PLANTS SHALL BE BOUND WITH ROPE OR WIRE IN SUCH A MANNER AS TO DAMAGE BARK OR BREAK BRANCHES. THE ROOT FLARE SHOULD BE WITHIN THE TOP 2" OF THE SOIL BALL. BALLED AND BURLAPPED PLANTS WILL NOT BE ACCEPTED IF THE BALL IS DRY, CRACKED, OR BROKEN BEFORE OR DURING PLANTING.
4. PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED WITHIN THE PLANT SCHEDULE.

PLANTING PROJECT CONDITIONS:

1. VERIFY SERVICE AND UTILITY LOCATIONS, AND DIMENSIONS OF CONSTRUCTION CONTIGUOUS WITH NEW PLANTINGS BY FIELD MEASUREMENTS BEFORE PROCEEDING WITH PLANTING WORK.
2. INTERRUPTION OF EXISTING SERVICES OR UTILITIES; DO NOT INTERRUPT SERVICES OR UTILITIES UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY SERVICES OR UTILITIES ACCORDING TO REQUIREMENTS INDICATED:
   - 2.1. NOTIFY OWNER'S PROJECT REPRESENTATIVE NO FEWER THAN TWO DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF EACH SERVICE OR UTILITY.
   - 2.2. DO NOT PROCEED WITH INTERRUPTION OF SERVICES OR UTILITIES WITHOUT REPRESENTATIVE'S WRITTEN PERMISSION.
3. PLANTING RESTRICTIONS: PLANTING SHALL OCCUR DURING THE FOLLOWING ACCEPTABLE INSTALLATION PERIODS:
   - 3.1. DECIDUOUS TREES AND SHRUBS - APRIL 15 TO OCTOBER 15.
   - 3.2. NATIVE SEEDING AND TURFGRASS: APRIL 15 - OCTOBER 15
4. WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND WARRANTY REQUIREMENTS.
5. CONTRACTOR SHALL PROTECT ALL EXISTING AND/OR NEWLY INSTALLED PLANTS, LAWNS, AND GRASS AREAS FROM DAMAGE AT ALL TIMES. DAMAGED PLANTS, LAWNS OR GRASS AREAS SHALL BE REPLACED OR TREATED AS REQUIRED TO CONFORM TO SPECIFICATIONS HEREIN FOR FRESH STOCK. WORK AREA SHALL BE KEPT CLEAN AND ORDERLY DURING THE INSTALLATION PERIOD. UNDER NO CONDITION SHALL DEBRIS FROM PLANTING ACTIVITIES RESULT IN A SAFETY HAZARD ON-SITE OR ADJACENT OFF-SITE PROPERTY. DAMAGE TO SITE IMPROVEMENTS OR ADJACENT LANDSCAPES INCURRED AS A RESULT OF PLANTING OR REPLACEMENT OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR THAT CAUSES THE DAMAGE AT NO COST TO THE OWNER.
6. EXAMINE AREAS TO RECEIVE PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
   - 6.1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL OR LIQUID SUCH AS PAINT, PAINT WASHOUT, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, OILS, GASOLINE, DIESEL FUEL, PAINT THINNER, TURPENTINE, TAR, ROOFING COMPOUND, OR ACID HAS BEEN DEPOSITED IN SOIL WITHIN PLANTING AREAS.
   - 6.2. DO NOT MIX OR PLACE SOILS IN FROZEN, WET, OR MUDDY CONDITIONS.

PLANTING DELIVERY, STORAGE, & HANDLING:

1. BULK MATERIALS;
   - 1.1. DO NOT DUMP OR STORE BULK MATERIALS NEAR STRUCTURES, UTILITIES, WALKWAYS AND PAVEMENTS, OR ON EXISTING TURF AREAS OR PLANTS.
2. DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, WIND BURN, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF PLANTS DURING SHIPPING AND DELIVERY. DO NOT DROP PLANTS DURING DELIVERY AND HANDLING.
3. HANDLE PLANTING STOCK BY ROOT BALL.
4. DELIVER PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY, SET PLANTS AND TREES IN SHADED LOCATION, PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
   - 4.1. SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, PEAT MOSS, SAWDUST, OR OTHER ACCEPTABLE MATERIAL.
   - 4.2. WATER ROOT SYSTEMS OF PLANTS STORED ON-SITE DEEPLY AND THOROUGHLY WITH A FINE-MIST SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN A MOIST, BUT NOT OVERLY WET CONDITION.

EXCAVATION FOR TREES & SHRUBS

1. EXCAVATE CIRCULAR PLANTING PITS AS INDICATED IN DRAWINGS. TRIM PERIMETER OF BOTTOM LEAVING CENTER AREA OF BOTTOM RAISED SLIGHTLY TO SUPPORT ROOT BALL AND ASSIST IN DRAINAGE AWAY FROM CENTER. DO NOT FURTHER DISTURB BASE. ENSURE THAT ROOT BALL WILL SIT ON UNDISTURBED BASE SOIL TO PREVENT SETTLING. SCARIFY SIDES OF PLANTING PIT SMEARRED OR SMOOTHED DURING EXCAVATION.
   - 1.1. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED STOCK.
   - 1.2. DO NOT EXCAVATE DEEPER THAN DEPTH OF THE ROOT BALL, MEASURED FROM THE ROOT FLARE TO THE BOTTOM OF THE ROOT BALL.
   - 1.3. IF AREA UNDER THE PLANT WAS INITIALLY DUG TOO DEEP, ADD SOIL TO RAISE IT TO CORRECT LEVEL AND THOROUGHLY TAMP THE ADDED SOIL TO PREVENT SETTLING.
   - 1.4. MAINTAIN REQUIRED ANGELS OF REPOSE OF ADJACENT MATERIALS AS SHOWN IN DRAWINGS. DO NOT EXCAVATE SUBGRADES OF ADJACENT PAVING, STRUCTURES, HARDSCAPES, OR OTHER NEW OR EXISTING IMPROVEMENTS.
   - 1.5. MAINTAIN SUPERVISION OF EXCAVATIONS DURING WORKING HOURS.
   - 1.6. KEEP EXCAVATIONS COVERED OR OTHERWISE PROTECTED WHEN UNATTENDED BY INSTALLER'S PERSONNEL.
2. SUBSOIL AND TOPSOIL REMOVED FROM EXCAVATIONS MAY BE USED AS PLANTING SOIL IF THEY CONFORM TO THE REQUIREMENTS LISTED IN THESE SPECIFICATIONS.
3. NOTIFY OWNER'S PROJECT REPRESENTATIVE IF UNEXPECTED ROCK OR OBSTRUCTIONS DETRIMENTAL TO TREES OR SHRUBS ARE ENCOUNTERED IN EXCAVATIONS.
4. NOTIFY OWNER'S PROJECT REPRESENTATIVE IF SUBSOIL CONDITIONS EVIDENCE UNEXPECTED WATER SEEPAGE OR RETENTION IN TREE OR SHRUB PLANTING PITS.

TREE & SHRUB PLANTING

1. BEFORE PLANTING VERIFY THAT ROOT FLARE IS VISIBLE AT TOP OF ROOT BALL. IF ROOT FLARE IS NOT VISIBLE, REMOVE SOIL IN A LEVEL MANNER FROM THE ROOT BALL TO WHERE THE TOP-MOST ROOT EMERGES FROM THE TRUNK. AFTER SOIL REMOVAL TO EXPOSE ROOT FLARE, VERIFY THAT ROOT BALL STILL MEETS SIZE REQUIREMENTS. PLANT MATERIAL WITHOUT ROOT FLARE VISIBLE OR PLANTED TOO LOW WILL BE RE-PLANTED AT THE REQUEST OF THE LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
2. PLANTS FOUND TO HAVE STEM GIRDLING ROOTS AND/OR KINKED ROOTS AT THE TIME OF PLANTING WILL BE REJECTED AND REPLACEMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
3. REMOVE ALL TWINE, STRING, WIRE, AND ALL OTHER NON-BIODEGRADABLE MATERIAL ENTIRELY FROM ROOT BALL AREA.
4. REMOVE ONLY DEAD, DYING, OR BROKEN BRANCHES. DO NOT PRUNE FOR SHAPE. DO NOT CUT TREE LEADERS.
5. SET BALLED AND BURLAPPED STOCK PLUMB AND IN CENTER OF PLANTING PIT OR TRENCH WITH ROOT FLARE 2 INCHES ABOVE ADJACENT FINISH GRADES.
   - 5.1. USE SOIL MATERIALS FROM EXCAVATION FOR BACKFILL.
   - 5.2. CAREFULLY CUT AND REMOVE BURLAP, ROPE, AND WIRE BASKETS FROM THE ENTIRE ROOT BALL. REMOVE PALLETS, IF ANY, BEFORE SETTING. DO NOT USE PLANTING STOCK IF ROOT BALL IS CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATION.
   - 5.3. BACKFILL AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE SOIL AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PLANTING PIT IS APPROXIMATELY ONE-HALF FILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. REPEAT WATERING UNTIL NO MORE WATER IS ABSORBED.
   - 5.4. CONTINUE BACKFILLING PROCESS. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF SOIL.

TREE & SHRUB MATERIAL:

1. GENERAL: FURNISH NURSERY-GROWN PLANTS TRUE TO GENUS, SPECIES, VARIETY, CULTIVAR, STEM FORM, SHEARING, AND OTHER FEATURES INDICATED IN PLANT SCHEDULE SHOWN AND DRAWINGS.; AND WITH HEALTHY ROOT SYSTEMS DEVELOPED BY TRANSPLANTING OR ROOT PRUNING. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK, DENSELY FOLIATED WHEN IN LEAF AND FREE OF DISEASE, PESTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT.
   - 1.1. TREES WITH DAMAGED, CROOKED, OR MULTIPLE LEADERS; TIGHT VERTICAL BRANCHES WHERE BARK IS SQUEEZED BETWEEN TWO BRANCHES OR BETWEEN BRANCH AND TRUNK ("INCLUDED BARK"); CROSSING TRUNKS; CUT-OFF LIMBS MORE THAN ¾" IN DIAMETER; OR WITH STEM GIRDLING ROOTS WILL BE REJECTED.
   - 1.2. COLLECTED STOCK: DO NOT USE PLANTS HARVESTED FROM THE WILD, FROM NATIVE STANDS, FROM AN ESTABLISHED LANDSCAPE PLANTING, OR NOT GROWN IN A STATE CERTIFIED NURSERY.
   - 1.3. PLANT MATERIAL SHALL BE PROVIDED IN THE CONTAINER TYPE INDICATED IN THE DRAWINGS (B&B, CONTAINER, BARE ROOT, ETC.), UNLESS THE CONTRACTOR RECEIVES WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT THAT SUBSTITUTION OF CONTAINER TYPE IS ACCEPTABLE.
2. FURNISH TREES WITH ROOT BALLS MEASURED FROM TOP OF ROOT BALL. ROOT FLARE SHALL BE VISIBLE BEFORE PLANTING.
3. SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD.

PLANTING SOIL:

PLANTING SOIL SHALL BE PLACED IN ONE CONTINUOUS VOLUME FOR THE WIDTH OF LANDSCAPE AREAS, AND A MINIMUM OF 3X THE DIAMETER OF THE ROOT BALL LENGTHWISE

1. INSTALL PLANTING SOIL FOR PLANT BEDS IN 6" LIFTS, MINIMUM 8" DEPTH.
2. DO NOT APPLY PLANTING SOIL TO SATURATED OR FROZEN SUBGRADES.
3. PLANTING SOIL SHALL BE A MIX OF 6-PARTS TOPSOIL, 1-PART COMPOST (APPROVED FOR USE ON THE PROJECT). THOROUGHLY BLEND PLANTING SOIL OFF-SITE BEFORE SPREADING.
   - 3.1. THE PROJECT WILL ACCEPT ONLY CLEAN, SALVAGED OR IMPORTED TOPSOIL CAPABLE OF PASSING THE 1" SIEVE, FREE OF ROCKS, DEBRIS, AND OF NOXIOUS WEEDS.
   - 3.2. STRIPPED, SALVAGED, OR MINED TOPSOIL MUST BE TAKEN FROM THE TOP 6-INCHES OF THE A-HORIZON, HAVING A DARK BROWN TO BLACK COLOR WITH A GRANULAR STRUCTURE AND CLAY CONTENT OF LESS THAN 25%, VERIFIED WITH A RIBBON TEST THAT YIELDS NO MORE THAN 1-INCH.

METAL EDGING

1. STANDARD PROFILE, COMMERCIAL-GRADE, EXTRUDED ALUMINUM EDGING, FABRICATED IN STANDARD LENGTHS WITH INTERLOCKING SECTIONS WITH LOOPS STAMPED FROM FACE OF SECTIONS TO RECEIVE STAKES.
   - 1.1. BASIS OF DESIGN: CLEANLINE BY PERMALOC OR APPROVED EQUAL.
   - 1.2. EDGING SIZE: 3/16-INCH-WIDE BY 5.5 INCHES DEEP
   - 1.3. STAKES: ALUMINUM, ASTM 221, ALLOY 6061-T6, 18-INCHES LONG.
   - 1.4. FINISH: BLACK DURAFLEX
   - 1.5. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: CURV-RITE, INC., PERMALOC CORPORATION, RUSSELL, J.D. COMPANY (THE), SURE-LOC EDGING CORPORATION
2. INSTALL METAL EDGE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ENSURE THAT METAL EDGING IS PROPERLY INSTALLED AND SECURED BEFORE INSTALLING STONE MULCH.

STONE MULCH MATERIAL & INSTALLATION:

1. SHALL BE HARD, DURABLE, STONE, WASHED FREE OF LOAM, SAND, CLAY, AND OTHER FOREIGN SUBSTANCES, OF THE FOLLOWING TYPE, SIZE RANGE, AND COLOR:
   - 1.1. MATERIAL: ANGULAR WASHED STONE.
   - 1.2. SIZE: 1-1/2" DIAMETER
   - 1.3. DEPTH: 3" MINIMUM DEPTH PLACED IN ONE LIFT
   - 1.4. COLOR RANGE: BLEND OF DARK GREY & BLUE TONES
   - 1.5. BASIS OF DESIGN: 1-1/2" 'AMERICAN HERITAGE' AGGREGATE BY COUNTY MATERIALS.
2. LIGHTLY COMPACT AREAS TO RECEIVE STONE MULCH
3. INSTALL WEED BARRIER FABRIC IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS; COMPLETELY COVER AREA TO BE MULCHED, OVERLAPPING EDGES OF FABRIC LENGTHS A MINIMUM OF 6-INCHES AND SECURING SEAMS WITH GALVANIZED PINS. WEED BARRIER FABRIC SHALL BE WRAPPED VERTICALLY UP THE OUTSIDE EDGES OF SURROUNDING CONCRETE FLATWORK OR CURB AND SECURED IN PLACE. HOLD FABRIC 2" CLEAR OF TOP OF ADJACENT CURB AND CONCRETE FLATWORK SO IT IS NOT VISIBLE FROM SURFACE.
4. PLACE AND FINISH STONE MULCH AS INDICATED IN DRAWINGS, ENSURING A SMOOTH, LEVEL TOP SURFACE FOR ALL STONE MULCH AREAS HELD APPROXIMATELY 1/2" BELOW THE TOP SURFACE OF ADJACENT PAVED AREAS OR METAL EDGING.

BARK MULCH MATERIAL & INSTALLATION

1. TWICE-SHREDDED HARDWOOD BARK MULCH TO BE PROVIDED AS TOP-DRESSING FOR ALL AT-GRADE PLANTING BEDS IN LOCATIONS INDICATED ON PLANTING PLANS.
   - 1.1. SIZE RANGE: MAXIMUM 2.5" TO 3"
   - 1.2. COLOR: NATURAL, UN-DYED
   - 1.3. PROVIDE 3" DEPTH MULCH FOR ALL PLANTING BEDS INDICATED AS BARK MULCH PLANTING BED.
2. KEEP BARK MULCH 2" CLEAR OF ALL STEMS OF PLANT MATERIAL.

TURF SEEDING:

1. DELIVERY:
   - 1.1. DELIVER PACKAGED SEED MATERIALS IN ORIGINAL, UNOPENED CONTAINERS LABELED AS TO NAME AND ADDRESS OF SUPPLIER; SPECIFIC BLEND OF SEED; AND INDICATION OF CONFORMANCE WITH STATE AND FEDERAL LAWS, AS APPLICABLE.
2. PROJECT CONDITIONS:
   - 2.1. SEED DURING ONE OF THE FOLLOWING PERIODS.
     - 2.1.1. SPRING SEEDING SEASON: APRIL 1 TO JUNE 15.
     - 2.1.2. FALL SEEDING SEASON: AUGUST 15 TO OCTOBER 1.
3. PRODUCTS
   - 3.0.1. PROVIDE THE FOLLOWING FOR TURFGRASS SEED BASIS OF DESIGN: REINDEERS DELUXE 50 SEED MIX OR APPROVED EQUAL
   - 3.0.2. TURFGRASS SEED MIX TO BE FERTILIZED WITH 'SCOTT'S STARTER FERTILIZER' BY THE 'SCOTTS MIRACLE-GRO COMPANY' OR APPROVED EQUAL.
4. PROCEED WITH INSTALLATION ONLY AFTER SATISFACTORY CONDITIONS HAVE BEEN MET.
5. REMOVE ANY AND ALL UNDESIRABLE VEGETATION THAT HAS GERMINATED IN THE AREAS TO BE SEEDED OR SODDED. CONTRACTOR SHALL EVALUATE THE USE OF A BROAD SPECTRUM, NON-PERSISTENT GLYSOPHATE-BASED HERBICIDE BASED ON SITE CONDITIONS.
   - 5.1. DO NOT APPLY SEED UNTIL FIVE TO SEVEN DAYS AFTER LAST HERBICIDE TREATMENT.
6. FINISH GRADING: GRADE AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS ½ INCH OF FINISH ELEVATION. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISH GRADING TO AREAS THAT CAN BE IMMEDIATELY SEEDED AND STABILIZED WITH EROSION CONTROL MATERIAL
7. MOISTEN PREPARED AREA BEFORE SEEDING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE DRY BEFORE SEEDING OR SODDING. DO NOT CREATE MUDDY SOIL.
8. NO SEEDING SHALL OCCUR ON FROZEN GROUND OR AT TEMPERATURES LOWER THAN 32 DEGREES FARENHEIT OR IN THE FOLLOWING 5 DAYS AFTER PLANNED SEEDING OR SODDING.
9. SEEDING RATES TO BE PERFORMED IN ACCORDANCE WITH SEED SUPPLIER RECOMMENDATIONS.

NATIVE SEEDING:

1. PROVIDE THE FOLLOWING SEED TYPES FROM: AGRECOL LLC 10101 N. CASEY ROAD EVANSVILLE, WISCONSIN 53536:
   - 1.1.1. AGRECOL'S 'RAINWATER RENEWAL SEED MIX' FOR AREAS SHOWN AS 'RAINWATER RENEWAL NATIVE SEED MIX'
   - 1.2. REFER TO DETAIL B ON SHEET L201, FOR SEED MIX COMPOSITION.
2. REFER TO CIVIL PLANS FOR LOCATIONS AND EXTENTS OF EROSION CONTROL MAT. IN GENERAL, PROVIDE CURLEX NET FREE FOR SEEDED AREAS WITH SLOPES OF 4:1 OR LESS AND CURLEX II EROSION CONTROL MAT IN ALL OTHER SEEDED AREAS. PROVIDE MANUFACTURER'S STANDARD BIODEGRADABLE ANCHORING STAKES (OR ALTERNATIVE SOURCE FOR BIODEGRADABLE STAKES, IF APPROVED IN WRITING BY OWNER'S REPRESENTATIVE). INSTALL PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
3. WITHIN 4 WEEKS FOLLOWING THE ISSUANCE OF THE NOTICE TO PROCEED, SUBMIT NAME AND LOCATION OF SEED SUPPLIER(S) AND A COMPLETE LIST OF EACH SEED MIX BY WEIGHT AND PROPORTION THAT IS BEING SUPPLIED BEFORE THE SEED MIX IS ORDERED. SUBSTITUTIONS WILL NOT BE PERMITTED. PROVIDE GEOGRAPHIC ORIGINS OF EACH SEED SPECIES.
4. ALL SEED MATERIAL SHALL ORIGINATE FROM LOCAL SOURCES TO THE EXTENT POSSIBLE, SPECIFICALLY FROM USDA PLANT HARDINESS ZONE 4 OR LOWER.
5. ALL SEEDING ZONE BOUNDARIES SHALL BE SURVEYED AND STAKED ON THE PROJECT SITE BY THE CONTRACTOR. NO SEED MIX SHALL BE INSTALLED UNTIL THE GRADE PREPARATION AND LAYOUT HAVE BEEN APPROVED.
6. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ADJUST SEED LIMITS WITHOUT ADJUSTING TOTAL SEEDED AREAS, TO MEET FIELD CONDITIONS, AT NO ADDITIONAL COST TO THE OWNER.
7. COORDINATION IS REQUIRED TO ENSURE RAINFALL/GROUNDWATER SEEPAGE DOES NOT RESULT IN SOIL MOISTURE CONDITIONS THAT WILL CAUSE EXCESSIVE RUTTING DURING SEEDING AND MULCHING OPERATIONS. FAILURE TO MEET THIS REQUIREMENT WILL NOT BE AN ACCEPTABLE REASON FOR NOT INSTALLING THE SEED AS SPECIFIED.
8. WHERE SEEDING OCCURS IN CLOSE PROXIMITY TO OTHER SITE IMPROVEMENTS OR AREAS TO REMAIN UNDISTURBED SUCH AS EXISTING WETLANDS AND UPLANDS AREAS, CARE SHALL BE TAKEN TO NOT DISTURB THE EXISTING CONDITIONS. ANY AREAS DAMAGED DURING PLANTING OPERATIONS SHALL BE PROMPTLY RESTORED TO THEIR ORIGINAL CONDITION AT NO COST TO THE OWNER.
9. FOLLOWING NATIVE SEED MIX INSTALLATION, THE LANDSCAPE ARCHITECT AND CONTRACTOR SHALL CONDUCT A SUBSTANTIAL COMPLETION INSPECTION ON ALL SEEDED AREAS. (SEE WARRANTY, MAINTENANCE AND ACCEPTANCE PERIOD)
10. GENERAL INSTALLATION:
    - 10.1. SEEDING OF NATIVE SEED MIXES SHALL OCCUR IN THE EARLY SPRING:
      - 10.1.1. APRIL 15 THROUGH MAY 31.
    - 10.2. DO NOT SOW SEED DURING ADVERSE WEATHER OR WHEN WIND SPEEDS EXCEED TEN MILES PER HOUR.
    - 10.3. DO NOT SOW SEED IN AREAS WHERE STANDING WATER IS PRESENT.
11. GRADE PREPARATION:
    - 11.1. SUBGRADE AND FINISH GRADE PREPARATION SHALL BE IN ACCORDANCE WITH SITE EARTHWORK REQUIREMENTS, AND TOPSOIL SHALL BE A MINIMUM 4 INCHES DEEP IN NON-BIORETENTION AREAS AFTER LIGHT COMPACTION TO PREVENT SETTLEMENT. BIORETENTION AREAS SHALL HAVE SOIL MIX PLACED PER DETAIL.
    - 11.2. PRIOR TO SEEDING, REPAIR ANY RUTS, RILLS, OR GULLIES GREATER THAN 2 INCHES IN DEPTH TO CREATE SMOOTH CONTINUOUS GRADES.
    - 11.3. IF THE PREPARED GRADE IS ERODED OR COMPACTED BY RAINFALL OR OTHER REASONS, REWORK THE TOPSOIL TO THE FULL 4-INCH DEPTH.
    - 11.4. IMMEDIATELY BEFORE SEEDING, SCARIFY, LOOSEN, FLOAT, AND DRAG TOPSOIL AS NECESSARY TO BRING IT TO THE PROPER CONDITION. REMOVE FOREIGN MATTER LARGER THAN 1-INCH DIAMETER.
    - 11.5. NO FURTHER GRADE PREPARATION IS REQUIRED.
12. IF REQUIRED DUE TO CONSTRUCTION SEQUENCING, SEED THE SITE WITH A TEMPORARY COVER CROP TO HOLD IT FOR SPRING SEEDING AS FOLLOWS:
    - 12.1. IF SEEDED MAY 15 THROUGH SEPTEMBER 1: MIX OF 32 POUNDS PER ACRE OF SEED OATS (AVENA SATIVA) AND 5 POUNDS PER ACRE OF ANNUAL RYE (LOLLIUM MULTIFLORUM).
    - 12.2. IF SEEDED SEPTEMBER 1 THROUGH OCTOBER 15: 20 POUNDS PER ACRE WINTER WHEAT (TRITICUM AESTIVUM) OR REGREEN STERILE WHEAT/WHEATGRASS HYBRID (TRITICUM AESTIVUM X ELYTRIGIA ELONGATAFROM).
13. BROADCASTING:
    - 13.1. FOR SPRING SEEDING OF NATIVE SEED, SOW SEED DIRECTLY ONTO BARE GROUND OR GROUND WHERE THE PREVIOUS YEAR'S PLANT STUBBLE HAS BEEN CUT TO 2-INCH HEIGHT.
    - 13.2. INCREASE THE VOLUME OF THE BROADCASTED SEED MIX BY MIXING IT WITH AN APPROVED CARRIER. ACCEPTABLE CARRIER MATERIAL INCLUDES MOISTENED COMPOST, PEAT MOSS, CORN COB BLAST MEDIA, OR COARSE-GRADE VERMICULITE. SAND AND SAWDUST ARE UNACCEPTABLE CARRIER MATERIALS. USE ONE BUSHEL BASKET OF CARRIER PER 1,000 SQUARE FEET OF AREA TO BE SEEDED (A BUSHEL EQUALS 8 GALLONS OR 1.24 CUBIC FEET).
      - 13.2.1. USE HALF OF THE TOTAL SEED QUANTITY AND CROSS THE ENTIRE AREA TO BE SEEDED, EVENLY SPREADING THE SEED. WALK PERPENDICULAR TO THE ORIGINAL SEEDING AND EVENLY BROADCAST THE SECOND HALF OF THE SEED.
      - 13.2.2. LIGHT SEEDS, AWNED SEEDS, OR BEARDED SEEDS TEND TO RISE TO THE TOP OF THE SPREADER, THEREFORE, MIX SEED ACCORDINGLY AS PLANTING COMMENCES.
      - 13.2.3. RAKE OR DRAG THE SEED INTO THE SOIL, BUT NOT MORE THAN 1/4-INCH DEEP. ROLL THE AREA WITH A ROLLER TO FIRM THE SEED INTO THE SOIL. ROLLING IS NOT NECESSARY ON DORMANT SEEDINGS.
14. DRILL SEEDER OR DROP SEEDER/SPREADER:
    - 14.1. FOR SPRING DRILL SEEDING, SOW SEED DIRECTLY ONTO BARE GROUND OR GROUND WHERE THE PREVIOUS YEAR'S PLANT STUBBLE HAS BEEN CUT TO 2-INCH HEIGHT; FOR SPRING DROP SEEDING, CULTIVATE THE GROUND BEFORE INSTALLING SEED MIX.
    - 14.2. CHECK THE EQUIPMENT FREQUENTLY TO ENSURE THE SEED IS DISPERSING EVENLY AND IS NOT CLOGGING.
    - 14.3. IF THE EQUIPMENT IS NOT EQUIPPED WITH A ROLLER, PASS OVER THE SEEDED AREA WITH A ROLLER TO FIRM THE SEED INTO THE SOIL. ROLLING IS NOT NECESSARY WITH DORMANT SEEDING.
      - 14.3.1. DO NOT MIX THE NATIVE SEED WITH ANY CARRIER MATERIAL.
      - 14.3.2. EVENLY DISTRIBUTE THE SEED ACROSS THE ENTIRE SITE TO BE SEEDED.
    - 14.4. KEEP THE TOPSOIL MOIST (TO A DEPTH OF 3 INCHES) FOR 3-6 WEEKS FOLLOWING SEEDING; AFTERWARD, APPLY ONE INCH OF WATER DURING THE GROWING SEASON IF RAIN HAS NOT OCCURRED FOR MORE THAN ONE WEEK. DO NOT APPLY WATER WITH SUCH A FORCE AS TO DISTURB SEED, SEEDLINGS, AND/OR TOPSOIL, OR THAT WOULD RUN OFF SOIL SURFACE.
15. ALL AREAS OVER WHICH HAULING OPERATIONS HAVE BEEN CONDUCTED SHALL BE KEPT CLEAN ON A DAILY BASIS. PROMPTLY REMOVE ALL MATERIALS SPILLED ON PAVEMENT.
16. UPON COMPLETION OF SEED INSTALLATION, REMOVE FROM THE SITE AND LEGALLY DISPOSE OF ALL TRASH AND DEBRIS INCLUDING ANY MATERIAL REMOVED DURING GRADE PREPARATION.
17. RESTORE ANY EXISTING AREAS DAMAGED BY OPERATIONS UNDER THE CONTRACT. RESTORATION SHALL INCLUDE FINISH GRADING AND SEEDING AS REQUIRED TO MATCH EXISTING GRADE AND/OR WETLANDS, AND MAINTENANCE OF RESTORED AREAS.
18. ANY DAMAGE BY THE CONTRACTOR TO ESTABLISHED OR NEWLY SEEDED AREAS NOT WITHIN THE PROJECT SCOPE OF WORK SHALL BE REPAIRED AND RESEEDED AT NO COST TO THE OWNER.

CLEAN-UP AND PROTECTION

1. DURING PLANTING, KEEP ADJACENT PAVING AND CONSTRUCTION CLEAN AND WORK AREA IN AN ORDERLY CONDITION.
2. PROTECT PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS AND OPERATIONS OF OTHER CONTRACTORS AND TRADES. MAINTAIN PROTECTION DURING INSTALLATION. TREAT, REPAIR, OR REPLACE DAMAGED PLANTINGS.
3. AFTER INSTALLATION REMOVE ALL NURSERY TAGS, NURSERY STAKES, TIE TAPE, LABELS, WIRE, STRING, AND OTHER DEBRIS FROM PLANT MATERIAL, PLANTING AREAS, AND PROJECT SITE.

VEGETATION MONITORING AND MANAGEMENT

MANAGEMENT AND MONITORING:
THE MANAGEMENT AND MONITORING OF NATIVE PLANTINGS (INCLUDING SEED MIXES, FORBS AND PLUGS) SHOULD BE DIRECTED TOWARD THE GOAL OF CREATING A STABLE, NATIVE PLANT COMMUNITY. INVASIVE AND WEEDY PLANT SPECIES WILL NEED TO BE CONTROLLED UNTIL THE DESIRED NATIVE PLANT COMMUNITIES ARE ESTABLISHED. THIS TYPICALLY WILL TAKE THREE (3) TO FIVE (5) YEARS AFTER SOWING OR PLUG INSTALLATION.

UNDESIRABLE PLANT CONTROL:
OVERALL MANAGEMENT OF VEGETATED AREAS MAY INCLUDE, BUT ARE NOT LIMITED TO: RESEEDING OR REPLANTING DAMAGED OR NON-ACTIVE GROWTH AREAS, IRRIGATION, STRATEGIC MOWING TO REDUCE WEED COVER AND PREVENT WEED SEED SET, REMOVAL OF TREE SEEDLINGS, TARGETED HERBICIDE APPLICATION(S), AND MECHANICAL WEED CONTROL (HAND PULLING AND SEED HEAD REMOVAL). SELECTED HERBICIDE APPLICATIONS SHOULD BE DONE SPARINGLY AND ONLY WHEN NECESSARY. SEL

Wauwatosa Grocery Redevelopment Stormwater Management Plan Report

7501 W North Ave
Wauwatosa, WI 53213

PREPARED FOR

Luther Group
780 Elm Grove Rd
Elm Grove, WI, 53122

PREPARED BY

Project Number – 25057

2026/05/20

Paul Imig, P.E.
Civil Engineering Group Leader

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1. Introduction

This Storm Water Management memo presents the design calculations and considerations for the proposed redevelopment located at the northwest corner of N Wauwatosa Avenue and Watson Avenue in Wauwatosa, WI. The proposed redevelopment encompasses approximately 2.058 acres. The proposed project will disturb the entire 2.058 acre parcel and will also result in an increase of impervious area over the site by approximately 0.274 acres. This storm water management report serves as a summary of calculations showing the proposed development meets all applicable ordinances.

2. Design Criteria

Water Quality

- City of Wauwatosa – Municipal Code (Chapter 24.13.040)
    - For a redevelopment, BMPs shall be designed, installed, and maintained to control total suspended solids carried in runoff from the post-construction site as follows: Reduce to the maximum extent practicable, the total suspended solids load from exposed parking areas and roads by 40%, based on the average annual rainfall, as compared to no runoff management controls.

- WDNR – Technical Standards (NR151 and NR216)
    - Total Suspended Solids. BMPs shall be designed, installed, and maintained to control total suspended solids carried in runoff from the post-construction site as follows: Reduce to the maximum extent practicable, the total suspended solids load by 40% based on an average annual rainfall, as compared to no runoff management controls.

Water Quantity and Management of Peak Runoff

- City of Wauwatosa – Municipal Code (Chapter 24.13.040)
    - For the 1-year, 24-hr and 2-year, 24-hr design storm, BMPs shall be designed to either: maintain or reduce the peak runoff discharge rates, to the maximum extent practicable, as compared to pre-development conditions or achieve a maximum runoff release rate of 0.15 cubic feet per second per acre, whichever is more stringent.
    - Section D.2 (Applicability) states that water quantity management requirements apply to a development that increases impervious surface area by 1/2 or more acres. This project increases impervious surface by 0.288 acres, therefore the project is exempt from City of Wauwatosa's water quantity requirements, however MMSD still applies.

- Milwaukee Metropolitan Sewerage District (Chapter 13.302(b))
    - For a redevelopment disturbing between 2-3.5 acres but not adding 1/2 acre or more of impervious surface, the site development shall achieve a 10% reduction to the existing runoff release rate. This project disturbs a total of 2.058 acres and has an increase in 0.288 acres of impervious surface.

- WDNR – Technical Standards (NR151 and NR216)
    - For the 1-year, 24-hr and 2-year, 24-hr design storm, BMPs shall be designed to either maintain or reduce the peak runoff discharge rates

Green Infrastructure

- Milwaukee Metropolitan Sewerage District (Chapter 13.302(b))

- Whenever redevelopment will increase impervious surface by 5,000 square feet but less than 21,780 square feet (1/2 acre), on a net basis, then the redevelopment shall include green infrastructure with a detention volume equal to one-half inch multiplied by the area of the net new impervious surface.

Infiltration

- Wisconsin Legislature Code Infiltration Performance Standard NR 151.124
  - NR 151.124 (3)(b)(3) states that a redevelopment post-construction site is exempt from infiltration requirements

3. Design Analysis

- Rainfall data used in the hydrologic analysis were obtained from the NOAA Atlas 14 precipitation depths, and the appropriate NRCS Wisconsin MSE3 precipitation distribution for 24 hour duration (1-yr, 2-yr, 10-yr, and 100-yr storm events).

1 year	2 year	10 year	100 year
2.46”	2.79”	3.93”	6.19”

- Curve numbers for the soils within the analysis region were selected from the values published in Wauwatosa’s Municipal Code (24.13.040) Table 13.040-2. Native soil types were determined from geotechnical report and borings.
- Time of concentration values were calculated based on the standard TR-55 method.
- The hydraulic calculations and analysis presented in this report were performed using HydroCad Watershed Modeling software which utilizes the methodologies of TR-55 for a hydrograph based analysis of watershed conditions. Hydrographs were developed using a standard MSE-3 24 hour hydrograph for the various 24-hr storm events.
- Sediment reduction characteristics for the proposed water quality facilities were determined using WinSLAMM (Version 10.3.4) Source Loading and Management Model.

4. Existing Condition Analysis

The existing site is bounded by W North Avenue to the north, Watson Avenue to the south, and N Wauwatosa Avenue to the west. There are residential houses to the east of the property. The existing property consists of a bank building with an associated drive-thru and parking lot. The site generally drains away from the building in the northwest corner, with catch basins in the parking lots at the northeast and southwest of the lot. There is pervious grassland surrounding majority of the site as well.

A Geotech report by Gestra prepared in 2021 for a previously planned development has identified 6-8 inches of asphalt over approximately 5 inches of base course in pavement areas. Greenspace areas had approximately 4-6 inches of topsoil. Fill material consisted typically of lean clay with various amounts of sand and gravel. Native soil consisted of layered lean clay and sand soils. Refer to the geotechnical report in Appendix A.

Utilizing the information from the geotechnical report boring logs, the soil site classification 'D' soil was used in the hydroCAD modeling. Refer to Appendix B for the existing conditions HydroCAD modeling. Data used to model the site for existing conditions, including surface areas, flow paths, time of concentrations and runoff curve number are presented in Figure SW 1.0 located in Appendix G.

5. Proposed Developed Conditions Description

The proposed project involves the disturbance of approximately all the 2.058 acre parcel. Proposed activities of the site consist of grading, construction of stormwater biofiltration basin, a new grocery building, a new bank building and its associated drive thru, utilities, an up-flo structure, a parking lot and associated drives. The proposed grocery building footprint is approximately 13,000 square feet and the proposed bank building is approximately 5,000 square feet. The proposed impervious area within the disturbed area of the project site will be approximately 1.680 acres, which is an increase in approximately 0.274 acres from existing impervious.

The grocery roof storage will be piped to the biofiltration basin. Majority of the pavement on site will surface drain to proposed catch basins and into a private storm sewer system where it will be treated by up-flo filters before connecting to the public storm sewer. The grocery building roof storm water will be collected internally and piped to the biofiltration basin. The bank building roof storm water will be collected internally and piped to a catch basin which connects to the rest of the private storm sewer system on site. There is an outlet control structure in the proposed stormwater biofiltration basin to regulate the stormwater flow being piped to the public storm connection at the intersection of Wauwatosa Ave and W North Ave. A small area will surface drain offsite without capture or treatment along the west, south, and east perimeter of the site.

The proposed biofiltration basin is located in the northwest corner of the redevelopment. The top of bio is at an elevation of 189.32 with a surface area of 1,532 square feet. The bottom of the bio is at an elevation of 184.22 with a surface area of 1,200 square feet. The proposed outlet control structure for the bio has a 12-inch diameter outlet with an invert at 184.22, a 1.5-inch orifice at elevation 184.22, a 6-inch orifice at elevation 785.72, a weir at 186.52, and a 18'' horizontal grate at 188.57 that release flow into the existing manhole in the intersection of Wauwatosa Ave and W north Ave northwest of the bio.

In order to meet green infrastructure requirements of MMSD, the storage of the biofiltration basin must be 22,803 gallons, which is met by expanding the biofiltration basin's area of storage to 3,233 cubic feet. This equates to 24,185 gallons of storage. See Appendix E for Green Infrastructure calculations. The stormwater bio has been designed to meet the peak flow control for the City of Wauwatosa and WDNR for a redevelopment site. The stormwater treatment requirements will be met from an up-flo device with 6 modules in CB 1.0.
Data used to model the site for proposed development stormwater conditions are presented in Figure SW 2.0 located in Appendix G.

Refer to Appendix B for the proposed HydroCAD modeling and Appendix C for the WinSLAMM modeling.

6. Storm Water Quantity Modeling

A summary of results can be viewed in the tables below:

Storm Frequency (yr)	Existing Peak Runoff Discharge Rate on site (cfs)	10% Reduction of Existing Peak Runoff Discharge Rate (cfs)	Post-Development Peak Runoff Discharge Rate (cfs)
1	5.88	5.29	5.21
2	6.85	6.19	5.94
10	10.46	9.41	9.41
100	18.06	16.25	16.00

7. Storm Water Quality Modeling

NR 151 regulations require that the project employ BMPs to reduce sediment load leaving the site by 40% compared to no controls.

Quality Summary Table

Total Suspended Solids Loading	
Total TSS prior to controls/treatment	880.3 lbs
Total TSS After controls/treatment	311.8 lbs
Total Percent TSS Reduction	64.58%

8. Storm Sewer Sizing

All storm sewer sizing was designed to handle the 10 year storm event with no surface charge. Refer to storm sewer sizing table provided in Appendix E. The roof drain is sized for 100 year per plumbing plan. Proposed future pavement and future building expansion areas were accounted for in the storm sewer sizing.

9. Green Infrastructure

The project will create 0.274 square feet of additional impervious surface, prompting the development to include green infrastructure according to MMSD code Chapter 13.302. The storage of the biofiltration basin must be 22,803 gallons, which is met by expanding the biofiltration basin's area of storage to 3,233 cubic feet. This equates to 24,185 gallons of storage. See Appendix F for Green Infrastructure calculations.

10. Operation, Maintenance, and Inspection

The proposed operation, maintenance and inspection schedules and practices for the proposed biofiltration basin, storm catch basins, and upflo filters are presented in Stormwater agreement located in Appendix F.

The Owner will be responsible for the regular inspection and maintenance of the stormwater management facilities to ensure that they are functioning properly, in accordance with the stormwater management agreement with the Owner and the City of Wauwatosa.

11. Conclusion

The proposed stormwater management plan meets the requirements of The City of Wauwatosa, MMSD, and WDNR through the implementation of best management practices described within this report to the greatest extent practicable.

Appendix A

Geotechnical Report

GEOTECHNICAL ENGINEERING REPORT

Mixed Use Development
7501 W. North Avenue
Wauwatosa, Wisconsin

GESTRA Project No.: 21313-10
October 13, 2021

Prepared For:
Oxeland Group
10001 Innovation Drive, Suite 2
Wauwatosa , WI 53226

GESTRA

Geotechnical Engineering Report

Mixed Use Development
7501 W. North Avenue
Wauwatosa, Wisconsin

GESTRA Project No. 21313-10
October 13, 2021

Prepared For:

Oxeland Group
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Wauwatosa, Wisconsin

Prepared By:

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APPENDIX II LABORATORY TEST RESULTS

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Geotechnical Engineering Report
Mixed Use Development
7501 W. North Avenue
Wauwatosa, Wisconsin

1.0 INTRODUCTION

GESTRA Engineering, Inc. (GESTRA) was authorized by Oxeland Group to complete a subsurface exploration and geotechnical report for the Mixed Use Development project located at the southeast corner of N. Wauwatosa Avenue and W. North Avenue in Wauwatosa, Wisconsin. This report presents the results from the subsurface soil exploration and describes the field exploration, laboratory test results, and provides recommendations pertaining to the design and construction of the proposed project.

The engineering recommendations and analysis contained within this report are based on the following project information which is a projection of GESTRA's understanding of the project. If for any reason the actual project information differs from what is reported below, GESTRA should be contacted so that we can review our recommendations in light of any new information.

1.1 PROJECT INFORMATION

The project site is located at the southeast corner of N. Wauwatosa Avenue and W. North Avenue. Watson Avenue is located on the south side of the site. The proposed development will include a new building located along the north, west and south sides of the property. The building is planned as 5 levels above grade. The north and west wings of the building will have parking on the lower level; retail, parking and apartments on the first level; and apartments for the remainder. The south wing is planned for townhomes, will not have a below grade level and will have 4 levels above grade.

The lower level will be slab on grade and the 1st and 2nd levels will be precast concrete with the remainder of the structure wood framed. Column loads and wall loads are not known, but we assume they will be on the order of 250 kips and 5 kips per lineal foot, respectively.

The lower level is set at elevation 759.5 feet, approximately 3 feet below existing grades in the southwest portion of the site and 10 to 11 feet below grades on the north side. The first level is planned at elevation 770.0 feet. The south wing, without the below grade level, is planned with a first level slab at 770.0 feet that is approximately 3 to 5 feet above existing grades.

A banking drive-thru is planned east of the north wing of the building. The site entrance/exits are located at the northeast corner of the development from W. North Avenue and from Watson Avenue on the south side. Asphalt parking is planned in the center portion of the development.

2.0 SCOPE OF SERVICES

GESTRA has performed the following services for the project:

- Contacted Diggers Hotline to locate the public utilities at the site and subcontracted a private locator to mark the private utilities at the site.

- Staked borehole locations in the field by measuring from existing site features. Elevations and coordinates of the as-drilled boring locations were determined by using a Geomax Zenith 35 GNSS-INS (GPS) receiver and were referenced to the Wisconsin County Coordinate System (WCCS), Milwaukee County (NAVD88).
- Completed five (5) standard penetration test (SPT) soil borings, one (1) at 20 feet deep and four (4) at 30 feet. At the completion of drilling, boreholes were abandoned per WDNR requirements and surface patched using cold patch asphalt in pavement areas.
- Performed laboratory soil testing to assign classification and engineering properties to the soils encountered. The laboratory testing included hand penetrometer readings, moisture contents, Atterberg limit and unconfined compressive strength.
- Prepared this geotechnical engineering report presenting the results of the field testing as well as providing recommendations pertaining to shallow foundations, allowable bearing capacity, estimates of settlement, seismic site classification, anticipation and management of groundwater, subgrade modulus for design of slabs on grade, soil parameters (assumed from the building borings) for the pavement design consisting of an estimated CBR value, asphalt and base course thickness for the proposed parking lot and drives, and site preparation/soil correction.

3.0 EXPLORATION RESULTS

3.1 SITE CONDITIONS

The development includes 3 adjoining properties 7423, 7429, and 7501 W. North Avenue. The property at the southeast corner of N. Wauwatosa Avenue and W. North Avenue is developed and includes asphalt pavement, a one to two story building (bank) and a smaller single-story building with drive-thru canopy. 7429 W. North Avenue is currently asphalt pavement and 7423 is not developed. A significant amount of below grade utilities are present throughout the site.

The site has an overall downward slope from the north to the south with elevations that vary from approximately 770 or 771 feet to 758 feet. Ground surface elevations at our boring locations ranged from 764.3 feet (B-4) to 770.8 feet (B-2).

Based on review of the Milwaukee County GIS & Land Information website, the bank building has been present on the site since at least 1975. Prior to 1975, the site appeared to contain residential buildings. 7423 and 7429 W. North Avenue also appeared to be residential properties that were demolished sometime prior to 1985.

3.2 SUBSURFACE SOIL PROFILE

Borings B-1, B-4 and B-5 were performed within the existing pavement and encountered 6 to 8 inches of asphalt over approximately 5 inches of base course. Borings B-2 and B-3 were performed in a greenspace area and encountered 4 to 6 inches of topsoil.

Fill, or possible fill, was observed below the topsoil and pavement at each boring location extending to estimated depths between 2 and 6 feet. The fill material typically consisted of lean clay with varying amounts of sand and gravel. Trace brick pieces were encountered within the fill in B-4 and a possible thin topsoil layer was noted below the base course in B-1. Moisture contents of the clay fill ranged between 8.6% and 16.1%.

The native soil profile consisted of layered profile of lean clay and sand soils. The native clay was encountered with a stiff to hard consistency with hand penetrometer and unconfined compression strength tests ranging between 1.5 tons per square foot (tsf) to over 4.5 tsf, and moisture contents between 11% to 24.5%. The native granular soils included sand and silty sand with varying amounts of gravel in a medium dense to dense condition. B-2 was the only boring that did not encounter native granular soils.

Results of the field and laboratory tests and observations are depicted on the individual boring logs included in Appendix I of this report. Soils were grouped together based on similar observed properties. The stratification lines were estimated by the reviewing engineer based on available data and experience. The actual in-situ changes between layers may differ slightly and may be more gradual than depicted on the boring logs. Subsurface and groundwater conditions can vary between borehole locations and in areas not explored.

It is important to note that the soil observations, fill depths, topsoil, and pavement thickness estimates were made in small diameter boreholes. Therefore, it should be understood that thicker or thinner deposits of the individual strata are likely to be encountered within other portions of the project. Furthermore, the estimation of strata thickness at a particular location can differ from person to person due to a sometimes indistinct transition between the soils encountered. Additionally, it must be recognized that in the absence of foreign substances and/or debris within the soil samples obtained, it is sometimes difficult to distinguish between natural soils and clean soil fill.

3.3 GROUNDWATER OBSERVATIONS

Groundwater observations were made during and at the completion of drilling operations. Groundwater was only encountered in the following borings: B-1 at 25.5 feet after drilling, B-3 at 24.5 during drilling and 25 feet after drilling, and B-4 at 13 feet during drilling and 26 feet after drilling. The shallower water encountered in boring B-4 during drilling may be a trapped water seam within a sand layer embedded with the clay soils.

Groundwater level fluctuations may occur with time and seasonal changes due to variations in precipitation, evaporation, surface water runoff and local dewatering. Perched water pockets and a higher water table may also be encountered during wet weather periods, particularly in more permeable silt and sand seams within native clays or granular fill material overlying less permeable clays. Installation and monitoring of an observation well would be required to assess true groundwater elevation.

4.0 ANALYSIS AND RECOMMENDATIONS

4.1 GEOTECHNICAL CONSIDERATIONS

The native soils encountered appear suitable for the planned construction. However, a geotechnical concern for the site is the existing undocumented fill material, planned building demolition and existing utilities present. Variations in strength and soil type were encountered in samples of the existing fill and the backfill within existing utilities and around existing buildings may include soft or wet soil. Therefore, GESTRA recommends complete removal of the existing fill from below the zone of influence of the new building foundations due to the potential for excessive total or differential settlement. The townhomes section of the project is at a higher elevation and will require additional fill. The building is assumed to include relatively closely spaced foundations;

therefore, complete removal of the existing fill under the townhomes and placing new engineered fill may be the preferred course of action for earthwork to avoid excessive foundation over-excavation.

The building slab on grade is anticipated to be lightly loaded, on the order of 150 psf or less and the existing fill indicated moderate strength in the samples collected. However, estimating potential settlement of a slab on grade cannot be accurately determined because of the unknown nature of the fill, variations in depth of the existing fill and variations in new fill required for the planned site grades. To construct the building slab on grade and pavements over the existing fill, the contractor and owner must understand and accept the potential risks. These risks may include increased settlement, buried unsuitable material or inconsistent material that could result in additional site excavation, subgrade instability, or other unforeseen potential detrimental conditions. If the owner and contractor cannot accept these risks, then mass excavation to remove existing fill should be performed. Alternatively, additional subgrade preparation can be performed to help mitigate, but not eliminate the risk of leaving the existing fill below slab on grade and pavements.

The recommendations presented in this report include assumptions related to the project design because detailed design information has not been developed. When additional design information is known, the recommendations presented in this report should be reviewed as information such as structural loads and changes in design elevations could impact the recommendations in this report.

4.2 SITE PREPARATION

We understand the existing building and pavement will be completely razed and removed at the start of the project. General site preparation should start with removal of topsoil / surficial organic soils, debris, or other deleterious material. Material removed from the project site should be disposed in accordance with all applicable federal, state, and local regulations. Soil should not be stockpiled near or adjacent to the excavations.

Based on the existing site plan, below grade utilities are present within the new building footprint and will likely need to be moved or abandoned. We recommend all unused utilities should be properly removed from the new building footprint. Areas of loose backfill material may be encountered within existing utility trenches or adjacent to the existing structures and should also be removed from the building footprint area. Upon excavation adjacent to the existing building and utility trenches and prior to backfilling the resulting excavations, the area should be observed by a GESTRA field representative to evaluate the suitability for subsequent support of the new building, pavements, or other planned improvements, and to perform density testing during subsequent backfill placement.

Assuming the potential risks related to the existing fill is acceptable to the project, we recommend compacting the exposed material in the building slab on grade area and pavement areas after the initial site preparation described above. After compaction and before base material is placed, a proof roll is recommended with a minimum 20-ton tri-axle dump truck, or like machinery imparting similar static loading on the soil and moving at no more than walking speed. A geotechnical engineer or their designated representative should be present during the proof roll in order to identify soft or unstable areas, if any, and subsequently recommend remediation procedures.

The townhomes section of the project is at a higher elevation and will require additional fill. The building is assumed to include relatively closely spaced foundations; therefore, complete removal of the existing fill under the townhomes and placing new engineered fill may be the preferred course of action for earthwork to avoid excessive foundation over-excavation.

Based on the variations of the material and lower SPT N-values of the fill in some of the borings, it is likely that areas of the proposed site may show instability and may be disturbed when exposed to construction traffic. Where remediation is needed, the options for improvement include the methods described in the following paragraphs. The type of improvement and the depth of remediation needed should be determined at the time of construction based on drainage, weather, and soil conditions.

Recondition the subgrade through moisture/density control:

If this option is chosen, the upper 12-inches of subgrade should be aerated through disking and dried to within two (2) percent of its optimum moisture content. After which, the dried soils can be re-compacted in place to at least 95% of the maximum modified Proctor density (ASTM D1557). However, this method may not be effective if lower strength soils extend to depths greater than 1 foot below grade.

Removal and replacement:

The soft or unstable soils could be removed and replaced with suitable engineered fill. The new fill should be compacted to at least 95% of the maximum dry density as obtained by the maximum modified Proctor density (ASTM D1557). To potentially reduce the amount of subgrade excavation, the new fill could consist of a well graded granular fill or a geogrid could be used with the granular fill.

Site grading should direct runoff away from planned building and pavement areas and should be maintained throughout construction so that the potential for the softening of the subgrade soils is reduced. Equipment and working traffic should also be kept to a minimum on subgrade surfaces, especially during times of precipitation or following spring thaw. The contractor is responsible for maintaining completed earthwork areas. Consideration should be given to installing construction roads or utilizing the existing pavement for construction traffic to reduce disturbance to the subgrade soils.

Based on our understanding of the project, excavations of up to 11 feet and fills up to 8 feet may be required to attain subgrade elevation at portions of the site. As a general rule for new fill placement, the lift thickness should not exceed 12 inches for granular soils and 9 inches for cohesive soils and the maximum particle size should be limited to 25% of the lift thickness. Engineered fill placed within the building pad, below foundations or in the pavement subgrade/base course should be compacted to a minimum of 95% of the modified Proctor dry density value. If engineered fill depths below building foundations or slab will exceed 10 feet, the lower 5 feet of fill should be compacted to 100% of the modified Proctor dry density value or consist of granular fill.

Structural soil fill should be placed a minimum of five feet beyond the edges of the new building and pavement areas, and an additional foot horizontally for each vertical foot of new fill to be placed to provide adequate lateral confinement. The inorganic site soils free of any construction debris or unsuitable material that would be removed from excavations could be reused as structural

fill; however, moisture conditioning and/or sorting of the excavated soil to remove unsuitable material may be necessary.

The information presented in this report may be used to evaluate the site conditions for construction, but the contractor is responsible for determining site preparation means and methods required to complete the project. An aggressive construction schedule or construction during seasons with limited drying time may not allow for reconditioning of the subgrade and soil correction may require removal and replacement with imported granular fill or use of chemical stabilization.

This geotechnical report identifies or recommends material that may be used as engineered fill, but the contractor is responsible for utilizing materials that meet the project requirements and determining means and methods required for placement and compaction. Typically, clay soils are easier to dry or rework when placed over large open areas during favorable weather conditions. Clay soils can be difficult to compact or moisture condition in trench backfill situations and may increase potential for consolidation and settlement of the backfill if it is not placed or compacted properly. Granular soils may be easier to place and compact in trench backfill situations but may increase construction costs if the material has to be imported.

4.3 FOUNDATION RECOMMENDATIONS

The proposed building can be supported on a typical shallow spread/strip footing system designed for a maximum net allowable soil bearing pressure of 4,000 pounds per square foot (psf) provided the recommendations in this report are followed. Spread foundations designed for a maximum net allowable soil bearing capacity of 4,000 psf should be supported by the native clay with a minimum unconfined compressive strength 2 tsf, native granular soils with a minimum SPT N-value of 15 blows per foot (bpf) or on new engineered fill place over the recommended native soils.

Table 4-1 provides the depths at each of the test boring locations to the soil recommended for an allowable bearing capacity of 4,000 psf and the anticipated soil type at the assumed foundation bearing elevation. The townhomes section of the project is planned with no below grade level and new fill is anticipated to raise the site grades to the design elevation. If engineered fill depths below building foundations or slab will exceed 10 feet, the lower 5 feet of fill should be compacted to 100% of the modified Proctor dry density value or consist of granular fill.

Table 4-1: Recommended Excavation Depths

Boring Location	Existing Surface Ground Elevation (ft)	Estimated Depth to 4,000 psf Allowable Bearing Capacity (ft)		Assumed Foundation Elev / Soil Type Encountered
		Depth (ft)	Elevation (ft)	
B-1	770.6	6	764.6	EL 759 feet Stiff, sandy lean clay
B-2	770.8	6	764.8	EL 759 feet Stiff to hard lean clay
B-3	766	10.5	755.5	EL 755.5 feet [1] Very stiff lean clay
B-4	764.3	4	760.3	EL 759 feet Hard lean clay
B-5	766.6	3.8	762.8	EL 769 New Fill [2]

1. *Potential foundation over-excavation*
2. *Townhomes area, existing site grades lower than assumed foundation elevation. Recommendations assume existing fill removed and new engineered fill placed.*

Where unsuitable soils are encountered at the foundation elevation, soil correction should consist of additional excavation to remove the unsuitable soils. If the over-excavation is being filled with engineered fill, we recommend the over-excavation be widened at a minimum 1H:1V ratio from the edge of the foundation. The over-excavation can then be filled to grade with suitable engineered fill consisting of a well graded granular material placed in lifts not exceeding 12 inches and compacted to at least 95% of maximum dry density as determined by the modified Proctor (ASTM D1557). Alternatively, lean concrete with a minimum compressive strength of 500 psi could be used to fill the over-excavation to grade and lateral over-excavation will not be required.

The depth of excavation required to expose suitable bearing material may vary in areas not explored by GESTRA; therefore, we recommend the foundation excavations be reviewed by a geotechnical engineer or their designated representative to determine when soils suitable to support the recommended bearing capacity are observed.

The shallow foundation design should incorporate a minimum strip footing width of 18 inches and column pad width of 24 inches, even if the allowable bearing capacity has not been fully utilized. All perimeter foundations should bear a minimum of 48 inches below grade for heated structures and 60 inches for unheated structures in order to protect the structure from frost heave. Interior foundations in heated buildings may bear at a shallower depth provided the bearing soils will not freeze. If the structure includes load bearing thickened slabs, subgrade preparation under the thickened slabs should follow the recommendations in this report for foundations. We recommend that foundations also be suitably reinforced in order to compensate for the effects of minor differential movements due to subsurface soil variations.

If the recommendations as stated in this report are used in the design and construction of the proposed buildings, it is our opinion that total settlements will be less than 1 inch.

4.4 FLOOR SLAB RECOMMENDATIONS

We recommend that a subgrade reaction modulus of 150 pounds per square inch per inch of deflection (pci) be used in the design of the floor slab at grade. The modulus value was assumed based on existing clay fill, the site is prepared following the recommendations of this report and assumes a 1-foot plate is used to determine the modulus and should be adjusted for the size of the foundation and confinement effect. We recommend that the floor slabs be suitably reinforced and designed to be separate from the foundation system in order to allow for separate movements. It is recommended the structural engineer specify the floor slab thickness, reinforcing, joint details and other parameters. At a minimum, the floor slabs are recommended to be reinforced or the concrete contain an appropriate fiber mesh additive to help control shrinkage cracking.

We recommend the installation of a capillary moisture break directly below the slab. A typical capillary moisture break may consist of at least 6 inches of sand or gravel with a maximum particle size of 1-1/2 inches, containing 15-55% passing the number 4 sieve and no more than 12% passing the number 200 sieve (fines) and should follow the recommendations of ACI 302.1R-15, Chapter 6. The structural engineer, architect, or manufacturer of a floor covering should determine the need of a vapor barrier, specify the vapor barrier location, and consider the concrete curing and the effects of moisture on future flooring materials or building end use. If a vapor retarder is used, we recommend it be placed in accordance with ACI 302.1 Section 3.2 and should meet the requirements of ASTM E1745. The vapor retarder should include proper sealing at penetrations, overlap at joints, and sealing at the interface of the wall and slab and may require an adequate cushion material to prevent damage.

4.5 BELOW GRADE WALLS

It is our understanding that portions of the proposed building will be designed below grade. Below grade walls will need to be designed to resist lateral earth pressures. The values presented in Table 4-2 assume that the walls are vertical; that a clean, free-draining granular fill is used as backfill within 2 feet behind the wall; the backfill condition at the ground surface is level; and that adequate drainage is provided to prevent the buildup of any hydrostatic pressure. In addition, the below grade walls will also be required to resist the surcharge of traffic that may occur during or after construction.

Table 4-2: Below-Grade Wall Design Parameters

Below-Grade Wall Design Parameters [1]	
Total Unit Weight of Backfill (γ)	125 pcf
Angle of Internal Friction (Φ)	26°
At-Rest Earth Pressure Coefficient, (K_o)	0.56
Active Earth Pressure Coefficient, (K_a)	0.39
Passive Earth Pressure Coefficient, (K_p)	2.56

Below-Grade Wall Design Parameters [1]	
Coefficient of sliding friction (ultimate)	0.35

1. *Based on clay soil encountered*

For walls that are free to rotate at least 0.001 times the height of the wall, such as a temporary earth retention system and retaining walls, then an active earth pressure condition will develop. Equivalent fluid densities can be calculated by multiplying unit weight by the listed pressure coefficients at different conditions. We also recommend using a minimum factor of safety of 2.0 in passive earth pressure calculations because of the large strains required to mobilize the full passive resistance, ignoring the upper 1 foot of soil in frost protected areas and ignoring the soil within the frost depth for other areas.

Drainage should be provided behind below-grade and retaining walls to prevent the buildup of hydrostatic pressures. We recommend that free-draining granular drainage aggregate be placed within 2 feet behind the back face of the below grade walls. Drainage pipes are recommended to be installed behind the walls and be drained by gravity or a sump pit and pump system. The drainage pipes should be surrounded by a minimum of 6 inches of drainage aggregate. Due to the existing fill and native soils containing a significant percentage of fine material, the drainage aggregate should be completely wrapped in a non-woven, high survivability, geotextile fabric with an apparent opening size (AOS) in the range of 70 to 100. The geotextile fabric should prevent migration of any adjacent soil into the drainage aggregate. We do not recommend using a drainage pipe that includes a geotextile sleeve in immediate contact with the pipe.

We recommend a relatively impermeable barrier that may consist of a minimum 2 foot thick clay cap or Bituminous or Portland cement concrete (i.e. walkways and drives) be placed around each of the below-grade structures to minimize surface water infiltration into the backfill against the walls. The clay material, if used, should be placed and compacted as recommended in this report and should extend from final grade to a depth of at least 2 feet. The clay cap or impermeable barrier should slope away from the structure at a minimum 2 percent grade. Surcharge loads, including those from adjacent (present and future) structures, as well as temporary construction equipment, within a zone defined by a plane extending at a 45 degree angle above the base of the wall should also be included in the design. The size of the compactor used behind the wall and requirements before backfilling should be confirmed by the structural engineer.

4.6 SEISMIC SITE CLASSIFICATION

Section 1613 of the International Building Code 2015 (IBC) was used to assign a soil site classification. Based on the native soil conditions observed and assuming these are consistent or better to a depth of 100 feet, the soil site classification **D** (stiff soil) should be used in the structural design of the proposed building. Based on site class D, and mapped spectral response acceleration S_s and S_1 for Wauwatosa, Wisconsin, the site coefficient F_a and F_v are 1.6 and 2.4, respectively.

4.7 PAVEMENT RECOMMENDATIONS

The pavement subgrade soils should be prepared following the recommendations in this report. Remnants of existing or former construction should be removed to a minimum depth of 2 feet below the proposed pavement subgrade. Our recommendations below assume the subgrade is thoroughly prepared for construction based on the recommendations developed in this report.

Additional corrective action may be determined at the time of construction for areas where it is necessary to provide a more consistent subgrade.

The Wisconsin Asphalt Pavement Association (WAPA) Asphalt Pavement Design Guide 2021, AASHTO (93/98), and the results of the geotechnical evaluation were used to provide the recommendations for the new asphalt pavement. Based on the existing clay fill and native clay soils as the subgrade material, GESTRA recommends that "poor soil" (estimated CBR value between 2 and 5, SSV = 2.5) conditions should be assumed as the subgrade soils. Table 4-3 below presents the recommended hot mix asphalt and base course thicknesses for the new pavement areas for 2 different Traffic Classes. Pavement sections may be modified if the traffic volumes are different than presented below.

Base course material should be placed at moisture content within 2% of optimum and compacted to a minimum of 95% of maximum dry density as determined by the modified Proctor. Hot Mix Asphalt (HMA) should be placed and compacted following the guidelines of WisDOT Standard Specifications for Highway and Structure Construction, section 460.3.

Table 4-3: Pavement Design Recommendations for Parking Lots

Traffic Class	Pavement Layer Type	Thickness (inches)	Material Type	WisDOT Specifications
Parking Lots (Max ADT 100, 100% Auto)	Hot Mix Asphalt	3.5	LT	Section 460
	Base Course (Dense Graded)	8.0	1-1/4 inch Crushed Stone	Section 305
Traffic Class I, (driveway and parking lots >50 stalls, 20 year ESALs < 1 million)[1]	Hot Mix Asphalt	4.0	LT	Section 460
	Base Course (Dense Graded)	10.0	1-1/4 inch Crushed Stone	Section 305

1. Based on Table 7.2 of the WAPA Asphalt Pavement Design Guide 2021.

One of the important considerations in designing a high quality and durable pavement is providing adequate drainage. Drainage design for the proposed pavement section is out of GESTRA's scope for this project. It is important that bird baths (leeching basins) and surface waves are not created during construction of the HMA layer. A proper slope should be allowed and drainage should be provided along the edges of pavements and catch basins to prevent the accumulation of free water within the base course, which otherwise may result in subgrade softening or swelling, and pavement deterioration under exposure and repeated traffic conditions.

Pavement sections presented in the above table should not be used for areas which experience repeated truck traffic, equipment or truck parking areas, entrances and exit aprons, or contain trash dumpster loading zones. In the areas listed above, a Portland Cement Concrete (PCC) pavement should be used. The PCC layer thickness is recommended to be 6.0 inches, with a minimum of 6.0 inch-thick crushed stone base course, but may be modified depending on the final design. The

reinforcement details for PCC layers should be designed by the project design engineer as the project conditions dictate.

All pavements require regular maintenance and repair in order to maintain the serviceability of the pavement. These repairs and maintenance are due to normal wear and tear of the pavement surface and are required in order to extend the serviceability life of the pavement. However, after 20 years of service, a normal pavement structure is likely to deteriorate to a point where pavement rehabilitation may be required to maintain the serviceability.

4.8 CONSTRUCTION CONSIDERATIONS

The detailed means and method of excavation and construction should be decided by the contractor and approved by the project design team. Based on the specific site information, geotechnical exploration results and requirements for the proposed project, the following issues should be taken in consideration during construction.

Dewatering

Based on the soil borings performed, substantial water is not anticipated to be encountered during excavation. If water is encountered during excavation, we anticipate the appropriate number of temporary sump pits and pumps should be sufficient to remove anticipated volume of water in the excavation. The contractor should be prepared to control groundwater and surface water and prevent it from accumulating in excavations or otherwise affecting construction.

Excavation Stability

Caving is a common issue for excavation side walls during construction, especially when fill material, granular soils, and/or water seepage are observed. An excavation plan should be developed and the length of excavation left open should be limited to prevent caving soil from covering the suitable bearing soils.

A temporary soil retention system may also be necessary in order to prevent caving or provide support of surrounding structures or utilities during construction. Providing recommendations or designing the retention system is out of the scope for GESTRA. The contractor must comply with the federal, state, local and updated OSHA regulations during excavation and in retention system design to ensure excavation safety.

Occupational Safety and Health Act (OSHA) has instituted strict standards for temporary construction excavations. These standards are outlined in 29 CFR Part 1926 Subpart P. Excavations within unstable soil conditions or extending five feet or more in depth should be adequately sloped or braced according to these standards. Excavation safety is the responsibility of the contractor. Material stockpiles or heavy equipment should not be placed near the edge of the excavation slopes. The actual stable slope angle should be determined during construction and will depend upon the loading, soil, and groundwater conditions encountered.

Weather Implications

The subgrade soil or the soil at foundation level might become unstable with exposure to adverse weather such as rain, snow and freezing temperatures. The unstable areas due to weather exposure may require an additional undercut or stabilization and the representative geotechnical engineer should assist with the determination of the depth of additional undercut or stabilization procedure based on observation of the field condition.

Soil Sensitivity

Soil at the construction site will be exposed to moisture and disturbance from construction traffic, construction equipment and human factors. Due to the disturbance, soil may become sensitive with contact of water. Contractor should try to lessen the exposure the soil at the construction site may encounter to moisture and disturbances. Therefore, the foundations, floor slabs and pavements should be constructed immediately after the review of the representative geotechnical engineer.

Existing Fill

Traces of foreign material was encountered within samples of the existing fill material collected. GESTRA has not evaluated the material with respect to environmental considerations. The depth and type of existing fill material varied between our borings. The planned excavation for the lower level portion of the building will likely extend through the existing fill, but the at grade section is planned higher than the existing grades. Consideration should be given to performing additional exploration through test pits prior to the start of construction in locations where new fill is required. The test pits will allow for cross sectional views of the existing fill to help define the condition of the fill, refine potential soil correction estimates, possibly identify buried former structures if present, and determine potential for reuse of the existing fill.

Existing Adjacent Structures

New construction near or adjacent to existing foundations and structures requires special consideration. Due to potential interaction between new and existing foundations and slab on grade pads and overlapping stresses from adjacent foundation, the existing building may experience some settlement. The effect of these stresses and potential settlement should be evaluated prior to finalizing the design.

If new slab on grade pads or foundations are planned adjacent to existing spread foundations, the effects of overlapping soil stresses must be considered and the maximum net allowable soil bearing pressure must not be exceeded. The excavation and new construction should also consider the potential impact on the existing deep foundations. A temporary soil retention system may also be necessary to avoid undermining the existing building or other adjacent structures. The contractor and design team should consider the impact of the planned construction on any adjacent structures or utilities and should develop a plan of construction to mitigate impact. Evaluation of any adjacent structures or utilities or the effect of the construction on adjacent structures or utilities is outside the scope of GESTRA's services for this project. The project may also want to consider a pre and post condition survey to identify pre-existing distress of the structures adjacent to the planned construction and a monitoring plan during construction.

5.0 EXPLORATION AND TESTING PROCEDURES

5.1 LAYOUT AND ELEVATION PROCEDURES

A total of five (5) soil borings were completed at the approximate locations shown on the attached Borehole Location Map in Appendix I. The location of the borings were selected by Oxeland Group and located in the field by GESTRA by measuring from existing site features. Elevations of the boreholes were obtained by GESTRA using a Geomax Zenith 35 GNSS-INS receiver. Elevations shown on the boring logs are referenced to the Wisconsin County Coordinate System

(WCCS), Milwaukee County (NAVD88). Coordinates and elevation were not obtained by a licensed surveyor.

5.2 FIELD TESTING PROCEDURES

The boreholes were drilled using a truck mounted drill rig. The boreholes were initiated and advanced by using hollow stem augers. In landscape areas, a 24-inch split spoon sample was typically collected at the surface. In pavement areas, the borings were drilled through the pavement sections and auger cutting samples were collected below the pavement. 18-inch split spoon samples were collected at 2-1/2 foot intervals starting at a depth of 2 feet to a depth of 16 feet. Below a depth of 16 feet, spilt spoon samples were collected at 5-foot intervals to the assigned termination depth.

All representative soil samples were taken in general accordance with the "Standard Method for Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). After each sampling, a soil sample was retained and placed in a jar and recorded for type, color, consistency, and moisture, sealed and then transported to the laboratory for further review and testing, if required. The specific drilling method used including the depths, rig type, crew chief, are included on each of the individual boring logs as it may change for each borehole.

5.3 LABORATORY TESTING PROCEDURES

After completion of drilling operations, all of the retained soil samples were transported to GESTRA's laboratory and classified by a geotechnical engineer using the Unified Soil Classification System (USCS). A chart describing the classification system used is included in Appendix I of this report. The engineer assigned laboratory testing suited to extract important index properties of the soil layers. These tests included hand penetrometer readings, moisture contents, Atterberg limit and unconfined compressive strength

STANDARD OF CARE

Our exploration was limited to evaluating subsurface soil and groundwater conditions pertaining to the proposed project. GESTRA did not perform any environmental, chemical, or hydrogeologic testing as these were not part of our work scope.

This report should be made available in its entirety to bidding contractors for information purposes. The soil boring logs and borehole location map should not be detached from this report. Our report is not valid if used for purposes other than what is described in the report.

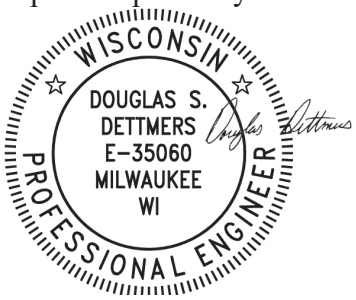
All OSHA regulations such as those regarding proper sloping and temporary shoring of excavations should be followed during the entire construction process.

GESTRA has presented our professional opinions in this report in the form of recommendations. Our opinions are based on our understanding of current project information and related accepted engineering practices at the time of this report. Other than this, no warranty is implied or intended.

Sincerely,

GESTRA Engineering, Inc.

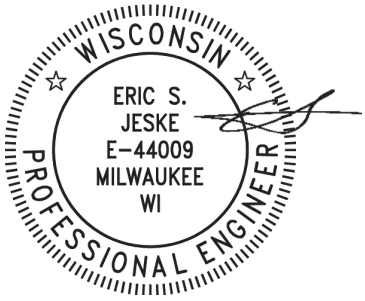
Report Prepared By:



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Date: 2021.10.13 11:42:39 -05'00'

Douglas Dettmers, P.E.
Senior Engineer

Report Reviewed By:



Digitally signed by Eric Jeske
Date: 2021.10.13 11:44:06 -05'00'

Eric Jeske, P.E.
Senior Engineer

APPENDIX I

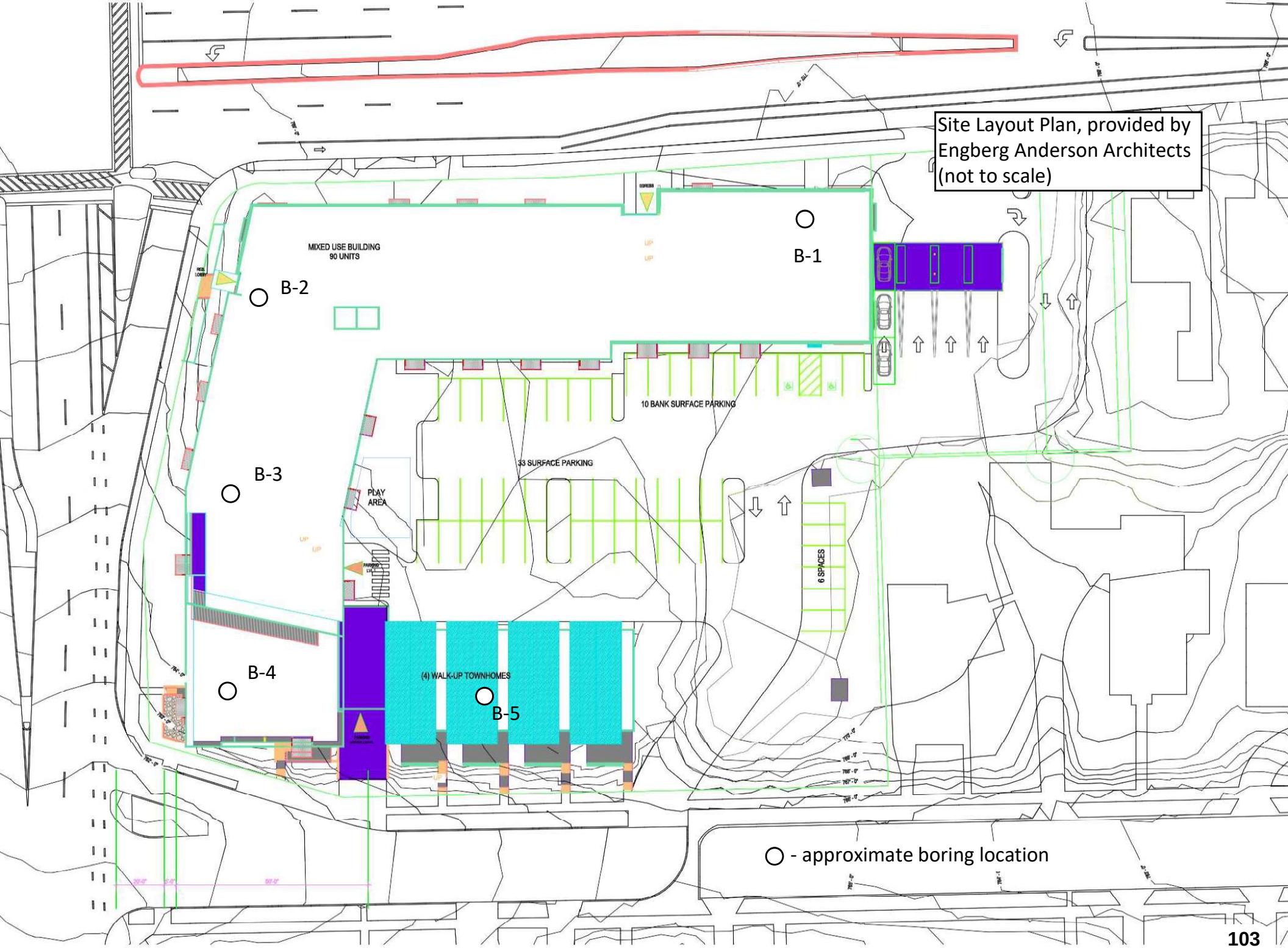
SITE LOCATION MAP, SITE LAYOUT PLAN, BOREHOLE LOCATION MAP, TEST BORING LOGS, GENERAL NOTES AND SOILS CLASSIFICATION

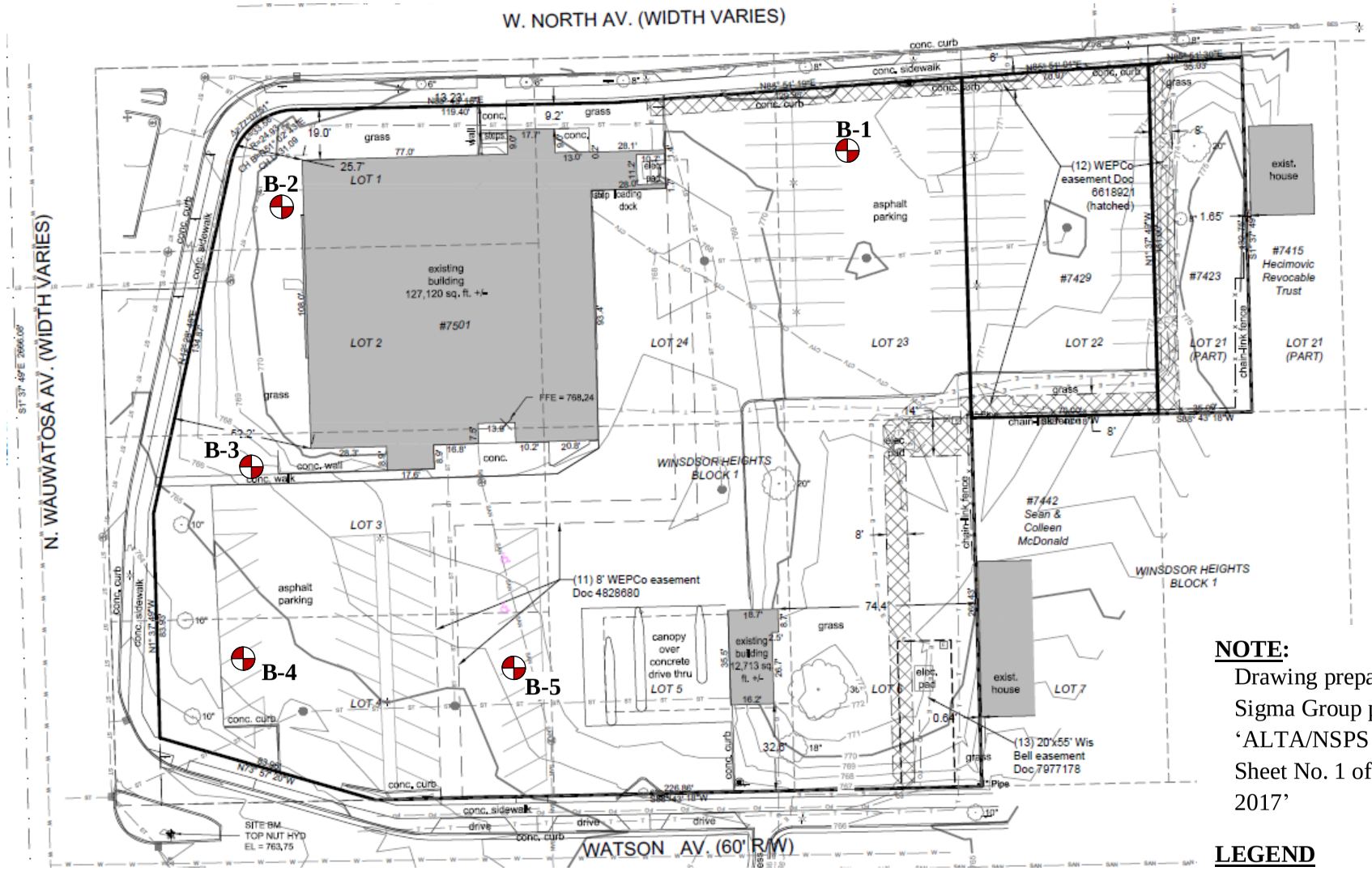


NOTE:
Drawing prepared using aerial topographic map from Google Earth

Project Name & Location: Mixed Use Development Wauwatosa, Wisconsin	**Drawing Title:** Site Location Map	**Project Number:** 21313-10	**Drawn by:** R. Haque
	Scale: Not to Scale	**Date:** October 12, 2021	**Checked & Approved by:** D. Dettmers

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Site Layout Plan, provided by Engberg Anderson Architects (not to scale)
MIXED USE BUILDING
90 UNITS
B-1
B-2
B-3
B-4
B-5
10 BANK SURFACE PARKING
33 SURFACE PARKING
PLAY AREA
6 SPACES
(4) WALK-UP TOWNHOMES
○ - approximate boring location



NOTE:

Drawing prepared using The Sigma Group prepared drawing, 'ALTA/NSPS Land Title Survey, Sheet No. 1 of 1, dated 8-30-2017'

LEGEND

- Soil Boring Location

Project Name & Location: Mixed Use Development Wauwatosa, Wisconsin	**Drawing Title:** Borehole Layout Plan	**Project Number:** 21313-10	**Drawn by:** R. Haque
	Scale: 1 Inch = 60 Feet (±)	**Date:** October 12, 2021	**Checked & Approved by:** D. Dettmers

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SOIL BORING LOG

GESTRA Engineering Inc.
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PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/27/2021
DATE DRILLING ENDED	9/27/2021
BORING NUMBER	B-1
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (International)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: S. Gonyer
FIELD LOG	C. Dietz
LAB LOG / QC	D. Dettmers
NORTHING	307589
EASTING	580105
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	770.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
				770.0	ASPHALT (7-inches)								
AU - 1					0.6 (770) BASE COURSE (not measured) 1 (769.6) Possible buried topsoil layer below base course								
SS - 2	6	4 2 3	5		SANDY LEAN CLAY, brown and gray with trace black, moist, trace to with gravel, (FILL)							16.1	
SS - 3	6	2 2 3	5	5 765.0	6 (764.6) LEAN CLAY, brown, moist, very stiff, trace gravel							14.5	
SS - 4	12	3 3 5	8			CL			2.50			17.7	
SS - 5	16	4 4 5	9	10 760.0	With sand in sample SS-5				2.50			15.2	
SS - 6	5	5 8 8	16		11.4 (759.2) SANDY LEAN CLAY, brown, moist, stiff	CL						14.1	
SS - 7	18	2 4 5	9	15 755.0	13.4 (757.2) LEAN CLAY, brown, moist, hard, trace to with sand	CL			4.00			14.4	
SS - 8	18	4 6 6	12	20 750.0	17.7 (752.9) SAND WITH SILT AND GRAVEL, brown, moist, medium dense	SP-SM							
SS - 9	18	3 3 8	11	25 745.0	22.7 (747.9) SILTY SAND, brown, wet, medium dense With silty clay layer at 26 feet (driller observation)	SM							

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 25.5 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

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SOIL BORING LOG

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/27/2021
DATE DRILLING ENDED	9/27/2021
BORING NUMBER	B-1
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (International)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: S. Gonyer
FIELD LOG	C. Dietz
LAB LOG / QC	D. Dettmers
NORTHING	307589
EASTING	580105
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	770.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						SILTY SAND, brown, wet, medium dense	SM							
						27.7 (742.9)								
						SAND WITH GRAVEL, gray, wet, medium dense	SP							
SS - 10	18	5 7 8	15	30	740.0									
						31 (739.6)								
						End of Boring at 31.0 ft.								
				35	735.0									
				40	730.0									
				45	725.0									
				50	720.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 25.5 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

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SOIL BORING LOG

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/24/2021
DATE DRILLING ENDED	9/24/2021
BORING NUMBER	B-2
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (HT)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: A. Woerpel
FIELD LOG	Z. Frye
LAB LOG / QC	D. Dettmers
NORTHING	307575
EASTING	579896
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	770.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	10	2 4 6 8	10	770.0	TOPSOIL (6-inches) 0.5 (770.3) LEAN CLAY, brown, moist, trace sand and gravel, (FILL)								
					1.4 (769.4)								
SS - 2	12	3 3 4	7		LEAN CLAY WITH SAND, brown, moist, trace to with gravel, (FILL)							10.9	
SS - 3	8	1 3 3	6	5 765.0	6 (764.8) LEAN CLAY, brown, moist, hard, trace sand and gravel							12.1	
SS - 4	18	2 7 8	15			CL			4.00 - 4.5+			12.6	
SS - 5	16	2 7 9	16	10 760.0	With wet sand lens at 10.5 feet				4.5			11.3	
SS - 6	18	3 4 5	9		12.5 (758.3) LEAN CLAY, gray, moist, stiff to very stiff, trace to with gravel				2.50			11.5	
SS - 7	16	1 3 6	9	15 755.0					3.00 - 3.50			11	
SS - 8	14	1 4 4	8	20 750.0		CL			1.75			11.4	
SS - 9	18	3 4 6	10	25 745.0					1.50			12.8	

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Mixed Use Development		DATE DRILLING STARTED: 9/24/2021	PAGE NUMBER: 2 of 2
PROJECT LOCATION: Wauwatosa, WI		DATE DRILLING ENDED: 9/24/2021	BORING NUMBER: B-2
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: Z. Frye LAB LOG / QC: D. Dettmers	NORTHING: 307575 EASTING: 579896	PROJECT NUMBER: 21313-10 DRILLING RIG: CME 75 (HT) DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 770.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 10	13	3 5 6	11	30 / 740.0	LEAN CLAY, gray, moist, stiff to very stiff, trace to with gravel With sandy lean clay layer in sample SS-10	CL			1.50			11.6	
					31 (739.8) End of Boring at 31.0 ft.								
				35 / 735.0									
				40 / 730.0									
				45 / 725.0									
				50 / 720.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

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SOIL BORING LOG

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/24/2021
DATE DRILLING ENDED	9/24/2021
BORING NUMBER	B-3
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (HT)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: D. Harris
FIELD LOG	Z. Frye
LAB LOG / QC	D. Dettmers
NORTHING	307472
EASTING	579880
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	766 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	8	2 6 9 9	15	765.0	TOPSOIL (4-inches) 0.3 (765.7) SANDY LEAN CLAY, brown, moist, trace gravel, (FILL) 1.3 (764.7)							8.6	
SS - 2	14	5 7 11	18		LEAN CLAY, brown, moist, very stiff to hard, with silty sand layers, (possible FILL)	CL			4.50			11.1	
SS - 3	10	3 8 9	17	5 760.0	6.1 (759.9)				2.00			17	
SS - 4	10	2 3 4	7		LEAN CLAY, gray, moist, stiff to very stiff, trace gravel	CL			2.00 **(1.7)**			11.7	γ_d = 127.7 pcf γ_T = 142.6 pcf
SS - 5	12	3 8 11	19	10 755.0	10.5 (755.5) SAND, brown, moist, medium dense to dense, with stiff to very stiff clay layers							12.6	
SS - 6	14	9 13 13	26			SP							
SS - 7	9	5 22 19	41	15 750.0	With gravel in sample SS-7 Rock chips from 15 to 15.2 feet due to possible boulder 17.3 (748.7)								
					LEAN CLAY, brown, moist, very stiff, trace gravel	CL							
SS - 8	14	5 6 10	16	20 745.0	20.7 (745.3) SAND, brown, moist, medium dense	SP			3.00			21.4	Sample SS-8A Sample SS-8B
					22.5 (743.5) SAND, orangish brown, wet, medium dense								
SS - 9	12	5 7 6	13	25 740.0		SP							

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 24.5 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 25 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/24/2021
DATE DRILLING ENDED	9/24/2021
BORING NUMBER	B-3
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (HT)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: D. Harris
FIELD LOG	Z. Frye
LAB LOG / QC	D. Dettmers
NORTHING	307472
EASTING	579880
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	766 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
					27.5 (738.5)	SP							
					LEAN CLAY, gray, moist, very stiff								
SS - 10	16	2 4 6	10	30 735.0		CL			3.00			16.9	
					31 (735)								
					End of Boring at 31.0 ft.								
				35 730.0									
				40 725.0									
				45 720.0									
				50 715.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 24.5 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 25 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/27/2021
DATE DRILLING ENDED	9/27/2021
BORING NUMBER	B-4
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (International)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: S. Gonyer
FIELD LOG	C. Dietz
LAB LOG / QC	D. Dettmers
NORTHING	307400
EASTING	579880
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	764.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
					ASPHALT (8-inches)								
					0.7 (763.6)								
					BASE COURSE (5-inches)								
					1.1 (763.2)								
SS - 2 AU - 1	18	2 4 6	10		LEAN CLAY WITH SAND, moist, trace brick pieces, (FILL)				2.00			12.5	
					2 (762.3)								
				760.0	LEAN CLAY, brown, moist, very stiff to hard, trace sand, trace to with gravel With gray mottling in sample SS-2								
SS - 3	18	2 5 7	12	5		CL			4.5+			12.1	
SS - 4	18	2 4 6	10						3.50			13.8	Samples SS-4 and SS-5 partly ribboned
				755.0									
SS - 5	8	7 12 12	24	10					2.00			12.8	
					11 (753.3)								
					SAND, brown, wet, medium dense, trace silt and clay								
SS - 6	14	2 5 5	10	▽		SP							
					13.5 (750.8)								
				750.0	SILTY SAND, brown, moist, medium dense	SM							
SS - 7	16	5 8 16	24	15									
					15.5 (748.8)								
					LEAN CLAY, gray, moist, very stiff to hard, trace gravel				4.5+				
				745.0		CL							
SS - 8	18	2 4 6	10	20					2.50			24.5	
					22.7 (741.6)								
					SILTY SAND, brown, wet, medium dense								
				740.0									
SS - 9	18	6 5 7	12	25		SM							
				▼									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 13 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 26 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

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SOIL BORING LOG

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/27/2021
DATE DRILLING ENDED	9/27/2021
BORING NUMBER	B-4
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (International)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: S. Gonyer
FIELD LOG	C. Dietz
LAB LOG / QC	D. Dettmers
NORTHING	307400
EASTING	579880
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	764.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 10	18	3 4 8	12	30	735.0	SILTY SAND, brown, wet, medium dense	SM							
						31 (733.3)								
						End of Boring at 31.0 ft.								
				35	730.0									
				40	725.0									
				45	720.0									
				50	715.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 13 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 26 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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PAGE NUMBER: 1 of 1

PROJECT NAME	Mixed Use Development
PROJECT LOCATION	Wauwatosa, WI
DATE DRILLING STARTED	9/27/2021
DATE DRILLING ENDED	9/27/2021
BORING NUMBER	B-5
PROJECT NUMBER	21313-10
DRILLING RIG	CME 75 (International)
BORING DRILLED BY	FIRM: GESTRA CREW CHIEF: S. Gonyer
FIELD LOG	C. Dietz
LAB LOG / QC	D. Dettmers
NORTHING	307387
EASTING	579985
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	766.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
					ASPHALT (6-inches)								
					0.5 (766.1)								
				765.0	BASE COURSE (5-inches)								
					0.9 (765.7)								
SS - 2 AU - 1	14	6 5 6	11		SILTY CLAY WITH SAND AND GRAVEL, brown, moist, (FILL)					19	7	11.5	
					3.8 (762.8)								
					LEAN CLAY, brown, moist, hard, trace sand and gravel								
SS - 3	18	7 11 14	25	5		CL			4.5+			12.1	
				760.0									
					7.5 (759.1)								
SS - 4	18	4 5 7	12		LEAN CLAY, gray, moist, stiff to very stiff, trace sand, trace to with gravel				2.00			12	
SS - 5	15	4 7 9	16	10					2.00			11.6	Samples SS-5 and SS-6 partly ribboned
				755.0									
SS - 6	3	6 7 9	16			CL			1.50			11.7	
SS - 7	18	9 9 9	18	15					2.00			12.2	
				750.0									
					17.7 (748.9)								
					SAND WITH SILT, brown, moist, medium dense								
SS - 8	14	7 8 8	16	20		SP-SM							
					21 (745.6)								
				745.0	End of Boring at 21.0 ft.								
				25									
				740.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

GENERAL NOTES

DRILLING AND SAMPLING SYMBOLS

SYMBOL	DEFINITION
HSA	Hollow Stem Auger
HSA w/ RW	Hollow Stem Auger converted to Rotary Wash Boring (initiated with Mudding Fluid)
SS	2" O.D. Split Spoon Sample – (ASTM D 1586)
SH	3" Thin-Walled Tube Sample (Shelby Tube) – (ASTM D 1587)
AU	Solid Stem Auger Sample
CA	Modified California Sample – (ASTM D 3550)
RC	Rock Core Sample – (ASTM D 2113)
HA	Hand Auger Sample
GB	Grab Bag Sample
R	SPT Refusal (N-value of 50 blows for less than 6 inches of penetration)
NMR	No Measurement Recorded
NE	Not Encountered

TEST SYMBOLS

SYMBOL	DEFINITION
MC	Moisture Content (%) – (ASTM D 2216)
LOI	Organic Content (Loss on Ignition) (%) – (ASTM D 2974)
Qp	Hand Penetrometer Reading (tsf)
Qu	Unconfined Comp. Strength (tsf) – (ASTM D 2166)
γ_d	Dry Density (pcf) – (ASTM D 7263)
γ_T	Total (Moist) Density (pcf)
LL, PL	Liquid and Plastic Limit (%) – (ASTM D 4318)
PI	Plasticity Index (%)
P200	Percent passing the #200 Sieve – (ASTM D 1140)
Ts	Hand Torvane Reading (tsf)
SG	Specific Gravity – (ASTM D854)
pH	Hydrogen Ion Content – (ASTM D4972)
RQD	Rock Quality Designation (%) – (ASTM D6032)

WATER LEVEL

Water levels shown on the boring logs are the levels measured in the borings at the time and under the conditions indicated. In some soils, it may not be possible to determine the groundwater level within the normal time required for test borings and an extended period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol may not indicate the true level of the groundwater table. Perched water refers to water above an impervious layer, thus impeded in reaching the water table. The available water level information is given at the bottom of the respective boring log sheet.

DESCRIPTIVE TERMINOLOGY

DENSITY TERM	SPT N-VALUE
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

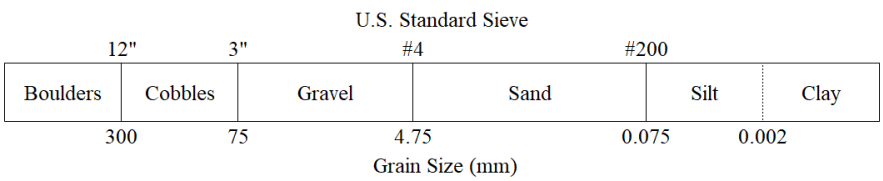
CONSISTENCY TERM	Unconfined Compressive Strength, (tsf)	SPT N-VALUE
Very Soft	<0.25	0 - 2
Soft	0.25 - 0.49	2 - 4
Medium Stiff	0.50 - 0.99	4 - 8
Stiff	1.00 - 1.99	8 - 16
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.0+	Over 30

Lamination	Up to 1/2" thick horizontal stratum
Layer	1/2" thick or greater horizontal stratum
Lens	1/2" to 6" discontinuous horizontal stratum
Varved	Alternating laminations
Dry	Powdery, dusty
Moist	Damp, below saturation
Wet	Saturated, above liquid limit

Standard Penetration Test N-Value: Blows per Foot of a 140 Pound Hammer Falling 30 inches on a 2-inch OD Split Barrel Sampler

Note: If unconfined compressive strength data is not available, then N-value should be used to describe consistency term

RELATIVE SIZES



SOILS CLASSIFICATION FOR ENGINEERING PURPOSES

ASTM Designation: D 2487 - 83

(Based on Unified Soil Classification System)

SOIL ENGINEERING

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]					Soil Classification[B] Group Symbol	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	Cu ≥ 4 and 1≤ Cc ≤ 3[E]		GW	Well-graded gravel[F]
			Cu < 4 and/or 1 > Cc > 3[E]		GP	Poorly-graded gravel[F]
		Gravels with Fines more than 12% fines[C]	Fines Classify as ML or MH		GM	Silty gravel[F.G.]
			Fines classify as CL or CH		GC	Clayey gravel[F.G.]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean sands Less than 5% fines[D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3[E]		SW	Well-graded sand[H]
			Cu < 6 and/or 1 > Cc > 3[E]		SP	Poorly-graded sand[H]
		Sands with Fines more than 12% fines[D]	Fines Classify as ML or MH		SM	Silty sand[G.H]
			Fines classify as CL or CH		SC	Clayey sand[G.H]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid Limit less than 50	Inorganic	PI > 7 and plots on or above " A" line[I]		CL	Lean clay[J.K.L]
			PI < 4 or plots below " A " line[I]		ML	Silt[J.K.L]
		Organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay[J.K.L.M] Organic Silt[J.K.L.N]
	Silts and Clays Liquid Limit 50 or more	Inorganic	PI plots on or above " A " line		CH	Fat clay[J.K.L]
			PI plots below " A " line		MH	Elastic silt[J.K.L]
		Organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay[J.K.L.O] Organic Silt[J.K.L.P]
Highly organic soils		Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-in (75- mm) sieve

[B] If field sample contained cobbles or boulders, or both, add with cobbles and/or boulders after group name

[C] Gravels with 5 to 12 % fines require dual symbols:
GW - GM (well-graded gravel with silt)
GW - GC (well-graded gravel with clay)
GP - GM (poorly-graded gravel with silt)
GP - GC (poorly-graded gravel with clay)

[D] Sands with 5 to 12 % fines require dual symbols:
SW -SM (well-graded sand with silt)
SW - SC (well-graded sand with clay)
SP - SM (poorly-graded sand with silt)
SP - SC (poorly-graded sand with clay)

[E] $Cu = \frac{D_{60}}{D_{10}}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" after group name

[G] If fines classify as CL-ML, use dual symbol GC-GM. or SC-SM

[H] If soil contains ≥ 15% gravel, add "with gravel" after group name.

[I] If Atterberg limits plot in hatched area, soil is a CL-ML (silty clay)

[J] If soil contains 15 to 29% plus No. 200, add, "with sand" or " with gravel", whichever is predominant

[K] If soil contains ≥ 30% plus No.200, and predominantly sand, add "sandy" before the group name

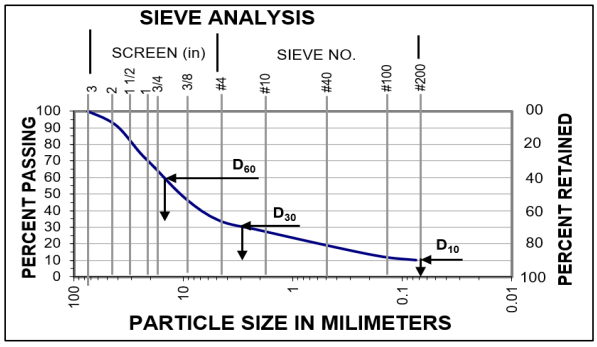
[L] If soil contains ≥ 30% plus No.200, and predominantly gravel, add "gravelly" before the group name

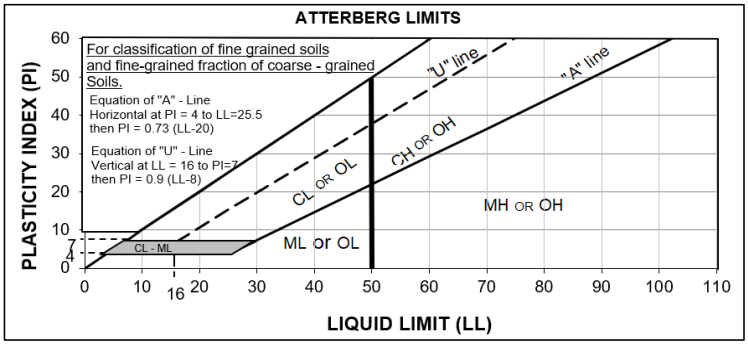
[M] PI ≥ 4 and plots on or above "A" Line

[N] PI < 4 or plots below "A" Line

[O] PI plots on or above "A" Line

[P] PI plots below "A" Line





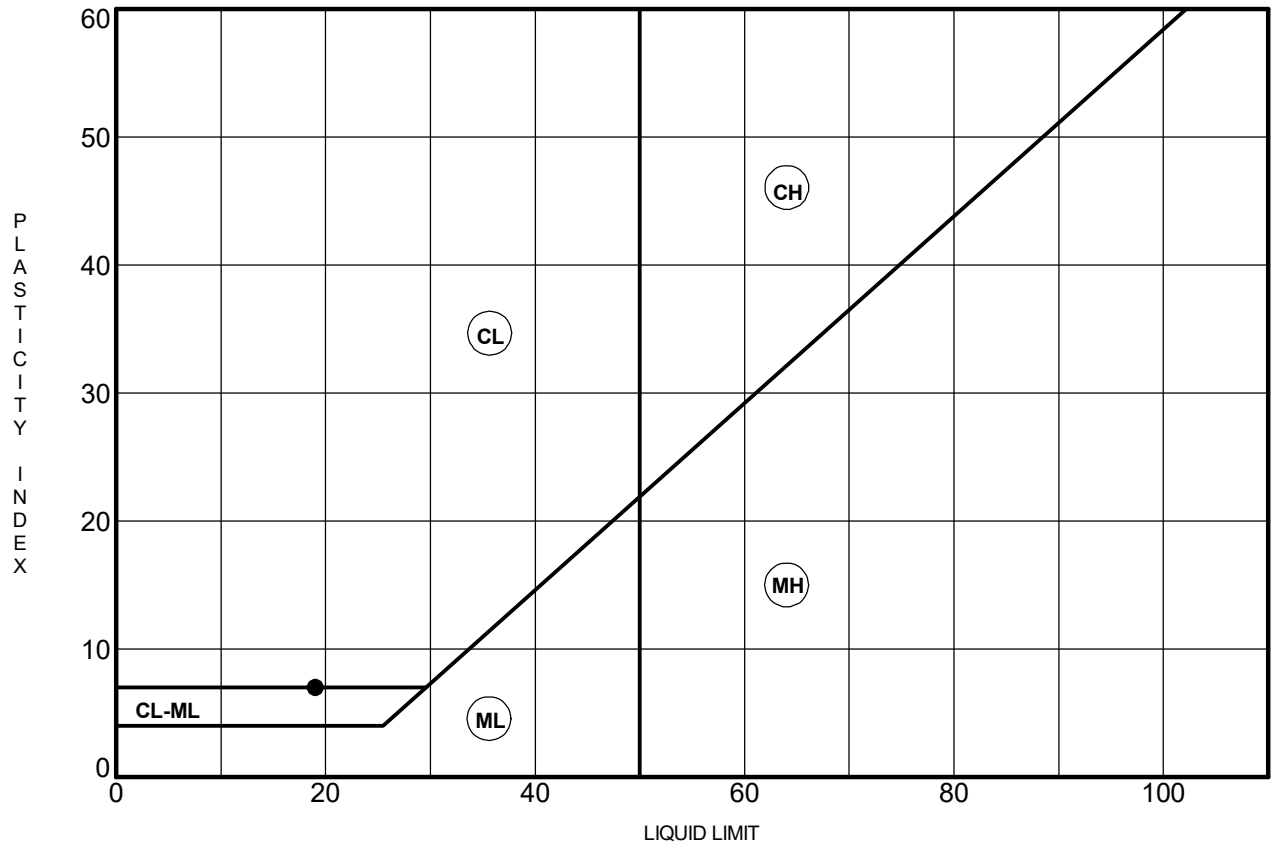
APPENDIX II

LABORATORY TEST RESULTS

GESTRA Engineering, Inc
191 W. Edgerton Avenue
Milwaukee, WI 53207
Phone: (414) 933-7444, Fax: (414) 933-7844

LABORATORY TEST RESULTS
ATTERBERG LIMITS RESULTS (ASTM D4318)

Project Name: Mixed Use Development
Project Number: 21313-10
Project Location: Wauwatosa, WI



Unless otherwise noted, Atterberg limit sample was air-dried, Liquid limit was performed using mutiple points, and plastic limit test was hand rolled.

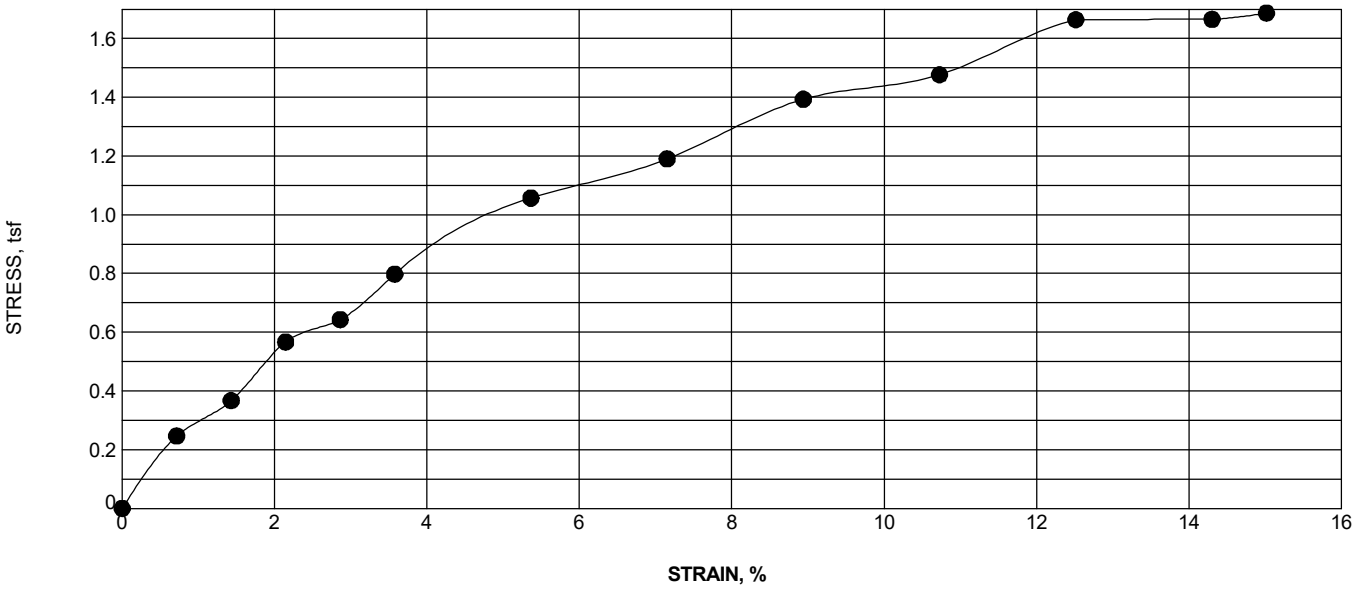
	Specimen Identification		LL	PL	PI	Fines	MC	Notes
●	**B-5, SS-2**	**2'-3.5'**	**19**	**12**	**7**		**11.5**	

ATTERBERG LIMITS - GINT STD US LAB.GDT - 10/12/21 16:08 - T:\PROJECTS\2021\MILWAUKEE-10 (GEOTECH)\21313-10 DD (TOSA MIXED USE)\LOGS\MIXED USE_2021-09-28.GPJ

GESTRA Engineering, Inc
191 W. Edgerton Avenue
Milwaukee, WI 53207
Phone: (414) 933-7444, Fax: (414) 933-7844

LABORATORY TEST RESULTS
UNCONFINED COMPRESSION TEST (ASTM D2166)

Project Name: Mixed Use Development
Project Number: 21313-10
Project Location: Wauwatosa, WI



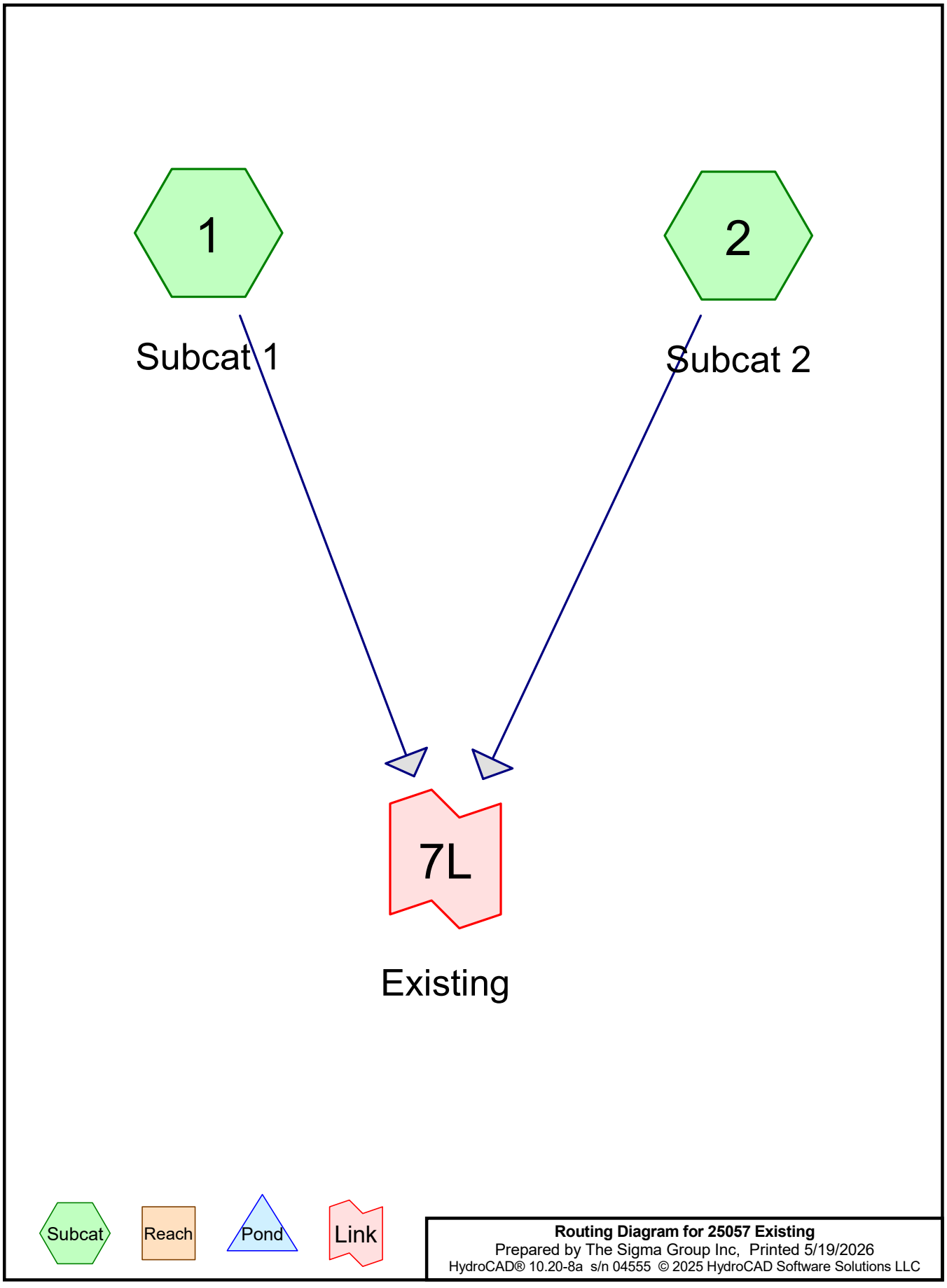


Specimen Indentification	● B-3, SS-4		
Depth (feet)	7'-8.5'		
USCS Classification	LEAN CLAY (CL)		
Sample Height (in)	2.80		
Sample Diameter (in)	1.38		
Height:Diameter Ratio	2.03		
Q_u (tsf)	1.69		
MC (%)	11.7		
γ_d (pcf)	127.7		
γ_T (pcf)	142.6		

UNCONFINED - GINT STD US LAB.GDT - 10/12/21 16:07 - T:\PROJECTS\2021\MILWAUKEE-10 (GEOTECH)\21313-10 DD (TOSA MIXED USE)\LOGS\MIXED USE_2021-09-28.GPJ

Appendix B

Calculations - Storm Water Quantity (HydroCAD Model)


1
2
Subcat 1
Subcat 2
7L
Existing
Subcat
Reach
Pond
Link
Routing Diagram for 25057 Existing
Prepared by The Sigma Group Inc, Printed 5/19/2026
HydroCAD® 10.20-8a s/n 04555 © 2025 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 9179 WI Milwaukee
Rainfall events imported from "NRCS2-Rain.txt" for 1254 WI Waukesha

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.652	78	>75% Grass cover, Good, HSG D (1, 2)
0.336	98	Roofs, HSG D (1)
1.070	98	Unconnected pavement, HSG D (1, 2)
2.058	**92**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
2.058	HSG D	1, 2
0.000	Other	
2.058		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.652	0.000	0.652	>75% Grass cover, Good	1, 2
0.000	0.000	0.000	0.336	0.000	0.336	Roofs	1
0.000	0.000	0.000	1.070	0.000	1.070	Unconnected pavement	1, 2
0.000	**0.000**	**0.000**	**2.058**	**0.000**	**2.058**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=57,461 sf 65.01% Impervious Runoff Depth>5.13"
Tc=6.0 min CN=91 Runoff=11.48 cfs 0.564 af

Subcatchment 2: Subcat 2 Runoff Area=32,170 sf 74.19% Impervious Runoff Depth>5.36"
Tc=6.0 min CN=93 Runoff=6.57 cfs 0.330 af

Link 7L: Existing after 11.75 hrs before 21.25 hrs Inflow=18.06 cfs 0.894 af
Primary=18.06 cfs 0.711 af Secondary=2.98 cfs 0.183 af

Total Runoff Area = 2.058 ac Runoff Volume = 0.894 af Average Runoff Depth = 5.21"
31.69% Pervious = 0.652 ac 68.31% Impervious = 1.406 ac

Summary for Subcatchment 1: Subcat 1

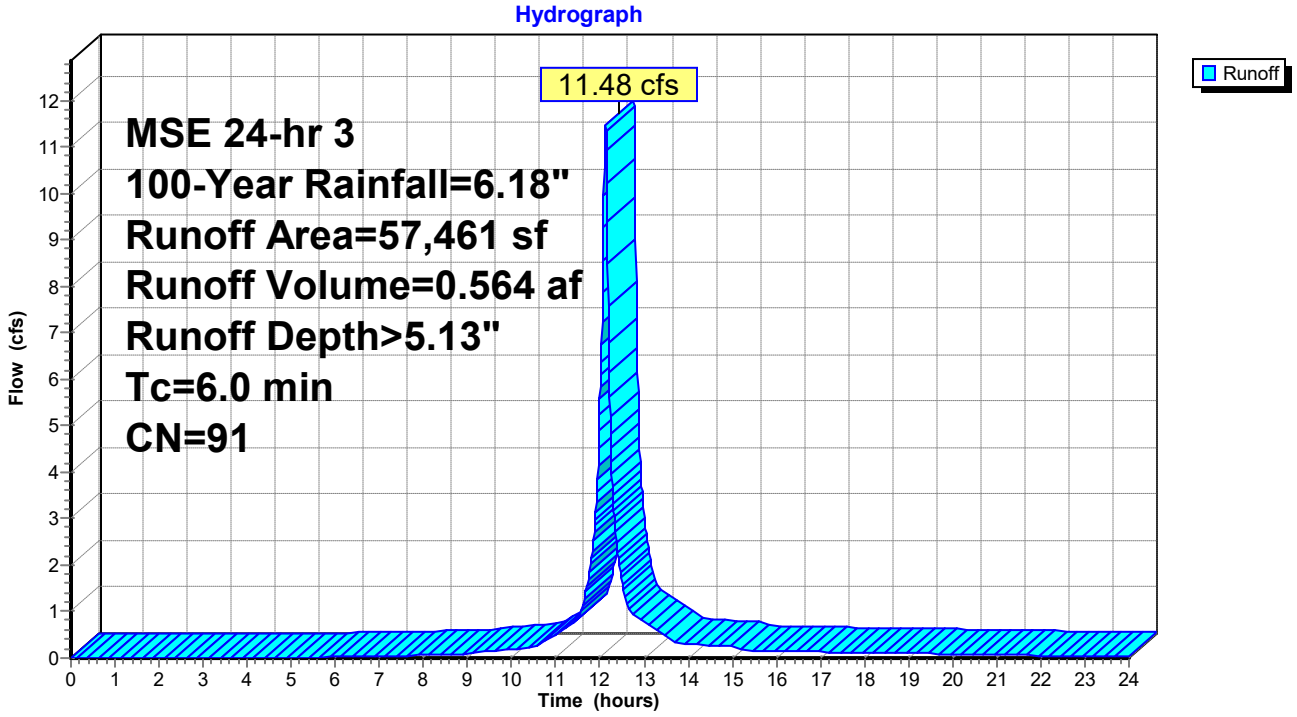
Runoff = 11.48 cfs @ 12.13 hrs, Volume= 0.564 af, Depth> 5.13"
Routed to Link 7L : Existing

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	20,104	78	>75% Grass cover, Good, HSG D
	14,633	98	Roofs, HSG D
	22,724	98	Unconnected pavement, HSG D
	57,461	91	Weighted Average
	20,104		34.99% Pervious Area
	37,357		65.01% Impervious Area
	22,724		60.83% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

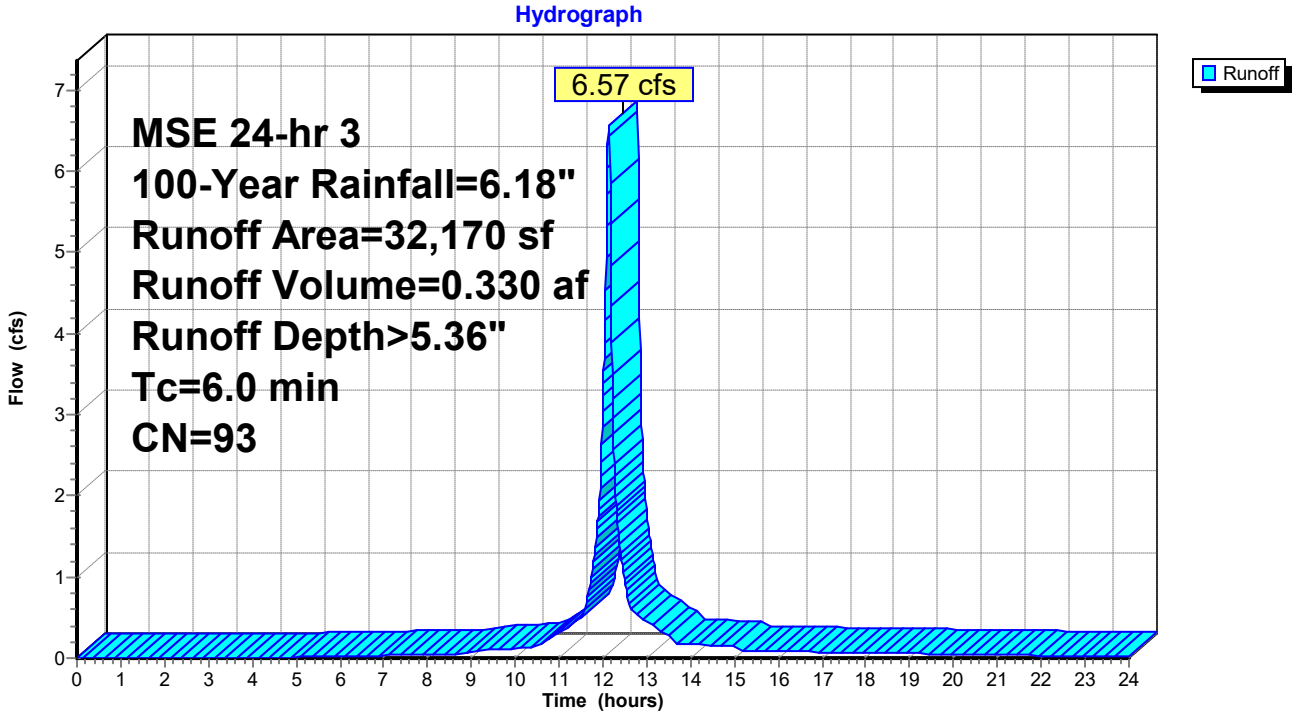
Runoff = 6.57 cfs @ 12.13 hrs, Volume= 0.330 af, Depth> 5.36"
Routed to Link 7L : Existing

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	8,303	78	>75% Grass cover, Good, HSG D
	0	98	Roofs, HSG D
	23,867	98	Unconnected pavement, HSG D
	32,170	93	Weighted Average
	8,303		25.81% Pervious Area
	23,867		74.19% Impervious Area
	23,867		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2: Subcat 2

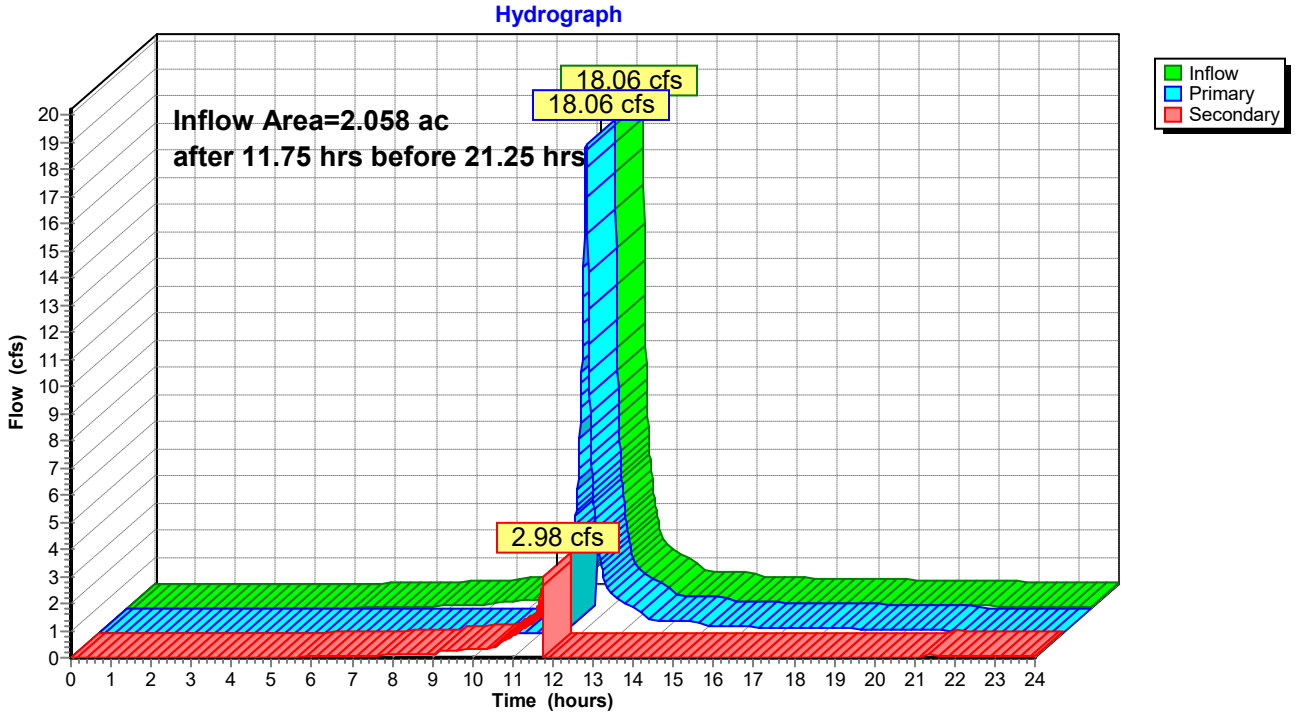


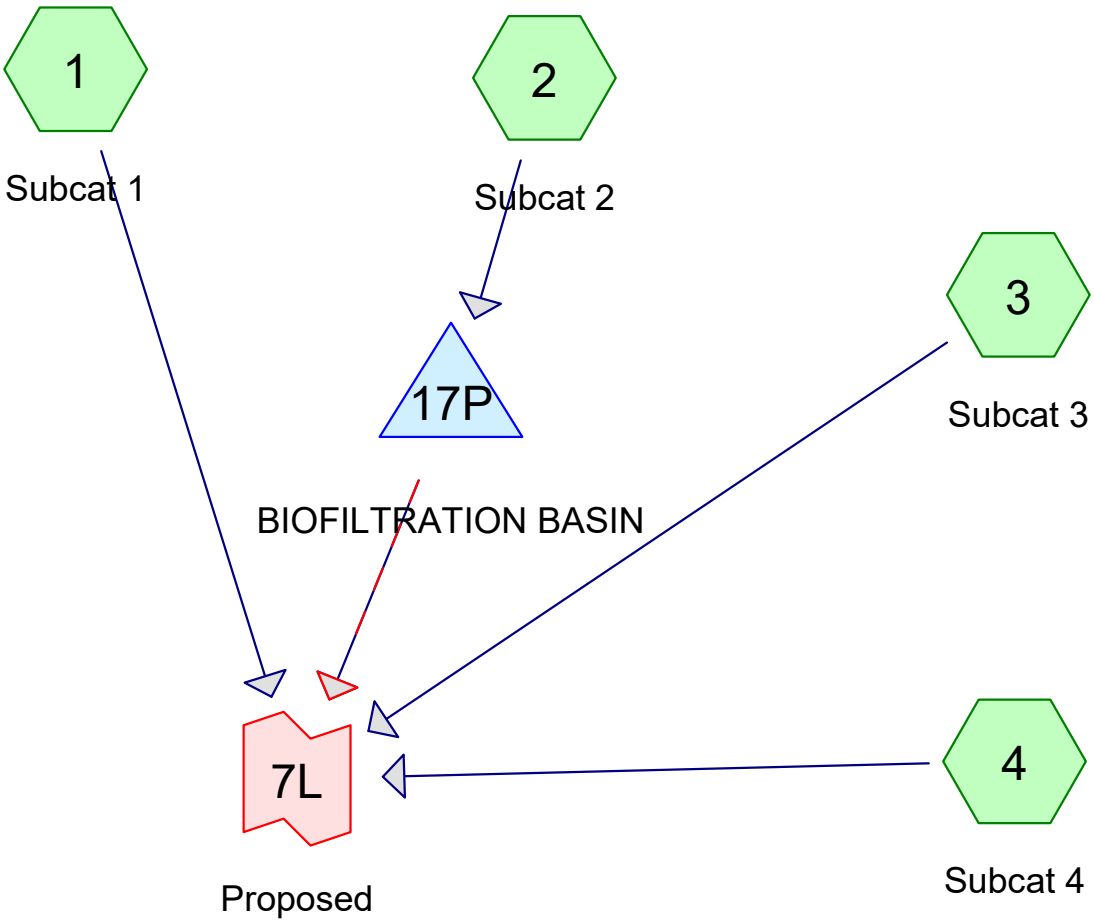
Summary for Link 7L: Existing

Inflow Area = 2.058 ac, 68.31% Impervious, Inflow Depth > 5.21" for 100-Year event
Inflow = 18.06 cfs @ 12.13 hrs, Volume= 0.894 af
Primary = 18.06 cfs @ 12.13 hrs, Volume= 0.711 af, Atten= 0%, Lag= 0.0 min
Secondary = 2.98 cfs @ 11.74 hrs, Volume= 0.183 af

Primary outflow = Inflow after 11.75 hrs before 21.25 hrs, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 7L: Existing





Subcat Reach Pond Link

Routing Diagram for 25057 Proposed
Prepared by The Sigma Group Inc, Printed 5/19/2026
HydroCAD® 10.20-8a s/n 04555 © 2025 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 9179 WI Milwaukee
Rainfall events imported from "NRCS2-Rain.txt" for 1227 WI Milwaukee
Rainfall events imported from "NRCS2-Rain.txt" for 1254 WI Waukesha

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.378	78	>75% Grass cover, Good, HSG D (1, 2, 4)
0.488	98	Roofs, HSG D (2, 3)
1.191	98	Unconnected pavement, HSG D (1, 3, 4)
2.058	**94**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
2.058	HSG D	1, 2, 3, 4
0.000	Other	
2.058		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.378	0.000	0.378	>75% Grass cover, Good	1, 2, 4
0.000	0.000	0.000	0.488	0.000	0.488	Roofs	2, 3
0.000	0.000	0.000	1.191	0.000	1.191	Unconnected pavement	1, 3, 4
0.000	**0.000**	**0.000**	**2.058**	**0.000**	**2.058**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	17P	184.22	183.93	38.4	0.0076	0.011	0.0	12.0	0.0	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1: Subcat 1 Runoff Area=46,889 sf 98.42% Impervious Runoff Depth>5.94"
Tc=6.0 min CN=98 Runoff=9.93 cfs 0.533 af

Subcatchment 2: Subcat 2 Runoff Area=17,921 sf 84.75% Impervious Runoff Depth>5.59"
Tc=6.0 min CN=95 Runoff=3.73 cfs 0.192 af

Subcatchment 3: Subcat 3 Runoff Area=11,068 sf 100.00% Impervious Runoff Depth>5.94"
Tc=6.0 min CN=98 Runoff=2.34 cfs 0.126 af

Subcatchment 4: Subcat 4 Runoff Area=13,753 sf 5.50% Impervious Runoff Depth>3.84"
Tc=6.0 min CN=79 Runoff=2.22 cfs 0.101 af

Pond 17P: BIOFILTRATION BASIN Peak Elev=188.75' Storage=2,511 cf Inflow=3.73 cfs 0.192 af
Primary=2.75 cfs 0.190 af Secondary=0.00 cfs 0.000 af Outflow=2.75 cfs 0.190 af

Link 7L: Proposed after 11.75 hrs before 21.25 hrs Inflow=16.00 cfs 0.950 af
Primary=16.00 cfs 0.735 af Secondary=2.31 cfs 0.215 af

Total Runoff Area = 2.058 ac Runoff Volume = 0.951 af Average Runoff Depth = 5.55"
18.38% Pervious = 0.378 ac 81.62% Impervious = 1.679 ac

Summary for Subcatchment 1: Subcat 1

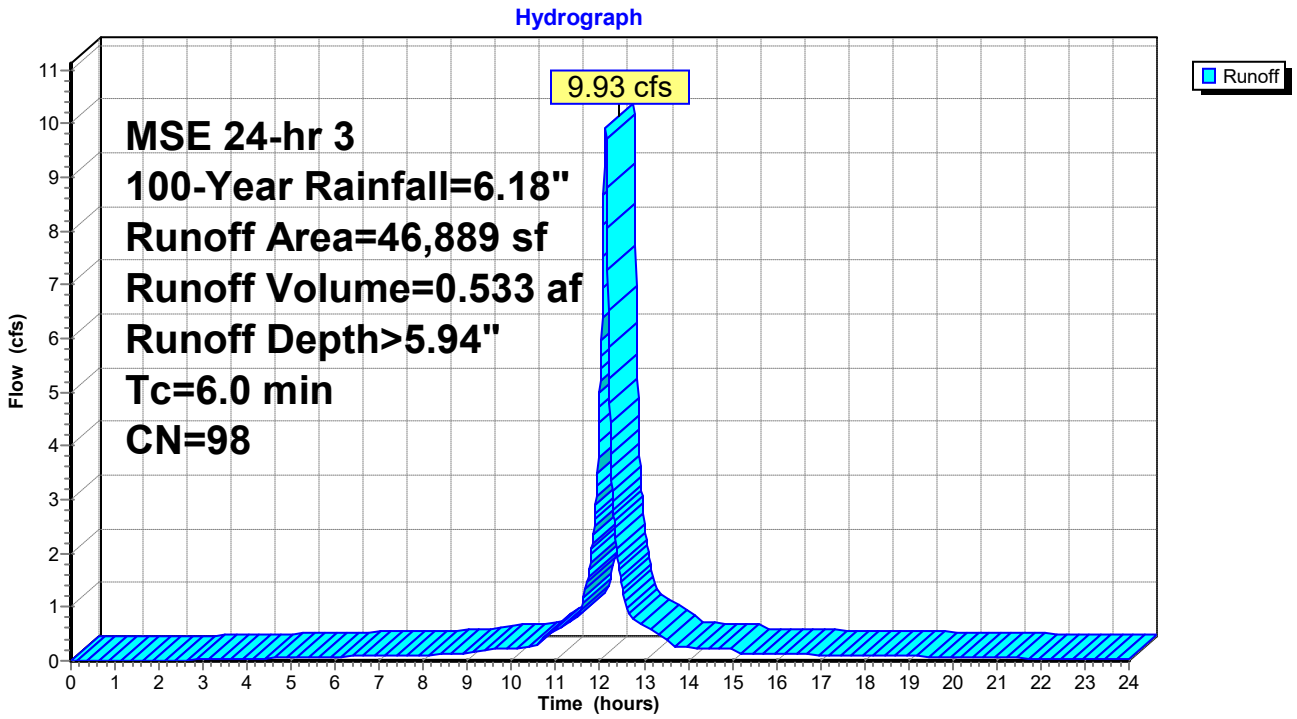
Runoff = 9.93 cfs @ 12.13 hrs, Volume= 0.533 af, Depth> 5.94"
Routed to Link 7L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	742	78	>75% Grass cover, Good, HSG D
	46,147	98	Unconnected pavement, HSG D
	46,889	98	Weighted Average
	742		1.58% Pervious Area
	46,147		98.42% Impervious Area
	46,147		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

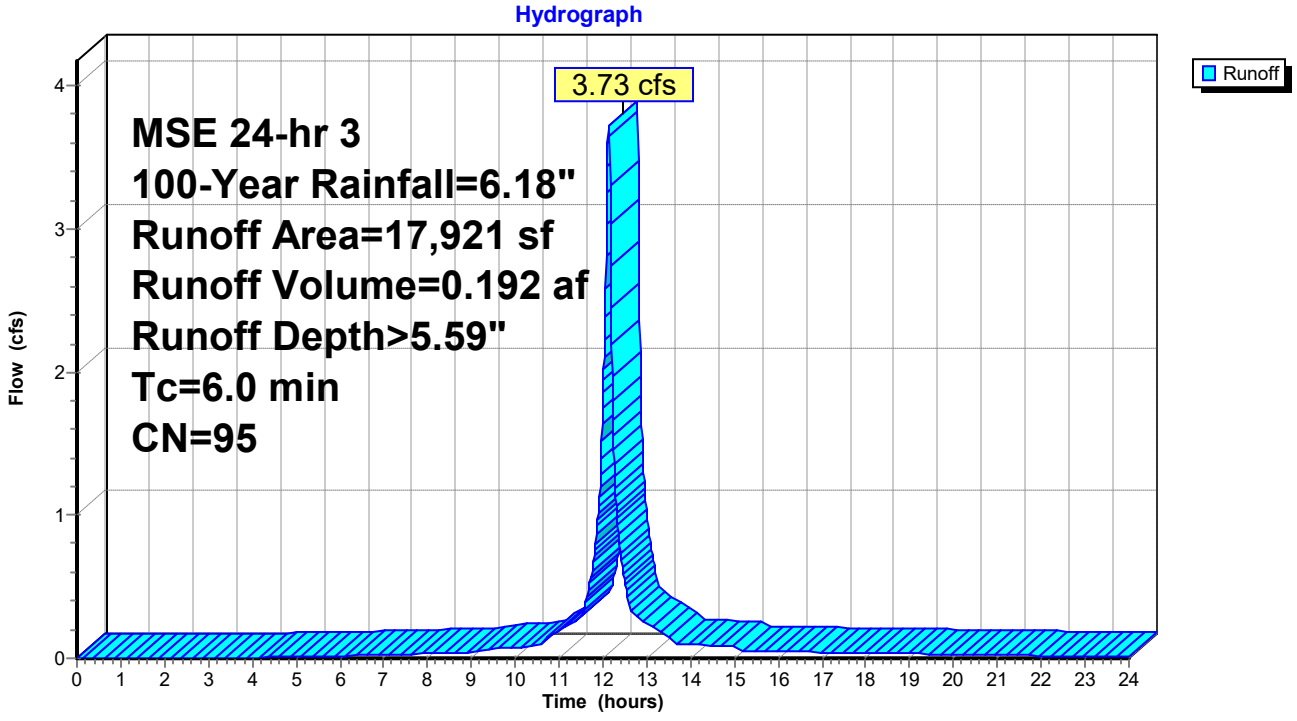
Runoff = 3.73 cfs @ 12.13 hrs, Volume= 0.192 af, Depth> 5.59"
Routed to Pond 17P : BIOFILTRATION BASIN

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	2,733	78	>75% Grass cover, Good, HSG D
	15,188	98	Roofs, HSG D
	17,921	95	Weighted Average
	2,733		15.25% Pervious Area
	15,188		84.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2: Subcat 2



Summary for Subcatchment 3: Subcat 3

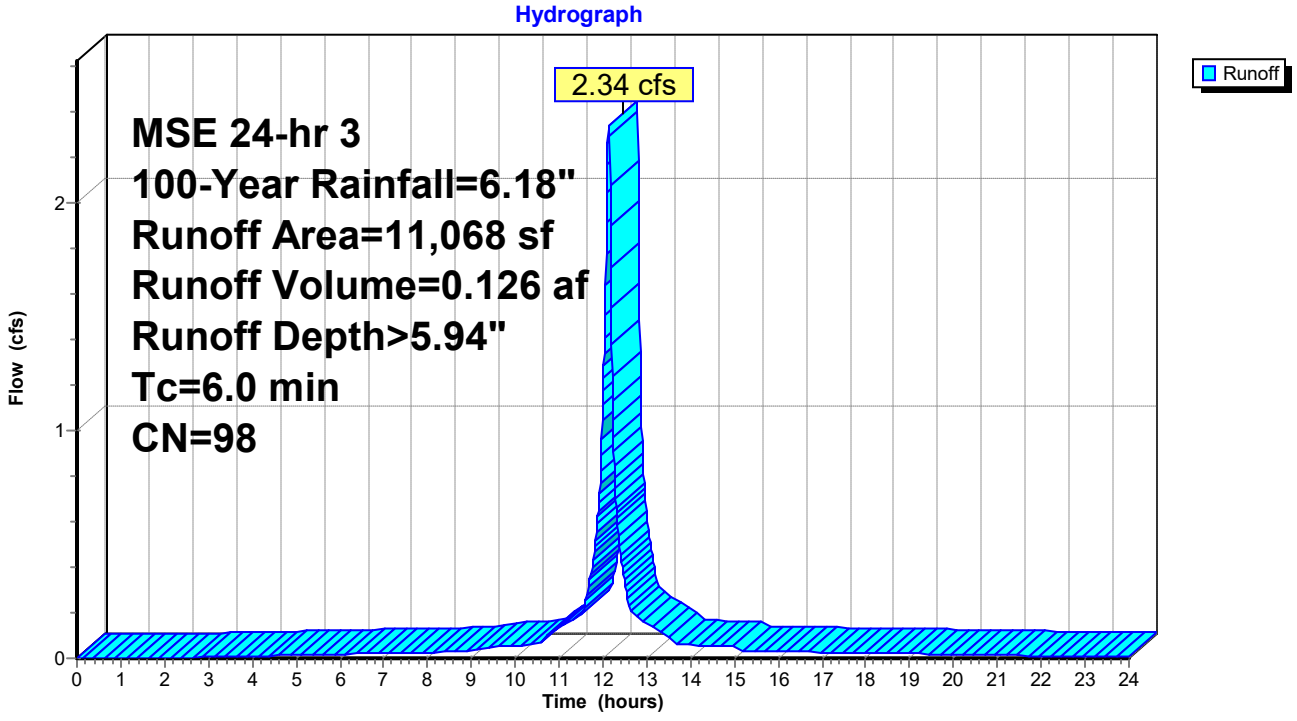
Runoff = 2.34 cfs @ 12.13 hrs, Volume= 0.126 af, Depth> 5.94"
Routed to Link 7L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

Area (sf)	CN	Description
6,076	98	Roofs, HSG D
4,992	98	Unconnected pavement, HSG D
11,068	98	Weighted Average
11,068		100.00% Impervious Area
4,992		45.11% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

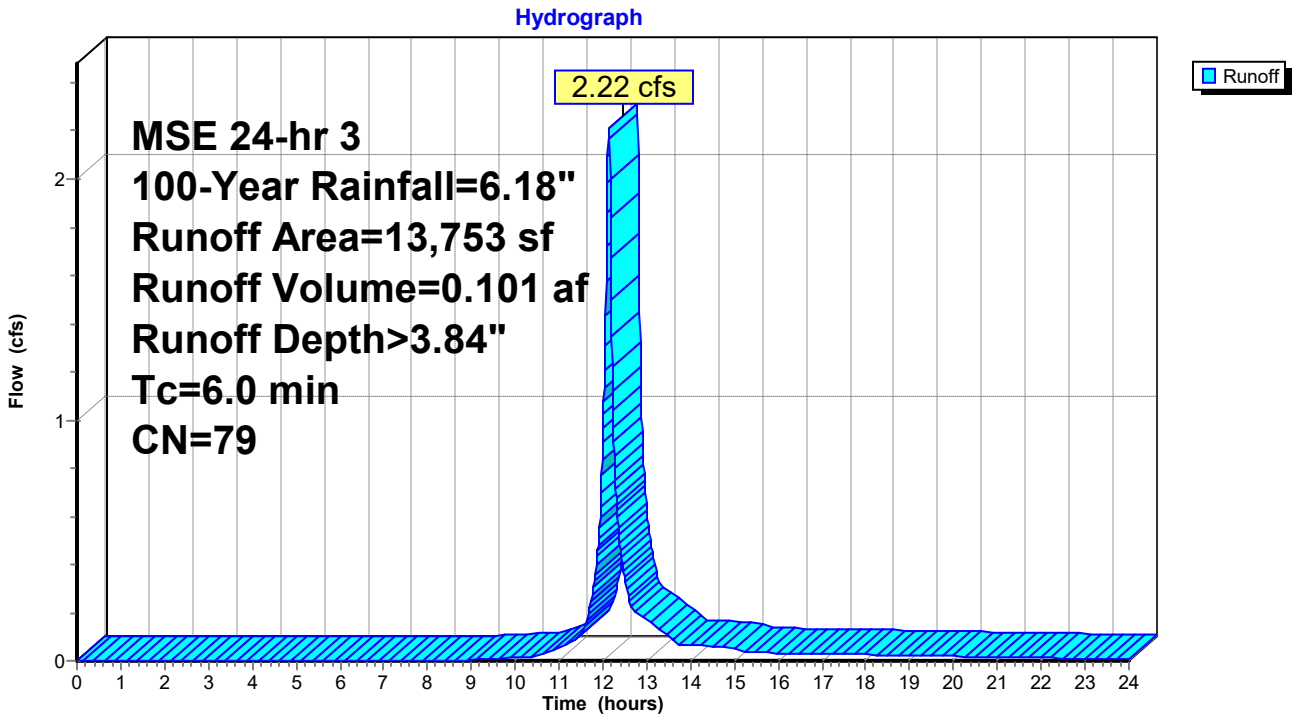
Runoff = 2.22 cfs @ 12.13 hrs, Volume= 0.101 af, Depth> 3.84"
Routed to Link 7L : Proposed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	12,997	78	>75% Grass cover, Good, HSG D
	756	98	Unconnected pavement, HSG D
	13,753	79	Weighted Average
	12,997		94.50% Pervious Area
	756		5.50% Impervious Area
	756		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 4: Subcat 4



Summary for Pond 17P: BIOFILTRATION BASIN

Inflow Area = 0.411 ac, 84.75% Impervious, Inflow Depth > 5.59" for 100-Year event
Inflow = 3.73 cfs @ 12.13 hrs, Volume= 0.192 af
Outflow = 2.75 cfs @ 12.18 hrs, Volume= 0.190 af, Atten= 26%, Lag= 3.1 min
Primary = 2.75 cfs @ 12.18 hrs, Volume= 0.190 af
Routed to Link 7L : Proposed
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 7L : Proposed

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 188.75' @ 12.18 hrs Surf.Area= 1,031 sf Storage= 2,511 cf

Plug-Flow detention time= 73.1 min calculated for 0.190 af (99% of inflow)
Center-of-Mass det. time= 69.0 min (825.7 - 756.7)

Volume	Invert	Avail.Storage	Storage Description
#1	184.21'	3,233 cf	**Custom Stage Data (Pyramidal)** Listed below (Recalc)

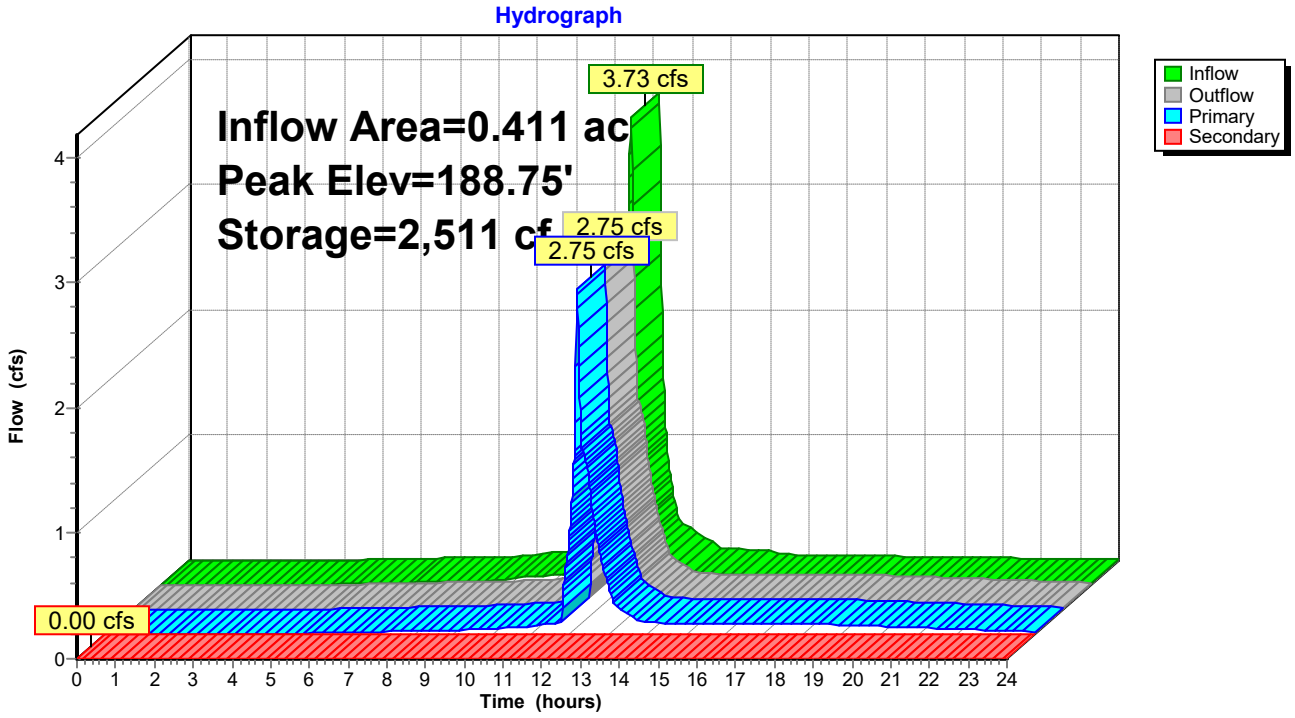
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
184.21	1,200	0.0	0	0	1,200
184.22	1,200	33.0	4	4	1,201
186.02	1,200	27.0	583	587	1,451
187.82	328	100.0	1,293	1,880	2,343
188.32	715	100.0	255	2,135	2,733
189.32	1,532	100.0	1,098	3,233	3,560

Device	Routing	Invert	Outlet Devices
#1	Primary	184.22'	**12.0" Round Culvert** L= 38.4' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 184.22' / 183.93' S= 0.0076 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 0.79 sf
#2	Device 1	186.52'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Device 4	184.22'	**6.0" Vert. Draintile** C= 0.600 Limited to weir flow at low heads
#4	Device 1	184.22'	**1.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 2	185.72'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 1	188.57'	**18.0" Horiz. Overflow Rim** C= 0.600 Limited to weir flow at low heads
#7	Secondary	188.82'	**10.0' long x 1.5' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.62 2.64 2.64 2.68 2.75 2.86 2.92 3.07 3.07 3.03 3.28 3.32

Primary OutFlow Max=2.74 cfs @ 12.18 hrs HW=188.75' (Free Discharge)
└─**1=Culvert** (Passes 2.74 cfs of 6.00 cfs potential flow)
  └─**2=Sharp-Crested Rectangular Weir** (Passes 1.41 cfs of 38.77 cfs potential flow)
    └─**5=Orifice/Grate** (Orifice Controls 1.41 cfs @ 7.19 fps)
  └─**4=Orifice/Grate** (Orifice Controls 0.12 cfs @ 10.18 fps)
    └─**3=Draintile** (Passes 0.12 cfs of 1.96 cfs potential flow)
  └─**6=Overflow Rim** (Weir Controls 1.20 cfs @ 1.40 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=184.21' (Free Discharge)
└─**7=Emergency Spillway** (Controls 0.00 cfs)

Pond 17P: BIOFILTRATION BASIN

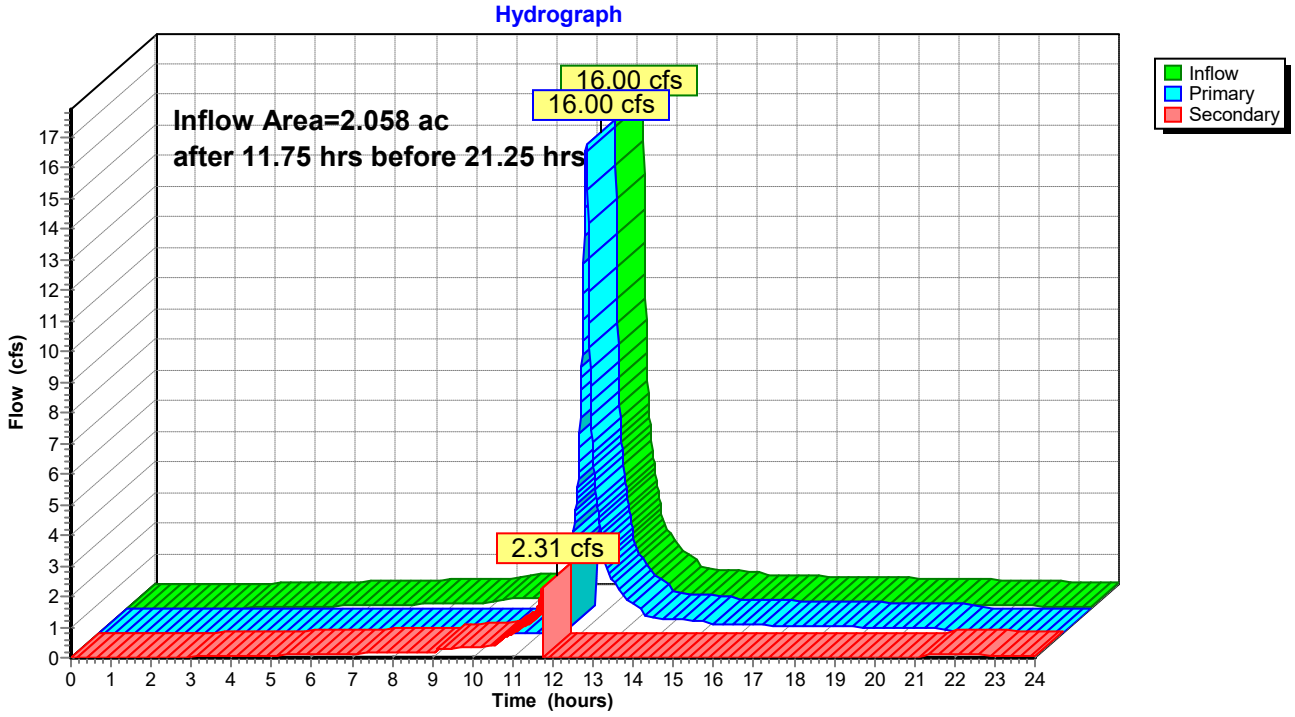


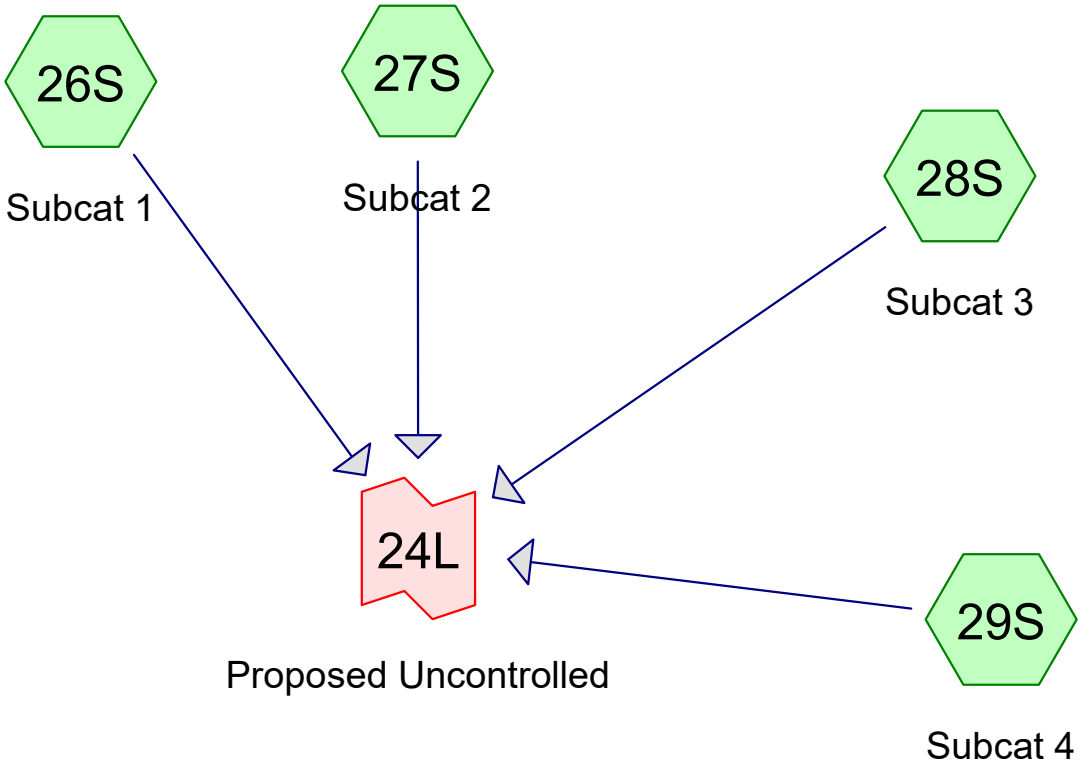
Summary for Link 7L: Proposed

Inflow Area = 2.058 ac, 81.62% Impervious, Inflow Depth > 5.54" for 100-Year event
Inflow = 16.00 cfs @ 12.14 hrs, Volume= 0.950 af
Primary = 16.00 cfs @ 12.14 hrs, Volume= 0.735 af, Atten= 0%, Lag= 0.0 min
Secondary = 2.31 cfs @ 11.74 hrs, Volume= 0.215 af

Primary outflow = Inflow after 11.75 hrs before 21.25 hrs, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 7L: Proposed





Subcat Reach Pond Link

Routing Diagram for 25057 Proposed
Prepared by The Sigma Group Inc, Printed 5/19/2026
HydroCAD® 10.20-8a s/n 04555 © 2025 HydroCAD Software Solutions LLC

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 9179 WI Milwaukee
Rainfall events imported from "NRCS2-Rain.txt" for 1227 WI Milwaukee
Rainfall events imported from "NRCS2-Rain.txt" for 1254 WI Waukesha

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.378	78	>75% Grass cover, Good, HSG D (26S, 27S, 29S)
0.488	98	Roofs, HSG D (27S, 28S)
1.191	98	Unconnected pavement, HSG D (26S, 28S, 29S)
2.058	**94**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
2.058	HSG D	26S, 27S, 28S, 29S
0.000	Other	
2.058		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.378	0.000	0.378	>75% Grass cover, Good	26S, 27S, 29S
0.000	0.000	0.000	0.488	0.000	0.488	Roofs	27S, 28S
0.000	0.000	0.000	1.191	0.000	1.191	Unconnected pavement	26S, 28S, 29S
0.000	**0.000**	**0.000**	**2.058**	**0.000**	**2.058**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 26S: Subcat 1 Runoff Area=46,889 sf 98.42% Impervious Runoff Depth>5.94"
Tc=6.0 min CN=98 Runoff=9.93 cfs 0.533 af

Subcatchment 27S: Subcat 2 Runoff Area=17,921 sf 84.75% Impervious Runoff Depth>5.59"
Tc=6.0 min CN=95 Runoff=3.73 cfs 0.192 af

Subcatchment 28S: Subcat 3 Runoff Area=11,068 sf 100.00% Impervious Runoff Depth>5.94"
Tc=6.0 min CN=98 Runoff=2.34 cfs 0.126 af

Subcatchment 29S: Subcat 4 Runoff Area=13,753 sf 5.50% Impervious Runoff Depth>3.84"
Tc=6.0 min CN=79 Runoff=2.22 cfs 0.101 af

Link 24L: Proposed Uncontrolled after 11.75 hrs before 21.25 hrs Inflow=18.21 cfs 0.951 af
Primary=18.21 cfs 0.717 af Secondary=2.81 cfs 0.234 af

Total Runoff Area = 2.058 ac Runoff Volume = 0.951 af Average Runoff Depth = 5.55"
18.38% Pervious = 0.378 ac 81.62% Impervious = 1.679 ac

Summary for Subcatchment 26S: Subcat 1

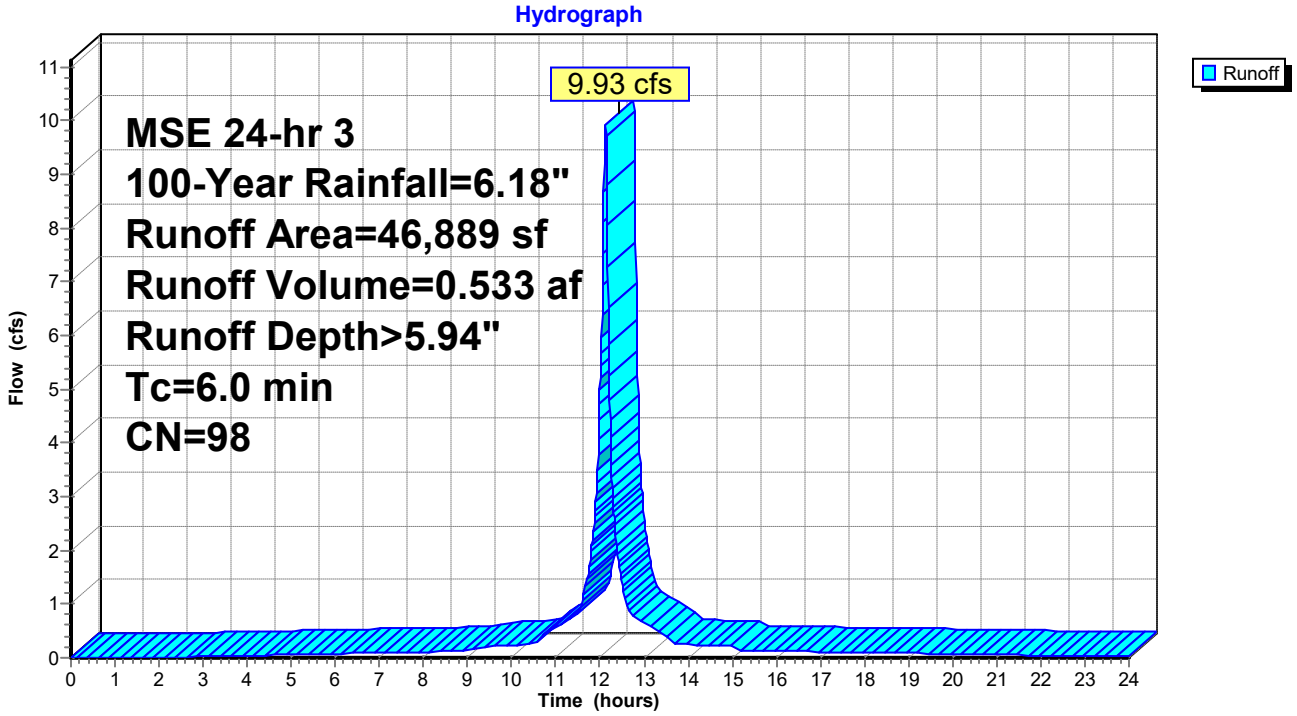
Runoff = 9.93 cfs @ 12.13 hrs, Volume= 0.533 af, Depth> 5.94"
Routed to Link 24L : Proposed Uncontrolled

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	742	78	>75% Grass cover, Good, HSG D
	46,147	98	Unconnected pavement, HSG D
	46,889	98	Weighted Average
	742		1.58% Pervious Area
	46,147		98.42% Impervious Area
	46,147		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 26S: Subcat 1



Summary for Subcatchment 27S: Subcat 2

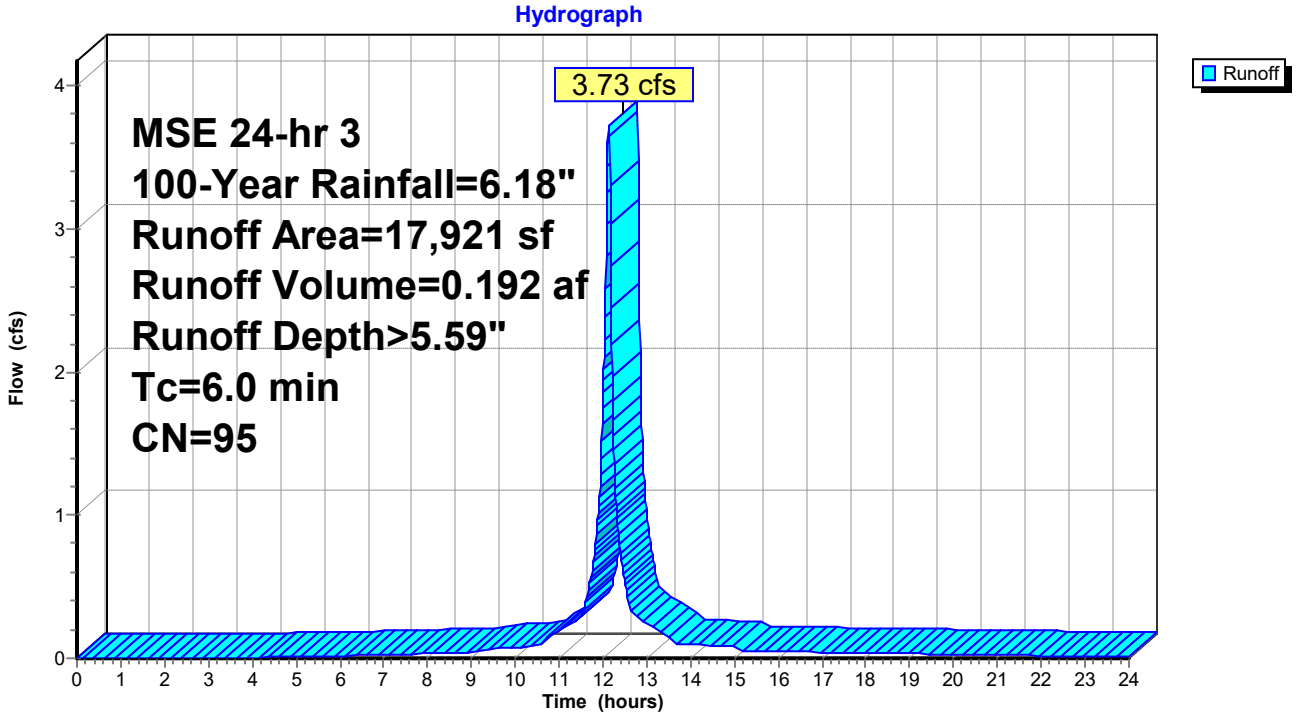
Runoff = 3.73 cfs @ 12.13 hrs, Volume= 0.192 af, Depth> 5.59"
Routed to Link 24L : Proposed Uncontrolled

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	2,733	78	>75% Grass cover, Good, HSG D
	15,188	98	Roofs, HSG D
	17,921	95	Weighted Average
	2,733		15.25% Pervious Area
	15,188		84.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 27S: Subcat 2



Summary for Subcatchment 28S: Subcat 3

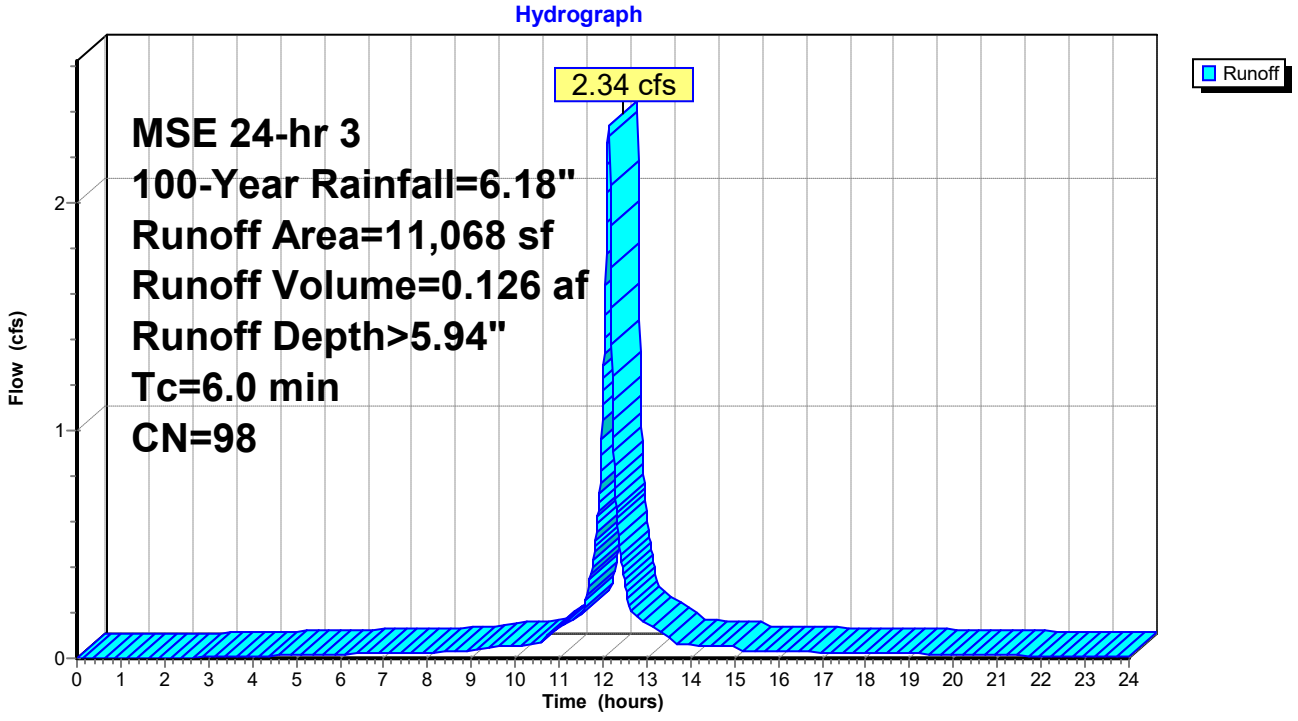
Runoff = 2.34 cfs @ 12.13 hrs, Volume= 0.126 af, Depth> 5.94"
Routed to Link 24L : Proposed Uncontrolled

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

Area (sf)	CN	Description
6,076	98	Roofs, HSG D
4,992	98	Unconnected pavement, HSG D
11,068	98	Weighted Average
11,068		100.00% Impervious Area
4,992		45.11% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 28S: Subcat 3



Summary for Subcatchment 29S: Subcat 4

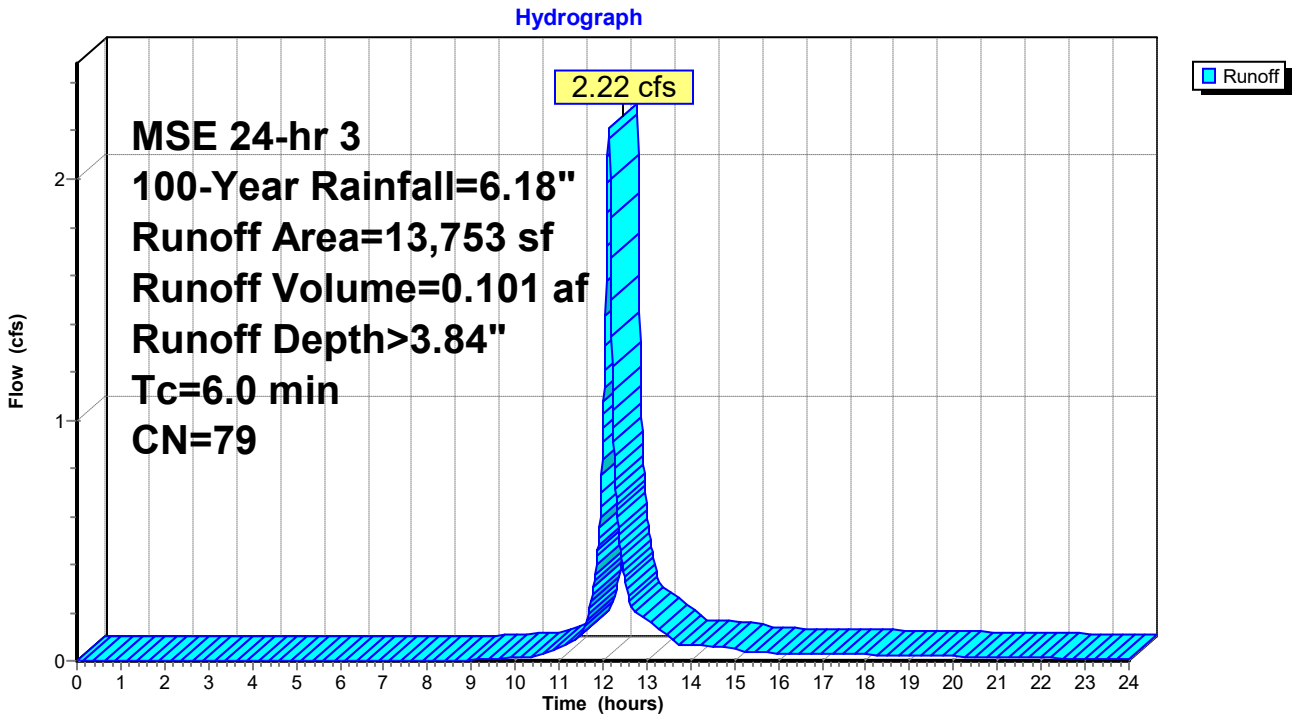
Runoff = 2.22 cfs @ 12.13 hrs, Volume= 0.101 af, Depth> 3.84"
Routed to Link 24L : Proposed Uncontrolled

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.18"

	Area (sf)	CN	Description
*	12,997	78	>75% Grass cover, Good, HSG D
	756	98	Unconnected pavement, HSG D
	13,753	79	Weighted Average
	12,997		94.50% Pervious Area
	756		5.50% Impervious Area
	756		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 29S: Subcat 4

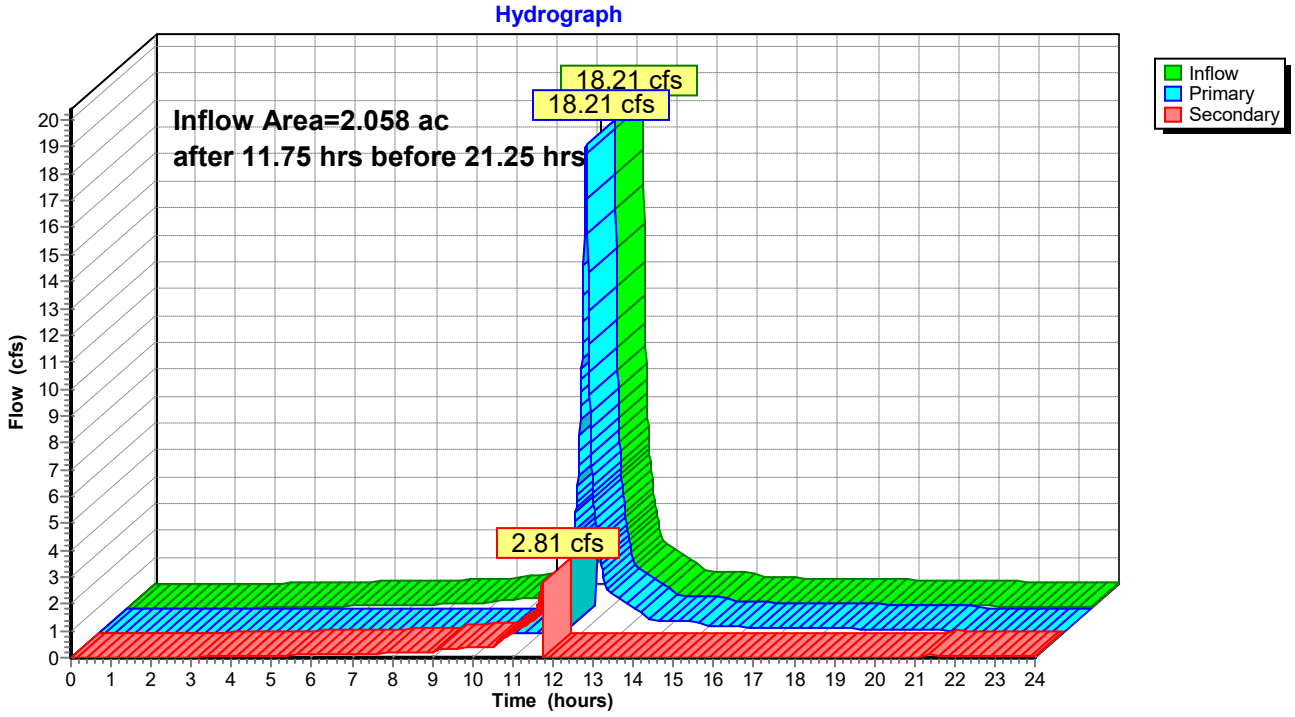


Summary for Link 24L: Proposed Uncontrolled

Inflow Area = 2.058 ac, 81.62% Impervious, Inflow Depth > 5.55" for 100-Year event
Inflow = 18.21 cfs @ 12.13 hrs, Volume= 0.951 af
Primary = 18.21 cfs @ 12.13 hrs, Volume= 0.717 af, Atten= 0%, Lag= 0.0 min
Secondary = 2.81 cfs @ 11.74 hrs, Volume= 0.234 af

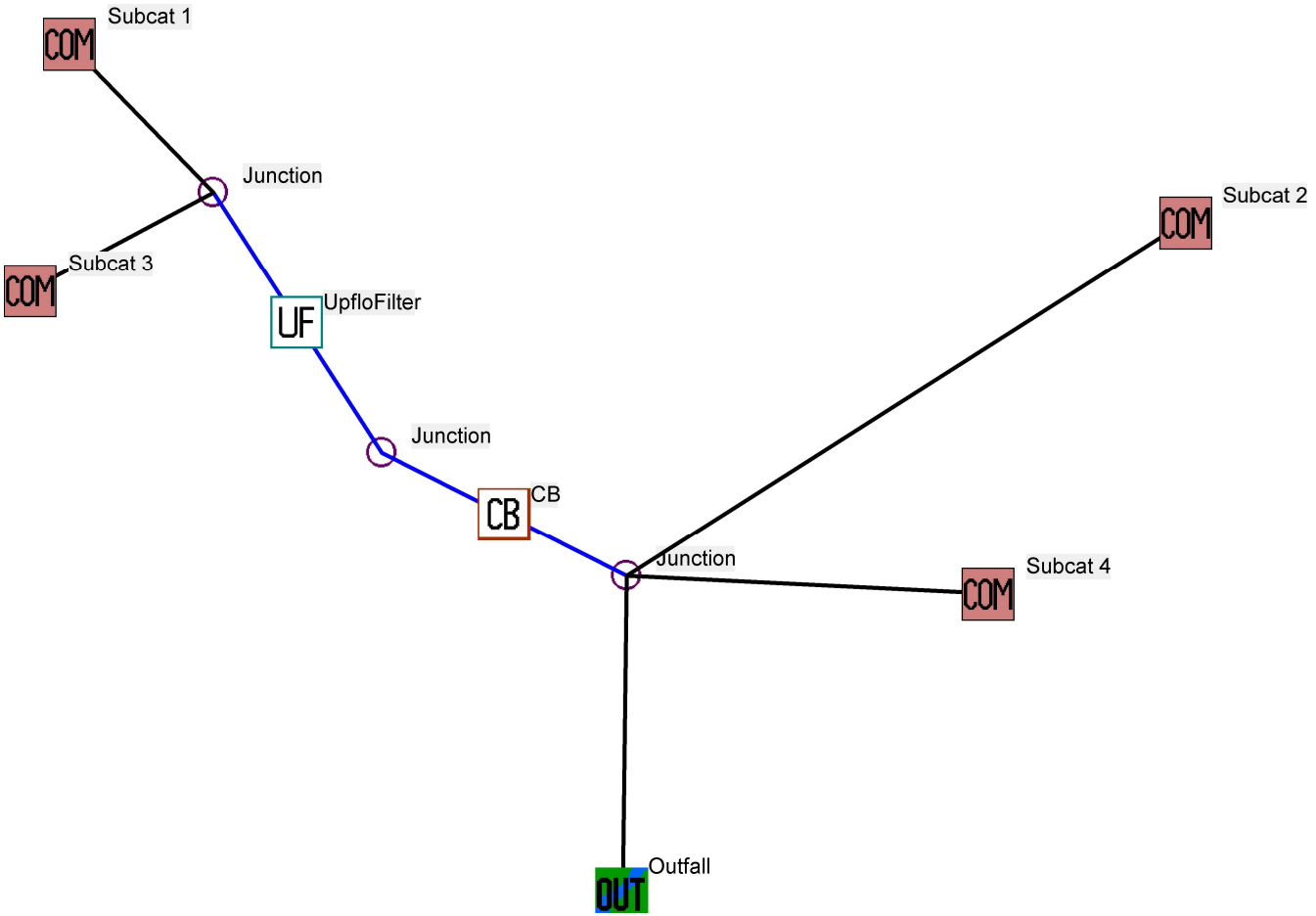
Primary outflow = Inflow after 11.75 hrs before 21.25 hrs, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 24L: Proposed Uncontrolled



Appendix C

Calculations - Storm Water Quality (WinSLAMM)


Subcat 1
COM
Junction
Subcat 3
COM
UF
UpfloFilter
Junction
CB
CB
Junction
Subcat 2
COM
Subcat 4
COM
Outfall
OUT

```
Data file name:  I:\Luther Group\25057 - Wauwatosa Grocery\060 CAD\800_SWMP\040_WinSLAMM\225057 WinSLAMM.mdb
WinSLAMM Version 10.5.0
Rain file name:  C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name:  C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name:  C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name:  C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance:  False
Pollutant Relative Concentration file name:  C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File:  C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator:  -42
Study period starting date:  01/05/69       Study period ending date:  12/31/69
Start of Winter Season:  12/06              End of Winter Season:  03/28
Date:  05-19-2026                           Time:  20:56:40
Site information:

LU# 1 - Commercial:  Subcat 1     Total area (ac):  1.076
     13 - Paved Parking 1:  1.059 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.017 ac.    Normal Clayey    Medium/High Density    No Alleys    Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz    OD-CP#2

LU# 2 - Commercial:  Subcat 2     Total area (ac):  0.412
     1 - Roofs 1:  0.349 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
OD-CP#4
     45 - Large Landscaped Areas 1:  0.063 ac.    Normal Clayey    Medium/High Density    No Alleys    Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz    OD-CP#3

LU# 3 - Commercial:  Subcat 3     Total area (ac):  0.254
     1 - Roofs 1:  0.139 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.115 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
```

```
LU# 4 - Commercial:  Subcat 4     Total area (ac):  0.315
     13 - Paved Parking 1:  0.017 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     45 - Large Landscaped Areas 1:  0.298 ac.    Normal Clayey    Medium/High Density    No Alleys    Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz    OD-CP#6


      Control Practice 1:  Catchbasin Cleaning CP# 1 (DS) - CB
         1.  Fraction of area served by catchbasins = 1.00
         2.  Number of catchbasins =  2
         3.  Average sump depth below catchbasin outlet invert (feet) =  2
         4.  Depth of sediment in catchbasin sump at beginning of study period (ft) =  0
         5.  Typical outlet pipe diameter (ft) =  1
         6.  Typical outlet pipe Mannings n =  0.013
         7.  Typical outlet pipe slope (ft/ft) =  0.004
         8.  Typical catchbasin sump surface area (square feet) =  12.6
         9.  Total catchbasin depth (feet) =  8.7
         10.  Inflow hydrograph peak to average flow ratio =  3.8
         11.  Leakage rate through sump bottom (in/hr) =  0
         12.  Catchbasin Critical Particle Size File Name:  Not needed - calculated by program

      Control Practice 2:  Other Device CP# 1 (SA) - SA Device, LU# 1 ,SA# 45
         Fraction of drainage area served by device (ac) = 1.00
         Particulate Concentration reduction fraction = 1.00
         Filterable Concentration reduction fraction = 0.00
         Runoff volume reduction fraction = 0

      Control Practice 3:  Other Device CP# 2 (SA) - SA Device, LU# 2 ,SA# 45
         Fraction of drainage area served by device (ac) = 1.00
         Particulate Concentration reduction fraction = 1.00
         Filterable Concentration reduction fraction = 0.00
         Runoff volume reduction fraction = 0

      Control Practice 4:  Other Device CP# 3 (SA) - SA Device, LU# 2 ,SA# 1
         Fraction of drainage area served by device (ac) = 1.00
         Particulate Concentration reduction fraction = 1.00
         Filterable Concentration reduction fraction = 0.00
```

```
   Runoff volume reduction fraction = 0

Control Practice 5:  Upflo Filter CP# 1 (DS) - UpfloFilter
   Media Type:  CPZ
   Fraction of Area Served by Upflo Filters (0-1):  1.0
   Height from Outlet Invert to Structure Top (ft):  4.0
   Sump Depth (ft):  3.00
   Sump Cleaning/Filter Replacement is not considered during the model run
   Solve for Given Conditions
   Number of filters:  6
Control Practice 6:  Other Device CP# 4 (SA) - SA Device, LU# 4 ,SA# 45
   Fraction of drainage area served by device (ac) = 1.00
   Particulate Concentration reduction fraction = 1.00
   Filterable Concentration reduction fraction = 0.00
   Runoff volume reduction fraction = 0
```

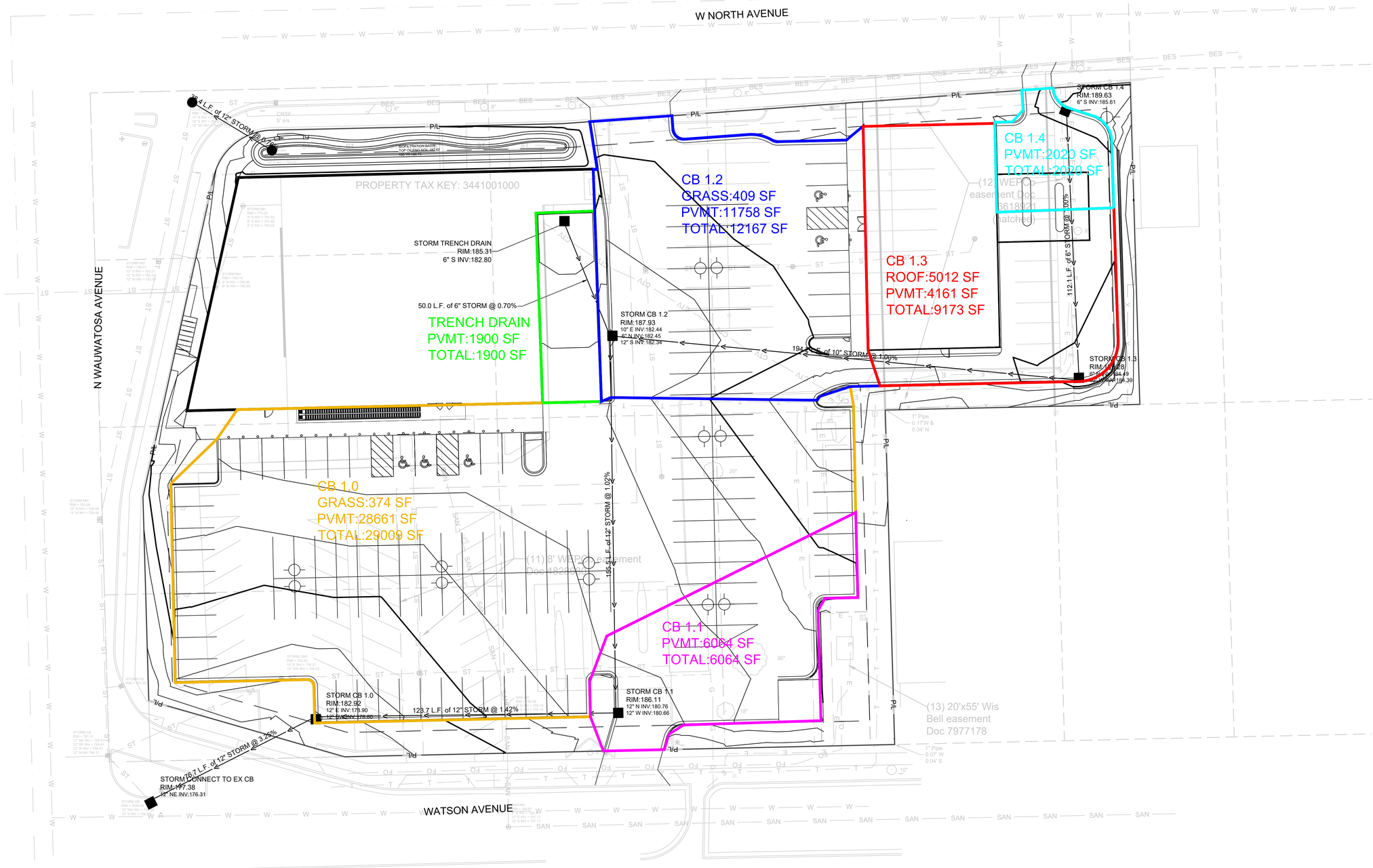
SLAMM for Windows Version 10.5.0
(c) Copyright Robert Pitt and John Voorhees 2019, All Rights Reserved

Data file name: I:\Luther Group\25057 - Wauwatosa Grocery\060 CAD\800_SWMP\040_WinSLAMM\225057 WinSLAMM.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 05-19-2026 Time of run: 16:55:12
Total Area Modeled (acres): 2.057
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	141620	-	99.57	880.3	-
Outfall Total with Controls:	141736	-0.08%	35.24	311.8	64.58%
Annualized Total After Outfall Controls:	143704			316.2	

Appendix D

Storm Sizing



STORM MAP

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

N

GRAPHIC SCALE
0 20 40

7501 W. NORTH AVENUE
WAUWATOSA, WI

WAUWATOSA GROCERY

PRELIMINARY NOT FOR CONSTRUCTION

NO.	REVISION	DATE	BY

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.19
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----
SHEET NO:	EXHIBIT

AKUSKE

EXHIBIT

25057

I:\Luther Group\25057 - Wauwatosa Grocery\060 CAD\100_Civil\020_CAD Modeling (Data Shortcut)\EXHIBIT STORM MAP.dwg

STORM SEWER CALCULATIONS

PROJECT: Tosa Grocery
LOCATION: Wauwatosa
DATE: 5/18/2026

RUN		LENGTH	INVERT	INVERT	SLOPE	REQ'S MIN. SLOPE PER DSPS 382.36	AREA (S.F.)			PEAK FLOW (GPM) PER DSPS 382.36			RUN FLOW	TOTAL FLOW	SIZE	PIPE MATERIAL
FROM	TO	(FT)	DOWN	UP	%	%	ROOF	PAVE/GRAVEL	LAWN	ROOF	PAVE/GRAVEL	LAWN	(GPM)	(GPM)	(IN)	
OCS	EX MH 1	38.40	183.93	184.22	0.76	0.26							480	480	12	PVC
													FROM HYDROCAD			
CB 1.4	CB 1.3	112.10	184.49	185.61	1.00	0.26		2020		0	62	0	62	62	6	PVC
CB 1.3	CB 1.2	194.20	182.44	184.38	1.00	0.26	5012	4161		193	128	0	321	383	10	PVC
TRENCH DRAIN	CB 1.2	50.00	182.45	182.80	0.70	0.26		1900		0	58	0	58	58	6	PVC
CB 1.2	CB 1.1	155.50	180.76	182.35	1.02	0.26		11758	409	0	362	4	366	807	12	PVC
CB 1.1	CB 1.0	123.70	178.90	180.66	1.42	0.26		6064		0	187	0	187	994	12	PVC
CB 1.0	EX CB	76.70	176.31	178.80	3.25	0.26		28661	374	0	882	4	885	1879	12	PVC

Appendix E

Green Infrastructure

Green Infrastructure Detention Volume Calculations

[1] New and Redeveloped Impervious Area

Land Type	Area *acres*	Area *sq.ft.*
Building	0.49	21262
Greenspace	0.38	16472
Impervious	1.19	51899
	2.058	89633

SWMP Total	2.058	89633
New and redeveloped impervious area	1.680	73161
New pervious area	0.378	16472

((0.5/12)*(73161))*7.48052

[2]	**Required Detention Volume**	**22803 gallons**

[3] Green Infrastructure Unit Detention Volume

Green Infrastructure	Unit Detention Volume
Bioswale	7.5 gal. per sq.ft.
Cistern	Capacity of cistern
Constructed wetlands	8.3 gal. per sq.ft.
Green roof	1 gal. per sq.ft.
Native landscaping	0.4 gal. per sq.ft.
Porous pavement	3 gal. per sq.ft.
Rain garden	4.4 gal. per sq.ft.
Rain barrel	Capacity of barrel
Tree	25 gal. per tree

per MMSD's Chapter 13: Surface Water and Stormwater

[4] Proposed Green Infrastructure

Proposed Green Infrastructure	Area	
Volume Invert Avail.Storage Storage Description #1 184.21' 3,233 cf **Custom Stage Data (Pyramidal)** Listed below (Recalc)		
Total Green Infrasture Area	**24185**	**gallons**

[5]	**Proposed Detention Volume**	**24185 gallons**
	Required Detention Volume	**22803 gallons**

[6]	**Does it meet requirements?**	**Yes**

Comments

Actual volume detained at the 100 year storm based on HydroCAD modeling:

GI	Storage (cf)	Storage (gal)
Biofiltration Basin 1	3233	24185
Total		24185

Per HydroCAD modeling

Appendix F

Stormwater Management Maintenance

Document Number

Storm Water Management Practice Maintenance Agreement

Luther Group, as "Titleholder(s)" of the property described below, in accordance with the City of Wauwatosa's Municipal Code Chapter 24.13.040 Storm Water Management and Erosion Control, agrees to install and maintain storm water management practice(s) on the subject property in accordance with approved plans and Storm Water Management Plan conditions. The Titleholder(s) further agrees to the terms stated in this document to ensure that the storm water management practice(s) continues serving the intended functions in perpetuity. This Agreement includes the following exhibits:

Exhibit A: Legal Description of the real estate for which this Agreement applies ("Property").
Exhibit B: Location Map(s) – shows an accurate location of each storm water management practice affected by this Agreement.
Exhibit C: Maintenance Plan – prescribes those activities that must be carried out to maintain compliance with this Agreement.

Note: After construction verification has been accepted by the City of Wauwatosa for all planned storm water management practices, an addendum(s) to this agreement shall be recorded by the Titleholder(s) showing design and construction details. The addendum(s) may contain several additional exhibits, including certification by City of Wauwatosa of Storm Water Permit termination, as described below.

Name and Return Address

City of Wauwatosa
7725 W North Ave
Wauwatosa, WI 53213

Parcel Number(s)

Through this Agreement, the Titleholder(s) hereby subjects the Property to the following covenants, conditions and restrictions:

1. The Titleholder(s) shall be responsible for the routine and extraordinary maintenance and repair of the storm water management practice(s) and drainage easements identified in Exhibit B until Storm Water Permit termination by the Wisconsin Department of Natural Resources and by the City of Wauwatosa pursuant to the City's Municipal Code Chapter 24.13.040, Stormwater Management and Erosion Control Ordinance.
2. After Storm Water Permit termination under 1., the current Titleholder(s) shall be solely responsible for maintenance and repair of the storm water management practices and drainage easements in accordance with the maintenance plan contained in Exhibit C.
3. The City of Wauwatosa, or its designee, upon 48 hours prior to written notice to Titleholder, is authorized to access the property as necessary to conduct inspections of the storm water management practices or drainage easements to ascertain compliance with this Agreement and the activities prescribed in Exhibit C. Upon written notification by City of Wauwatosa or their designee, the Titleholder(s) shall, at their own cost and within a reasonable time period determined by the City of Wauwatosa and specified in the notification, have an inspection of the storm sewer management practice conducted by a qualified professional, file a report with the City of Wauwatosa and complete any maintenance or repair work recommended in the report. The Titleholder(s) shall ne liable for the failure to undertake any maintenance or repairs.
4. Upon notification by the City of Wauwatosa of required maintenance or repairs, the Titleholder(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the City of Wauwatosa and specified in the notification.
5. If the Titleholder(s) do not complete an inspection under 3. above or required maintenance or repairs under 4 above within the specified time period, the City of Wauwatosa is authorized, but not required, to perform the specified inspections, maintenance or repairs. In the case of an emergency situation, as determined by the City of Wauwatosa, no notice shall be required prior to the City of Wauwatosa performing emergency maintenance or repairs. The City of Wauwatosa may levy the costs and expenses of such inspections, maintenance or repair related actions as a special charge against the Property and collected as such in accordance with the procedures under s. 66.0627 Wis. Stats. or subch. VII of ch. 66 Wis. Stats.

6. This Agreement shall run with the Property and be binding upon all heirs, successors and assigns. After the Titleholder(s) records this maintenance agreement and addendum, the agreement and the addendum may be amended or modified by agreement between the City of Wauwatosa and the current Titleholder(s).
7. Titleholder may, at any time after obtaining approval from the City, relocate any or all of the storm water management facilities described in this Agreement to another portion of the Property provided that any such relocated storm water management facilities shall remain subject to this Agreement. Further, Titleholder acknowledges that, based on the scope of work for any such relocation of storm water management facilities, permitting may be required as part of the City's approval.

Dated this ___ day of _____, 2026.

Titleholder(s):
Luther Group
By: _____

Name/Title:

Acknowledgements

State of Wisconsin:
County of Milwaukee

Personally came before me this ____ day of _____, 2026, the above named_____ to be known to be the person who executed the foregoing instrument and acknowledged the same.

_____.
Notary Public, Milwaukee County, WI
My commission expires:_____.

This document was drafted by:

The Sigma Group, Inc.
1300 W. Canal Street
Milwaukee, WI 53233

For Certification Stamp

Exhibit A – Legal Description

The following description and reduced copy map identifies the land parcel(s) affected by this Agreement. For a larger scale view of the referenced document, contact the Wauwatosa County Register of Deeds office.

Project Identifier: Wauwatosa Grocery Redevelopment **Acres:** 2.058
Date of Recording:
Map Produced By: The Sigma Group, Inc
Legal Description:

Legal description per Chicago Title Insurance Company Commitment No. CO-6203, with an effective date of April 17, 2017:

PARCEL A:
Lots 1, 2, 3, 4, 5, 6, 23 and 24, in Block 1, in Windsor Heights, in the Northwest 1/4 of Section 22, Town 7 North, Range 21 East, in the City of Wauwatosa, County of Milwaukee, State of Wisconsin.

EXCEPTING THEREFROM those parcels conveyed to the City of Wauwatosa by Deeds recorded as Document No's. 4166988, 4240321, 4754624 and 4754625.

Tax Key No: 344-0444-02
Address: 7501 W. North Avenue

PARCEL B:
The West 35 feet of Lot 21, in Block 1, in Windsor Heights, being a Subdivision of a part of the Northwest 1/4 of Section 22, Town 7 North, Range 21 East, in the City of Wauwatosa, County of Milwaukee, State of Wisconsin.
EXCEPTING THEREFROM that parcel conveyed to the City of Wauwatosa by Warranty Deed recorded as Document No. 4244293.

Tax Key No: 344-0469-00
Address: 7423 W. North Avenue

PARCEL C:
That part of Lot 22, in Block 1, in Windsor Heights, being a Subdivision of a part of the Northwest 1/4 of Section 22, Town 7 North, Range 21 East, in the City of Wauwatosa, County of Milwaukee, State of Wisconsin.
EXCEPT that part bounded and described as follows:
Beginning at the Northwest corner of said Lot 22; thence East along the North line of said Lot 22, 70.00 feet to the Northeast corner of said Lot 22; thence South along the East line of said Lot 22, 7.00 feet to a point; thence Westerly to a point on the West line of said Lot 22, said point being 10.51 feet South of the Northwest corner of said Lot 22; thence North along the West line of said Lot 22, to the place of beginning.

Tax Key No: 344-0470-00
Address: 7429 W. North Avenue

Exhibit B - Location Map
Storm Water Management Practices Covered by this Agreement

The stormwater management practices covered by this Agreement are depicted in the reduced copy of a portion of the construction plans, as shown below. The practices include porous pavement and all associated pipes.

Development Name: Wauwatosa Grocery Redevelopment
Stormwater Practices: Biofiltration Basin, Up-flo filters, Catch Basins
Location of Practices: 7501 W North Ave
Owner: Luther Group
Drafter Name: The Sigma Group

Figure B1
Plan View of Storm Water Practices

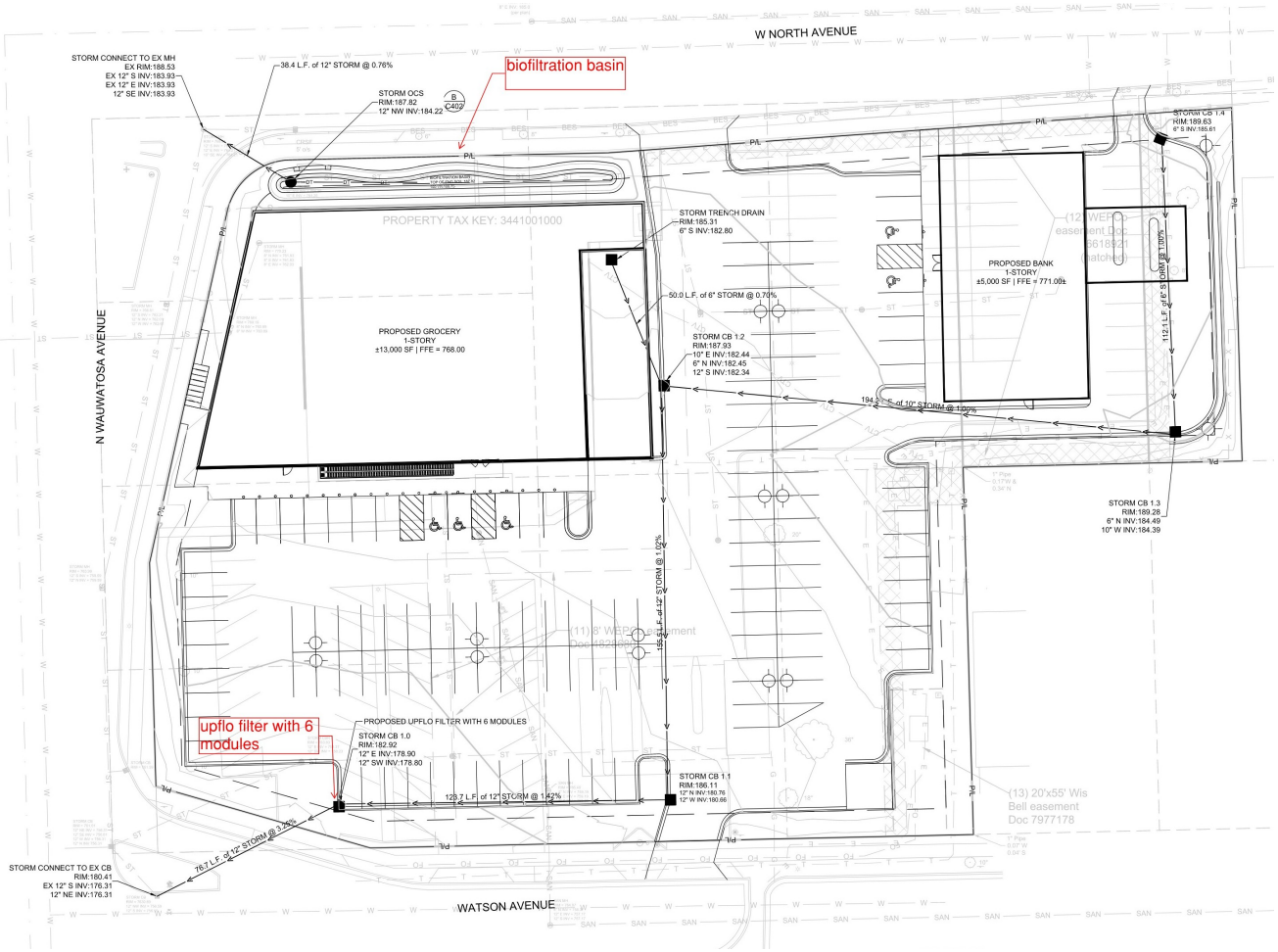


Exhibit C
Storm Water Practice Maintenance Plan

This exhibit explains the basic function of each of the storm water practices listed in Exhibit B and prescribes the minimum maintenance requirements to remain compliant with this Agreement. The maintenance activities listed below are aimed to ensure these practices continue serving their intended functions in perpetuity. The list of activities is not all inclusive, but rather indicates the minimum type of maintenance that can be expected for this particular site. Access to the stormwater practices for maintenance vehicles is shown in Exhibit B. Any failure of a storm water practice that is caused by a lack of maintenance will subject the Owner(s) to enforcement of the provisions listed on page 1 of this Agreement by the City of Wauwatosa.

Up-Flo Filter Description

The Up-Flo filter system provides supplement treatment to the underground system. The system is designed to capture trash, oil, sediment and remove fine pollutants.

Maintenance:

To ensure the proper long-term function of the storm water management practices described above, the following activities must be completed by the Facility Manager:

1. A minimum of two inspections are required a year (May and October) to monitor sediment and pollutant accumulation:
    a. Inspect the Up-Flo system for sediment building up within the sump. When sediment depth in the sump is found to be greater than 16 inches, sediment removal is required. There should always be a minimum of 8 inches separation between outlet pipe invert and the sediment built up within the sump.
    b. Inspect the Up-Flo system for sediment building up within the sump. Whenever sediment depth in the sump is found to be greater than 16 inches, sediment removal is required. There should always be a minimum of 8 inches separation between outlet pipe invert and the sediment built up within the sump.
    c. Media filter bags shall be replaced at least once a year and properly disposed of media filter bags accordance with the Up-Flo manufacture's operation and maintenance manual.
    d. The Up-Flo filtration system shall be inspected for outlet pipe clogging/blockage of debris or ice within the basins. Any blockage must be removed immediately.
    e. Inspect the structural integrity of the structure/pipe connections. If any structural damage to the inlet/ catch basin structure/ pipe connections is identified the damage shall be repaired.
    f. For detailed inspection and maintenance requirements refer to manufactures operation and maintenance manual.
    g. Any other repair or maintenance needed to insure the continued function of the storm water practices or as ordered by the Village of Pewaukee under the provisions listed on Page 1 of this Declaration of Covenant.

Biofiltration Basin

Inspection:

To ensure the proper function of the biofiltration basin, the following activities must be completed on a monthly during the growing season (March – November):

1. Inspect basin for erosion damage.
2. Inspect for litter
3. Inspect the basin inlets and outlet riser for blockage and structural integrity on an annual basis.
4. Inspect the basin for the presence of weeds.
5. Inspect condition of plants in basin for plants that appear to be dead or dying
6. Inspect basin for visible indication of engineered soil clogging or overtopping of the basin.

Maintenance:

1. Remove litter on a regular basis
2. Repair any noted erosion damage. Apply topsoil/seed/much/geotextile as necessary to stabilize repaired areas.
3. Water plants as regularly during first growing season; plants should only need watering during periods of drought after establishment.
4. Water plants as needed during drought periods.
5. Remove weeds regularly during the establishment period (first two years) and as needed thereafter; hand weed to prevent compaction of and minimize disturbance of plants; weed after watering or after rain event to minimize disturbance and aid in removal.
6. Remove invasive weeds (Canada thistle, garlic mustard, tree seedlings) immediately; hand weed to prevent compaction of and minimize disturbance of plants; weed after watering or after rain event to minimize disturbance and aid in removal.
7. Remove/replace diseased, dying, or dead plantings as needed
8. When standing water is observed in 50% of the basin floor 3 days after rainfall event it is an indication that the engineered soils have clogged and lost their infiltration capacity and soil maintenance is required; soil maintenance shall consist of remove sediment and replacement top 2 to 3 inches of engineered soil and deep tilling and replacement/re-establishment of plants damaged during soil maintenance activities.
9. Remove any blockage from outlet structure/overflow riser
10. Repair any structural damage to outlet structure/overflow riser

Storm Inlets/Catch Basins

Inspection:

1. Inspect inlets/catch basin on a semi-annual basis.
2. Inspect for level of debris/sediment build up in sump
3. Inspect for blockage of outlet
4. Inspect for structural integrity of structure/pipe connections

Maintenance:

To ensure the proper function of the storm inlets/catch basins described above, the following activities must be completed on a semi-annual basis (April and October):

1. Remove sediment/debris when it reaches a level within six inches of the discharge pipe invert
2. Remove blockage of discharge pipe as required
3. Repair any structural damage observed to inlet/catch basin structure/pipe connections, etc.

Signatures
The undersigned agree to the provision set forth in this agreement.
For the Owner:

_____
Name

_____
Title

_____
Signature

_____
Date

STATE OF WISCONSIN)
) S.S.
MILWAUKEE COUNTY)

Personally came before me this _____ day of _____, 20__, the above named _____ to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____
Notary Public
State of Wisconsin
My Commission expires _____

This document was drafted by:

The Sigma Group, Inc.
1300 W. Canal Street
Milwaukee, WI 53233
414-643-4200

Appendix G

Figures

2026.04.22

WATERSHED AREA 1			
Tc = 6.0 min.	SF	ACRE	CN
EXISTING			
GREENSPACE	20104	0.46	78
PAVEMENT	22724	0.52	98
ROOF	14633	0.34	98
TOTAL	57461	1.32	91

WATERSHED AREA 2			
Tc = 6.0 min.	SF	ACRE	CN
EXISTING			
GREENSPACE	8303	0.19	78
PAVEMENT	23867	0.55	98
TOTAL	32170	0.74	93



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Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

N

GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

EXISTING CONDITIONS

PRELIMINARY
NOT FOR
CONSTRUCTION

ISSUANCE	DATE

NO.	REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.04.22
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
SW 1.0

AKUSKE
SW 1.0
25057

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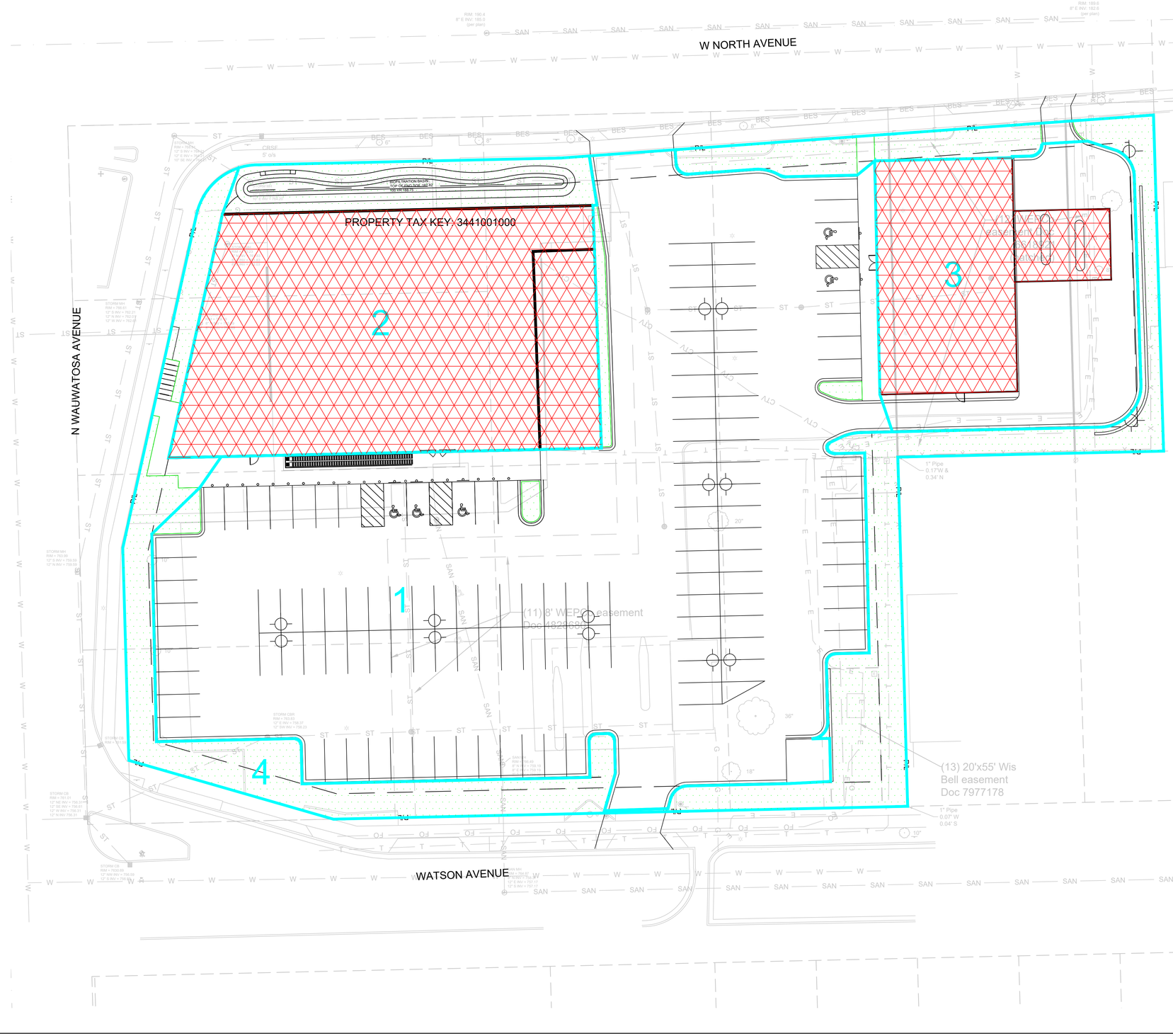
2026.05.19

WATERSHED AREA 1			
Tc = 6.0 min.	SF	ACRE	CN
PROPOSED			
GREENSPACE	742	0.02	78
PAVEMENT	16147	0.37	98
TOTAL	16889	0.39	97

WATERSHED AREA 2			
Tc = 6.0 min.	SF	ACRE	CN
PROPOSED			
GREENSPACE	2733	0.06	78
ROOF	15188	0.35	98
TOTAL	17921	0.41	95

WATERSHED AREA 3			
Tc = 6.0 min.	SF	ACRE	CN
PROPOSED			
PAVEMENT	4992	0.11	98
ROOF	6076	0.14	98
TOTAL	11068	0.25	98

WATERSHED AREA 4			
Tc = 6.0 min.	SF	ACRE	CN
PROPOSED			
GREENSPACE	12997	0.30	78
PAVEMENT	756	0.02	98
TOTAL	13753	0.32	79



LEGEND:

- SUBCATCHMENT AREA
- GRASS
- ROOFS

THE SIGMA GROUP
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www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

PROPOSED CONDITIONS

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE

NO. REVISION	DATE

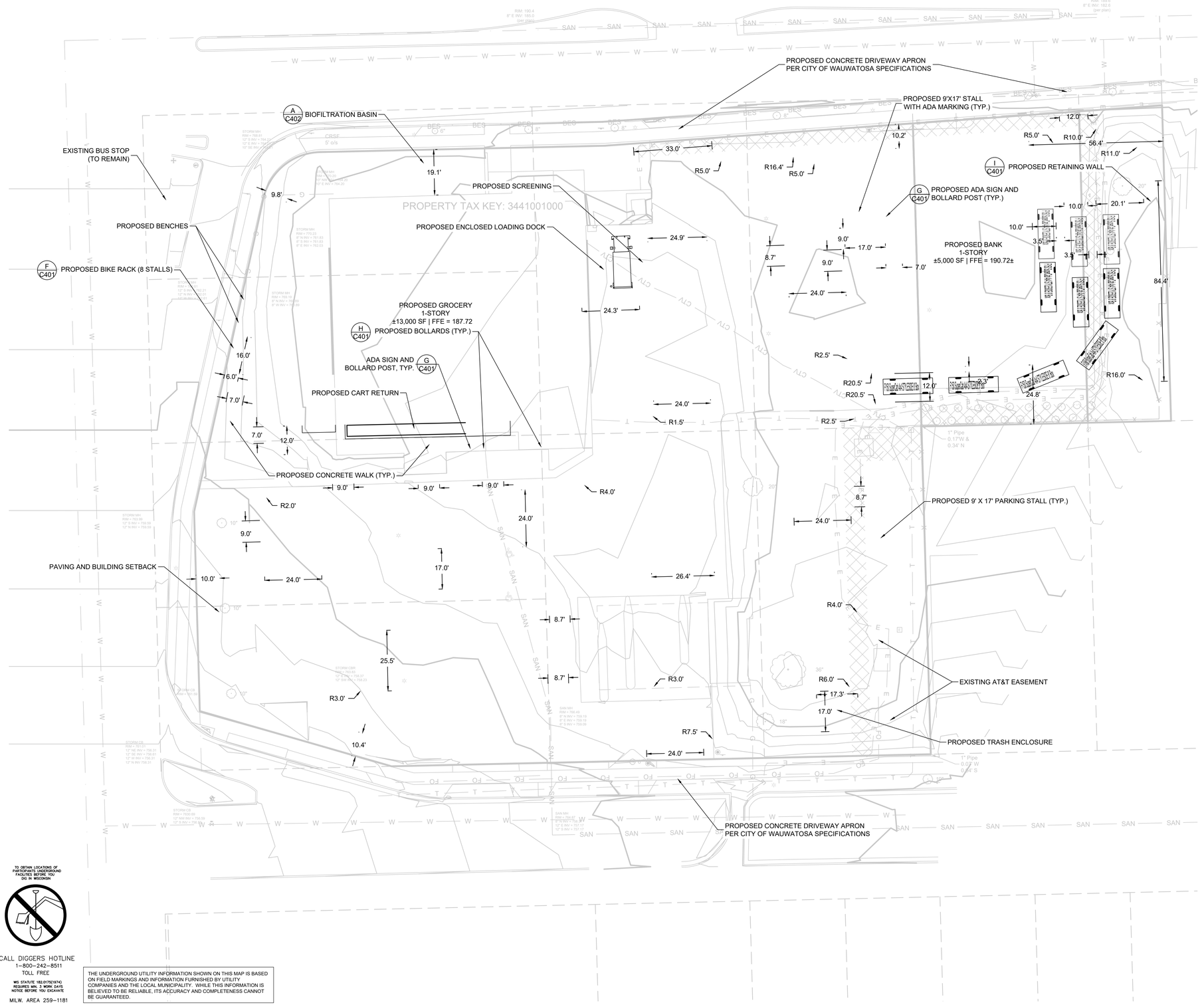
PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.19
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
SW 2.0

AKUSKE
SW 2.0
25057

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2026.05.27



SITE INFORMATION			
SITE AREA	89631	2.058 AC	
SITE DISTURBED AREA	89631	2.058 AC	
EXISTING IMPERVIOUS AREA	61224	1.406 AC	68.3 %
PROPOSED IMPERVIOUS AREA	73161	1.680 AC	81.6 %
TOTAL PARKING SPACES	124		
ADA PARKING SPACES	5		

LEGEND:

- A C401 — 5" THICK CONCRETE WALK
- B C401 — CONCRETE PAVEMENT
- C C401 — ASPHALT SURFACE
- D C401 — HEAVY-DUTY ASPHALT SURFACE
- E C401 — CURB & GUTTER (ACCEPT)
- 5 — EXISTING CONTOUR

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
6. WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND RAMPS, PAVING, AND CURB AND GUTTER SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS.
7. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY REQUIRES A STREET OCCUPANCY PERMIT FROM THE CITY.
8. EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

THE SIGMA GROUP
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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

TRUCK TURNING MOVEMENTS

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO. REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:
EX 1

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EX 1
25057

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2026.05.27





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Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

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GRAPHIC SCALE
0 20 40

WAUWATOSA GROCERY
7501 W. NORTH AVENUE
WAUWATOSA, WI

FIRETRUCK TURNING MOVEMENTS

PRELIMINARY NOT FOR CONSTRUCTION

ISSUANCE	DATE
CONDITIONAL USE SUBMITTAL	05/20/2026
DRB SUBMITTAL	05/27/2026

NO. REVISION	DATE

PROJECT NO:	25057
DESIGN DATE:	----
PLOT DATE:	2026.05.27
DRAWN BY:	JMJ
CHECKED BY:	PJI
APPROVED BY:	----

SHEET NO:

EX 2

CMUELLER

EX 2

25057

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TIA TECHNICAL MEMORANDUM

DATE: June 15, 2026

BY: Tammi Czewski, P.E., PTOE
Traffic Analysis & Design, Inc.

SUBJECT: **BMO Bank Redevelopment Traffic Impact Analysis Update**
Wauwatosa, WI

This traffic impact analysis (TIA) report supersedes the BMO Bank Redevelopment TIA dated April 30, 2026. This TIA update includes an additional intersection alternative for the study intersections, as well as revises geometric parameters evaluated for the Wauwatosa Avenue intersection with Rozmus Way/Watson Avenue.

INTRODUCTION & DEVELOPMENT PLAN

The BMO Bank site at 7501 W. North Avenue in Wauwatosa, Wisconsin is proposed to be redeveloped with a 13,000-square foot grocery store and a new, but smaller 5,000-square foot bank building with an attached drive-thru teller/ATM canopy. The site currently contains an approximate 24,000-square foot two-story bank building and separate drive-thru teller/ATM building with canopy. These buildings will both be razed for site redevelopment.

The BMO Bank site currently has four full-access driveways to Watson Avenue plus one full-access driveway (at a median opening) and two right-in/right-out access driveways to W. North Avenue. After redevelopment, the site will have only one full-access driveway to Watson Avenue plus one full-access driveway (at a median opening) and one right-in/right-out access driveway to W. North Avenue. The right-in/right-out only access driveway to W. North Avenue will be used exclusively by exits from the new BMO Bank drive-thru teller/ATM lanes.

The location of the BMO Bank site with respect to the surrounding roadway system is shown on Exhibit 1 and the development site plan is on Exhibit 2. In addition to proposed building development, the site plan shows how delivery/semi-trucks will access the site (inbound as a right-turn from W. North Avenue and outbound as a right-turn onto Watson Avenue) and their back-in maneuvering to the grocery loading dock. It also shows the trash enclosure position on the southeast corner of the site, which is easily accessible via the adjacent drive aisles in that area.

PURPOSE

This traffic impact analysis (TIA) report was prepared to document the existing and future build peak hour traffic volumes and traffic operations at the BMO bank driveways and adjacent intersections near the development site. The peak hours capture both the weekday school afternoon peak dismissal period and the weekday evening commuter rush hour period.

The traffic volumes were evaluated with both the existing geometrics and traffic control at these intersections, as well as with the future reconstruction of the Wauwatosa Avenue/W. North Avenue intersection planned as part of the Wisconsin Department of Transportation's (WisDOT) STH 181 (Wauwatosa Avenue) project. As required by the City of Wauwatosa, this study evaluates three access scenarios the Wauwatosa Avenue intersections with Rozmus Way/Watson Avenue:

- Scenario 1: Full Access/no restrictions
- Scenario 2: Right-out only from Watson Avenue
- Scenario 3: Left-in/Right-in/Right at from Rozmus Way and Right-in/Right-out at Watson Avenue

All access scenarios were evaluated for both the existing and future transportation conditions.

STUDY AREA

Study Intersections

Exhibit 1 shows the study intersections evaluated in this TIA report. The study intersections are also listed below:

- Wauwatosa Avenue & Rozmus Way/Watson Avenue
- Wauwatosa Avenue & W. North Avenue
- W. North Avenue & BMO Bank Site West Driveway
- W. North Avenue & BMO Bank Site East Driveway(s)

The Wauwatosa Avenue/W. North Avenue intersection operates with actuated-coordinated traffic signal control. Based on analysis files provided by the City of Wauwatosa, the signal will be uncoordinated/run free with the future planned reconstruction of the intersection. All other study intersections and site driveways operate with stop sign control on the minor street and driveway approaches.

Study Area Roadways/Existing Transportation System

The geometrics, traffic control, and intersection spacing along the study sections of W. North Avenue and Wauwatosa Avenue are on Exhibit 3. The following are descriptions of the roadways in the study area:

W. North Avenue is a two-lane undivided east/west principal arterial through the study area, with widening to a four-lane divided cross-section through the Wauwatosa Avenue intersection and BMO Bank site driveways. A left-turn lane, two through lanes, and a right-turn lane are provided at all approaches to the Wauwatosa Avenue/W. North Avenue intersection. There is a median opening on the east side of the Wauwatosa Avenue/W. North Avenue intersection to allow for full-access turning movements at the BMO Bank West Site Driveway. The speed limits on W. North Avenue are posted at 30 mph west of Wauwatosa Avenue and 25 mph east of Wauwatosa Avenue.

Wauwatosa Avenue is also a two-lane undivided north/south principal arterial through the study area, with widening to a four-lane divided cross-section through the W. North Avenue intersection. The two-lane/four-lane transition occurs within the Rozmus Way/Watson Avenue intersection. The speed limit on Wauwatosa Avenue is posted at 30 mph, with a 20-mph school speed zone (when children are present) through the study area for the nearby Longfellow Middle School.

Watson Avenue & Rozmus Way are two-lane undivided east/west local roadways that connect opposite each other at Wauwatosa Avenue. Both roadways operate with a 25-mph speed limit. Rozmus Way provides access primarily to the Wauwatosa City Hall and Public Library, and Watson Avenue, which is bisected by a physical barrier to the east, provides access primarily to the BMO Bank site.

Sidewalks are provided on the north side of Rozmus Way and on both sides of all other roadways throughout the study area. On-street bicycle lanes are striped on Wauwatosa Avenue and W. North Avenue.

Future Transportation System

WisDOT is proposing an improvement project that includes replacing the pavement and resurfacing sections along STH 181 from Wisconsin Avenue to Center Street in Wauwatosa. As part of the project, which is tentatively scheduled to begin in 2030 or 2031, traffic signal modernization and other improvements will be made to the Wauwatosa Avenue (STH 181)/W. North Avenue intersection.

The improvement option (Option 2) for the Watson Avenue to Meinecke Avenue corridor segment was provided by the city for use as the Future Transportation System in this study. In this option, all exclusive right-turn lanes at the Wauwatosa Avenue/W. North Avenue intersections are removed (right-turns would turn from the outside through lanes), and the median on W. North Avenue would be extended further east of Wauwatosa Avenue, with no median opening for the BMO Bank site driveways. Aerial comparisons of the Existing and Future Transportation Systems are shown on Exhibit 4. The Future Transportation System lane geometrics with estimated turn lane storage distances (as scaled from the WisDOT North Avenue Option 2 plan), are on Exhibit 5.

EXISTING (NO BUILD) TRAFFIC CONDITIONS

Data Collection/Existing Traffic Volumes – Existing Transportation System

This study uses city-provided turning movement traffic counts at the Wauwatosa Avenue intersections with W. North Avenue and Rozmus Way/Watson Avenue, as well as supplemental W. North Avenue driveway and drive-thru teller/ATM lane counts for the BMO Bank site. The city-provided traffic counts were collected in April 2024 and the supplemental bank traffic data was collected in April 2026.

Per the city, traffic volumes from 3:00-4:00 p.m. at the Wauwatosa Avenue/W. North Avenue intersection and from 3:30-4:30 p.m. (due to lack of data from 3:00-3:30 p.m.) at the Wauwatosa Avenue/Rozmus Way/Watson Avenue intersections were to be used for the weekday school peak hour time period. Traffic data from 4:30-5:30 p.m. at both intersections was to be used for the weekday PM peak hour time period. All traffic counts collected for this study are in Appendix A.

The BMO Bank W. North Avenue driveway and drive-thru teller/ATM counts were compiled for the 3:00-4:00 p.m. (school peak) and 4:30-5:30 p.m. (PM peak) time periods. All traffic volumes were balanced from the Wauwatosa Avenue/W. North Avenue intersection and are shown as the Existing Traffic Volumes – Existing Transportation System on Exhibit 6. Note that the exhibit combines traffic volumes for the BMO Bank east site driveways into one driveway. Traffic using these driveways is relatively low during the peak hours and therefore are shown together with negligible turning movements into and out of the BMO Bank site.

Existing Traffic Volumes – Future Transportation System

This study evaluates the existing traffic volumes for both the Existing Transportation System (Exhibit 3) and Future Transportation System (Exhibit 5). The Future Transportation System involves closing the W. North Avenue median opening at the BMO Bank West Site Driveway, restricting access to all W. North Avenue BMO Bank driveways to right-in/right-out only access. Therefore, the left turn movements in and out of the West Site Driveway were rerouted to match the Future Transportation System plans. The rerouted BMO Bank trips are on Exhibit 7 and the resulting Existing Traffic Volumes – Future Transportation System are on Exhibit 8.

Existing Traffic Peak Hour Operations

Intersection operation is defined by "level of service." Level of Service (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'. For the purposes of this study, LOS D or better was used to define acceptable peak hour operating conditions. The LOS definitions for signalized and unsignalized intersections are in Appendix A.

The study intersections were analyzed using the Synchro 12 traffic analysis model (outputs based on the *Highway Capacity Manual, 7th Edition (HCM7*) and the peak hour turning movement volumes estimated for each intersection. The Synchro analysis models in this study include peak hour factors and heavy vehicle percentages for each intersection (summary tables are in Appendix B), plus signal timings, pedestrian crossing volumes, lane utilization factors, and other parameters from the city-provided Synchro files for the Existing and Future Transportation Systems.

Note that the Wauwatosa Avenue/W. North Avenue intersection currently operates with non-standard phasing that is incompatible with the Highway Capacity Manual computational methodology. In the future, the signal timing phasing is planned to be standardized. Therefore, the volume-to-capacity ratios, delays, and LOS for this intersection are reported from the Synchro Timings module with the Existing Transportation System, and the HCM7 module with the Future Transportation System. Following typical WisDOT analysis procedures, all traffic queues at this intersection are reported from the Synchro Timings module for both the Existing and Future Transportation Systems.

Wauwatosa Avenue tapers from a four-lane cross-section to a two-lane cross-section just south of the Rozmus Way/Watson Avenue intersection. Southbound, the tapering occurs within the intersection resulting in most through traffic traveling in the inside southbound through lane. Most traffic traveling in the outside southbound through lane turn right onto Rozmus Way.

Therefore, the southbound approach at this intersection was evaluated as a shared left-turn/through lane plus right-turn lane.

Northbound widening from one lane to two lanes occur south of the intersection, with two full-width through lanes passing through the Rozmus Way/Watson Avenue intersection. Traffic videos provided by the City show that traffic utilizes both northbound through lanes as it positions into the northbound left-turn, through, or right-turn lanes at the signalized intersection with W. North Avenue. During peak times, however, northbound traffic queues from the signal extend to and through the intersection with Rozmus Way (typically in one lane only), effectively limiting northbound traffic to a single through travel lane. To best model traffic flow where the northbound approach sometimes operates with two through lanes and sometime operates with one through lane (due to queuing), the approach was modeled with left-turn lane (into Rozmus Way) and shared through/right-turn lane, and a growth factor of 0.75 was applied to all northbound movements. The growth factor reduces traffic flows used in the capacity calculations since the exact geometric/traffic flow condition can not be modeled with the available traffic modeling tools.

The peak hour operating conditions for each study intersection with the Existing Traffic Volumes are shown on Exhibit 9 (Existing Transportation System) and Exhibit 10 (Future Transportation System). The analysis tables show the peak hour LOS per lane group and corresponding delay (in seconds per vehicle), volume-to-capacity (v/c) ratios, and 95th percentile queues. The Synchro traffic analysis worksheets for the Existing Traffic Volumes are in Appendix B (Existing Transportation System) and Appendix C (Future Transportation System).

As shown for the Existing Transportation System on Exhibit 9, even with the lowered volume factor applied to the traffic models, the effective single northbound and southbound through lanes on Wauwatosa Avenue result in LOS E and F conditions for eastbound and westbound left-turn and through movements on Rozmus Way and Watson Avenue. Delays for both approaches are about 75 seconds or less, the movements are well below capacity (volume-to-capacity (v/c) $\leq$0.18), and queues are about one vehicle in length. The elimination of the westbound Watson Avenue right-turn only lane changes the average delay calculations for that approach, resulting in lower, LOS E or better delays for all movements at the intersection.

Although all lane groups at the Wauwatosa Avenue/W. North Avenue intersection operate at LOS D for both analysis scenarios, the elimination of right-turn lanes increases peak hour traffic queues in all lanes. The Future Transportation System plan increases left-turn storage distances on all approaches except the northbound left-turn lane, which is planned to maintain about 100 feet of queue storage. As shown on Exhibit 10, northbound left-turn PM peak hour queues extend to about 205 feet, so excess queues will spill over into the northbound through lanes, extending northbound queues to more than 760 feet. Maintaining the right-turn lanes in the Future Transportation System condition would reduce all queues at the intersection from what was evaluated in this TIA, although spillback would still be expected in both the left and right-turn lanes on the northbound and other intersection approaches.

BUILD (BMO BANK REDEVELOPMENT) TRAFFIC CONDITIONS

Rerouted Rozmus Way Traffic

Existing left-turn traffic exiting Rozmus Way onto Wauwatosa Avenue was rerouted to North Avenue for the access Scenario 3 alternative (left-in/right-in/right-out at Rozmus Way and right-in/right-out at Watson Avenue). The rerouted traffic is shown on Exhibit 11.

Rerouted BMO Bank Driveway Traffic

Redevelopment of the BMO Bank site includes razing the existing BMO Bank building and separate drive-thru teller/ATM building, building a new grocery store and bank branch with drive-thru building, reconfiguring the internal site circulation and parking area, and reducing/relocating the site driveways to W. North Avenue and Watson Avenue. For this study, the existing BMO Bank trips on site are expected to remain the same when the site is redeveloped with the new bank branch building. Therefore, the existing BMO Bank driveway trips were rerouted to match the new site configuration for each of the access analysis alternatives evaluated in this study. The rerouted BMO Bank driveway volumes are on the following exhibits:

Rerouted Existing Bank Trips to Proposed Redevelopment Plan

- Exhibit 12A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 12B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 12C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 12D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 12E: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 12F: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

Note: LIRIRO refers to left-in/right-in/right-out only access; RIRO refers to right-in/right-out only access.

New Grocery Store Traffic

Trips for the proposed grocery store on the BMO Bank redevelopment site were generated from fitted curve equations for the "Supermarket" land use published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 12th Edition.* Based on ITE, the 13,000-square foot grocery store generates 1,455 driveway trips per weekday, with 145 trips during the weekday PM peak hour and 145 trips during the weekday School peak hour (estimated the same as for the PM peak hour).

About 25% of these trips are estimated to be pass-by trips on W. North Avenue and Wauwatosa Avenue. Pass-by trips are trips already on the roadway system but divert into and out of the development along their original traffic path. Of the weekday driveway trips, 360 are estimated to be pass-by trips, with 40 pass-by trips during the weekday PM peak hour and 40 pass-by trips during the weekday School peak hour. This leaves 1,095 new grocery store trips during a typical weekday with 105 new trips during the weekday PM peak hour and 105 new trips during the School peak hour.

The proposed grocery store new and pass-by trips were assigned to the study intersections based on the following trip distributions. The distribution of new trips was based on existing travel

patterns for the BMO Bank site. The distribution of pass-by trips was based on directional through traffic patterns on W. North Avenue and Wauwatosa Avenue for each peak hour.

Trip Distribution – New Trips

- 20% to/from the west on W. North Avenue
- 40% to/from the east on W. North Avenue
- 20% to/from the north on Wauwatosa Avenue
- 20% to/from the south on Wauwatosa Avenue

Trip Distribution – Pass-by Trips

- 30% northbound on Wauwatosa Avenue
- 20% southbound on Wauwatosa Avenue
- 25% eastbound on W. North Avenue
- 25% westbound on W. North Avenue

The trip generation and trip distribution tables for the proposed grocery store are on Exhibit 13. The traffic assignments for the Existing and Future Transportation Systems, and for the three Watson Avenue access scenarios are on the following exhibits:

Grocery New Trips

- Exhibit 14A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 14B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 14C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 14D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 14E: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 14F: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

Grocery Pass-by Trips

- Exhibit 15A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 15B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 15C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 15D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 15E: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 15F: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

Grocery Driveway Trips (New + Pass-by)

- Exhibit 16A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 16B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 16C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 16D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 16E: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 16F: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

Build Traffic Volumes

The Build traffic volumes were generated by adding the Rerouted Rozmus Way Trips (Scenario 3 only), Rerouted Existing Bank Trips and the Grocery Driveway Trips to the Existing Traffic Volumes for each analysis scenario. The Build traffic volumes are on the following exhibits:

Build Traffic Volumes

- Exhibit 17A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 17B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 17C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 17D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 17E: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 17F: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

Build Traffic Peak Hour Operations

The Build Traffic Volumes were evaluated using the same modeling parameters as the Existing Traffic Volumes. When necessary to maintain stable queueing results within the Synchro model, maximum green times for the Wauwatosa Avenue/W. North Avenue signal were increased from values provided by the city (all other maximum green times were not changed).

The peak hour operating conditions tables for each Build traffic scenario are on the following exhibits:

Build Traffic Capacity/LOS Analysis Tables

- Exhibit 18A: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 18B: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Exhibit 18C: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Exhibit 18D: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Exhibit 18F: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Avenue)

The Synchro traffic analysis worksheets for the Build Traffic Volumes are found in the following Appendices:

Build Traffic Synchro Worksheets

- Appendix D: Existing System – Scenario 1 (Full Access Exits from Watson Avenue)
- Appendix E: Existing System – Scenario 2 (Right-Out Only from Watson Avenue)
- Appendix F: Existing System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)
- Appendix G: Future System – Scenario 1 (Full Access Exits from Watson Avenue)
- Appendix H: Future System – Scenario 2 (Right-Out Only from Watson Avenue)
- Appendix I: Future System – Scenario 3 (LIRIRO at Rozmus Way/RIRO at Watson Avenue)

With the Build Traffic Volumes, delays at the study intersections along W. North Avenue are at LOS D or better for all lane groups during the School and PM peak hours. At the Wauwatosa Avenue intersection with Rozmus Way/Watson Avenue, variable results of LOS E and F

conditions result from the different access Scenarios 1 and 2 evaluated in this study. A comparison of the access scenario operations at this intersection are:

- Existing Transportation System & Scenario 1: LOS F conditions for both eastbound & westbound left-turn/through lanes during the School and PM peak hours. For both, delays are about 1-1½ minutes per vehicle, but all movements are well below capacity (v/c<0.40) and queues are 1-2 vehicles in length.
- Existing Transportation System & Scenario 2: LOS F conditions for the eastbound left-turn/through lane on Rozmus Avenue during the School and PM peak hours. Delays for this lane are about 1-1½ minutes per vehicle, but all movements are well below capacity (v/c<0.22) and queues are about one vehicle in length.
- Existing Transportation System & Scenario 3: LOS D or better for all movements during the peak hours.
- Future Transportation System & Scenario 1: LOS F conditions for the eastbound left-turn/through lane on Rozmus Avenue during the School and PM peak hours. Delays for this lane are about one minute per vehicle, but the lane is well below capacity (v/c≤0.16), and queues are about one vehicle in length. LOS E conditions for the westbound left-turn/through lane on Watson Avenue during the PM peak hour. Delays for this lane are only 44.4 seconds/vehicle, the lane is below capacity (v/c≤0.40), and queues are about two vehicles in length.
- Future Transportation System & Scenario 2: LOS F conditions for the eastbound left-turn/through lane on Rozmus Avenue during the School and PM peak hours. Delays for this lane are about one minute per vehicle, but all movements are well below capacity (v/c≤0.17) and queues are about one vehicle in length.
- Future Transportation System & Scenario 3: LOS D or better for all movements during the peak hours.

Similar to the existing conditions, peak hour traffic queues from the Wauwatosa Avenue/W. North Avenue signalized intersection extend through both the median opening for the BMO Bank West Site Driveway on W. North Avenue and through Rozmus Way/Watson Avenue for both the Existing Transportation System and Future Transportation System conditions. Relatively small increases in left-turn lane queues occur between the different access scenarios. Without the removal of right-turn lanes at the Wauwatosa Avenue/W. North Avenue intersection, traffic queues are much higher with the Future Transportation System than with the Existing Transportation System.

During the peak hours where traffic queues back up with slowed or stopped vehicles through the BMO Bank median opening to W. North Avenue or the Rozmus Way/Watson Avenue intersection, site traffic is expected to adapt and alter entry and exit routes to avoid additional delays by turning left into or out of the site. Based on existing BMO Bank site traffic counts, few vehicles exit to W. North Avenue or Wauwatosa Avenue during the School or PM peak hours. New grocery store traffic was applied to the site driveways based on the existing BMO Bank distribution patterns, but due to mainline queuing, left-turns from these driveways may at times be difficult. Left-turn exits (and at times left-turn entries) assigned to the BMO Bank site

in this TIA may be conservatively high. During peak periods, a greater number of site trips are likely to enter and exit as right-turn movements to avoid queues and reduce vehicle delays.

Safety Analysis

The City of Wauwatosa has expressed concern about the potential for "courtesy crashes" that may occur on Wauwatosa Avenue with increases in turns entering the BMO Bank site from Watson Avenue. These "courtesy crashes" could occur when a vehicle in the inside northbound through lane on Wauwatosa Avenue stops at Watson Avenue and "waves in" a southbound vehicle waiting to turn left onto Watson Avenue (this is sometimes done as a generous gesture by drivers who may queue up and block roadways that others want to turn onto). Northbound vehicles in the outside through lanes who do not stop at Watson Avenue may not see the turning vehicle (and vice versa) and cause a crash.

Crash analysis data was compiled for the Wauwatosa Avenue intersection with Rozmus Way/Watson Avenue. Only three total crashes occurred at the intersection during the five-year period from 2020 through 2024. One was a rear-end crash, one was a side-swipe crash, and one was an angle crash between a southbound left-turn vehicle and a northbound through vehicle. All were property damage only (no injury crashes). Based on the crash history, no specific crash patterns, which include "courtesy crashes," are present at the intersection. Crash data and a collision diagram for this intersection are in Appendix J.

RECOMMENDATIONS

Improvements are for jurisdictional consideration and are not legally binding. The City of Wauwatosa reserves the right to determine alternative solutions.

Existing Transportation System Recommendations (Exhibit 19) – Until 2030/2031

- Maintain the existing geometrics and traffic control at the Wauwatosa Avenue intersection with W. North Avenue.
- Maintain the existing geometrics and traffic control at the Wauwatosa Avenue intersection with Rozmus Way/Watson Avenue.

  To avoid multiple construction periods impacting traffic flow on Wauwatosa Avenue, changes to this intersection are not recommended until the North Avenue/Watson Avenue segments of the WisDOT STH 181 improvement project. With full-access exits, Rozmus Way and Watson Avenue left-turn/through lane peak hour delays are at 1-1½ minutes per vehicle, but well below capacity (v/c≤0.40) and with relatively short traffic queues (1-2 vehicles). This study may be highly conservative with the site traffic assignment turning left in and out of Watson Avenue and the North Avenue driveways. It is expected that during peak times, particularly when traffic queues from the signal extends past these access points, site traffic will shift to primarily right-in/right-out only movements to avoid delays and queues.
- Maintain the existing geometrics and traffic control and the existing median opening on W. North Avenue at the BMO Bank West Site Driveway (full-access turning movements to/from the West Site Driveway).
- Remove the two existing BMO Bank East Site Driveways to W. North Avenue and replace with a single East Site Driveway as shown on the proposed plan for the reconstructed site.

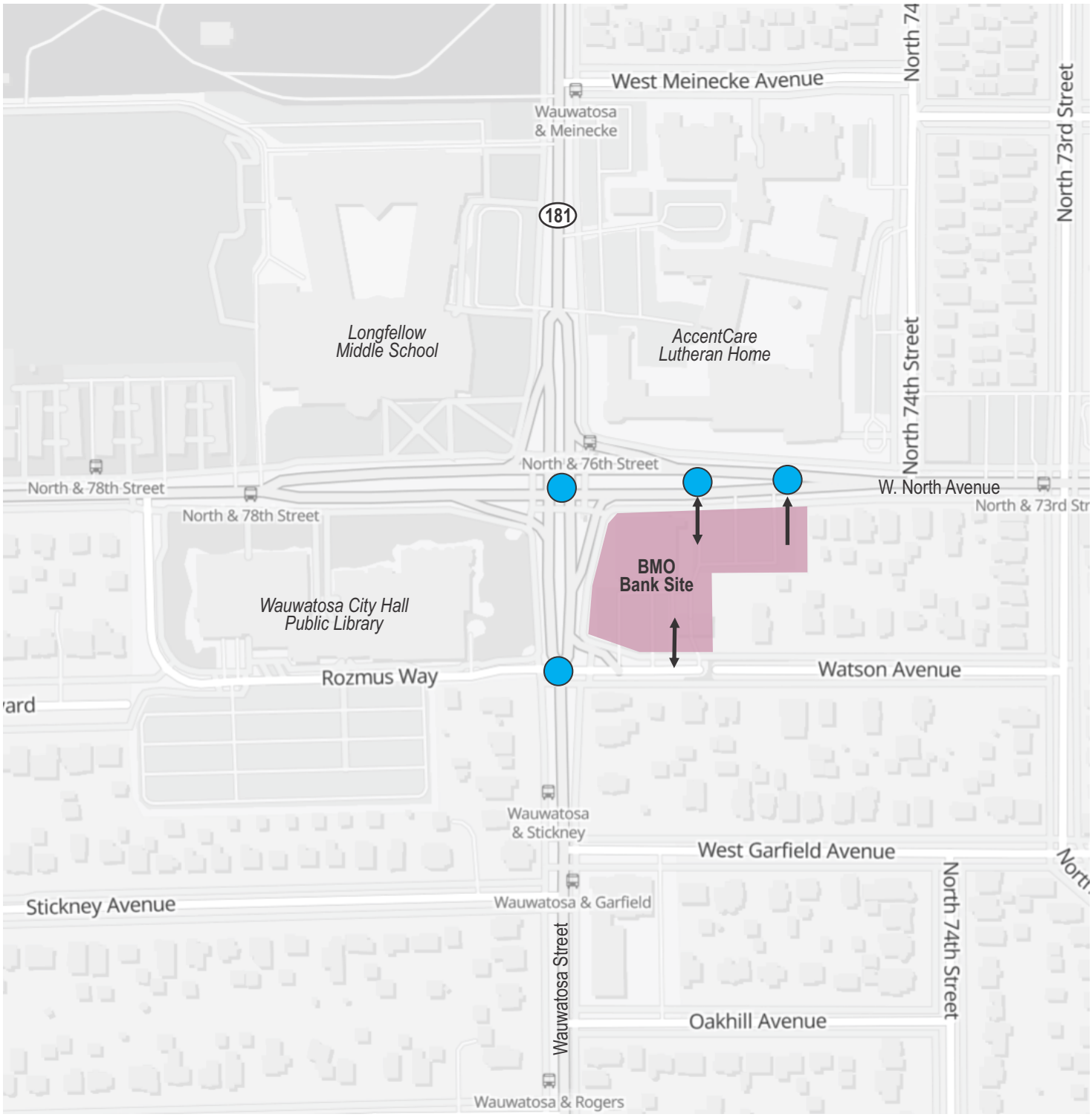
- Remove the four existing BMO Bank South Site Driveways to Watson Avenue and replace with a single driveway as shown on the proposed plan for the reconstructed site.

Future Transportation System Recommendations (Exhibit 20) – WisDOT STH 181 Project Implementation in 2030/2031

- Modify the intersection geometrics and traffic signals at the Wauwatosa Avenue/W. North Avenue intersection that are planned as part of the WisDOT STH 181 improvement project. This study evaluated preliminary plans provided by the City of Wauwatosa, which included removing the right-turn lanes at all approaches and upgrading the signal timing operations.
- Extend the median on W. North Avenue through the BMO Bank West Site Driveway. This extension is planned as part of the WisDOT STH 181 improvement project.
- Restrict access at the Wauwatosa Avenue intersection with Rozmus Way/Watson Avenue to mitigate LOS F delays and reduce the risk of courtesy and other crashes at the intersection that may occur with the increased traffic volumes to/from the redeveloped BMO Bank site. Restrict Rozmus Way access to left-in/right-in/right-out only movements and restrict Watson Avenue access to right-in/right-out only movements.

CONCLUSIONS

The above recommendations accommodate the future traffic volumes projected for the redevelopment of the BMO Bank site.



LEGEND

- Study Intersection
- BMO Bank Site
- Proposed Site Entrance & Exit
- Proposed Site Exit Only

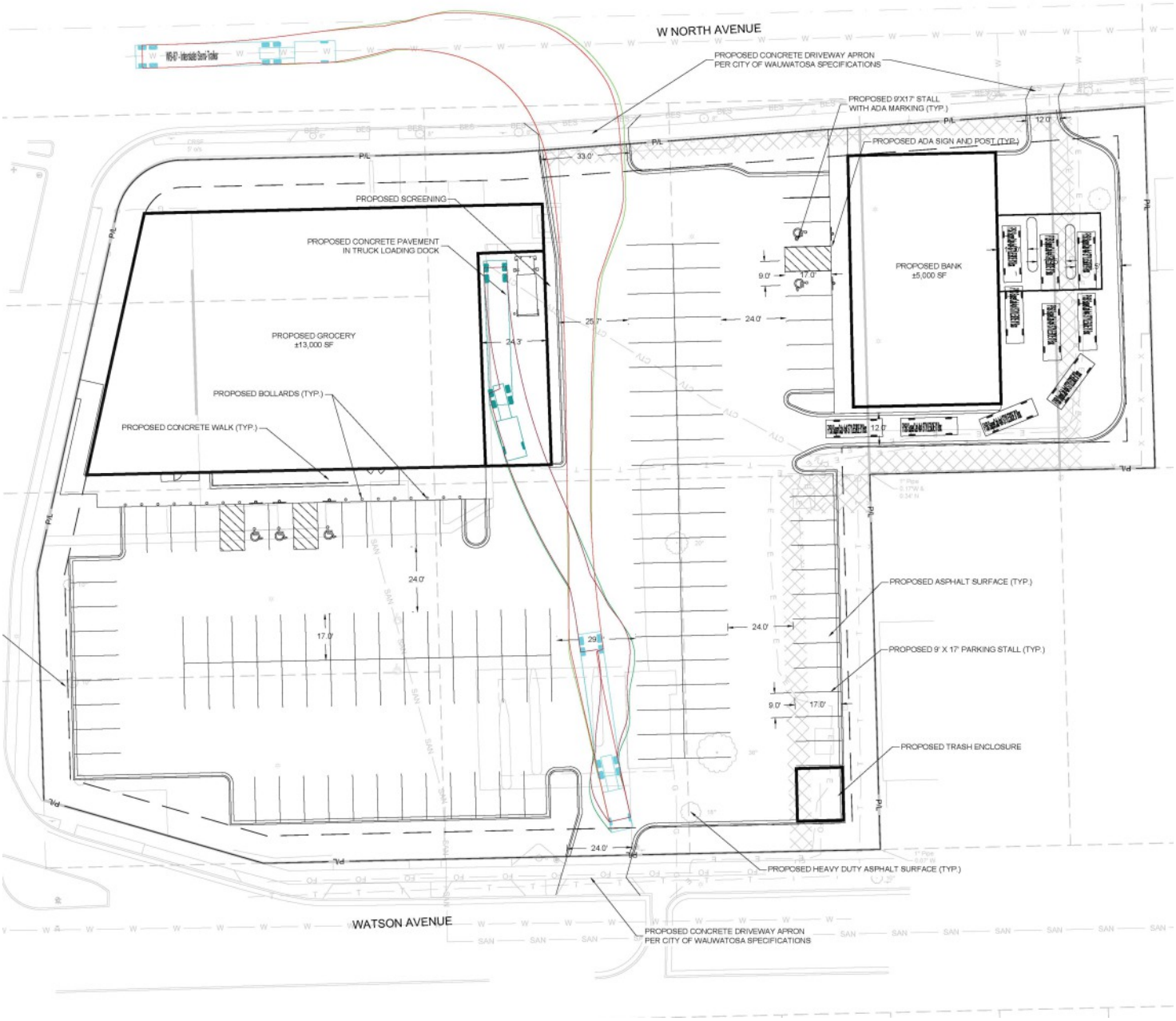
TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

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NOT TO SCALE

EXHIBIT 1
PROJECT LOCATION MAP & STUDY INTERSECTIONS



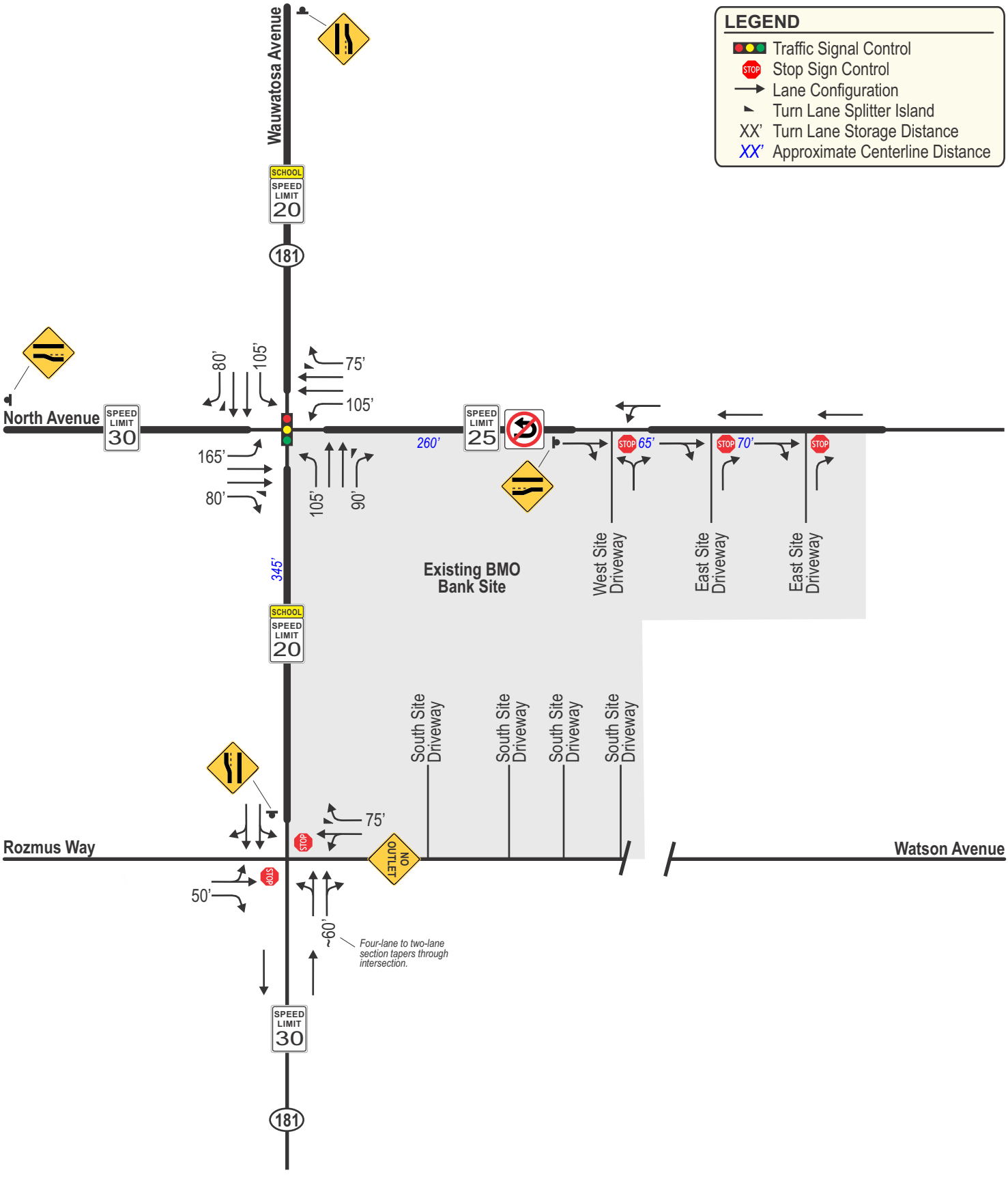
TADI TRAFFIC ANALYSIS & DESIGN, INC.

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EXHIBIT 2
BMO BANK REDEVELOPMENT PLAN



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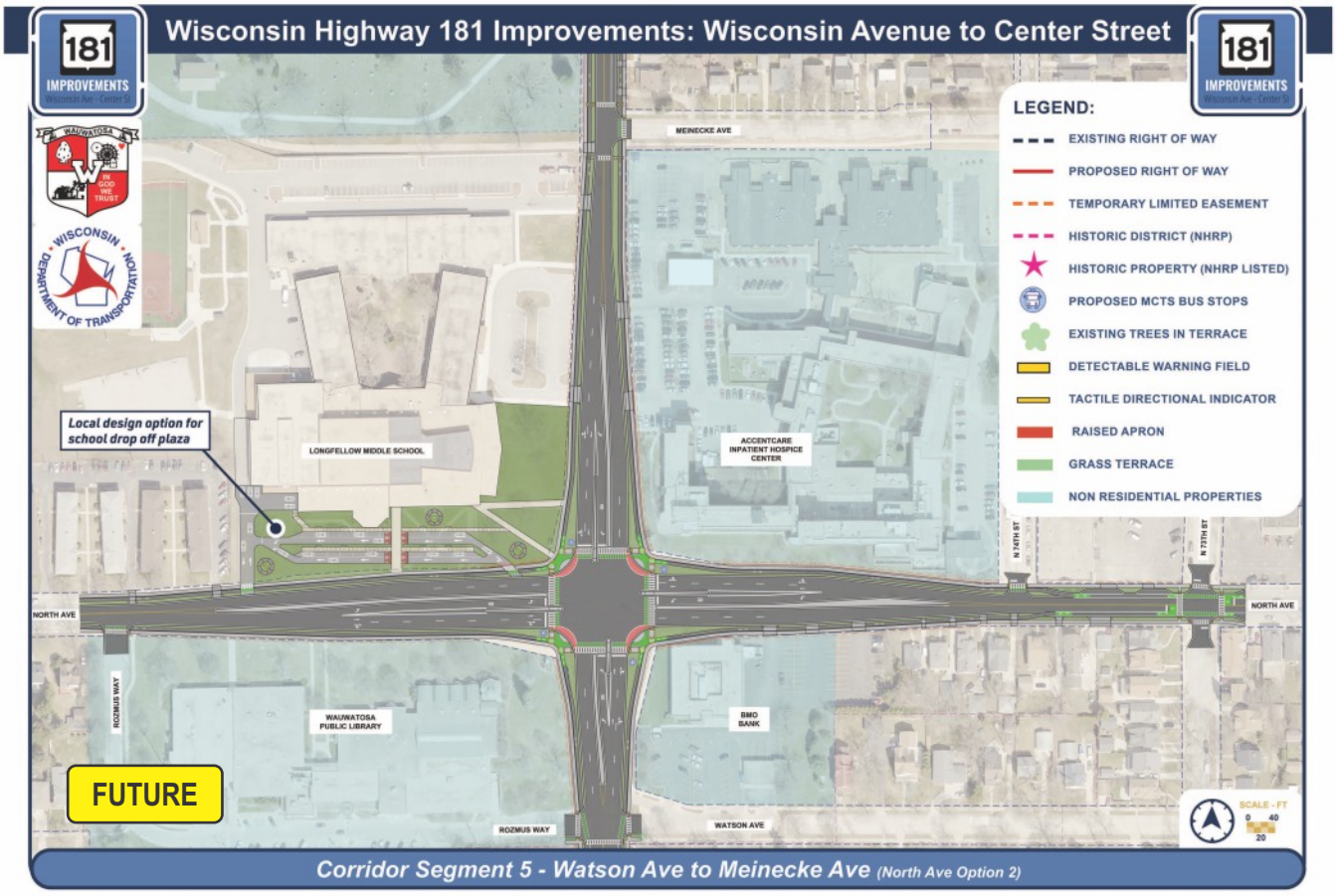
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EXHIBIT 3
EXISTING TRANSPORTATION SYSTEM





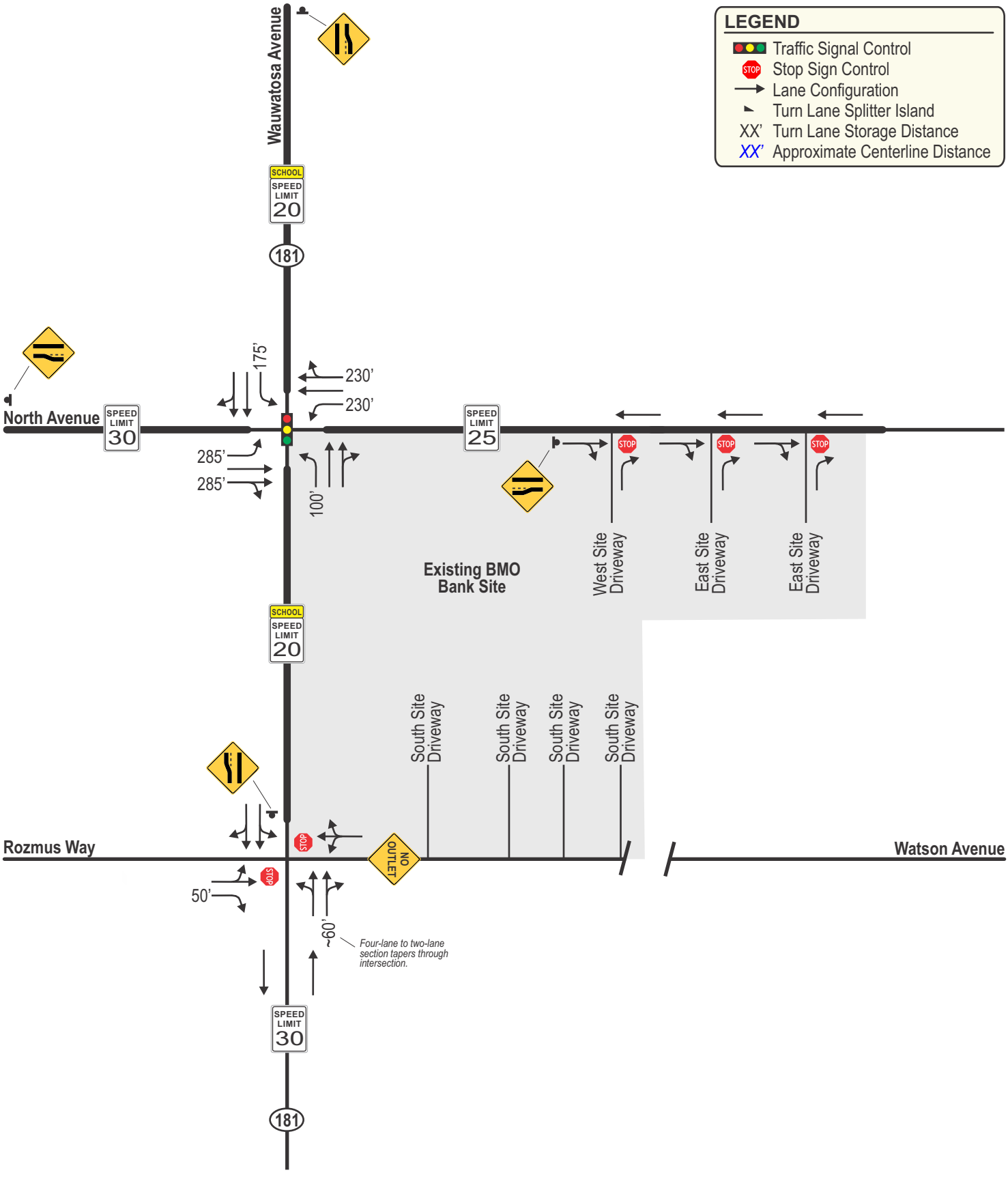
TADI TRAFFIC ANALYSIS & DESIGN, INC.

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EXHIBIT 4
EXISTING & FUTURE TRANSPORTATION SYSTEM AERIAL GRAPHICS



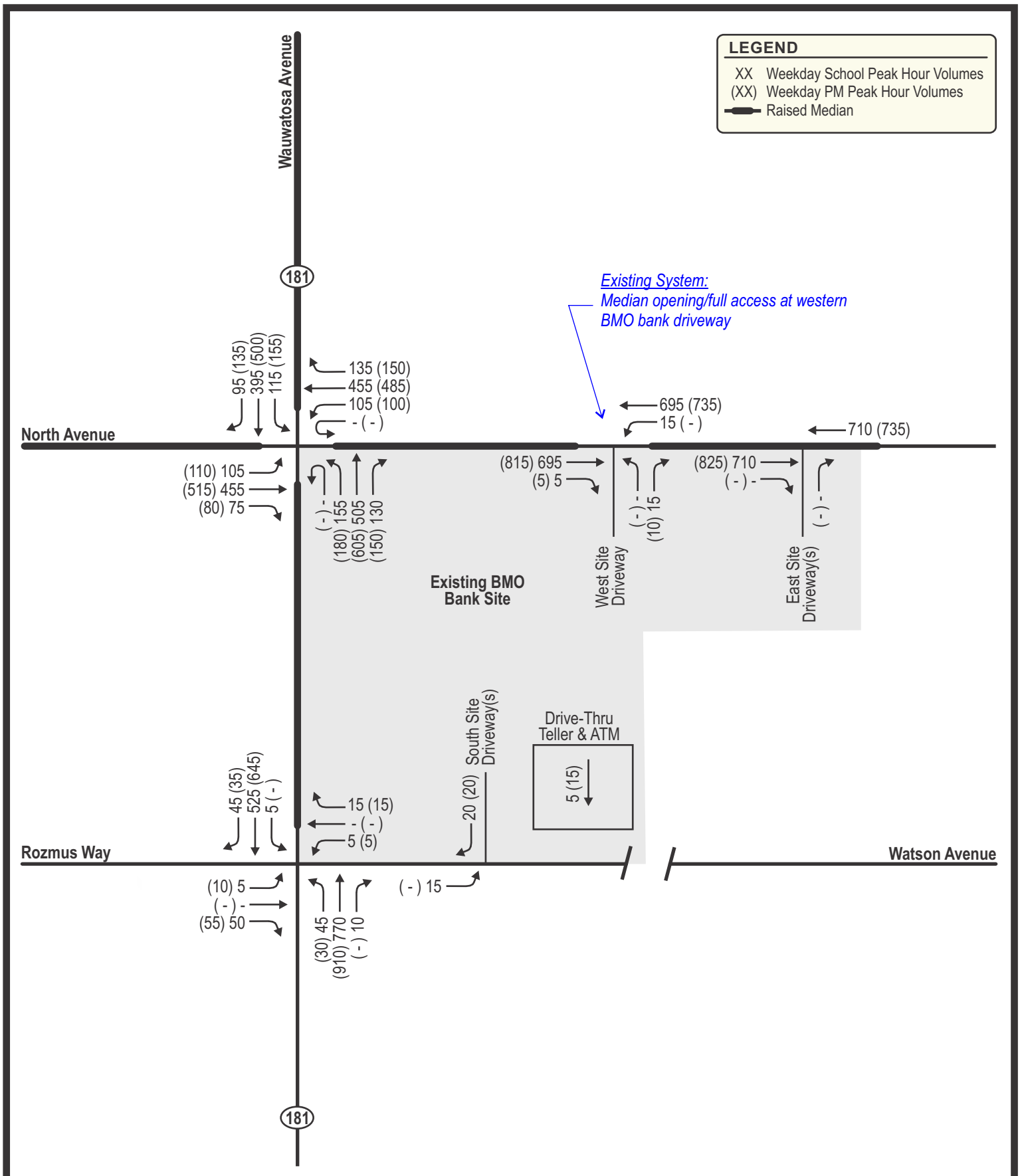
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EXHIBIT 5
FUTURE TRANSPORTATION SYSTEM
WISDOT STH 181 IMPROVEMENT PROJECT



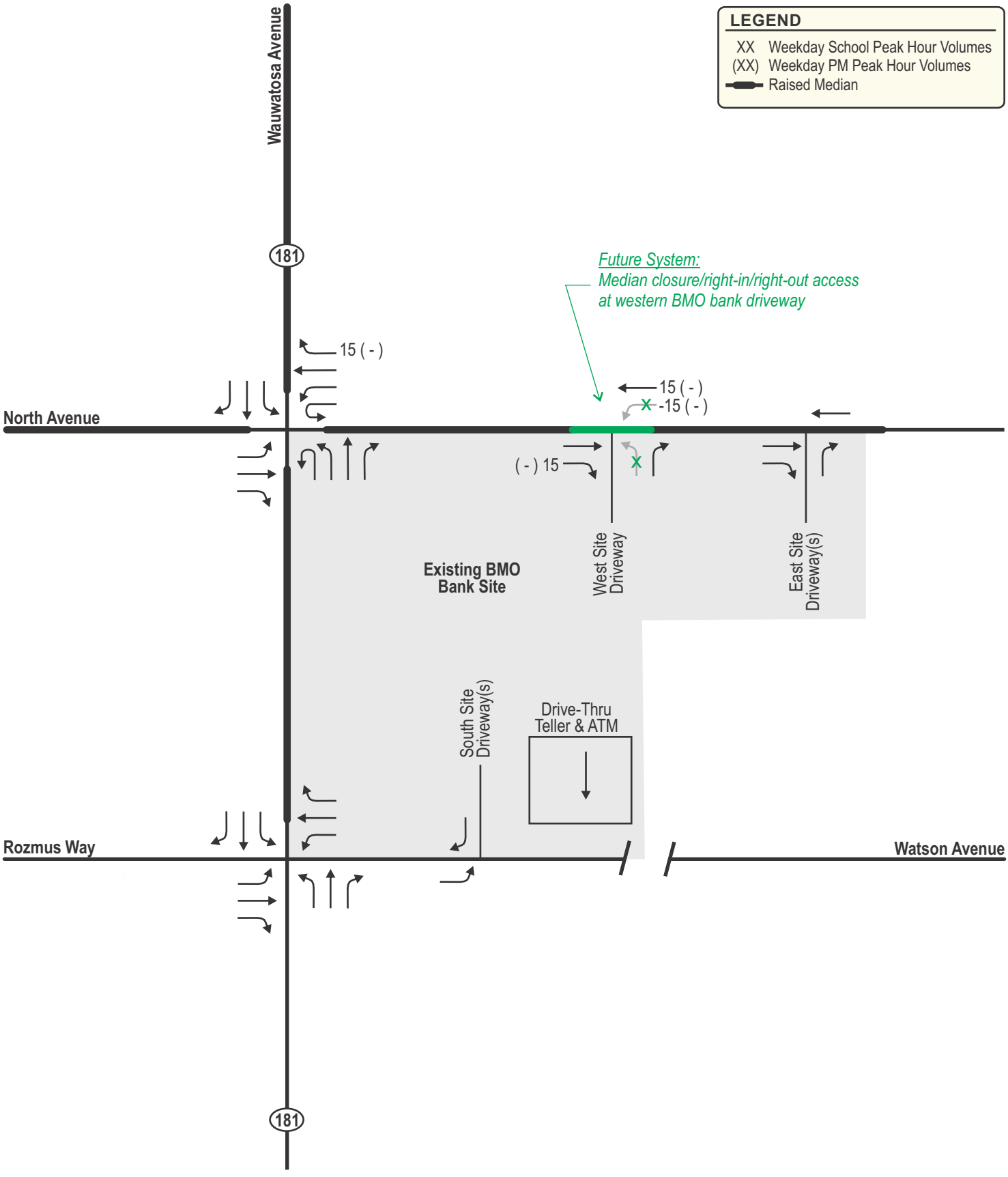
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EXHIBIT 6
EXISTING TRAFFIC VOLUMES
EXISTING TRANSPORTATION SYSTEM



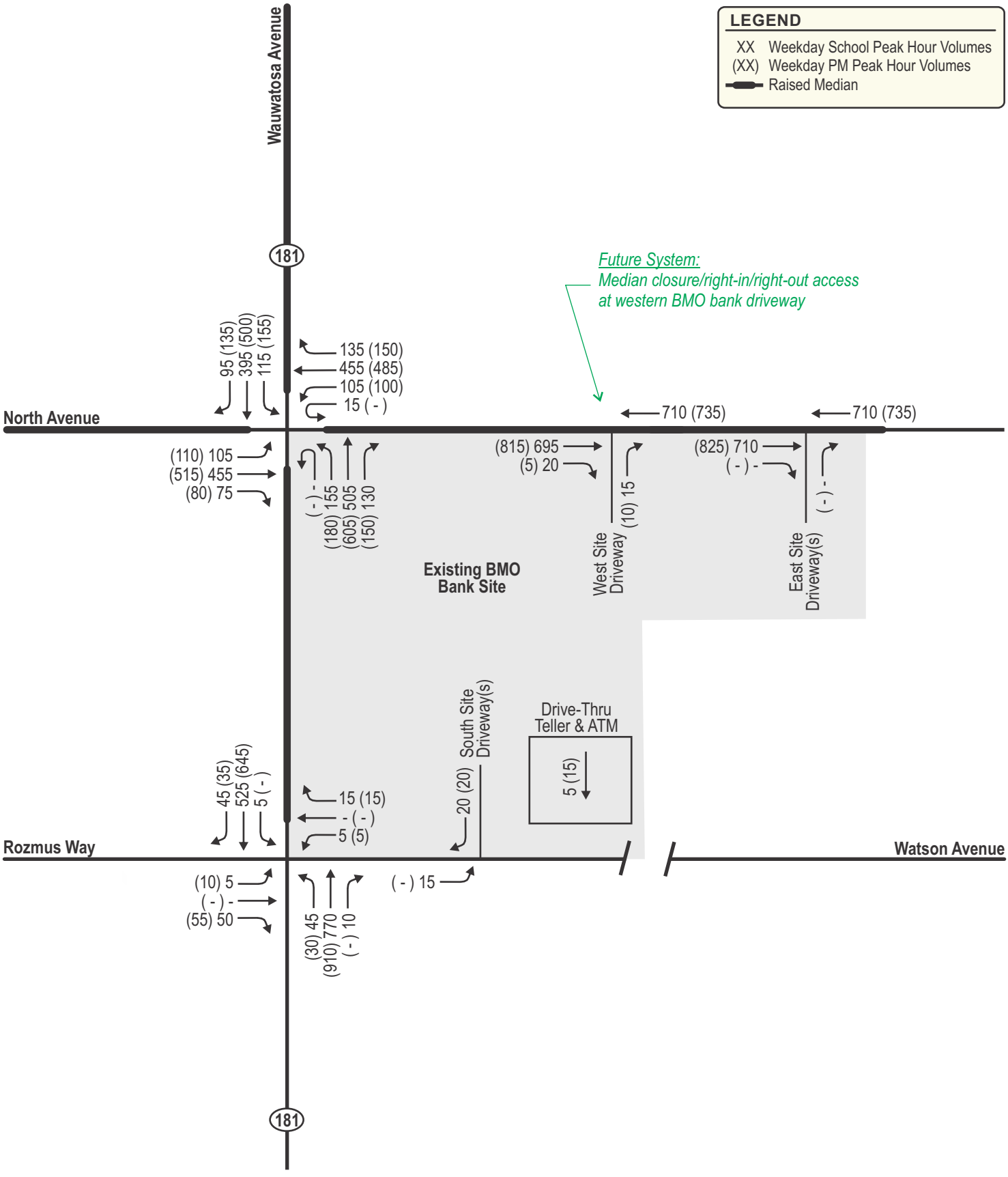
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EXHIBIT 7
REROUTED EXISTING BANK TRIPS - EXISTING SITE PLAN
FUTURE TRANSPORTATION SYSTEM



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3644: 06-12-2026

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NOT TO SCALE

EXHIBIT 8
EXISTING TRAFFIC VOLUMES
FUTURE TRANSPORTATION SYSTEM

Existing Traffic Peak Hour Operating Conditions

Existing Transportation System

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*<1*		*1*	*1*	*1>*		*<1*		*1*	
	Schl	LOS	F		B	E		B	B	*		A		*	A
		Delay	55.8		14.1	46.4		12.7	10.2	*		8.8		*	1.6
		v/c	0.08		0.12	0.07		0.03	0.06	*		0.01		*	
		Queue	10'		10'	5'		5'	5'	*		0'		*	
	PM	LOS	F		B	F		B	A	*		A		*	A
		Delay	74.5		13.3	70.9		13.8	9.7	*		9.1		*	1.7
		v/c	0.18		0.12	0.10		0.04	0.04	*		0.00		*	
		Queue	15'		10'	10'		5'	5'	*		0'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	
	Schl	LOS	C	D	A	C	D	B	C	D	A	C	C	A	C
		Delay	22.4	35.1	3.1	22.8	35.1	10.4	23.4	36.2	9.3	22.2	33.2	5.3	28.5
		v/c	0.41	0.58	0.15	0.42	0.58	0.28	0.52	0.64	0.26	0.45	0.51	0.21	
		Queue	85'	275'	20'	85'	275'	65'	115'	310'	60'	90'	240'	35'	
	PM	LOS	C	D	A	C	D	B	C	D	B	C	D	A	C
		Delay	22.6	36.2	3.1	23.0	35.4	11.4	28.3	39.8	10.8	29.2	35.7	9.2	30.6
		v/c	0.41	0.63	0.15	0.41	0.60	0.29	0.64	0.74	0.29	0.63	0.61	0.26	
		Queue	85'	310'	20'	80'	295'	80'	130'	375'	75'	115'	300'	60'	
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		*<1*		-	*<1>*			-			
	Schl	LOS	-	*		A		-	B			-			A
		Delay	-	*		8.6		-	10.9			-			0.2
		v/c	-	*		0.02		-	0.03			-			
		Queue	-	*		5'		-	5'			-			
	PM	LOS	-	*		A		-	B			-			A
		Delay	-	*		8.9		-	12.2			-			0.1
		v/c	-	*		0.00		-	0.03			-			
		Queue	-	*		0'		-	5'			-			
W. North Avenue & East Site Driveway(s) *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		14.0	-			0.0
		v/c	-	*		-	*	-	-		0.00	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		16.5	-			0.0
		v/c	-	*		-	*	-	-		0.00	-			
		Queue	-	*		-	*	-	-		0'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Due to non-Nema signal phasing at the Wauwatosa Avenue/North Avenue intersection, the reported LOS, delays and v/c ratios are based on Synchro analysis methodology and not the HCM 7.

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

Existing Traffic Peak Hour Operating Conditions

Future Transportation System

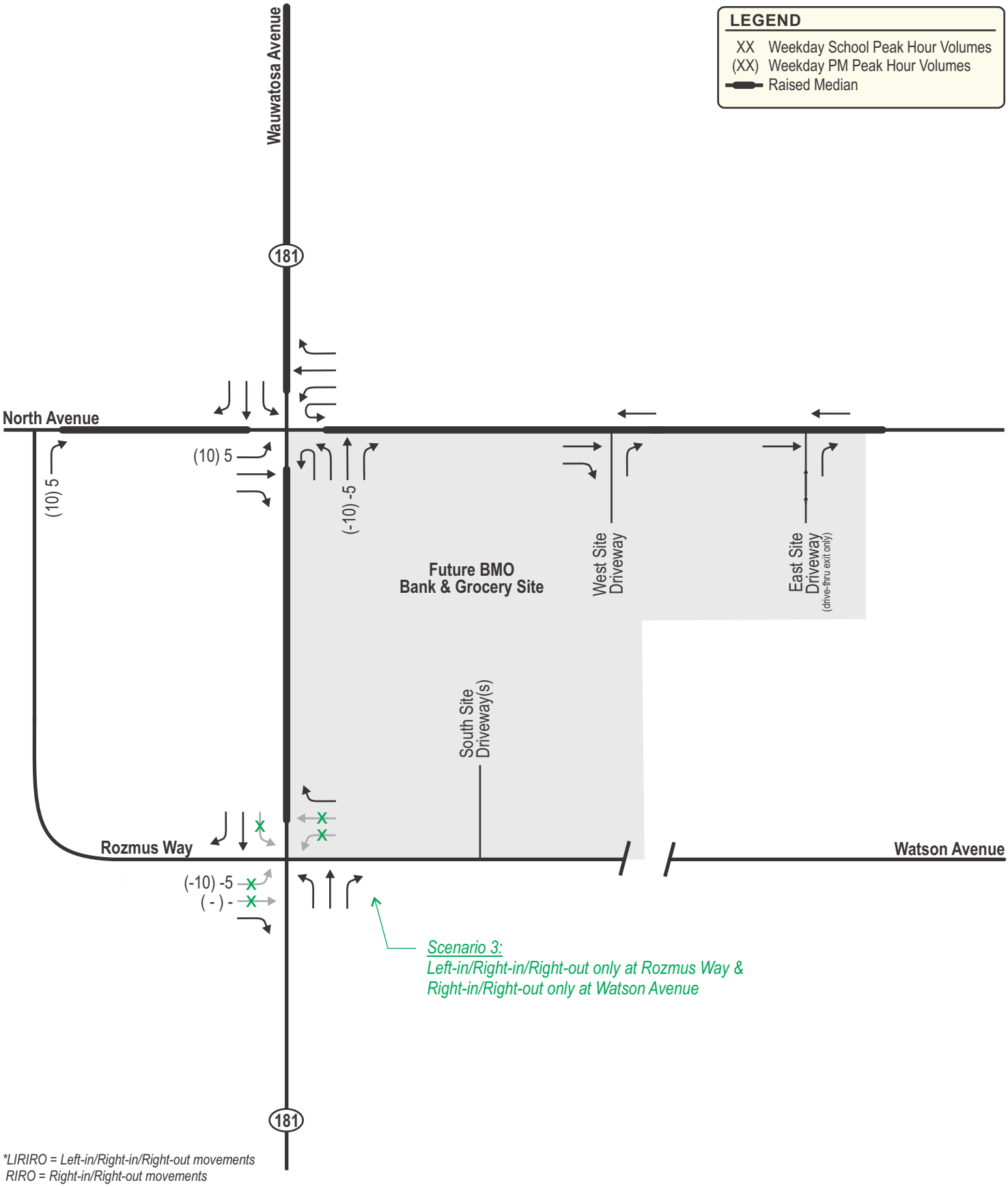
Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*<1>*			*1*	*1>*		*<1*		*1*	
	Schl	LOS	E		C	C			A	*		A		*	A
		Delay	43.5		15.1	20.7			9.8	*		8.8		*	1.5
		v/c	0.06		0.13	0.09			0.06	*		0.01		*	
		Queue	5'		10'	10'			5'	*		0'		*	
	PM	LOS	E		B	C			A	*		A		*	A
		Delay	47.8		14.6	24.5			9.3	*		9.1		*	1.4
		v/c	0.12		0.13	0.11			0.04	*		0.00		*	
		Queue	10'		15'	10'			5'	*		0'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2>*		*1*	*2>*		*1*	*2>*		*1*	*2>*		
	Schl	LOS	D	C		D	C		D	C		D	C		C
		Delay	39.0	30.5		37.3	32.5		36.6	34.9		39.4	29.6		33.0
		v/c	0.46	0.67		0.46	0.74		0.55	0.76		0.51	0.61		
		Queue	95'	385'		105'	480'		130'	540'		105'	365'		
	PM	LOS	D	C		D	D		D	D		D	C		D
		Delay	40.6	34.8		38.7	36.4		37.8	36.0		40.9	33.6		35.7
		v/c	0.51	0.78		0.41	0.81		0.63	0.80		0.68	0.74		
		Queue	105'	485'		95'	555'		205'	660'		165'	505'		
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		11.3	-			0.1
		v/c	-	*		-	*	-	-		0.03	-			
		Queue	-	*		-	*	-	-		5'	-			
	PM	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		11.8	-			0.1
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		5'	-			
W. North Avenue & East Site Driveway(s) *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		14.7	-			0.0
		v/c	-	*		-	*	-	-		0.00	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		16.4	-			0.0
		v/c	-	*		-	*	-	-		0.00	-			
		Queue	-	*		-	*	-	-		0'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.



TADI TRAFFIC ANALYSIS & DESIGN, INC.

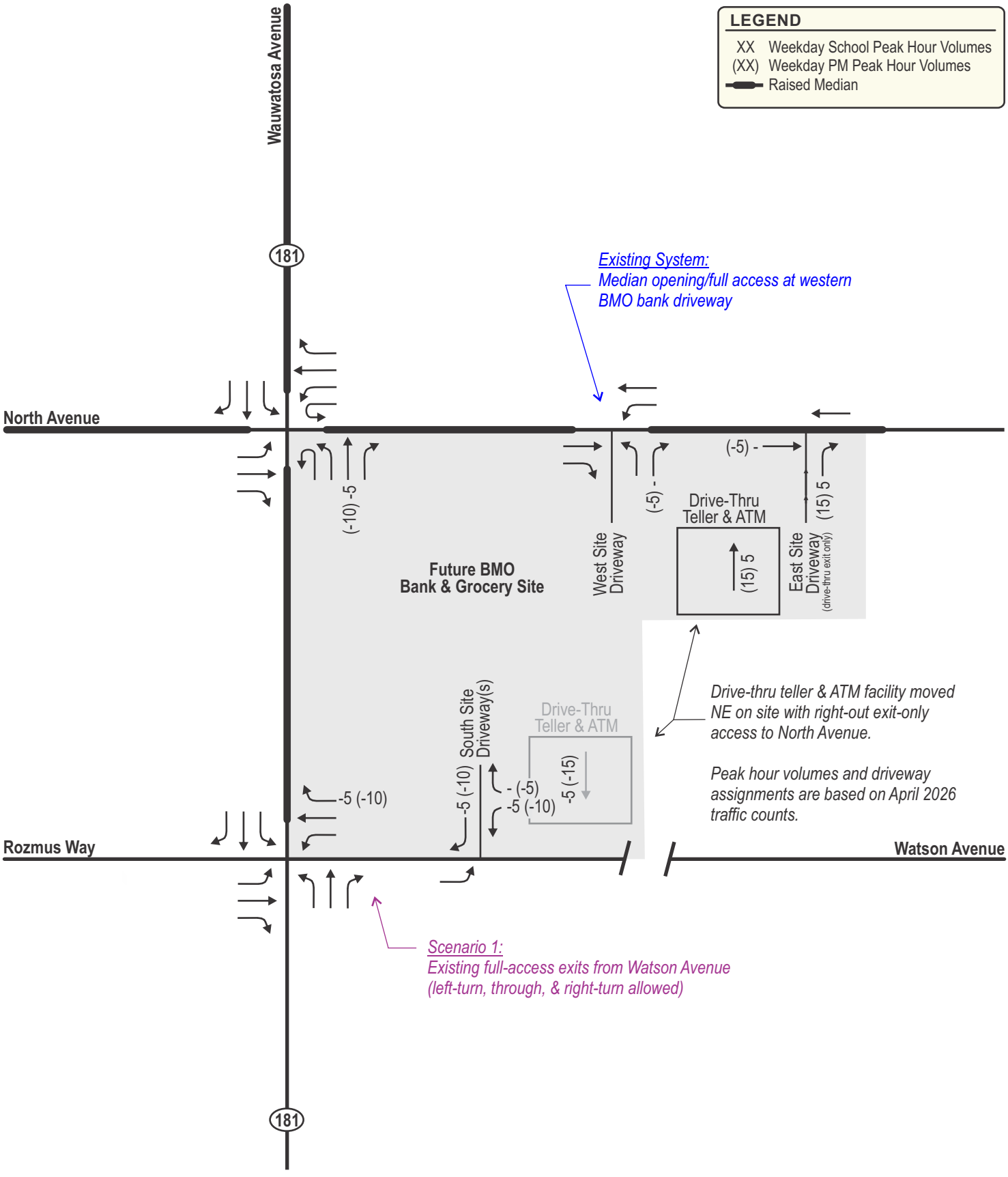
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 11
REROUTED EXISTING ROZMUS WAY TRIPS
FUTURE TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

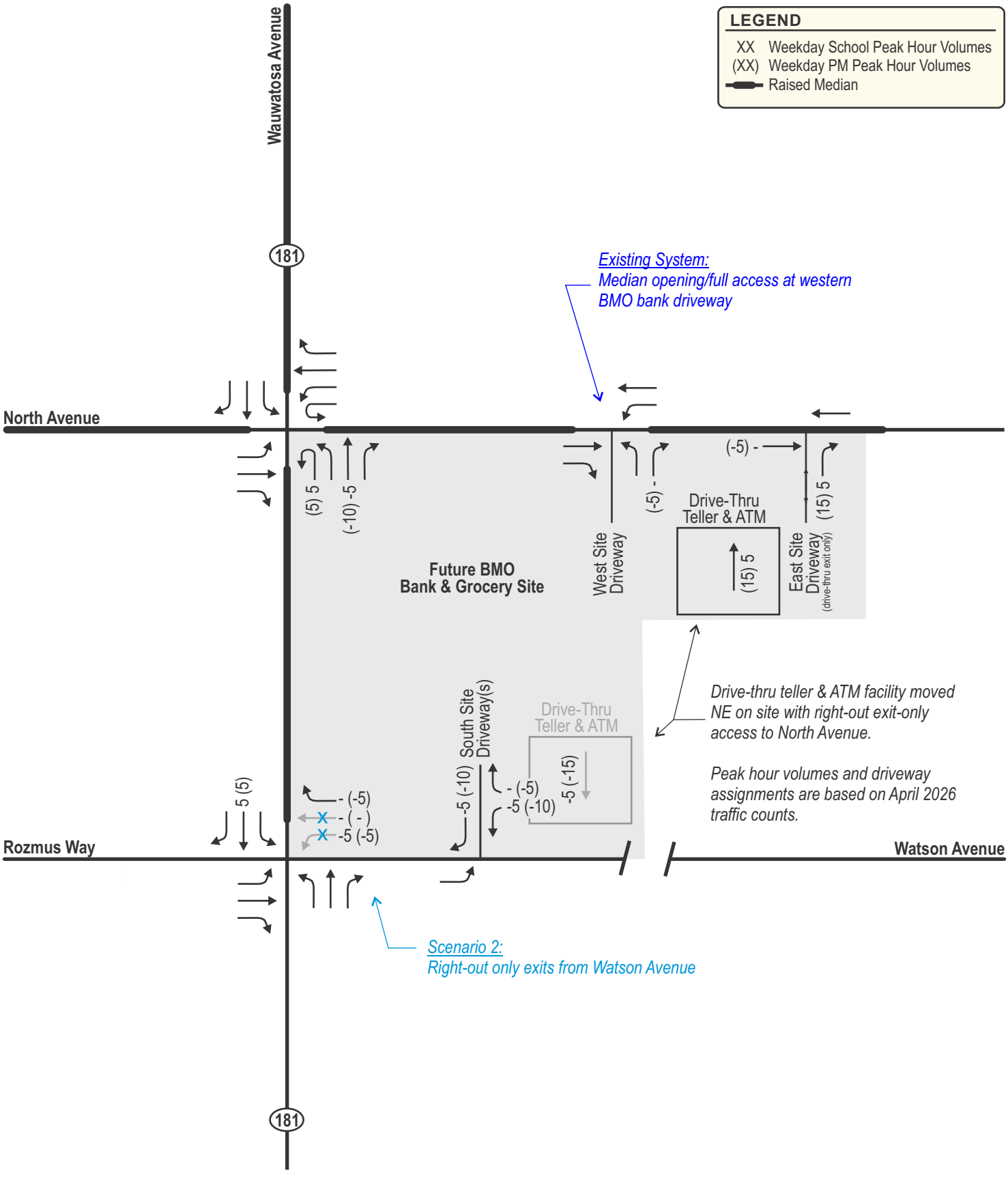
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12A
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN
EXISTING TRANSPORTATION SYSTEM &
SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

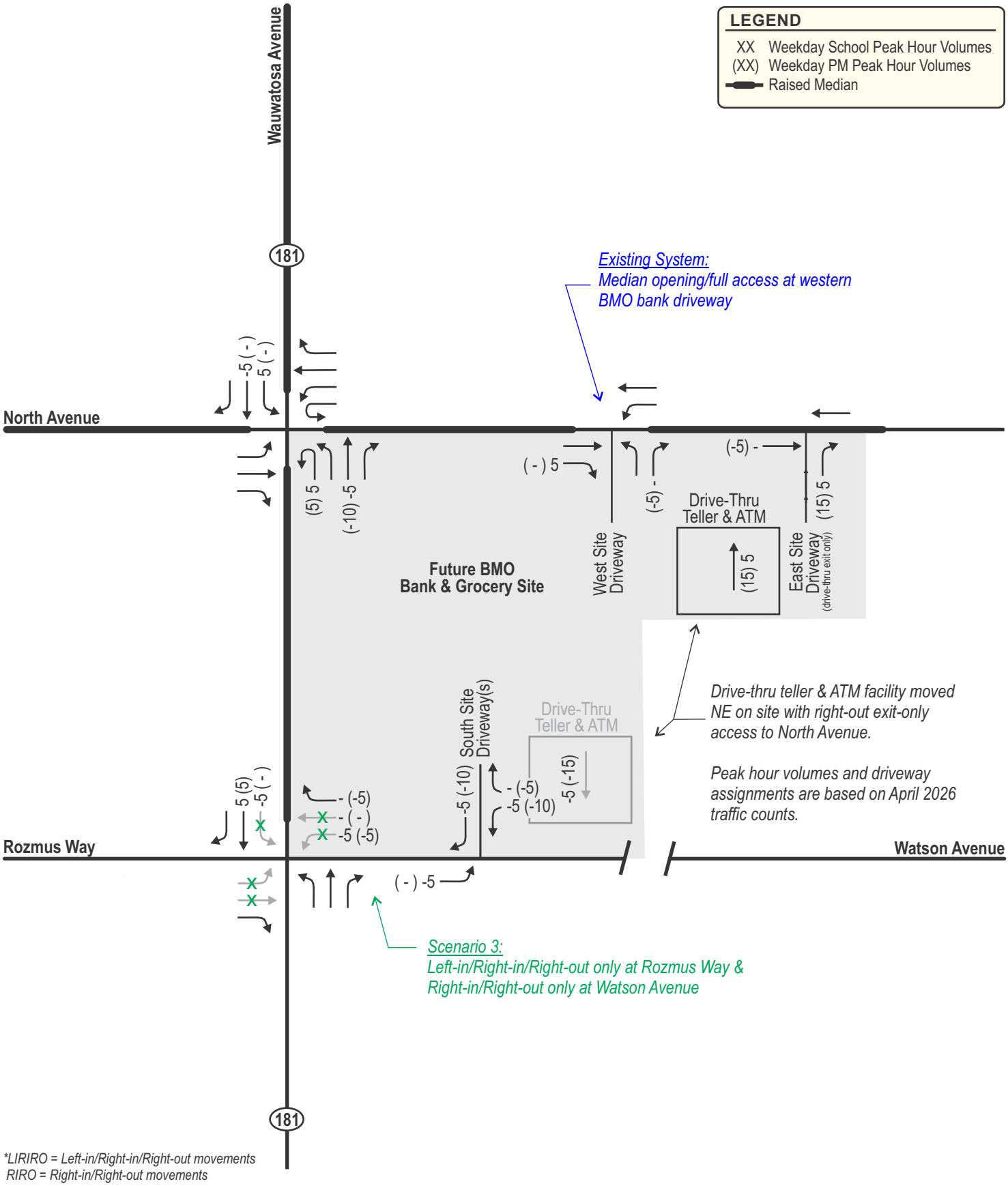
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12B
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN
EXISTING TRANSPORTATION SYSTEM &
SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

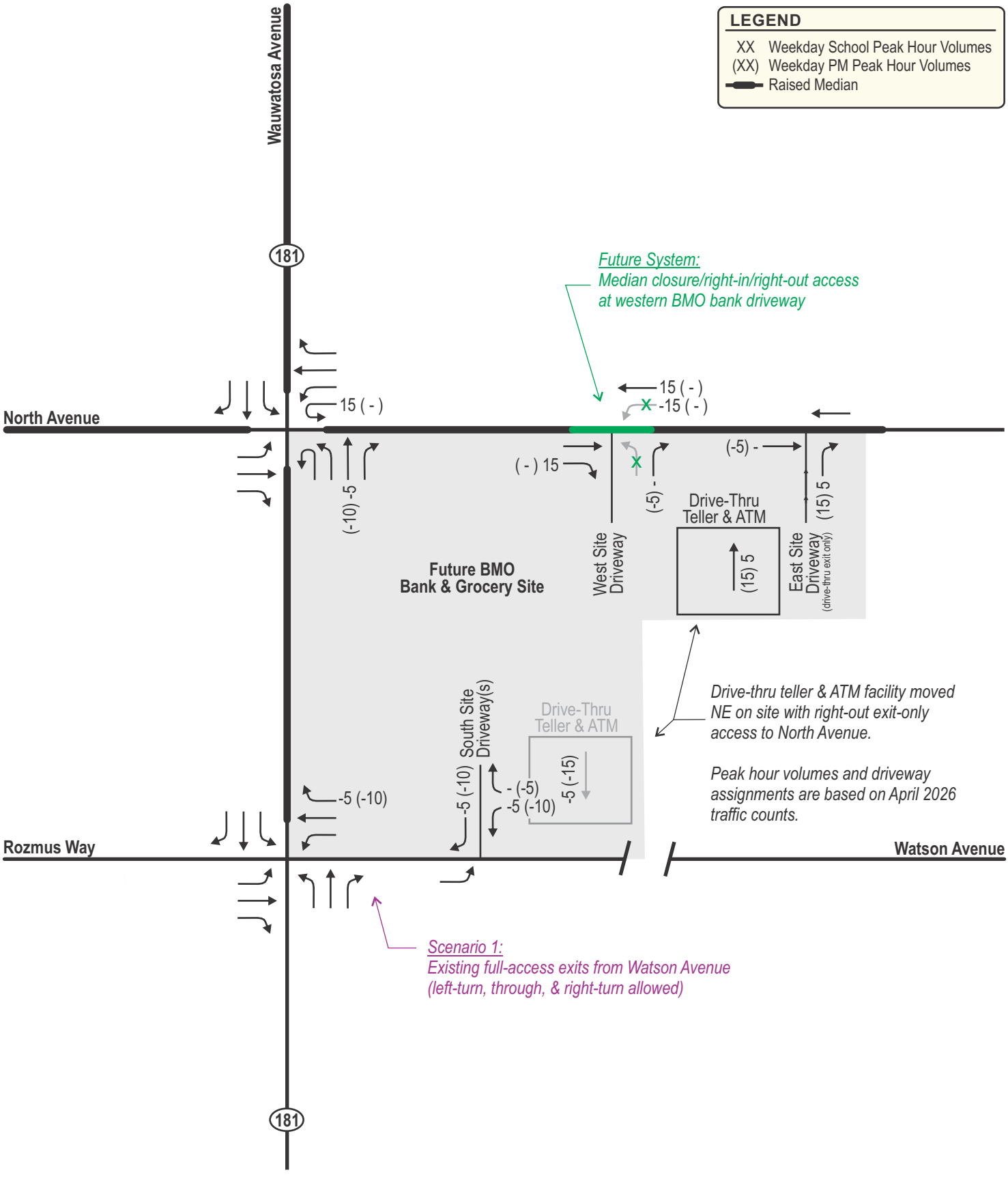
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12C
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN
EXISTING TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONS



TADI TRAFFIC ANALYSIS & DESIGN, INC.

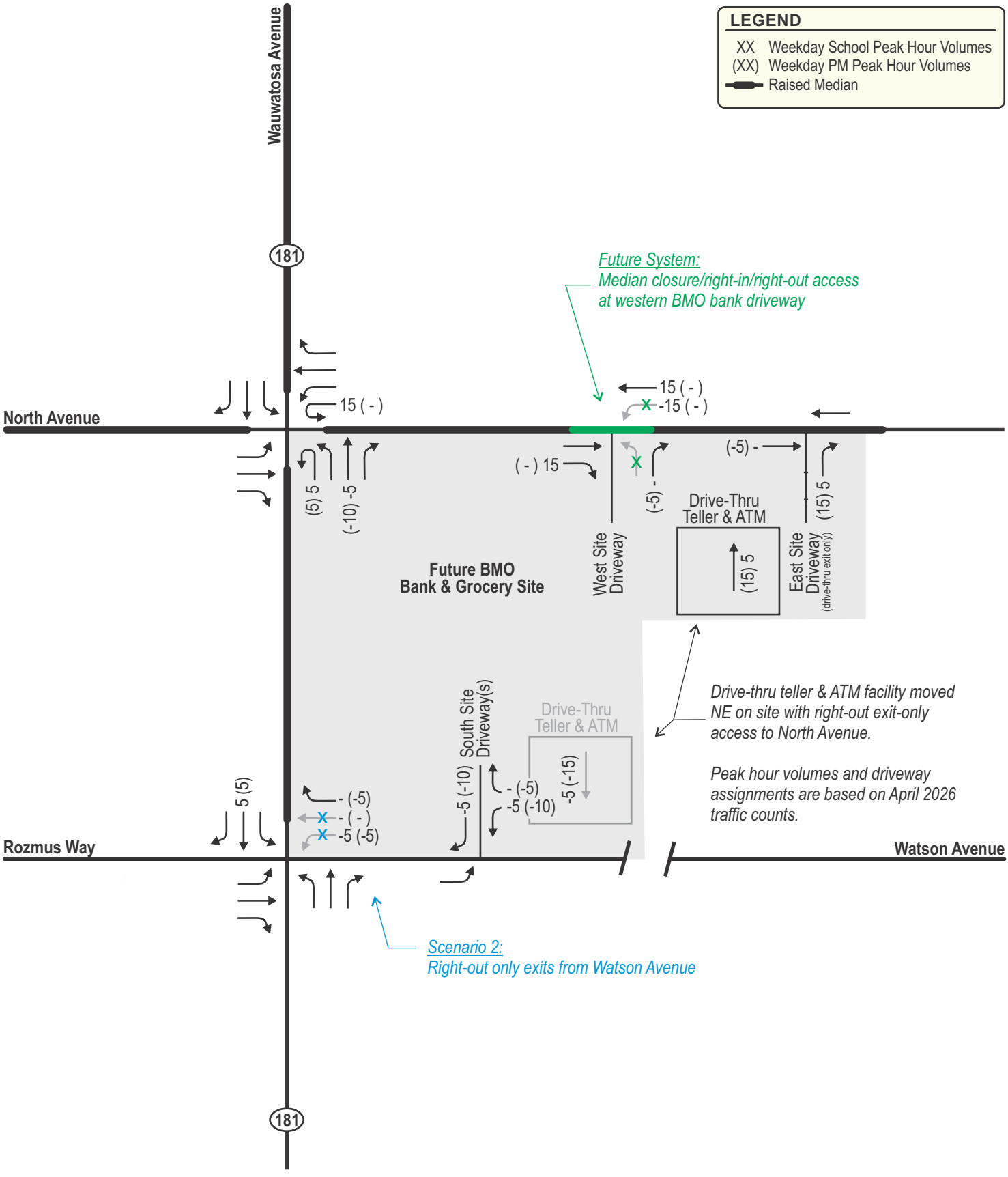
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12D
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

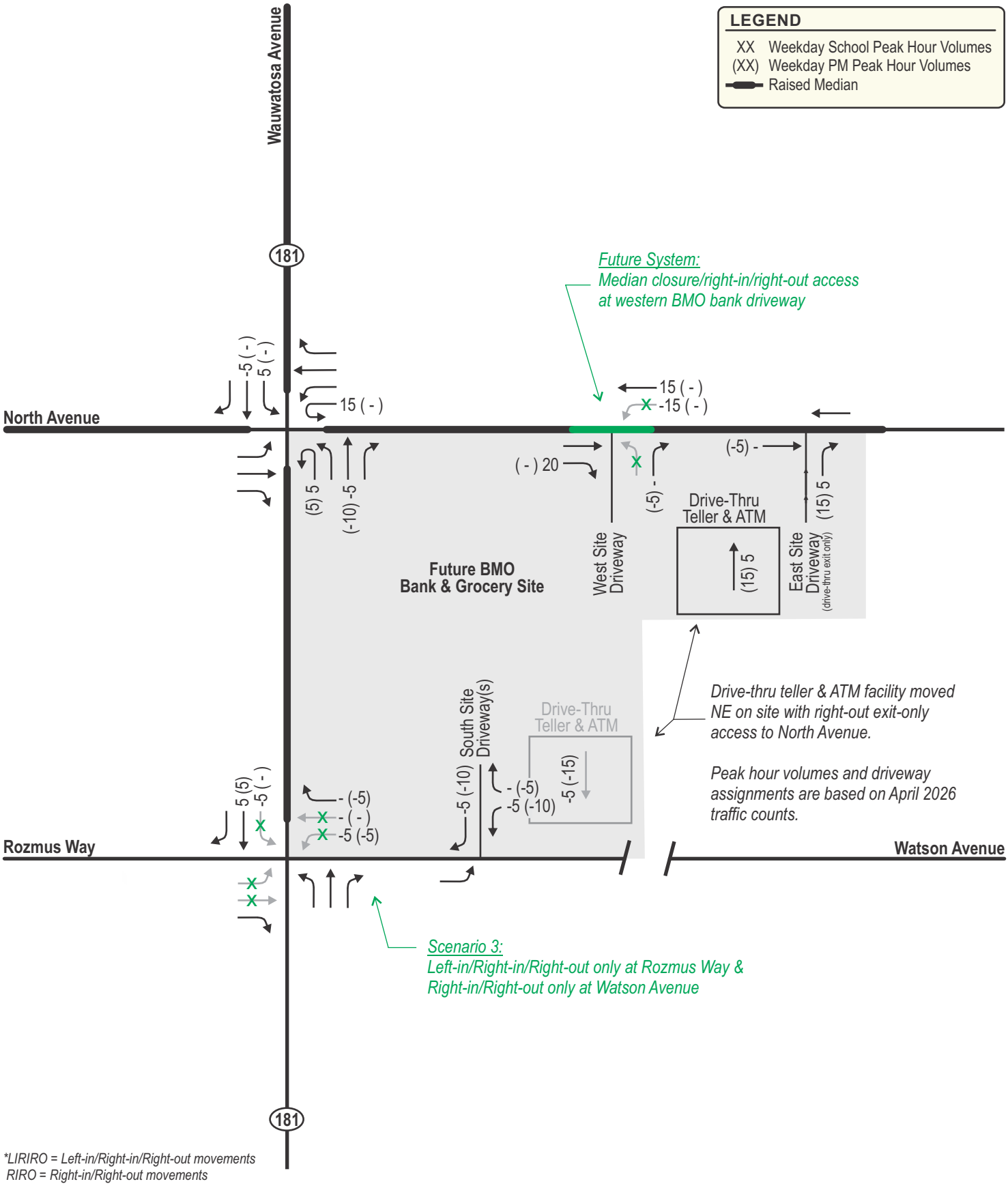
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12E
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 12F
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

Grocery Trip Generation Table[1]

Land Use	ITE Code	Proposed Size	Weekday Daily	School Peak [2] In	School Peak [2] Out	School Peak [2] Total	PM Peak In	PM Peak Out	PM Peak Total
Supermarket	850	13,000 SF	1,455 FCE	75 (50%)	70 (50%)	145 FCE	75 (50%)	70 (50%)	145 FCE
Total Driveway Trips			**1,455**	**75**	**70**	**145**	**75**	**70**	**145**
Pass-by Trips [3]	*(850)*	*25%*	*-360*	*-20*	*-20*	*-40*	*-20*	*-20*	*-40*
Total New Trips			**1,095**	**55**	**50**	**105**	**55**	**50**	**105**

[1] *Trip Rates (X.XX) and/or Fitted Curve Equations (FCE) are from the ITE Trip Generation Manual, 12th Edition.*

[2] *Based on ITE Hourly Trip distribution data, traffic for 3-4 pm is similar to the 4-5 pm peak (highest volume hour for supermarkets). Therefore, the ITE PM trip equations (representing 4-6 pm trips) without adjustments were used for the school peak hour (3-4 pm).*

[3] *Pass-by trip percentages are within WisDOT-acceptable values with PB% was 10% or less of traffic on study roadways.*

Trip Distribution (New Trips)[4]

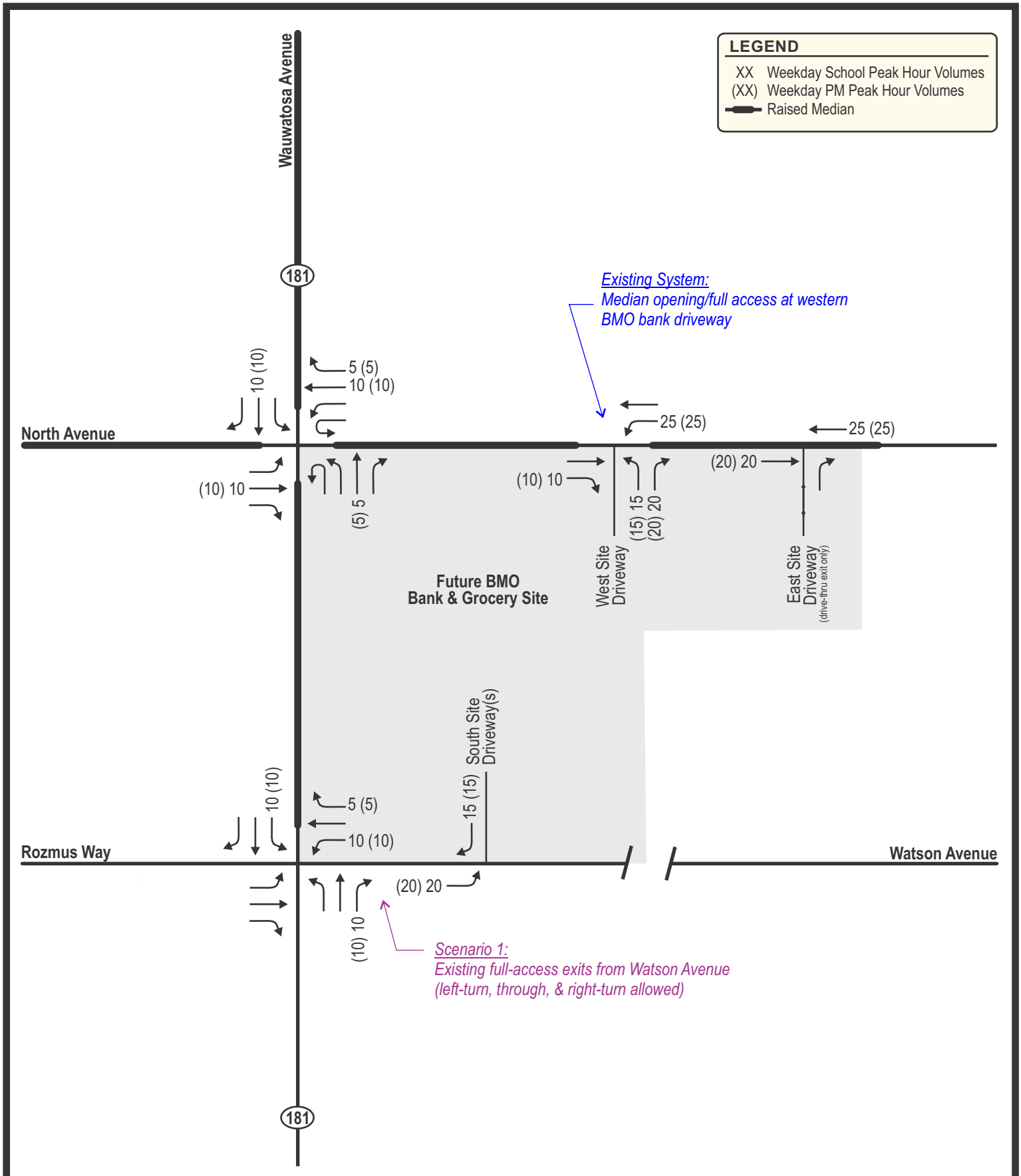
W. on North Avenue	20%	10	10	10	10
E. on North Avenue	40%	25	20	25	20
N. on Wauwatosa Road	20%	10	10	10	10
S. on Wauwatosa Road	20%	10	10	10	10
	100%	***55***	***50***	***55***	***50***

[4] *Trip distribution based on existing bank traffic entering and exiting North Avenue and Watson Avenue site driveways.*

Trip Distribution Pass-by Trips[5]

NB on Wauwatosa Avenue	30% (30%)	5	5	5	5
SB on Wauwatosa Avenue	20% (20%)	5	5	5	5
EB on North Avenue	25% (25%)	5	5	5	5
WB on North Avenue	25% (25%)	5	5	5	5
	School (PM)	***20***	***20***	***20***	***20***

[5] *Trip distribution based on directional traffic on study area roadways during each peak hour.*



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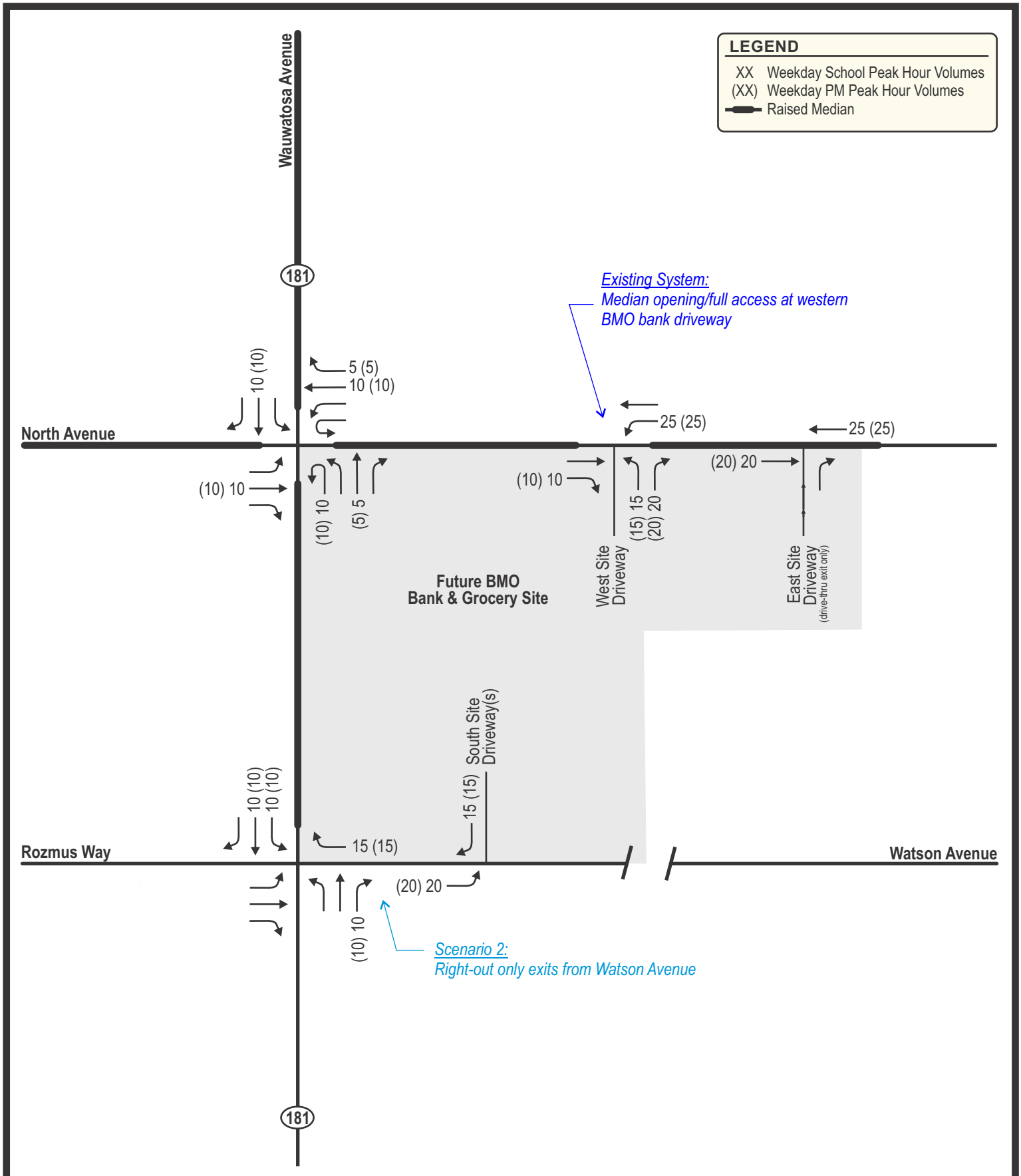
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 14A
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

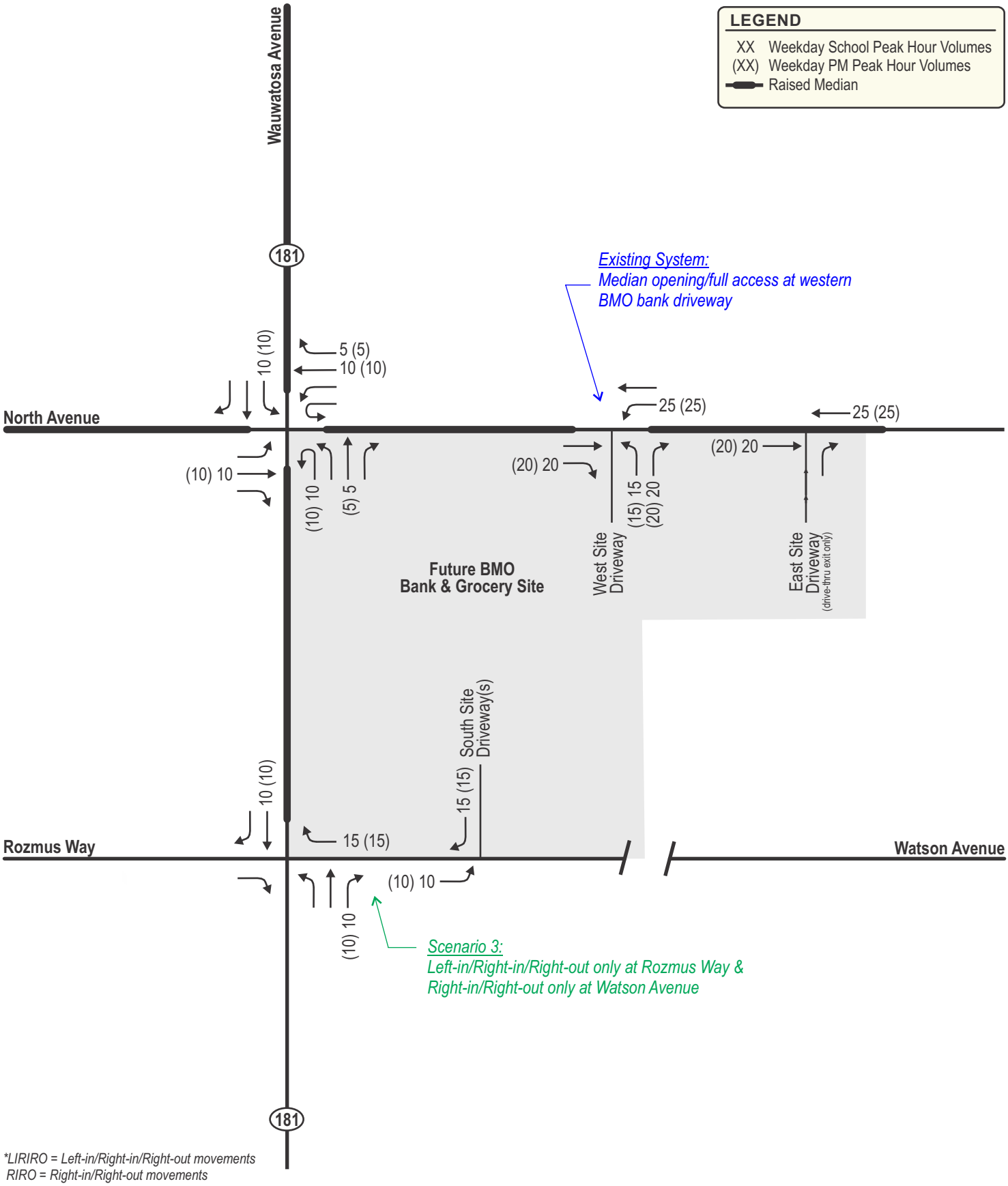
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 14B
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

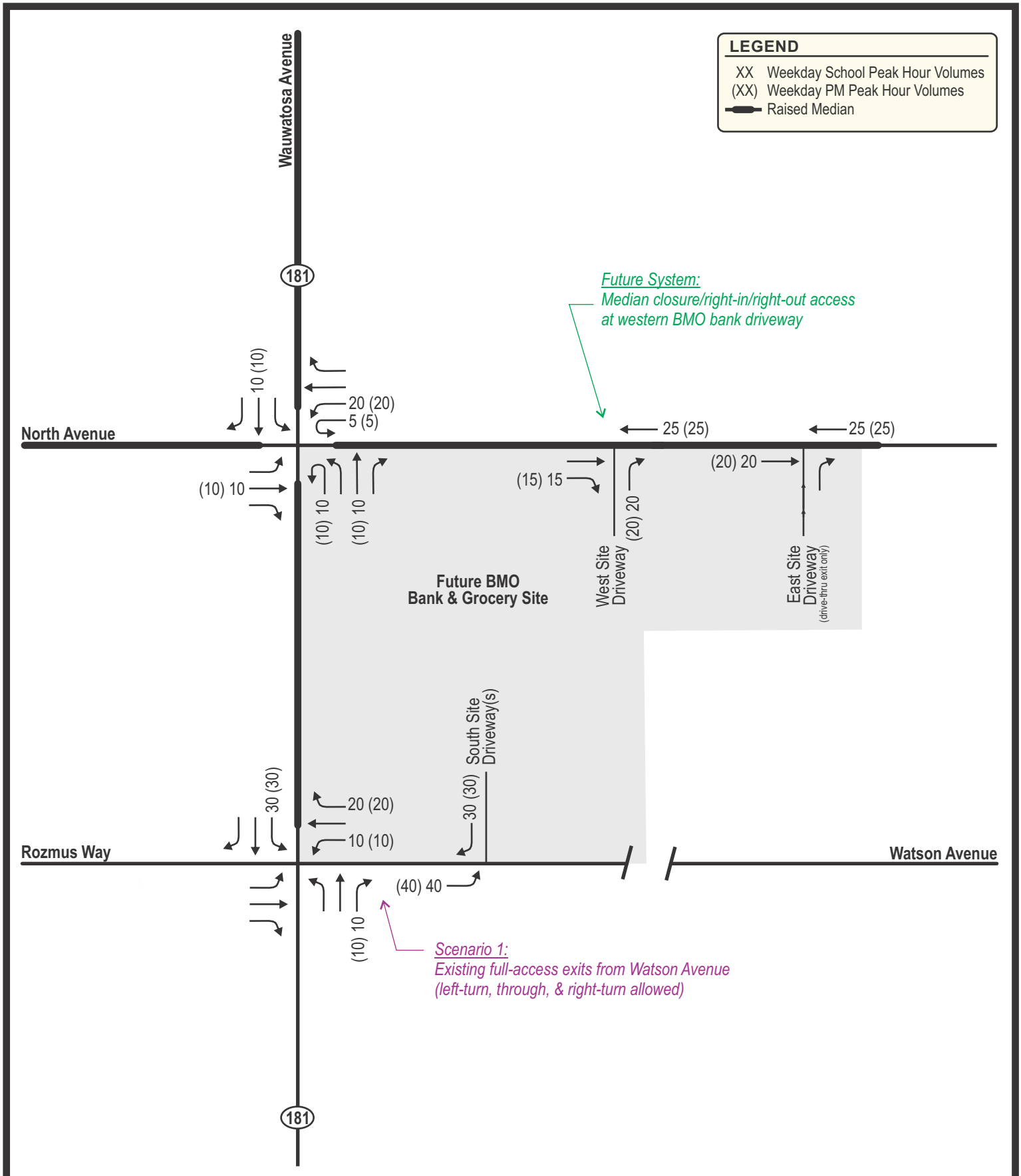
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 14C
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



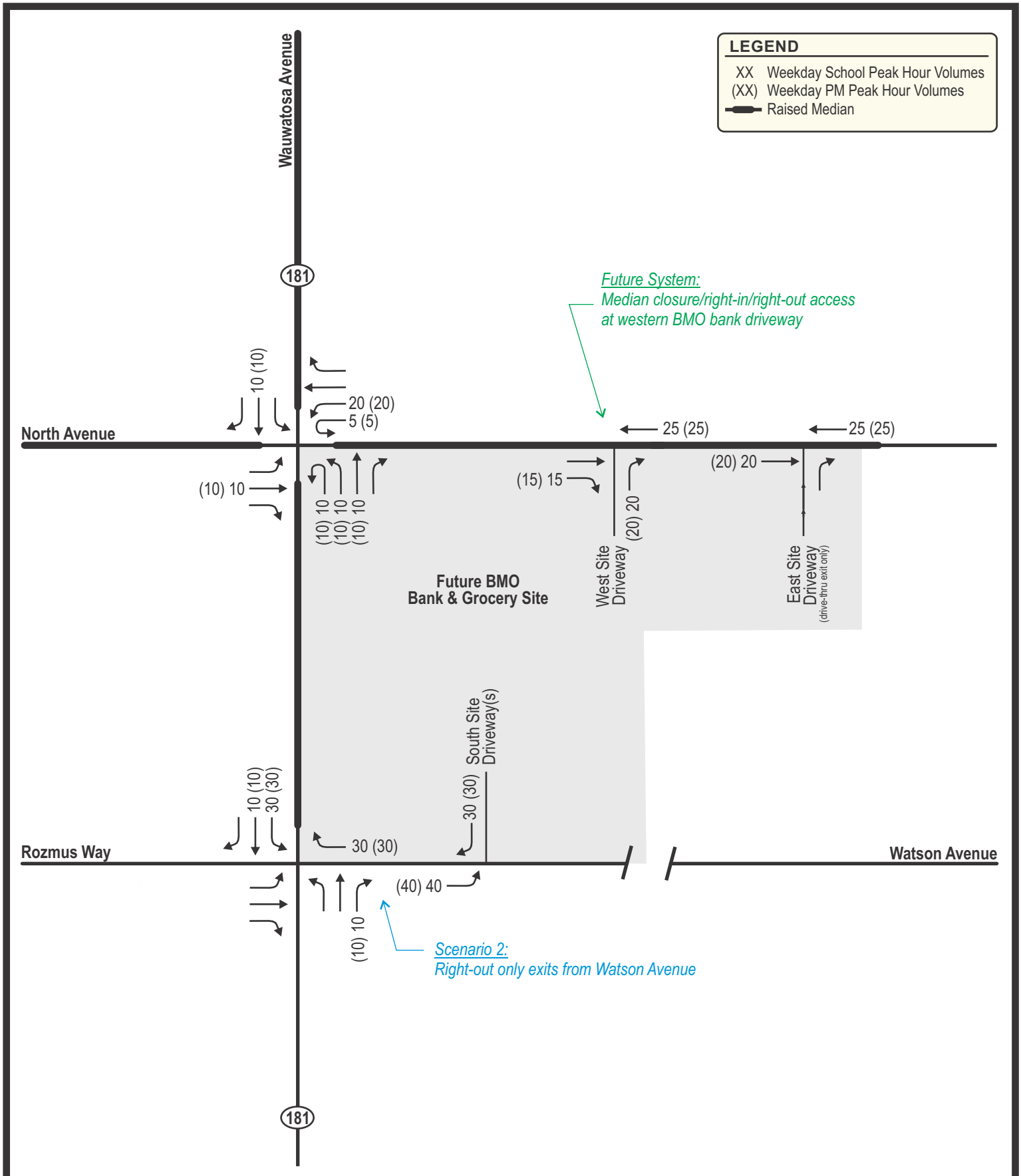
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TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 14D
GROCERY NEW TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



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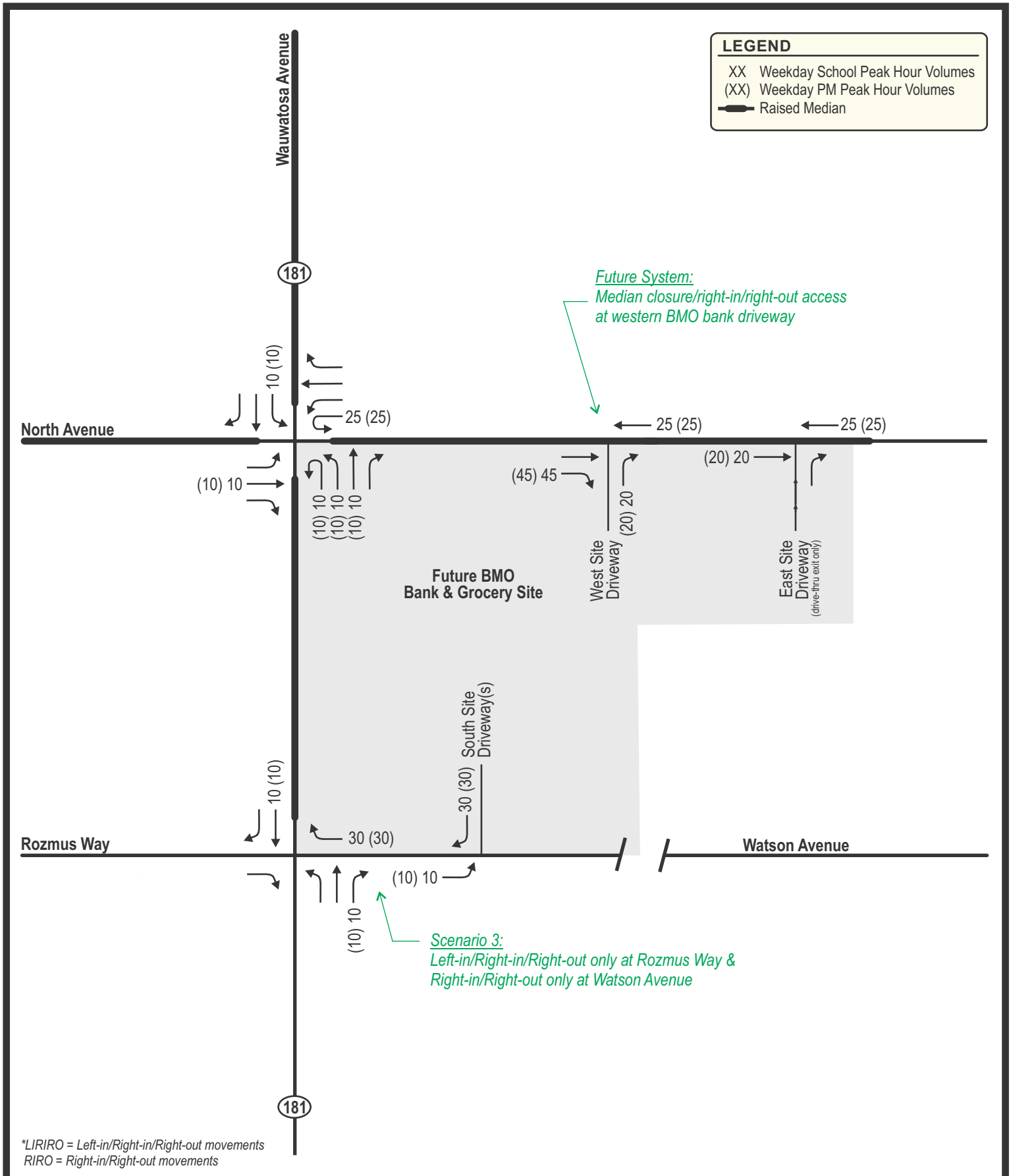
3644: 06-12-2026

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NOT TO SCALE

EXHIBIT 14E
GROCERY NEW TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

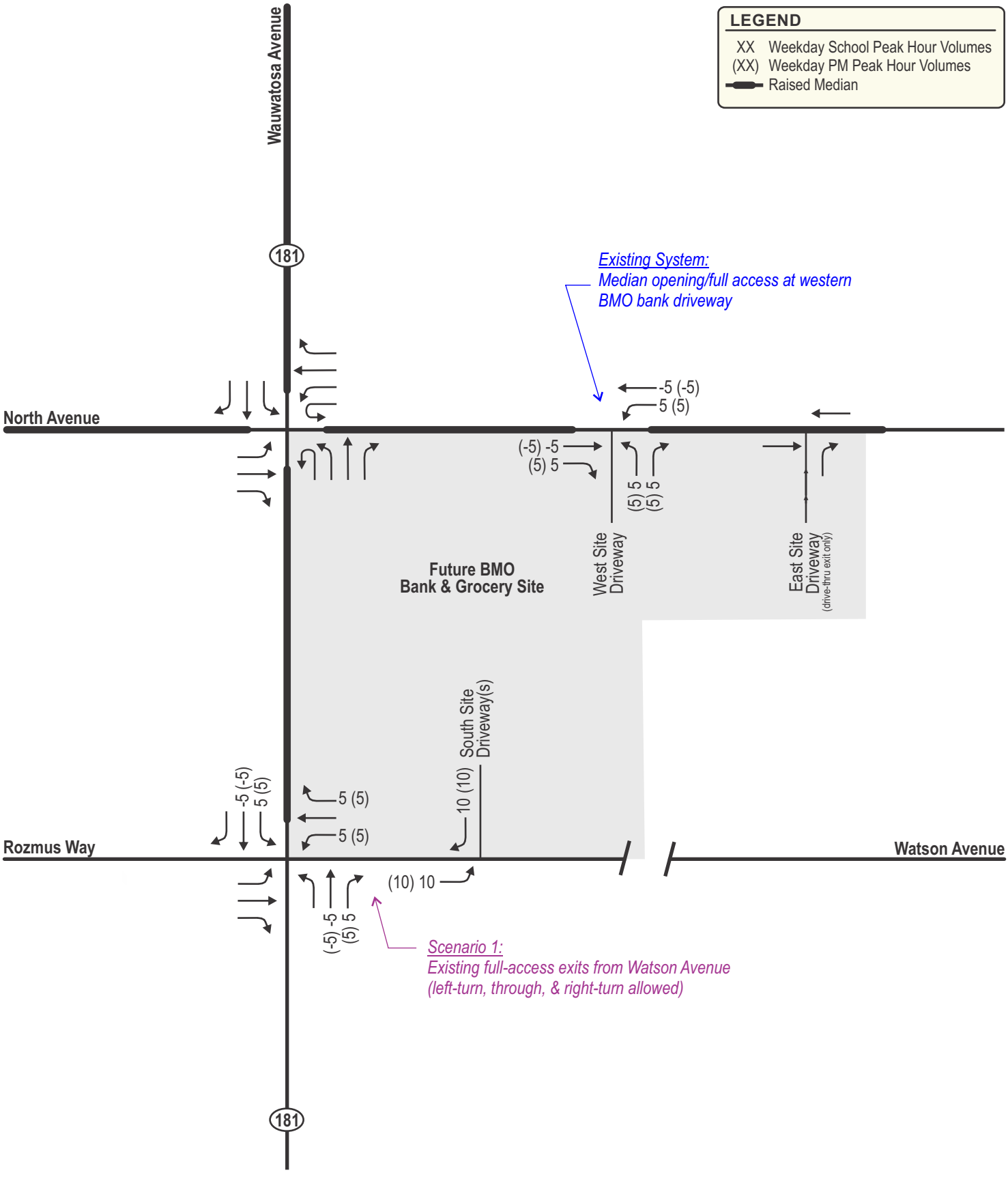
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 14F
GROCERY NEW TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

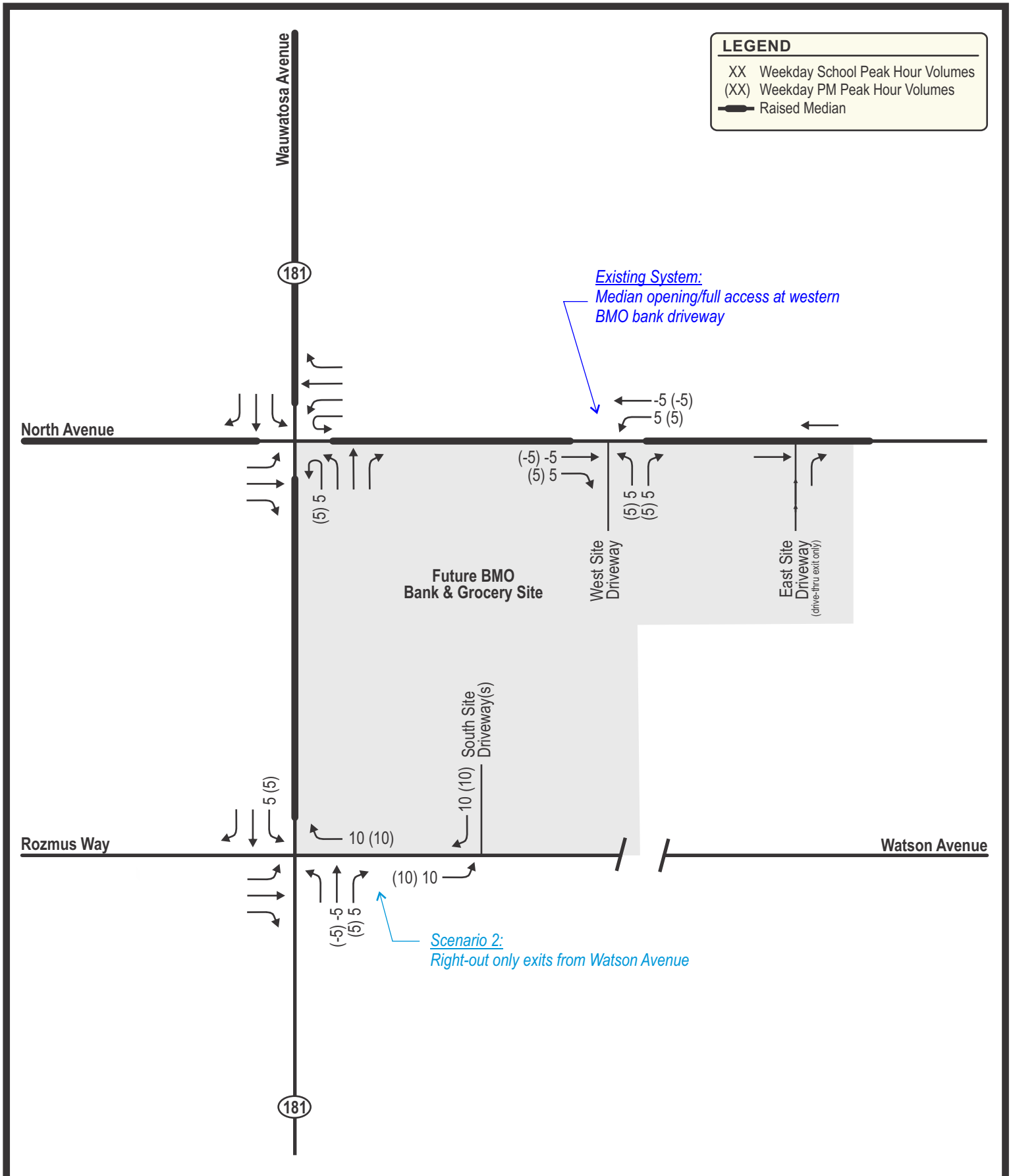
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 15A
GROCERY PASS-BY TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



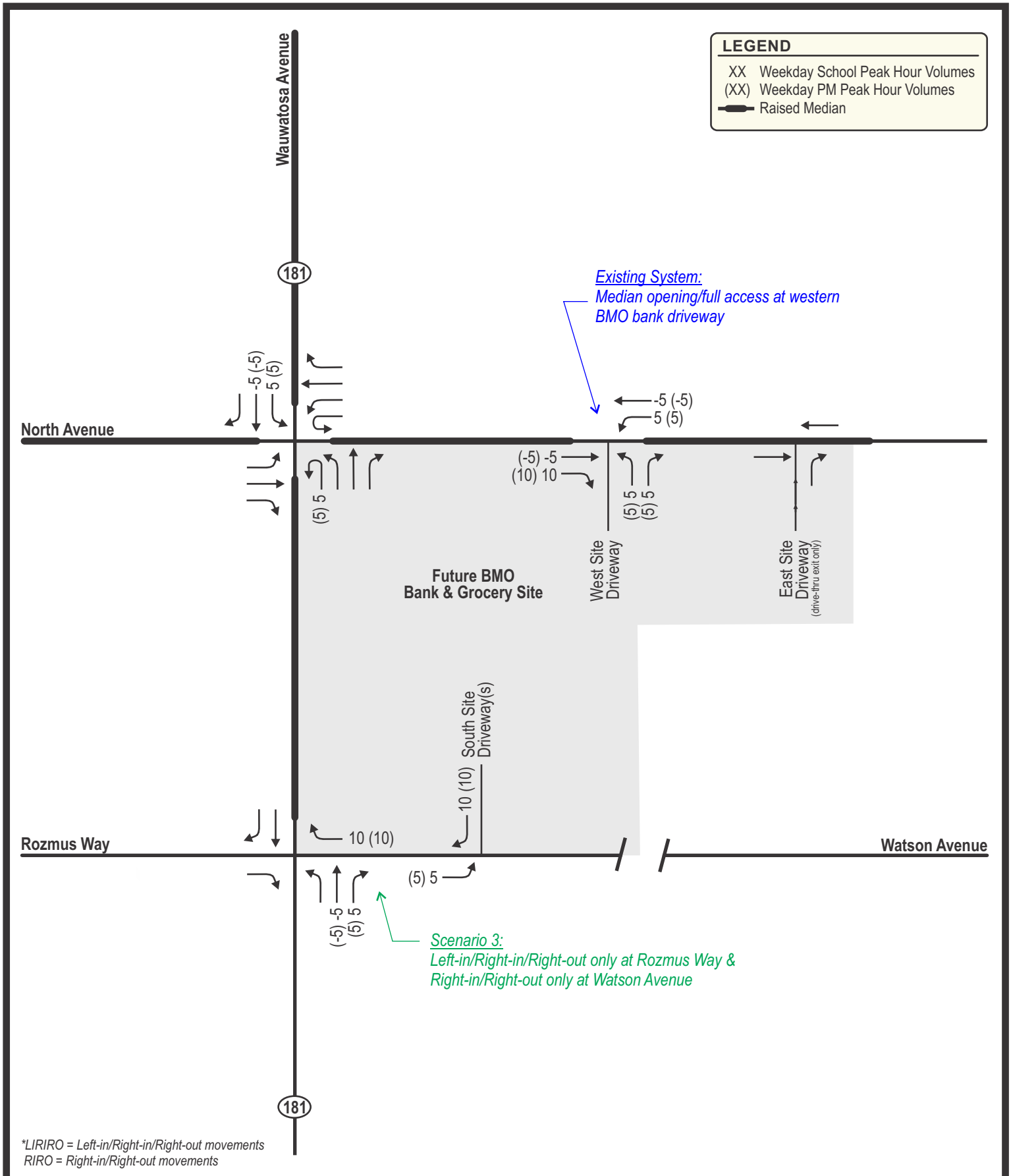
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 15B
GROCERY PASS-BY TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

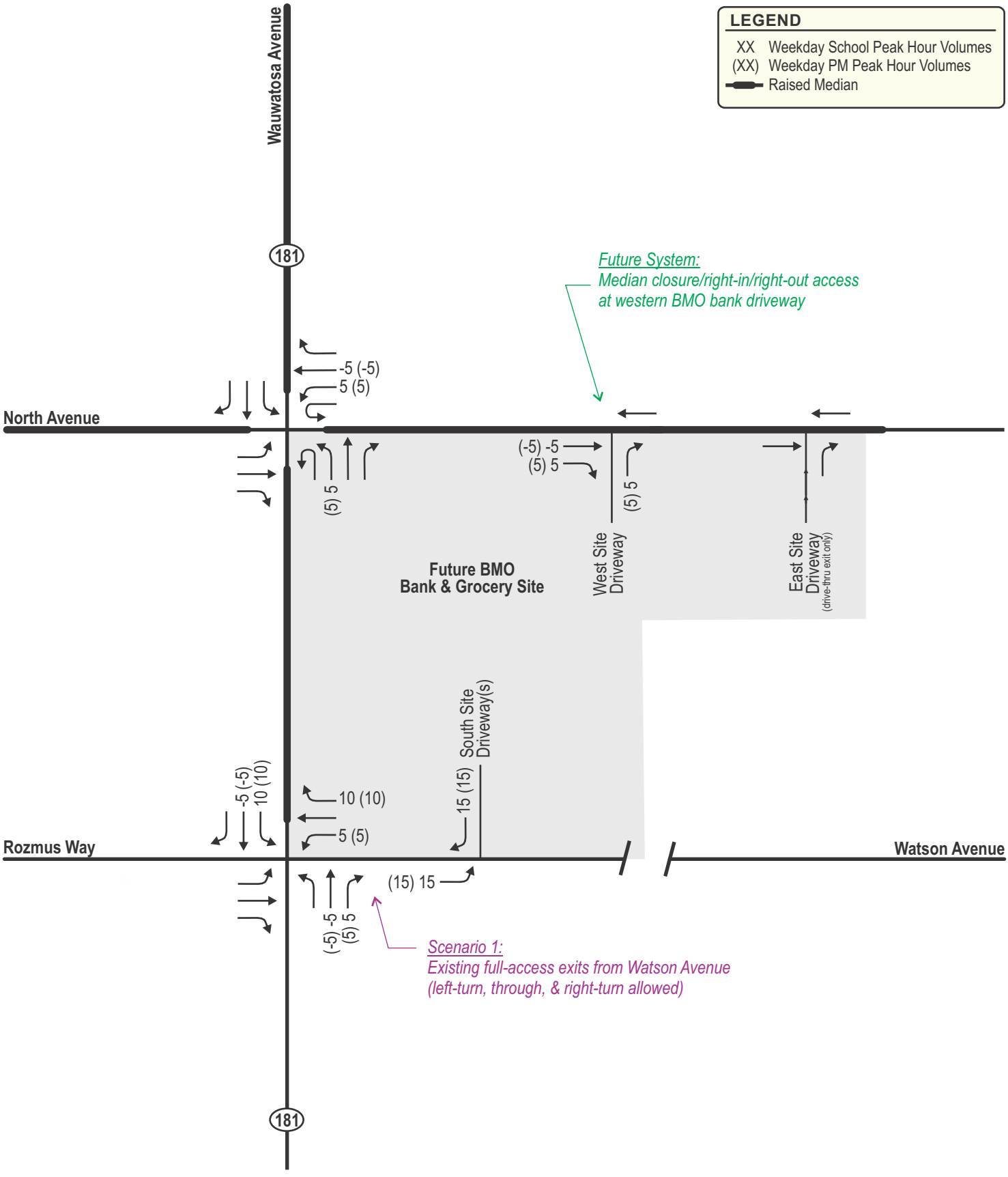
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 15C
GROCERY PASS-BY TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

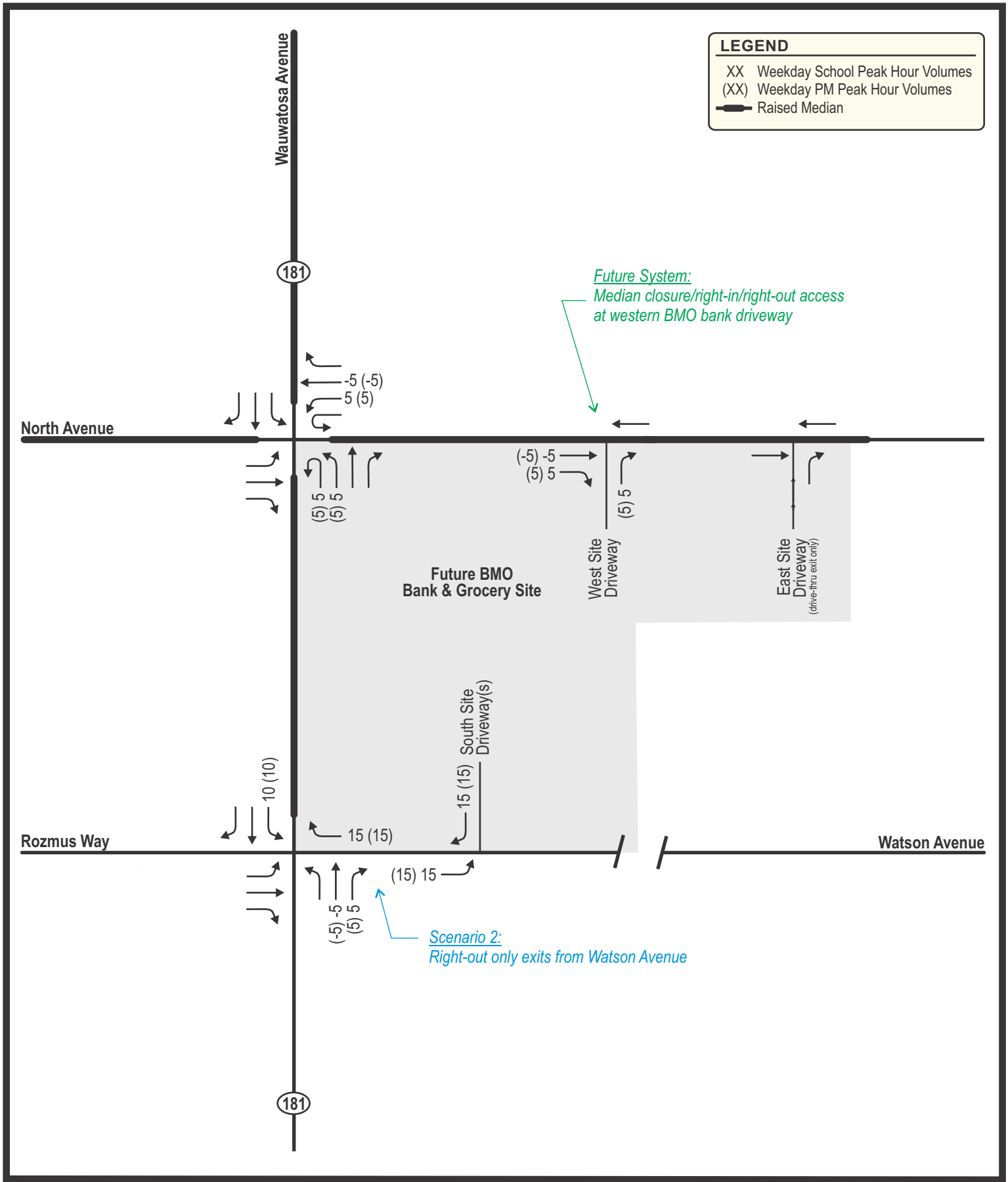
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 15D
GROCERY PASS-BY TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



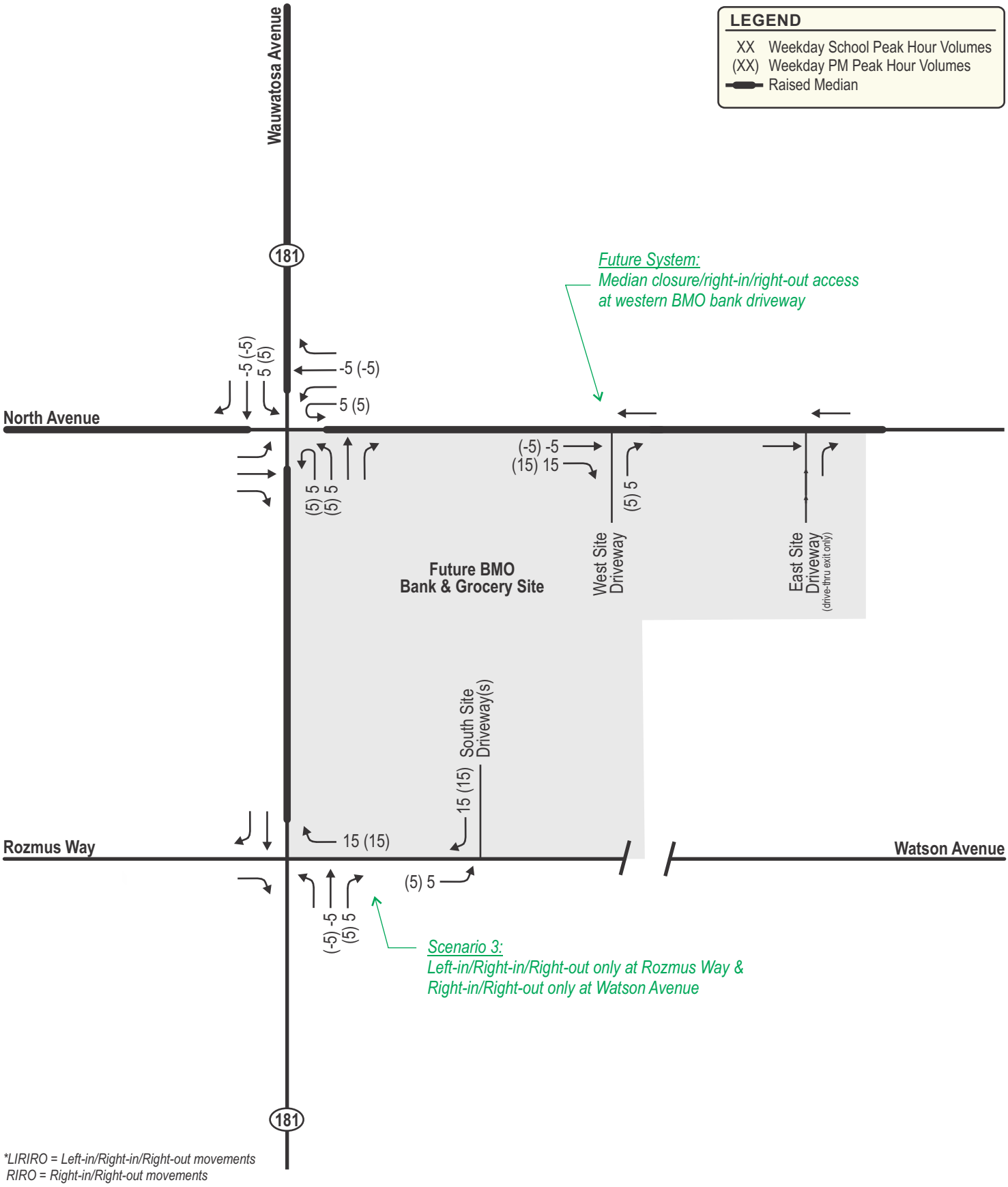
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 15E
GROCERY PASS-BY TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

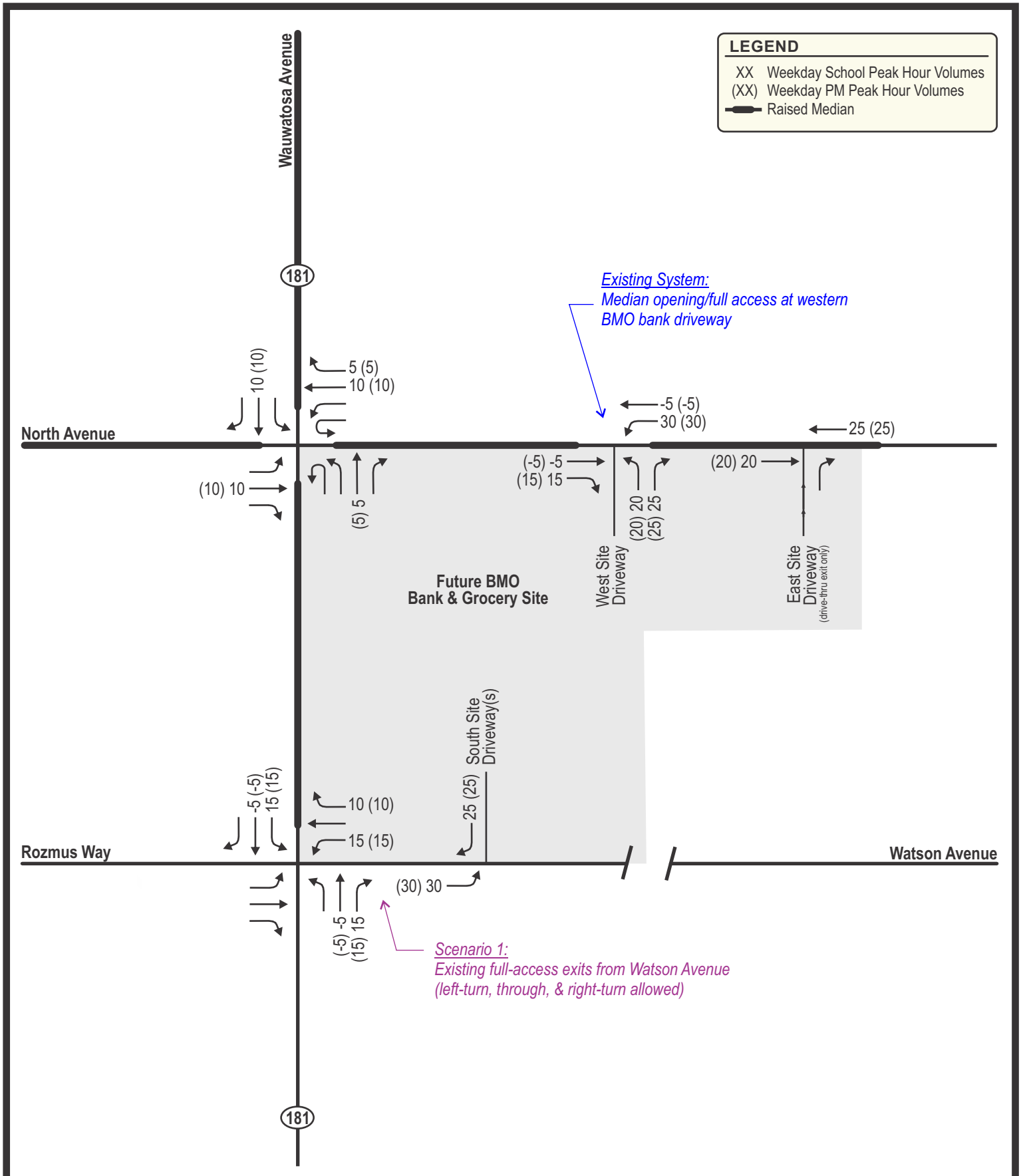
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 15F
GROCERY PASS-BY TRIPS
FUTURE TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



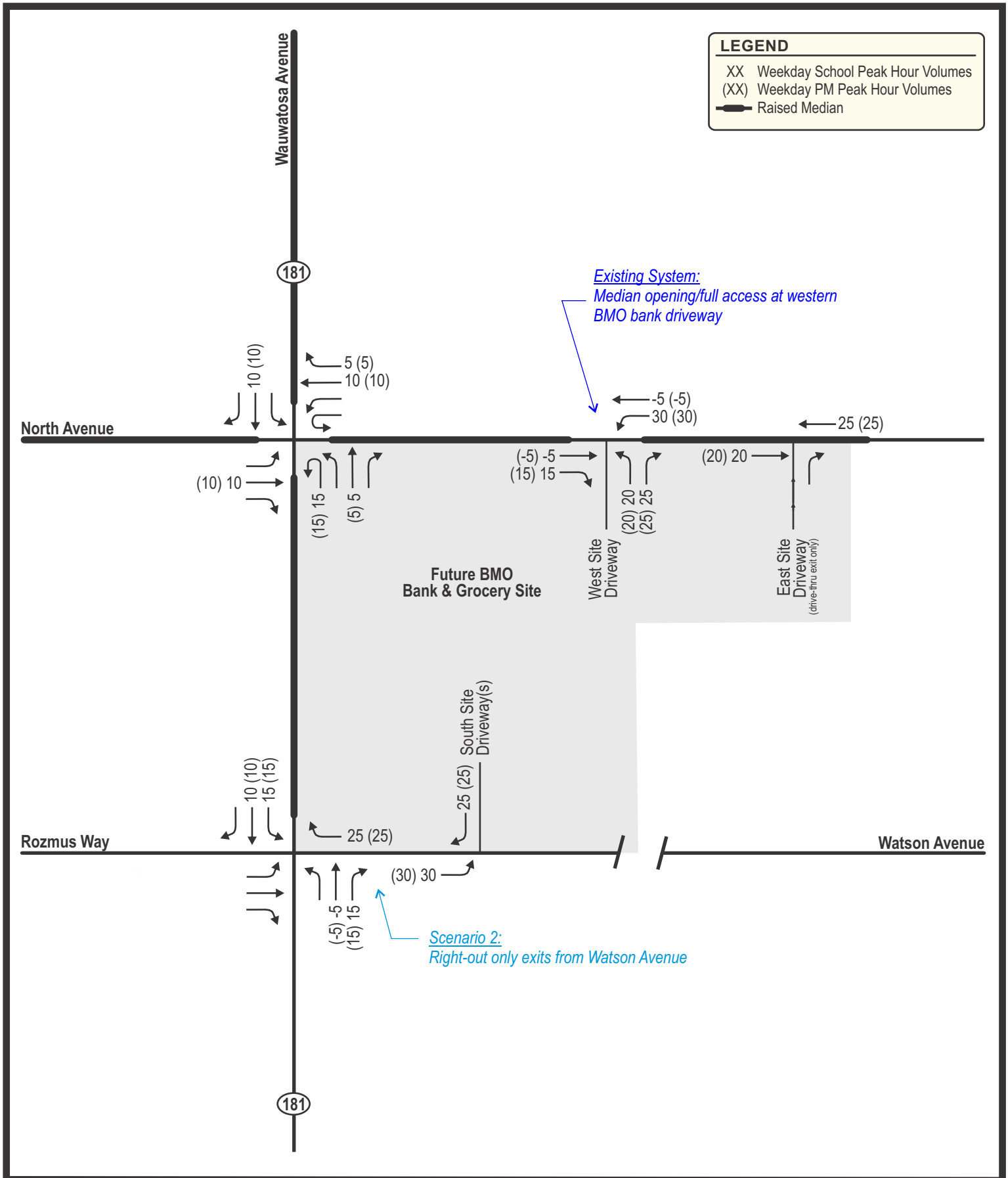
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 16A
GROCERY DRIVEWAY TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



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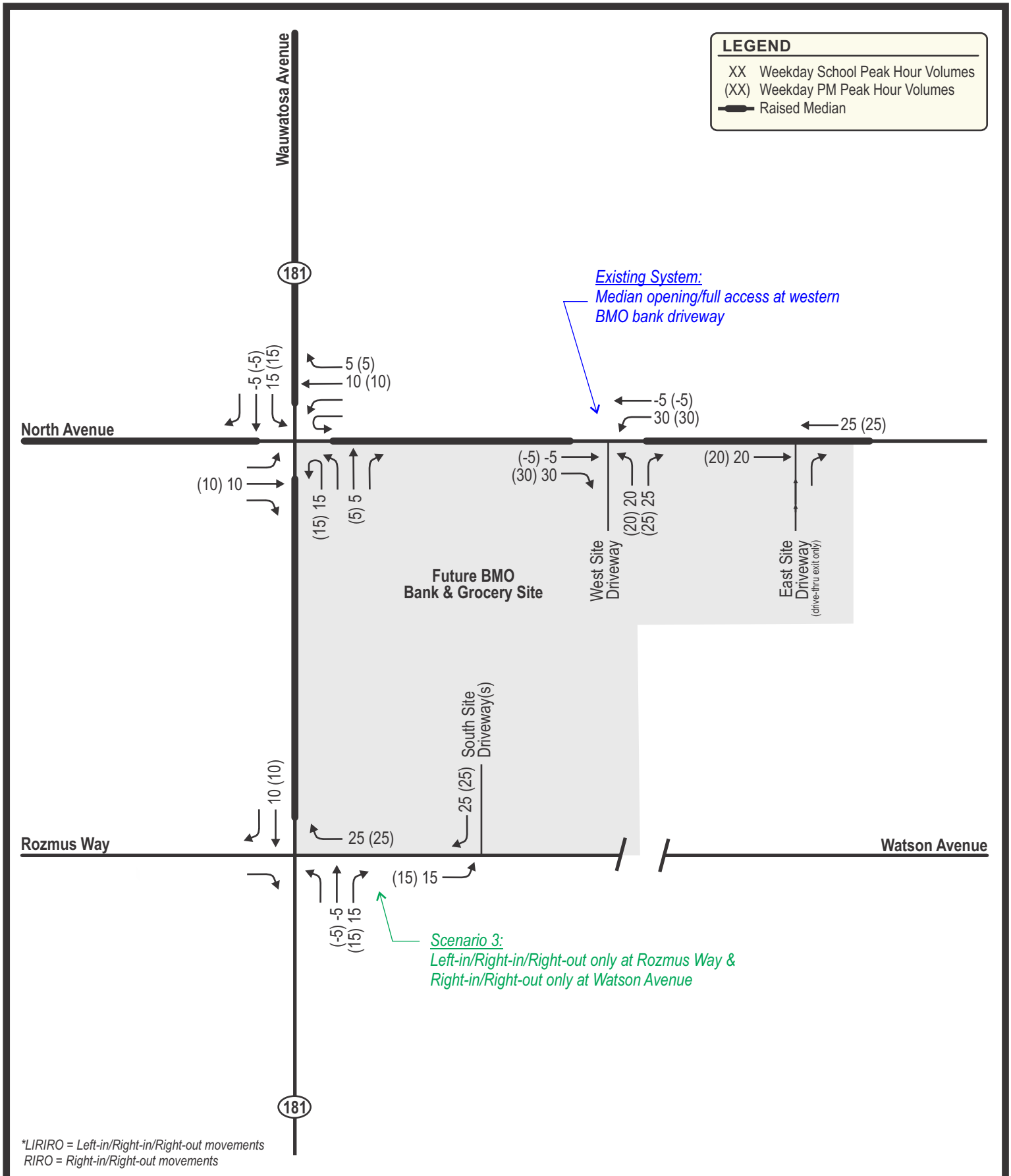
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 16B
GROCERY DRIVEWAY TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

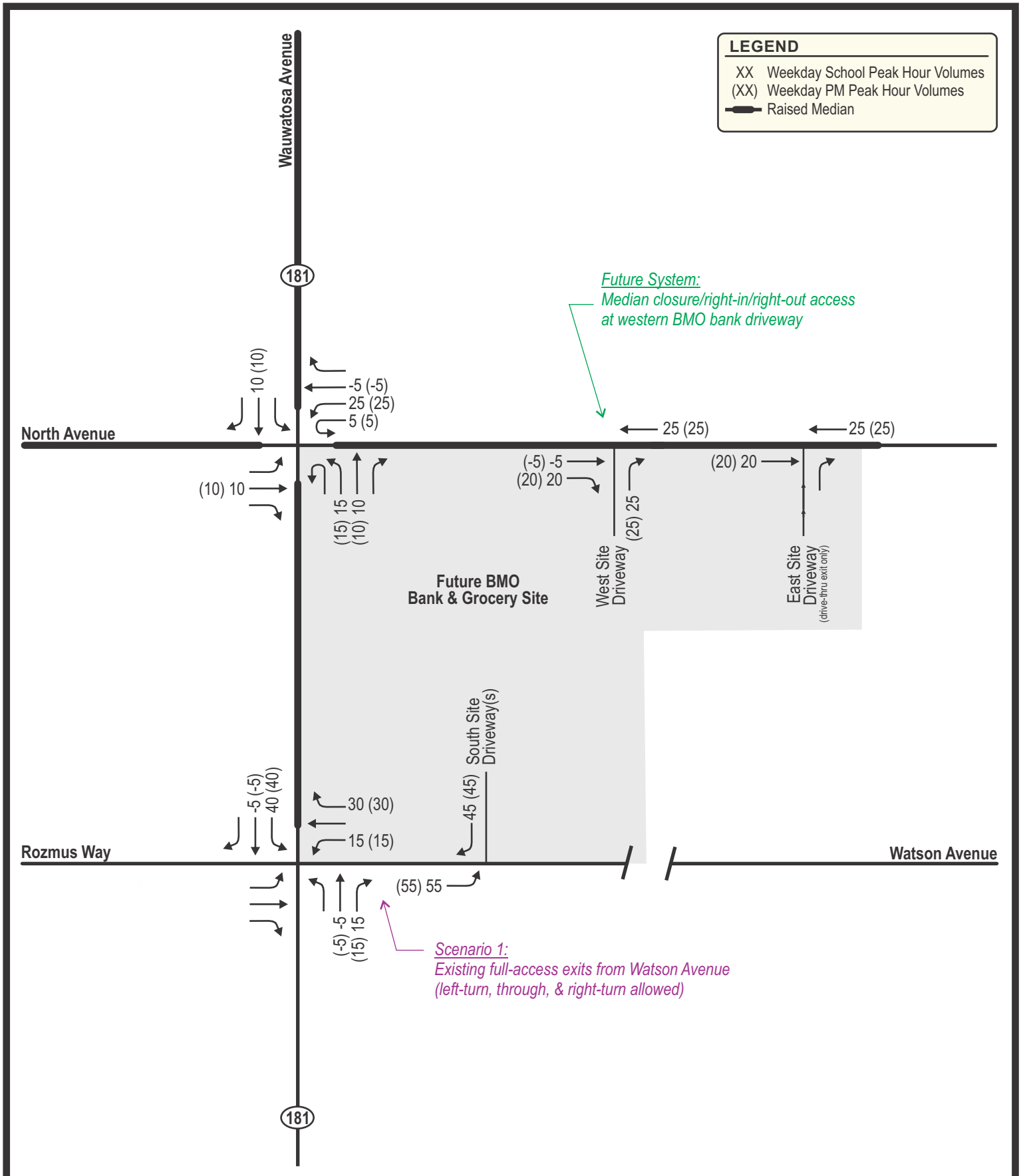
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 16C
GROCERY DRIVEWAY TRIPS
EXISTING TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

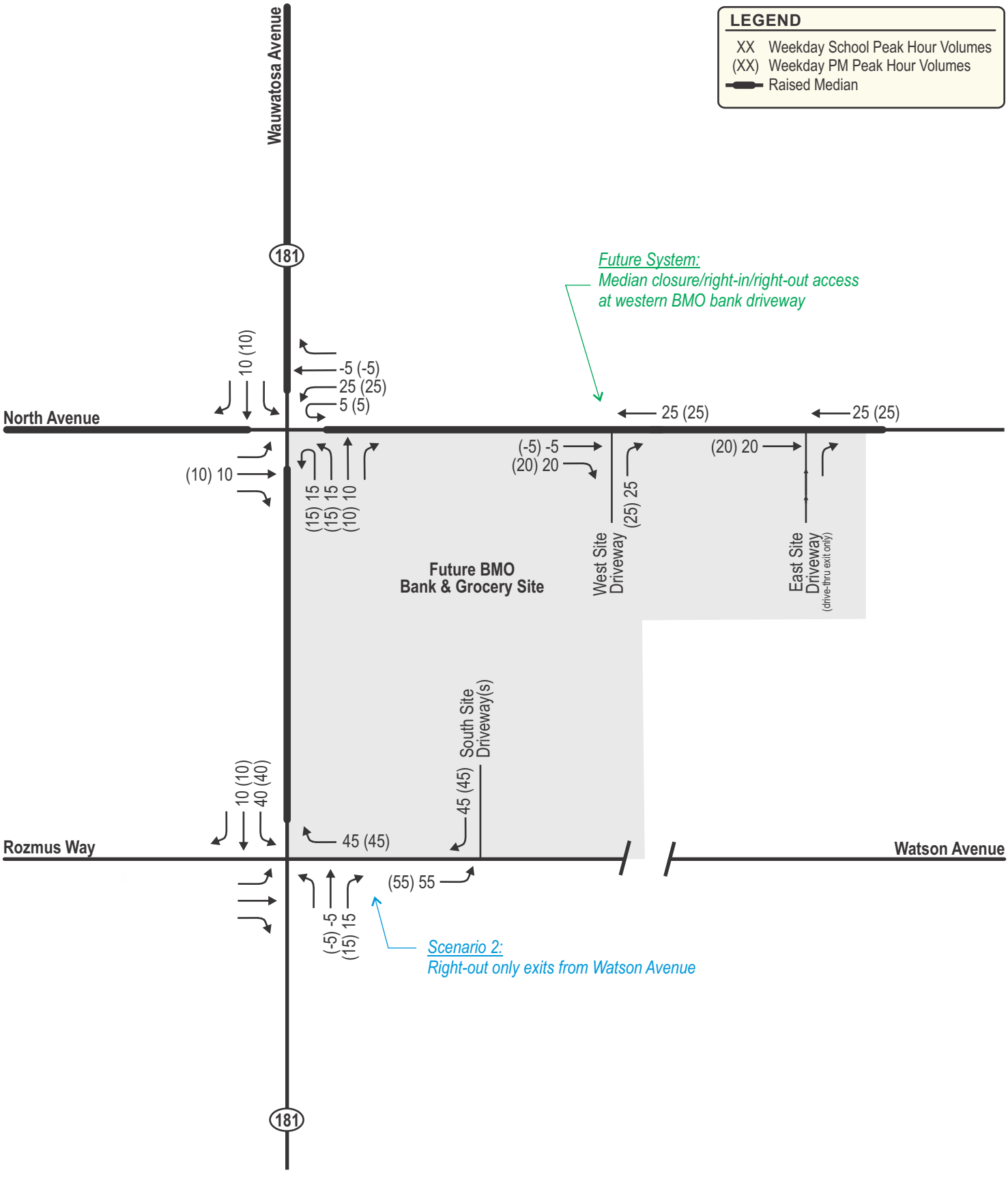
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 16D
GROCERY DRIVEWAY TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

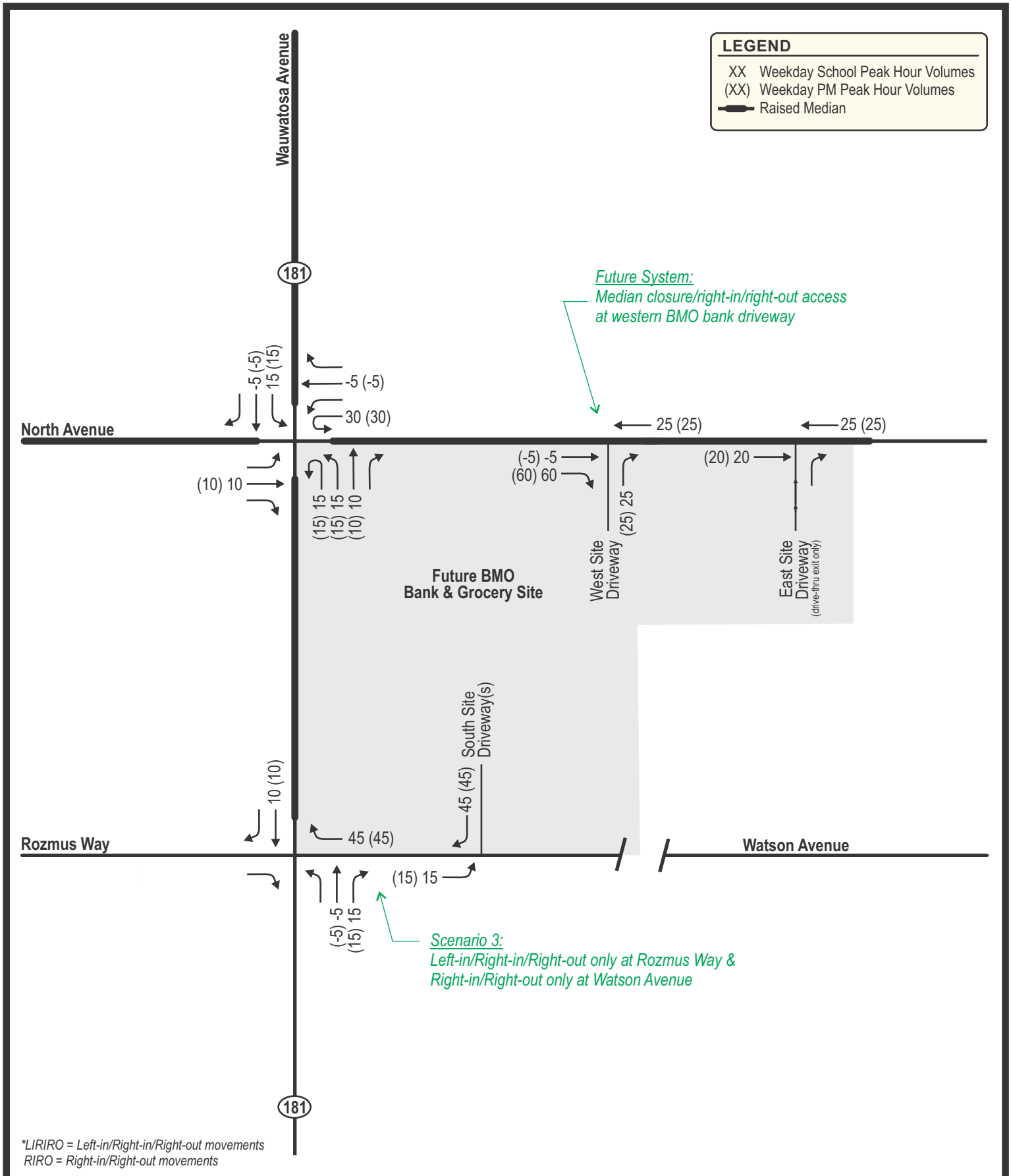
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 16E
GROCERY DRIVEWAY TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

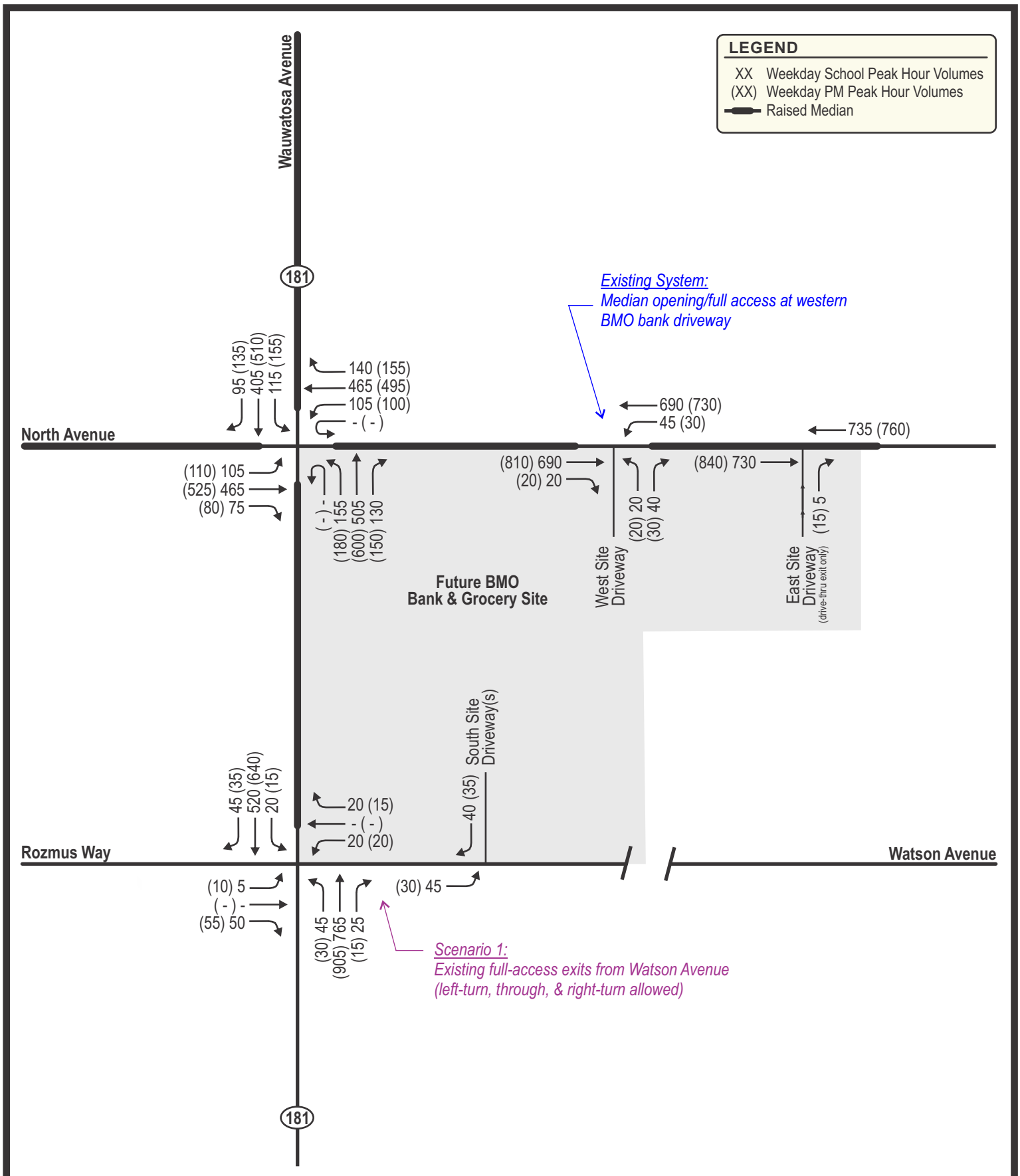
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 16F
GROCERY DRIVEWAY TRIPS
FUTURE TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

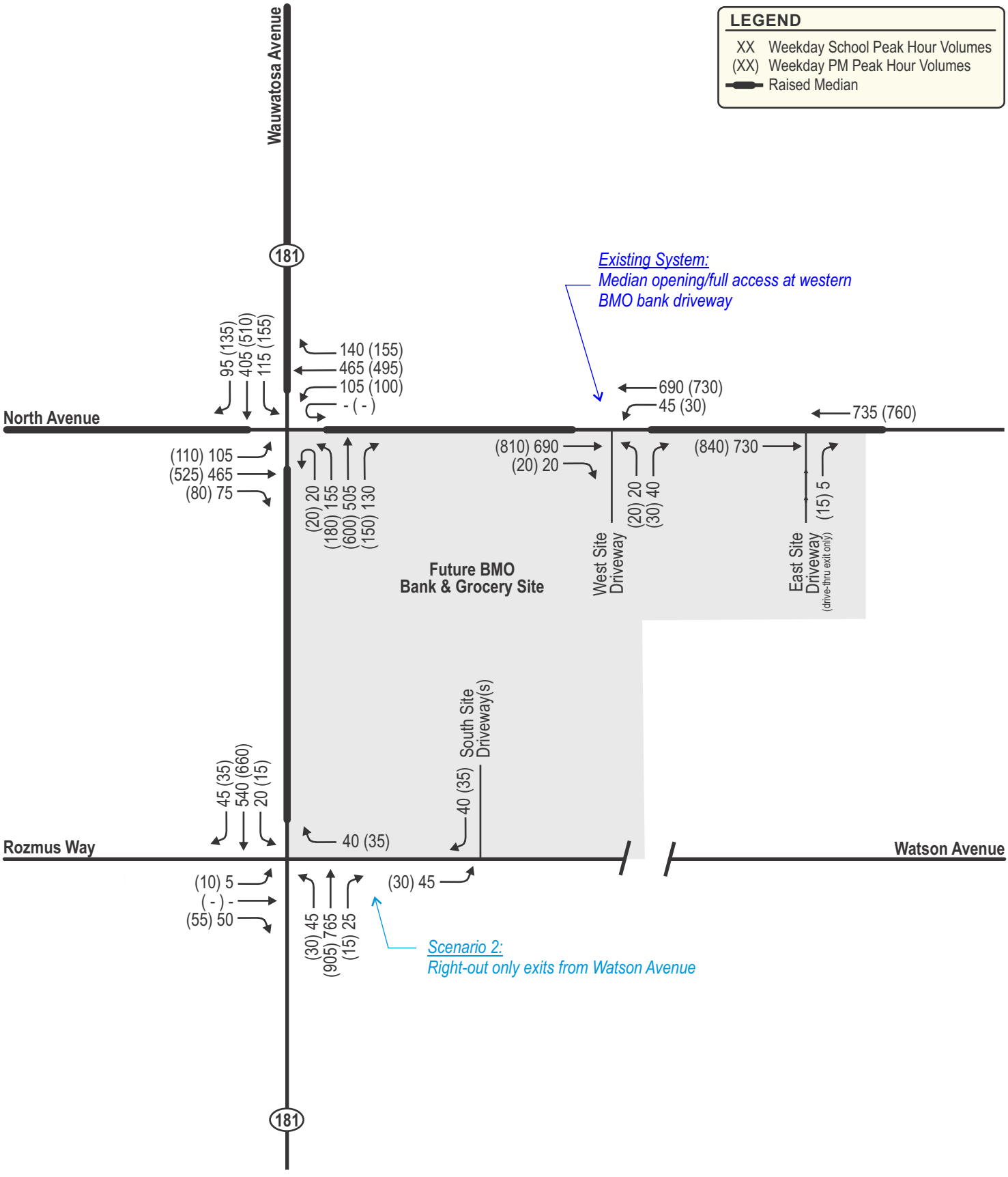
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 17A
BUILD TRAFFIC VOLUMES
EXISTING TRANSPORTATION SYSTEM &
SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

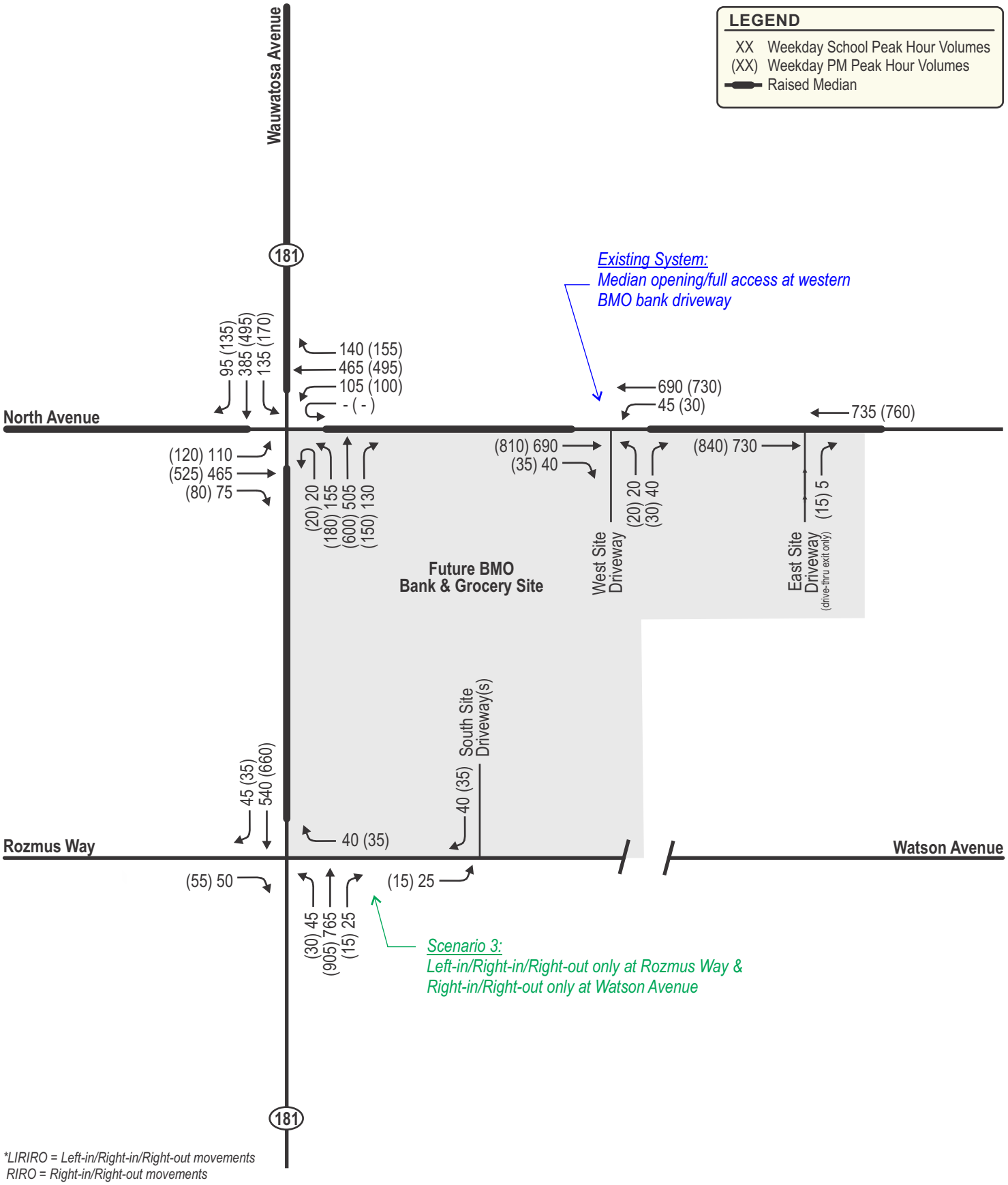
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 17B
BUILD TRAFFIC VOLUMES
EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

TADI TRAFFIC ANALYSIS & DESIGN, INC.

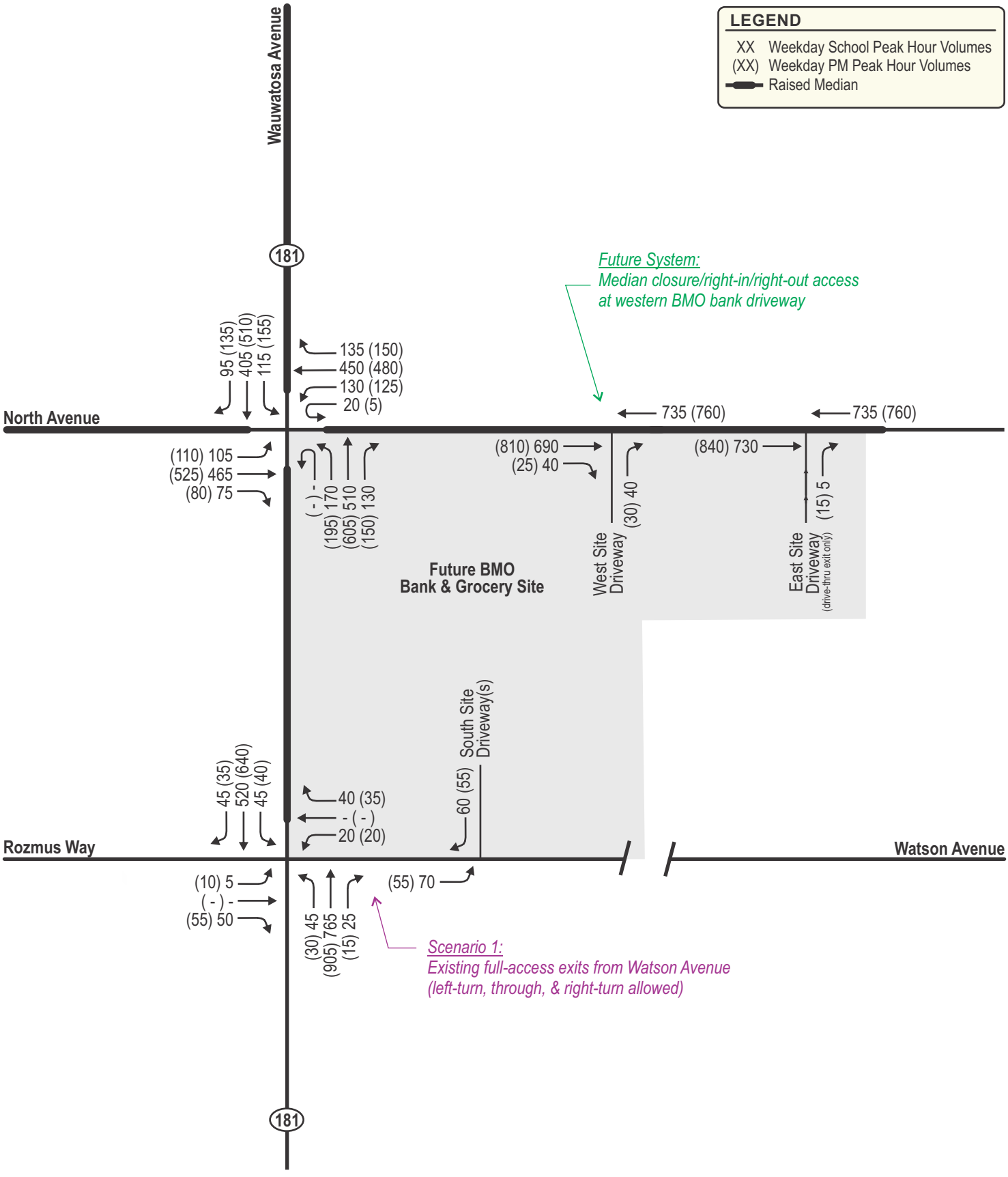
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 17C
BUILD TRAFFIC VOLUMES
EXISTING TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

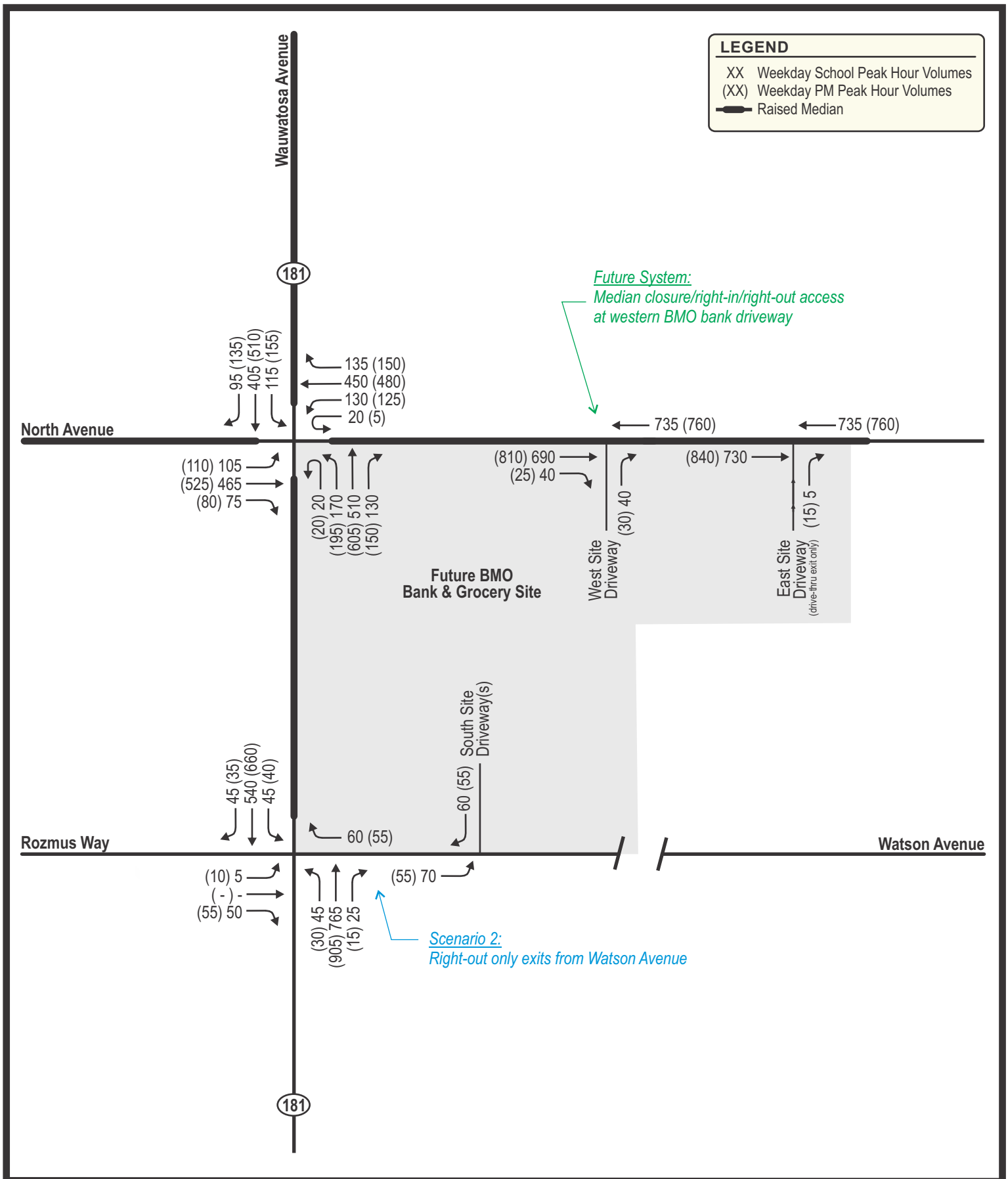
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 17D
BUILD TRAFFIC VOLUMES
FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

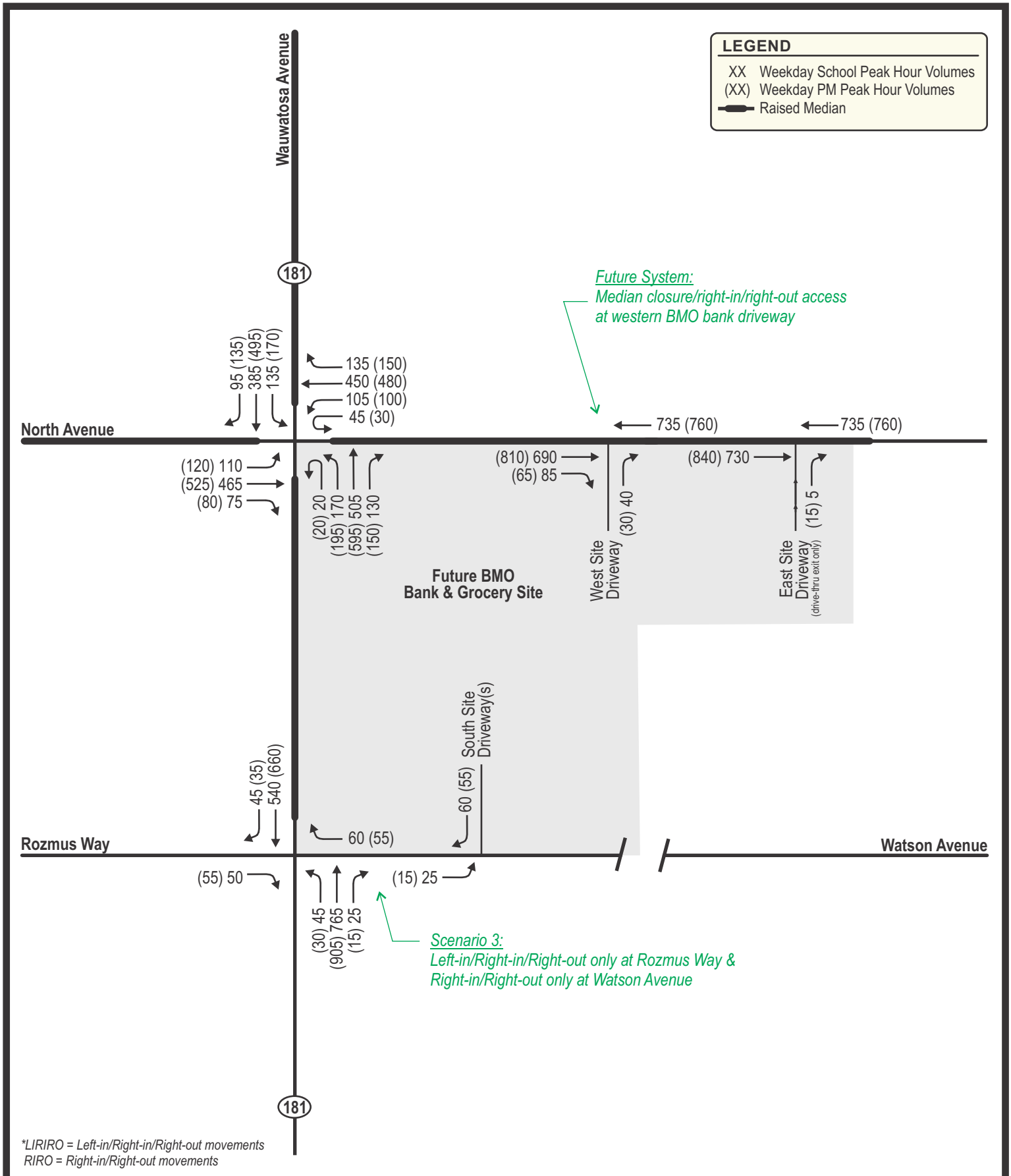
3644: 06-12-2026

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NOT TO SCALE

EXHIBIT 17E
BUILD TRAFFIC VOLUMES
FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 17F
BUILD TRAFFIC VOLUMES
FUTURE TRANSPORTATION SYSTEM &
SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

Build Traffic Peak Hour Operating Conditions

Existing Transportation System - Scenario 1 (Full Access at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*<1*		*1*	*1*	*1>*		*<1*		*1*	
	Schl	LOS	F		B	F		B	B	*		A		*	A
		Delay	60.9		14.0	60.0		12.8	10.2	*		8.9		*	2.4
		v/c	0.09		0.12	0.26		0.04	0.06	*		0.02		*	
		Queue	10'		10'	25'		5'	5'	*		5'		*	
	PM	LOS	F		B	F		B	A	*		A		*	A
		Delay	79.1		13.4	107.4		13.8	9.7	*		9.2		*	3.0
		v/c	0.19		0.12	0.40		0.04	0.04	*		0.02		*	
		Queue	20'		10'	40'		5'	5'	*		5'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	
	Schl	LOS	C	D	A	C	D	B	C	D	A	C	C	A	C
		Delay	22.6	35.4	3.1	23.1	35.4	11.0	23.7	36.2	9.3	22.2	33.5	5.3	28.7
		v/c	0.41	0.59	0.15	0.43	0.59	0.29	0.53	0.64	0.26	0.45	0.52	0.21	
		Queue	85'	280'	20'	85'	280'	70'	115'	310'	60'	90'	245'	35'	
	PM	LOS	C	D	A	C	D	B	C	D	B	C	D	A	C
		Delay	22.8	36.5	3.1	23.3	35.8	11.9	29.0	39.5	10.8	28.6	36.0	9.2	30.8
		v/c	0.42	0.64	0.15	0.42	0.61	0.30	0.66	0.73	0.29	0.62	0.20	0.26	
		Queue	85'	320'	20'	80'	300'	80'	130'	370'	75'	115'	305'	60'	
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		*<1*		-	*<1>*			-			
	Schl	LOS	-	*		A		-	D			-			A
		Delay	-	*		8.9		-	25.8			-			1.3
		v/c	-	*		0.05		-	0.29			-			
		Queue	-	*		5'		-	30'			-			
	PM	LOS	-	*		A		-	D			-			A
		Delay	-	*		9.1		-	33.2			-			1.2
		v/c	-	*		0.04		-	0.31			-			
		Queue	-	*		5'		-	35'			-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		14.6	-			0.0
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.6	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Due to non-Nema signal phasing at the Wauwatosa Avenue/North Avenue intersection, the reported LOS, delays and v/c ratios are based on Synchro analysis methodology and not the HCM 7.

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

Build Traffic Peak Hour Operating Conditions

Existing Transportation System - Scenario 2 (Right-Out Only at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*-*		*1*	*1*	*1>*		*<1*		*1*	
	Schl	LOS	F		B	-		B	B	*		A		*	A
		Delay	65.8		14.4	-		13.2	10.3	*		8.9		*	1.7
		v/c	0.10		0.12	-		0.09	0.07	*		0.02		*	
		Queue	10'		10'	-		10'	5'	*		5'		*	
	PM	LOS	F		B	-		B	A	*		A		*	A
		Delay	90.3		13.6	-		14.3	9.8	*		9.2		*	1.7
		v/c	0.22		0.12	-		0.09	0.04	*		0.02		*	
		Queue	20'		10'	-		10'	5'	*		5'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	
	Schl	LOS	C	D	A	C	D	B	C	D	A	C	C	A	C
		Delay	22.6	35.4	3.1	23.1	35.4	11.0	25.6	36.7	9.3	22.1	33.9	5.3	28.9
		v/c	0.41	0.59	0.15	0.43	0.59	0.29	0.53	0.64	0.26	0.45	0.52	0.21	
		Queue	85'	280'	20'	85'	280'	70'	130'	310'	60'	90'	245'	35'	
	PM	LOS	C	D	A	C	D	B	C	D	B	C	D	A	C
		Delay	22.8	36.5	3.1	23.3	35.8	11.9	32.9	40.2	10.8	28.4	36.5	9.2	31.2
		v/c	0.42	0.64	0.15	0.42	0.61	0.30	0.72	0.74	0.29	0.62	0.63	0.26	
		Queue	85'	320'	20'	80'	300'	80'	150'	370'	75'	115'	305'	60'	
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		*<1*		-	*<1>*			-			
	Schl	LOS	-	*		A		-	D			-			A
		Delay	-	*		8.9		-	25.8			-			1.3
		v/c	-	*		0.05		-	0.29			-			
		Queue	-	*		5'		-	30'			-			
	PM	LOS	-	*		A		-	D			-			A
		Delay	-	*		9.1		-	33.2			-			1.2
		v/c	-	*		0.04		-	0.31			-			
		Queue	-	*		5'		-	35'			-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		14.6	-			0.0
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.6	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Due to non-Nema signal phasing at the Wauwatosa Avenue/North Avenue intersection, the reported LOS, delays and v/c ratios are based on Synchro analysis methodology and not the HCM 7.

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

Build Traffic Peak Hour Operating Conditions

Existing Transportation System - Scenario 3 (Left-in/Right-in/Right-out at Rozmus Way & Right-in/Right-out at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	-		*1*	-		*1*	*1*	*1>*		-	*2*	*1*	
	Schl	LOS	-		B	-		B	B	*		-	*	*	A
		Delay	-		14.4	-		13.2	10.3	*		-	*	*	1.3
		v/c	-		0.12	-		0.09	0.07	*		-	*	*	
		Queue	-		10'	-		10'	5'	*		-	*	*	
	PM	LOS	-		B	-		B	A	*		-	*	*	A
		Delay	-		13.6	-		14.3	9.8	*		-	*	*	1.0
		v/c	-		0.12	-		0.09	0.04	*		-	*	*	
		Queue	-		10'	-		10'	5'	*		-	*	*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	*1*	*2*	*1*	
	Schl	LOS	C	D	A	C	D	B	C	D	A	C	C	A	C
		Delay	23.1	35.4	3.1	23.0	35.4	11.0	24.9	36.7	9.3	24.0	33.4	5.3	28.9
		v/c	0.43	0.59	0.15	0.43	0.59	0.29	0.57	0.64	0.26	0.52	0.50	0.21	
		Queue	85'	280'	20'	85'	280'	70'	130'	310'	60'	105'	235'	35'	
	PM	LOS	C	D	A	C	D	B	C	D	B	C	D	A	C
		Delay	23.6	36.8	3.1	23.2	36.0	11.9	31.5	40.1	10.8	32.0	36.0	9.2	31.3
		v/c	0.45	0.64	0.15	0.42	0.61	0.30	0.70	0.74	0.29	0.68	0.61	0.26	
		Queue	95'	320'	20'	80'	300'	80'	145'	370'	75'	130'	295'	60'	
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		*<1*		-	*<1>*			-			
	Schl	LOS	-	*		A		-	D			-			A
		Delay	-	*		9.0		-	26.3			-			1.3
		v/c	-	*		0.05		-	0.29			-			
		Queue	-	*		5'		-	30'			-			
	PM	LOS	-	*		A		-	D			-			A
		Delay	-	*		9.2		-	33.8			-			1.2
		v/c	-	*		0.04		-	0.32			-			
		Queue	-	*		5'		-	35'			-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		14.6	-			0.0
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.6	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Due to non-Nema signal phasing at the Wauwatosa Avenue/North Avenue intersection, the reported LOS, delays and v/c ratios are based on Synchro analysis methodology and not the HCM 7.

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

**LIRIRO = Left-in/Right-in/Right-out movements*
RIRO = Right-in/Right-out movements

Build Traffic Peak Hour Operating Conditions

Future Transportation System - Scenario 1 (Full Access at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*<1>*			*1*	*1>*		*<1*		*1*	
	Schl	LOS	F		C	D			A	*		A		*	A
		Delay	54.9		15.0	31.6			9.8	*		9.0		*	2.8
		v/c	0.08		0.13	0.32			0.06	*		0.05		*	
		Queue	10'		10'	35'			5'	*		5'		*	
	PM	LOS	F		B	E			A	*		A		*	A
		Delay	62.0		14.5	44.4			9.3	*		9.3		*	3.0
		v/c	0.16		0.13	0.40			0.04	*		0.05		*	
		Queue	15'		15'	45'			5'	*		5'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2>*		*1*	*2>*		*1*	*2>*		*1*	*2>*		
	Schl	LOS	D	C		D	C		D	D		D	C		C
		Delay	38.8	30.7		38.6	32.3		37.4	35.2		39.5	29.7		33.2
		v/c	0.46	0.68		0.59	0.74		0.61	0.77		0.52	0.62		
		Queue	95'	400'		130'	485'		145'	555'		115'	380'		
	PM	LOS	D	D		D	D		D	D		D	C		D
		Delay	40.7	35.1		39.8	36.3		38.5	35.4		40.9	33.6		35.7
		v/c	0.51	0.79		0.55	0.81		0.68	0.80		0.67	0.75		
		Queue	105'	515'		135'	565'		250'	665'		165'	520'		
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		11.8	-			0.3
		v/c	-	*		-	*	-	-		0.08	-			
		Queue	-	*		-	*	-	-		10'	-			
	PM	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		12.2	-			0.2
		v/c	-	*		-	*	-	-		0.07	-			
		Queue	-	*		-	*	-	-		5'	-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		15.1	-			0.1
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.3	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement; (< or >) indicates a shared lane movement.

U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

Build Traffic Peak Hour Operating Conditions

Future Transportation System - Scenario 2 (Right-Out Only at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*-*		*1*	*1*	*1>*		*<1*		*1*	
	Schl	LOS	F		C	-		B	A	*		A		*	A
		Delay	58.7		15.3	-		13.6	9.9	*		9.0		*	2.0
		v/c	0.09		0.13	-		0.13	0.06	*		0.05		*	
		Queue	10'		10'	-		10'	5'	*		5'		*	
	PM	LOS	F		B	-		B	A	*		A		*	A
		Delay	67.5		14.8	-		14.8	9.4	*		9.3		*	1.9
		v/c	0.17		0.14	-		0.14	0.04	*		0.05		*	
		Queue	15'		15'	-		15'	5'	*		5'		*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2>*		*1*	*2>*		*1*	*2>*		*1*	*2>*		
	Schl	LOS	D	C		D	C		D	D		D	C		C
		Delay	38.8	30.7		38.6	32.3		38.1	35.2		39.5	29.7		33.3
		v/c	0.46	0.68		0.59	0.74		0.69	0.77		0.52	0.62		
		Queue	95'	400'		130'	485'		165'	555'		115'	380'		
	PM	LOS	D	D		D	D		D	D		D	C		D
		Delay	40.7	35.1		39.8	36.3		40.4	35.4		40.9	33.6		35.8
		v/c	0.51	0.79		0.55	0.81		0.75	0.80		0.67	0.75		
		Queue	105'	515'		135'	565'		295'	665'		165'	520'		
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		11.8	-			0.3
		v/c	-	*		-	*	-	-		0.08	-			
		Queue	-	*		-	*	-	-		10'	-			
	PM	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		12.2	-			0.2
		v/c	-	*		-	*	-	-		0.07	-			
		Queue	-	*		-	*	-	-		5'	-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		15.1	-			0.1
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.3	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

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U-turns at signals, if any, are included in the left-turn movements.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet. One vehicle in queue can be estimted for every 25' of the 95th percentile queue (e.g. 0-25' queues = 1 vehicle in queue).

Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

Build Traffic Peak Hour Operating Conditions

Future Transportation System - Scenario 3 (Left-in/Right-in/Right-out at Rozmus Way & Right-in/Right-out at Watson Avenue)

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	-		*1*	-		*1*	*1*	*1>*		-	*2*	*1*	
	Schl	LOS	-		C	-		B	A	*		-	*	*	A
		Delay	-		15.3	-		13.6	9.9	*		-	*	*	1.5
		v/c	-		0.13	-		0.13	0.06	*		-	*	*	
		Queue	-		10'	-		10'	5'	*		-	*	*	
	PM	LOS	-		B	-		B	A	*		-	*	*	A
		Delay	-		14.8	-		14.8	9.4	*		-	*	*	1.3
		v/c	-		0.14	-		0.14	0.04	*		-	*	*	
		Queue	-		15'	-		15'	5'	*		-	*	*	
Wauwatosa Avenue & W. North Avenue *Traffic Signal Control*		*Lanes->*	*1*	*2>*		*1*	*2>*		*1*	*2>*		*1*	*2>*		
	Schl	LOS	D	C		D	C		D	D		D	C		C
		Delay	39.1	30.7		38.6	32.4		37.5	35.0		39.9	29.5		33.3
		v/c	0.48	0.68		0.59	0.74		0.67	0.76		0.60	0.59		
		Queue	100'	400'		130'	485'		165'	545'		140'	360'		
	PM	LOS	D	C		D	D		D	D		D	C		D
		Delay	40.6	34.9		39.5	36.1		39.8	35.2		41.3	33.1		35.6
		v/c	0.55	0.79		0.54	0.81		0.74	0.80		0.73	0.74		
		Queue	110'	515'		135'	565'		290'	650'		210'	500'		
W. North Avenue & West Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1>*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		12.1	-			0.3
		v/c	-	*		-	*	-	-		0.08	-			
		Queue	-	*		-	*	-	-		10'	-			
	PM	LOS	-	*		-	*	-	-		B	-			A
		Delay	-	*		-	*	-	-		12.5	-			0.2
		v/c	-	*		-	*	-	-		0.07	-			
		Queue	-	*		-	*	-	-		5'	-			
W. North Avenue & East Site Driveway *Stop Sign Control (NB)*		*Lanes->*	-	*1*		-	*1*	-	-		*1*	-			
	Schl	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		15.1	-			0.1
		v/c	-	*		-	*	-	-		0.02	-			
		Queue	-	*		-	*	-	-		0'	-			
	PM	LOS	-	*		-	*	-	-		C	-			A
		Delay	-	*		-	*	-	-		17.3	-			0.2
		v/c	-	*		-	*	-	-		0.06	-			
		Queue	-	*		-	*	-	-		5'	-			

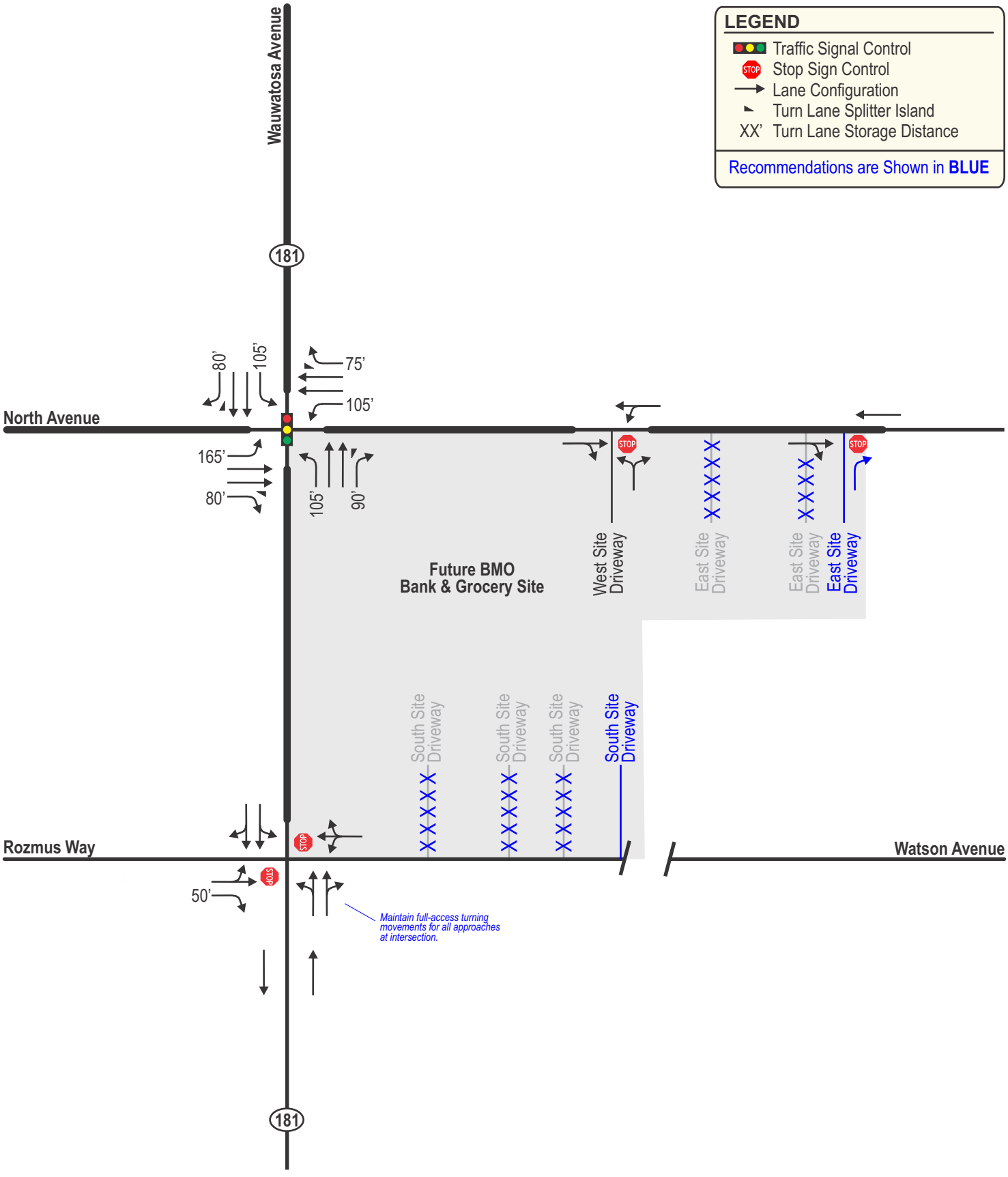
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**LIRIRO = Left-in/Right-in/Right-out movements*
RIRO = Right-in/Right-out movements



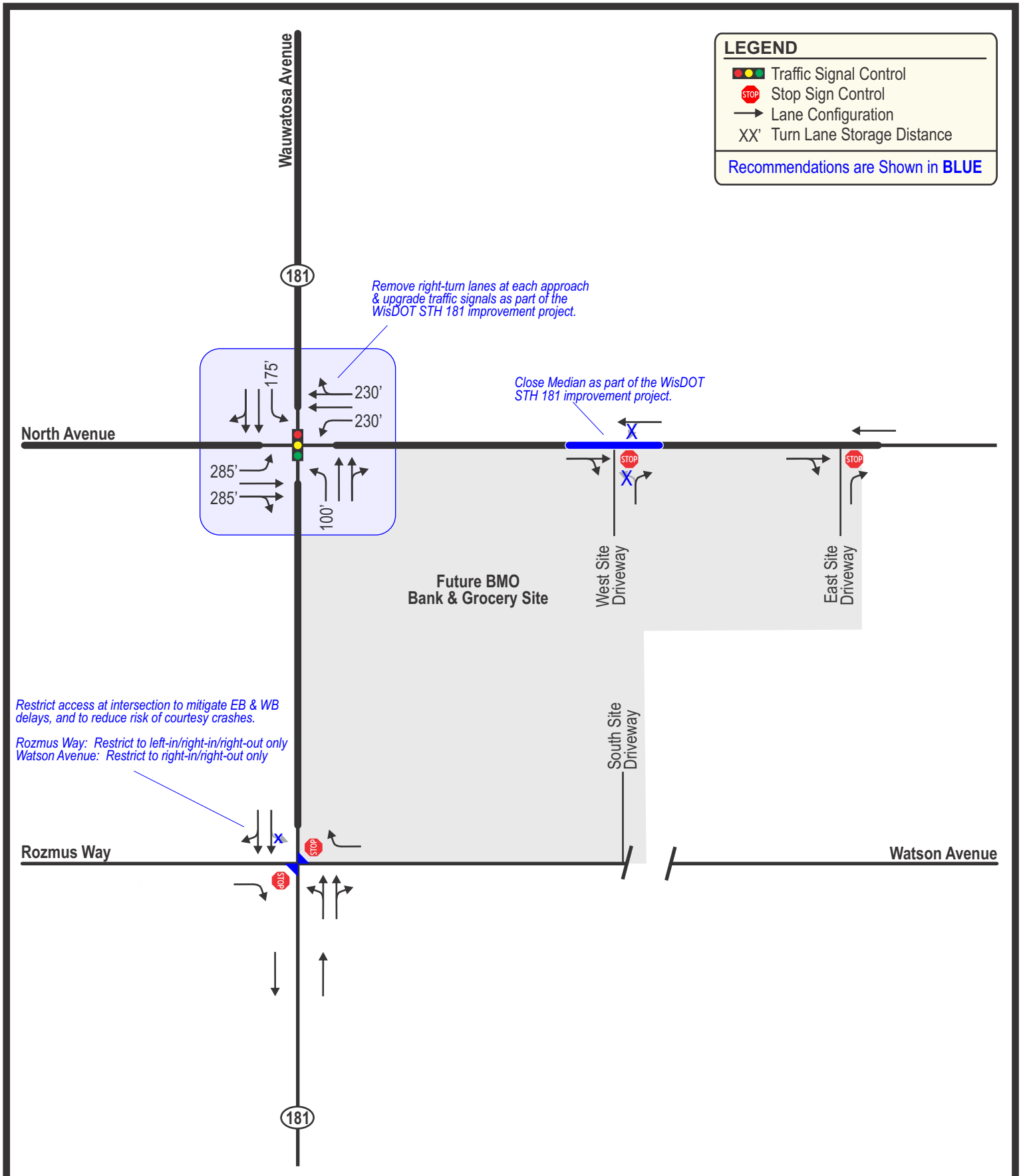
TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 19
BUILD RECOMMENDATIONS
EXISTING TRANSPORTATION SYSTEM



TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 20
BUILD RECOMMENDATION OPTIONS
FUTURE TRANSPORTATION SYSTEM

APPENDIX A

TRAFFIC COUNTS

Intersection Traffic Volume Report

Count Basics	Version 2023.10		Page 1 of 13
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Base Information, Observed (6) Hour and Estimated (24) Hour Volume Summaries

Major St: **STH 181 (Wauwatosa Avenue)**
Minor St: **W North Avenue**
Intersection of: ***STH 181 (Wauwatosa Avenue) & W North Ave*** **IX_ID:**

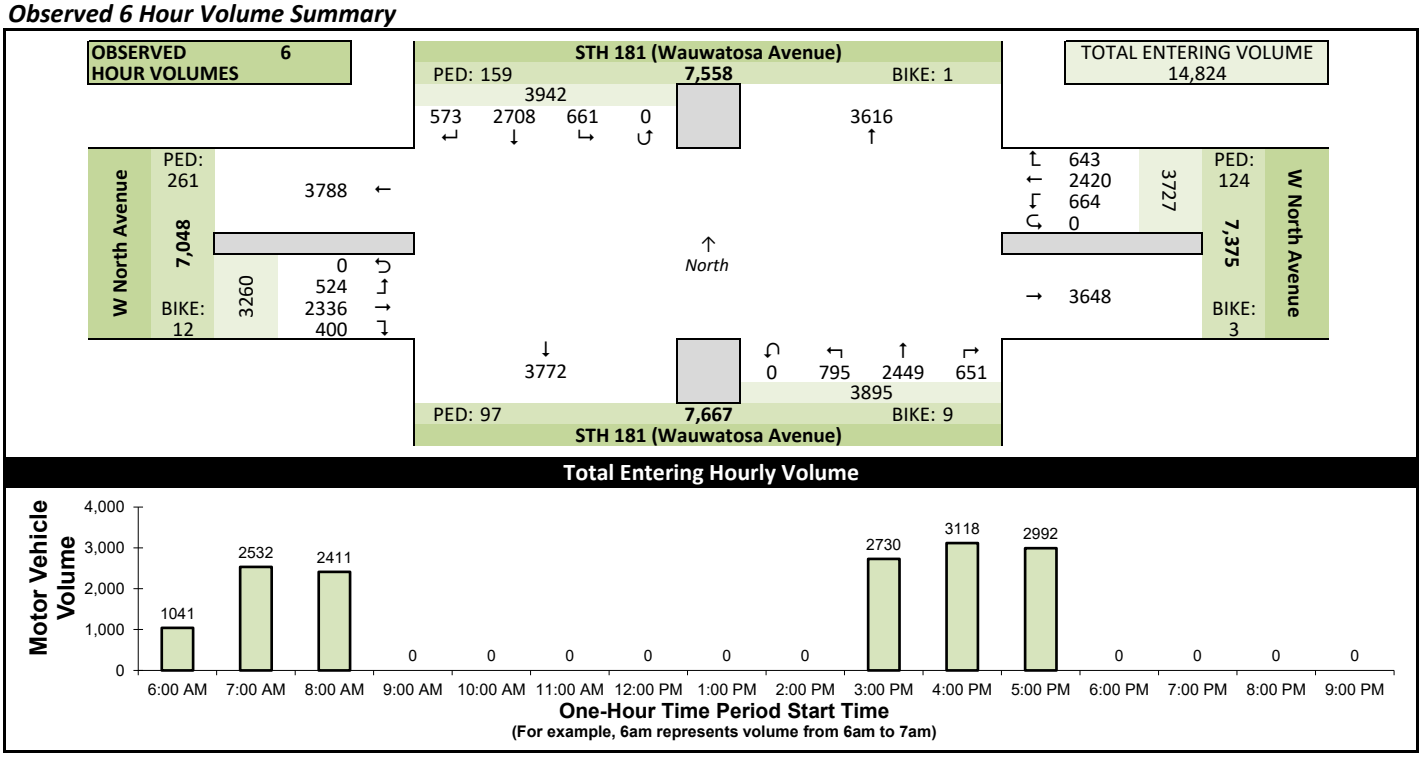
Site Information

Municipality	City of Wauwatosa		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names		North Direction	↑
North Leg	STH 181 (Wauwatosa Avenue)		
East Leg	W North Avenue		
South Leg	STH 181 (Wauwatosa Avenue)		
West Leg	W North Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
Pre-school children	None		
Elementry school age children	None		
Visually impaired (white cane/helper dog)	None		
Elderly/disabled (except wheelchairs)	None		
Wheelchairs/electric scooters	None		
Other (describe)	None	None	

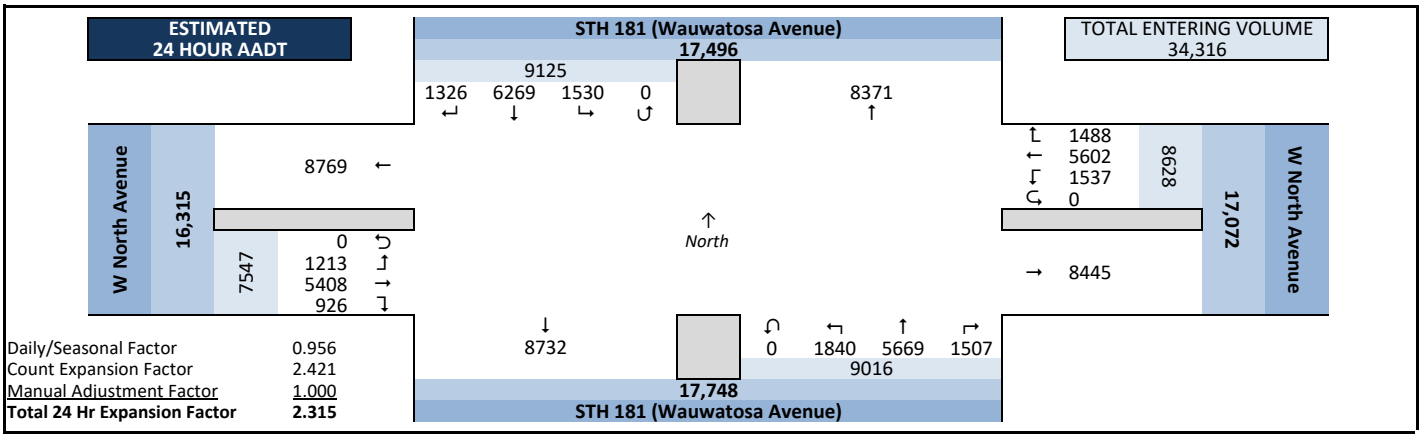
Count Information

Hrs Counted:	06:00 AM-09:00 AM and 03:00 PM-06:00 PM				
1st Day of Count	Tuesday, April 16, 2024			Weather	
AM Peak Period	Tuesday, April 16, 2024			Clear & Dry	
Midday Peak Period				Clear & Dry	
PM Peak Period	Tuesday, April 16, 2024			Clear & Dry	
Calculated Peak Hours					
AM	7:30-8:30am	MD	3:00-4:00pm	PM	4:30-5:30pm
Peak Hours Selected for Analysis					
AM	7:30-8:30am	MD	3:00-4:00pm	PM	4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors				
Count Expansion Group	(2) Urban Arterials & Collectors				
Daily/Seasonal Adjustment Factor	0.956	Count Expansion Factor	2.421		
Company Name	GRAEF			Manual Adj.	1.000
Observers: AM Peak Period	GRAEF				
Observers: Midday Peak Period					
Observers: PM Peak Period	GRAEF				
Comments	2021 DOT Daily & Seasonal Factors				

Observed 6 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

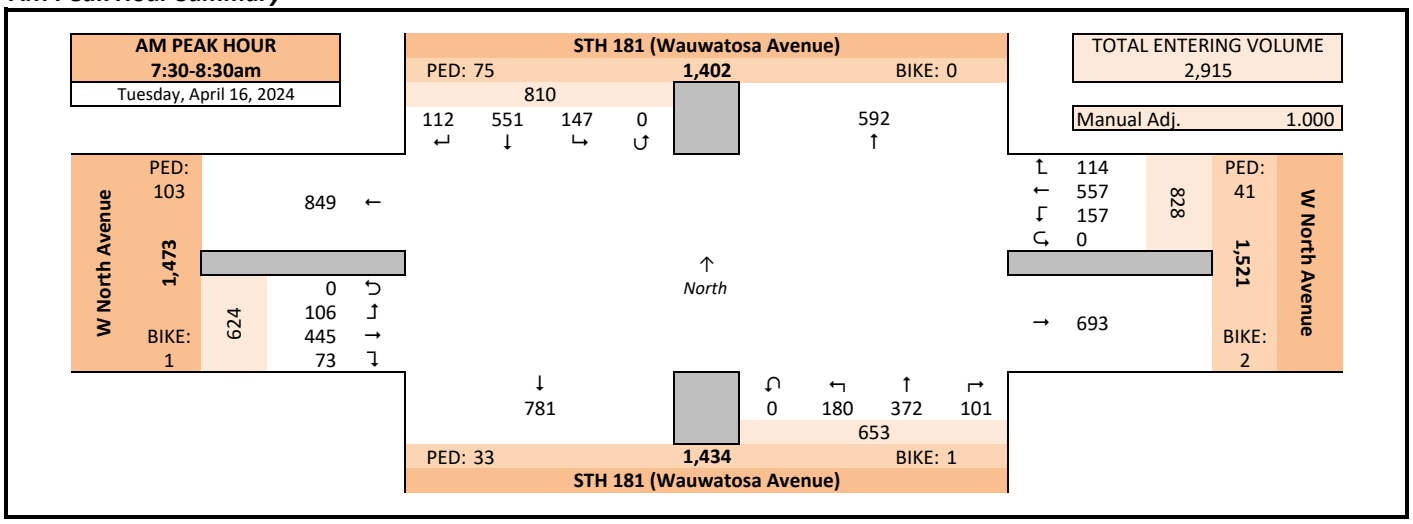
STH 181 (Wauwatosa Avenue) & W North Avenue

Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

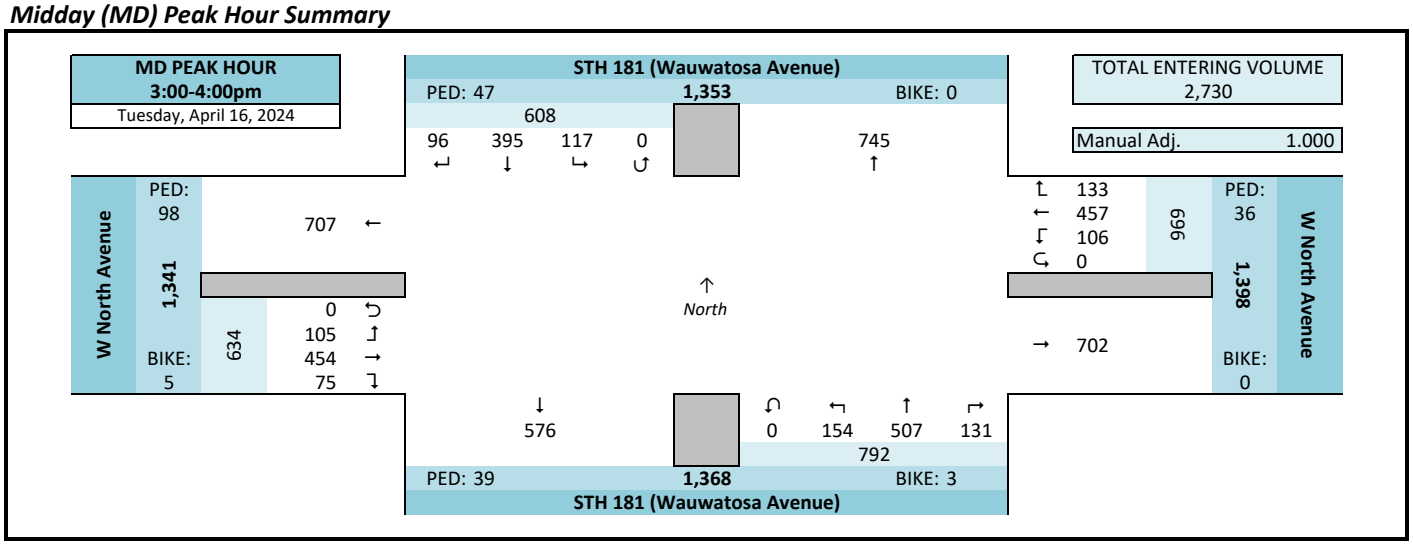
All Motor Vehicles



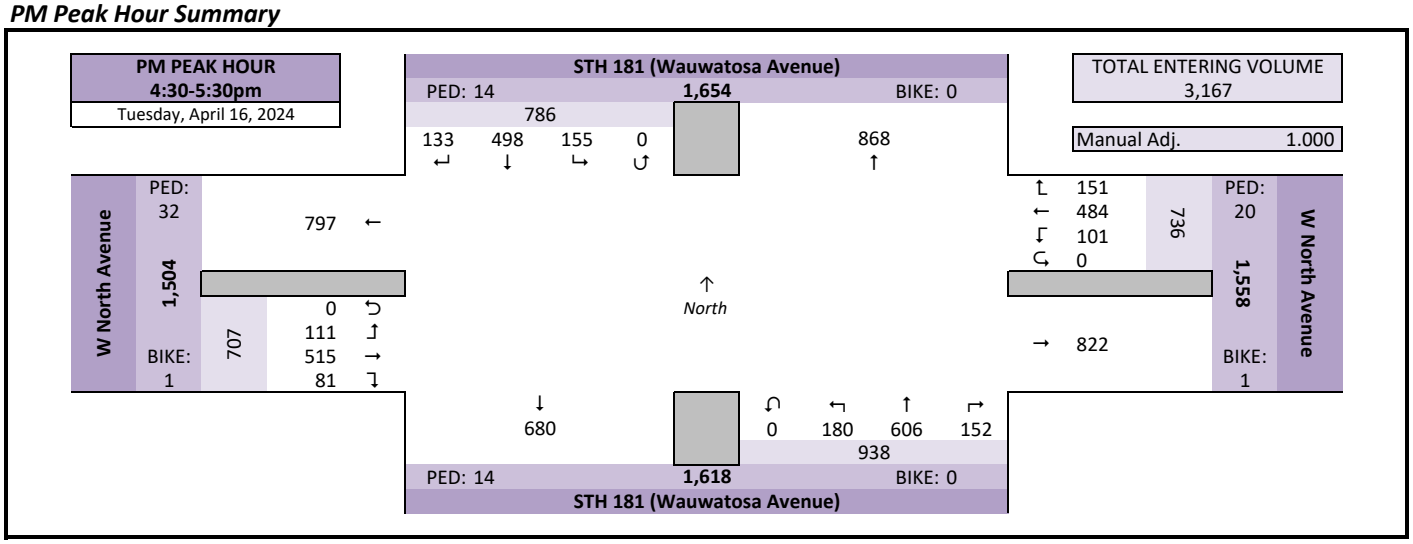
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

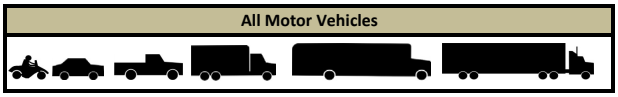


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

Peak Hour Volume Summary

STH 181 (Wauwatosa Avenue) & W North Avenue



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, April 16, 2024		From North					From East					From South					From West					
	AM Peak Hour	STH 181 (Wauwatosa Avenue)					W North Avenue					STH 181 (Wauwatosa Avenue)					W North Avenue					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:30 AM	19	176	36	0	231	23	113	32	0	168	25	112	39	0	176	19	113	23	0	155	730
	7:45 AM	33	137	50	0	220	16	179	36	0	231	33	97	66	0	196	14	109	28	0	151	798
	8:00 AM	37	123	35	0	195	52	165	57	0	274	21	88	55	0	164	23	106	29	0	158	791
	8:15 AM	23	115	26	0	164	23	100	32	0	155	22	75	20	0	117	17	117	26	0	160	596
	Peak Hour Volume	112	551	147	0	810	114	557	157	0	828	101	372	180	0	653	73	445	106	0	624	2915
	Rounded Hourly Volume	110	550	145	0	805	115	555	155	0	825	100	370	180	0	650	75	445	105	0	625	2905
	% Single Unit Trucks	2.7	2.9	2.7	0.0	2.8	0.9	0.9	0.6	0.0	0.8	2.0	3.0	1.1	0.0	2.3	1.4	2.2	0.0	0.0	1.8	1.9
	% Heavy Trucks	0.0	0.0	0.7	0.0	0.1	1.8	0.5	0.6	0.0	0.7	1.0	0.3	0.6	0.0	0.5	2.7	1.6	1.9	0.0	1.8	0.7
	% Trucks (Total)	2.7	2.9	3.4	0.0	3.0	2.6	1.4	1.3	0.0	1.6	3.0	3.2	1.7	0.0	2.8	4.1	3.8	1.9	0.0	3.5	2.6
	Peak Hour Factor (PHF)	0.76	0.78	0.73	0.00	0.88	0.55	0.78	0.69	0.00	0.76	0.77	0.83	0.68	0.00	0.83	0.79	0.95	0.91	0.00	0.97	0.91

Tuesday, April 16, 2024		From North					From East					From South					From West					
	MD Peak Hour	STH 181 (Wauwatosa Avenue)					W North Avenue					STH 181 (Wauwatosa Avenue)					W North Avenue					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	3:00 PM	34	80	15	0	129	27	94	26	0	147	31	78	29	0	138	16	113	23	0	152	566
	3:15 PM	25	106	22	0	153	32	104	16	0	152	45	146	44	0	235	18	106	20	0	144	684
	3:30 PM	18	114	48	0	180	36	147	29	0	212	27	146	45	0	218	16	118	34	0	168	778
	3:45 PM	19	95	32	0	146	38	112	35	0	185	28	137	36	0	201	25	117	28	0	170	702
	Peak Hour Volume	96	395	117	0	608	133	457	106	0	696	131	507	154	0	792	75	454	105	0	634	2730
	Rounded Hourly Volume	95	395	115	0	605	135	455	105	0	695	130	505	155	0	790	75	455	105	0	635	2725
	% Single Unit Trucks	0.0	3.0	1.7	0.0	2.3	2.3	1.1	0.0	0.0	1.1	0.0	1.4	0.6	0.0	1.0	0.0	2.0	0.0	0.0	1.4	1.4
	% Heavy Trucks	2.1	0.0	0.9	0.0	0.5	0.8	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
	% Trucks (Total)	2.1	3.0	2.6	0.0	2.8	3.0	1.1	0.0	0.0	1.3	0.0	1.6	0.6	0.0	1.1	0.0	2.0	0.0	0.0	1.4	1.6
	Peak Hour Factor (PHF)	0.71	0.87	0.61	0.00	0.84	0.87	0.78	0.76	0.00	0.82	0.73	0.87	0.86	0.00	0.84	0.75	0.96	0.77	0.00	0.93	0.88

Tuesday, April 16, 2024		From North					From East					From South					From West					
	PM Peak Hour	STH 181 (Wauwatosa Avenue)					W North Avenue					STH 181 (Wauwatosa Avenue)					W North Avenue					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:30 PM	29	131	34	0	194	37	109	26	0	172	27	170	35	0	232	15	115	32	0	162	760
	4:45 PM	31	128	42	0	201	30	142	38	0	210	45	138	58	0	241	18	151	38	0	207	859
	5:00 PM	37	111	38	0	186	42	127	21	0	190	38	153	45	0	236	21	107	25	0	153	765
	5:15 PM	36	128	41	0	205	42	106	16	0	164	42	145	42	0	229	27	142	16	0	185	783
	Peak Hour Volume	133	498	155	0	786	151	484	101	0	736	152	606	180	0	938	81	515	111	0	707	3167
	Rounded Hourly Volume	135	500	155	0	790	150	485	100	0	735	150	605	180	0	935	80	515	110	0	705	3165
	% Single Unit Trucks	0.0	1.8	0.0	0.0	1.1	0.0	2.5	0.0	0.0	1.6	0.0	2.0	0.6	0.0	1.4	0.0	1.6	1.8	0.0	1.4	1.4
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	1.8	0.0	0.0	1.1	0.0	2.5	0.0	0.0	1.6	0.0	2.0	0.6	0.0	1.4	0.0	1.6	1.8	0.0	1.4	1.4
	Peak Hour Factor (PHF)	0.90	0.95	0.92	0.00	0.96	0.90	0.85	0.66	0.00	0.88	0.84	0.89	0.78	0.00	0.97	0.75	0.85	0.73	0.00	0.85	0.92

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike
		STH 181 (Wauwatosa Avenue)			W North Avenue			STH 181 (Wauwatosa Avenue)			W North Avenue			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Volume
AM	7:30 AM	13	0	13	4	0	4	2	0	2	16	0	16	35
	7:45 AM	42	0	42	24	0	24	22	0	22	58	0	58	146
	8:00 AM	20	0	20	9	1	10	9	0	9	26	1	27	66
	8:15 AM	0	0	0	4	1	5	0	1	1	3	0	3	9
	Total	75	0	75	41	2	43	33	1	34	103	1	104	256
MD	3:00 PM	2	0	2	2	0	2	0	0	0	1	0	1	5
	3:15 PM	7	0	7	12	0	12	11	0	11	17	1	18	48
	3:30 PM	38	0	38	17	0	17	28	1	29	71	3	74	158
	3:45 PM	0	0	0	5	0	5	0	2	2	9	1	10	17
	Total	47	0	47	36	0	36	39	3	42	98	5	103	228
PM	4:30 PM	0	0	0	2	0	2	0	0	0	7	1	8	10
	4:45 PM	6	0	6	8	0	8	11	0	11	14	0	14	39
	5:00 PM	1	0	1	2	0	2	0	0	0	5	0	5	8
	5:15 PM	7	0	7	8	1	9	3	0	3	6	0	6	25
	Total	14	0	14	20	1	21	14	0	14	32	1	33	82

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

STH 181 (Wauwatosa Avenue) & W North Avenue

Count Basics			*Page 5 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events



15-Minute Motor Vehicle Data

	15-Minute	From North (↓) STH 181 (Wauwatosa Avenue)					From East (←) W North Avenue					From South (↑) STH 181 (Wauwatosa Avenue)					From West (→) W North Avenue					15-Min	Hourly	
	Time Period Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum	PHF
Pre-AM Peak Period	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AM Peak Period	6:00 AM	6	50	6	0	62	6	28	8	0	42	7	21	6	0	34	2	23	6	0	31	169	1041	0.70
	6:15 AM	9	72	9	0	90	9	21	13	0	43	2	34	5	0	41	4	23	13	0	40	214	1323	0.73
	6:30 AM	10	81	10	0	101	9	46	28	0	83	15	32	8	0	55	4	34	9	0	47	286	1662	0.75
	6:45 AM	16	96	14	0	126	17	50	38	0	105	10	53	7	0	70	10	54	7	0	71	372	2106	0.72
	7:00 AM	16	104	18	0	138	15	67	23	0	105	12	82	19	0	113	17	54	24	0	95	451	2532	0.79
	7:15 AM	12	163	29	0	204	11	87	31	0	129	12	89	24	0	125	14	65	16	0	95	553	2872	0.90
	7:30 AM	19	176	36	0	231	23	113	32	0	168	25	112	39	0	176	19	113	23	0	155	730	2915	0.91
	7:45 AM	33	137	50	0	220	16	179	36	0	231	33	97	66	0	196	14	109	28	0	151	798	2689	0.84
	8:00 AM	37	123	35	0	195	52	165	57	0	274	21	88	55	0	164	23	106	29	0	158	791	2411	0.76
	8:15 AM	23	115	26	0	164	23	100	32	0	155	22	75	20	0	117	17	117	26	0	160	596		
	8:30 AM	20	121	18	0	159	18	66	22	0	106	18	77	14	0	109	21	90	19	0	130	504		
	8:45 AM	17	97	22	0	136	17	96	32	0	145	34	80	27	0	141	16	70	12	0	98	520		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	34	80	15	0	129	27	94	26	0	147	31	78	29	0	138	16	113	23	0	152	566	2730	0.88
	3:15 PM	25	106	22	0	153	32	104	16	0	152	45	146	44	0	235	18	106	20	0	144	684	2889	0.93
	3:30 PM	18	114	48	0	180	36	147	29	0	212	27	146	45	0	218	16	118	34	0	168	778	2979	0.96
	3:45 PM	19	95	32	0	146	38	112	35	0	185	28	137	36	0	201	25	117	28	0	170	702	2961	0.96
	4:00 PM	32	133	28	0	193	39	98	18	0	155	40	124	45	0	209	30	119	19	0	168	725	3118	0.91
	4:15 PM	35	114	32	0	181	37	123	22	0	182	39	148	37	0	224	12	149	26	0	187	774	3158	0.92
	4:30 PM	29	131	34	0	194	37	109	26	0	172	27	170	35	0	232	15	115	32	0	162	760	3167	0.92
	4:45 PM	31	128	42	0	201	30	142	38	0	210	45	138	58	0	241	18	151	38	0	207	859	3126	0.91
	5:00 PM	37	111	38	0	186	42	127	21	0	190	38	153	45	0	236	21	107	25	0	153	765	2992	0.96
	5:15 PM	36	128	41	0	205	42	106	16	0	164	42	145	42	0	229	27	142	16	0	185	783		
	5:30 PM	25	125	27	0	177	37	118	29	0	184	40	107	33	0	180	21	129	28	0	178	719		
	5:45 PM	34	108	29	0	171	30	122	36	0	188	38	117	56	0	211	20	112	23	0	155	725		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Post PM Peak Period	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		573	2708	661	0	3942	643	2420	664	0	3727	651	2449	795	0	3895	400	2336	524	0	3260	14824		

Peak Hour All Vehicle Volume Summary

	Hourly Time Period Start Time	From North (↓) STH 181 (Wauwatosa Avenue) Right	Thru	Left	U-Tn	Total	From East (←) W North Avenue Right	Thru	Left	U-Tn	Total	From South (↑) STH 181 (Wauwatosa Avenue) Right	Thru	Left	U-Tn	Total	From West (→) W North Avenue Right	Thru	Left	U-Tn	Total	Total Hourly Volume	PHF
AM	7:30 AM	112	551	147	0	810	114	557	157	0	828	101	372	180	0	653	73	445	106	0	624	2915	0.91
MD	3:00 PM	96	395	117	0	608	133	457	106	0	696	131	507	154	0	792	75	454	105	0	634	2730	0.88
PM	4:30 PM	133	498	155	0	786	151	484	101	0	736	152	606	180	0	938	81	515	111	0	707	3167	0.92

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

Count Basics			*Page 9 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

STH 181 (Wauwatosa Avenue) & W North Avenue



15-Minute Heavy Vehicle Data

	15-Minute	↓ From North					← From East					↑ From South					→ From West						
	Time Period	STH 181 (Wauwatosa Avenue)					W North Avenue					STH 181 (Wauwatosa Avenue)					W North Avenue					15-Min	Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum
Pre-AM Peak Period	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM Peak Period	6:00 AM	0	4	0	0	4	0	3	1	0	4	0	1	0	0	1	0	2	0	0	2	11	35
	6:15 AM	0	3	0	0	3	0	0	0	0	0	0	1	1	0	2	0	1	0	0	1	6	37
	6:30 AM	0	2	0	0	2	0	2	1	0	3	0	1	1	0	2	0	2	0	0	2	9	46
	6:45 AM	1	3	0	0	4	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	9	54
	7:00 AM	0	1	1	0	2	0	3	1	0	4	0	1	3	0	4	0	3	0	0	3	13	71
	7:15 AM	1	1	0	0	2	0	3	0	0	3	1	6	1	0	8	0	2	0	0	2	15	73
	7:30 AM	0	5	2	0	7	1	1	0	0	2	2	3	0	0	5	1	2	0	0	3	17	77
	7:45 AM	2	5	1	0	8	1	1	1	0	3	0	4	2	0	6	1	6	2	0	9	26	76
	8:00 AM	0	1	0	0	1	1	3	0	0	4	0	4	1	0	5	0	5	0	0	5	15	74
	8:15 AM	1	5	2	0	8	0	3	1	0	4	1	1	0	0	2	1	4	0	0	5	19	
	8:30 AM	0	3	0	0	3	1	3	2	0	6	0	2	0	0	2	1	1	3	0	5	16	
	8:45 AM	2	5	1	0	8	1	2	1	0	4	2	3	2	0	7	1	4	0	0	5	24	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	3	0	0	3	1	1	0	0	2	0	1	0	0	1	0	4	0	0	4	10	44
	3:15 PM	1	4	1	0	6	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	12	47
	3:30 PM	0	3	2	0	5	1	0	0	0	1	0	3	1	0	4	0	3	0	0	3	13	46
	3:45 PM	1	2	0	0	3	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	9	45
	4:00 PM	1	4	1	0	6	1	1	0	0	2	0	1	0	0	1	1	3	0	0	4	13	47
	4:15 PM	0	4	2	0	6	1	0	0	0	1	0	1	1	0	2	0	2	0	0	2	11	47
	4:30 PM	0	3	0	0	3	0	2	0	0	2	0	4	0	0	4	0	2	1	0	3	12	44
	4:45 PM	0	2	0	0	2	0	3	0	0	3	0	2	1	0	3	0	2	1	0	3	11	47
	5:00 PM	0	3	0	0	3	0	4	0	0	4	0	4	0	0	4	0	2	0	0	2	13	44
	5:15 PM	0	1	0	0	1	0	3	0	0	3	0	2	0	0	2	0	2	0	0	2	8	
	5:30 PM	0	1	0	0	1	0	5	0	0	5	2	3	0	0	5	0	3	1	0	4	15	
	5:45 PM	0	4	0	0	4	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	8	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Post PM Peak Period	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		10	72	13	0	95	11	50	8	0	69	9	56	14	0	79	6	58	8	0	72	315	

Peak Hour Heavy Vehicle Volume Summary

	Hourly	↓ From North					← From East					↑ From South					→ From West					Total
	Time Period	STH 181 (Wauwatosa Avenue)					W North Avenue					STH 181 (Wauwatosa Avenue)					W North Avenue					Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume
AM	7:30 AM	3	16	5	0	24	3	8	2	0	13	3	12	3	0	18	3	17	2	0	22	77
MD	3:00 PM	2	12	3	0	17	4	5	0	0	9	0	8	1	0	9	0	9	0	0	9	44
PM	4:30 PM	0	9	0	0	9	0	12	0	0	12	0	12	1	0	13	0	8	2	0	10	44

Intersection Traffic Volume Report

Count Basics	Version 2023.10		Page 1 of 13
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

Base Information, Observed (3) Hour and Estimated (24) Hour Volume Summaries

Major St: **Wauwatosa Avenue**
Minor St: **Watson Avenue**
Intersection of: ***Wauwatosa Avenue & Watson Avenue*** **IX_ID:**

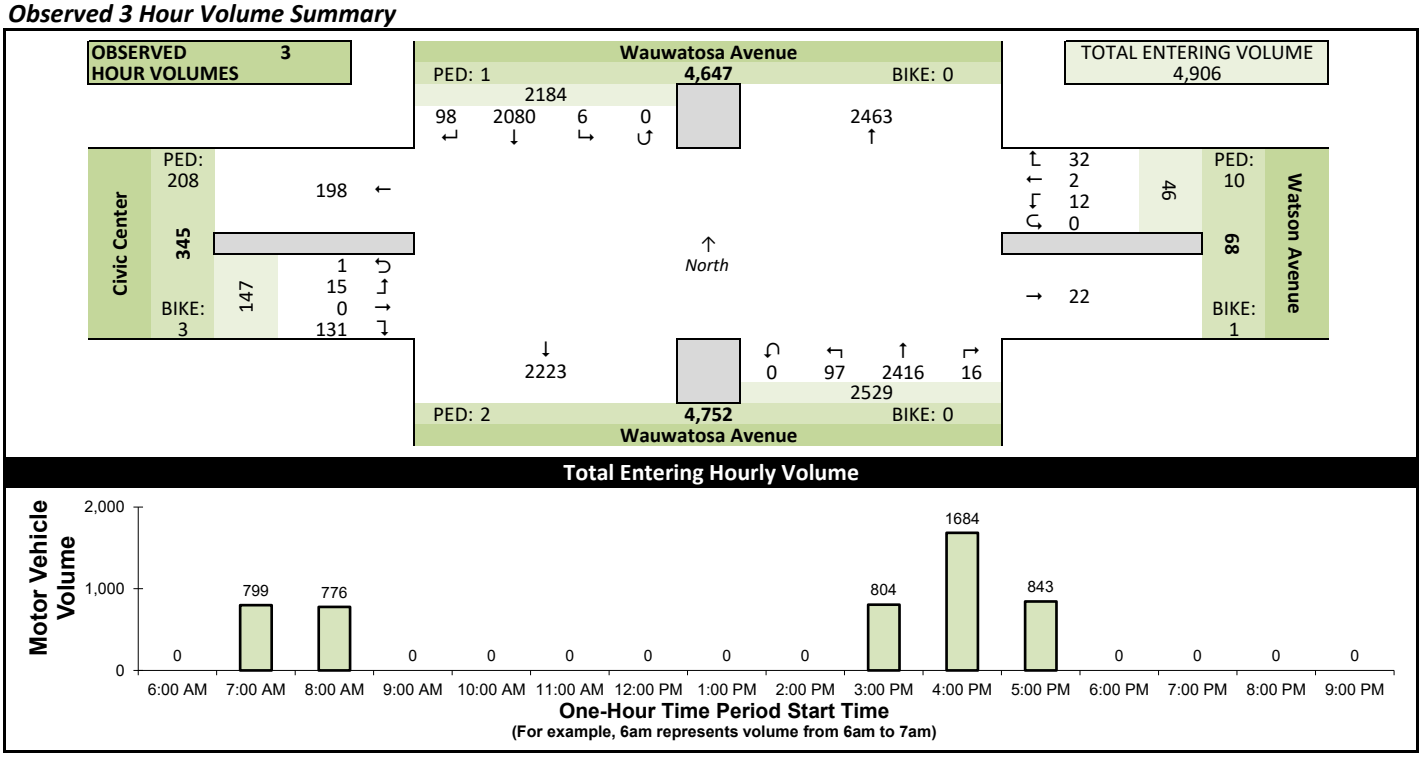
Site Information

Municipality	City of Wauwatosa		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control			
Roadway Names		North Direction	↑
North Leg	Wauwatosa Avenue		
East Leg	Watson Avenue		
South Leg	Wauwatosa Avenue		
West Leg	Civic Center		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
Pre-school children		Unknown	
Elementry school age children		Unknown	
Visually impaired (white cane/helper dog)		Unknown	
Elderly/disabled (except wheelchairs)		Unknown	
Wheelchairs/electric scooters		Unknown	
Other (describe)		None	None

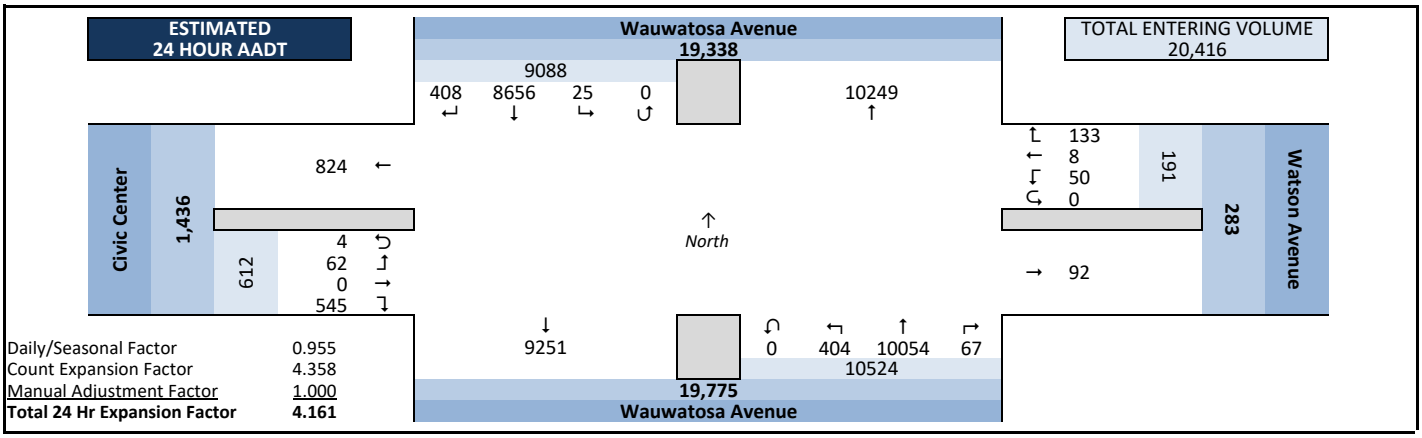
Count Information

Hrs Counted:	07:30 AM-08:30 AM and 03:30 PM-05:30 PM				
1st Day of Count	Tuesday, April 16, 2024			Weather	
AM Peak Period	Wednesday, April 17, 2024			Clear & Dry	
Midday Peak Period				Clear & Dry	
PM Peak Period	Tuesday, April 16, 2024			Clear & Dry	
Calculated Peak Hours					
AM	7:30-8:30am	MD		PM	4:30-5:30pm
Peak Hours Selected for Analysis					
AM	7:30-8:30am	MD		PM	4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors				
Count Expansion Group	(2) Urban Arterials & Collectors				
Daily/Seasonal Adjustment Factor	0.955	Count Expansion Factor	4.358		
Company Name	Spack (CountCam)			Manual Adj.	1.000
Observers: AM Peak Period	Spack (CountCam)				
Observers: Midday Peak Period	Spack (CountCam)				
Observers: PM Peak Period	Spack (CountCam)				
Comments	2021 DOT Daily & Seasonal Factors				

Observed 3 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

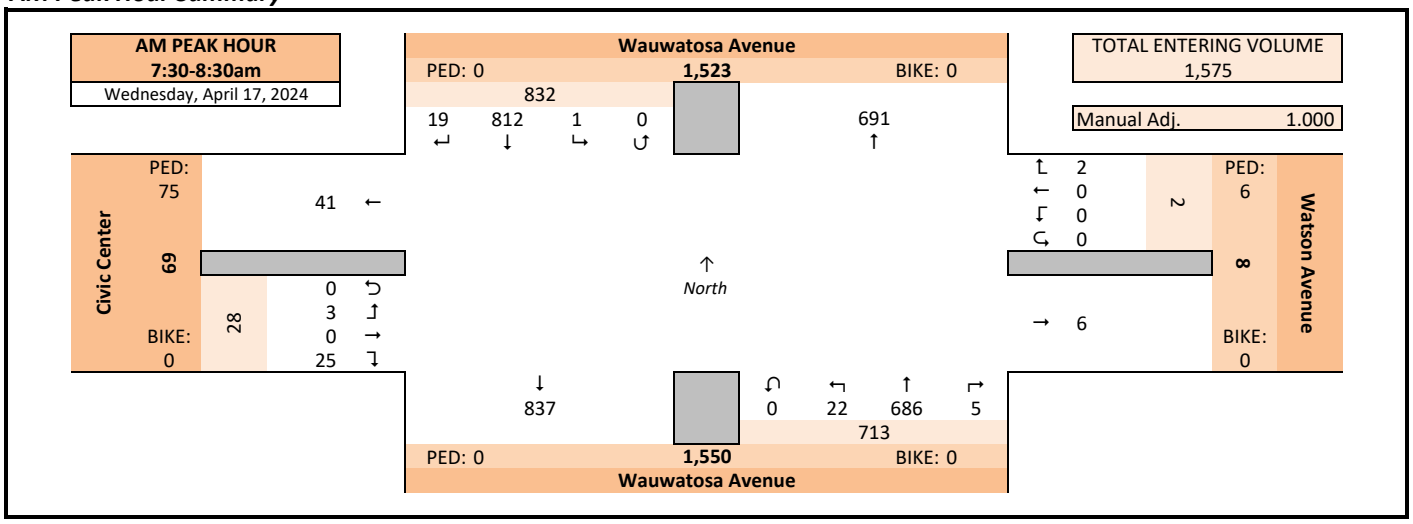
Wauwatosa Avenue & Watson Avenue

Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

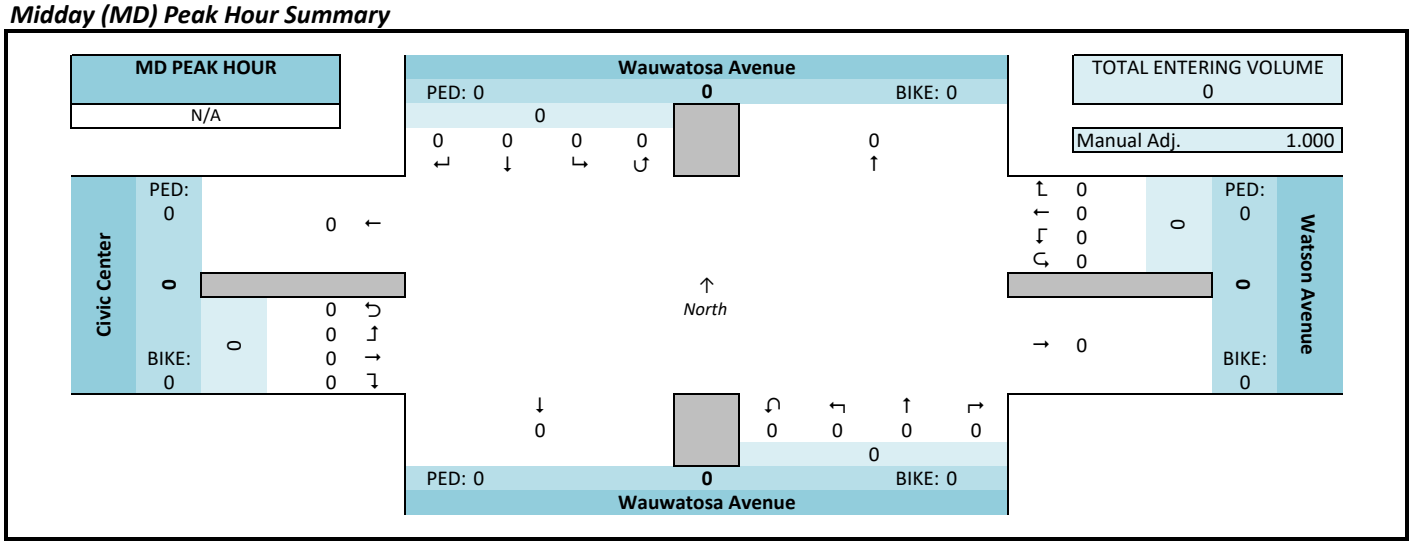
All Motor Vehicles



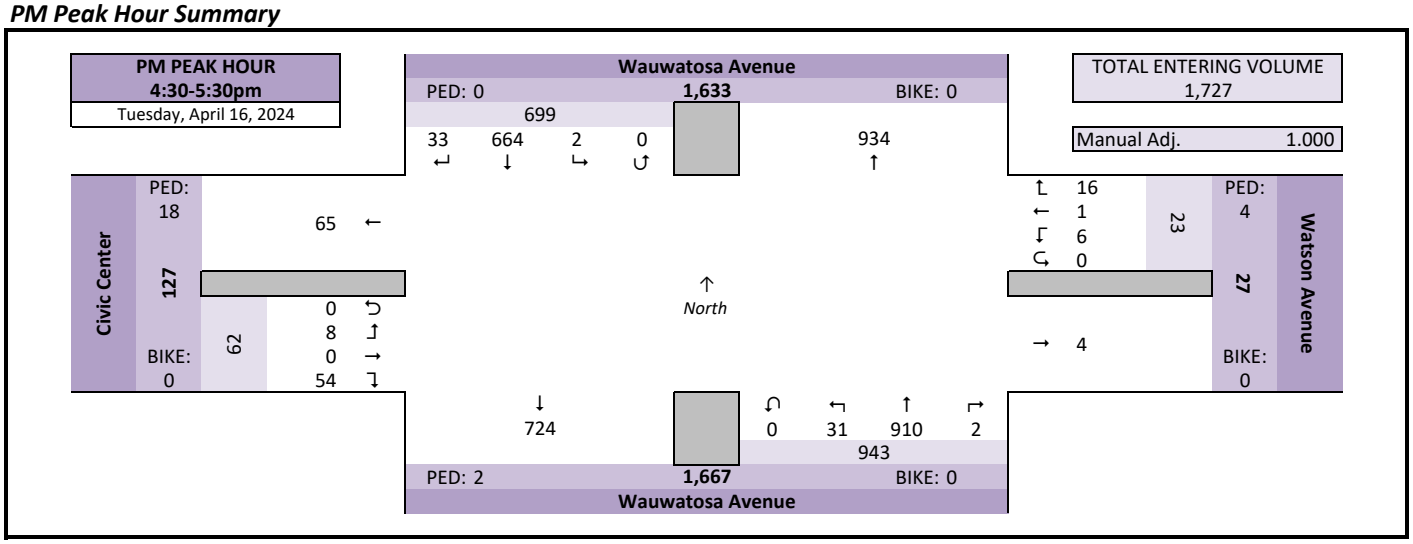
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

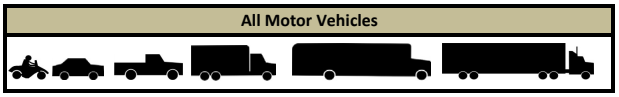


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

Peak Hour Volume Summary

Wauwatosa Avenue & Watson Avenue



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, April 17, 2024		From North					From East					From South					From West					
	AM Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:30 AM	2	256	0	0	258	0	0	0	0	0	0	166	1	0	167	2	0	0	0	2	427
	7:45 AM	6	181	0	0	187	1	0	0	0	1	1	173	4	0	178	5	0	1	0	6	372
	8:00 AM	8	192	1	0	201	0	0	0	0	0	2	192	12	0	206	12	0	2	0	14	421
	8:15 AM	3	183	0	0	186	1	0	0	0	1	2	155	5	0	162	6	0	0	0	6	355
	Peak Hour Volume	19	812	1	0	832	2	0	0	0	2	5	686	22	0	713	25	0	3	0	28	1575
	Rounded Hourly Volume	20	810	0	0	830	0	0	0	0	0	5	685	20	0	710	25	0	5	0	30	1570
	% Single Unit Trucks	5.3	1.8	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.9
	% Heavy Trucks	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	% Trucks (Total)	5.3	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	2.0
	Peak Hour Factor (PHF)	0.59	0.79	0.25	0.00	0.81	0.50	0.00	0.00	0.00	0.50	0.62	0.89	0.46	0.00	0.87	0.52	0.00	0.37	0.00	0.50	0.92

N/A		From North					From East					From South					From West					
	MD Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tuesday, April 16, 2024		From North					From East					From South					From West					
	PM Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:30 PM	5	167	2	0	174	4	1	1	0	6	1	226	8	0	235	13	0	0	0	13	428
	4:45 PM	13	172	0	0	185	3	0	2	0	5	1	241	10	0	252	13	0	1	0	14	456
	5:00 PM	10	153	0	0	163	3	0	1	0	4	0	222	8	0	230	19	0	5	0	24	421
	5:15 PM	5	172	0	0	177	6	0	2	0	8	0	221	5	0	226	9	0	2	0	11	422
	Peak Hour Volume	33	664	2	0	699	16	1	6	0	23	2	910	31	0	943	54	0	8	0	62	1727
	Rounded Hourly Volume	35	665	0	0	700	15	0	5	0	20	0	910	30	0	940	55	0	10	0	65	1725
	% Single Unit Trucks	0.0	0.8	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.9
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.8	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.9
	Peak Hour Factor (PHF)	0.63	0.97	0.25	0.00	0.94	0.67	0.25	0.75	0.00	0.72	0.50	0.94	0.77	0.00	0.94	0.71	0.00	0.40	0.00	0.65	0.95

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Wauwatosa Avenue			Watson Avenue			Wauwatosa Avenue			Civic Center			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:30 AM	0	0	0	5	0	5	0	0	0	22	0	22	27
	7:45 AM	0	0	0	1	0	1	0	0	0	40	0	40	41
	8:00 AM	0	0	0	0	0	0	0	0	0	6	0	6	6
	8:15 AM	0	0	0	0	0	0	0	0	0	7	0	7	7
	Total	0	0	0	6	0	6	0	0	0	75	0	75	81
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	3	0	3	0	0	0	4	0	4	7
	4:45 PM	0	0	0	1	0	1	0	0	0	10	0	10	11
	5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
	5:15 PM	0	0	0	0	0	0	2	0	2	2	0	2	4
	Total	0	0	0	4	0	4	2	0	2	18	0	18	24

Intersection Traffic Volume Report

15-Minute Motor Vehicle Data

Wauwatosa Avenue & Watson Avenue

Count Basics		*Page 5 of 13*
Start Date: Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3	Non-Holiday	No Special Events



15-Minute Motor Vehicle Data

15-Minute Time Period		From North (↓) Wauwatosa Avenue					From East (←) Watson Avenue					From South (↑) Wauwatosa Avenue					From West (→) Civic Center					15-Min Totals	Hourly Sum	PHF
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
Pre-AM Peak Period	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 AM	2	256	0	0	258	0	0	0	0	0	0	166	1	0	167	2	0	0	0	2	427	1575	0.92
	7:45 AM	6	181	0	0	187	1	0	0	0	1	1	173	4	0	178	5	0	1	0	6	372		
	8:00 AM	8	192	1	0	201	0	0	0	0	0	2	192	12	0	206	12	0	2	0	14	421		
	8:15 AM	3	183	0	0	186	1	0	0	0	1	2	155	5	0	162	6	0	0	0	6	355		
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30 PM	12	150	1	0	163	2	0	1	0	3	3	226	14	0	243	15	0	0	0	15	424	1604	0.95
	3:45 PM	15	139	2	0	156	3	0	1	0	4	2	191	11	0	204	13	0	3	0	16	380	1608	0.94
	4:00 PM	9	171	0	0	180	3	1	1	0	5	2	194	10	0	206	13	0	0	1	14	405	1684	0.92
	4:15 PM	10	144	0	0	154	6	0	3	0	9	2	209	9	0	220	11	0	1	0	12	395	1700	0.93
	4:30 PM	5	167	2	0	174	4	1	1	0	6	1	226	8	0	235	13	0	0	0	13	428	1727	0.95
	4:45 PM	13	172	0	0	185	3	0	2	0	5	1	241	10	0	252	13	0	1	0	14	456		
	5:00 PM	10	153	0	0	163	3	0	1	0	4	0	222	8	0	230	19	0	5	0	24	421		
	5:15 PM	5	172	0	0	177	6	0	2	0	8	0	221	5	0	226	9	0	2	0	11	422		
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Post PM Peak Period	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		98	2080	6	0	2184	32	2	12	0	46	16	2416	97	0	2529	131	0	15	1	147	4906		

Peak Hour All Vehicle Volume Summary

Hourly Time Period		From North (↓) Wauwatosa Avenue					From East (←) Watson Avenue					From South (↑) Wauwatosa Avenue					From West (→) Civic Center					Total Hourly Volume	PHF
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM	7:30 AM	19	812	1	0	832	2	0	0	0	2	5	686	22	0	713	25	0	3	0	28	1575	0.92
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:30 PM	33	664	2	0	699	16	1	6	0	23	2	910	31	0	943	54	0	8	0	62	1727	0.95

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

Count Basics			*Page 9 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

Wauwatosa Avenue & Watson Avenue



15-Minute Heavy Vehicle Data

	15-Minute Time Period	From North (↓) Wauwatosa Avenue					From East (←) Watson Avenue					From South (↑) Wauwatosa Avenue					From West (→) Civic Center					15-Min	Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum
Pre-AM Peak Period	12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9	32
	7:45 AM	1	3	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7	
	8:00 AM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7	
	8:15 AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	19
	3:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4	19
	4:00 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4	19
	4:15 PM	0	4	0	0	4	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	7	20
	4:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	15
	4:45 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4	
	5:00 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5	
	5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Post PM Peak Period	10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		1	32	0	0	33	0	0	1	0	1	0	32	0	0	32	0	0	0	0	0	66	

Peak Hour Heavy Vehicle Volume Summary

	Hourly Time Period	From North (↓) Wauwatosa Avenue					From East (←) Watson Avenue					From South (↑) Wauwatosa Avenue					From West (→) Civic Center					Total Hourly
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume
AM	7:30 AM	1	16	0	0	17	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	32
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	15

Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

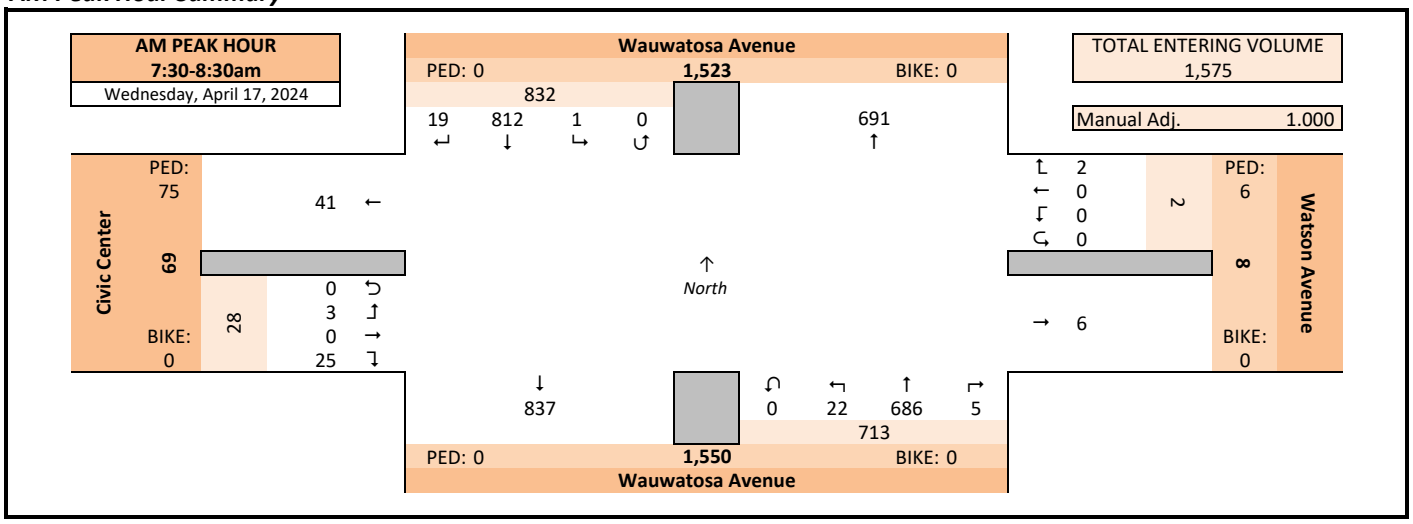
Wauwatosa Avenue & Watson Avenue

Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

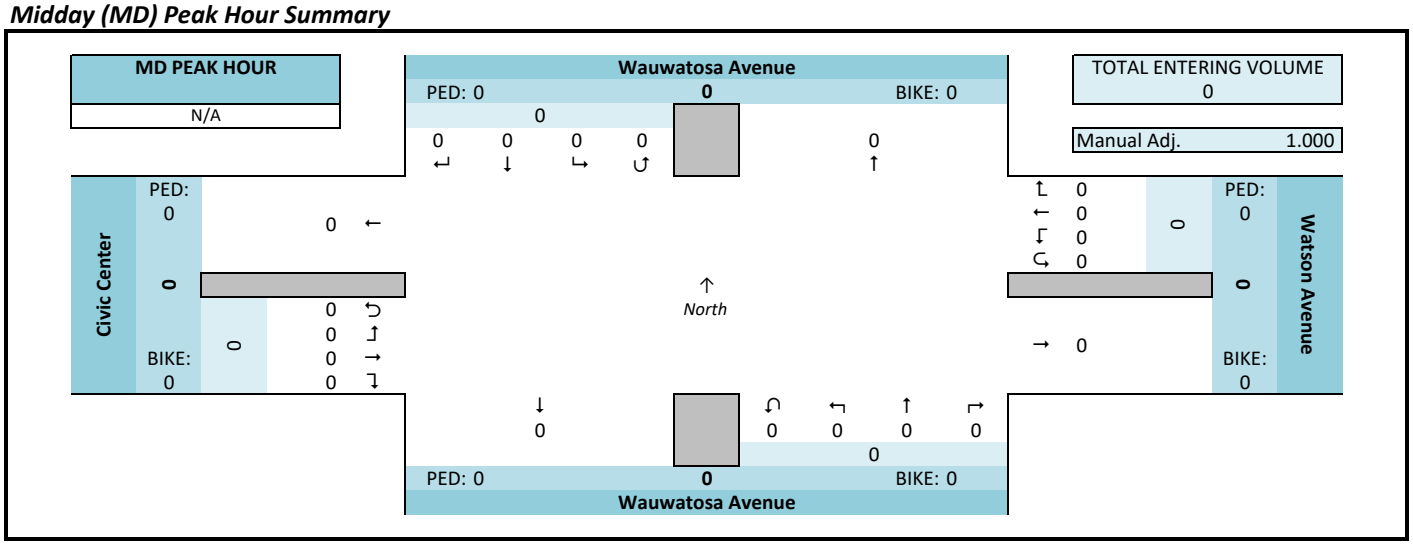
All Motor Vehicles



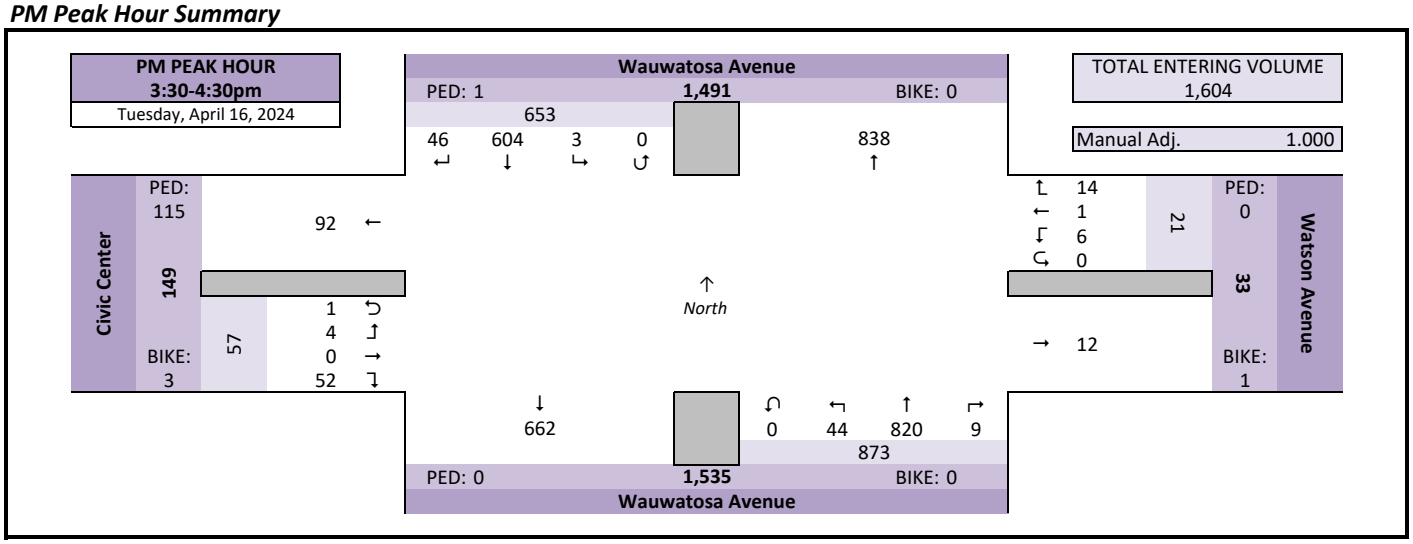
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

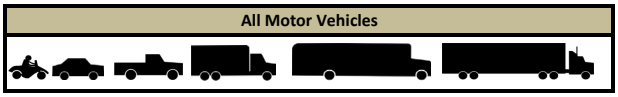


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

Peak Hour Volume Summary

Wauwatosa Avenue & Watson Avenue



Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, April 17, 2024		From North					From East					From South					From West					
	AM Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:30 AM	2	256	0	0	258	0	0	0	0	0	0	166	1	0	167	2	0	0	0	2	427
	7:45 AM	6	181	0	0	187	1	0	0	0	1	1	173	4	0	178	5	0	1	0	6	372
	8:00 AM	8	192	1	0	201	0	0	0	0	0	2	192	12	0	206	12	0	2	0	14	421
	8:15 AM	3	183	0	0	186	1	0	0	0	1	2	155	5	0	162	6	0	0	0	6	355
	Peak Hour Volume	19	812	1	0	832	2	0	0	0	2	5	686	22	0	713	25	0	3	0	28	1575
	Rounded Hourly Volume	20	810	0	0	830	0	0	0	0	0	5	685	20	0	710	25	0	5	0	30	1570
	% Single Unit Trucks	5.3	1.8	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	1.9
	% Heavy Trucks	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	% Trucks (Total)	5.3	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	2.0
	Peak Hour Factor (PHF)	0.59	0.79	0.25	0.00	0.81	0.50	0.00	0.00	0.00	0.50	0.62	0.89	0.46	0.00	0.87	0.52	0.00	0.37	0.00	0.50	0.92

N/A		From North					From East					From South					From West					
	MD Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tuesday, April 16, 2024		From North					From East					From South					From West					
	PM Peak Hour	Wauwatosa Avenue					Watson Avenue					Wauwatosa Avenue					Civic Center					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	3:30 PM	12	150	1	0	163	2	0	1	0	3	3	226	14	0	243	15	0	0	0	15	424
	3:45 PM	15	139	2	0	156	3	0	1	0	4	2	191	11	0	204	13	0	3	0	16	380
	4:00 PM	9	171	0	0	180	3	1	1	0	5	2	194	10	0	206	13	0	0	1	14	405
	4:15 PM	10	144	0	0	154	6	0	3	0	9	2	209	9	0	220	11	0	1	0	12	395
	Peak Hour Volume	46	604	3	0	653	14	1	6	0	21	9	820	44	0	873	52	0	4	1	57	1604
	Rounded Hourly Volume	45	605	5	0	655	15	0	5	0	20	10	820	45	0	875	50	0	5	0	55	1605
	% Single Unit Trucks	0.0	1.8	0.0	0.0	1.7	0.0	0.0	16.7	0.0	4.8	0.0	0.7	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.1
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	% Trucks (Total)	0.0	1.8	0.0	0.0	1.7	0.0	0.0	16.7	0.0	4.8	0.0	0.9	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	1.2
	Peak Hour Factor (PHF)	0.77	0.88	0.37	0.00	0.91	0.58	0.25	0.50	0.00	0.58	0.75	0.91	0.79	0.00	0.90	0.87	0.00	0.33	0.25	0.89	0.95

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Wauwatosa Avenue			Watson Avenue			Wauwatosa Avenue			Civic Center			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:30 AM	0	0	0	5	0	5	0	0	0	22	0	22	27
	7:45 AM	0	0	0	1	0	1	0	0	0	40	0	40	41
	8:00 AM	0	0	0	0	0	0	0	0	0	6	0	6	6
	8:15 AM	0	0	0	0	0	0	0	0	0	7	0	7	7
	Total	0	0	0	6	0	6	0	0	0	75	0	75	81
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	3:30 PM	0	0	0	0	0	0	0	0	0	97	2	99	99
	3:45 PM	1	0	1	0	0	0	0	0	0	14	0	14	15
	4:00 PM	0	0	0	0	1	1	0	0	0	2	0	2	3
	4:15 PM	0	0	0	0	0	0	0	0	0	2	1	3	3
	Total	1	0	1	0	1	1	0	0	0	115	3	118	120

Wauwatosa
Weekday PM
#2751
LA.

File Name : North Ave, BMO Bank Drives, PM
Site Code : 00000000
Start Date : 4/14/2026
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	From North					NORTH AVE From East					BMO BANK DRIVES From South					NORTH AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	5	0	5	6	0	0	0	6	3	0	0	0	3	14
03:15 PM	0	0	0	0	0	0	0	3	0	3	1	0	0	0	1	2	0	0	0	2	6
03:30 PM	0	0	0	0	0	0	0	2	0	2	8	0	0	0	8	2	0	0	0	2	12
03:45 PM	0	0	0	0	0	0	1	3	0	4	1	0	0	0	1	0	1	0	0	1	6
Total	0	0	0	0	0	0	1	13	0	14	16	0	0	0	16	7	1	0	0	8	38
04:00 PM	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	1	0	0	0	1	4
04:15 PM	0	0	0	0	0	0	0	2	0	2	4	0	0	0	4	3	1	0	0	4	10
04:30 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3	0	0	0	3	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	2	0	5	0	0	0	0	0	5
Total	0	0	0	0	0	0	0	5	0	5	9	0	2	0	11	7	1	0	0	8	24
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	4
Grand Total	0	0	0	0	0	0	1	18	0	19	29	0	2	0	31	15	2	0	0	17	67
Apprch %	0	0	0	0		0	5.3	94.7	0		93.5	0	6.5	0		88.2	11.8	0	0		
Total %	0	0	0	0	0	0	1.5	26.9	0	28.4	43.3	0	3	0	46.3	22.4	3	0	0	25.4	
Unshifted	0	0	0	0	0	0	0	18	0	18	29	0	2	0	31	15	0	0	0	15	64
% Unshifted	0	0	0	0	0	0	0	100	0	94.7	100	0	100	0	100	100	0	0	0	88.2	95.5
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
% Bank 2	0	0	0	0	0	0	100	0	0	5.3	0	0	0	0	0	0	100	0	0	11.8	4.5

3644 PL 4/16/2026

Wauwatosa BMO Bank Drive Thru/ATM Volumes LA

North Ave Watson Ave

	Enter		Exit		Enter		Exit	
	Drive Thru	ATM	Drive Thru	ATM	Drive Thru	ATM	Drive Thru	ATM
3:00	2	1					2	1
3:15	0	1			0	1	1	2
3:30	0	1					0	1
3:45	0	0					0	0
4:00	2	1					1	1
4:15	2	2	1	0	1	0	2	1
4:30	1	2	0	1	1	0	2	2
4:45	2	1	0	1	1	1	3	1
5:00	0	3			0	1	0	3
5:30	0	1	0	1			0	1
	9	13	1	3	3	3	11	13

Total IN 28

Total Out 28

Level of Service Definitions

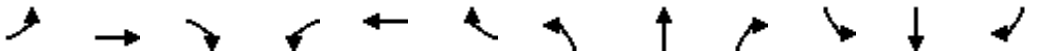
LOS	Signalized Intersections Control Delay/Vehicle (sec/veh)	Unsignalized Intersections Avg. Control Delay (sec/veh)	Relative Delay
A	≤10	≤10	Short Delays
	Free-flow traffic operations at avearge travel speeds. Vehicles completely unimpeded in ability to maneuver. Minimal delay at signalized intersections.		
B	> 10 - 20	> 10 - 15	
	Reasonably unimpeded traffic operations at average travel speeds. Vehicle maneuverability slightly restricted. Low traffic delays.		
C	> 20 - 35	> 15 - 25	
	Stable traffic operations. Lane changes becoming more restricted. Travel speeds reduced to half of average free flow travel speeds. Longer intersection delays.		
D	> 35 - 55	> 25 - 35	Moderate Delays
	Small increases in traffic flow can cause increased delays. Delays likely attributable to increased traffic, reduced signal progression, and adverse timing.		
E	> 55 - 80	> 35 - 50	
	Significant delays. Travel speeds reduced to one-third of average free flow travel speed.		
F	> 80	> 50	Long Delays
	Extremely low speeds. Intersection congestion. Long delays. Extensive traffic queues at intersections.		

Source: Highway Capacity Manual, Transportation Research Board, Washington, D.C., 2010

APPENDIX B

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Existing Traffic Volumes &
Existing Transportation System



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	5	1	15	45	770	10	5	525	45
Future Volume (vph)	5	1	50	5	1	15	45	770	10	5	525	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	6	16	47	619	0	0	558	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Description: NB/SB approaches modeled with 1 lane due to lane drop/adds through intersection. NB growth factor set to 0.75 to adjust for conditions wher

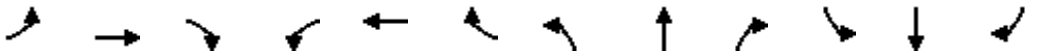
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	50	5	1	15	45	770	10	5	525	45
Future Vol, veh/h	5	1	50	5	1	15	45	770	10	5	525	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	50	-	-	70	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	5	1	16	47	608	11	5	553	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1392	668	1273	1434	615	715	0	0	619	0	0
Stage 1	678	678	-	709	709	-	-	-	-	-	-	-
Stage 2	704	714	-	564	726	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.15	6.55	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.545	4.045	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	110	503	118	99	486	832	-	-	961	-	-
Stage 1	475	452	-	420	433	-	-	-	-	-	-	-
Stage 2	429	436	-	570	418	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0		0	-	-		-	-
Mov Cap-1 Maneuver	75	90	448	96	82	485	741	-	-	960	-	-
Mov Cap-2 Maneuver	75	90	-	96	82	-	-	-	-	-	-	-
Stage 1	419	400	-	393	405	-	-	-	-	-	-	-
Stage 2	387	408	-	497	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	18.58	22.32	0.73	0.08
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	77	448	93	485	17	-	-
HCM Lane V/C Ratio	0.064	-	-	0.082	0.118	0.068	0.033	0.005	-	-
HCM Ctrl Dly (s/v)	10.2	-	-	55.8	14.1	46.4	12.7	8.8	0	-
HCM Lane LOS	B	-	-	F	B	E	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.2	0.1	0	-	-

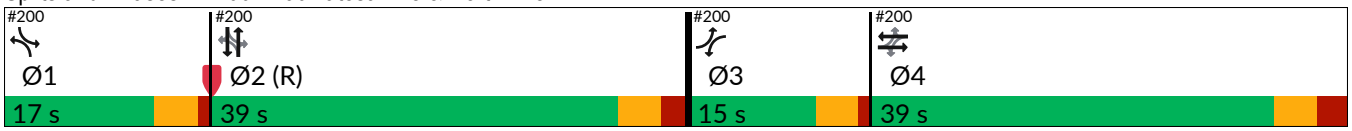


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	455	75	105	455	135	155	505	130	115	395	95
Future Volume (vph)	105	455	75	105	455	135	155	505	130	115	395	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	517	85	119	517	153	176	574	148	131	449	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		47	47		47	47		98	98		98	98
Act Effct Green (s)	45.0	34.7	34.7	45.0	34.7	34.7	47.0	35.2	35.2	47.0	35.2	35.2
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.58	0.15	0.42	0.58	0.28	0.52	0.64	0.26	0.45	0.51	0.20
Control Delay (s/veh)	22.4	35.1	3.1	22.8	35.1	10.4	23.4	36.2	9.3	22.2	33.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.4	35.1	3.1	22.8	35.1	10.4	23.4	36.2	9.3	22.2	33.2	5.3
LOS	C	D	A	C	D	B	C	D	A	C	C	A
Approach Delay (s/veh)		29.2			28.4			29.2			26.7	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	206	0	49	206	19	72	234	14	53	176	0
Queue Length 95th (ft)	84	276	18	84	276	66	116	308	60	90	240	33
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	321	891	557	310	891	553	366	903	568	319	886	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.58	0.15	0.38	0.58	0.28	0.48	0.64	0.26	0.41	0.51	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 28.5		Intersection LOS: C	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	695	5	15	695	1	15
Future Volume (vph)	695	5	15	695	1	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	814	0	0	825	18	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	695	5	15	695	1	15
Future Vol, veh/h	695	5	15	695	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	808	6	17	808	1	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	814	0	1654	407
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	843	-
Critical Hdwy	-	-	4.115	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2095	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1026	-	127	*878
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	1026	-	123	*878
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.18	10.85
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	38	-
HCM Lane V/C Ratio	0.029	-	-	0.017	-
HCM Ctrl Dly (s/v)	10.9	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	1	0	710	0	1
Future Volume (vph)	710	1	0	710	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	827	0	0	826	0	1
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.4%		ICU Level of Service A	
Analysis Period (min) 15			

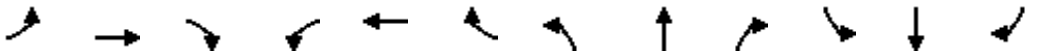
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	710	1	0	710	0	1
Future Vol, veh/h	710	1	0	710	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	826	1	0	826	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	826
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	400
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		0
Mov Cap-1 Maneuver	-	-	-	-	-	400
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	14.03
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	400	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-
HCM Ctrl Dly (s/v)	14	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	5	1	15	30	910	1	1	645	35
Future Volume (vph)	10	1	55	5	1	15	30	910	1	1	645	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	6	16	32	719	0	0	680	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			

Description: NB/SB approaches modeled with 1 lane due to lane drop/adds through intersection. NB growth factor set to 0.75 to adjust for conditions wher

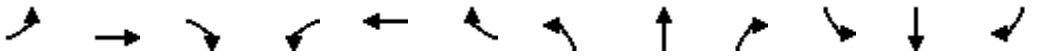
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	5	1	15	30	910	1	1	645	35
Future Vol, veh/h	10	1	55	5	1	15	30	910	1	1	645	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	50	-	-	70	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	5	1	16	32	718	1	1	679	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1481	1486	699	1470	1522	723	734	0	0	723	0	0
Stage 1	699	699	-	786	786	-	-	-	-	-	-	-
Stage 2	782	787	-	684	736	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	69	83	501	71	77	428	809	-	-	884	-	-
Stage 1	479	447	-	387	405	-	-	-	-	-	-	-
Stage 2	389	404	-	493	423	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0		0	-	-		-	-
Mov Cap-1 Maneuver	62	78	491	59	72	426	795	-	-	880	-	-
Mov Cap-2 Maneuver	62	78	-	59	72	-	-	-	-	-	-	-
Stage 1	470	439	-	370	387	-	-	-	-	-	-	-
Stage 2	359	387	-	432	415	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.51	30.09	0.41	0.01
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	795	-	-	63	491	61	426	3	-	-
HCM Lane V/C Ratio	0.04	-	-	0.184	0.118	0.104	0.037	0.001	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	74.5	13.3	70.9	13.8	9.1	0	-
HCM Lane LOS	A	-	-	F	B	F	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.4	0.3	0.1	0	-	-

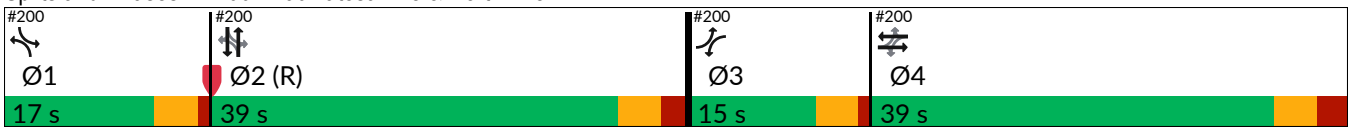


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	560	87	109	527	163	196	658	163	168	543	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		28	28		28	28		52	52		52	52
Act Effct Green (s)	45.0	34.8	34.8	45.0	34.8	34.8	47.0	34.8	34.8	47.0	34.8	34.8
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.63	0.15	0.41	0.60	0.29	0.64	0.74	0.29	0.63	0.61	0.26
Control Delay (s/veh)	22.6	36.2	3.1	23.0	35.4	11.4	28.3	39.8	10.8	29.2	35.7	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	36.2	3.1	23.0	35.4	11.4	28.3	39.8	10.8	29.2	35.7	9.2
LOS	C	D	A	C	D	B	C	D	B	C	D	A
Approach Delay (s/veh)		30.3			28.8			32.9			29.9	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	226	0	45	212	24	82	282	22	69	220	14
Queue Length 95th (ft)	87	311	22	81	294	78	132	373	74	116	298	62
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	319	892	571	289	884	566	325	892	570	289	892	564
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.63	0.15	0.38	0.60	0.29	0.60	0.74	0.29	0.58	0.61	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 30.6		Intersection LOS: C	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	815	5	1	735	1	10
Future Volume (vph)	815	5	1	735	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	943	0	0	846	12	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	815	5	1	735	1	10
Future Vol, veh/h	815	5	1	735	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	937	6	1	845	1	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	943	0	1787	471
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	847	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	916	-	102	*858
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	419	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	916	-	102	*858
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	419	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.01	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	513	-	-	2	-
HCM Lane V/C Ratio	0.025	-	-	0.001	-
HCM Ctrl Dly (s/v)	12.2	-	-	8.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	825	1	0	735	0	1
Future Volume (vph)	825	1	0	735	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	949	0	0	845	0	1
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	825	1	0	735	0	1
Future Vol, veh/h	825	1	0	735	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	948	1	0	845	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	949
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	315
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		0
Mov Cap-1 Maneuver	-	-	-	-	-	315
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

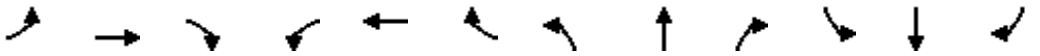
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	16.48
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	315	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-
HCM Ctrl Dly (s/v)	16.5	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

APPENDIX C

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Existing Traffic Volumes &
Future Transportation System



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	5	1	15	45	770	10	5	525	45
Future Volume (vph)	5	1	50	5	1	15	45	770	10	5	525	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	22	0	47	619	0	0	558	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

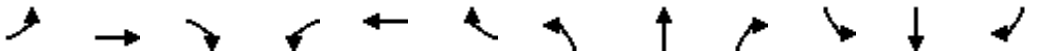
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	50	5	1	15	45	770	10	5	525	45
Future Vol, veh/h	5	1	50	5	1	15	45	770	10	5	525	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	5	1	16	47	608	11	5	553	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1392	668	1273	1434	615	715	0	0	619	0	0
Stage 1	678	678	-	709	709	-	-	-	-	-	-	-
Stage 2	704	714	-	564	726	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.15	6.55	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.545	4.045	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	122	143	460	142	132	486	890	-	-	961	-	-
Stage 1	444	453	-	420	433	-	-	-	-	-	-	-
Stage 2	429	436	-	505	425	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	97	118	410	115	109	485	793	-	-	960	-	-
Mov Cap-2 Maneuver	97	118	-	115	109	-	-	-	-	-	-	-
Stage 1	392	400	-	395	407	-	-	-	-	-	-	-
Stage 2	389	410	-	435	376	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	18.12	20.74	0.7	0.08
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	793	-	-	100	410	251	17	-	-
HCM Lane V/C Ratio	0.06	-	-	0.063	0.128	0.088	0.005	-	-
HCM Ctrl Dly (s/v)	9.8	-	-	43.5	15.1	20.7	8.8	0	-
HCM Lane LOS	A	-	-	E	C	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.4	0.3	0	-	-

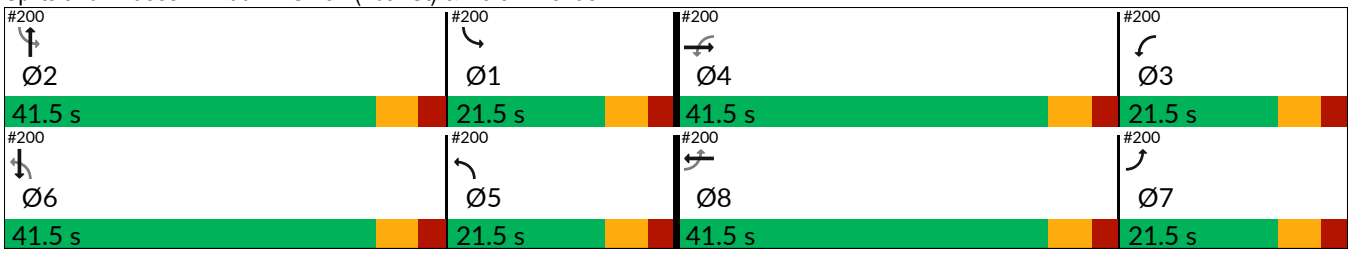


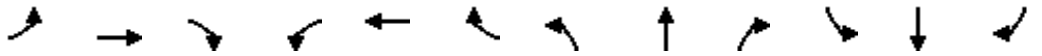
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	455	75	120	455	135	155	505	130	115	395	95
Future Volume (vph)	105	455	75	120	455	135	155	505	130	115	395	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	602	0	136	670	0	176	722	0	131	557	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	18.5		12.5	18.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	41.5		21.5	41.5	
Total Split (%)	17.1%	32.9%		17.1%	32.9%		17.1%	32.9%		17.1%	32.9%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
v/c Ratio	0.59	0.81		0.57	0.88		0.59	0.88		0.64	0.78	
Control Delay (s/veh)	48.7	47.8		44.3	52.4		42.2	50.8		51.4	46.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	48.7	47.8		44.3	52.4		42.2	50.8		51.4	46.1	
Queue Length 50th (ft)	51	278		59	299		77	330		57	254	
Queue Length 95th (ft)	94	386		106	#480		132	#538		103	364	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	304	832		319	815		337	822		296	795	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.72		0.43	0.82		0.52	0.88		0.44	0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 126	
Actuated Cycle Length: 111.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Description: U-turns, if any, are included in the left-turn volumes.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	455	75	120	455	135	155	505	130	115	395	95
Future Volume (veh/h)	105	455	75	120	455	135	155	505	130	115	395	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.98		0.94	0.97		0.89	0.98		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	119	517	85	136	517	153	176	574	148	131	449	108
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	3	3	3
Cap, veh/h	260	772	126	295	700	206	318	759	195	255	750	178
Arrive On Green	0.06	0.28	0.28	0.07	0.29	0.29	0.07	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1795	2735	447	1795	2407	708	1795	2462	632	1767	2468	587
Grp Volume(v), veh/h	119	266	336	136	303	367	176	329	393	131	251	306
Grp Sat Flow(s),veh/h/ln	1795	1414	1768	1795	1414	1701	1795	1414	1681	1767	1392	1664
Q Serve(g_s), s	0.0	15.6	15.8	0.0	18.1	18.3	0.0	19.6	19.8	0.0	14.3	14.7
Cycle Q Clear(g_c), s	0.0	15.6	15.8	0.0	18.1	18.3	0.0	19.6	19.8	0.0	14.3	14.7
Prop In Lane	1.00		0.25	1.00		0.42	1.00		0.38	1.00		0.35
Lane Grp Cap(c), veh/h	260	399	499	295	411	495	318	436	518	255	423	505
V/C Ratio(X)	0.46	0.67	0.67	0.46	0.74	0.74	0.55	0.75	0.76	0.51	0.59	0.61
Avail Cap(c_a), veh/h	438	529	661	457	529	636	487	529	628	429	520	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	29.7	29.8	36.9	29.9	30.0	36.0	29.2	29.2	38.8	27.7	27.8
Incr Delay (d2), s/veh	0.5	0.8	0.7	0.4	2.5	2.3	0.6	5.7	5.1	0.6	1.9	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.3	6.6	2.9	6.3	7.6	3.8	7.2	8.5	2.9	4.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.0	30.5	30.5	37.3	32.5	32.3	36.6	34.9	34.3	39.4	29.6	29.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		721			806			898			688	
Approach Delay, s/veh		31.9			33.2			35.0			31.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	35.3	13.0	32.9	12.7	34.9	12.2	33.7
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	2.0	21.8	2.0	17.8	2.0	16.7	2.0	20.3
Green Ext Time (p_c), s	0.1	5.1	0.1	2.3	0.1	4.6	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	33.0
HCM 7th LOS	C



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	695	5	15	695	1	15
Future Volume (vph)	695	5	15	695	1	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	814	0	0	825	1	17
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	695	5	15	695	1	15
Future Vol, veh/h	695	5	15	695	1	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	808	6	17	808	1	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	814	0	1250	407
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	439	-
Critical Hdwy	-	-	4.12	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.21	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	815	-	165	593
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	617	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	815	-	160	593
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.2	11.25
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	815	-
HCM Lane V/C Ratio	0.029	-	-	0.021	-
HCM Ctrl Dly (s/v)	11.2	-	-	9.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	710	1	0	710	0	1
Future Volume (vph)	710	1	0	710	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	827	0	0	826	0	1
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

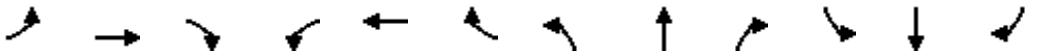
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	710	1	0	710	0	1
Future Vol, veh/h	710	1	0	710	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	826	1	0	826	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	826
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	372
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	372
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	14.71
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	372	-	-	-
HCM Lane V/C Ratio	0.003	-	-	-
HCM Ctrl Dly (s/v)	14.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	5	1	15	30	910	1	1	645	35
Future Volume (vph)	10	1	55	5	1	15	30	910	1	1	645	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	22	0	32	719	0	0	680	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

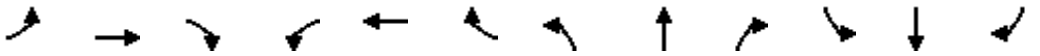
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	5	1	15	30	910	1	1	645	35
Future Vol, veh/h	10	1	55	5	1	15	30	910	1	1	645	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	5	1	16	32	718	1	1	679	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1481	1486	699	1470	1522	723	734	0	0	723	0	0
Stage 1	699	699	-	786	786	-	-	-	-	-	-	-
Stage 2	782	787	-	684	736	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	104	125	442	106	119	428	876	-	-	884	-	-
Stage 1	432	443	-	387	405	-	-	-	-	-	-	-
Stage 2	389	404	-	440	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	94	118	433	87	112	426	861	-	-	880	-	-
Mov Cap-2 Maneuver	94	118	-	87	112	-	-	-	-	-	-	-
Stage 1	424	435	-	371	388	-	-	-	-	-	-	-
Stage 2	360	388	-	379	418	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	20.12	24.49	0.39	0.01
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	861	-	-	96	433	207	3	-	-
HCM Lane V/C Ratio	0.037	-	-	0.121	0.134	0.107	0.001	-	-
HCM Ctrl Dly (s/v)	9.3	-	-	47.8	14.6	24.5	9.1	0	-
HCM Lane LOS	A	-	-	E	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.5	0.4	0	-	-



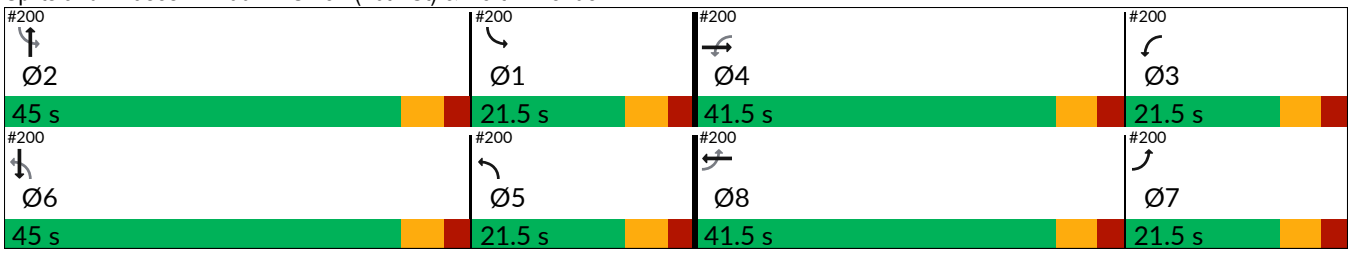
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	647	0	109	690	0	196	821	0	168	690	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	35.5		12.5	35.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	45.0		21.5	45.0	
Total Split (%)	16.6%	32.0%		16.6%	32.0%		16.6%	34.7%		16.6%	34.7%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	38.5		15.0	38.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
v/c Ratio	0.64	0.89		0.51	0.92		0.72	0.97		0.75	0.89	
Control Delay (s/veh)	57.3	57.3		48.2	60.6		57.1	64.9		62.4	54.8	

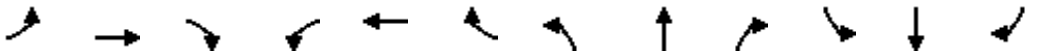
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.3	57.3		48.2	60.6		57.1	64.9		62.4	54.8	
Queue Length 50th (ft)	59	319		54	354		88	426		74	335	
Queue Length 95th (ft)	103	#486		95	#556		#206	#662		163	#506	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	278	782		276	760		285	848		278	843	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.83		0.39	0.91		0.69	0.97		0.60	0.82	

Intersection Summary

Area Type: Other
Cycle Length: 129.5
Actuated Cycle Length: 119.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Description: U-turns, if any, are included in the left-turn volumes.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (veh/h)	110	515	80	100	485	150	180	605	150	155	500	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.96	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	560	87	109	527	163	196	658	163	168	543	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	236	717	111	267	650	200	314	820	203	248	736	198
Arrive On Green	0.06	0.26	0.26	0.08	0.27	0.27	0.09	0.32	0.32	0.06	0.30	0.30
Sat Flow, veh/h	1795	2775	430	1781	2380	733	1795	2527	625	1795	2473	667
Grp Volume(v), veh/h	120	285	362	109	310	380	196	368	453	168	309	381
Grp Sat Flow(s),veh/h/ln	1795	1414	1791	1781	1403	1711	1795	1414	1738	1795	1414	1726
Q Serve(g_s), s	0.0	17.5	17.6	0.0	19.3	19.5	1.6	22.2	22.3	1.3	18.4	18.6
Cycle Q Clear(g_c), s	0.0	17.5	17.6	0.0	19.3	19.5	1.6	22.2	22.3	1.3	18.4	18.6
Prop In Lane	1.00		0.24	1.00		0.43	1.00		0.36	1.00		0.39
Lane Grp Cap(c), veh/h	236	365	463	267	383	467	314	459	564	248	421	514
V/C Ratio(X)	0.51	0.78	0.78	0.41	0.81	0.81	0.63	0.80	0.80	0.68	0.74	0.74
Avail Cap(c_a), veh/h	414	529	670	417	525	640	439	582	715	423	582	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	32.2	32.3	38.3	31.7	31.8	37.1	28.8	28.9	39.7	29.5	29.6
Incr Delay (d2), s/veh	0.6	2.5	2.1	0.4	4.6	4.1	0.8	7.2	6.0	1.2	4.0	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.1	7.7	2.3	6.9	8.4	4.1	8.2	9.9	3.7	6.6	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.6	34.8	34.4	38.7	36.4	35.9	37.8	36.0	34.9	40.9	33.6	33.1
LnGrp LOS	D	C	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		767			799			1017			858	
Approach Delay, s/veh		35.5			36.5			35.9			34.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	36.9	13.6	30.7	14.9	34.4	12.2	32.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	38.5	15.0	35.0	15.0	38.5	15.0	35.0
Max Q Clear Time (g_c+I1), s	3.3	24.3	2.0	19.6	3.6	20.6	2.0	21.5
Green Ext Time (p_c), s	0.1	6.1	0.1	2.4	0.1	5.7	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.7
HCM 7th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	815	5	0	735	0	10
Future Volume (vph)	815	5	0	735	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	943	0	0	845	0	11
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	815	5	0	735	0	10
Future Vol, veh/h	815	5	0	735	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	937	6	0	845	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	471
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	539
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	539
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	11.82
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	539	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	825	1	0	735	0	1
Future Volume (vph)	825	1	0	735	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	949	0	0	845	0	1
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	825	1	0	735	0	1
Future Vol, veh/h	825	1	0	735	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	948	1	0	845	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	949
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	316
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	316
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

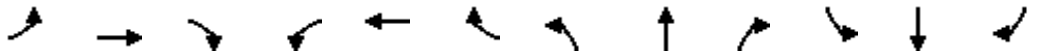
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	16.44
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	316	-	-	-
HCM Lane V/C Ratio	0.004	-	-	-
HCM Ctrl Dly (s/v)	16.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

APPENDIX D

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &
Existing Transportation System
Scenario 1 (Full Access Exits at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	20	1	20	45	765	25	20	520	45
Future Volume (vph)	5	1	50	20	1	20	45	765	25	20	520	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	22	21	47	630	0	0	568	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

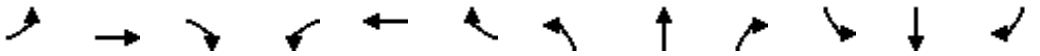
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	50	20	1	20	45	765	25	20	520	45
Future Vol, veh/h	5	1	50	20	1	20	45	765	25	20	520	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	50	-	-	70	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	21	1	21	47	604	26	21	547	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1405	1430	662	1303	1465	619	710	0	0	631	0	0
Stage 1	704	704	-	713	713	-	-	-	-	-	-	-
Stage 2	700	726	-	590	752	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.15	6.55	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.545	4.045	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	90	102	507	111	93	483	837	-	-	951	-	-
Stage 1	454	436	-	418	431	-	-	-	-	-	-	-
Stage 2	431	431	-	545	403	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0		0	-	-		-	-
Mov Cap-1 Maneuver	69	82	452	88	75	482	745	-	-	950	-	-
Mov Cap-2 Maneuver	69	82	-	88	75	-	-	-	-	-	-	-
Stage 1	391	375	-	391	403	-	-	-	-	-	-	-
Stage 2	385	403	-	464	347	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.04	37	0.71	0.3
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	745	-	-	71	452	87	482	67	-	-
HCM Lane V/C Ratio	0.064	-	-	0.089	0.116	0.255	0.044	0.022	-	-
HCM Ctrl Dly (s/v)	10.2	-	-	60.9	14	60	12.8	8.9	0	-
HCM Lane LOS	B	-	-	F	B	F	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.9	0.1	0.1	-	-

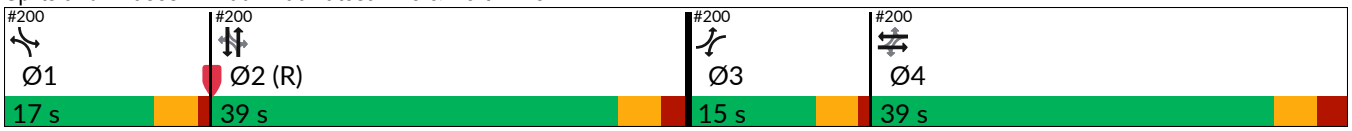


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	105	465	140	155	505	130	115	405	95
Future Volume (vph)	105	465	75	105	465	140	155	505	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	528	85	119	528	159	176	574	148	131	460	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		47	47		47	47		98	98		98	98
Act Effct Green (s)	45.0	34.7	34.7	45.0	34.7	34.7	47.0	35.2	35.2	47.0	35.2	35.2
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.59	0.15	0.43	0.59	0.29	0.53	0.64	0.26	0.45	0.52	0.20
Control Delay (s/veh)	22.6	35.4	3.1	23.1	35.4	11.0	23.7	36.2	9.3	22.2	33.5	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	35.4	3.1	23.1	35.4	11.0	23.7	36.2	9.3	22.2	33.5	5.3
LOS	C	D	A	C	D	B	C	D	A	C	C	A
Approach Delay (s/veh)		29.5			28.8			29.3			27.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	211	0	49	211	22	72	234	14	53	182	0
Queue Length 95th (ft)	84	282	18	84	282	71	116	308	60	90	247	33
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	315	891	557	305	891	553	361	903	568	319	886	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.59	0.15	0.39	0.59	0.29	0.49	0.64	0.26	0.41	0.52	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 28.7		Intersection LOS: C	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	20	45	690	20	40
Future Volume (vph)	690	20	45	690	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	825	0	0	854	70	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	20	45	690	20	40
Future Vol, veh/h	690	20	45	690	20	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	23	52	802	23	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	826	0	1721	413
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	907	-
Critical Hdwy	-	-	4.115	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2095	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	985	-	109	*898
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	985	-	98	*898
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	393	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.54	25.76
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	242	-	-	110	-
HCM Lane V/C Ratio	0.288	-	-	0.053	-
HCM Ctrl Dly (s/v)	25.8	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

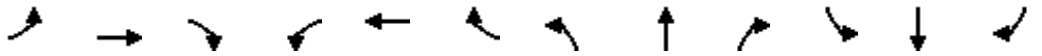
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	381
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	14.59
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	381	-	-
HCM Lane V/C Ratio	0.015	-	-
HCM Ctrl Dly (s/v)	14.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	20	1	15	30	905	15	15	640	35
Future Volume (vph)	10	1	55	20	1	15	30	905	15	15	640	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	22	16	32	730	0	0	690	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

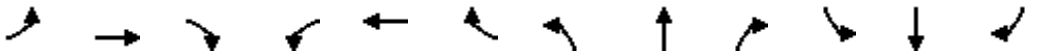
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	20	1	15	30	905	15	15	640	35
Future Vol, veh/h	10	1	55	20	1	15	30	905	15	15	640	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Stop	-	-	None	-	-	None
Storage Length	-	-	50	-	-	70	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	21	1	16	32	714	16	16	674	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1501	1521	694	1497	1550	726	729	0	0	734	0	0
Stage 1	723	723	-	790	790	-	-	-	-	-	-	-
Stage 2	778	797	-	708	760	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	68	79	498	68	74	426	815	-	-	875	-	-
Stage 1	452	429	-	385	403	-	-	-	-	-	-	-
Stage 2	391	400	-	465	406	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0	0	0		0	-	-		-	-
Mov Cap-1 Maneuver	59	72	489	55	68	424	801	-	-	872	-	-
Mov Cap-2 Maneuver	59	72	-	55	68	-	-	-	-	-	-	-
Stage 1	431	409	-	369	386	-	-	-	-	-	-	-
Stage 2	360	383	-	396	387	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	24.32	68.43	0.4	0.2
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	801	-	-	60	489	56	424	41	-	-
HCM Lane V/C Ratio	0.039	-	-	0.194	0.118	0.398	0.037	0.018	-	-
HCM Ctrl Dly (s/v)	9.7	-	-	79.1	13.4	107.4	13.8	9.2	0	-
HCM Lane LOS	A	-	-	F	B	F	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.4	1.5	0.1	0.1	-	-

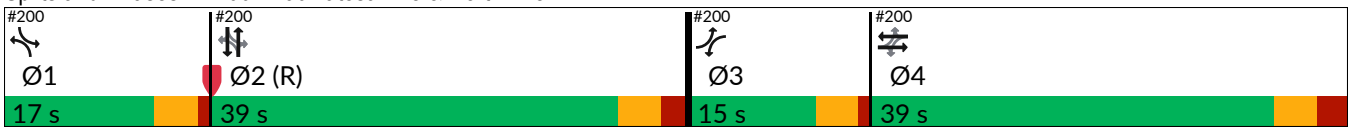


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	100	495	155	180	600	150	155	510	135
Future Volume (vph)	110	525	80	100	495	155	180	600	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	571	87	109	538	168	196	652	163	168	554	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		28	28		28	28		52	52		52	52
Act Effct Green (s)	45.0	34.8	34.8	45.0	34.8	34.8	47.0	34.8	34.8	47.0	34.8	34.8
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.42	0.64	0.15	0.42	0.61	0.30	0.66	0.73	0.29	0.62	0.62	0.26
Control Delay (s/veh)	22.8	36.5	3.1	23.3	35.8	11.9	29.0	39.5	10.8	28.6	36.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.8	36.5	3.1	23.3	35.8	11.9	29.0	39.5	10.8	28.6	36.0	9.2
LOS	C	D	A	C	D	B	C	D	B	C	D	A
Approach Delay (s/veh)		30.7			29.2			32.9			30.1	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	232	0	45	218	27	82	278	22	69	226	14
Queue Length 95th (ft)	87	318	22	81	300	82	132	370	74	114	306	62
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	313	892	571	285	884	566	320	892	570	291	892	564
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.64	0.15	0.38	0.61	0.30	0.61	0.73	0.29	0.58	0.62	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 30.8		Intersection LOS: C	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	20	30	730	20	30
Future Volume (vph)	810	20	30	730	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	954	0	0	873	57	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	20	30	730	20	30
Future Vol, veh/h	810	20	30	730	20	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	23	34	839	23	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	954	0	1851	477
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	908	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	905	-	91	*858
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	905	-	84	*858
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	392	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.36	33.22
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	184	-	-	71	-
HCM Lane V/C Ratio	0.312	-	-	0.038	-
HCM Ctrl Dly (s/v)	33.2	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	303
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	303
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

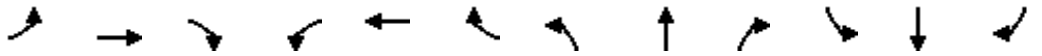
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.62
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	303	-	-
HCM Lane V/C Ratio	0.057	-	-
HCM Ctrl Dly (s/v)	17.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

APPENDIX E

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &
Existing Transportation System
Scenario 2 (Right-Out Only at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	0	0	40	45	765	25	20	540	45
Future Volume (vph)	5	1	50	0	0	40	45	765	25	20	540	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	0	42	47	630	0	0	589	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

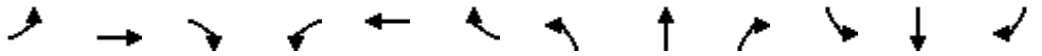
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	50	0	0	40	45	765	25	20	540	45
Future Vol, veh/h	5	1	50	0	0	40	45	765	25	20	540	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	0	0	42	47	604	26	21	568	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1425	1452	683	-	-	619	731	0	0	631	0	0
Stage 1	726	726	-	-	-	-	-	-	-	-	-	-
Stage 2	700	726	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	-	-	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	-	-	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	86	98	489	0	0	483	817	-	-	951	-	-
Stage 1	438	423	-	0	0	-	-	-	-	-	-	-
Stage 2	432	431	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0				0	-	-		-	-
Mov Cap-1 Maneuver	63	79	435	-	-	482	727	-	-	950	-	-
Mov Cap-2 Maneuver	63	79	-	-	-	-	-	-	-	-	-	-
Stage 1	376	364	-	-	-	-	-	-	-	-	-	-
Stage 2	368	403	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.91	13.18	0.72	0.29
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	65	435	482	64	-	-
HCM Lane V/C Ratio	0.065	-	-	0.096	0.121	0.087	0.022	-	-
HCM Ctrl Dly (s/v)	10.3	-	-	65.8	14.4	13.2	8.9	0	-
HCM Lane LOS	B	-	-	F	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.3	0.1	-	-

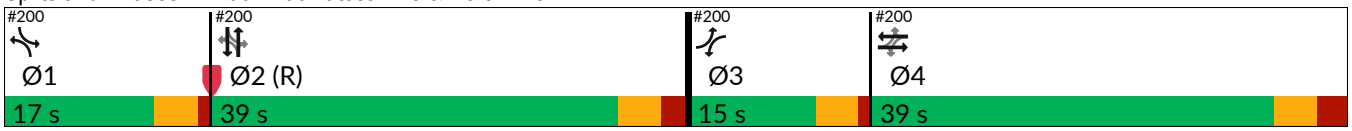


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	105	465	140	175	505	130	115	405	95
Future Volume (vph)	105	465	75	105	465	140	175	505	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	528	85	119	528	159	199	574	148	131	460	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		47	47		47	47		98	98		98	98
Act Effct Green (s)	45.0	34.7	34.7	45.0	34.7	34.7	47.0	34.7	34.7	47.0	34.7	34.7
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.59	0.15	0.43	0.59	0.29	0.59	0.64	0.26	0.44	0.53	0.21
Control Delay (s/veh)	22.6	35.4	3.1	23.1	35.4	11.0	25.6	36.7	9.3	22.1	33.9	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	35.4	3.1	23.1	35.4	11.0	25.6	36.7	9.3	22.1	33.9	5.3
LOS	C	D	A	C	D	B	C	D	A	C	C	A
Approach Delay (s/veh)		29.5			28.8			29.9			27.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	211	0	49	211	22	83	237	15	53	184	0
Queue Length 95th (ft)	84	282	18	84	282	71	130	308	60	90	247	33
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	315	891	557	305	891	553	358	890	562	316	873	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.59	0.15	0.39	0.59	0.29	0.56	0.64	0.26	0.41	0.53	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 28.9		Intersection LOS: C	
Intersection Capacity Utilization 86.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	20	45	690	20	40
Future Volume (vph)	690	20	45	690	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	825	0	0	854	70	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	20	45	690	20	40
Future Vol, veh/h	690	20	45	690	20	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	23	52	802	23	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	826	0	1721	413
Stage 1	-	-	-	-	814	-
Stage 2	-	-	-	-	907	-
Critical Hdwy	-	-	4.115	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2095	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	985	-	109	*898
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	985	-	98	*898
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	393	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.54	25.76
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	242	-	-	110	-
HCM Lane V/C Ratio	0.288	-	-	0.053	-
HCM Ctrl Dly (s/v)	25.8	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

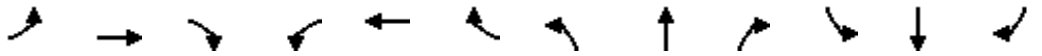
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	381
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	14.59
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	381	-	-
HCM Lane V/C Ratio	0.015	-	-
HCM Ctrl Dly (s/v)	14.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	0	0	35	30	905	15	15	660	35
Future Volume (vph)	10	1	55	0	0	35	30	905	15	15	660	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	0	37	32	730	0	0	711	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			

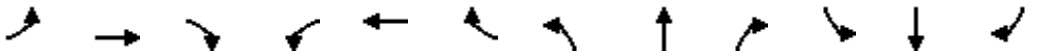
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	0	0	35	30	905	15	15	660	35
Future Vol, veh/h	10	1	55	0	0	35	30	905	15	15	660	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	0	0	37	32	714	16	16	695	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1522	1542	715	-	-	726	750	0	0	734	0	0
Stage 1	744	744	-	-	-	-	-	-	-	-	-	-
Stage 2	778	797	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	-	-	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	-	-	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	63	73	485	0	0	426	793	-	-	875	-	-
Stage 1	440	417	-	0	0	-	-	-	-	-	-	-
Stage 2	391	400	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	0	0	0				0	-	-		-	-
Mov Cap-1 Maneuver	52	67	476	-	-	424	779	-	-	872	-	-
Mov Cap-2 Maneuver	52	67	-	-	-	-	-	-	-	-	-	-
Stage 1	419	397	-	-	-	-	-	-	-	-	-	-
Stage 2	343	382	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	26.39	14.29	0.41	0.19
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	779	-	-	53	476	424	40	-	-
HCM Lane V/C Ratio	0.041	-	-	0.217	0.122	0.087	0.018	-	-
HCM Ctrl Dly (s/v)	9.8	-	-	90.3	13.6	14.3	9.2	0	-
HCM Lane LOS	A	-	-	F	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.4	0.3	0.1	-	-



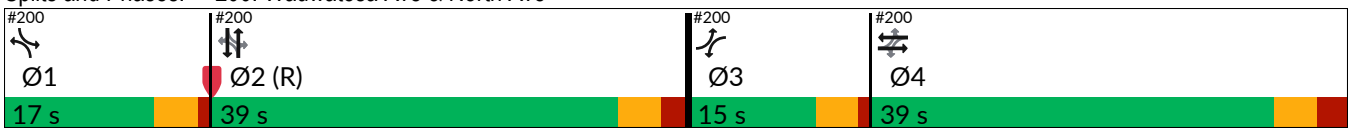
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	100	495	155	200	600	150	155	510	135
Future Volume (vph)	110	525	80	100	495	155	200	600	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	571	87	109	538	168	217	652	163	168	554	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		28	28		28	28		52	52		52	52
Act Effct Green (s)	45.0	34.8	34.8	45.0	34.8	34.8	47.0	34.3	34.3	47.0	34.3	34.3
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.31	0.31	0.43	0.31	0.31

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.42	0.64	0.15	0.42	0.61	0.30	0.72	0.74	0.29	0.62	0.63	0.26
Control Delay (s/veh)	22.8	36.5	3.1	23.3	35.8	11.9	32.9	40.2	10.8	28.4	36.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.8	36.5	3.1	23.3	35.8	11.9	32.9	40.2	10.8	28.4	36.5	9.2
LOS	C	D	A	C	D	B	C	D	B	C	D	A
Approach Delay (s/veh)		30.7			29.2			34.0			30.3	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	49	232	0	45	218	27	92	279	22	69	227	14
Queue Length 95th (ft)	87	318	22	81	300	82	#151	370	74	116	306	62
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	313	892	571	285	884	566	317	880	564	287	880	558
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.64	0.15	0.38	0.61	0.30	0.68	0.74	0.29	0.59	0.63	0.26

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay (s/veh): 31.2 Intersection LOS: C
Intersection Capacity Utilization 87.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	20	30	730	20	30
Future Volume (vph)	810	20	30	730	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	954	0	0	873	57	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	20	30	730	20	30
Future Vol, veh/h	810	20	30	730	20	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	23	34	839	23	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	954	0	1851	477
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	908	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	905	-	91	*858
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	905	-	84	*858
Mov Cap-2 Maneuver	-	-	-	-	84	-
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	392	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.36	33.22
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	184	-	-	71	-
HCM Lane V/C Ratio	0.312	-	-	0.038	-
HCM Ctrl Dly (s/v)	33.2	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	303
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	303
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.62
HCM LOS			C

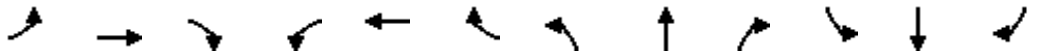
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	303	-	-
HCM Lane V/C Ratio	0.057	-	-
HCM Ctrl Dly (s/v)	17.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

APPENDIX F

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &
Existing Transportation System

Scenario 3 (Left-in/Right-in/Right-out at Rozmus Way & Right-in/Right-out at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	50	0	0	40	45	765	25	0	540	45
Future Volume (vph)	0	0	50	0	0	40	45	765	25	0	540	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	53	0	0	42	47	630	0	0	568	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

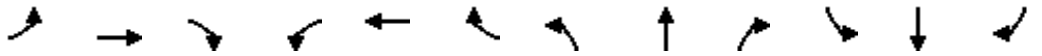
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	50	0	0	40	45	765	25	0	540	45
Future Vol, veh/h	0	0	50	0	0	40	45	765	25	0	540	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	0	0	53	0	0	42	47	604	26	0	568	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	683	-	-	619	731	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.21	-	-	6.25	4.11	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.309	-	-	3.345	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	489	0	0	483	817	-	-	0	-	-
Stage 1	0	0	-	0	0	-	-	-	-	0	-	-
Stage 2	0	0	-	0	0	-	-	-	-	0	-	-
Platoon blocked, %			0				0	-	-		-	-
Mov Cap-1 Maneuver	-	-	435	-	-	482	727	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.41	13.18	0.72	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	727	-	-	435	482	-	-
HCM Lane V/C Ratio	0.065	-	-	0.121	0.087	-	-
HCM Ctrl Dly (s/v)	10.3	-	-	14.4	13.2	-	-
HCM Lane LOS	B	-	-	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.3	-	-

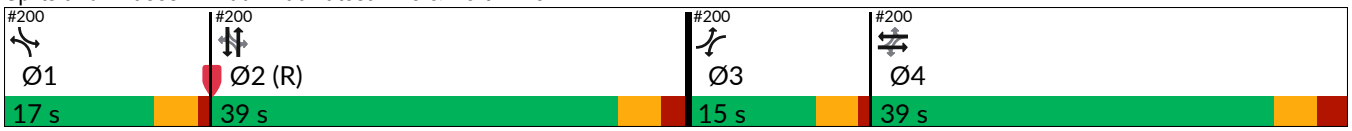


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	465	75	105	465	140	175	505	130	135	385	95
Future Volume (vph)	110	465	75	105	465	140	175	505	130	135	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	528	85	119	528	159	199	574	148	153	438	108
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		47	47		47	47		98	98		98	98
Act Effct Green (s)	45.0	34.7	34.7	45.0	34.7	34.7	47.0	34.7	34.7	47.0	34.7	34.7
Actuated g/C Ratio	0.41	0.32	0.32	0.41	0.32	0.32	0.43	0.32	0.32	0.43	0.32	0.32

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.43	0.59	0.15	0.43	0.59	0.29	0.57	0.64	0.26	0.52	0.50	0.21
Control Delay (s/veh)	23.1	35.4	3.1	23.0	35.4	11.1	24.9	36.7	9.3	24.0	33.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.1	35.4	3.1	23.0	35.4	11.1	24.9	36.7	9.3	24.0	33.4	5.3
LOS	C	D	A	C	D	B	C	D	A	C	C	A
Approach Delay (s/veh)		29.6			28.8			29.8			27.0	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	51	211	0	49	211	22	83	237	15	63	174	0
Queue Length 95th (ft)	87	282	18	84	282	71	130	308	60	103	234	33
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	315	890	557	305	890	553	368	890	562	316	873	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.59	0.15	0.39	0.59	0.29	0.54	0.64	0.26	0.48	0.50	0.21

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay (s/veh): 28.9		Intersection LOS: C	
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	40	45	690	20	40
Future Volume (vph)	690	40	45	690	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	854	70	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	40	45	690	20	40
Future Vol, veh/h	690	40	45	690	20	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	47	52	802	23	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	849	0	1733	424
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	907	-
Critical Hdwy	-	-	4.115	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2095	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	962	-	107	*898
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	962	-	96	*898
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	393	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.55	26.31
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	238	-	-	110	-
HCM Lane V/C Ratio	0.293	-	-	0.054	-
HCM Ctrl Dly (s/v)	26.3	-	-	9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

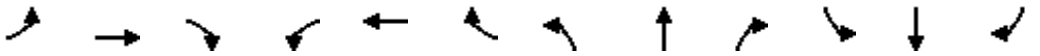
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	381
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	14.59
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	381	-	-
HCM Lane V/C Ratio	0.015	-	-
HCM Ctrl Dly (s/v)	14.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	55	0	0	35	30	905	15	0	660	35
Future Volume (vph)	0	0	55	0	0	35	30	905	15	0	660	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	58	0	0	37	32	730	0	0	695	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

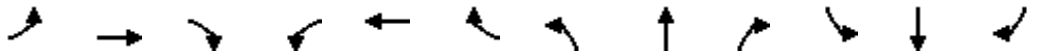
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	55	0	0	35	30	905	15	0	660	35
Future Vol, veh/h	0	0	55	0	0	35	30	905	15	0	660	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	58	0	0	37	32	714	16	0	695	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	715	-	-	726	750	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.21	-	-	6.21	4.11	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.309	-	-	3.309	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	485	0	0	426	793	-	-	0	-	-
Stage 1	0	0	-	0	0	-	-	-	-	0	-	-
Stage 2	0	0	-	0	0	-	-	-	-	0	-	-
Platoon blocked, %			0				0	-	-		-	-
Mov Cap-1 Maneuver	-	-	476	-	-	424	779	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.61	14.29	0.41	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	779	-	-	476	424	-	-
HCM Lane V/C Ratio	0.041	-	-	0.122	0.087	-	-
HCM Ctrl Dly (s/v)	9.8	-	-	13.6	14.3	-	-
HCM Lane LOS	A	-	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.3	-	-

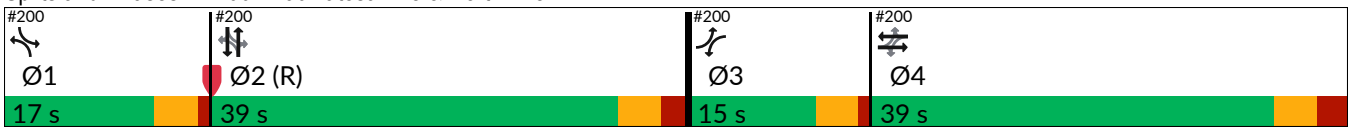


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	525	80	100	495	155	200	600	150	170	495	135
Future Volume (vph)	120	525	80	100	495	155	200	600	150	170	495	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	10	12	12	10	12	12	11	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	155		100	110		100	95		100	105		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	75		75	75		75	75		75	75		75
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			25			30			30	
Link Distance (ft)		746			271			337			393	
Travel Time (s)		17.0			7.4			7.7			8.9	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	571	87	109	538	168	217	652	163	185	538	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4		4	4		4	2		2	2		2
Detector Phase	3	4		3	4		1	2		1	2	
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0	6.0	12.0	12.0
Minimum Split (s)	10.5	38.0	38.0	10.5	38.0	38.0	10.5	37.6	37.6	10.5	37.6	37.6
Total Split (s)	15.0	39.0	39.0	15.0	39.0	39.0	17.0	39.0	39.0	17.0	39.0	39.0
Total Split (%)	13.6%	35.5%	35.5%	13.6%	35.5%	35.5%	15.5%	35.5%	35.5%	15.5%	35.5%	35.5%
Maximum Green (s)	10.5	33.0	33.0	10.5	33.0	33.0	12.5	33.4	33.4	12.5	33.4	33.4
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	2.4	2.4	1.0	2.4	2.4	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	6.0	4.5	6.0	6.0	4.5	5.6	5.6	4.5	5.6	5.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Time Before Reduce (s)	20.0	22.0	22.0	20.0	22.0	22.0	20.0	40.0	40.0	20.0	40.0	40.0
Time To Reduce (s)	0.0	9.0	9.0	0.0	9.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	Max	Max	None	Max	Max	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0
Flash Don't Walk (s)		22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0
Pedestrian Calls (#/hr)		28	28		28	28		52	52		52	52
Act Effct Green (s)	45.0	34.6	34.6	45.0	34.6	34.6	47.0	34.4	34.4	47.0	34.4	34.4
Actuated g/C Ratio	0.41	0.31	0.31	0.41	0.31	0.31	0.43	0.31	0.31	0.43	0.31	0.31

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.45	0.64	0.15	0.42	0.61	0.30	0.70	0.74	0.29	0.68	0.61	0.26
Control Delay (s/veh)	23.6	36.8	3.1	23.2	36.0	11.9	31.5	40.1	10.8	32.0	36.0	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.6	36.8	3.1	23.2	36.0	11.9	31.5	40.1	10.8	32.0	36.0	9.2
LOS	C	D	A	C	D	B	C	D	B	C	D	A
Approach Delay (s/veh)		30.9			29.3			33.7			30.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	54	233	0	45	219	27	92	279	22	76	219	14
Queue Length 95th (ft)	93	318	22	81	300	82	146	370	74	132	295	62
Internal Link Dist (ft)		666			191			257			313	
Turn Bay Length (ft)	155		100	110		100	95		100	105		100
Base Capacity (vph)	312	887	568	283	878	564	325	881	565	288	881	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.64	0.15	0.39	0.61	0.30	0.67	0.74	0.29	0.64	0.61	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 29 (26%), Referenced to phase 2:NBSB, Start of 1st Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 31.3		Intersection LOS: C	
Intersection Capacity Utilization 88.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 200: Wauwatosa Ave & North Ave



HCM 7th Edition methodology does not support Non-NEMA phasing.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	35	30	730	20	30
Future Volume (vph)	810	35	30	730	20	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	971	0	0	873	57	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

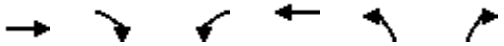
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	35	30	730	20	30
Future Vol, veh/h	810	35	30	730	20	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	40	34	839	23	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	971	0	1859	486
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	908	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	889	-	90	*858
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	392	-
Platoon blocked, %	-	-	0	-	0	0
Mov Cap-1 Maneuver	-	-	889	-	83	*858
Mov Cap-2 Maneuver	-	-	-	-	83	-
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	392	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.36	33.84
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	181	-	-	71	-
HCM Lane V/C Ratio	0.317	-	-	0.039	-
HCM Ctrl Dly (s/v)	33.8	-	-	9.2	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	303
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		0
Mov Cap-1 Maneuver	-	-	-	-	-	303
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

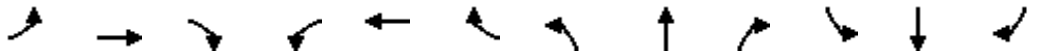
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.62
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	303	-	-
HCM Lane V/C Ratio	0.057	-	-
HCM Ctrl Dly (s/v)	17.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

APPENDIX G

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &
Future Transportation System
Scenario 1 (Full Access Exits at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	20	1	40	45	765	25	45	520	45
Future Volume (vph)	5	1	50	20	1	40	45	765	25	45	520	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	64	0	47	630	0	0	594	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

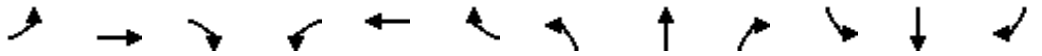
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	50	20	1	40	45	765	25	45	520	45
Future Vol, veh/h	5	1	50	20	1	40	45	765	25	45	520	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	21	1	42	47	604	26	47	547	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1457	1483	662	1355	1517	619	710	0	0	631	0	0
Stage 1	757	757	-	713	713	-	-	-	-	-	-	-
Stage 2	700	726	-	643	804	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.15	6.55	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.545	4.045	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	108	126	463	125	117	483	894	-	-	951	-	-
Stage 1	401	417	-	418	431	-	-	-	-	-	-	-
Stage 2	431	431	-	457	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	76	97	413	94	91	482	796	-	-	950	-	-
Mov Cap-2 Maneuver	76	97	-	94	91	-	-	-	-	-	-	-
Stage 1	331	344	-	393	405	-	-	-	-	-	-	-
Stage 2	369	405	-	368	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.27	31.62	0.69	0.66
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	796	-	-	78	413	198	143	-	-
HCM Lane V/C Ratio	0.06	-	-	0.08	0.128	0.324	0.05	-	-
HCM Ctrl Dly (s/v)	9.8	-	-	54.9	15	31.6	9	0	-
HCM Lane LOS	A	-	-	F	B	D	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	1.3	0.2	-	-

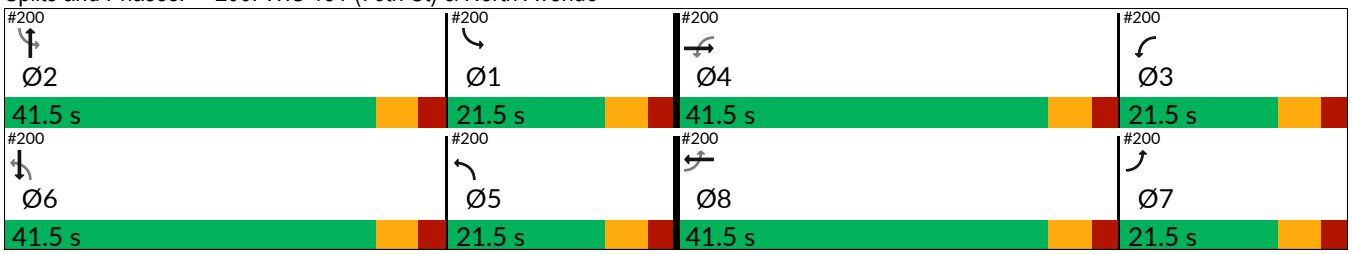


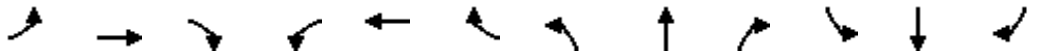
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	150	450	135	170	510	130	115	405	95
Future Volume (vph)	105	465	75	150	450	135	170	510	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	613	0	170	664	0	193	728	0	131	568	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	18.5		12.5	18.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	41.5		21.5	41.5	
Total Split (%)	17.1%	32.9%		17.1%	32.9%		17.1%	32.9%		17.1%	32.9%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	42.2	31.7		42.2	32.8		44.8	35.3		44.8	32.0	
Actuated g/C Ratio	0.37	0.28		0.37	0.29		0.40	0.31		0.40	0.28	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.56	0.83		0.71	0.89		0.66	0.89		0.64	0.80	
Control Delay (s/veh)	46.9	49.7		54.6	54.1		47.3	53.3		52.6	47.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	46.9	49.7		54.6	54.1		47.3	53.3		52.6	47.8	
LOS	D	D		D	D		D	D		D	D	
Approach Delay (s/veh)		49.2			54.2			52.1			48.7	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	51	280		75	296		85	334		57	257	
Queue Length 95th (ft)	94	400		131	#483		147	#553		116	378	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	300	824		311	806		329	814		289	787	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.74		0.55	0.82		0.59	0.89		0.45	0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 126			
Actuated Cycle Length: 113.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 51.2		Intersection LOS: D	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			
Description: U-turns, if any, are included in the left-turn volumes.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	465	75	150	450	135	170	510	130	115	405	95
Future Volume (veh/h)	105	465	75	150	450	135	170	510	130	115	405	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.99		0.94	0.97		0.89	0.98		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	119	528	85	170	511	153	193	580	148	131	460	108
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	3	3	3
Cap, veh/h	261	778	125	289	697	207	314	762	194	254	755	176
Arrive On Green	0.06	0.28	0.28	0.07	0.29	0.29	0.07	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1795	2744	440	1795	2399	714	1795	2469	627	1767	2482	577
Grp Volume(v), veh/h	119	271	342	170	300	364	193	331	397	131	256	312
Grp Sat Flow(s),veh/h/ln	1795	1414	1770	1795	1414	1700	1795	1414	1682	1767	1392	1668
Q Serve(g_s), s	0.0	15.9	16.1	0.0	17.9	18.1	0.0	19.8	20.0	0.0	14.7	15.0
Cycle Q Clear(g_c), s	0.0	15.9	16.1	0.0	17.9	18.1	0.0	19.8	20.0	0.0	14.7	15.0
Prop In Lane	1.00		0.25	1.00		0.42	1.00		0.37	1.00		0.35
Lane Grp Cap(c), veh/h	261	401	502	289	411	494	314	436	519	254	423	507
V/C Ratio(X)	0.46	0.68	0.68	0.59	0.73	0.74	0.61	0.76	0.76	0.52	0.60	0.62
Avail Cap(c_a), veh/h	439	529	662	455	529	636	483	529	629	427	521	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	29.7	29.8	37.9	29.9	30.0	36.6	29.2	29.3	38.9	27.8	27.9
Incr Delay (d2), s/veh	0.5	1.0	0.8	0.7	2.4	2.2	0.7	6.0	5.2	0.6	2.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.4	6.8	3.7	6.2	7.5	4.2	7.2	8.6	2.9	5.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.8	30.7	30.6	38.6	32.3	32.1	37.4	35.2	34.5	39.5	29.7	29.6
LnGrp LOS	D	C	C	D	C	C	D	D	C	D	C	C
Approach Vol, veh/h		732			834			921			699	
Approach Delay, s/veh		32.0			33.5			35.3			31.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	35.4	12.9	33.0	12.7	35.0	12.2	33.7
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	2.0	22.0	2.0	18.1	2.0	17.0	2.0	20.1
Green Ext Time (p_c), s	0.1	5.1	0.1	2.3	0.1	4.7	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	33.2
HCM 7th LOS	C



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	40	0	735	0	40
Future Volume (vph)	690	40	0	735	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	47
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	40	0	735	0	40
Future Vol, veh/h	690	40	0	735	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	47	0	855	0	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	424
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	578
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	578
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	11.77
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	578	-	-	-
HCM Lane V/C Ratio	0.08	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

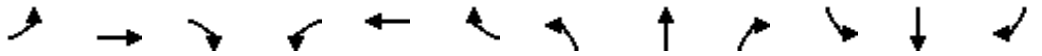
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	361
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	15.14
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	361	-	-
HCM Lane V/C Ratio	0.016	-	-
HCM Ctrl Dly (s/v)	15.1	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	20	1	35	30	905	15	40	640	35
Future Volume (vph)	10	1	55	20	1	35	30	905	15	40	640	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		70	0		0	0		0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	59	0	32	730	0	0	716	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

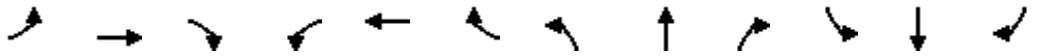
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	20	1	35	30	905	15	40	640	35
Future Vol, veh/h	10	1	55	20	1	35	30	905	15	40	640	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	21	1	37	32	714	16	42	674	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1554	1573	694	1550	1602	726	729	0	0	734	0	0
Stage 1	776	776	-	790	790	-	-	-	-	-	-	-
Stage 2	778	797	-	760	813	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	93	111	445	93	106	426	880	-	-	875	-	-
Stage 1	392	409	-	385	403	-	-	-	-	-	-	-
Stage 2	391	400	-	400	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	73	96	436	70	92	424	865	-	-	872	-	-
Mov Cap-2 Maneuver	73	96	-	70	92	-	-	-	-	-	-	-
Stage 1	354	370	-	370	387	-	-	-	-	-	-	-
Stage 2	343	384	-	317	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	22.43	44.35	0.39	0.52
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	865	-	-	74	436	149	106	-	-
HCM Lane V/C Ratio	0.037	-	-	0.155	0.133	0.397	0.048	-	-
HCM Ctrl Dly (s/v)	9.3	-	-	62	14.5	44.4	9.3	0	-
HCM Lane LOS	A	-	-	F	B	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	1.7	0.2	-	-

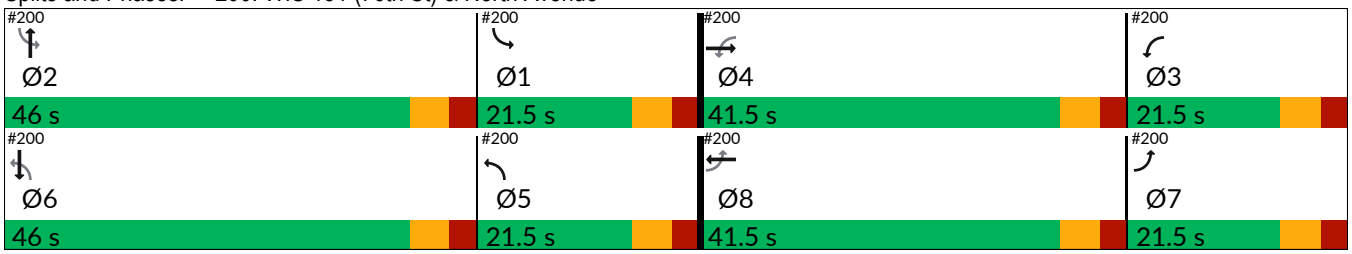


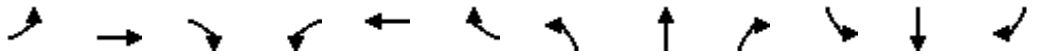
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	130	480	150	195	605	150	155	510	135
Future Volume (vph)	110	525	80	130	480	150	195	605	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	658	0	141	685	0	212	821	0	168	701	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	35.5		12.5	35.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	46.0		21.5	46.0	
Total Split (%)	16.5%	31.8%		16.5%	31.8%		16.5%	35.2%		16.5%	35.2%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	39.5		15.0	39.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	44.5	33.2		44.5	34.7		51.4	39.7		51.4	36.7	
Actuated g/C Ratio	0.36	0.27		0.36	0.28		0.42	0.33		0.42	0.30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.61	0.91		0.65	0.93		0.78	0.96		0.75	0.89	
Control Delay (s/veh)	55.4	61.2		57.8	63.7		64.3	64.4		63.2	56.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	55.4	61.2		57.8	63.7		64.3	64.4		63.2	56.1	
LOS	E	E		E	E		E	E		E	E	
Approach Delay (s/veh)		60.3			62.7			64.3			57.5	
Approach LOS		E			E			E			E	
Queue Length 50th (ft)	61	344		74	370		111	446		76	358	
Queue Length 95th (ft)	104	#514		134	#563		#250	#666		167	#521	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	272	766		269	744		278	853		273	849	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.86		0.52	0.92		0.76	0.96		0.62	0.83	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130.5			
Actuated Cycle Length: 122			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 61.4		Intersection LOS: E	
Intersection Capacity Utilization 88.0%		ICU Level of Service E	
Analysis Period (min) 15			
Description: U-turns, if any, are included in the left-turn volumes.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	525	80	130	480	150	195	605	150	155	510	135
Future Volume (veh/h)	110	525	80	130	480	150	195	605	150	155	510	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	571	87	141	522	163	212	658	163	168	554	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	236	726	110	259	645	200	312	825	204	250	745	197
Arrive On Green	0.06	0.26	0.26	0.07	0.27	0.27	0.09	0.33	0.33	0.06	0.30	0.30
Sat Flow, veh/h	1795	2783	423	1781	2374	738	1795	2527	625	1795	2486	657
Grp Volume(v), veh/h	120	289	369	141	307	378	212	368	453	168	314	387
Grp Sat Flow(s),veh/h/ln	1795	1414	1793	1781	1403	1710	1795	1414	1739	1795	1414	1729
Q Serve(g_s), s	0.0	17.8	17.9	0.0	19.2	19.3	2.6	22.2	22.3	1.2	18.8	18.9
Cycle Q Clear(g_c), s	0.0	17.8	17.9	0.0	19.2	19.3	2.6	22.2	22.3	1.2	18.8	18.9
Prop In Lane	1.00		0.24	1.00		0.43	1.00		0.36	1.00		0.38
Lane Grp Cap(c), veh/h	236	369	467	259	381	464	312	462	568	250	424	518
V/C Ratio(X)	0.51	0.79	0.79	0.54	0.81	0.81	0.68	0.80	0.80	0.67	0.74	0.75
Avail Cap(c_a), veh/h	414	528	669	415	524	638	437	596	733	424	596	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	32.2	32.2	39.1	31.8	31.9	37.5	28.7	28.7	39.7	29.6	29.6
Incr Delay (d2), s/veh	0.6	2.9	2.4	0.7	4.5	4.0	1.0	6.7	5.6	1.2	4.1	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.2	7.9	3.0	6.8	8.3	4.6	8.1	9.9	3.7	6.7	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.7	35.1	34.7	39.8	36.3	35.9	38.5	35.4	34.3	40.9	33.6	33.1
LnGrp LOS	D	D	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		778			826			1033			869	
Approach Delay, s/veh		35.8			36.7			35.6			34.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	37.1	13.3	30.9	14.9	34.6	12.2	32.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	39.5	15.0	35.0	15.0	39.5	15.0	35.0
Max Q Clear Time (g_c+I1), s	3.2	24.3	2.0	19.9	4.6	20.9	2.0	21.3
Green Ext Time (p_c), s	0.1	6.4	0.1	2.4	0.1	5.9	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.7
HCM 7th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	25	0	760	0	30
Future Volume (vph)	810	25	0	760	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	960	0	0	874	0	34
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	25	0	760	0	30
Future Vol, veh/h	810	25	0	760	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	29	0	874	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	480
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	532
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	532
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	532	-	-	-
HCM Lane V/C Ratio	0.065	-	-	-
HCM Ctrl Dly (s/v)	12.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	309
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	309
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

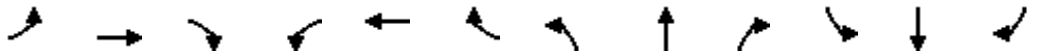
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.34
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	309	-	-
HCM Lane V/C Ratio	0.056	-	-
HCM Ctrl Dly (s/v)	17.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

APPENDIX H

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &
Future Transportation System
Scenario 2 (Right-Out Only at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	50	0	0	60	45	765	25	45	540	45
Future Volume (vph)	5	1	50	0	0	60	45	765	25	45	540	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	53	0	0	63	47	630	0	0	615	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

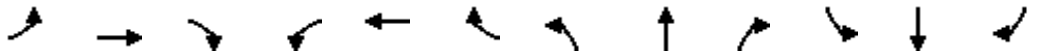
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↱			↱	↰	↦			↕	↱
Traffic Vol, veh/h	5	1	50	0	0	60	45	765	25	45	540	45
Future Vol, veh/h	5	1	50	0	0	60	45	765	25	45	540	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	5	1	53	0	0	63	47	604	26	47	568	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1478	1504	683	-	-	619	731	0	0	631	0	0
Stage 1	778	778	-	-	-	-	-	-	-	-	-	-
Stage 2	700	726	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	-	-	6.25	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	-	-	3.345	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	105	122	451	0	0	483	878	-	-	951	-	-
Stage 1	391	408	-	0	0	-	-	-	-	-	-	-
Stage 2	432	431	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	70	94	401	-	-	482	782	-	-	950	-	-
Mov Cap-2 Maneuver	70	94	-	-	-	-	-	-	-	-	-	-
Stage 1	321	336	-	-	-	-	-	-	-	-	-	-
Stage 2	352	405	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	19.97	13.59	0.69	0.64
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	73	401	482	138	-	-
HCM Lane V/C Ratio	0.061	-	-	0.086	0.131	0.131	0.05	-	-
HCM Ctrl Dly (s/v)	9.9	-	-	58.7	15.3	13.6	9	0	-
HCM Lane LOS	A	-	-	F	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.4	0.2	-	-

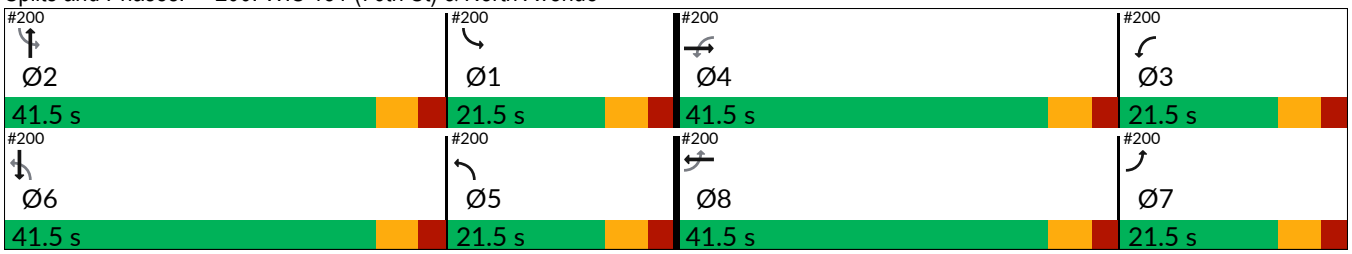


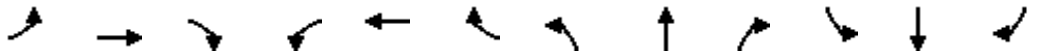
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	150	450	135	190	510	130	115	405	95
Future Volume (vph)	105	465	75	150	450	135	190	510	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	613	0	170	664	0	216	728	0	131	568	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	18.5		12.5	18.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	41.5		21.5	41.5	
Total Split (%)	17.1%	32.9%		17.1%	32.9%		17.1%	32.9%		17.1%	32.9%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	42.2	31.9		42.2	32.8		45.5	35.3		45.5	32.1	
Actuated g/C Ratio	0.37	0.28		0.37	0.29		0.40	0.31		0.40	0.28	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.56	0.83		0.71	0.89		0.72	0.90		0.62	0.80	
Control Delay (s/veh)	47.7	50.1		55.7	55.2		51.9	54.4		51.2	48.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	47.7	50.1		55.7	55.2		51.9	54.4		51.2	48.3	
LOS	D	D		E	E		D	D		D	D	
Approach Delay (s/veh)		49.7			55.3			53.8			48.8	
Approach LOS		D			E			D			D	
Queue Length 50th (ft)	53	286		78	304		97	344		57	262	
Queue Length 95th (ft)	94	400		131	#483		#166	#553		117	378	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	297	820		310	801		327	809		286	782	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.75		0.55	0.83		0.66	0.90		0.46	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 126			
Actuated Cycle Length: 113.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 52.2		Intersection LOS: D	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			
Description: U-turns, if any, are included in the left-turn volumes.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	465	75	150	450	135	190	510	130	115	405	95
Future Volume (veh/h)	105	465	75	150	450	135	190	510	130	115	405	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.99		0.94	0.97		0.89	0.98		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	119	528	85	170	511	153	216	580	148	131	460	108
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	3	3	3
Cap, veh/h	261	778	125	289	697	207	314	762	194	254	755	176
Arrive On Green	0.06	0.28	0.28	0.07	0.29	0.29	0.07	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1795	2744	440	1795	2399	714	1795	2469	627	1767	2482	577
Grp Volume(v), veh/h	119	271	342	170	300	364	216	331	397	131	256	312
Grp Sat Flow(s),veh/h/ln	1795	1414	1770	1795	1414	1700	1795	1414	1682	1767	1392	1668
Q Serve(g_s), s	0.0	15.9	16.1	0.0	17.9	18.1	0.4	19.8	20.0	0.0	14.7	15.0
Cycle Q Clear(g_c), s	0.0	15.9	16.1	0.0	17.9	18.1	0.4	19.8	20.0	0.0	14.7	15.0
Prop In Lane	1.00		0.25	1.00		0.42	1.00		0.37	1.00		0.35
Lane Grp Cap(c), veh/h	261	401	502	289	411	494	314	436	519	254	423	507
V/C Ratio(X)	0.46	0.68	0.68	0.59	0.73	0.74	0.69	0.76	0.76	0.52	0.60	0.62
Avail Cap(c_a), veh/h	439	529	662	455	529	636	483	529	629	427	521	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	29.7	29.8	37.9	29.9	30.0	37.1	29.2	29.3	38.9	27.8	27.9
Incr Delay (d2), s/veh	0.5	1.0	0.8	0.7	2.4	2.2	1.0	6.0	5.2	0.6	2.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.4	6.8	3.7	6.2	7.5	4.7	7.2	8.6	2.9	5.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.8	30.7	30.6	38.6	32.3	32.1	38.1	35.2	34.5	39.5	29.7	29.6
LnGrp LOS	D	C	C	D	C	C	D	D	C	D	C	C
Approach Vol, veh/h		732			834			944			699	
Approach Delay, s/veh		32.0			33.5			35.6			31.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	35.4	12.9	33.0	12.7	35.0	12.2	33.7
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	2.0	22.0	2.0	18.1	2.4	17.0	2.0	20.1
Green Ext Time (p_c), s	0.1	5.1	0.1	2.3	0.1	4.7	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	33.3
HCM 7th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	40	0	735	0	40
Future Volume (vph)	690	40	0	735	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	47
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	40	0	735	0	40
Future Vol, veh/h	690	40	0	735	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	47	0	855	0	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	424
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	578
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	578
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	11.77
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	578	-	-	-
HCM Lane V/C Ratio	0.08	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

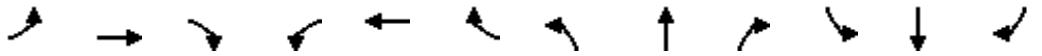
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	361
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	15.14
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	361	-	-
HCM Lane V/C Ratio	0.016	-	-
HCM Ctrl Dly (s/v)	15.1	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1	55	0	0	55	30	905	15	40	660	35
Future Volume (vph)	10	1	55	0	0	55	30	905	15	40	660	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	58	0	0	58	32	730	0	0	737	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			

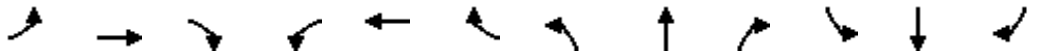
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	55	0	0	55	30	905	15	40	660	35
Future Vol, veh/h	10	1	55	0	0	55	30	905	15	40	660	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	11	1	58	0	0	58	32	714	16	42	695	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1575	1594	715	-	-	726	750	0	0	734	0	0
Stage 1	797	797	-	-	-	-	-	-	-	-	-	-
Stage 2	778	797	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	-	-	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	-	-	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	90	107	433	0	0	426	864	-	-	875	-	-
Stage 1	382	400	-	0	0	-	-	-	-	-	-	-
Stage 2	391	400	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	93	424	-	-	424	849	-	-	872	-	-
Mov Cap-2 Maneuver	67	93	-	-	-	-	-	-	-	-	-	-
Stage 1	344	361	-	-	-	-	-	-	-	-	-	-
Stage 2	325	383	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.6	14.82	0.39	0.51
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	849	-	-	69	424	424	103	-	-
HCM Lane V/C Ratio	0.037	-	-	0.168	0.136	0.136	0.048	-	-
HCM Ctrl Dly (s/v)	9.4	-	-	67.5	14.8	14.8	9.3	0	-
HCM Lane LOS	A	-	-	F	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.5	0.5	0.2	-	-



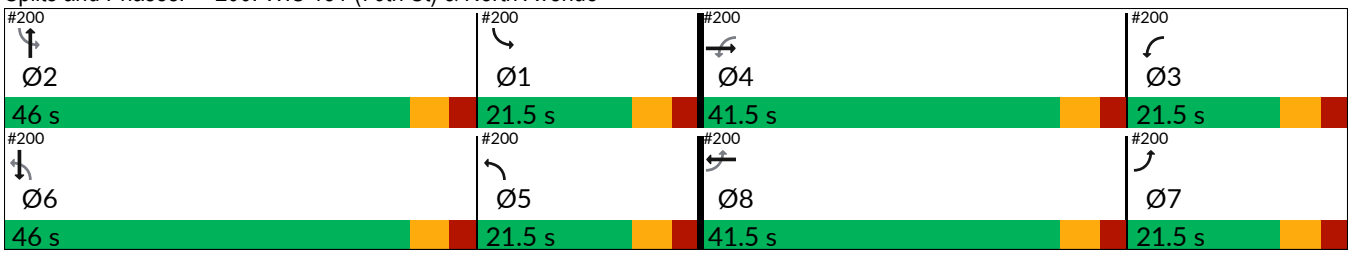
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	130	480	150	215	605	150	155	510	135
Future Volume (vph)	110	525	80	130	480	150	215	605	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	658	0	141	685	0	234	821	0	168	701	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	35.5		12.5	35.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	46.0		21.5	46.0	
Total Split (%)	16.5%	31.8%		16.5%	31.8%		16.5%	35.2%		16.5%	35.2%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	39.5		15.0	39.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	44.5	33.3		44.5	34.7		52.0	39.6		52.0	36.8	
Actuated g/C Ratio	0.36	0.27		0.36	0.28		0.42	0.32		0.42	0.30	

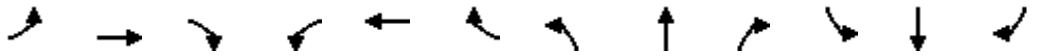
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.61	0.91		0.66	0.94		0.85	0.97		0.72	0.90	
Control Delay (s/veh)	55.9	61.7		58.7	64.9		71.6	65.8		60.5	56.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	55.9	61.7		58.7	64.9		71.6	65.8		60.5	56.6	
LOS	E	E		E	E		E	E		E	E	
Approach Delay (s/veh)		60.8			63.8			67.1			57.3	
Approach LOS		E			E			E			E	
Queue Length 50th (ft)	61	344		74	370		132	446		76	358	
Queue Length 95th (ft)	104	#514		134	#563		#296	#666		167	#521	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	270	762		268	740		276	849		271	845	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.44	0.86		0.53	0.93		0.85	0.97		0.62	0.83	

Intersection Summary

Area Type: Other
Cycle Length: 130.5
Actuated Cycle Length: 122.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay (s/veh): 62.5 Intersection LOS: E
Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15
Description: U-turns, if any, are included in the left-turn volumes.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	525	80	130	480	150	215	605	150	155	510	135
Future Volume (veh/h)	110	525	80	130	480	150	215	605	150	155	510	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	120	571	87	141	522	163	234	658	163	168	554	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	236	726	110	259	645	200	312	825	204	250	745	197
Arrive On Green	0.06	0.26	0.26	0.07	0.27	0.27	0.09	0.33	0.33	0.06	0.30	0.30
Sat Flow, veh/h	1795	2783	423	1781	2374	738	1795	2527	625	1795	2486	657
Grp Volume(v), veh/h	120	289	369	141	307	378	234	368	453	168	314	387
Grp Sat Flow(s),veh/h/ln	1795	1414	1793	1781	1403	1710	1795	1414	1739	1795	1414	1729
Q Serve(g_s), s	0.0	17.8	17.9	0.0	19.2	19.3	3.8	22.2	22.3	1.2	18.8	18.9
Cycle Q Clear(g_c), s	0.0	17.8	17.9	0.0	19.2	19.3	3.8	22.2	22.3	1.2	18.8	18.9
Prop In Lane	1.00		0.24	1.00		0.43	1.00		0.36	1.00		0.38
Lane Grp Cap(c), veh/h	236	369	467	259	381	464	312	462	568	250	424	518
V/C Ratio(X)	0.51	0.79	0.79	0.54	0.81	0.81	0.75	0.80	0.80	0.67	0.74	0.75
Avail Cap(c_a), veh/h	414	528	669	415	524	638	437	596	733	424	596	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	32.2	32.2	39.1	31.8	31.9	37.9	28.7	28.7	39.7	29.6	29.6
Incr Delay (d2), s/veh	0.6	2.9	2.4	0.7	4.5	4.0	2.5	6.7	5.6	1.2	4.1	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	6.2	7.9	3.0	6.8	8.3	5.2	8.1	9.9	3.7	6.7	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.7	35.1	34.7	39.8	36.3	35.9	40.4	35.4	34.3	40.9	33.6	33.1
LnGrp LOS	D	D	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		778			826			1055			869	
Approach Delay, s/veh		35.8			36.7			36.0			34.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	37.1	13.3	30.9	14.9	34.6	12.2	32.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	39.5	15.0	35.0	15.0	39.5	15.0	35.0
Max Q Clear Time (g_c+I1), s	3.2	24.3	2.0	19.9	5.8	20.9	2.0	21.3
Green Ext Time (p_c), s	0.1	6.4	0.1	2.4	0.1	5.9	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.8
HCM 7th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	25	0	760	0	30
Future Volume (vph)	810	25	0	760	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	960	0	0	874	0	34
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	25	0	760	0	30
Future Vol, veh/h	810	25	0	760	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	29	0	874	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	480
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	532
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	532
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	532	-	-	-
HCM Lane V/C Ratio	0.065	-	-	-
HCM Ctrl Dly (s/v)	12.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	309
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	309
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.34
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	309	-	-
HCM Lane V/C Ratio	0.056	-	-
HCM Ctrl Dly (s/v)	17.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

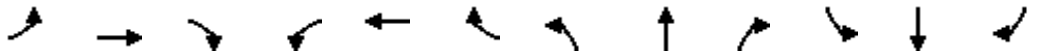
APPENDIX I

SYNCHRO INTERSECTION CAPACITY ANALYSIS

Build Traffic Volumes &

Future Transportation System

Scenario 3 (Left-in/Right-in/Right-out at Rozmus Way & Right-in/Right-out at Watson Avenue)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	50	0	0	60	45	765	25	0	540	45
Future Volume (vph)	0	0	50	0	0	60	45	765	25	0	540	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)	1					1	115		1	1		115
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	53	0	0	63	47	630	0	0	568	47
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	50	0	0	60	45	765	25	0	540	45
Future Vol, veh/h	0	0	50	0	0	60	45	765	25	0	540	45
Conflicting Peds, #/hr	1	0	0	0	0	1	115	0	1	1	0	115
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	5	5	5	1	1	1	2	2	2
Mvmt Flow	0	0	53	0	0	63	47	604	26	0	568	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	683	-	-	619	731	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.21	-	-	6.25	4.11	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.309	-	-	3.345	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	451	0	0	483	878	-	-	0	-	-
Stage 1	0	0	-	0	0	-	-	-	-	0	-	-
Stage 2	0	0	-	0	0	-	-	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	401	-	-	482	782	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	15.32	13.59	0.69	0
HCM LOS	C	B		

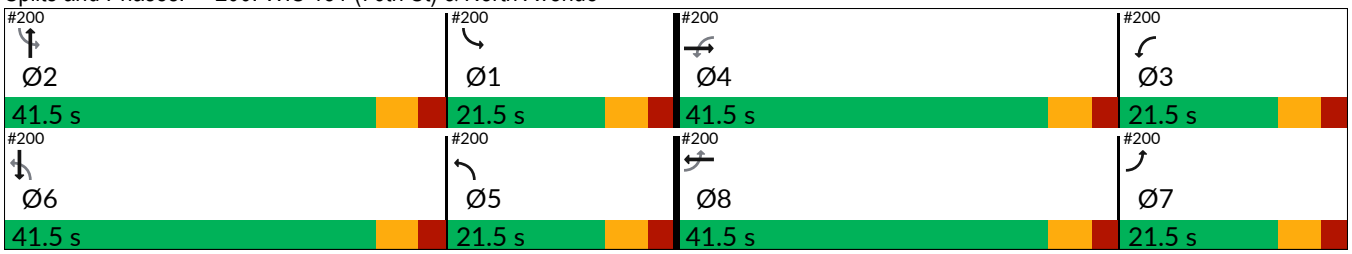
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	782	-	-	401	482	-	-
HCM Lane V/C Ratio	0.061	-	-	0.131	0.131	-	-
HCM Ctrl Dly (s/v)	9.9	-	-	15.3	13.6	-	-
HCM Lane LOS	A	-	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.4	-	-

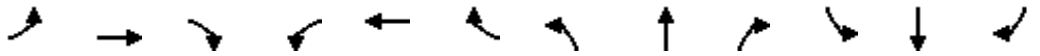
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	465	75	150	450	135	190	505	130	135	385	95
Future Volume (vph)	110	465	75	150	450	135	190	505	130	135	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	47		39	39		47	98		36	36		98
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	125	613	0	170	664	0	216	722	0	153	546	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	18.5		12.5	18.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	41.5		21.5	41.5	
Total Split (%)	17.1%	32.9%		17.1%	32.9%		17.1%	32.9%		17.1%	32.9%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	42.4	31.7		42.4	32.9		45.7	35.2		45.7	31.8	
Actuated g/C Ratio	0.37	0.28		0.37	0.29		0.40	0.31		0.40	0.28	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.59	0.83		0.71	0.89		0.69	0.90		0.71	0.78	
Control Delay (s/veh)	49.5	50.8		55.6	55.2		48.7	54.2		57.9	47.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.5	50.8		55.6	55.2		48.7	54.2		57.9	47.6	
LOS	D	D		E	E		D	D		E	D	
Approach Delay (s/veh)		50.6			55.3			52.9			49.9	
Approach LOS		D			E			D			D	
Queue Length 50th (ft)	55	288		77	304		98	340		68	254	
Queue Length 95th (ft)	98	400		131	#483		164	#547		141	360	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	296	817		307	799		331	806		286	779	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.42	0.75		0.55	0.83		0.65	0.90		0.53	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 126			
Actuated Cycle Length: 114.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 52.3		Intersection LOS: D	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			
Description: U-turns, if any, are included in the left-turn volumes.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 200: WIS 181 (76th St) & North Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	465	75	150	450	135	190	505	130	135	385	95
Future Volume (veh/h)	110	465	75	150	450	135	190	505	130	135	385	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.94	0.99		0.94	0.97		0.89	0.98		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	125	528	85	170	511	153	216	574	148	153	438	108
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	3	3	3
Cap, veh/h	262	777	125	289	696	207	324	758	195	256	744	181
Arrive On Green	0.06	0.28	0.28	0.07	0.29	0.29	0.07	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1795	2744	440	1795	2399	714	1795	2462	632	1767	2454	598
Grp Volume(v), veh/h	125	271	342	170	300	364	216	329	393	153	246	300
Grp Sat Flow(s),veh/h/ln	1795	1414	1770	1795	1414	1700	1795	1414	1680	1767	1392	1661
Q Serve(g_s), s	0.0	15.9	16.1	0.0	17.9	18.1	0.0	19.6	19.8	0.0	14.0	14.4
Cycle Q Clear(g_c), s	0.0	15.9	16.1	0.0	17.9	18.1	0.0	19.6	19.8	0.0	14.0	14.4
Prop In Lane	1.00		0.25	1.00		0.42	1.00		0.38	1.00		0.36
Lane Grp Cap(c), veh/h	262	400	501	289	410	493	324	435	517	256	422	503
V/C Ratio(X)	0.48	0.68	0.68	0.59	0.73	0.74	0.67	0.75	0.76	0.60	0.58	0.60
Avail Cap(c_a), veh/h	438	528	661	454	528	635	490	528	628	428	520	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	29.8	29.8	37.9	30.0	30.0	36.6	29.2	29.3	39.1	27.6	27.8
Incr Delay (d2), s/veh	0.5	1.0	0.9	0.7	2.4	2.2	0.9	5.8	5.1	0.8	1.8	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	5.4	6.8	3.7	6.2	7.5	4.7	7.2	8.5	3.3	4.8	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	39.1	30.7	30.7	38.6	32.4	32.2	37.5	35.0	34.4	39.9	29.5	29.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		738			834			938			699	
Approach Delay, s/veh		32.1			33.6			35.3			31.7	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	35.3	12.9	33.0	12.8	34.9	12.3	33.7
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	2.0	21.8	2.0	18.1	2.0	16.4	2.0	20.1
Green Ext Time (p_c), s	0.1	5.1	0.1	2.3	0.2	4.5	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	33.3
HCM 7th LOS	C



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	690	85	0	735	0	40
Future Volume (vph)	690	85	0	735	0	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	901	0	0	855	0	47
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.8%		ICU Level of Service A	
Analysis Period (min) 15			

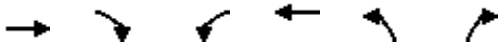
Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	690	85	0	735	0	40
Future Vol, veh/h	690	85	0	735	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	802	99	0	855	0	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	451
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	556
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	556
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	556	-	-	-
HCM Lane V/C Ratio	0.084	-	-	-
HCM Ctrl Dly (s/v)	12.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	730	0	0	735	0	5
Future Volume (vph)	730	0	0	735	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2230	200	
Travel Time (s)	4.4			60.8	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	849	0	0	855	0	6
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

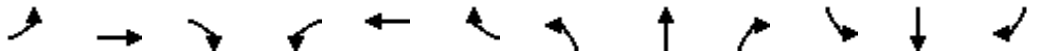
Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	730	0	0	735	0	5
Future Vol, veh/h	730	0	0	735	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	1	1	2	2
Mvmt Flow	849	0	0	855	0	6

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	849
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	361
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	361
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	15.14
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	361	-	-
HCM Lane V/C Ratio	0.016	-	-
HCM Ctrl Dly (s/v)	15.1	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	55	0	0	55	30	905	15	0	660	35
Future Volume (vph)	0	0	55	0	0	55	30	905	15	0	660	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		0	0		0	0		0
Storage Lanes	0		0	0		1	1		0	0		1
Taper Length (ft)	25		100	25		100	25		25	25		25
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		319			263			95			337	
Travel Time (s)		8.7			7.2			2.2			7.7	
Confl. Peds. (#/hr)			2	2			18		4	4		18
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	75%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	58	0	0	58	32	730	0	0	695	37
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	55	0	0	55	30	905	15	0	660	35
Future Vol, veh/h	0	0	55	0	0	55	30	905	15	0	660	35
Conflicting Peds, #/hr	0	0	2	2	0	0	18	0	4	4	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	0	58	0	0	58	32	714	16	0	695	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	715	-	-	726	750	0	0	-	-	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.21	-	-	6.21	4.11	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.309	-	-	3.309	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	433	0	0	426	864	-	-	0	-	-
Stage 1	0	0	-	0	0	-	-	-	-	0	-	-
Stage 2	0	0	-	0	0	-	-	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	424	-	-	424	849	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.82	14.82	0.39	0
HCM LOS	B	B		

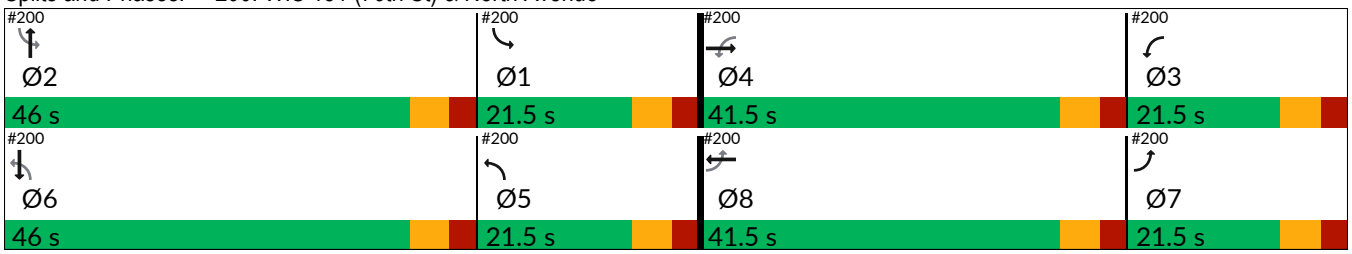
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	849	-	-	424	424	-	-
HCM Lane V/C Ratio	0.037	-	-	0.136	0.136	-	-
HCM Ctrl Dly (s/v)	9.4	-	-	14.8	14.8	-	-
HCM Lane LOS	A	-	-	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	-	-

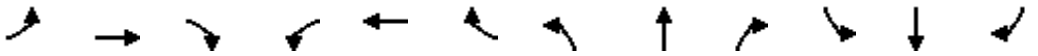
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	525	80	130	480	150	215	595	150	170	495	135
Future Volume (vph)	120	525	80	130	480	150	215	595	150	170	495	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	285		285	0		0	100		0	175		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		100	100		25	100		25
Right Turn on Red			No			No			No			No
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		746			271			337			493	
Travel Time (s)		17.0			6.2			7.7			11.2	
Confl. Peds. (#/hr)	14		14	14		14	32		20	20		32
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	658	0	141	685	0	234	810	0	185	685	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	12.0		6.0	12.0		6.0	12.0		6.0	12.0	
Minimum Split (s)	12.5	18.5		12.5	18.5		12.5	35.5		12.5	35.5	
Total Split (s)	21.5	41.5		21.5	41.5		21.5	46.0		21.5	46.0	
Total Split (%)	16.5%	31.8%		16.5%	31.8%		16.5%	35.2%		16.5%	35.2%	
Maximum Green (s)	15.0	35.0		15.0	35.0		15.0	39.5		15.0	39.5	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	2.0		1.5	2.0		1.5	4.0		1.5	4.0	
Minimum Gap (s)	1.5	1.5		1.5	1.5		1.5	2.5		1.5	2.5	
Time Before Reduce (s)	0.0	15.0		0.0	15.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	20.0		0.0	20.0		0.0	20.0		0.0	20.0	
Recall Mode	None	Ped		None	Ped		None	Ped		None	Ped	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		22.0			22.0			22.0			22.0	
Pedestrian Calls (#/hr)		20			25			20			25	
Act Effct Green (s)	44.7	33.2		44.7	34.8		51.7	39.7		51.7	36.4	
Actuated g/C Ratio	0.36	0.27		0.36	0.28		0.42	0.32		0.42	0.30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.66	0.91		0.65	0.93		0.83	0.95		0.81	0.88	
Control Delay (s/veh)	58.9	61.8		57.7	64.4		68.8	63.1		69.8	55.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	58.9	61.8		57.7	64.4		68.8	63.1		69.8	55.5	
LOS	E	E		E	E		E	E		E	E	
Approach Delay (s/veh)		61.4			63.3			64.4			58.6	
Approach LOS		E			E			E			E	
Queue Length 50th (ft)	67	344		74	370		127	437		95	347	
Queue Length 95th (ft)	111	#514		134	#563		#288	#652		#208	#502	
Internal Link Dist (ft)		666			191			257			413	
Turn Bay Length (ft)	285						100			175		
Base Capacity (vph)	271	763		268	741		283	849		271	844	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.86		0.53	0.92		0.83	0.95		0.68	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130.5			
Actuated Cycle Length: 122.5			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 62.0		Intersection LOS: E	
Intersection Capacity Utilization 89.1%		ICU Level of Service E	
Analysis Period (min) 15			
Description: U-turns, if any, are included in the left-turn volumes.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 200: WIS 181 (76th St) & North Avenue

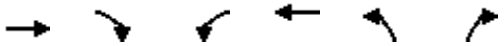




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	525	80	130	480	150	215	595	150	170	495	135
Future Volume (veh/h)	120	525	80	130	480	150	215	595	150	170	495	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.96	0.99		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	130	571	87	141	522	163	234	647	163	185	538	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	1	1	1
Cap, veh/h	238	727	110	261	646	201	314	815	205	252	735	200
Arrive On Green	0.06	0.26	0.26	0.07	0.27	0.27	0.09	0.32	0.32	0.06	0.30	0.30
Sat Flow, veh/h	1795	2783	423	1781	2374	738	1795	2517	633	1795	2468	671
Grp Volume(v), veh/h	130	289	369	141	307	378	234	363	447	185	307	378
Grp Sat Flow(s),veh/h/ln	1795	1414	1793	1781	1403	1710	1795	1414	1737	1795	1414	1725
Q Serve(g_s), s	0.0	17.8	17.9	0.0	19.1	19.3	3.6	21.8	21.9	2.1	18.2	18.4
Cycle Q Clear(g_c), s	0.0	17.8	17.9	0.0	19.1	19.3	3.6	21.8	21.9	2.1	18.2	18.4
Prop In Lane	1.00		0.24	1.00		0.43	1.00		0.36	1.00		0.39
Lane Grp Cap(c), veh/h	238	369	468	261	382	465	314	458	562	252	421	514
V/C Ratio(X)	0.55	0.78	0.79	0.54	0.81	0.81	0.74	0.79	0.79	0.73	0.73	0.73
Avail Cap(c_a), veh/h	415	530	672	417	526	641	442	598	735	426	598	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	32.1	32.1	38.9	31.7	31.8	37.6	28.7	28.7	39.8	29.4	29.5
Incr Delay (d2), s/veh	0.7	2.8	2.4	0.6	4.4	3.9	2.2	6.4	5.4	1.6	3.7	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	6.2	7.9	3.0	6.8	8.3	5.2	8.0	9.7	4.1	6.4	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.6	34.9	34.5	39.5	36.1	35.7	39.8	35.2	34.1	41.3	33.1	32.6
LnGrp LOS	D	C	C	D	D	D	D	D	C	D	C	C
Approach Vol, veh/h		788			826			1044			870	
Approach Delay, s/veh		35.6			36.5			35.8			34.6	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	36.7	13.3	30.9	14.9	34.3	12.3	31.9
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	15.0	39.5	15.0	35.0	15.0	39.5	15.0	35.0
Max Q Clear Time (g_c+I1), s	4.1	23.9	2.0	19.9	5.6	20.4	2.0	21.3
Green Ext Time (p_c), s	0.1	6.4	0.1	2.4	0.1	5.9	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	35.6
HCM 7th LOS	D



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	810	65	0	760	0	30
Future Volume (vph)	810	65	0	760	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			160	200	
Travel Time (s)	7.4			4.4	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1006	0	0	874	0	34
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	810	65	0	760	0	30
Future Vol, veh/h	810	65	0	760	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	931	75	0	874	0	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	503
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	514
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	514
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.51
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	514	-	-	-
HCM Lane V/C Ratio	0.067	-	-	-
HCM Ctrl Dly (s/v)	12.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	0	0	760	0	15
Future Volume (vph)	840	0	0	760	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	1
Taper Length (ft)		25	25		25	25
Link Speed (mph)	25			25	25	
Link Distance (ft)	160			2220	200	
Travel Time (s)	4.4			60.5	5.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	0	874	0	17
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	840	0	0	760	0	15
Future Vol, veh/h	840	0	0	760	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	2	2	2	2
Mvmt Flow	966	0	0	874	0	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	966
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	309
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	309
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.34
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	309	-	-
HCM Lane V/C Ratio	0.056	-	-
HCM Ctrl Dly (s/v)	17.3	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

APPENDIX J

INTERSECTION COLLISION DIAGRAM

Wauwatosa Avenue & Rozmus Way/Watson Avenue

Intersection Collision Diagram

TRAFFIC ANALYSIS & DESIGN, INC.

		Duration	
Location:	Wauwatosa Avenue & Watson Avenue	**From:**	1/1/2020 — 5 Years
Municipality:	City of Wauwatosa	**To:**	12/31/2024 — 0 Months
County:	Milwaukee	**AADT:**	17,100
Traffic Control:	Minor Street Stop	**Area Type:**	Urban
		GPS Coordinates:	43.059673, -88.007435

MAP

TOTAL CRASHES: 3

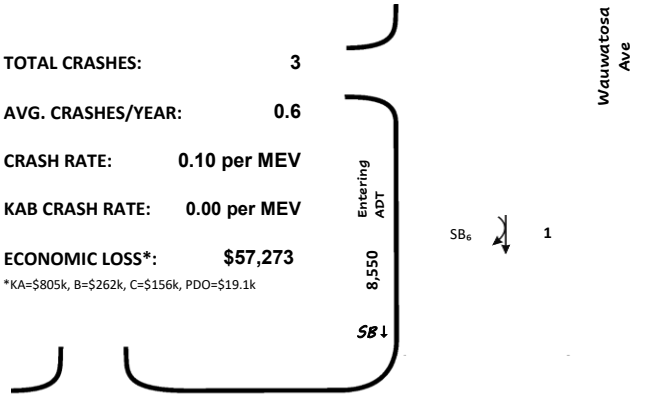
AVG. CRASHES/YEAR: 0.6

CRASH RATE: 0.10 per MEV

KAB CRASH RATE: 0.00 per MEV

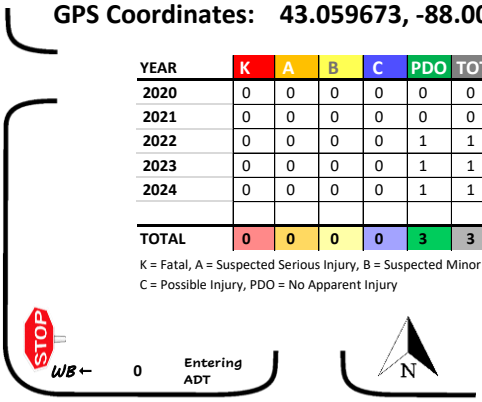
ECONOMIC LOSS*: $57,273

*KA=$805k, B=$262k, C=$156k, PDO=$19.1k



YEAR	K	A	B	C	PDO	TOT.	ECON. LOSS
2020	0	0	0	0	0	0	$ -
2021	0	0	0	0	0	0	$ -
2022	0	0	0	0	1	1	$ 19,091
2023	0	0	0	0	1	1	$ 19,091
2024	0	0	0	0	1	1	$ 19,091
TOTAL	0	0	0	0	3	3	$ 57,273

K = Fatal, A = Suspected Serious Injury, B = Suspected Minor Injury,
C = Possible Injury, PDO = No Apparent Injury



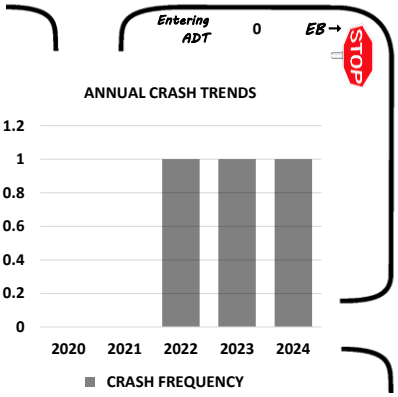
Rozmus Way

SB1 1

Watson Ave

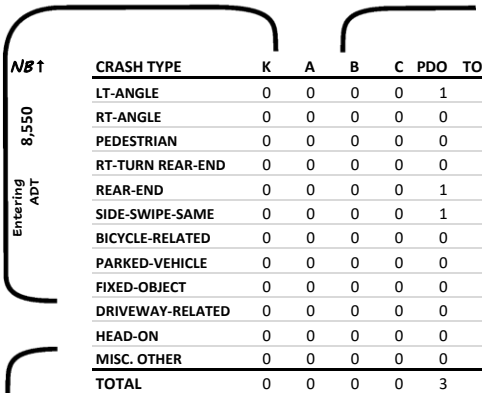
ECON. LOSS COLOR SCALE

- > $1 M
- > $500 K
- Ped/Bike





Wauwatosa Ave



CRASH TYPE	K	A	B	C	PDO	TOT.	ECON. LOSS
LT-ANGLE	0	0	0	0	1	1	$ 19,091
RT-ANGLE	0	0	0	0	0	0	$ -
PEDESTRIAN	0	0	0	0	0	0	$ -
RT-TURN REAR-END	0	0	0	0	0	0	$ -
REAR-END	0	0	0	0	1	1	$ 19,091
SIDE-SWIPE-SAME	0	0	0	0	1	1	$ 19,091
BICYCLE-RELATED	0	0	0	0	0	0	$ -
PARKED-VEHICLE	0	0	0	0	0	0	$ -
FIXED-OBJECT	0	0	0	0	0	0	$ -
DRIVEWAY-RELATED	0	0	0	0	0	0	$ -
HEAD-ON	0	0	0	0	0	0	$ -
MISC. OTHER	0	0	0	0	0	0	$ -
TOTAL	0	0	0	0	3	3	$ 57,273

ROAD CONDITIONS		
DRY	3	100%
WET	0	0%
SNOW	0	0%
ICE	0	0%
OTH.	0	0%
TOT.	3	

LIGHT CONDITIONS		
DAY	2	67%
DARK	1	33%
TOT.	3	

DRIVER BEHAVIOR		
ALCOHOL	0	0%
DRUGS	0	0%
BOTH	0	0%
SPEED	0	0%

SEASON		
SPRING	1	33%
SUMMER	0	0%
FALL	2	67%
WINTER	0	0%
TOT.	3	

FAILURE TO YIELD		
NB	0	0%
SB	1	33%
EB	0	0%
WB	0	0%
TBD	0	0%
TOT.	1	33%

RAN STOP SIGN		
NB	0	0%
SB	0	0%
EB	0	0%
WB	0	0%
TBD	0	0%
TOT.	0	0%

TBD = verification from crash report needed for direction

VEHICLE DAMAGE		
Minor	50%	3
Moderate	0%	0
Severe	33%	2
None/Other/Unkn	17%	1
Total Damaged Vehicles		6

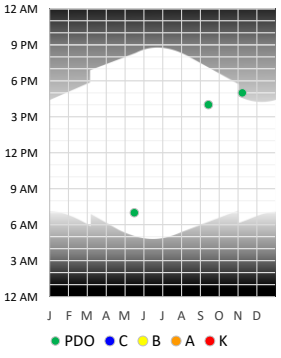
NOTES:

Crashes have been vetted with crash reports.

TOP 5 CRASH TYPES (RANKED BY ECONOMIC LOSS)

Crash Symbol & Type		ECON. LOSS	TOT.	K	A	B	C	PDO	Failure to Yield	Ran Stop Sign	Speed Related	Slippery Road	Notes
NB5	NB Rear-End Crashes	$19,091	1	0	0	0	0	1	0	0	0	0	
SB1	SB Left-Turn Angle Crashes	$19,091	1	0	0	0	0	1	1	0	0	0	
SB6	SB Side-Swipe Crashes	$19,091	1	0	0	0	0	1	0	0	0	0	

Time-of-Day



Crash Data

Corresponds to Collision Diagram

TRAFFIC ANALYSIS & DESIGN, INC.

Location:	**Wauwatosa Avenue & Watson Avenue**	**From:**	**1/1/2020**		
Municipality:	**City of Wauwatosa**	**To:**	**12/31/2024**	**Duration**	
County:	**Milwaukee**	**AADT:**	**17,100**	**5**	**Years**
Traffic Control:	**Minor Street Stop**	**Area Type:**	**Urban**	**0**	**Months**

Ref #	Label	Doc. #	Date	Crash Type	Time	Severity	Road Cond.	Light Cond.	Alc. Flag	Drug Flag	Speed Flag	Notes
1	NB_5	1RL18L0QGR	9/14/2023	REAR-END	4 PM							Stopped in traffic
2	SB_1	1RL18NGT40	11/8/2024	LT-ANGLE	5 PM			DARK				SBL through traffic
3	SB_6	1RL18VN0Z0	5/17/2022	SIDE-SWIPE-SAME	7 AM							Passing at merge
4												
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Ref #	Label	Doc. #	Date	Crash Type	Time	Severity	Road Cond.	Light Cond.	Alc. Flag	Drug Flag	Speed Flag	Notes
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Staff Report

File #: 26-1078 **Agenda Date:** 6/23/2026 **Agenda #:** 3.

Public Hearing regarding proposed ordinance amending Zoning Code Sections 24.06.070 SP-RP, Research Park District and 24.07.030 Use Table related to the Milwaukee County Research Park Master Plan implementation

24.06.070 SP-RP, Research Park District

A. Purpose. The SP-RP district is primarily intended to accommodate a broad range of office, professional, research related uses, and certain specialized manufacturing operations of a non-nuisance type in an office park setting along with multi-unit housing, retail, and service uses in order to implement the Research Park Master Plan. Development within the SP-RP district is subject to all applicable codes, covenants, and restrictions. ~~establish and regulate uses in conjunction with the authority of the Milwaukee Regional Innovation Center, Inc., formerly known as the Milwaukee County Research Park Corporation, consisting of research and development facilities, certain specialized manufacturing operations of a non-nuisance type, offices and professional support activities and services and prototype business incubators; all to be located in an aesthetic environment conducive to innovative and technological advancement and new job formation. Development within the research park must be in general conformance with the approved master plan for the site and must respect protective covenants established to promote a quality environment.~~

B. ~~Permitted~~ Uses. Principal uses are allowed in the SP-RP district in accordance with the use table of Section 24.07.030. ~~The following uses are permitted as of right in the SP-RP district:~~

~~1. Automatic temperature controls~~

~~2. Biological products~~

~~3. Business and laboratory incubators~~

~~4. Business and management consulting services~~

~~5. Computer programming services~~

~~6. Dental laboratory services~~

~~7. Commercial testing laboratories~~

~~8. Drugs, chemical and allied products~~

~~9. Data processing~~

~~10. Educational and scientific research services~~

~~11. Educational services~~

~~12. Electrical machinery, equipment and supplies~~

~~13. Electrical transmission and distribution equipment~~

~~14. Electric and steam and chilled water generation plants and related facilities~~

~~15. Electrometallurgical products~~

~~16. Electronic components and accessories~~

~~17. Electronic control equipment~~

~~18. Engineering and architectural services~~

~~19. Engineering, laboratory and scientific and research instruments and associated equipment~~

~~20. Exhibition halls~~

~~21. Facilities management services~~

~~22. Fabricated metal products~~

~~23. Finance, insurance and real estate services~~

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~~24. Food and kindred products~~

~~25. Forestry activities and related services~~

~~26. Horticultural services~~

~~27. Hotels and motels~~

~~28. Industrial inorganic and organic chemicals~~

~~29. Instruments for measuring, controlling and indicating physical characteristics~~

~~30. Mechanical measuring and controlling instruments (except automatic temperature controls)~~

~~31. Medical and health services~~

~~32. Medical laboratory services~~

~~33. Medical research, technology and development~~

~~34. Medical scientific research facilities~~

~~35. Medicinal chemicals and botanical products~~

~~36. Miscellaneous plastic products~~

~~37. Mixed-Use Building, Vertical~~

~~38. Multi-Unit Buildings, 5-12 units~~

~~39. Multi-Unit Buildings, 13+ units~~

~~40. Motion picture production~~

~~41. Office buildings~~

~~42. Office computing and accounting machines~~

~~43. Optical instruments and lenses~~

~~44. Orthopedic, prosthetic and surgical appliances~~

~~45. Pharmaceutical preparations~~

~~46. Photographic equipment supplies~~

~~47. Plastics materials and synthetic resins, synthetic rubber, synthetic and other manmade fibers~~

~~48. Printing and publishing~~

~~49. Professional, scientific and controlling instruments~~

~~50. Research, development and testing services~~

~~51. Resources production and extraction~~

~~52. Stenographic services and other duplicating and mailing services~~

~~53. Surgical, medical and dental instruments~~

~~54. Technical training facilities~~

~~55. X-ray apparatus and tubes: medical, industrial, research and control~~

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C. Lot and Building Standards. The lot and building standards of the following table apply to all principal and accessory uses allowed in the SP-RP district, except as otherwise expressly stated in this zoning ordinance. General exceptions to these standards and rules for measuring compliance can be found in Section 24.18.030.

Lot and Building Standards	**SP-RP**
Minimum Lot Area (square feet) – only applies to parcel with navigable waterway	[1]
Minimum Lot Width (feet) – only applies to parcel with navigable waterway	[1]
Minimum Setbacks (feet)	
From property line on Mayfair Road, Watertown Plank Road and Wisconsin Avenue	10
From property line at highway 45	50
From shared property line within the park	3
From property line of internal streets	10
From navigable waterway ordinary high water mark	[1]
Maximum Height (feet)	
Principal Buildings	No max.
Principal Buildings – within 300' of the Wisconsin Avenue property line	100
Accessory Buildings	50
Accessory Buildings – within 300' of the Wisconsin Avenue property line	30
Maximum Building Coverage (% of lot area)	No max.

[1] Must follow regulations established in Chapter NR 115 Wisconsin Statutes.

~~C. Conditional Uses. The following uses may be allowed in the SP-RP district if reviewed and approved in accordance with the conditional use permit procedures of Section 24.16.040. Such uses must be accessory to allowed principal uses in each building and may not exceed 30% of the building's gross floor area.~~

~~1. Banking services and related functions~~

~~2. Barber services~~

~~3. Beauty services~~

~~4. Day care centers~~

~~5. Eating places~~

~~6. Groceries~~

~~7. Heliport landing/takeoff pads~~

~~8. Laundry and dry-cleaning pickup stations only~~

~~9. Office supplies and equipment~~

~~10. Off-street parking~~

~~11. Recreation or fitness centers~~

~~12. Telephone relay towers (microwave)~~

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13. Television transmitting stations and relay towers

14. Water storage

D. Additional Conditional Uses. In addition to those conditional uses authorized under subsection C above, the following uses may be allowed in the SP-RP District if reviewed and approved in accordance with the conditional use permit procedures of Section 24.16.040, except they may be free standing conditional uses and not accessory to any allowed principal uses:

1. Buildings in which any of the commercial uses listed in B and C, above, occupy the ground floor.

2. Eating places with indoor seating capacity in which sales of prepared foods, meals and non-alcoholic beverages constitute at least 50% of the establishment's gross income and which do not include drive-through or drive-in facilities.

E. Minimum Ground Floor Area. The minimum ground floor area is 8,000 square feet, unless a smaller area is approved by the common council on the final plan.

F. Maximum Lot Coverage. Buildings may not cover more than 50% of the gross site area.

G. Lot Area. Lots must have a minimum area of one acre.

H. Lot Width. Lots must have a minimum width of 100 feet.

I. Setbacks. Minimum building setbacks are as follows:

1. From property line on Mayfair Road, Watertown Plank Road and Wisconsin Avenue: 50 feet

2. From property line at highway 45: 100 feet

3. From shared property line within the park: 25 feet

4. From curbline of internal streets other than main street: 40 feet

5. From curbline of main street: 25 feet

6. From creek and water feature: 60 feet

J. Height. Within 300 feet of the curbline of Mayfair Road and Wisconsin Avenue, building heights may not exceed 100 feet. Other areas of the park have no set maximum height limit.

K. Design Review. Design review is the responsibility of a special board authorized for this purpose. Design review must occur before final plan review by the common council.

L. Final Plan Review. Final plan review must be conducted by the common council. Changes and amendments to approved developments prior to or during construction must be reviewed and approved as follows:

1. Changes in the approved final development plan must be reviewed by the special board authorized as a project review board and returned to the common council if 40% or more of the members present consider the change to be a variance to the approved plan and/or that it does not meet the intent of conditions and restrictions placed on the approved plan.

2.1. Minor changes in the location, siting and height of buildings and structures may be authorized by the development director.

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24.06.070 SP-RP, Research Park District

A. Purpose. The SP-RP district is primarily intended to accommodate a broad range of office, professional, research related uses, and certain specialized manufacturing operations of a non-nuisance type in an office park setting along with multi-unit housing, retail, and service uses in order to implement the Research Park Master Plan. Development within the SP-RP district is subject to all applicable codes, covenants, and restrictions.

B. Uses. Principal uses are allowed in the SP-RP district in accordance with the use table of Section 24.07.030.

C. Lot and Building Standards. The lot and building standards of the following table apply to all principal and accessory uses allowed in the SP-RP district, except as otherwise expressly stated in this zoning ordinance. General exceptions to these standards and rules for measuring compliance can be found in Section 24.18.030.

Lot and Building Standards	**SP-RP**
Minimum Lot Area (square feet) – only applies to parcel with navigable waterway	[1]
Minimum Lot Width (feet) – only applies to parcel with navigable waterway	[1]
Minimum Setbacks (feet)	
From property line on Mayfair Road, Watertown Plank Road and Wisconsin Avenue	10
From property line at highway 45	50
From shared property line within the park	3
From property line of internal streets	10
From navigable waterway ordinary high water mark	[1]
Maximum Height (feet)	
Principal Buildings	No max.
Principal Buildings – within 300’ of the Wisconsin Avenue property line	100
Accessory Buildings	50
Accessory Buildings – within 300’ of the Wisconsin Avenue property line	30
Maximum Building Coverage (% of lot area)	No max.

[1] Must follow regulations established in Chapter NR 115 Wisconsin Statutes.

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link to use definitions:
https://wauwatosa.municipalcodeonline.com/book?type=ordinances#name=CHAPTER_24.08_USE_CLASSIFICATIONS

24.07.030 Use Table

The following table identifies principal uses allowed in residential, commercial and industrial zoning districts. See Section 24.07.020 for information about how to interpret the use table.

USE CATEGORY	**DISTRICTS**																					
Use Subcategory (See Chapter 24.08) - Specific Use Type (See Ch. 24.08)	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[54]**	**C1[54]**	**C2[54]**	**M1[54]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP[1]**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
RESIDENTIAL																						
Household Living																						
- Detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	
- Semi-detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020A
- Two-unit House	P	P	P	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020B
- Three-Unit/Four-Unit House	-	-	-	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	P	24.09.020C

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- Cottage Court	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020D
- Attached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	–P	-	P	P	P	24.09.020A
- Multi-unit Residential Building, 5-12 units	-	-	-	P	P	P	P	P	P	-	-	-	-	-	P	-	P	-	P	P	P	
- Multi-unit Residential Building, 13+ units	-	-	-	-	-	-	-	P	P	-	-	-	-	-	P	-	P	-	-	P	P	
- Mixed-use Building, Vertical	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Mixed-use, Horizontal	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	–P	-	-	-	-	
- Educational Facility Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	24.06.060C
- Live-Work Unit	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	-	-	-	P	P	24.09.020E
Group Living (except as indicated below)	-	-	-	-	C	C	-	P	C	-	-	-	-	-	C	C	-	-	C	P	C	
- Adult Family Home	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.010
- Community Living Arrangement	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.040
- Foster Home/Treatment Foster Home	P	P	P	P	P	P	-	C	-	-	-	-	-	-	C	C	-	-	P	C	-	24.09.060

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PUBLIC/CIVIL	GR	SR	NR	MR	LDM	MDM	CO[54]	C1[54]	C2[54]	M1[54]	M2	SP-CON	SP-POS	SP-PUB	SP-INS	SP-MED	SP-RP[1]	SP-PKG	MID-RES	MID-TRN	MID-MIX	USE REGULATIONS
College/University	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Day Care																						
- Home-Based—Up to 8 children or adults	P	P	P	P	P	P	P	P	P	-	-	-	C	-	C	C	P	-	P	P	P	
- More than 8 children or adults [7]	C[6]	C[6]	C[6]	C[6]	C[6]	C[6]	C	C	C	-	-	-	C	-	C	C	C	-	-	C	C	
Detention and Correctional Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	
Fraternal, Labor, Membership Organization	-	-	-	-	-	-	-	P	P	P	-	-	-	-	P	-	P	-	-	P	P	
Hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Library/Cultural Exhibit	-	P	P	P	P	P	P	P	P	-	-	C	C	-	C	C	-	-	P	P	P	
Park/Recreation/Open Space (except as indicated below)	-	-	-	-	-	-	-	-	-	-	-	P	P	P	C	C	P	-	-	-	-	
- Community or Recreation Center	-	C	C	C	C	C	-	C	P	-	-	C	P	C	C	C	C	-	C	C	P	

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-General Recreation Park/Playground		C	C	C	C	C	-	-	-	-	-	P	P	P	C	C	P	-	C	-	-	
- Golf Course (min. 5,000 yards)	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Swimming Pool	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Tennis Court	C	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	P	-	C	-	-	
Religious Assembly	C	C	C	C	C	C	-	P	P	C	-	-	-	-	C	C	-	-	C	C	C	
Government or Safety Services	C	C	C	C	C	C	C	C	C	P	P	-	-	P	C	C	P	-	C	C	C	
School	-	P	P	P	P	P	P	P	-	-	-	P	P	-	P	P	P	-	P	P	-	
Utilities & Services																						
- Minor	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	-	P	P	P	
- Major	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	C	C	C	
COMMERCIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[54]**	**C1[54]**	**C2[54]**	**M1[54]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP[1]**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Animal Services																						

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- Sales & Grooming	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Shelter or Boarding Kennel	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Veterinary	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Artist Work or Sales Space	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Building Maintenance Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Business Equipment Sales & Service	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Business Support Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
- Trade/Vocational/Technical School	-	-	-	-	-	-	P	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Communication Service Establishments	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Construction Sales & Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Eating & Drinking Establishments [23]																						
- Restaurant	-	-	-	-	-	-	C	C	C	-	-	-	C	-	-	C	P/C [7]	-	-	C	C	

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- Bar or Tavern	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	-	C	-	-	C	C	
Entertainment & Spectator Sports (except as indicated below)	-	-	-	-	-	-	-	C	C	-	-	-	-	C	-	-	C	-	-	C	C	
- Amphitheater	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Aquarium or Planetarium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Auditorium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Stadium and Athletic Fields (accessory to schools only in R districts)	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
Financial Services (except as indicated below)	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Convenient Cash Business	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.050
Food & Beverage Retail Sales																						
- Grocery Store	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	P	-	-	P	P	
- Liquor/Wine/Beer Store	-	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	C	-	-	C	C	

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- Carry-out Only	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
Funeral & Interment Services																						
- Cemetery/Columbarium/ Mausoleum	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
- Cremating	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Undertaking/Funeral Services	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	P	P	
Lodging																						
- Bed & Breakfast	-	-	C	C	C	C	-	C	-	-	-	-	-	-	-	-	-	-	C	C	-	24.09.030
- Hotel/Motel	-	-	-	-	-	-	-	C	P	-	-	-	-	-	-	-	P	-	-	C	C	
- Campground	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
Office, Administrative, Professional	-	-	-	-	-	-	P	P	P	P	P	-	-	P	-	P	P	-	-	P	P	
- Government/ School District Offices	-	P	P	P	P	P	P	P	P	-	-	-	-	-	P	P	P	-	-	P	P	
Office or Clinic, Medical	-	-	-	-	-	-	P	P	P	-	C[~~6~~ 5]	-	-	-	P	P	P	-	-	P	P	

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Parking, Non-Accessory	-	-	-	-	-	-	-	C	P	P	P	-	-	P	-	C	-	P	-	C	P	24.06.080B
Personal Improvement Service	-	-	-	-	-	-	P	P	P	P	C	-	-	-	-	-	P	-	-	P	P	
Repair or Laundry Service, Consumer	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Research Service	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	P	P	-	-	P	P	
Retail Sales (except as indicated below)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
-Antiques, Resale Shops, Second-hand Merchandise	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	6.55
- Cigarette, Cigar, Tobacco, Vape, or E-Cigarette Store	-	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	24.09.120
- Cigarette & Tobacco Product Sales (ancillary)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	
- Large-Format Retail	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.090
Sports & Recreation, Participant																						
- Indoor	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	P	P	-	-	P	P	6.12.060
- Outdoor	-	-	-	-	-	-	-	C	C	P	P	-	-	-	-	C	C	-	-	C	C	

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Vehicle Sales & Service																							
- Auto Wash/Cleaning Service	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	-	7.46.120
- Auto Fueling Station	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	C	
- Heavy Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Light Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	6.72
- Motor Vehicle Repair, Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Motor Vehicle Repair, General	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Vehicle Storage & Towing	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
INDUSTRIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[~~54~~]**	**C1[~~54~~]**	**C2[~~54~~]**	**M1[~~54~~]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP[~~1~~]**	**SP-PKG**	**MD-RES**	**MD-TRN**	**MD-MIX**	**USE REGULATIONS**
Manufacturing & Industrial Services, Artisan	-	-	-	-	-	-	-	P	P	P	P	-	-	P	-	-	P	-	-	P	P	
Manufacturing & Industrial Services, Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	P	-	-	-	-	

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Manufacturing & Industrial Services, General	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
Manufacturing & Industrial Services, Intensive	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	
-Recycling Service																						
- Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	P	
- General	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-	-	
Residential Storage Warehouses	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
-Warehousing, Wholesaling & Freight Movement																						
- Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
- General	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
Waste-Related Use	-	-	-	-	-	-	-	-	-	-	C	-	-	P	-	-	-	-	-	-	-	
AGRICULTURAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[54]**	**C1[54]**	**C2[54]**	**M1[54]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP[1]**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**

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Apiary	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-		
Community Garden	P	P	P	P	P	P	P	P	P	P	P	P	P	P	C	C	-	-	P	P	P		
Farmer's Market	C	C	C	C	C	C	P	P	P	P	P	-	P	P	P	P	P	-	C	P	P		
Nurseries & Greenhouses	-	-	C	-	-	-	-	-	P	P	-	C	C	P	C	C	-	-	-	-	P		
MISCELLANEOUS	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[54]**	**C1[54]**	**C2[54]**	**M1[54]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP[1]**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**	
Wireless Communication Facilities																							
- Co-located	[21]	[21]	[21]	[21]	[21]	[21]	[21]	P	P	P	P	-	-	P	-	-	P	-	[21]	P	-	24.09.110	
- Freestanding	[21]	[21]	[21]	[21]	[21]	[21]	[21]	[21]	[21]	P	P	-	-	P	-	-	[1]	-	[21]	[21]	[21]	24.09.110	
Drive-through or Drive-in Facilities	-	-	-	-	-	-	C	C[43]	C[43]	C[43]	C	-	-	-	-	-	C[3]	-	-	-	-	24.11.100	
Helipad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-		

~~[1] See Section 24.06.070 for a list of permitted and conditional uses in the SP-RP district.~~
[21] See Section 24.09.110 for additional regulations.
[32] See Section 24.05.020 C.2. In a regional mall, no Conditional Use is required for establishments with no separate entrance or seating.
[43] See Section 24.05.030 B.7. Drive-through or drive-in facilities are prohibited in /NOR overlay. See Section 24.05.020 D for additional /MAY Overlay drive-through or drive-in regulations.

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[~~5~~4] See Subsection 24.03.040 I and 24.04.040 F. - Outdoor storage activities require a Conditional Use.
[~~6~~5] See Subsection 24.08.040 O.2. "Office or Clinic, Medical" definition.
[~~7~~6] Only allowed on school or religious assembly properties with a Conditional Use.
[7] Eating establishments with no alcohol sales and operate between 6 am and 10 pm are permitted. All other eating establishments require a Conditional Use Permit.

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link to use definitions:
https://wauwatosa.municipalcodeonline.com/book?type=ordinances#name=CHAPTER_24.08_USE_CLASSIFICATIONS

24.07.030 Use Table

The following table identifies principal uses allowed in residential, commercial and industrial zoning districts. See Section 24.07.020 for information about how to interpret the use table.

USE CATEGORY	**DISTRICTS**																					
Use Subcategory (See Chapter 24.08) - Specific Use Type (See Ch. 24.08)	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
RESIDENTIAL																						
Household Living																						
- Detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	
- Semi-detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020A
- Two-unit House	P	P	P	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020B
- Three-Unit/Four-Unit House	-	-	-	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	P	24.09.020C

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- Cottage Court	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020D
- Attached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	P	-	P	P	P	24.09.020A
- Multi-unit Residential Building, 5-12 units	-	-	-	P	P	P	P	P	P	-	-	-	-	-	P	-	P	-	P	P	P	
- Multi-unit Residential Building, 13+ units	-	-	-	-	-	-	-	P	P	-	-	-	-	-	P	-	P	-	-	P	P	
- Mixed-use Building, Vertical	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Mixed-use, Horizontal	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	P	-	-	-	-	
- Educational Facility Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	24.06.060C
- Live-Work Unit	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	-	-	-	P	P	24.09.020E
Group Living (except as indicated below)	-	-	-	-	C	C	-	P	C	-	-	-	-	-	C	C	-	-	C	P	C	
- Adult Family Home	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.010
- Community Living Arrangement	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.040
- Foster Home/Treatment Foster Home	P	P	P	P	P	P	-	C	-	-	-	-	-	-	C	C	-	-	P	C	-	24.09.060

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PUBLIC/CIVIL	GR	SR	NR	MR	LDM	MDM	CO[4]	C1[4]	C2[4]	M1[4]	M2	SP-CON	SP-POS	SP-PUB	SP-INS	SP-MED	SP-RP	SP-PKG	MID-RES	MID-TRN	MID-MIX	USE REGULATIONS
College/University	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Day Care																						
- Home-Based—Up to 8 children or adults	P	P	P	P	P	P	P	P	P	-	-	-	C	-	C	C	P	-	P	P	P	
- More than 8 children or adults	C[6]	C[6]	C[6]	C[6]	C[6]	C[6]	C	C	C	-	-	-	C	-	C	C	C	-	-	C	C	
Detention and Correctional Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	
Fraternal, Labor, Membership Organization	-	-	-	-	-	-	-	P	P	P	-	-	-	-	P	-	P	-	-	P	P	
Hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Library/Cultural Exhibit	-	P	P	P	P	P	P	P	P	-	-	C	C	-	C	C	-	-	P	P	P	
Park/Recreation/Open Space (except as indicated below)	-	-	-	-	-	-	-	-	-	-	-	P	P	P	C	C	P	-	-	-	-	
- Community or Recreation Center	-	C	C	C	C	C	-	C	P	-	-	C	P	C	C	C	C	-	C	C	P	
-General Recreation Park/Playground		C	C	C	C	C	-	-	-	-	-	P	P	P	C	C	P	-	C	-	-	

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- Golf Course (min. 5,000 yards)	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Swimming Pool	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Tennis Court	C	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	P	-	C	-	-	
Religious Assembly	C	C	C	C	C	C	-	P	P	C	-	-	-	-	C	C	-	-	C	C	C	
Government or Safety Services	C	C	C	C	C	C	C	C	C	P	P	-	-	P	C	C	P	-	C	C	C	
School	-	P	P	P	P	P	P	P	-	-	-	P	P	-	P	P	P	-	P	P	-	
Utilities & Services																						
- Minor	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	-	P	P	P	
- Major	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	C	C	C	
COMMERCIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Animal Services																						
- Sales & Grooming	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	

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- Shelter or Boarding Kennel	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Veterinary	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Artist Work or Sales Space	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Building Maintenance Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Business Equipment Sales & Service	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Business Support Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
- Trade/Vocational/Technical School	-	-	-	-	-	-	P	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Communication Service Establishments	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Construction Sales & Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Eating & Drinking Establishments [2]																						
- Restaurant	-	-	-	-	-	-	C	C	C	-	-	-	C	-	-	C	P/C [7]	-	-	C	C	
- Bar or Tavern	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	-	C	-	-	C	C	

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Entertainment & Spectator Sports (except as indicated below)	-	-	-	-	-	-	-	C	C	-	-	-	-	C	-	-	C	-	-	C	C	
- Amphitheater	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Aquarium or Planetarium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Auditorium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Stadium and Athletic Fields (accessory to schools only in R districts)	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
Financial Services (except as indicated below)	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Convenient Cash Business	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.050
Food & Beverage Retail Sales																						
- Grocery Store	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	P	-	-	P	P	
- Liquor/Wine/Beer Store	-	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	C	-	-	C	C	
- Carry-out Only	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
Funeral & Interment Services																						

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- Cemetery/Columbarium/ Mausoleum	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
- Cremating	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Undertaking/Funeral Services	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	P	P	
Lodging																						
- Bed & Breakfast	-	-	C	C	C	C	-	C	-	-	-	-	-	-	-	-	-	-	C	C	-	24.09.030
- Hotel/Motel	-	-	-	-	-	-	-	C	P	-	-	-	-	-	-	-	P	-	-	C	C	
- Campground	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
Office, Administrative, Professional	-	-	-	-	-	-	P	P	P	P	P	-	-	P	-	P	P	-	-	P	P	
- Government/ School District Offices	-	P	P	P	P	P	P	P	P	-	-	-	-	-	P	P	P	-	-	P	P	
Office or Clinic, Medical	-	-	-	-	-	-	P	P	P	-	C[5]	-	-	-	P	P	P	-	-	P	P	
Parking, Non-Accessory	-	-	-	-	-	-	-	C	P	P	P	-	-	P	-	C	-	P	-	C	P	24.06.080B
Personal Improvement Service	-	-	-	-	-	-	P	P	P	P	C	-	-	-	-	-	P	-	-	P	P	

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Repair or Laundry Service, Consumer	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Research Service	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	P	P	-	-	P	P	
Retail Sales (except as indicated below)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
-Antiques, Resale Shops, Second-hand Merchandise	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	6.55
- Cigarette, Cigar, Tobacco, Vape, or E-Cigarette Store	-	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	24.09.120
- Cigarette & Tobacco Product Sales (ancillary)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	
- Large-Format Retail	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.090
Sports & Recreation, Participant																						
- Indoor	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	P	P	-	-	P	P	6.12.060
- Outdoor	-	-	-	-	-	-	-	C	C	P	P	-	-	-	-	C	C	-	-	C	C	
Vehicle Sales & Service																						
- Auto Wash/Cleaning Service	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	-	7.46.120

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- Auto Fueling Station	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	C	
- Heavy Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Light Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	6.72
- Motor Vehicle Repair, Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Motor Vehicle Repair, General	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Vehicle Storage & Towing	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
INDUSTRIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Manufacturing & Industrial Services, Artisan	-	-	-	-	-	-	-	P	P	P	P	-	-	P	-	-	P	-	-	P	P	
Manufacturing & Industrial Services, Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	P	-	-	-	-	
Manufacturing & Industrial Services, General	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
Manufacturing & Industrial Services, Intensive	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	

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-Recycling Service																						
- Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	P	
- General	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-	-	
Residential Storage Warehouses	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
-Warehousing, Wholesaling & Freight Movement																						
- Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
- General	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
Waste-Related Use	-	-	-	-	-	-	-	-	-	-	C	-	-	P	-	-	-	-	-	-	-	
AGRICULTURAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Apiary	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	
Community Garden	P	P	P	P	P	P	P	P	P	P	P	P	P	P	C	C	-	-	P	P	P	
Farmer's Market	C	C	C	C	C	C	P	P	P	P	P	-	P	P	P	P	P	-	C	P	P	

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Nurseries & Greenhouses	-	-	C	-	-	-	-	-	P	P	-	C	C	P	C	C	-	-	-	-	P	
MISCELLANEOUS	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Wireless Communication Facilities																						
- Co-located	[1]	[1]	[1]	[1]	[1]	[1]	[1]	P	P	P	P	-	-	P	-	-	P	-	[1]	P	-	24.09.110
- Freestanding	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	P	P	-	-	P	-	-	[1]	-	[1]	[1]	[1]	24.09.110
Drive-through or Drive-in Facilities	-	-	-	-	-	-	C	C[3]	C[3]	C[3]	C	-	-	-	-	-	C[3]	-	-	-	-	24.11.100
Helipad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	

[1] See Section 24.09.110 for additional regulations.
[2] See Section 24.05.020 C.2. In a regional mall, no Conditional Use is required for establishments with no separate entrance or seating.
[3] See Section 24.05.030 B.7. Drive-through or drive-in facilities are prohibited in /NOR overlay. See Section 24.05.020 D for additional /MAY Overlay drive-through or drive-in regulations.
[4] See Subsection 24.03.040 I and 24.04.040 F. - Outdoor storage activities require a Conditional Use.
[5] See Subsection 24.08.040 O.2. "Office or Clinic, Medical" definition.
[6] Only allowed on school or religious assembly properties with a Conditional Use.
[7] Eating establishments with no alcohol sales and operate between 6 am and 10 pm are permitted. All other eating establishments require a Conditional Use Permit.

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Ordinance amending Zoning Code Sections 24.06.070 SP-RP, Research Park District and 24.07.030 Use Table related to the Milwaukee County Research Park Master Plan implementation

The Common Council of the City of Wauwatosa do ordain as follows:

Part I. The "SP-RP, Research Park District" section of Wauwatosa Code of Ordinances 24.06.070 is hereby repealed and replaced to read as follows:

24.06.070 SP-RP, Research Park District

A. Purpose. The SP-RP district is primarily intended to accommodate a broad range of office, professional, research related uses, and certain specialized manufacturing operations of a non-nuisance type in an office park setting along with multi-unit housing, retail, and service uses in order to implement the Research Park Master Plan. Development within the SP-RP district is subject to all applicable codes, covenants, and restrictions.

B. Uses. Principal uses are allowed in the SP-RP district in accordance with the use table of Section 24.07.030.

C. Lot and Building Standards. The lot and building standards of the following table apply to all principal and accessory uses allowed in the SP-RP district, except as otherwise expressly stated in this zoning ordinance. General exceptions to these standards and rules for measuring compliance can be found in Section 24.18.030.

Lot and Building Standards	**SP-RP**
Minimum Lot Area (square feet) – only applies to parcel with navigable waterway	[1]
Minimum Lot Width (feet) – only applies to parcel with navigable waterway	[1]
Minimum Setbacks (feet)	
From property line on Mayfair Road, Watertown Plank Road and Wisconsin Avenue	10
From property line at highway 45	50
From shared property line within the park	3
From property line of internal streets	10
From navigable waterway ordinary high water mark	[1]
Maximum Height (feet)	
Principal Buildings	No max.
Principal Buildings – within 300' of the Wisconsin Avenue property line	100
Accessory Buildings	50
Accessory Buildings – within 300' of the Wisconsin Avenue property line	30
Maximum Building Coverage (% of lot area)	No max.

[1] Must follow regulations established in Chapter NR 115 Wisconsin Statutes.

Part II. The "Use Table" section of Wauwatosa Municipal Code of Ordinances 24.07.030 is hereby repealed and replaced to read as follows:

24.07.030 Use Table

The following table identifies principal uses allowed in residential, commercial and industrial zoning districts. See Section 24.07.020 for information about how to interpret the use table.

USE CATEGORY	**DISTRICTS**																				
Use Subcategory (See Chapter 24.08) - Specific Use Type (See Ch. 24.08)	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
RESIDENTIAL																						
Household Living																						
- Detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	
- Semi-detached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020A
- Two-unit House	P	P	P	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020B
- Three-Unit/Four-Unit House	-	-	-	P	P	P	P	P	-	-	-	-	-	-	-	-	-	-	P	P	P	24.09.020C
- Cottage Court	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	24.09.020D
- Attached House	P	P	P	P	P	P	-	P	-	-	-	-	-	-	-	-	P	-	P	P	P	24.09.020A
- Multi-unit Residential Building, 5-12 units	-	-	-	P	P	P	P	P	P	-	-	-	-	-	P	-	P	-	P	P	P	
- Multi-unit Residential Building, 13+ units	-	-	-	-	-	-	-	P	P	-	-	-	-	-	P	-	P	-	-	P	P	

- Mixed-use Building, Vertical	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Mixed-use, Horizontal	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	P	-	-	-	-	
- Educational Facility Housing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	24.06.060C
- Live-Work Unit	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	-	-	-	P	P	24.09.020E
Group Living (except as indicated below)	-	-	-	-	C	C	-	P	C	-	-	-	-	-	C	C	-	-	C	P	C	
- Adult Family Home	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.010
- Community Living Arrangement	P/C	P/C	P/C	P/C	P/C	P/C	-	C	-	-	-	-	-	-	C	C	-	-	P/C	C	-	24.09.040
- Foster Home/Treatment Foster Home	P	P	P	P	P	P	-	C	-	-	-	-	-	-	C	C	-	-	P	C	-	24.09.060
PUBLIC/CIVIL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
College/University	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Day Care																						
- Home-Based—Up to 8 children or adults	P	P	P	P	P	P	P	P	P	-	-	-	C	-	C	C	P	-	P	P	P	
- More than 8 children or adults	C[6]	C[6]	C[6]	C[6]	C[6]	C[6]	C	C	C	-	-	-	C	-	C	C	C	-	-	C	C	
Detention and Correctional Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	

Fraternal, Labor, Membership Organization	-	-	-	-	-	-	-	P	P	P	-	-	-	-	P	-	P	-	-	P	P	
Hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	P	-	-	-	-	-	
Library/Cultural Exhibit	-	P	P	P	P	P	P	P	P	-	-	C	C	-	C	C	-	-	P	P	P	
Park/Recreation /Open Space (except as indicated below)	-	-	-	-	-	-	-	-	-	-	-	P	P	P	C	C	P	-	-	-	-	
- Community or Recreation Center	-	C	C	C	C	C	-	C	P	-	-	C	P	C	C	C	C	-	C	C	P	
-General Recreation Park/Playground		C	C	C	C	C	-	-	-	-	-	P	P	P	C	C	P	-	C	-	-	
- Golf Course (min. 5,000 yards)	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Swimming Pool	-	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	-	-	C	-	-	
- Tennis Court	C	C	C	C	C	C	-	-	-	-	-	C	P	C	C	C	P	-	C	-	-	
Religious Assembly	C	C	C	C	C	C	-	P	P	C	-	-	-	-	C	C	-	-	C	C	C	
Government or Safety Services	C	C	C	C	C	C	C	C	C	P	P	-	-	P	C	C	P	-	C	C	C	
School	-	P	P	P	P	P	P	P	-	-	-	P	P	-	P	P	P	-	P	P	-	
Utilities & Services																						
- Minor	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	-	P	P	P	
- Major	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	-	C	C	C	
COMMERCIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-C**	**SP-**	**SP-P**	**SP-**	**SP-M**	**SP-**	**SP-P**	**MID-**	**MID-**	**MID-**	**USE REGU**

												ON	POS	UB	INS	ED	RP	KG	RES	TRN	MIX	LATIONS
Animal Services																						
- Sales & Grooming	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Shelter or Boarding Kennel	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Veterinary	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Artist Work or Sales Space	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Building Maintenance Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Business Equipment Sales & Service	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Business Support Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
- Trade/Vocational /Technical School	-	-	-	-	-	-	P	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Communication Service Establishments	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Construction Sales & Service	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	P	-	-	-	P	
Eating & Drinking Establishments [2]																						
- Restaurant	-	-	-	-	-	-	C	C	C	-	-	-	C	-	-	C	P/C [7]	-	-	C	C	
- Bar or Tavern	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	-	C	-	-	C	C	
Entertainment & Spectator	-	-	-	-	-	-	-	C	C	-	-	-	-	C	-	-	C	-	-	C	C	

Sports (except as indicated below)																						
- Amphitheater	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Aquarium or Planetarium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Auditorium	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
- Stadium and Athletic Fields (accessory to schools only in R districts)	-	C	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-	C	C	-	
Financial Services (except as indicated below)	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
- Convenient Cash Business	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.050
Food & Beverage Retail Sales																						
- Grocery Store	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	P	-	-	P	P	
- Liquor/Wine/Beer Store	-	-	-	-	-	-	-	C	C	C	-	-	-	-	-	-	C	-	-	C	C	
- Carry-out Only	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	P	-	-	P	P	
Funeral & Interment Services																						
- Cemetery/Columbarium/Mausoleum	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
- Cremating	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Undertaking/Funeral Services	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	P	P	

Lodging																						
- Bed & Breakfast	-	-	C	C	C	C	-	C	-	-	-	-	-	-	-	-	-	-	C	C	-	24.09.030
- Hotel/Motel	-	-	-	-	-	-	-	C	P	-	-	-	-	-	-	-	P	-	-	C	C	
- Campground	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	
Office, Administrative, Professional	-	-	-	-	-	-	P	P	P	P	P	-	-	P	-	P	P	-	-	P	P	
- **Government / School District Offices**	-	P	P	P	P	P	P	P	P	-	-	-	-	-	P	P	P	-	-	P	P	
Office or Clinic, Medical	-	-	-	-	-	-	P	P	P	-	C [5]	-	-	-	P	P	P	-	-	P	P	
Parking, Non-Accessory	-	-	-	-	-	-	-	C	P	P	P	-	-	P	-	C	-	P	-	C	P	24.06.080B
Personal Improvement Service	-	-	-	-	-	-	P	P	P	P	C	-	-	-	-	-	P	-	-	P	P	
Repair or Laundry Service, Consumer	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
Research Service	-	-	-	-	-	-	P	P	P	P	P	-	-	-	-	P	P	-	-	P	P	
Retail Sales (except as indicated below)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	P	-	-	P	P	
-Antiques, Resale Shops, Second-hand Merchandise	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	6.55
- Cigarette, Cigar, Tobacco, Vape, or E-Cigarette Store	-	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	24.09.120

- Cigarette & Tobacco Product Sales (ancillary)	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	-	-	-	-	P	P	
- Large-Format Retail	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	24.09.090
Sports & Recreation, Participant																						
- Indoor	-	-	-	-	-	-	-	P	P	P	P	-	-	-	-	P	P	-	-	P	P	6.12.060
- Outdoor	-	-	-	-	-	-	-	C	C	P	P	-	-	-	-	C	C	-	-	C	C	
Vehicle Sales & Service																						
- Auto Wash/Cleaning Service	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	-	7.46.120
- Auto Fueling Station	-	-	-	-	-	-	-	-	C	P	P	-	-	P	-	-	-	-	-	-	C	
- Heavy Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
- Light Vehicles and Equipment, Sales/Rentals	-	-	-	-	-	-	-	-	P	P	P	-	-	-	-	-	-	-	-	-	-	6.72
- Motor Vehicle Repair, Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Motor Vehicle Repair, General	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	-	
- Vehicle Storage & Towing	-	-	-	-	-	-	-	-	C	P	P	-	-	-	-	-	-	-	-	-	-	
INDUSTRIAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Manufacturing & Industrial Services, Artisan	-	-	-	-	-	-	-	P	P	P	P	-	-	P	-	-	P	-	-	P	P	

Manufacturing & Industrial Services, Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	P	-	-	-	-	
Manufacturing & Industrial Services, General	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
Manufacturing & Industrial Services, Intensive	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	
-Recycling Service																						
- Limited	-	-	-	-	-	-	-	-	P	P	P	-	-	P	-	-	-	-	-	-	P	
- General	-	-	-	-	-	-	-	-	-	-	P	-	-	P	-	-	-	-	-	-	-	
Residential Storage Warehouses	-	-	-	-	-	-	-	-	-	P	P	-	-	-	-	-	-	-	-	-	-	
-Warehousing, Wholesaling & Freight Movement																						
- Limited	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
- General	-	-	-	-	-	-	-	-	-	P	P	-	-	P	-	-	-	-	-	-	-	
Waste-Related Use	-	-	-	-	-	-	-	-	-	-	C	-	-	P	-	-	-	-	-	-	-	
AGRICULTURAL	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Apiary	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	-	-	-	-	
Community Garden	P	P	P	P	P	P	P	P	P	P	P	P	P	P	C	C	-	-	P	P	P	
Farmer's Market	C	C	C	C	C	C	P	P	P	P	P	-	P	P	P	P	P	-	C	P	P	

Nurseries & Greenhouses	-	-	C	-	-	-	-	-	P	P	-	C	C	P	C	C	-	-	-	-	P	
MISCELLANEOUS	**GR**	**SR**	**NR**	**MR**	**LDM**	**MDM**	**CO[4]**	**C1[4]**	**C2[4]**	**M1[4]**	**M2**	**SP-CON**	**SP-POS**	**SP-PUB**	**SP-INS**	**SP-MED**	**SP-RP**	**SP-PKG**	**MID-RES**	**MID-TRN**	**MID-MIX**	**USE REGULATIONS**
Wireless Communication Facilities																						
- Co-located	[1]	[1]	[1]	[1]	[1]	[1]	[1]	P	P	P	P	-	-	P	-	-	P	-	[1]	P	-	24.09.110
- Freestanding	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	P	P	-	-	P	-	-	[1]	-	[1]	[1]	[1]	24.09.110
Drive-through or Drive-in Facilities	-	-	-	-	-	-	C	C[3]	C[3]	C[3]	C	-	-	-	-	-	C[3]	-	-	-	-	24.11.100
Helipad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-	-	-	-	-	

[1] See Section 24.09.110 for additional regulations.
[2] See Section 24.05.020 C.2. In a regional mall, no Conditional Use is required for establishments with no separate entrance or seating.
[3] See Section 24.05.030 B.7. Drive-through or drive-in facilities are prohibited in /NOR overlay. See Section 24.05.020 D for additional /MAY Overlay drive-through or drive-in regulations.
[4] See Subsection 24.03.040 I and 24.04.040 F. - Outdoor storage activities require a Conditional Use.
[5] See Subsection 24.08.040 O.2. "Office or Clinic, Medical" definition.
[6] Only allowed on school or religious assembly properties with a Conditional Use.
[7] Eating establishments with no alcohol sales and operate between 6 am and 10 pm are permitted. All other eating establishments require a Conditional Use Permit.

Part III. This ordinance shall become effective on and after its date of passage and publication.

File #: 26-1173 **Agenda Date:** 6/23/2026 **Agenda #:** 4.

Appointments by Mayor McBride of Aiden Fera (District 12), Catherine Riley (District 7), Nicholas Watson (District 1) as members of the Wauwatosa Youth Commission, terms ending May 31, 2028

Application Form

Profile

Aiden
First Name

N
Middle Initial

Fera
Last Name

Email Address

Home Address

Suite or Apt

City

State

Postal Code

What district do you live in? *

☑ District 12

Home: (414) 732-9036
Primary Phone

Alternate Phone

Wauwatosa West High School
Employer

Student
Job Title

Please look at the vacancy page before applying. Some Boards, Committees and Commissions have requirements that they are looking for in an applicant, such as specific skills or member types such as Adult or Student.

The Vacancy page can be found here:

VACANCIES

Which Boards would you like to apply for?

Youth Commission: Submitted

Question applies to Youth Commission

What is the month and year of your graduation?

June 2028

Question applies to Youth Commission

For Youth Commission: Students - please enter the month and year of your graduation.
This helps us to know if you will be filling out your full term.

For Youth Commission: Adults - please enter N/A for the question "What is the month and year of your graduation"?

Why are interested in joining this Board, Committee or Commission?

Aiden_s_Resume.pdf

Upload a Resume

If you have issues uploading your resume, email it to Deyanira Nevarez at dnevarez@wauwatosa.net

If you need to send your resume separately, complete the remainder of the application, save it, and we will submit both the application and resume for you.

Please tell us about yourself and why you want to serve.

I want to be able to help my community and people my age, whom I have seen struggle daily at school. I believe that the best way that I can do such a thing is becoming more involved in my community and trying to get the solutions out there that need to be done. I am a sophomore at Wauwatosa West High School, and will be a junior in the very near future. I would be honored to have the privilege of helping out my community in any way that I possibly can.

Demographics

12/21/2009

Date of Birth

Once you submit your application, check here for the Common Council agenda that has your appointment or reappointment. It may be possible that it will be on future agendas and not on the next upcoming meeting date agenda. This will be how you know if you have been appointed or reappointed.

Aiden Fera

High school sophomore with a high GPA enrolled in multiple extracurriculars and Advanced Placement classes. Enthusiastic to help the community.



EXPERIENCE & ACTIVITIES

Mock Trial Club

September 2024 - PRESENT

Attended fictional trials in both criminal and civil settings as both a witness and an attorney.

Link Crew

2026 - PRESENT

Working with incoming Freshman students in order to help them better integrate in the school community.

Theater - Tech Crew

September 2024 - January 2025

Helped work on school plays and construct sets.

AP Classes - Human Geography & Seminar

September 2025 - PRESENT

Took college level courses and advanced knowledge in the world around me (Human Geograph) as well as the ability to research and write an argumentative essay (Seminar).

EDUCATION

Wauwatosa West High School, Wauwatosa

September 2024 - Present

Currently finishing 10th grade

GPA 4.089 (weighted with bonus points)

AWARDS

Honor Roll - recognized for 4.0 GPA in 9th and 10th grades

Brewers Student Achievers award - recognized for academic success April 2025

Zero Tardies - 2023-2024 Demonstrating effective time management and being on task

President's Education Award for Educational Excellence - 2024

Mock Trial Award - Eager Beaver 2024-2025 - Demonstrating being eager to learn

LANGUAGES

English

Spanish - currently enrolled

Application Form

Profile

Catherine
First Name

Middle Initial

Riley
Last Name

Email Address

Home Address

Suite or Apt

City

State

Postal Code

What district do you live in? *

☑ District 7

Home: (414) 477-2790
Primary Phone

Alternate Phone

Student
Employer

none
Job Title

Please look at the vacancy page before applying. Some Boards, Committees and Commissions have requirements that they are looking for in an applicant, such as specific skills or member types such as Adult or Student.

The Vacancy page can be found here:

VACANCIES

Which Boards would you like to apply for?

Youth Commission: Submitted

Question applies to Youth Commission

What is the month and year of your graduation?

May 2029

Question applies to Youth Commission

For Youth Commission: Students - please enter the month and year of your graduation.
This helps us to know if you will be filling out your full term.

For Youth Commission: Adults - please enter N/A for the question "What is the month and year of your graduation"?

Why are interested in joining this Board, Committee or Commission?

Cate_Riley_9th_Grade_Resume.docx
Upload a Resume

If you have issues uploading your resume, email it to Deyanira Nevarez at dnevarez@wauwatosa.net

If you need to send your resume separately, complete the remainder of the application, save it, and we will submit both the application and resume for you.

Please tell us about yourself and why you want to serve.

My name is Cate Riley and I just completed my freshman year at Divine Savior Holy Angels. I really enjoy doing community service and I am looking for ways to get involved in my local community. I believe being a representative on the Tosa Youth Commission would be a great way to learn more about my community. I would be able to offer up my experiences from growing up in Wauwatosa and also help with continuing to make Wauwatosa a great place to grow up.

Demographics

07/26/2011
Date of Birth

Once you submit your application, check here for the Common Council agenda that has your appointment or reappointment. It may be possible that it will be on future agendas and not on the next upcoming meeting date agenda. This will be how you know if you have been appointed or reappointed.

Cate Riley

10th Grade at Divine Savior Holy Angels



SKILLS

I excel at leadership, showing compassion towards others, working with a team, serving my community and having a positive attitude.

School Activities

6th Grade:

St. Jude Volleyball Team, St. Jude Basketball Team, a pig in Shrek (St. Jude Musical), 414 Volleyball Club, Wauwatosa Shock Softball team, Girl Scouts, Catholic Memorial Stem Challenge, NHD Regional Qualifier, classroom leader at St. Jude Safety Town, Maintained GPA of 4.0

7th Grade:

St. Jude Volleyball Team, Dorothy in Wizard of Oz (St. Jude Musical), 414 Volleyball Club, Wauwatosa Shock Softball team, Catholic Memorial Leadership Forum (won 2nd place), NHD Regional Qualifier, NHD State Qualifier, Maintained a GPA of 4.0

8th Grade:

St. Jude Volleyball Team, Mrs. Trunchbull in Matilda (St. Jude Musical), 414 Volleyball Club, Wauwatosa Shock Softball team, Maintained a GPA of 4.0

9th Grade:

DSHA JV2 Volleyball Team, DSHA Lacrosse Team, Art Club, Service Club, 414 Volleyball Club, Elite Player Committee Member for 414 Volleyball Club, Earned a 4.0 first and second semester. Appointed Assistant Captain for DSHA House System.

Volunteer Experiences

High School

- Ally Cats Bowling League
- Reading to Children at Next Door Foundation
- Special Olympics Volleyball and Basketball

St. Jude the Apostle

- Winterfest Volunteer 6th and 7th Grade
- Fish Fry Volunteer 6th, 7th and 8th Grade
- Women of St. Jude Cookie Walk Volunteer 6th, 7th and 8th Grade
- Halloween Kids' Night at St. Jude 7th and 8th Grade
- Spring Clean Up 6th Grade
- Judefest Volunteer 6th and 7th Grade
- Thrift Shop Volunteer Wednesdays after school in 6th Grade
- 4th Grade Volleyball Try It Session-Group Leader, 6th and 7th Grade

Love Ministries

July 2024

- Assembled fleece blankets for children in foster care

MacCannon Brown Homeless Sanctuary

March 2024

- Made and served lunches

Wauwatosa Shock Tournament Concessions

July 2024

- Set up, cleaned and worked the concessions stand

YMCA Mircale League

2022, 2023 and 2024

- Assisted players in the game with positioning, batting, and fielding

EDUCATION

9th Grade at Divine Savior Holy Angles
4-8th grade at St. Jude School, Wauwatosa, WI

AWARDS

DSHA Spanish One Student of the Year
DSHA Academic Scholarship Award for placement test achievement
Principal's Honor Roll 1st semester of freshman year
Principal's Honor Roll all 6 semesters of middle school
All Tournament Team-Winter Classic Volleyball Team 2024 and 2025
Player of the month for 414 Volleyball Club, February 2025
Catholic Memorial Leadership Forum-2nd Place, 2024

Application Form

Profile

Nicholas "niko" — First Name
D — Middle Initial
Watson — Last Name

Email Address

Home Address
Suite or Apt
City
State
Postal Code

What district do you live in? *

☑ District 1

Mobile: (414) 393-8008 — Primary Phone
Alternate Phone

Marquette University High School — Employer
High School Student — Job Title

Please look at the vacancy page before applying. Some Boards, Committees and Commissions have requirements that they are looking for in an applicant, such as specific skills or member types such as Adult or Student.

The Vacancy page can be found here:

VACANCIES

Which Boards would you like to apply for?

Youth Commission: Submitted

Question applies to Youth Commission

What is the month and year of your graduation?

May 2029

Question applies to Youth Commission

For Youth Commission: Students - please enter the month and year of your graduation.
This helps us to know if you will be filling out your full term.

For Youth Commission: Adults - please enter N/A for the question "What is the month and year of your graduation"?

Why are interested in joining this Board, Committee or Commission?

Nicholas_Dimitri_Watson_Resume.docx
Upload a Resume

If you have issues uploading your resume, email it to Deyanira Nevarez at dnevarez@wauwatosa.net

If you need to send your resume separately, complete the remainder of the application, save it, and we will submit both the application and resume for you.

Please tell us about yourself and why you want to serve.

I'm a student at Marquette University High School and I'll be starting my sophomore year this fall. I've lived in Wauwatosa my whole life, and it's the community I know best and care about deeply. Growing up here has shaped who I am, from my school experiences at Wauwatosa Catholic Grade School to friendships and community activities, I cannot imagine living anywhere else. I want to serve on the Wauwatosa Youth Commission because I want to give back to the community that has helped shape me. I'm also interested in learning more about how decisions are made in the city and how young people can have a voice in that process. I think it would be a great opportunity to grow as a leader, meet new people, and represent the opinions of students in Wauwatosa. I'm excited about the idea of being able to contribute and help make our community even better.

Demographics

01/30/2010
Date of Birth

Once you submit your application, check here for the Common Council agenda that has your appointment or reappointment. It may be possible that it will be on future agendas and not on the next upcoming meeting date agenda. This will be how you know if you have been appointed or reappointed.

Nicholas "niko" D Watson

Nicholas Dimitri Watson

[redacted]

Objective

Motivated and dependable high school student seeking opportunities to gain work experience, develop professional skills, and contribute positively to a team. Strong work ethic demonstrated through years of volunteer service, athletics participation, and commitment to academics.

Education

Marquette University High School Expected Graduation: May 2029

Athletics & Activities

MUHS Junior Varsity Gold Tennis Team (2025–2026)

- Participated as a member of the JV Gold Tennis Team
- Demonstrated teamwork, sportsmanship, discipline, and commitment through practices and competitions
- Developed time-management skills by balancing academics and athletics

MUHS Trapshooting Team (2025–2026)

- Competed as a member of the school's trapshooting program
- Practiced focus, safety awareness, responsibility, and precision
- Worked collaboratively with teammates while developing individual skills

Volunteer Experience

St. Sebastian Catholic Church (2021–Present)

Volunteer

- Assist with Fish Fry events by helping with setup, food service, hospitality, and cleanup
- Support parish office staff with administrative and organizational tasks as needed
- Volunteer during Spring Into Service events
- Demonstrate reliability, professionalism, and a willingness to serve others
- Contribute to parish events and activities that support the local community

File #: 26-1174 **Agenda Date:** 6/23/2026 **Agenda #:** 5.

Appointment by Mayor McBride of Timothy Nordvall (District 5) as a member of the Wauwatosa Board of Health, term ending January 1, 2030

Application Form

Profile

Timothy
First Name

Middle Initial

Nordvall
Last Name

Email Address

Home Address

Suite or Apt

City

State

Postal Code

What district do you live in? *

- [x] District 5

Home: (414) 755-9075
Primary Phone

Alternate Phone

Froedtert ThedaCare
Employer

Patient Safety Specialist / Registered Nurse
Job Title

Please look at the vacancy page before applying. Some Boards, Committees and Commissions have requirements that they are looking for in an applicant, such as specific skills or member types such as Adult or Student.

The Vacancy page can be found here:

VACANCIES

Which Boards would you like to apply for?

Board of Health: Submitted

Why are interested in joining this Board, Committee or Commission?

TNordvall_Resume.pdf
Upload a Resume

If you have issues uploading your resume, email it to Deyanira Nevarez at dnevarez@wauwatosa.net

If you need to send your resume separately, complete the remainder of the application, save it, and we will submit both the application and resume for you.

Please tell us about yourself and why you want to serve.

I am interested in serving on Wauwatosa’s Board of Health to contribute my professional experience in healthcare to the community in a direct and meaningful way. Throughout my career in critical care, trauma, interfacility transport, and patient safety, I have seen the real-world impact of healthcare systems on patients and families. I am motivated to support thoughtful, evidence-based decisions that strengthen Wauwatosa’s community health and improve access to safe, effective care.

Demographics

10/06/1982

Date of Birth

Once you submit your application, check here for the Common Council agenda that has your appointment or reappointment. It may be possible that it will be on future agendas and not on the next upcoming meeting date agenda. This will be how you know if you have been appointed or reappointed.

TIMOTHY NORDVALL, BSN, RN

[redacted]

PROFESSIONAL SUMMARY

Registered Nurse and healthcare leader with 14+ years of experience across critical care, trauma, transport, ambulatory operations, and patient safety. Expertise in healthcare quality improvement, patient safety event investigation, and system-level performance improvement. Proven ability to collaborate with clinicians and healthcare leadership to improve safety, outcomes, and regulatory compliance. United States Coast Guard veteran with a strong commitment to public service and healthcare system improvement.

KEY QUALIFICATIONS

- Patient safety event investigation and root cause analysis (RCA)
- Healthcare quality improvement and performance measurement
- Clinical operations across inpatient, ambulatory, and critical care environments
- Data-driven decision making using Epic Slicer Dicer, REDCap, Power BI, Excel
- Regulatory compliance (Joint Commission, CMS standards)
- Interdisciplinary collaboration with physicians, nursing, and executive leadership
- Healthcare systems thinking across care delivery settings
- Emergency response and public service (United States Coast Guard)

PROFESSIONAL EXPERIENCE

Patient Safety Specialist – Froedtert ThedaCare | Milwaukee, WI

May 2026 – Present

- Lead investigation of patient safety events and system-level risk identification
- Partner with clinical and operational leaders to implement safety improvements
- Analyze safety and quality trends to support organizational learning and prevention

Manager, Patient Operations – Ascension Columbia St. Mary's | Milwaukee, WI

May 2025 – May 2026

- Led inpatient operations focused on patient safety, staffing, throughput, and care coordination

- Supported quality improvement initiatives and regulatory readiness activities
- Partnered with physicians and leaders on workflow and care delivery improvements

Practice Manager – Children's Wisconsin | Milwaukee, WI

Feb 2023 – Feb 2024

- Directed ambulatory clinic operations including staffing, budgeting, and patient access
- Improved clinic workflow and operational efficiency through process redesign
- Collaborated with physicians on care delivery and performance improvement initiatives

Critical Care & Transport Nursing (Combined Roles)

2012 – 2025

- VA Medical Center ICU RN
- Children's Wisconsin PICU RN & Transport Team
- Froedtert Surgical ICU RN
- Provided high-acuity critical care in adult and pediatric settings
- Participated in rapid response, code events, and trauma care delivery
- Supported interfacility transport of critically ill patients via air and ground
- Contributed to quality improvement and patient safety initiatives

Pediatric Trauma Coordinator – University of Chicago Medicine | Chicago, IL

Nov 2020 – Aug 2021

- Led Pediatric Trauma Performance Improvement and Patient Safety (PIPS) program
- Conducted root cause analyses and performance improvement reviews
- Partnered with clinical and informatics teams to improve trauma care processes

Manager, Patient Care Operations – Lurie Children's Hospital | Chicago, IL

Jul 2018 – Nov 2020

- Managed operations for pediatric specialty clinics including oncology and surgical services
- Led staffing and workflow improvements to increase access and efficiency

- Developed operational dashboards using Power BI for leadership decision-making

Nurse Informatics Specialist – Froedtert Health

Feb 2014 – Mar 2015

- Supported Epic Optime/Anesthesia build and workflow optimization
- Developed reporting tools and clinical documentation improvements
- Collaborated with multidisciplinary teams to improve EHR usability

MILITARY SERVICE

United States Coast Guard – Information Systems Technician

Sep 2001 – Jun 2007

- Performed search and rescue and law enforcement operations as small boat crew member
- Managed information systems implementation and disaster recovery support
- Contributed to mission readiness and emergency response operations

EDUCATION
BSN, Concordia University Wisconsin
ADN, Milwaukee Area Technical College
USCG Technical Training – Information Systems Technician

SKILLS

- Patient Safety & Quality Improvement
- Root Cause Analysis (RCA)
- Healthcare Operations & Systems Improvement
- Regulatory Compliance (CMS, Joint Commission)
- Performance Metrics & Data Analysis
- Epic Slicer Dicer, REDCap, Power BI, Excel
- Interdisciplinary Leadership & Collaboration
- Emergency Preparedness & Response

CITY OF WAUWATOSA
7725 W. North Avenue
Wauwatosa, WI 53213

NOTICE OF CIRCUMSTANCES OF CLAIM

Name: KATHLEEN BRANNINGS
Address: 1647 N 123RD ST
WAUWATOSA WI 53226
Phone: 262-302-0006
Email: KMAHONEY@ANITASGARDENS.COM

Incident/Accident Information
Date: 5/14/26
Time: 11:00 AM
Place: 119TH + WATERTOWN PLANK RD

CIRCUMSTANCES OF CLAIM

In the space below briefly describe the circumstances of your claim. (Attach additional sheets, if necessary.) For auto damages, attach a copy of police report, if any, and a diagram of the accident scene indicating north, south, east or west corners if the accident occurred at an intersection. For bodily injury, indicate nature of injury, whether or not medical attention was given and the name of the treatment provider. Identify any witnesses to the incident/accident.

I WAS EAST BOUND ON WATERTOWN PLANK RD ABOUT 119TH ST LATE MORNING ON 5/14/26. I HEARD A POP + HISS AND MY TIRE - LEFT REAR TIRE WENT FLAT. I WAS ABLE TO DRIVE HOME AND HAD AAA CHANGE TIRE. UPON REPAIR IT WAS NOTED A HUGE PIECE OF METAL WAS IN TIRE, I BELIEVE THIS WAS DEBRIS FROM CONSTRUCTION AND HAD NOT BEEN REMOVED FROM THE ROAD.

Signed: Kathleen Brannings Date: 5/27/26

****

CLAIM

NOTE: You are not required to make a claim at this time. As long as you have filed the above Notice of Circumstances of Claim you may file a claim with the City at any time consistent with the applicable statute of limitations. However, in order for the City to formally accept or deny your claim at this time, the following claim must be completed and signed.

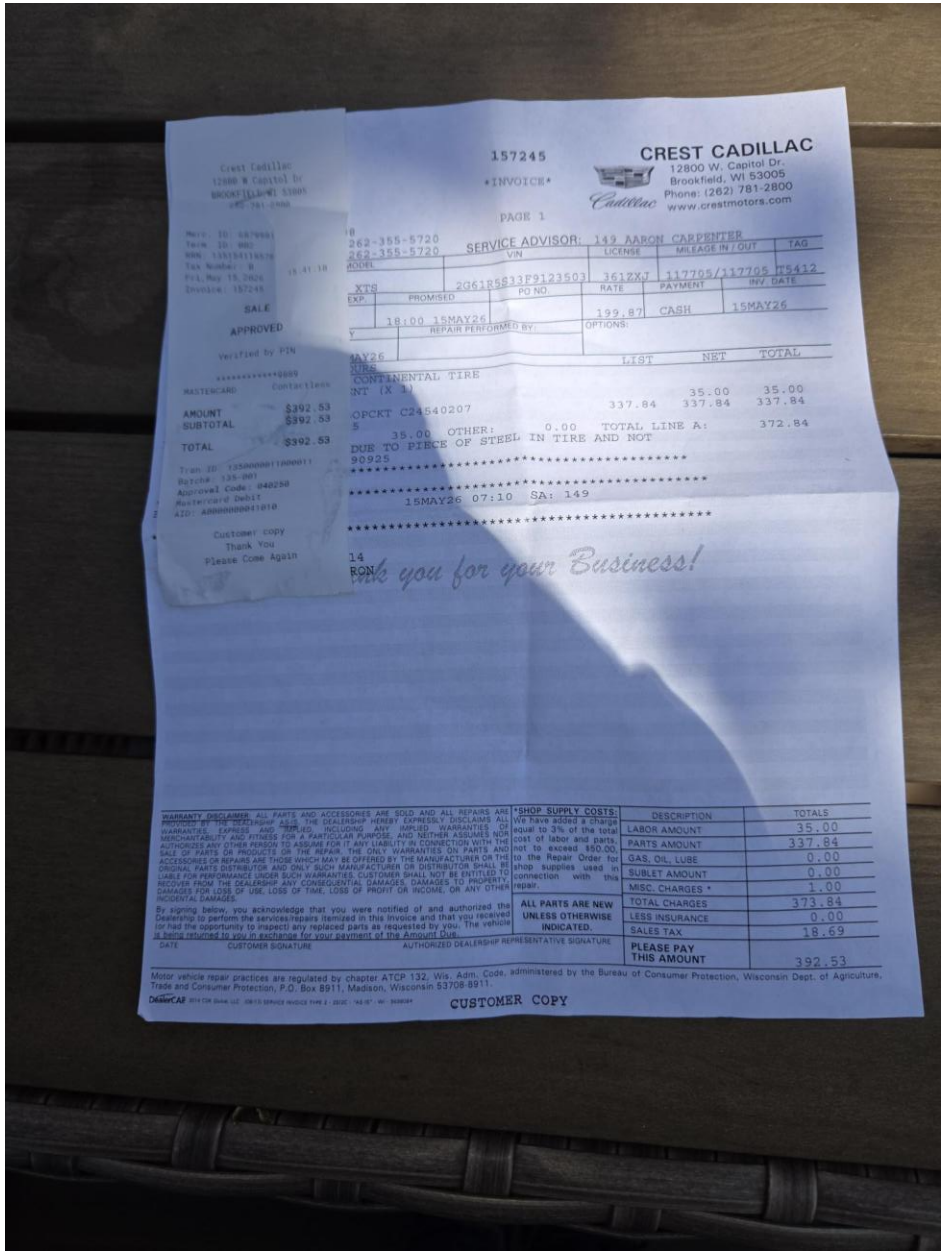
The undersigned hereby makes a claim against the City arising out of the circumstances described above in the amount of $ 392.53.

To process this claim it is necessary to detail all damages being sought.

Signed: Kathleen Brannings Date: 5/27/26

Address: 1647 N 123RD ST
WAUWATOSA WI 53226





157245

INVOICE

PAGE 1

CREST CADILLAC
12800 W. Capitol Dr.
Brookfield, WI 53005
Phone: (262) 781-2800
www.crestmotors.com

262-355-5720
262-355-5720

SERVICE ADVISOR: 149 AARON CARPENTER

MODEL	VIN	LICENSE	MILEAGE IN / OUT	TAG
XT5	2G61R5S33F9123503	361ZXJ	117705/117705	T5412

EXP	PROMISED	PO NO	RATE	PAYMENT	INV DATE
	18:00 15MAY26		199.87	CASH	15MAY26

REPAIR PERFORMED BY: OPTIONS:

		LIST	NET	TOTAL
	CONTINENTAL TIRE		35.00	35.00
	NT (X 1)		337.84	337.84
	OPCKT C24540207	337.84	337.84	337.84
5	35.00 OTHER:	0.00	TOTAL LINE A:	372.84

DUE TO PIECE OF STEEL IN TIRE AND NOT
90925

15MAY26 07:10 SA: 149

14
RON

We thank you for your Business!

Crest Cadillac
12800 W Capitol Dr
BROOKFIELD WI 53005
(262) 781-2800

Merc. ID: 687990
Term. ID: 002
MRN: 130191119570
Tax Number: R
Fri, May 15 2026 18:41:18
Invoice: 157245

SALE

APPROVED

Verified by PIN

**********0889
MASTERCARD Contactless

AMOUNT $392.53
SUBTOTAL $392.53

TOTAL $392.53

Tran ID: 135000001700011
Batch#: 135-001
Approval Code: 840258
Mastercard Debit
AID: A0000000041010

Customer Copy
Thank You
Please Come Again

WARRANTY DISCLAIMER: ALL PARTS AND ACCESSORIES ARE SOLD AND ALL REPAIRS ARE PROVIDED BY THE DEALERSHIP AS IS. THE DEALERSHIP HEREBY EXPRESSLY DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF PARTS OR PRODUCTS OR THE REPAIR. THE ONLY WARRANTIES ON PARTS AND ACCESSORIES OR REPAIRS ARE THOSE WHICH MAY BE OFFERED BY THE MANUFACTURER OR THE ORIGINAL PARTS DISTRIBUTOR AND ONLY SUCH MANUFACTURER OR DISTRIBUTOR SHALL BE LIABLE FOR PERFORMANCE UNDER SUCH WARRANTIES. CUSTOMER SHALL NOT BE ENTITLED TO RECOVER FROM THE DEALERSHIP ANY CONSEQUENTIAL DAMAGES, DAMAGES TO PROPERTY, DAMAGES FOR LOSS OF USE, LOSS OF TIME, LOSS OF PROFIT OR INCOME, OR ANY OTHER INCIDENTAL DAMAGES.

By signing below, you acknowledge that you were notified of and authorized the Dealership to perform the services/repairs itemized in this invoice and that you received (or had the opportunity to inspect) any replaced parts as requested by you. The vehicle is being returned to you in exchange for your payment of the Amount Due.

DATE CUSTOMER SIGNATURE AUTHORIZED DEALERSHIP REPRESENTATIVE SIGNATURE

***SHOP SUPPLY COSTS:** We have added a charge equal to 3% of the total cost of labor and parts, not to exceed $50.00, to the Repair Order for shop supplies used in connection with this repair.

ALL PARTS ARE NEW UNLESS OTHERWISE INDICATED.

DESCRIPTION	TOTALS
LABOR AMOUNT	35.00
PARTS AMOUNT	337.84
GAS, OIL, LUBE	0.00
SUBLET AMOUNT	0.00
MISC. CHARGES *	1.00
TOTAL CHARGES	373.84
LESS INSURANCE	0.00
SALES TAX	18.69
PLEASE PAY THIS AMOUNT	392.53

Motor vehicle repair practices are regulated by chapter ATCP 132, Wis. Adm. Code, administered by the Bureau of Consumer Protection, Wisconsin Dept. of Agriculture, Trade and Consumer Protection, P.O. Box 8911, Madison, Wisconsin 53708-8911.

DealerCAF

CUSTOMER COPY

CITY OF WAUWATOSA

7725 W. North Avenue
Wauwatosa, WI 53213

Received by
JUN 04 2026
City Clerk's Office

NOTICE OF CLAIM

Incident/Accident Information

Name: Julie Lucey

Address: [redacted]

Date: 06/04/2026

Time: 9:04 am

Phone: [redacted]

Place:

Email: [redacted]

CIRCUMSTANCES OF CLAIM

In the space below briefly describe the circumstances of your claim. (Attach additional sheets, if necessary.) For auto damages, attach a copy of police report, if any, and a diagram of the accident scene indicating north, south, east or west corners if the accident occurred at an intersection. For bodily injury, indicate nature of injury, whether or not medical attention was given and the name of the treatment provider. Identify any witnesses to the incident/accident.

I've fallen on State Street twice. The most recent fall was by Kin restaurant –where there's a a dip in the sidewalk and I hurt my neck. I saw a neurosurgeon and an orthopedic surgeon. I have had x-rays and an MRI. Doing some more testing to see what is wrong with my neck. Fall took place January 9, 2026.

I know this is too late – but I also fell the beginning of 2024. I hurt my back, neck and knee. I had three surgeries because of that fall and still in treatment. I've had two knee surgeries and one neck surgery. I was hurt on the cobblestones by Salamander – that are now…are finally being fixed.

They city mandates that I pay for my sidewalk so they are safe. Why did it take 2-/1/2 years to fix that cobblestone that most likely has resulted in numerous falls.

Could you please give me a call.

Thank you,
Julie Lucey
[redacted]

Jeffrey A. Pitman
Board Certified Civil Trial Specialist
By the National Board of Trial Advocacy
Licensed in WI, IA, IL & NM
Howard S. Sicula
Richard G. Kalkhoff
Court Commissioner
M. Angela Dentice
Patrick C. O'Neill
Board Certified Trial Specialist
By the National Board of Trial Advocacy
Licensed in WI, NM & IL

PKSD
PITMAN, KALKHOFF, SICULA & DENTICE
1110 North Dr. Martin Luther King Jr. Dr. • Suite 320 • Milwaukee, WI 53203
Telephone (414) 333-3333 • Facsimile (414) 212-0004
www.PKSD.com

Rebecca L. Domnitz
Benjamin E. Reyes
Licensed in WI, NM, TX & IL
Adam M. Fitzpatrick
Court Commissioner
Luke D. Mayefske
Samuel M. Killian
Ronald W. Cresswell

Received by
MAY 29 2026
City Clerk's Office

TO: Wauwatosa City Clerk
7725 W. North Avenue
Wauwatosa, Wisconsin 53213

NOTICE OF CLAIM PURSUANT TO SECTION 893.80(1d)(b), WIS. STATS.
FILED BY JADA CARTER

Please take notice that we represent Jada Carter who resides at 3353 N. Vel R. Phillips Avenue, Milwaukee, Wisconsin 53212 and hereby give notice of claim concerning the injuries sustained by Jada Carter on April 30, 2025 when the vehicle she was operating southbound on Swan Boulevard was struck by a City of Wauwatosa DPW truck, negligently operated by Patrick Weber, as the DPW truck was attempting to turn onto Swan Boulevard from Beverly Place. A Notice of Injury was previously served on the City of Wauwatosa on August 4, 2025.

Demand is made against Wauwatosa, Wisconsin pursuant to Sec. 893.80(1d)(b) as follows:

1. $6,434.00 past medical expenses;
2. $2,620.62 property damage;
3. $10,000.00 past pain & suffering.

Total demand: $19,054.62

The undersigned is one of the attorneys for Jada Carter and is, therefore, authorized to serve this Notice of Claim on her behalf. Supporting medical records, bills and property damage will be provided to you upon request.

Dated at Milwaukee, Wisconsin this 26th Day of May, 2026.

By: _____
Richard G. Kalkhoff
State Bar No. 1017506

STATE OF WISCONSIN CIRCUIT COURT MILWAUKEE COUNTY

I. Griffin for self Case No._____

26CV005594

United States ex rel I. Griffin

I. Griffin for herself and as next of kin, next of friend

for Cherakei Griffin personal representative under 42 USC 1320d, the Health Insurance Portability and Accountability Act, and applicable regulations

Received by
JUN 12 2026
City Clerk's Office

S.Griffin for himself
-Plaintiffs'
V

HON. CYNTHIA DAVIS, BR. 21
CIVIL C

CLASSIFICATION CODE 30105

Chad Bublitz

Brennyn Sibley(8622 Petrie Rd, Two Rivers, Wi, 54241)
Froedert Memorial Hospital & the Medical College Of Wisconsin(9200 W Wisconsin Ave , Wauwatosa Wi. 53226)
Chad Bublitz (2755 Cambridge Circle, Brookfield, Wisc 53045)
Dewey Hospital (1220 W Dewey Ave.)
Aurora Hospital(s) (1220 W Dewey Ave.)
Wauwatosa Police Department (1700 N 116th Street Wauwatosa, WI 53226)
Milwaukee Police Department (2920 N Vel R. Phillips Ave)
Milwaukee County(901 N. 9th Street, Milwaukee, WI 53233) #105
City of Wauwatosa (7725 W. North Ave.Wauwatosa, WI 53213)
City Of Milwaukee (200 E. Wells Street, Milwaukee, WI 53202)
Cavalier Johnson **(individual capacity)** (726 N 34th St)
Ronald Edwards **(individual capacity)** 4518 N 64th St
Milwaukee, WI 53218
Kathleen Murphy **(individual capacity)** 15260 Indian Creek Pkwy #P
Brookfield, WI 53005

FILED AND AUTHENTICATED
JUN 12 2026
ANNA MARIA HODGES
Clerk of Circuit Court

Amy Rapisarda **(individual capacity)** 3120 Serenity Dr
Manitowoc, WI 54220
Dr Jane/John Doe(s) **(individual capacity)** **-Defendants'**

SUMMONS

STATE OF WISCONSIN CIRCUIT COURT MILWAUKEE COUNTY

I. Griffin for self Case No. 26CV005594

Received by

United States ex rel I. Griffin JUN 12 2026

I. Griffin for herself and as next of kin, next of friend City Clerk's Office

for Cherakei Griffin personal representative under 42 USC 1320d, the Health Insurance Portability and Accountability Act, and applicable regulations

S.Griffin for himself

-Plaintiffs'

Complaint for Monetary, Declaratory & Injunctive Relief

REQUEST FOR CRIMINAL PROSECUTION OF DEFENDANTS

V

CLASSIFICATION CODE 30105

JURY TRIAL DEMAND

Chad Bublitz**(individual capacity)** (2755 Cambridge Circle, Brookfield , Wi 53045)

Brennyn Sibley**(individual capacity)** (8622 Petrie Rd, Two Rivers, Wi, 54241)

Froedert Memorial Hospital & the Medical College Of Wisconsin (9200 W Wisconsin Ave , Wauwatosa Wi. 53226)

Dewey Hospital (1220 W Dewey Ave.)

Aurora Hospital(s) (1220 W. Dewey Ave.)

Wauwatosa Police Department (1700 N 116th Street Wauwatosa, WI 53226)

Milwaukee Police Department (2920 N Vel R. Phillips Ave)

Milwaukee County (901 N. 9th Street, Milwaukee, WI 53233) 41105

City of Wauwatosa (7725 W. North Ave.Wauwatosa, WI 53213)

City Of Milwaukee (200 E. Wells Street, Milwaukee, WI 53202)
Cavalier Johnson **(individual capacity)** 726 N 34th St
Milwaukee, WI 53208

FILED AND AUTHENTICATED
JUN 12 2026
ANNA MARIA HODGES
Clerk of Circuit Court

Ronald Edwards **(individual capacity)** 4518 N 64th St
Milwaukee, WI 53218
Kathleen Murphy **(individual capacity)** 15260 Indian Creek Pkwy #P
Brookfield, WI 53005
Amy Rapisarda **(individual capacity)** 3120 Serenity Dr
Manitowoc, WI 54220
Dr Jane/John Doe(s) **(individual capacity)** **-Defendants'**

NATURE OF CASE

This is an action in which pursuant to clearly established law, prosecution of the defendants' must be commenced as they have clearly, going to war against the United States Constitution, recklessly with disregard to the civil rights of the Plaintiffs, engaged in and continuing to engage in serious federal criminal acts as detailed infra. Pursuant to 42 U.S. C. 1987, the Court is with the authority and obligation to commence a criminal prosecution component part within this very serious action.

As of the filing of this federal action against said defendants' the physical whereabouts of Plaintiff's daughter Cherakei Griffin and her health and safety are unknown. There is evidence that Cherakei Griffin is forcefully being used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security. **It is believed that the Plaintiff Cherakei Griffin, is now in serious danger of being human trafficked and all named defendants' are in collusion as it relates.** Cherakei Griffin was last seen at home, healthy, unharmed, uninjured by the plaintiff. On June 4, 2026, at gun point defendant Kathleen Murphy entered the resident by threat and use of force, and removed one occupant and stayed in the resident with Cherakei Griffin. When she came out of the residence Cherakei Griffin had visible injuries to her body and person, and was taken away from her home by defendant Kathleen Murphy. Kathleen Murphy is believed to be the same person who partook in the sexual assault of the Plainitff approximately a year ago. The defendant are using hospitals and badges

and there purported authority under 'the color of law" to engage in trafficking, kidnapping, false imprisonment, involuntary servitude, slavery, human rights and civil rights violations. The defendants have KIDNAPPED Cherakei Griffin and have done so in violation of the laws, rights and guarantees of the United States Constitution. The defendants' all have either taken an oath to support and uphold the constitution and/or receive federal funding from the United States. Cherakei Griffin is in extreme physical imminent danger and the Plaintiff Ieshuh Griffin asks the Court to order an emergency hearing regarding this as expeditiously as possible, respectfully speaking. The defendants' drugged Cherakei Griffin and purposely violated HIPPA by ignoring the POA. The defendants' allege that they do not know the whereabouts of Cherakei Griffin. No one has seen nor heard from Cherakei Griffin, who has no money, no shoes and was so drugged up it is impossible for Cherakei Griffin to literally be cognizant in freezing cold, alone. Respondents' are refusing to file a missing person report, though mandated bylaw, and have banned the plaintiff I.Griffin from entering onto the premises of Froedert Hospital and Dewey Hospital. The defendants' have threatened physical harm to the plaintiff Ieshuh Griffin every time the Plaintiff attempts to set foot on Wauwatosa land regarding the whereabouts of her Daughter. The Plaintiff is suing for $50 BILLION dollars for the loss, medical experimentation and cover up of injury to Cherakei Griffin and the violations of civil rights of both Cherakei Griffin and her mother.

This case is being brought pursuant to the **Civil Rights Act, The Civil Rights of Institutionalized Persons Act, 42 USC 1320d, the Health Insurance Portability and Accountability Act , The Emergency Medical Treatment And Labor Act, The Americans With Disabilities Act** as well as all applicable federal laws and regulations, whereby Plaintiff hereby complains of a pattern of denials of equal protection and equal treatment and civil rights

violations, as well as violations of The Civil Rights of Institutionalized Persons Act, 42 USC 1320d, the Health Insurance Portability and Accountability Act , The Emergency Medical Treatment And Labor Act, The Americans With Disabilities Act. Plaintiffs'' ask the court to schedule and issue emergency mandatory orders by way of the injunctive relief act and the Plaintiffs'' ask the court to schedule a hearing and issue emergency declarations of the rights and privileges and immunities of Plaintiffs''. Plaintiff further complains of a neglect to prevent the same willful discrimination, disparate treatment, negligent, mismanagement. As a direct cause of the segregated and discriminatory actions of the Defendants' against the Plaintiffs', the Plaintiffs' has suffered and continues to suffer irreparable injury, **and Plaintiff Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown.** There is evidence that Cherakei Griffin is forcefully being used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security.
The Plaintiffs' have been subjected to a hostile and discriminatory atmosphere by the Defendants' with intent to cause injury to the Plaintiffs', specifically Plaintiff Cherakei Griffin as **Plaintiff Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown.**

The Plaintiff hereby petitions for a jury to award the Plainitff damages and certain remedial actions, including a monetary award of **FIFTY BILLION DOLLARS $50, 000,000,000 inclusive of punitive damages**. The Plaintiff further as detailed above moves for the immediate commencement of a federal criminal prosecution against all defendants as mandated pursuant to the FRCP statue as stated supra. The Plainitff further complains in regards to intentional discrimination by the Defendants' on the basis of status, color, and race and gender as well as

religious belief as in relation to Plaintiff's daughter, who **is believed to be in imminent physical danger and whereabouts are unknown.** There is evidence that Cherakei Griffin is forcefully being used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security. The Defendants' engaged in unlawful segregated, discriminatory, arbitrary and capricious random decision making against the Plaintiffs' which has interfered with fairness, due process and constitutionally protected rights.

1. This is a multi-grounded civil rights action at law, at common law, and also in equity, to vindicate and restore various rights of the Plaintiffs' secured under federal law, to vindicate and restore various rights of the Plaintiffs' secured under federal law, to vindicate and restore their various inalienable rights guaranteed under certain portions of, and several Amendments to, the United States Constitution, and for the Plaintiffs 'to claim all rights, damages, and forms of reliefs obtainable under any available means, in the interest of justice, and through the authority and supplemental jurisdiction vested in this Court by 28 USC § 1367, and also through Article III of the United States Constitution, if and as necessary.
2. In no way, shape, or form, do or will the Plaintiff claim or assert, either expressed or implied, any manner of rights or interests alluding to any aspect of controversy under any state law, whatsoever, excepting only that a matter must be fairly characterized as an act, practice, or policy of, or by, the state which exists or functions in derogation of federal law or federal rights.
3. Further, Plaintiffs' expressly disclaim any such allusions to matters arising solely under state law or state rights, with, again, excepting only that a given matter must or might be

fairly characterized as an act, practice, pattern, or policy of, or committed by, the state which exists or functions in derogation of federal law or federal rights.

The Plaintiffs' seeks all available forms of declaratory, injunctive, retrospective, and prospective relief that correspond to the various cause of action and prayers for relief herein including an emergency hearing regarding **Plaintiff daughter, whom is believed to be in imminent physical danger and whereabouts are unknown.** There is evidence that Cherakei Griffin is forcefully being used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security.

4. There presently exist a United States Constitution, a Bill of Right, a United States Supreme Court, as well as federal statues ensuring strict compliance with all such federal law and applicable federal rights. The Defendants' named supra, themselves have routinely misapplied and out righted disregard the law and the Plaintiffs' has no recourse except to come to the federal government to assist in enforcing its own laws, and to prohibit the Defendants' named supra from consistently misapplying the law and violation of Plaintiffs' rights.
5. Given the above seriousness and important nature of this case, the significant implications to the general public, and the same including grievous and numerous violations of civil and constitutional rights, this Court, respectfully speaking, should afford special attention thereupon, and impart expediency to the resolution of this action, pursuant to all authority under 28 USC § 1657 (a).
6. **Short Plain Statement of Notice of Unconstitutional Acts.**

This constitutes 'fair notice' of what the claims are and the grounds for the claims. Officials sued in their personal capacity come to court as individuals. While acting 'under the color of

law', the Defendants' named supra in their individual capacities (with the exception of are all employees and/or agents of the Defendants' acting under the 'color of law' named supra in their individual capacity. All of the Defendants' named supra have uniformly and in concert engaged in and/or approved of the use of excessive force, kidnapping, medical malpractice, false imprisonment, treason, violations of the United States Constitution, violations of Human rights, violation of Indigenous People rights, violations of Indian rights against the Plaintiffs' and that of Plaintiffs family member Cherakei Griffin. The Defendants' further violated their own policies and procedures with their discriminatory actions as well as engaged in and are continuing to engage in retaliation against the Plaintiffs' for exercising their constitutional rights. The defendants' as a whole, subjected minor S.G. and S.G's mother to violations of their constitutional and human rights by acts and/or omissions, 'under the color of law' as detailed infra.

PARTIES TO THE CASE

Plainitff I. Griffin is a city of Milwaukee residence, an indigenous person, and of both African American and Original Indian heritage and ancestry. I. Griffin was seriously injured by one, some of all of the defendants, including sexually assaulted, falsely imprisoned, falsely arrested. At no time did I. Griffin consent to any of the serious and inhuman violations against her and her person.

S. Griffin is a young Black male, son of I. Griffin, brother of Cherakei Griffin, a city of Milwaukee residence, an indigenous person, and of both African American and Original Indian heritage and ancestry. S. Griffin, while in his home was, exercising his constitutional rights, was seriously injured by one, some of all of the defendant, including assault, falsely imprisoned,

falsely arrested. At no time did S. Griffin consent to any of the serious and inhuman violations against his and his person.

I. Griffin's daughter, and sibling of S. Griffin, Cherakei Griffin, herein referenced as Cherakei and/or the Cherakei Griffin, is a young African American female born in and residing in City of Milwaukee. On June 4, 2026 Cherakei Griffin was forcefully removed at gunpoint from her home by defendant Kathleen Murphy. Kathleen Murphy is believed to have inflicted serious injuries onto the Plaintiff's daughter while alone with her inside her residence. Kathleen Murphy is also responsible for assisting in the actual sexual assault of the Plainitff, one year earlier. It is believed that the defendants separately and/or as a whole are engaging in experiments and inflicting torture onto the Plaintiff's daughter. It is believed that the Plaintiff's daughter is being heavily drugged. All traces of the Plaintiff's daughter has been erased. The **Plaintiff's daughter is believed to be in imminent physical danger and whereabouts are unknown.** There is evidence that Cherakei Griffin is forcefully being used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security.

Plaintiff I. Griffin is the biological mother of Cherakei Griffin and has acted on her medical behalf her entire life, as well as becoming her legally binding Power of Attorney on May 26, 2014 and has myriads of updated POA paperwork in which the defendants' repeatedly ignored. The Defendants'are violating the rights of Plaintiff I. Griffin as it relates to her involvement of the care and safety and well being of her biological child Plaintiff Cherakei Griffin. The defendants' further are refusing to acknowledge that the Plaintiff is Plaintiff Cherakei Griffin's POA, and are doing so with the intent to engage in improper and unlawful conduct against Plaintiff C. Griffin, whom **Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown.** There is evidence that Cherakei Griffin is forcefully being

used for human cloning experimentation. She has been listed at two different hospitals at the same time, under heavy security.

Plaintiff United States ex rel I. Griffin is a necessary party as this action is of significant public importance and the laws of the United States are being egregiously violated y the defendants to the point that the United States Attorney General and intervention in this action by way of The Institutionalized Persons Right Act. Further, the United States Attorney General intervention is necessary as the Defendants are blatantly violating the EMTALA and as such the United States Attorney General Office has a mandatory obligation to enter onto the premises of West Allis Memorial hospital and open up an official investigation.

The Defendants' named supra in their individual capacities and official capacities are all uniformly and in concert engaged in and/or approved of the used false subjective admission and restraint of Cherakei Griffin and are knowingly and actively interfering with and preventing Plaintiff I. Griffin to exercise her fiduciary responsibilities to Plaintiff Cherakei Griffin and are continuing to subject Cherakei Griffin to cruel and unusual punishment. The Defendants' further have violated their own policies and procedures with their discriminatory actions as well as engaged in and are continuing to engage in retaliation against the Plaintiff for exercising her constitutional rights.

As a direct and proximate result of the Defendants' actions and omissions The Defendants' have willfully committed gross negligence and reckless disregard to the various basic and absolute duties owed towards the Plaintiffs' and the Plaintiffs' related, inherent, natural, legal and constitutional rights, to due process all in violation of various civil and/or constitutional rights, contrary to the laws of the United States, and they should be thereof found

due and owing to the Plaintiffs' for certain amounts of damages; $50, 000,000,000 and all remedial actions appropriate thereof should be taken expeditiously.

Defendants

CITY OF MILWAUKEE & CITY OF WAUWATOSA

These defendants operate and controls the operations of the geographical land in which the plaintiffs and her daughter and son were violated on. These defendants ultimately bares as well the responsibility in ensuring that its facilities are in conformity with the United States Constitution and its programs adhere to the clearly established law. The failure to supervise is so severe as to reach levels of gross negligence or deliberate indifference to deprivation of Plaintiffs' constitutional rights. Defendant was most certainly aware, and did not intervene to alleviate risks posed by such restraints. It has misuse of power posse by virtue of state law, which is made possible only because the wrongdoer is clothed with the authority of state law committed in fulfillment of tasks assigned to it

EVERS, MCBRIDE, JOHNSON, MURPHY, EDWARDS, RAPISARDA, SIBLEY, BUBLITZ

While acting under the color of law, these defendants knowingly willingly and reckless engaged in bribery, public corruption, false imprisonment, retaliation for the exercise of constitutional rights, slavery , involuntary servitude and other serious federal offense as detailed within the complaint.

MURPHY, BUBLITZ,SIBLEY,

While acting under color of law, in a police uniform these defendants engaged in nonconsensual sexual assault, kidnapping, assault and battery, falsified police reports,

falsleied imprisonment, and kidnapping all in violation of the United States COnstion as well as the State of Wisconsin Constitution

DEWEY, FROEDERT, AURORA, MILWAUKEE COUNTY, CITY OF MILWAUKEE, CITY OF WAUWATOSA, WAUWATOSA POLICE DEPARTMENT,

These defendants have engaged in medical kidnapping, torture falsified reports, misuse of federal grants, federal funds, slavery, involuntary servitude, violations of HIPPA, violations of the FEDERAL LAW relating to POWER OF ATTORNEY, torture, violations of Indigenous Rights, violations of Indian law,

Jurisdiction and Venue

The circuit court has general jurisdiction prescribed under Article VII and has power to hear all civil actions pursuant to the powers vested thereunder. See Wis. Stats. 753.03. Venue is proper thereunder as the Plainitff and the defendants' either reside in and/or do business within the jurisdiction of the court, the state of Wisconsin and or the county of Milwaukee. Personal jurisdiction in this matter is met as alleged above, and the Defendants' have, are or work for agents located within said jurisdiction. Plaintiff's claims arise under the United States Constitution as well as the Civil Rights Act, The Civil Rights of Institutionalized Persons Act, 42 USC 1320d, the Health Insurance Portability and Accountability Act , The Emergency Medical Treatment And Labor Act.

DEMAND FOR JURY TRIAL

Plaintiff, respectfully demands a trial by jury in this action of all triable issues.

DEMAND FOR CRIMINAL PROSECUTION AGAINST ALL DEFENDANTS

Federal criminal charges for civil rights violations under the color of law are primarily governed by **18 U.S.C. § 242**, which makes it a crime for anyone acting under governmental authority

(such as the defendants') to willfully deprive a person of their constitutional rights. Federal criminal charges for public corruption are prosecuted by the Department of Justice (DOJ) and investigated by the FBI, targeting federal, state, and local officials who misuse their office for personal gain. The Court is endowed with general supervisory jurisdiction over public corruption offenses.

REQUEST FOR PRELIMINARY INJUNCTIVE RELIEF

Plaintiffs'' are asking the Court to schedule as expeditiously as possible a hearing to effectuate Emergency injunctive relief. **Currently, Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown.** Pursuant to the **Language of Civil Rights of Institutionalized Persons Act, the** Court has the power to order federal government officials to enter onto the premises of Froedert Hospital and any other institution to check on and access the whereabouts health and wellness of Plaintiff C. Griffin who is being denied all rights and privileges as it relates. **Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown**

FACTUAL ALLEGATIONS

The Plaintiffs' have a right to equal protection under the law, through litigation and any other lawful means. "The starting point in interpreting a statute is its language, for ` [i]f the intent of Congress is clear, that is the end of the matter.'" **See Good Samaritan Hospital v. 113 S. Ct. 2151,** egregious or flagrant conditions which deprive such persons of any rights, privileges, or immunities secured or protected by the Constitution or laws of the United States causing such persons to suffer grievous harm, and that such deprivation is pursuant to a pattern or practice of resistance to the full enjoyment of such rights, privileges, or immunities, the Attorney General, for or in the name of the United States, may institute a civil action in any appropriate. The Language of the Rights of Institutionalized Persons Act can call upon the FBI to conduct

thorough investigations of defendants'; taking photographs and collecting relevant data on institutional conditions.

The Defendants' have chilled the Plaintiff's protected federal rights under federal law. The Plaintiff Cherakei Griffin under such act has the right to be under the least restrictive setting yet the Defendants' have subjected the Plaintiff Cherakei Griffin to conditions ex that deprive her of constitutional rights. The defendants' are failing to adhere to the mandates of the Emergency Medical Treatment and Labor Rights Act in such an egregious manner that an onsite investigation needs to be commenced as **Cherakei Griffin is believed to be in imminent physical danger and whereabouts are unknown.**

GOVERNING LAW

1. **Title VI of the Civil Rights Act of 1964** provides: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 42 U.S.C. § 2000d. **The Fourteenth Amendment** provides, in relevant part, that no person shall be denied "the equal protection of the laws." The "central mandate" of equal protection is "racial neutrality" by the government or institution subject to the Fourteenth Amendment. **See *Miller v. Johnson*, 515 U.S. 900**. "Whenever the government treats any person unequally because of his or her race, that person has suffered an injury that falls squarely within the language and spirit of the Constitution's guarantee of equal protection." **See Adarand Constructors, Inc. v. Pena, 515 U.S. 200**. "Distinctions between citizens solely because of their ancestry are by their very nature odious to a free people, and therefore are contrary to our traditions and hence constitutionally suspect." **See Fisher, 133 S. Ct.**

2419. Thus, "any official action that treats a person differently on account of race or ethnic origin is inherently suspect." In other words, "because racial classifications so seldom provide a relevant basis for disparate treatment, the Equal Protection Clause demands that racial classifications be subjected to the most rigid scrutiny."

2. **The Fourteenth Amendment to the United States Constitution**-"All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States.....no State shall make or enforce any law which shall abridge the privileges or immunities of citizens in the United States...nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any persons within its jurisdiction the equal protections of the laws.
3. **HIPPA**- HIPPA and the American with Disability Act authorized the power of attorney to act as the principal's personal representative under 42 USC 1320d, the Health Insurance Portability and Accountability Act, and applicable regulations, to obtain access to the principal's health-care information and communicate with the principal's health care provider.

Emergency Medical Treatment and Labor Act: If a violation of the statute is alleged, the federal government comes into the medical facility and investigates not just the claimed violation, but any violation of any type from the statute. Section 1395dd(c) generally restricts transfers of unstabilized patients or improper transfers of stabilized persons. §1395dd (d) authorizes both civil fines and a private cause of action for violations of the statute as well as commencement of investigation of misconduct or unlawful actions against persons in their care.

Title II of the ADA Requires States to Serve Individuals with Disabilities in the Most Integrated Setting Appropriate. Congress enacted the ADA in 1990 "to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities." 42 U.S.C. § 12101(b)(1). Congress found that "historically, society has tended to isolate and segregate individuals with disabilities, and despite some improvements, such forms of discrimination against individuals with disabilities continue to be a serious and pervasive social problem." 42 U.S.C. § 12101(a)(2). For these reasons, Congress prohibited discrimination against individuals with disabilities by public entities when it provided that "no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity." 42 U.S.C. § 12132. Accordingly, the "ADA is intended to insure that qualified individuals receive services in a manner consistent with basic human dignity rather than a manner which shunts them aside, hides, and ignores them." One form of discrimination prohibited by Title II of the ADA is violation of the "integration mandate." 28 C.F.R. § 35.130(d); see also 42 U.S.C. § 12101(a)(2), (b)(1). That is, under the ADA, public entities are required to "administer services, programs, and activities in the most integrated setting appropriate to the needs of qualified individuals with disabilities." 28 C.F.R. § 35.130(d). An integrated setting is one that "enables individuals with disabilities to interact with non-disabled persons to the fullest extent possible." 28 C.F.R. Pt. 35, App. B, 690 (2015). In Olmstead v. L.C., the Supreme Court held that public entities are required to provide community-based services to persons with disabilities when (a) such services are appropriate; (b) the affected persons do not oppose community-based treatment; and (c) community-based services can be reasonably accommodated, taking into account the resources available to the

entity and the needs of other persons with disabilities. 527 U.S. 581, 607. In so holding, the Court explained that unnecessary institutional placement "perpetuates unwarranted assumptions that persons so isolated are incapable or unworthy of participating in community life." Id. at 600. The ADA's integration mandate applies both to people who are currently institutionalized and to people who are at serious risk of institutionalization. See Steimel v. Wernert, 823 F.3d 902, 913 (7th Cir. 2016); ("A State's program violates the ADA's integration mandate if it creates the risk of segregation; neither present nor inevitable segregation is required.").Failure to provide community services is a direct violation of the ADA. The ADA was passed, in part, to combat discrimination against individuals with disabilities, including discrimination in the form of unnecessary segregation.

4. **18 USC § 241**- Conspiracy against rights-"If two or more persons conspire to injure, oppress, threaten. Or intimidate any person in any State…in the free exercise or enjoyment of any right or privileged secured to him by the Constitution or laws of the United States because of his having so exercised the same…or if two or more persons prevent, or hinder his free exercise or enjoyment of any right or privilege so secured…..
5. **18 USC § 242**- Deprivation of rights under color of law-"Whoever, under color of any law, statue, ordinance, regulation, or custom, willfully subjects any person in any State…to the deprivation of any rights, privileges, or immunities secured or protected by the Constitution or laws of the United States…
6. **42 USC § 1981**- Equal rights under the law-"All persons within the jurisdiction of the United States shall have the same right in every State…to the full and equal benefit of all laws and proceedings for the security of persons and property as enjoyed by white citizens….

7. **42 USC § 1986**- Action for neglect to prevent-"Every person who, having knowledge that any of the wrongs conspired to be done, and mentioned in section 1985of this title, are about to be committed, and having power to prevent or aid in preventing the commission of the same, neglects to do so, if such wrongful act to be committed, shall be liable to the party injured, or his legal representatives, for all damages caused by such wrongful act be committed, which such person by reasonable diligence could have prevented; and such damages may be recovered in an action on the case; and any number of persons guilty of such wrongful neglect or refusal maybe joined as defendants in the action..."
8. **42 USC § 1988**-Proceedings in vindication of civil rights-"The jurisdiction in civil and criminal matters conferred on the district courts. For the protection of all persons in the United States in their civil rights, and for their vindication, shall be exercised and enforced in conformity with the laws of the United States.....

CLAIM FOR RELIEF

The Defendants' engage in and continue to engage in violation of all the governing laws cited supra and as a direct and proximate result the Plaintiffs'' are suffering irreparable damage.

COUNT I

Violation of 42 U.S.C. § 1983

(All Defendants' named supra)

Plaintiff reallege the above allegations as if hereinafter set forth in full and further states these claims arise under Title 42 of The United States Code (Civil Rights Act of 1964, as amended) including but not limited to § 1983. Defendants' deprived Plaintiff Cherakei Griffin of her rights, privileges, and immunities secured by the United States Constitution (or other federal laws). The arbitrary, highly offensive discriminatory actions of the Defendants' named supra shocks the

conscience, and are clearly, and unjustifiable unconstitutional, and illegal. The defendants' had no justifiable or legitimate state interest or objective in the disparate treatment against the Plaintiff, which was and is wholly different and not in conformity with others similarly situated. By reason of the foregoing, Plaintiffs' are entitled to the Relief set forth in the Prayer and as qualified as above.

Count II

Violation of 42 HIPPA and Power Of Attorney Rights of Plaintiffs''

(All Defendants 'named supra)

By Plaintiff re-alleges and incorporates by reference the above allegations contained in the paragraphs above as if fully set forth herein. By reason of the foregoing, Plaintiff is entitled to the Relief set forth in the Prayer and as qualified as above.

COUNT III

(All Defendants' named supra)

Emergency Medical Treatment And Labor Act Plaintiff re-alleges and incorporates by reference the above allegations contained in the paragraphs above as if fully set forth herein. By reason of the foregoing, Plaintiff is entitled to the Relief set forth in the Prayer and as qualified as above.

COUNT IV

TREASON

All Defendants 'named supra)

B Plaintiff re-alleges and incorporates by reference the above allegations contained in the paragraphs above as if fully set forth herein. All defendants have knowingly, and willfully

engaged in war against the United States Constitution, constituting in act of treason. By reason of the foregoing, Plaintiffs 'are entitled to the Relief set forth in the Prayer and as qualified as above.

COUNT V

UNLAWFUL NONCONSENSUAL MEDICAL RESEARCH

All Defendants 'named supra)

It is believed from the totality of evidence that respondents' have and are engaging in nonconsensual inhumane research against Cherakei Griffin in violation of clearly established federal law and guaranteed constitutional rights engaged in and are covering up against Cherakei Griffin

COUNT VI

(Wauwatosa Police Department & Milwaukee Police Department, Murphy, Edwards, Sibley, Bublitz)

42 USC § 14141- Police Misconduct Statue; unlawful for state or local law enforcement agencies to allow officers to engage in a pattern or practice of conduct that deprives persons of rights protected by the Constitution and or laws of the United States.

COUNT VII

Constitution Article I, Clause 3, Sec.8- impermissible burden on interstate commerce.

(All defendants)

The defendants have monopolized a scheme to create color of law crimes that are direct contradiction to interstate commerce

COUNT VIII

42 USC § 1988

(ALL DEFENDANTS)

While acting under the color of law and/or purporting to act under the color of law, the defendants treated the Plaintiffs' separately, unequally, segregated and as such the actions complained of constitute a violation of the Plaintiffs' equal protection rights secured under the laws of the United States Constitution and there under. These actions were arbitrary and not founded in any law. Proceedings in vindication of civil rights-"The jurisdiction in civil and criminal matters conferred on the district courts. For the protection of all persons in the United States in their civil rights, and for their vindication, shall be exercised and enforced in conformity with the laws of the United States.....

Plaintiff reallege the above allegations as if hereinafter set forth in full and further states these claims arise under 42 USC section 1988. Defendants' deprived Plaintiffs' rights, privileges, and immunities secured by the United States Constitution (or other federal laws). The arbitrary, highly offensive discriminatory actions of the Defendants' named supra shocks the conscience, and are clearly, and unjustifiable unconstitutional, and illegal. The defendants' had no justifiable or legitimate state interest or objective in the disparate treatment against the Plaintiffs', which was and is wholly different and not in conformity with others similarly situated. By reason of the foregoing, Plaintiffs' are entitled to the Relief set forth in the Prayer and as qualified as above.

PRAYER FOR RELIEF

I. The Plaintiff prays that there is a finding that the Defendants' have violated the Plaintiffs' constitutional rights as described in said complaint, in violation of The federal laws cited supra, and as such the Plaintiffs' be awarded actual, compensatory, statutory, consequential damages; punitive and treble damages in the amount of

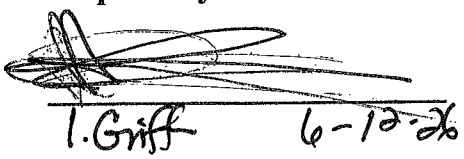
$50,000,000.000. The Plaintiff further prays for the Court to enforce injunctive and declaratory relief to effectuate justice, require the Defendants' to immediately remedy in accordance with the law all violations and to ensure that adequate steps are implementing to deter reoccurrence in the future. Order the Defendants' to cease violating the Constitution of the United States and those of the Plaintiffs' that are federally protected and order the immediate release of Plaintiff Cherakei Griffin as well as provide the Court with her whereabouts immediately. The Plaintiffs' ask that the Court order a weekly full documented writing on the whereabouts of Plaintiff Cherakei Griffin and order the fullest extent possible of the participation of Plaintiff I. Griffin and rights as it relates to the Plaintiff Cherakei Griffin. Plaintiffs'' also ask the Court to order that any and all evidence or possible evidence in this matter not be destroyed.

II. The Plaintiff prays that all issues be tried by a jury to the extent they are so triable under the Seventh Amendment to the United States Constitution and Rule 38 of the Federal Rules of Civil Procedure, to weigh and decide the facts.

III. Apply strict scrutiny to each defendant, on an individual basis. The Plaintiff requested for immediate Injunctive and Declaratory relief and an order to enjoin the Defendants''

IV. Effectuate any other relief deem necessary. Including ordering the release of body camera footage, and other discovery request.

Respectfully submitted this 12th date of June the year 2026



I. Griff 6-12-26

Plaintiff – I. Griffin, P.O. Box 72057, Milwaukee, WI 53212

File #: 26-1077 **Agenda Date:** 6/23/2026 **Agenda #:** 1.

Resolution approving a Conditional Use Permit to establish an eating establishment in the Midtown-Mixed (MID-MIX) zoning district at 8820 W. North Avenue, Ransom Htoo, applicant

WHEREAS, Ransom Htoo applied for a Conditional Use Permit in the Midtown-Mixed (MID-MIX) zoning district at 8820 W. North Avenue to establish an eating establishment, and;

WHEREAS, this request was reviewed and recommended by the City Plan Commission to be necessary for the public convenience at that location; located and proposed to be operated in such manner which will protect the public health, safety, and welfare; and was found to be compatible with surrounding uses;

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa, Wisconsin hereby grants a Conditional Use Permit to Ransom Htoo subject to:

1. Hours of operation 11:00 am to 2:30 pm, and 4:00 pm to 9:00 pm, Monday through Saturday.
2. Design Review Board approval for any exterior changes. Architectural supervision, plan review, and all applicable building permits are also required. A final occupancy inspection and approval must be obtained prior to occupancy.
3. Per City Code 13.30.030, any building project in excess of $100,000 shall have the sanitary sewer lateral replaced or inspected and pressure tested per BPW requirements.
4. Providing detailed costs of any alterations and/or new construction, as well as income & expense as requested by the Assessor's office.
5. The project being designed, constructed and maintained in full compliance with all applicable national, state and local fire code requirements.
6. Under WMC 24.16.040I., a Conditional Use will lapse and have no further effect eighteen (18) months after it is approved by the Common Council, unless a building permit has been issued (if required); the use or structure has been lawfully established; or unless a different lapse of approval period or point of expiration has been expressly established by the Common Council.
7. Obtaining other required licenses, permits, and approvals.

By: Plan Commission

Recommendation: Approve 6-0

File #: 26-1085 **Agenda Date:** 6/23/2026 **Agenda #:** 1.

Resolution approving application for Fireworks User Permit by Greg Pappas, Blue Mound Golf and Club, for the property address located at 10122 W. North Avenue for a 10-minute fireworks display for a wedding on August 1, 2026, from 9:15 P.M. - 9:25 P.M.

WHEREAS, Greg Pappas, Blue Mound Golf and Country Club, has applied for a fireworks user's permit for the purposes of conducting fireworks displays at 10122 W. North Avenue for a fireworks display on August 1, 2026 from 9:15 p.m. - 9:25 p.m.; and

WHEREAS, the Government Affairs Committee reviewed the request and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT the City Clerk be authorized to issue a firework user's permit to Greg Pappas, Blue Mound Golf and Country Club, for the purpose of conducting fireworks displays on August 1, 2026 from 9:15 p.m. - 9:25 p.m. at 10122 W. North Avenue, subject to all applicable laws and permit conditions, and subject further to all of the following:

1. Receipt by the City Clerk of a signed application and appropriate permit fee.
2. Receipt by the City Attorney of a Hold Harmless Agreement executed by the applicant in favor of the City of Wauwatosa.
3. Receipt by the City Attorney of a Certificate of General Liability Insurance evidencing liability coverage for the fireworks contractor naming the City of Wauwatosa as an additional insured.

BE IT FURTHER RESOLVED that the Common Council hereby authorizes the firework display to have a 10-minute duration as requested by the applicant.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1087 **Agenda Date:** 6/23/2026 **Agenda #:** 2.

Resolution approving Special Event Permit application - Applicant: Wauwatosa Village Business Improvement District (BID); Event Name: Tosa Village Classic (Tour of America's Dairyland); Location: Village of Wauwatosa - State Street, Harmonee Avenue, Wauwatosa Avenue, Blanchard Street, 72nd Street; Date/Time: June 28, 2026, 8:00 AM - 8:00 PM

WHEREAS, the Wauwatosa Village Business Improvement District (BID) has requested a Special Event Permit for the Tosa Village Classic (Tour of America's Dairyland) event on June 28, 2026, located at State Street, Harmonee Avenue, Wauwatosa Avenue, Blanchard Street, and 72nd Street from 8:00 AM until 8:00 PM; and

WHEREAS, the Government Affairs Committee reviewed the request and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT the Special Event Permit is hereby approved for the Tosa Village Classic (Tour of America's Dairyland) event on June 28, 2026 from 8:00 AM until 8:00 PM.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1088 **Agenda Date:** 6/23/2026 **Agenda #:** 3.

Resolution approving Special Event Permit application - Applicant: Wauwatosa Village Business Improvement District (BID), Event Name: Village Al Fresco, Location: W. State Street between Underwood and Wauwatosa Avenue, Date/Time: July 28, 2026, 6:00 PM to 9:00 PM

WHEREAS, the Wauwatosa Village Business Improvement District (BID) has requested a Special Event Permit for the Village Al Fresco event on July 28, 2026, located on W. State Street between Underwood and Wauwatosa Avenues, from 6:00 PM until 9:00 PM; and

WHEREAS, the Government Affairs Committee reviewed the request and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT the Special Event Permit is hereby approved for the Village Al Fresco event located on W. State Street between Underwood and Wauwatosa Avenues on July 28, 2026 from 6:00 PM until 9:00 PM.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1089 **Agenda Date:** 6/23/2026 **Agenda #:** 4.

Resolution approving application for temporary extension of licensed premises by DRI 7 Tosa Village LLC, d/b/a Café Hollander, 7677 W. State Street, for the Village Al Fresco event on July 28, 2026, from 6:00 PM - 9:00 PM

WHEREAS, DRI 7 Tosa Village LLC, d/b/a Café Hollander, 7677 W. State Street, has requested a temporary extension of the licensed premises for the following date and times:

1. Village Al Fresco event on July 28, 2026 from 6:00 - 9:00 PM

WHEREAS, the temporary extended premises is described as follows: State Street between Harmonee and Wauwatosa Avenues; and

WHEREAS, the Government Affairs Committee reviewed the applications and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT the retail alcohol licensed premises of DRI 7 Tosa Village LLC, d/b/a Café Hollander, 7677 W. State Street, be extended on July 28, 2026 from 6:00 - 9:00 PM.

BE IT FURTHER RESOLVED THAT the temporary extended premises is described as follows: State Street between Harmonee and Wauwatosa Avenues.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1092 **Agenda Date:** 6/23/2026 **Agenda #:** 5.

Resolution approving application for a new Class "B" Beer and Reserve "Class B" Liquor license by W Group West LLC, d/b/a Staybridge Suites, 1401 N. Mayfair Road, Manpreet Kaur - Agent, for the period ending June 30, 2027

WHEREAS, W Group West LLC, d/b/a Staybridge Suites, located at 1401 N. Mayfair Road, Wauwatosa, WI, has applied for a new Retail Class "B" Beer and Reserve "Class B" Liquor license; and

WHEREAS, the applicant meets the qualifications pursuant to WI. Stat. Sec. §125.04(5); and

WHEREAS, the Government Affairs Committee reviewed the request and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT a new Retail Class "B" Beer and Reserve "Class B" Liquor license be granted to W Group West LLC, d/b/a Staybridge Suites, Manpreet Kaur - Agent, located at 1401 N. Mayfair Road, for the period ending June 30, 2027.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1093 **Agenda Date:** 6/23/2026 **Agenda #:** 6.

Resolution approving application for a new Class "B" Beer and "Class C" Wine license by What's On Your Agenda, 2222 North Mayfair Road, Suite 200, Aisha Strickland - Agent, for the period ending June 30, 2027

WHEREAS, What's On Your Agenda, located at 2222 N. Mayfair Road, Suite 200, Wauwatosa, WI, has applied for a new Retail Class "B" Beer and "Class C" Wine license; and

WHEREAS, the applicant meets the qualifications pursuant to WI. Stat. Sec. §125.04(5); and

WHEREAS, the Government Affairs Committee reviewed the request and recommends approval.

NOW, THEREFORE, BE IT RESOLVED THAT a new Retail Class "B" Beer and "Class C" Wine license be granted to What's On Your Agenda, Aisha Strickland - Agent, located at 2222 N. Mayfair Road, for the period ending June 30, 2027.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1094 **Agenda Date:** 6/23/2026 **Agenda #:** 7.

Resolution approving various alcohol license renewal applications for the 2026-2027 license period

WHEREAS, the Government Affairs Committee of the City of Wauwatosa has reviewed current applications for renewal alcohol licenses for various applicants who have met the applicable qualifications of Chapter 125 of the Wisconsin Statutes and the Wauwatosa Municipal Code, and recommends approval of said renewals; and

WHEREAS, further applications for renewal, as received and reviewed by staff, will be considered at a future meeting of the Government Affairs Committee;

NOW, THEREFORE, BE IT RESOLVED, by the Common Council of the City of Wauwatosa that the renewal applications for the following Class "A" beer, "Class A" liquor, Class "B" beer, "Class B" liquor, Reserve "Class B" liquor, Premier Economic Development District "Class B" liquor, and Class "C" wine licenses are hereby approved.

BE IT FURTHER RESOLVED that the list of licensees approved as part of the present renewal resolution is reflected as follows:

LIST OF ALCOHOL BEVERAGE LICENSE RENEWALS
FOR THE 2026-2027 LICENSE PERIOD

CLASS “B” BEER AND “CLASS B” LIQUOR - RENEWAL

- Dave & Buster’s of Wisconsin, Inc., d/b/a Dave & Buster’s, Linda Halopka-Ivery - Agent, 2201-2215 N. Mayfair Road
- Kella Bella LLC, d/b/a Arte Wine and Painting Studio, Kelly Cannizzaro - Agent, 1442 Underwood Avenue
- PM Food Services LLC, d/b/a North Avenue Grill, Michael Topolovich - Agent, 7225 W. North Avenue
- Eats Enterprises, Inc., d/b/a Hector’s Mexican Grill, Daniel Van Roy - Agent, 7118 W. State Street
- King Cobra Investments LLC, d/b/a Drunken Cobra, Anthony Lampasona - Agent, 6818 W. North Avenue

CLASS “B” BEER AND RESERVE “CLASS B” LIQUOR - RENEWAL

- Ginza PZW Corp., d/b/a Ginza Sushi, Fang Ping Xiao - Agent, 2727A N. Mayfair Road
- MoreThanBourbon, Inc., d/b/a More Than Bourbon, Sukhlal Gill - Agent, 11500 W. North Avenue
- Bamboo Door, Inc., d/b/a Wauwatiki, Panagiotis Panagos Jr. - Agent, 6502 W. North Avenue
- San Camillo, Inc., d/b/a San Camillo, Jeremy Pust - Agent, 10200 W. Blue Mound Road

CLASS “B” BEER AND “CLASS C” WINE - RENEWAL

- Cosmos Café LLC, d/b/a Cosmos Café, Theofilos Tselentis - Agent, 7203 W. North Avenue
- Little Village Play Café LLC, d/b/a The Little Village Play Café, Abigail Gilman - Agent, 6505 W. North Avenue

CLASS "A" BEER AND "CLASS A" LIQUOR - RENEWAL

- ASG Wine Merchants, Inc., d/b/a Liquor Guys, Harneet Kaur - Agent, 11728 W. North Avenue
- North Avenue Beer and Liquor LLC, d/b/a Buy Rite Liquor, Parkash Kaur - Agent, 6002 W. North Avenue

By: Choose an item.

Recommendation: Approved 6-0

File #: 26-1090 **Agenda Date:** 6/23/2026 **Agenda #:** 8.

Resolution amending the September 2026 Common Council meeting calendar

WHEREAS, the September 2026 Common Council meeting is currently scheduled for September 22, 2026; and

WHEREAS, Council and Council Committee meetings for the 2027 budget process will begin in late September 2026; and

WHEREAS, budget materials will not be ready for presentation to the Committee of the Whole on September 22, 2026;

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the September 2026 Common Council meeting calendar is hereby amended by moving committee meetings to September 22, 2026, and moving the Common Council meeting to September 29, 2026.

By: Government Affairs Committee

Recommendation: Approve 6-0

File #: 26-1179 **Agenda Date:** 6/23/2026 **Agenda #:** 9.

Resolution establishing an annual reporting and disclosure process to provide transparency regarding the portion of the Wauwatosa School District levy attributable to private school voucher and 2R independent charter school programs

WHEREAS, property tax bills issued to Wauwatosa residents include the total levy attributable to the Wauwatosa School District; and

WHEREAS, portions of the school district levy collected through property taxes are used to fund private school choice programs and 2R independent charter school programs under Wisconsin state law; and

WHEREAS, these costs are not currently itemized or clearly identified for taxpayers on the property tax bill or accompanying tax bill materials; and

WHEREAS, on December 11, 2025, the Wauwatosa School Board adopted a Property Tax Transparency Resolution encouraging the City of Wauwatosa to develop an annually recurring method to notify residents of the cost of private school voucher and 2R independent charter school programs on their property tax bills; and

WHEREAS, other Wisconsin municipalities, including the City of Green Bay, have implemented similar transparency measures by adding informational language to the property tax bill identifying the portion of the school district levy attributable to private school vouchers; and

WHEREAS, providing this information will increase transparency and improve public understanding of how property tax dollars are allocated within the school district levy;

NOW, THEREFORE, BE IT RESOLVED that the Wauwatosa Common Council directs the development of an annually recurring method to notify Wauwatosa residents of the portion of the Wauwatosa School District levy attributable to private school voucher and 2R independent charter school programs; and

BE IT FURTHER RESOLVED that the Wauwatosa School District shall provide the total levied amount generated by private school voucher and 2R independent charter school programs to the City of Wauwatosa Finance Director by November 10 of each calendar year for the purpose of preparing annual property tax bill materials; and

BE IT FURTHER RESOLVED that the City of Wauwatosa Finance Department shall include the following informational disclosure on the informational insert accompanying the annual property tax bill: “Of the amount levied by the Wauwatosa School District, $xxx.xx is for the purpose of private school vouchers.” with the dollar amount updated annually based on the information provided by the Wauwatosa School District; and

BE IT FURTHER RESOLVED that the inclusion of this informational statement is intended solely to provide transparency to taxpayers and does not alter the calculation of the school district levy or property tax obligations.

By: Government Affairs Committee

Recommendation: Approve 5-1

File #: 26-1083 **Agenda Date:** 6/23/2026 **Agenda #:** 10.

Ordinance amending various sections of the Wauwatosa Municipal Code to conform to the twelve-district, one-alder-per-district Common Council structure

The Common Council of the City of Wauwatosa do hereby ordain as follows:

Part I. Subsection (J) of Section 7.50.050 of the Wauwatosa Municipal Code is hereby amended to read in its entirety as follows:

"The alderperson of the district in which the special event is scheduled to occur shall be provided a copy of such notification prior to its delivery to property owners, residents and/or businesses as described above."

Part II. Section 8.44.150 of the Wauwatosa Municipal Code is hereby amended to read in its entirety as follows:

"The board of public works is authorized and empowered to issue additional rules, regulations and directives as it may deem necessary for the public interest. In the event any of the requirements herein contained may cause undue or unnecessary hardship upon any person, firm or corporation, application may be made to the board of public works for a variance setting forth the nature of the same and reasons therefor, and such may be granted by the board upon notice of such application to the alderperson of the district."

Part III. Subsection (A)(3) of Section 15.06.070 of the Wauwatosa Municipal Code is hereby amended to read in its entirety as follows:

"Regular first class mail, interdepartmental mail or e-mail to the alderperson of the district in which the affected property is located."

Part IV. Subsection (C)(1) of Section 24.16.050 of the Wauwatosa Municipal Code is hereby amended to read in its entirety as follows:

"Preapplication Meetings. Before submitting a PUD application, the applicant must schedule a meeting with the zoning administrator to discuss the proposed plan and the required process. The zoning administrator is responsible for coordinating the involvement of other relevant city departments in the preapplication meeting. The applicant must also hold a neighborhood meeting, with invitations mailed to all property owners within 200 feet of the subject property, alderperson of the district, and the zoning administrator."

Part V. This ordinance shall take effect on and after its date of publication.

By: Government Affairs Committee

Recommendation: Adopt 6-0

File #: 26-1086 **Agenda Date:** 6/23/2026 **Agenda #:** 11.

Ordinance amending Section 6.08.250 of the Wauwatosa Municipal Code related to provisional retail alcohol licenses

The Common Council of the City of Wauwatosa do hereby ordain as follows:

Part I. Section 6.08.250 of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

1. A provisional retail license may be issued to a person who has applied for a Class "A," Class "B," "Class A," "Class B" or "Class C" license, provided that the provisional retail license only authorizes the activities that the type of retail license applied for authorizes. A provisional retail license may not be issued if the quota prohibits issuing an annual license for the same.
2. A provisional retail license authorizes applicants for retail licenses to conduct activities that the type of retail license applied for authorizes while awaiting Common Council action, provided the applicant meets all the other qualifications set out in Sections 6.08.060 and 6.08.250(C) of this chapter.
3. The city clerk is authorized to issue provisional retail licenses provided that:
    a. An application for a Class “A,” Class “B,” “Class A,” “Class B,” or “Class C” license has been filed with the city clerk;
    b. The applicant meets the qualifications outlined in Sections 125.04(5)(a-c); and
    c. The applicant is not delinquent in the payment of any taxes, assessments, fees, or other charges owed to the City.
4. A provisional retail license expires 60 days after its issuance or when the retail license applied for is issued or denied, whichever is sooner.
5. No person may hold more than one provisional retail license for each type of license applied for by the holder per year.
6. A provisional retail license is non-transferable and applies only to the applicant and premises identified in the application.
7. The city clerk may revoke the license if the holder violates this chapter, violates state law related to alcohol beverage licensing, or no longer meets the qualifications for issuance.

Part II. This ordinance shall take effect on and after its date of publication.

By: Government Affairs Committee

Recommendation: Adopt 6-0

File #: 26-1180 **Agenda Date:** 6/23/2026 **Agenda #:** 12.

Ordinance amending various sections of Section 2.04.020 of the Wauwatosa Municipal Code related to the vacation of the office of alderperson and selection of replacement

The Common Council of the City of Wauwatosa do hereby ordain as follows:

Part I. A "Findings" section is hereby added to Section 2.04.020 of the Wauwatosa Municipal Code to read as follows:

"The Common Council finds that:

1. The authority to determine how an aldermanic vacancy is filled rests solely with the Common Council as the elected legislative body of the City, pursuant to Wis. Stat. § 17.23(1)(am).
2. City staff shall support the Common Council in carrying out that determination promptly and efficiently."

Part II. Subsection 2.02.020(A)(2) is hereby amended in its entirety to read as follows:

"An alderperson shall file with the City Clerk a written declaration of prospective vacancy to announce their intention to vacate their aldermanic position, on a date certain, by resignation or expected change in residency. The purpose of declaring a prospective vacancy is to allow the Common Council to fill the vacancy without leaving an aldermanic district unrepresented for a period of time. Once an alderperson has filed a written declaration of prospective vacancy, that declaration shall be binding and they may not withdraw it."

Part III. Subsection 2.02.040(A)(3) of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

"When an alderperson's residency changes in a manner that triggers a vacancy under Section A(1)(b) or A(1)(c), the alderperson shall notify the City Clerk of their new address in writing no later than five (5) business days following the effective date of the change in residency."

Part IV. Subsection 2.02.040(A)(4) of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

"If an officer of the City receives actual notice, in their official capacity, that an alderperson's residency has changed in a manner that triggers a vacancy under Section A(1)(b) or A(1)(c), and no written notification from the alderperson has been received by the City Clerk, such officer shall promptly notify the City Clerk."

Part V. Subsection 2.02.040(A)(5) of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

"Upon receipt of notice under Section A(2-4), the City Clerk shall promptly inform the Common Council."

Part VI. Subsection 2.02.040(A)(6) of the Wauwatosa Municipal Code is hereby created to read as follows:

"When an alderperson changes their residency to a place outside Wauwatosa or their district, the alderperson shall have no authority to serve as an alderperson in any capacity."

Part VII. Subsection 2.02.040(A)(7) of the Wauwatosa Municipal Code is hereby created to read as follows:

"For purposes of this section, "residency" shall be defined in the same manner as are qualifications for voting in local elections under the Wisconsin Statutes."

Part VIII. Subsection 2.04.020(B) of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

"It is the policy of the City of Wauwatosa that vacancies in aldermanic offices shall be filled by election of the voters of the affected aldermanic district whenever that can be accomplished within a reasonable timeframe. Council appointment is a secondary measure to be used only when an election is impracticable or where the district would otherwise be left unrepresented for a period of more than one year. Nothing in this Subsection limits the council's authority under Wis. Stat. § 17.23(1)(am)."

Part IX. Subsection 2.04.020(C) of the Wauwatosa Municipal Code is hereby amended in its entirety to read as follows:

"No later than the next regular council meeting following the Government Affairs Committee meeting under Section (D), the Common Council shall vote on a resolution:

1. Holding the vacancy open until the next regularly scheduled election consistent with Wis. Stat. § 17.23(1)(am);
2. Ordering a special election under Wis. Stat. § 8.50 to fill the vacancy at the earliest qualifying election date;
3. Filling the vacancy by appointment under Subsection (F)."

Part X. Subsection 2.04.020(D) of the Wauwatosa Municipal Code is hereby created to read as follows:

"Before the Common Council votes on any resolution under Subsection (C), the matter shall be referred to the Government Affairs Committee for review and recommendation.

1. Upon the creation of a vacancy, or upon an alderperson's filing of a written declaration of prospective vacancy under Subsection (A)(2), the City Clerk shall promptly notify the Government Affairs Committee.
2. No later than the next regular meeting of the Government Affairs Committee following such notification, the Committee shall convene to consider whether the vacancy should be filled by election under Subsection (C)(1) or (C)(2), or by council appointment under Subsection (C)(3). The Committee's review shall include consideration of the factors set forth in Subsection (E).
3. The Government Affairs Committee shall adopt a written recommendation identifying its preferred course of action and the reasons therefor, and shall transmit that recommendation to the full Common Council.
4. The Common Council shall not vote on a resolution under Subsection (C) until it has received the Committee's written recommendation, or until thirty (30) days have elapsed from the date of vacancy notification, whichever occurs first. Nothing in this Subsection prevents the Council from departing from the Committee's recommendation."

Part XI. Subsection 2.04.020(E) of the Wauwatosa Municipal Code is hereby created to read as follows:

"If the Council determines it necessary to appoint someone under Subsection (C), the Council may proceed to fill the vacancy by appointment under Subsection (F). The minutes of the meeting shall record each council member's vote. Appropriate grounds include one or more of the following:

(i) The unexpired term is twelve (12) months or fewer from the date of vacancy;
(ii) No qualifying election date exists within a reasonable period such that the district would be unrepresented for more than a year;
(iii) The cost and administrative burden of a stand-alone special election would be disproportionate to the length of the unexpired term; or
(iv) Other extraordinary circumstances."

Part XII. Subsection 2.04.020(F) of the Wauwatosa Municipal Code is hereby created and titled "Committee to Nominate Replacements" and shall read as follows:

"1. When an aldermanic vacancy occurs, or when an alderperson has declared a prospective vacancy, and the Common Council has determined, pursuant to Subsection (C) that a council appointment is appropriate (either as an interim appointment pending a special election, or as a full appointment in lieu of a special election), an aldermanic nomination committee of five current council members shall be formed to assess the qualifications of applicants and to recommend one of the applicants to the full Common Council to fill the vacancy.

2. Four members of the aldermanic nomination committee shall be selected by the City Clerk drawing lots. If the chosen alderperson from such district chooses not to serve on the committee, or is otherwise unable to serve, a replacement alderperson will be selected by lot.

3. The mayor shall appoint the fifth member of the aldermanic nomination committee from among the common council members who are not chosen to serve on the committee in accordance with paragraph (2).

4. The mayor shall appoint the chair of the aldermanic nomination committee from among the five common council members who were chosen in accordance with paragraphs (B)(2) and (B)(3) above."

Part XIII. Subsection 2.04.020(G) of the Wauwatosa Municipal Code is hereby created and titled "Selection of Replacements by Common Council" and shall read as follows:

"1. The process for filling by council appointment, where authorized under Subsection (C), an aldermanic vacancy shall be as follows:
   a. The city clerk shall announce the vacancy in the manner customarily used for official city announcements. Wauwatosa residents interested in the vacancy shall have two weeks from the date of the announcement to submit an application to the aldermanic nomination committee.
   b. No later than two weeks after the close of the application deadline, the aldermanic nomination committee shall meet and conduct interviews of the applicants. The committee may select an applicant to recommend to the full Common Council at that meeting, or at a subsequent meeting to be held within seven days of the first meeting.

2. Those interviews of the aldermanic applicants shall be videotaped and broadcast made publicly available through the online platform customarily used by the City for broadcasting meetings of the Common Council and Common Council committees.

3. To allow for public comment and appropriate consideration by alderpersons who are not members of the aldermanic nomination committee, the Common Council shall not vote to fill any aldermanic vacancy unless at least seven days have elapsed since the aldermanic nomination committee has selected an applicant to recommend to the common council.

4. The Common Council shall make its determination to either fill the vacancy by committee appointment or refer the vacancy to an election, or special election within sixty (60) days of the date of vacancy notification.

5. After the time period specified in Subsection (F)(1) above has ended, the Common Council shall select one of the applicants for the aldermanic vacancy by a majority vote. It is not bound to follow the aldermanic nomination committee's recommendation."

Part XIV. This ordinance shall take effect on and after its date of publication.

By: Government Affairs Committee

Recommendation: Adopt 6-0

File #: 26-1102 **Agenda Date:** 6/23/2026 **Agenda #:** 1.

Resolution authorizing advance purchase of 2027 fleet vehicles and equipment, waiving competitive bidding for one Prentice 2124 log loader dump body, and directing staff to include 2028 fleet procurement authority in the 2027 budget resolution

WHEREAS, the Fleet Maintenance Division purchases vehicles and equipment for City departments to replace aging fleet assets using fleet equipment reserve funds; and

WHEREAS, advance ordering of 2027 fleet vehicles and equipment is necessary to avoid limited ordering windows, delivery delays, cancellations, and additional price increases; and

WHEREAS, the Fleet Division seeks authorization to order replacement vehicles and equipment planned within the equipment replacement budget in an amount not to exceed $1,105,000; and

WHEREAS, the Forestry Division requires a Prentice 2124 log loader dump body to be installed on a City-supplied Freightliner chassis; and

WHEREAS, waiver of competitive bidding for the Prentice 2124 log loader dump body is in the best interests of the City due to operational compatibility with an existing Forestry vehicle and the limited availability of dealers in Wisconsin.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the Fleet Maintenance Division is authorized to order 2027 fleet vehicles and equipment in advance of approval of the 2027 Operating and Capital Budgets, within the equipment replacement budget, in an amount not to exceed $1,105,000, and that the competitive bidding requirement is hereby waived for the purchase of one Prentice 2124 log loader dump body, and that staff is directed to include in the 2027 budget resolution authority for the Fleet Superintendent to initiate the procurement process for 2028 vehicles in 2027, provided that such vehicles are funded through the Fleet Equipment Reserve and that the Reserve maintains a sufficient balance.

By: Financial Affairs Committee

Recommendation: Approve 6-0

File #: 26-1181 **Agenda Date:** 6/23/2026 **Agenda #:** 2.

Resolution approving a contract with Single Source, Inc. for professional real estate services on the Blue Mound Road USH 18 project, CIP Project No. 1123, in the amount of $121,225 and approving an associated Level III fund transfer

WHEREAS, the City of Wauwatosa is responsible for real estate acquisition professional services on Wisconsin Department of Transportation Project I.D. 2200-10-21, USH 18 Blue Mound Road, from North 66th Street to North 106th Street; and

WHEREAS, the City of Milwaukee led a competitive procurement process for real estate services for the project and Single Source, Inc. was selected as the best value firm; and

WHEREAS, WisDOT has requested that each participating municipality contract separately with Single Source, Inc. for its respective professional real estate services; and

WHEREAS, the total contract value for the City of Wauwatosa's professional real estate services is $121,225.00, and a Level III fund transfer in that amount is required to fund the contract in 2026;

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the proper City officials are authorized to enter into a contract with Single Source, Inc. for professional real estate services on the Blue Mound Road USH 18 project, CIP Project No. 1123, in the amount of $121,225.00, and that a Level III fund transfer in the amount of $121,225.00 is hereby approved.

By: Financial Affairs Committee

Recommendation: Approve 6-0

File #: 26-1182 **Agenda Date:** 6/23/2026 **Agenda #:** 3.

Resolution approving a multi-year agreement with Vaisala Inc. to join a regional winter weather pavement sensor network in the Greater Milwaukee Area

WHEREAS, Southeastern Wisconsin Watersheds Trust, Inc. has partnered with Vaisala Inc. to establish a regional winter weather pavement sensor network in the Greater Milwaukee Area; and

WHEREAS, the network will provide real-time roadway surface temperature and pavement condition data to support roadway deicing strategies and regional data sharing; and

WHEREAS, the proposed agreement requires a three-year subscription commitment for two pavement sensors at a total cost of $9,600, to be paid from the Storm Sewer General Fund;

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa, Wisconsin that City staff are hereby authorized to execute a multi-year agreement with Vaisala Inc. for the City to join the regional winter weather pavement sensor network in the Greater Milwaukee Area.

By: Financial Affairs Committee

Recommendation: Approve 6-0

File #: 26-1183 **Agenda Date:** 6/23/2026 **Agenda #:** 4.

Resolution approving an amended State Municipal Agreement with the Wisconsin Department of Transportation for the STH 181 resurfacing project (CIP #1126)

WHEREAS, the State Municipal Agreement between the City of Wauwatosa and the Wisconsin Department of Transportation for the STH 181 resurfacing project, CIP #1126, has been updated with new estimated design and construction costs; and

WHEREAS, the amended agreement supersedes the previous agreement approved by WisDOT on April 2, 2024.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the proper City officials are authorized to execute the amended State Municipal Agreement with the Wisconsin Department of Transportation for the STH 181 resurfacing project, CIP #1126.

By: Financial Affairs Committee

Recommendation: Approve 6-0

File #: 26-1184 **Agenda Date:** 6/23/2026 **Agenda #:** 5.

Resolution waiving the competitive bidding process to approve a contract with Premier Design and Build Group for construction management services in the amount of $279,292, awarding a demolition contract to Johler Demolition in the amount of $1,596,700 for demolition of the Linneage warehouse in Tax Increment District No. 7, and approving a Level Three fund transfer of $1,975,992

WHEREAS, the Common Council previously approved a Purchase and Sale Agreement for the acquisition of the Linneage warehouse property within Tax Increment District No. 7; and

WHEREAS, the redevelopment of the Linneage warehouse site is contemplated by the Tax Increment District No. 7 project plan; and

WHEREAS, to prepare the site for redevelopment, the City desires to retain a construction manager and a demolition contractor for demolition of the Linneage warehouse; and

WHEREAS, Premier Design and Build Group has served as construction manager on prior phases of work within Tax Increment District No. 7 and, based on its familiarity with the site and prior project involvement, staff recommends waiver of the competitive bidding process; and

WHEREAS, Premier Design and Build Group submitted a proposal for construction management services in the amount of $279,292, which staff has determined to be fair and reasonable; and

WHEREAS, competitive bids were solicited for the demolition work and Johler Demolition was the lowest responsible bidder at $1,596,700; and

WHEREAS, a contingency of $100,000 is recommended for the demolition work; and

WHEREAS, Tax Increment District No. 7 is forecasted to have sufficient increment to pay the associated debt service for this project, and a Level Three fund transfer in the amount of $1,975,992 is needed to provide sufficient expenditure authority.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the competitive bidding process is hereby waived for construction management services, and the appropriate City officials are authorized to enter into a contract with Premier Design and Build Group in the amount of $279,292 for construction management services related to demolition of the Linneage warehouse in Tax Increment District No. 7, to award and execute a demolition contract with Johler Demolition in the amount of $1,596,700, with a contingency of $100,000, and to complete a Level Three fund transfer in the amount of $1,975,992 to provide expenditure authority for this project.

By: Financial Affairs Committee

Recommendation: Approve 6-0

COMPTROLLER'S OFFICE BILLS & CLAIMS REPORT

Common Council Meeting: June 23, 2026

Payments to be approved: Date range May 20, 2026 - June 23, 2026

Electronic payments are included in the supporting documentation.

Department	Description	Short Description
000	UNASSIGNED	UNASSIGN
110	MAYOR	MAYOR
111	COMMON COUNCIL	COUNCIL
113	YOUTH COMMISSION	YOUTH
114	HISTORIC PRESERVATION COMM	HISTORIC
115	SENIOR COMMISSION	SENIOR
120	MUNICIPAL COURT	COURT
130	CITY ATTORNEY	ATTORNEY
131	LITIGATION RESERVE	LITIGATION
140	CITY ADMINISTRATION	ADMIN
141	CITY CLERK	CLERK
142	ELECTIONS	ELECTIONS
143	HUMAN RESOURCES	HR
144	INFORMATION TECHNOLOGY	IT
150	CITY ASSESSOR	ASSESSOR
151	FINANCE	FINANCE
152	DEBT	DEBT
153	SPECIAL ASSESSMENTS	SP ASSESS
154	REMISSION OF TAXES	REMISSION
190	INSURANCE ADMINISTRATION	INSURANCE
191	MKE ANIMAL CONTROL COMM	MADACC
210	POLICE	POLICE
212	POLICE RESERVES	POLICE RES
220	FIRE	FIRE
230	CROSSING GUARDS	CROSSING
310	PUBLIC WORKS OPS	PW OPS
315	ROADWAY MAINTENANCE	ROADS
320	TRAFFIC CONTROL	TRAFFIC
325	ELECTRICAL SERVICES	ELECTRICAL
330	SOLID WASTE	WASTE
335	FLEET	FLEET
340	FORESTRY	FORESTRY
345	PARKS	PARKS
350	POLICE STATION	POL STN
355	MUNICIPAL COMPLEX	MUNI COMP
360	PUBLIC WORKS BUILDING	PW BLDG
399	UNKNOWN PWDEPT - WRKFLW ONLY	NO DEPT WF
410	HEALTH	HEALTH
510	LIBRARY	LIBRARY
515	TOURISM	TOURISM
520	CIVIC CELEBRATION	CELEBRATE
610	PLANNING AND ZONING	PLANNING
615	ECONOMIC DEVELOPMENT	DEVELOPMT
620	BUILDING REG AND CODE ENF	BLDG REG
625	ENGINEERING	ENGINEER
630	COMM DEV BLOCK GRANT	CDBG

635	BIKE PED COMMITTEE	BIKE PED
705	TAX INCREMENT DISTRICT 5	TIF 5
706	TAX INCREMENT DISTRICT 6	TIF 6
707	TAX INCREMENT DISTRICT 7	TIF 7
708	TAX INCREMENT DISCRICT 8	TIF 8
709	TAX INCREMENT DISCTICT 9	TIF 9
710	TAX INCREMENT DISTRICT 10	TIF 10
711	TAX INCREMENT DISTRICT 11	TIF 11
712	TAX INCREMENT DISTRICT 12	TIF 12
713	TAX INCREMENT DISTRICT 13	TIF 13
810	WATER	WATER
811	WATER SOURCE OF SUPPLY	PUMPING
812	WATER PUMPING	TRANDIST
813	WATER TREATMENT	ADMIN
814	WATER TRANSMISSION & DISTRIB	SRCE SPPLY
815	WATER CUSTOMER ACCOUNTS	TREATMNT
816	WATER ADMIN & GENERAL	CUSTACCT
830	SANITARY SEWER	SANITARY
840	STORM SEWER	STORM
901	UNDISTRIBUTED PAYROLL	UNDISPAY
902	NONDEPARTMENTAL	NONDEPT
941	HART PARK SENIOR	SENIOR
942	FIREMENS ENDOWMENT	FIREENDOW
943	CEMETERY CARE	CEMCARE
944	BACHMAN FLAG	FLAG
945	LICENSE PLATE READER	ALPR
946	LAND CONSERVATION	LANDCON
947	LIBRARY TRUST	LIB TRUST
999	UNKNOWN DEPT - WORKFLOW ONLY	NO DEPT WF

Check Nbr	Check Dt	Check Status	Cleared Dt	Check Amount	Invoice Number	Invoice Type	Vendor Num	Vendor Name	Invoice Description	Org Obj	Object Description	Inv GL Eff Dt	Inv Line Item Amt
30722	5/20/2026	Outstanding		$243,339.20	UH 5/20/26	Direct Disbursement	933	UNITED HEALTHCARE	HEALTH CLAIMS	16190000 - 6403	CLAIMS	5/20/2026	$243,339.20
30723	5/20/2026	Outstanding		$10,228.66	UH FLEX 5/20/26	Direct Disbursement	933	UNITED HEALTHCARE	FLEXIBLE SPENDING	10 - 2316	FLEXIBLE SPENDING	5/20/2026	$10,228.66
30724	5/29/2026	Outstanding		$858,766.48	WRS REMIT 043026	Direct Disbursement	316	WI RETIREMENT SYSTEMS	WRS REMITTANCE APR 2026	10 - 2302	WRS	4/30/2026	$858,766.63
										10 - 2302	WRS	4/30/2026	-$0.15
											Line Item Total		**$858,766.48**
30725	5/21/2026	Cleared	5/27/2026	$430.53	11054	Invoice	1012	AIR PLUS LLC	P-233 CABCAM PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$430.53
30726	5/21/2026	Cleared	5/28/2026	$2,205.72	1975225111	Invoice	884	AT&T	charges 3/1/26-3/31/26 includi	24144000 - 6306	TELECOMMUNICATIONS	4/15/2026	$2,205.72
30727	5/21/2026	Cleared	5/27/2026	$4,177.00	EQUIPINV_059963	Invoice	418	BAYCOM INC	UEMS 1yr on premise limited se	24144000 - 6410	SOFTWARE LICENSING	4/15/2026	$4,177.00
30728	5/21/2026	Cleared	5/27/2026	$352.74	762434	Invoice	39	BILLS POWER CENTER INC	G-10 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$352.74
30729	5/21/2026	Cleared	5/27/2026	$113.02	918223	Invoice	18	BRAKE & EQUIPMENT	F310 wheel seal	10220000 - 6206	EQUIPMENT REPAIRS	5/12/2026	$113.02
30730	5/21/2026	Cleared	5/26/2026	$699.70	M93285	Invoice	48	BROOKS TRACTOR INC	S-115 WEAR KIT	20335000 - 6009	REPAIR PARTS	5/14/2026	$699.70
30731	5/21/2026	Cleared	5/27/2026	$105.75	999102643601	Invoice	1010	CENGAGE LEARNING INC	Book Alp*	35510103 - 6006	BOOKS AND PERIODICALS	5/13/2026	$105.75
30732	5/21/2026	Cleared	5/26/2026	$3,985.00	265180501	Invoice	1836	CENTURY FENCE COMPANY	DOUBLE SWING GATE REPLACEMENT	26360000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/19/2026	$3,985.00
30733	5/21/2026	Cleared	5/29/2026	$31,898.32	493274	Invoice	785	E.H. WOLF & SONS	8504 GAL UNLEADED AT $3.75097	20 - 1503	FUEL INVENTORY	5/14/2026	$31,898.32
30734	5/21/2026	Cleared	5/28/2026	$3,095.07	231007	Invoice	50	EMMONS BUSINESS INTERIORS	Book trucks	35510000 - 6099	OTHER EXPENSES	5/13/2026	$3,095.07
30735	5/21/2026	Outstanding		$284.44	26-088 Salyers	Invoice	1316	EMPLOYEES	Salyers Uni Allow - Boots, Qui	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$44.00

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30735	5/21/2026	Outstanding		$284.44	UA2605 Salyers	Invoice	1316	EMPLOYEES	Salyers Uni Allow - Boots, Qui	10210000 - 5305	UNIFORM ALLOWANCE	5/18/2026	$240.44
											Line Item Total		**$284.44**
30736	5/21/2026	Cleared	5/27/2026	$19.00	26-044l Griffin	Invoice	1316	EMPLOYEES	Griffin Travel Reimburse - WCT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$19.00
30737	5/21/2026	Cleared	5/28/2026	$102.20	UA2605 Wood	Invoice	1316	EMPLOYEES	Wood Uni Allow - Modular Holst	10210000 - 5305	UNIFORM ALLOWANCE	5/18/2026	$102.20
30738	5/21/2026	Cleared	6/15/2026	$19.00	26-044l Machalk	Invoice	1316	EMPLOYEES	Machalk Travel Reimburse - WCT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$19.00
30739	5/21/2026	Cleared	6/1/2026	$19.00	26-044l Olson	Invoice	1316	EMPLOYEES	Olson Travel Reimburse - WCTC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$19.00
30740	5/21/2026	Outstanding		$154.00	26-087 Schleis	Invoice	1316	EMPLOYEES	Schleis Travel Reimburse - Mot	10210109 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$154.00
30741	5/21/2026	Cleared	6/5/2026	$636.64	UA26 Gibbs	Invoice	1316	EMPLOYEES	Gibbs Uni Allow-Gun,Flashlight	10210000 - 5305	UNIFORM ALLOWANCE	5/18/2026	$636.64
30742	5/21/2026	Cleared	6/15/2026	$110.00	26-058 Orlowski	Invoice	1316	EMPLOYEES	Orlowski Travel Reimburse - FB	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$110.00
30743	5/21/2026	Cleared	5/27/2026	$204.90	REIMB MTAW CONF 2026	Invoice	1316	EMPLOYEES	REIMBURSE MTAW CONFERENCE D SU	10151000 - 6002	PROFESSIONAL DEVELOPMENT	4/15/2026	$204.90
30744	5/21/2026	Cleared	6/12/2026	$97.11	2026 BOOT REIM DEMIN	Invoice	1316	EMPLOYEES	2026 BOOT REIMBURSEMENT N DEMI	10625000 - 6007	CLOTHING	4/15/2026	$97.11
30745	5/21/2026	Cleared	5/29/2026	$150.00	2026 TAUGHER SHOES	Invoice	1316	EMPLOYEES	TAUGHER SAFETY SHOES	10340000 - 6007	CLOTHING	5/14/2026	$150.00
30746	5/21/2026	Cleared	6/1/2026	$19.00	26-044k Miszewski	Invoice	1316	EMPLOYEES	Miszewski Travel Reimburse - W	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$19.00
30747	5/21/2026	Cleared	5/27/2026	$66.00	26-093 Lewandowski	Invoice	1316	EMPLOYEES	Lewandowski Travel Reimburse -	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$66.00

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30748	5/21/2026	Cleared	6/3/2026	$300.15	MILES GLEESING APR26	Invoice	1316	EMPLOYEES	Mileage Reimbursement B Gleesi	32515000 - 6002	PROFESSIONAL DEVELOPMENT	4/15/2026	$300.15
30749	5/21/2026	Cleared	6/3/2026	$113.00	26-074 K. Tyrpak	Invoice	1316	EMPLOYEES	K. Tyrpak Travel Reimburse - W	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/8/2026	$113.00
30750	5/21/2026	Cleared	6/15/2026	$150.00	2026 STEINMAN SHOES	Invoice	1316	EMPLOYEES	STEINMAN SAFETY SHOES	10340000 - 6007	CLOTHING	5/14/2026	$150.00
30751	5/21/2026	Cleared	5/27/2026	$41,175.00	INV-66752-L4H9	Invoice	2436	EXPRESS ELEVATOR LLC	Flood Recovery 2025 Muellner E	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/19/2026	$41,175.00
30752	5/21/2026	Cleared	5/26/2026	$991.70	WIMI3402710	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	10320000 - 6008	OTHER SUPPLIES	5/21/2026	$118.84
					WIMI3403758	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$130.80
					WIMI3403760	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$190.00
					WIMI3403761	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$230.90
					WIMI3403762	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$30.57
					WIMI3403763	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$172.70
					WIMI3403794	Invoice	91	FASTENAL COMPANY	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$117.89
											Line Item Total		**$991.70**
30753	5/21/2026	Cleared	6/1/2026	$1,205.20	100030-2	Invoice	1947	FORD CONSTRUCTION COMPANY INC	WALL DAMAGE AT PD	12210000 - 7001	FIXED ASSET	5/12/2026	$1,205.20
30754	5/21/2026	Cleared	5/27/2026	$836.76	AR275100	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	35510000 - 6202	GENERAL SERVICES	5/13/2026	$538.64
					AR282039	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	35510000 - 6202	GENERAL SERVICES	5/13/2026	$109.13
					AR282072	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10141000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$78.62
					AR282073	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10310000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$110.37
											Line Item Total		**$836.76**
30755	5/21/2026	Cleared	6/2/2026	$1,187.34	181050372	Invoice	940	HUMANADENTAL INS. CO.	Humana June 2026	17190000 - 6209	CLAIMS ADMINISTRATION	5/18/2026	$1,187.34

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30756	5/21/2026	Cleared	5/27/2026	$646.78	C271197909:01	Invoice	1696	I-STATE TRUCK CENTER	R-76 SEAL KIT	20335000 - 6009	REPAIR PARTS	5/14/2026	$529.29
					C271197956:01	Invoice	1696	I-STATE TRUCK CENTER	R-76 SEAL KIT	20335000 - 6009	REPAIR PARTS	5/14/2026	$117.49
											Line Item Total		**$646.78**
30757	5/21/2026	Cleared	5/27/2026	$460.50	IN339707	Invoice	149	JEFFERSON FIRE & SAFETY INC	BAC5401 tank repair	10220000 - 6206	EQUIPMENT REPAIRS	5/12/2026	$460.50
30758	5/21/2026	Cleared	5/29/2026	$218.92	PIMK0480638	Invoice	1223	JFTCO, INC	R-36 SEALS & BOLTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$169.79
					PIMK0480639	Invoice	1223	JFTCO, INC	R-36 SEALS & BOLTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$3.65
					PIMK0480926	Invoice	1223	JFTCO, INC	R-36 SEALS & BOLTS	20335000 - 6009	REPAIR PARTS	5/14/2026	$45.48
											Line Item Total		**$218.92**
30759	5/21/2026	Cleared	5/27/2026	$908.65	503224	Invoice	1657	KANOPY INC	material econtent*	35510103 - 6006	BOOKS AND PERIODICALS	5/13/2026	$908.65
30760	5/21/2026	Cleared	5/29/2026	$9,795.96	140243	Invoice	387	KAPUR AND ASSOCIATES	Wisconsin Avenue MultiUse Path	12315005 - 7001	FIXED ASSET	5/8/2026	$1,255.74
										52840000 - 7001	FIXED ASSET	5/8/2026	$623.81
										12315003 - 7001	FIXED ASSET	5/8/2026	$7,567.50
										50814673 - 7001	FIXED ASSET	5/8/2026	$348.91
											Line Item Total		**$9,795.96**
30761	5/21/2026	Cleared	6/2/2026	$497.50	INV05460	Invoice	1870	LAUGHLIN CONSTABLE INC	Misc Support	10140000 - 6207	MARKETING SERVICES	5/21/2026	$497.50
30762	5/21/2026	Cleared	5/29/2026	$2,547.84	CC13239	Credit Memo	162	LF GEORGE INC	Z-15 TOOTH CREDIT	20335000 - 6009	REPAIR PARTS	12/9/2025	-$316.20
					IC00599	Invoice	162	LF GEORGE INC	Z-15 TOOTH CREDIT	20335000 - 6009	REPAIR PARTS	12/9/2025	$316.20
					IC01805	Invoice	162	LF GEORGE INC	Z-15 TOOTH CREDIT	20335000 - 6009	REPAIR PARTS	5/14/2026	$2,547.84
											Line Item Total		**$2,547.84**
30763	5/21/2026	Cleared	5/28/2026	$850.00	26-0013	Invoice	489	MANNEDGE CONSULTING LLC	TIF Construction -Blanchard Pa	36711000 - 6203	CONSULTING SERVICES	4/15/2026	$850.00
30764	5/21/2026	Cleared	5/28/2026	$24.74	508745621	Invoice	333	MIDWEST TAPE	material advd*	35510103 - 6006	BOOKS AND PERIODICALS	5/13/2026	$24.74

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30765	5/21/2026	Cleared	5/28/2026	$30,438.17	028100	Invoice	2178	MSA PROFESSIONAL SERVICES, INC.	Preliminary Engineering Analys	51830000 - 7001	FIXED ASSET	5/7/2026	$15,219.08
										52840000 - 7001	FIXED ASSET	5/7/2026	$15,219.09
											Line Item Total		**$30,438.17**
30766	5/21/2026	Cleared	6/1/2026	$1,074.70	56809	Invoice	1938	NEWPORT NETWORK SOLUTIONS INC	MUELLNER BUILDING FRONT DOOR S	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/19/2026	$1,074.70
30767	5/21/2026	Cleared	5/28/2026	$124.00	26-12168 Williams	Invoice	99999	ONE TIME VENDOR	Williams, Daveris D (M/B 10/11	10 - 2501	DUE BAIL	5/8/2026	$124.00
30768	5/21/2026	Cleared	6/1/2026	$390.57	05192026-01	Invoice	99999	ONE TIME VENDOR	Claim of Walsh - Subrogation L	18190220 - 6403	CLAIMS	5/20/2026	$390.57
30769	5/21/2026	Outstanding		$115.43	05192026-02	Invoice	99999	ONE TIME VENDOR	Claim of Walsh - Subrogation I	18190220 - 6403	CLAIMS	5/20/2026	$115.43
30770	5/21/2026	Cleared	5/29/2026	$1,292.47	6032848	Invoice	222	PRICE ENGINEERING CO, LLC	S-24 CYLINDER REPAIR	20335000 - 6009	REPAIR PARTS	5/14/2026	$1,292.47
30771	5/21/2026	Cleared	5/26/2026	$69,184.08	2026200	Invoice	882	PROPHOENIX	Annual maint and support 6/1/2	24144000 - 6410	SOFTWARE LICENSING	4/15/2026	$69,184.08
30772	5/21/2026	Cleared	5/28/2026	$29.62	INV-WI-7862	Invoice	231	RELIANT FIRE APPARATUS INC	F309 light	10220000 - 6206	EQUIPMENT REPAIRS	5/12/2026	$29.62
30773	5/21/2026	Cleared	5/27/2026	$300.00	071626Event	Invoice	2161	SOUND CHECK ENTERTAINMENT	programming kids	35510104 - 6027	PROGRAMMING	5/13/2026	$300.00
30774	5/21/2026	Cleared	5/27/2026	$4,436.68	05073684	Invoice	1291	STARK PAVEMENT CORPORATION	WEEK OF 5/11 STARK TICKETS	10315000 - 6105	CONCRETE SAND AND STONE	5/19/2026	$498.79
										50814673 - 6108	ASPHALT	5/19/2026	$3,937.89
											Line Item Total		**$4,436.68**
30775	5/21/2026	Cleared	5/27/2026	$14,275.00	081899	Invoice	1113	STATZ RESTORATION & ENGINEERING COMPANY INC	Police 2026 updates- General C	12210000 - 7001	FIXED ASSET	5/12/2026	$14,275.00
30776	5/21/2026	Cleared	5/27/2026	$5,019.93	0000964031	Invoice	865	SUPERIOR VISION INSURANCE PLAN OF WI INC	Superior Vision Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/18/2026	$2,131.31
					0000964032	Invoice	865	SUPERIOR VISION INSURANCE PLAN OF WI INC	Superior Vision Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/18/2026	$934.67
					0000964033	Invoice	865	SUPERIOR VISION INSURANCE PLAN OF WI INC	Superior Vision Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/18/2026	$785.45

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30776	5/21/2026	Cleared	5/27/2026	$5,019.93	0000964034	Invoice	865	SUPERIOR VISION INSURANCE PLAN OF WI INC	Superior Vision Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/18/2026	$1,119.93
					0000964063	Invoice	865	SUPERIOR VISION INSURANCE PLAN OF WI INC	Superior Vision Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/18/2026	$48.57
											Line Item Total		**$5,019.93**
30777	5/21/2026	Cleared	5/28/2026	$107.10	51175	Invoice	181	THE ALSTAR COMPANY LLC	DIP BRUSHES	20335000 - 6008	OTHER SUPPLIES	5/14/2026	$107.10
30778	5/21/2026	Cleared	5/27/2026	$25,223.00	1456A	Invoice	2250	TRUE AV SOLUTIONS LLC	Tourism Kiosk	32515000 - 7001	FIXED ASSET	5/21/2026	$25,223.00
30779	5/21/2026	Cleared	5/27/2026	$807.74	CI100-00270595	Invoice	906	TYLER TECHNOLOGIES INC	2026 Maintenance and Support	24144000 - 6411	SOFTWARE MAINT	5/20/2026	$807.74
30780	5/21/2026	Cleared	5/28/2026	$11,852.28	693620649395	Invoice	1280	UHS PREMIUM BILLING	UHC Admin Fees June	16190000 - 6209	CLAIMS ADMINISTRATION	5/18/2026	$11,852.28
30781	5/21/2026	Cleared	5/29/2026	$265.65	569949	Invoice	286	UPTOWN MOTORS INC	P-285 HOSE	20335000 - 6009	REPAIR PARTS	5/14/2026	$85.65
					570186	Invoice	286	UPTOWN MOTORS INC	P-285 HOSE	20335000 - 6009	REPAIR PARTS	5/14/2026	$180.00
											Line Item Total		**$265.65**
30782	5/21/2026	Outstanding		$919.35	0804778500	Invoice	192	US CELLULAR	Monthly charges 5/24/26 - 6/23	10310000 - 6306	TELECOMMUNICATIONS	4/15/2026	$67.71
										34345000 - 6306	TELECOMMUNICATIONS	4/15/2026	$33.86
										10625000 - 6306	TELECOMMUNICATIONS	4/15/2026	$332.76
										10325000 - 6306	TELECOMMUNICATIONS	4/15/2026	$42.88
										10410000 - 6306	TELECOMMUNICATIONS	4/15/2026	$33.86
										24144000 - 6306	TELECOMMUNICATIONS	4/15/2026	$104.45
										10620000 - 6306	TELECOMMUNICATIONS	4/15/2026	$125.60
										10410000 - 6306	TELECOMMUNICATIONS	4/15/2026	$135.36

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30782	5/21/2026	Outstanding		$919.35	0804778500	Invoice	192	US CELLULAR	Monthly charges 5/24/26 - 6/23	10151000 - 6306	TELECOMMUNICATIONS	4/15/2026	$42.87
											Line Item Total		**$919.35**
30783	5/21/2026	Cleared	6/1/2026	$1,388.85	0007654031	Invoice	404	USA TODAY MEDIA CORP	Legal ads 4/1/26-4/30/26 acct#	36716000 - 6099	OTHER EXPENSES	4/15/2026	$146.44
										36716000 - 6099	OTHER EXPENSES	4/15/2026	$114.84
										10111000 - 6011	OFFICIAL NOTICES	4/15/2026	$418.68
										10142000 - 6011	OFFICIAL NOTICES	4/15/2026	$117.84
										10111000 - 6011	OFFICIAL NOTICES	4/15/2026	$234.68
										10141000 - 6011	OFFICIAL NOTICES	4/15/2026	$75.93
										10610000 - 6011	OFFICIAL NOTICES	4/15/2026	$87.26
										10610000 - 6011	OFFICIAL NOTICES	4/15/2026	$44.18
										10141000 - 6011	OFFICIAL NOTICES	4/15/2026	$128.00
										13630000 - 6603	GRANT EXPENDITURE	4/15/2026	$21.00
											Line Item Total		**$1,388.85**
30784	5/21/2026	Cleared	5/29/2026	$2,549.17	4228914	Invoice	1063	WASTEBUILT	STOCK GRABBER FRAME	20 - 1501	GENERAL INVENTORY	5/14/2026	$2,101.67
					4228918	Invoice	1063	WASTEBUILT	STOCK GRABBER FRAME	20 - 1501	GENERAL INVENTORY	5/14/2026	$447.50
											Line Item Total		**$2,549.17**
30785	5/21/2026	Cleared	5/29/2026	$1,448.68	S0892322	Invoice	1351	WCTC	2026-04 April Training Events	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/4/2026	$1,448.68
30786	5/21/2026	Outstanding		$8,975.30	Smoke Diver 1	Invoice	2526	WISCONSIN SMOKE DIVERS ASSOCIATION INC	Connex box structure materials	14220000 - 6603	GRANT EXPENDITURE	5/12/2026	$8,975.30

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30787	5/21/2026	Outstanding		$120.00	1001	Invoice	1162	WSFIA AREA 1	WSFIA annual lunch dues	10220000 - 6005	MEMBERSHIPS AND DUES	5/12/2026	$120.00
30788	5/21/2026	Cleared	6/1/2026	$16,330.06	3556E21001	Invoice	2263	XYLEM WATER SOLUTIONS USA, INC	SPARE PARTS	51830000 - 6206	EQUIPMENT REPAIRS	5/7/2026	$8,165.03
										52840000 - 6206	EQUIPMENT REPAIRS	5/7/2026	$8,165.03
											Line Item Total		**$16,330.06**
30789	5/26/2026	Outstanding		$9,366.72	WORKERSCOMP 5/26/26	Direct Disbursement	55	CITIES & VILLAGES MUTUAL INSURANCE COMPANY	WORKERS COMP	19190210 - 6403	CLAIMS	5/26/2026	$5,025.76
										19190220 - 6403	CLAIMS	5/26/2026	$982.22
										19190300 - 6403	CLAIMS	5/26/2026	$3,358.74
											Line Item Total		**$9,366.72**
30790	5/26/2026	Outstanding		$4,631.90	DENTAL 5/26/26	Direct Disbursement	941	HUMANA	DENTAL THROUGH 5/23/26	17190000 - 6403	CLAIMS	5/26/2026	$4,631.90
30792	5/29/2026	Outstanding		$2,520.00	87794	Direct Disbursement	299	WAUWATOSA POLICEMENS NSU BARG	Payroll Run 1 - Warrant 2611B1	10 - 2314	UNION DUES - WPOA	5/28/2026	$2,520.00
30793	5/29/2026	Outstanding		$61,949.27	87792	Direct Disbursement	278	NATIONWIDE RETIREMENT SOLUTIONS	Payroll Run 1 - Warrant 2611B1	10 - 2311	DEFERRED CONTRIBUTION	5/28/2026	$61,949.27
30794	5/29/2026	Outstanding		$232.93	87795	Direct Disbursement	312	WISCONSIN DEPT OF REVENUE	Payroll Run 1 - Warrant 2611B1	10 - 2312	WAGE GARNISHMENTS	5/28/2026	$232.93
30797	5/27/2026	Outstanding		$123,403.75	UH 5/27/26	Direct Disbursement	933	UNITED HEALTHCARE	HEALTH CLAIMS	16190000 - 6403	CLAIMS	5/27/2026	$123,403.75
30798	5/27/2026	Outstanding		$9,166.06	UH FLEX 5/27/26	Direct Disbursement	933	UNITED HEALTHCARE	FLEXIBLE SPENDING	10 - 2316	FLEXIBLE SPENDING	5/27/2026	$9,166.06
30799	5/28/2026	Cleared	6/10/2026	$110.00	54938290	Invoice	2236	1-800-RADIATOR & AC	P-239 RADIATOR	20335000 - 6009	REPAIR PARTS	5/20/2026	$110.00
30800	5/28/2026	Cleared	6/8/2026	$812.28	PSI874915	Invoice	1621	1ST AYD	SPRAY & LUBE	20335000 - 6008	OTHER SUPPLIES	5/20/2026	$812.28
30801	5/28/2026	Cleared	6/2/2026	$19,885.00	196169	Invoice	1013	ARTHUR WEILER INC	2026 TREES	52840000 - 6104	TREES, SHRUBS, FLOWERS	5/20/2026	$19,885.00

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30802	5/28/2026	Cleared	6/2/2026	$991.41	414471846505 2026	Invoice	884	AT&T	Monthly serv 5/13/26 - 6/12/26	10210000 - 6306	TELECOMMUNICATIONS	4/15/2026	$340.49
										10220000 - 6306	TELECOMMUNICATIONS	4/15/2026	$180.26
										22355000 - 6306	TELECOMMUNICATIONS	4/15/2026	$240.34
										26360000 - 6306	TELECOMMUNICATIONS	4/15/2026	$10.01
										34345000 - 6306	TELECOMMUNICATIONS	4/15/2026	$110.16
										35510000 - 6306	TELECOMMUNICATIONS	4/15/2026	$20.03
										50816921 - 6306	TELECOMMUNICATIONS	4/15/2026	$30.04
										51830000 - 6306	TELECOMMUNICATIONS	4/15/2026	$60.08
											Line Item Total		**$991.41**
30803	5/28/2026	Cleared	6/2/2026	$3,363.99	287291821829X05 1526	Invoice	1148	AT&T MOBILITY	Apr 08 - May 07 2026 Wireless	10210000 - 6306	TELECOMMUNICATIONS	5/8/2026	$3,363.99
30804	5/28/2026	Cleared	6/5/2026	$14,222.19	20260516000045	Invoice	53	CARE PLUS DENTAL PLANS INC	Care Plus Premiums June	17190000 - 6408	INSURANCE PREMIUMS	5/26/2026	$14,222.19
30805	5/28/2026	Cleared	6/5/2026	$2,931.46	5140025738	Invoice	184	CITY OF MILWAUKEE OFFICE OF CITY TREASURER	GENERAL ILLUMINATION FEB 2026	10325000 - 6302	ELECTRICITY	5/27/2026	$1,503.74
					5140025748	Invoice	184	CITY OF MILWAUKEE OFFICE OF CITY TREASURER	GENERAL ILLUMINATION FEB 2026	10325000 - 6302	ELECTRICITY	5/27/2026	$1,427.72
											Line Item Total		**$2,931.46**
30806	5/28/2026	Cleared	6/3/2026	$11,350.00	451727	Invoice	1237	COTTINGHAM & BUTLER INSURANCE SERVICE, INC CDC	2026 market update and classif	10143000 - 6203	CONSULTING SERVICES	5/19/2026	$11,350.00
30807	5/28/2026	Cleared	6/2/2026	$9,679.20	1327-236072	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	10131000 - 6204	LEGAL SERVICES	5/26/2026	$275.00
					1327-236073	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	10131000 - 6204	LEGAL SERVICES	5/26/2026	$55.00
					1327-236074	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	10131000 - 6204	LEGAL SERVICES	5/26/2026	$165.00
					1327-236075	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	18190310 - 6403	CLAIMS	5/26/2026	$550.00

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30807	5/28/2026	Cleared	6/2/2026	$9,679.20	1327-236076	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	18190310 - 6204	LEGAL SERVICES	5/26/2026	$1,512.50
					1327-236077	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	18190000 - 6204	LEGAL SERVICES	5/26/2026	$6,694.20
					1327-236078	Invoice	1386	CRIVELLO NICHOLS & HALL, SC	General Matter	10131000 - 6204	LEGAL SERVICES	5/26/2026	$427.50
											Line Item Total		**$9,679.20**
30808	5/28/2026	Cleared	6/2/2026	$2,261.65	14132	Invoice	410	CROWLEY CONSTRUCTION CORPORATION	Contract 24-22, Pavement Marki	10320000 - 6202	GENERAL SERVICES	5/20/2026	$2,261.65
30809	5/28/2026	Cleared	6/3/2026	$1,759.72	231100	Invoice	50	EMMONS BUSINESS INTERIORS	PANELTECH	34345000 - 6099	OTHER EXPENSES	5/20/2026	$1,759.72
30810	5/28/2026	Outstanding		$150.00	I MOORE 2026 BOOTS	Invoice	1316	EMPLOYEES	I MOORE 2026 BOOTS	34345000 - 6007	CLOTHING	5/27/2026	$150.00
30811	5/28/2026	Outstanding		$19.00	26-044m Roy	Invoice	1316	EMPLOYEES	Roy Travel Reimburse - WCTC In	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30812	5/28/2026	Cleared	6/12/2026	$600.00	BUS 390 Blair	Invoice	1316	EMPLOYEES	Tuition Reimbursement for Gen	10220000 - 6022	TUITION REIMBURSEMENT	5/18/2026	$300.00
					GEN311 Blair	Invoice	1316	EMPLOYEES	Tuition Reimbursement for Gen	10220000 - 6022	TUITION REIMBURSEMENT	5/18/2026	$300.00
											Line Item Total		**$600.00**
30813	5/28/2026	Cleared	6/10/2026	$94.48	G SKOUG 2026 BOOTS	Invoice	1316	EMPLOYEES	G SKOUG 2026 BOOTS	10340000 - 6007	CLOTHING	5/27/2026	$94.48
30814	5/28/2026	Cleared	6/16/2026	$116.04	BROECKER BOOTS 2026	Invoice	1316	EMPLOYEES	BROECKER BOOTS 2026	10340000 - 6007	CLOTHING	5/27/2026	$116.04
30815	5/28/2026	Cleared	6/5/2026	$83.94	WW086407	Invoice	519	FERGUSON ENTERPRISES	supplies for maint	50814675 - 6008	OTHER SUPPLIES	5/27/2026	$83.94
30816	5/28/2026	Cleared	6/2/2026	$165.23	87798	Invoice	2420	FLORIDA STATE DISBURSEMENT UNIT	Payroll Run 1 - Warrant 2611B1	10 - 2312	WAGE GARNISHMENTS	5/28/2026	$165.23
30817	5/28/2026	Cleared	6/2/2026	$815.90	AR282074	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10130000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$35.81
										10140000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$16.32

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30817	5/28/2026	Cleared	6/2/2026	$815.90	AR282074	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10150000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$69.75
										10610000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$3.02
										10615000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$0.07
										10620000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$53.70
										10625000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$112.06
					AR28282	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10410000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$158.73
					AR282869	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10210000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$114.08
					AR282870	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10210000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$111.89
					AR282871	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10210000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$139.33
					AR282913	Invoice	211	FORWARD TS	Copier charges 4/10/26-5/9/26	10210000 - 6004	PRINTING AND DUPLICATION	4/15/2026	$1.14
											Line Item Total		**$815.90**
30818	5/28/2026	Cleared	6/2/2026	$12,511.16	87769	Invoice	2492	GUELIG WASTE REMOVAL & DEMOLITION LLC	24-61 DPW INCINERATOR BUILDING	12360000 - 7002	NON FIXED ASSET	5/20/2026	$5,502.00
					87770	Invoice	2492	GUELIG WASTE REMOVAL & DEMOLITION LLC	24-61 DPW INCINERATOR BUILDING	12360000 - 7002	NON FIXED ASSET	5/20/2026	$239.20
					87771	Invoice	2492	GUELIG WASTE REMOVAL & DEMOLITION LLC	24-61 DPW INCINERATOR BUILDING	12360000 - 7002	NON FIXED ASSET	5/20/2026	$976.00
					87772	Invoice	2492	GUELIG WASTE REMOVAL & DEMOLITION LLC	24-61 DPW INCINERATOR BUILDING	12360000 - 7002	NON FIXED ASSET	5/20/2026	$5,793.96
											Line Item Total		**$12,511.16**
30819	5/28/2026	Cleared	6/1/2026	$1,294.18	14894808	Invoice	126	HACH COMPANY	Chlorine	50814662 - 6102	CHEMICALS	5/27/2026	$1,294.18
30820	5/28/2026	Cleared	6/9/2026	$5,363.24	0148133	Invoice	2177	INFINITY HOME SERVICES HOLDCO, INC	Nancy Simon 216 N 110th Street	38640000 - 6202	GENERAL SERVICES	5/22/2026	$5,363.24

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30821	5/28/2026	Cleared	6/2/2026	$443.22	459041	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERIES	20 - 1501	GENERAL INVENTORY	5/20/2026	$443.22
30822	5/28/2026	Cleared	6/2/2026	$1,053.91	PIMK0482139	Invoice	1223	JFTCO, INC	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/20/2026	$1,057.29
					PIMK0482140	Invoice	1223	JFTCO, INC	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/20/2026	$4.47
					PIMK0482398	Credit Memo	1223	JFTCO, INC	R-35 FLEET PARTS	20335000 - 6009	REPAIR PARTS	5/20/2026	-$7.85
											Line Item Total		**$1,053.91**
30823	5/28/2026	Cleared	6/4/2026	$14,540.00	12013757	Invoice	2544	JM BRENNAN INC	C/O Luther Manor V7157939	13630301 - 6603	GRANT EXPENDITURE	5/22/2026	$14,540.00
30824	5/28/2026	Cleared	6/9/2026	$107.99	23119781P	Invoice	339	JX ENTERPRISES INC	T-109 VALVE	20335000 - 6009	REPAIR PARTS	5/20/2026	$107.99
30825	5/28/2026	Cleared	6/4/2026	$1,008.34	134912	Invoice	387	KAPUR AND ASSOCIATES	Wisconsin Avenue MultiUse Path	12315003 - 7001	FIXED ASSET	5/27/2026	$1,008.34
30826	5/28/2026	Cleared	6/5/2026	$850.00	26-0014	Invoice	489	MANNEDGE CONSULTING LLC	TIF Construction -Blanchard Pa	36716000 - 6203	CONSULTING SERVICES	4/15/2026	$850.00
30827	5/28/2026	Cleared	6/2/2026	$250.00	2600508-IN	Invoice	551	MIDSTATES ORGANIZED CRIME INFORMATION CENTER	2026 MOCIC Membership Fees (51	10210107 - 6005	MEMBERSHIPS AND DUES	3/30/2026	$250.00
30828	5/28/2026	Cleared	6/5/2026	$2,860.00	PS-INV106909	Invoice	878	MILWAUKEE PLATE GLASS CO	REPLACEMENT UNIT	22355000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/27/2026	$2,860.00
30829	5/28/2026	Cleared	6/8/2026	$7,425.25	8282325659	Invoice	198	MOTOROLA SOLUTIONS	Public Safety Radio Equipment	12220000 - 7001	FIXED ASSET	5/22/2026	$4,609.00
										12220000 - 7001	FIXED ASSET	5/22/2026	$2,816.25
											Line Item Total		**$7,425.25**
30830	5/28/2026	Cleared	6/5/2026	$550.00	FY27-44Dues	Invoice	1201	NATIONAL COMMUNITY DEV ASSOCIATION	City of Wauwatosa, WI NCDA FY	13630000 - 6603	GRANT EXPENDITURE	5/26/2026	$228.79
										13630000 - 6603	GRANT EXPENDITURE	5/26/2026	$321.21
											Line Item Total		**$550.00**
30831	5/28/2026	Outstanding		$30.66	000909615	Invoice	869	NEU TOOL AND SUPPLY CORPORATION	W-28 ADAPTER	20335000 - 6009	REPAIR PARTS	5/20/2026	$30.66

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30832	5/28/2026	Cleared	6/1/2026	$70.00	2607502	Invoice	249	NORTHERN LAKE SERVICE INC	2026 Lead Program - 5821 w Wel	50813643 - 6016	LABORATORY SAMPLES	5/27/2026	$35.00
					2607609	Invoice	249	NORTHERN LAKE SERVICE INC	2026 Lead Program - 5821 w Wel	50813643 - 6016	LABORATORY SAMPLES	5/27/2026	$35.00
											Line Item Total		**$70.00**
30833	5/28/2026	Cleared	6/2/2026	$250.00	HMFS2026-0027	Invoice	99999	ONE TIME VENDOR	Hydrant Relase	50 - 2408	DEPOSITS	5/27/2026	$250.00
30834	5/28/2026	Cleared	6/1/2026	$74.15	REIMB RUZICKA 051926	Invoice	99999	ONE TIME VENDOR	AWARDS COMMITTE RECEPTION 2026	10111000 - 6609	DEPARTMENT SPECIFIC	4/15/2026	$74.15
30835	5/28/2026	Outstanding		$129.52	3122026	Invoice	99999	ONE TIME VENDOR	programming kids	35510104 - 6027	PROGRAMMING	5/13/2026	$129.52
30836	5/28/2026	Cleared	6/9/2026	$75.00	87855	Invoice	99999	ONE TIME VENDOR	UB 114074 7608 STATE	50 - 1350	UTILITY ACCOUNTS RECEIVABLE	5/27/2026	$75.00
30837	5/28/2026	Cleared	5/29/2026	$3,304.49	87856	Invoice	99999	ONE TIME VENDOR	UB 107483 1920 86TH	50 - 1350	UTILITY ACCOUNTS RECEIVABLE	5/27/2026	$3,304.49
30838	5/28/2026	Outstanding		$100.00	BR2026-0210	Invoice	99999	ONE TIME VENDOR	Did not need permit.	10620000 - 4450	BUILDING PERMITS	5/11/2026	$100.00
30839	5/28/2026	Outstanding		$25.00	2026 WALSH REFUND	Invoice	99999	ONE TIME VENDOR	RETURN COLLECTION FEE REFUND	10330000 - 4636	RESIDENTIAL COLLECTION	5/20/2026	$25.00
30840	5/28/2026	Outstanding		$100.00	3359998021-2025	Invoice	99999	ONE TIME VENDOR	3359998021-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	5/28/2026	$100.00
30841	5/28/2026	Cleared	6/8/2026	$15,281.31	26603000-2	Invoice	1895	OPN ARCHITECTS	City Hall/Library Design Servi	12355000 - 7001	FIXED ASSET	5/20/2026	$15,281.31
30842	5/28/2026	Cleared	6/8/2026	$255.00	87791	Invoice	217	POLICE SUPERVISORY UNION DUES	Payroll Run 1 - Warrant 2611B1	10 - 2315	UNION DUES - POLICE SUP	5/28/2026	$255.00
30843	5/28/2026	Cleared	6/1/2026	$792.12	6033255	Invoice	222	PRICE ENGINEERING CO, LLC	R-36 CYLINDER REPAIR	20335000 - 6009	REPAIR PARTS	5/20/2026	$662.34
					6033501	Invoice	222	PRICE ENGINEERING CO, LLC	R-36 CYLINDER REPAIR	20335000 - 6009	REPAIR PARTS	5/20/2026	$129.78
											Line Item Total		**$792.12**

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30844	5/28/2026	Cleared	6/4/2026	$382.76	INV-WI-7987	Invoice	231	RELIANT FIRE APPARATUS INC	F217 - TRANSDUCER,TANK LEVEL	10220000 - 6206	EQUIPMENT REPAIRS	5/26/2026	$382.76
30845	5/28/2026	Cleared	6/2/2026	$7,874.16	12A9607962	Invoice	1024	RELIASTAR LIFE INSURANCE COMPANY	Life Insurance Premiums June	16190000 - 6408	INSURANCE PREMIUMS	5/26/2026	$7,874.16
30846	5/28/2026	Cleared	6/4/2026	$10,234.86	066141	Invoice	239	SANBORN TUBE SALES OF WISCONSIN INC	Aluminum Sign Posts	12320000 - 7001	FIXED ASSET	5/20/2026	$9,393.62
										12320000 - 7001	FIXED ASSET	5/20/2026	$841.24
											Line Item Total		**$10,234.86**
30847	5/28/2026	Cleared	6/4/2026	$1,916.25	165540	Invoice	251	SIGMA GROUP INC	DPW drop-off center redevelopm	31615000 - 6203	CONSULTING SERVICES	5/27/2026	$1,916.25
30848	5/28/2026	Cleared	6/5/2026	$70.53	1193981-BB	Invoice	866	SPEEDY METALS LLC	Supplies for mains	50814673 - 6008	OTHER SUPPLIES	5/27/2026	$70.53
30849	5/28/2026	Cleared	6/3/2026	$3,823.42	05073788	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS 5/18-5/22/26	10315000 - 6105	CONCRETE SAND AND STONE	5/27/2026	$1,568.47
										50814673 - 6108	ASPHALT	5/27/2026	$1,294.95
					05073829	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS 5/18-5/22/26	10315000 - 6105	CONCRETE SAND AND STONE	5/27/2026	$960.00
											Line Item Total		**$3,823.42**
30850	5/28/2026	Cleared	6/1/2026	$410.00	87797	Invoice	1630	STATE DISBURSEMENT UNIT	Payroll Run 1 - Warrant 2611B1	10 - 2312	WAGE GARNISHMENTS	5/28/2026	$410.00
30851	5/28/2026	Cleared	6/2/2026	$735.00	0042474-IN	Invoice	591	STOP STICK LTD	R26-14 Stop Sticks for Motors	10210109 - 6008	OTHER SUPPLIES	5/4/2026	$735.00
30852	5/28/2026	Cleared	6/2/2026	$2,667.50	I826016	Invoice	273	TAPCO	BRACKETS	12320000 - 7001	FIXED ASSET	5/20/2026	$2,667.50
30853	5/28/2026	Cleared	6/5/2026	$341.00	51173	Invoice	181	THE ALSTAR COMPANY LLC	FOAMING WASH & WAX CONCENTRATE	26360000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/27/2026	$341.00
30854	5/28/2026	Cleared	6/3/2026	$3,981.00	693925870132	Invoice	1280	UHS PREMIUM BILLING	Kaia & 2nd MD	16190000 - 6403	CLAIMS	5/26/2026	$1,845.00
										16190000 - 6403	CLAIMS	5/26/2026	$2,136.00
											Line Item Total		**$3,981.00**

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30855	5/28/2026	Cleared	6/9/2026	$160.00	570671	Invoice	286	UPTOWN MOTORS INC	M-95 TROUBLESHOOT STOP SAFETY	20335000 - 6009	REPAIR PARTS	5/20/2026	$160.00
30856	5/28/2026	Cleared	6/2/2026	$4,750.00	648201-2	Invoice	2396	WENDEL ARCHITECTURE P.C.	Station 52 Needs Assessment	12220000 - 7002	NON FIXED ASSET	5/22/2026	$4,750.00
30857	5/28/2026	Cleared	6/1/2026	$1,999.92	87796	Invoice	368	WI SUPPORT COLLECTIONS TRUST FUND	Payroll Run 1 - Warrant 2611B1	10 - 2312	WAGE GARNISHMENTS	5/28/2026	$1,999.92
30858	5/28/2026	Cleared	6/3/2026	$480.00	12006	Invoice	741	WISCONSIN ATHLETIC CLUB LLC	Equipment Maintenance	16190902 - 6203	CONSULTING SERVICES	5/26/2026	$300.00
					12007	Invoice	741	WISCONSIN ATHLETIC CLUB LLC	Equipment Maintenance	16190902 - 6203	CONSULTING SERVICES	5/26/2026	$180.00
											Line Item Total		**$480.00**
30859	5/28/2026	Outstanding		$300.00	2026 UWM Clerk Edu	Invoice	894	WISCONSIN MUNICIPAL COURT CLERKS ASSOCIATION	2026 UWM Clerk Edu	10120000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$300.00
30860	5/28/2026	Cleared	6/2/2026	$72.40	300097	Invoice	2349	WISCONSIN SCRUB & SWEEP LLC	FLOOR PADS 20" WHITE	34345000 - 6014	JANITORIAL SUPPLIES	5/27/2026	$72.40
30861	5/28/2026	Cleared	6/10/2026	$3,200.00	0206467-IN	Invoice	322	ZARNOTH BRUSH WORKS	STOCK BROOMS	20 - 1501	GENERAL INVENTORY	5/20/2026	$3,200.00
30862	6/1/2026	Outstanding		$1,353,607.56	DEP JUNE 2026	Direct Disbursement	1302	DEPOSITORY TRUST COMPANY	DEPOSITORY TRUST JUNE 2026	11152000 - 6405	DEBT SERVICE INTEREST	6/1/2026	$973,644.38
										50810430 - 6405	DEBT SERVICE INTEREST	6/1/2026	$236,134.41
										51830000 - 6405	DEBT SERVICE INTEREST	6/1/2026	$9,398.75
										52840000 - 6405	DEBT SERVICE INTEREST	6/1/2026	$134,430.02
											Line Item Total		**$1,353,607.56**
30863	6/1/2026	Outstanding		$10,447.65	DENTAL 6/1/26	Direct Disbursement	941	HUMANA	DENTAL THROUGH 5/30/26	17190000 - 6403	CLAIMS	6/1/2026	$10,447.65
30864	6/3/2026	Outstanding		$71,619.98	UH 6/3/26	Direct Disbursement	933	UNITED HEALTHCARE	HEALTH CLAIMS	16190000 - 6403	CLAIMS	6/3/2026	$71,619.98

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30865	6/3/2026	Outstanding		$4,382.20	UH FLEX 6/3/26	Direct Disbursement	933	UNITED HEALTHCARE	FLEXIBLE SPENDING	10 - 2316	FLEXIBLE SPENDING	6/3/2026	$4,382.20
30866	6/4/2026	Cleared	6/12/2026	$371.00	26-0267	Invoice	828	ADVANTAGE POLICE SUPPLY	R26-15/16 12GA Door Breaching	10210000 - 6008	OTHER SUPPLIES	5/26/2026	$371.00
30867	6/4/2026	Cleared	6/12/2026	$16,587.06	PS-INV106328	Invoice	766	ALL CITY MANAGEMENT SERVICES INC	Crossing Guard services for 20	10230000 - 6202	GENERAL SERVICES	5/28/2026	$16,587.06
30868	6/4/2026	Cleared	6/12/2026	$6,008.40	25C-0400004	Invoice	1782	ARCH SOLAR C&I	Solar PV for Fire Stations And	12345000 - 7001	FIXED ASSET	5/28/2026	$6,008.40
30869	6/4/2026	Cleared	6/9/2026	$555.92	2473915113	Invoice	884	AT&T	Charges 4/1/2026-4/30/2026 ac	10210000 - 6306	TELECOMMUNICATIONS	6/3/2026	$190.93
										10220000 - 6306	TELECOMMUNICATIONS	6/3/2026	$101.08
										22355000 - 6306	TELECOMMUNICATIONS	6/3/2026	$134.77
										26360000 - 6306	TELECOMMUNICATIONS	6/3/2026	$5.61
										34345000 - 6306	TELECOMMUNICATIONS	6/3/2026	$61.77
										35510000 - 6306	TELECOMMUNICATIONS	6/3/2026	$11.23
										50816921 - 6306	TELECOMMUNICATIONS	6/3/2026	$16.84
										51830000 - 6306	TELECOMMUNICATIONS	6/3/2026	$33.69
											Line Item Total		**$555.92**
30870	6/4/2026	Cleared	6/9/2026	$550.00	6684	Invoice	1926	AUTO SERVICE AIDS LLC	12/11/25 LIFT INSPECTIONS	20335000 - 6202	GENERAL SERVICES	6/1/2026	$550.00
30871	6/4/2026	Cleared	6/11/2026	$1,140.00	0284804	Invoice	613	BAXTER & WOODMAN	On Call Development Review Ser	10625000 - 6202	GENERAL SERVICES	5/27/2026	$1,140.00
30872	6/4/2026	Cleared	6/8/2026	$1,106.81	M93443	Invoice	48	BROOKS TRACTOR INC	S-120 AIR CLEANER	20335000 - 6009	REPAIR PARTS	6/1/2026	$430.64
					M93535	Invoice	48	BROOKS TRACTOR INC	S-120 AIR CLEANER	20335000 - 6009	REPAIR PARTS	6/1/2026	$23.48

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30872	6/4/2026	Cleared	6/8/2026	$1,106.81	M93536	Invoice	48	BROOKS TRACTOR INC	S-120 AIR CLEANER	20335000 - 6009	REPAIR PARTS	6/1/2026	$652.69
											Line Item Total		**$1,106.81**
30873	6/4/2026	Cleared	6/15/2026	$53.25	999102703938	Invoice	1010	CENGAGE LEARNING INC	material alp*	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$53.25
30874	6/4/2026	Cleared	6/15/2026	$1,129.75	5140025779	Invoice	184	CITY OF MILWAUKEE OFFICE OF CITY TREASURER	GENERAL ILLUMINATION APRIL	10325000 - 6302	ELECTRICITY	5/28/2026	$1,129.75
30875	6/4/2026	Cleared	6/15/2026	$41,685.00	2025 AUDIT	Invoice	914	CLIFTONLARSONALLEN LLP	2025 AUDIT	10 - 2101	SUSPENSE GENERAL	6/4/2026	$41,685.00
30876	6/4/2026	Cleared	6/8/2026	$721.84	INV1351664	Invoice	892	DASH MEDICAL GLOVES	Nitrile Gloves - Large (4), XL	10210107 - 6008	OTHER SUPPLIES	5/26/2026	$721.84
30877	6/4/2026	Cleared	6/10/2026	$5,991.87	231090	Invoice	50	EMMONS BUSINESS INTERIORS	2 file cabinets	10410000 - 6003	OFFICE SUPPLIES	4/15/2026	$1,857.80
					231185	Invoice	50	EMMONS BUSINESS INTERIORS	2 file cabinets	10310000 - 6097	PCARD REBATE	5/20/2026	$2,134.07
										22355000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/20/2026	$2,000.00
											Line Item Total		**$5,991.87**
30878	6/4/2026	Cleared	6/5/2026	$222.02	2026WISPUBLHEALTHASS	Invoice	1316	EMPLOYEES	2026 WI PUBLIC HEALTH ASSOCIAT	10410000 - 6002	PROFESSIONAL DEVELOPMENT	6/4/2026	$222.02
30879	6/4/2026	Cleared	6/8/2026	$66.34	MILES STEPHENS MAY26	Invoice	1316	EMPLOYEES	Mileage Reimbursement L Stephe	10410000 - 6099	OTHER EXPENSES	4/15/2026	$66.34
30880	6/4/2026	Cleared	6/10/2026	$273.32	26-054 Ziegler	Invoice	1316	EMPLOYEES	Ziegler Travel Reimburse - NAP	10210110 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$273.32
30881	6/4/2026	Cleared	6/8/2026	$142.88	26-033 Wex(2)	Invoice	1316	EMPLOYEES	Wex Uni Allow - Polo Shirts x2	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
					26-044n Wex	Invoice	1316	EMPLOYEES	Wex Uni Allow - Polo Shirts x2	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
					UA2606 Wex	Invoice	1316	EMPLOYEES	Wex Uni Allow - Polo Shirts x2	10210000 - 5305	UNIFORM ALLOWANCE	6/1/2026	$104.88
											Line Item Total		**$142.88**

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30882	6/4/2026	Cleared	6/8/2026	$22.00	26-095 Olson	Invoice	1316	EMPLOYEES	Olson Travel Reimburse - MCSO	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$22.00
30883	6/4/2026	Outstanding		$603.50	VR2606 Mitchell	Invoice	1316	EMPLOYEES	Mitchell Bulletproof Vest Gran	10210000 - 6603	GRANT EXPENDITURE	5/22/2026	$603.50
30884	6/4/2026	Cleared	6/9/2026	$95.00	26-061 Cefalu	Invoice	1316	EMPLOYEES	Cefalu Travel Reimburse - Deat	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$95.00
30885	6/4/2026	Cleared	6/11/2026	$230.42	26-054 Rebholz	Invoice	1316	EMPLOYEES	Rebholz Travel Reimburse - NAP	10210110 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$230.42
30886	6/4/2026	Cleared	6/8/2026	$333.14	UA2605 Albiter	Invoice	1316	EMPLOYEES	Albiter Uni Allowance - Pants	10210000 - 5305	UNIFORM ALLOWANCE	5/26/2026	$144.90
					UA2606 Albiter	Invoice	1316	EMPLOYEES	Albiter Uni Allowance - Pants	10210000 - 5305	UNIFORM ALLOWANCE	6/1/2026	$188.24
											Line Item Total		**$333.14**
30887	6/4/2026	Cleared	6/16/2026	$19.00	26-044m Pearson	Invoice	1316	EMPLOYEES	Pearson Travel Reimburse - WCT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30888	6/4/2026	Outstanding		$19.00	26-084 MacGillis	Invoice	1316	EMPLOYEES	MacGillis Travel Reimburse - D	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30889	6/4/2026	Cleared	6/15/2026	$19.00	26-118 Keck	Invoice	1316	EMPLOYEES	Keck Travel Reimburse - Defens	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30890	6/4/2026	Cleared	6/10/2026	$306.00	2026CNUCONF	Invoice	1316	EMPLOYEES	2026 CNU CONFERENCE	10610000 - 6002	PROFESSIONAL DEVELOPMENT	6/4/2026	$306.00
30891	6/4/2026	Cleared	6/8/2026	$600.00	TUITION REIM - TARA	Invoice	1316	EMPLOYEES	TUITION REIMBURSEMENT - T. WRI	10143431 - 6002	PROFESSIONAL DEVELOPMENT	6/2/2026	$600.00
30892	6/4/2026	Cleared	6/9/2026	$275.00	26-062 Sibley	Invoice	1316	EMPLOYEES	Sibley Travel Reimburse - WI L	10210000 - 6099	OTHER EXPENSES	5/22/2026	$275.00
30893	6/4/2026	Cleared	6/15/2026	$38.00	26-044n Trawicki	Invoice	1316	EMPLOYEES	Trawicki Travel Reimburse - WC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00

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30893	6/4/2026	Cleared	6/15/2026	$38.00	26-073 Trawicki	Invoice	1316	EMPLOYEES	Trawicki Travel Reimburse - WC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
											Line Item Total		**$38.00**
30894	6/4/2026	Cleared	6/12/2026	$19.00	26-044n Mohs	Invoice	1316	EMPLOYEES	Mohs Travel Reimburse - WCTC I	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30895	6/4/2026	Cleared	6/11/2026	$19.00	26-044n Larson	Invoice	1316	EMPLOYEES	Larson Travel Reimburse - WCTC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30896	6/4/2026	Cleared	6/5/2026	$4.50	52626	Invoice	1316	EMPLOYEES	travel expenses	35510000 - 6002	PROFESSIONAL DEVELOPMENT	6/1/2026	$4.50
30897	6/4/2026	Cleared	6/5/2026	$9.06	51126	Invoice	1316	EMPLOYEES	travel expenses	35510000 - 6002	PROFESSIONAL DEVELOPMENT	6/1/2026	$9.06
30898	6/4/2026	Cleared	6/10/2026	$19.00	26-044l Karweik	Invoice	1316	EMPLOYEES	Karweik Travel Reimburse - WCT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30899	6/4/2026	Outstanding		$600.00	TUITION REIM - MARY	Invoice	1316	EMPLOYEES	TUITION REIMBURSEMENT - M. BOE	10143431 - 6002	PROFESSIONAL DEVELOPMENT	6/2/2026	$600.00
30900	6/4/2026	Cleared	6/10/2026	$94.25	MILES PANSING MAY 26	Invoice	1316	EMPLOYEES	Mileage Reimbursement C Pansin	10130000 - 6099	OTHER EXPENSES	4/15/2026	$94.25
30901	6/4/2026	Outstanding		$320.00	ER2606 Elkatan	Invoice	1316	EMPLOYEES	Elkatan - Housing Deposit FVTC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	6/1/2026	$320.00
30902	6/4/2026	Outstanding		$320.00	ER2606 Sutherland	Invoice	1316	EMPLOYEES	Sutherland - Housing Deposit F	10210000 - 6002	PROFESSIONAL DEVELOPMENT	6/1/2026	$320.00
30903	6/4/2026	Cleared	6/15/2026	$150.00	2026 STEINER SHOES	Invoice	1316	EMPLOYEES	STEINER SAFETY SHOES	10340000 - 6007	CLOTHING	6/1/2026	$150.00
30904	6/4/2026	Cleared	6/11/2026	$376.93	WIMI3404201	Invoice	91	FASTENAL COMPANY	ELECTRICAL SUPPLIES	20335000 - 6009	REPAIR PARTS	6/1/2026	$35.69
					WIMI3404207	Invoice	91	FASTENAL COMPANY	ELECTRICAL SUPPLIES	20335000 - 6009	REPAIR PARTS	6/1/2026	$269.99
					WIMI3404208	Invoice	91	FASTENAL COMPANY	ELECTRICAL SUPPLIES	10325000 - 6021	ELECTRICAL SUPPLIES	6/1/2026	$68.67

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30904	6/4/2026	Cleared	6/11/2026	$376.93	WIMI3404229	Invoice	91	FASTENAL COMPANY	ELECTRICAL SUPPLIES	20335000 - 6009	REPAIR PARTS	6/1/2026	$2.58
											Line Item Total		**$376.93**
30905	6/4/2026	Cleared	6/15/2026	$15,268.05	0474881	Invoice	73	FERGUSON WATERWORKS #1476	Inventory	50 - 1501	GENERAL INVENTORY	6/2/2026	$3,695.55
					0474888	Invoice	73	FERGUSON WATERWORKS #1476	Inventory	50 - 1501	GENERAL INVENTORY	6/2/2026	$5,832.50
					0474888-1	Invoice	73	FERGUSON WATERWORKS #1476	Inventory	50 - 1501	GENERAL INVENTORY	6/2/2026	$2,320.00
					047932	Invoice	73	FERGUSON WATERWORKS #1476	Inventory	50 - 1501	GENERAL INVENTORY	6/2/2026	$3,420.00
											Line Item Total		**$15,268.05**
30906	6/4/2026	Outstanding		$300.00	6201566	Invoice	2425	FIRST STAGE	programming kids	35510104 - 6006	BOOKS AND PERIODICALS	6/1/2026	$300.00
30907	6/4/2026	Cleared	6/9/2026	$315.00	295763	Invoice	109	GIELOWS LAWN & GARDEN EQUIPMENT	G-25 BLADES	20335000 - 6009	REPAIR PARTS	6/1/2026	$315.00
30908	6/4/2026	Cleared	6/9/2026	$19,924.00	0144866	Invoice	113	GRAEF	Pump Station Design Services	38810000 - 7001	FIXED ASSET	5/20/2026	$10,000.00
					0145162	Invoice	113	GRAEF	Pump Station Design Services	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/28/2026	$5,460.00
					0145163	Invoice	113	GRAEF	Pump Station Design Services	52840000 - 6202	GENERAL SERVICES	5/28/2026	$4,464.00
											Line Item Total		**$19,924.00**
30909	6/4/2026	Cleared	6/11/2026	$528.00	260746	Invoice	125	GRAPHIC EDGE INC	Alderperson Business Cards	10111000 - 6099	OTHER EXPENSES	6/2/2026	$528.00
30910	6/4/2026	Cleared	6/11/2026	$138.19	PIMK0450904	Credit Memo	1223	JFTCO, INC	R-36 OIL PAN	20335000 - 6009	REPAIR PARTS	6/1/2026	-$728.95
					PIMK0481216	Invoice	1223	JFTCO, INC	R-36 OIL PAN	20335000 - 6009	REPAIR PARTS	6/1/2026	$867.14
											Line Item Total		**$138.19**
30911	6/4/2026	Cleared	6/17/2026	$3,380.37	12353618P	Invoice	339	JX ENTERPRISES INC	T-114 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$69.98
					23120019P	Invoice	339	JX ENTERPRISES INC	T-114 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$1,763.39
					23120054P	Invoice	339	JX ENTERPRISES INC	T-114 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$92.75
					23120066P	Invoice	339	JX ENTERPRISES INC	T-114 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$1,038.27

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30911	6/4/2026	Cleared	6/17/2026	$3,380.37	23120120P	Invoice	339	JX ENTERPRISES INC	T-114 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$415.98
											Line Item Total		**$3,380.37**
30912	6/4/2026	Cleared	6/8/2026	$9,735.00	J26-89474	Invoice	2222	K.G. STEVENS, INC.	PD PROJECT	12210000 - 7001	FIXED ASSET	5/28/2026	$9,735.00
30913	6/4/2026	Cleared	6/15/2026	$868.70	507212	Invoice	1657	KANOPY INC	material econtent*	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$868.70
30914	6/4/2026	Cleared	6/12/2026	$12,626.00	11439	Invoice	1653	KLM ENGINEERING INC	Tank Mixer (Glenview)	50814672 - 7001	FIXED ASSET	6/2/2026	$12,626.00
30915	6/4/2026	Cleared	6/8/2026	$1,874.00	J091397	Invoice	167	LANGER ROOFING & SHEET METAL	LIBRARY LEAKS PROJECT	22355000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/28/2026	$297.00
					J091406	Invoice	167	LANGER ROOFING & SHEET METAL	LIBRARY LEAKS PROJECT	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	5/28/2026	$1,577.00
											Line Item Total		**$1,874.00**
30916	6/4/2026	Outstanding		$3,417.00	4321	Invoice	491	LEGACY RECYCLING LLC	5/26 TV & BULB RECYCLING	10330306 - 6202	GENERAL SERVICES	6/1/2026	$1,900.00
					4326	Invoice	491	LEGACY RECYCLING LLC	5/26 TV & BULB RECYCLING	50814676 - 6202	GENERAL SERVICES	6/2/2026	$1,517.00
											Line Item Total		**$3,417.00**
30917	6/4/2026	Cleared	6/9/2026	$47.29	J93911	Invoice	170	LINCOLN CONTRACTORS SUPPLY INC	Pulley & Belt Parts for FTC Sa	14220000 - 6603	GRANT EXPENDITURE	5/28/2026	$47.29
30918	6/4/2026	Cleared	6/12/2026	$1,108.81	P42570	Invoice	1092	MACQUEEN EQUIPMENT	T-126 LINEAR HANDGUN	20335000 - 6009	REPAIR PARTS	6/1/2026	$92.93
					P42571	Invoice	1092	MACQUEEN EQUIPMENT	T-126 LINEAR HANDGUN	20335000 - 6009	REPAIR PARTS	6/1/2026	$1,015.88
											Line Item Total		**$1,108.81**
30919	6/4/2026	Cleared	6/10/2026	$1,752.75	401282	Invoice	2408	MCMAHON ASSOCIATES INC	Dispatch Study - split 50% wit	10 - 1550	PREPAIDS	5/22/2026	$1,752.75
30920	6/4/2026	Cleared	6/16/2026	$628.62	1189602	Invoice	831	MEI TOTAL ELEVATOR SOLUTIONS	CITY HALL & LIBRARY MONTHLY SE	22355000 - 6202	GENERAL SERVICES	5/28/2026	$628.62
30921	6/4/2026	Cleared	6/8/2026	$7,753.00	01-2321345	Invoice	355	MICHAEL BEST AND FRIEDRICH LLP	Professional Services thru 4/3	15948000 - 6203	CONSULTING SERVICES	4/15/2026	$7,753.00
30922	6/4/2026	Cleared	6/9/2026	$4,867.02	108778	Invoice	179	MID CITY PLUMBING & HEATING INC	Service at 1260 Kavanaugh Pl	50814676 - 6202	GENERAL SERVICES	6/2/2026	$660.48

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30922	6/4/2026	Cleared	6/9/2026	$4,867.02	108823	Invoice	179	MID CITY PLUMBING & HEATING INC	Service at 1260 Kavanaugh Pl	50814675 - 7001	FIXED ASSET	6/2/2026	$4,206.54
											Line Item Total		**$4,867.02**
30923	6/4/2026	Cleared	6/11/2026	$354.60	508852041	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$187.42
					508885570	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$116.95
					508885571	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$26.99
					508885573	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/1/2026	$23.24
											Line Item Total		**$354.60**
30924	6/4/2026	Cleared	6/15/2026	$2,878.73	COURT FEES MAY 26	Invoice	1607	MILWAUKEE COUNTY TREASURER	Court Fees May 2026	10 - 2504	DUE MILWAUKEE COUNTY	4/15/2026	$2,878.73
30925	6/4/2026	Cleared	6/9/2026	$241.64	48970	Invoice	191	MILWAUKEE SPRING & ALIGNMENT	R-33 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$241.64
30926	6/4/2026	Cleared	6/9/2026	$3,500.00	RHSA 801893 Q1 2026	Invoice	140	MISSIONSQUARE	RHSA 801893 FUNDING FOR Q1 202	16190000 - 5212	RETIREE HEALTH CONTRBUTION	6/2/2026	$3,500.00
30927	6/4/2026	Cleared	6/8/2026	$70.00	2608853	Invoice	249	NORTHERN LAKE SERVICE INC	2026 Lead Program - 6230 Wisco	50813643 - 6016	LABORATORY SAMPLES	6/2/2026	$35.00
					2608857	Invoice	249	NORTHERN LAKE SERVICE INC	2026 Lead Program - 6230 Wisco	50813643 - 6016	LABORATORY SAMPLES	6/2/2026	$35.00
											Line Item Total		**$70.00**
30928	6/4/2026	Cleared	6/10/2026	$2,575.05	42880490	Invoice	212	OFFICE DEPOT	June 2026 Office Depot Departm	10220000 - 6003	OFFICE SUPPLIES	6/1/2026	$170.64
										10151000 - 6003	OFFICE SUPPLIES	6/1/2026	$77.07
										10625000 - 6003	OFFICE SUPPLIES	6/1/2026	$19.17
										10625000 - 6023	OFFICE EQUIPMENT & FURNITURE	6/1/2026	$178.90
										10410000 - 6003	OFFICE SUPPLIES	6/1/2026	$53.71
										35510000 - 6004	PRINTING AND DUPLICATION	6/1/2026	$1,508.01

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30928	6/4/2026	Cleared	6/10/2026	$2,575.05	42880490	Invoice	212	OFFICE DEPOT	June 2026 Office Depot Departm	35510000 - 6008	OTHER SUPPLIES	6/1/2026	$210.68
										35510000 - 6003	OFFICE SUPPLIES	6/1/2026	$356.87
											Line Item Total		**$2,575.05**
30929	6/4/2026	Cleared	6/12/2026	$295.53	3791001000-2025	Invoice	99999	ONE TIME VENDOR	3791001000-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	6/4/2026	$295.53
30930	6/4/2026	Outstanding		$75.00	ROWS2026-0064	Invoice	99999	ONE TIME VENDOR	ROW permit refund - not needed	10625000 - 4466	STREET OCCUPANCY	5/27/2026	$75.00
30931	6/4/2026	Cleared	6/16/2026	$912.58	REF SP 406-0066-000	Invoice	99999	ONE TIME VENDOR	Refund special assessment 715	33 - 2108	SUSPENSE PREBILLED SPCL ASSMNT	4/15/2026	$912.58
30932	6/4/2026	Cleared	6/10/2026	$84.23	3310019000-2025	Invoice	99999	ONE TIME VENDOR	3310019000-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	6/4/2026	$84.23
30933	6/4/2026	Cleared	6/9/2026	$1,590.42	26-14305 Edgerly	Invoice	99999	ONE TIME VENDOR	Edgerly, Ricky D (M/W 12/15/77	10 - 2501	DUE BAIL	5/22/2026	$1,590.42
30934	6/4/2026	Cleared	6/10/2026	$29.50	2026KD80	Invoice	99999	ONE TIME VENDOR	Transcripts - 22CV4819 Summary	10131000 - 6204	LEGAL SERVICES	6/3/2026	$29.50
30935	6/4/2026	Cleared	6/9/2026	$130.00	77121205	Invoice	99999	ONE TIME VENDOR	Parking Ticket Overpayment/Sta	10210000 - 6202	GENERAL SERVICES	6/1/2026	$5.00
										10210000 - 4504	PARKING	6/1/2026	$125.00
											Line Item Total		**$130.00**
30936	6/4/2026	Cleared	6/8/2026	$390.57	05192026-02-02	Invoice	99999	ONE TIME VENDOR	Claim of Walsh - corrected amo	18190220 - 6403	CLAIMS	6/2/2026	$390.57
30937	6/4/2026	Cleared	6/10/2026	$130.00	77105950	Invoice	99999	ONE TIME VENDOR	Parking Ticket Overpayment/Sta	10210000 - 6202	GENERAL SERVICES	6/1/2026	$5.00
										10210000 - 4504	PARKING	6/1/2026	$125.00
											Line Item Total		**$130.00**
30938	6/4/2026	Cleared	6/10/2026	$808.64	REF SP 383-0298-000	Invoice	99999	ONE TIME VENDOR	Refund special assessment 7002	33 - 2108	SUSPENSE PREBILLED SPCL ASSMNT	4/15/2026	$808.64

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30939	6/4/2026	Cleared	6/11/2026	$201.46	REF SP 383-0014-000	Invoice	99999	ONE TIME VENDOR	Refund special assessment 6928	33 - 2108	SUSPENSE PREBILLED SPCL ASSMNT	4/15/2026	$201.46
30940	6/4/2026	Outstanding		$1,034.41	90162458	Invoice	99999	ONE TIME VENDOR	Quiet Zone Diagnostic Review	10625000 - 6202	GENERAL SERVICES	5/27/2026	$1,034.41
30941	6/4/2026	Cleared	6/10/2026	$11,515.96	90159700	Invoice	99999	ONE TIME VENDOR	UPRR QZ Diagnostic Review	10625000 - 6202	GENERAL SERVICES	5/19/2026	$11,515.96
30942	6/4/2026	Cleared	6/9/2026	$30.00	4262	Invoice	99999	ONE TIME VENDOR	Coliform Bacteria test	50814662 - 6016	LABORATORY SAMPLES	6/2/2026	$30.00
30943	6/4/2026	Cleared	6/10/2026	$98.80	26-14488 Munoz-Cerda	Invoice	99999	ONE TIME VENDOR	Munoz-Cerda, Arturo (M/W 8/22/	10 - 2501	DUE BAIL	5/22/2026	$98.80
30944	6/4/2026	Cleared	6/8/2026	$17,184.55	316466	Invoice	2318	PERFECTION PLUS, INC.	City Wide Cleaning Contract- 2	10220000 - 6202	GENERAL SERVICES	5/28/2026	$494.40
										10350000 - 6202	GENERAL SERVICES	5/28/2026	$4,306.98
										22355000 - 6202	GENERAL SERVICES	5/28/2026	$11,124.00
										26360000 - 6202	GENERAL SERVICES	5/28/2026	$1,259.17
											Line Item Total		**$17,184.55**
30945	6/4/2026	Cleared	6/10/2026	$4,300.00	19757	Invoice	2060	PINNACLE ENGINEERING GROUP	Prepare TID Exhibit 2825 N May	36707000 - 6203	CONSULTING SERVICES	4/15/2026	$3,500.00
					5638.00A-200	Invoice	2060	PINNACLE ENGINEERING GROUP	Prepare TID Exhibit 2825 N May	36717000 - 6203	CONSULTING SERVICES	4/15/2026	$800.00
											Line Item Total		**$4,300.00**
30946	6/4/2026	Cleared	6/8/2026	$96.45	60396186	Invoice	220	POMPS TIRE SERVICE INC	G-20 ST205/75R15/8 TIRES	20335000 - 6009	REPAIR PARTS	6/1/2026	$96.45
30947	6/4/2026	Cleared	6/17/2026	$4,560.18	3381	Invoice	1868	PRISM TECHNICAL MANAGEMENT/MARKETING SERVICES LLC	Sonesta Hotel Conversion Inclu	36711000 - 6203	CONSULTING SERVICES	4/15/2026	$2,215.58

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30947	6/4/2026	Cleared	6/17/2026	$4,560.18	3382	Invoice	1868	PRISM TECHNICAL MANAGEMENT/MARKETING SERVICES LLC	Sonesta Hotel Conversion Inclu	36716000 - 6203	CONSULTING SERVICES	4/15/2026	$2,344.60
											Line Item Total		**$4,560.18**
30948	6/4/2026	Cleared	6/16/2026	$475.00	I7B7JN9QA8	Invoice	2533	PUBLIC SAFETY UAS LLC	26-121 Karweik - Indoor Flight	10210000 - 6002	PROFESSIONAL DEVELOPMENT	6/1/2026	$475.00
30949	6/4/2026	Cleared	6/17/2026	$80.26	G54971-001	Invoice	233	RITTER TECH A DIV OF MCE	S-21 SWIVEL CONNECTORS	20335000 - 6009	REPAIR PARTS	6/1/2026	$80.26
30950	6/4/2026	Cleared	6/9/2026	$16,000.00	5863	Invoice	1765	ROBINSON BROTHERS ENVIRONMENTAL INC	Police 2026 updates- Abatement	12210000 - 7001	FIXED ASSET	5/28/2026	$11,250.00
					5865	Invoice	1765	ROBINSON BROTHERS ENVIRONMENTAL INC	Police 2026 updates- Abatement	12210000 - 7001	FIXED ASSET	5/28/2026	$4,750.00
											Line Item Total		**$16,000.00**
30951	6/4/2026	Cleared	6/8/2026	$79,475.00	2026-2-1	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$34,350.00
					2026-2-2	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$175.00
					2026-2-3	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$125.00
					2026-2-4	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$675.00
					2026-2-5	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$2,100.00
					2026-2-6	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$150.00
					2026-2-7	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$675.00
					2026-2-8	Invoice	915	SEIBEL LAW OFFICES LLC	Ascension - Exemption Case	10131000 - 6204	LEGAL SERVICES	6/1/2026	$41,225.00
											Line Item Total		**$79,475.00**
30952	6/4/2026	Cleared	6/10/2026	$2,665.23	05073891	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS WEEK OF 5/26	10315000 - 6105	CONCRETE SAND AND STONE	5/28/2026	$2,458.25
										50814673 - 6108	ASPHALT	5/28/2026	$206.98
											Line Item Total		**$2,665.23**
30953	6/4/2026	Cleared	6/9/2026	$5,725.00	081930	Invoice	1113	STATZ RESTORATION & ENGINEERING COMPANY INC	Police 2026 updates- General C	12210000 - 7001	FIXED ASSET	5/28/2026	$5,725.00

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30954	6/4/2026	Cleared	6/16/2026	$550.00	6152026	Invoice	2547	TNZ MAGIC	programming kids	35510104 - 6027	PROGRAMMING	6/1/2026	$550.00
30955	6/4/2026	Cleared	6/11/2026	$2,435.25	X207086403:01	Invoice	319	TRUCK COUNTRY OF WI	T-123 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$2,435.25
30956	6/4/2026	Cleared	6/15/2026	$456.93	571124	Invoice	286	UPTOWN MOTORS INC	DIAGNOSIS COOLANT MIXTURE	20335000 - 6206	EQUIPMENT REPAIRS	6/1/2026	$456.93
30957	6/4/2026	Cleared	6/9/2026	$92,686.00	39892 Luther Manor	Invoice	290	VISU SEWER INC	Luther Manor V7160427	13630301 - 6603	GRANT EXPENDITURE	6/1/2026	$92,686.00
30958	6/4/2026	Outstanding		$4,002.56	1000172363	Invoice	314	WE ENERGIES	Hit gas line during water main	50814673 - 6205	BLDING & INFRSTRCTRE REPAIRS	6/2/2026	$4,002.56
30959	6/4/2026	Cleared	6/15/2026	$1,611.96	202604	Invoice	1331	WEST MILWAUKEE WI POLICE DEPT	April 2026 OWI Grant Reimburse	10210000 - 4384	STATE GRANT DOA	5/22/2026	$1,611.96
30960	6/4/2026	Cleared	6/12/2026	$10,252.87	COURT FEES MAY 26	Invoice	891	WI COURT FINES & SURCHARGES	Court Fees May 2026	10 - 2550	DUE STATE OF WISCONSIN	4/15/2026	$10,252.87
30961	6/4/2026	Cleared	6/10/2026	$2,900.00	12078	Invoice	741	WISCONSIN ATHLETIC CLUB LLC	Onsite Fitness Classes	16190902 - 6203	CONSULTING SERVICES	6/2/2026	$2,900.00
30962	6/2/2026	Outstanding		$14,047.92	WORKERSCOMP 6/2/26	Direct Disbursement	55	CITIES & VILLAGES MUTUAL INSURANCE COMPANY	WORKERS COMP	19190210 - 6403	CLAIMS	6/2/2026	$12,354.04
										19190220 - 6403	CLAIMS	6/2/2026	$360.00
										19190300 - 6403	CLAIMS	6/2/2026	$540.00
										19190100 - 6403	CLAIMS	6/2/2026	$793.88
											Line Item Total		**$14,047.92**
30963	6/8/2026	Outstanding		$6,527.60	DENTAL 6/8/26	Direct Disbursement	941	HUMANA	DENTAL THROUGH 6/6/26	17190000 - 6403	CLAIMS	6/8/2026	$6,527.60
30964	6/9/2026	Outstanding		$34,894.15	WORKERSCOMP 6/9/26	Direct Disbursement	55	CITIES & VILLAGES MUTUAL INSURANCE COMPANY	WORKERS COMP	19190210 - 6403	CLAIMS	6/9/2026	$30,612.36
										19190220 - 6403	CLAIMS	6/9/2026	$3,158.77
										19190300 - 6403	CLAIMS	6/9/2026	$1,033.02

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30964	6/9/2026	Outstanding		$34,894.15	WORKERSCOMP 6/9/26	Direct Disbursement	55	CITIES & VILLAGES MUTUAL INSURANCE COMPANY	WORKERS COMP	19190510 - 6403	CLAIMS	6/9/2026	$90.00
											Line Item Total		**$34,894.15**
30965	6/10/2026	Outstanding		$139,664.85	UH 6/10/26	Direct Disbursement	933	UNITED HEALTHCARE	HEALTH CLAIMS	16190000 - 6403	CLAIMS	6/10/2026	$139,664.85
30966	6/10/2026	Outstanding		$8,516.92	UH FLEX 6/10/26	Direct Disbursement	933	UNITED HEALTHCARE	FLEXIBLE SPENDING	10 - 2316	FLEXIBLE SPENDING	6/10/2026	$8,516.92
30969	6/12/2026	Outstanding		$62,247.98	88148	Direct Disbursement	278	NATIONWIDE RETIREMENT SOLUTIONS	Payroll Run 1 - Warrant 2612B1	10 - 2311	DEFERRED CONTRIBUTION	6/11/2026	$62,247.98
30970	6/11/2026	Cleared	6/17/2026	$5,566.82	55516	Invoice	617	ABT MAILCOM	Bill mailing	10150000 - 6013	POSTAGE	6/3/2026	$765.52
					55548	Invoice	617	ABT MAILCOM	Bill mailing	50815903 - 6004	PRINTING AND DUPLICATION	5/27/2026	$927.18
										50815903 - 6013	POSTAGE	5/27/2026	$3,607.60
										51830000 - 6004	PRINTING AND DUPLICATION	5/27/2026	$133.26
										52840000 - 6004	PRINTING AND DUPLICATION	5/27/2026	$133.26
											Line Item Total		**$5,566.82**
30971	6/11/2026	Cleared	6/16/2026	$34,259.04	80239429	Invoice	28	BADGER METER INC	Beacon fixed network and orion	24144000 - 6409	SOFTWARE HOSTING	6/2/2026	$33,696.00
										50815902 - 6306	TELECOMMUNICATIONS	6/2/2026	$281.52
										50815903 - 6306	TELECOMMUNICATIONS	6/2/2026	$281.52
											Line Item Total		**$34,259.04**
30972	6/11/2026	Outstanding		$687.50	0286269	Invoice	613	BAXTER & WOODMAN	Environmental Services for UST	12315001 - 7001	FIXED ASSET	6/5/2026	$687.50
30973	6/11/2026	Cleared	6/16/2026	$20.75	062026	Invoice	1029	BENISTAR UA 6803	Benistar July 2026	16190000 - 6209	CLAIMS ADMINISTRATION	6/8/2026	$20.75
30974	6/11/2026	Cleared	6/15/2026	$497.11	M93495	Invoice	48	BROOKS TRACTOR INC	S-120 FILTER ELEMENT	20335000 - 6009	REPAIR PARTS	6/4/2026	$113.25
					M93565	Invoice	48	BROOKS TRACTOR INC	S-120 FILTER ELEMENT	20335000 - 6009	REPAIR PARTS	6/4/2026	$265.58

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30974	6/11/2026	Cleared	6/15/2026	$497.11	M93809	Invoice	48	BROOKS TRACTOR INC	S-120 FILTER ELEMENT	20335000 - 6009	REPAIR PARTS	6/4/2026	$118.28
											Line Item Total		**$497.11**
30975	6/11/2026	Cleared	6/17/2026	$8,240.00	25101942	Invoice	2237	BROWN & BROWN INSURANCE SERVICES, INC.	Brown & Brown Q3 Fees	16190000 - 6209	CLAIMS ADMINISTRATION	6/8/2026	$8,240.00
30976	6/11/2026	Outstanding		$11,946.00	J102496	Invoice	1903	BUTTERS-FETTING CO INC	DEMO SOLAR TANK AT FH51	12220000 - 7001	FIXED ASSET	5/28/2026	$11,946.00
30977	6/11/2026	Cleared	6/16/2026	$3,545.27	3088722-00	Invoice	54	CARLIN SALES CORPORATION	FERTILIZER, SEED, TOP CUT, ETC	52840000 - 6104	TREES, SHRUBS, FLOWERS	5/28/2026	$47.60
										10340000 - 6008	OTHER SUPPLIES	5/28/2026	$1,817.69
					3089505-00	Invoice	54	CARLIN SALES CORPORATION	FERTILIZER, SEED, TOP CUT, ETC	52840000 - 6104	TREES, SHRUBS, FLOWERS	5/12/2026	$224.70
										10340000 - 6102	CHEMICALS	5/12/2026	$46.80
										34345000 - 6099	OTHER EXPENSES	5/12/2026	$1,408.48
											Line Item Total		**$3,545.27**
30978	6/11/2026	Cleared	6/16/2026	$125.72	0067054-IN	Invoice	265	CASPERS TRUCK EQUIPMENT	S-20 BUSHINGS	20335000 - 6009	REPAIR PARTS	6/4/2026	$125.72
30979	6/11/2026	Cleared	6/16/2026	$105.00	999102727239	Invoice	1010	CENGAGE LEARNING INC	Book Alp*	35510103 - 6006	BOOKS AND PERIODICALS	6/8/2026	$105.00
30980	6/11/2026	Outstanding		$300.00	26-017360	Invoice	2551	CHARTER COMMUNICATIONS LEROC	Distinct Ident x4 -Det.Kastner	10210107 - 6306	TELECOMMUNICATIONS	6/8/2026	$200.00
					26-017362	Invoice	2551	CHARTER COMMUNICATIONS LEROC	Distinct Ident x4 -Det.Kastner	10210107 - 6306	TELECOMMUNICATIONS	6/8/2026	$100.00
											Line Item Total		**$300.00**
30981	6/11/2026	Cleared	6/17/2026	$2,235.64	51459 5/26	Invoice	1124	CHICAGO PARTS AND SOUND LLC	5/26 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/1/2026	$760.94
										20 - 1501	GENERAL INVENTORY	6/1/2026	$1,365.70
										20 - 2101	SUSPENSE GENERAL	6/1/2026	$109.00
											Line Item Total		**$2,235.64**

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30982	6/11/2026	Outstanding		$2,274.73	2500066250	Invoice	20	CINTAS	DPW REPAIRS/REPLACEMENTS	26360000 - 6202	GENERAL SERVICES	6/10/2026	$2,274.73
30983	6/11/2026	Cleared	6/16/2026	$32,885.40	106538	Invoice	492	COMPLETE LAWN & LANDSCAPE SUPPLY	2026 Mectinite Purchase for EA	10340000 - 6102	CHEMICALS	5/19/2026	$16,442.70
										52840000 - 6102	CHEMICALS	5/19/2026	$16,442.70
											Line Item Total		**$32,885.40**
30984	6/11/2026	Cleared	6/16/2026	$600.75	647721	Invoice	384	COREY OIL LTD	55 GAL 5W20	20 - 1501	GENERAL INVENTORY	6/4/2026	$600.75
30985	6/11/2026	Cleared	6/15/2026	$46,070.75	00058908	Invoice	2126	DAAR CORPORATION	2025 Construction Inspection S	12902000 - 6099	OTHER EXPENSES	6/8/2026	$22,626.25
					00059079	Invoice	2126	DAAR CORPORATION	2025 Construction Inspection S	12902000 - 6099	OTHER EXPENSES	6/8/2026	$23,444.50
											Line Item Total		**$46,070.75**
30986	6/11/2026	Outstanding		$10,500.00	15-0000040110	Invoice	1083	DEPT OF AG TRADE & CONSUMER PROTECTION	Weights and Measures inspectio	10141000 - 6202	GENERAL SERVICES	6/4/2026	$10,500.00
30987	6/11/2026	Cleared	6/15/2026	$8,453.81	0711.17279	Invoice	1093	DEVNET	CAMA w/EDGE software license J	24144000 - 6411	SOFTWARE MAINT	6/3/2026	$8,453.81
30988	6/11/2026	Cleared	6/17/2026	$28,590.61	495438	Invoice	785	E.H. WOLF & SONS	7301 GAL DIESEL AT $3.91598	20 - 1503	FUEL INVENTORY	6/4/2026	$28,590.61
30989	6/11/2026	Cleared	6/17/2026	$10,835.00	231201	Invoice	50	EMMONS BUSINESS INTERIORS	Police 2026 Remodel Furniture	12210000 - 7001	FIXED ASSET	6/10/2026	$10,835.00
30990	6/11/2026	Cleared	6/17/2026	$38.00	26-044n Grosenick	Invoice	1316	EMPLOYEES	Grosenick Travel Reimburse - W	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
					26-114 Grosenick	Invoice	1316	EMPLOYEES	Grosenick Travel Reimburse - W	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
											Line Item Total		**$38.00**
30991	6/11/2026	Outstanding		$261.00	TRAV GSM CONF 2026	Invoice	1316	EMPLOYEES	Reimb Travel GSM conference 5/	10143431 - 6002	PROFESSIONAL DEVELOPMENT	4/15/2026	$261.00

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30992	6/11/2026	Cleared	6/16/2026	$38.00	26-104 Ratkowski	Invoice	1316	EMPLOYEES	Ratkowski Travel Reimburse - P	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$38.00
30993	6/11/2026	Outstanding		$370.85	26-053 Zientek	Invoice	1316	EMPLOYEES	Zientek Travel Reimburse - ASE	10143431 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$370.85
30994	6/11/2026	Outstanding		$19.00	26-044n Svatek	Invoice	1316	EMPLOYEES	Svatek Travel Reimburse - WCTC	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
30995	6/11/2026	Cleared	6/16/2026	$423.02	26-053 Wrucke	Invoice	1316	EMPLOYEES	Wrucke Travel Reimburse - ASEB	10143431 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$274.51
										10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$148.51
											Line Item Total		**$423.02**
30996	6/11/2026	Outstanding		$285.00	26-053 Tyrpak	Invoice	1316	EMPLOYEES	Tyrpak Travel Reimburse - ASEB	10143431 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$266.00
					26-114 Tyrpak	Invoice	1316	EMPLOYEES	Tyrpak Travel Reimburse - ASEB	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
											Line Item Total		**$285.00**
30997	6/11/2026	Outstanding		$22.00	26-126 Salyers	Invoice	1316	EMPLOYEES	Salyers Travel Reimburse - PIT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$22.00
30998	6/11/2026	Outstanding		$276.00	26-053 Schleis	Invoice	1316	EMPLOYEES	Schleis Travel Reimburse - ASE	10143431 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$276.00
30999	6/11/2026	Outstanding		$19.00	26-114 Martell	Invoice	1316	EMPLOYEES	Martell Travel Reimburse - Def	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$19.00
31000	6/11/2026	Cleared	6/17/2026	$451.40	UA2606 Kirby	Invoice	1316	EMPLOYEES	Kirby Uni Allowance - Moab Sho	10210000 - 5305	UNIFORM ALLOWANCE	6/8/2026	$451.40
31001	6/11/2026	Outstanding		$22.00	26-126 Steberl	Invoice	1316	EMPLOYEES	Steberl Travel Reimburse - PIT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$22.00
31002	6/11/2026	Outstanding		$22.00	26-126 Johnson	Invoice	1316	EMPLOYEES	Johnson Travel Reimburse - PIT	10210000 - 6002	PROFESSIONAL DEVELOPMENT	5/22/2026	$22.00

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31003	6/11/2026	Cleared	6/16/2026	$406.75	52526	Invoice	1316	EMPLOYEES	professional development	35510000 - 6002	PROFESSIONAL DEVELOPMENT	6/8/2026	$406.75
31004	6/11/2026	Cleared	6/15/2026	$23.35	MILES LEE MAY 26	Invoice	1316	EMPLOYEES	Mileage Reimbursement P. Lee M	10410000 - 6099	OTHER EXPENSES	6/8/2026	$23.35
31005	6/11/2026	Cleared	6/15/2026	$152.25	MILES TURNER 052826	Invoice	1316	EMPLOYEES	Travel to Madison for PCCC-TEC	10625000 - 6002	PROFESSIONAL DEVELOPMENT	6/3/2026	$152.25
31006	6/11/2026	Cleared	6/16/2026	$125.28	UA2606 La Fontain	Invoice	1316	EMPLOYEES	La Fontain Uni Allow - Undersh	10210000 - 5305	UNIFORM ALLOWANCE	6/8/2026	$125.28
31007	6/11/2026	Outstanding		$21.35	613420498566	Invoice	1316	EMPLOYEES	F157 - Reimbursement for Emerg	10220000 - 6206	EQUIPMENT REPAIRS	6/4/2026	$21.35
31008	6/11/2026	Outstanding		$138.00	2026 TANZILO SHOES	Invoice	1316	EMPLOYEES	TANZILO SAFETY SHOES	10320000 - 6007	CLOTHING	6/1/2026	$69.00
										10330000 - 6007	CLOTHING	6/1/2026	$69.00
											Line Item Total		**$138.00**
31009	6/11/2026	Cleared	6/16/2026	$341.25	INV-68185-N2Q8	Invoice	2436	EXPRESS ELEVATOR LLC	Quarterly Elevator Maintenance	10220000 - 6202	GENERAL SERVICES	6/4/2026	$341.25
31010	6/11/2026	Cleared	6/17/2026	$30.02	WIMI3404374	Invoice	91	FASTENAL COMPANY	R-33 WHEELS	20335000 - 6009	REPAIR PARTS	6/4/2026	$30.02
31011	6/11/2026	Outstanding		$1,984.50	140254	Invoice	2009	FEHR GRAHAM & ASSOCIATES LLC	2026 Safety Consultant	10310000 - 6002	PROFESSIONAL DEVELOPMENT	6/4/2026	$1,984.50
31012	6/11/2026	Outstanding		$2,750.00	0526WPD	Invoice	1852	FIRST RESPONDERS PSYCHOLOGICAL SERVICES LLC	2026-05 May Individual Therapy	10210000 - 6202	GENERAL SERVICES	6/8/2026	$2,750.00
31013	6/11/2026	Outstanding		$165.23	88153	Invoice	2420	FLORIDA STATE DISBURSEMENT UNIT	Payroll Run 1 - Warrant 2612B1	10 - 2312	WAGE GARNISHMENTS	6/11/2026	$165.23
31014	6/11/2026	Cleared	6/16/2026	$73.14	AR284327	Invoice	211	FORWARD TS	Copier charges 5/10/26 - 6/9/2	10310000 - 6004	PRINTING AND DUPLICATION	6/3/2026	$73.14
31015	6/11/2026	Outstanding		$962.50	00023838-00	Invoice	1036	FROEDTERT HEALTH INC	Blanket order for wellness coa	16190902 - 6203	CONSULTING SERVICES	6/9/2026	$762.50

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31015	6/11/2026	Outstanding		$962.50	00023838-00	Invoice	1036	FROEDTERT HEALTH INC	Blanket order for wellness coa	16190902 - 6203	CONSULTING SERVICES	6/9/2026	$200.00
											Line Item Total		**$962.50**
31016	6/11/2026	Cleared	6/16/2026	$26,770.00	0144896	Invoice	113	GRAEF	Sanitary Sewer and Water Main	50814673 - 7001	FIXED ASSET	6/5/2026	$21,600.00
					0144897	Invoice	113	GRAEF	Sanitary Sewer and Water Main	51830000 - 7001	FIXED ASSET	6/5/2026	$5,170.00
											Line Item Total		**$26,770.00**
31017	6/11/2026	Outstanding		$112.00	260745	Invoice	125	GRAPHIC EDGE INC	business cards Nysome and Zett	10625000 - 6003	OFFICE SUPPLIES	6/8/2026	$64.00
										50816921 - 6008	OTHER SUPPLIES	6/8/2026	$48.00
											Line Item Total		**$112.00**
31018	6/11/2026	Outstanding		$2,592.57	9353284888	Invoice	117	GRAYBAR ELECTRIC COMPANY	PERIWINKLE OMNI CABLE CORP	10325000 - 6403	CLAIMS	6/4/2026	$964.86
										10325000 - 6021	ELECTRICAL SUPPLIES	6/4/2026	$964.87
					9353301777	Invoice	117	GRAYBAR ELECTRIC COMPANY	PERIWINKLE OMNI CABLE CORP	10325000 - 6021	ELECTRICAL SUPPLIES	6/4/2026	$662.84
											Line Item Total		**$2,592.57**
31019	6/11/2026	Outstanding		$1,400.00	687438	Invoice	2188	HALL, RENDER, KILLIAN, HEATH & LYMAN, P.C.	2400 Mayfair Road Property Auc	36710000 - 6099	OTHER EXPENSES	4/15/2026	$1,400.00
31020	6/11/2026	Cleared	6/17/2026	$1,092.74	120004044A	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERY	20 - 1501	GENERAL INVENTORY	6/4/2026	$123.82
					150002902A	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERY	20 - 1501	GENERAL INVENTORY	6/4/2026	$195.58
					459140	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERY	20 - 1501	GENERAL INVENTORY	6/1/2026	$123.82
					459168	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERY	20335000 - 6008	OTHER SUPPLIES	6/4/2026	$383.36
					459176	Invoice	146	INTERSTATE ALL BATTERY CENTER	STOCK BATTERY	20 - 1501	GENERAL INVENTORY	6/1/2026	$266.16
											Line Item Total		**$1,092.74**

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31021	6/11/2026	Outstanding		$5.00	Badge	Invoice	2259	DANIEL WEGNER	Badge for Inspection	10620000 - 6099	OTHER EXPENSES	5/28/2026	$5.00
31022	6/11/2026	Cleared	6/15/2026	$11,065.00	2101307A	Invoice	1771	JOHNS DISPOSAL SERVICE INC	4/26 30YD EMPTY & RETURN	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	6/4/2026	$303.18
										34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	6/4/2026	$265.00
					2122108A	Invoice	1771	JOHNS DISPOSAL SERVICE INC	4/26 30YD EMPTY & RETURN	10330306 - 6202	GENERAL SERVICES	6/4/2026	$10,231.82
					2146135	Invoice	1771	JOHNS DISPOSAL SERVICE INC	4/26 30YD EMPTY & RETURN	34345000 - 6202	GENERAL SERVICES	6/4/2026	$265.00
											Line Item Total		**$11,065.00**
31023	6/11/2026	Outstanding		$1,070.28	23119522P	Invoice	339	JX ENTERPRISES INC	STOCK SLEEVES	20335000 - 6009	REPAIR PARTS	6/4/2026	$308.05
					23120196P	Invoice	339	JX ENTERPRISES INC	STOCK SLEEVES	20 - 1501	GENERAL INVENTORY	6/1/2026	$203.96
					23120197P	Invoice	339	JX ENTERPRISES INC	STOCK SLEEVES	20 - 1501	GENERAL INVENTORY	6/1/2026	$50.88
					23120386P	Invoice	339	JX ENTERPRISES INC	STOCK SLEEVES	20335000 - 6009	REPAIR PARTS	6/4/2026	$507.39
											Line Item Total		**$1,070.28**
31024	6/11/2026	Outstanding		$25,678.79	140841	Invoice	387	KAPUR AND ASSOCIATES	Wisconsin Avenue MultiUse Path	12315005 - 7001	FIXED ASSET	6/8/2026	$4,806.52
										12325000 - 7001	FIXED ASSET	6/8/2026	$1,040.67
										12315003 - 7001	FIXED ASSET	6/8/2026	$19,831.60
											Line Item Total		**$25,678.79**
31025	6/11/2026	Outstanding		$5,400.00	Luther Manor INV 73	Invoice	2545	KIM KISER	Luther Manor V7162853	13630301 - 6603	GRANT EXPENDITURE	6/9/2026	$5,400.00
31026	6/11/2026	Cleared	6/16/2026	$4,187.35	X101136011:01	Invoice	188	KRIETE TRUCK CENTER MILWAUKEE INC	BOLDMAX LRG & XL	20335000 - 6009	REPAIR PARTS	6/4/2026	$4,011.55
					X101136492:01	Invoice	188	KRIETE TRUCK CENTER MILWAUKEE INC	BOLDMAX LRG & XL	20335000 - 6008	OTHER SUPPLIES	6/4/2026	$175.80
											Line Item Total		**$4,187.35**

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31027	6/11/2026	Outstanding		$467.53	P42431	Invoice	1092	MACQUEEN EQUIPMENT	STOCK BROOM	20 - 1501	GENERAL INVENTORY	6/4/2026	$467.53
31028	6/11/2026	Outstanding		$442.42	1189603	Invoice	831	MEI TOTAL ELEVATOR SOLUTIONS	QUARTERLY ELEVATOR SERVICE DPW	26360000 - 6202	GENERAL SERVICES	6/10/2026	$442.42
31029	6/11/2026	Cleared	6/16/2026	$515,810.36	88034	Invoice	179	MID CITY PLUMBING & HEATING INC	24-56 WEST ZONE PUMPING STATIO	38810000 - 7001	FIXED ASSET	4/29/2026	$515,810.36
31030	6/11/2026	Outstanding		$414.63	508917863	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/8/2026	$388.39
					508917865	Invoice	333	MIDWEST TAPE	material advd	35510103 - 6006	BOOKS AND PERIODICALS	6/8/2026	$26.24
											Line Item Total		**$414.63**
31031	6/11/2026	Cleared	6/17/2026	$274,556.58	1-0115.300a	Invoice	194	MILWAUKEE WATER WORKS	Milwaukee water 1-0115.300	50811602 - 6308	WHOLESALE WATER	6/2/2026	$237,302.97
					1-0118.300	Invoice	194	MILWAUKEE WATER WORKS	Milwaukee water 1-0115.300	50811602 - 6308	WHOLESALE WATER	6/2/2026	$37,253.61
											Line Item Total		**$274,556.58**
31032	6/11/2026	Cleared	6/11/2026	$6,794.08	88101	Invoice	99999	ONE TIME VENDOR	UB 103397 2420 97TH	50 - 1350	UTILITY ACCOUNTS RECEIVABLE	6/8/2026	$193.39
										52 - 1350	UTILITY ACCOUNTS RECEIVABLE	6/8/2026	$6,600.69
											Line Item Total		**$6,794.08**
31033	6/11/2026	Outstanding		$230.00	BR2026-0249	Invoice	99999	ONE TIME VENDOR	Did not need Building permit	10620000 - 4450	BUILDING PERMITS	5/28/2026	$230.00
31034	6/11/2026	Cleared	6/15/2026	$90.02	2026 HARTZ YW RETURN	Invoice	99999	ONE TIME VENDOR	YW CART RETURN CREDIT	10330000 - 4698	OTHER PUBLIC CHARGES - SALES T	5/20/2026	$85.00
										10 - 2552	DUE STATE OF WI - SALES	5/20/2026	$5.02
											Line Item Total		**$90.02**
31035	6/11/2026	Outstanding		$90.02	N KLETT YW CART	Invoice	99999	ONE TIME VENDOR	CANCEL YARD WASTE CART ORDER	10330000 - 4698	OTHER PUBLIC CHARGES - SALES T	6/3/2026	$85.00

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31035	6/11/2026	Outstanding		$90.02	N KLETT YW CART	Invoice	99999	ONE TIME VENDOR	CANCEL YARD WASTE CART ORDER	10 - 2552	DUE STATE OF WI - SALES	6/3/2026	$5.02
											Line Item Total		**$90.02**
31036	6/11/2026	Cleared	6/15/2026	$375.00	BZA2026-0007	Invoice	99999	ONE TIME VENDOR	Did not need permit	10620000 - 4699	OTHER PUBLIC CHARGES	5/28/2026	$375.00
31037	6/11/2026	Cleared	6/16/2026	$141.88	2540055000-2025	Invoice	99999	ONE TIME VENDOR	2540055000-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	6/11/2026	$141.88
31038	6/11/2026	Outstanding		$5.25	3350032000-2025	Invoice	99999	ONE TIME VENDOR	3350032000-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	6/11/2026	$5.25
31039	6/11/2026	Outstanding		$99.75	3380243000-2025	Invoice	99999	ONE TIME VENDOR	3380243000-TAX REFUND	10 - 2105	SUSPENSE TAX OVER PAYMENTS	6/11/2026	$99.75
31041	6/11/2026	Outstanding		$14,850.00	US451066	Invoice	2555	PICTOMETRY INTERNATIONAL CORP	2026 Flight EV Cloud Year 1 or	10150000 - 6202	GENERAL SERVICES	6/3/2026	$14,850.00
31042	6/11/2026	Outstanding		$5,000.00	19763	Invoice	2060	PINNACLE ENGINEERING GROUP	1717 N 73 Survey ALTA	31615000 - 6202	GENERAL SERVICES	6/8/2026	$5,000.00
31043	6/11/2026	Outstanding		$255.00	88147	Invoice	217	POLICE SUPERVISORY UNION DUES	Payroll Run 1 - Warrant 2612B1	10 - 2315	UNION DUES - POLICE SUP	6/11/2026	$255.00
31044	6/11/2026	Cleared	6/15/2026	$2,147.64	60396188	Invoice	220	POMPS TIRE SERVICE INC	STOCK 225/70R19.5/14 GY TIRES	20 - 1501	GENERAL INVENTORY	6/1/2026	$1,500.00
					60396189	Invoice	220	POMPS TIRE SERVICE INC	STOCK 225/70R19.5/14 GY TIRES	20 - 1501	GENERAL INVENTORY	6/1/2026	$647.64
											Line Item Total		**$2,147.64**
31045	6/11/2026	Cleared	6/15/2026	$10,045.00	2117	Invoice	2449	PTP LLC	PAINTING PROJECT	12210000 - 7001	FIXED ASSET	5/27/2026	$10,045.00
31046	6/11/2026	Outstanding		$1,805.98	INV-WI-7926	Invoice	231	RELIANT FIRE APPARATUS INC	F309 - FIELD SERVICE KIT O-RIN	10220000 - 6206	EQUIPMENT REPAIRS	6/4/2026	$122.19
					INV-WI-8219	Invoice	231	RELIANT FIRE APPARATUS INC	F309 - FIELD SERVICE KIT O-RIN	10220000 - 6206	EQUIPMENT REPAIRS	6/4/2026	$278.00

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31046	6/11/2026	Outstanding		$1,805.98	INV-WI-8239	Invoice	231	RELIANT FIRE APPARATUS INC	F309 - FIELD SERVICE KIT O-RIN	10220000 - 6206	EQUIPMENT REPAIRS	6/4/2026	$1,405.79
											Line Item Total		**$1,805.98**
31047	6/11/2026	Outstanding		$523.42	G56370-001	Invoice	233	RITTER TECH A DIV OF MCE	R-33 FLEET PARTS	20335000 - 6009	REPAIR PARTS	6/4/2026	$523.42
31048	6/11/2026	Cleared	6/16/2026	$15,000.00	10681-2085	Invoice	2506	SHRI DIPESHWARI LLC	CDA bldg imprvmnt forgivable L	38615000 - 6099	OTHER EXPENSES	6/9/2026	$15,000.00
31049	6/11/2026	Cleared	6/17/2026	$3,450.19	05074011	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS 6/1/26	10315000 - 6105	CONCRETE SAND AND STONE	6/10/2026	$788.63
					05074053	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS 6/1/26	10315000 - 6105	CONCRETE SAND AND STONE	6/10/2026	$1,974.86
					05074083	Invoice	1291	STARK PAVEMENT CORPORATION	STARK TICKETS 6/1/26	10315000 - 6105	CONCRETE SAND AND STONE	6/10/2026	$686.70
											Line Item Total		**$3,450.19**
31050	6/11/2026	Cleared	6/15/2026	$410.00	88152	Invoice	1630	STATE DISBURSEMENT UNIT	Payroll Run 1 - Warrant 2612B1	10 - 2312	WAGE GARNISHMENTS	6/11/2026	$410.00
31051	6/11/2026	Cleared	6/16/2026	$246,376.06	06012026	Invoice	1734	SYMETRA LIFE INSURANCE COMPANY	Stop Loss Premiums June	16190000 - 6408	INSURANCE PREMIUMS	6/8/2026	$246,376.06
31052	6/11/2026	Cleared	6/15/2026	$88,415.25	0002	Invoice	2531	SYNLAWN GREAT LAKES	Playground Turf Replacement	34345000 - 6205	BLDING & INFRSTRCTRE REPAIRS	6/4/2026	$88,415.25
31053	6/11/2026	Outstanding		$100.00	L2512120318	Invoice	2040	T-MOBILE USA, INC.	Time Diff of Arrival_Det. Schm	10210107 - 6306	TELECOMMUNICATIONS	6/8/2026	$100.00
31054	6/11/2026	Outstanding		$247.26	X207087015:01	Invoice	319	TRUCK COUNTRY OF WI	R-76 PARK BRAKE VALVE	20335000 - 6009	REPAIR PARTS	6/4/2026	$247.26
31055	6/11/2026	Cleared	6/17/2026	$313.95	693927625961	Invoice	1280	UHS PREMIUM BILLING	Variable Copay May	16190000 - 6209	CLAIMS ADMINISTRATION	6/8/2026	$313.95
31056	6/11/2026	Cleared	6/16/2026	$3,767.26	I10010078022	Invoice	159	UKG KRONOS SYSTEMS LLC	Kronos Hosting Fees	24144000 - 6409	SOFTWARE HOSTING	6/3/2026	$1,149.12
					I10010079686	Invoice	159	UKG KRONOS SYSTEMS LLC	Kronos Hosting Fees	24144000 - 6409	SOFTWARE HOSTING	4/15/2026	$1,200.00

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31056	6/11/2026	Cleared	6/16/2026	$3,767.26	I10080061614	Invoice	159	UKG KRONOS SYSTEMS LLC	Kronos Hosting Fees	24144000 - 6409	SOFTWARE HOSTING	6/8/2026	$1,418.14
											Line Item Total		**$3,767.26**
31057	6/11/2026	Cleared	6/17/2026	$2,689.01	233624	Invoice	280	UNITED MAILING SERVICES INC	Postage 5/1/2026 - 5/31/2026	10 - 1502	POSTAGE INVENTORY	6/8/2026	$2,689.01
31058	6/11/2026	Outstanding		$125.42	571559	Invoice	286	UPTOWN MOTORS INC	P-299 TPMS KIT	20335000 - 6009	REPAIR PARTS	6/4/2026	$125.42
31059	6/11/2026	Outstanding		$41.32	6140817426	Invoice	705	VESTIS GROUP, INC	Mechanic's Uniform Service	10220000 - 6202	GENERAL SERVICES	6/4/2026	$20.66
					6140821390	Invoice	705	VESTIS GROUP, INC	Mechanic's Uniform Service	10220000 - 6202	GENERAL SERVICES	6/4/2026	$20.66
											Line Item Total		**$41.32**
31060	6/11/2026	Cleared	6/17/2026	$153.00	4234085	Invoice	1063	WASTEBUILT	STOCK ROLLER ASSEMBLY	20 - 1501	GENERAL INVENTORY	6/1/2026	$76.50
					4234088	Invoice	1063	WASTEBUILT	STOCK ROLLER ASSEMBLY	20 - 1501	GENERAL INVENTORY	6/1/2026	$76.50
											Line Item Total		**$153.00**
31061	6/11/2026	Outstanding		$376.66	S0896272	Invoice	1351	WCTC	Classes for FF & Interns	10220000 - 6022	TUITION REIMBURSEMENT	6/4/2026	$376.66
31062	6/11/2026	Outstanding		$6,495.42	5940193995	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6302	ELECTRICITY	6/4/2026	$143.17
					5940216140	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6303	NATURAL GAS	6/4/2026	$263.70
					5940267025	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6302	ELECTRICITY	6/4/2026	$3,513.52
					5940895466	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6303	NATURAL GAS	6/4/2026	$676.70
					5941079463	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6303	NATURAL GAS	6/4/2026	$248.39
					5941403941	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6302	ELECTRICITY	6/4/2026	$897.03
					5941433942	Invoice	314	WE ENERGIES	STATION #1 - GAS	10220000 - 6302	ELECTRICITY	6/4/2026	$752.91
											Line Item Total		**$6,495.42**
31063	6/11/2026	Outstanding		$3,322.43	202603	Invoice	1341	WEST ALLIS WI POLICE DEPT	March 2026 BOTS OWI Grant Reim	10210000 - 4384	STATE GRANT DOA	5/22/2026	$3,322.43

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31064	6/11/2026	Outstanding		$1,999.92	88151	Invoice	368	WI SUPPORT COLLECTIONS TRUST FUND	Payroll Run 1 - Warrant 2612B1	10 - 2312	WAGE GARNISHMENTS	6/11/2026	$1,999.92
31065	6/11/2026	Outstanding		$2,275.42	77536695	Invoice	996	UNITI (FKA:WINDSTREAM)	Monthly charges 6/4/2026 - 7/3	10210000 - 6306	TELECOMMUNICATIONS	6/8/2026	$781.47
										10220000 - 6306	TELECOMMUNICATIONS	6/8/2026	$413.72
										22355000 - 6306	TELECOMMUNICATIONS	6/8/2026	$551.61
										26360000 - 6306	TELECOMMUNICATIONS	6/8/2026	$22.98
										34345000 - 6306	TELECOMMUNICATIONS	6/8/2026	$252.82
										35510000 - 6306	TELECOMMUNICATIONS	6/8/2026	$45.96
										50816921 - 6306	TELECOMMUNICATIONS	6/8/2026	$68.95
										51830000 - 6306	TELECOMMUNICATIONS	6/8/2026	$137.91
											Line Item Total		**$2,275.42**
31066	6/11/2026	Cleared	6/17/2026	$3,100.00	11827	Invoice	741	WISCONSIN ATHLETIC CLUB LLC	Onsite Fitness Classes	16190902 - 6203	CONSULTING SERVICES	6/8/2026	$3,100.00
31067	6/15/2026	Outstanding		$2,901.20	DENTAL 6/15/26	Direct Disbursement	941	HUMANA	DENTAL THROUGH 6/13/26	17190000 - 6403	CLAIMS	6/15/2026	$2,901.20
50107	5/21/2026	Cleared	5/21/2026	$5,759.50	529466	Invoice	1074	VON BRIESEN & ROPER SC	2024 Firefighter Negotiations	10143000 - 6204	LEGAL SERVICES	5/19/2026	$1,963.50
					529467	Invoice	1074	VON BRIESEN & ROPER SC	2024 Firefighter Negotiations	10143000 - 6204	LEGAL SERVICES	5/19/2026	$3,796.00
											Line Item Total		**$5,759.50**
50108	5/28/2026	Cleared	5/28/2026	$343,058.02	1002735	Invoice	189	MILWAUKEE METRO SEWER DISTRICT	MMSD Dist 1	51830000 - 6214	WASTEWATER TREATMENT SERVICES	5/4/2026	$311,080.32
					1002736	Invoice	189	MILWAUKEE METRO SEWER DISTRICT	MMSD Dist 1	51830000 - 6214	WASTEWATER TREATMENT SERVICES	5/4/2026	$31,977.70
											Line Item Total		**$343,058.02**

Check Nbr	Check Dt	Check Status	Cleared Dt	Check Amount	Invoice Number	Invoice Type	Vendor Num	Vendor Name	Invoice Description	Org Obj	Object Description	Inv GL Eff Dt	Inv Line Item Amt
50109	5/28/2026	Cleared	5/28/2026	$3,900.00	05222026	Invoice	241	LAW OFFICES OF GEORGE M. SCHIMMEL	May Municipal Court fees	10130000 - 6204	LEGAL SERVICES	5/26/2026	$3,900.00
50110	5/28/2026	Cleared	5/28/2026	$4,731.09	87793	Invoice	298	WAUWATOSA PROFESSIONAL FIREFIGHTERS ASSOC	Payroll Run 1 - Warrant 2611B1	10 - 2313	UNION DUES - FIRE	5/28/2026	$4,731.09
50111	6/4/2026	Cleared	6/4/2026	$7,609.00	533	Invoice	55	CITIES & VILLAGES MUTUAL INSURANCE COMPANY	2025 XC Workers Compensation A	19190000 - 6408	INSURANCE PREMIUMS	6/3/2026	$7,609.00
50112	6/11/2026	Cleared	6/11/2026	$778,382.94	DRAW 5	Invoice	2313	BARRETT/LO VISIONARY DEVELOPMENT LLC	Draw 5 redevelopment loan for	10 - 1440	ACCOUNTS RECEIVABLE LOANS	6/8/2026	$778,382.94
50113	6/11/2026	Cleared	6/11/2026	$934,276.52	88061	Invoice	1317	GLOBE CONTRACTORS INC	26-07 2026 STREET & UTILITY IM	52840000 - 7001	FIXED ASSET	6/1/2026	$257,227.80
										51830000 - 7001	FIXED ASSET	6/1/2026	$43,730.40
					88176	Invoice	1317	GLOBE CONTRACTORS INC	26-07 2026 STREET & UTILITY IM	12315003 - 7001	FIXED ASSET	6/10/2026	$27,815.00
										52840000 - 7001	FIXED ASSET	6/10/2026	$168,545.54
										12325000 - 7001	FIXED ASSET	6/10/2026	$8,508.85
										12320000 - 7001	FIXED ASSET	6/10/2026	$173,014.97
										12315001 - 7001	FIXED ASSET	6/10/2026	$255,433.96
											Line Item Total		**$934,276.52**
50114	6/11/2026	Cleared	6/11/2026	$4,679.10	88149	Invoice	298	WAUWATOSA PROFESSIONAL FIREFIGHTERS ASSOC	Payroll Run 1 - Warrant 2612B1	10 - 2313	UNION DUES - FIRE	6/11/2026	$4,679.10
Total	**348**			**$7,551,307.06**									

File #: 26-1052 **Agenda Date:** 6/23/2026 **Agenda #:** 1.

Resolution approving an encroachment agreement within the public right-of-way adjacent to the proposed Medical College of Wisconsin Student Housing Development at 8701 Watertown Plank Road

WHEREAS, an application has been made to the City of Wauwatosa by the Medical College of Wisconsin for an encroachment within the public right-of-way adjacent to the proposed Medical College of Wisconsin Student Housing Development at 8701 Watertown Plank Road for construction tie-back rods; and

WHEREAS, the proposed tie-back rods are to be installed under the south side of Watertown Plank Road and will remain below grade after construction; and

WHEREAS, the Board of Public Works recommended approval subject to review and conditions;

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa, Wisconsin that the requested encroachment within the public right-of-way adjacent to 8701 Watertown Plank Road is hereby approved subject to the following conditions:

1. Engineering Services Division review and approval of the construction tie-back rods, including Milwaukee Metropolitan Sewerage District review and approval as needed.
2. The applicant shall provide a to-scale plan and cross section of the tie-backs showing the starting depth, angle of downward depth, and the location of all existing public and private utilities.
3. As-builts of the construction tie-back rods shall be provided to the Engineering Services Division.
4. The applicant shall execute a hold harmless/encroachment agreement in favor of the City.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1053 **Agenda Date:** 6/23/2026 **Agenda #:** 2.

Resolution approving a grade crossing surface construction and maintenance agreement with Soo Line Railroad Company, d/b/a CPKC, at N. 115th Street north of Underwood Parkway, related to Contract 25-07 Watertown Plank Road & N. 115th Street Utilities & Paving

WHEREAS, Contract 25-07, Watertown Plank Road and N. 115th Street Utilities & Paving, includes construction of a multi-use path along the east side of N. 115th Street and a sidewalk along the west side of N. 115th Street; and

WHEREAS, the multi-use path, sidewalk, and roadway crossing at N. 115th Street north of Underwood Parkway require railroad crossing surface work to be performed by Soo Line Railroad Company, d/b/a CPKC; and

WHEREAS, the proposed Grade Crossing Surface Construction and Maintenance Agreement provides for construction of the crossing surfaces, related maintenance responsibilities, and an easement for the new multi-use path crossing.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the proper City officials are hereby authorized to enter into a Grade Crossing Surface Construction and Maintenance Agreement with Soo Line Railroad Company, d/b/a CPKC, for the railroad crossing at N. 115th Street north of Underwood Parkway related to Contract 25-07, Watertown Plank Road and N. 115th Street Utilities & Paving.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1185 **Agenda Date:** 6/23/2026 **Agenda #:** 3.

Resolution approving a sign encroachment request at 7603 W. State Street for Jake Schindler of Green Hill Metal Werks, LLC

WHEREAS, an application has been made to the Common Council of the City of Wauwatosa (hereinafter "City") by Jake Schindler of Green Hill Metal Werks, LLC, for the property at 7603 W. State Street, Wauwatosa, Wisconsin, (hereinafter "the Applicant") to encroach upon City property for a building-mounted sign projecting into the public right-of-way; and

WHEREAS, the proposed sign will project 48 inches into the right-of-way and provide a bottom clearance of 100 inches above the sidewalk surface; and

WHEREAS, the Common Council of the City of Wauwatosa is willing to grant to said Applicant a privilege for the aforesaid encroachment subject to execution of a hold harmless/encroachment agreement with the City.

NOW, THEREFORE, BE IT RESOLVED THAT the requested sign encroachment within the City right-of-way at 7603 W. State Street is hereby approved, subject to the Applicant executing a hold harmless/encroachment agreement in favor of the City prior to issuance of final building occupancy.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1186 **Agenda Date:** 6/23/2026 **Agenda #:** 4.

Resolution approving a sign encroachment at 6517 W. North Avenue for Jkayla Hodges of Sign Effectz, Inc.

WHEREAS, an application has been made to the Common Council of the City of Wauwatosa by Jkayla Hodges of Sign Effectz Inc. for an encroachment within the public right-of-way at 6517 W. North Avenue for a sign attached to the building and projecting into the right-of-way; and

WHEREAS, the proposed sign will project 30 inches into the public right-of-way and will maintain a clearance of 9 feet, 10 inches above the sidewalk surface; and

WHEREAS, staff recommends approval subject to execution of a hold harmless agreement.

NOW, THEREFORE, BE IT RESOLVED that the Common Council of the City of Wauwatosa hereby approves the requested sign encroachment within the public right-of-way at 6517 W. North Avenue, subject to the applicant executing a hold harmless/encroachment agreement in favor of the City prior to issuance of a permanent sign permit.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1187 **Agenda Date:** 6/23/2026 **Agenda #:** 5.

Resolution approving a contract modification for Contract 26-01, Flood Damage Maintenance Repairs, in the amount of $41,324.60

WHEREAS, a contract modification has been prepared for Contract 26-01, Flood Damage maintenance repairs, Project No. 9906C12; and

WHEREAS, the contract modification provides for additional work associated with adding speed humps, signing, and pavement marking at Hart Park; and

WHEREAS, the amount of the contract modification is $41,324.60, increasing the contract total from $223,362.00 to $264,686.60; and

WHEREAS, funding for the contract modification is part of the traffic calming project fund.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the contract modification for Contract 26-01, Flood Damage maintenance repairs, Project No. 9906C12, in the amount of $41,324.60 is hereby approved.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1188 **Agenda Date:** 6/23/2026 **Agenda #:** 6.

Resolution approving the execution of a Green Infrastructure Funding Agreement (G98005P192) with the Milwaukee Metropolitan Sewerage District (MMSD) for a Green Alley project at N. 102nd Street and North Avenue, Project 10262

WHEREAS, the Milwaukee Metropolitan Sewerage District has created a funding mechanism to assist municipalities in installing green infrastructure practices; and

WHEREAS, the City of Wauwatosa proposes to construct a Green Alley at N. 102nd Street and North Avenue, Project 10262, including replacement of standard concrete with permeable pavers; and

WHEREAS, MMSD will provide funding assistance in the amount of $245,741.44 for the project.

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa that the proper City officials are hereby authorized to execute Green Infrastructure Funding Agreement G98005P192 with the Milwaukee Metropolitan Sewerage District for Project 10262 in the amount of $245,741.44.

By: Board of Public Works

Recommendation: Approve 6-0

File #: 26-1189 **Agenda Date:** 6/23/2026 **Agenda #:** 7.

Resolution accepting the Wisconsin Department of Natural Resources (WDNR) 2025 Compliance Maintenance Annual Report (CMAR) for the City's wastewater collection system

City of Wauwatosa
Wisconsin Department of Natural Resources
NR 208 - Compliance Maintenance Resolution
2026

WHEREAS, the City of Wauwatosa is required under its Wisconsin Pollution Discharge Elimination System (WPDES) permit issued by the Wisconsin Department of Natural Resources to file the CY 2025 Compliance Maintenance Annual Report (CMAR) for its wastewater collection system under Wisconsin Administrative Code NR 208; and

WHEREAS, it is necessary to acknowledge that the governing body has reviewed the Compliance Maintenance Annual Report (CMAR); and

WHEREAS, it is necessary to provide recommendations or an action response plan for all individual CMAR section grades of "C" or less and/or an overall grade point average less than 3.00; and

WHEREAS, after receiving an "A" on the one credit financial management section and an "A" on the three-credit collection system section, the City of Wauwatosa's overall grade point average is 4.0;

NOW THEREFORE, BE IT RESOLVED by the Common Council of the City of Wauwatosa to accept the CY 2025 Compliance Maintenance Annual Report (CMAR) and that the following recommendations and actions be taken to address and correct problems and deficiencies of the collection system as identified in the CMAR in order to maintain compliance with effluent limitations and permit conditions and eliminate Sanitary Sewer Overflows (SSO):

1) Continue with the City's Inflow and Infiltration elimination program.
2) Continue with its current sanitary sewer collection system operational procedures and make improvements where necessary.
3) Initiate additional engineering studies in areas where there may be inadequate capacity.
4) Perform orderly and timely inspection, maintenance and repairs.
5) Add newly identified troubled spots to the monthly maintenance schedule.
6) Complete manhole and mainline improvements as identified in the Capital Improvements Program.

BE IT FURTHER RESOLVED THAT the Director of Public Works or his representative is hereby designated to act as the City of Wauwatosa's authorized representative for administering and submitting the Compliance Maintenance Annual Report and that he is hereby directed to make that submittal.

By: Board of Public Works

Recommendation: Approve 6-0

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Community Affairs Committee

Mtg Date	Item	Sponsor	Leg File #
TBD	Consideration of designation of sister city for the City of Wauwatosa	McBride	
3/1/2027	Review Zoning Code Sections 24.11.060B & C related to Residential and Commercial Vehicle Parking Regulations in Residential Districts		

*Memo received

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Financial Affairs Committee

Mtg Date	Item	Sponsor	Leg File #
7/21/2026	Presentation by the Wauwatosa Health Department related to City Social Worker Updates	Health	
7/21/2026	Review of Financial Resiliency Policy	Finance	26-1055
7/21/2026	Recommendation for Adoption of an Innovation Grant Spending Policy	Finance	26-1057
9/8/2026	Report from the Finance Department on the 2026 Second Quarter General Fund Forecast	Finance	26-0066
9/8/2026	Presentation of the audited 2025 Annual Comprehensive Financial Report	Finance	26-0057
9/15/2026	Consideration of recommendation by Finance Director for approval of 2026 General Obligation Notes	Finance	26-0058
10/13/2026	Review of the 2027 proposed budget		26-0060
10/13/2026	Consideration of Wauwatosa Village Business Improvement District 2027 operating plan, budget, and proposed assessments		26-0064
10/13/2026	Consideration of EastTown Business Improvement District 2027 operating plan, budget, and proposed assessments		26-0065
10/20/2026	(Cont.) Review of the 2027 proposed budget		26-0060
11/4/2026	Review and consideration of approval of a 5-year capital plan and 2027 capital budget		26-0062
11/10/2026	(Cont.) Review and consideration of approval of a 5-year capital plan and 2027 capital budget		26-0062
12/1/2026	Report from the Finance Department on the 2026 Third Quarter General Fund Forecast	Finance	26-0067

*Memo received

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Government Affairs Committee

Mtg Date	Item	Sponsor	Leg File #
7/21/2026	Consideration of application for Special Event Permit - Applicant: Wauwatosa Village BID, Event Name: Tosa Fest, Location: Village of Wauwatosa - State Street, Harwood Avenue, Underwood Avenue, Dates/Time: September 11, 2026 from 5 p.m. - 10 p.m. and September 12, 2026 from 11 a.m. - 10 p.m.	City Clerk	26-0996
7/21/2026	Consideration of application for new Class "B" Beer and Reserve "Class B" Liquor license by ALM MW, LLC, d/b/a Renaissance Hotel Milwaukee, 2300 N. Mayfair Road, Chantal Bancher - Agent, for the period ending June 30, 2027	City Clerk	26-1191
7/21/2026	Review and consideration of updated special event ordinance and establishing a provision for a temporary DORA	Municipal Services, Administration, and PD	26-1065
7/21/2026	Consideration of applications for temporary extesnion of licensed premises by 6930 Bar LLC d/b/a Walter's on North, 6930 W. North Avenue for events on August 1, 2026 and September 19, 2026	City Clerk	26-1193
7/21/2026	Consideration of designation of official City newspaper	City Clerk	26-1192
7/21/2026	Consideration of application for Fireworks User Permit by Padi Kong, Wauwatosa School District, for the property address located at 11400 W. Center Street for Tosa West Homecoming on October 2, 2026 from 9:15 PM - 9:40 PM	City Clerk	26-1069
7/21/2026	Discussion and consideration of the Aldermanic vacancy inDistrict 6 pursuant to secion 2.04.020	City Clerk	
10/20/2026	Review and consideration of approval of the 2027 Common Council meeting calendar	City Clerk	
TBD	Consideration of adoption of an ordinance related to full-service retail outlets	City Clerk	25-1290

*Memo received

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Transportation Affairs Committee

Mtg Date	Item	Sponsor	Leg File #
7/21/2026	*Consideration of a trial overnight parking permit program to replace punitive overnight parking citations	Phillips	26-1178
7/21/2026	Consideration of a reduced speed limit on Lloyd Street	Engineering	
Jul-26	Various parking and intersection control items	Engineering	

*Memo received

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Committee of the Whole

Mtg Date	Item	Sponsor	Leg File #
7/21/2026	City Hall/Library Complex Presentation	Administration/ Public Works	
7/28/2026	Department of Public Works Annual Report	Department	
September	Overview of the 2027 Operating Budget	Finance	
10/27/2026	Best practices for helping residents request customer service	Administration	
10/27/2026	Milwaukee Metro Fire update	Administration	
Nov/Dec	TIFs – review of active districts, and economic investment policy	Finance	
Nov/Dec	Lead Lateral Replacement update	Finance	

*Memo received

FUTURE COUNCIL COMMITTEE AGENDA ITEMS

Common Council

Mtg Date	Item	Sponsor	Leg File #
10/27/2026	Public Hearing on the 2027 Operating Budget		
11/17/2026	Resolution approving the 2027 Operating and Capital Budgets		