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.

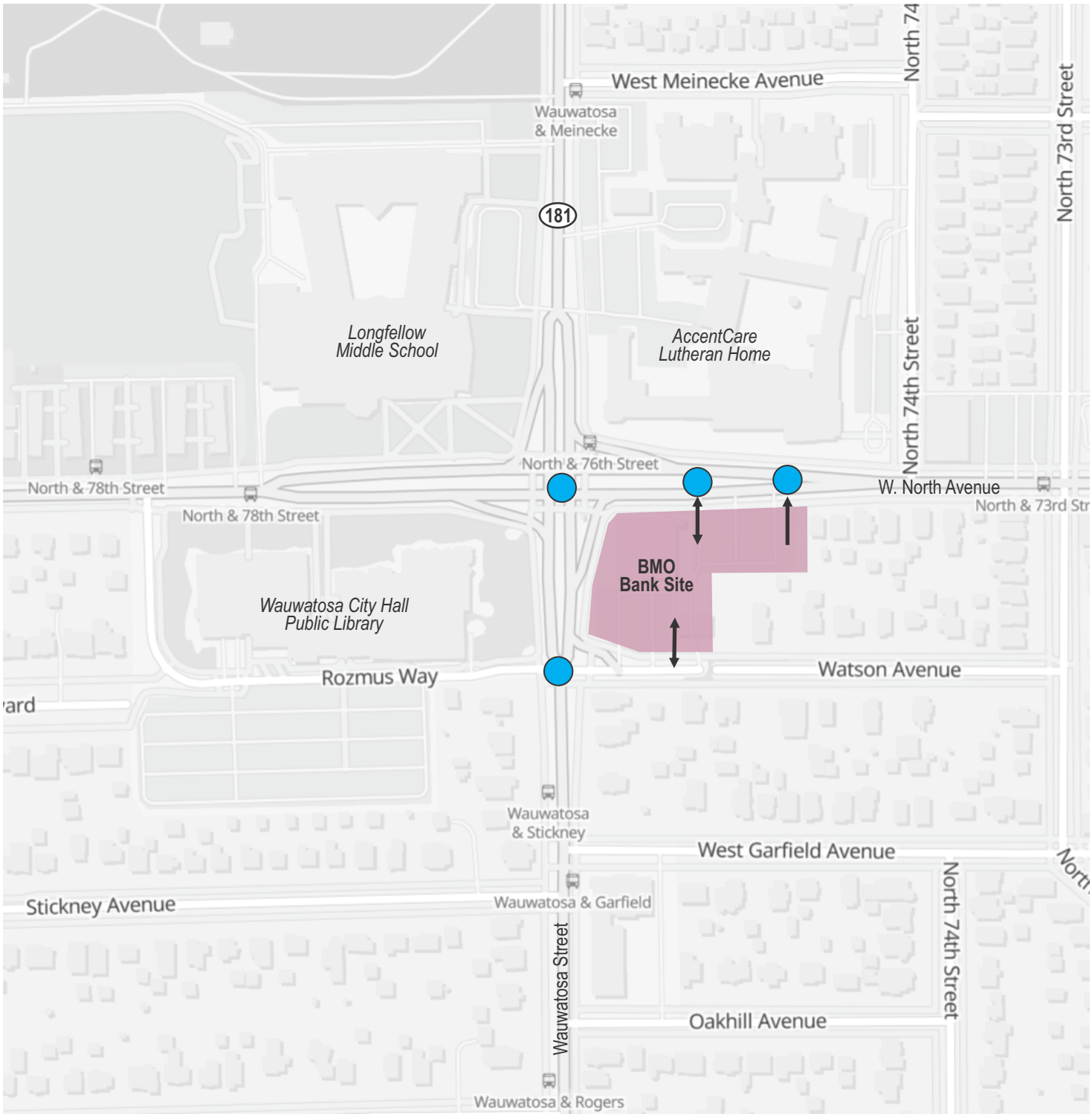
- Remove the four existing BMO Bank South Site Driveways to Watson Avenue and replace with a single driveway as shown on the proposed plan for the reconstructed site.

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.

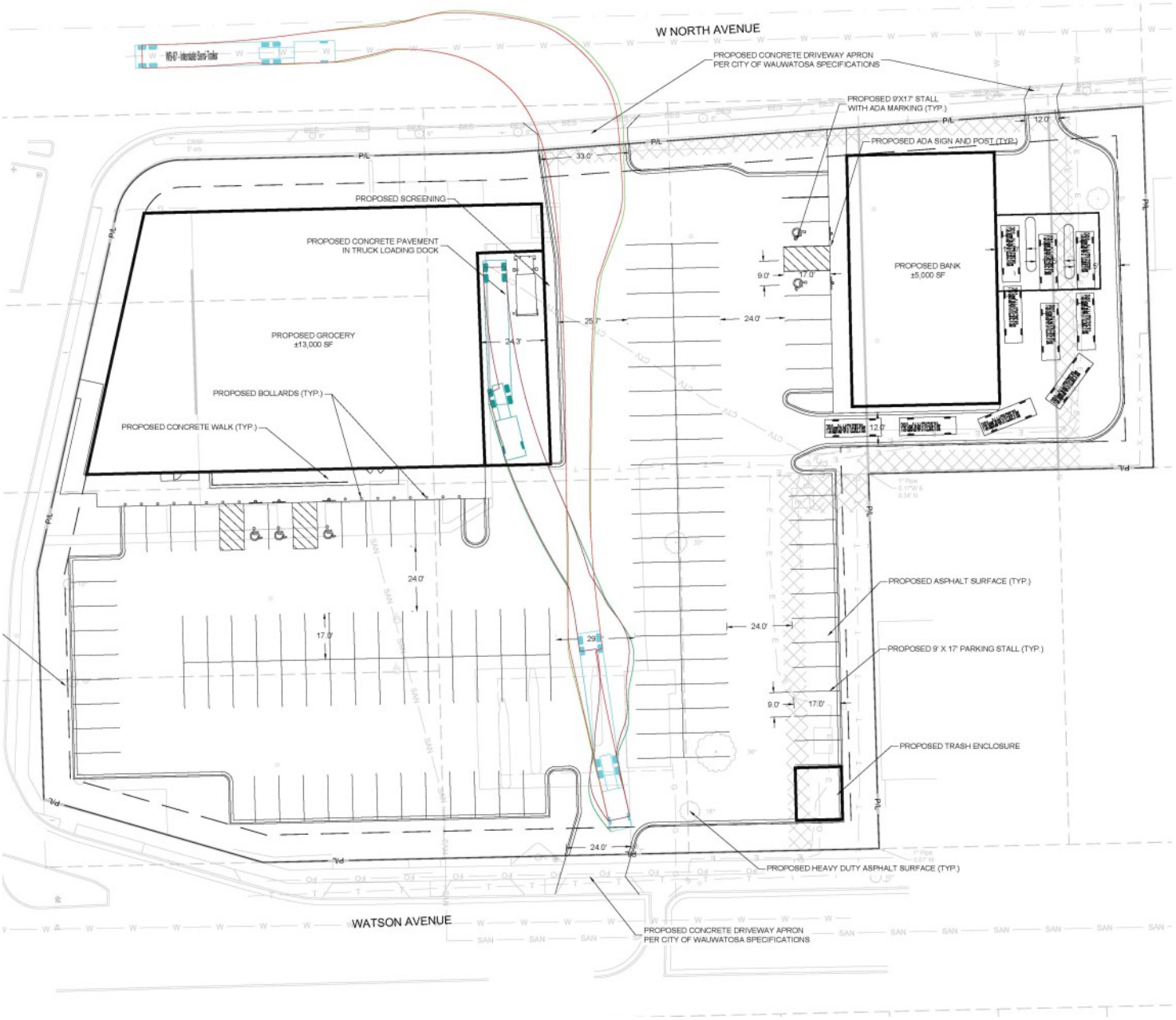
3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 1
PROJECT LOCATION MAP & STUDY INTERSECTIONS

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

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EXHIBIT 2
BMO BANK REDEVELOPMENT PLAN

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

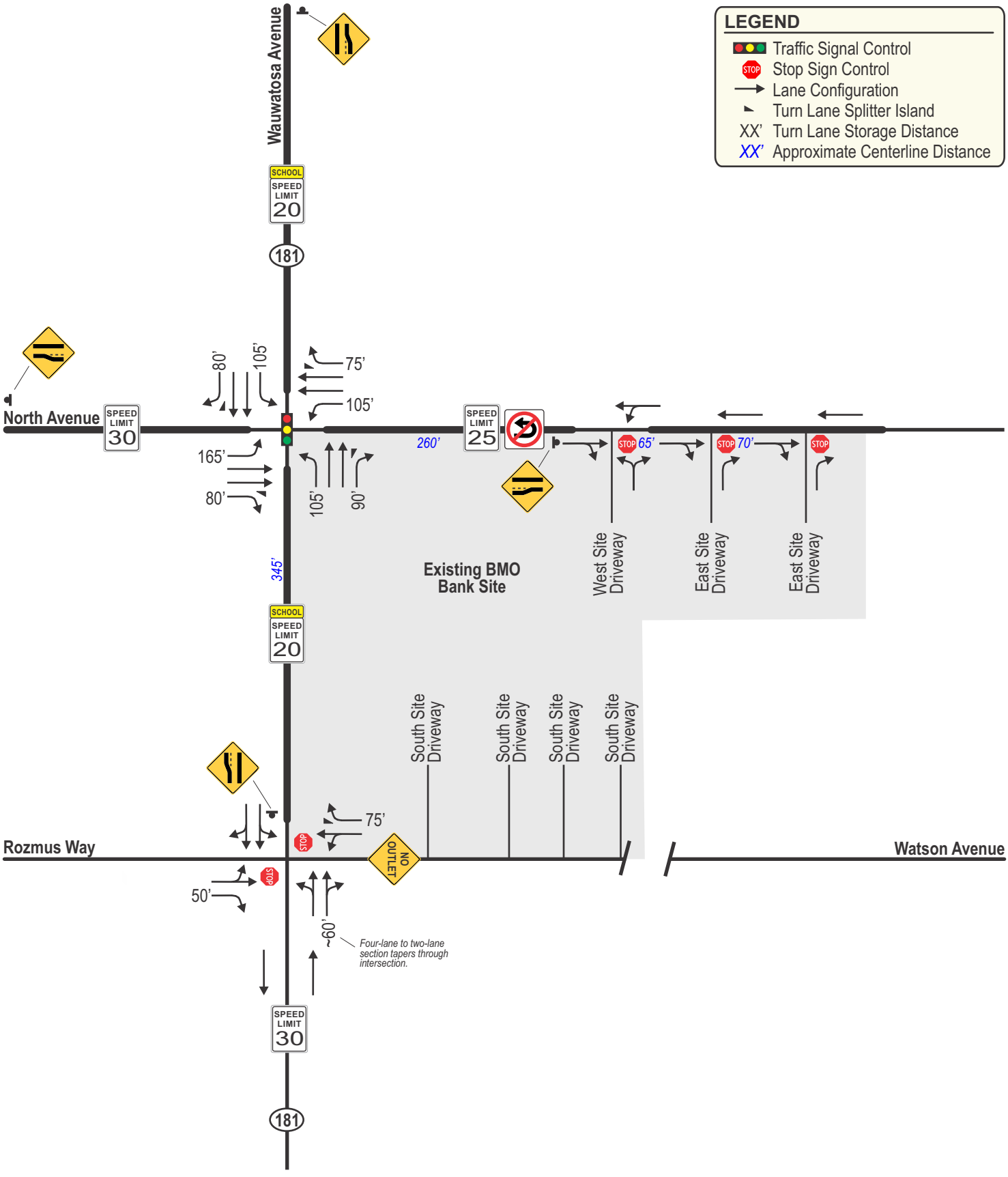

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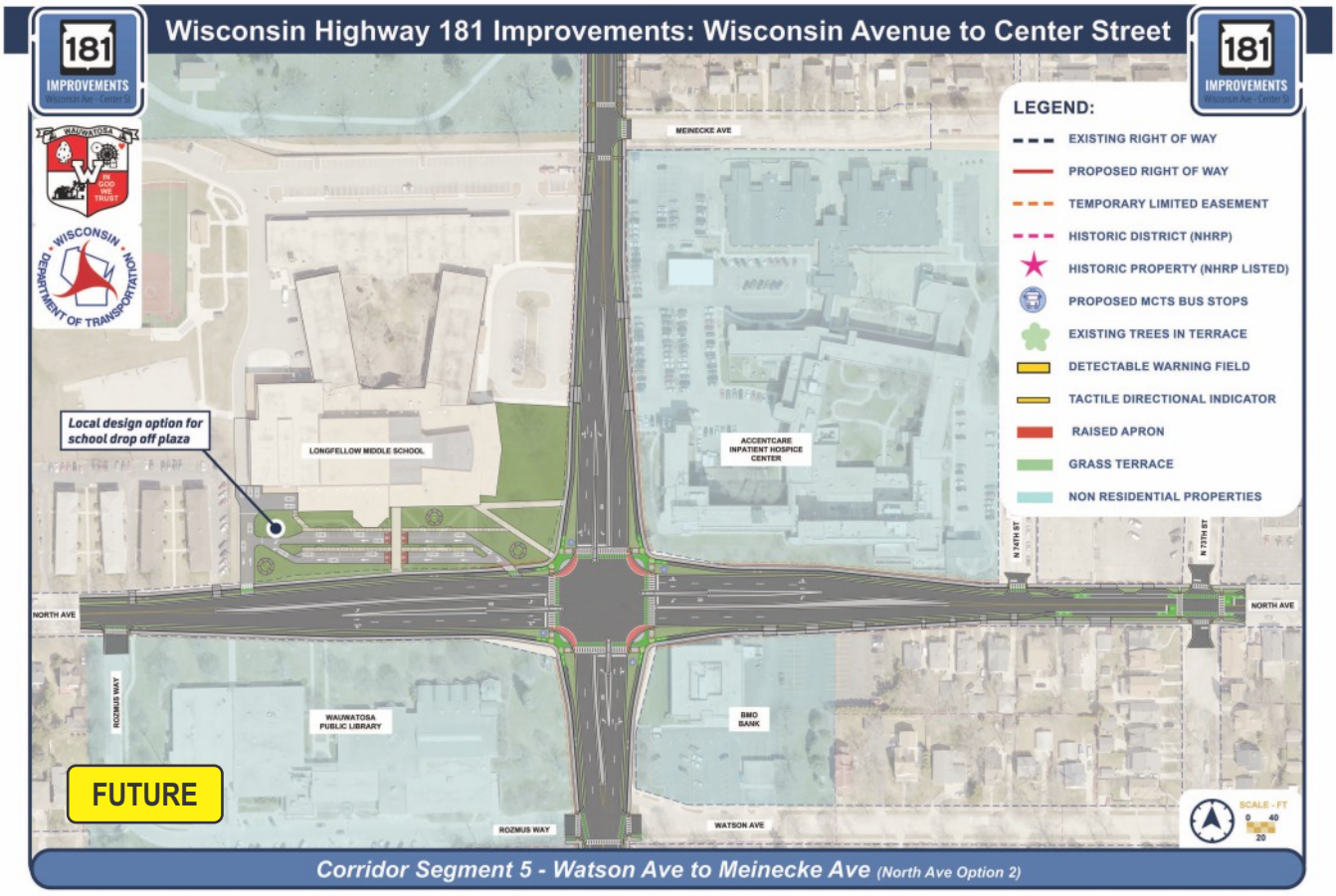
EXHIBIT 3
EXISTING TRANSPORTATION SYSTEM

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 4
EXISTING & FUTURE TRANSPORTATION SYSTEM AERIAL GRAPHICS

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

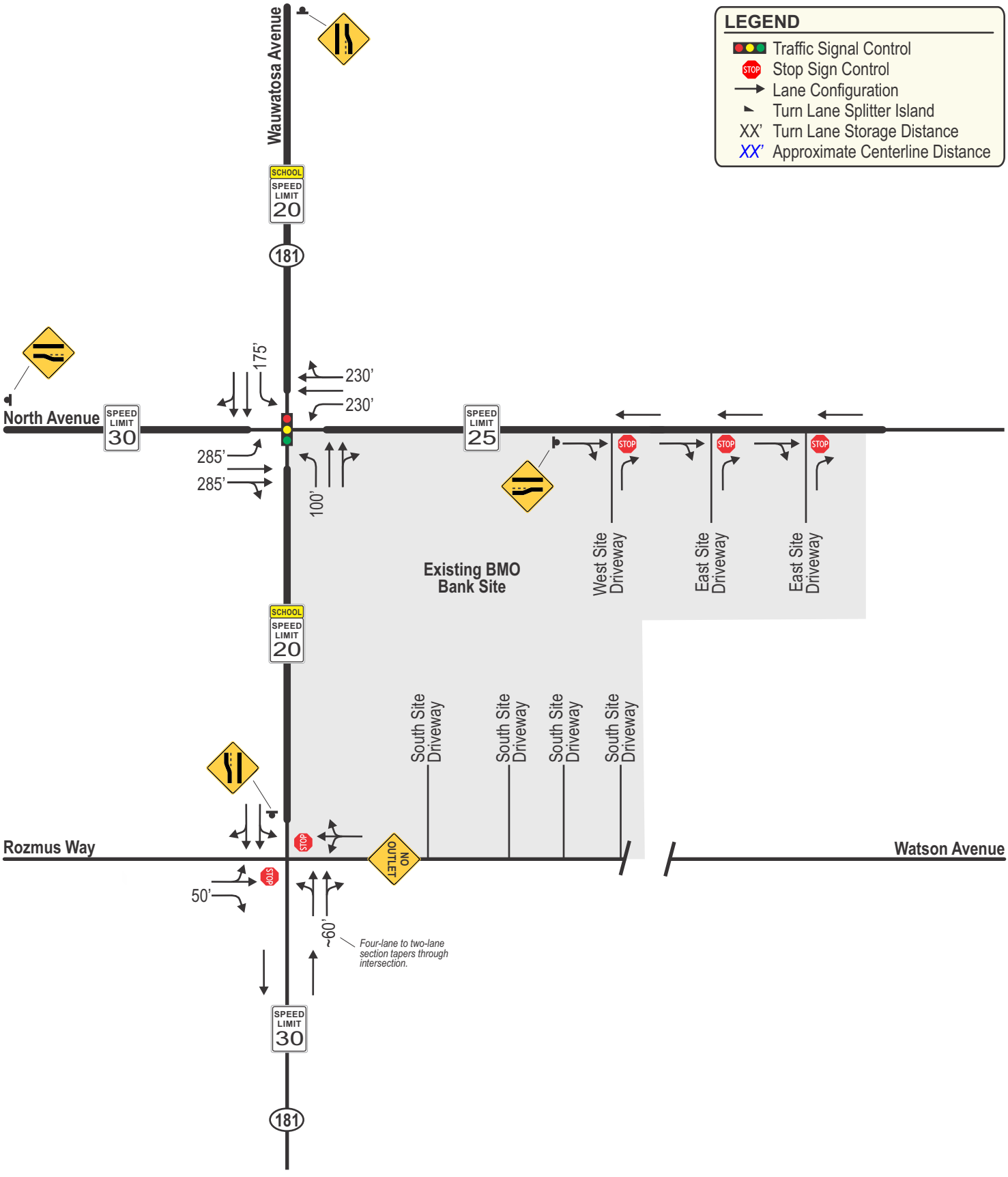

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EXHIBIT 5
FUTURE TRANSPORTATION SYSTEM
WISDOT STH 181 IMPROVEMENT PROJECT

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

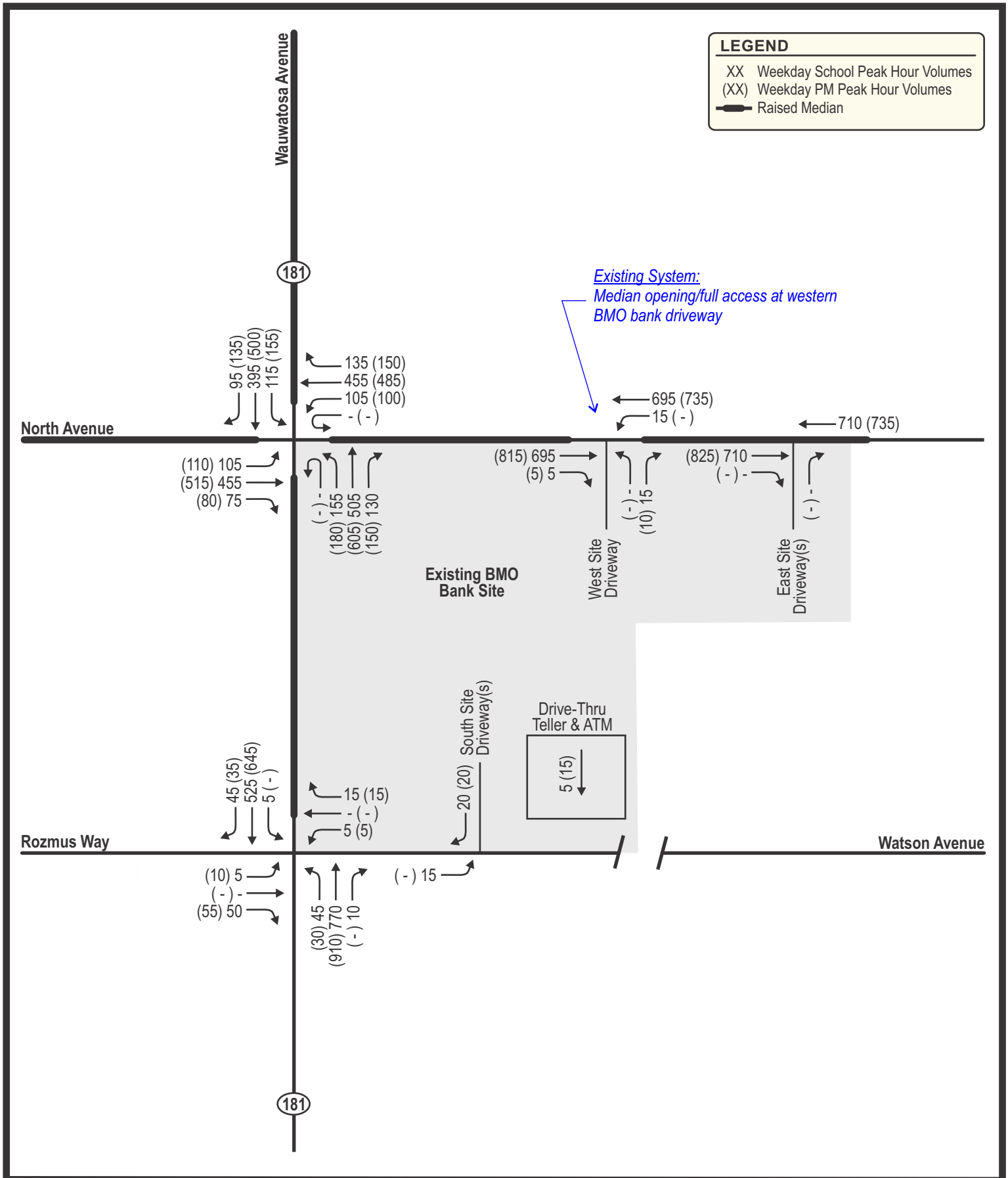

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EXHIBIT 6
EXISTING TRAFFIC VOLUMES
EXISTING TRANSPORTATION SYSTEM

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

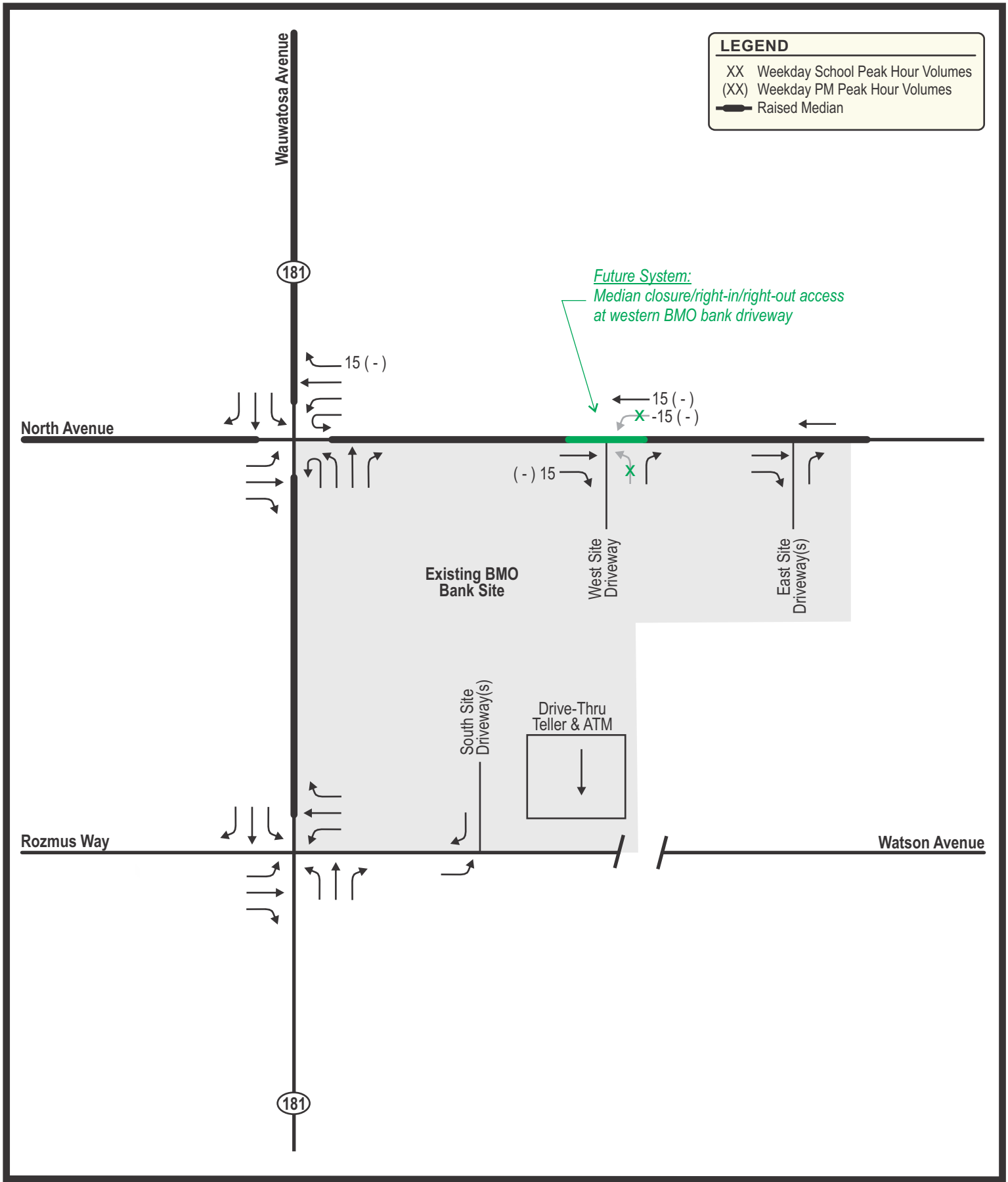

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EXHIBIT 7
REROUTED EXISTING BANK TRIPS - EXISTING SITE PLAN
FUTURE TRANSPORTATION SYSTEM

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

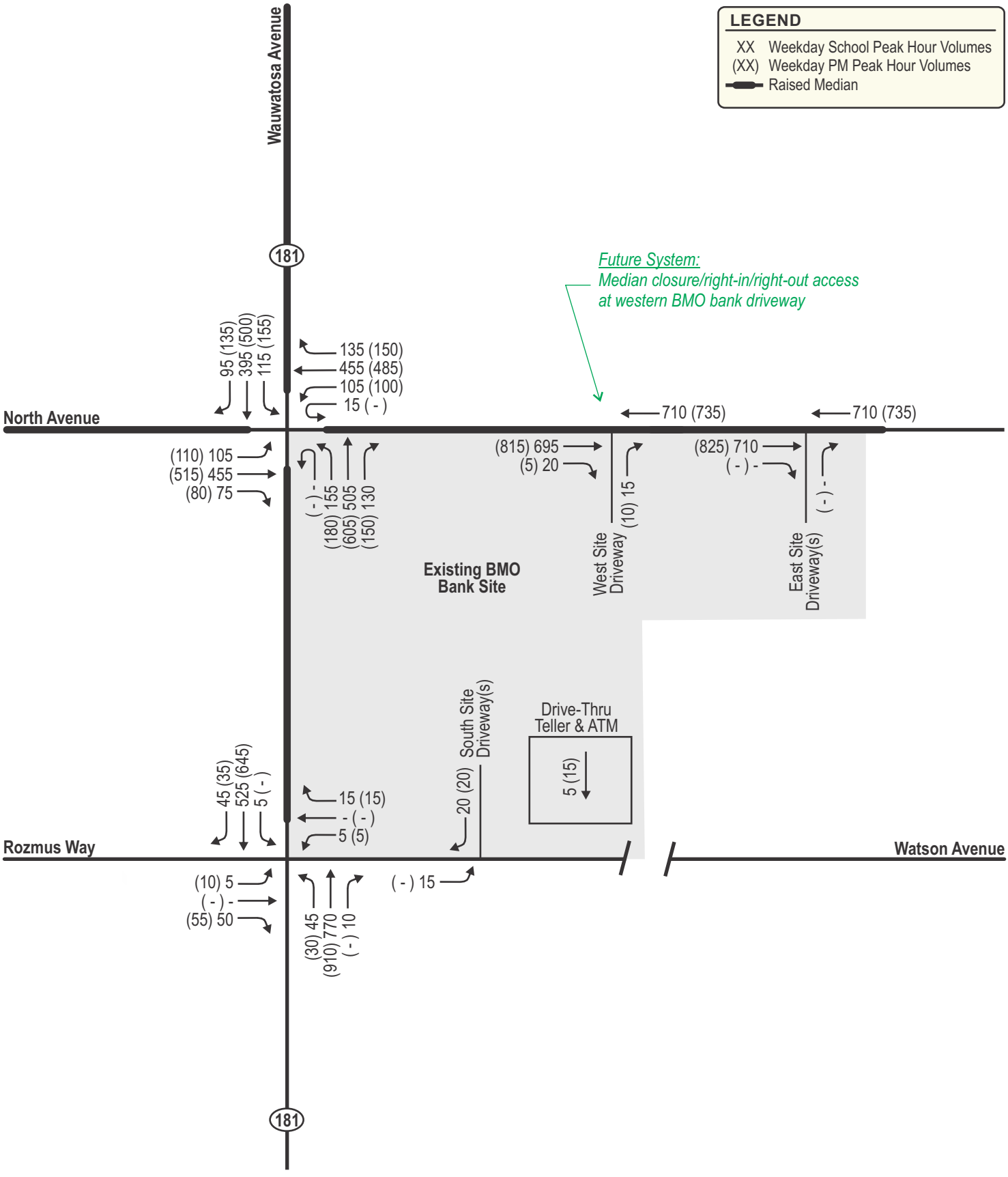

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EXHIBIT 8
EXISTING TRAFFIC VOLUMES
FUTURE TRANSPORTATION SYSTEM

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

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

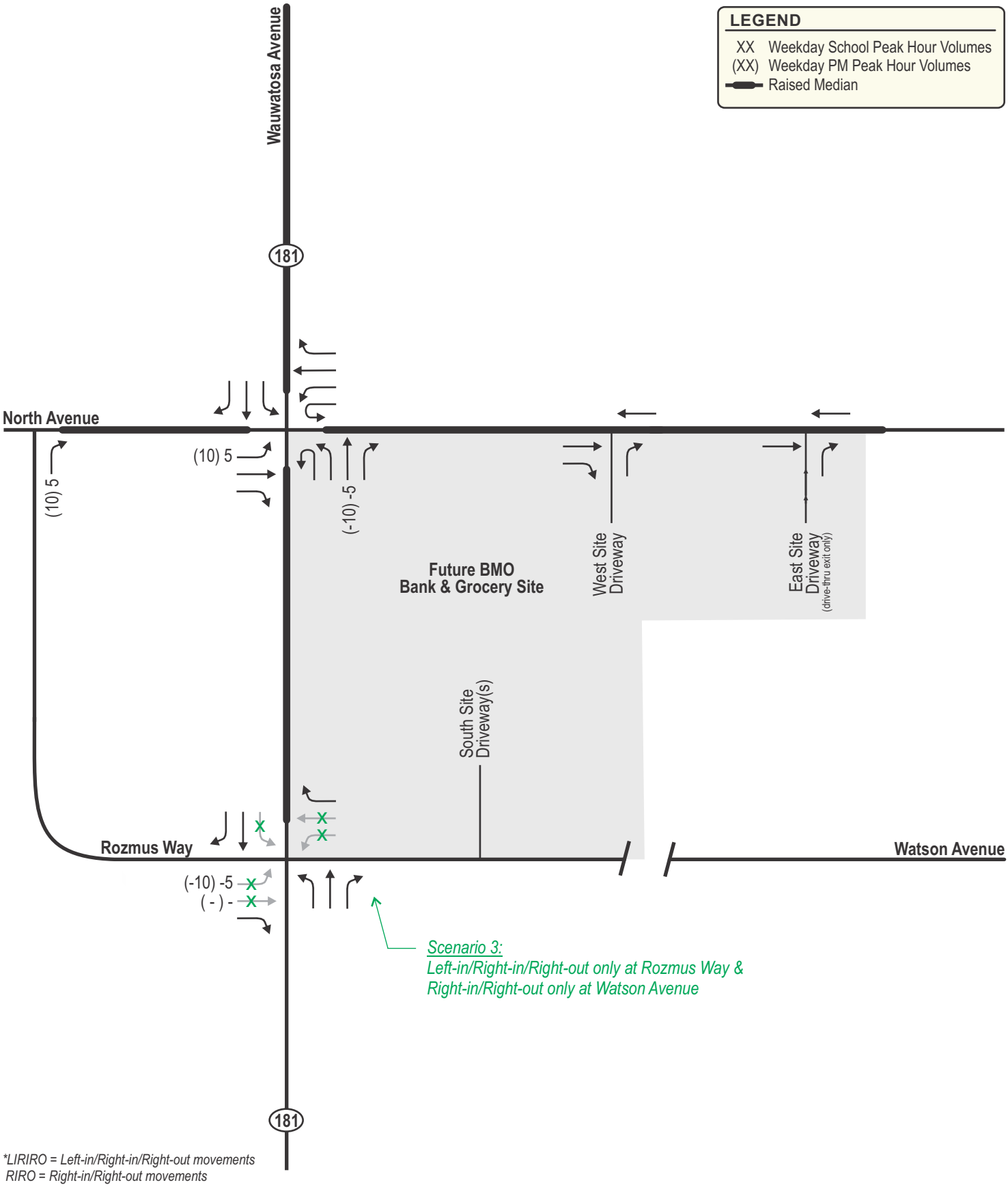
Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Wauwatosa Avenue & Rozmus Way/Watson Avenue *Stop Sign Control (EB/WB)*		*Lanes->*	*<1*		*1*	*<1>*			*1*	*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.



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

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3644: 06-12-2026

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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

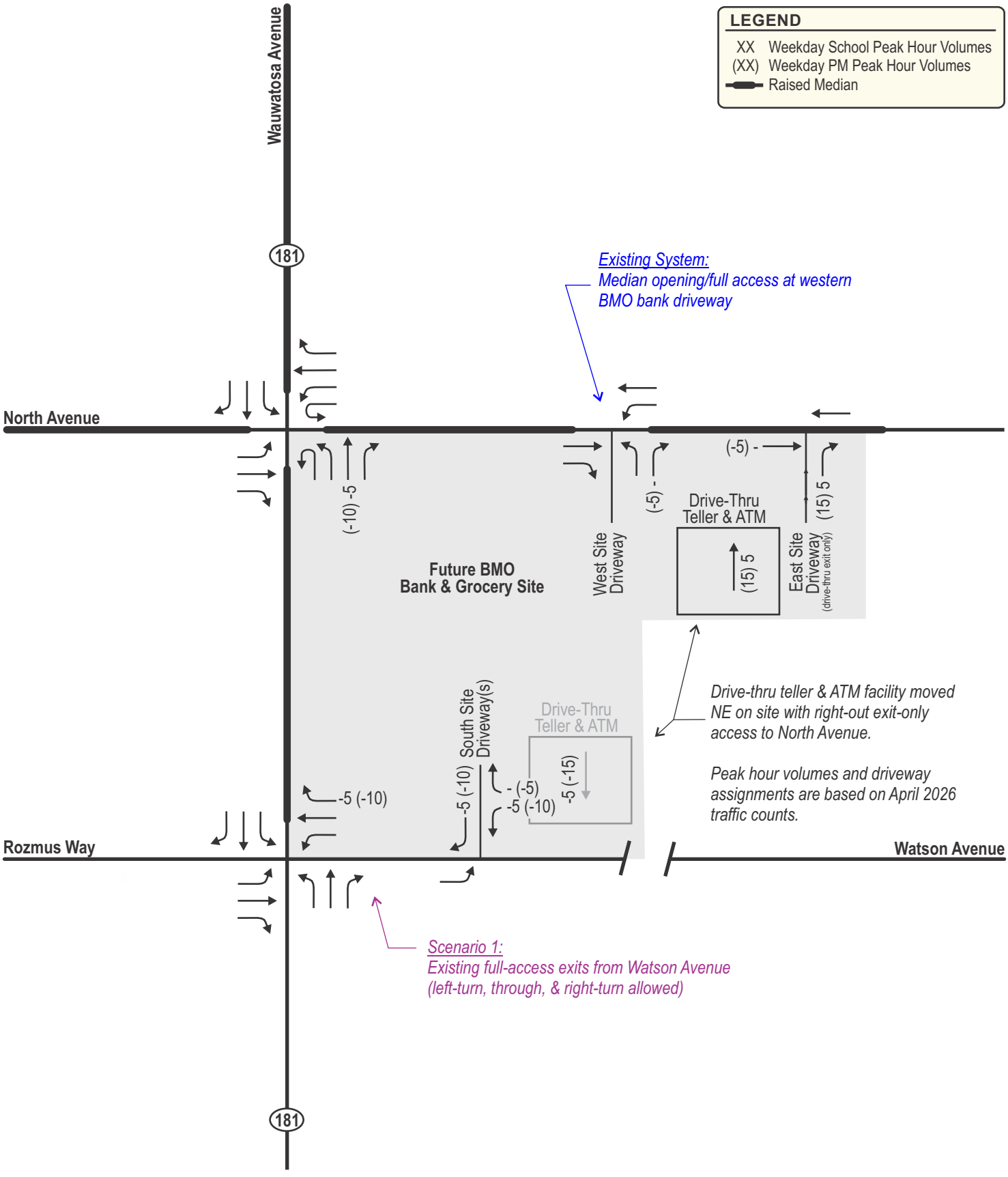

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EXHIBIT 12A
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN EXISTING TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

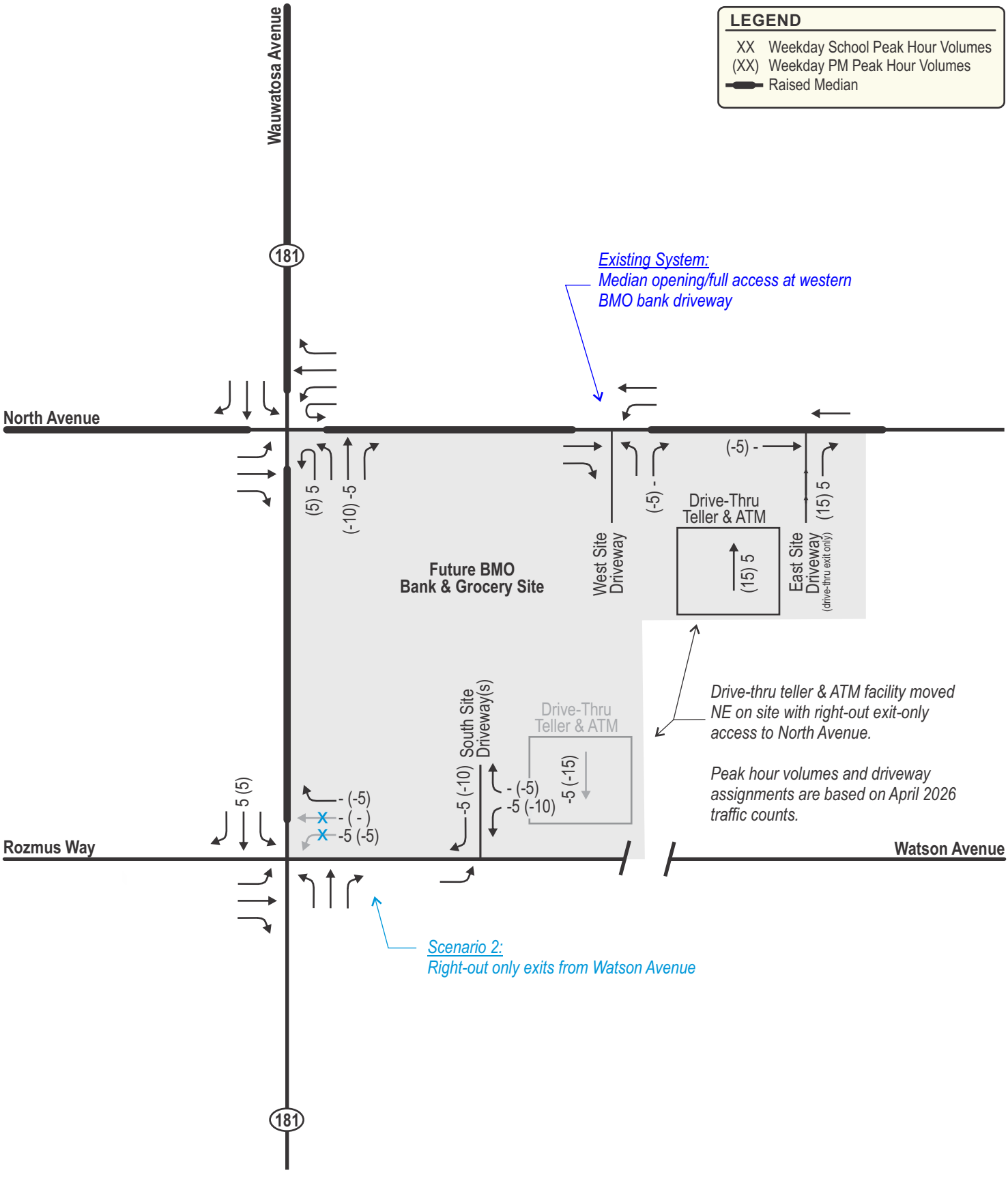

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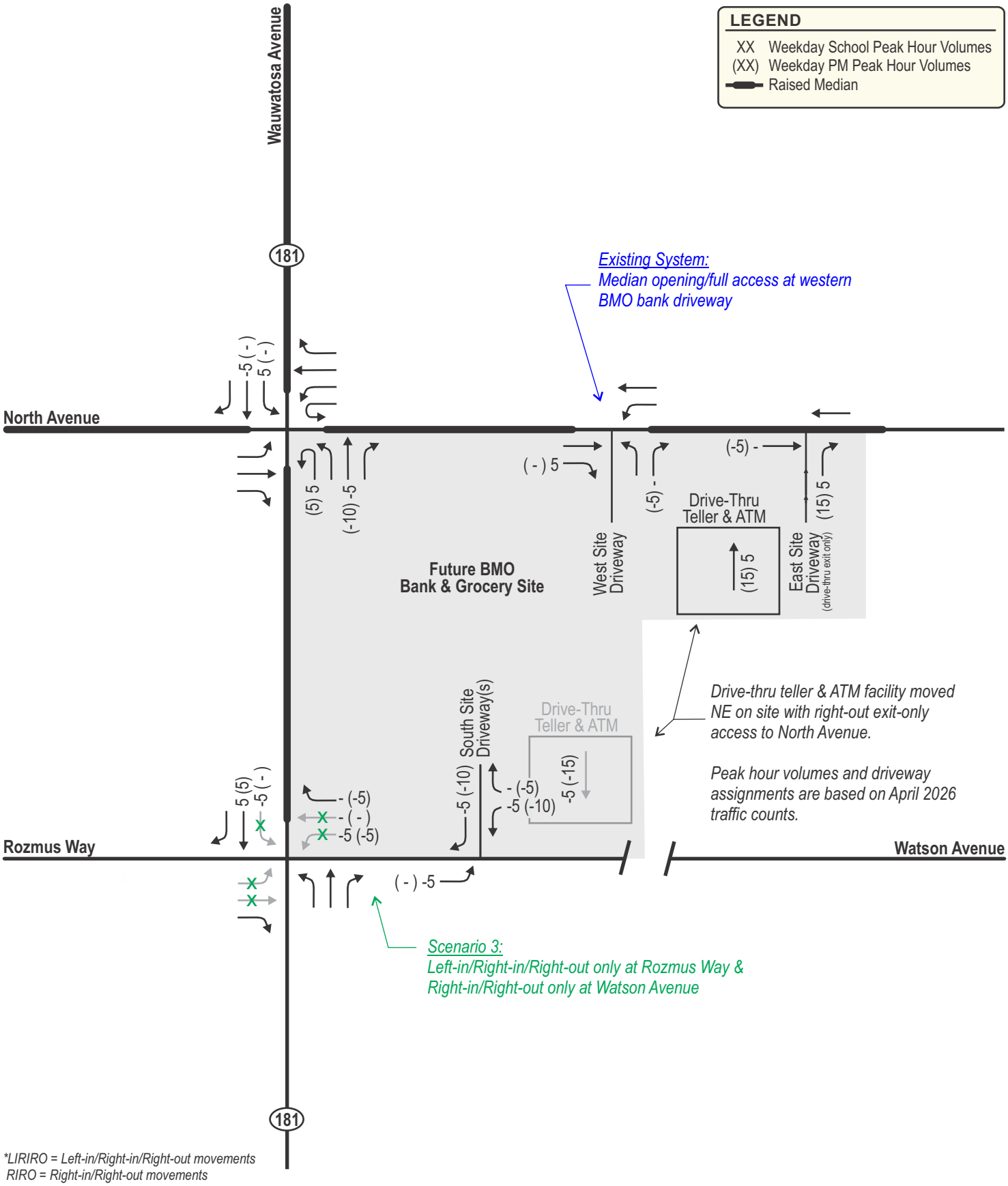
EXHIBIT 12B
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

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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, WISCONSIN

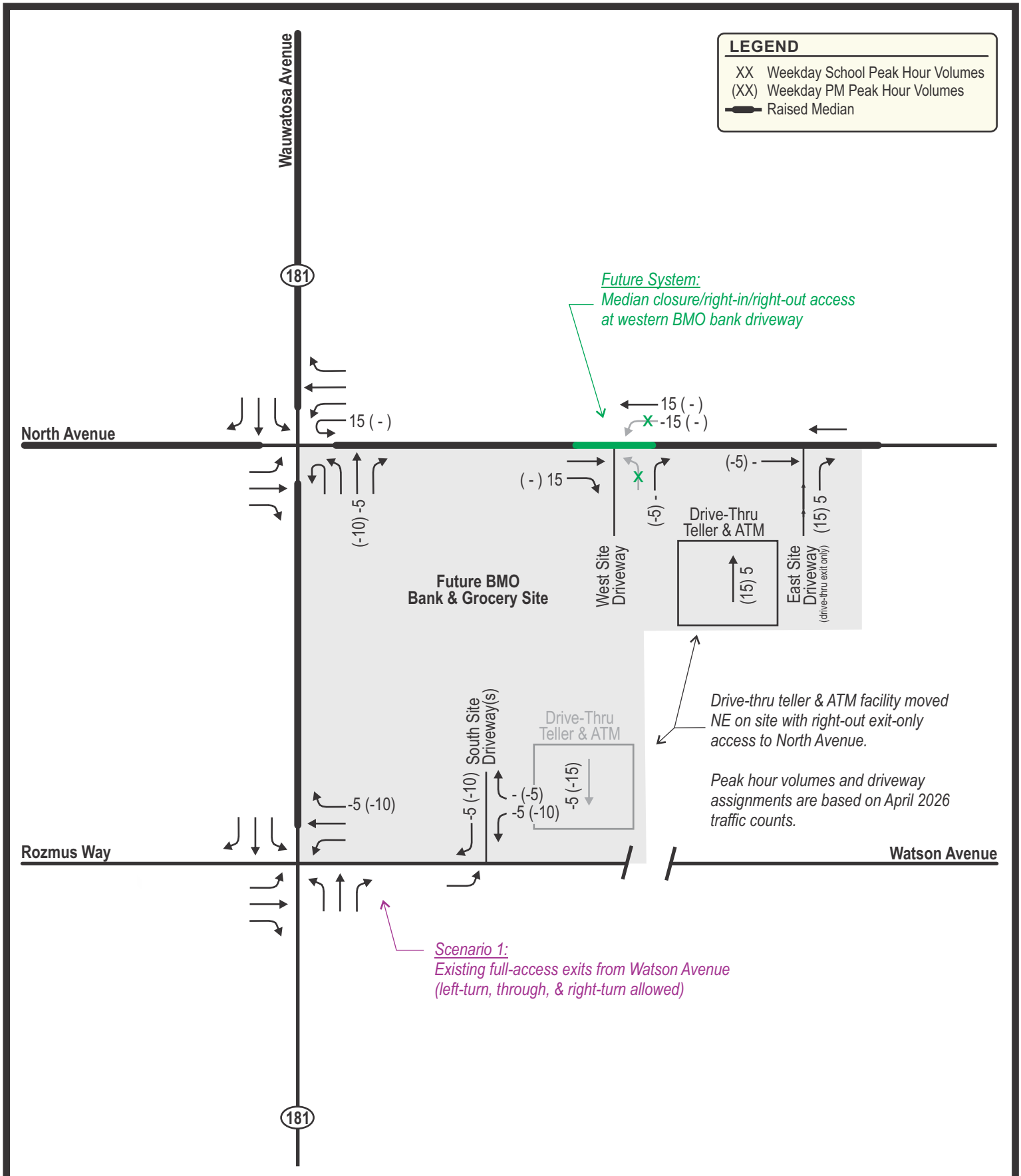

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EXHIBIT 12D
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

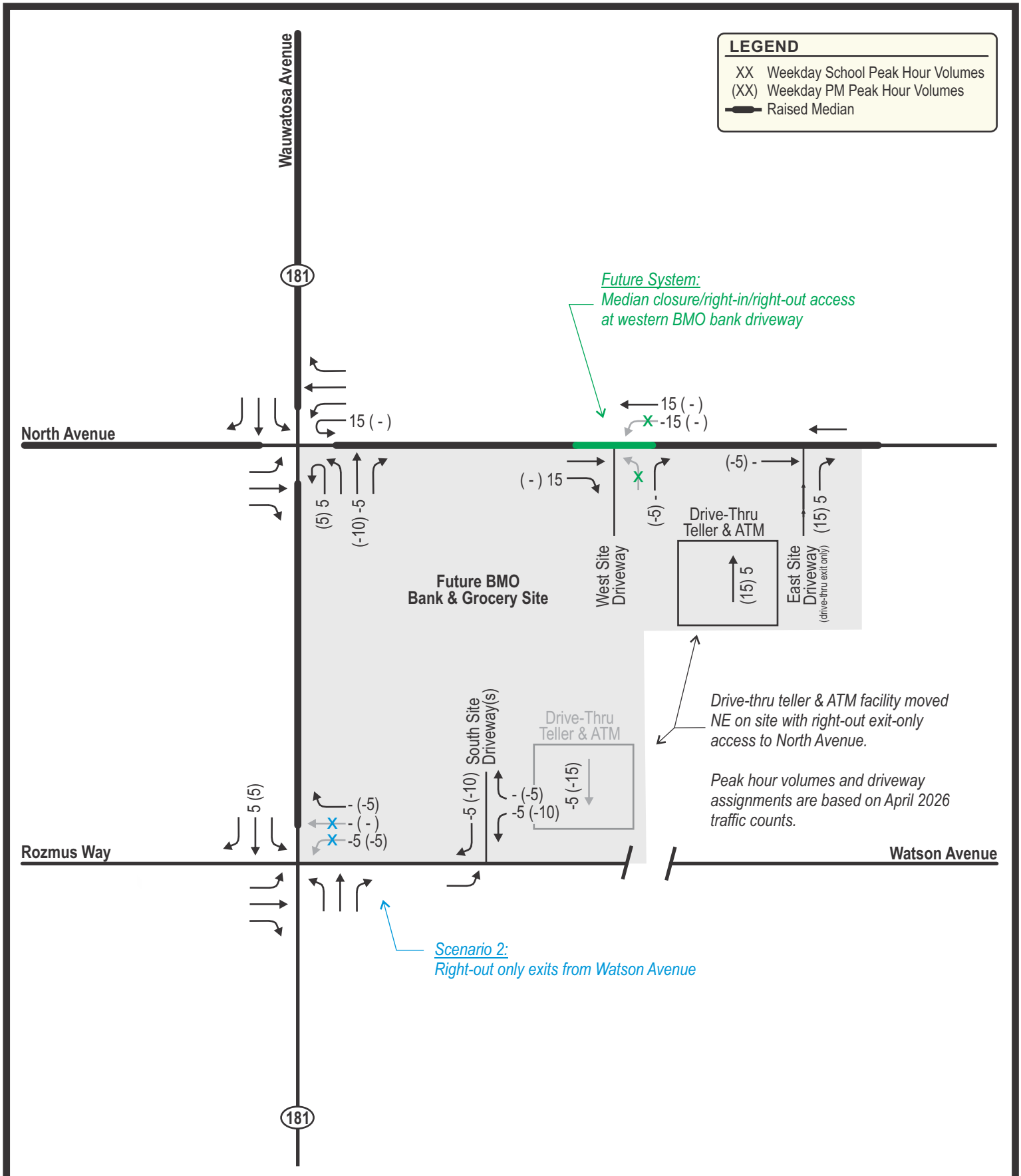

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EXHIBIT 12E
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

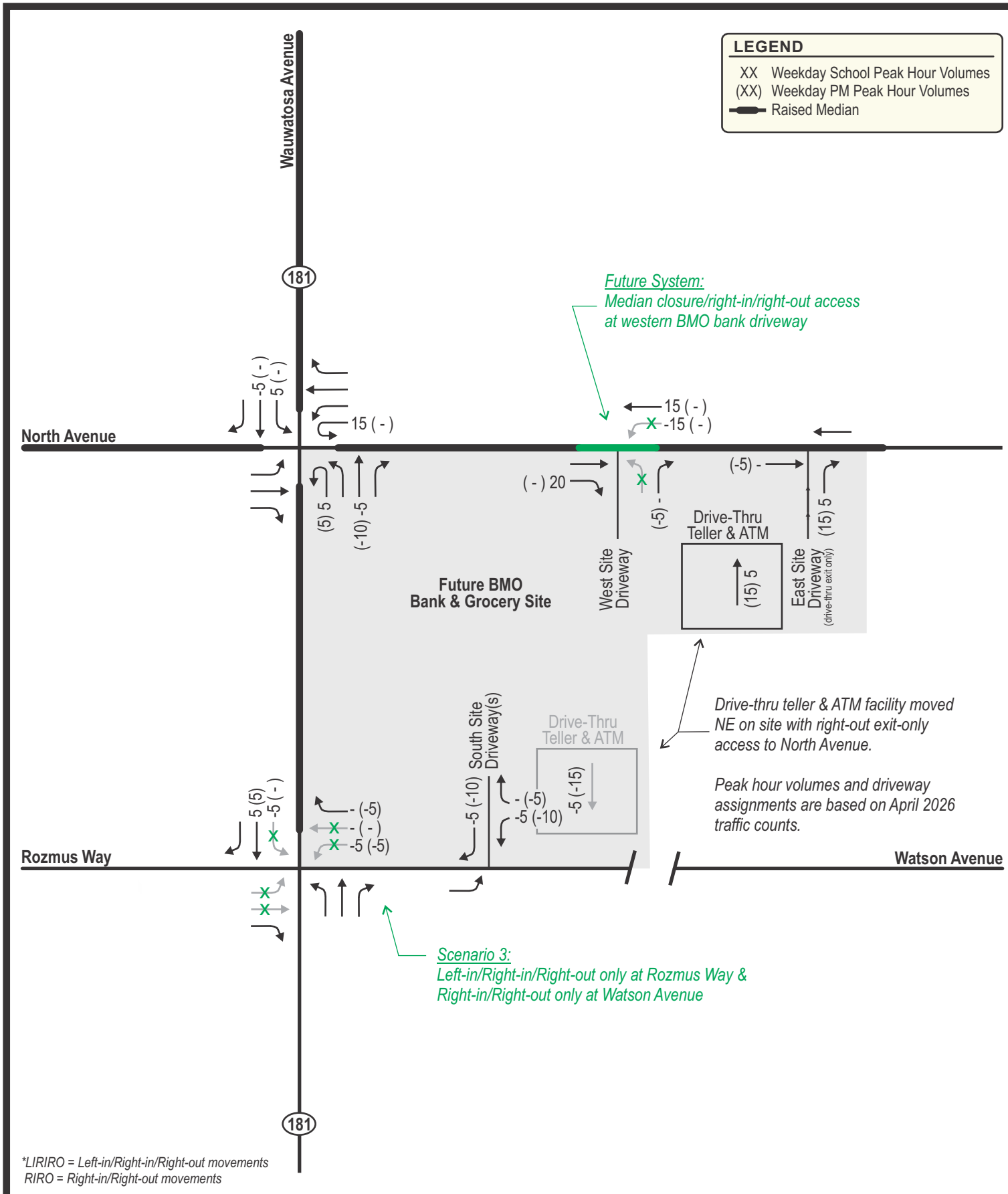

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EXHIBIT 12F
REROUTED EXISTING BANK TRIPS - PROPOSED SITE PLAN FUTURE TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

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.*

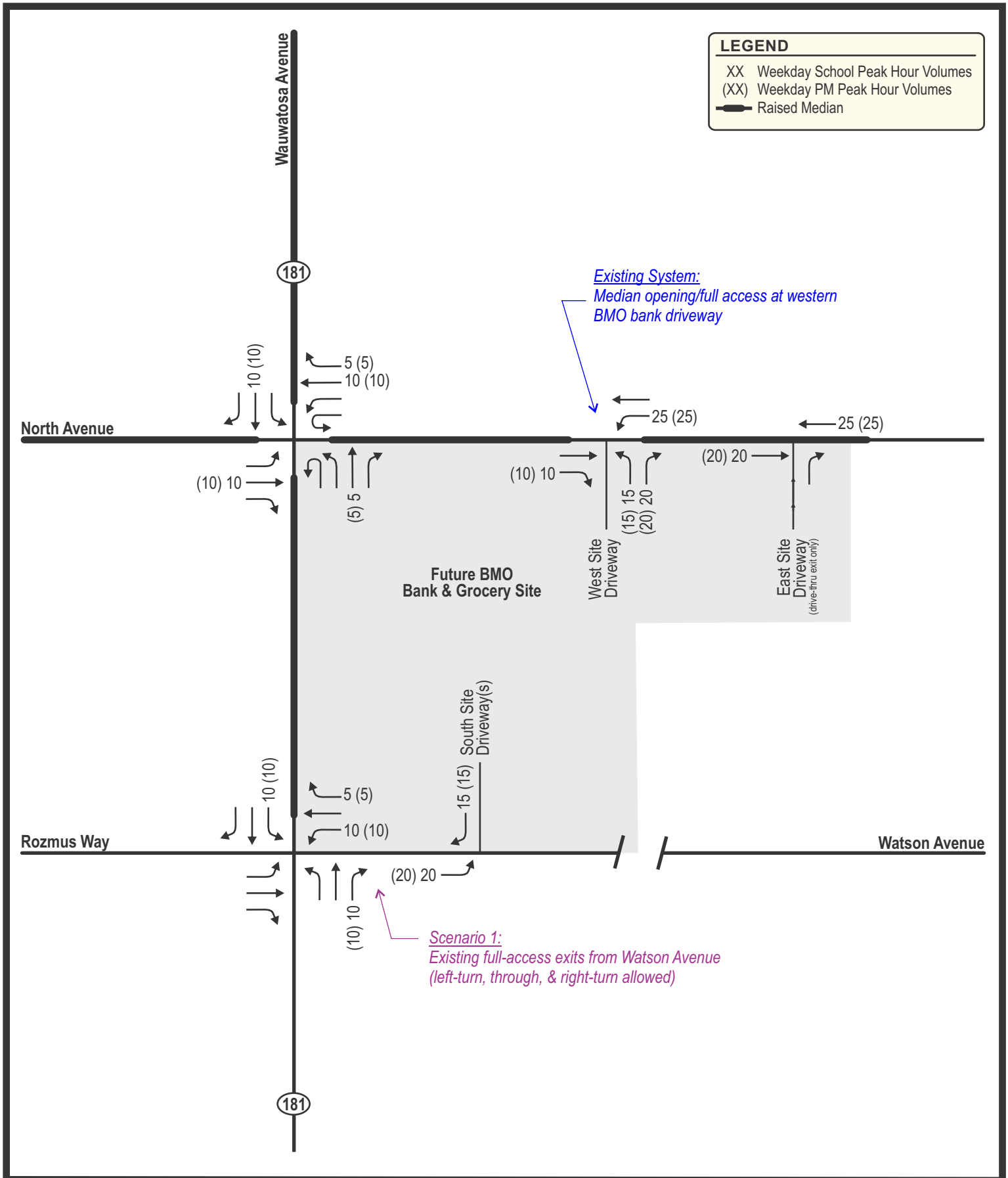

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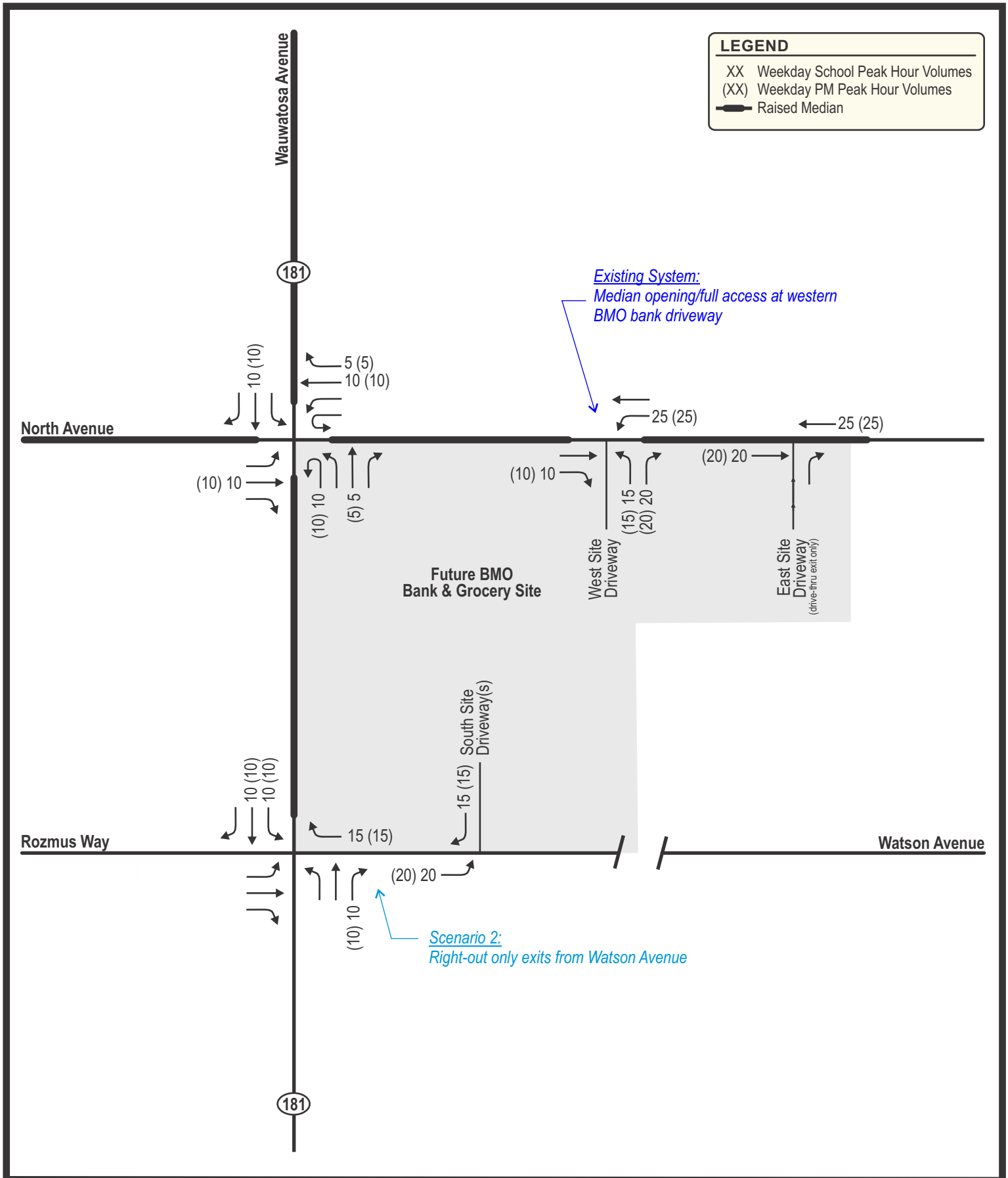
EXHIBIT 14A
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



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3644: 06-12-2026

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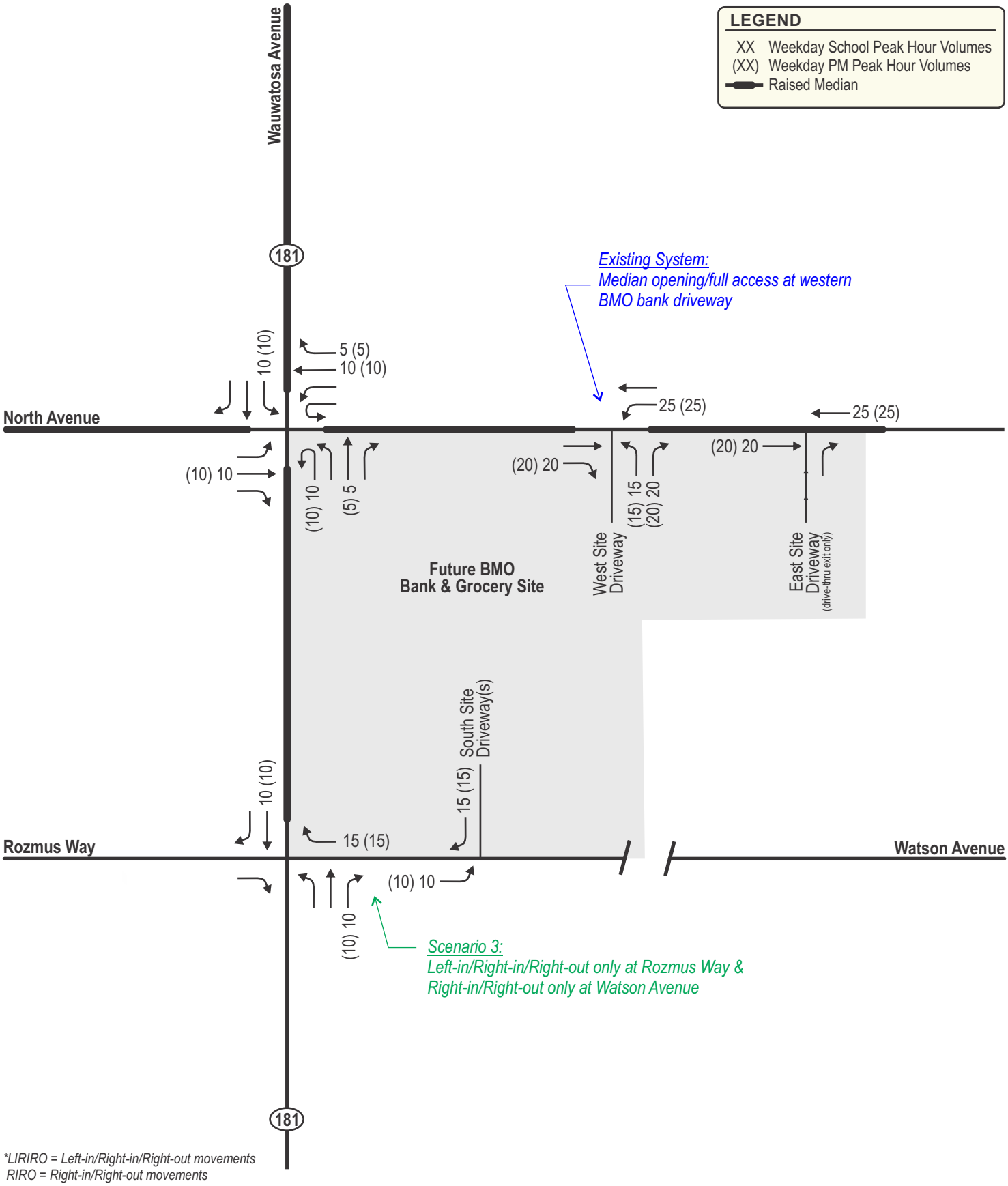
EXHIBIT 14B
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



*LIRIRO = Left-in/Right-in/Right-out movements
RIRO = Right-in/Right-out movements

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3644: 06-12-2026

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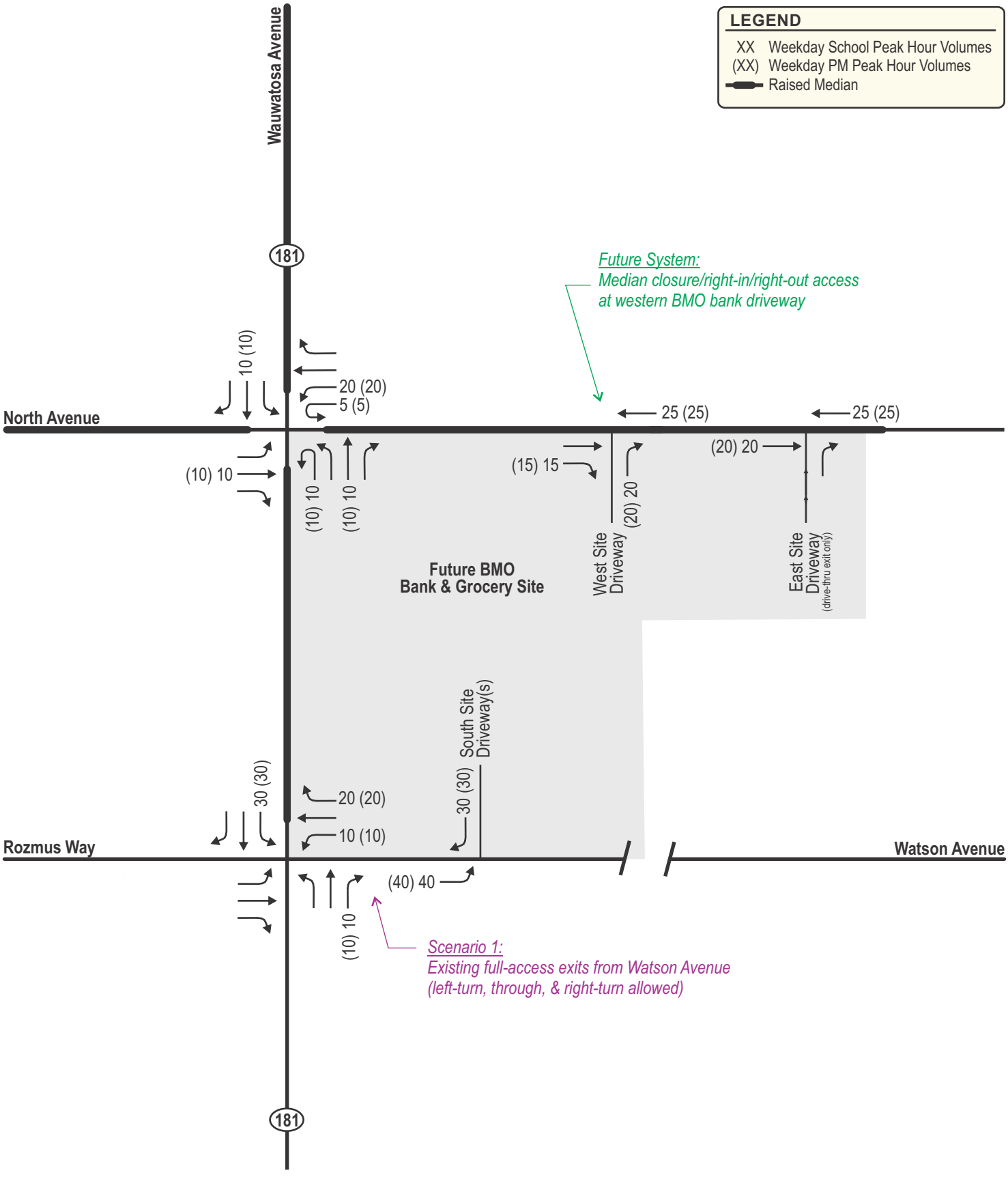
EXHIBIT 14C
GROCERY NEW TRIPS
EXISTING TRANSPORTATION SYSTEM & SCENARIO 3 (LIRIRO AT ROZMUS WAY; RIRO AT WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



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TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

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EXHIBIT 14D
GROCERY NEW TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 1 (FULL ACCESS EXITS FROM WATSON AVENUE)

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

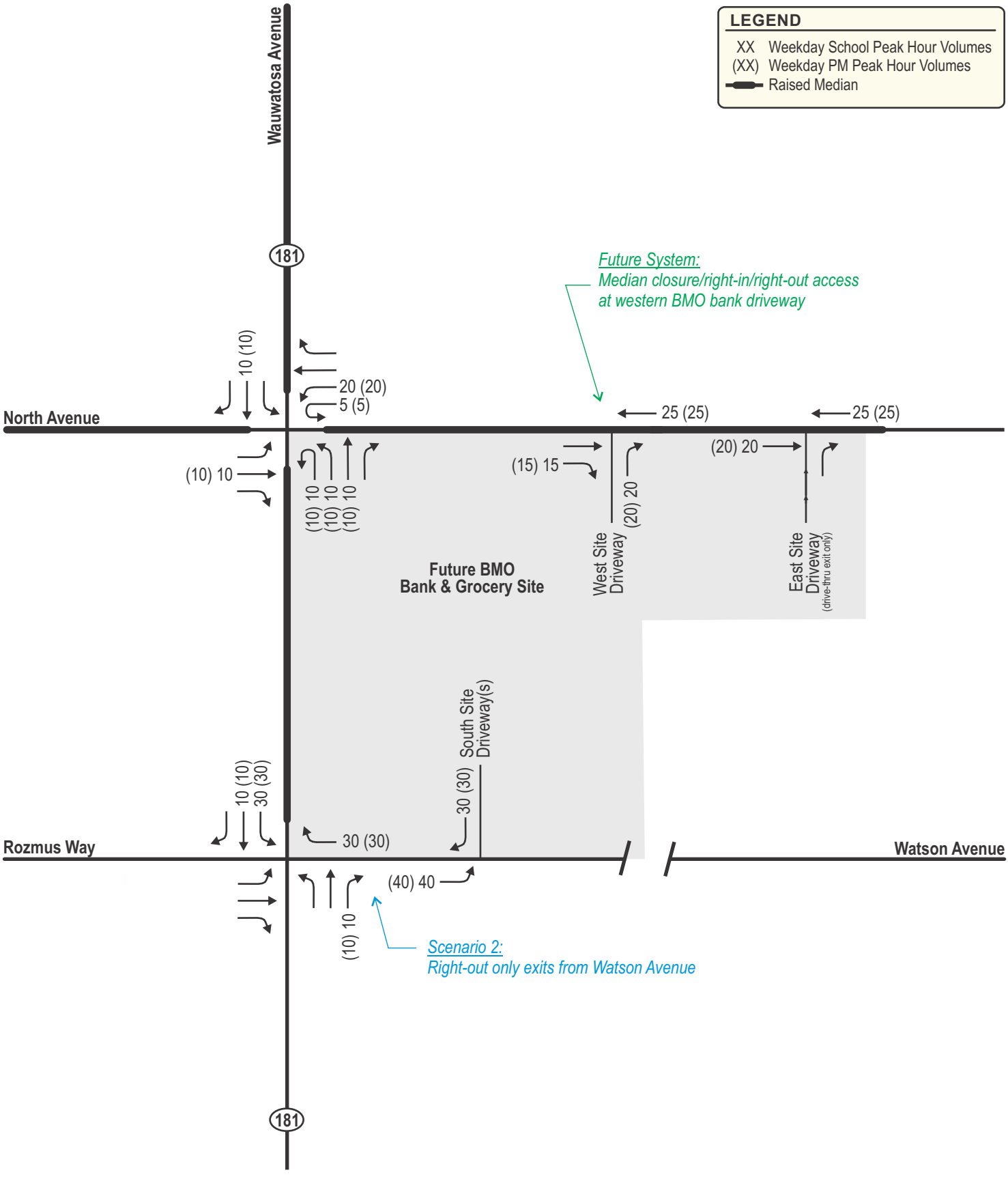

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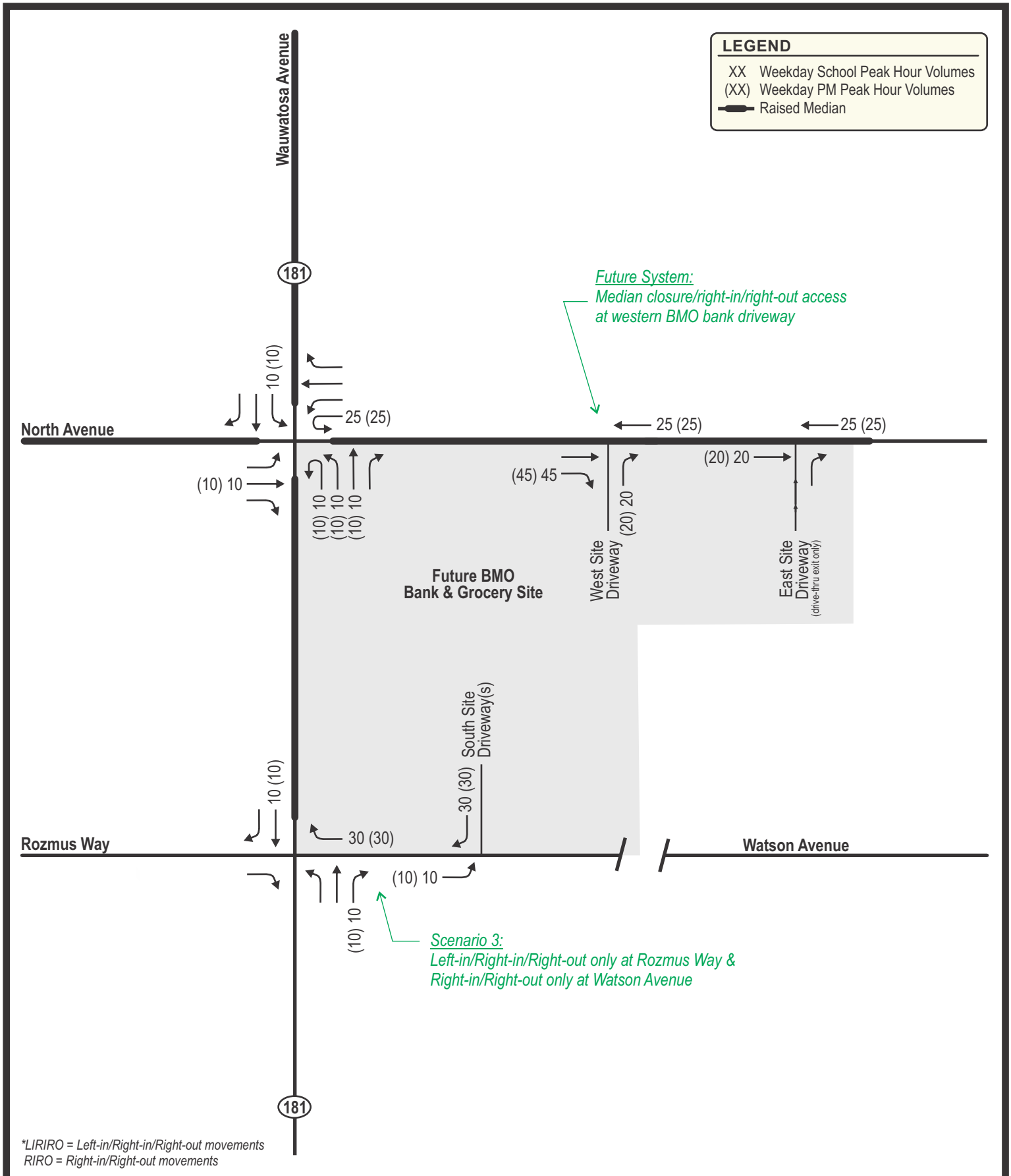
EXHIBIT 14E
GROCERY NEW TRIPS
FUTURE TRANSPORTATION SYSTEM & SCENARIO 2 (RIGHT-OUT ONLY FROM WATSON AVENUE)

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

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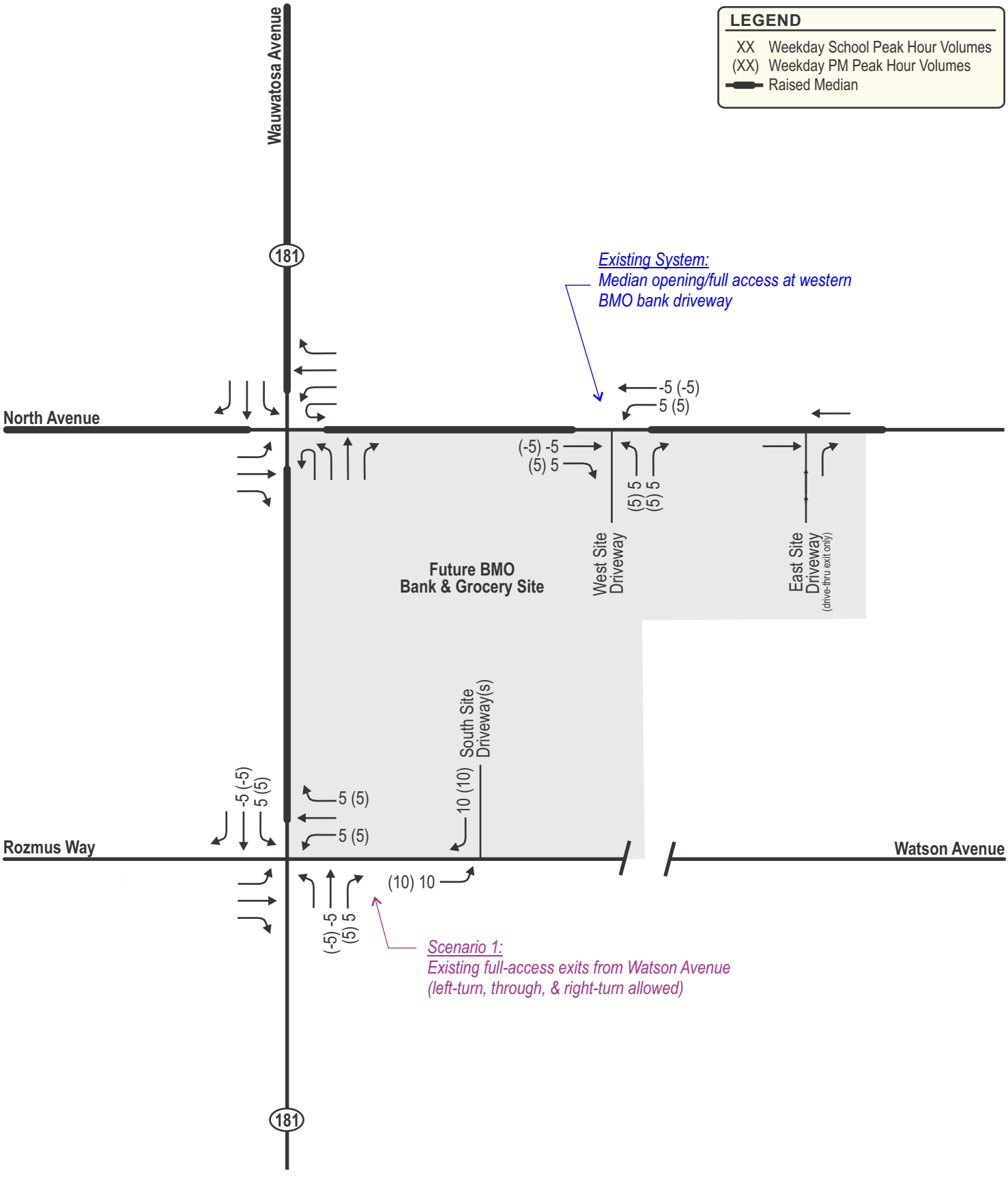
NOT TO SCALE

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



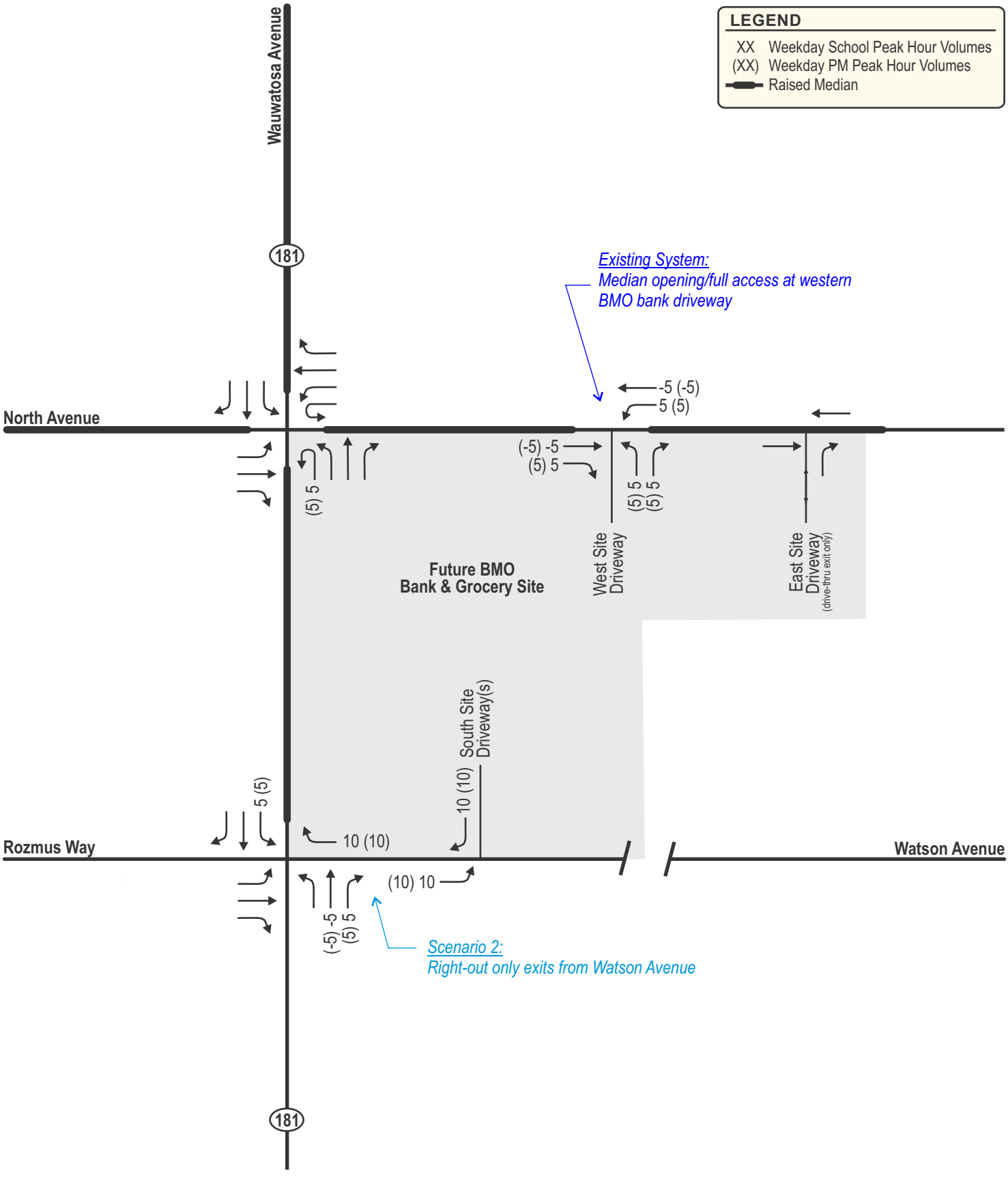
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



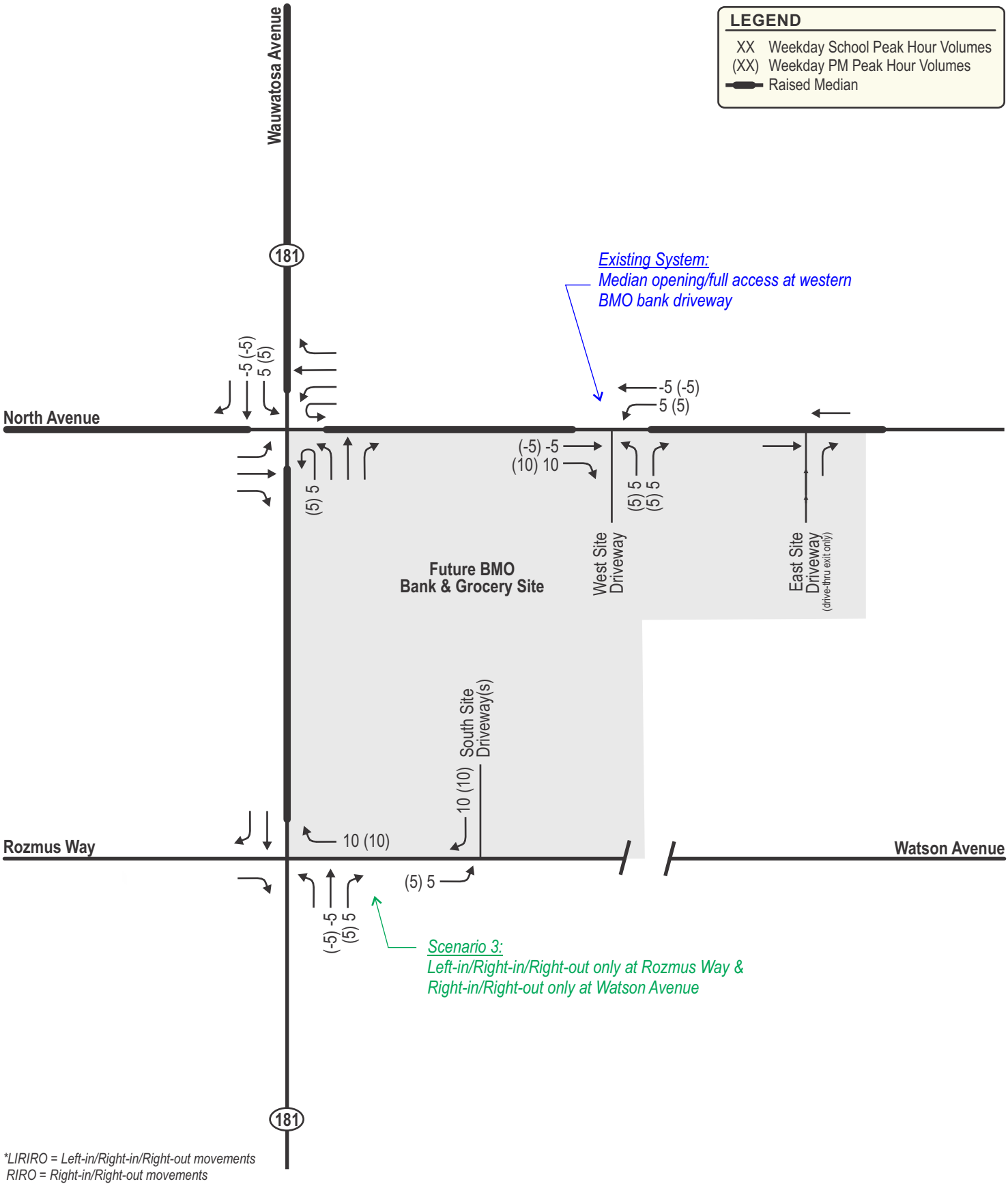
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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.

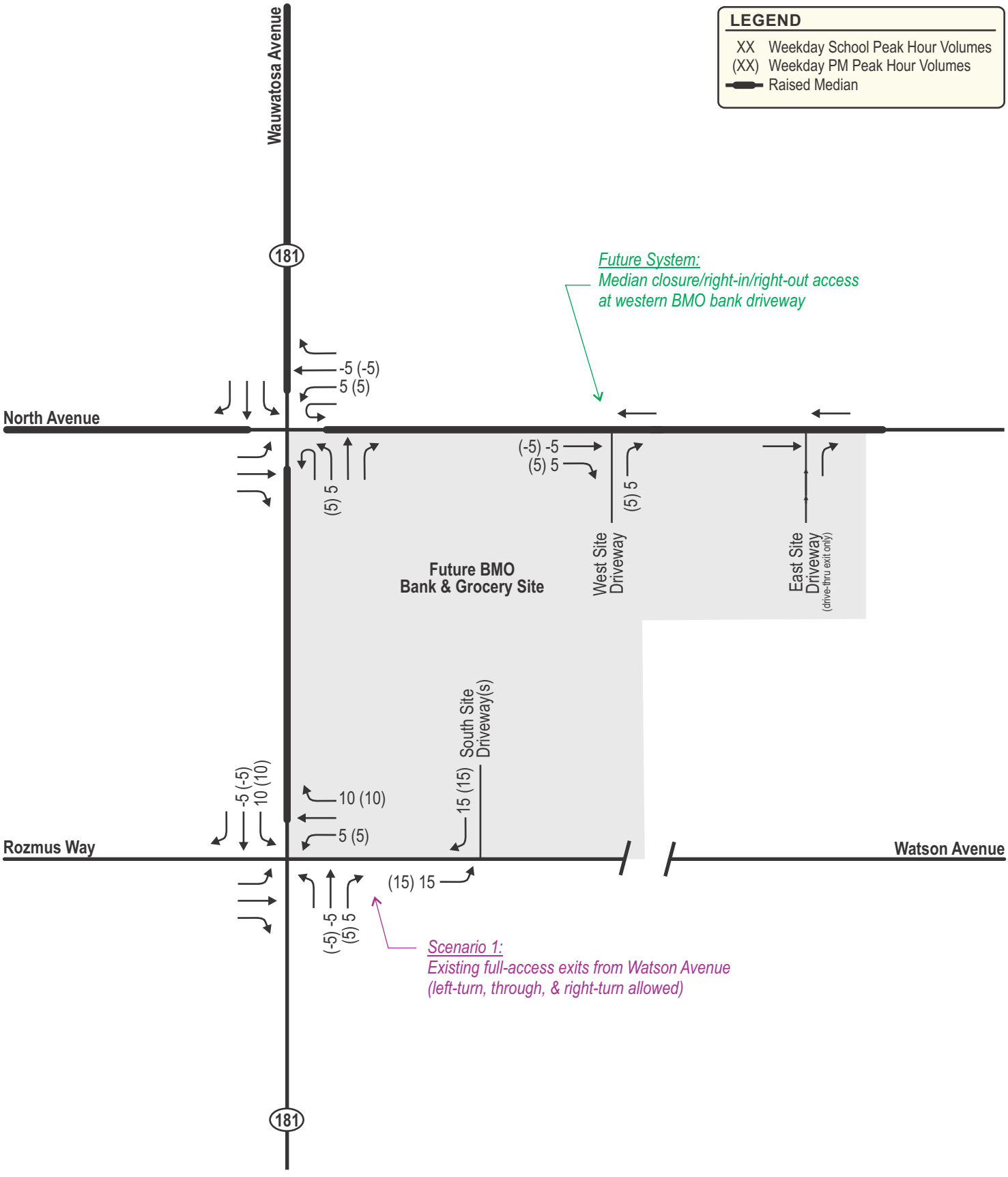
3644: 06-12-2026

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



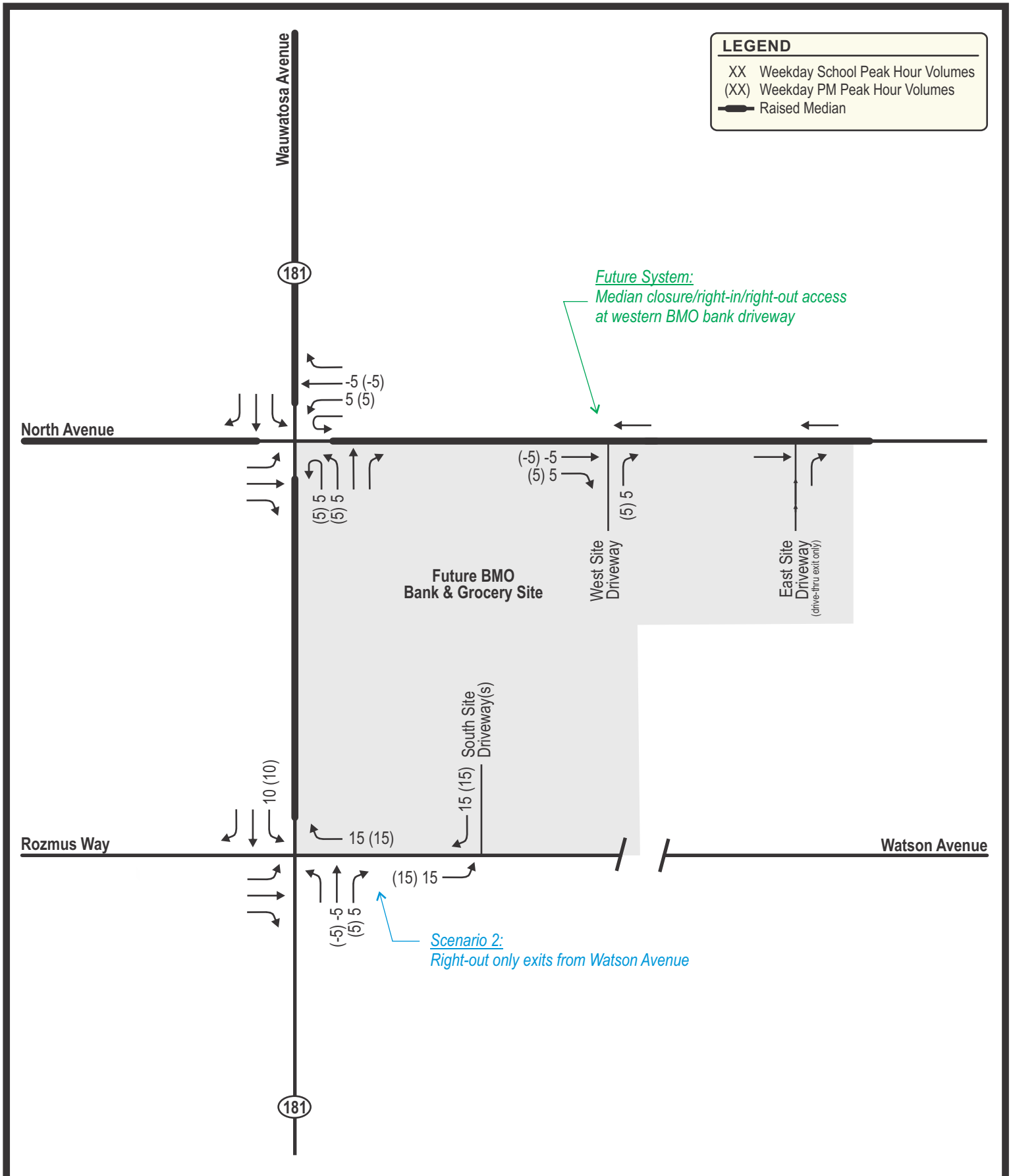
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



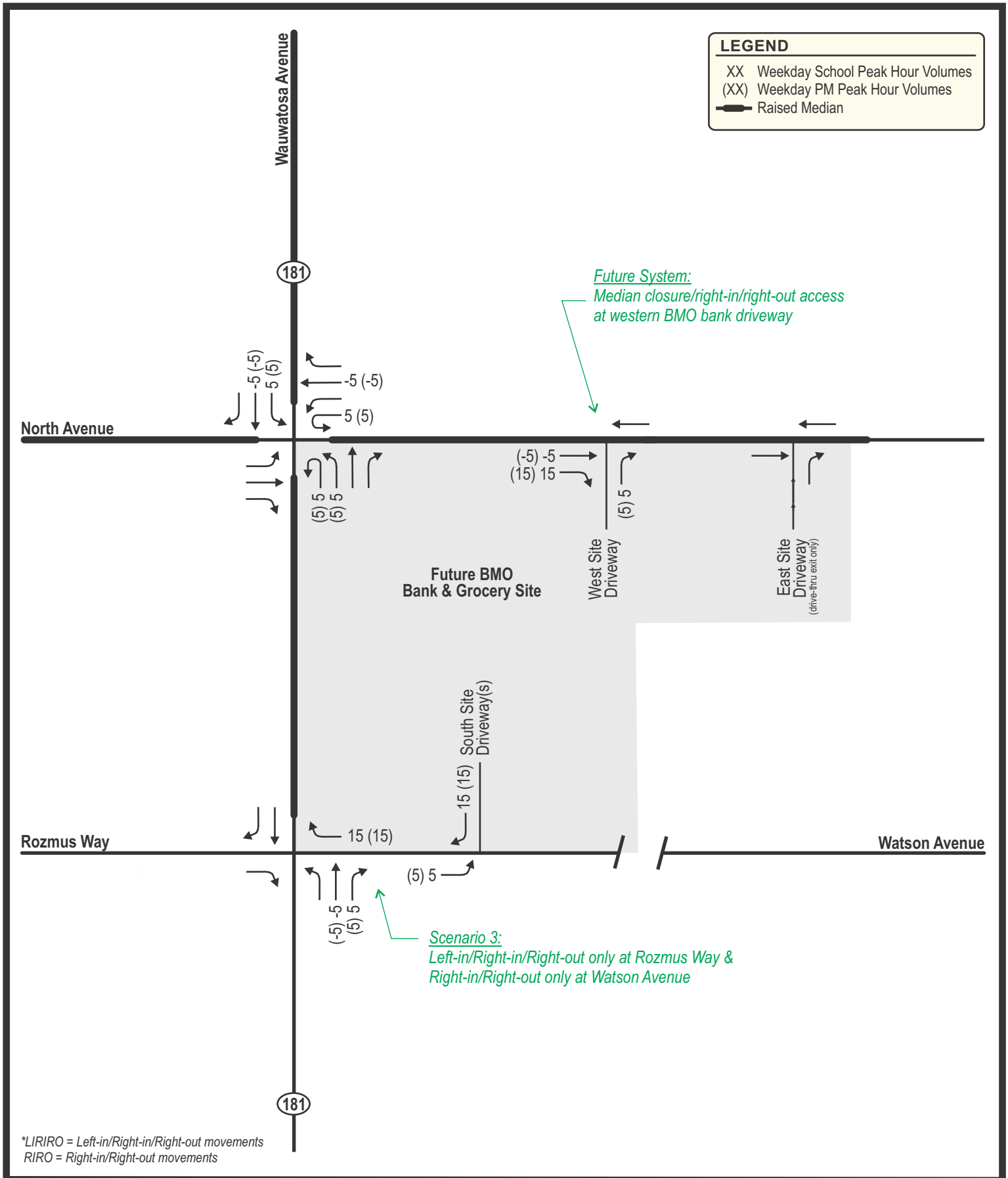
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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.

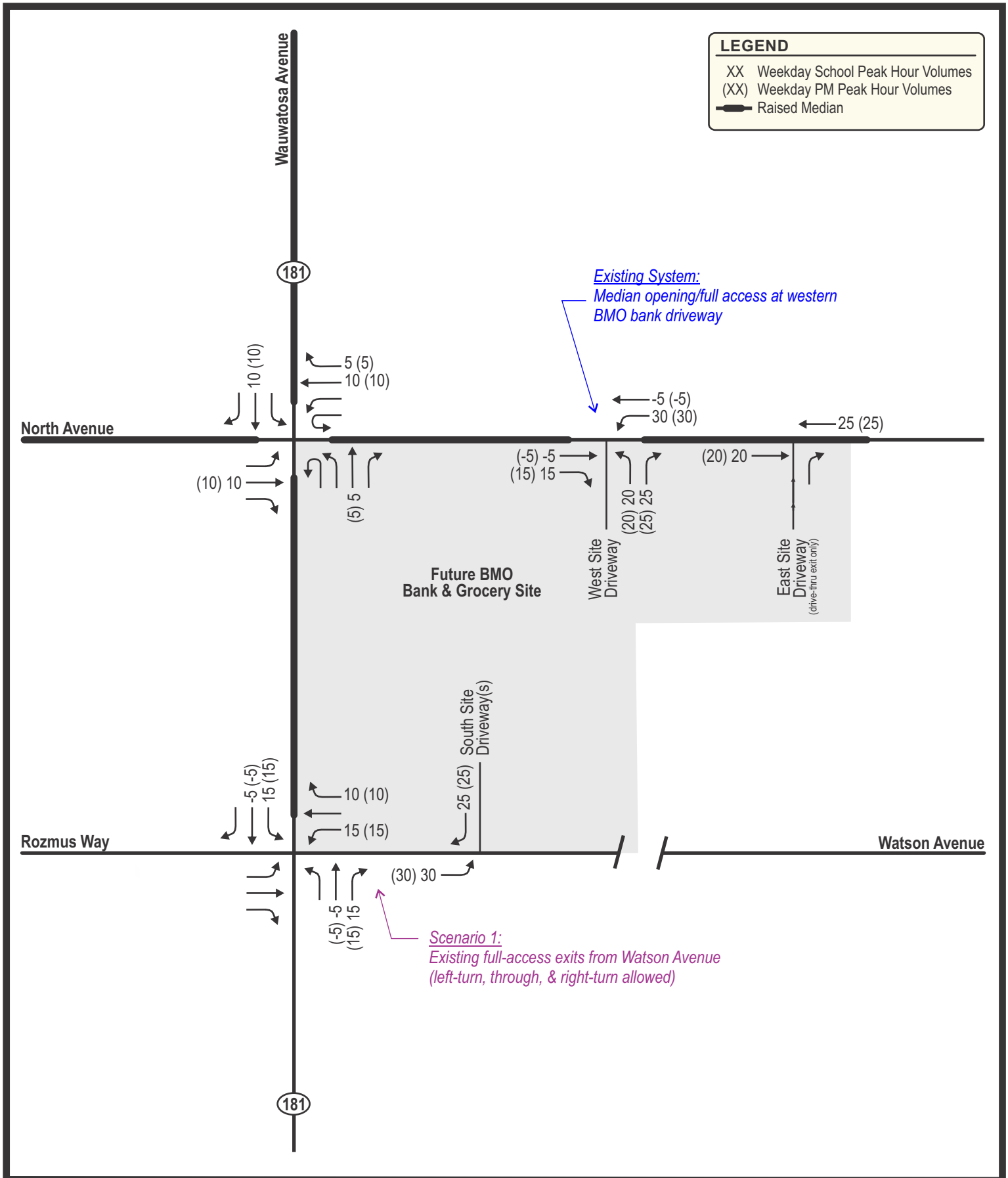
3644: 06-12-2026

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



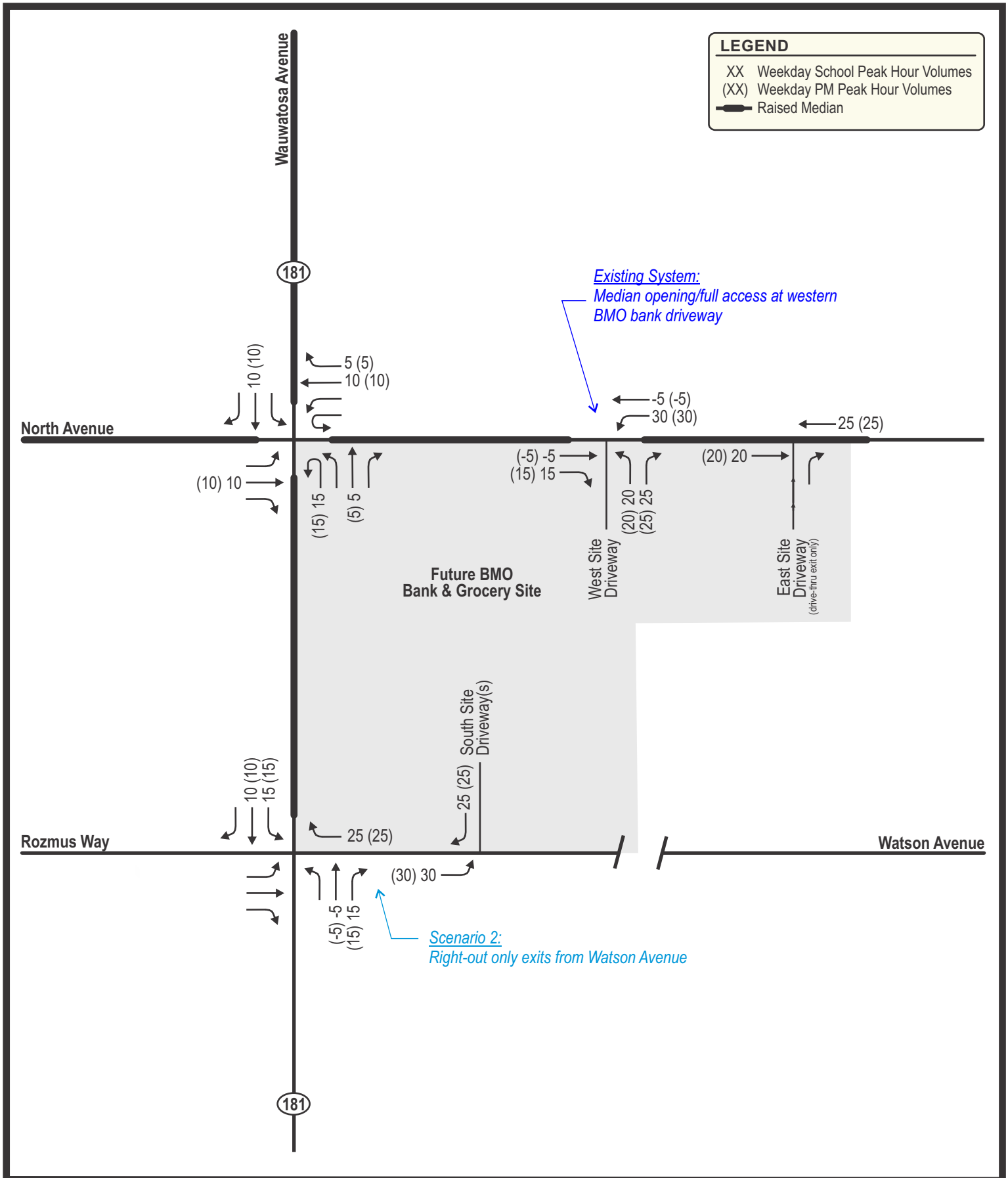
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



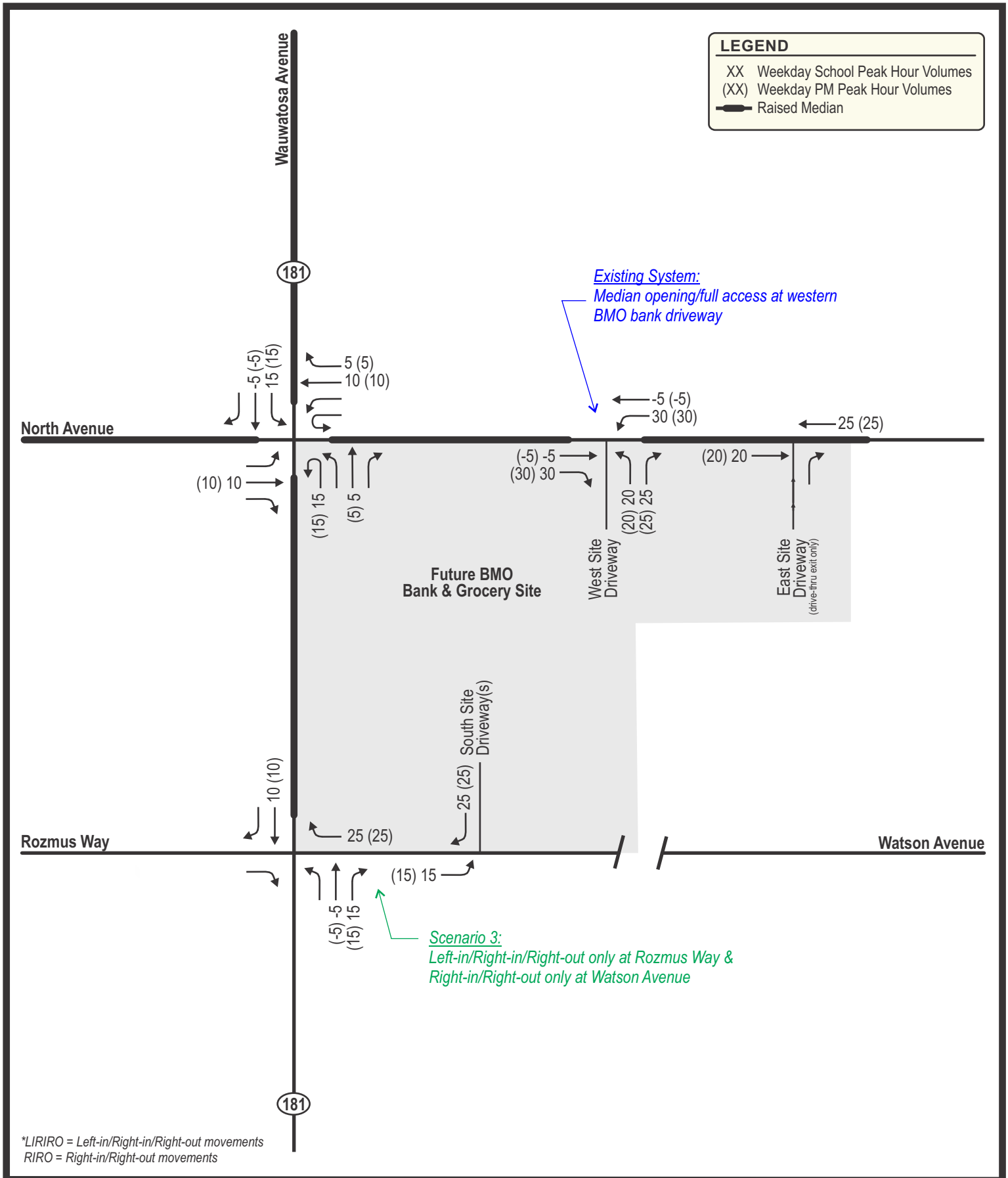
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



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RIRO = Right-in/Right-out movements

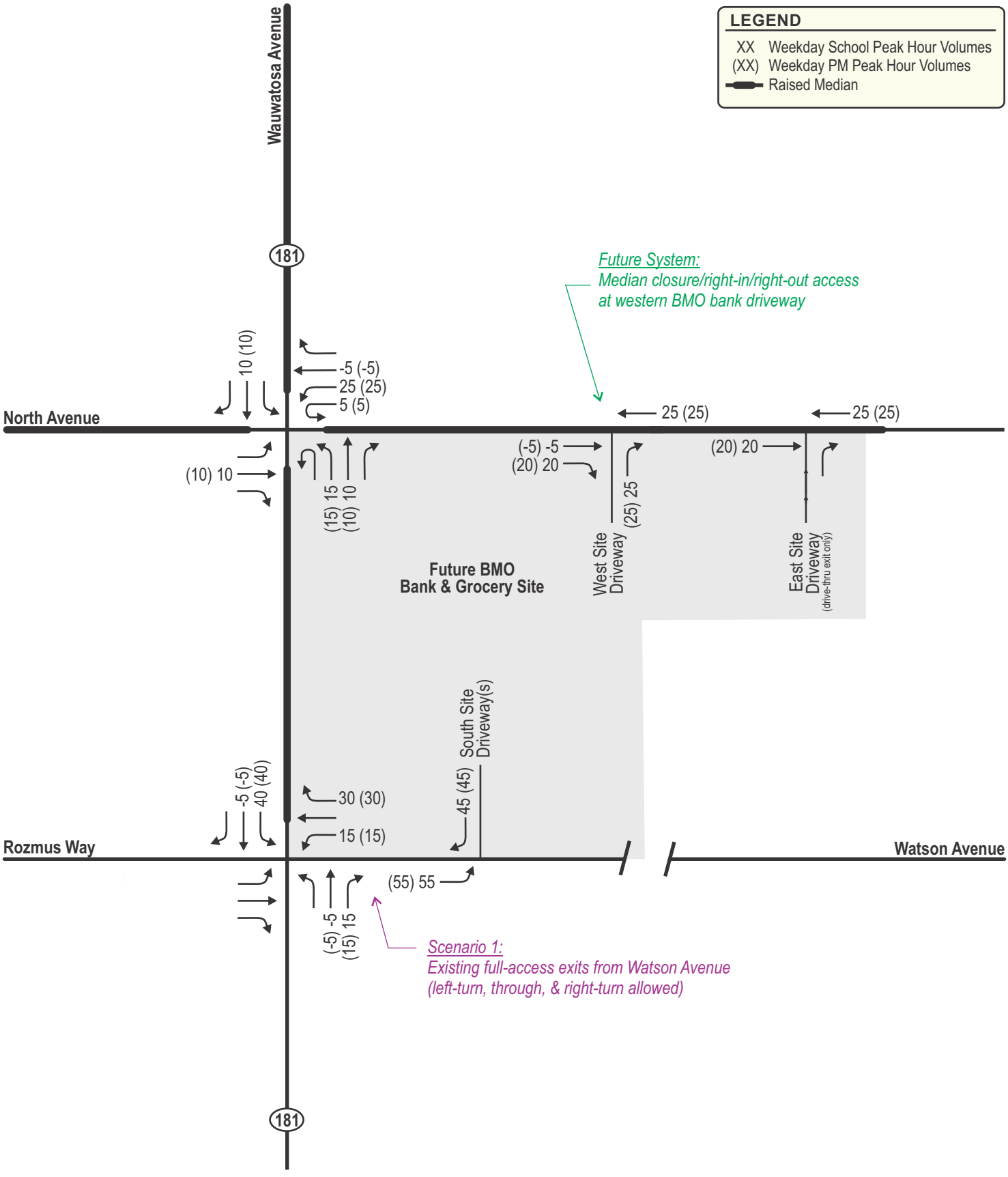
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



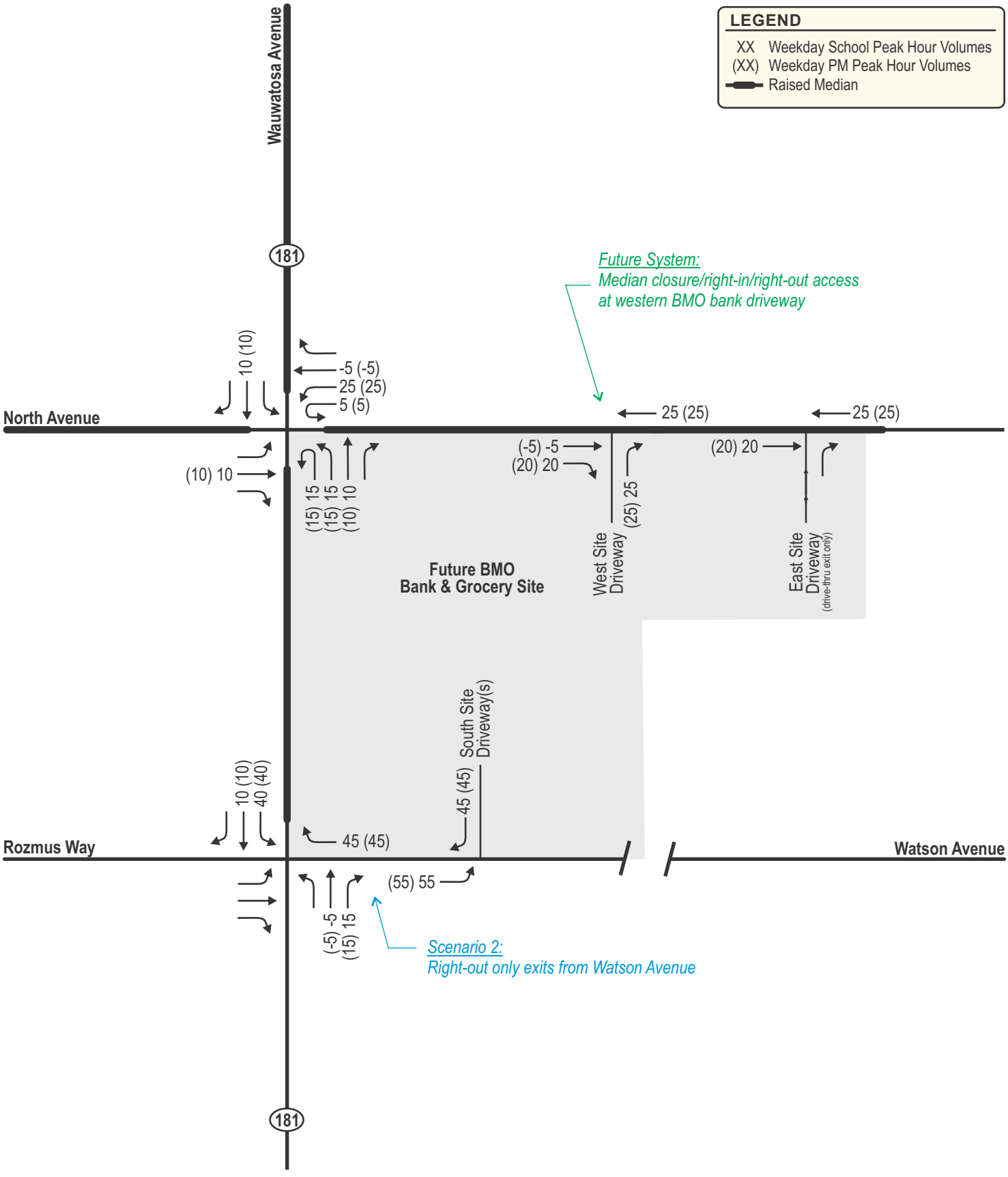
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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



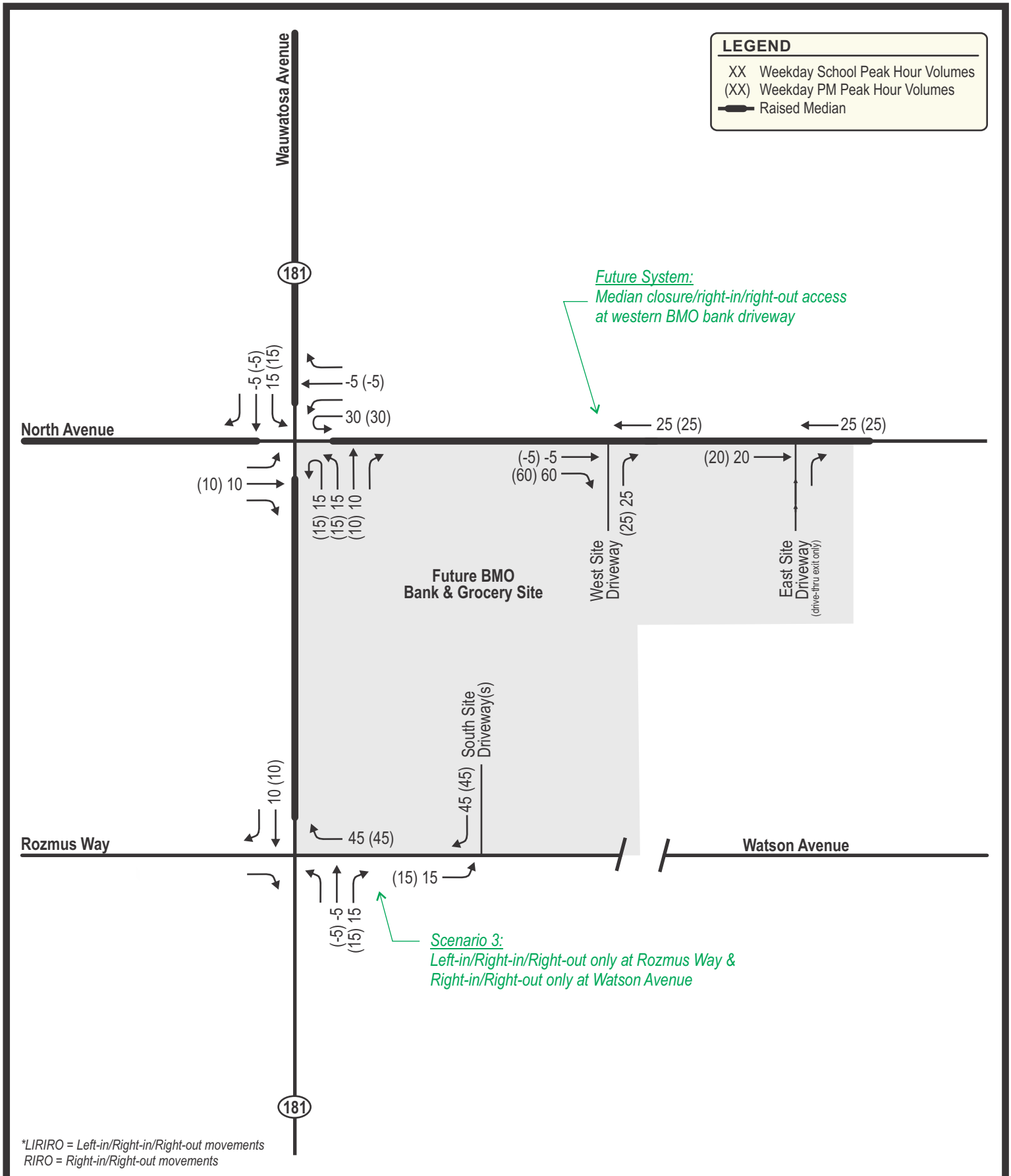
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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

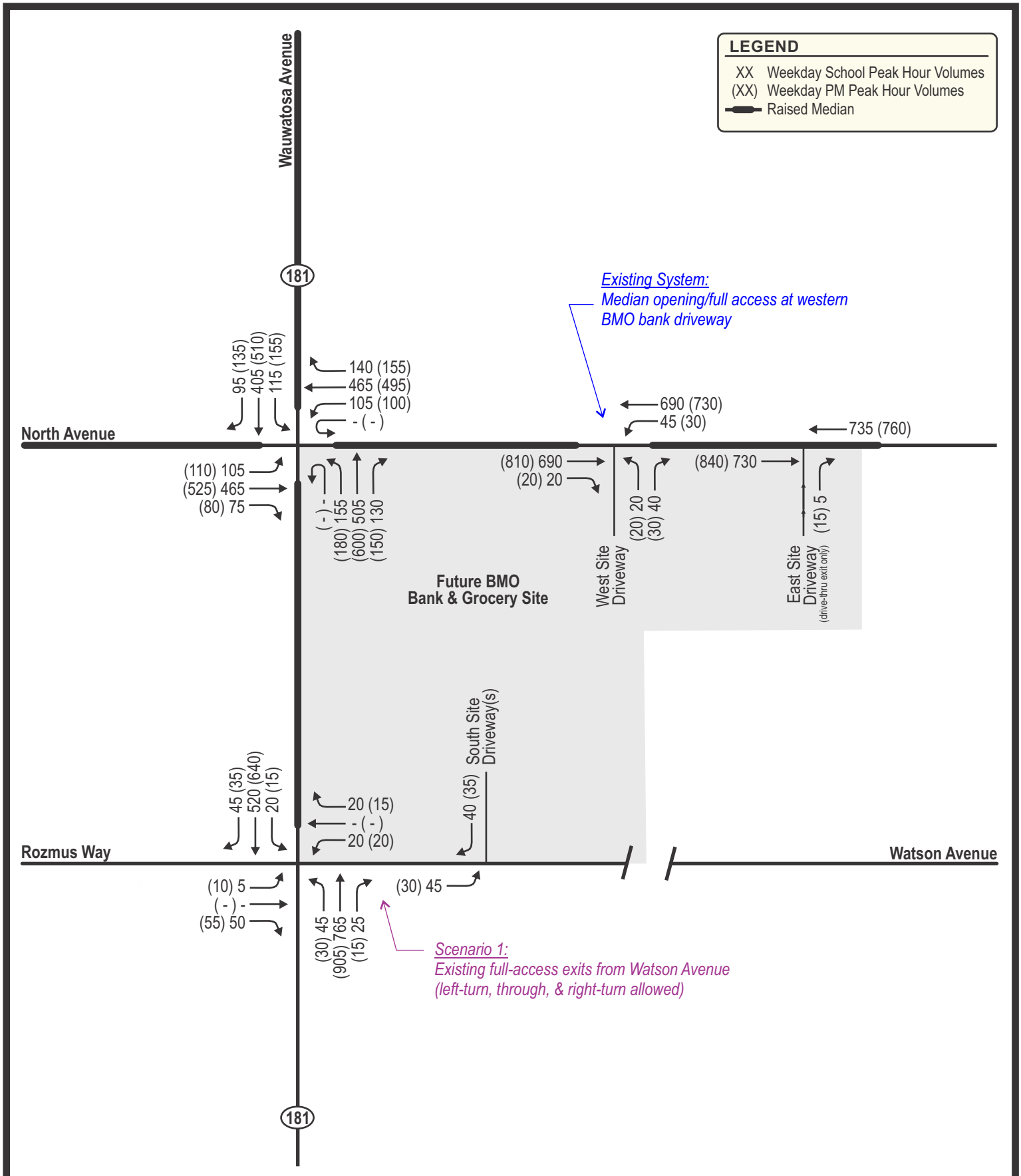
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

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.

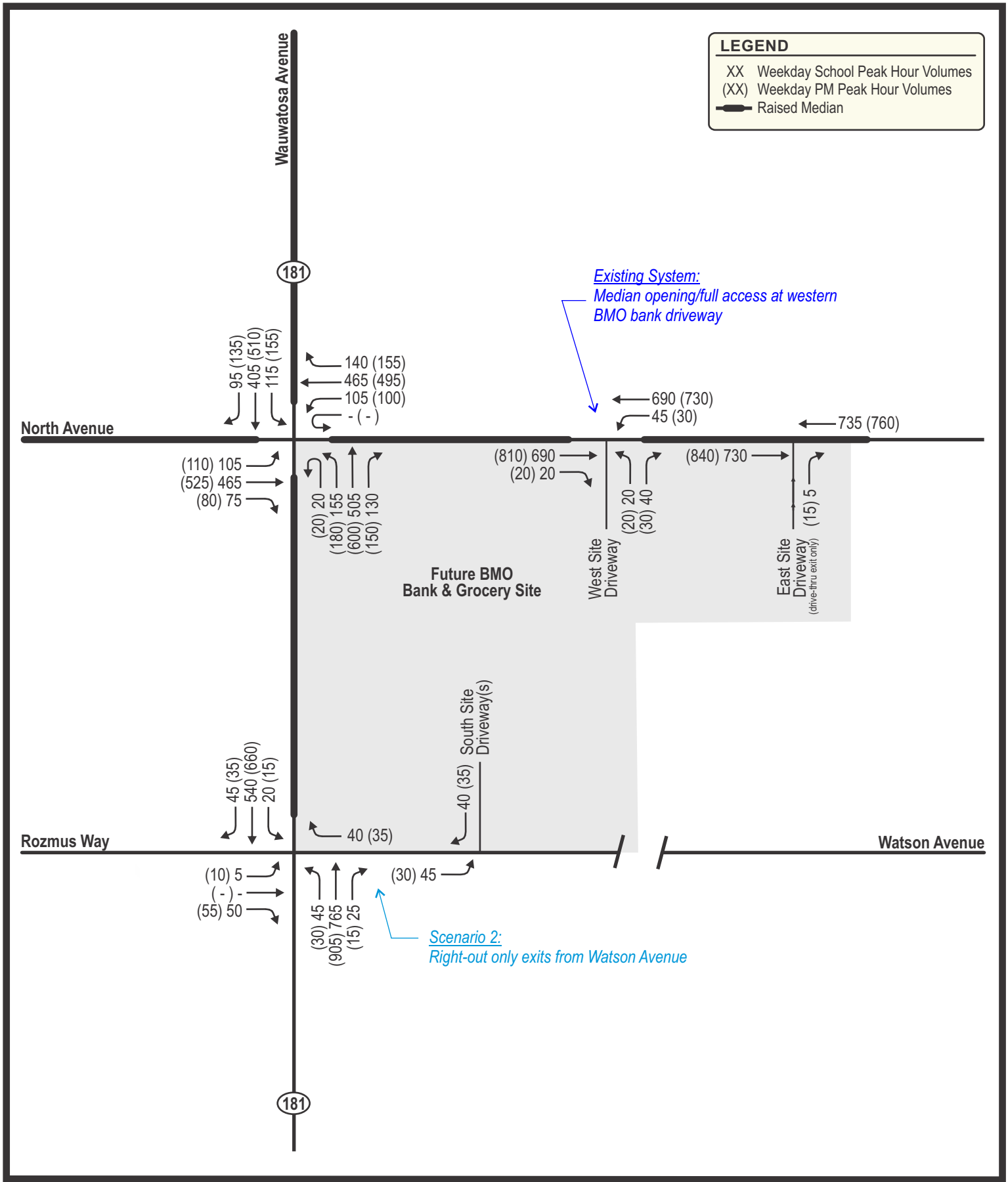
3644: 06-12-2026

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.

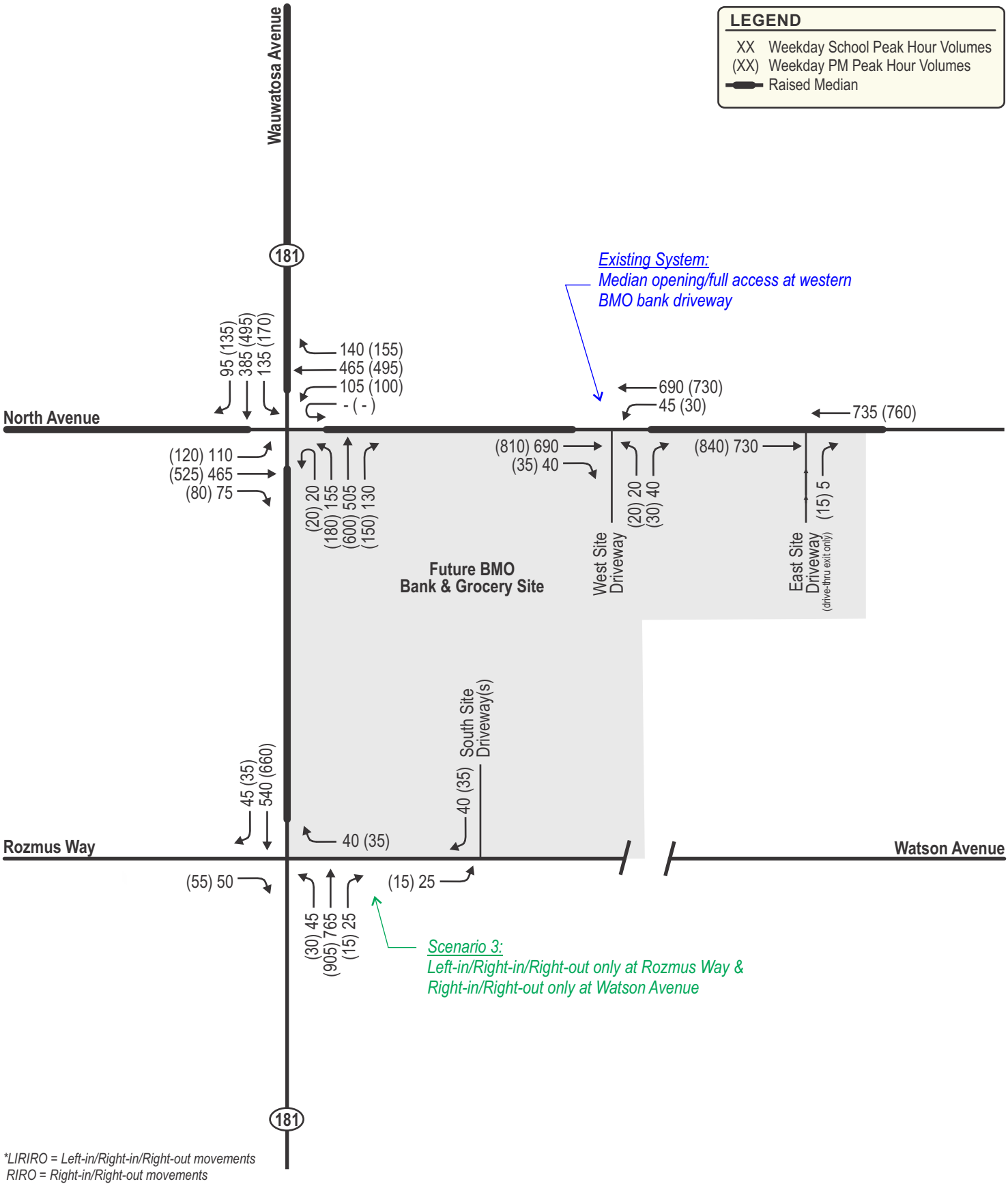
3644: 06-12-2026

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.

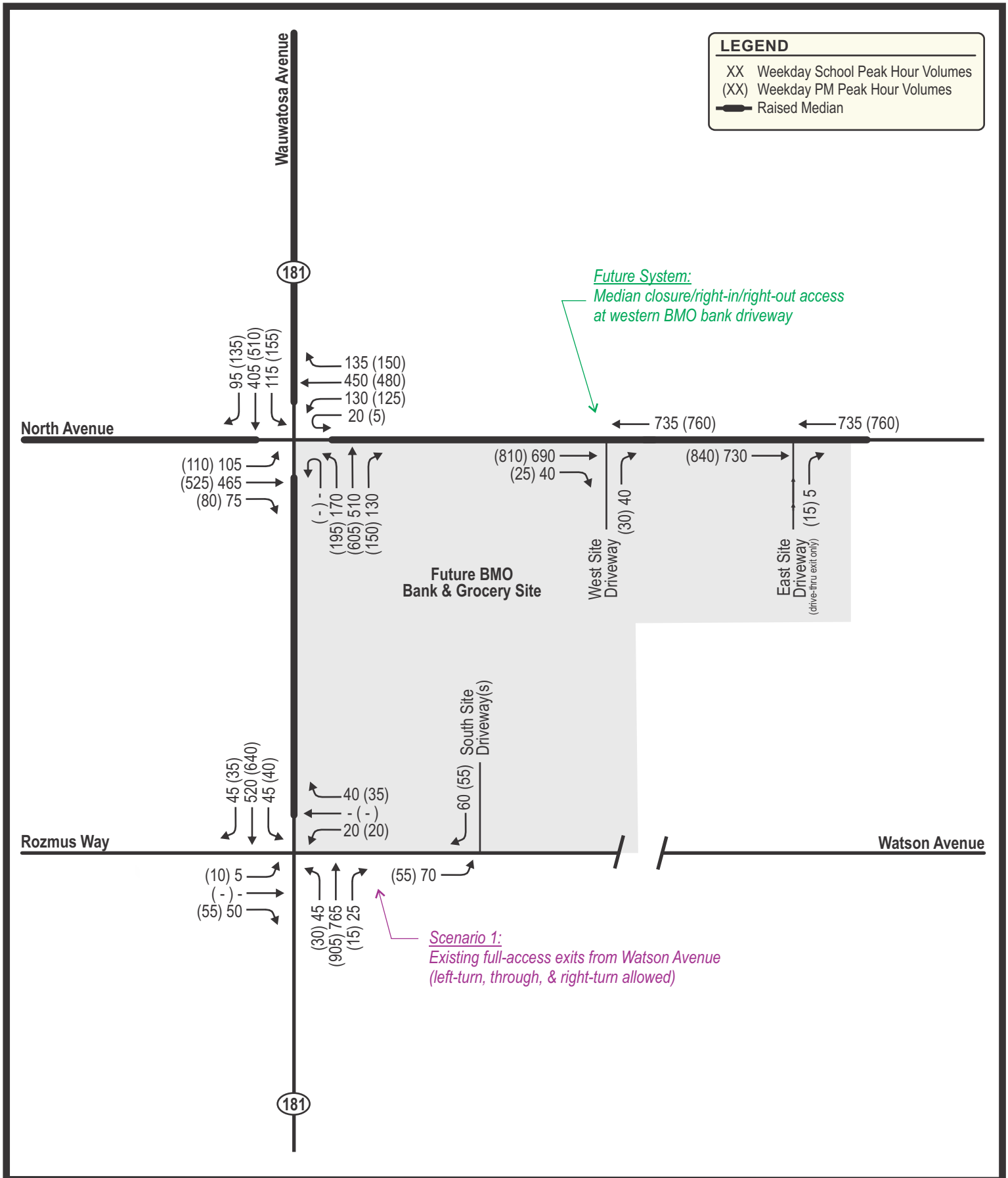
3644: 06-12-2026

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.

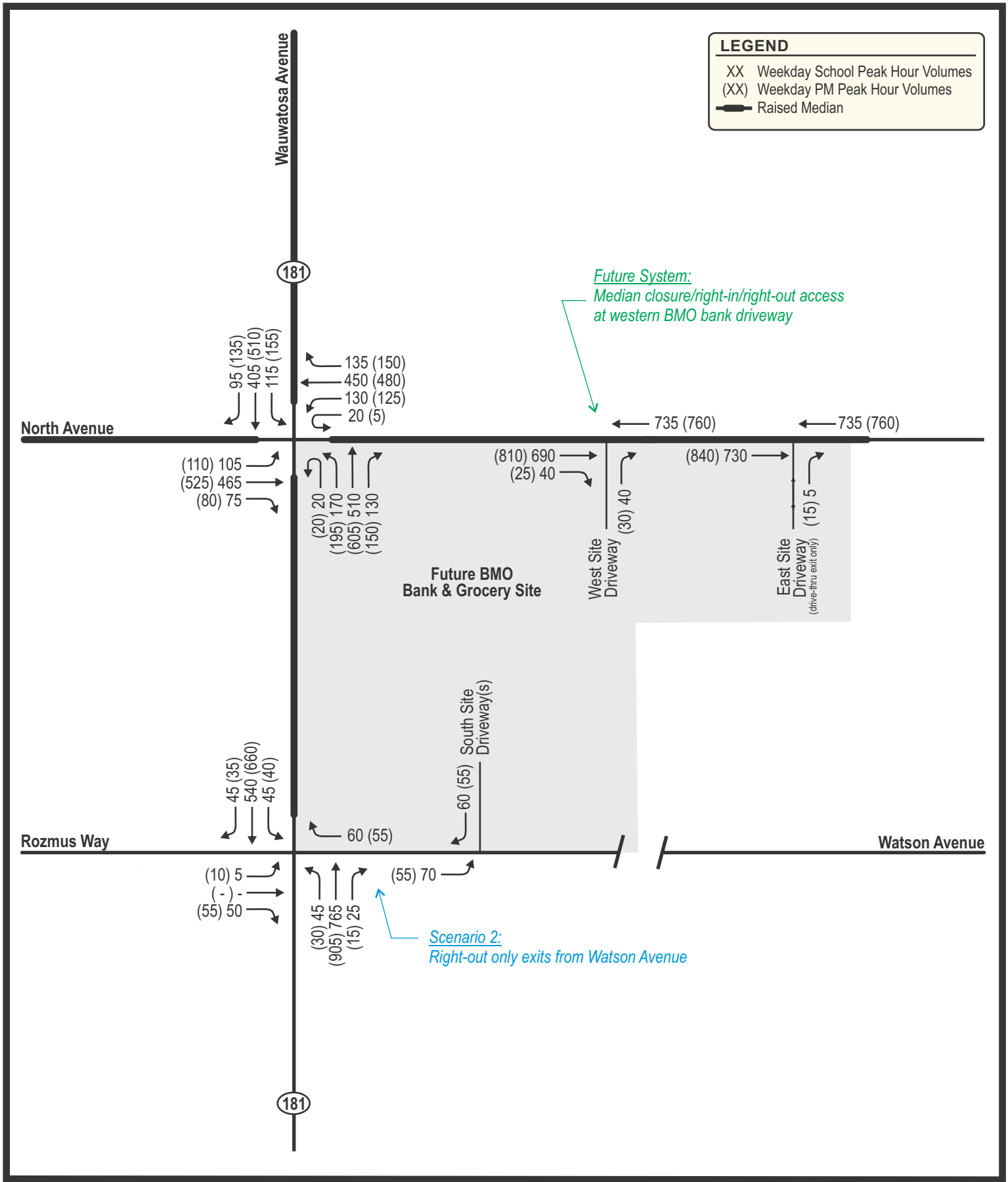
3644: 06-12-2026

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.

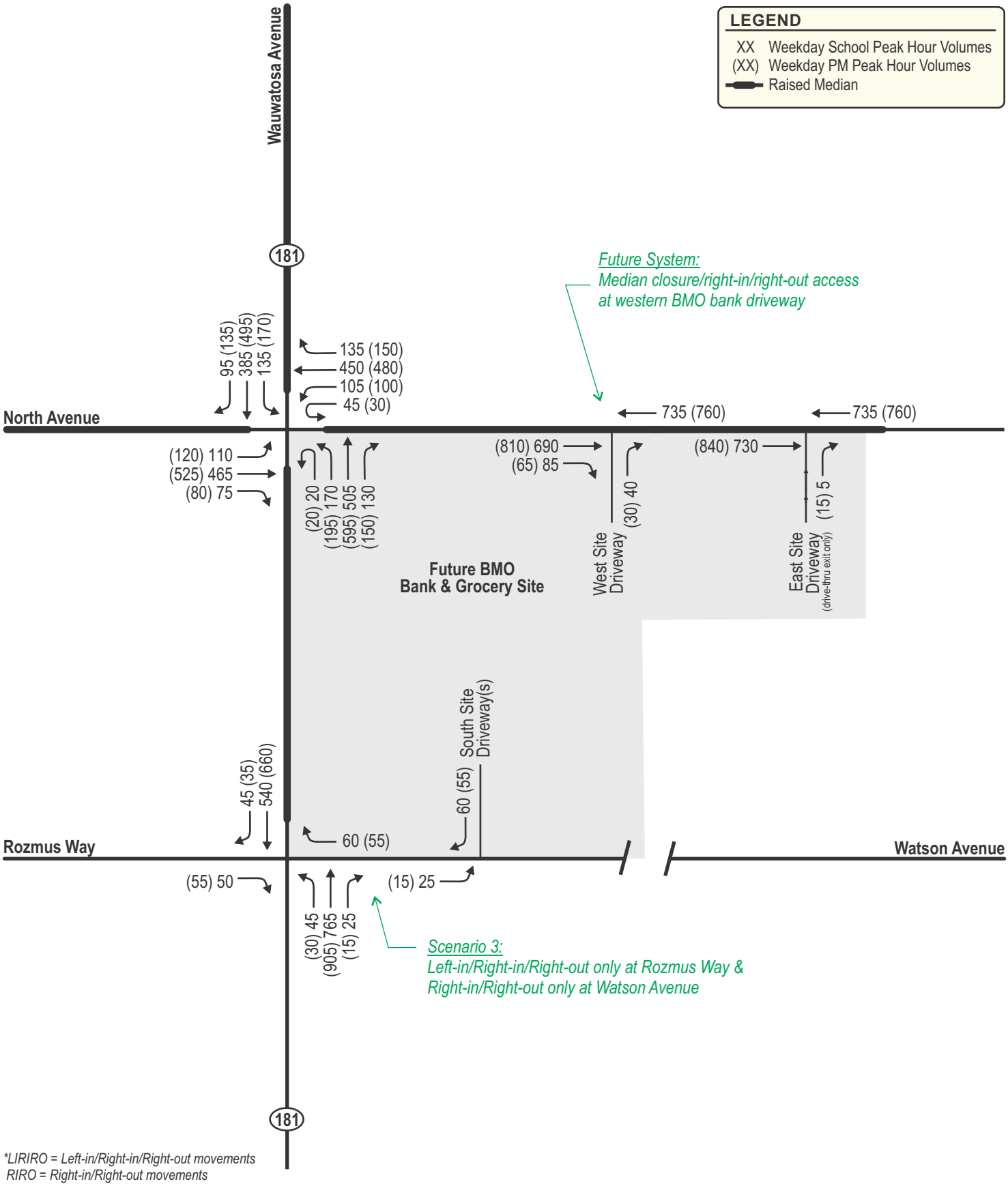
3644: 06-12-2026

N

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



*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 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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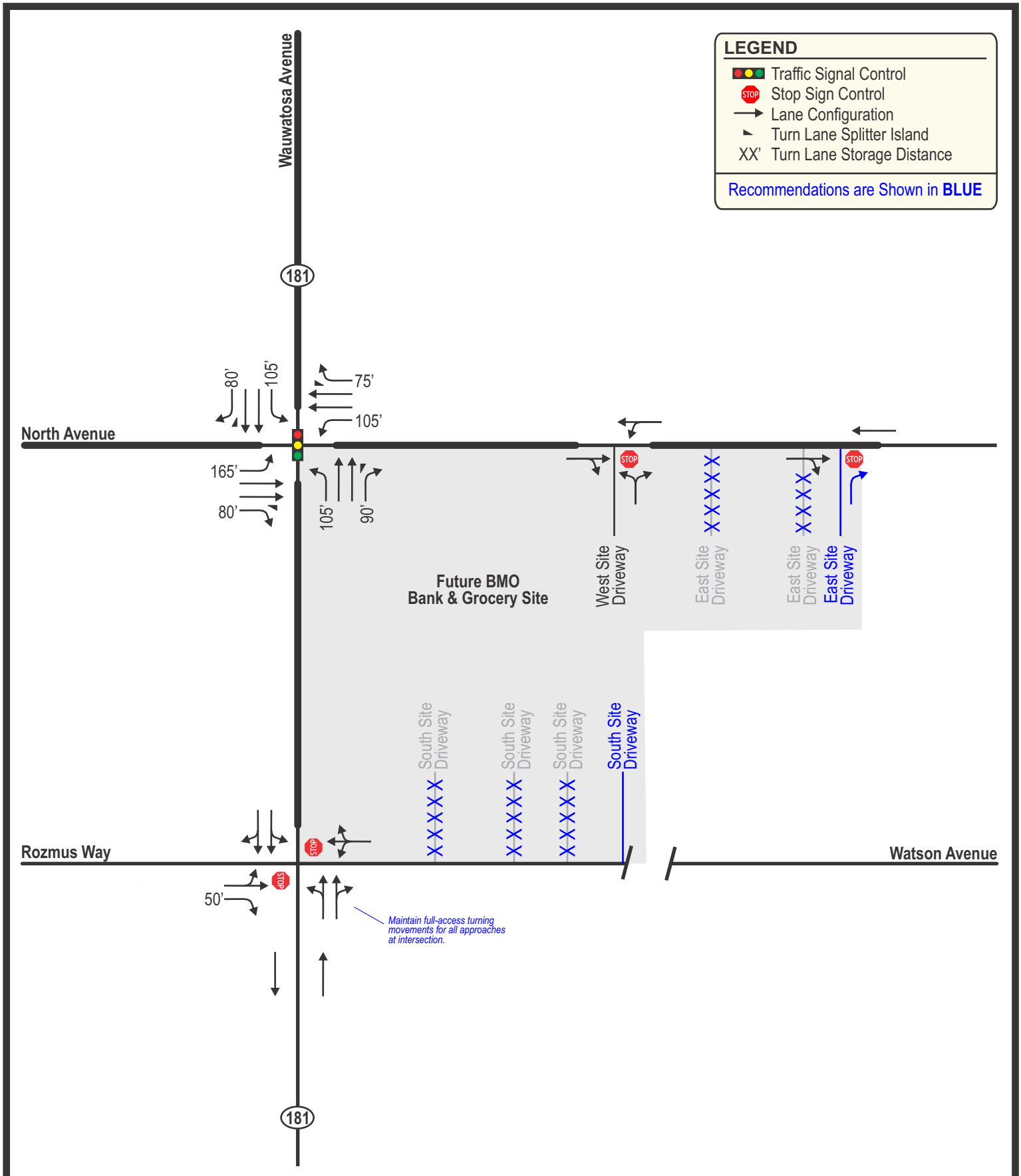
Wauwatosa Avenue transitions from 4 lanes to 2 lanes through Rozmus Way/Watson Avenue. Per City, model NB as LT + TH/RT (with a 0.75 NB TH growth factor to simulate occasional two-lane use by NB traffic) and model SB as LT/TH + RT.

**LIRIRO = Left-in/Right-in/Right-out movements*
RIRO = Right-in/Right-out movements



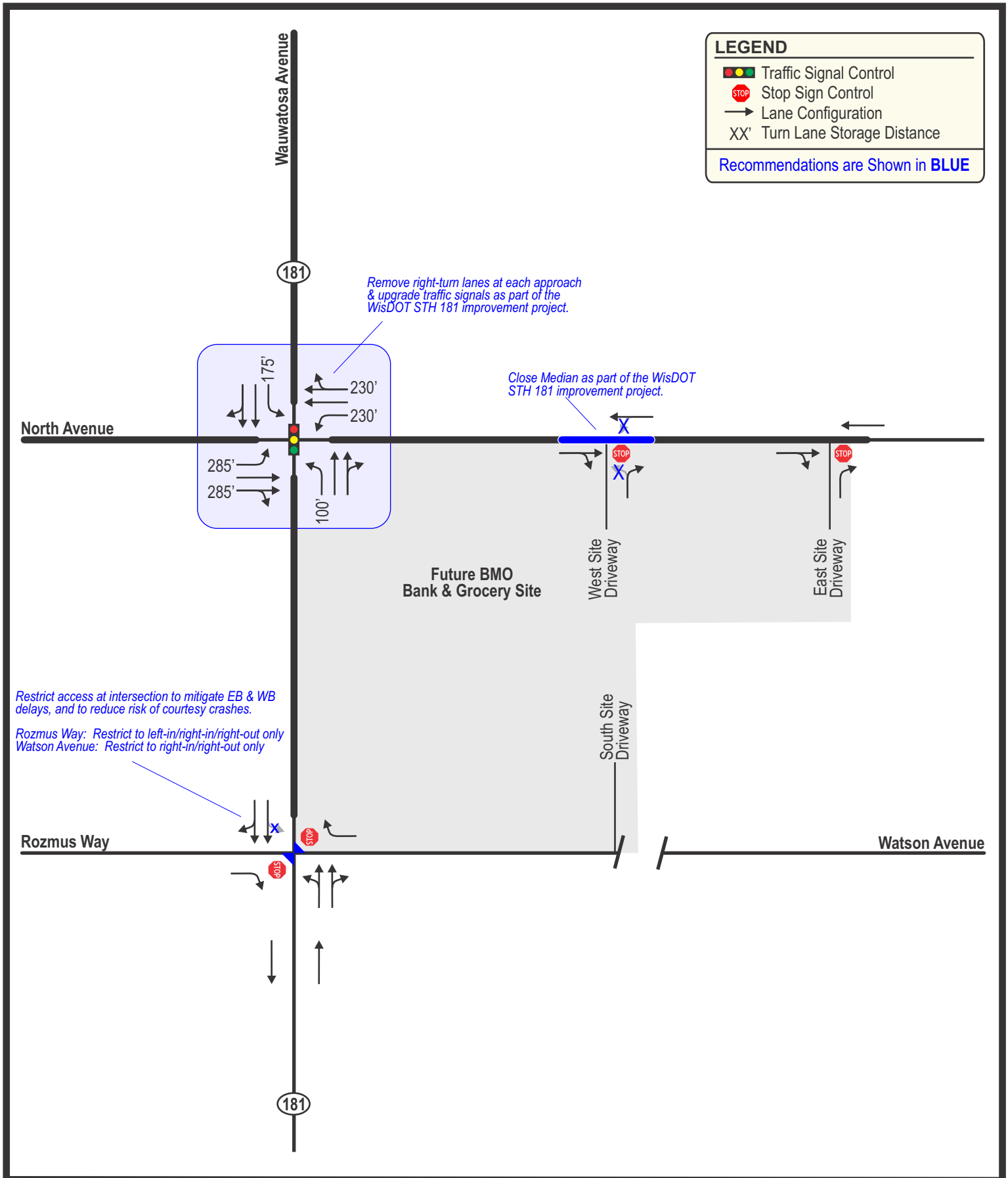
TADI
TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N
NOT TO SCALE

EXHIBIT 19
BUILD RECOMMENDATIONS
EXISTING TRANSPORTATION SYSTEM

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN



TADI TRAFFIC ANALYSIS & DESIGN, INC.

3644: 06-12-2026

N

NOT TO SCALE

EXHIBIT 20
BUILD RECOMMENDATION OPTIONS
FUTURE TRANSPORTATION SYSTEM

BMO BANK REDEVELOPMENT (BANK & GROCERY) TIA - WAUWATOSA, WISCONSIN

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:**

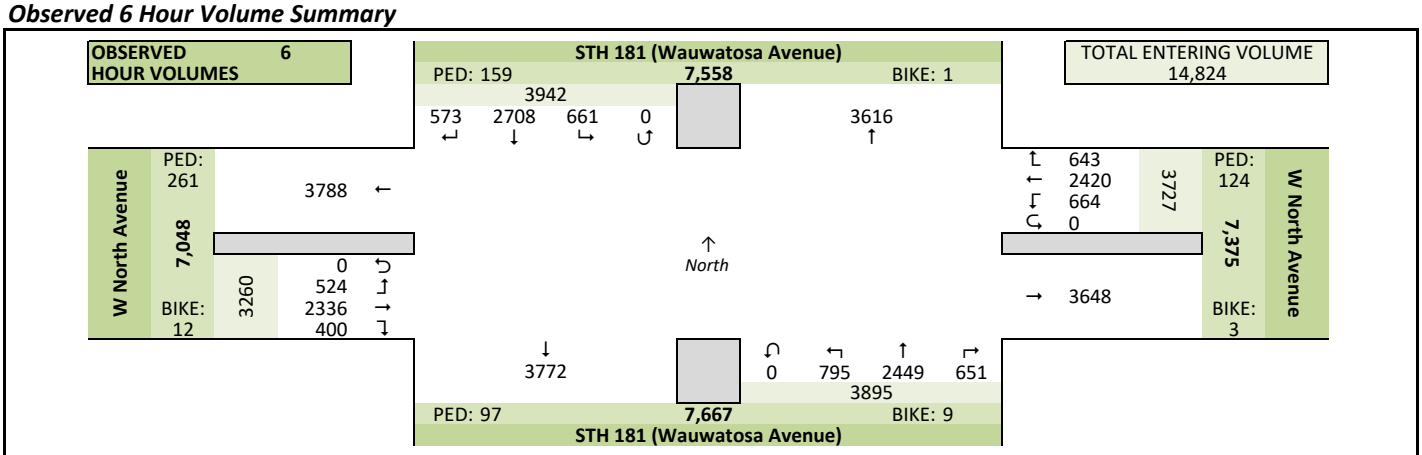
Site Information

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		

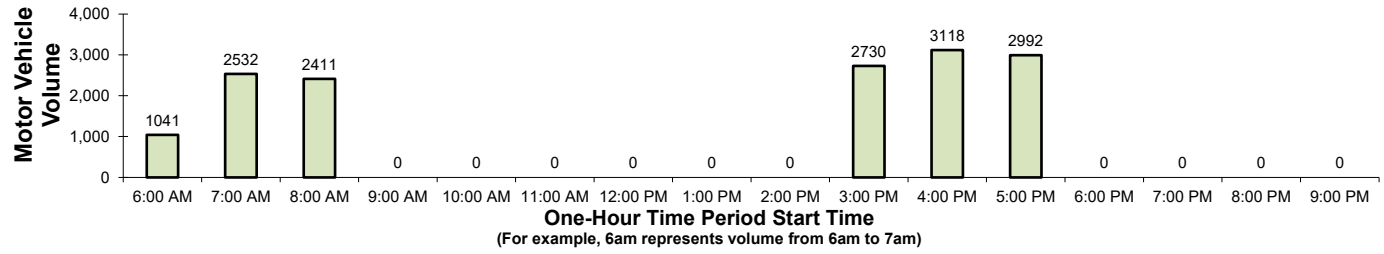
Count Information

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				

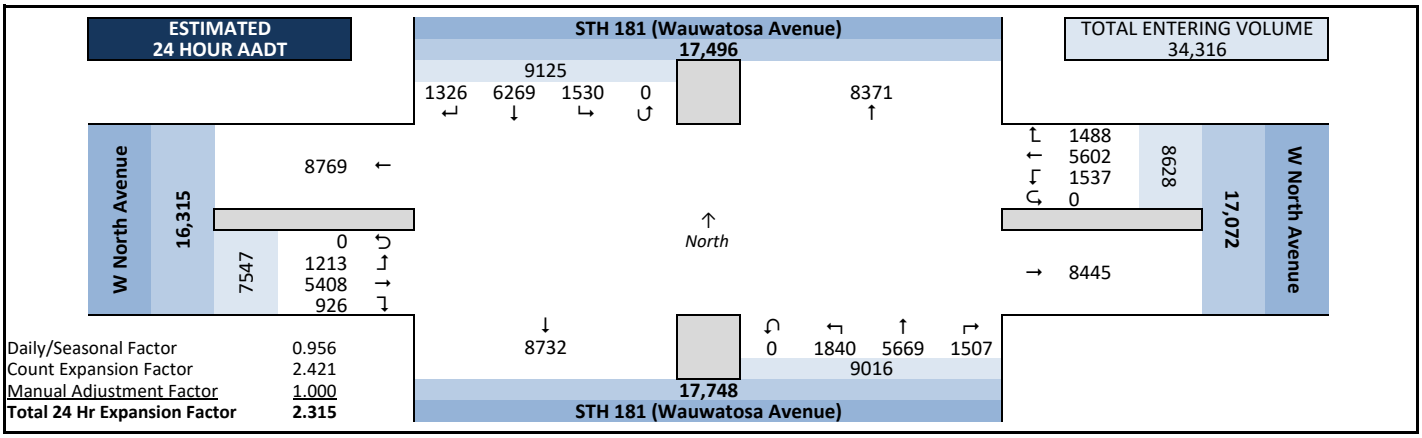
Observed 6 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



Daily/Seasonal Factor	0.956
Count Expansion Factor	2.421
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	**2.315**

Intersection Traffic Volume Report

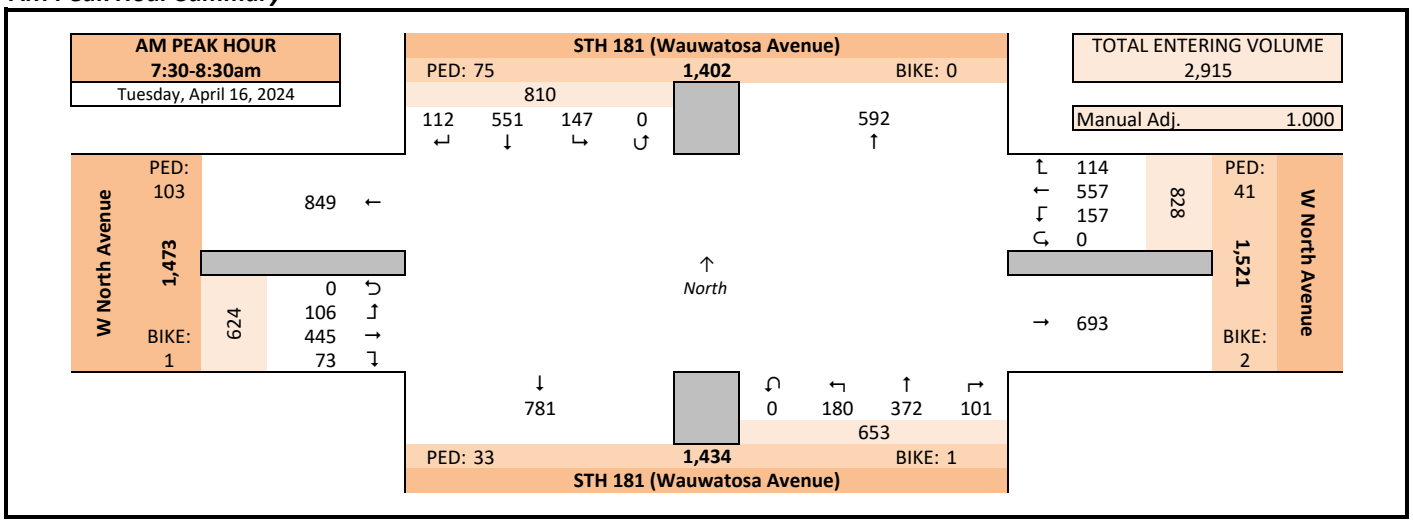
Peak Hour Volume Graphical Summary

STH 181 (Wauwatosa Avenue) & W North Avenue

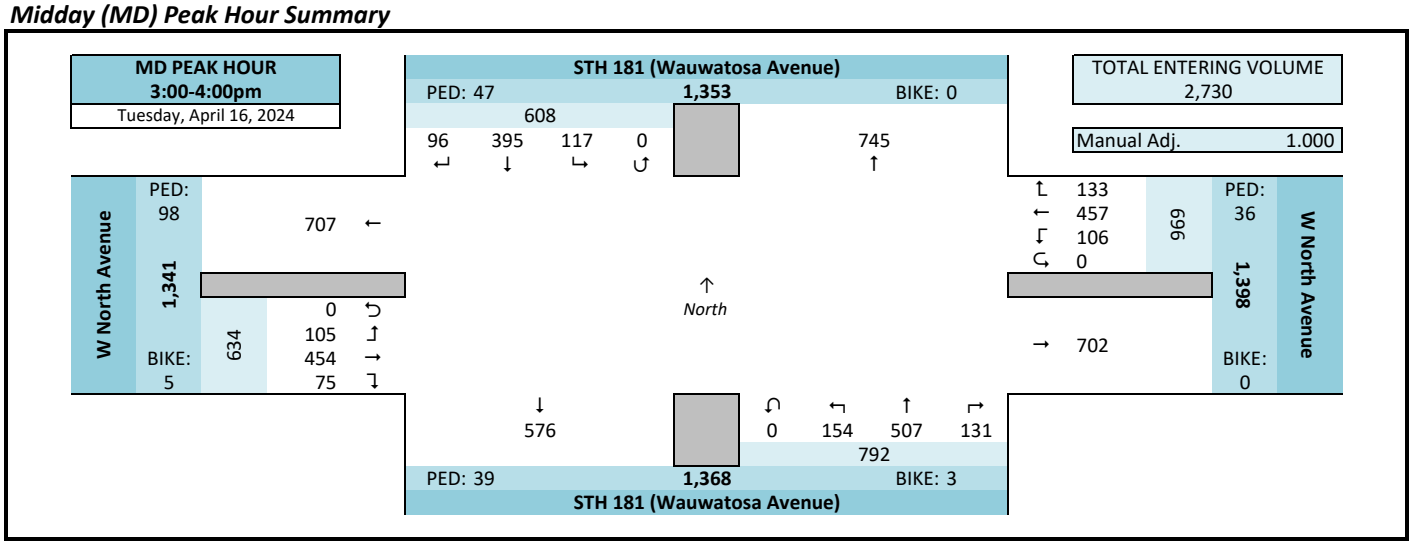
Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 6		Non-Holiday	No Special Events

All Motor Vehicles

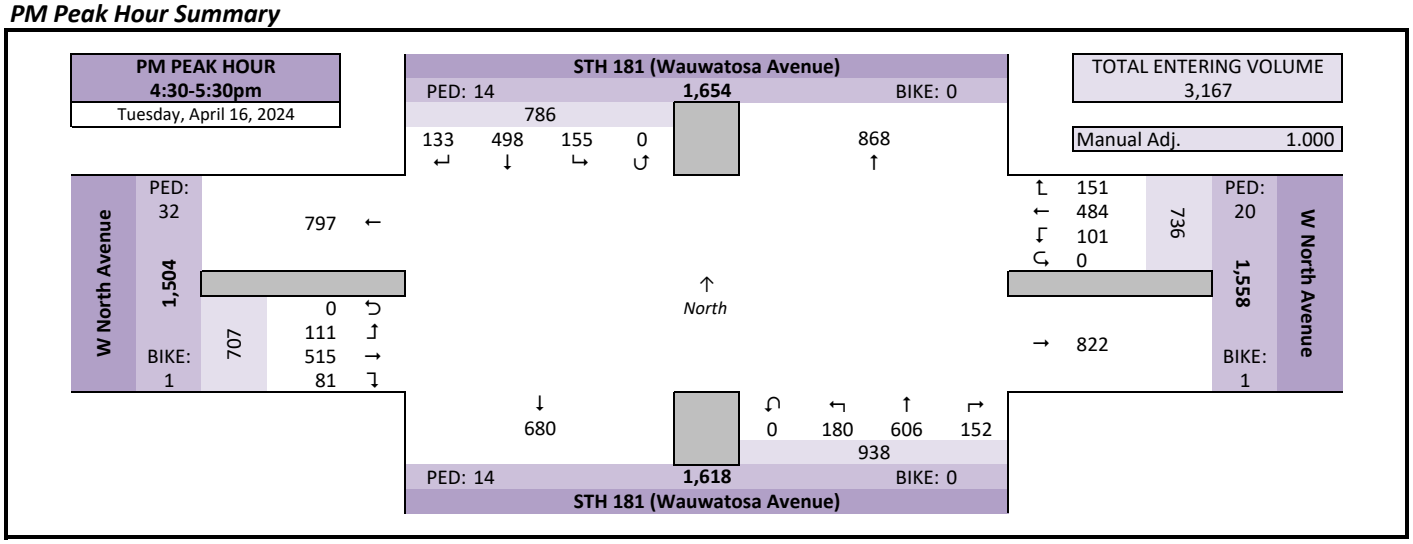
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

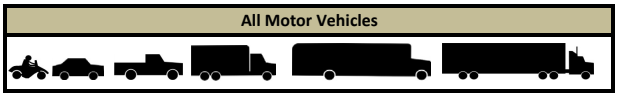


Intersection Traffic Volume Report

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 Volume
		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	
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)					From East (←) W North Avenue					From South (↑) STH 181 (Wauwatosa Avenue)					From West (→) W North Avenue					Total Hourly Volume	PHF
		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	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:**

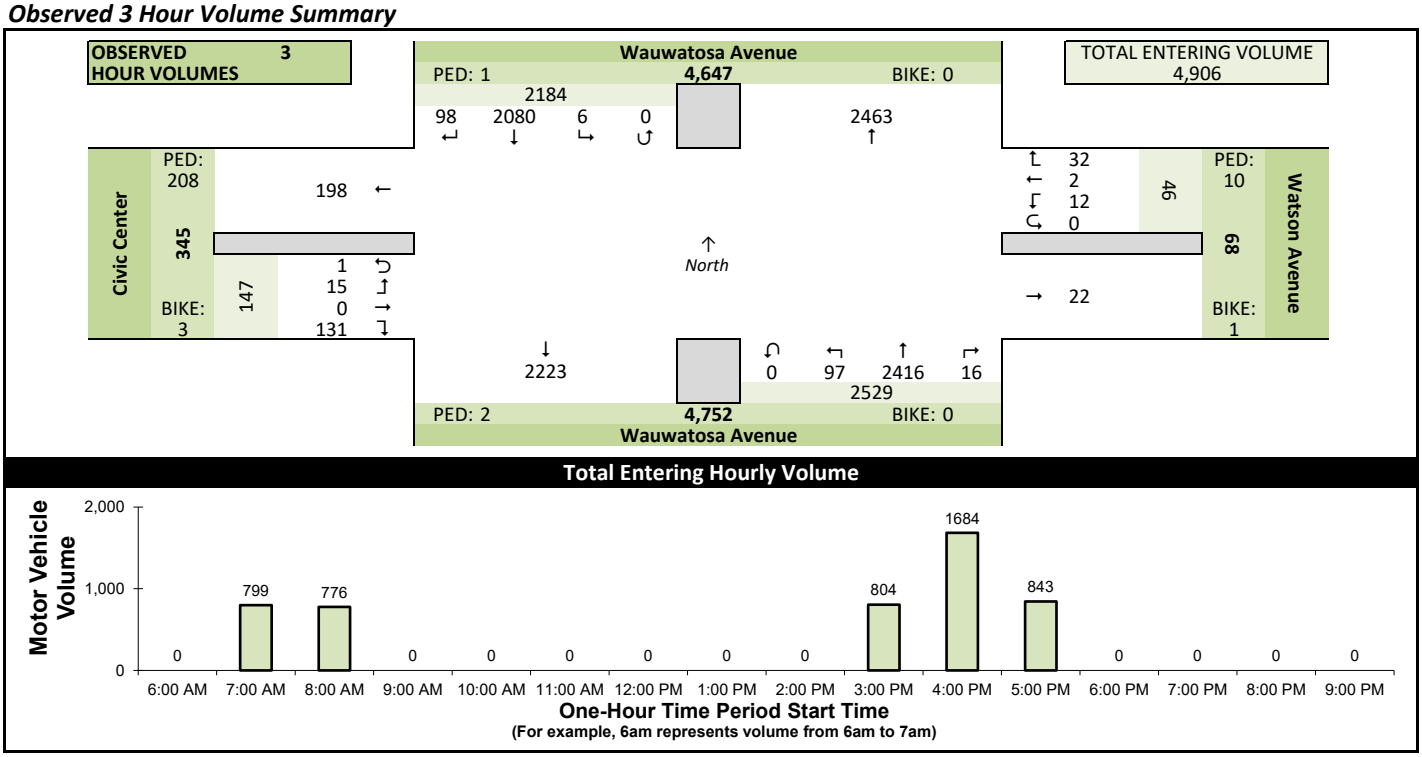
Site Information

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

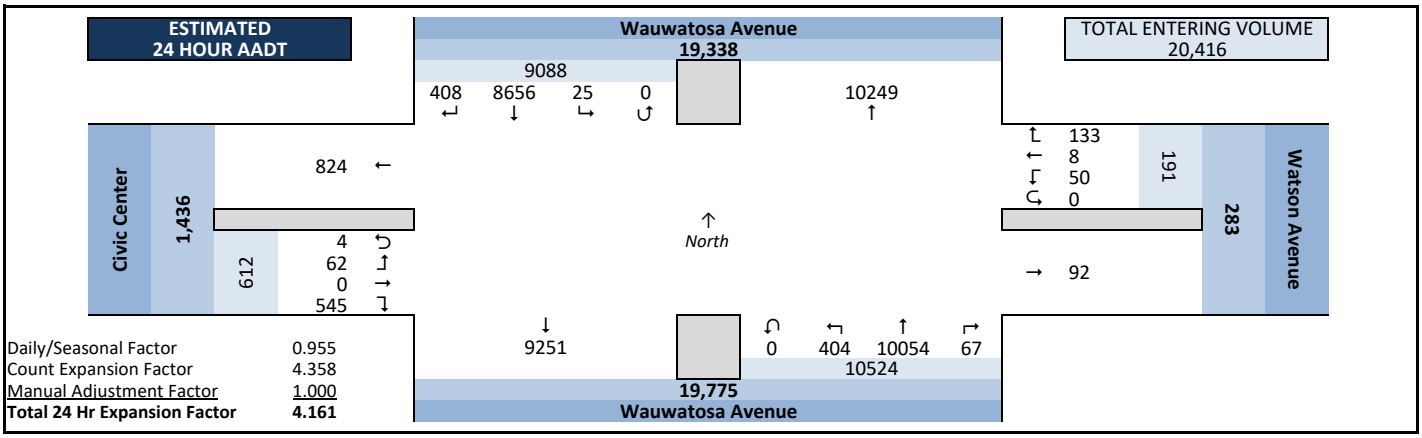
Hrs Counted:	07:30 AM-08:30 AM and 03:30 PM-05:30 PM				
1st Day of Count	Tuesday, April 16, 2024			Weather	
AM Peak Period	Wednesday, April 17, 2024			Clear & Dry	
Midday Peak Period				Clear & Dry	
PM Peak Period	Tuesday, April 16, 2024			Clear & Dry	
Calculated Peak Hours					
AM	7:30-8:30am	MD		PM	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



Total Entering Hourly Volume

Estimated 24 Hour AADT



Daily/Seasonal Factor	0.955
Count Expansion Factor	4.358
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	**4.161**

Intersection Traffic Volume Report

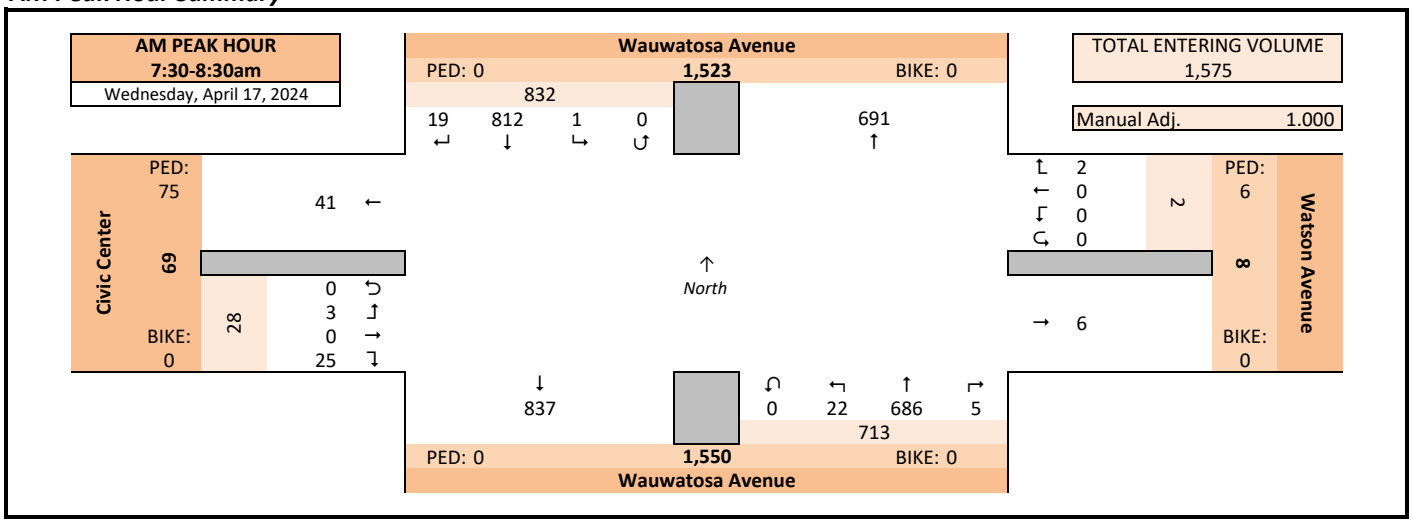
Peak Hour Volume Graphical Summary

Wauwatosa Avenue & Watson Avenue

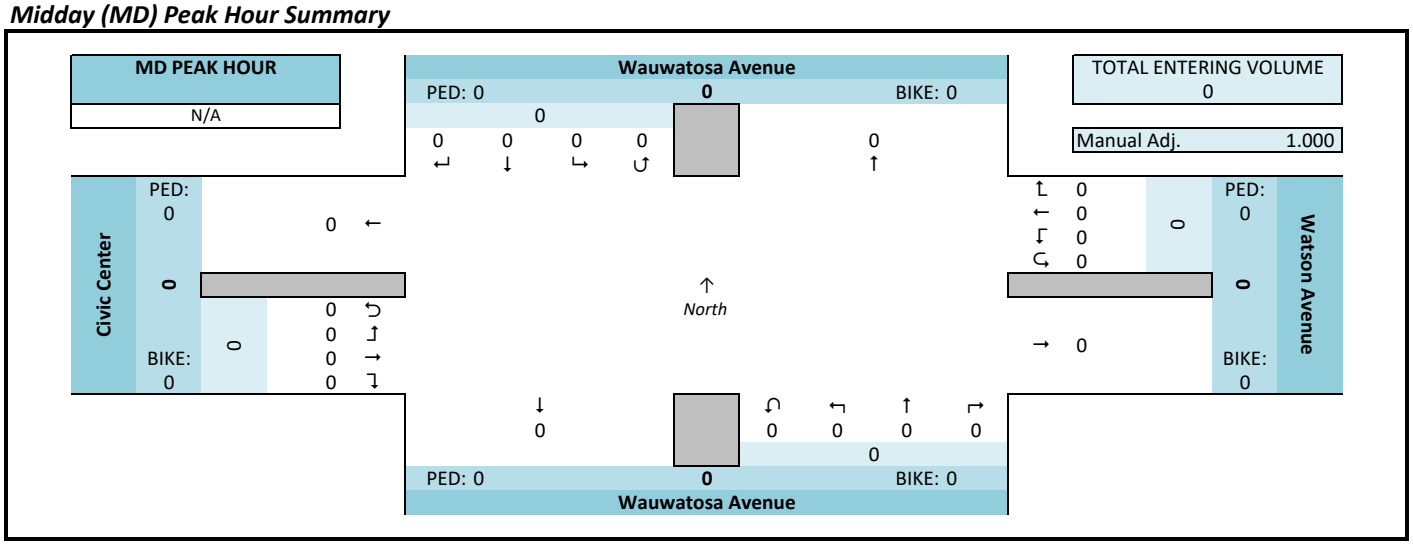
Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

All Motor Vehicles

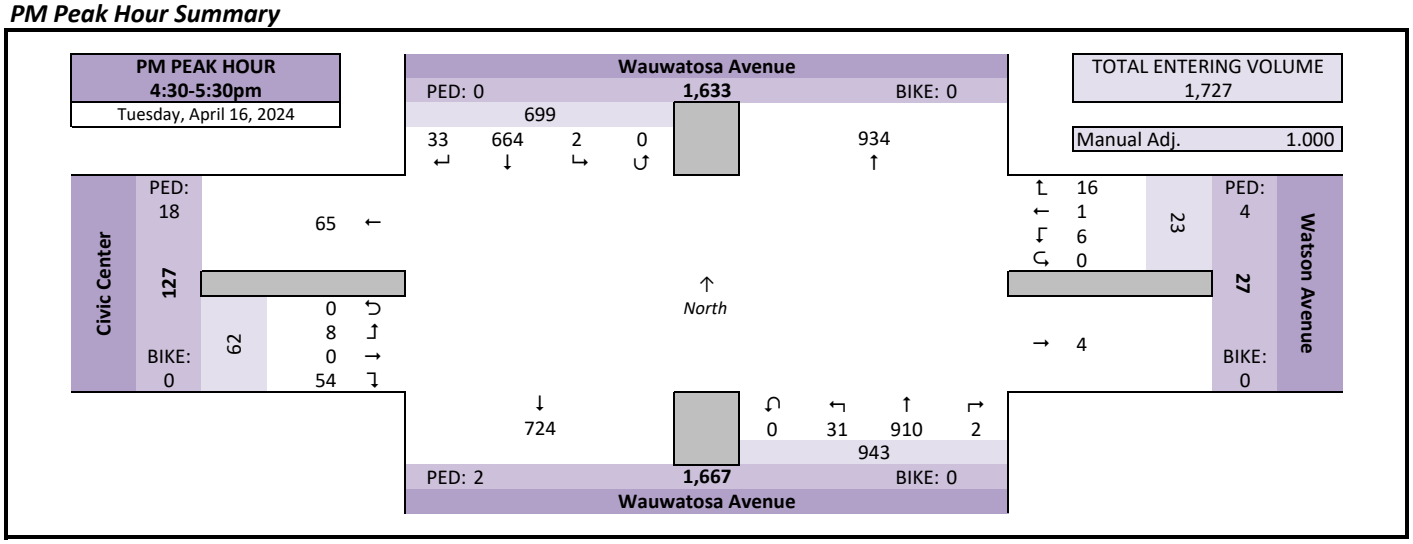
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

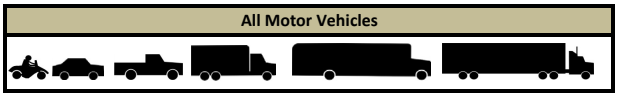


Intersection Traffic Volume Report

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

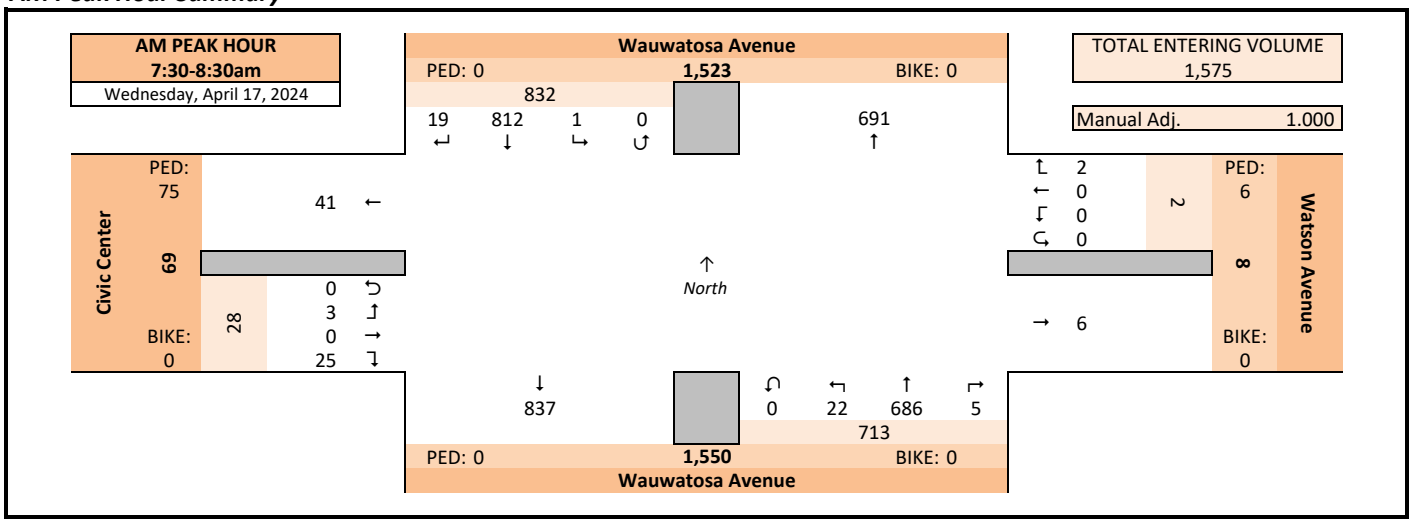
Peak Hour Volume Graphical Summary

Wauwatosa Avenue & Watson Avenue

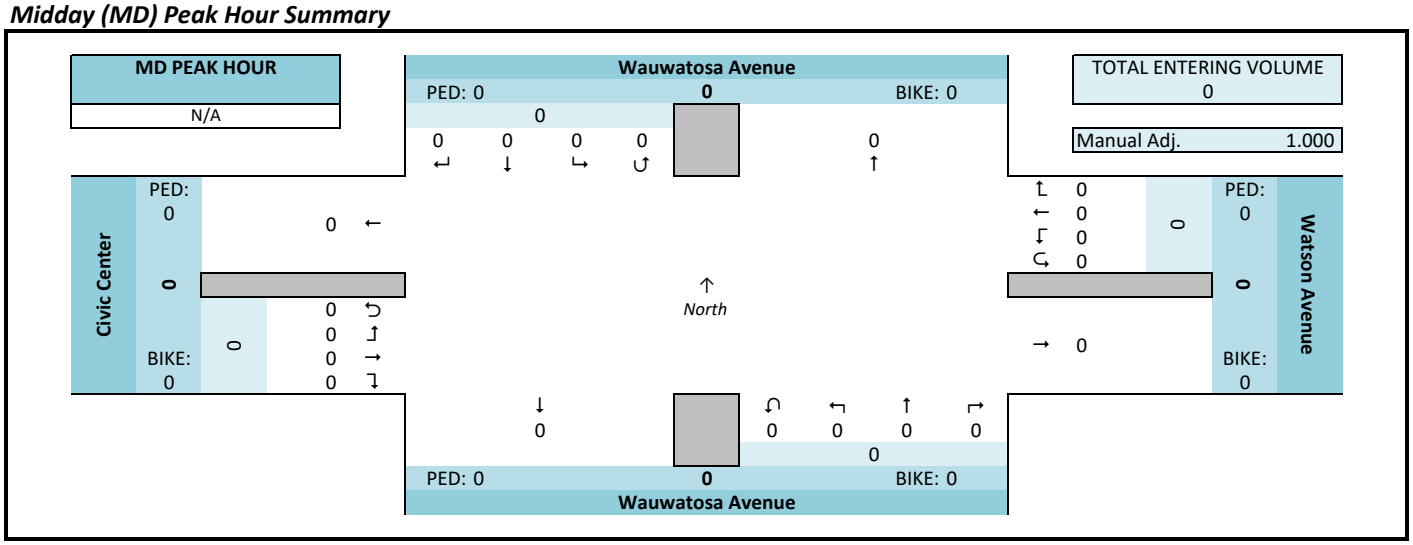
Count Basics			*Page 2 of 13*
Start Date:	Tuesday, April 16, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 3		Non-Holiday	No Special Events

All Motor Vehicles

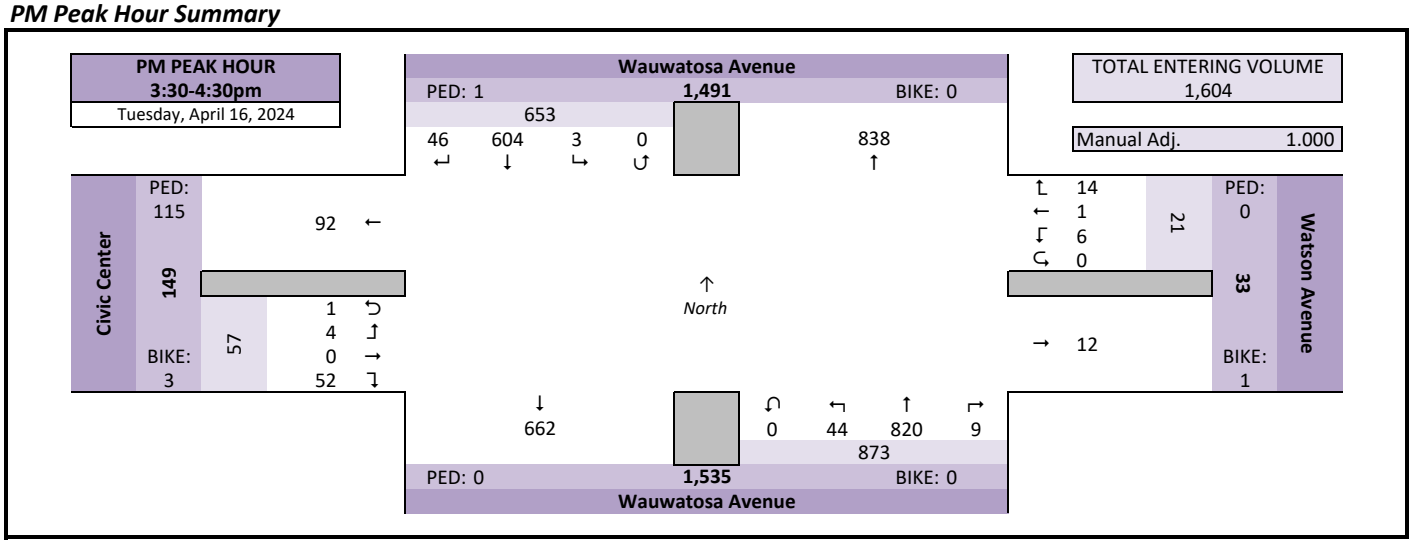
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

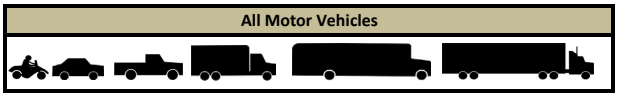


Intersection Traffic Volume Report

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

Traffic Analysis & Design, Inc.

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

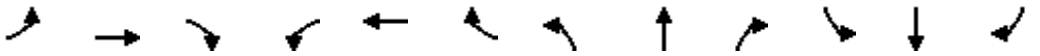
LOS	Signalized Intersections Control Delay/Vehicle (sec/veh)	Unsignalized Intersections Avg. Control Delay (sec/veh)	Relative Delay
A	≤10	≤10	Short Delays
	Free-flow traffic operations at avearge travel speeds. Vehicles completely unimpeded in ability to maneuver. Minimal delay at signalized intersections.		
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

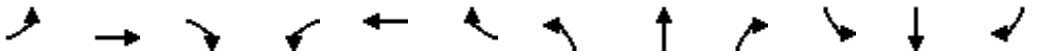
Intersection	
Int Delay, s/veh	1.6

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	-	-

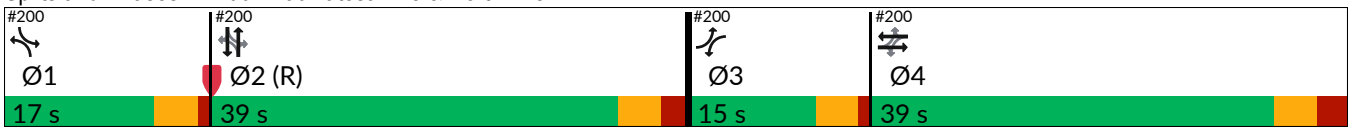


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	455	75	105	455	135	155	505	130	115	395	95
Future Volume (vph)	105	455	75	105	455	135	155	505	130	115	395	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

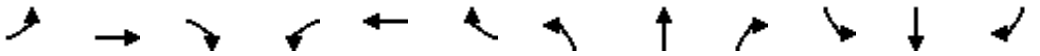
Intersection	
Int Delay, s/veh	0

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

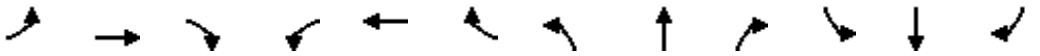
Intersection	
Int Delay, s/veh	1.7

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	-	-

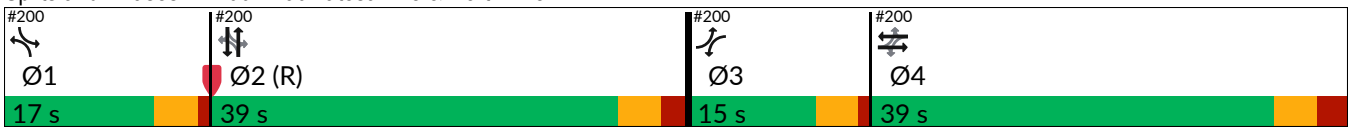


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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

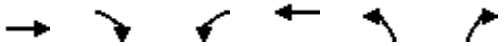
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.41	0.63	0.15	0.41	0.60	0.29	0.64	0.74	0.29	0.63	0.61	0.26
Control Delay (s/veh)	22.6	36.2	3.1	23.0	35.4	11.4	28.3	39.8	10.8	29.2	35.7	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	36.2	3.1	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	-	-	-	-	-	-

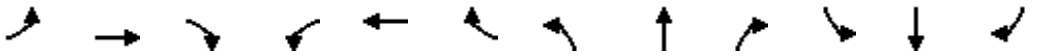
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	16.48
HCM LOS			C

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	

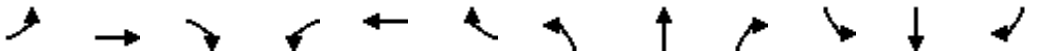
Intersection	
Int Delay, s/veh	1.5

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	-	-

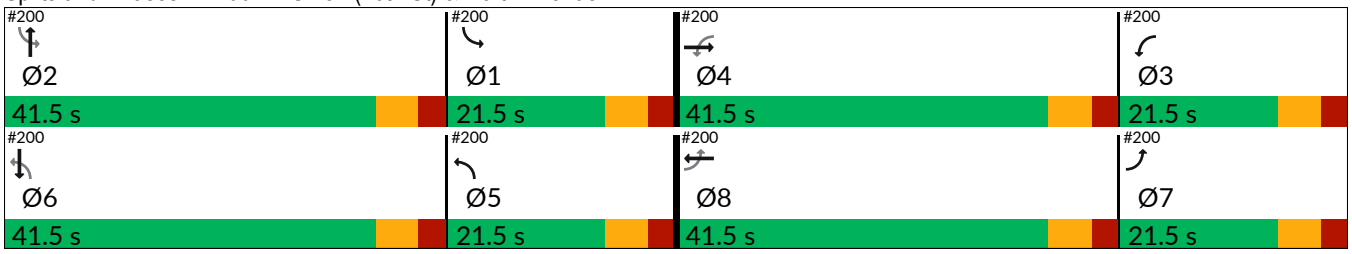


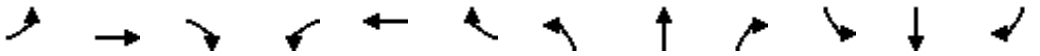
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	455	75	120	455	135	155	505	130	115	395	95
Future Volume (vph)	105	455	75	120	455	135	155	505	130	115	395	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	

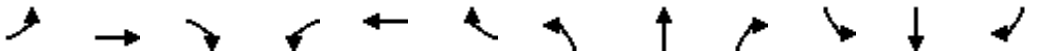
Intersection	
Int Delay, s/veh	0

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	

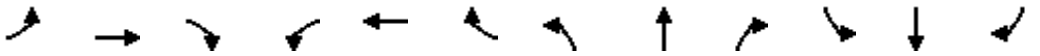
Intersection	
Int Delay, s/veh	1.4

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	-	-



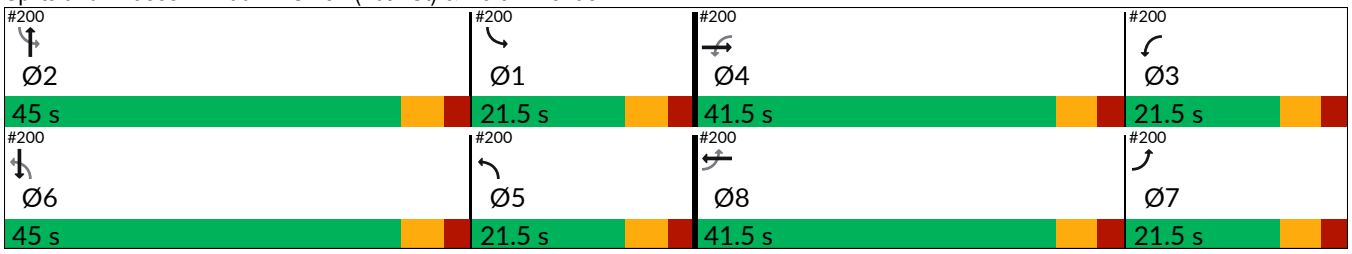
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (vph)	110	515	80	100	485	150	180	605	150	155	500	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	

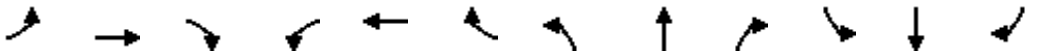
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.3	57.3		48.2	60.6		57.1	64.9		62.4	54.8	
Queue Length 50th (ft)	59	319		54	354		88	426		74	335	
Queue Length 95th (ft)	103	#486		95	#556		#206	#662		163	#506	
Internal Link 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

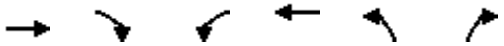




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	515	80	100	485	150	180	605	150	155	500	135
Future Volume (veh/h)	110	515	80	100	485	150	180	605	150	155	500	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	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	-	-	-	-	-	-

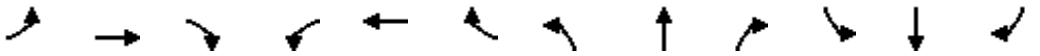
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	16.44
HCM LOS			C

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			

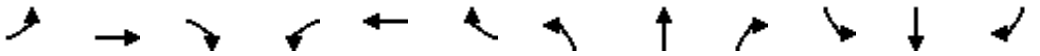
Intersection	
Int Delay, s/veh	2.4

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	-	-

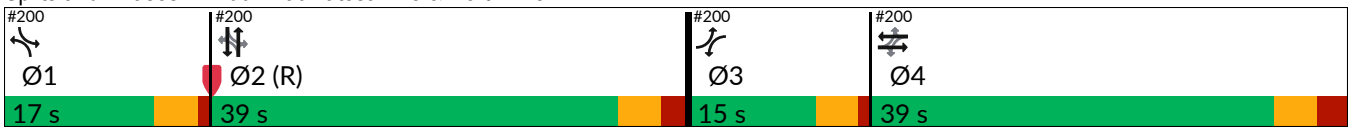


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	105	465	140	155	505	130	115	405	95
Future Volume (vph)	105	465	75	105	465	140	155	505	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		

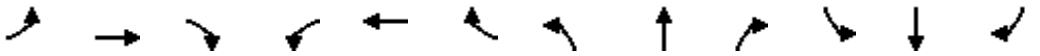
Intersection	
Int Delay, s/veh	0

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			

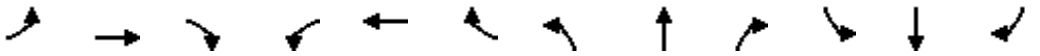
Intersection	
Int Delay, s/veh	3

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	-	-

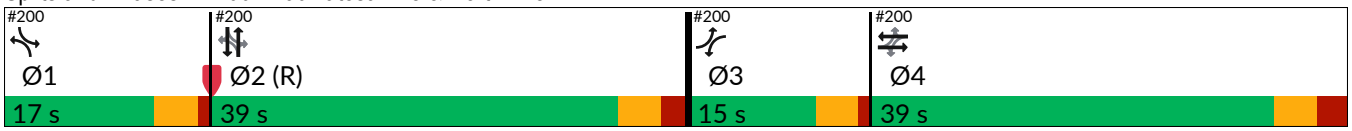


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	100	495	155	180	600	150	155	510	135
Future Volume (vph)	110	525	80	100	495	155	180	600	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	-	-	-	-	-	-

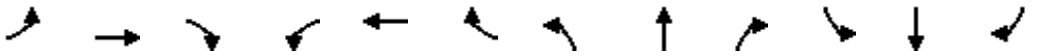
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.62
HCM LOS			C

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			

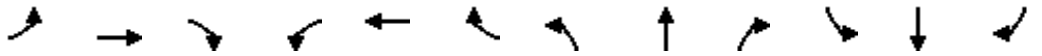
Intersection	
Int Delay, s/veh	1.7

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	-	-

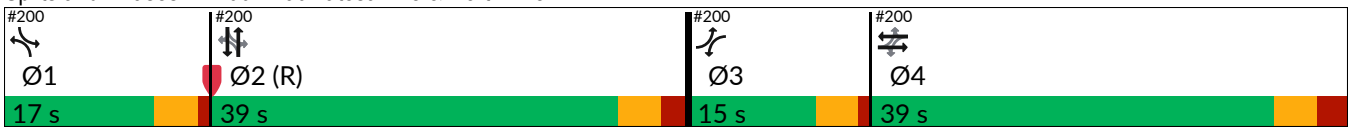


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	105	465	140	175	505	130	115	405	95
Future Volume (vph)	105	465	75	105	465	140	175	505	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

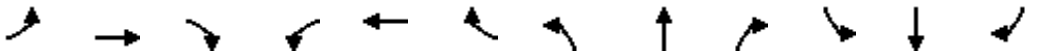
Intersection	
Int Delay, s/veh	0

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			

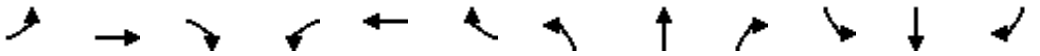
Intersection	
Int Delay, s/veh	1.7

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	-	-



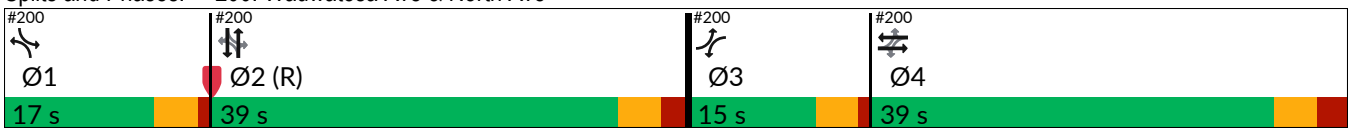
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	100	495	155	200	600	150	155	510	135
Future Volume (vph)	110	525	80	100	495	155	200	600	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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

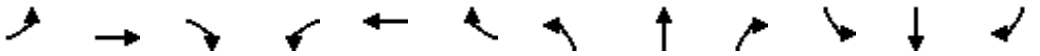
Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	303	-	-
HCM Lane V/C Ratio	0.057	-	-
HCM Ctrl Dly (s/v)	17.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-

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			

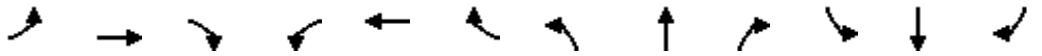
Intersection	
Int Delay, s/veh	1.3

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	-	-

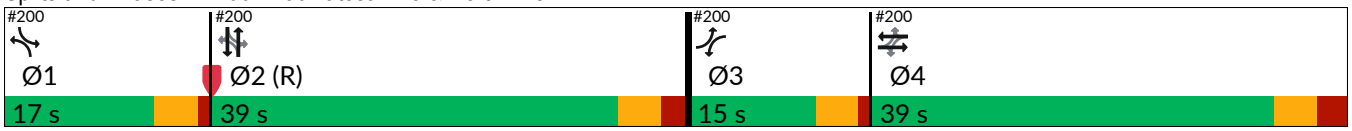


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	465	75	105	465	140	175	505	130	135	385	95
Future Volume (vph)	110	465	75	105	465	140	175	505	130	135	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

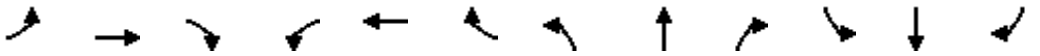
Intersection	
Int Delay, s/veh	0

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			

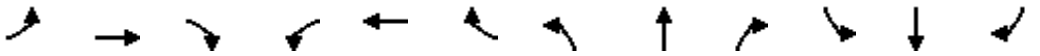
Intersection	
Int Delay, s/veh	1

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	-	-

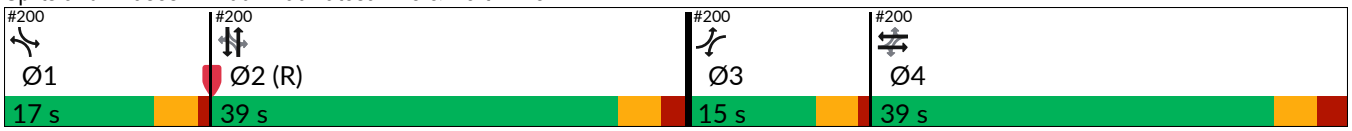


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	525	80	100	495	155	200	600	150	170	495	135
Future Volume (vph)	120	525	80	100	495	155	200	600	150	170	495	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

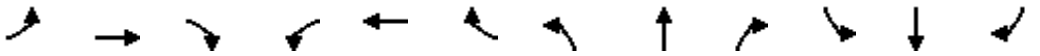
Intersection	
Int Delay, s/veh	2.8

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	-	-

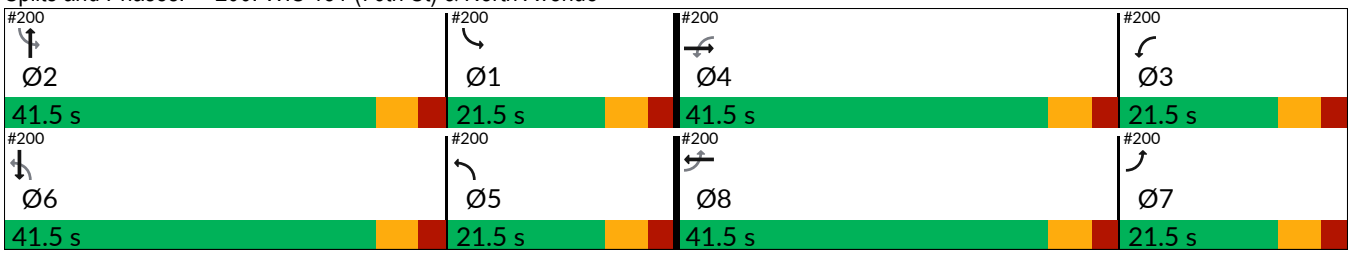


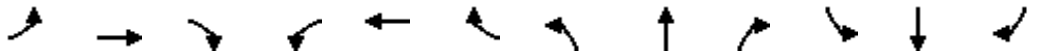
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	150	450	135	170	510	130	115	405	95
Future Volume (vph)	105	465	75	150	450	135	170	510	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

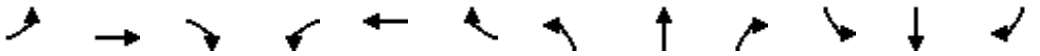
Intersection	
Int Delay, s/veh	0.1

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			

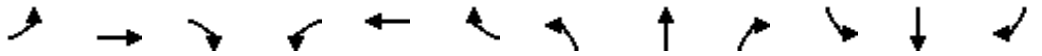
Intersection	
Int Delay, s/veh	3

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	-	-

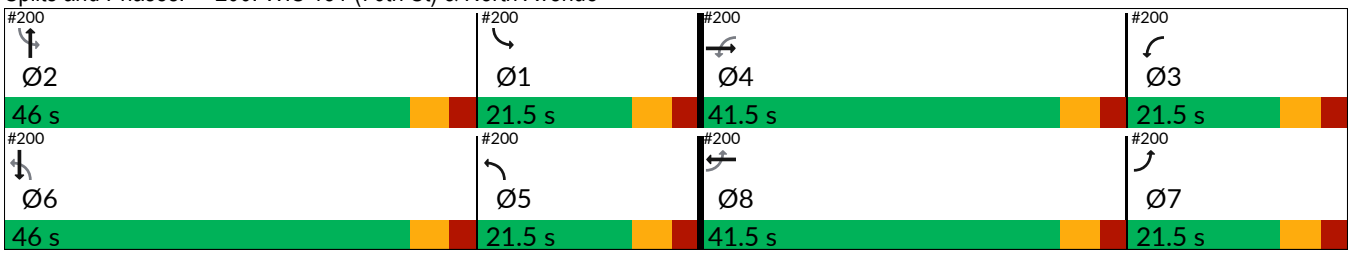


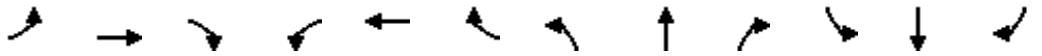
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	130	480	150	195	605	150	155	510	135
Future Volume (vph)	110	525	80	130	480	150	195	605	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	-	-	-	-	-	-

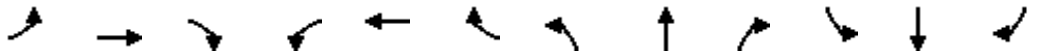
Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	17.34
HCM LOS			C

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		

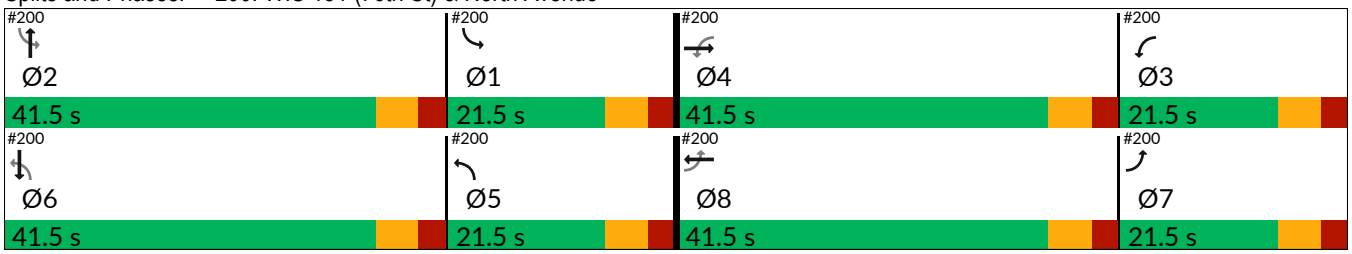
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	73	401	482	138	-	-
HCM Lane V/C Ratio	0.061	-	-	0.086	0.131	0.131	0.05	-	-
HCM Ctrl Dly (s/v)	9.9	-	-	58.7	15.3	13.6	9	0	-
HCM Lane LOS	A	-	-	F	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.4	0.4	0.2	-	-

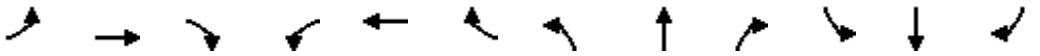
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	465	75	150	450	135	190	510	130	115	405	95
Future Volume (vph)	105	465	75	150	450	135	190	510	130	115	405	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			

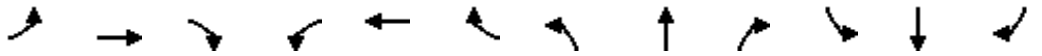
Intersection	
Int Delay, s/veh	0.1

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			

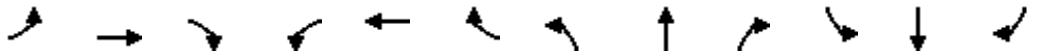
Intersection	
Int Delay, s/veh	1.9

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	-	-

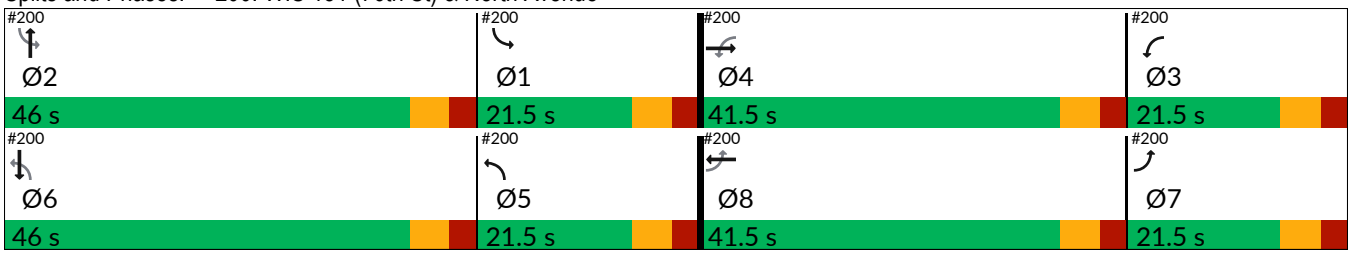


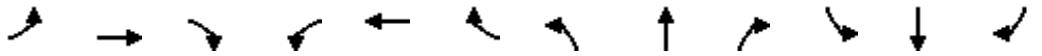
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	525	80	130	480	150	215	605	150	155	510	135
Future Volume (vph)	110	525	80	130	480	150	215	605	150	155	510	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	-	-

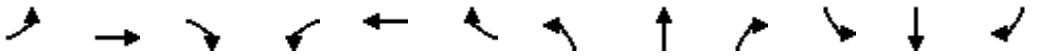
APPENDIX I

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			

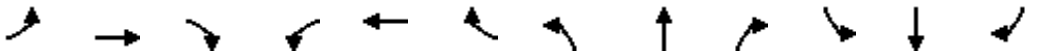
Intersection	
Int Delay, s/veh	1.5

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	-	-

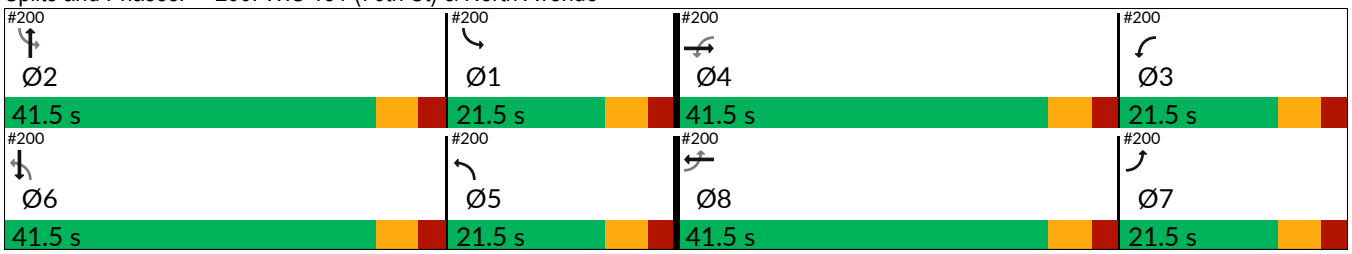


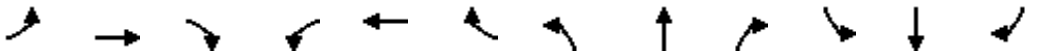
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	465	75	150	450	135	190	505	130	135	385	95
Future Volume (vph)	110	465	75	150	450	135	190	505	130	135	385	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		

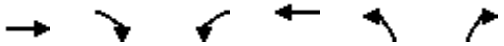
Intersection	
Int Delay, s/veh	0.3

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			

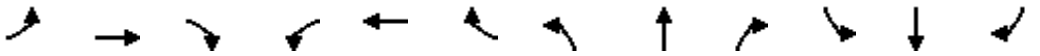
Intersection	
Int Delay, s/veh	1.3

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	-	-

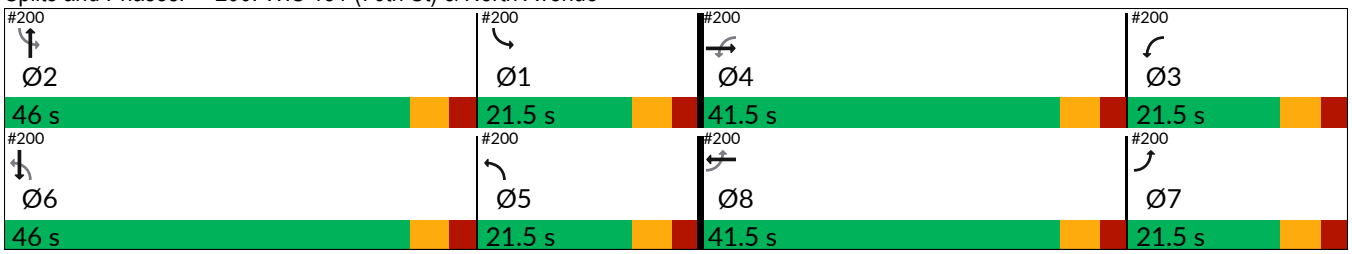


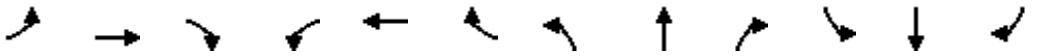
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	525	80	130	480	150	215	595	150	170	495	135
Future Volume (vph)	120	525	80	130	480	150	215	595	150	170	495	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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

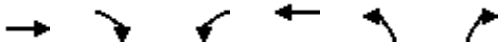




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	525	80	130	480	150	215	595	150	170	495	135
Future Volume (veh/h)	120	525	80	130	480	150	215	595	150	170	495	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	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			

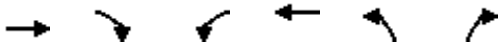
Intersection	
Int Delay, s/veh	0.2

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

TADI 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

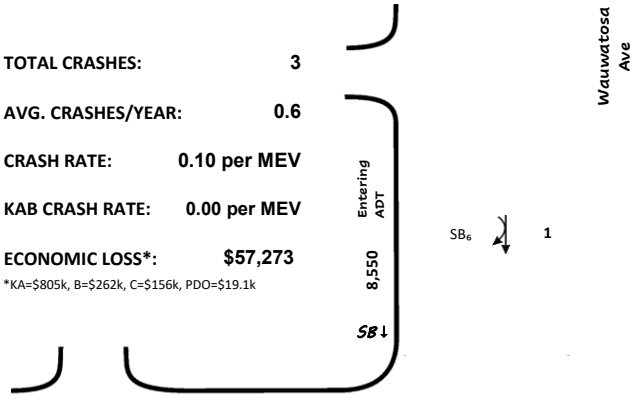
AVG. CRASHES/YEAR: 0.6

CRASH RATE: 0.10 per MEV

KAB CRASH RATE: 0.00 per MEV

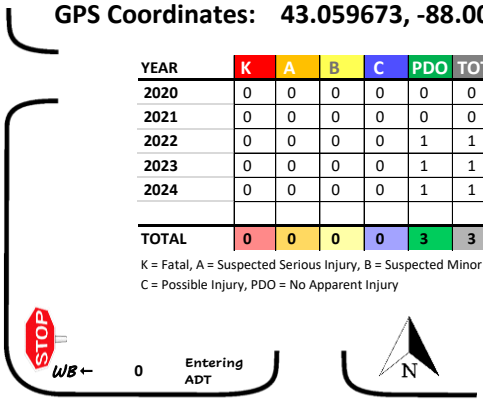
ECONOMIC LOSS*: $57,273

*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



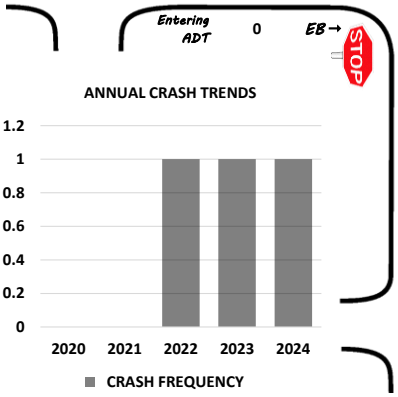
Rozmus Way

SB1 1

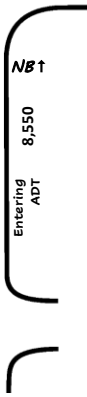
Watson Ave

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

NOTES:

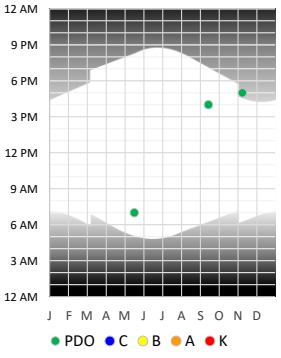
Crashes have been vetted with crash reports.

VEHICLE DAMAGE		
Minor	50%	3
Moderate	0%	0
Severe	33%	2
None/Other/Unkn	17%	1
Total Damaged Vehicles		6

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												
5												
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