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**Corridor Study for  
Wisconsin Highway 81  
(WIS 213 – Milwaukee Road)**

Beloit, Wisconsin

*Final Report*

*Prepared for:*



Stateline Area Transportation Study

*Prepared by:*

**AECOM**

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# Executive Summary

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The Wisconsin Highway 81 (WIS 81) corridor study evaluates traffic operations, traffic safety, roadway access, and multimodal accommodations within the City of Beloit, Wisconsin. This report documents the methodologies, findings, and recommended mitigation strategies to improve traffic safety and facilitate acceptable traffic operations at key locations in the study area for existing-year (Year 2022) and future-year (Year 2047) conditions. A review of the existing roadway and intersection geometrics was performed to identify substandard elements along the corridor. Crash data was obtained and analyzed at study intersections and crash commonalities were identified. Traffic operations analysis was performed at key intersections along WIS 81 to evaluate current and projected traffic conditions along the project corridor.

Alternatives for the WIS 81 corridor were developed based on deficiencies found in the following categories: geometric site reviews of the study area, safety evaluation of the WIS 81 corridor and the study intersections, and intersection operations analysis for the existing-year and Year 2047 horizon year. Locations with several alternatives were evaluated based on the aforementioned categories and a preferred alternative was selected based on those results.

The following describes recommendations for the WIS 81 corridor and key intersections:

## *WIS 81 (Liberty Avenue), Madison Road to Fourth Street*

- It is recommended that the Liberty Avenue cross-section be updated to provide a three-lane cross-section with two travel lanes and a two-way, left-turn lane (TWLTL) with a multi-use path replacing one sidewalk. This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from Liberty Avenue. The multi-use path will enhance bike/ped accommodations along the corridor and provide a vital east-west route connecting western Beloit to the downtown area. These improvements can be accommodated within the existing roadway cross-section and right of way, minimizing construction costs and right of way acquisition.
- It is recommended that access management strategies are considered for implementation along the Liberty Avenue corridor. Strategies such as consolidation, cross-access, restriction, or removal of access to Liberty Avenue will improve safety and mobility by reducing the number of access drives and conflict points which motorists must consider when driving along the roadway. Restriction or removal of public roadway access to Liberty Avenue should be investigated further to determine candidate locations. If locations are determined, crossing elements at these restricted intersections should be implemented to improve bike/ped safety when crossing Liberty Avenue.

## *WIS 81 (Liberty Avenue), Sixth Street intersection*

- It is recommended that the intersection control at Sixth Street be updated to provide traffic signal control (via shifting the traffic signal control from Bluff Street to Sixth Street). This improvement will provide protected green time to traffic to and from Sixth Street instead of waiting for gaps in Liberty Avenue traffic, improving safety and mobility at the intersection. Shifting the traffic signal to the east will also help serve traffic to and from Beloit Memorial High School, providing better distribution of traffic

from the campus. While the Sixth Street traffic signal is approximately 570 feet from the existing traffic signal at Fourth Street, traffic signal phasing and timing can be coordinated to provide efficient traffic flow along Liberty Avenue with no queues spilling back to the upstream intersection.

*WIS 81 (Liberty Avenue), Fifth Street intersection*

- It is recommended that the Fifth Street intersection be restricted (right-in, right-out access only) or removed at Liberty Avenue. This access management will aid in safety and mobility along Liberty Avenue by removing a full-access intersection between two closely-spaced traffic signals as well as reduce cut-through traffic to and from Beloit Memorial High School. This improvement also provides an opportunity to enhance the existing multi-use path crossing at Liberty Avenue, improving safety and comfort for bicyclists and pedestrians that use it.

*WIS 81 (Liberty Avenue), Fourth Street intersection*

- It is recommended that, in the short-term, to maintain the existing intersection geometrics and intersection control (i.e., no-build condition). The existing intersection is anticipated to operate adequately (LOS D or better) during Year 2047 peak-hour conditions and the traffic signal will continue to provide dedicated green time for bikes/peds traveling to and from the high school.
- It is recommended that, as a long-term strategy, the intersection of Liberty Avenue and Fourth Street be realigned so the south and west legs (WIS 81) serve as the “through” movement. While this alternative has the largest impacts to the surrounding areas and is the most complex to implement, this alternative provides the greatest benefit to the intersection as it increases mobility along WIS 81 by making two adjacent intersection legs the “through” movement, allowing green time to be more efficiently allocated. Trucks and other large vehicles traveling along WIS 81 will become through movements in the area and not have to perform tight turns at this intersection. The traffic signal will remain in-place, which will provide bike/ped traffic dedicated signal time to cross WIS 81 unopposed.
  - If the horizontal curve alternative is determined to be not feasible for implementation, the roundabout alternative should be considered. While impacts to surrounding parcels are likely, they are not as significant as the horizontal curve alternative. The roundabout is anticipated to provide adequate traffic operations while eliminating angle and head-on crashes due to the roundabout design. Splitter islands on all four quadrants will also allow bikes/peds to perform a two-stage crossing of a roadway.

*WIS 81 (Fourth Street), Liberty Avenue to Portland Avenue*

- It is recommended that the Fourth Street cross-section be updated to provide a three-lane cross-section (two travel lanes and a TWLTL) with a parking lane. This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from Fourth Street. In addition, the existing “trapping left” condition for northbound traffic at Liberty Avenue is eliminated with this

improvement. The on-street parking lane will provide additional parking supply in the area, particularly as the Brassworx site develops. These improvements can be accommodated within the existing roadway cross-section and right of way, minimizing construction costs and right of way acquisition.

*WIS 81 (Portland Avenue), US 51 intersection*

- It is recommended that the intersection of Portland Avenue with US 51 be updated to reduce the number of eastbound through lanes from two to one. This improvement will eliminate the downstream “trapping right” condition at Woodward Avenue as well as the upstream lane utilization and “queue-jumping” issues on eastbound WIS 81, significantly improving safety in this area. Eliminating the second through lane will also allow the westbound left-turn lane to be shifted southerly so the left-turns at the intersection will create a positive left-turn offset, further improving safety at this location. It is anticipated that delays will increase with the reduction of roadway capacity for eastbound through movements, but LOS D or better operations are projected for all movements at this intersection. This alternative can be accommodated within the existing roadway cross-section and right of way, minimizing complexity to implement and associated costs.

*WIS 81 (White Avenue), Woodward Avenue intersection*

- It is recommended that the White Avenue and Woodward Avenue intersection be restricted to right-turn in, right-turn out access only. This alternative eliminates lower-volume, left-turn movements at this intersection while maintaining the higher-volume, eastbound right-turn onto Woodward Avenue. Eliminating left-turn movements improves safety and mobility in the area by eliminating conflict points for WIS 81 motorists. This alternative can be implemented within the existing roadway cross-section.

*WIS 81 (White Avenue), Park Avenue intersection*

- It is recommended that the White Avenue and Park Avenue intersection be updated from traffic signal control to roundabout control. This improvement will benefit safety by eliminating left-turn, angle, and head-on crashes due to the roundabout design and benefit mobility by providing yield control for motorists. The roundabout will reduce travel speeds at the intersection by forcing motorists to navigate around the roundabout median. The splitter islands will provide two-stage crossing for bicyclists and pedestrians. This improvement can be accommodated within the existing right of way.

*WIS 81 (White Avenue), Park Avenue to Milwaukee Road*

- It is recommended that, in the short-term, to maintain the existing roadway cross-section (i.e., no-build condition). Most study intersections along this corridor are anticipated to operate at LOS D or better during Year 2047 conditions. In addition, discussions throughout the project with local stakeholders and residents raised concerns over the cost to widen the roadway cross-section, the potential loss of vegetation in the roadway terrace, and likely right of way acquisition to implement several alternatives favored maintaining the existing cross-section and right of way for as long as possible.

- To aid in maximizing the existing cross-section, it is recommended that access management strategies are considered for implementation along the White Avenue corridor. Strategies such as consolidation, cross-access, restriction, or removal of access to White Avenue will improve safety and mobility by reducing the number of access drives and conflict points which motorists must consider when driving along the roadway. Restriction or removal of public roadway access to White Avenue should be investigated further to determine candidate locations. If locations are determined, crossing elements at these restricted intersections should be implemented to improve bike/ped safety when crossing White Avenue.
- To aid in promoting bicycle use in eastern Beloit, it is recommended that bicycle routes parallel to White Avenue be promoted to connect the existing bike lanes and downtown Beloit with the eastern neighborhoods and commercial areas. Routes such as Keeler Avenue to the north and Woodward Avenue / Strong Avenue to the south provide long-distance parallel routes to White Avenue with significantly lower traffic volumes. In addition, bicycle-use elements, such as pavement markings or wayfinding signs can be installed along these parallel routes to promote their use by providing bicycle-centric features that add to the comfort level of using these routes.
- It is recommended that, as a long-term solution, the White Avenue cross-section be updated to provide a three-lane cross-section (two travel lanes and a TWLTL). This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from White Avenue. Widening of the roadway cross-section will be necessary to implement this alternative so this improvement should be considered as part of a larger roadway reconstruction project that requires adjusting utilities beneath the roadway.

*WIS 81 (White Avenue), Milwaukee Road intersection*

- Both alternatives, updating the intersection to a roundabout or installing numerous intersection improvements, improve safety by reducing travel speeds approaching and through the intersection. Both alternatives, also, address bicycle and pedestrian accommodations to cross White Avenue by providing two-stage crossing at the intersection. Both alternatives will provide adequate mobility for both White Avenue and Milwaukee Road traffic. Therefore, both alternatives would be beneficial to addressing the needs of the intersection. It is recommended, though, that the numerous intersection improvements be implemented at this location as these improvements can be constructed within the roadway cross-section and right of way. The roundabout alternative will likely require right of way to construct the circulation lanes and sidewalks around the intersection.

### *Other recommendations*

In addition to the recommendations previously discussed, there are other locations in the study area that would benefit from improvements, but the improvement is more systemic (e.g., reviewing traffic signal phasing / timing) or the improvement does not have a comparable alternative to evaluate against it. Therefore, the following describes other recommendations to improve safety, mobility, access, and multimodal accommodations along the WIS 81 corridor:

- It is recommended that crosswalk pavement markings be monitored and refreshed to maintain their visibility for motorists and bicyclists/pedestrians. In particular, the crosswalks at the Liberty Avenue and Fourth Street intersection should be updated due to its location near Beloit Memorial High School.
- It is recommended that crosswalks at unsignalized intersections east of US 51 be installed to provide a defined path for bicyclists/pedestrians crossing the side-street or WIS 81.
- It is recommended that the Liberty Avenue and Fifth Street intersection be enhanced with signing and marking to promote safer, more comfortable crossing for bicyclists and pedestrians using the multi-use path at this location.
- It is recommended that access management strategies near the Fourth Street and Portland Avenue intersection be employed as the proposed Brassworx site becomes developed. This improvement will allow for safe and efficient operations at the signalized intersection without impacting driveways or roadways nearby.
- It is recommended that traffic signal equipment is reviewed for improved visibility and clarity for motorists. Examples of this include inspecting and adding backplates (or retroreflective backplates) to each signal head, checking the placement of overhead signal heads over each through or turn lane, and examining the placement of each signal head to ensure that motorists can clearly see them without obstruction.
- It is recommended to provide signing and marking along Portland Avenue to connect the existing bike lanes to the Fifth Street multi-use path. Currently, the on-street bike lanes abruptly end at Fourth Street, one block east of the multi-use path, with no additional information about the path. Adding signing and marking along this one-block stretch of Portland Avenue will provide a vital connection for bicyclists traveling through the City of Beloit.
- It is recommended that intersection sight triangles be reviewed at unsignalized intersections along WIS 81 and address any locations with obstructions. Maintaining clear and unobstructed sight triangles improves safety for both WIS 81 and side-street traffic by providing sight lines for vehicles to see each other as they approach an intersection. Items such as vegetation, fences, lawn decorations, and utility poles can block the field of vision for a driver and increase crash risk due to approaching vehicles “hiding” behind objects. In the event obstructions are present within a sight triangle, they should be removed or minimized (e.g., vegetation trimmed) as much as possible.
  - The intersection of White Avenue with Wisconsin Avenue is an example of a location where obstructions along White Avenue impede the field of vision for motorists along Wisconsin Avenue



# 1.0 Introduction

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Wisconsin Highway 81 (WIS 81) is a significant east-west, principal arterial in the City of Beloit as it connects commuters and freight from western Rock County and residential neighborhoods in western Beloit with downtown Beloit, eastern Beloit, and the I-39/90 and I-43 freeway corridors. Within the study area, WIS 81 travels through several distinct environments and its roadway features reflect these surroundings. From WIS 213 (Madison Road) to Fourth Street, WIS 81 is a two-lane undivided roadway that is the primary east-west route for several residential neighborhoods and the Beloit Memorial High School campus. From Fourth Street to Park Avenue, WIS 81 is primarily a four-lane roadway that connects numerous commercial and industrial properties, as well as access to downtown Beloit, to the surrounding areas. This segment also provides an important crossing of the Rock River, one of five river crossings in the City of Beloit. From Park Avenue to Milwaukee Road, WIS 81 is a two-lane undivided roadway that runs through several residential neighborhoods. East of Milwaukee Road, WIS 81 transitions back to a four-lane divided roadway that serves commercial properties to the east.

The WIS 81 corridor provides multimodal accommodations such as sidewalks, crosswalks, bicycle lanes, and multi-use paths; however, these elements are disjointed and do not connect with each other, creating continuity issues for its users. In addition, WIS 81 provides limited opportunities for bicyclists and pedestrians to cross safely and comfortably – particularly through the residential neighborhoods on the eastern and western ends of the corridor.

## 1.1 Study Purpose

The purpose of this corridor study is to provide recommendations that the City of Beloit and Stateline Area Transportation Study (SLATS MPO), in coordination with the Wisconsin Department of Transportation (WisDOT) can incorporate into a roadway design project for construction. In addition, intersection recommendations can be developed into a Highway Safety Improvement Program (HSIP) funding application to address identified safety issues along the corridor. The goals of this study are listed below:

- Evaluate present-day conditions of the WIS 81 corridor study area to identify roadway needs, operational and safety concerns, multimodal accommodations, and opportunities for potential improvements
- Determine future planned and/or proposed developments along or near the WIS 81 corridor that will increase demand for use of the roadway
- Develop roadway and intersection strategies that will improve the viability of the corridor while balancing the traffic safety, traffic operations, access, and multimodal needs of its users

## 1.2 Study Area

The WIS 81 corridor study area runs from WIS 213 (Madison Road) easterly to Milwaukee Road. Key intersections within the study area include the following:

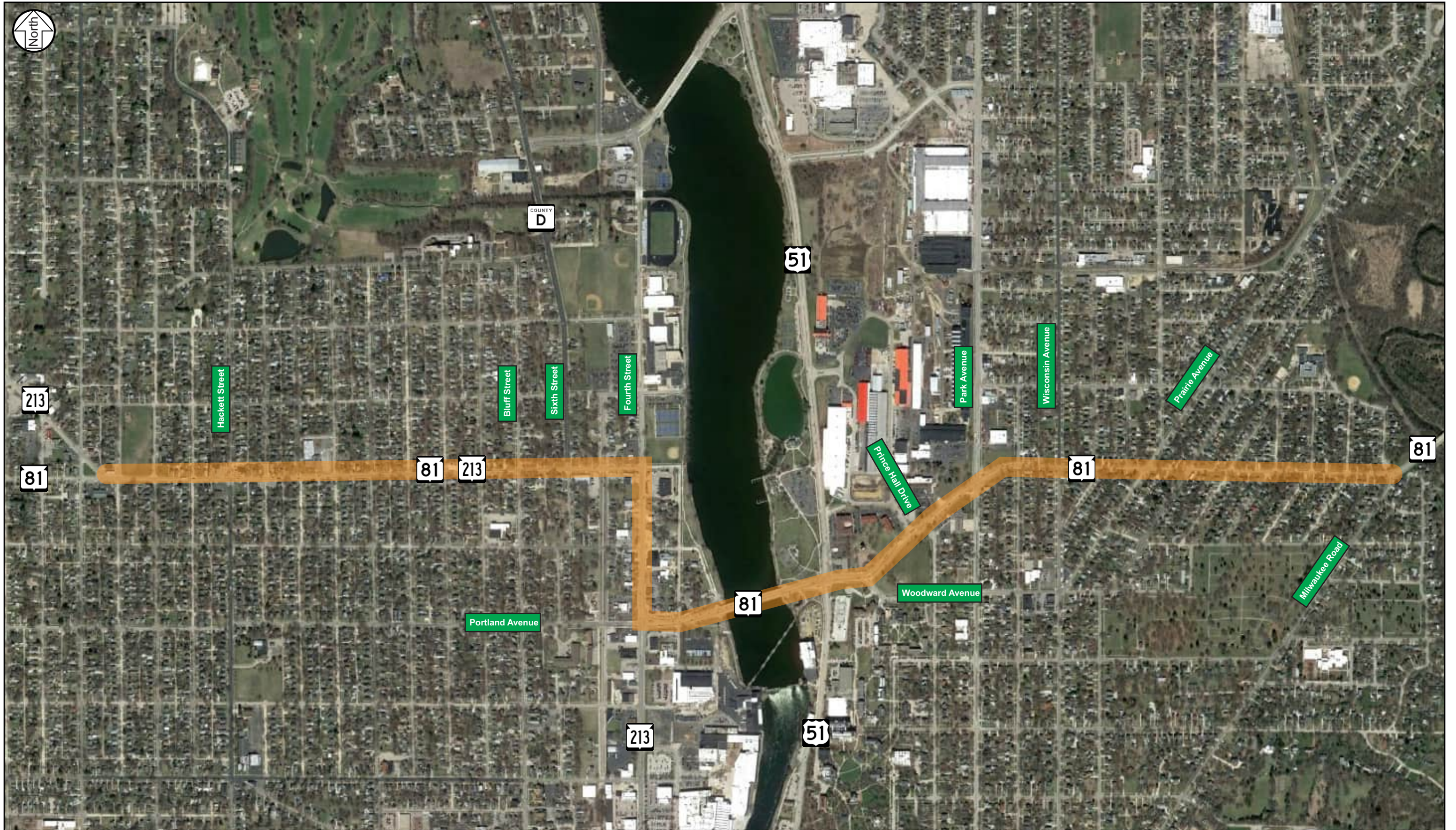
- WIS 81 and WIS 213 (Madison Road)
- WIS 81 and Hackett Street
- WIS 81 and Bluff Street
- WIS 81 and Sixth Street
- WIS 81 and Fourth Street
- WIS 81 and Portland Avenue
- WIS 81 and US 51 (Riverside Drive / Pleasant Street)
- WIS 81 and Woodward Avenue
- WIS 81 and Prince Hall Drive
- WIS 81 and Park Avenue
- WIS 81 and Wisconsin Avenue
- WIS 81 and Prairie Avenue
- WIS 81 and Milwaukee Road

The general study area limits are illustrated in **Figure 1.1**.

## 1.3 Study Approach

This study was completed utilizing industry accepted publications such as the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, WisDOT's *Facilities Development Manual* (FDM), AASHTO's *Policy of Geometric Design of Highways and Streets*, and FHWA's *Manual on Uniform Traffic Control Devices* (MUTCD). These design standards aid in determining substandard components within the existing roadway and helped develop alternatives to address the concerns.

Additionally, the City and SLATS MPO requested public input during the project to engage the public, local stakeholders, and policy makers help confirm problem locations, identify needs and desires for consideration, and provide feedback about potential alternatives within the study area. Three public information meetings (PIMs) were conducted throughout the project that allowed attendees to provide direct feedback on existing concerns and proposed alternatives that were developed for consideration.



**Project Study Area**  
 Wisconsin 81 Corridor Study  
 Beloit, Wisconsin

Figure 1

## 2.0 Existing Area Conditions

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### 2.1 Roadway Transportation System

Descriptions of major area roadways within the study area are summarized below. Roadway and intersection characteristics are illustrated in **Figure 2.1**.

#### ***Wisconsin Highway 81 (WIS 81)***

WIS 81 is an east-west roadway that connects the western and eastern areas of Beloit via a crossing over the Rock River. From WIS 213 to Fourth Street, WIS 81 is also known as Liberty Avenue and provides a two-lane undivided urban cross-section. At Fourth Street, WIS 81 turns south and follows Fourth Street to Portland Avenue. At Portland Avenue, WIS 81 turns east and follows Portland Avenue to US 51. From Liberty Avenue to US 51, WIS 81 provides a four-lane undivided urban cross-section. From US 51 to Milwaukee Road, WIS 81 is also known as White Avenue and provides a two-lane cross-section. The entire section of WIS 81 in this study area is classified as a principal arterial in the SLATS MPO area. Sidewalks are present on both sides of WIS 81 throughout the study area and marked, on-street bicycle lanes are provided on Portland Avenue/White Avenue from Fourth Street to Harrison Avenue. On-street parking is only permitted on WIS 81 between 11th Street and Vine Street. The cross-section width (including curb and gutter) varies along WIS 81, as illustrated below:

- Liberty Avenue segment: 40-42 feet pavement width
- Fourth Street segment: 48-foot pavement width
- Portland Avenue segment: 58-foot pavement width
- White Avenue segment: 30-foot pavement width

The posted speed limit along WIS 81 is 25 mph throughout the study area. Traffic signal control is provided at Hackett Street; Bluff Street; Fourth Street; Portland Avenue; US 51; Prince Hall Drive; Park Avenue; and Prairie Avenue. Exclusive turn lanes are provided along WIS 81 at many key intersections within the study area. Beloit Transit Routes 1 and 6 run along Fourth Street while Routes 3 and 5 run east of Milwaukee Road.

Annual daily traffic (ADT) volumes along WIS 81 were taken in the year 2019 and vary throughout the study area. WIS 81 has approximately 11,000 vehicles per day (vpd) along Liberty Avenue, then decreases to 9,700 vpd along Fourth Street. Over the Rock River, WIS 81 has an ADT of 17,300 vpd (highest in the study area, the City of Beloit, and SLATS MPA) and approximately 15,000 vpd west of Park Avenue. Along White Avenue on the eastern end of the study area, WIS 81 has an ADT of approximately 12,800 vpd.

#### ***Wisconsin Highway 213 (WIS 213)***

WIS 213 is primarily a two-lane, north-south principal arterial roadway that connects western Rock County and western Beloit to downtown Beloit. WIS 213 runs concurrent with WIS 81 from Madison Road to Portland Avenue. Exclusive turn lanes are provided along WIS 213 at many key intersections while concurrent with WIS 81. Beloit Transit Route 6 runs along WIS 213 south of WIS 81. Sidewalks are provided on the east side of WIS 213 north of Liberty Avenue and on both sides of WIS 213 through the study area. On-street parking is provided between 11th Street and Vine Street and the roadway has a posted speed limit of 25 mph.

### ***United States Highway 51 (US 51)***

US 51, also known as Riverside Drive north of WIS 81 and Pleasant Street south of WIS 81, is a four-lane, north-south principal arterial roadway that is a vital north-south route within the Beloit metropolitan area. At its signalized intersection with WIS 81, exclusive turn lanes are provided on both approaches of US 51. The Beloit-Janesville Express transit route runs along US 51 with stops near WIS 81. Sidewalks are provided along both sides of US 51 north of WIS 81 and only on the west side south of WIS 81. On-street parking is prohibited on US 51 and the roadway has a posted speed limit of 30 mph near WIS 81.

### ***Park Avenue, Prairie Avenue***

Park Avenue and Prairie Avenue are arterial roadways that are primary north-south routes in eastern Beloit. Both roadways are primarily two-lane roadways except for Park Avenue north of WIS 81, which provides two travel lanes in each direction. However, the outside northbound lane accommodates occasional parking, which can limit the use of the outside lane for travel. At WIS 81, both roadways provide exclusive turn lanes (left and right-turn lanes on Park Avenue, left-turn lanes on Prairie Avenue) and both intersections are under traffic signal control. Beloit Transit Route 2 run along both roadways. Sidewalks are present on both sides of Park Avenue and Prairie Avenue. On-street parking is prohibited on both sides of Prairie Avenue and the west side of Park Avenue north of WIS 81; on-street parking is permitted on the east side of Park Avenue north of the Old Fashion Bakery entrance and on both sides south of WIS 81.

### ***Sixth Street, Hackett Street***

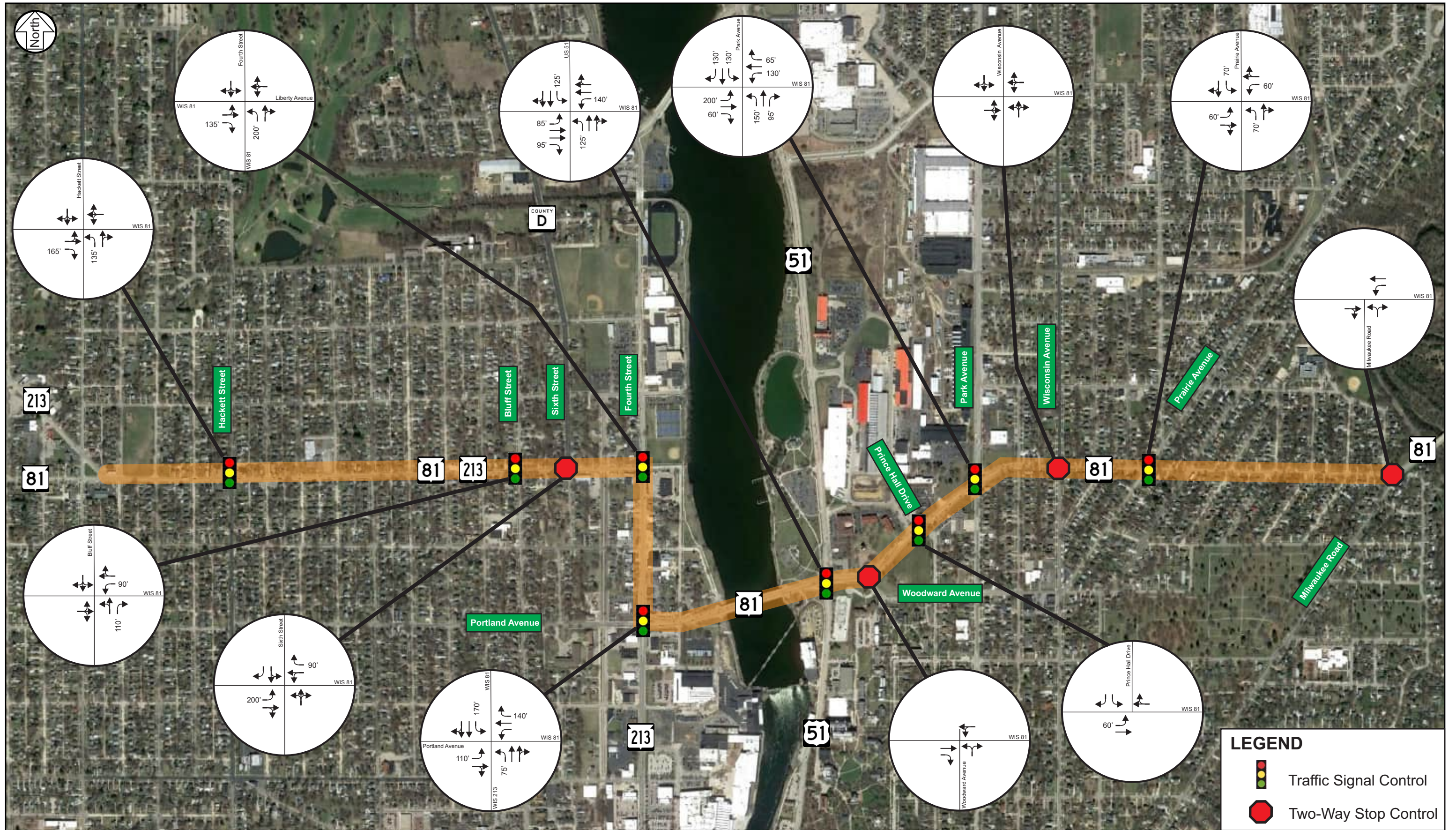
Sixth Street (also known as County D) and Hackett Street are arterial roadways that are primary north-south routes in western Beloit. Both roadways are primarily two-lane roadways except for southbound Sixth Street approaching WIS 81, which provides two travel lanes in that direction. At WIS 81, a northbound left-turn lane is provided on Hackett Street while the southbound approach is flared which serves as a de facto right-turn lane. Sixth Street provides an unmarked, de facto right-turn lane on its southbound approach with WIS 81. The Hackett Street intersection is under traffic signal control while all movements from Sixth Street are under stop-sign control. Sidewalks are present on both sides of Sixth Street and Hackett Street. Beloit Transit Route 1 runs along both Sixth Street and Hackett Street. On-street parking is permitted on both sides of Hackett Street and on both sides of Sixth Street south of WIS 81. On-street parking is permitted on the east side of Sixth Street north of WIS 81.

### ***Milwaukee Road***

Milwaukee Road is a two-lane, north-south collector roadway that serves a residential neighborhood on the City's east side. At WIS 81, the designation of Milwaukee Road comprises the south and east approaches. At WIS 81, a westbound left-turn lane is provided from westbound Milwaukee Road to southbound Milwaukee Road and all movements from the south approach are under stop-sign control. On-street parking is prohibited on both sides of Milwaukee Road between Edan Court and White Avenue and Beloit Transit Routes 3 and 5 run along Milwaukee Road.

### ***Bluff Street, Woodward Avenue, Wisconsin Avenue, Prince Hall Drive***

These roadways are collector roadways or local streets that serve residential neighborhoods or commercial properties. Prince Hall Drive and Bluff Street have traffic signal control at WIS 81; movements from Woodward Avenue and Wisconsin Avenue at WIS 81 are under stop-sign control. Exclusive left-turn and right-turn lanes are provided on Prince Hall Drive at WIS 81 while an exclusive right-turn lane is provided on northbound Bluff Street at WIS 81.



**Existing Intersection Configurations**

Wisconsin 81 Corridor Study  
 Beloit, Wisconsin

**Figure 1**

## 2.2 Area Land Uses

For much of the study area, WIS 81 travels through residential neighborhoods and land uses that support them. WIS 81, as Liberty Avenue, travels through residential areas in western Beloit and turns south (Fourth Street) at the Beloit Memorial High School campus. Several local retail parcels are scattered along Liberty Avenue. Along Fourth Street, retail, and commercial parcels line both sides of WIS 81. At Portland Avenue, the Ironworks campus and other ancillary commercial/industrial properties are located on the south side of the roadway, west of the Rock River. East of the Rock River, Riverside Park is located on the north side of the roadway while Beloit College is on the south side. Along White Avenue, the ABC Supply campus along with a mix of commercial and residential uses are north of the roadway while the Beloit College campus continues south of the roadway. East of Park Avenue, land uses transition back to residential neighborhoods to Milwaukee Road. It should be noted that two of Beloit's three fire stations are in the study area, with headquarters at Park Avenue and Station 3 at McKinley Avenue, one block west of the WIS 81 and WIS 213 (Madison Road) intersection.

## 2.3 Planned Roadway Improvement Projects

Several roadway improvement projects are planned for construction within the WIS 81 study area. While these projects will not be constructed for some time, it is important to note these projects in the existing conditions as they will address roadway and intersection issues that currently existing along WIS 81. These projects are described below:

- WIS 81, WIS 213, and McKinley Avenue “triangle” intersection. WisDOT is currently investigating improvements at the WIS 81, WIS 213, and McKinley Avenue “triangle” intersection to address mobility and safety concerns. At the time of this study, a preferred alternative has not been finalized; however, improvements at this location are scheduled for Year 2027-2028 construction.
- WIS 81 curb ramp reconstruction. WisDOT is currently identifying existing sidewalk curb ramp installations along WIS 81 to improve to meet ADA and WisDOT design standards. These improvements are scheduled for Year 2027-2028 construction.
- WIS 81 bridge over Rock River. WisDOT has identified this bridge for joint and parapet repairs to maximize the life of the structure. These improvements are scheduled for Year 2027-2028 construction.
- WIS 81 and Milwaukee Road intersection. WisDOT and the City of Beloit is currently investigating improvements at the WIS 81 and Milwaukee Road intersection to address mobility and safety concerns. At the time of this study, a preferred alternative has not been identified. This improvement is tentatively planned for construction in Year 2028.

## 2.4 Data Collection Plan

Data collection efforts focused on gathering and organizing a variety of information related to the study area. A field review of the study area was performed to gather intersection and roadway geometrics, multimodal facilities, and surrounding land uses. Traffic signal phasing and timing information within the study area was provided by the City of Beloit. Intersection turning movement counts were gathered to understand traffic operations during peak traffic periods within the study area.

Key intersections evaluated in this study were identified during the project scoping process. It was determined that intersection data collection would be conducted at the following locations:

- WIS 81 and Hackett Street
- WIS 81 and Bluff Street
- WIS 81 and Sixth Street
- WIS 81 and Fourth Street
- WIS 81 and Portland Avenue
- WIS 81 and US 51 (Riverside Drive / Pleasant Street)
- WIS 81 and Woodward Avenue
- WIS 81 and Prince Hall Drive
- WIS 81 and Park Avenue
- WIS 81 and Wisconsin Avenue
- WIS 81 and Prairie Avenue
- WIS 81 and Milwaukee Road

Key roadway and intersection locations are shown in Figure 2.1.

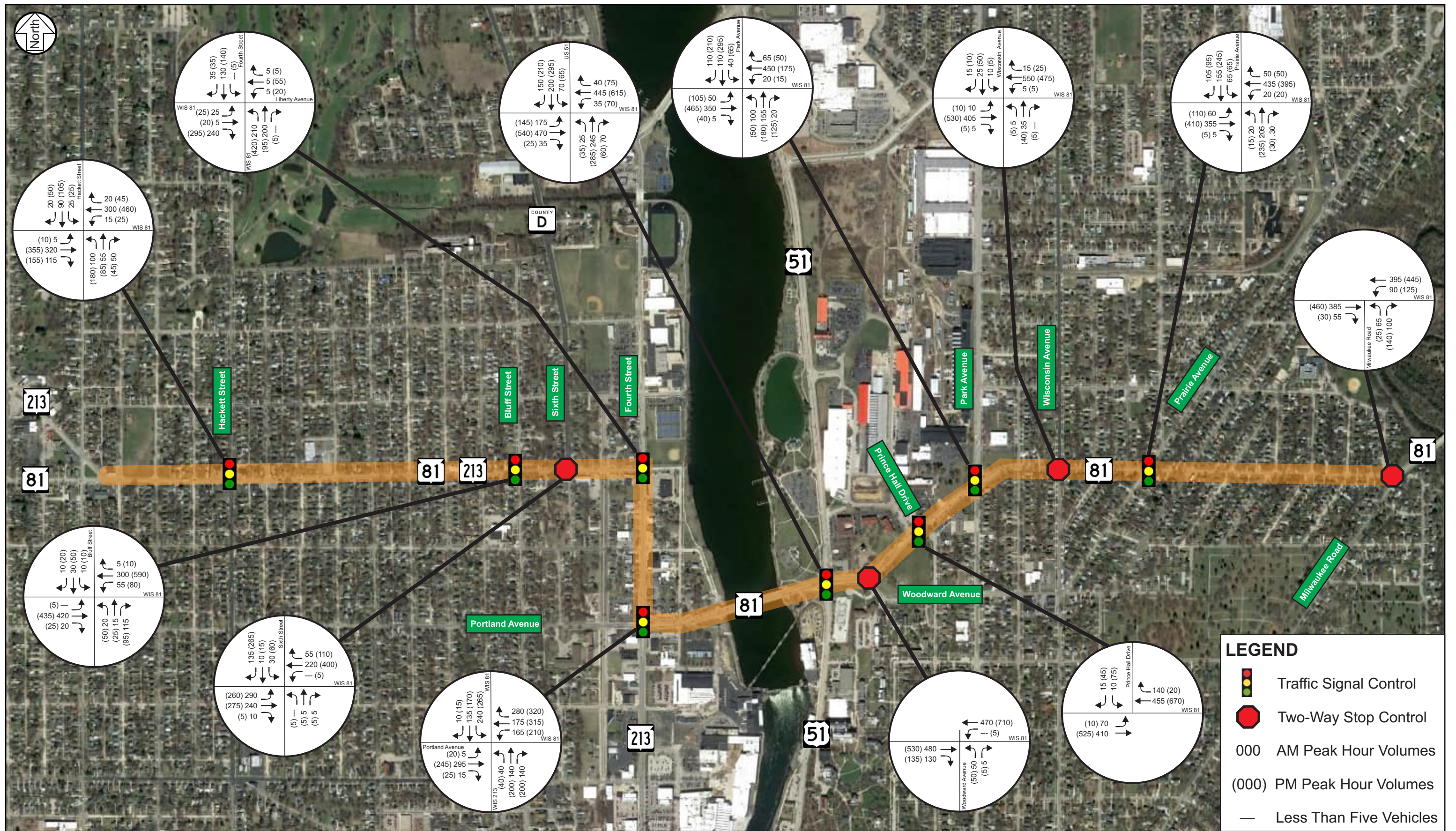
## 2.5 Peak Hour Turning Movement Counts

Weekday morning (7:00 to 9:00 a.m.) and weekday afternoon (2:00 to 6:00 p.m.) peak hour turning movement counts were collected at many the above-mentioned intersections over several days in May 2022. The counts, collected by IMEG Corporation, used video-based data collection technology. It was determined that the morning peak hour of the study area occurred from 7:15 a.m. to 8:15 a.m. and the afternoon peak hour occurred from 3:15 p.m. to 4:15 p.m.

Intersection turning movement counts at the WIS 81 intersections with Wisconsin Avenue, Prairie Avenue, and Milwaukee Road were collected in October 2022. The weekday morning and afternoon peak hours determined from the May 2022 counts were applied to this data for consistency purposes.

Balanced peak hour turning movement volumes are illustrated in **Figure 2.2** while intersection turning movement count summaries for each intersection are provided in **Appendix A**.





**Existing-Year Peak-Hour Intersection Volumes**

Wisconsin 81 Corridor Study  
 Beloit, Wisconsin

**Figure 1**

## 3.0 Corridor Safety Analysis

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The existing roadway and intersection geometrics were reviewed to determine whether design standards and multimodal accommodations are met. Roadway and intersection crash data on WIS 81 from Year 2017 through May 2022 were obtained from WisDOT for review. This review investigated for crash commonalities and trends through the project corridor. The following section summarize the processes and results for the safety analysis.

### 3.1 Geometric Review

Roadway and intersection geometry along the corridor was reviewed and compared to national (AASHTO) and state (WisDOT Facilities Development Manual) standards. These standards provide information on recommended cross section elements, horizontal and vertical profile, site distance and intersection spacing. The following locations raise potential concerns to be considered for future improvements.

#### ***WIS 81 Corridor***

The WIS 81 and WIS 213 (Madison Road) intersection is a skewed unsignalized intersection that can restrict visibility of motorists along WIS 213 to see approaching vehicles along WIS 81. As previously mentioned, this intersection is currently being studied for intersection improvement.

The residential areas along the eastern and western parts of the WIS 81 study area provide numerous access points to the roadway, such as public streets, public alleys, and private driveways. An access review of the study area found that Liberty Avenue, from Madison Road to Fourth Street (0.90 miles) has 85 access points while White Avenue, from Harrison Avenue to Milwaukee Road (0.62 miles) has 62 access points. Roadways with high access density (the number of access points over given distance – 94 access points per mile along Liberty Avenue, 100 access points per mile along White Avenue), can increase crash risk as vehicles can enter and exit the WIS 81 traffic stream at numerous locations over a short distance of roadway.

#### ***WIS 81 at Garfield Avenue, Moore Street, and Tenth Street intersections***

These unsignalized intersections have side-streets that are slightly offset and not lined up opposite of each other. These skews increase crash risk as left-turns from WIS 81 or from the side-streets may interfere with each other as their turning paths cross each other, potentially leading to sideswipe crashes. Furthermore, through movements from the side-streets must laterally shift while traveling through the intersection, increasing driver expectancy issues at these locations.

#### ***WIS 81 near Bluff Street intersection***

The signalized intersection of WIS 81 and Bluff Street is located at the top of a vertical curve along WIS 81. East of the intersection, the elevation of WIS 81 lowers as the roadway nears the Rock River. This alignment may become difficult for westbound vehicles when WIS 81 traffic is stopped at Bluff Street for vehicles must stop, queue, and accelerate on the vertical curve. This condition may be especially difficult for large trucks that do not have the acceleration characteristics of passenger vehicles.

### **WIS 81 at Fifth Street intersection**

The unsignalized intersection of WIS 81 and Fifth Street has a multi-use path separating the through lanes on both approaches of Fifth Street. The multi-use path crosses WIS 81 and a marked crosswalk is provided to delineate this crossing. Bicycle crossing warning signs (MUTCD W11-1) are provided on WIS 81 approaching this path, but no other features are provided that alert motorists of the exact location of the crossing as well as provide comfort to bicyclists and pedestrians as they cross WIS 81 (see image below). In addition, stop signs are not provided on the path to alert these users that they are crossing a principal arterial roadway.

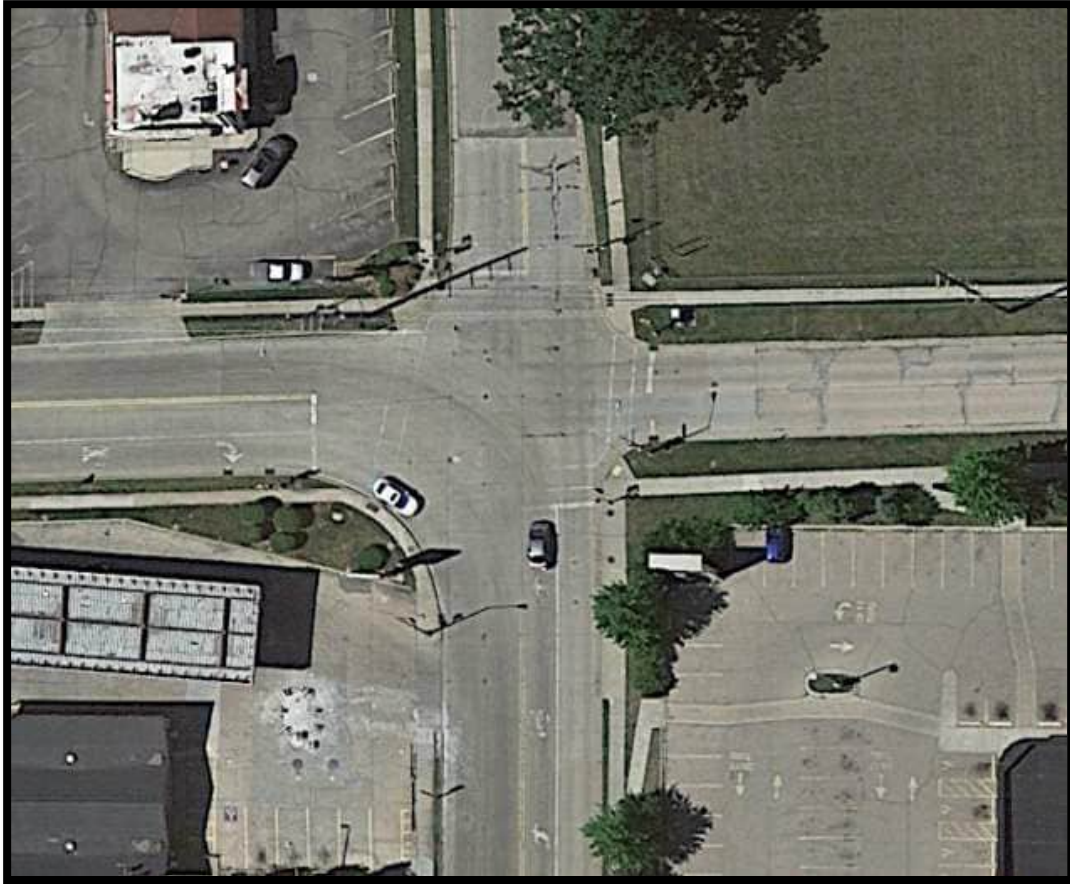


Looking east at Fifth Street

### **WIS 81 at Fourth Street intersection**

The signalized intersection of WIS 81 and Fourth Street experiences an increased amount of truck traffic using the south and west intersection legs to follow the WIS 81 roadway designation. The compact physical intersection footprint at this location may require trucks to encroach into oncoming traffic to complete their turning movement. While the stop bar for the west approach leg is located further away to accommodate truck turning paths, longer or wider trucks may still have to travel on opposing lanes to complete their turn.

The northbound (south) leg approaching this intersection provides two through lanes for travel. However, the inside through lane immediately becomes an exclusive left-turn lane at Liberty Avenue. This “trapping left” lane condition can cause motorists wishing to continue traveling northbound on Fourth Street to quickly and abruptly change lanes to avoid the left-turn lane, increasing crash risk along WIS 81 approaching and at the intersection.



Source: Google Earth

### ***WIS 81 and US 51 & Woodward Avenue intersections***

The unsignalized Woodward Avenue intersection is located approximately 250 feet east of the signalized US 51 intersection. Eastbound WIS 81 traffic are provided two through lanes through US 51. However, the outside through lane immediately becomes an exclusive right-turn lane for Woodward Avenue. This “trapping right” lane condition can cause motorists wishing to continue traveling eastbound on WIS 81 to quickly and abruptly change lanes to avoid the right-turn lane, increase crash probability along WIS 81 between the intersections. In addition, motorists familiar with the “trapping right” may use the outside through lane at US 51 to pass slower-moving vehicles in the inside lane. This affects both safety, due to an increase in sideswipe and rear-end crashes, as well as mobility as traffic behind the merging vehicle(s) may have to slow or stop to avoid collisions.



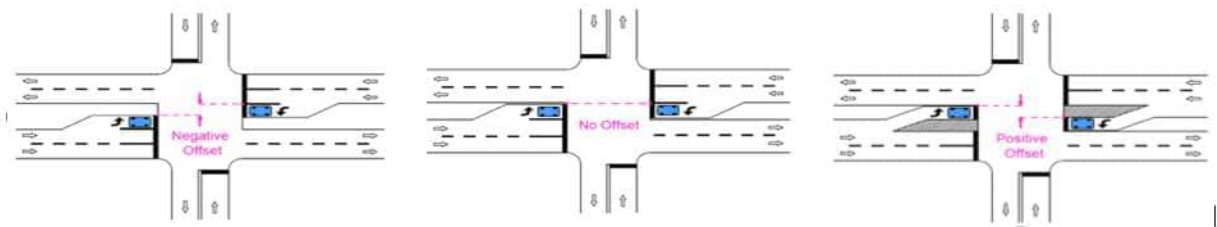
Source: Google Earth



Looking east on WIS 81 at US 51

### ***WIS 81 with Portland Avenue, US 51, Park Avenue, and Prairie Avenue***

These signalized intersections have left-turn lanes along WIS 81 or the side-streets that have a negative left-turn lane offset. “Left-turn lane offset” is the lateral distance between the left edge of a left-turn lane and the right edge of the opposing left-turn lane. This distance can be negative, zero, or positive (refer to proceeding image). Negative left-turn lane offset can increase crash risk for left-turning and through motorists when opposing traffic are in both left-turn lanes. When this occurs, motorists turning left may not see approaching vehicles in the opposite through lane due to the blocking left-turning vehicle and misjudge the available gap to complete their movement.



Source: Minnesota DOT

While a zero left-turn lane offset improves field of vision for left-turning motorists, their sight can still be obscured by opposing left-turn vehicles. Therefore, it is preferred that opposing left-turn lanes attempt to provide a positive offset at intersections.

### ***WIS 81 and Nelson Avenue intersection***

This unsignalized intersection is located approximately 100 feet from the eastbound stop bar at the signalized Prairie Avenue intersection and within the approach taper for the eastbound left-turn lane. Having two closely spaced intersections can increase crash risk as many turning movements can occur over a short distance. Having an intersection within the functional area of an intersection, particularly within the left-turn lane, can increase rear-end crash potential as left-turning vehicles cannot make the distinction between turning left onto Nelson Avenue or Prairie Avenue. This can lead to misjudgment from following drivers and lead to rear-end crashes.

### ***WIS 81 at Prairie Avenue, Central Avenue, Partridge Avenue, Eaton Avenue, and Hinsdale Avenue intersections***

The side-streets at these locations intersect WIS 81 at skewed angles and not at traditional 90-degree, right angles. These skews, approximately 30 to 35 degrees, can increase crash risk on the side-streets as motorists entering or crossing WIS 81 likely have to adjust their body to see traffic approaching along WIS 81. This need for adjustment can reduce their field of vision due to physical body limitations, parts of the car blocking their view, or inability to see clearly, which can result in misjudging gaps in the WIS 81 traffic stream.

### ***WIS 81 at Eaton Avenue and Hinsdale Avenue intersections***

These unsignalized intersections have side-streets that are offset and not lined up opposite of each other. These offset approach legs increase crash risk as left-turns from WIS 81 or from the side-streets may interfere with each other as their turning paths cross each other, potentially leading to sideswipe crashes. Furthermore, through movements from the side-streets must laterally shift while traveling through the intersection, increasing driver expectancy issues at these locations.

### ***WIS 81 and Milwaukee Road intersection***

Similar to the US 51 and Woodward Avenue intersections, westbound WIS 81 at the White Avenue / Milwaukee Road intersection has a “trapping left” condition where the inside through lane becomes an exclusive left-turn lane for South Milwaukee Road. This condition increases crash probability as motorists may quickly and abruptly merge to the outside lane to avoid being “trapped” in the exclusive left-turn lane.

The speed limit for westbound WIS 81 reduces from 40 mph to 25 mph as the roadway approaches the White Avenue / Milwaukee Road intersection. At the 25 mph speed limit sign, approximately 1,200 feet east of the intersection, WIS 81 provides multiple through lanes, a wide clear zone outside the through lanes, and few access drives for motorists to negotiate. In other words, the roadway environment is not conducive for motorists to follow the 25 mph travel speed; rather, motorists typically travel at faster speeds as they don't feel restricted to slow down. At the intersection, the westbound lanes veer to the right and unfamiliar motorists may not be ready for the "trapping left" lane condition and the sharper horizontal curve. This can increase the probability of motorists leaving the roadway or crossing into oncoming traffic as they do not negotiate the curve at the posted speed.



Source: Google Earth

### **3.2 Multimodal Accommodations Review**

A field review of existing infrastructure for bicyclists and pedestrians, such as sidewalks, bike lanes, and bike paths, was performed to understand their current state. This evaluation included the physical state of the surface, associated pavement markings or other infrastructure, wayfinding or guidance elements, and connectivity.

## ***Pedestrian Accommodations***

Sidewalks are provided along both sides of WIS 81 throughout the entirety of the study area. While the sidewalks through the residential areas of Liberty Avenue and White Avenue are older and narrower, a connected, navigable walking path is provided for pedestrians to use. Curb ramps at the majority of intersections appear to be either outdated and not compliant with ADA standards. It should be noted, though, that a future WisDOT project will update these non-compliant curb ramps. Crosswalks are provided at all signalized intersections, but consideration should be given to refresh them to increase their visibility to motorists. In particular, the crosswalks at the Fourth Street intersection should be updated due to its activity from Beloit Memorial High School. Marked crosswalks are provided at unsignalized intersections west of US 51 but not at locations east of US 51 even though curb ramps are present to cross WIS 81; for consistency purposes, consideration should be given to install marked crosswalks along and crossing WIS 81 to give bicyclists and pedestrians a defined path to cross the roadway.

A multi-use path runs from ABC Supply Stadium to Beloit Memorial High School in western Beloit, parallel to Fifth Street. At WIS 81, marked crosswalks and advanced warning signs are provided to alert motorists of the path. However, because the path runs between the travel lanes of Fifth Street, similar to a boulevard, the presence of the path can become lost with motorists likely looking for traffic entering and exiting Fifth Street.

The White Avenue portion of WIS 81, particularly from Park Avenue to Milwaukee Road, can function as an impediment for pedestrians wishing to cross the roadway. Several factors help foster this condition:

- The amount of daily traffic (approximately 12,800 vpd) along a two-lane roadway cross-section creates few natural gaps for pedestrians to feel comfortable crossing
- The lack of marked crosswalks along this section (except for Prairie Avenue)
- The lack of intersections that interrupt WIS 81 traffic to allow pedestrians to cross (only Prairie Avenue is signalized in this stretch of WIS 81)
- The horizontal curve at Milwaukee Road can hide pedestrians from westbound traffic
- The amount of access density (roadways and driveways) along this stretch of WIS 81 can shift a motorist's focus away from looking for pedestrians and more to other vehicles

## ***Bicycle Accommodations***

An on-street marked bicycle lane is provided along Portland Avenue and White Avenue from Fourth Street to Harrison Avenue. The pavement surface of the bike lane appears to be satisfactory for travel; however, the pavement joint between the travel lane and bike lane was patched in numerous places which can lead to an uneven surface as a bicyclist gets closer to the left side of the bike lane. Pavement markings and symbols are provided to inform motorists of the bike lane, but there are no follow-through skip markings at intersections to show the bike path between a through lane and a right-turn lane (westbound at Portland Avenue, eastbound at US 51, eastbound and westbound at Park Avenue, for example – see image below).





Looking west at Portland Avenue

The existing bicycle lane, while useful for bicyclists to use, does not aid in the east-west connectivity of dedicated bicycle facilities in the City of Beloit. For example, there are no bicycle facilities provided that connects this east-west bicycle lane to the multi-use path along Fifth Street. To the east, there are no facilities that connects the lane to the retail and commercial areas in eastern Beloit. This lack of physical connectivity, and subsequent lack of wayfinding or direction guidance, can dissuade bicyclists from traveling longer distances throughout the city.

### 3.3 Intersection Crash Statistics

WisDOT provided crash data (Years 2017 through May 2022) for the extents of the WIS 81 corridor. This data was reviewed for crash frequency, severity, and commonalities for key intersections and roadway segments throughout the study area. **Table 3.1** illustrates the injury type, total crashes, and intersection crash rate for each location.

As a general rule of thumb, locations with an intersection crash rate above 1.0 crashes per million entering vehicles (MEV) should be considered for further investigation and mitigation. From the table, three intersections: Sixth Street, US 51, and Wisconsin Avenue, have crash rates above the 1.0 threshold while the Hackett Street intersection is just below the threshold (0.98).

The following outlines historical crash data at the key study intersections and any crash trends or commonalities identified from the crash review.

**Table 3.1 Intersection Crash Statistics**

Intersection	Injury Type					Total Crashes	Crash Rate (MEV)
	K	A	B	C	O		
Hackett Street	0	0	2	4	22	28	0.98
Bluff Street	0	1	3	2	12	18	0.62
Sixth Street	0	1	2	3	35	41	1.14
Fourth Street	0	0	2	2	12	16	0.57
Portland Avenue	0	0	0	3	16	19	0.45
US 51	0	1	4	13	49	67	1.21
Woodward Avenue	0	1	0	0	12	13	0.37
Prince Hall Drive	0	0	0	0	2	2	0.06
Park Avenue	0	1	0	2	21	24	0.66
Wisconsin Avenue	0	1	4	2	28	35	1.16
Prairie Avenue	0	1	0	3	26	30	0.81
Milwaukee Road	0	2	1	0	10	13	0.42

Crash data obtained from UW TOPS Lab for 2017 through May 2022  
K – fatal crash ; A – serious injury crash ; B – minor injury crash ;  
C – possible injury crash ; O – property damage only crash  
Crash rate – crashes per million entering vehicles (MEV)

**WIS 81 and Hackett Street**

At the intersection of WIS 81 and Hackett Street, 28 intersection-related crashes were reported in the past 5.5 years. Of those 28 crashes, 11 were rear-end crashes, 11 were angle crashes, 5 were single-vehicle crashes, and 1 was a head-on crash. 8 of 11 rear-end crashes involved vehicles traveling eastbound or westbound on WIS 81. 7 of 11 angle crashes involved a vehicle traveling southbound on Hackett Street being struck by a vehicle traveling on WIS 81.

The majority of rear-end crashes may be the result of the absence of a left-turn lane along WIS 81. It is possible that left-turning vehicles are storing in the WIS 81 through lanes which may increase rear-end crashes as following vehicles are not anticipating the left-turning vehicles. The majority of angle crashes may be the result of Hackett Street motorists attempting to “beat” the red traffic signal phase and are struck by WIS 81 traffic.

**WIS 81 and Bluff Street**

At the intersection of WIS 81 and Bluff Street, 18 intersection-related crashes were reported in the past 5.5 years. Of those 18 crashes, 8 were angle crashes, 6 were rear-end crashes, 2 were sideswipe crashes, and 2 were single-vehicle crashes. 4 of 6 rear-end crashes involved vehicles traveling eastbound on WIS 81.

### ***WIS 81 and Sixth Street***

At the intersection of WIS 81 and Sixth Street, 41 intersection-related crashes were reported in the past 5.5 years. Of those 41 crashes, 22 were angle crashes, 8 were rear-end crashes, 7 were sideswipe crashes, 3 were single-vehicle crashes, and one was a head-on crash. 4 of 8 rear-end crashes involved vehicles traveling eastbound on WIS 81. 6 of 8 rear-end crashes involved vehicles traveling southbound on Sixth Street. 14 of 22 angle crashes involved a southbound vehicle being struck by vehicles traveling on WIS 81. 8 of 38 crashes involved a teenage driver.

It is likely that the majority of angle crashes are the result of motorists along Sixth Street becoming frustrated with the few gaps in the WIS 81 traffic stream and become more aggressive and accepting smaller gaps to enter the intersection. This condition can be typical of side-streets intersecting higher-volumes arterials under stop-sign control. This condition can be compounded by having inexperienced drivers, such as motorists from the high school, using the intersection.

### ***WIS 81 and Fourth Street***

At the intersection of WIS 81 and Fourth Street, 16 intersection-related crashes were reported in the past 5.5 years. Of those 16 crashes, 7 were rear-end crashes, 3 were angle crashes, 2 were sideswipe crashes, 2 were single-vehicle crashes, and 2 were head-on crashes. 4 of 7 rear-end crashes involved vehicles traveling eastbound on WIS 81. 5 of 16 crashes involved a teenage driver. Similar to Sixth Street, the location of the high school campus increases the amount of young, inexperienced drivers to the intersection which results in an increased crash risk due to their typical inability to assess gaps and approaching speeds.

### ***WIS 81 and Portland Avenue***

At the intersection of WIS 81 and Portland Avenue, 19 intersection-related crashes were reported in the past 5.5 years. Of those 19 crashes, 6 were rear-end crashes, 6 were angle crashes, 5 were sideswipe crashes, and 2 were head-on crashes. 9 of 19 crashes involved a vehicle traveling eastbound being struck.

### ***WIS 81 and US 51***

At the intersection of WIS 81 and US 51, 67 intersection-related crashes were reported in the past 5.5 years; this was the most intersection-related crashes in the study area. Of those 67 crashes, 25 were rear-end crashes, 19 were angle crashes, 11 were single-vehicle crashes, 9 were sideswipe crashes, and 2 were head-on crashes. 19 of 67 crashes resulted in injuries, including 1 A-injury (severe injury). 10 of 25 rear-end crashes involved westbound vehicles while 8 of 25 involved eastbound vehicles. 14 of 19 angle crashes involved a vehicle traveling westbound and 10 of 19 angle crashes involved a vehicle traveling eastbound; this included 5 crashes that involved an eastbound left-turning vehicle being struck by a westbound-traveling vehicle.

It is likely that the geometrics at this intersection aid in the high number of crashes at this intersection. The intersection is located at the bottom of a hill for westbound traffic; it is likely that motorists are following too closely and at higher speeds down the hill and do not properly react to the vehicle in front of them. The eastbound approach also has a trapping right condition downstream which creates poor lane utilization and motorists making sudden merges or “queue jumps” from the outside lane to avoid being stuck in the downstream right-turn lane. As previously mentioned, all left-turn lanes have a negative or zero left-turn lane offset which can

block the vision of left-turning motorists of approaching vehicles in the opposite lanes. This condition can increase crash risk for left-turning traffic as they are unaware of approaching vehicles as they complete their turn movement.

### ***WIS 81 and Woodward Avenue***

At the intersection of WIS 81 and Woodward Avenue, 13 intersection-related crashes were reported in the past 5.5 years. Of those 16 crashes, 8 were sideswipe crashes, 3 were rear-end crashes, 1 was an angle crash, and 1 was a single-vehicle crash. All 13 crashes involved a vehicle traveling eastbound. These crashes are likely the result of the existing trapping right condition along eastbound WIS 81 and motorists making quick merges to avoid being stuck in this lane.

### ***WIS 81 and Prince Hall Drive***

Two crashes were reported at the WIS 81 and Prince Hall Drive intersection. One crash was a rear-end crash and the other was a single-vehicle crash. Both crashes occurred to vehicles traveling westbound along WIS 81.

### ***WIS 81 and Park Avenue***

At the intersection of WIS 81 and Park Avenue, 24 intersection-related crashes were reported in the past 5.5 years. Of those 24 crashes, 11 were rear-end crashes, 6 were angle crashes, 3 were single-vehicle crashes, 2 were sideswipe crashes, and 2 were head-on crashes. The 11 rear-end crashes did not have a predominant movement in which the crashes occurred. 4 of 6 angle crashes involved a northbound vehicle and a westbound vehicle. Both head-on crashes involved an eastbound and westbound vehicle.

### ***WIS 81 and Wisconsin Avenue***

At the intersection of WIS 81 and Park Avenue, 35 intersection-related crashes were reported in the past 5.5 years. Of those 35 crashes, 24 were angle crashes, 6 were rear-end crashes, 6 were angle crashes, 3 were single-vehicle crashes, 2 were sideswipe crashes, and 2 were head-on crashes. 19 of the 24 angle crashes involved a through movement from Wisconsin Avenue being struck by a through movement along WIS 81 (10 from northbound, 9 from southbound). 4 of 6 rear-end crashes involved eastbound vehicles.

The majority of angle crashes at this intersection may be the result of motorists along Wisconsin Avenue becoming frustrated with the few gaps in the WIS 81 traffic stream and become more aggressive and accepting smaller gaps to enter the intersection. This condition can be typical of side-streets intersecting higher-volume arterials under stop-sign control. In addition, a review of this intersection noted several objects were obstructing the field of vision for motorists along Wisconsin Avenue. These items, such as vegetation and sign poles, and utility poles, can block or hide approaching vehicles at the intersection and increase crash risk for motorists.

### ***WIS 81 and Prairie Avenue***

At the intersection of WIS 81 and Prairie Avenue, 30 intersection-related crashes were reported in the past 5.5 years. Of those 30 crashes, 20 were rear-end crashes, 6 were angle crashes, 2 were single-vehicle crashes, 1 was a sideswipe crash, and 1 was a head-on crash. 11 of 20 rear-end crashes involved westbound vehicles while 6 of 20 involved eastbound vehicles. 15 of 30 crashes occurred during the midday hours of 11:00 a.m. and 3:00 p.m.

The rear-end crashes may be the result of motorists following too closely along a high-volume, low-speed, single-lane roadway and not reacting to phase changes at the signal properly. This condition may be aided by vegetation possibly obscuring the traffic signal heads, which can reduce the reaction time of motorists by not providing ample information of the traffic signal phase change. In addition, the stop bars along WIS 81 are set back from the intersection curb due to the intersection skew; this, in turn, creates a longer distance for motorists to travel through the intersection. This condition may make motorists become more aggressive to clear the intersection, particularly during the yellow clearance interval, and may follow too closely to vehicles in front of them.

### ***WIS 81 and Milwaukee Road***

At the intersection of WIS 81 and Milwaukee Road, 13 intersection-related crashes were reported in the past 5.5 years. Of those 13 crashes, 7 were single-vehicle crashes (including one A-injury crash), 4 were sideswipe crashes, 1 was a rear-end crash, and 1 was an angle crash. 6 of the 7 single-vehicle crashes were motorists traveling westbound on WIS 81 and all 6 crashes were identified as speed-related crashes. In addition, 4 of the 6 westbound single-vehicle crashes occurred between 1:00 a.m. and 5:00 a.m.

As previously discussed, the approach speeds and horizontal curve at this intersection create an environment where motorists are comfortable traveling above the speed limit along westbound WIS 81 approaching the curve. When they attempt to navigate the curve, they realize it is too sharp at their increased speed and either overcompensate and run off the road to the right or cross the centerline into oncoming traffic and/or run off the road to the left.

## 4.0 Pavement and Traffic Signal Inventory

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An investigation of the existing roadway pavement and traffic signal equipment was performed along WIS 81. This analysis will provide a preliminary evaluation of the roadway pavement condition and traffic signal equipment to determine if any deficiencies are present.

### 4.1 Roadway Pavement Evaluation

WIS 81 has a concrete pavement roadway surface and concrete curb and gutter throughout the entirety of the study area.

A visual and vehicle ride inspection of the roadway surface indicates that the Liberty Avenue, Fourth Street, and White Avenue (east of Park Avenue) portions of the roadway have joint failures which causes faulting from one concrete surface to the next. This results in an uneven or “rough” ride for motorists. Joint sealing and pavement patching near the joint are present along various portions of the roadway, which can add to the rougher ride for motorists. The Portland Avenue and White Avenue (west of Park Avenue) sections shows significant longitudinal and transverse patching between the travel lanes and at the curb and gutter, suggesting pavement improvement should be considered to improve ride. Frequent patching is present along this section suggesting that pavement and sub-pavement condition is deteriorating and requires improvement in the near-term.



Fourth Street south of Liberty Avenue

## 4.2 Traffic Signal Inventory

Eight traffic signal installations currently exist along WIS 81: Hackett Street; Bluff Street; Fourth Street; Portland Avenue; US 51; Prince Hall Drive; Park Avenue; and Prairie Avenue. The following describes an inventory of the equipment at each traffic signal location.

**Hackett Street:** Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, some signal heads are missing the backplate (see image). Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals.

The intersection provides an eastbound right-turn lane to accommodate a high number of right-turning vehicles (a maximum of 155 vehicles during the afternoon peak hour), but no exclusive left-turn lanes are provided along WIS 81. While the observed traffic counts for left-turns are low (less than 30 vehicles per hour during peak traffic conditions), it is possible that a left-turning vehicle could impede through movements by waiting for a gap to complete their turning movement. This is likely in the weekday afternoon peak hour where the amount of westbound through vehicles (560 vehicles) may create few natural gaps or creates long platoons after a phase change which could make eastbound through vehicles wait longer periods of time.

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.



Hackett Street at Liberty Avenue, looking north

**Bluff Street:** Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, all signal heads are missing the backplate. Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals. A westbound left-turn lane is provided at Bluff Street, but no left-turn traffic signal equipment is provided. With the infrequent number of left-turning vehicles using the westbound left-turn lane (approximately one vehicle per minute during peak traffic conditions), the need for a protected left-turn phase is likely not needed to accommodate this movement.

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.

Fourth Street: Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, all signal heads are missing the backplate (see image). Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals.



Fourth Street at Liberty Avenue, looking south

Crosswalks and pedestrian equipment are provided on all intersection approaches. However, the crosswalk pavement markings are in poor condition and may not be readily visible to motorists. With the location of Beloit Memorial High School nearby and the amount of pedestrian traffic that travels through this intersection (approximately 55 pedestrians observed in thirty minutes after school release), the pavement markings at this intersection should be updated and consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for this phase before the traffic signal phasing changes.

Portland Avenue: Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, some signal heads are missing the backplate. Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals.



The north and south approaches of the intersection provide overhead signal heads for traffic; however, only one signal head is provided to control the left-turn lane and the two through lanes. It is recommended that a minimum of two signal heads (one for the left-turn and inside through lane and another for the outside through lane) be provided to control traffic at these approaches.



Fourth Street at Portland Avenue, looking south (Source: Google Earth)

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.

US 51: Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, several signal heads are missing the backplate. Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals.

All four approaches of the intersection provide overhead signal heads for traffic; however, only one signal head is provided to control the left-turn lane and the two through lanes. It is recommended that a minimum of two signal heads (one for the left-turn and inside through lane and another for the outside through lane) be provided to control traffic at these approaches.

The far overhead signal arm for eastbound traffic has a single overhead signal head and an exclusive right-turn lane sign with a plaque “RIGHT LANE” underneath it (MUTCD Signs R3-5 and R3-5fP, respectively). This sign placement is to inform motorists that the outside through lane, past the US 51 intersection, becomes an exclusive right-turn lane at Woodward Avenue. This introduces a “trapping right” lane situation for these motorists. While trapping-lane

conditions are not conducive to traffic operations, the information for this situation provided at a traffic signal could be seen as contradicting the pavement marking that provides a through lane and “ONLY” for the through lane. If the trapping lane condition cannot be mitigated, additional signage should be installed for this approach that provides a clearer understanding of the lane configurations downstream.

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.

Prince Hall Drive: Traffic signals and poles at this location are in good condition. Crosswalks and pedestrian equipment are provided on all intersection approaches.

Park Avenue: Traffic signals and poles at this location are in good condition; while the traffic signals are operating properly, several signal heads are missing the backplate. Backplates help distinguish the signal head from its background (e.g., sunlight). Consideration should be made to add backplates where necessary as well as install retroreflective backplates to enhance the visibility and noticeability of the signals.

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.

Prairie Avenue: Traffic signals and poles at this location are in good condition. Consideration should be made to install retroreflective backplates to enhance the visibility and noticeability of the signals. In addition, periodic visual checks of the signal heads should be performed to ensure that nearby trees do not block or impede traffic from seeing the signal heads (see image below).

Crosswalks and pedestrian equipment are provided on all intersection approaches. Consideration should be given to provide pedestrian countdown timers to inform pedestrians how much time remains for the pedestrian phase before the traffic signal phasing changes.



White Avenue at Prairie Avenue, looking west (Source: Google Earth)

## 5.0 Traffic Operations Analysis

To determine how traffic operates under existing conditions, an operational analysis was conducted for intersections identified in Section 2.4 using methodologies published in the *Highway Capacity Manual* (HCM). The HCM module in the traffic operations software package, Synchro11, was used to document the results of the traffic operations analysis. Operational analysis results identify a Level of Service (LOS), which is intended to depict the quality of traffic flow through an intersection. Signalized and unsignalized intersections are given a ranking from LOS A through LOS F as a function of the average control delay as presented in **Table 5.1** for signalized intersections and **Table 5.2** for unsignalized and roundabout intersections. For urban principal arterials such as WIS 81, the minimum acceptable LOS is LOS D.

**Table 5.1 Level of Service (LOS) Criteria, Signalized Intersections**

LOS Designation	Average Control Delay/Vehicle (seconds)	Description
A	≤ 10.0	Very low vehicle delays, free flow, signal progression extremely favorable, most vehicles arrive during given signal phase.
B	10.1 to 20.0	Good signal progression, more vehicles stop and experience higher delays than for LOS A.
C	20.1 to 35.0	Stable flow, fair signal progression, significant number of vehicles stop at signals.
D	35.1 to 55.0	Congestion noticeable, longer delays and unfavorable signal progression, many vehicles stop at signals.
E	55.1 to 80.0	Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.
F	> 80.0	Unacceptable delays, extremely unstable flow and congestion, traffic exceeds roadway capacity, stop-and-go conditions

**Table 5.2: Level of Service (LOS) Criteria, Unsignalized Intersections**

LOS Designation	Average Control Delay/Vehicle (seconds)	Description
A	≤ 10.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
B	10.1 to 15.0	Same as LOS A
C	15.1 to 25.0	Moderate delays at intersections with satisfactory to good traffic flow. Light congestion; infrequent backups on critical approaches.
D	25.1 to 35.0	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No standing long lines formed.
E	35.1 to 50.0	Heavy traffic flow condition. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limited stable traffic flow.
F	> 50.0	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow condition. Average delays greater than one minute highly probable. Total breakdown.

SOURCE: *Highway Capacity Manual, HCM2010*, Transportation Research Board, 2010.

## 5.1 Existing Conditions

To determine how traffic currently operates in the study area, an operational analysis was conducted for the weekday morning and afternoon peak hours at the key intersections. Existing geometrics, traffic controls, and peak hour traffic volumes for the key intersections are shown in **Figures 2.1 and 2.2**. Level of service and queuing results for each turning movement at the analyzed intersections are shown in **Table 5.3** for the weekday AM peak hour and **Table 5.4** for the weekday PM peak hour. The traffic operations output files are in Appendix B.

**Table 5.3: Traffic Operations Analysis, Existing Conditions, Weekday AM Peak Hour**

Weekday Morning Peak - Existing Conditions															
Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Hackett Street	9.9	A	Lane Configuration	-	<1>	1	-	<1>	-	1	1>	-	-	<1>	-
			Volume	5	320	115	15	300	20	100	55	50	25	90	20
			Delay (s)	-	10.1	7.8	-	10.7	-	7.6	7.3	-	-	12.4	-
			LOS	-	B	A	-	B	-	A	A	-	-	B	-
			V/C Ratio	-	0.47	0.13	-	0.53	-	0.14	0.19	-	-	0.31	-
95% Queue (ft)	-	85	15	-	90	-	20	20	-	-	40	-			
WIS 81 & Bluff Street	6.7	A	Lane Configuration	-	<1>	-	1	1>	-	-	<1	1	-	<1>	-
			Volume	1	420	20	55	300	5	20	15	115	10	30	10
			Delay (s)	-	6.4	-	3.8	5.0	-	-	11.3	12.0	-	11.6	-
			LOS	-	A	-	A	A	-	-	B	B	-	B	-
			V/C Ratio	-	0.57	-	0.10	0.42	-	-	0.10	0.28	-	0.15	-
95% Queue (ft)	-	75	-	10	45	-	-	10	25	-	15	-			
WIS 81 & Sixth Street	7.2	A	Lane Configuration	1	1>	-	-	<1	1	-	<1>	-	-	<1	1
			Volume	290	240	10	1	220	55	1	5	5	30	10	135
			Delay (s)	9.3	0.0	-	-	8.0	0.0	-	30.1	-	-	67.0	11.1
			LOS	A	A	-	-	A	A	-	D	-	-	F	B
			V/C Ratio	0.30	0.00	-	-	0.01	0.00	-	0.09	-	-	0.47	0.22
95% Queue (ft)	10	0	-	-	0	0	-	10	-	-	50	20			
WIS 81 & Fourth Street	8.3	A	Lane Configuration	-	<1	1	-	<1>	-	1	1>	-	-	<1>	-
			Volume	25	5	240	5	5	210	200	1	1	130	35	
			Delay (s)	-	7.6	7.6	-	7.6	-	7.6	16.7	-	-	16.3	-
			LOS	-	A	A	-	A	-	A	B	-	-	B	-
			V/C Ratio	-	0.08	0.31	-	0.04	-	0.37	0.34	-	-	0.50	-
95% Queue (ft)	-	10	40	-	10	-	50	40	-	-	70	-			
WIS 81 & Portland Avenue	19.1	B	Lane Configuration	1	1>	-	1	1	1	1	2>	-	1	2>	-
			Volume	5	295	15	165	175	280	10	140	140	240	135	10
			Delay (s)	15.5	24.0	-	14.1	14.1	14.4	19.9	26.8	-	15.7	15.0	-
			LOS	B	C	-	B	B	B	B	C	-	B	B	-
			V/C Ratio	0.01	0.74	-	0.49	0.31	0.33	0.03	0.57	-	0.16	0.16	-
95% Queue (ft)	5	220	-	75	90	90	5	110	-	125	40	-			
WIS 81 & US 51	28.9	C	Lane Configuration	1	2	1	1	2>	-	1	2>	-	1	2>	-
			Volume	175	470	35	35	445	40	25	245	70	70	200	150
			Delay (s)	29.6	30.7	25.3	27.7	42.0	-	15.9	20.2	-	15.6	19.6	-
			LOS	C	C	C	C	D	-	B	C	-	B	B	-
			V/C Ratio	0.65	0.57	0.05	0.15	0.76	-	0.06	0.28	-	0.17	0.31	-
95% Queue (ft)	175	240	20	35	280	-	40	135	-	50	150	-			
WIS 81 & Woodward Avenue	1.2	A	Lane Configuration	-	1	1	-	<1	-	-	<1>	-	-	-	-
			Volume	-	480	130	1	470	-	50	-	5	-	-	-
			Delay (s)	-	0.0	0.0	-	9.1	-	-	25.0	-	-	-	-
			LOS	-	A	A	-	A	-	-	D	-	-	-	-
			V/C Ratio	-	0.01	0.01	-	0.01	-	-	0.26	-	-	-	-
95% Queue (ft)	-	0	0	-	0	-	-	25	-	-	-	-			
WIS 81 & Prince Hall Drive	2.7	A	Lane Configuration	1	1	-	-	1>	-	-	-	-	1	-	1
			Volume	70	410	-	-	455	140	-	-	-	10	-	15
			Delay (s)	1.8	2.5	-	-	1.5	-	-	-	-	42.4	-	42.5
			LOS	A	A	-	-	A	-	-	-	-	D	-	D
			V/C Ratio	0.12	0.35	-	-	0.56	-	-	-	-	0.19	-	0.19
95% Queue (ft)	10	65	-	-	25	-	-	-	-	15	-	10			
WIS 81 & Park Avenue	22.6	C	Lane Configuration	1	1	1	1	1	1	1	1	1	1	1	
			Volume	50	350	5	20	450	65	100	155	20	40	110	110
			Delay (s)	10.0	13.0	0.0	9.2	16.7	9.9	30.6	42.1	32.0	31.6	40.9	37.9
			LOS	B	B	A	A	B	A	C	D	C	C	D	D
			V/C Ratio	0.13	0.45	0.00	0.04	0.59	0.06	0.41	0.65	0.06	0.20	0.56	0.38
95% Queue (ft)	20	210	0	10	300	20	95	190	15	40	130	80			
WIS 81 & Wisconsin Avenue	2.7	A	Lane Configuration	-	<1>	-	-	<1>	-	-	<1>	-	-	<1>	-
			Volume	10	405	5	5	550	15	5	35	1	10	25	15
			Delay (s)	-	9.0	-	-	8.4	-	-	32.2	-	-	29.8	-
			LOS	-	A	-	-	A	-	-	D	-	-	D	-
			V/C Ratio	-	0.01	-	-	0.01	-	-	0.27	-	-	0.29	-
95% Queue (ft)	-	0	-	-	0	-	-	25	-	-	30	-			
WIS 81 & Prairie Avenue	20.8	C	Lane Configuration	1	1>	-	1	1>	-	1	1>	-	1	1>	-
			Volume	60	355	5	20	435	50	20	205	30	65	155	105
			Delay (s)	12.9	14.2	-	10.6	22.3	-	24.6	31.4	-	19.4	20.3	-
			LOS	B	B	-	B	C	-	C	C	-	B	C	-
			V/C Ratio	0.23	0.56	-	0.06	0.81	-	0.09	0.81	-	0.29	0.61	-
95% Queue (ft)	25	200	-	10	320	-	15	205	-	40	180	-			
WIS 81 & Milwaukee Road	4.6	A	Lane Configuration	-	1>	-	1	1	-	-	<1>	-	-	-	-
			Volume	-	385	55	90	395	-	65	-	100	-	-	-
			Delay (s)	-	0.0	-	8.7	0.0	-	-	25.6	-	-	-	-
			LOS	-	A	-	A	A	-	-	D	-	-	-	-
			V/C Ratio	-	0.00	-	0.09	0.00	-	-	0.52	-	-	-	-
95% Queue (ft)	-	0	-	10	0	-	-	70	-	-	-	-			

**Table 5.4: Traffic Operations Analysis, Existing Conditions, Weekday PM Peak Hour**

Weekday Afternoon Peak - Existing Conditions															
Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Hackett Street	17.9	B	Lane Configuration	-	<1>	1	-	<1>	-	1	1>	-	<1>	-	
			Volume	10	355	155	25	560	45	180	85	45	25	105	50
			Delay (s)	-	10.2	7.7	-	28.2	-	10.0	9.3	-	-	17.3	-
			LOS	-	B	A	-	C	-	B	A	-	-	B	-
			V/C Ratio	-	0.50	0.16	-	0.91	-	0.32	0.26	-	-	0.54	-
			95% Queue (ft)	-	110	25	-	330	-	50	35	-	-	80	-
WIS 81 & Bluff Street	7.6	A	Lane Configuration	-	<1>	-	1	1>	-	-	<1	1	-	<1>	
			Volume	5	435	25	80	590	10	50	25	95	10	50	20
			Delay (s)	-	6.0	-	4.0	7.4	-	-	13.1	13.2	-	13.5	-
			LOS	-	A	-	A	A	-	-	B	B	-	B	-
			V/C Ratio	-	0.59	-	0.16	0.77	-	-	0.21	0.22	-	0.25	-
			95% Queue (ft)	-	85	-	10	125	-	-	30	20	-	30	-
WIS 81 & Sixth Street	18.3	B	Lane Configuration	1	1>	-	-	<1	1	-	<1>	-	-	<1	
			Volume	260	275	5	5	400	110	5	5	5	60	15	265
			Delay (s)	10.6	0.0	-	-	8.0	0.0	-	108.6	-	-	220.2	18.3
			LOS	B	A	-	-	A	A	-	F	-	-	F	C
			V/C Ratio	0.32	0.00	-	-	0.01	0.00	-	0.34	-	-	1.09	0.54
			95% Queue (ft)	35	0	-	-	0	0	-	10	-	-	50	20
WIS 81 & Fourth Street	11.2	B	Lane Configuration	-	<1	1	-	<1>	-	1	1>	-	-	<1>	
			Volume	25	20	295	20	55	5	420	95	5	5	140	35
			Delay (s)	-	16.7	7.6	-	17.5	-	8.7	4.5	-	-	20.1	-
			LOS	-	B	A	-	B	-	A	A	-	-	C	-
			V/C Ratio	-	0.15	0.34	-	0.28	-	0.71	0.15	-	-	0.59	-
			95% Queue (ft)	-	30	70	-	55	-	170	25	-	-	135	-
WIS 81 & Portland Avenue	22.0	C	Lane Configuration	1	1>	-	1	1	1	1	2>	-	1	2>	
			Volume	20	245	25	210	315	320	40	200	200	265	170	15
			Delay (s)	18.7	30.7	-	16.8	20.9	18.3	18.6	28.2	-	16.4	16.1	-
			LOS	B	C	-	B	C	B	B	C	-	B	B	-
			V/C Ratio	0.08	0.77	-	0.61	0.61	0.41	0.10	0.68	-	0.19	0.19	-
			95% Queue (ft)	15	180	-	115	215	130	25	170	-	150	55	-
WIS 81 & US 51	21.3	C	Lane Configuration	1	2	1	1	2>	-	1	2>	-	1	2>	
			Volume	145	540	25	70	615	75	35	285	60	65	295	210
			Delay (s)	9.1	12.8	10.3	9.2	1.6	-	29.7	37.2	-	28.7	50.2	-
			LOS	A	B	B	A	A	-	C	D	-	C	D	-
			V/C Ratio	0.27	0.33	0.02	0.14	0.43	-	0.21	0.56	-	0.27	0.81	-
			95% Queue (ft)	65	155	15	30	20	-	30	185	-	55	285	-
WIS 81 & Woodward Avenue	1.5	A	Lane Configuration	-	1	1	-	<1	-	-	<1>	-	-	-	
			Volume	-	530	135	5	710	-	50	-	5	-	-	
			Delay (s)	-	0.0	0.0	-	9.2	-	-	38.0	-	-	-	
			LOS	-	A	A	-	A	-	-	E	-	-	-	
			V/C Ratio	-	0.01	0.01	-	0.01	-	-	0.36	-	-	-	
			95% Queue (ft)	-	0	0	-	0	-	-	40	-	-	-	
WIS 81 & Prince Hall Drive	10.8	B	Lane Configuration	1	1	-	-	1>	-	-	-	1	-	1	
			Volume	10	525	-	-	670	20	-	-	-	75	-	45
			Delay (s)	6.6	1.0	-	-	13.0	-	-	-	-	46.8	-	43.1
			LOS	A	A	-	-	B	-	-	-	-	D	-	D
			V/C Ratio	0.03	0.43	-	-	0.60	-	-	-	-	0.72	-	0.31
			95% Queue (ft)	5	20	-	-	440	-	-	-	-	90	-	35
WIS 81 & Park Avenue	26.1	C	Lane Configuration	1	1	1	1	1	1	1	1	1	1	1	
			Volume	105	465	40	15	445	60	45	175	50	50	180	125
			Delay (s)	7.3	24.2	0.0	9.1	11.6	7.5	34.4	48.7	36.8	34.3	49.5	38.6
			LOS	A	C	A	A	B	A	C	D	D	C	D	D
			V/C Ratio	0.20	0.45	0.00	0.04	0.46	0.04	0.27	0.80	0.16	0.29	0.81	0.39
			95% Queue (ft)	35	410	0	5	180	15	45	205	30	50	215	80
WIS 81 & Wisconsin Avenue	3.2	A	Lane Configuration	-	<1>	-	-	<1>	-	-	<1>	-	-	<1>	
			Volume	10	530	5	5	475	25	5	40	5	5	50	10
			Delay (s)	-	8.6	-	-	8.7	-	-	31.2	-	-	31.5	-
			LOS	-	A	-	-	A	-	-	D	-	-	D	-
			V/C Ratio	-	0.01	-	-	0.01	-	-	0.29	-	-	0.35	-
			95% Queue (ft)	-	0	-	-	0	-	-	30	-	-	35	-
WIS 81 & Prairie Avenue	22.5	C	Lane Configuration	1	1>	-	1	1>	-	1	1>	-	1	1>	
			Volume	110	410	5	20	395	50	15	235	30	65	245	95
			Delay (s)	14.5	18.3	-	13.3	24.3	-	27.0	31.7	-	19.3	21.6	-
			LOS	B	B	-	B	C	-	C	C	-	B	C	-
			V/C Ratio	0.40	0.68	-	0.07	0.80	-	0.07	0.82	-	0.29	0.71	-
			95% Queue (ft)	50	255	-	10	310	-	15	175	-	40	185	-
WIS 81 & Milwaukee Road	4.0	A	Lane Configuration	-	1>	-	1	1	-	-	<1>	-	-	-	
			Volume	-	460	30	125	445	-	25	-	140	-	-	
			Delay (s)	-	0.0	-	9.2	0.0	-	-	22.8	-	-	-	
			LOS	-	A	-	A	A	-	-	C	-	-	-	
			V/C Ratio	-	0.00	-	0.14	0.00	-	-	0.49	-	-	-	
			95% Queue (ft)	-	0	-	15	0	-	-	70	-	-	-	

The results of the existing-year traffic operations analysis indicate that all intersections currently operate at adequate levels of service (LOS D or better) with the exception of the intersections of WIS 81 with Sixth Street and with Woodward Avenue. During peak traffic periods, movements from the side streets (Sixth Street and Woodward Avenue) can experience longer delays due to infrequent gaps in the WIS 81 traffic stream not adequately allowing traffic to enter the intersection. This is not an uncommon situation in urban areas, especially when principal arterials such as WIS 81 intersect side streets under stop-sign control. As traffic volumes increase at this location, consideration should be given to identify geometric improvements that will mitigate these deficiencies at this location.

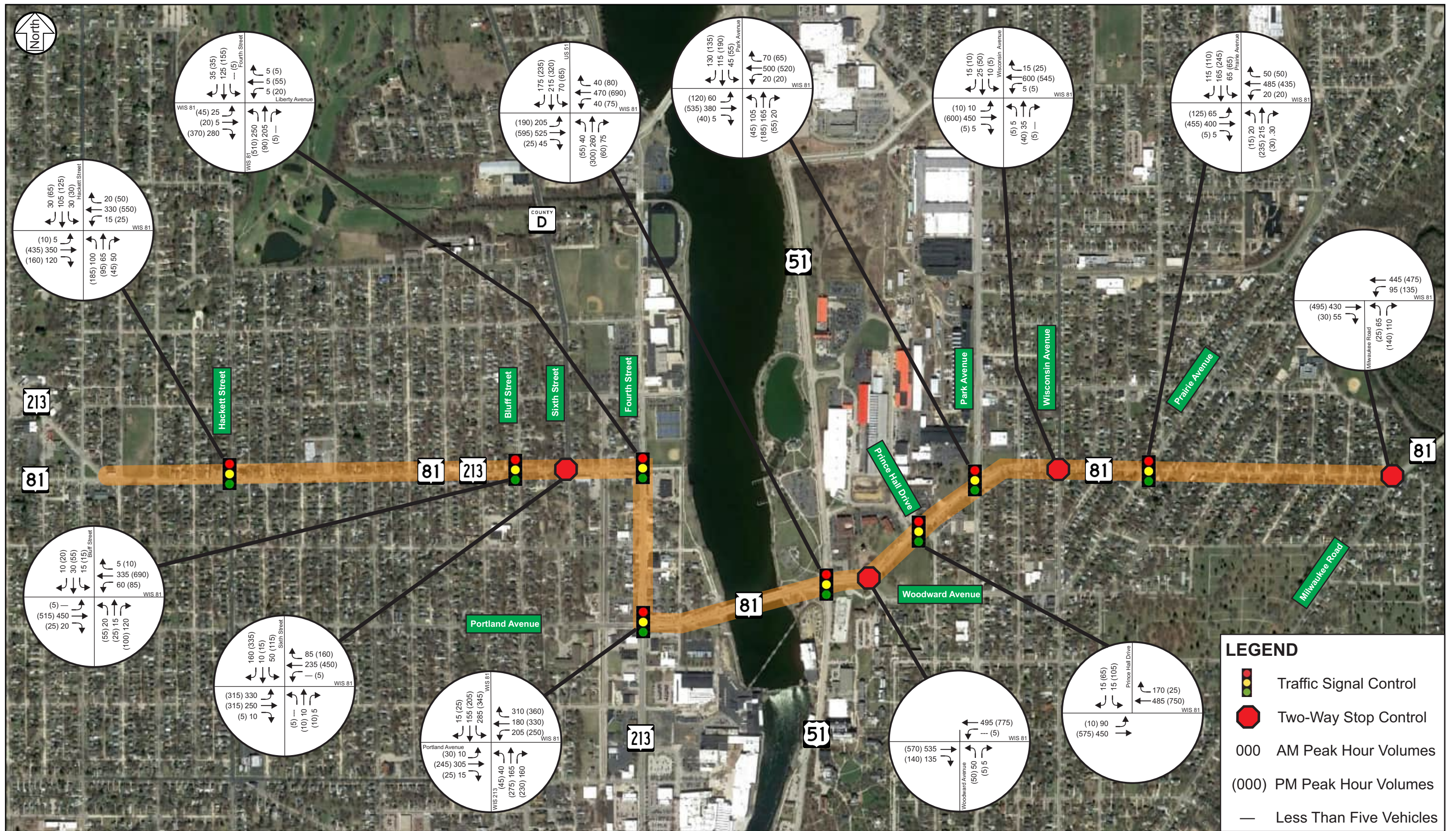
## 5.2 Year 2047 Conditions, No Build

To determine if the existing roadway system will accommodate Year 2047 traffic volumes, a peak hour operations analysis was conducted that evaluated the existing intersection geometry, lane configuration, and control with forecasted Year 2047 peak hour volumes. Analysis outputs are illustrated in **Table 5.5** (weekday morning peak hour) and **Table 5.6** (weekday afternoon peak hour). Traffic operations output files for this scenario are provided in **Appendix C**.

The Year 2047 traffic volumes were projected using the following methodologies:

- Year 2022 intersection turning movement counts collected for this study was submitted to WisDOT Traffic Forecasting Section (TFS) and Year 2047 traffic projections were created. WisDOT TFS develops traffic projections by reviewing the Beloit travel demand model and applies growth rates along WIS 81 and side-streets to the turning movements. These traffic projections are provided in **Appendix D**.
- Peak-hour traffic for planned / proposed developments were developed using trip generation rates published in the ITE *Trip Generation Manual*. The following developments were included in the traffic projections:
  - Brassworx: a proposed mixed-use development of existing parcels is generally bounded by Merrill Street, Third Street, Portland Avenue, and Fourth Street. At the time of this study, a general site plan was not developed so it was assumed that 200 residential apartments and 60,000 square feet of retail space would occupy this site.
  - Beloit Memorial High School: a 2018 traffic study discussed expansion of the high school, which assumed the construction of a new welcome and resource center and new sports fields within the campus.
  - ABC Supply: a 2018 traffic study evaluated the expansion of the ABC Supply campus site, which included the addition of 160,000 square feet of office space to the existing site.

The peak-hour traffic projections for the planned / proposed developments were added to Year 2047 traffic projections provided by WisDOT TFS to create a volume data set used to evaluate the existing geometrics and intersection control. The Year 2047 peak-hour intersection turning movement counts are illustrated in **Figure 5.1**.



Future-Year (Year 2047) Peak-Hour Intersection Volumes

Wisconsin 81 Corridor Study

Beloit, Wisconsin



**Table 5.5: Traffic Operations Analysis, Year 2047 No-Build Conditions, Weekday AM Peak Hour**

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Hackett Street	10.3	B	Lane Configuration	-	<1>	1	-	<1>	-	1	1>	-	-	<1>	-
			Volume	5	350	120	15	330	20	100	65	50	30	105	30
			Delay (s)	-	10.1	7.7	-	10.7	-	7.9	7.6	-	-	13.2	-
			LOS	-	B	A	-	B	-	A	A	-	-	B	-
			V/C Ratio	-	0.50	0.13	-	0.55	-	0.16	0.22	-	-	0.40	-
			95% Queue (ft)	-	95	15	-	100	-	20	25	-	-	55	-
WIS 81 & Bluff Street	6.9	A	Lane Configuration	-	<1>	-	1	1>	-	-	<1>	1	-	<1>	-
			Volume	1	450	20	60	335	5	20	15	120	15	30	10
			Delay (s)	-	6.5	-	3.8	5.1	-	-	12.2	13.0	-	12.5	-
			LOS	-	A	-	A	A	-	-	B	B	-	B	-
			V/C Ratio	-	0.60	-	0.12	0.46	-	-	0.10	0.30	-	0.17	-
			95% Queue (ft)	-	85	-	10	50	-	-	15	25	-	20	-
WIS 81 & Sixth Street	15.8	B	Lane Configuration	1	1>	-	-	<1>	1	-	<1>	-	-	<1>	1
			Volume	330	250	10	1	235	85	1	10	5	50	10	160
			Delay (s)	9.9	0.0	-	-	8.1	0.0	-	49.5	-	-	204.0	11.7
			LOS	A	A	-	-	A	A	-	E	-	-	F	B
			V/C Ratio	0.35	0.00	-	-	0.01	0.00	-	0.20	-	-	1.00	0.27
			95% Queue (ft)	40	0	-	-	0	0	-	15	-	-	130	30
WIS 81 & Fourth Street	8.4	A	Lane Configuration	-	<1>	1	-	<1>	-	1	1>	-	-	<1>	-
			Volume	25	5	280	5	5	5	250	205	1	1	125	35
			Delay (s)	-	11.0	7.4	-	10.7	-	6.9	5.7	-	-	14.4	-
			LOS	-	B	A	-	B	-	A	A	-	-	B	-
			V/C Ratio	-	0.08	0.35	-	0.04	-	0.43	0.34	-	-	0.50	-
			95% Queue (ft)	-	10	45	-	5	-	60	45	-	-	70	-
WIS 81 & Portland Avenue	22.5	C	Lane Configuration	1	1>	-	1	1	1	1	2>	-	1	2>	-
			Volume	10	305	15	205	180	310	10	165	160	285	155	15
			Delay (s)	17.9	29.7	-	17.3	16.1	16.6	22.7	31.8	-	19.2	16.3	-
			LOS	B	C	-	B	B	B	C	C	-	B	B	-
			V/C Ratio	0.03	0.78	-	0.62	0.32	0.37	0.03	0.64	-	0.70	0.17	-
			95% Queue (ft)	10	265	-	115	110	120	10	150	-	150	45	-
WIS 81 & US 51	28.1	C	Lane Configuration	1	2	1	1	2>	-	1	2>	-	1	2>	-
			Volume	205	525	45	40	470	40	40	260	75	70	215	175
			Delay (s)	29.8	30.8	24.8	26.8	36.8	-	16.5	21.4	-	16.3	21.7	-
			LOS	C	C	C	C	D	-	B	C	-	B	C	-
			V/C Ratio	0.71	0.62	0.07	0.18	0.82	-	0.11	0.31	-	0.17	0.36	-
			95% Queue (ft)	200	265	25	40	250	-	30	150	-	50	180	-
WIS 81 & Woodward Avenue	1.3	A	Lane Configuration	-	1	1	-	<1>	-	-	<1>	-	-	-	-
			Volume	-	535	135	1	495	-	50	-	5	-	-	-
			Delay (s)	-	0.0	0.0	-	9.3	-	-	28.8	-	-	-	-
			LOS	-	A	A	-	A	-	-	D	-	-	-	-
			V/C Ratio	-	0.01	0.01	-	0.01	-	-	0.30	-	-	-	-
			95% Queue (ft)	-	0	0	-	0	-	-	30	-	-	-	-
WIS 81 & Prince Hall Drive	2.2	A	Lane Configuration	1	1	-	-	1>	-	-	-	-	1	-	1
			Volume	90	450	-	-	485	170	-	-	-	15	-	15
			Delay (s)	0.5	0.8	-	-	1.8	-	-	-	-	46.9	-	46.6
			LOS	A	A	-	-	A	-	-	-	-	D	-	D
			V/C Ratio	0.16	0.38	-	-	0.61	-	-	-	-	0.24	-	0.17
			95% Queue (ft)	5	15	-	-	30	-	-	-	-	20	-	10
WIS 81 & Park Avenue	22.1	C	Lane Configuration	1	1	1	1	1	1	1	1	1	1	1	1
			Volume	60	380	5	20	500	70	105	165	20	45	115	130
			Delay (s)	10.0	1.5	0.0	8.2	17.3	9.7	34.9	50.0	36.4	36.6	49.1	45.5
			LOS	B	A	A	A	B	A	C	D	D	D	D	D
			V/C Ratio	0.17	0.45	0.00	0.04	0.62	0.06	0.47	0.73	0.06	0.25	0.65	0.50
			95% Queue (ft)	25	20	0	10	355	25	115	175	15	50	160	110
WIS 81 & Wisconsin Avenue	3.0	A	Lane Configuration	-	<1>	-	-	<1>	-	-	<1>	-	-	<1>	-
			Volume	10	450	5	5	600	15	5	35	1	10	25	15
			Delay (s)	-	9.2	-	-	8.6	-	-	39.0	-	-	36.4	-
			LOS	-	A	-	-	A	-	-	E	-	-	E	-
			V/C Ratio	-	0.01	-	-	0.01	-	-	0.32	-	-	0.34	-
			95% Queue (ft)	-	0	-	-	0	-	-	35	-	-	35	-
WIS 81 & Prairie Avenue	24.2	C	Lane Configuration	1	1>	-	1	1>	-	1	1>	-	1	1>	-
			Volume	65	400	5	20	485	50	20	215	30	65	165	115
			Delay (s)	14.8	15.8	-	11.2	29.3	-	26.9	33.9	-	20.4	22.0	-
			LOS	B	B	-	B	C	-	C	C	-	C	C	-
			V/C Ratio	0.29	0.62	-	0.06	0.88	-	0.10	0.83	-	0.31	0.66	-
			95% Queue (ft)	30	240	-	10	405	-	20	175	-	45	210	-
WIS 81 & Milwaukee Road	5.4	A	Lane Configuration	-	1>	-	1	1	-	-	<1>	-	-	-	-
			Volume	-	430	55	95	445	-	65	-	110	-	-	-
			Delay (s)	-	0.0	-	8.9	0.0	-	-	32.4	-	-	-	-
			LOS	-	A	-	A	A	-	-	D	-	-	-	-
			V/C Ratio	-	0.00	-	0.10	0.00	-	-	0.61	-	-	-	-
			95% Queue (ft)	-	0	-	10	0	-	-	90	-	-	-	-

**Table 5.6: Traffic Operations Analysis, Year 2047 No-Build Conditions, Weekday PM Peak Hour**

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Hackett Street	16.9	B	Lane Configuration	-	<1	1	-	<1>	-	1	1>	-	<1>	-	
			Volume	10	435	160	25	550	50	185	95	45	30	125	65
			Delay (s)	-	11.7	8.3	-	17.1	-	17.7	16.8	-	-	30.0	-
			LOS	-	B	A	-	B	-	B	B	-	-	C	-
			V/C Ratio	-	0.52	0.13	-	0.78	-	0.46	0.30	-	-	0.70	-
			95% Queue (ft)	-	210	35	-	340	-	110	80	-	-	185	-
WIS 81 & Bluff Street	8.3	A	Lane Configuration	-	<1>	-	1	1>	-	-	<1	1	-	<1>	
			Volume	5	515	25	85	690	10	55	25	100	15	55	20
			Delay (s)	-	6.0	-	4.0	7.5	-	-	14.2	14.2	-	14.7	-
			LOS	-	A	-	A	A	-	-	B	B	-	B	-
			V/C Ratio	-	0.61	-	0.17	0.78	-	-	0.23	0.24	-	0.30	-
			95% Queue (ft)	-	90	-	15	140	-	-	35	25	-	40	-
WIS 81 & Sixth Street	124.1	F	Lane Configuration	1	1>	-	-	<1	1	-	<1>	-	-	<1	
			Volume	315	315	5	5	450	160	5	10	10	115	15	335
			Delay (s)	12.3	0.0	-	-	8.1	0.0	-	525.1	-	-	999.9	28.1
			LOS	B	A	-	-	A	A	-	F	-	-	F	D
			V/C Ratio	0.43	0.00	-	-	0.01	0.00	-	1.26	-	-	3.78	0.73
			95% Queue (ft)	55	0	-	-	0	0	-	95	-	-	430	155
WIS 81 & Fourth Street	16.9	B	Lane Configuration	-	<1	1	-	<1>	-	1	1>	-	-	<1>	
			Volume	45	20	370	20	55	5	510	90	5	5	155	35
			Delay (s)	-	21.2	8.7	-	21.6	-	17.3	4.4	-	-	26.8	-
			LOS	-	C	A	-	C	-	B	A	-	-	C	-
			V/C Ratio	-	0.24	0.40	-	0.31	-	0.87	0.13	-	-	0.75	-
			95% Queue (ft)	-	30	110	-	70	-	290	25	-	-	215	-
WIS 81 & Portland Avenue	30.2	C	Lane Configuration	1	1>	-	1	1	1	1	2>	-	1	2>	
			Volume	30	245	25	250	330	360	45	275	230	345	205	25
			Delay (s)	23.1	38.6	-	28.5	27.0	23.4	21.7	38.2	-	31.4	17.1	-
			LOS	C	D	-	C	C	C	C	D	-	C	B	-
			V/C Ratio	0.14	0.81	-	0.76	0.66	0.48	0.12	0.77	-	0.86	0.21	-
			95% Queue (ft)	25	280	-	210	280	190	35	270	-	280	80	-
WIS 81 & US 51	37.4	D	Lane Configuration	1	2	1	1	2>	-	1	2>	-	1	2>	
			Volume	190	595	45	75	690	80	55	300	60	65	320	235
			Delay (s)	27.4	14.9	6.5	25.0	47.3	-	41.8	38.8	-	35.5	52.4	-
			LOS	C	B	A	C	D	-	D	D	-	D	D	-
			V/C Ratio	0.40	0.39	0.04	0.31	0.77	-	0.38	0.64	-	0.23	0.86	-
			95% Queue (ft)	155	185	15	60	415	-	60	190	-	65	335	-
WIS 81 & Woodward Avenue	1.7	A	Lane Configuration	-	1	1	-	<1	-	-	<1>	-	-	-	
			Volume	-	570	140	5	775	-	50	-	5	-	-	
			Delay (s)	-	0.0	0.0	-	9.3	-	-	47.5	-	-	-	
			LOS	-	A	A	-	A	-	-	E	-	-	-	
			V/C Ratio	-	0.01	0.01	-	0.01	-	-	0.42	-	-	-	
			95% Queue (ft)	-	0	0	-	0	-	-	50	-	-	-	
WIS 81 & Prince Hall Drive	7.3	A	Lane Configuration	1	1	-	-	1>	-	-	-	-	1	-	
			Volume	10	575	-	-	750	25	-	-	-	105	-	
			Delay (s)	2.2	4.7	-	-	2.9	-	-	-	-	43.0	-	
			LOS	A	A	-	-	A	-	-	-	-	D	-	
			V/C Ratio	0.02	0.49	-	-	0.70	-	-	-	-	0.75	-	
			95% Queue (ft)	5	150	-	-	40	-	-	-	-	120	-	
WIS 81 & Park Avenue	27.0	C	Lane Configuration	1	1	1	1	1	1	1	1	1	1	1	
			Volume	120	535	45	20	520	65	45	185	55	55	190	135
			Delay (s)	15.5	1.8	0.0	18.3	37.5	17.4	41.1	48.0	26.2	40.8	48.2	36.2
			LOS	B	A	A	B	D	B	D	D	C	D	D	D
			V/C Ratio	0.22	0.54	0.00	0.05	0.84	0.07	0.26	0.81	0.16	0.31	0.81	0.39
			95% Queue (ft)	60	25	0	15	460	25	40	210	40	55	215	80
WIS 81 & Wisconsin Avenue	3.8	A	Lane Configuration	-	<1>	-	-	<1>	-	-	<1>	-	-	<1>	
			Volume	10	600	5	5	545	25	5	40	5	5	50	10
			Delay (s)	-	8.8	-	-	8.9	-	-	41.3	-	-	42.6	-
			LOS	-	A	-	-	A	-	-	E	-	-	E	-
			V/C Ratio	-	0.01	-	-	0.01	-	-	0.36	-	-	0.43	-
			95% Queue (ft)	-	0	-	-	0	-	-	40	-	-	50	-
WIS 81 & Prairie Avenue	25.0	C	Lane Configuration	1	1>	-	1	1>	-	1	1>	-	1	1>	
			Volume	125	455	5	20	435	50	15	235	30	65	245	110
			Delay (s)	15.6	19.6	-	13.8	27.1	-	30.8	35.7	-	21.1	25.6	-
			LOS	B	B	-	B	C	-	C	D	-	C	C	-
			V/C Ratio	0.48	0.71	-	0.07	0.83	-	0.08	0.84	-	0.31	0.76	-
			95% Queue (ft)	60	300	-	10	365	-	15	245	-	45	275	-
WIS 81 & Milwaukee Road	4.6	A	Lane Configuration	-	1>	-	1	1	-	-	<1>	-	-	-	
			Volume	-	495	30	135	475	-	25	-	150	-	-	
			Delay (s)	-	0.0	-	9.4	0.0	-	-	26.9	-	-	-	
			LOS	-	A	-	A	A	-	-	D	-	-	-	
			V/C Ratio	-	0.00	-	0.16	0.00	-	-	0.56	-	-	-	
			95% Queue (ft)	-	0	-	15	0	-	-	80	-	-	-	

The results of the existing-year traffic operations analysis indicate that most intersections will continue to operate at adequate levels of service (LOS D or better). The intersections of WIS 81 with Sixth Street and with Woodward Avenue are anticipated to have movements operate at LOS E or LOS F, which is expected given that these locations currently have operational deficiencies. In addition, the intersection of WIS 81 and Wisconsin Avenue is also projected to have LOS E operations along Wisconsin Avenue. This is due to movements from Wisconsin Avenue experiencing longer delays due to infrequent gaps in the WIS 81 traffic stream not adequately allowing traffic to enter the intersection.

## 6.0 Alternatives Evaluation

Chapter 3.0 highlighted geometric deficiencies and crash patterns in the study area that could create safety issues. Chapter 5 indicated that several intersections currently, and are anticipated to, experience operational deficiencies during peak-hour traffic periods. Therefore, alternatives were developed that address these issues while maintaining favorable safety, mobility, access, and multimodal accommodations. These alternatives, and their evaluation, are provided below.

### 6.1 Corridor Improvements

#### 6.1.1 Liberty Avenue (WIS 213 to Fourth Street)

*Alternative 1: Add pavement markings to more clearly define roadway features*

The current roadway cross-section of Liberty Avenue is approximately 40 to 42 feet. This width provides 20 to 21 feet for each direction. This dimension is typically too small for two travel lanes but too wide for one travel lane. It is possible that motorists may mistakenly use this wide, single roadway lane as two lanes and attempt to pass slower-moving vehicles, increasing driver expectancy and crash risk. Providing pavement markings, such as lane lines, will guide motorists through the corridor (the roadway would maintain one travel lane in each direction) and inform them where features such as on-street parking or exclusive turn lanes are located.



#### Advantages

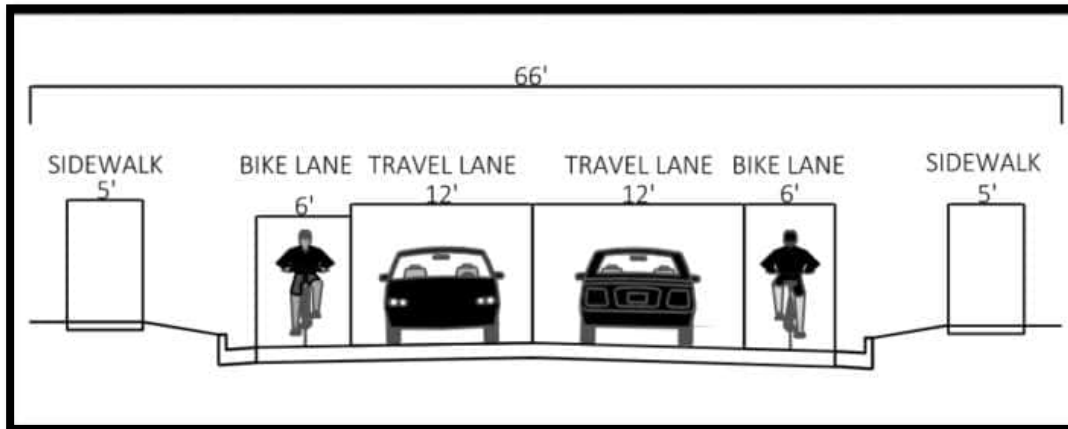
- Increased safety for motorists by clearly defining travel on the roadway
- Clearly defines roadway features such as parking lanes and turn lanes
- Minimal construction costs to implement
- No roadway widening necessary to implement

#### Disadvantages

- Pavement markings can be disregarded by traveling public
- Does not aid in multi-modal accommodations along roadway
- May not aid in long-term mobility of roadway

*Alternative 2: Update cross-section to provide two travel lanes and on-street bike lanes*

This alternative would maintain the existing roadway cross-section of two, 12-foot travel lanes (one in each direction) but provide six-foot, on-street bike lanes in each direction. The inclusion of the bicycle lanes would provide a dedicated route for bike travel in western Beloit, connecting the high school campus and the north-south multi-use path at Fifth Street to the residential neighborhoods on the west side of the city.



**Advantages**

- Increased safety for motorists by clearly defining travel on the roadway
- Provides dedicated bicycle route for users
- Minimal construction costs to implement
- No roadway widening necessary to implement

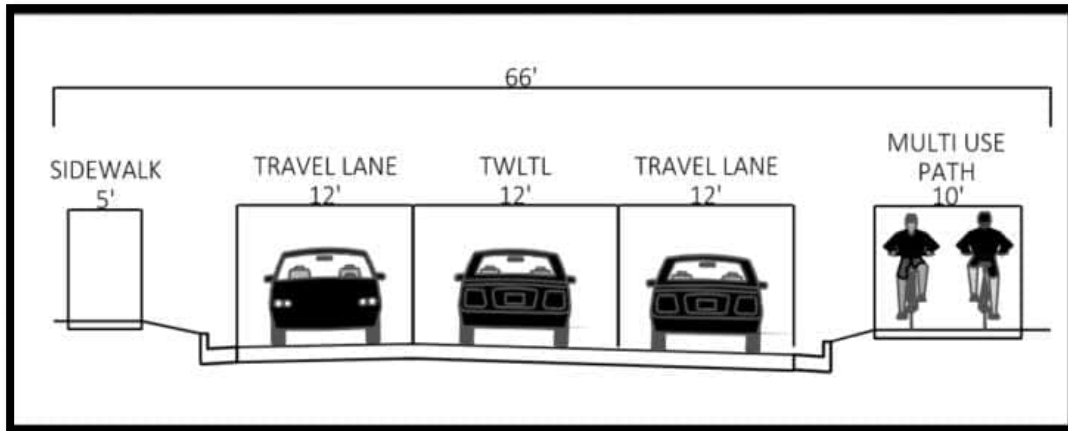
**Disadvantages**

- Pavement markings can be disregarded by traveling public
- Removes on-street parking areas along Liberty Avenue
- May create mobility issues along Liberty Avenue due to the loss of exclusive turn lanes
- On-street bicycle lanes and high-volume roadways (like Liberty Avenue) increases risk exposure for vehicle-bicycle crashes

*Alternative 3: Update cross-section to provide three travel lanes and a multi-use path*

This alternative would update the existing roadway cross-section of two travel lanes (one in each direction) to a three-lane cross-section with a 12-foot, two-way left-turn lane (TWLTL) separating 12-foot through lanes. The inclusion of a TWLTL will improve safety and mobility by allowing left-turning vehicles to or from Liberty Avenue to use the TWLTL to store before completing their turn movement. This, in turn, allows through movements to continue along Liberty Avenue without interruptions from left-turning vehicles blocking the through lane.

In addition, a 10-foot multi-use path would be provided along one side of the roadway (it is unknown at this time which side of Liberty Avenue would have this path). Similar to the previously discussed bike lanes, this path will provide a well-defined travel route for bicyclists and pedestrians connecting western Beloit to the high school campus and downtown areas.



#### Advantages

- Increased safety and mobility for motorists by moving left-turning vehicles away from through lanes
- Provides dedicated bike/ped route for users
- Minimal construction costs and no roadway widening needed to implement three-lane cross-section
- Multi-use path can be accommodated with roadway right of way

#### Disadvantages

- Removes on-street parking areas along Liberty Avenue
- Terrace between roadway and sidewalk may be reduced or removed to accommodate multi-use path

#### *Alternative 4: Implement access management strategies*

Section 3.1 stated that an access review of Liberty Avenue found 85 access points from WIS 213 to Fourth Street, an access density of 94 access points per mile. This high access density can increase congestion and crash risk as motorists have numerous locations to enter and exit the WIS 81 corridor. This alternative would implement access management strategies that would reduce the amount of access along WIS 81. For private driveways, this would include consolidation, cross-access between parcels, turn movement restriction, and/or their removal. Public roadway access typically involves restriction or removal of access to the major route (WIS 81).

No existing private driveways were recommended for access management at this time as it is unknown if reasonable access to any affected parcels can be provided. Rather, this alternative would be considered as development or redevelopment of parcels is proposed along Liberty Avenue. For public roadways, candidate locations were considered for implementation, but will require further evaluation to determine their feasibility. One such combination of access management involves the restriction (e.g., right-in, right-out access) or removal of access at Moore Street, 10th Street, 8th Street, and Oak Street. These candidate roadways are at least two blocks from each other, allowing affected traffic to divert one block to the next full access roadway with Liberty Avenue. Access management for public roadways may increase the ability to provide elements that enhance bike/ped crossing of Liberty Avenue, such as the installation of refuge islands, additional signage, and beacon/lighting elements. By restricting or removing left-turn or through movements, these devices can be installed without potentially impeding on the affected turn movements.

**Advantages**

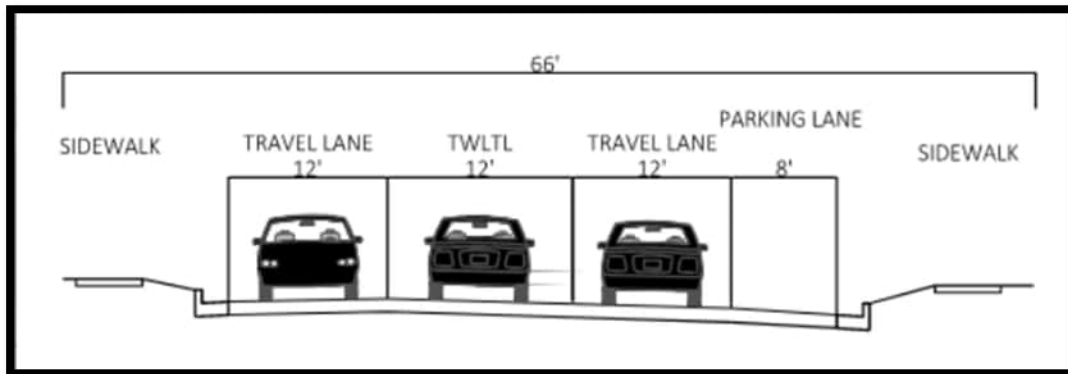
- Increased safety and mobility for motorists by reducing the number of access points along Liberty Avenue
- Minimal construction costs needed to implement
- No roadway widening needed to implement

**Disadvantages**

- Residents and motorists on affected roadways would travel to adjacent streets for access to/from Liberty Avenue
- Increased delays may occur on remaining full-access side-streets due to increase in diverted traffic using these roadways

**6.1.2 Fourth Avenue (Portland Avenue to WIS 213)**

The current roadway cross-section of Fourth Street is undivided with four travel lanes. The inside travel lanes typically serve as de facto turn lanes for motorists turning left from Fourth Street. In addition, northbound Fourth Street provides a “trapping left” condition as the inside through lane becomes a left-turn lane at Liberty Avenue. These situations can increase crash risk due to unexpected lane changes from the inside lanes and increased congestion as motorists may not want to drive in the inside lanes due to left-turning vehicles and the trapping left conditions. Converting the four-lane cross-section to a three-lane cross-section (two travel lanes and a TWLTL) would maintain mobility along Fourth Street while providing refuge for left-turning vehicles to and from the roadway. In addition, an on-street parking lane would be provided on the east side of Fourth Street to increase the parking supply in the area. The addition of the parking lane allows the existing roadway cross-section to be utilized without moving the curbs to accommodate the new cross-section elements.

**Advantages**

- Increased safety and mobility for motorists by moving left-turning vehicles away from through lanes
- Provides increased parking supply in area
- Minimal construction costs and no roadway widening needed to implement three-lane cross-section
- No roadway widening needed to implement on-street parking lane

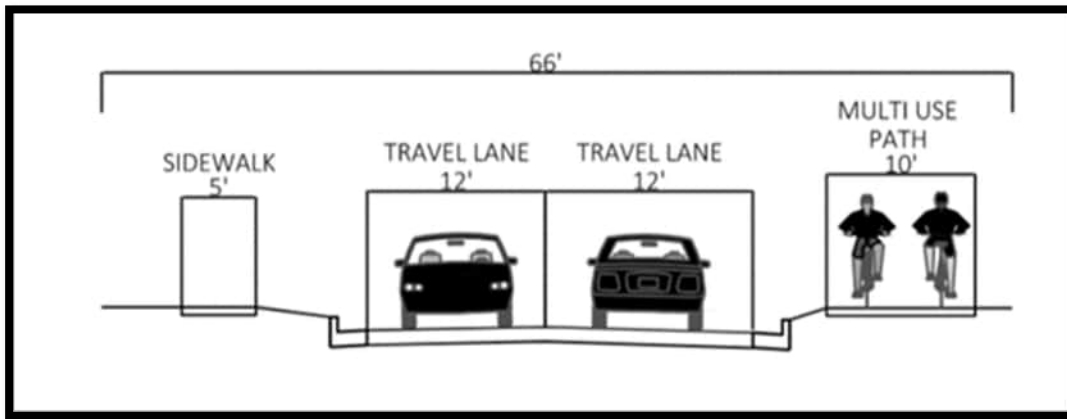
**Disadvantages**

- Increases vehicle / parked vehicle interactions at parking lane
- No multi-modal improvements provided along Fourth Street

6.1.3 White Avenue (Park Avenue to Milwaukee Road)

Alternative 1: Provide multi-use path

The current roadway cross-section of White Avenue is approximately 28 to 30 feet. This cross-section, and its limited right of way, restricts the ability to improve mobility along White Avenue. In addition, the ability to continue the existing bike lanes that terminate at Harrison Avenue are limited without roadway widening and/or right of way acquisition. This alternative would replace a sidewalk with a multi-use path (it is unknown which side this path would be located) that would connect the existing bike lanes at Harrison Avenue with a proposed multi-use path east of Milwaukee Road. This improvement would provide a vital bike/ped route connecting the residential neighborhoods and commercial areas of eastern Beloit and the downtown area.



**Advantages**

- Provides dedicated bike/ped route for users
- No roadway widening necessary to implement
- Improvement can be accommodated within existing right of way

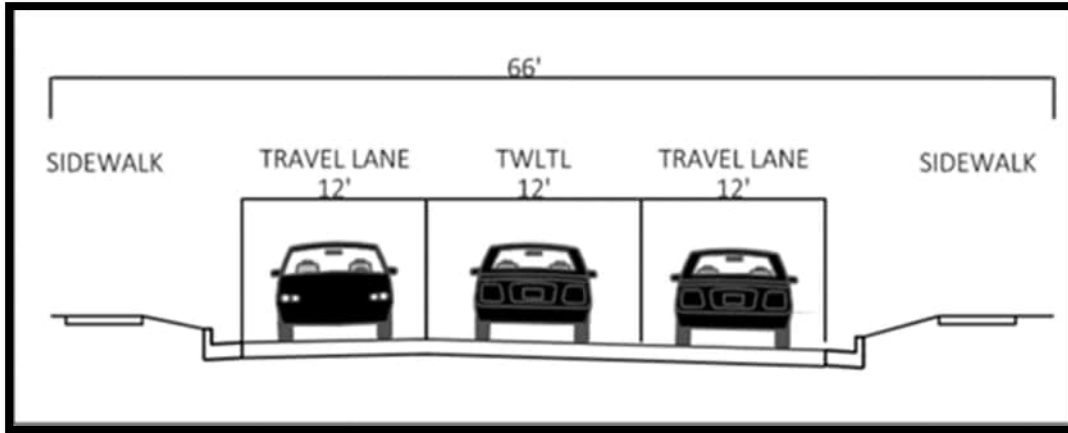
**Disadvantages**

- Does not address mobility or safety issues of motorists along White Avenue
- Terrace between roadway and sidewalk may be reduced or removed to accommodate multi-use path

Alternative 2: Update cross-section to provide three travel lanes

This alternative would update the existing roadway cross-section of two travel lanes (one in each direction) to a three-lane cross-section with a 12-foot, two-way left-turn lane (TWLTL) separating 12-foot through lanes. The inclusion of a TWLTL will improve safety and mobility by allowing left-turning vehicles to or from White Avenue to use the TWLTL to store before completing their turn movement. This, in turn, allows through movements to continue along White Avenue without interruptions from left-turning vehicles blocking the through lane. This alternative would not provide a multi-use path and maintain the existing sidewalks.





**Advantages**

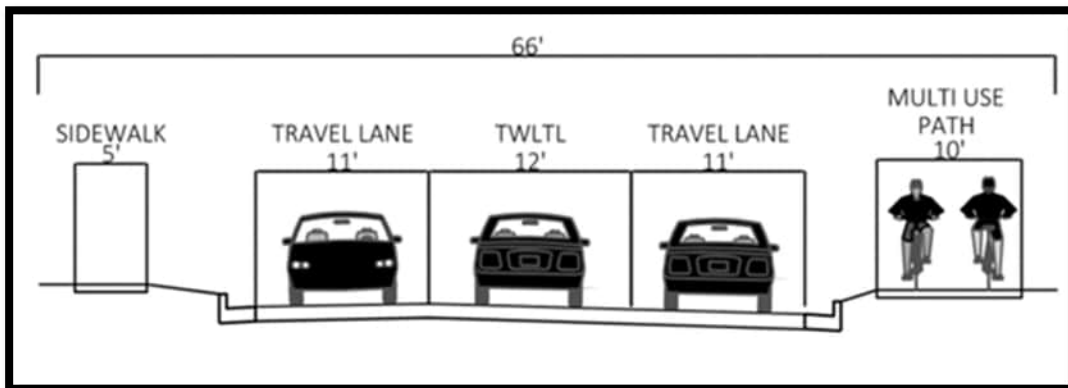
- Increased safety and mobility for motorists by moving left-turning vehicles away from through lanes

**Disadvantages**

- Significant construction costs to implement
- Terrace between roadway and sidewalk may be reduced or removed to accommodate improvement
- Bike/ped accommodations not improved with this alternative

*Alternative 3: Update cross-section to provide three travel lanes and a multi-use path*

This alternative is a combination of Alternative 1 and Alternative 2 which would provide a three-lane roadway cross-section of White Avenue as well as a multi-use path for bike/ped use.



**Advantages**

- Increased safety and mobility for motorists by moving left-turning vehicles away from through lanes
- Provides dedicated bike/ped route for users

**Disadvantages**

- Significant construction costs to implement
- Possible right of way needed to implement
- Terrace between roadway and sidewalk may be reduced or removed to accommodate multi-use path

*Alternative 4: Implement access management strategies*

Section 3.1 stated that an access review of White Avenue found 62 access points from Harrison Avenue to Milwaukee Road, an access density of 100 access points per mile. This high access density can increase congestion and crash risk as motorists have numerous locations to enter and exit the WIS 81 corridor. This alternative would implement access management strategies that would reduce the amount of access along White Avenue. For private driveways, this would include consolidation, cross-access between parcels, turn movement restriction, and/or their removal. Public roadway access typically involves restriction or removal of access to the major route (WIS 81).

No existing private driveways were recommended for access management at this time as it is unknown if reasonable access to any affected parcels can be provided. Rather, this alternative would be considered as development or redevelopment of parcels is proposed along White Avenue. For public roadways, candidate locations were considered for implementation, but will require further evaluation to determine their feasibility. One such combination of access management involves the restriction (e.g., right-in, right-out access) or removal of access at Harrison Avenue, Wisconsin Avenue, Nelson Avenue, Central Avenue, Eaton Avenue, and Hinsdale Avenue. These candidate roadways are at least two blocks from each other, allowing affected traffic to divert one block to the next full access roadway with White Avenue. Access management for public roadways may increase the ability to provide elements that enhance bike/ped crossing of White Avenue, such as the installation of refuge islands, additional signage, and beacon/lighting elements. By restricting or removing left-turn or through movements, these devices can be installed without potentially impeding on the affected turn movements.

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Increased safety and mobility for motorists by reducing the number of access points along White Avenue</li><li>• Minimal construction costs needed to implement</li><li>• No roadway widening needed to implement</li></ul>	<ul style="list-style-type: none"><li>• Residents and motorists on affected roadways would travel to adjacent streets for access to/from White Avenue</li><li>• Increased delays may occur on remaining full-access side-streets due to increase in diverted traffic using these roadways</li></ul>

## 6.2 Intersection Improvements

### 6.2.1 Liberty Avenue and Bluff Street and Sixth Street

This improvement would change the intersection control at these intersections so that Sixth Street is under traffic signal control while Bluff Street would become a two-way stop-control (TWSC) intersection. Sixth Street is a higher functionally classified roadway, carries more peak-hour and daily traffic, and has a greater benefit to the Beloit Memorial High School campus traffic; therefore, upgrading the intersection control to a traffic signal will provide dedicated green time for movements to and from Sixth Street.



#### Advantages

- Traffic signal serves higher classification, higher-volume roadway
- Improves safety and mobility by providing dedicated green time to and from Sixth Street
- Provides another access to Liberty Avenue via traffic signal for Beloit Memorial High School campus traffic
- No/minimal right of way needed to implement

#### Disadvantages

- Increased delays along Bluff Street likely due to stop control
- Potential increases in traffic along Sixth Street due to diverted Bluff Street traffic

Traffic operations analysis was performed for Year 2047 conditions with the change in intersection control, with its results illustrated below:

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Bluff Street, TWSC, AM Peak Hour	4.9	A	Lane Configuration	-	<1>	-	1	1>	-	-	<1	1	-	<1>	-
			Volume	1	450	20	60	335	5	20	15	120	15	30	10
			Delay (s)	-	8.3	-	9.1	-	-	-	39.1	13.6	-	39.0	-
			LOS	-	A	-	A	-	-	-	E	B	-	E	-
			V/C Ratio	-	0.01	-	0.08	-	-	-	0.29	0.18	-	0.40	-
			95% Queue (ft)	-	0	-	10	-	-	-	30	20	-	45	-
WIS 81 & Sixth Street, Signal, AM Peak Hour	10.8	B	Lane Configuration	1	1>	-	-	<1	1	-	<1>	-	-	<1	1
			Volume	330	250	10	1	235	85	1	10	5	50	10	160
			Delay (s)	8.4	4.5	-	-	14.6	12.7	-	13.6	-	-	14.3	17.4
			LOS	A	A	-	-	B	B	-	B	-	-	B	B
			V/C Ratio	0.61	0.30	-	-	0.64	0.28	-	0.05	-	-	0.17	0.62
			95% Queue (ft)	75	40	-	-	100	35	-	5	-	-	25	75
WIS 81 & Bluff Street, TWSC, PM Peak Hour	100.0	F	Lane Configuration	-	<1>	-	1	1>	-	-	<1	1	-	<1>	-
			Volume	5	515	25	85	690	10	55	25	100	15	55	20
			Delay (s)	-	9.8	-	9.5	-	-	-	360.0	14.4	-	360.0	-
			LOS	-	A	-	A	-	-	-	F	B	-	F	-
			V/C Ratio	-	0.01	-	0.12	-	-	-	9.88	0.17	-	1.66	-
			95% Queue (ft)	-	0	-	0	-	-	-	345	15	-	250	-
WIS 81 & Sixth Street, Signal, PM Peak Hour	14.5	B	Lane Configuration	1	1>	-	-	<1	1	-	<1>	-	-	<1	1
			Volume	315	315	5	5	450	160	5	10	10	115	15	335
			Delay (s)	14.1	6.3	-	-	18.9	14.5	-	17.4	-	-	19.3	14.8
			LOS	B	A	-	-	B	B	-	B	-	-	B	B
			V/C Ratio	0.76	0.34	-	-	0.80	0.34	-	0.06	-	-	0.33	0.60
			95% Queue (ft)	115	90	-	-	265	80	-	15	-	-	80	180

The results indicate that Sixth Street, as a traffic signal, will operate adequately during peak-hour conditions while Bluff Street, as two-way stop control, will experience long delays on the side-street due to limited gaps in the WIS 81 traffic stream. It should be noted that no diversion of traffic from Bluff Street to Sixth Street was assumed so a “worst-case” condition was analyzed; it is likely that many left-turn and through movements will use the traffic signal at Sixth Street. In addition, when traffic along WIS 81 is stopped at Sixth Street, side-street traffic at Bluff Street may be provided additional gaps to complete their turning movement, improving operations.

### 6.2.2 Liberty Avenue and Fifth Street

The intersection of Liberty Avenue and Fifth Street is located approximately 250 feet east of Sixth Street and approximately 250 feet west of Fourth Street. With Fourth Street currently signalized and Sixth Street recommended to become signalized, the provision of an unsignalized intersection so close to these signalized locations may create mobility and safety concerns. To mitigate this situation, Fifth Street access would be restricted (right-in, right-out only) or removed at Liberty Avenue to reduce the number of conflict points at this intersection and between the two traffic signals. The multi-use path would remain at this intersection.



**Advantages**

- Improves safety by reducing conflict points along this section of Liberty Avenue
- Improves mobility by eliminating left-turns and through movements at intersection
- Reduces cut-through traffic to/from high school
- No/minimal right of way needed to implement
- Maintains and allows for enhancements of multi-use path crossing at Liberty Avenue

**Disadvantages**

- Residents and businesses along Fifth Street will be diverted to other roadways
- Potential increases in traffic along Fourth and Sixth Streets due to diverted Fifth Street traffic

### 6.2.3 Liberty Avenue and Fourth Street

#### Alternative 1: Remove east leg from intersection

This alternative would remove the east (Liberty Avenue) leg from the existing intersection, converting it to a T-intersection. The existing roadway would remain for access to adjacent properties.



#### Advantages

- Increased mobility by removing traffic movements to/from east leg and reallocates green time for traffic signal
- Increased safety by reducing number of conflict points at intersection
- Potential sidewalk enhancement on east side of intersection due to roadway removal
- Minimal construction costs to implement

#### Disadvantages

- Does not address “trapping left” condition for northbound traffic (if Fourth Street maintains four-lane cross-section)
- Does not address improving turning capabilities for movements along WIS 81 corridor
- Removes the only signalized access to Fourth Street for properties on east side of roadway, including Brassworx development

*Alternative 2: Convert north leg to one-way northbound traffic only*

This alternative would convert the north leg (Fourth Street) from two-way to one-way northbound from the existing intersection. Existing southbound traffic would be diverted to other roadways, such as Sixth Street, for travel.



**Advantages**

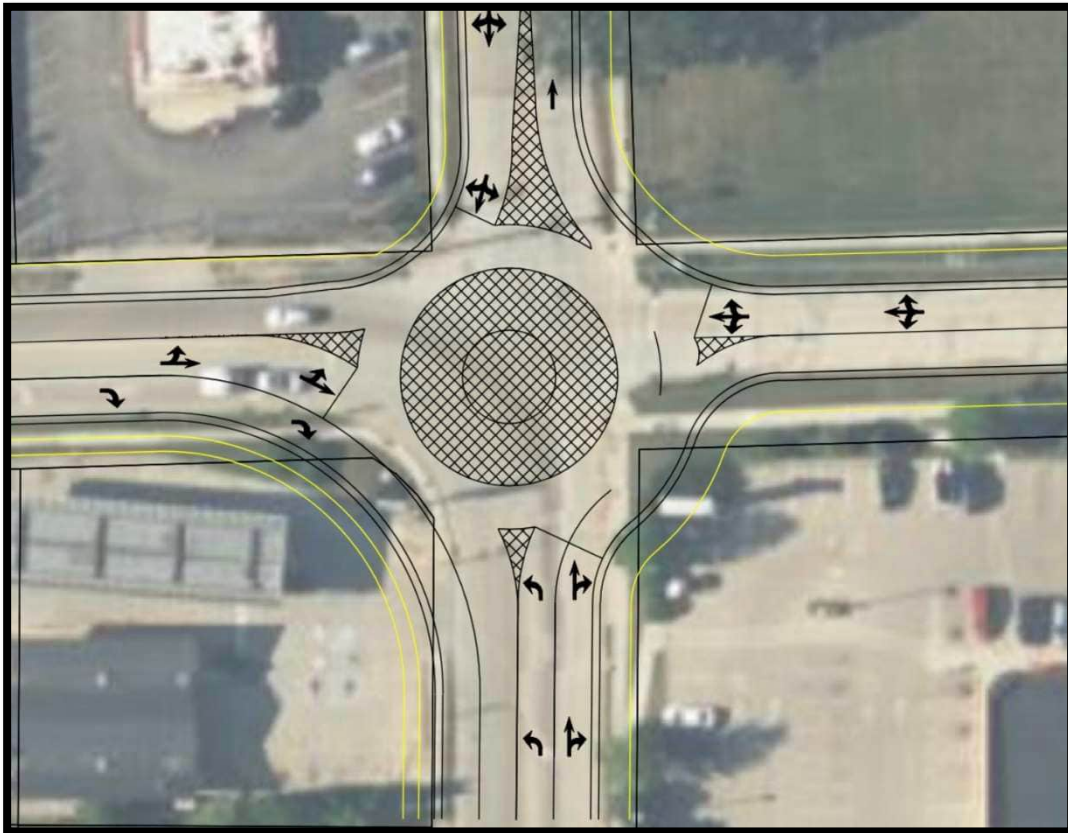
- Increased mobility by removing traffic movements to/from north leg and reallocates green time for traffic signal
- Increased safety by reducing number of conflict points at intersection
- Provides streamlined traffic flow into high school campus area
- Minimal construction costs to implement

**Disadvantages**

- Does not address “trapping left” condition for northbound traffic (if Fourth Street maintains four-lane cross-section)
- Does not address improving turning capabilities for movements along WIS 81 corridor
- Likely increases traffic to Fifth and Sixth Streets due to diverted southbound traffic

*Alternative 3: Update intersection control to a roundabout*

This alternative would convert the existing signalized intersection to a roundabout. The roundabout would have single-lane approaches on the north and east legs and two-lane approaches on the south and west legs. Raised splitter islands would separate the travel lanes on each approach and a mountable truck apron would be present to accommodate truck movements.



**Advantages**

- Increased mobility by making all intersection movements yield control
- Increased safety by eliminating angle and head-on crash potential
- Splitter islands provide two-stage crossing for bike/ped traffic
- Design maintains truck turning capabilities at intersection

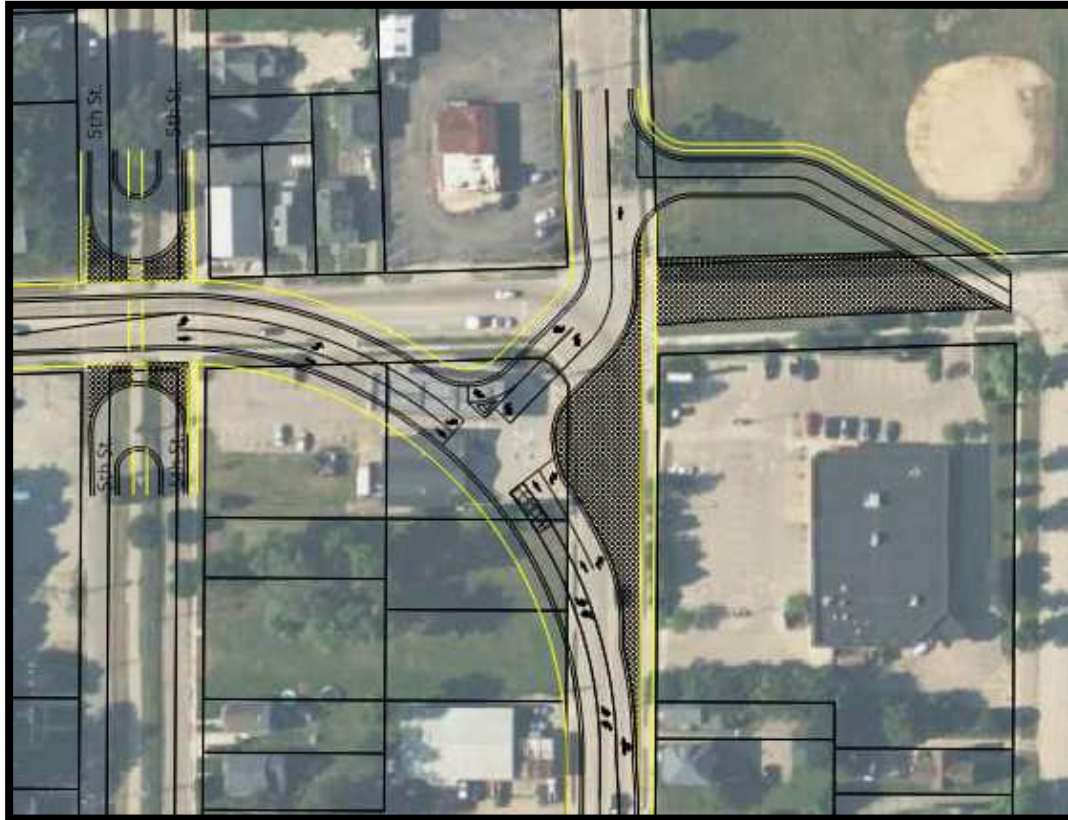
**Disadvantages**

- Does not address “trapping left” condition for northbound traffic (if Fourth Street maintains four-lane cross-section)
- Significant construction costs and right of way acquisition to implement

*Alternative 4: Realign WIS 81 to a horizontal curve*



This alternative would reconstruct the intersection to align the south and west (WIS 81) intersection legs to make through movements the “major” movement at the intersection. The north leg would intersect the realigned legs, forming a T-intersection that would be signalized. The east leg would be realigned to the north and intersect the north leg away from the newly formed T-intersection to provide spacing between the intersections.



#### Advantages

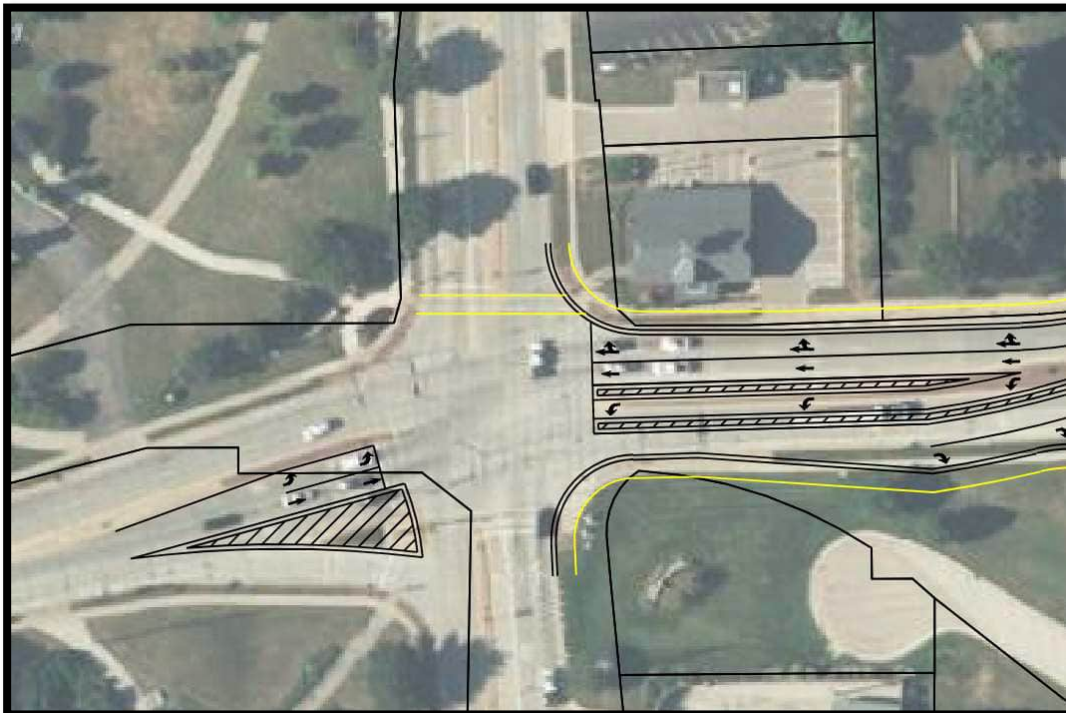
- Increased mobility by realigning south and west legs and reallocating green time for traffic signal
- Increased safety by reducing number of conflict points at intersection
- Approach realignment makes truck travel easier as they are now through movements through the intersection
- Potential sidewalk enhancement on east side of intersection due to roadway removal

#### Disadvantages

- Significant right of way needed to implement
- Significant construction costs to implement
- Fifth Street access must be restricted or removed due to horizontal alignment change

#### 6.2.4 Portland Avenue / White Avenue and US 51

The existing intersection is located within a transition area of WIS 81 where the existing four lanes west of the intersection is reduced to two travel lanes east of US 51. The lane reduction for eastbound WIS 81 traffic is performed by creating a “trapping right” turn lane at Woodward Avenue, located approximately 250 feet east of US 51. This condition impacts traffic flow for eastbound WIS 81 traffic at US 51 as poor lane utilization (to avoid the trapping right at Woodward Avenue) and queue-jumping (aggressive drivers attempting to avoid long queues by speeding and merging suddenly) creates safety and mobility concerns. The intersection geometrics for the left-turn lanes on WIS 81 also provides a negative left-turn offset which can block field of vision and increase crash risk. To mitigate these deficiencies, the eastbound approach of the intersection would be reduced from two through lanes to one through lane to eliminate the trapping right situation downstream. The elimination of the second eastbound through lane would allow the westbound left-turn lane to be shifted southerly to improve the left-turn offset for the eastbound and westbound left-turn lanes.



**Advantages**

- Increased safety for eastbound motorists by eliminating trapping right and queue-jumping conditions downstream
- Increased safety for eastbound/westbound left-turn lanes by improving left-turn offset
- Improvements can be accommodated within existing roadway footprint
- Median in southwest quadrant could provide two-stage crossing

**Disadvantages**

- Eastbound merge for WIS 81 will occur further back, possibly on the Rock River bridge
- Increased delays at intersection possible due to loss of eastbound through lane and reallocation of green time

Traffic operations analysis was performed for Year 2047 conditions with the change in intersection control, with its results illustrated below:

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & US 51, AM Peak Hour	22.2	C	Lane Configuration	1	1	1	1	2>	-	1	2>	-	1	2>	-
			Volume	205	525	45	40	470	40	40	260	75	70	215	175
			Delay (s)	12.8	25.4	12.8	14.5	4.2	-	27.6	34.8	-	27.3	36.0	-
			LOS	B	C	B	B	A	-	C	C	-	C	D	-
			V/C Ratio	0.44	0.74	0.04	0.15	0.41	-	0.22	0.60	-	0.31	0.69	-
			95% Queue (ft)	120	415	20	20	45	-	40	180	-	65	215	-
WIS 81 & US 51, PM Peak Hour	23.0	C	Lane Configuration	1	1	1	1	2>	-	1	2>	-	1	2>	-
			Volume	190	595	45	75	690	80	55	300	60	65	320	235
			Delay (s)	12.6	29.8	13.6	16.6	8.6	-	23.7	28.6	-	22.4	36.5	-
			LOS	B	C	B	B	A	-	C	C	-	C	D	-
			V/C Ratio	0.44	0.81	0.04	0.29	0.60	-	0.26	0.44	-	0.21	0.74	-
			95% Queue (ft)	95	465	15	40	95	-	40	160	-	45	225	-

The results of the traffic operations analysis indicate that all traffic movements are anticipated to operate at LOS D or better during peak traffic periods. It should be noted that longer queues are projected on the eastbound approach with one through lane; however, these queues would not interfere with traffic operations at upstream intersections.

### 6.2.5 White Avenue and Woodward Avenue

#### Alternative 1: Provide right-in, right-out access only

The unsignalized intersection of White Avenue and Woodward Avenue is located approximately 250 feet from the signalized US 51 intersection. This close intersection spacing can increase congestion and crash risk due to the increased number of conflict points over a short distance. This alternative would convert the full access intersection to right-in, right-out access only. An eastbound right-turn lane would be provided to allow right-turning vehicles to move out of the through traffic stream (this provision assumes that improvements to the US 51 intersection will be implemented). A raised median would be constructed along White Avenue prohibiting left-turns at the intersection from occurring.



#### Advantages

- Improves safety by reducing conflict points at intersection
- Improves mobility by eliminating left-turns at intersection
- No right of way needed to implement
- Minimal construction costs to implement
- Maintains bike/ped movements at intersection
- Affects minor amount of left-turning traffic (max. 50 vehicles per hour)

#### Disadvantages

- Existing left-turning traffic will divert to Park Avenue intersection
- Increased travel time and distance for diverted left-turning traffic

*Alternative 2: Remove access to/from Woodward Avenue*

This alternative would eliminate the Woodward Avenue intersection entirely. Bicyclists and pedestrians would still have infrastructure to travel from either roadway.



**Advantages**

- Improves safety by eliminating intersection
- Improves mobility by eliminating intersection
- No right of way needed to implement
- Minimal construction costs to implement
- Maintains bike/ped movements at intersection

**Disadvantages**

- Existing Woodward Avenue traffic will divert to Park Avenue intersection
- More traffic affected with this alternative due to right-turning traffic now diverted
- Increased travel time and distance for diverted traffic and emergency vehicles

*Alternative 3: Remove Woodward Avenue access and add new access at Prince Hall Drive*

This alternative would eliminate the Woodward Avenue intersection entirely and construct a new roadway that would connect from Woodward Avenue or Church Street with White Avenue via the existing signalized intersection with Prince Hall Drive. This roadway extension would create a fourth leg at the Prince Hall Drive intersection.



**Advantages**

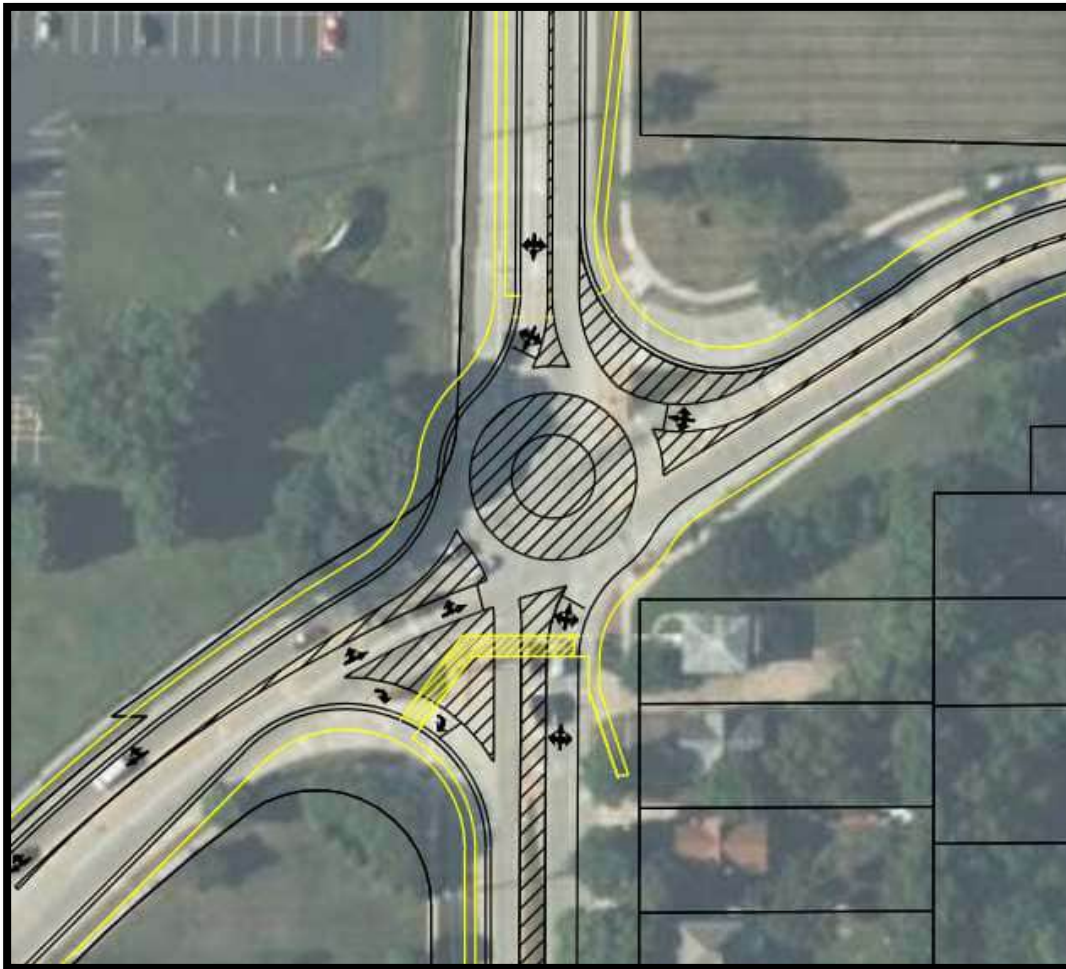
- Improves safety by eliminating intersection
- Improves mobility by eliminating intersection
- Roadway extension minimizes diverted travel distance and travel time
- Increases emergency vehicle circulation at existing fire station on Church Street
- Maintains bike/ped movements at intersection

**Disadvantages**

- Significant construction costs and right of way acquisition to implement
- Increased delay along White Avenue likely due to fourth leg added at Prince Hall Drive signalized intersection

### 6.2.6 White Avenue and Park Avenue

The signalized intersection of White Avenue and Park Avenue is anticipated to experience LOS D for numerous intersection lane groups under Year 2047 conditions. This, coupled with the existing crash commonalities and negative left-turn offset along White Avenue, will compound the existing crash risk at this location. To mitigate these concerns, the intersection would be converted from traffic signal control to roundabout control. Single-lane approaches would be provided at each intersection leg. Raised splitter islands would separate the travel lanes on each approach and a mountable truck apron would be present to accommodate truck movements.



#### Advantages

- Increased mobility by making all intersection movements yield control
- Increased safety by eliminating angle and head-on crash potential
- Splitter islands provide two-stage crossing for bike/ped traffic
- Aids in reducing travel speeds at intersection
- Can be accommodated within existing right of way

#### Disadvantages

- Significant construction costs to implement

Traffic operations analysis was performed for Year 2047 conditions with the change in intersection control, with its results illustrated below:

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Park Avenue, AM Peak Hour	11.3	B	Lane Configuration	-	<1	1	-	<1>	-	-	<1>	-	-	<1>	-
			Volume	60	380	5	20	500	70	105	165	20	45	115	130
			Delay (s)	-	7.7	-	-	15.0	-	-	9.1	-	-	11.6	-
			LOS	-	A	-	-	C	-	-	A	-	-	B	-
			V/C Ratio	-	0.43	-	-	0.68	-	-	0.39	-	-	0.45	-
			95% Queue (ft)	-	55	-	-	140	-	-	45	-	-	60	-
WIS 81 & Park Avenue, PM Peak Hour	13.6	B	Lane Configuration	-	<1	1	-	<1>	-	-	<1>	-	-	<1>	-
			Volume	120	535	45	20	520	65	45	185	55	55	190	
			Delay (s)	-	13.0	-	-	15.1	-	-	12.3	-	-	13.1	-
			LOS	-	B	-	-	C	-	-	B	-	-	B	-
			V/C Ratio	-	0.67	-	-	0.68	-	-	0.46	-	-	0.54	-
			95% Queue (ft)	-	135	-	-	140	-	-	60	-	-	85	-

The results of the traffic operations analysis indicated that the roundabout control is projected to operate adequately during peak traffic conditions.

### 6.2.7 White Avenue and Milwaukee Road

#### Alternative 1: Update intersection control to a roundabout

The unsignalized intersection of White Avenue and Milwaukee Road is currently located along a horizontal curve and at a transitional area of WIS 81 from residential neighborhood and commercial center. Crash history and public comment at this intersection cite that WIS 81 westbound motorists are approaching this intersection at high travel speeds which increases crash risk at the intersection, particularly run-off-road crashes. In addition, the geometry and travel speeds at this intersection make bicycle and pedestrian travel uncomfortable (a crosswalk previously located on the west side of the intersection was removed due to these conditions). To mitigate these concerns, the intersection would be converted from two-way stop control to roundabout control. Single-lane approaches would be provided at each intersection leg. Raised splitter islands would separate the travel lanes on each approach and a mountable truck apron would be present to accommodate truck movements.





**Advantages**

- Increased mobility by making all intersection movements yield control
- Increased safety by eliminating angle and head-on crash potential
- Splitter islands provide two-stage crossing for bike/ped traffic
- Aids in reducing travel speeds at intersection

**Disadvantages**

- Significant construction costs to implement
- Right of way acquisition likely to implement

Traffic operations analysis was performed for Year 2047 conditions with the change in intersection control, with its results illustrated below:

Intersection	Overall		By Approach	Eastbound			Westbound			Northbound			Southbound		
	Delay (s)	LOS		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
WIS 81 & Milwaukee Road	7.5	A	Lane Configuration	-	1>	-	-	<1	-	-	<1>	-	-	-	-
			Volume	-	430	55	95	445	-	65	-	110	-	-	-
			Delay (s)	-	7.5	-	-	7.8	-	-	-	6.6	-	-	-
			LOS	-	A	-	-	A	-	-	-	A	-	-	-
			V/C Ratio	-	0.44	-	-	0.47	-	-	-	0.23	-	-	-
			95% Queue (ft)	-	60	-	-	65	-	-	-	25	-	-	-
WIS 81 & Milwaukee Road	8.7	A	Lane Configuration	-	1>	-	-	<1	-	-	<1>	-	-	-	
			Volume	-	495	30	135	475	-	25	-	150	-	-	
			Delay (s)	-	9.4	-	-	8.5	-	-	-	7.5	-	-	
			LOS	-	A	-	-	A	-	-	-	A	-	-	
			V/C Ratio	-	0.53	-	-	0.53	-	-	-	0.25	-	-	
			95% Queue (ft)	-	80	-	-	80	-	-	-	25	-	-	

The results of the traffic operations analysis indicated that the roundabout control is projected to operate adequately during peak traffic conditions.

*Alternative 2: Provide on-street improvements to intersection*

This alternative would provide numerous roadway and intersection improvements to the intersection, listed below:

- Reduce the number of travel lanes along Milwaukee Road (east approach) from four to two east of the at-grade railroad crossing
- Construct raised medians along WIS 81 near the Milwaukee Road intersection
- Install speed limit feedback signs along WIS 81 to inform and alert motorists of their current travel speed approaching the intersection
- Install a crosswalk on the west side of the intersection and install advanced warning and crosswalk features (e.g., signs, beacons, etc.) informing motorists of the crosswalk
- Construct a protected, multi-use path on the south side of WIS 81, east of the Milwaukee Road intersection



**Advantages**

- Increased safety by reducing travel speed approaching and through intersection
- Raised median island provides two-stage crossing for bike/ped traffic
- Can be accommodated within existing roadway cross-section and right of way
- Can be installed as separate items of together at once

**Disadvantages**

- Signs and markings can be disregarded by motorists
- Does not physically make motorists reduce speeds (i.e., horizontal deflection of a roundabout)

## 7.0 Recommendations

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Alternatives for the WIS 81 corridor were developed based on deficiencies found in the following categories: geometric site reviews of the study area, safety evaluation of the WIS 81 corridor and the study intersections, and intersection operations analysis for the existing-year and Year 2047 horizon year. Locations with several alternatives were evaluated based on the aforementioned categories and a preferred alternative was selected based on those results.

The following describes recommendations for the WIS 81 corridor and key intersections:

### *WIS 81 (Liberty Avenue), Madison Road to Fourth Street*

- It is recommended that the Liberty Avenue cross-section be updated to provide a three-lane cross-section (two travel lanes and a TWLTL) with a multi-use path replacing one sidewalk. This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from Liberty Avenue. The multi-use path will enhance bike/ped accommodations along the corridor and provide a vital east-west route connecting western Beloit to the downtown area. These improvements can be accommodated within the existing roadway cross-section and right of way, minimizing construction costs and right of way acquisition.
- It is recommended that access management strategies are considered for implementation along the Liberty Avenue corridor. Strategies such as consolidation, cross-access, restriction, or removal of access to Liberty Avenue will improve safety and mobility by reducing the number of access drives and conflict points which motorists must consider when driving along the roadway. Restriction or removal of public roadway access to Liberty Avenue should be investigated further to determine candidate locations. If locations are determined, crossing elements at these restricted intersections should be implemented to improve bike/ped safety when crossing Liberty Avenue.

### *WIS 81 (Liberty Avenue), Sixth Street intersection*

- It is recommended that the intersection control at Sixth Street be updated to provide traffic signal control (via shifting the traffic signal control from Bluff Street to Sixth Street). This improvement will provide protected green time to traffic to and from Sixth Street instead of waiting for gaps in Liberty Avenue traffic, improving safety and mobility at the intersection. Shifting the traffic signal to the east will also help serve traffic to and from Beloit Memorial High School, providing better distribution of traffic from the campus. While the Sixth Street traffic signal is approximately 570 feet from the existing traffic signal at Fourth Street, traffic signal phasing and timing can be coordinated to provide efficient traffic flow along Liberty Avenue with no queues spilling back to the upstream intersection.

### *WIS 81 (Liberty Avenue), Fifth Street intersection*

- It is recommended that the Fifth Street intersection be restricted (right-in, right-out access only) or removed at Liberty Avenue. This access management will aid in safety and mobility along Liberty Avenue by removing a full-access intersection between two closely-spaced traffic signals as well as reduce cut-through traffic to and from Beloit

Memorial High School. This improvement also provides an opportunity to enhance the existing multi-use path crossing at Liberty Avenue, improving safety and comfort for bicyclists and pedestrians that use it.

*WIS 81 (Liberty Avenue), Fourth Street intersection*

- It is recommended that, in the short-term, to maintain the existing intersection geometrics and intersection control (i.e., no-build condition). The existing intersection is anticipated to operate adequately (LOS D or better) during Year 2047 peak-hour conditions and the traffic signal will continue to provide dedicated green time for bikes/peds traveling to and from the high school.
- It is recommended that, as a long-term strategy, the intersection of Liberty Avenue and Fourth Street be realigned so the south and west legs (WIS 81) serve as the “through” movement. While this alternative has the largest impacts to the surrounding areas and is the most complex to implement, this alternative provides the greatest benefit to the intersection as it increases mobility along WIS 81 by making two adjacent intersection legs the “through” movement, allowing green time to be more efficiently allocated. Trucks and other large vehicles traveling along WIS 81 will become through movements in the area and not have to perform tight turns at this intersection. The traffic signal will remain in-place, which will provide bike/ped traffic dedicated signal time to cross WIS 81 unopposed.
  - If the horizontal curve alternative is determined to be not feasible for implementation, the roundabout alternative should be considered. While impacts to surrounding parcels are likely, they are not as significant as the horizontal curve alternative. The roundabout is anticipated to provide adequate traffic operations while eliminating angle and head-on crashes due to the roundabout design. Splitter islands on all four quadrants will also allow bikes/peds to perform a two-stage crossing of a roadway.

*WIS 81 (Fourth Street), Liberty Avenue to Portland Avenue*

- It is recommended that the Fourth Street cross-section be updated to provide a three-lane cross-section (two travel lanes and a TWLTL) with a parking lane. This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from Fourth Street. In addition, the existing “trapping left” condition for northbound traffic at Liberty Avenue is eliminated with this improvement. The on-street parking lane will provide additional parking supply in the area, particularly as the Brassworx site develops. These improvements can be accommodated within the existing roadway cross-section and right of way, minimizing construction costs and right of way acquisition.

*WIS 81 (Portland Avenue), US 51 intersection*

- It is recommended that the intersection of Portland Avenue with US 51 be updated to reduce the number of eastbound through lanes from two to one. This improvement will eliminate the downstream “trapping right” condition at Woodward Avenue as well as the upstream lane utilization and “queue-jumping” issues on eastbound WIS 81, significantly

improving safety in this area. Eliminating the second through lane will also allow the westbound left-turn lane to be shifted southerly so the left-turns at the intersection will create a positive left-turn offset, further improving safety at this location. It is anticipated that delays will increase with the reduction of roadway capacity for eastbound through movements, but LOS D or better operations are projected for all movements at this intersection. This alternative can be accommodated within the existing roadway cross-section and right of way, minimizing complexity to implement and associated costs.

*WIS 81 (White Avenue), Woodward Avenue intersection*

- It is recommended that the White Avenue and Woodward Avenue intersection be restricted to right-turn in, right-turn out access only. This alternative eliminates lower-volume, left-turn movements at this intersection while maintaining the higher-volume, eastbound right-turn onto Woodward Avenue. Eliminating left-turn movements improves safety and mobility in the area by eliminating conflict points for WIS 81 motorists. This alternative can be implemented within the existing roadway cross-section.

*WIS 81 (White Avenue), Park Avenue intersection*

- It is recommended that the White Avenue and Park Avenue intersection be updated from traffic signal control to roundabout control. This improvement will benefit safety by eliminating left-turn, angle, and head-on crashes due to the roundabout design and benefit mobility by providing yield control for motorists. The roundabout will reduce travel speeds at the intersection by forcing motorists to navigate around the roundabout median. The splitter islands will provide two-stage crossing for bicyclists and pedestrians. This improvement can be accommodated within the existing right of way.

*WIS 81 (White Avenue), Park Avenue to Milwaukee Road*

- It is recommended that, in the short-term, to maintain the existing roadway cross-section (i.e., no-build condition). Most study intersections along this corridor are anticipated to operate at LOS D or better during Year 2047 conditions. In addition, discussions throughout the project with local stakeholders and residents raised concerns over the cost to widen the roadway cross-section, the potential loss of vegetation in the roadway terrace, and likely right of way acquisition to implement several alternatives favored maintaining the existing cross-section and right of way for as long as possible.
  - To aid in maximizing the existing cross-section, it is recommended that access management strategies are considered for implementation along the White Avenue corridor. Strategies such as consolidation, cross-access, restriction, or removal of access to White Avenue will improve safety and mobility by reducing the number of access drives and conflict points which motorists must consider when driving along the roadway. Restriction or removal of public roadway access to White Avenue should be investigated further to determine candidate locations. If locations are determined, crossing elements at these restricted intersections should be implemented to improve bike/ped safety when crossing White Avenue.

- To aid in promoting bicycle use in eastern Beloit, it is recommended that bicycle routes parallel to White Avenue be promoted to connect the existing bike lanes and downtown Beloit with the eastern neighborhoods and commercial areas. Routes such as Keeler Avenue to the north and Woodward Avenue / Strong Avenue to the south provide long-distance parallel routes to White Avenue with significantly lower traffic volumes. In addition, bicycle-use elements, such as pavement markings or wayfinding signs can be installed along these parallel routes to promote their use by providing bicycle-centric features that add to the comfort level of using these routes.
- It is recommended that, as a long-term solution, the White Avenue cross-section be updated to provide a three-lane cross-section (two travel lanes and a TWLTL). This alternative improves both safety and mobility as the TWLTL will allow left-turning vehicles to store and complete their turning movement to and from White Avenue. Widening of the roadway cross-section will be necessary to implement this alternative so this improvement should be considered as part of a larger roadway reconstruction project that requires adjusting utilities beneath the roadway.

*WIS 81 (White Avenue), Wisconsin Avenue intersection*

- It is recommended that intersection sight triangles be reviewed at this location and address any obstructions. This improvement will improve safety by providing clear and unobstructed sight triangles for both WIS 81 and Wisconsin Avenue traffic. In the event obstructions are present within a sight triangle, they should be removed or minimized (e.g., vegetation trimmed) as much as possible.
  - A review of intersection crash data found many crashes at this intersection were the result of a through movement along Wisconsin Avenue being struck by a through movement along White Avenue. This implies that there are few adequate gaps in the White Avenue traffic stream and motorists along Wisconsin Avenue may become frustrated and accept smaller gaps to cross. Additionally, limited visibility at this intersection may compound this issue. In addition to clearing vision triangles to improve sight distance from Wisconsin Avenue, another potential solution would upgrade the intersection control, such as a roundabout. A roundabout would improve intersection safety and mobility as well as maintain adequate traffic flow along WIS 81 even though Wisconsin Avenue is located between the signalized intersections of Park Avenue and Prairie Avenue (approximately 1,500 feet apart). WIS 81 traffic flow would also operate adequately with a roundabout at this location even if the WIS 81 and Park Avenue intersection was converted to roundabout control. The roundabout alternative would require additional right-of-way for construction that would impact corner properties (and possibly buildings) adjacent to the intersection. This improvement could also divert traffic from adjacent arterials such as Park Avenue and Prairie Avenue and use Wisconsin Avenue, a residential local street, as a cut-through route to avoid the signalized intersections at WIS 81.

### *WIS 81 (White Avenue), Milwaukee Road intersection*

- Both alternatives, updating the intersection to a roundabout or installing numerous intersection improvements, improve safety by reducing travel speeds approaching and through the intersection. Both alternatives, also, address bicycle and pedestrian accommodations to cross White Avenue by providing two-stage crossing at the intersection. Both alternatives will provide adequate mobility for both White Avenue and Milwaukee Road traffic. Therefore, both alternatives would be beneficial to addressing the needs of the intersection. It is recommended, though, that the numerous intersection improvements be implemented at this location as these improvements can be constructed within the roadway cross-section and right of way. The roundabout alternative will likely require right of way to construct the circulation lanes and sidewalks around the intersection.

### *Other recommendations*

In addition to the recommendations previously discussed, there are other locations in the study area that would benefit from improvements, but the improvement is more systemic (e.g., reviewing traffic signal phasing / timing) or the improvement does not have a comparable alternative to evaluate against it. Therefore, the following describes other recommendations to improve safety, mobility, access, and multimodal accommodations along the WIS 81 corridor:

- It is recommended that crosswalk pavement markings be monitored and refreshed to maintain their visibility for motorists and bicyclists/pedestrians. In particular, the crosswalks at the Liberty Avenue and Fourth Street intersection should be updated due to its location near Beloit Memorial High School.
- It is recommended that crosswalks at unsignalized intersections east of US 51 be installed to provide a defined path for bicyclists/pedestrians crossing the side-street or WIS 81.
- It is recommended that the Liberty Avenue and Fifth Street intersection be enhanced with signing and marking to promote safer, more comfortable crossing for bicyclists and pedestrians using the multi-use path at this location.
- It is recommended that access management strategies near the Fourth Street and Portland Avenue intersection be employed as the proposed Brassworx site becomes developed. This improvement will allow for safe and efficient operations at the signalized intersection without impacting driveways or roadways nearby.
- It is recommended that traffic signal equipment is reviewed for improved visibility and clarity for motorists. Examples of this include inspecting and adding backplates (or retroreflective backplates) to each signal head, checking the placement of overhead signal heads over each through or turn lane, and examining the placement of each signal head to ensure that motorists can clearly see them without obstruction.
- It is recommended to provide signing and marking along Portland Avenue to connect the existing bike lanes to the Fifth Street multi-use path. Currently, the on-street bike lanes abruptly end at Fourth Street, one block east of the multi-use path, with no additional information about the path. Adding signing and marking along this one-block stretch of Portland Avenue will provide a vital connection for bicyclists traveling through the City of Beloit.

- It is recommended that intersection sight triangles be reviewed at unsignalized intersections along WIS 81 and address any locations with obstructions. Maintaining clear and unobstructed sight triangles improves safety for both WIS 81 and side-street traffic by providing sight lines for vehicles to see each other as they approach an intersection. Items such as vegetation, fences, lawn decorations, and utility poles can block the field of vision for a driver and increase crash risk due to approaching vehicles “hiding” behind objects. In the event obstructions are present within a sight triangle, they should be removed or minimized (e.g., vegetation trimmed) as much as possible.



# Appendix

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**Appendix A: Intersection Turning Movement Counts**

**Appendix B: Existing-Year (Year 2022) Traffic Operations Analysis Worksheets**

**Appendix C: WisDOT Traffic Forecast Worksheets**

**Appendix D: Future-Year (Year 2047) Traffic Operations Analysis Worksheets**

## **Appendix A: Intersection Turning Movement Counts**

# Intersection Traffic Volume Report

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Hackett St and WIS 81**



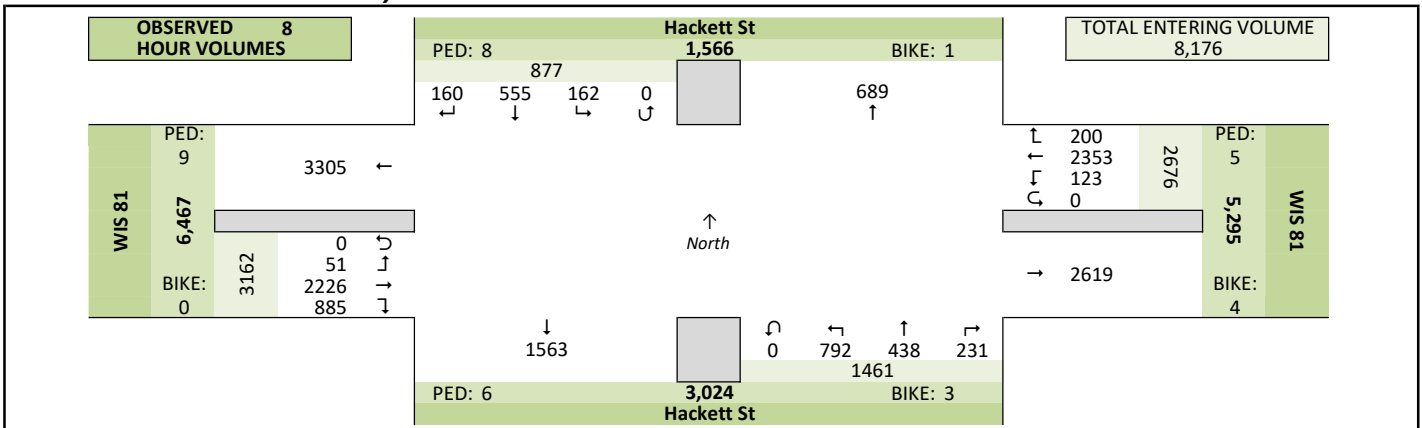
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction ↑		
North Leg	Hackett St		
East Leg	WIS 81		
South Leg	Hackett St		
West Leg	WIS 81		
Special Considerations	Schools In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed	Pre-school children None		
	Elementary school age children None		
	Visually impaired (white cane/helper dog) None		
	Elderly/disabled (except wheelchairs) None		
	Wheelchairs/electric scooters None		
Other (describe)	None None		

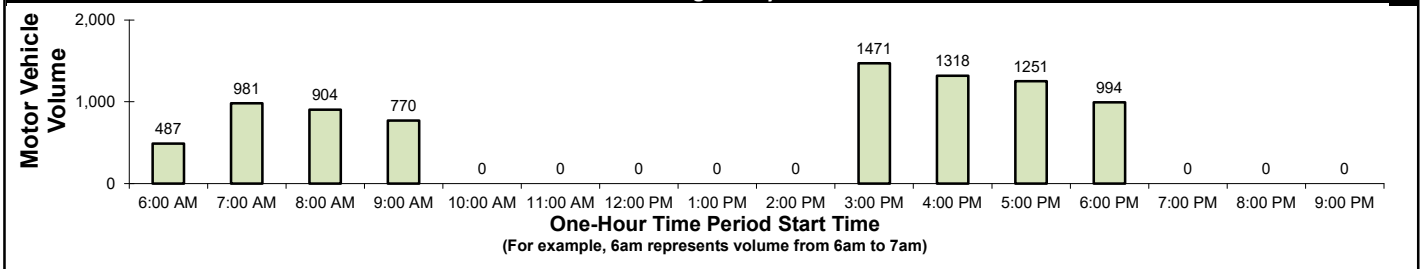
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Wednesday, May 11, 2022	Weather	
AM Peak Period	Wednesday, May 11, 2022	Clear & Dry	
Midday Peak Period	Wednesday, May 11, 2022	Clear & Dry	
PM Peak Period	Wednesday, May 11, 2022	Clear & Dry	
Calculated Peak Hours	AM 7:30-8:30am	MD	PM 3:15-4:15pm
Peak Hours Selected for Analysis	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	CBS Squared, Inc.	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

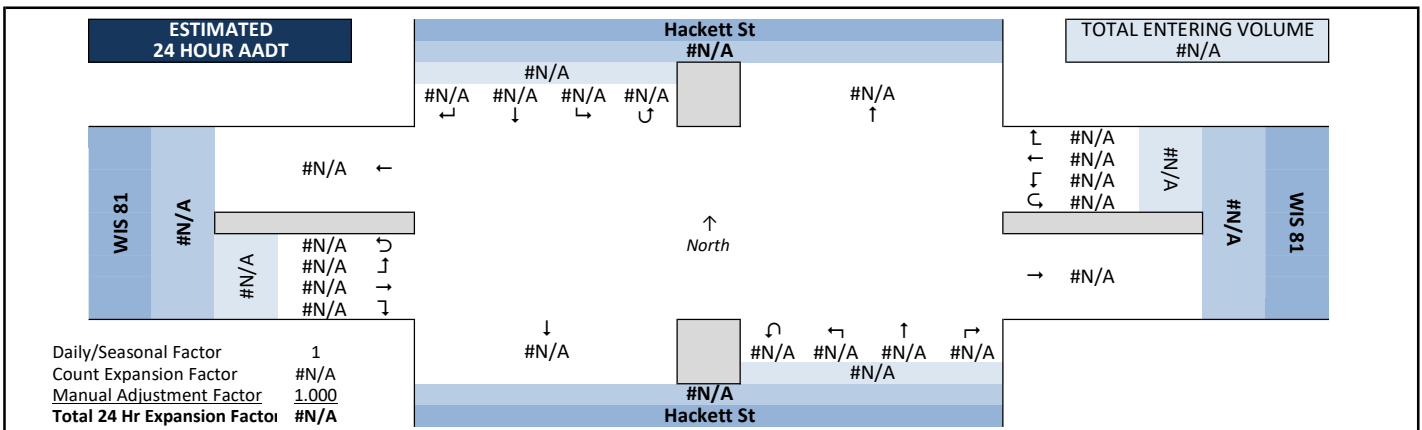
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Page 3 of 11</b>	
Start Date: Wednesday, May 11, 2022	Weekday	Schools in Session	
Total Number of Hours Counted: 8	Non-Holiday	No Special Events	

## Peak Hour Volume Summary

### Hackett St and WIS 81



### Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, May 11, 2022		From North					From East					From South					From West					Totals
		Hackett St					WIS 81					Hackett St					WIS 81					
AM Peak Hour	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	
	7:15 AM	6	21	4	0	31	1	69	2	0	72	10	14	21	0	45	21	72	1	0	94	242
	7:30 AM	1	21	9	0	31	5	67	2	0	74	14	16	19	0	49	36	90	1	0	127	281
	7:45 AM	7	28	6	0	41	6	80	7	0	93	19	11	28	0	58	22	78	1	0	101	293
	8:00 AM	7	19	6	0	32	6	83	2	0	91	7	14	30	0	51	35	80	0	0	115	289
	Peak Hour Volume	21	89	25	0	135	18	299	13	0	330	50	55	98	0	203	114	320	3	0	437	1105
	Rounded Hourly Volume	20	90	25	0	135	20	300	15	0	335	50	55	100	0	205	115	320	5	0	440	1115
	% Single Unit Trucks	0.0	2.2	0.0	0.0	1.5	11.1	3.3	0.0	0.0	3.6	4.0	1.8	2.0	0.0	2.5	0.9	3.4	33.3	0.0	3.0	2.9
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	3.0	2.9
	% Trucks (Total)	0.0	2.2	0.0	0.0	1.5	11.1	9.7	0.0	0.0	9.4	4.0	1.8	2.0	0.0	2.5	0.9	7.5	33.3	0.0	5.9	5.8
	Peak Hour Factor (PHF)	0.75	0.79	0.69	0.00	0.82	0.75	0.90	0.46	0.00	0.89	0.66	0.86	0.82	0.00	0.87	0.79	0.89	0.75	0.00	0.86	0.94

N/A		From North					From East					From South					From West					Totals
		Hackett St					WIS 81					Hackett St					WIS 81					
MD Peak Hour	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	
	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

Wednesday, May 11, 2022		From North					From East					From South					From West					Totals
		Hackett St					WIS 81					Hackett St					WIS 81					
PM Peak Hour	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	
	3:15 PM	13	22	5	0	40	10	110	8	0	128	9	23	39	0	71	31	78	4	0	113	352
	3:30 PM	18	29	5	0	52	13	120	4	0	137	13	23	62	0	98	32	80	1	0	113	400
	3:45 PM	8	28	8	0	44	9	120	7	0	136	12	15	51	0	78	50	114	2	0	166	424
	4:00 PM	10	24	5	0	39	12	111	5	0	128	11	24	28	0	63	42	84	2	0	128	358
	Peak Hour Volume	49	103	23	0	175	44	461	24	0	529	45	85	180	0	310	155	356	9	0	520	1534
	Rounded Hourly Volume	50	105	25	0	180	45	460	25	0	530	45	85	180	0	310	155	355	10	0	520	1540
	% Single Unit Trucks	4.1	3.9	4.3	0.0	4.0	4.5	1.5	8.3	0.0	2.1	4.4	2.4	0.0	0.0	1.3	0.6	2.0	0.0	0.0	1.5	2.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	2.3	2.4	0.0	0.0	2.3	0.0	1.2	0.0	0.0	0.3	0.0	5.1	0.0	0.0	3.5	2.0
	% Trucks (Total)	4.1	3.9	4.3	0.0	4.0	6.8	3.9	8.3	0.0	4.3	4.4	3.5	0.0	0.0	1.6	0.6	7.0	0.0	0.0	5.0	4.0
	Peak Hour Factor (PHF)	0.68	0.89	0.72	0.00	0.84	0.85	0.96	0.75	0.00	0.97	0.87	0.89	0.73	0.00	0.79	0.77	0.78	0.56	0.00	0.78	0.90

### 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
		Hackett St			WIS 81			Hackett St			WIS 81			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	1	1	2	0	0	0	0	0	0	2
	7:30 AM	4	0	4	0	0	0	0	0	0	2	0	2	6
	7:45 AM	0	0	0	1	1	2	2	2	4	0	0	0	6
	8:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	2
	Total	4	0	4	3	3	6	2	2	4	2	0	2	16
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	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1
	4:00 PM	1	0	1	1	0	1	1	0	1	0	0	0	3
	Total	1	0	1	1	0	1	2	0	2	0	0	0	4





# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

### Hackett St and WIS 81



#### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Hackett St			WIS 81			Hackett St			WIS 81				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	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
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	14
7:15 AM	0	0	0	1	1	2	0	0	0	0	0	0	2	16
7:30 AM	4	0	4	0	0	0	0	0	0	2	0	2	6	14
7:45 AM	0	0	0	1	1	2	2	2	4	0	0	0	6	8
8:00 AM	0	0	0	1	1	2	0	0	0	0	0	0	2	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	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	9
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	9
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	2	1	3	1	1	2	1	1	2	2	0	2	9	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
3:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	7
4:00 PM	1	0	1	1	0	1	1	0	1	0	0	0	3	6
4:15 PM	1	0	1	0	0	0	0	0	0	1	0	1	2	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
6:30 PM	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	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
<b>Totals</b>	<b>8</b>	<b>1</b>	<b>9</b>	<b>5</b>	<b>4</b>	<b>9</b>	<b>6</b>	<b>3</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>36</b>	

#### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Tuesday, May 24, 2022	Weekday	Schools in Session		
Total Number of Hours Counted:	8	Non-Holiday	No Special Events		

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Park Ave and WIS 81/White Ave**



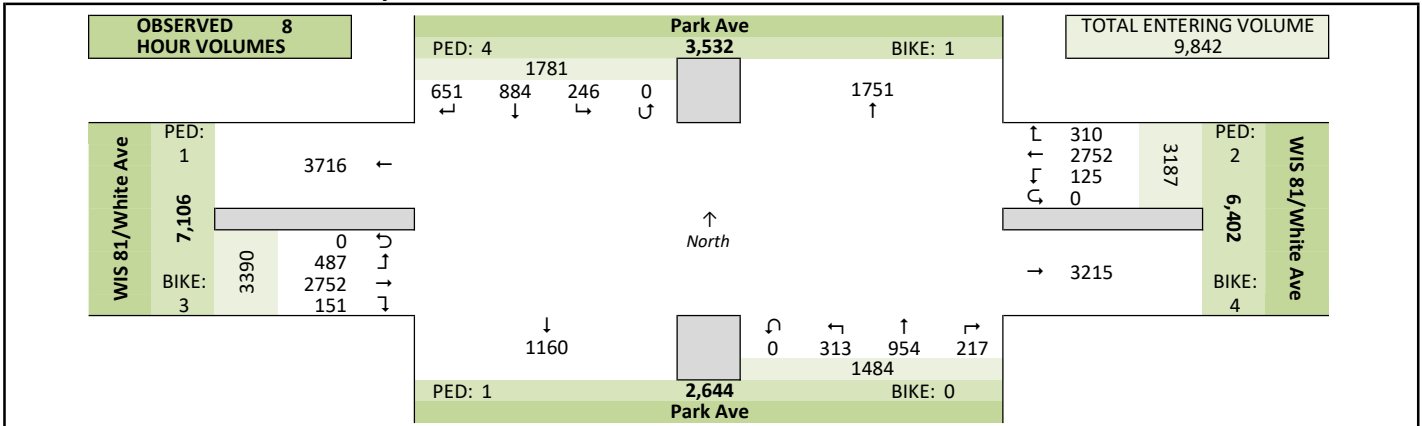
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Partial Stop Control		
Roadway Names	North Direction ↑		
North Leg	Park Ave		
East Leg	WIS 81/White Ave		
South Leg	Park Ave		
West Leg	WIS 81/White Ave		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)		None	None

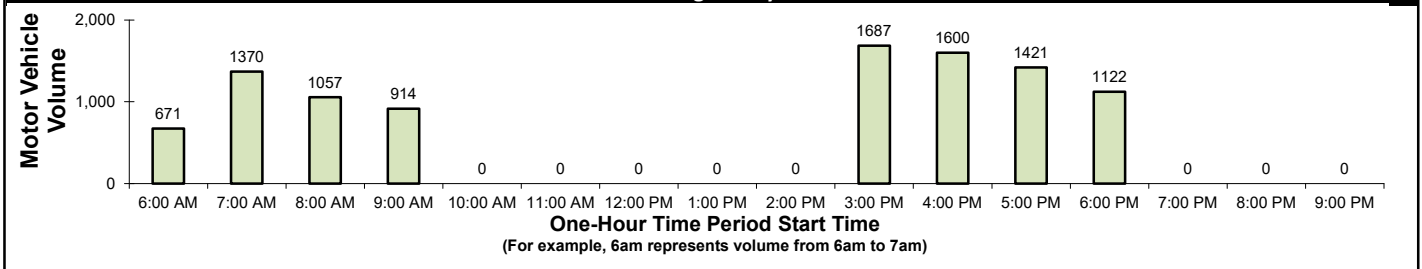
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Tuesday, May 24, 2022	Weather	
AM Peak Period	Tuesday, May 24, 2022	Clear & Dry	
Midday Peak Period	Tuesday, May 24, 2022	Clear & Dry	
PM Peak Period	Tuesday, May 24, 2022	Clear & Dry	
Calculated Peak Hours			
	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

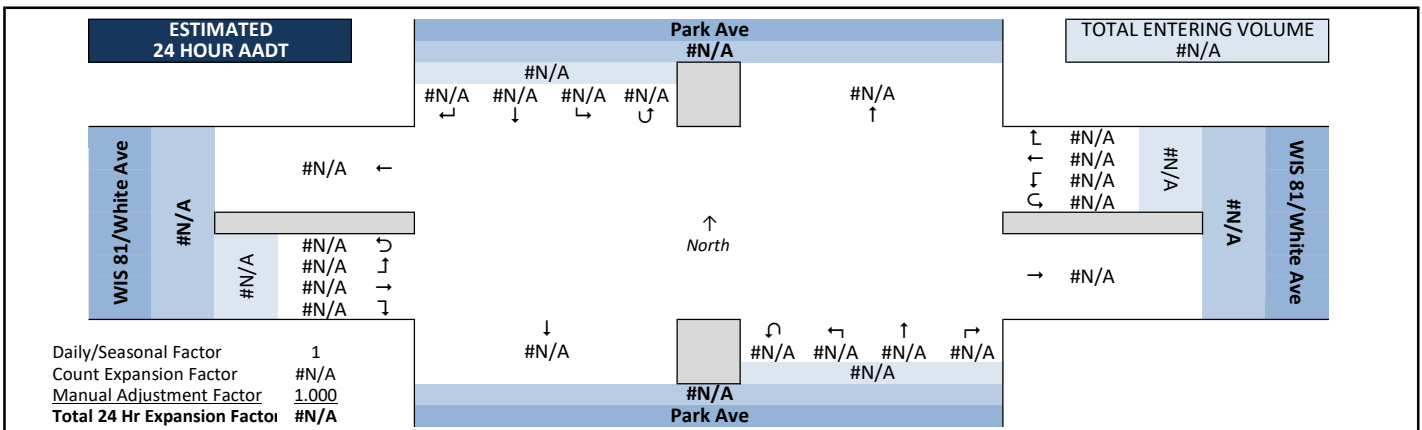
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT





# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Page 3 of 11</b>	
Start Date: Tuesday, May 24, 2022	Weekday	Schools in Session	
Total Number of Hours Counted: 8	Non-Holiday	No Special Events	

## Peak Hour Volume Summary

### Park Ave and WIS 81/White Ave



### Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, May 24, 2022		From North					From East					From South					From West					Totals
AM Peak Hour	Start Time	Park Ave					WIS 81/White Ave					Park Ave					WIS 81/White Ave					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	7:15 AM	28	26	6	0	60	14	101	6	0	121	6	34	22	0	62	0	74	7	0	81	324
7:30 AM	35	27	10	0	72	15	130	3	0	148	3	46	30	0	79	0	87	17	0	104	403	
7:45 AM	27	36	13	0	76	26	119	8	0	153	7	47	28	0	82	2	97	14	0	113	424	
8:00 AM	19	20	10	0	49	8	101	1	0	110	3	26	19	0	48	1	91	11	0	103	310	
Peak Hour Volume	109	109	39	0	257	63	451	18	0	532	19	153	99	0	271	3	349	49	0	401	1461	
Rounded Hourly Volume	110	110	40	0	260	65	450	20	0	535	20	155	100	0	275	5	350	50	0	405	1475	
% Single Unit Trucks	3.7	8.3	2.6	0.0	5.4	1.6	2.4	5.6	0.0	2.4	10.5	2.0	1.0	0.0	2.2	0.0	1.1	6.1	0.0	1.7	2.7	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	2.4	5.6	0.0	2.3	0.0	1.3	0.0	0.0	0.7	0.0	4.9	6.1	0.0	5.0	2.3	
% Trucks (Total)	3.7	8.3	2.6	0.0	5.4	1.6	4.9	11.1	0.0	4.7	10.5	3.3	1.0	0.0	3.0	0.0	6.0	12.2	0.0	6.7	5.1	
Peak Hour Factor (PHF)	0.78	0.76	0.75	0.00	0.85	0.61	0.87	0.56	0.00	0.87	0.68	0.81	0.82	0.00	0.83	0.37	0.90	0.72	0.00	0.89	0.86	

N/A		From North					From East					From South					From West					Totals
Midday (MD) Peak Hour	Start Time	Park Ave					WIS 81/White Ave					Park Ave					WIS 81/White Ave					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	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	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	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	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	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	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	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	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	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	0.00

Tuesday, May 24, 2022		From North					From East					From South					From West					Totals
PM Peak Hour	Start Time	Park Ave					WIS 81/White Ave					Park Ave					WIS 81/White Ave					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
	3:15 PM	37	38	11	0	86	11	98	5	0	114	14	44	15	0	73	8	104	33	0	145	418
3:30 PM	31	55	14	0	100	12	113	4	0	129	16	37	17	0	70	12	121	29	0	162	461	
3:45 PM	29	37	11	0	77	16	123	2	0	141	11	38	4	0	53	4	128	21	0	153	424	
4:00 PM	30	48	16	0	94	19	110	6	0	135	10	56	7	0	73	18	112	20	0	150	452	
Peak Hour Volume	127	178	52	0	357	58	444	17	0	519	51	175	43	0	269	42	465	103	0	610	1755	
Rounded Hourly Volume	125	180	50	0	355	60	445	15	0	520	50	175	45	0	270	40	465	105	0	610	1755	
% Single Unit Trucks	1.6	1.7	1.9	0.0	1.7	5.2	2.3	5.9	0.0	2.7	3.9	1.1	0.0	0.0	1.5	0.0	1.7	2.9	0.0	1.8	2.0	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	3.4	1.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.9	0.0	1.1	0.9	
% Trucks (Total)	1.6	1.7	1.9	0.0	1.7	8.6	3.6	5.9	0.0	4.2	3.9	1.1	0.0	0.0	1.5	0.0	2.8	4.9	0.0	3.0	2.8	
Peak Hour Factor (PHF)	0.86	0.81	0.81	0.00	0.89	0.76	0.90	0.71	0.00	0.92	0.80	0.78	0.63	0.00	0.92	0.58	0.91	0.78	0.00	0.94	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
15-Minute Start Time	Park Ave			WIS 81/White Ave			Park Ave			WIS 81/White Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	1	0	1	0	2	2	0	0	0	0	0	0	3	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	
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	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	1	
3:45 PM	1	1	2	2	0	2	0	0	0	0	0	0	4	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>5</b>	





# Intersection Traffic Volume Report

<b>Count Basics</b>			<b>Page 11 of 11</b>
Start Date:	Tuesday, May 24, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

## 15-Minute Pedestrian and Bicyclist Data

### Park Ave and WIS 81/White Ave



#### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Park Ave			WIS 81/White Ave			Park Ave			WIS 81/White Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	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
6:30 AM	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	3
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	1	0	1	0	2	2	0	0	0	0	0	0	3	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:15 AM	1	0	1	0	0	0	0	0	0	1	1	2		
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	0	2	2	0	0	0	0	1	1	3	8
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
3:30 PM	0	0	0	0	0	0	0	0	0	1	1	1	5	5
3:45 PM	1	1	2	2	0	2	0	0	0	0	0	4	4	4
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	1	0	1	1	1	1
6:00 PM	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
6:30 PM	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
7:00 PM	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
7:30 PM	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
8:00 PM	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
8:30 PM	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
9:00 PM	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
9:30 PM	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
<b>Totals</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>16</b>	

#### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Wednesday, September 14, 2022	Weekday	Schools in Session		
Total Number of Hours Counted:	13	Non-Holiday	No Special Events		

## Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Prairie Avenue and WIS 81**



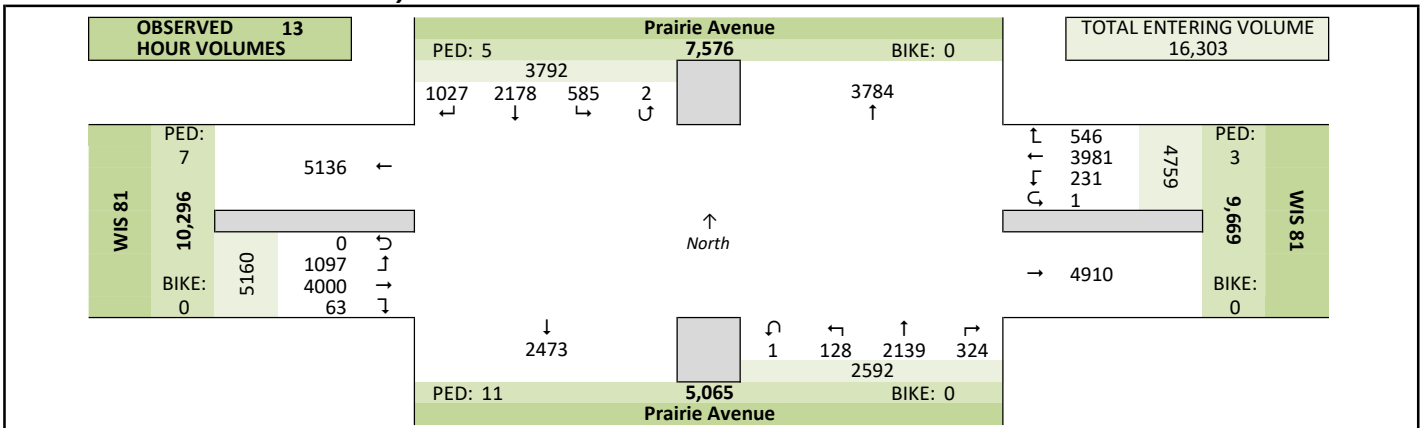
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction ↑		
North Leg	Prairie Avenue		
East Leg	WIS 81		
South Leg	Prairie Avenue		
West Leg	WIS 81		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None None		

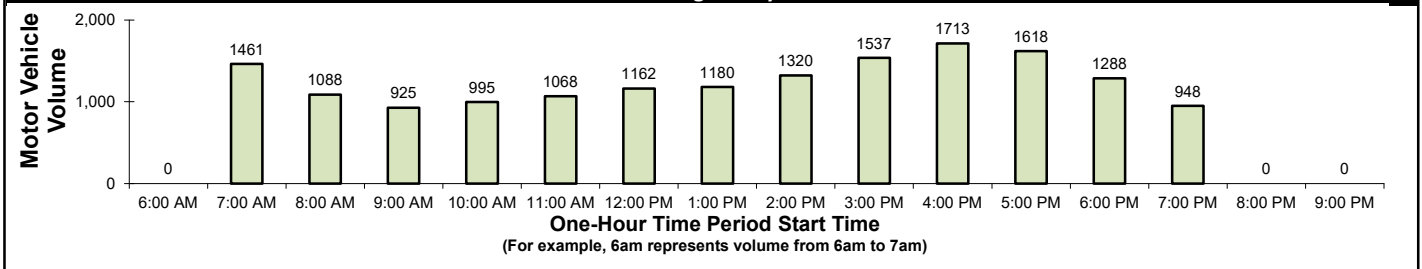
### Count Information

Hrs Counted:	7:00 AM-8:00 PM		
1st Day of Count	Wednesday, September 14, 2022	Weather	
AM Peak Period	Wednesday, September 14, 2022	Clear & Dry	
Midday Peak Period	Wednesday, September 14, 2022	Clear & Dry	
PM Peak Period	Wednesday, September 14, 2022	Clear & Dry	
Calculated Peak Hours			
	AM 7:15-8:15am	MD 12:45-1:45pm	PM 4:00-5:00pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD 12:45-1:45pm	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	CBS Squared, Inc.	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

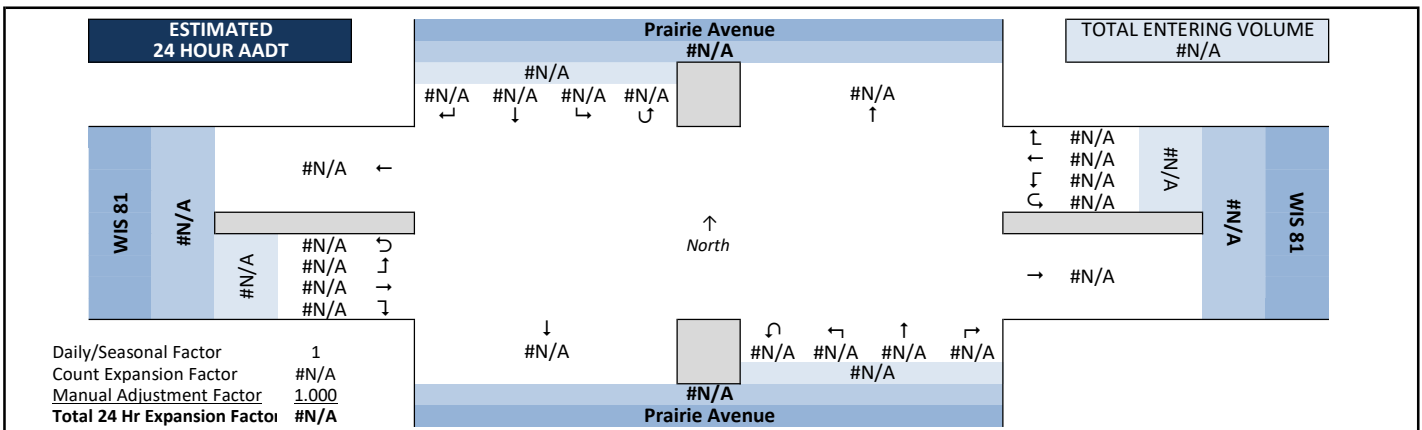
### Observed 13 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Page 3 of 11</b>	
Start Date:	Wednesday, September 14, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

## Peak Hour Volume Summary

### Prairie Avenue and WIS 81



### Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, September 14, 2022		From North					From East					From South					From West					Totals
		Prairie Avenue					WIS 81					Prairie Avenue					WIS 81					
AM Peak Hour	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	
	7:15 AM	24	25	18	0	67	13	107	7	0	127	3	49	4	0	56	1	76	13	0	90	340
	7:30 AM	31	36	13	0	80	14	137	4	0	155	7	67	10	0	84	0	85	13	0	98	417
	7:45 AM	27	55	18	0	100	15	105	4	0	124	12	60	7	0	79	1	115	21	0	137	440
	8:00 AM	21	38	15	0	74	8	85	3	0	96	6	30	0	0	36	1	79	14	0	94	300
	Peak Hour Volume	103	154	64	0	321	50	434	18	0	502	28	206	21	0	255	3	355	61	0	419	1497
	Rounded Hourly Volume	105	155	65	0	325	50	435	20	0	505	30	205	20	0	255	5	355	60	0	420	1505
	% 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	2.9	0.6	7.8	0.0	2.8	4.0	5.8	0.0	0.0	5.4	0.0	1.9	0.0	0.0	1.6	0.0	5.4	0.0	0.0	4.5	3.9
	% Trucks (Total)	2.9	0.6	7.8	0.0	2.8	4.0	5.8	0.0	0.0	5.4	0.0	1.9	0.0	0.0	1.6	0.0	5.4	0.0	0.0	4.5	3.9
	Peak Hour Factor (PHF)	0.83	0.70	0.89	0.00	0.80	0.83	0.79	0.64	0.00	0.81	0.58	0.77	0.52	0.00	0.76	0.75	0.77	0.73	0.00	0.76	0.85

Wednesday, September 14, 2022		From North					From East					From South					From West					Totals
		Prairie Avenue					WIS 81					Prairie Avenue					WIS 81					
MD Peak Hour	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	
	12:45 PM	25	37	4	1	67	7	88	7	0	102	5	37	3	0	45	0	61	14	0	75	289
	1:00 PM	17	33	11	0	61	11	72	6	0	89	8	33	3	0	44	0	79	23	0	102	296
	1:15 PM	15	40	7	0	62	8	87	5	0	100	6	45	3	0	54	2	89	18	0	109	325
	1:30 PM	21	31	8	0	60	6	66	7	0	79	8	30	4	0	42	1	93	27	0	121	302
	Peak Hour Volume	78	141	30	1	250	32	313	25	0	370	27	145	13	0	185	3	322	82	0	407	1212
	Rounded Hourly Volume	80	140	30	0	250	30	315	25	0	370	25	145	15	0	185	5	320	80	0	405	1210
	% 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	3.1	6.4	0.0	0.0	5.7	0.0	1.4	0.0	0.0	1.1	0.0	5.0	0.0	0.0	3.9	3.2
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	3.1	6.4	0.0	0.0	5.7	0.0	1.4	0.0	0.0	1.1	0.0	5.0	0.0	0.0	3.9	3.2
	Peak Hour Factor (PHF)	0.78	0.88	0.68	0.25	0.93	0.73	0.89	0.89	0.00	0.91	0.84	0.81	0.81	0.00	0.86	0.37	0.87	0.76	0.00	0.84	0.93

Wednesday, September 14, 2022		From North					From East					From South					From West					Totals
		Prairie Avenue					WIS 81					Prairie Avenue					WIS 81					
PM Peak Hour	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	
	3:15 PM	29	65	15	0	109	11	84	4	0	99	6	49	3	0	58	1	71	20	0	92	358
	3:30 PM	29	55	20	0	104	8	94	5	0	107	8	60	1	0	69	2	96	31	0	129	409
	3:45 PM	24	50	9	0	83	14	16	6	0	36	8	74	8	0	90	0	112	33	0	145	354
	4:00 PM	15	74	20	0	109	15	99	7	0	121	8	54	4	0	66	0	129	26	0	155	451
	Peak Hour Volume	97	244	64	0	405	48	293	22	0	363	30	237	16	0	283	3	408	110	0	521	1572
	Rounded Hourly Volume	95	245	65	0	405	50	295	20	0	365	30	235	15	0	280	5	410	110	0	525	1575
	% 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	1.6	0.0	0.2	0.0	5.5	0.0	0.0	4.4	3.3	1.7	0.0	0.0	1.8	0.0	6.4	1.8	0.0	5.4	3.2
	% Trucks (Total)	0.0	0.0	1.6	0.0	0.2	0.0	5.5	0.0	0.0	4.4	3.3	1.7	0.0	0.0	1.8	0.0	6.4	1.8	0.0	5.4	3.2
	Peak Hour Factor (PHF)	0.84	0.82	0.80	0.00	0.93	0.80	0.74	0.79	0.00	0.75	0.94	0.80	0.50	0.00	0.79	0.37	0.79	0.83	0.00	0.84	0.87

### 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
		Prairie Avenue			WIS 81			Prairie Avenue			WIS 81			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>
MD	12:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1
	1:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
	1:15 PM	0	0	0	1	0	1	0	0	0	1	0	1	2
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>
PM	3:15 PM	0	0	0	0	0	0	2	0	2	1	0	1	3
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>3</b>

# Intersection Traffic Volume Report

## 15-Minute Motor Vehicle Data

### Prairie Avenue and WIS 81

All Motor Vehicles

### 15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North Prairie Avenue					From East WIS 81					From South Prairie Avenue					From West WIS 81					15-Min Totals	Hourly Sum	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 Peak Period	AM Peak Period Rows (9:45 AM to 9:45 AM)																					
Midday Peak Period	Midday Peak Period Rows (10:00 AM to 1:45 PM)																						
PM Peak Period	PM Peak Period Rows (2:00 PM to 9:45 PM)																						
<b>Totals</b>	1027	2178	585	2	3792	546	3981	231	1	4759	324	2139	128	1	2592	63	4000	1097	0	5160	16303		

### Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North Prairie Avenue					From East WIS 81					From South Prairie Avenue					From West WIS 81					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 7:15 AM	103	154	64	0	321	50	434	18	0	502	28	206	21	0	255	3	355	61	0		
MD 12:45 PM	78	141	30	1	250	32	313	25	0	370	27	145	13	0	185	3	322	82	0	407	1212	0.93
PM 3:15 PM	97	244	64	0	405	48	293	22	0	363	30	237	16	0	283	3	408	110	0	521	1572	0.87





# Intersection Traffic Volume Report

<b>Count Basics</b>			<b>Page 11 of 11</b>
Start Date:	Wednesday, September 14, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

## 15-Minute Pedestrian and Bicyclist Data

### Prairie Avenue and WIS 81



#### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Prairie Avenue			WIS 81			Prairie Avenue			WIS 81				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	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	
6:30 AM	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	
7:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	1	0	1	1	0	1	2	2
9:15 AM	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	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10:15 AM	0	0	0	0	0	0	1	0	1	1	0	1	2	2
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	3
11:30 AM	0	0	0	1	0	1	1	0	1	0	0	0	2	3
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	3
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
12:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	4
1:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	3
1:15 PM	0	0	0	1	0	1	0	0	0	1	0	1	2	2
1:30 PM	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
2:00 PM	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
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:15 PM	0	0	0	0	0	0	2	0	2	1	0	1	3	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	2	0	2	0	0	0	0	0	0	0	0	0	2	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	0	5	0	5	0	0	0	5	6
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	1
6:15 PM	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
6:45 PM	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
7:15 PM	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
7:45 PM	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
8:15 PM	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
8:45 PM	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
9:15 PM	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
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>26</b>	

#### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Wednesday, March 31, 2021	Weekday	Schools in Session		
Total Number of Hours Counted:	8	Non-Holiday	No Special Events		

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **US 51/Riverside Dr and WIS 81/White Ave**



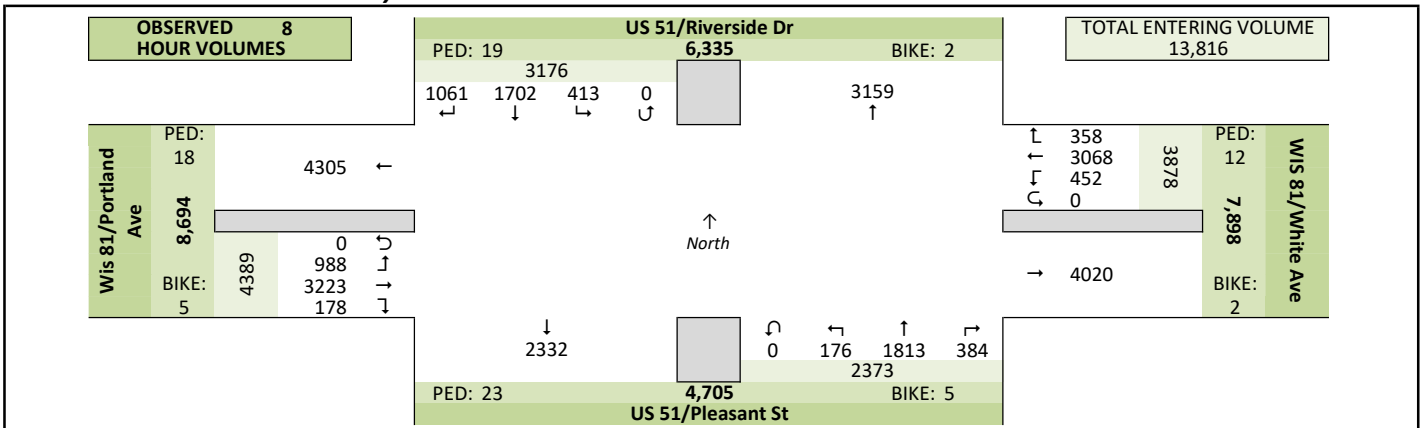
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction		↑
North Leg	US 51/Riverside Dr		
East Leg	WIS 81/White Ave		
South Leg	US 51/Pleasant St		
West Leg	Wis 81/Portland Ave		
Special Considerations	Schools <b>In Session</b>		
Holidays	<b>None</b>		
Special Events	<b>None</b>		
Special Pedestrians Observed	Pre-school children <b>None</b>		
	Elementary school age children <b>None</b>		
	Visually impaired (white cane/helper dog) <b>None</b>		
	Elderly/disabled (except wheelchairs) <b>None</b>		
	Wheelchairs/electric scooters <b>None</b>		
Other (describe)	<b>None None</b>		

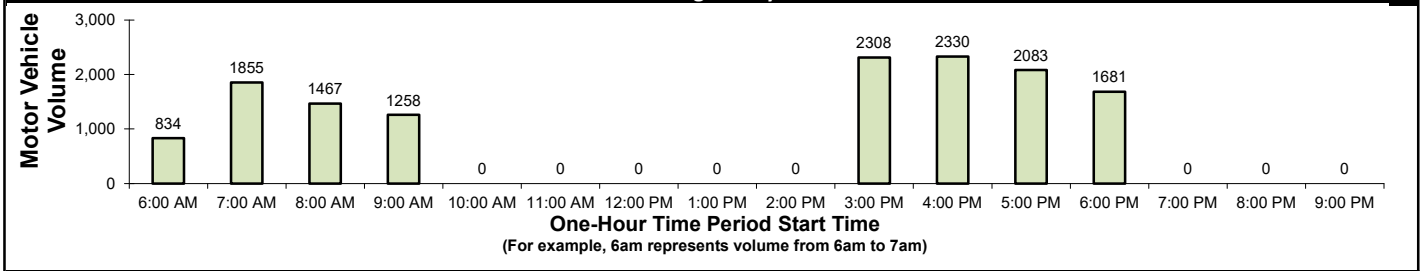
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Thursday, May 12, 2022	Weather	
AM Peak Period	Wednesday, March 31, 2021	Clear & Dry	
Midday Peak Period	Wednesday, March 31, 2021	Clear & Dry	
PM Peak Period	Wednesday, March 31, 2021	Clear & Dry	
Calculated Peak Hours	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Peak Hours Selected for Analysis	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

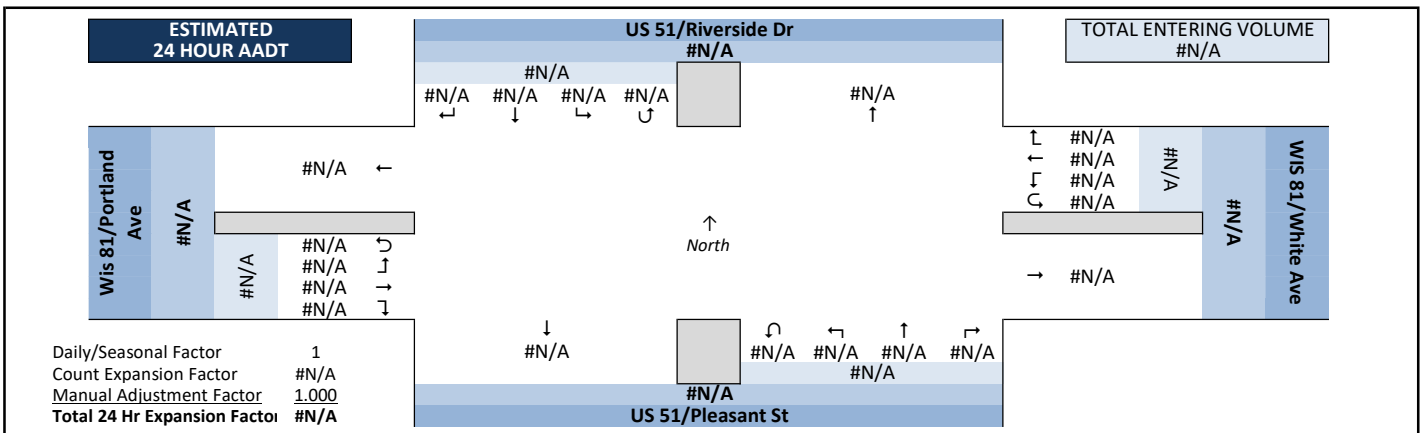
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT









# Intersection Traffic Volume Report

Count Basics			Page 11 of 11
Start Date:	Wednesday, March 31, 2021	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

## 15-Minute Pedestrian and Bicyclist Data

### US 51/Riverside Dr and WIS 81/White Ave



#### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	US 51/Riverside Dr			WIS 81/White Ave			US 51/Pleasant St			Wis 81/Portland Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	5
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
6:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	12
6:45 AM	0	0	0	0	0	0	0	0	0	3	0	3	3	12
7:00 AM	0	1	1	0	0	0	3	0	3	2	0	2	6	9
7:15 AM	1	0	1	0	0	0	1	0	1	0	0	0	2	4
7:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
8:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	9
8:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	9
8:30 AM	0	0	0	0	1	1	1	1	2	2	1	3	6	8
8:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	3
9:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	3
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	1	
9:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	1	0	1	0	0	0	2	0	2	0	0	0	3	19
3:15 PM	0	1	1	0	0	0	2	0	2	2	0	2	5	19
3:30 PM	1	0	1	0	0	0	2	0	2	0	0	0	3	14
3:45 PM	5	0	5	0	0	0	1	0	1	2	0	2	8	11
4:00 PM	1	0	1	0	0	0	2	0	2	0	0	0	3	5
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	0	0	2	0	2	0	0	0	0	0	0	2	10
5:00 PM	0	0	0	0	0	0	0	0	0	1	1	2	2	16
5:15 PM	2	0	2	2	0	2	0	0	0	0	0	0	4	23
5:30 PM	0	0	0	0	0	0	0	0	0	1	1	2	2	25
5:45 PM	2	0	2	0	0	0	2	2	4	2	0	2	8	27
6:00 PM	3	0	3	6	0	6	0	0	0	0	0	0	9	20
6:15 PM	2	0	2	0	0	0	0	2	2	0	2	2	6	
6:30 PM	0	0	0	2	0	2	0	0	0	2	0	2	4	
6:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
<b>Totals</b>	<b>19</b>	<b>2</b>	<b>21</b>	<b>12</b>	<b>2</b>	<b>14</b>	<b>23</b>	<b>5</b>	<b>28</b>	<b>18</b>	<b>5</b>	<b>23</b>	<b>86</b>	

#### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

## Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Milwaukee Road and WIS 81**



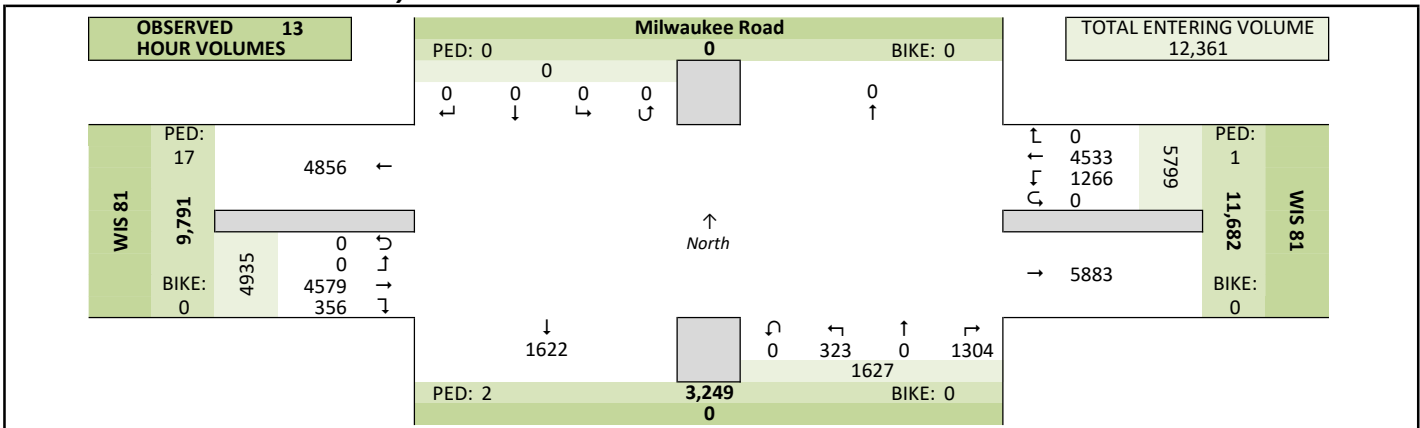
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Partial Stop Control		
Roadway Names	North Direction ↑		
North Leg	Milwaukee Road		
East Leg	WIS 81		
South Leg			
West Leg	WIS 81		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)		None	None

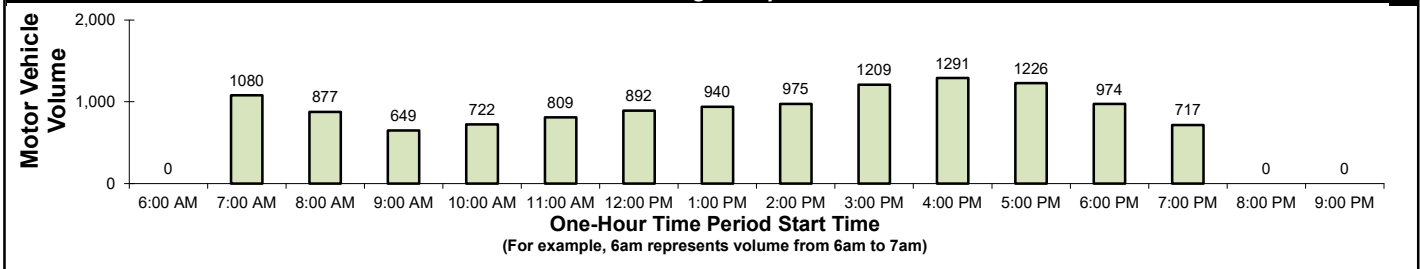
### Count Information

Hrs Counted:	7:00 AM-8:00 PM		
1st Day of Count	Wednesday, September 14, 2022	Weather	
AM Peak Period	Wednesday, September 14, 2022	Clear & Dry	
Midday Peak Period	Wednesday, September 14, 2022	Clear & Dry	
PM Peak Period	Wednesday, September 14, 2022	Clear & Dry	
Calculated Peak Hours			
	AM 7:15-8:15am	MD 12:45-1:45pm	PM 3:45-4:45pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD 12:45-1:45pm	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	CBS Squared, Inc.	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

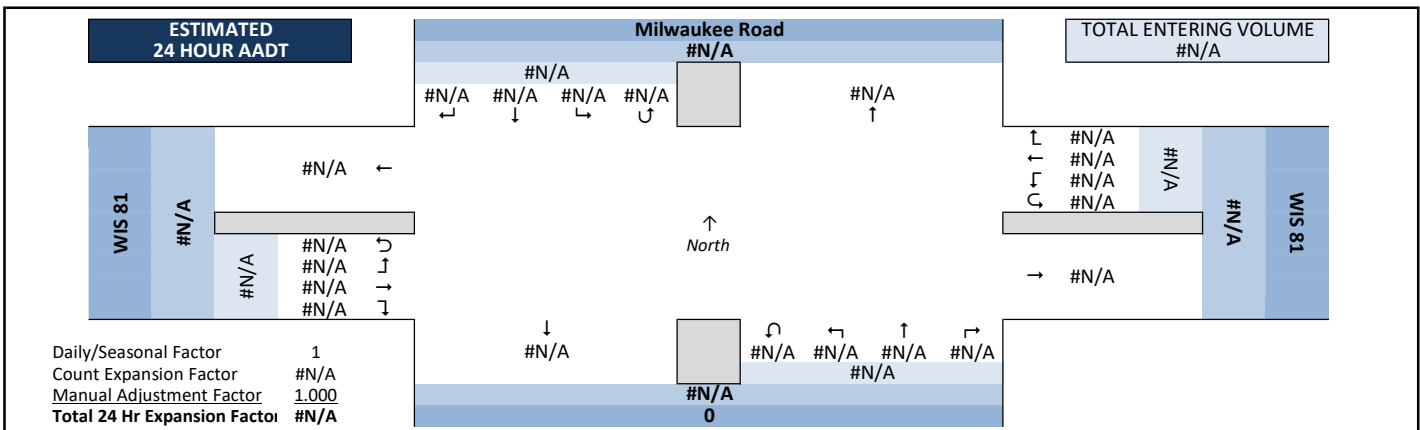
### Observed 13 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT











# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

<b>Count Basics</b>			<b>Page 11 of 11</b>
Start Date:	Wednesday, September 14, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	13	Non-Holiday	No Special Events

### Milwaukee Road and WIS 81



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Milwaukee Road			WIS 81			0			WIS 81				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	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	
6:30 AM	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	
7:00 AM	0	0	0	1	0	1	0	0	0	2	0	2	3	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	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
9:00 AM	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
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
10:15 AM	0	0	0	0	0	0	1	0	1	1	0	1	2	4
10:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
11:15 AM	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
11:45 AM	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	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
1:00 PM	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
1:30 PM	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
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
3:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	1	0	1	1	0	1	2	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	4
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	5
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	5
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	4
6:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	2	3
7:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
7:15 PM	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	
7:45 PM	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	
8:15 PM	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	
8:45 PM	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	
9:15 PM	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	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>17</b>	<b>0</b>	<b>17</b>	<b>20</b>	

### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Wednesday, March 31, 2021	Weekday	Schools in Session		
Total Number of Hours Counted:	8	Non-Holiday	No Special Events		

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Prince Hall Rd and WIS 81/White Ave**



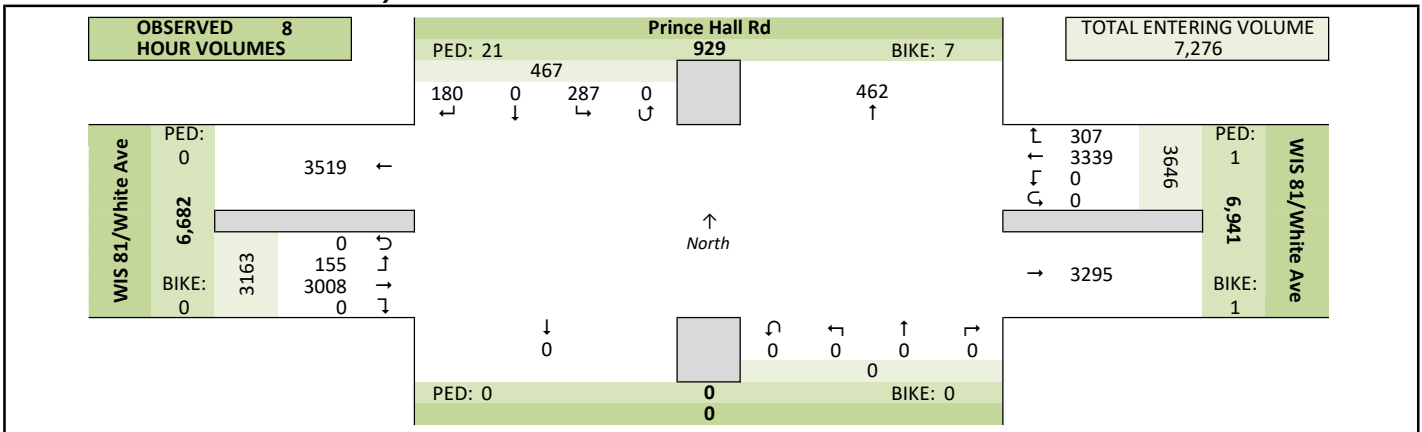
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg	Prince Hall Rd		
East Leg	WIS 81/White Ave		
South Leg			
West Leg	WIS 81/White Ave		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None None		

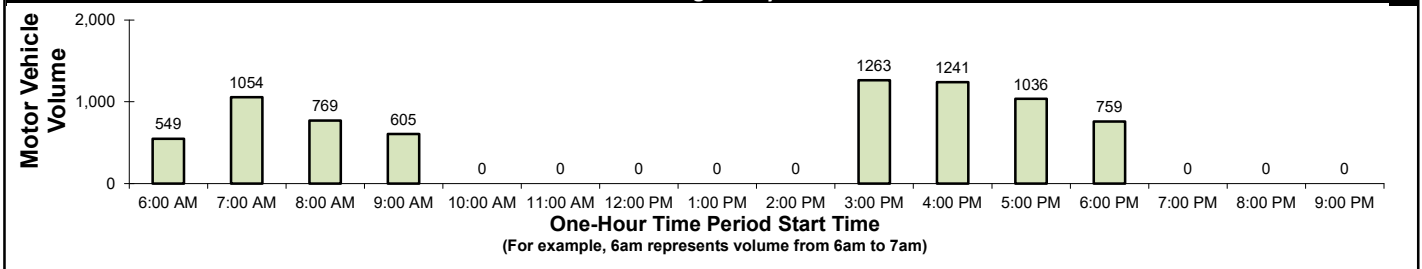
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM			
1st Day of Count	Tuesday, May 17, 2022	Weather		
AM Peak Period	Wednesday, March 31, 2021	Clear & Dry		
Midday Peak Period	Tuesday, May 17, 2022	Clear & Dry		
PM Peak Period	Tuesday, May 17, 2022	Clear & Dry		
Calculated Peak Hours				
	AM 7:15-8:15am	MD	PM 3:15-4:15pm	
Peak Hours Selected for Analysis				
	AM 7:15-8:15am	MD	PM 3:15-4:15pm	
Daily/Seasonal Adjustment Group				
Count Expansion Group				
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A	
Company Name	IMEG		Manual Adj.	1.000
Observers	AM Peak Period			
	Midday Peak Period			
	PM Peak Period			
Comments				

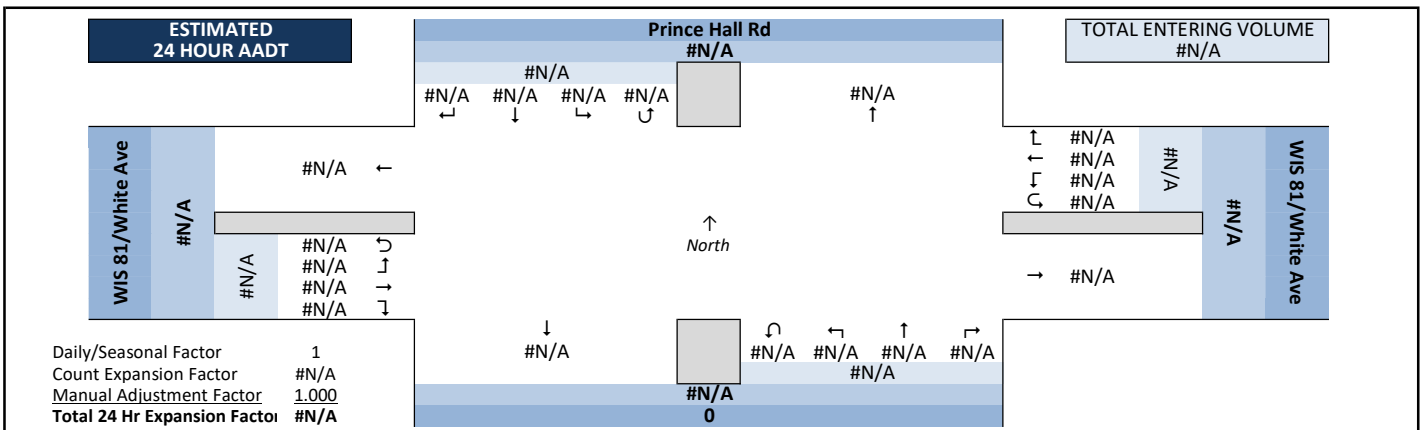
### Observed 8 Hour Volume Summary



Total Entering Hourly Volume



### Estimated 24 Hour AADT









# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

Prince Hall Rd and WIS 81/White Ave



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Prince Hall Rd			WIS 81/White Ave			0			WIS 81/White Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	3
7:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	7
7:45 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	6
8:00 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	5
8:15 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	2
9:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	1
9:15 AM	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	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	1	10
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:45 PM	8	0	8	1	0	1	0	0	0	0	0	0	9	12
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	1	1	2	0	0	0	0	0	0	0	0	0	2	3
4:45 PM	0	0	0	0	1	1	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:15 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	
6:30 PM	0	4	4	0	0	0	0	0	0	0	0	0	4	
6:45 PM	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	
7:15 PM	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	
7:45 PM	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	
8:15 PM	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	
8:45 PM	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	
9:15 PM	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	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Totals</b>	<b>21</b>	<b>7</b>	<b>28</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	

### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					



# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Tuesday, May 17, 2022	Weekday	Schools in Session		
Total Number of Hours Counted:	8.25	Non-Holiday	No Special Events		

## Base Information, Observed (8.25) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Woodward Ave and USH 81/White Ave**



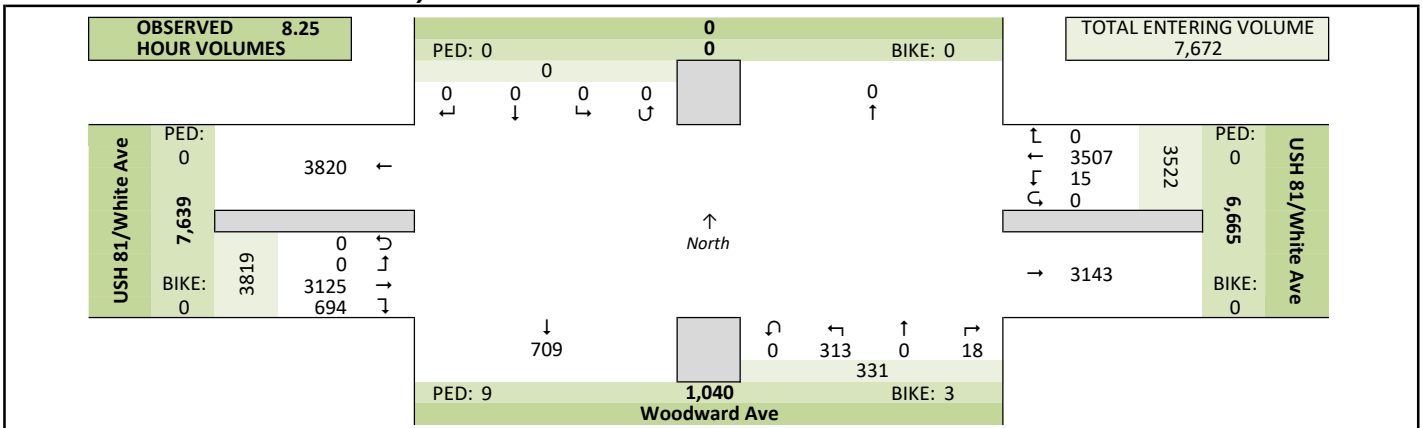
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Partial Stop Control		
Roadway Names	North Direction ↑		
North Leg			
East Leg	USH 81/White Ave		
South Leg	Woodward Ave		
West Leg	USH 81/White Ave		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)		None	None

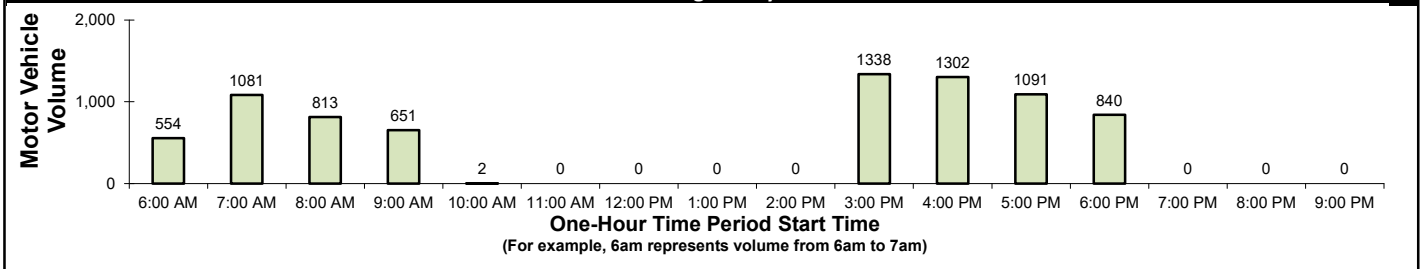
### Count Information

Hrs Counted:	6:00 AM-10:15 AM and 3:00 PM-7:00 PM		
1st Day of Count	Tuesday, May 17, 2022	Weather	
AM Peak Period	Tuesday, May 17, 2022	Clear & Dry	
Midday Peak Period	Tuesday, May 17, 2022	Clear & Dry	
PM Peak Period	Tuesday, May 17, 2022	Clear & Dry	
Calculated Peak Hours			
	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

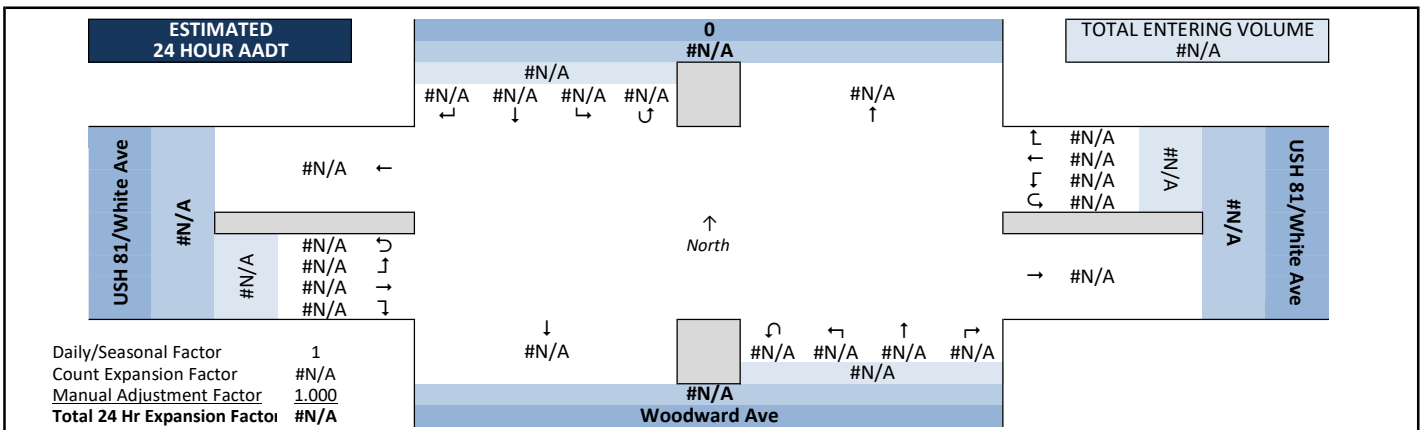
### Observed 8.25 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

Count Basics			Page 3 of 11
Start Date:	Tuesday, May 17, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8.25	Non-Holiday	No Special Events

## Peak Hour Volume Summary

### Woodward Ave and USH 81/White Ave



#### Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, May 17, 2022		From North					From East					From South					From West					Totals	
AM Peak Hour		0					USH 81/White Ave					Woodward Ave					USH 81/White Ave						
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	
7:15 AM		0	0	0	0	0	0	100	0	0	100	0	0	10	0	10	21	106	0	0	127	237	
7:30 AM		0	0	0	0	0	0	155	0	0	155	1	0	12	0	13	41	121	0	0	162	330	
7:45 AM		0	0	0	0	0	0	123	1	0	124	2	0	17	0	19	46	139	0	0	185	328	
8:00 AM		0	0	0	0	0	0	90	0	0	90	0	0	11	0	11	22	115	0	0	137	238	
Peak Hour Volume		0	0	0	0	0	0	468	1	0	469	3	0	50	0	53	130	481	0	0	611	1133	
Rounded Hourly Volume		0	0	0	0	0	0	470	0	0	470	5	0	50	0	55	130	480	0	0	610	1135	
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	3.8	1.9	0.0	0.0	2.3	2.3	
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	1.5	1.0	
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.8	3.7	0.0	0.0	3.8	3.3	
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.25	0.00	0.76	0.37	0.00	0.74	0.00	0.70	0.71	0.87	0.00	0.00	0.83	0.86	

N/A		From North					From East					From South					From West					Totals	
MD Peak Hour		0					USH 81/White Ave					Woodward Ave					USH 81/White Ave						
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	
12:00 PM		0	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	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	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	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	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	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	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	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	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	0.00

Tuesday, May 17, 2022		From North					From East					From South					From West					Totals	
PM Peak Hour		0					USH 81/White Ave					Woodward Ave					USH 81/White Ave						
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	
3:15 PM		0	0	0	0	0	0	178	1	0	179	2	0	13	0	15	26	106	0	0	132	326	
3:30 PM		0	0	0	0	0	0	168	1	0	169	2	0	13	0	15	40	141	0	0	181	365	
3:45 PM		0	0	0	0	0	0	164	0	0	164	0	0	10	0	10	36	136	0	0	172	346	
4:00 PM		0	0	0	0	0	0	198	1	0	199	1	0	12	0	13	35	147	0	0	182	394	
Peak Hour Volume		0	0	0	0	0	0	708	3	0	711	5	0	48	0	53	137	530	0	0	667	1431	
Rounded Hourly Volume		0	0	0	0	0	0	710	5	0	715	5	0	50	0	55	135	530	0	0	665	1435	
% Single Unit Trucks		0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	2.1	0.0	1.9	0.0	1.7	0.0	0.0	1.3	1.3	
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.3	1.3	
% Trucks (Total)		0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	2.4	0.0	0.0	2.1	0.0	1.9	0.0	3.4	0.0	0.0	2.7	2.5	
Peak Hour Factor (PHF)		0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.75	0.00	0.89	0.62	0.00	0.92	0.00	0.88	0.86	0.90	0.00	0.00	0.92	0.91	

#### 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
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM 7:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
AM 7:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
AM 7:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0
AM 8:00 AM		0	0	0	0	0	0	3	0	3	0	0	0	3
<b>Total</b>		0	0	0	0	0	0	3	0	3	0	0	0	3
MD 12:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>		0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:15 PM		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	0	0	0	0
PM 3:45 PM		0	0	0	0	0	0	1	0	1	0	0	0	1
PM 4:00 PM		0	0	0	0	0	0	2	0	2	0	0	0	2
<b>Total</b>		0	0	0	0	0	0	3	0	3	0	0	0	3





# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

Count Basics			Page 11 of 11	
Start Date:	Tuesday, May 17, 2022	Weekday	Schools in Session	
Total Number of Hours Counted:	8.25	Non-Holiday	No Special Events	

### Woodward Ave and USH 81/White Ave

**Pedestrians and Bicyclists**



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	0			USH 81/White Ave			Woodward Ave			USH 81/White Ave				
Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Totals	
<b>AM Peak Period</b>														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	1	1	0	0	0	1	1
7:00 AM	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	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	3	0	3	0	0	0	3	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	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	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Midday Peak Period</b>														
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
<b>PM Peak Period</b>														
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	3
4:00 PM	0	0	0	0	0	0	2	0	2	0	0	0	2	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:00 PM	0	0	0	0	0	0	0	2	2	0	0	0	2	3
6:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	
6:30 PM	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	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	

### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Thursday, August 11, 2022	Weekday	Schools in Session		
Total Number of Hours Counted:	8	Non-Holiday	No Special Events		

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **4th St and Liberty Ave**



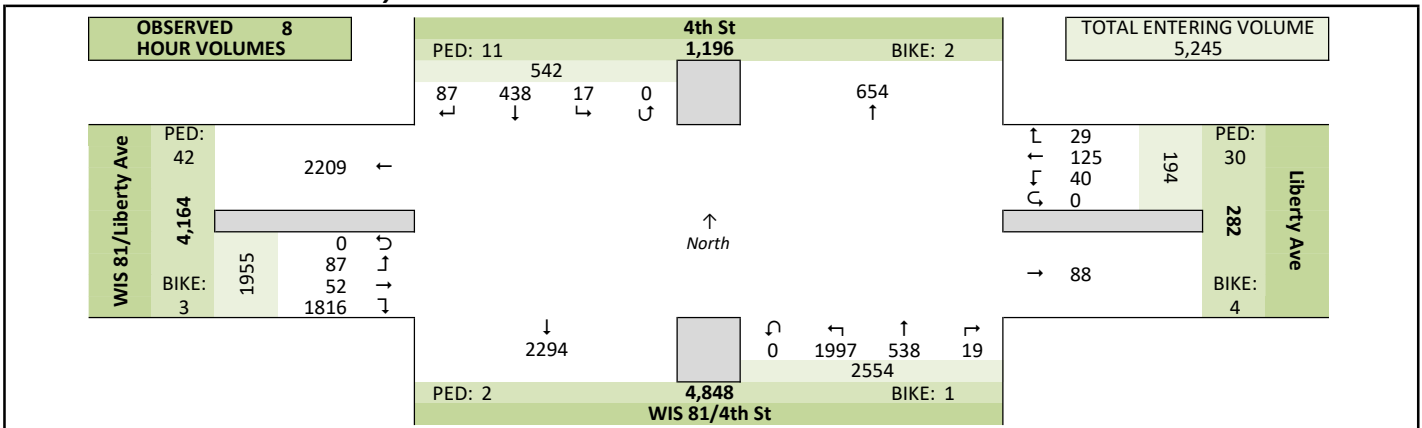
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction ↑		
North Leg	4th St		
East Leg	Liberty Ave		
South Leg	WIS 81/4th St		
West Leg	WIS 81/Liberty Ave		
Special Considerations	Schools In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed	Pre-school children None		
	Elementary school age children None		
	Visually impaired (white cane/helper dog) None		
	Elderly/disabled (except wheelchairs) None		
	Wheelchairs/electric scooters None		
Other (describe)	None None		

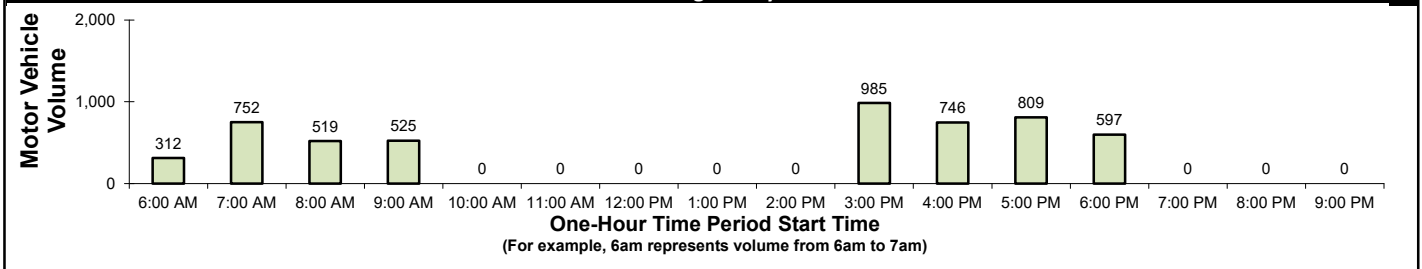
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Thursday, August 11, 2022	Weather	
AM Peak Period	Thursday, August 11, 2022	Clear & Dry	
Midday Peak Period	Thursday, August 11, 2022	Clear & Dry	
PM Peak Period	Thursday, August 11, 2022	Clear & Dry	
Calculated Peak Hours	AM 7:15-8:15am MD	PM 3:15-4:15pm	
Peak Hours Selected for Analysis	AM 7:15-8:15am MD	PM 3:15-4:15pm	
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

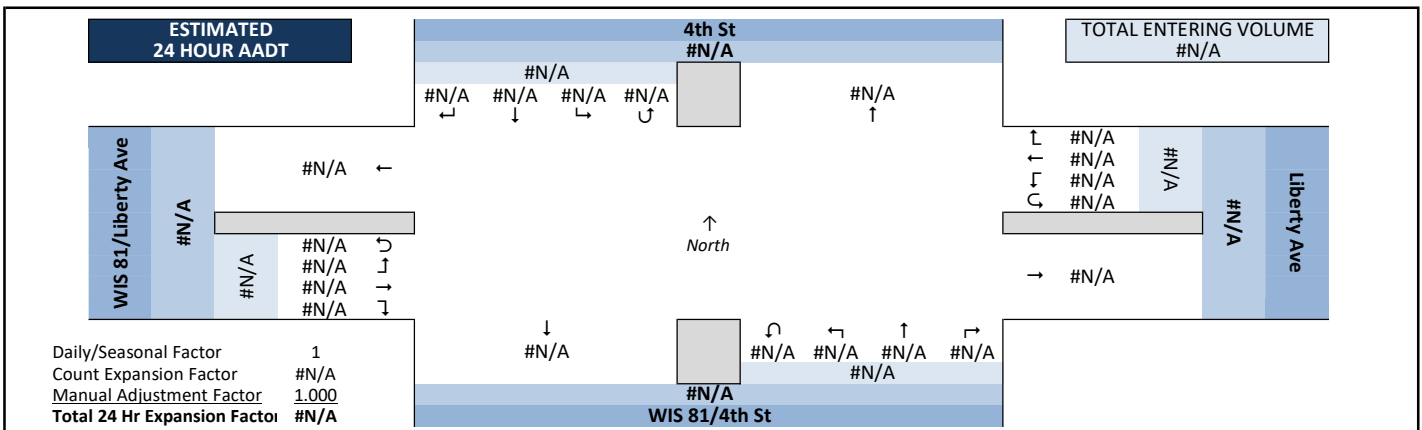
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

<b>Count Basics</b>	<b>Page 3 of 11</b>		
Start Date: Thursday, August 11, 2022	Weekday	Schools in Session	
Total Number of Hours Counted: 8	Non-Holiday	No Special Events	

## Peak Hour Volume Summary

### 4th St and Liberty Ave

All Motor Vehicles						

### Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, August 11, 2022	From North					From East					From South					From West					Totals	
	4th St					Liberty Ave					WIS 81/4th St					WIS 81/Liberty Ave						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
<b>AM Peak Hour</b>																						
Start Time																						
7:15 AM	4	9	0	0	13	0	1	0	0	1	0	0	22	48	0	70	57	0	2	0	59	143
7:30 AM	9	30	0	0	39	2	2	2	0	6	0	0	71	51	0	122	48	0	10	0	58	225
7:45 AM	12	55	0	0	67	2	0	0	0	2	1	1	86	44	0	131	60	1	10	0	71	271
8:00 AM	4	24	0	0	28	1	3	1	0	5	1	1	21	45	0	67	47	2	3	0	52	152
Peak Hour Volume	29	118	0	0	147	5	6	3	0	14	2	2	200	188	0	390	212	3	25	0	240	791
Rounded Hourly Volume	30	120	0	0	150	5	5	5	0	15	0	200	190	0	390	210	5	25	0	240	795	
% Single Unit Trucks	3.4	1.7	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	2.6	4.2	66.7	0.0	0.0	4.6	3.0	
% 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	11.2	0.0	5.4	6.1	0.0	0.0	0.0	5.4	4.3	
% Trucks (Total)	3.4	1.7	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	0.0	7.9	10.4	66.7	0.0	0.0	10.0	7.3	
Peak Hour Factor (PHF)	0.60	0.54	0.00	0.00	0.55	0.62	0.50	0.37	0.00	0.58	0.50	0.58	0.92	0.00	0.74	0.88	0.37	0.62	0.00	0.85	0.73	

N/A	From North					From East					From South					From West					Totals
	4th St					Liberty Ave					WIS 81/4th St					WIS 81/Liberty Ave					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
<b>MD Peak Hour</b>																					
Start Time																					
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

Thursday, August 11, 2022	From North					From East					From South					From West					Totals
	4th St					Liberty Ave					WIS 81/4th St					WIS 81/Liberty Ave					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
<b>PM Peak Hour</b>																					
Start Time																					
3:15 PM	3	10	3	0	16	3	3	0	0	6	1	25	105	0	131	48	6	6	0	60	213
3:30 PM	23	86	2	0	111	1	36	12	0	49	1	35	84	0	120	68	5	9	0	82	362
3:45 PM	2	31	1	0	34	1	6	6	0	13	1	14	90	0	105	64	2	3	0	69	221
4:00 PM	6	15	0	0	21	0	3	2	0	5	3	9	87	0	99	66	4	3	0	73	198
Peak Hour Volume	34	142	6	0	182	5	48	20	0	73	6	83	366	0	455	246	17	21	0	284	994
Rounded Hourly Volume	35	140	5	0	180	5	50	20	0	75	5	85	365	0	455	245	15	20	0	280	990
% 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	2.2	0.0	1.8	0.8	11.8	0.0	0.0	1.4	1.2
% 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	3.3	0.0	2.6	7.3	0.0	0.0	0.0	6.3	3.0
% 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	5.5	0.0	4.4	8.1	11.8	0.0	0.0	7.7	4.2
Peak Hour Factor (PHF)	0.37	0.41	0.50	0.00	0.41	0.42	0.33	0.42	0.00	0.37	0.50	0.59	0.87	0.00	0.87	0.90	0.71	0.58	0.00	0.87	0.69

### 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
	4th St			Liberty Ave			WIS 81/4th St			WIS 81/Liberty Ave			
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
<b>AM</b>													
15-Minute Start Time													
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
7:30 AM	0	0	0	4	0	4	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	2	2	0	0	0	4	0	4	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	4	2	6	0	0	0	5	1	6	12
<b>MD</b>													
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
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PM</b>													
3:15 PM	2	0	2	6	0	6	0	0	0	3	0	3	11
3:30 PM	4	0	4	11	1	12	0	0	0	26	0	26	42
3:45 PM	0	0	0	1	0	1	0	0	0	3	0	3	4
4:00 PM	0	0	0	0	1	1	0	1	1	0	1	1	3
<b>Total</b>	6	0	6	18	2	20	0	1	1	32	1	33	60





# Intersection Traffic Volume Report

## 15-Minute Heavy Vehicle Data

### 4th St and Liberty Ave

#### Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)



#### 15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North 4th St					From East Liberty Ave					From South WIS 81/4th St					From West WIS 81/Liberty Ave					15-Min Totals	Hourly Sum		
	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 Peak Period																							
6:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	37
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	9	34
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	40
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	11	44
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9	53
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	15	58
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	57
7:45 AM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	20	59
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	14	57
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	14	63
8:30 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11	63
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	18	64
9:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	1	8	0	9	10	0	0	0	0	10	20	60
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	9	0	10	4	0	0	0	0	4	14	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	5	0	0	0	0	5	12	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	8	0	0	0	0	8	14	
Middy 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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	3	0	0	0	0	3	11	42
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	0	0	0	0	5	10	39
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4	0	0	0	0	4	6	36
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	8	2	0	0	0	10	15	34
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4	0	0	0	0	4	8	23
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	3	0	0	0	0	3	7	26
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	0	0	0	2	4	26
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0	0	0	0	3	4	29
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	6	0	0	0	0	6	11	33
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	4	0	0	0	0	4	7	27
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	2	0	0	0	0	2	7	24
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	6	0	0	0	0	6	8	19
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	0	0	0	0	4	5	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	0	0	0	2	4	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	2	
7:00 PM	0	0	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	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	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	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	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	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	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	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	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	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	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	0	0	
Totals	2	5	0	0	7	0	0	0	0	0	0	0	3	161	0	164	156	4	0	0	0	160	331	

#### Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North 4th St					From East Liberty Ave					From South WIS 81/4th St					From West WIS 81/Liberty Ave					Total Hourly Volume		
	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 7:15 AM	1	2	0	0	3	0	0	0	0	0	0	0	0	31	0	31	22	2	0	0	0	24	58
MD 12:00 PM																							

# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

Count Basics		Page 11 of 11	
Start Date:	Thursday, August 11, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

### 4th St and Liberty Ave



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	4th St			Liberty Ave			WIS 81/4th St			WIS 81/Liberty Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	4
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	2	2	14
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	12
7:30 AM	0	0	0	4	0	4	0	0	0	1	0	1	5	12
7:45 AM	0	0	0	0	2	2	0	0	0	4	0	4	6	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	7
9:15 AM	0	1	1	2	0	2	0	0	0	0	0	0	3	
9:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	
9:45 AM	1	0	1	1	0	1	0	0	0	0	0	0	2	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	58
3:15 PM	2	0	2	6	0	6	0	0	0	3	0	3	11	60
3:30 PM	4	0	4	11	1	12	0	0	0	26	0	26	42	54
3:45 PM	0	0	0	1	0	1	0	0	0	3	0	3	4	13
4:00 PM	0	0	0	0	1	1	0	1	1	0	1	3	3	9
4:15 PM	2	0	2	1	0	1	2	0	2	0	0	5	7	7
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:15 PM	0	0	0	2	0	2	0	0	0	0	0	0	2	
6:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
Totals	11	2	13	30	4	34	2	1	3	42	3	45	95	

### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Version 2013.J4.1</b>		<b>Page 1 of 11</b>	
Start Date:	Thursday, May 12, 2022	Weekday	Schools in Session		
Total Number of Hours Counted:	8	Non-Holiday	No Special Events		

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **WIS 81/4th St and WIS 81/Portland Ave**



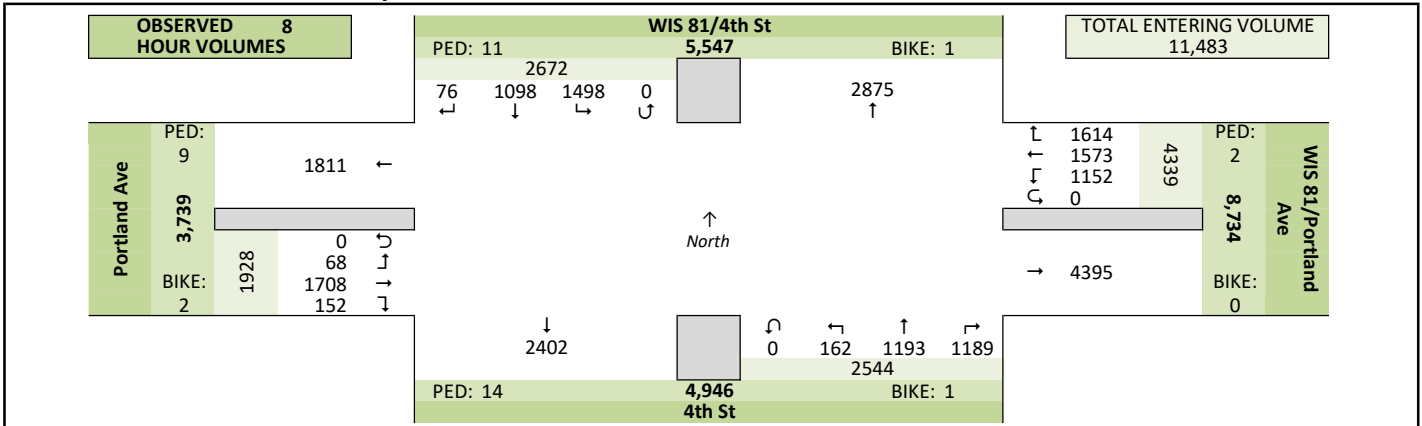
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction ↑		
North Leg	WIS 81/4th St		
East Leg	WIS 81/Portland Ave		
South Leg	4th St		
West Leg	Portland Ave		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None None		

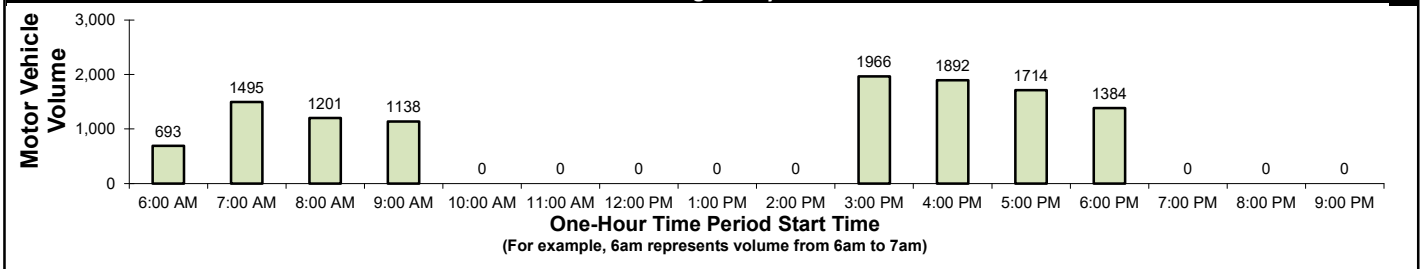
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Thursday, May 12, 2022		Weather
AM Peak Period	Thursday, May 12, 2022		Clear & Dry
Midday Peak Period	Thursday, May 12, 2022		Clear & Dry
PM Peak Period	Thursday, May 12, 2022		Clear & Dry
Calculated Peak Hours			
	AM 7:15-8:15am	MD	PM 3:30-4:30pm
Peak Hours Selected for Analysis			
	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG		Manual Adj.
Manual Adj.	1.000		
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

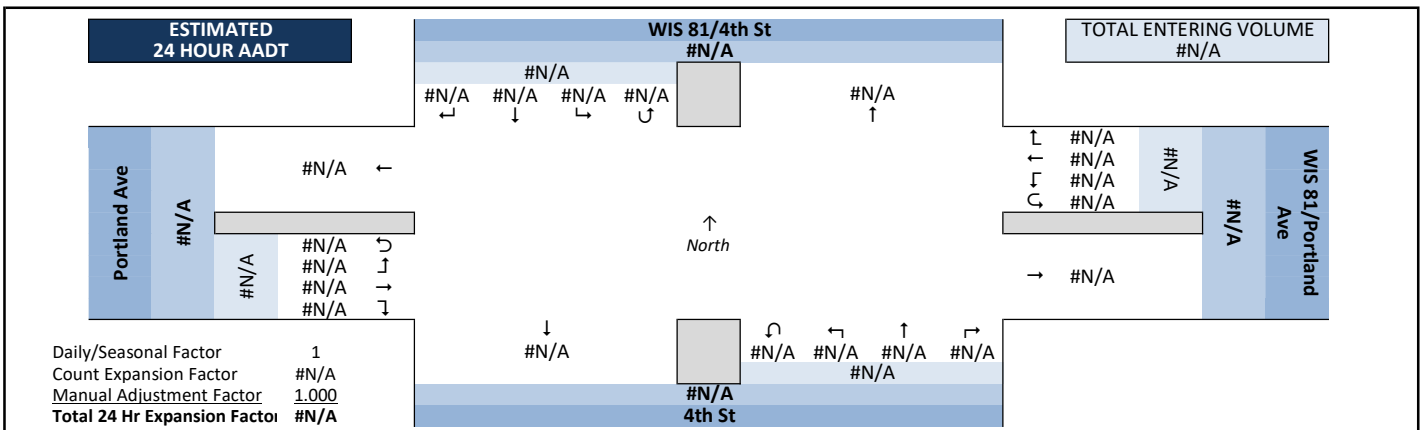
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Page 3 of 11</b>	
Start Date:	Thursday, May 12, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

## Peak Hour Volume Summary

WIS 81/4th St and WIS 81/Portland Ave



### Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, May 12, 2022		From North					From East					From South					From West					Totals
		WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave					
		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 Peak Hour	AM Peak Hour																					
	Start Time																					
	7:15 AM	0	24	41	0	65	53	42	39	0	134	38	27	0	0	65	0	73	0	0	73	337
	7:30 AM	5	33	65	0	103	88	36	36	0	160	30	38	1	0	69	4	95	0	0	99	431
	7:45 AM	2	48	72	0	122	73	50	55	0	178	41	39	7	0	87	8	64	0	0	72	459
	8:00 AM	4	30	50	0	84	57	44	31	0	132	27	36	3	0	66	2	55	5	0	62	344
	Peak Hour Volume	11	135	228	0	374	271	172	161	0	604	136	140	11	0	287	14	287	5	0	306	1571
	Rounded Hourly Volume	10	135	230	0	375	270	170	160	0	600	135	140	10	0	285	15	285	5	0	305	1565
% Single Unit Trucks	0.0	3.0	3.1	0.0	2.9	3.3	3.5	2.5	0.0	3.1	0.7	2.9	0.0	0.0	1.7	0.0	0.7	20.0	0.0	1.0	2.4	
% Heavy Trucks	0.0	6.7	4.4	0.0	5.1	2.2	0.0	0.6	0.0	1.2	0.7	5.7	9.1	0.0	3.5	0.0	0.0	0.0	0.0	0.0	2.3	
% Trucks (Total)	0.0	9.6	7.5	0.0	8.0	5.5	3.5	3.1	0.0	4.3	1.5	8.6	9.1	0.0	5.2	0.0	0.7	20.0	0.0	1.0	4.7	
Peak Hour Factor (PHF)	0.55	0.70	0.79	0.00	0.77	0.77	0.86	0.73	0.00	0.85	0.83	0.90	0.39	0.00	0.82	0.44	0.76	0.25	0.00	0.77	0.86	

N/A		From North					From East					From South					From West					Totals
		WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Midday (MD) Peak Hour	MD Peak Hour																					
	Start Time																					
	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	

Thursday, May 12, 2022		From North					From East					From South					From West					Totals
		WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
PM Peak Hour	PM Peak Hour																					
	Start Time																					
	3:15 PM	1	26	49	0	76	88	77	50	0	215	39	55	11	0	105	4	40	3	0	47	443
	3:30 PM	9	53	91	0	153	107	76	51	0	234	52	57	7	0	116	2	64	7	0	73	576
	3:45 PM	2	44	63	0	109	56	68	55	0	179	55	46	11	0	112	7	63	4	0	74	474
	4:00 PM	4	46	57	0	107	58	83	51	0	192	50	43	12	0	105	10	71	5	0	86	490
	Peak Hour Volume	16	169	260	0	445	309	304	207	0	820	196	201	41	0	438	23	238	19	0	280	1983
	Rounded Hourly Volume	15	170	260	0	445	310	305	205	0	820	195	200	40	0	435	25	240	20	0	285	1985
% Single Unit Trucks	0.0	1.8	0.8	0.0	1.1	0.6	0.3	1.0	0.0	0.6	1.0	2.0	2.4	0.0	1.6	0.0	2.1	10.5	0.0	2.5	1.2	
% Heavy Trucks	0.0	4.7	3.5	0.0	3.8	1.3	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	1.2	
% Trucks (Total)	0.0	6.5	4.2	0.0	4.9	1.9	0.3	1.0	0.0	1.1	1.5	2.5	2.4	0.0	2.1	0.0	2.1	10.5	0.0	2.5	2.4	
Peak Hour Factor (PHF)	0.44	0.80	0.71	0.00	0.73	0.72	0.92	0.94	0.00	0.88	0.89	0.88	0.85	0.00	0.94	0.57	0.84	0.68	0.00	0.81	0.86	

### 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
		WIS 81/4th St			WIS 81/Portland Ave			4th St			Portland Ave			
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	2	0	2	0	0	0	2	0	2	0	0	0	4
	Total	2	0	2	0	0	0	2	0	2	0	0	0	4
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	3:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
	3:30 PM	1	0	1	0	0	0	0	0	0	1	0	1	2
	3:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
	4:00 PM	0	0	0	0	0	0	2	0	2	0	0	0	2
	Total	1	0	1	0	0	0	2	0	2	3	0	3	6

# Intersection Traffic Volume Report

## 15-Minute Motor Vehicle Data

### WIS 81/4th St and WIS 81/Portland Ave



### 15-Minute Motor Vehicle Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF
	WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
<b>AM Peak Period</b>	[Data rows for AM Peak Period: 6:00 AM to 9:45 AM]																				693	0.85	
<b>Midday Peak Period</b>	[Data rows for Midday Peak Period: 10:00 AM to 1:45 PM]																						
<b>PM Peak Period</b>	[Data rows for PM Peak Period: 2:00 PM to 9:45 PM]																				1966	0.85	
<b>Totals</b>	76	1098	1498	0	2672	1614	1573	1152	0	4339	1189	1193	162	0	2544	152	1708	68	0	1928	11483		

### Peak Hour All Vehicle Volume Summary

Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume	PHF	
	WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
<b>AM</b> 7:15 AM	11	135	228	0	374	271	172	161	0	604	136	140	11	0	287	14	287	5	0	306	1571	0.86	
<b>MD</b> 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>PM</b> 3:15 PM	16	169	260	0	445	309	304	207	0	820	196	201	41	0	438	23	238	19	0	280	1983	0.86	

# Intersection Traffic Volume Report

## 15-Minute Heavy Vehicle Data

### WIS 81/4th St and WIS 81/Portland Ave



### 15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
6:00 AM	0	0	1	0	1	3	0	3	0	6	1	2	0	0	3	0	0	1	0	1	1	11	49
6:15 AM	0	0	4	0	4	1	0	2	0	3	0	4	0	0	4	0	1	0	0	1	1	12	57
6:30 AM	0	1	3	0	4	2	1	0	0	3	0	4	0	0	4	0	1	0	0	1	1	12	63
6:45 AM	0	3	3	0	6	2	1	0	0	3	2	2	0	0	4	0	1	0	0	1	1	14	68
7:00 AM	0	2	4	0	6	4	0	2	0	6	0	6	0	0	6	0	1	0	0	1	1	19	74
7:15 AM	0	1	5	0	6	3	1	4	0	8	0	3	0	0	3	0	1	0	0	1	18	74	
7:30 AM	0	3	4	0	7	4	1	1	0	6	1	2	1	0	4	0	0	0	0	0	17	69	
7:45 AM	0	5	6	0	11	2	3	0	0	5	1	2	0	0	3	0	1	0	0	1	20	67	
8:00 AM	0	4	2	0	6	6	1	0	0	7	0	5	0	0	5	0	0	1	0	1	19	66	
8:15 AM	0	1	5	0	6	5	0	1	0	6	0	1	0	0	1	0	0	0	0	0	13	70	
8:30 AM	0	2	3	0	5	2	1	0	0	3	0	4	0	0	4	1	1	1	0	3	15	78	
8:45 AM	0	3	2	0	5	1	2	1	0	4	0	9	0	0	9	0	1	0	0	1	19	88	
9:00 AM	0	11	3	0	14	4	0	0	0	4	1	3	0	0	4	0	1	0	0	1	23	84	
9:15 AM	0	5	7	0	12	4	0	0	0	4	3	1	0	0	4	0	1	0	0	1	21		
9:30 AM	0	5	5	0	10	4	0	2	0	6	2	6	0	0	8	0	0	1	0	1	25		
9:45 AM	0	3	4	0	7	3	1	0	0	4	1	1	0	0	2	0	2	0	0	2	15		
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		
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	3	0	3	3	1	0	0	4	0	2	0	0	2	0	1	1	0	2	11	45	
3:15 PM	0	1	3	0	4	3	0	0	0	3	1	1	1	0	3	0	1	1	0	2	12	47	
3:30 PM	0	1	4	0	5	0	1	2	0	3	1	1	0	0	2	0	2	0	0	2	12	54	
3:45 PM	0	4	1	0	5	2	0	0	0	2	1	1	0	0	2	0	1	0	0	1	10	56	
4:00 PM	0	5	3	0	8	1	0	0	0	1	0	2	0	0	2	0	1	1	0	2	13	54	
4:15 PM	0	3	3	0	6	4	2	1	0	7	1	2	0	0	3	0	2	1	0	3	19	48	
4:30 PM	0	1	2	0	3	5	0	0	0	5	0	5	0	0	5	0	1	0	0	1	14	40	
4:45 PM	0	3	1	0	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	8	33	
5:00 PM	0	1	2	0	3	1	1	0	0	2	0	1	0	0	1	0	0	1	0	1	7	29	
5:15 PM	0	2	4	0	6	1	0	0	0	1	1	3	0	0	4	0	0	0	0	0	11	31	
5:30 PM	0	1	3	0	4	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	7	27	
5:45 PM	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	4	22	
6:00 PM	0	1	4	0	5	1	0	0	0	1	0	1	0	0	1	0	2	0	0	2	9	21	
6:15 PM	0	1	1	0	2	2	0	1	0	3	0	2	0	0	2	0	0	0	0	0	7		
6:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2		
6:45 PM	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3		
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		
Totals	0	74	99	0	173	80	17	20	0	117	17	78	2	0	97	1	23	11	0	35	422		

### Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	WIS 81/4th St					WIS 81/Portland Ave					4th St					Portland Ave					
	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 7:15 AM	0	13	17	0	30	15	6	5	0	26	2	12	1	0	15	0	2	1	0	3	74
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 3:15 PM	0	11	11	0	22	6	1	2	0	9	3	5	1	0	9	0	5	2	0	7	47

# Intersection Traffic Volume Report

Count Basics			Page 11 of 11
Start Date:	Thursday, May 12, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

## 15-Minute Pedestrian and Bicyclist Data

### WIS 81/4th St and WIS 81/Portland Ave



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	WIS 81/4th St			WIS 81/Portland Ave			4th St			Portland Ave				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	2
7:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
8:00 AM	2	0	2	0	0	0	2	0	2	0	0	0	4	6
8:15 AM	0	0	0	0	0	0	0	1	1	0	0	0	1	2
8:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:15 AM	0	0	0	0	0	0	2	0	2	0	0	0	2	
9:30 AM	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	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	1	0	1	1	0	1	0	0	0	2	6
3:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	6
3:30 PM	1	0	1	0	0	0	0	0	0	1	0	1	2	5
3:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	6
4:00 PM	0	0	0	0	0	0	2	0	2	0	0	0	2	9
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4:30 PM	1	0	1	0	0	0	0	0	0	2	0	2	3	9
4:45 PM	1	1	2	0	0	0	0	0	0	2	0	2	4	7
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	8
5:15 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	7
5:30 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	9
5:45 PM	0	0	0	1	0	1	3	0	3	1	0	1	5	10
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7
6:15 PM	3	0	3	0	0	0	0	0	0	0	0	0	3	
6:30 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	
6:45 PM	0	0	0	0	0	0	0	0	0	2	2	2	2	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
<b>Totals</b>	<b>11</b>	<b>1</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>15</b>	<b>9</b>	<b>2</b>	<b>11</b>	<b>40</b>	

### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **6th St and WIS 81**



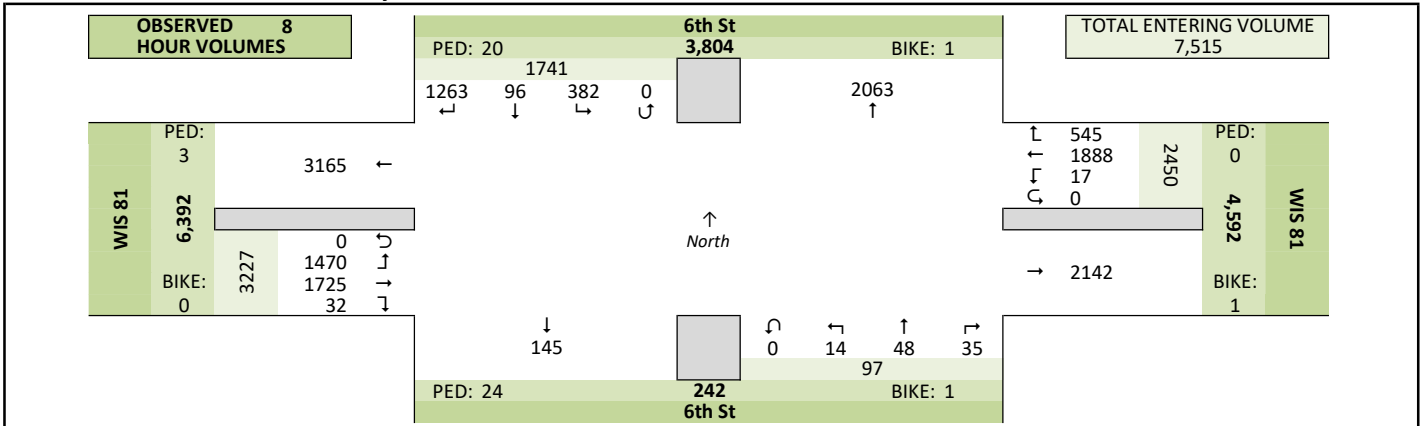
### Site Information

Municipality	City of Beloit
County	Rock
WisDOT Region	SW-M
Traffic Control	Partial Stop Control
Roadway Names	North Direction ↑
North Leg	6th St
East Leg	WIS 81
South Leg	6th St
West Leg	WIS 81
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

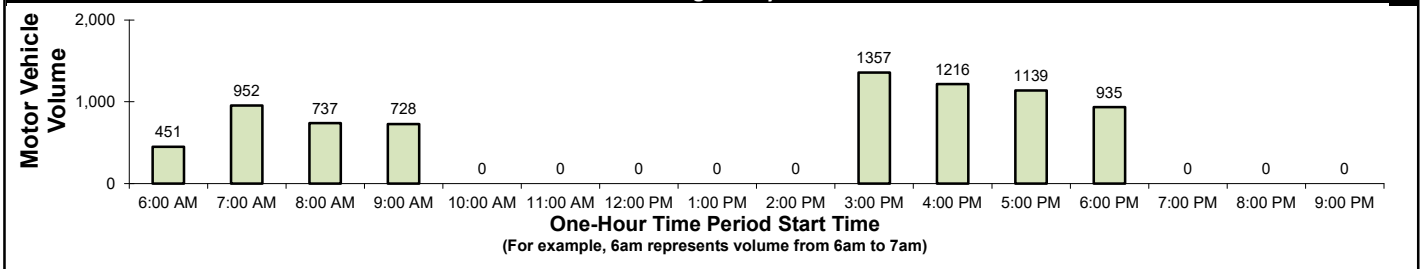
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM	
1st Day of Count	Wednesday, May 11, 2022	Weather
AM Peak Period	Wednesday, May 11, 2022	Clear & Dry
Midday Peak Period	Wednesday, May 11, 2022	Clear & Dry
PM Peak Period	Wednesday, May 11, 2022	Clear & Dry
Calculated Peak Hours	AM 7:15-8:15am	MD
Peak Hours Selected for Analysis	AM 7:15-8:15am	MD
Daily/Seasonal Adjustment Group		PM 3:15-4:15pm
Count Expansion Group		
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor #N/A
Company Name	IMEG	Manual Adj. 1.000
Observers	AM Peak Period	
	Midday Peak Period	
	PM Peak Period	
Comments		

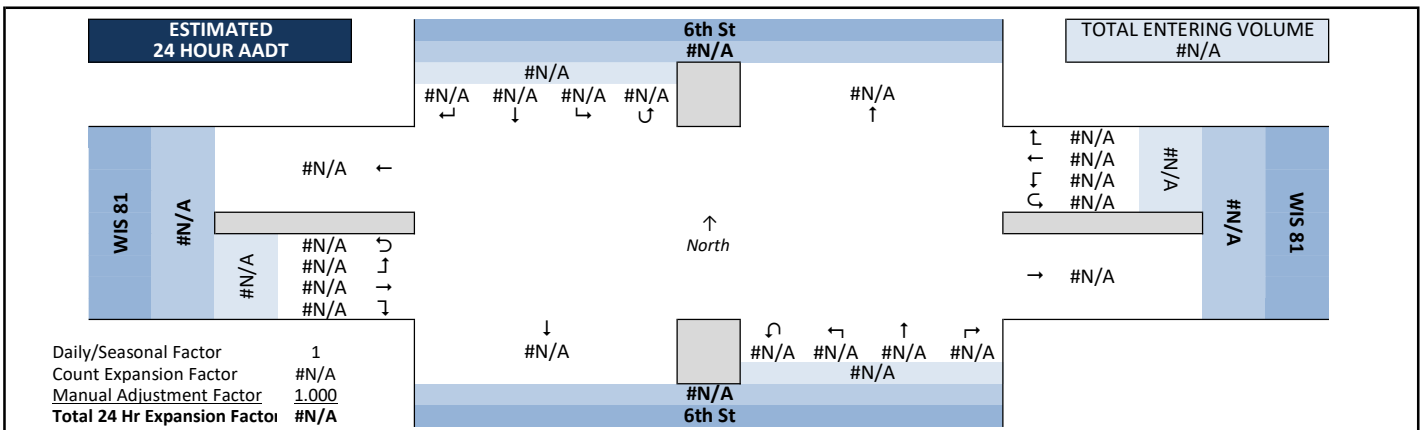
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



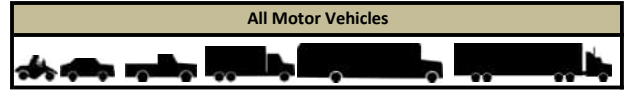


# Intersection Traffic Volume Report

<b>Count Basics</b>		<b>Page 3 of 11</b>	
Start Date:	Wednesday, May 11, 2022	Weekday	Schools in Session
Total Number of Hours Counted:	8	Non-Holiday	No Special Events

## Peak Hour Volume Summary

6th St and WIS 81



### Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, May 11, 2022		From North ↓ 6th St					From East ← WIS 81					From South ↑ 6th St					From West → WIS 81					Totals
AM Peak Hour Start Time	6th St					WIS 81					6th St					WIS 81					Totals	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
7:15 AM	37	1	10	0	48	10	53	0	0	63	1	1	0	0	2	3	56	59	0	118	231	
7:30 AM	34	4	7	0	45	18	45	0	0	63	2	4	0	0	6	1	64	84	0	149	263	
7:45 AM	45	1	8	0	54	19	68	0	0	87	0	1	1	0	2	0	68	94	0	162	305	
8:00 AM	21	2	4	0	27	10	53	1	0	64	0	0	0	0	0	4	52	55	0	111	202	
Peak Hour Volume	137	8	29	0	174	57	219	1	0	277	3	6	1	0	10	8	240	292	0	540	1001	
Rounded Hourly Volume	135	10	30	0	175	55	220	0	0	275	5	5	0	0	10	10	240	290	0	540	1000	
% Single Unit Trucks	0.0	0.0	6.9	0.0	1.1	10.5	2.7	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	3.3	2.7	0.0	3.0	3.0	
% Heavy Trucks	1.5	0.0	0.0	0.0	1.1	1.8	9.1	0.0	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	5.0	1.4	0.0	3.0	3.9	
% Trucks (Total)	1.5	0.0	6.9	0.0	2.3	12.3	11.9	0.0	0.0	11.9	0.0	0.0	0.0	0.0	0.0	0.0	8.3	4.1	0.0	5.9	6.9	
Peak Hour Factor (PHF)	0.76	0.50	0.72	0.00	0.81	0.75	0.81	0.25	0.00	0.80	0.37	0.37	0.25	0.00	0.42	0.50	0.88	0.78	0.00	0.83	0.82	

N/A		From North ↓ 6th St					From East ← WIS 81					From South ↑ 6th St					From West → WIS 81					Totals
MD Peak Hour Start Time	6th St					WIS 81					6th St					WIS 81					Totals	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
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	

Wednesday, May 11, 2022		From North ↓ 6th St					From East ← WIS 81					From South ↑ 6th St					From West → WIS 81					Totals
PM Peak Hour Start Time	6th St					WIS 81					6th St					WIS 81					Totals	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
3:15 PM	72	3	13	0	88	26	88	1	0	115	0	2	2	0	4	1	68	75	0	144	351	
3:30 PM	63	0	16	0	79	31	151	2	0	184	1	1	1	0	3	2	86	57	0	145	411	
3:45 PM	59	8	17	0	84	23	83	2	0	108	4	2	0	0	6	0	56	66	0	122	320	
4:00 PM	69	3	16	0	88	29	77	0	0	106	2	1	1	0	4	0	66	63	0	129	327	
Peak Hour Volume	263	14	62	0	339	109	399	5	0	513	7	6	4	0	17	3	276	261	0	540	1409	
Rounded Hourly Volume	265	15	60	0	340	110	400	5	0	515	5	5	5	0	15	5	275	260	0	540	1410	
% Single Unit Trucks	2.7	0.0	1.6	0.0	2.4	5.5	1.3	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	1.1	3.1	0.0	2.0	2.1	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	1.8	0.0	0.0	25.0	0.0	5.9	0.0	6.9	0.4	0.0	3.7	2.1	
% Trucks (Total)	2.7	0.0	1.6	0.0	2.4	5.5	3.5	0.0	0.0	3.9	0.0	0.0	25.0	0.0	5.9	0.0	8.0	3.4	0.0	5.7	4.3	
Peak Hour Factor (PHF)	0.91	0.44	0.91	0.00	0.96	0.88	0.66	0.62	0.00	0.70	0.44	0.75	0.50	0.00	0.71	0.37	0.80	0.87	0.00	0.93	0.86	

### 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
	North Approach			East Approach			South Approach			West Approach			
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
15-Minute Start Time	6th St			WIS 81			6th St			WIS 81			
AM 7:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1
7:30 AM	3	0	3	0	0	0	1	0	1	0	0	0	4
7:45 AM	1	0	1	0	0	0	5	0	5	0	0	0	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>
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
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
PM 3:15 PM	4	0	4	0	0	0	1	0	1	0	0	0	5
3:30 PM	4	0	4	0	0	0	3	0	3	0	0	0	7
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>9</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>

# Intersection Traffic Volume Report

## 15-Minute Motor Vehicle Data

### 6th St and WIS 81



#### 15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF
	6th St					WIS 81					6th St					WIS 81							
	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 Peak Period																							
6:00 AM																							
6:15 AM																							
6:30 AM																							
6:45 AM																							
7:00 AM																							
7:15 AM																							
7:30 AM																							
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9:00 AM																							
9:15 AM																							
9:30 AM																							
9:45 AM																							
Midday Peak Period																							
10:00 AM																							
10:15 AM																							
10:30 AM																							
10:45 AM																							
11:00 AM																							
11:15 AM																							
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PM Peak Period																							
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9:30 PM																							
9:45 PM																							
Totals																							

#### Peak Hour All Vehicle Volume Summary

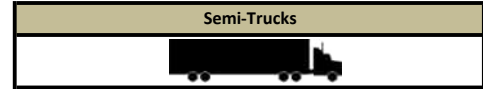
Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	6th St					WIS 81					6th St					WIS 81						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 7:15 AM																						
MD 12:00 PM																						
PM 3:15 PM																						

# Intersection Traffic Volume Report

## 15-Minute Semi-Truck Data

<b>Count Basics</b>		<b>Page 8 of 11</b>	
Start Date: Wednesday, May 11, 2022	Weekday	Schools in Session	
Total Number of Hours Counted: 8	Non-Holiday	No Special Events	

### 6th St and WIS 81



### 15-Minute Semi-Truck Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum
	6th St					WIS 81					6th St					WIS 81						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
6:00 AM	1	0	0	0	1	0	4	0	0	4	1	0	1	0	2	0	2	0	0	2	9	29
6:15 AM	0	0	0	0	0	0	2	0	0	2	3	0	0	0	3	0	3	0	0	3	8	27
6:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	35
6:45 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	5	0	0	5	8	37
7:00 AM	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	1	1	0	2	7	41
7:15 AM	2	0	0	0	2	0	8	0	0	8	0	0	0	0	0	0	5	1	0	6	16	39
7:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	2	0	2	6	31
7:45 AM	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	4	1	0	5	12	32
8:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5	34
8:15 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	8	41
8:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7	47
8:45 AM	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	0	8	1	0	9	14	51
9:00 AM	1	0	0	0	1	0	5	0	0	5	3	0	0	0	3	0	2	1	0	3	12	44
9:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	0	4	1	0	5	14	
9:30 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	0	5	0	0	5	11	
9:45 AM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	7	
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	
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	2	0	0	2	0	0	0	0	0	0	8	1	0	9	11	30
3:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	0	3	1	0	4	9	30
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	26
3:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4	26
4:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	9	0	0	9	11	26
4:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5	19
4:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	1	0	4	6	22
4:45 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4	22
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	4	22
5:15 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8	27
5:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	24
5:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4	21
6:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	4	0	7	9	19
6:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	2	0	3	5	
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	1	1	0	2	2	
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	
Totals	7	0	0	0	7	2	99	0	0	101	8	0	4	0	12	0	103	22	0	125	245	

### Peak Hour Semi-Truck Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	6th St					WIS 81					6th St					WIS 81					
	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 7:15 AM	0	0	0	0	0	1	16	0	0	17	0	0	0	0	0	0	11	3	0	14	31
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 3:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	17	1	0	18	26

# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

### 6th St and WIS 81



#### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	6th St			WIS 81			6th St			WIS 81				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	4
6:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	7
7:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	12
7:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	11
7:30 AM	3	0	3	0	0	0	1	0	1	0	0	0	4	11
7:45 AM	1	0	1	0	0	0	5	0	5	0	0	0	6	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	2	0	2	0	0	0	2	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	1	0	1	0	0	0	0	0	0	1	0	1	2	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	13
3:15 PM	4	0	4	0	0	0	1	0	1	0	0	0	5	13
3:30 PM	4	0	4	0	0	0	3	0	3	0	0	0	7	10
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	6
4:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	7
4:15 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	7
4:30 PM	3	0	3	0	0	0	0	0	0	0	0	0	3	5
4:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	4
5:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	7
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	0	0	0	1	0	1	1	0	1	2	9
5:45 PM	0	0	0	0	1	1	2	1	3	0	0	0	4	7
6:00 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	3
6:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	
6:30 PM	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	
7:00 PM	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	
7:30 PM	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	
8:00 PM	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	
8:30 PM	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	
9:00 PM	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	
9:30 PM	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	
<b>Totals</b>	<b>20</b>	<b>1</b>	<b>21</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>24</b>	<b>1</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>50</b>	

#### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

# Intersection Traffic Volume Report

## Base Information, Observed (8) Hour and Estimated (24) Hour Volume Summaries

Intersection of: **Bluff St and WIS 81**



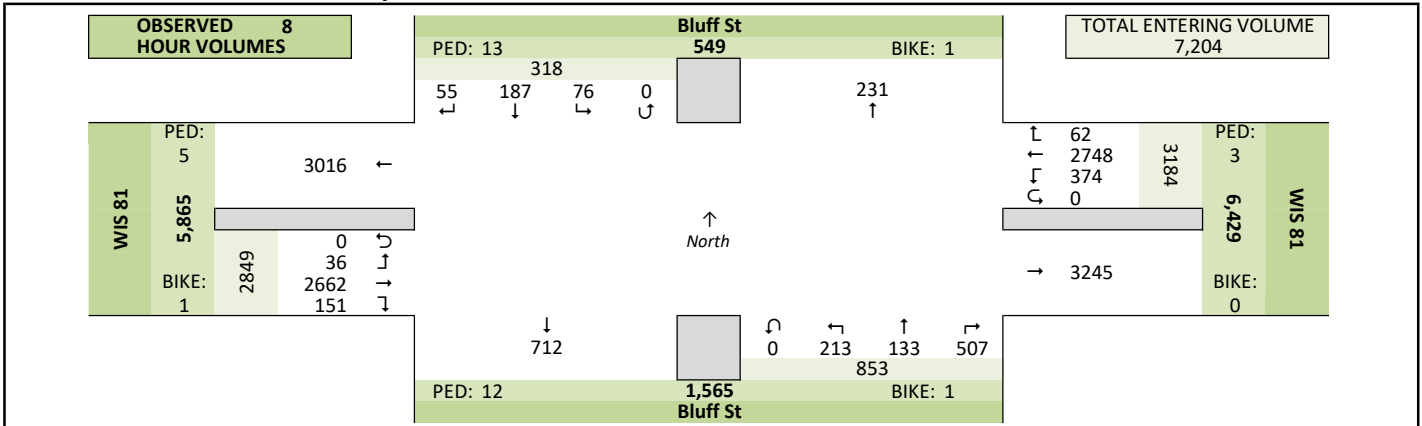
### Site Information

Municipality	City of Beloit		
County	Rock	WisDOT Region	SW-M
Traffic Control	Traffic Signal		
Roadway Names	North Direction ↑		
North Leg	Bluff St		
East Leg	WIS 81		
South Leg	Bluff St		
West Leg	WIS 81		
Special Considerations	Schools In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed	Pre-school children None		
	Elementary school age children None		
	Visually impaired (white cane/helper dog) None		
	Elderly/disabled (except wheelchairs) None		
	Wheelchairs/electric scooters None		
Other (describe)	None None		

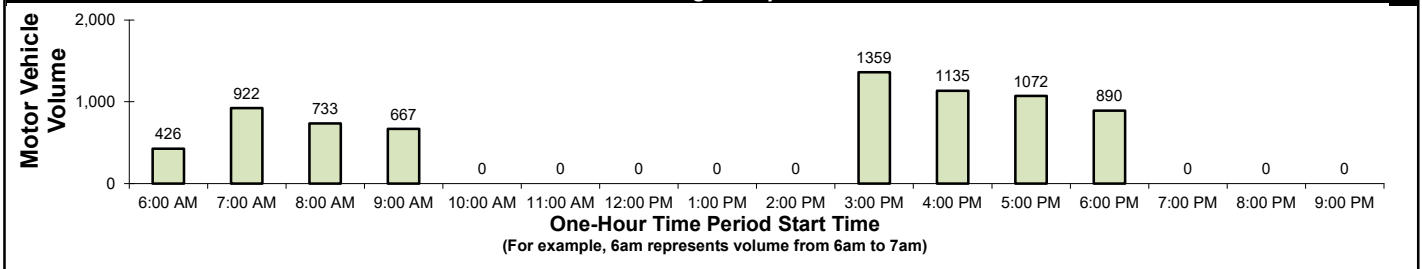
### Count Information

Hrs Counted:	6:00 AM-10:00 AM and 3:00 PM-7:00 PM		
1st Day of Count	Wednesday, May 11, 2022	Weather	
AM Peak Period	Wednesday, May 11, 2022	Clear & Dry	
Midday Peak Period	Wednesday, May 11, 2022	Clear & Dry	
PM Peak Period	Wednesday, May 11, 2022	Clear & Dry	
Calculated Peak Hours	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Peak Hours Selected for Analysis	AM 7:15-8:15am	MD	PM 3:15-4:15pm
Daily/Seasonal Adjustment Group			
Count Expansion Group			
Daily/Seasonal Adjustment Factor	1	Count Expansion Factor	#N/A
Company Name	IMEG	Manual Adj.	1.000
Observers	AM Peak Period		
	Midday Peak Period		
	PM Peak Period		
Comments			

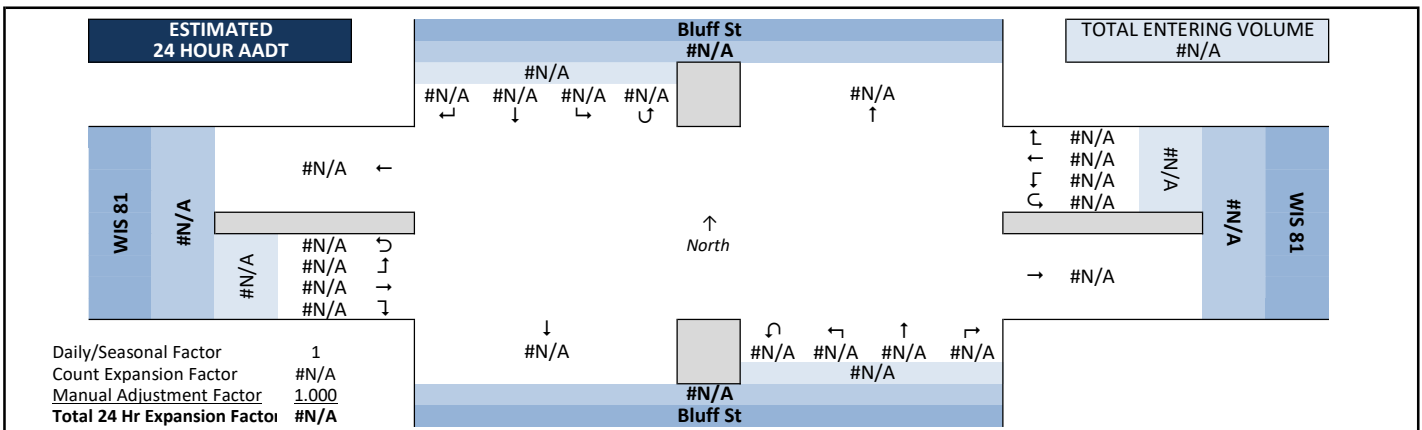
### Observed 8 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT



# Intersection Traffic Volume Report

<b>Count Basics</b> <span style="float: right;">Page 3 of 11</span>		
Start Date: Wednesday, May 11, 2022	Weekday	Schools in Session
Total Number of Hours Counted: 8	Non-Holiday	No Special Events

## Peak Hour Volume Summary

### Bluff St and WIS 81

#### Peak Hour Volumes, Truck Percentages, and PHFs



Wednesday, May 11, 2022		From North					From East					From South					From West					Totals
AM Peak Hour	Start Time	Bluff St					WIS 81					Bluff St					WIS 81					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
		7:15 AM	2	2	0	0	4	1	71	16	0	88	23	0	3	0	26	6	93	0	0	99
	7:30 AM	2	5	4	0	11	3	66	11	0	80	42	4	5	0	51	2	111	1	0	114	256
	7:45 AM	3	18	6	0	27	1	92	19	0	112	32	7	2	0	41	5	124	0	0	129	309
	8:00 AM	3	4	2	0	9	0	73	11	0	84	16	2	8	0	26	5	90	0	0	95	214
	Peak Hour Volume	10	29	12	0	51	5	302	57	0	364	113	13	18	0	144	18	418	1	0	437	996
	Rounded Hourly Volume	10	30	10	0	50	5	300	55	0	360	115	15	20	0	150	20	420	0	0	440	1000
	% Single Unit Trucks	0.0	6.9	8.3	0.0	5.9	0.0	2.0	0.0	0.0	1.6	2.7	15.4	0.0	0.0	3.5	5.6	2.9	0.0	0.0	3.0	2.7
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	7.3	0.0	0.0	6.0	0.9	0.0	0.0	0.0	0.7	0.0	3.6	0.0	0.0	3.4	3.8
	% Trucks (Total)	0.0	6.9	8.3	0.0	5.9	0.0	9.3	0.0	0.0	7.7	3.5	15.4	0.0	0.0	4.2	5.6	6.5	0.0	0.0	6.4	6.5
	Peak Hour Factor (PHF)	0.83	0.40	0.50	0.00	0.47	0.42	0.82	0.75	0.00	0.81	0.67	0.46	0.56	0.00	0.71	0.75	0.84	0.25	0.00	0.85	0.81

N/A

N/A		From North					From East					From South					From West					Totals
Midday (MD) Peak Hour	Start Time	Bluff St					WIS 81					Bluff St					WIS 81					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
		12:00 PM	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

Wednesday, May 11, 2022

Wednesday, May 11, 2022		From North					From East					From South					From West					Totals
PM Peak Hour	Start Time	Bluff St					WIS 81					Bluff St					WIS 81					
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
		3:15 PM	5	9	4	0	18	0	146	13	0	159	31	8	10	0	49	3	110	0	0	113
	3:30 PM	8	23	2	0	33	3	190	30	0	223	31	9	19	0	59	7	109	2	0	118	433
	3:45 PM	6	12	2	0	20	2	125	21	0	148	13	5	13	0	31	11	107	2	0	120	319
	4:00 PM	2	8	4	0	14	4	127	16	0	147	19	4	10	0	33	4	107	2	0	113	307
	Peak Hour Volume	21	52	12	0	85	9	588	80	0	677	94	26	52	0	172	25	433	6	0	464	1398
	Rounded Hourly Volume	20	50	10	0	80	10	590	80	0	680	95	25	50	0	170	25	435	5	0	465	1395
	% Single Unit Trucks	9.5	3.8	25.0	0.0	8.2	0.0	1.4	2.5	0.0	1.5	1.1	0.0	1.9	0.0	1.2	0.0	1.6	0.0	0.0	1.5	1.9
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	4.1	2.2
	% Trucks (Total)	9.5	3.8	25.0	0.0	8.2	0.0	3.4	2.5	0.0	3.2	1.1	0.0	1.9	0.0	1.2	0.0	6.0	0.0	0.0	5.6	4.1
	Peak Hour Factor (PHF)	0.66	0.57	0.75	0.00	0.64	0.56	0.77	0.67	0.00	0.76	0.76	0.72	0.68	0.00	0.73	0.57	0.98	0.75	0.00	0.97	0.81

#### Peak Hour Pedestrian and Bicyclist Volumes

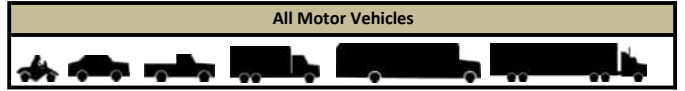
Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
15-Minute Start Time		Bluff St			WIS 81			Bluff St			WIS 81			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	1
	7:30 AM	3	0	3	0	0	0	1	0	1	0	0	0	4
	7:45 AM	1	0	1	0	0	0	2	0	2	0	0	0	3
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	5	0	5	0	0	0	3	0	3	0	0	0	8
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	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	2	0	2	0	0	0	2	0	2	0	0	0	4
	3:45 PM	1	0	1	0	0	0	0	0	0	1	0	1	2
	4:00 PM	1	0	1	0	0	0	0	0	0	2	1	3	4
	Total	4	0	4	0	0	0	2	0	2	3	1	4	10

# Intersection Traffic Volume Report

## 15-Minute Motor Vehicle Data

Count Basics			Page 5 of 11
Start Date:	Wednesday, May 11, 2022	Weekday	Schools in Session
Total Number of Hours Counted: 8		Non-Holiday	No Special Events

### Bluff St and WIS 81



#### 15-Minute Motor Vehicle Data

15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum	PHF
	Bluff St					WIS 81					Bluff St					WIS 81							
	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 Peak Period																							
6:00 AM	0	0	0	0	0	0	19	3	0	22	8	0	1	0	9	0	41	1	0	42	73	426	0.88
6:15 AM	2	4	1	0	7	0	28	5	0	33	13	0	2	0	15	3	62	1	0	66	121	493	0.88
6:30 AM	0	7	0	0	7	2	26	3	0	31	6	4	2	0	12	2	65	0	0	67	117	589	0.68
6:45 AM	0	5	1	0	6	0	30	1	0	31	1	2	1	0	4	3	71	0	0	74	115	728	0.71
7:00 AM	0	3	2	0	5	0	52	5	0	57	11	1	2	0	14	3	61	0	0	64	140	922	0.75
7:15 AM	2	2	0	0	4	1	71	16	0	88	23	0	3	0	26	6	93	0	0	99	217	996	0.81
7:30 AM	2	5	4	0	11	3	66	11	0	80	42	4	5	0	51	2	111	1	0	114	256	959	0.78
7:45 AM	3	18	6	0	27	1	92	19	0	112	32	7	2	0	41	5	124	0	0	129	309	865	0.70
8:00 AM	3	4	2	0	9	0	73	11	0	84	16	2	8	0	26	5	90	0	0	95	214	733	0.86
8:15 AM	1	3	2	0	6	1	67	8	0	76	9	0	6	0	15	9	74	0	0	83	180	678	0.94
8:30 AM	2	3	1	0	6	1	50	11	0	62	13	4	0	0	17	1	72	4	0	77	162	672	0.95
8:45 AM	0	5	2	0	7	2	54	13	0	69	13	5	3	0	21	5	70	5	0	80	177	667	0.94
9:00 AM	0	7	3	0	10	2	60	10	0	72	9	3	5	0	17	3	57	0	0	60	159	667	0.94
9:15 AM	0	3	4	0	7	0	76	6	0	82	8	2	6	0	16	3	66	0	0	69	174	667	0.94
9:30 AM	0	6	3	0	9	1	67	8	0	76	5	3	5	0	13	4	53	2	0	59	157		
9:45 AM	0	3	3	0	6	1	62	5	0	68	8	4	4	0	16	9	75	3	0	87	177		
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	1	7	6	0	14	1	94	12	0	107	33	11	8	0	52	3	90	2	0	95	268	1359	0.78
3:15 PM	5	9	4	0	18	0	146	13	0	159	31	8	10	0	49	3	110	0	0	113	339	1398	0.81
3:30 PM	8	23	2	0	33	3	190	30	0	223	31	9	19	0	59	7	109	2	0	118	433	1333	0.77
3:45 PM	6	12	2	0	20	2	125	21	0	148	13	5	13	0	31	11	107	2	0	120	319	1197	0.94
4:00 PM	2	8	4	0	14	4	127	16	0	147	19	4	10	0	33	4	107	2	0	113	307	1135	0.92
4:15 PM	2	8	2	0	12	3	118	18	0	139	14	4	12	0	30	9	82	2	0	93	274	1086	0.91
4:30 PM	0	4	2	0	6	0	148	18	0	166	17	1	12	0	30	6	89	0	0	95	297	1075	0.90
4:45 PM	0	5	4	0	9	6	103	21	0	130	18	4	8	0	30	4	84	0	0	88	257	1060	0.94
5:00 PM	1	2	3	0	6	3	104	11	0	118	7	8	10	0	25	6	102	1	0	109	258	1072	0.95
5:15 PM	6	3	0	0	9	2	108	10	0	120	18	4	9	0	31	6	95	2	0	103	263	1074	0.95
5:30 PM	3	8	0	0	11	3	113	11	0	127	18	9	3	0	30	5	106	3	0	114	282	1020	0.90
5:45 PM	1	5	6	0	12	1	116	13	0	130	19	7	11	0	37	0	89	1	0	90	269	976	0.91
6:00 PM	4	3	4	0	11	8	94	13	0	115	15	7	9	0	31	9	93	1	0	103	260	890	0.86
6:15 PM	0	6	1	0	7	7	86	6	0	99	11	2	10	0	23	6	73	1	0	80	209		
6:30 PM	0	3	1	0	4	0	96	19	0	115	18	6	7	0	31	7	81	0	0	88	238		
6:45 PM	1	3	1	0	5	4	87	7	0	98	8	3	7	0	18	2	60	0	0	62	183		
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		
<b>Totals</b>	55	187	76	0	318	62	2748	374	0	3184	507	133	213	0	853	151	2662	36	0	2849	7204		

#### Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume	PHF
	Bluff St					WIS 81					Bluff St					WIS 81						
	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 7:15 AM	10	29	12	0	51	5	302	57	0	364	113	13	18	0	144	18	418	1	0	437	996	0.81
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 3:15 PM	21	52	12	0	85	9	588	80	0	677	94	26	52	0	172	25	433	6	0	464	1398	0.81

# Intersection Traffic Volume Report

## 15-Minute Heavy Vehicle Data

Bluff St and WIS 81



### 15-Minute Heavy Vehicle Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	Bluff St					WIS 81					Bluff St					WIS 81							
	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 Peak Period	6:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	8	36
	6:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	8	0	0	8	11	42
	6:30 AM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	5	51
	6:45 AM	0	0	1	0	1	0	3	0	0	3	0	1	0	0	1	1	6	0	0	7	12	56
	7:00 AM	0	0	0	0	0	0	7	1	0	8	2	1	0	0	3	0	3	0	0	3	14	68
	7:15 AM	0	0	0	0	0	0	11	0	0	11	3	0	0	0	3	0	6	0	0	6	20	65
	7:30 AM	0	0	0	0	0	0	5	0	0	5	0	1	0	0	1	0	4	0	0	4	10	60
	7:45 AM	0	2	1	0	3	0	7	0	0	7	1	1	0	0	2	1	11	0	0	12	24	63
	8:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11	66
	8:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	2	5	0	0	7	15	81
	8:30 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	13	87
	8:45 AM	0	1	1	0	2	2	9	0	0	11	0	2	1	0	3	0	11	0	0	11	27	93
	9:00 AM	0	4	0	0	4	0	8	1	0	9	0	1	1	0	2	0	11	0	0	11	26	85
	9:15 AM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	9	0	0	9	21	
	9:30 AM	0	0	1	0	1	0	13	0	0	13	0	0	0	0	0	0	5	0	0	5	19	
	9:45 AM	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	0	8	0	0	8	19	
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	1	1	0	2	0	4	0	0	4	0	1	3	0	4	0	10	0	0	10	20	60
	3:15 PM	0	2	1	0	3	0	8	0	0	8	0	0	1	0	1	0	8	0	0	8	20	57
	3:30 PM	1	0	0	0	1	0	4	0	0	4	1	0	0	0	1	0	5	0	0	5	11	49
	3:45 PM	0	0	1	0	1	0	3	2	0	5	0	0	0	0	0	0	3	0	0	3	9	45
	4:00 PM	1	0	1	0	2	0	5	0	0	5	0	0	0	0	0	0	10	0	0	10	17	42
	4:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	1	3	0	0	4	12	31
	4:30 PM	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	0	3	0	0	3	7	29
	4:45 PM	0	0	1	0	1	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	6	28
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	5	0	0	5	6	31
	5:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	10	40
	5:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	36
	5:45 PM	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	9	39
	6:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	12	0	0	12	15	33
	6:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	
	6:30 PM	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	0	5	0	0	5	9	
	6:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3	
	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	
Totals		2	11	11	0	24	2	174	5	0	181	9	9	6	0	24	5	187	0	0	192	421	

### Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume	
	Bluff St					WIS 81					Bluff St					WIS 81						
	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 7:15 AM	0	2	1	0	3	0	28	0	0	28	4	2	0	0	6	1	27	0	0	28	65	
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	0
PM 3:15 PM	2	2	3	0	7	0	20	2	0	22	1	0	1	0	2	0	26	0	0	26	57	



# Intersection Traffic Volume Report

Count Basics			Page 11 of 11
Start Date:	Wednesday, May 11, 2022	Weekday	Schools in Session
Total Number of Hours Counted: 8		Non-Holiday	No Special Events

## 15-Minute Pedestrian and Bicyclist Data

### Bluff St and WIS 81



### 15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Bluff St			WIS 81			Bluff St			WIS 81				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	4
6:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	4
6:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	7
7:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	9
7:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	8
7:30 AM	3	0	3	0	0	0	1	0	1	0	0	0	4	7
7:45 AM	1	0	1	0	0	0	2	0	2	0	0	0	3	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
9:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1	
9:30 AM	0	0	0	0	0	0	0	1	1	0	0	0	1	
9:45 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	
10:00 AM	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	
10:30 AM	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	
11:00 AM	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	
11:30 AM	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	
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	
1:00 PM	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	
1:30 PM	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	
2:00 PM	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	
2:30 PM	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	
3:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	7
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10
3:30 PM	2	0	2	0	0	0	2	0	2	0	0	0	4	12
3:45 PM	1	0	1	0	0	0	0	0	0	1	0	1	2	8
4:00 PM	1	0	1	0	0	0	0	0	0	2	1	3	4	6
4:15 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:00 PM	0	0	0	1	0	1	1	0	1	0	0	0	2	4
6:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	
6:30 PM	0	0	0	0	0	0	1	0	1	0	0	0	1	
6:45 PM	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	
7:15 PM	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	
7:45 PM	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	
8:15 PM	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	
8:45 PM	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	
9:15 PM	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	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	13	1	14	3	0	3	12	1	13	5	1	6	36	

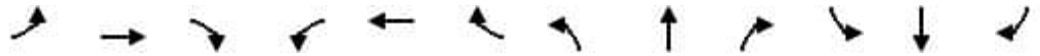
### Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/helper dog)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

## **Appendix B: Existing-Year (Year 2022) Traffic Operations Analysis Worksheets**

HCM 6th Signalized Intersection Summary  
 2: Hackett Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	5	320	115	15	300	20	100	55	50	25	90	20
Future Volume (veh/h)	5	320	115	15	300	20	100	55	50	25	90	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	0.99		0.99	0.98		0.98
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	1811	1668	1811	1767	1567	1767	1856	1548	1856	1870	1560	1870
Adj Flow Rate, veh/h	5	340	76	16	319	21	106	59	53	27	96	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	9	9	9	3	3	3	2	2	2
Cap, veh/h	100	627	576	111	533	34	732	304	273	149	259	50
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.09	0.41	0.41	0.24	0.24	0.24
Sat Flow, veh/h	6	1658	1523	26	1409	90	1767	747	671	143	1094	211
Grp Volume(v), veh/h	345	0	76	356	0	0	106	0	112	144	0	0
Grp Sat Flow(s),veh/h/ln	1663	0	1523	1525	0	0	1767	0	1417	1447	0	0
Q Serve(g_s), s	0.0	0.0	1.2	0.0	0.0	0.0	1.5	0.0	1.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	1.2	6.9	0.0	0.0	1.5	0.0	1.9	3.0	0.0	0.0
Prop In Lane	0.01		1.00	0.04		0.06	1.00		0.47	0.19		0.15
Lane Grp Cap(c), veh/h	727	0	576	678	0	0	732	0	577	457	0	0
V/C Ratio(X)	0.47	0.00	0.13	0.53	0.00	0.00	0.14	0.00	0.19	0.31	0.00	0.00
Avail Cap(c_a), veh/h	2055	0	1802	1875	0	0	883	0	1067	1176	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	0.0	7.6	9.3	0.0	0.0	7.6	0.0	7.1	12.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.2	1.4	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.0
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(95%),veh/ln	3.3	0.0	0.6	3.6	0.0	0.0	0.8	0.0	0.8	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	0.0	7.8	10.7	0.0	0.0	7.6	0.0	7.3	12.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		421			356			218				144
Approach Delay, s/veh		9.7			10.7			7.4				12.4
Approach LOS		A			B			A				B
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		18.1	6.3	12.8		18.1		19.1				
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		44.0	6.5	28.0		44.0		28.0				
Max Q Clear Time (g_c+I1), s		8.0	3.5	5.0		8.9		3.9				
Green Ext Time (p_c), s		5.4	0.0	0.8		5.0		0.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									

# HCM 6th Signalized Intersection Summary

## 4: Fourth Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	25	5	240	5	5	5	210	200	1	1	130	35
Future Volume (veh/h)	25	5	240	5	5	5	210	200	1	1	130	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	0.99		0.99	0.99		0.99
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	1752	1614	1752	1900	1585	1900	1781	1580	1781	1870	1560	1870
Adj Flow Rate, veh/h	34	7	204	7	7	7	288	274	1	1	178	48
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	10	10	10	0	0	0	8	8	8	2	2	2
Cap, veh/h	442	72	649	202	165	118	771	815	3	98	280	75
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.17	0.52	0.52	0.24	0.24	0.24
Sat Flow, veh/h	993	272	1475	271	619	445	1697	1573	6	2	1179	317
Grp Volume(v), veh/h	41	0	204	21	0	0	288	0	275	227	0	0
Grp Sat Flow(s),veh/h/ln	1265	0	1475	1335	0	0	1697	0	1579	1497	0	0
Q Serve(g_s), s	0.4	0.0	3.3	0.0	0.0	0.0	4.1	0.0	3.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	3.3	0.4	0.0	0.0	4.1	0.0	3.8	5.1	0.0	0.0
Prop In Lane	0.83		1.00	0.33		0.33	1.00		0.00	0.00		0.21
Lane Grp Cap(c), veh/h	514	0	649	485	0	0	771	0	818	453	0	0
V/C Ratio(X)	0.08	0.00	0.31	0.04	0.00	0.00	0.37	0.00	0.34	0.50	0.00	0.00
Avail Cap(c_a), veh/h	956	0	1170	927	0	0	1300	0	2084	1185	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	6.8	10.1	0.0	0.0	6.4	0.0	5.2	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.6	0.0	0.0	0.0	0.3	0.0	0.5	0.9	0.0	0.0
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(95%),veh/ln	0.4	0.0	1.5	0.2	0.0	0.0	1.9	0.0	1.6	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.0	7.4	10.2	0.0	0.0	6.7	0.0	5.7	13.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		245			21			563			227	
Approach Delay, s/veh		7.9			10.2			6.2			13.6	
Approach LOS		A			B			A			B	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		13.9	10.4	12.8		13.9		23.2				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		23.0	18.0	27.0		23.0		49.0				
Max Q Clear Time (g_c+I1), s		5.3	6.1	7.1		2.4		5.8				
Green Ext Time (p_c), s		1.8	0.7	1.3		0.1		3.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary  
7: Fourth Street & Portland Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗		↖	↗	
Traffic Volume (veh/h)	5	295	15	165	175	280	10	140	140	240	135	10
Future Volume (veh/h)	5	295	15	165	175	280	10	140	140	240	135	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
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		No		No
Adj Sat Flow, veh/h/ln	1885	1672	1885	1841	1666	1841	1826	1653	1826	1781	1613	1781
Adj Flow Rate, veh/h	6	343	17	192	203	202	12	163	163	279	157	12
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	4	4	4	5	5	5	8	8	8
Cap, veh/h	419	466	23	389	646	603	370	308	272	468	973	74
Arrive On Green	0.01	0.29	0.29	0.10	0.39	0.39	0.02	0.20	0.20	0.16	0.34	0.34
Sat Flow, veh/h	1795	1579	78	1753	1666	1558	1739	1570	1388	1697	2885	218
Grp Volume(v), veh/h	6	0	360	192	203	202	12	163	163	279	83	86
Grp Sat Flow(s),veh/h/ln	1795	0	1657	1753	1666	1558	1739	1570	1388	1697	1532	1571
Q Serve(g_s), s	0.1	0.0	12.4	4.5	5.4	5.8	0.3	5.9	6.8	7.7	2.4	2.4
Cycle Q Clear(g_c), s	0.1	0.0	12.4	4.5	5.4	5.8	0.3	5.9	6.8	7.7	2.4	2.4
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.14
Lane Grp Cap(c), veh/h	419	0	489	389	646	603	370	308	272	468	517	530
V/C Ratio(X)	0.01	0.00	0.74	0.49	0.31	0.33	0.03	0.53	0.60	0.60	0.16	0.16
Avail Cap(c_a), veh/h	574	0	888	517	1025	958	508	520	460	684	797	817
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	0.00	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	15.5	0.0	20.1	13.7	13.6	13.7	19.9	22.9	23.2	15.2	14.7	14.7
Incr Delay (d2), s/veh	0.0	0.0	4.6	0.4	0.6	0.7	0.0	3.0	4.5	0.5	0.3	0.3
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(95%),veh/ln	0.1	0.0	8.8	2.9	3.6	3.6	0.2	4.2	4.4	5.0	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	0.0	24.7	14.1	14.1	14.4	19.9	25.9	27.7	15.7	15.0	15.0
LnGrp LOS	B	A	C	B	B	B	B	C	C	B	B	B
Approach Vol, veh/h		366			597			338			448	
Approach Delay, s/veh		24.6			14.2			26.5			15.4	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	0.4	22.7	5.0	25.4	4.5	28.6	13.9	16.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	1.0	34.0	6.0	33.0	6.0	39.0	18.0	21.0				
Max Q Clear Time (g_c+1/5), s	1.0	14.4	2.3	4.4	2.1	7.8	9.7	8.8				
Green Ext Time (p_c), s	0.1	4.0	0.0	1.9	0.0	4.3	0.3	2.7				

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary  
 10: Pleasant Street & Portland Avenue/White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑		↘	↑↑		↘	↑↑	
Traffic Volume (veh/h)	175	470	35	35	445	40	25	245	70	70	200	150
Future Volume (veh/h)	175	470	35	35	445	40	25	245	70	70	200	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
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	1856	1699	1856	1826	1653	1826	1811	1640	1811	1841	1666	1841
Adj Flow Rate, veh/h	203	547	25	41	517	47	29	285	81	81	233	174
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	5	5	5	6	6	6	4	4	4
Cap, veh/h	311	954	461	267	675	61	447	1007	281	489	767	549
Arrive On Green	0.10	0.30	0.30	0.04	0.23	0.23	0.03	0.42	0.42	0.04	0.44	0.44
Sat Flow, veh/h	1767	3229	1561	1739	2911	264	1725	2403	670	1753	1759	1258
Grp Volume(v), veh/h	203	547	25	41	278	286	29	183	183	81	209	198
Grp Sat Flow(s),veh/h/ln	1767	1614	1561	1739	1570	1604	1725	1558	1515	1753	1583	1435
Q Serve(g_s), s	8.4	14.4	1.1	1.8	16.5	16.6	0.9	7.7	8.0	2.6	8.6	9.0
Cycle Q Clear(g_c), s	8.4	14.4	1.1	1.8	16.5	16.6	0.9	7.7	8.0	2.6	8.6	9.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.44	1.00		0.88
Lane Grp Cap(c), veh/h	311	954	461	267	364	372	447	653	635	489	690	626
V/C Ratio(X)	0.65	0.57	0.05	0.15	0.76	0.77	0.06	0.28	0.29	0.17	0.30	0.32
Avail Cap(c_a), veh/h	339	1130	546	335	487	497	502	653	635	516	690	626
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(l)	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	25.7	29.9	25.2	27.4	35.8	35.9	15.8	19.1	19.2	15.4	18.3	18.4
Incr Delay (d2), s/veh	3.9	0.8	0.1	0.3	6.1	6.2	0.1	1.1	1.1	0.2	1.1	1.3
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(95%),veh/lr	6.9	9.6	0.8	1.4	11.2	11.5	0.7	5.4	5.4	1.9	6.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	30.7	25.3	27.7	42.0	42.1	15.9	20.2	20.3	15.6	19.4	19.8
LnGrp LOS	C	C	C	C	D	D	B	C	C	B	B	B
Approach Vol, veh/h		775			605			395			488	
Approach Delay, s/veh		30.2			41.1			19.9			18.9	
Approach LOS		C			D			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	47.9	8.1	35.5	6.8	49.6	14.4	29.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	31.0	31.0	8.0	35.0	6.0	31.0	12.0	31.0				
Max Q Clear Time (g_c+14), s	10.0	10.0	3.8	16.4	2.9	11.0	10.4	18.6				
Green Ext Time (p_c), s	0.0	3.1	0.0	5.1	0.0	3.5	0.1	3.8				

Intersection Summary

HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

HCM 6th TWSC  
11: Woodward Avenue & White Avenue

11/11/2022

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	480	130	1	470	50	5
Future Vol, veh/h	480	130	1	470	50	5
Conflicting Peds, #/hr	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	558	151	1	547	58	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	712	0	1113
Stage 1	-	-	-	-	561
Stage 2	-	-	-	-	552
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	883	-	233
Stage 1	-	-	-	-	575
Stage 2	-	-	-	-	581
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	880	-	231
Mov Cap-2 Maneuver	-	-	-	-	231
Stage 1	-	-	-	-	573
Stage 2	-	-	-	-	578

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	243	-	-	880	-
HCM Lane V/C Ratio	0.263	-	-	0.001	-
HCM Control Delay (s)	25	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0	-

# HCM 6th Signalized Intersection Summary

## 12: White Avenue & Prince Hall Drive

11/11/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Volume (veh/h)	70	410	455	140	10	15
Future Volume (veh/h)	70	410	455	140	10	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1632	1548	1856	1737	1737
Adj Flow Rate, veh/h	81	477	529	163	12	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	3	3	11	11
Cap, veh/h	695	1359	944	291	64	57
Arrive On Green	0.83	0.83	1.00	1.00	0.04	0.04
Sat Flow, veh/h	739	1632	1134	349	1654	1472
Grp Volume(v), veh/h	81	477	0	692	12	11
Grp Sat Flow(s),veh/h/ln	739	1632	0	1484	1654	1472
Q Serve(g_s), s	1.9	6.2	0.0	0.0	0.6	0.7
Cycle Q Clear(g_c), s	1.9	6.2	0.0	0.0	0.6	0.7
Prop In Lane	1.00			0.24	1.00	1.00
Lane Grp Cap(c), veh/h	695	1359	0	1235	64	57
V/C Ratio(X)	0.12	0.35	0.00	0.56	0.19	0.19
Avail Cap(c_a), veh/h	695	1359	0	1235	408	363
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.84	1.00	1.00
Uniform Delay (d), s/veh	1.4	1.8	0.0	0.0	41.9	41.9
Incr Delay (d2), s/veh	0.3	0.7	0.0	1.5	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	2.3	0.0	1.0	0.5	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	1.8	2.5	0.0	1.5	42.4	42.5
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		558	692		23	
Approach Delay, s/veh		2.4	1.5		42.4	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		80.7		9.3		80.7
Change Period (Y+Rc), s		* 5.8		* 5.8		* 5.8
Max Green Setting (Gmax), s		* 56		* 22		* 56
Max Q Clear Time (g_c+I1), s		8.2		2.7		2.0
Green Ext Time (p_c), s		4.5		0.0		6.5

### Intersection Summary

HCM 6th Ctrl Delay	2.7
HCM 6th LOS	A

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



# HCM 6th Signalized Intersection Summary

## 13: Park Avenue & White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	350	5	20	450	65	100	155	20	40	110	110
Future Volume (veh/h)	50	350	5	20	450	65	100	155	20	40	110	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
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	1796	1626	1796	1826	1653	1826	1856	1714	1856	1826	1687	1826
Adj Flow Rate, veh/h	58	407	0	23	523	47	116	180	14	47	128	79
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	7	7	7	5	5	5	3	3	3	5	5	5
Cap, veh/h	432	914		528	893	834	284	279	254	234	228	207
Arrive On Green	0.05	0.56	0.00	0.03	0.54	0.54	0.07	0.16	0.16	0.05	0.14	0.14
Sat Flow, veh/h	1711	1626	1522	1739	1653	1543	1767	1714	1563	1739	1687	1530
Grp Volume(v), veh/h	58	407	0	23	523	47	116	180	14	47	128	79
Grp Sat Flow(s),veh/h/ln	1711	1626	1522	1739	1653	1543	1767	1714	1563	1739	1687	1530
Q Serve(g_s), s	1.3	13.2	0.0	0.5	19.1	1.3	4.9	8.8	0.7	2.0	6.4	4.2
Cycle Q Clear(g_c), s	1.3	13.2	0.0	0.5	19.1	1.3	4.9	8.8	0.7	2.0	6.4	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	914		528	893	834	284	279	254	234	228	207
V/C Ratio(X)	0.13	0.45		0.04	0.59	0.06	0.41	0.65	0.06	0.20	0.56	0.38
Avail Cap(c_a), veh/h	506	914		642	893	834	322	286	260	319	281	255
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)	0.96	0.96	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9	11.5	0.0	9.2	13.9	9.8	29.7	35.3	31.8	31.2	36.4	35.5
Incr Delay (d2), s/veh	0.1	1.5	0.0	0.0	2.8	0.1	0.9	6.8	0.2	0.4	4.5	2.5
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(95%),veh/lr	0.8	8.4	0.0	0.3	11.9	0.8	3.8	7.5	0.5	1.6	5.2	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	13.0	0.0	9.2	16.7	9.9	30.6	42.1	32.0	31.6	40.9	37.9
LnGrp LOS	B	B		A	B	A	C	D	C	C	D	D
Approach Vol, veh/h		465	A		593			310			254	
Approach Delay, s/veh		12.6			15.9			37.3			38.3	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	55.6	10.1	18.2	8.1	53.6	7.6	20.6				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.0	3.5	5.0	3.5	6.0				
Max Green Setting (Gmax), s	3.5	40.0	8.5	15.0	8.5	40.0	8.5	15.0				
Max Q Clear Time (g_c+1/2), s	12.5	15.2	6.9	8.4	3.3	21.1	4.0	10.8				
Green Ext Time (p_c), s	0.0	2.8	0.0	0.8	0.0	3.6	0.0	0.6				

### Intersection Summary

HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

### Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC  
20: Sixth Street & Liberty Avenue

11/11/2022

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖	↗		↔			↖	↗
Traffic Vol, veh/h	290	240	10	1	220	55	1	5	5	30	10	135
Future Vol, veh/h	290	240	10	1	220	55	1	5	5	30	10	135
Conflicting Peds, #/hr	4	0	7	7	0	4	7	0	7	4	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	90	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	6	6	6	12	12	12	0	0	0	2	2	2
Mvmt Flow	354	293	12	1	268	67	1	6	6	37	12	165

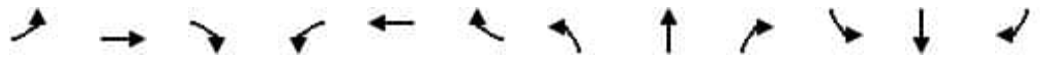
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	339	0	0	312	0	0	1413	1355	313	1294	1294	279
Stage 1	-	-	-	-	-	-	1014	1014	-	274	274	-
Stage 2	-	-	-	-	-	-	399	341	-	1020	1020	-
Critical Hdwy	4.16	-	-	4.22	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.308	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1198	-	-	1194	-	-	117	151	732	139	163	760
Stage 1	-	-	-	-	-	-	290	319	-	732	683	-
Stage 2	-	-	-	-	-	-	631	642	-	285	314	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1193	-	-	1186	-	-	64	105	722	101	113	752
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	105	-	101	113	-
Stage 1	-	-	-	-	-	-	203	223	-	513	680	-
Stage 2	-	-	-	-	-	-	480	639	-	192	219	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5			0			30.1			23.9		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	157	1193	-	-	1186	-	-	104	752
HCM Lane V/C Ratio	0.085	0.296	-	-	0.001	-	-	0.469	0.219
HCM Control Delay (s)	30.1	9.3	-	-	8	0	-	67	11.1
HCM Lane LOS	D	A	-	-	A	A	-	F	B
HCM 95th %tile Q(veh)	0.3	1.2	-	-	0	-	-	2	0.8

HCM 6th Signalized Intersection Summary  
 23: Bluff Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Volume (veh/h)	1	420	20	55	300	5	20	15	115	10	30	10
Future Volume (veh/h)	1	420	20	55	300	5	20	15	115	10	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
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	1811	1511	1811	1781	1580	1781	1841	1695	1841	1811	1511	1811
Adj Flow Rate, veh/h	1	519	25	68	370	6	25	19	88	12	37	12
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	8	8	8	4	4	4	6	6	6
Cap, veh/h	104	805	39	651	873	14	292	169	318	150	205	57
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	0	1429	69	820	1550	25	627	821	1550	126	998	275
Grp Volume(v), veh/h	545	0	0	68	0	376	44	0	88	61	0	0
Grp Sat Flow(s),veh/h/ln	1498	0	0	820	0	1575	1448	0	1550	1399	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	1.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.6	0.0	0.0	1.5	0.0	4.7	0.7	0.0	1.7	1.2	0.0	0.0
Prop In Lane	0.00		0.05	1.00		0.02	0.57		1.00	0.20		0.20
Lane Grp Cap(c), veh/h	948	0	0	651	0	887	461	0	318	412	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.10	0.00	0.42	0.10	0.00	0.28	0.15	0.00	0.00
Avail Cap(c_a), veh/h	2397	0	0	1445	0	2413	937	0	851	872	0	0
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.2	0.0	0.0	3.6	0.0	4.3	11.2	0.0	11.6	11.4	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.1	0.0	0.7	0.1	0.0	0.5	0.2	0.0	0.0
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(95%),veh/ln	3.0	0.0	0.0	0.3	0.0	1.7	0.4	0.0	0.9	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.0	0.0	3.8	0.0	5.0	11.3	0.0	12.0	11.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		545			444			132				61
Approach Delay, s/veh		6.4			4.8			11.8				11.6
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.5		11.1		23.5		11.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		53.0		19.0		53.0		19.0				
Max Q Clear Time (g_c+I1), s		10.6		3.2		6.7		3.7				
Green Ext Time (p_c), s		8.9		0.2		6.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

HCM 6th TWSC  
29: Milwaukee Road & White Avenue

11/11/2022

Intersection						
Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	385	55	90	395	65	100
Future Vol, veh/h	385	55	90	395	65	100
Conflicting Peds, #/hr	0	1	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	5	5	3	3
Mvmt Flow	423	60	99	434	71	110

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	484	0	1087
Stage 1	-	-	-	-	454
Stage 2	-	-	-	-	633
Critical Hdwy	-	-	4.15	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.245	-	3.527
Pot Cap-1 Maneuver	-	-	1063	-	238
Stage 1	-	-	-	-	638
Stage 2	-	-	-	-	527
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1062	-	215
Mov Cap-2 Maneuver	-	-	-	-	215
Stage 1	-	-	-	-	637
Stage 2	-	-	-	-	477

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	25.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	352	-	-	1062	-
HCM Lane V/C Ratio	0.515	-	-	0.093	-
HCM Control Delay (s)	25.6	-	-	8.7	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	2.8	-	-	0.3	-

# HCM 6th Signalized Intersection Summary

## 31: Prairie Avenue & White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	355	5	20	435	50	20	205	30	65	155	105
Future Volume (veh/h)	60	355	5	20	435	50	20	205	30	65	155	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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	1826	1619	1826	1826	1619	1826	1870	1659	1870	1856	1646	1856
Adj Flow Rate, veh/h	71	418	6	24	512	59	24	241	35	76	182	124
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	3	3	3
Cap, veh/h	307	747	11	417	629	72	275	297	43	259	297	202
Arrive On Green	0.05	0.47	0.47	0.03	0.44	0.44	0.21	0.21	0.21	0.06	0.33	0.33
Sat Flow, veh/h	1739	1592	23	1739	1425	164	1070	1416	206	1767	911	621
Grp Volume(v), veh/h	71	0	424	24	0	571	24	0	276	76	0	306
Grp Sat Flow(s),veh/h/ln	1739	0	1615	1739	0	1589	1070	0	1621	1767	0	1532
Q Serve(g_s), s	1.4	0.0	12.7	0.5	0.0	21.1	1.3	0.0	10.9	2.1	0.0	11.3
Cycle Q Clear(g_c), s	1.4	0.0	12.7	0.5	0.0	21.1	4.8	0.0	10.9	2.1	0.0	11.3
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.13	1.00		0.41
Lane Grp Cap(c), veh/h	307	0	758	417	0	702	275	0	340	259	0	499
V/C Ratio(X)	0.23	0.00	0.56	0.06	0.00	0.81	0.09	0.00	0.81	0.29	0.00	0.61
Avail Cap(c_a), veh/h	367	0	984	525	0	968	385	0	506	317	0	705
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.5	0.0	12.9	10.5	0.0	16.4	24.4	0.0	25.3	18.8	0.0	19.1
Incr Delay (d2), s/veh	0.4	0.0	1.4	0.1	0.0	5.9	0.1	0.0	6.1	0.6	0.0	1.2
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(95%),veh/ln	1.0	0.0	7.9	0.3	0.0	12.7	0.6	0.0	8.1	1.6	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	14.2	10.6	0.0	22.3	24.6	0.0	31.4	19.4	0.0	20.3
LnGrp LOS	B	A	B	B	A	C	C	A	C	B	A	C
Approach Vol, veh/h		495			595			300			382	
Approach Delay, s/veh		14.1			21.8			30.9			20.2	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	35.6		25.9	7.7	33.7	7.8	18.1				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	41.0		31.0	6.0	41.0	6.0	21.0				
Max Q Clear Time (g_c+I1), s	2.5	14.7		13.3	3.4	23.1	4.1	12.9				
Green Ext Time (p_c), s	0.0	5.5		1.8	0.0	6.6	0.0	1.1				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				20.8								
HCM 6th LOS				C								

HCM 6th TWSC  
 34: Wisconsin Avenue & White Avenue

11/11/2022

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	405	5	5	550	15	5	35	1	10	25	15
Future Vol, veh/h	10	405	5	5	550	15	5	35	1	10	25	15
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	1	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	4	4	4	5	5	5	0	0	0	4	4	4
Mvmt Flow	12	476	6	6	647	18	6	41	1	12	29	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	667	0	0	483	0	0	1198	1183	482	1196	1177	660
Stage 1	-	-	-	-	-	-	504	504	-	670	670	-
Stage 2	-	-	-	-	-	-	694	679	-	526	507	-
Critical Hdwy	4.14	-	-	4.15	-	-	7.1	6.5	6.2	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.245	-	-	3.5	4	3.3	3.536	4.036	3.336
Pot Cap-1 Maneuver	913	-	-	1064	-	-	164	191	588	161	189	460
Stage 1	-	-	-	-	-	-	554	544	-	443	452	-
Stage 2	-	-	-	-	-	-	436	454	-	532	536	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	911	-	-	1063	-	-	135	185	586	130	183	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	185	-	130	183	-
Stage 1	-	-	-	-	-	-	543	534	-	434	447	-
Stage 2	-	-	-	-	-	-	387	449	-	480	526	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			32.2			29.8		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	911	-	-	1063	-	-	203
HCM Lane V/C Ratio	0.268	0.013	-	-	0.006	-	-	0.29
HCM Control Delay (s)	32.2	9	0	-	8.4	0	-	29.8
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1	0	-	-	0	-	-	1.2

HCM 6th Signalized Intersection Summary  
 2: Hackett Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	10	355	155	25	560	45	180	85	45	25	105	50
Future Volume (veh/h)	10	355	155	25	560	45	180	85	45	25	105	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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	1826	1682	1826	1841	1632	1841	1870	1560	1870	1841	1536	1841
Adj Flow Rate, veh/h	11	394	107	28	622	50	200	94	50	28	117	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	4	4	4
Cap, veh/h	92	715	664	99	619	49	624	367	195	117	178	77
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.12	0.38	0.38	0.20	0.20	0.20
Sat Flow, veh/h	13	1662	1544	28	1440	113	1781	958	509	112	903	392
Grp Volume(v), veh/h	405	0	107	700	0	0	200	0	144	201	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	1544	1581	0	0	1781	0	1467	1407	0	0
Q Serve(g_s), s	0.0	0.0	1.8	8.5	0.0	0.0	3.5	0.0	2.9	2.1	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	1.8	18.5	0.0	0.0	3.5	0.0	2.9	5.7	0.0	0.0
Prop In Lane	0.03		1.00	0.04		0.07	1.00		0.35	0.14		0.28
Lane Grp Cap(c), veh/h	807	0	664	767	0	0	624	0	563	373	0	0
V/C Ratio(X)	0.50	0.00	0.16	0.91	0.00	0.00	0.32	0.00	0.26	0.54	0.00	0.00
Avail Cap(c_a), veh/h	807	0	664	767	0	0	686	0	631	692	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.2	0.0	7.5	12.4	0.0	0.0	9.9	0.0	9.1	16.1	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.2	15.8	0.0	0.0	0.1	0.0	0.2	1.2	0.0	0.0
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(95%),veh/ln	4.4	0.0	0.9	13.3	0.0	0.0	2.0	0.0	1.4	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	7.7	28.2	0.0	0.0	10.0	0.0	9.3	17.3	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		512			700			344			201	
Approach Delay, s/veh		9.7			28.2			9.7			17.3	
Approach LOS		A			C			A			B	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		22.5	8.0	12.5		22.5		20.5				
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		18.5	6.5	18.5		18.5		18.5				
Max Q Clear Time (g_c+I1), s		9.8	5.5	7.7		20.5		4.9				
Green Ext Time (p_c), s		3.3	0.0	0.8		0.0		0.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.9								
HCM 6th LOS				B								

# HCM 6th Signalized Intersection Summary

## 4: Fourth Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	25	20	295	20	55	5	420	95	5	5	140	35
Future Volume (veh/h)	25	20	295	20	55	5	420	95	5	5	140	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.95	0.97		0.95	0.97		0.97	0.94		0.92
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		No		No
Adj Sat Flow, veh/h/ln	1781	1641	1781	1900	1585	1900	1841	1632	1841	1900	1585	1900
Adj Flow Rate, veh/h	36	29	265	29	80	7	609	138	7	7	203	51
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	8	8	8	0	0	0	4	4	4	0	0	0
Cap, veh/h	257	173	787	130	269	20	863	946	48	71	296	73
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.29	0.61	0.61	0.25	0.25	0.25
Sat Flow, veh/h	647	721	1436	201	1122	85	1753	1538	78	13	1190	292
Grp Volume(v), veh/h	65	0	265	116	0	0	609	0	145	261	0	0
Grp Sat Flow(s),veh/h/ln	1369	0	1436	1408	0	0	1753	0	1616	1495	0	0
Q Serve(g_s), s	0.0	0.0	5.8	0.0	0.0	0.0	12.3	0.0	2.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	5.8	3.4	0.0	0.0	12.3	0.0	2.1	8.7	0.0	0.0
Prop In Lane	0.55		1.00	0.25		0.06	1.00		0.05	0.03		0.20
Lane Grp Cap(c), veh/h	430	0	787	419	0	0	863	0	994	439	0	0
V/C Ratio(X)	0.15	0.00	0.34	0.28	0.00	0.00	0.71	0.00	0.15	0.59	0.00	0.00
Avail Cap(c_a), veh/h	566	0	939	558	0	0	1177	0	1557	690	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.6	0.0	7.4	17.2	0.0	0.0	7.5	0.0	4.5	18.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.4	0.0	0.0	1.2	0.0	0.1	1.3	0.0	0.0
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(95%),veh/ln	1.1	0.0	2.7	2.1	0.0	0.0	6.8	0.0	1.0	5.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	0.0	7.6	17.5	0.0	0.0	8.7	0.0	4.5	20.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	C	A	A
Approach Vol, veh/h		330			116			754			261	
Approach Delay, s/veh		9.4			17.5			7.9			20.1	
Approach LOS		A			B			A			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		17.2	20.1	17.7		17.2		37.8				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		19.0	26.0	23.0		19.0		53.0				
Max Q Clear Time (g_c+I1), s		7.8	14.3	10.7		5.4		4.1				
Green Ext Time (p_c), s		1.1	1.8	1.2		0.5		0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											11.2	
HCM 6th LOS											B	



# HCM 6th Signalized Intersection Summary

## 7: Fourth Street & Portland Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	245	25	210	315	320	40	200	200	265	170	15
Future Volume (veh/h)	20	245	25	210	315	320	40	200	200	265	170	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
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		No		No
Adj Sat Flow, veh/h/ln	1856	1646	1856	1885	1707	1885	1870	1693	1870	1826	1653	1826
Adj Flow Rate, veh/h	23	285	29	244	366	231	47	233	233	308	198	17
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	1	1	1	2	2	2	5	5	5
Cap, veh/h	289	370	38	402	597	558	455	382	339	457	1031	88
Arrive On Green	0.03	0.25	0.25	0.12	0.35	0.35	0.04	0.24	0.24	0.16	0.35	0.35
Sat Flow, veh/h	1767	1468	149	1795	1707	1595	1781	1609	1426	1739	2928	249
Grp Volume(v), veh/h	23	0	314	244	366	231	47	233	233	308	105	110
Grp Sat Flow(s),veh/h/ln	1767	0	1618	1795	1707	1595	1781	1609	1426	1739	1570	1606
Q Serve(g_s), s	0.7	0.0	12.6	6.5	12.4	7.7	1.4	9.0	10.4	8.7	3.3	3.3
Cycle Q Clear(g_c), s	0.7	0.0	12.6	6.5	12.4	7.7	1.4	9.0	10.4	8.7	3.3	3.3
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	289	0	407	402	597	558	455	382	339	457	553	566
V/C Ratio(X)	0.08	0.00	0.77	0.61	0.61	0.41	0.10	0.61	0.69	0.67	0.19	0.19
Avail Cap(c_a), veh/h	396	0	649	540	881	823	532	530	470	657	810	829
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(l)	1.00	0.00	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	18.7	0.0	24.2	16.3	18.8	17.2	18.5	23.7	24.2	15.8	15.7	15.7
Incr Delay (d2), s/veh	0.0	0.0	6.5	0.6	2.2	1.0	0.0	3.3	5.2	0.7	0.4	0.4
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(95%),veh/ln	0.5	0.0	9.1	4.6	8.6	5.1	1.0	6.6	7.0	5.9	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	30.7	16.8	20.9	18.3	18.6	27.0	29.4	16.4	16.1	16.1
LnGrp LOS	B	A	C	B	C	B	B	C	C	B	B	B
Approach Vol, veh/h		337			841			513			523	
Approach Delay, s/veh		29.9			19.0			27.3			16.3	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	20.6	12.6	21.6	7.0	28.6	5.8	28.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	19.0	23.0	14.0	28.0	6.0	36.0	6.0	36.0				
Max Q Clear Time (g_c+110), s	11.0	12.4	8.5	14.6	3.4	5.3	2.7	14.4				
Green Ext Time (p_c), s	0.3	3.6	0.2	2.8	0.0	2.5	0.0	6.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					22.0							
HCM 6th LOS					C							

HCM 6th Signalized Intersection Summary  
 10: Pleasant Street & Portland Avenue/White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	540	25	70	615	75	35	285	60	65	295	210
Future Volume (veh/h)	145	540	25	70	615	75	35	285	60	65	295	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.98	0.99		0.98
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	1856	1699	1856	1870	1693	1870	1841	1666	1841	1870	1693	1870
Adj Flow Rate, veh/h	153	568	16	74	647	79	37	300	63	68	311	221
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
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	560	1738	841	521	1508	184	173	532	110	254	389	269
Arrive On Green	0.06	0.54	0.54	0.09	1.00	1.00	0.03	0.20	0.20	0.04	0.22	0.22
Sat Flow, veh/h	1767	3229	1562	1781	2885	352	1753	2604	538	1781	1804	1248
Grp Volume(v), veh/h	153	568	16	74	360	366	37	181	182	68	276	256
Grp Sat Flow(s),veh/h/ln	1767	1614	1562	1781	1609	1628	1753	1583	1559	1781	1609	1444
Q Serve(g_s), s	3.8	9.4	0.5	1.8	0.0	0.0	1.6	9.7	10.0	2.8	15.5	16.0
Cycle Q Clear(g_c), s	3.8	9.4	0.5	1.8	0.0	0.0	1.6	9.7	10.0	2.8	15.5	16.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.35	1.00		0.86
Lane Grp Cap(c), veh/h	560	1738	841	521	841	851	173	323	319	254	346	311
V/C Ratio(X)	0.27	0.33	0.02	0.14	0.43	0.43	0.21	0.56	0.57	0.27	0.80	0.82
Avail Cap(c_a), veh/h	676	1738	841	590	841	851	263	367	361	326	372	334
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	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	9.0	12.3	10.2	9.2	0.0	0.0	29.5	33.9	34.1	28.5	35.3	35.5
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.0	1.6	1.6	0.2	3.2	3.5	0.2	12.9	16.6
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(95%),veh/ln	2.5	6.1	0.3	1.2	0.7	0.7	1.2	7.2	7.4	2.2	11.7	11.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	12.8	10.3	9.2	1.6	1.6	29.7	37.1	37.5	28.7	48.3	52.1
LnGrp LOS	A	B	B	A	A	A	C	D	D	C	D	D
Approach Vol, veh/h		737			800			400			600	
Approach Delay, s/veh		12.0			2.3			36.6			47.7	
Approach LOS		B			A			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	55.1	7.1	24.5	9.8	53.7	8.2	23.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	41.0	41.0	8.0	22.0	12.0	37.0	8.0	22.0				
Max Q Clear Time (g_c+1), s	11.4	11.4	3.6	18.0	5.8	2.0	4.8	12.0				
Green Ext Time (p_c), s	0.0	8.2	0.0	1.9	0.1	10.7	0.0	2.6				

Intersection Summary

HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th TWSC  
11: Woodward Avenue & White Avenue

11/11/2022

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	530	135	5	710	50	5
Future Vol, veh/h	530	135	5	710	50	5
Conflicting Peds, #/hr	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	582	148	5	780	55	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	733	0	1378
Stage 1	-	-	-	-	585
Stage 2	-	-	-	-	793
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	872	-	160
Stage 1	-	-	-	-	557
Stage 2	-	-	-	-	446
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	870	-	157
Mov Cap-2 Maneuver	-	-	-	-	157
Stage 1	-	-	-	-	555
Stage 2	-	-	-	-	440

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	38
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	168	-	-	870	-
HCM Lane V/C Ratio	0.36	-	-	0.006	-
HCM Control Delay (s)	38	-	-	9.2	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

# HCM 6th Signalized Intersection Summary

## 12: White Avenue & Prince Hall Drive

11/11/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗	↖	↘	↙
Traffic Volume (veh/h)	10	525	670	20	75	45
Future Volume (veh/h)	10	525	670	20	75	45
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1646	1560	1870	1870	1870
Adj Flow Rate, veh/h	11	577	736	22	82	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	415	1339	1226	37	114	102
Arrive On Green	1.00	1.00	0.55	0.55	0.06	0.06
Sat Flow, veh/h	701	1646	1507	45	1781	1585
Grp Volume(v), veh/h	11	577	0	758	82	31
Grp Sat Flow(s),veh/h/ln	701	1646	0	1552	1781	1585
Q Serve(g_s), s	0.6	0.0	0.0	31.4	4.3	1.8
Cycle Q Clear(g_c), s	32.0	0.0	0.0	31.4	4.3	1.8
Prop In Lane	1.00			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	415	1339	0	1263	114	102
V/C Ratio(X)	0.03	0.43	0.00	0.60	0.72	0.31
Avail Cap(c_a), veh/h	415	1339	0	1263	416	370
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.89	1.00	1.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	11.2	43.6	42.4
Incr Delay (d2), s/veh	0.1	1.0	0.0	1.9	3.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.7	0.0	17.6	3.6	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.6	1.0	0.0	13.0	46.8	43.1
LnGrp LOS	A	A	A	B	D	D
Approach Vol, veh/h		588	758		113	
Approach Delay, s/veh		1.1	13.0		45.7	
Approach LOS		A	B		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		83.1		11.9		83.1
Change Period (Y+Rc), s		* 5.8		* 5.8		* 5.8
Max Green Setting (Gmax), s		* 61		* 22		* 61
Max Q Clear Time (g_c+I1), s		34.0		6.3		33.4
Green Ext Time (p_c), s		4.5		0.1		6.6
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			10.8			
HCM 6th LOS			B			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

# HCM 6th Signalized Intersection Summary

## 13: Park Avenue & White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	105	465	40	15	445	60	45	175	50	50	180	125
Future Volume (veh/h)	105	465	40	15	445	60	45	175	50	50	180	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
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	1856	1680	1856	1841	1666	1841	1870	1728	1870	1870	1728	1870
Adj Flow Rate, veh/h	111	489	0	16	468	39	47	184	33	53	189	82
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
Percent Heavy Veh, %	3	3	3	4	4	4	2	2	2	2	2	2
Cap, veh/h	567	1076		452	1014	946	175	231	210	181	235	212
Arrive On Green	0.02	0.21	0.00	0.02	0.61	0.61	0.04	0.13	0.13	0.04	0.14	0.14
Sat Flow, veh/h	1767	1680	1572	1753	1666	1555	1781	1728	1573	1781	1728	1562
Grp Volume(v), veh/h	111	489	0	16	468	39	47	184	33	53	189	82
Grp Sat Flow(s),veh/h/ln	1767	1680	1572	1753	1666	1555	1781	1728	1573	1781	1728	1562
Q Serve(g_s), s	2.1	24.1	0.0	0.3	14.5	1.0	2.1	9.8	1.8	2.4	10.1	4.5
Cycle Q Clear(g_c), s	2.1	24.1	0.0	0.3	14.5	1.0	2.1	9.8	1.8	2.4	10.1	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	567	1076		452	1014	946	175	231	210	181	235	212
V/C Ratio(X)	0.20	0.45		0.04	0.46	0.04	0.27	0.80	0.16	0.29	0.81	0.39
Avail Cap(c_a), veh/h	665	1076		568	1014	946	258	327	298	261	327	296
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.3	23.0	0.0	9.1	10.1	7.5	34.1	39.9	36.4	34.0	39.8	37.4
Incr Delay (d2), s/veh	0.1	1.2	0.0	0.0	1.5	0.1	0.3	8.8	0.3	0.3	9.7	1.2
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(95%),veh/ln	1.3	16.4	0.0	0.2	9.2	0.6	1.7	8.2	1.2	1.9	8.5	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	24.2	0.0	9.1	11.6	7.5	34.4	48.7	36.8	34.3	49.5	38.6
LnGrp LOS	A	C		A	B	A	C	D	D	C	D	D
Approach Vol, veh/h		600	A		523			264			324	
Approach Delay, s/veh		21.1			11.2			44.7			44.3	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	64.8	7.6	16.9	8.7	61.8	7.8	16.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	4.0	45.0	8.0	18.0	10.0	43.0	8.0	18.0				
Max Q Clear Time (g_c+1), s	12.3	26.1	4.1	12.1	4.1	16.5	4.4	11.8				
Green Ext Time (p_c), s	0.0	5.6	0.0	0.6	0.1	6.6	0.0	0.5				

### Intersection Summary

HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

### Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC  
20: Sixth Street & Liberty Avenue

11/11/2022

Intersection												
Int Delay, s/veh	18.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	260	275	5	5	400	110	5	5	5	60	15	265
Future Vol, veh/h	260	275	5	5	400	110	5	5	5	60	15	265
Conflicting Peds, #/hr	9	0	4	4	0	9	4	0	4	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	90	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	4	4	4	6	6	6	2	2	2
Mvmt Flow	302	320	6	6	465	128	6	6	6	70	17	308

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	602	0	0	330	0	0	1644	1545	336	1428	1420	483
Stage 1	-	-	-	-	-	-	931	931	-	486	486	-
Stage 2	-	-	-	-	-	-	713	614	-	942	934	-
Critical Hdwy	4.16	-	-	4.14	-	-	7.16	6.56	6.26	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.236	-	-	3.554	4.054	3.354	3.518	4.018	3.318
Pot Cap-1 Maneuver	956	-	-	1218	-	-	78	112	697	113	136	584
Stage 1	-	-	-	-	-	-	315	340	-	563	551	-
Stage 2	-	-	-	-	-	-	417	477	-	316	345	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	948	-	-	1213	-	-	23	75	688	78	91	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	23	75	-	78	91	-
Stage 1	-	-	-	-	-	-	214	231	-	381	542	-
Stage 2	-	-	-	-	-	-	184	469	-	206	234	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.1			0.1			108.6			62.8		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	51	948	-	-	1213	-	-	80	574
HCM Lane V/C Ratio	0.342	0.319	-	-	0.005	-	-	1.09	0.537
HCM Control Delay (s)	108.6	10.6	-	-	8	0	-	220.2	18.3
HCM Lane LOS	F	B	-	-	A	A	-	F	C
HCM 95th %tile Q(veh)	1.2	1.4	-	-	0	-	-	6.2	3.2

HCM 6th Signalized Intersection Summary  
 23: Bluff Street & Liberty Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Volume (veh/h)	5	435	25	80	590	10	50	25	95	10	50	20
Future Volume (veh/h)	5	435	25	80	590	10	50	25	95	10	50	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
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	1811	1511	1811	1856	1646	1856	1885	1736	1885	1781	1486	1781
Adj Flow Rate, veh/h	6	537	31	99	728	12	62	31	73	12	62	25
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	3	3	3	1	1	1	8	8	8
Cap, veh/h	95	825	47	633	947	16	324	129	327	119	199	72
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	4	1406	80	836	1614	27	820	622	1575	75	959	349
Grp Volume(v), veh/h	574	0	0	99	0	740	93	0	73	99	0	0
Grp Sat Flow(s),veh/h/ln	1490	0	0	836	0	1641	1443	0	1575	1382	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	13.2	0.0	0.0	1.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	0.0	2.8	0.0	13.2	1.8	0.0	1.5	2.3	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.02	0.67		1.00	0.12		0.25
Lane Grp Cap(c), veh/h	968	0	0	633	0	963	454	0	327	391	0	0
V/C Ratio(X)	0.59	0.00	0.00	0.16	0.00	0.77	0.21	0.00	0.22	0.25	0.00	0.00
Avail Cap(c_a), veh/h	2106	0	0	1280	0	2232	829	0	768	767	0	0
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.4	0.0	0.0	3.9	0.0	6.1	12.9	0.0	12.8	13.1	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	1.3	0.2	0.0	0.3	0.3	0.0	0.0
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(95%),veh/ln	3.3	0.0	0.0	0.4	0.0	5.0	1.1	0.0	0.9	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	4.0	0.0	7.4	13.1	0.0	13.2	13.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		574			839			166				99
Approach Delay, s/veh		6.0			7.0			13.2				13.5
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.9		12.1		26.9		12.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		53.0		19.0		53.0		19.0				
Max Q Clear Time (g_c+I1), s		12.0		4.3		15.2		3.8				
Green Ext Time (p_c), s		4.8		0.4		7.6		0.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				7.6								
HCM 6th LOS				A								

HCM 6th TWSC  
 29: Milwaukee Road & White Avenue

11/11/2022

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	460	30	125	445	25	140
Future Vol, veh/h	460	30	125	445	25	140
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	3	3	1	1
Mvmt Flow	523	34	142	506	28	159

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	557	0	1330
Stage 1	-	-	-	-	540
Stage 2	-	-	-	-	790
Critical Hdwy	-	-	4.13	-	6.41
Critical Hdwy Stg 1	-	-	-	-	5.41
Critical Hdwy Stg 2	-	-	-	-	5.41
Follow-up Hdwy	-	-	2.227	-	3.509
Pot Cap-1 Maneuver	-	-	1009	-	171
Stage 1	-	-	-	-	586
Stage 2	-	-	-	-	449
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1009	-	147
Mov Cap-2 Maneuver	-	-	-	-	147
Stage 1	-	-	-	-	586
Stage 2	-	-	-	-	386

Approach	EB	WB	NB
HCM Control Delay, s	0	2	22.8
HCM LOS			C

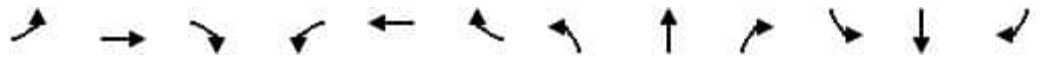
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	386	-	-	1009	-
HCM Lane V/C Ratio	0.486	-	-	0.141	-
HCM Control Delay (s)	22.8	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.6	-	-	0.5	-



# HCM 6th Signalized Intersection Summary

## 31: Prairie Avenue & White Avenue

11/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	410	5	20	395	50	15	235	30	65	245	95
Future Volume (veh/h)	110	410	5	20	395	50	15	235	30	65	245	95
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
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	1826	1619	1826	1841	1632	1841	1870	1659	1870	1900	1685	1900
Adj Flow Rate, veh/h	126	471	6	23	454	57	17	270	34	75	282	109
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	0	0	0
Cap, veh/h	315	697	9	329	565	71	236	328	41	255	400	155
Arrive On Green	0.06	0.44	0.44	0.03	0.40	0.40	0.23	0.23	0.23	0.05	0.35	0.35
Sat Flow, veh/h	1739	1595	20	1753	1421	178	992	1443	182	1810	1157	447
Grp Volume(v), veh/h	126	0	477	23	0	511	17	0	304	75	0	391
Grp Sat Flow(s),veh/h/ln	1739	0	1616	1753	0	1600	992	0	1625	1810	0	1604
Q Serve(g_s), s	2.9	0.0	16.6	0.5	0.0	19.9	1.1	0.0	12.5	2.1	0.0	14.9
Cycle Q Clear(g_c), s	2.9	0.0	16.6	0.5	0.0	19.9	7.6	0.0	12.5	2.1	0.0	14.9
Prop In Lane	1.00		0.01	1.00		0.11	1.00		0.11	1.00		0.28
Lane Grp Cap(c), veh/h	315	0	706	329	0	636	236	0	369	255	0	555
V/C Ratio(X)	0.40	0.00	0.68	0.07	0.00	0.80	0.07	0.00	0.82	0.29	0.00	0.71
Avail Cap(c_a), veh/h	338	0	952	420	0	942	355	0	565	297	0	785
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	15.9	13.3	0.0	18.8	26.8	0.0	25.9	19.1	0.0	19.9
Incr Delay (d2), s/veh	0.3	0.0	2.4	0.0	0.0	5.5	0.1	0.0	5.8	0.2	0.0	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(95%),veh/ln	1.9	0.0	10.2	0.4	0.0	12.4	0.5	0.0	9.0	1.5	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	0.0	18.3	13.3	0.0	24.3	27.0	0.0	31.7	19.3	0.0	21.6
LnGrp LOS	B	A	B	B	A	C	C	A	C	B	A	C
Approach Vol, veh/h		603			534			321				466
Approach Delay, s/veh		17.5			23.8			31.5				21.2
Approach LOS		B			C			C				C
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	35.3		28.9	9.1	32.5	8.3	20.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	41.5		34.5	5.5	41.5	5.5	24.5				
Max Q Clear Time (g_c+I1), s	2.5	18.6		16.9	4.9	21.9	4.1	14.5				
Green Ext Time (p_c), s	0.0	6.0		2.4	0.0	6.1	0.0	1.4				

### Intersection Summary

HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

HCM 6th TWSC  
 34: Wisconsin Avenue & White Avenue

11/11/2022

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	530	5	5	475	25	5	40	5	5	50	10
Future Vol, veh/h	10	530	5	5	475	25	5	40	5	5	50	10
Conflicting Peds, #/hr	4	0	5	3	0	2	5	0	3	2	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	576	5	5	516	27	5	43	5	5	54	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	547	0	0	586	0	0	1183	1163	587	1172	1152	539
Stage 1	-	-	-	-	-	-	606	606	-	544	544	-
Stage 2	-	-	-	-	-	-	577	557	-	628	608	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1022	-	-	989	-	-	166	195	510	169	198	542
Stage 1	-	-	-	-	-	-	484	487	-	523	519	-
Stage 2	-	-	-	-	-	-	502	512	-	471	486	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1018	-	-	984	-	-	124	189	506	134	192	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	189	-	134	192	-
Stage 1	-	-	-	-	-	-	474	477	-	513	513	-
Stage 2	-	-	-	-	-	-	435	506	-	416	476	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			31.2			31.5		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	191	1018	-	-	984	-	-	205
HCM Lane V/C Ratio	0.285	0.011	-	-	0.006	-	-	0.345
HCM Control Delay (s)	31.2	8.6	0	-	8.7	0	-	31.5
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-	1.5

**Appendix C: WisDOT Traffic Forecast Worksheets**

**WisDOT TRAFFIC FORECAST REPORT**

Region/COUNTY(IES): SW/Rock

Developed by: Miao Zhang

PROJECT ID(S): 0000-00-00

LOCATION: Madison Road - Park Avenue

Phone: (608) 267-5242

ROUTE(S): STH 81, STH 213

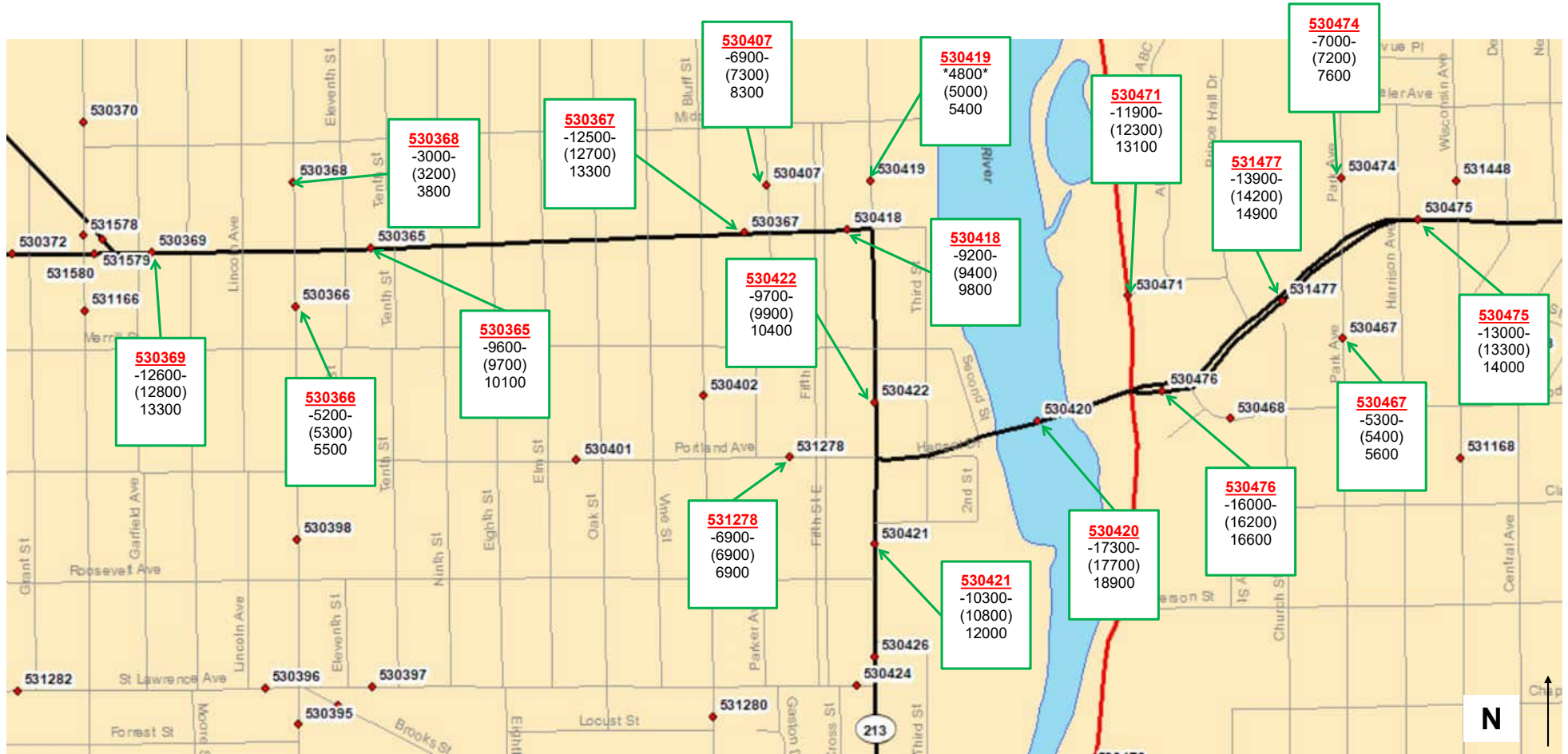
COMPLETED: 08/18/2022

E-Mail: miao.zhang@dot.wi.gov

Traffic Forecasting Section; Bureau of Planning and Economic Development; Division of Transportation Investment Management



Site(s)	Route(s)	Volume(s)	Site Growth %
530369	STH81/STH 213	13340	0.21%
530420	STH 81	18880	0.33%



SITE ID = Colored, bolded, and underlined


**NOTES ON THE FORECAST:**

- This projection assumes that no major new traffic generators will be added to the development already included in the 2010/2050 Rock Regional Travel Demand Model.
- Vehicle classification data and design values (K factors, directional splits, and percent trucks in design hours) are available here: <http://wisconsin.dot.gov/Pages/projects/data-plan/traf-fore/default.aspx>
- The 2010/2050 Rock Regional Travel Demand Model 4.2.0.0 was used to complete this forecast. The Traffic Analysis Forecasting Information System output was used as a comparison tool to check against the model output. Adjustments were made as needed.
- Roadway improvements coded within the existing plus committed (E+C) network of the 2010/2050 Rock Regional Travel Demand Model were assumed to be in place for the purposes of developing this forecast.

Symbol	Count	Symbol	Forecast
-000-	2019 Count	(000)	2027 AADT
*000*	2016 Count	000	2047 AADT

WisDOT Bureau of Planning & Economic Development  
 Traffic Forecasting Section  
 Forecast by: Miao Zhang  
 Phone: (608) 267 5242  
 Email: miao.zhang@dot.wi.gov

**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

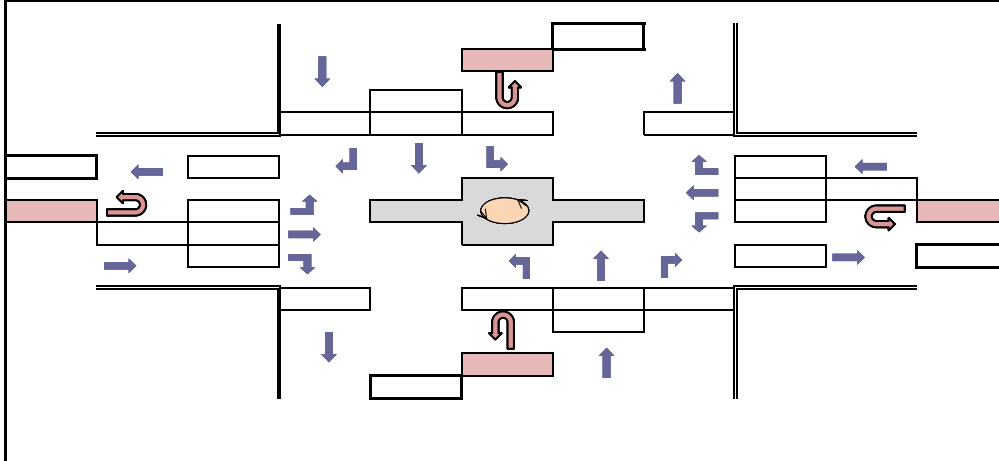
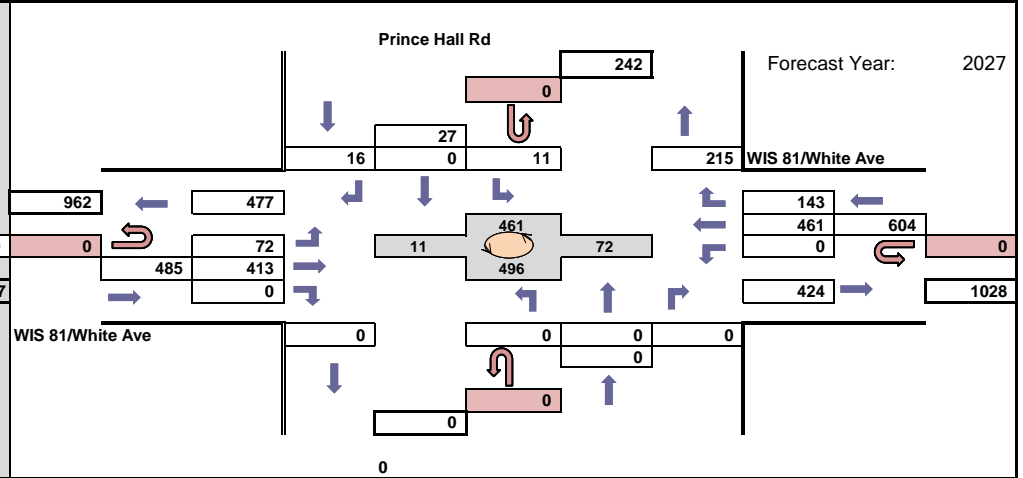
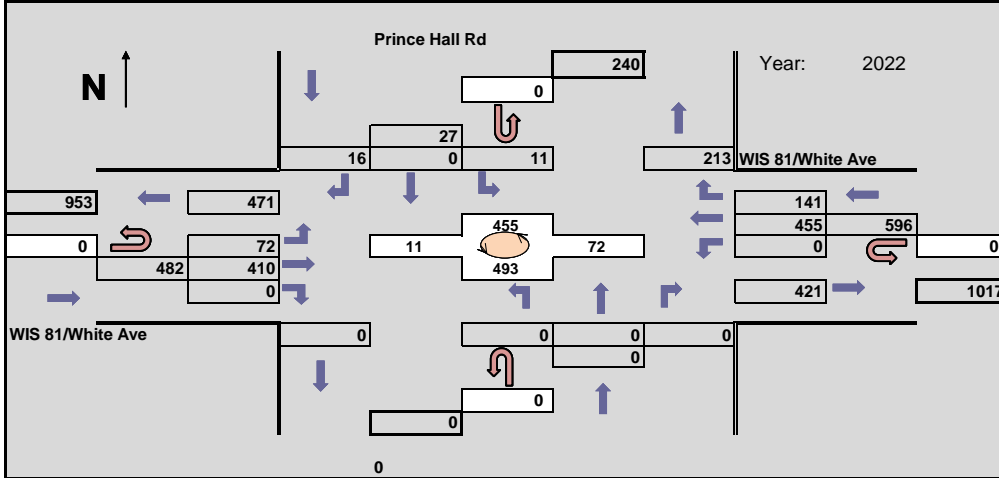
Design Hour: 7:15-8:15am

Forecast Completed: 8/25/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Prince Hall Rd

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

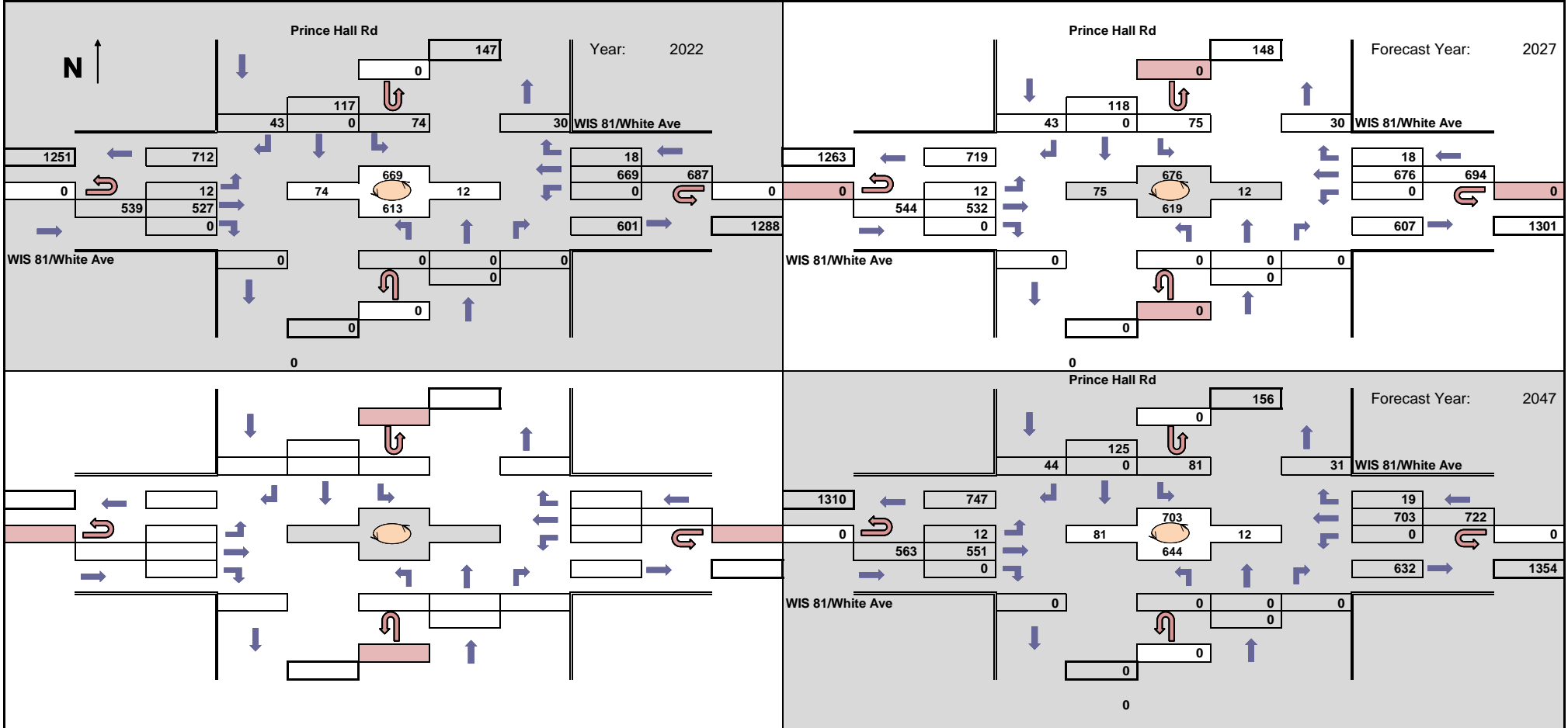
Design Hour: 3:15-4:15pm

Forecast Completed: 8/25/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Prince Hall Rd

Design Hour Turning Movement Data



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**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

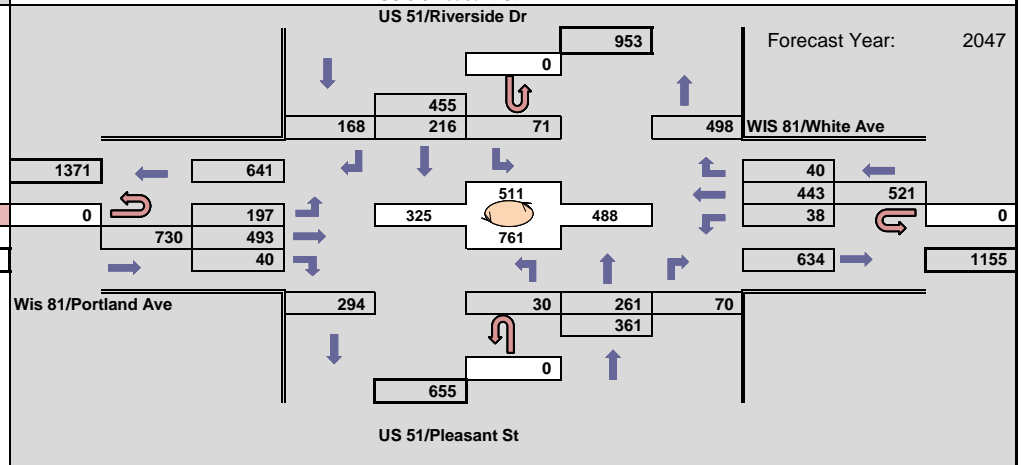
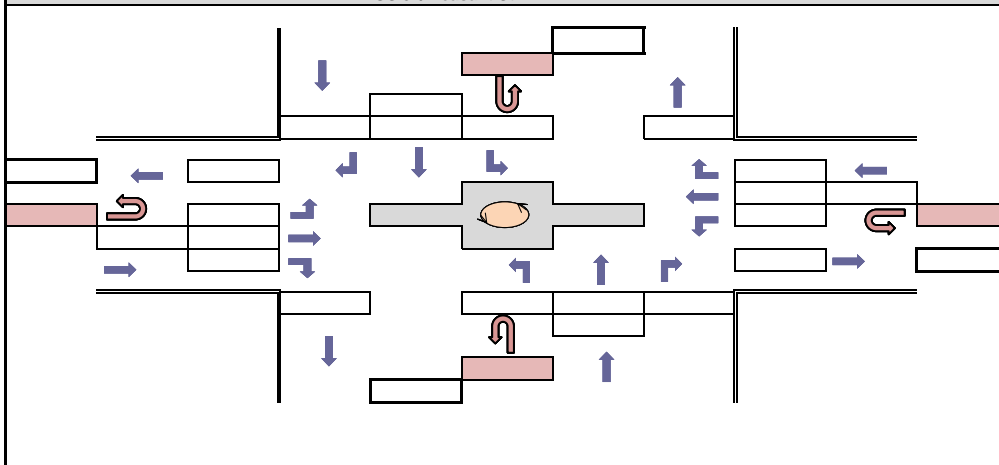
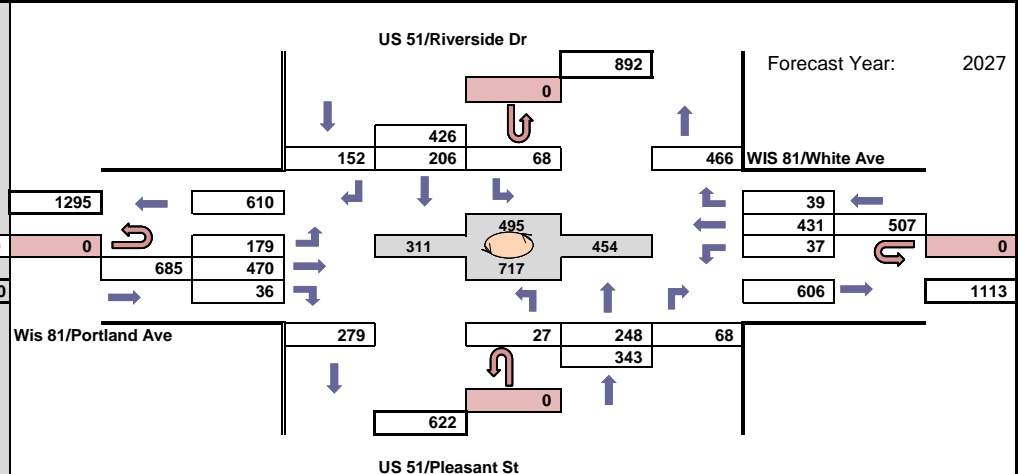
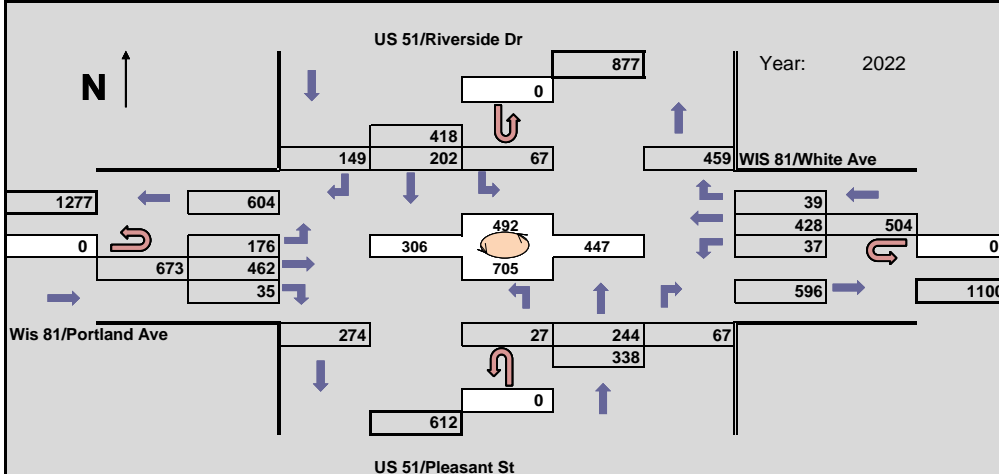
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & US 51

Design Hour Turning Movement Data



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 Email: miao.zhang@dot.wi.gov

**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

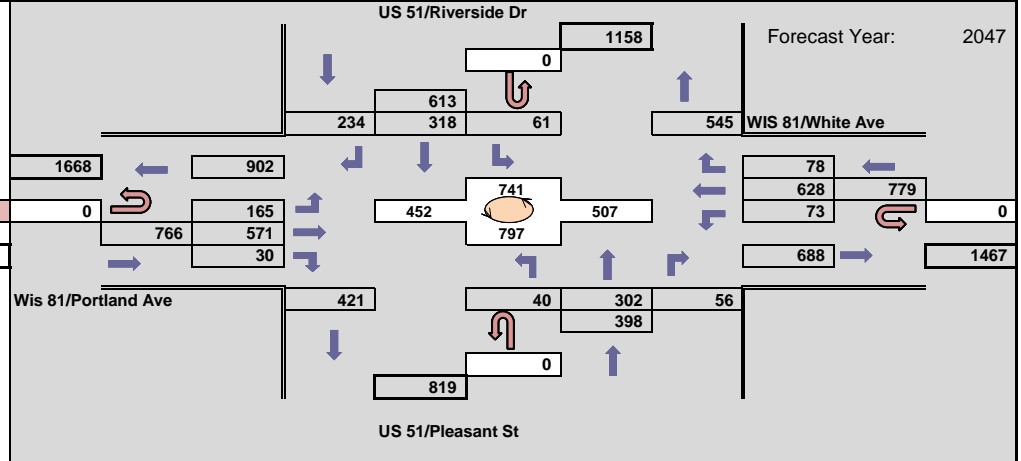
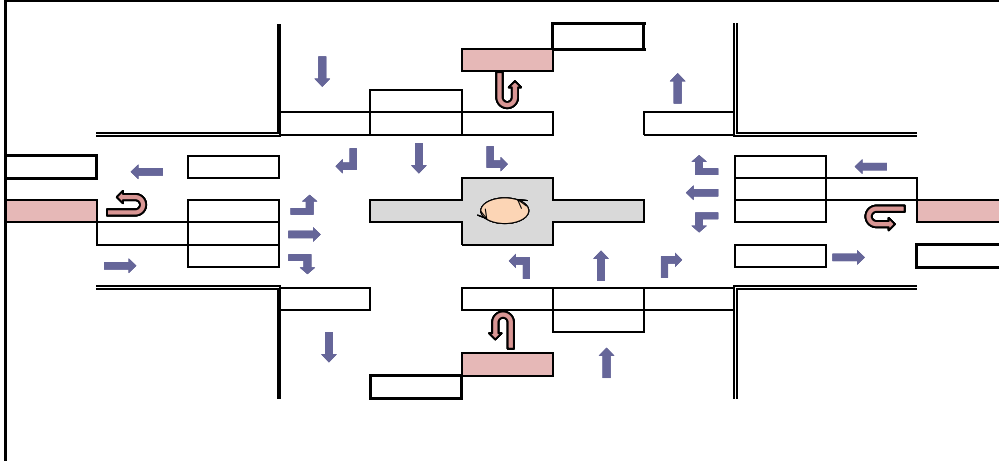
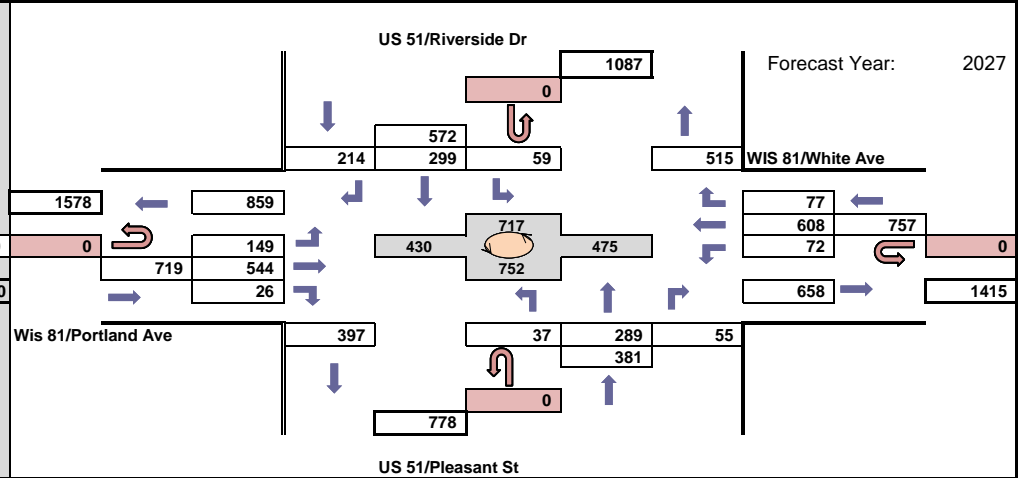
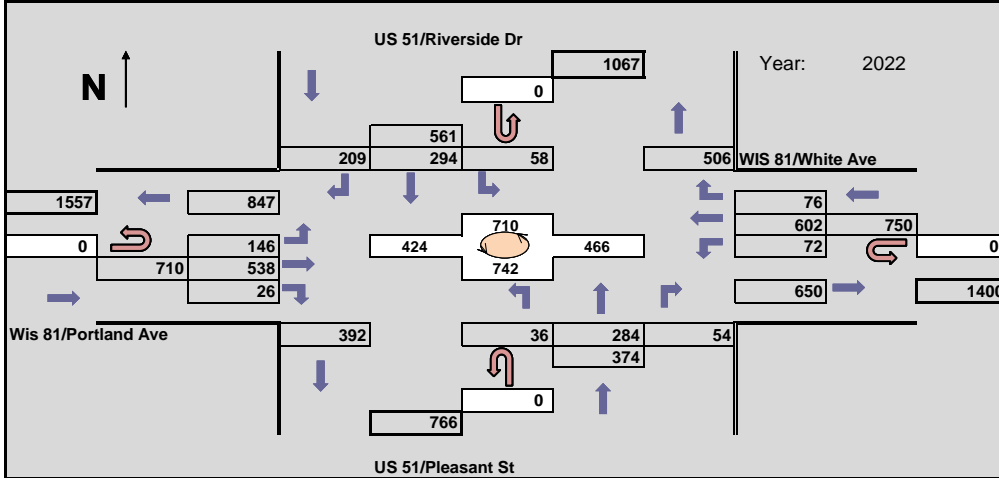
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**

Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & US 51


Design Hour Turning Movement Data





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 Email: miao.zhang@dot.wi.gov

**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

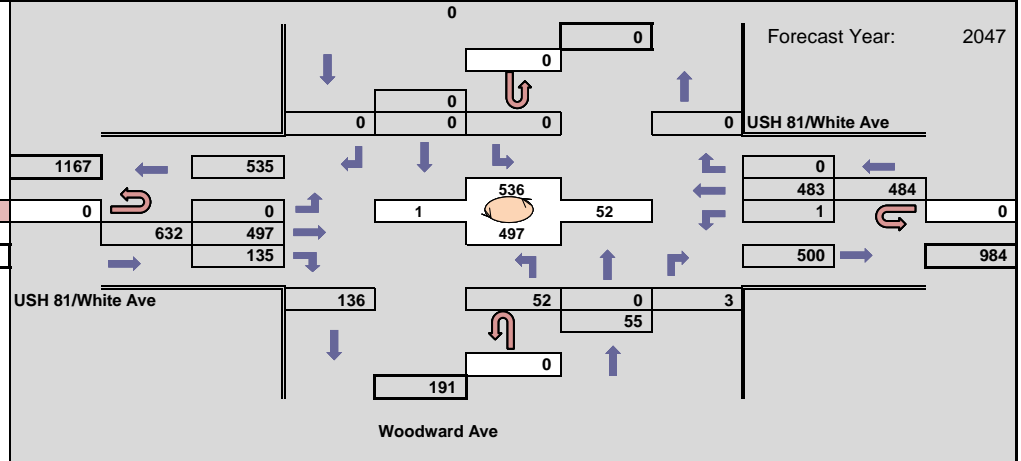
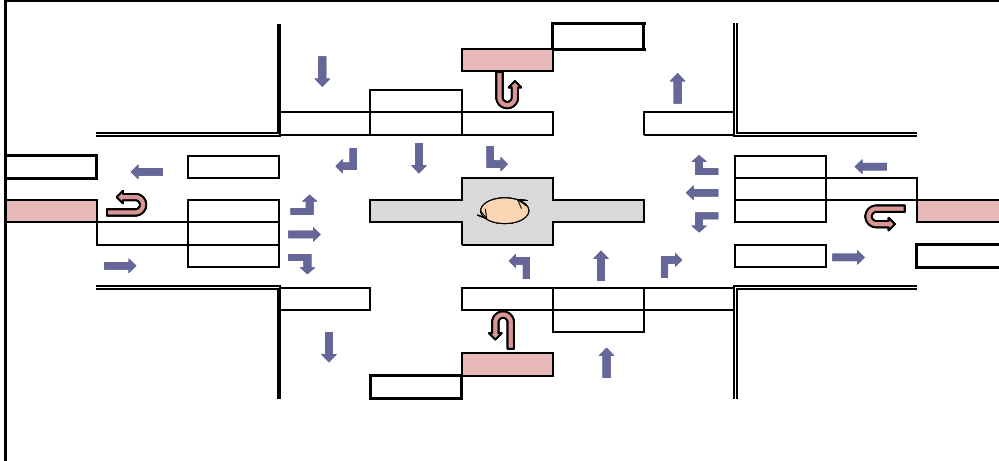
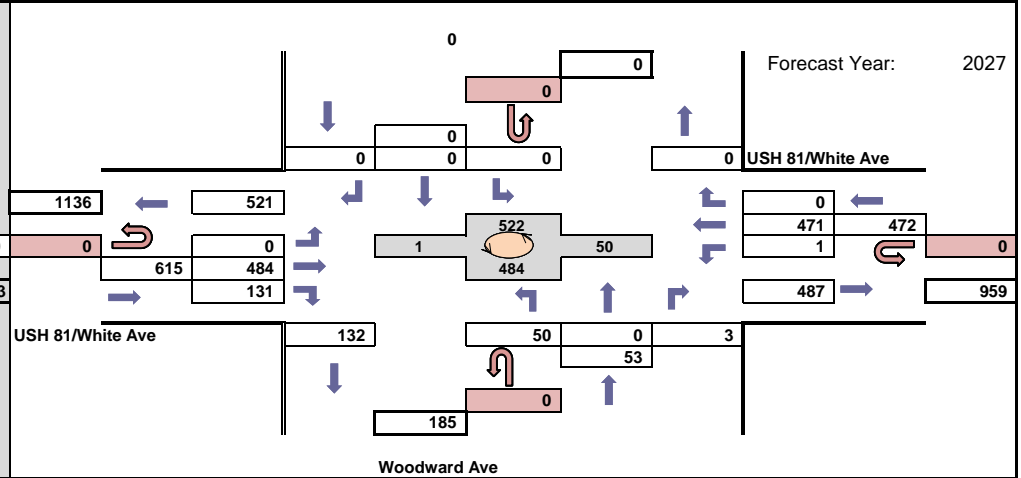
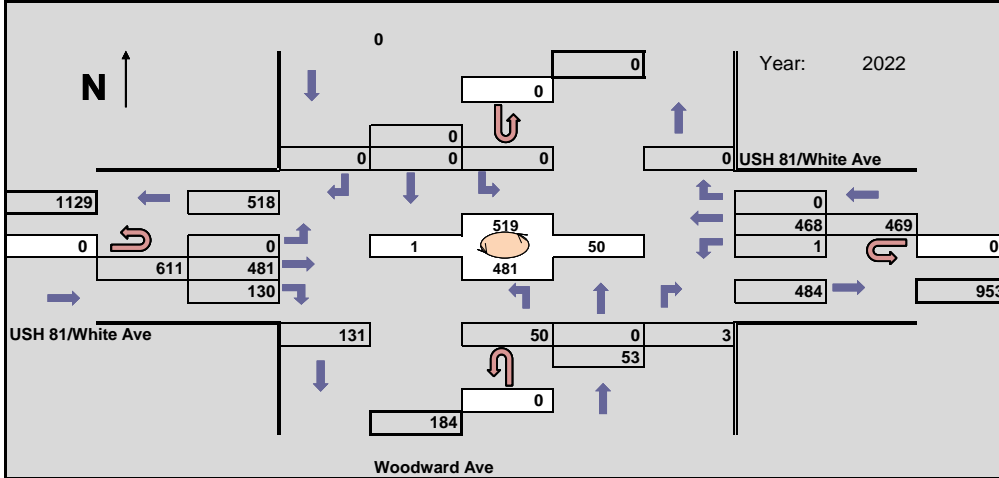
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Woodward Ave.

Design Hour Turning Movement Data



WisDOT Bureau of Planning & Economic Development  
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 Email: miao.zhang@dot.wi.gov

**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

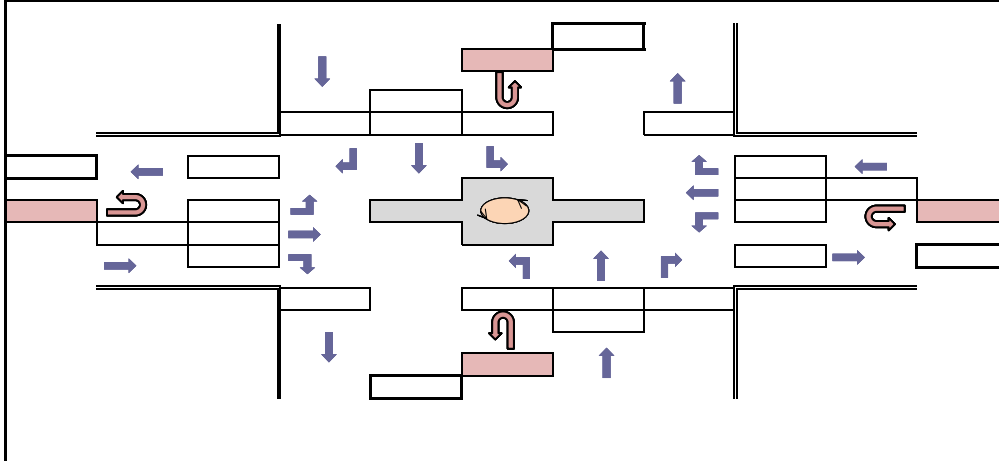
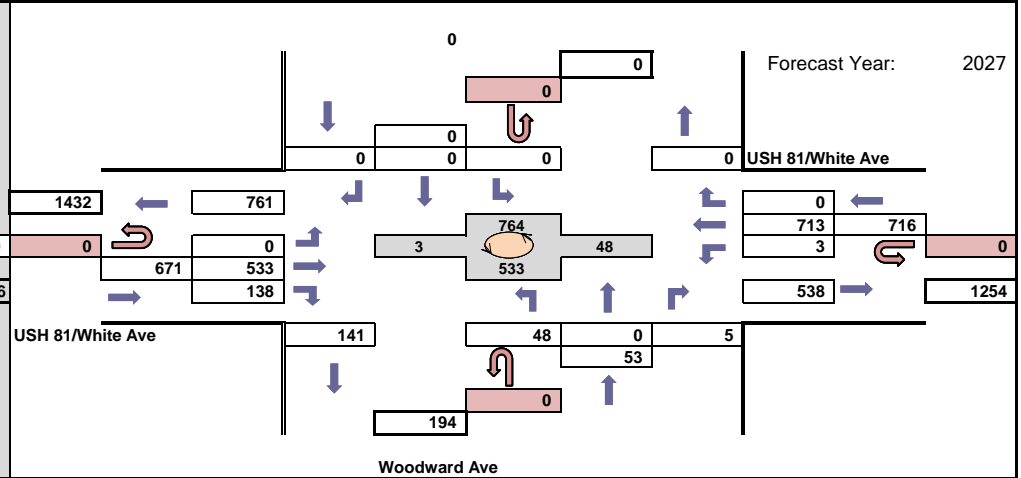
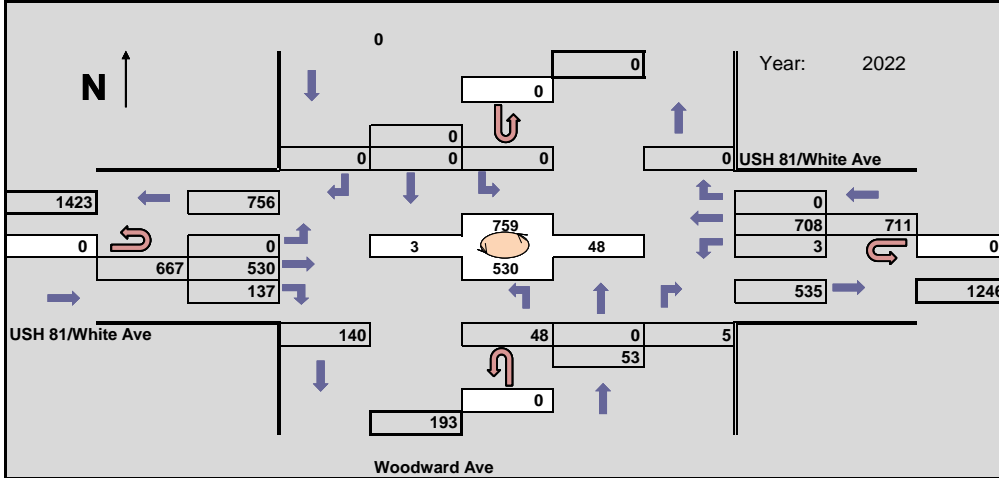
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Woodward Ave.

Design Hour Turning Movement Data



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**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

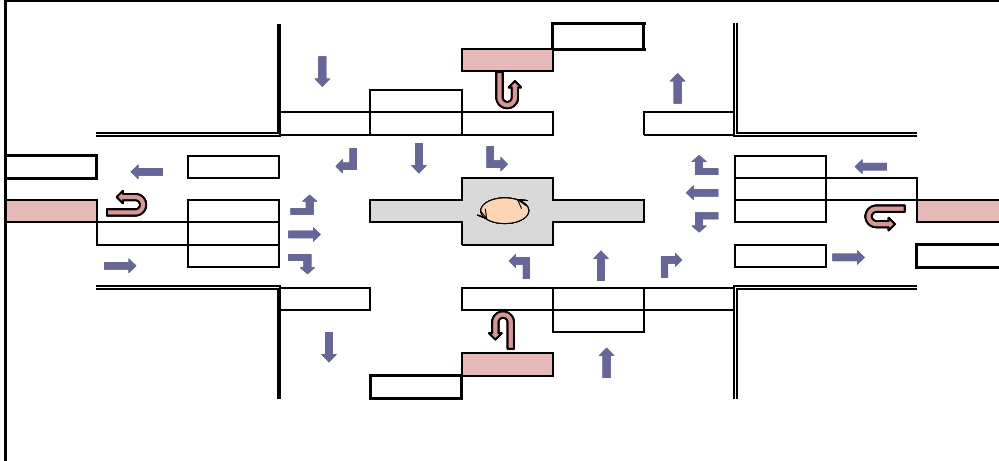
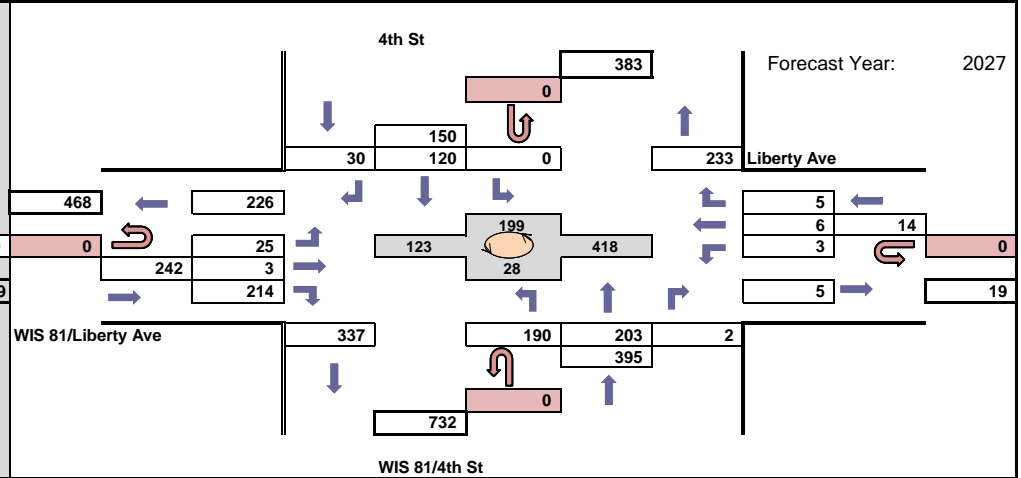
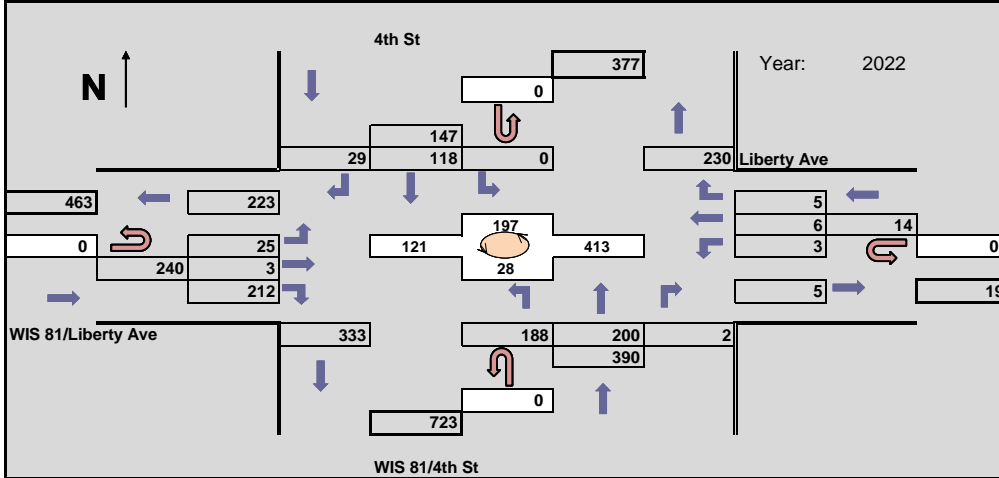
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & 4th St

Design Hour Turning Movement Data



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 Email: miao.zhang@dot.wi.gov

**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

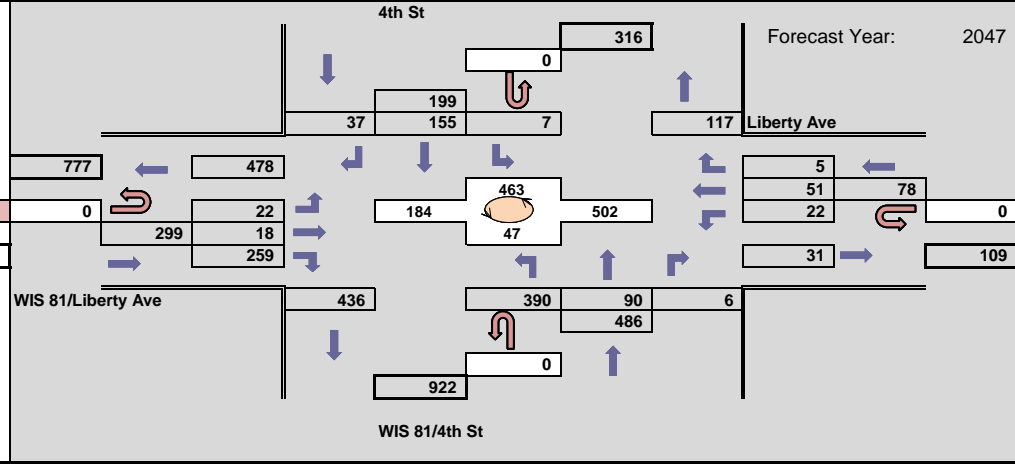
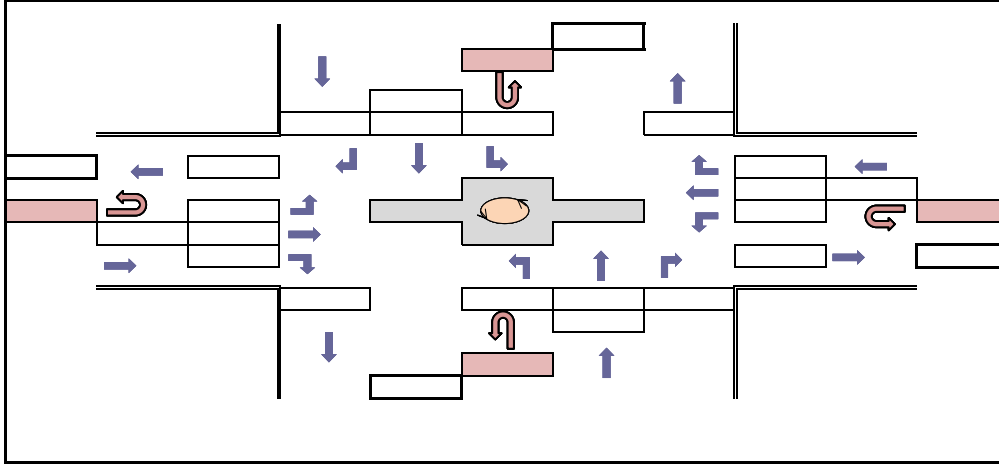
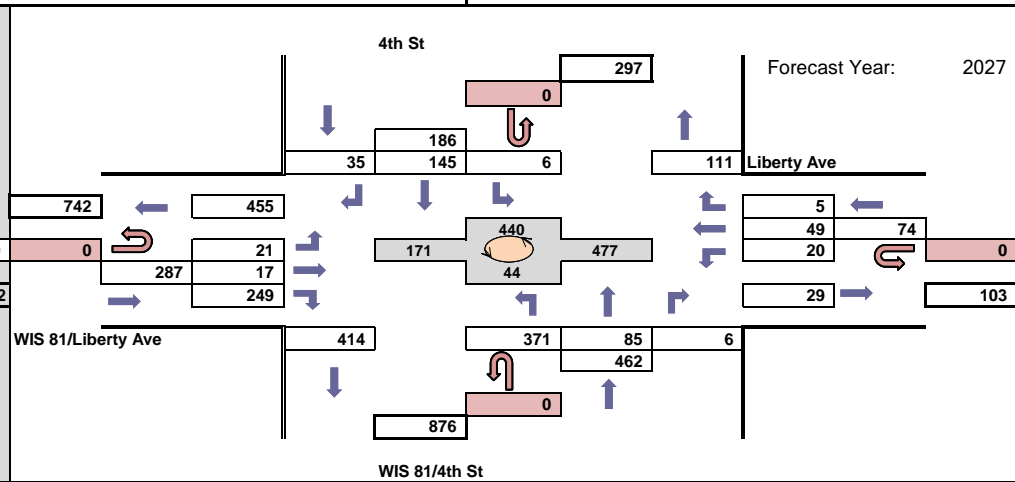
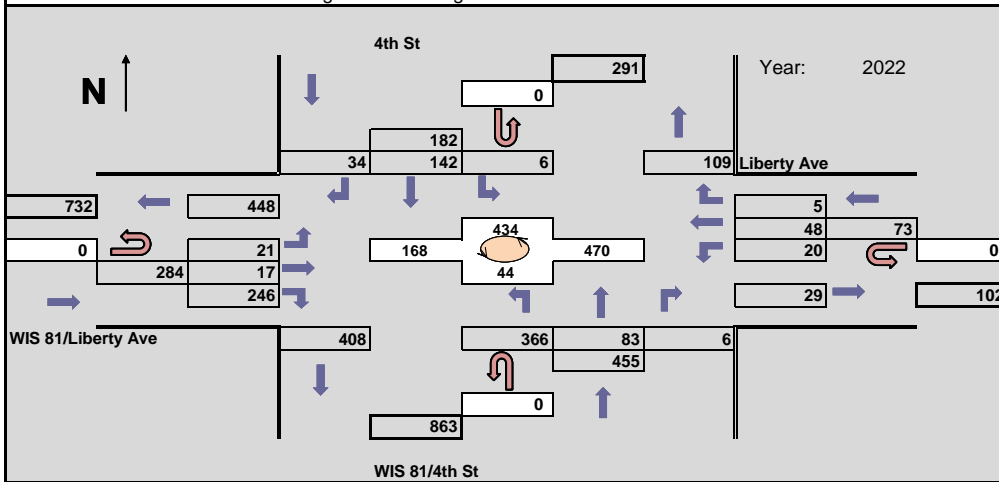
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & 4th St

Design Hour Turning Movement Data



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**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

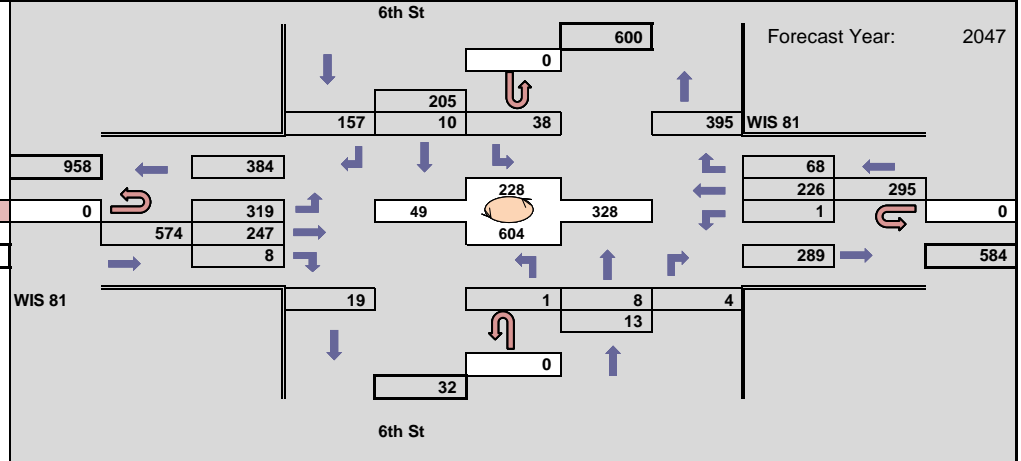
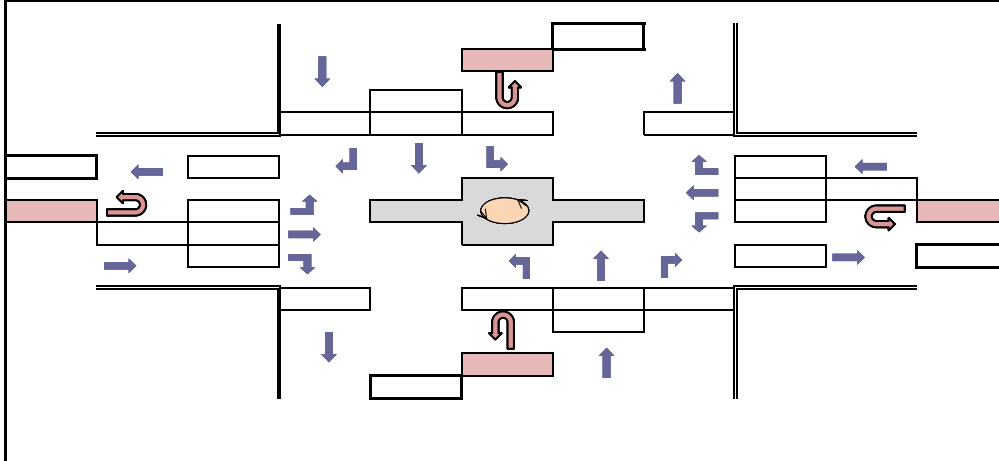
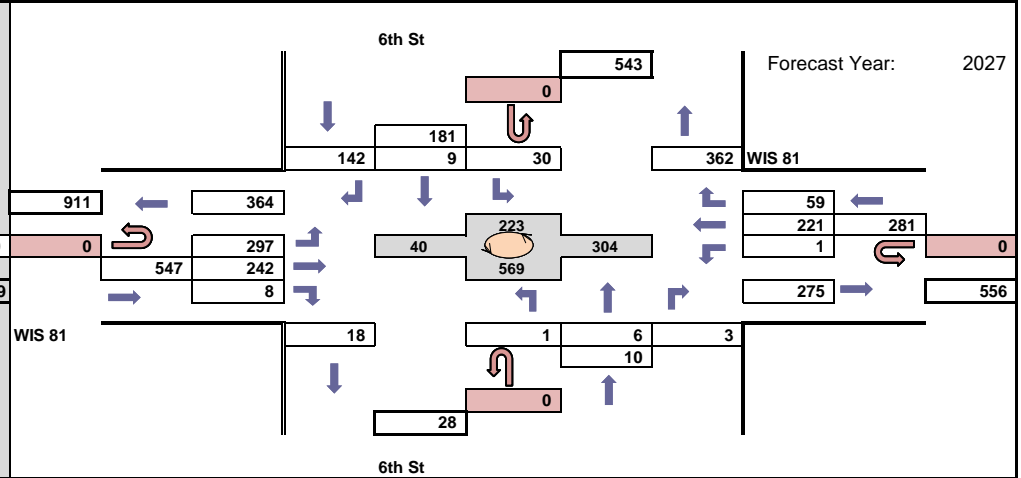
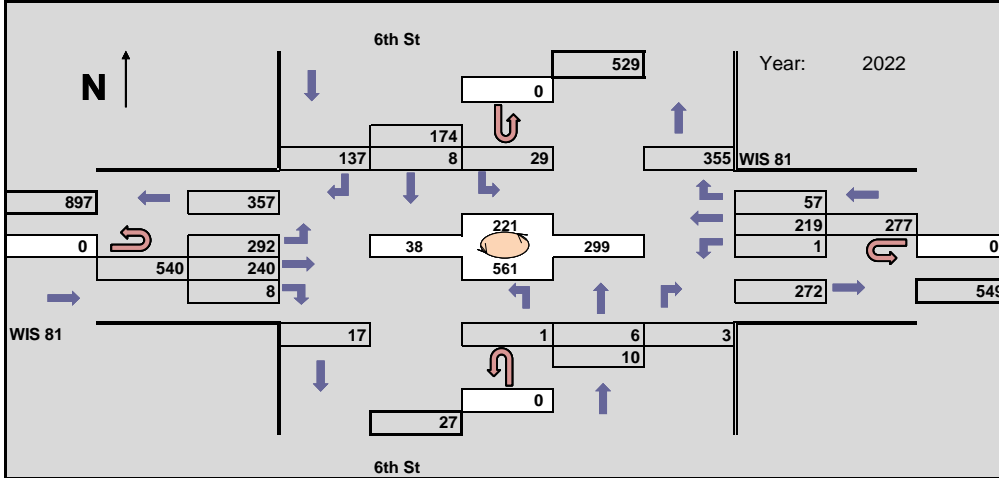
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & 6th St

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

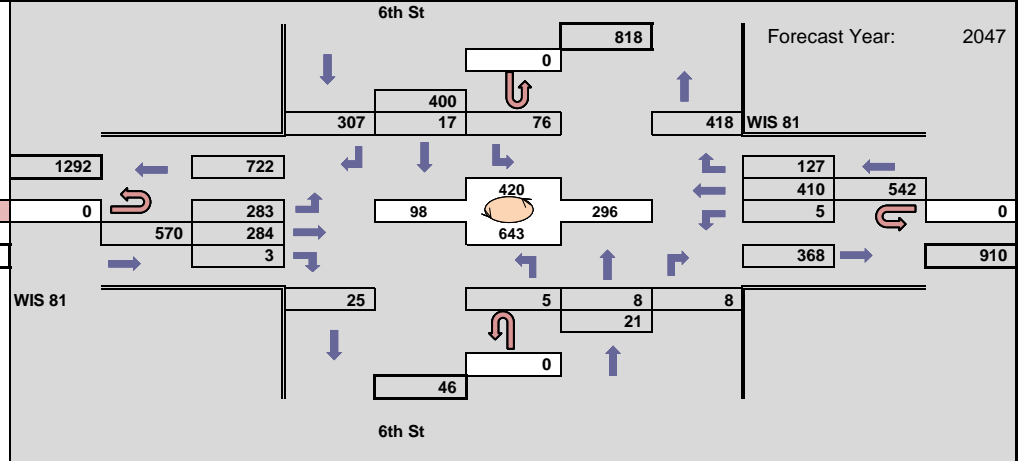
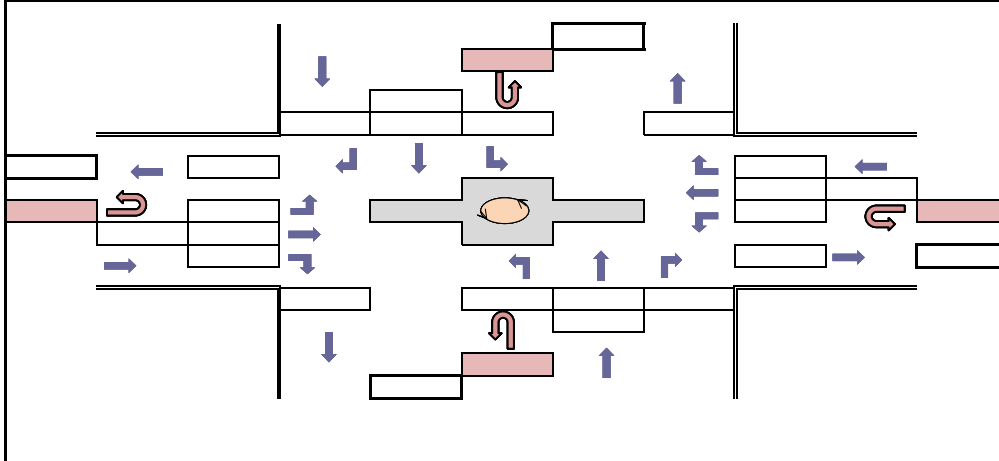
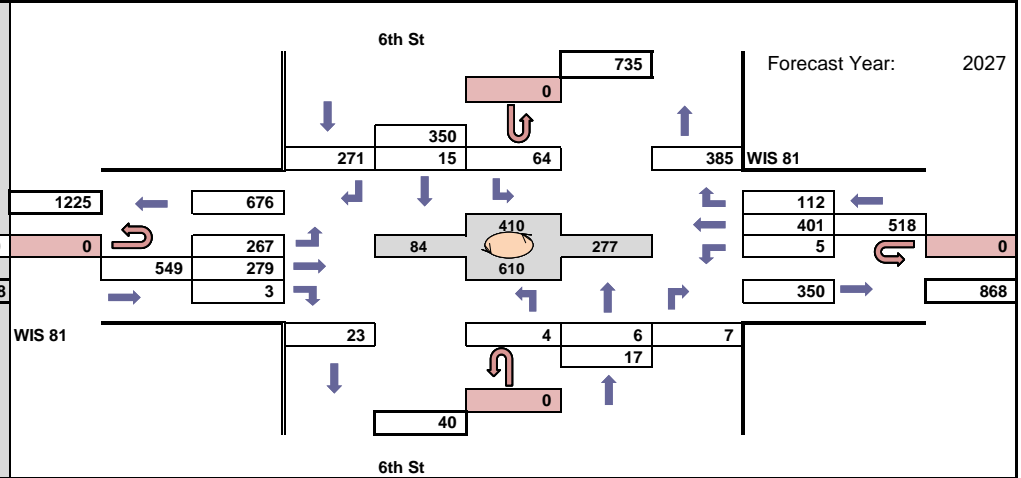
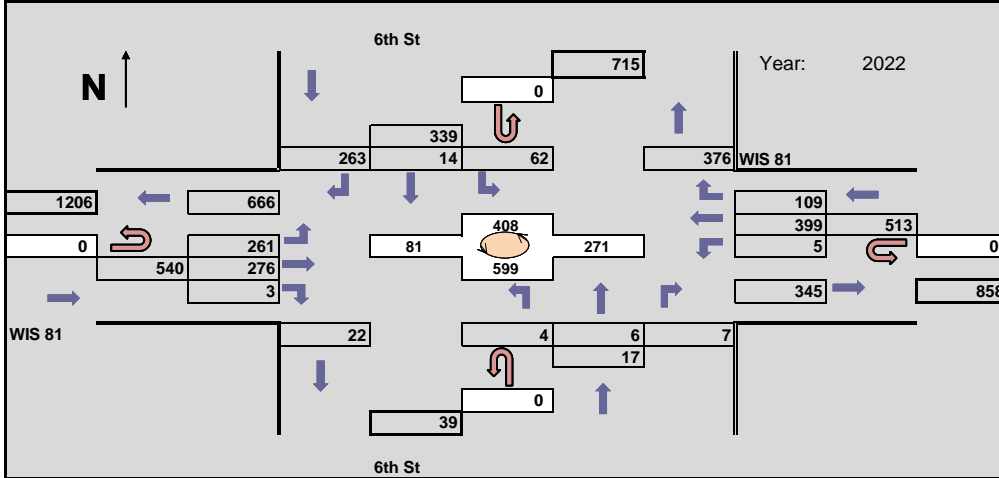
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & 6th St

Design Hour Turning Movement Data



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 Forecast by: Miao Zhang  
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 Email: miao.zhang@dot.wi.gov

**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

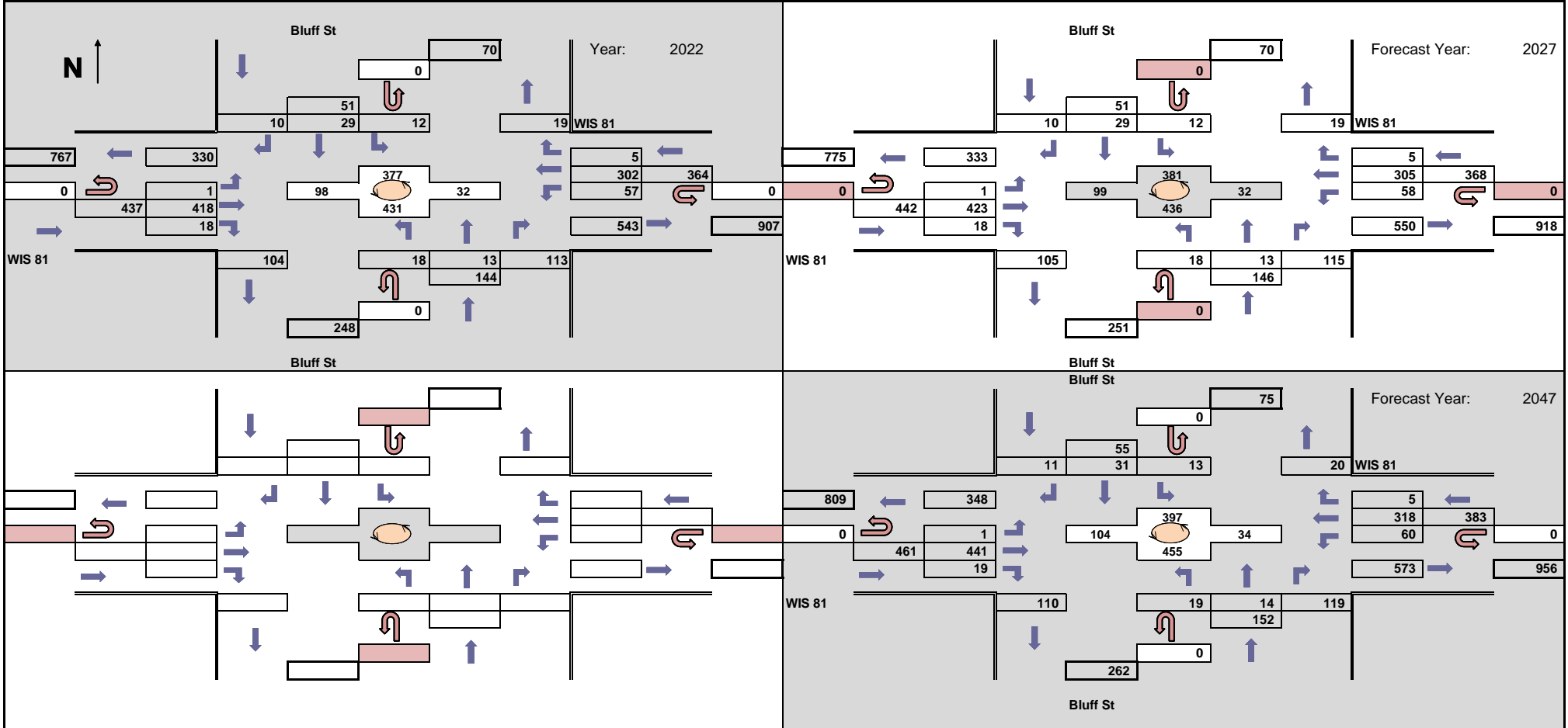
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Bluff St

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

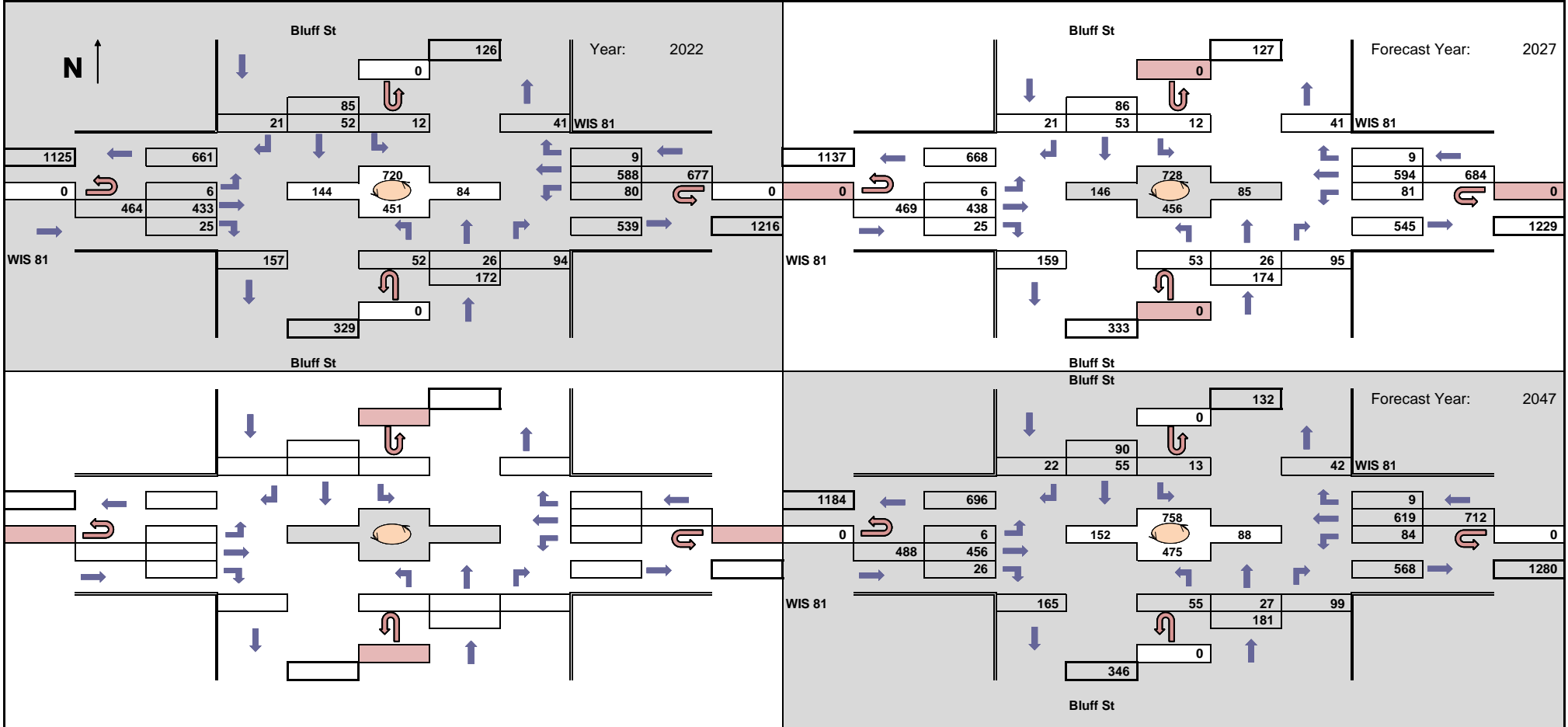
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**

Project ID(s): 000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Bluff St


Design Hour Turning Movement Data





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 Indicates roundabout

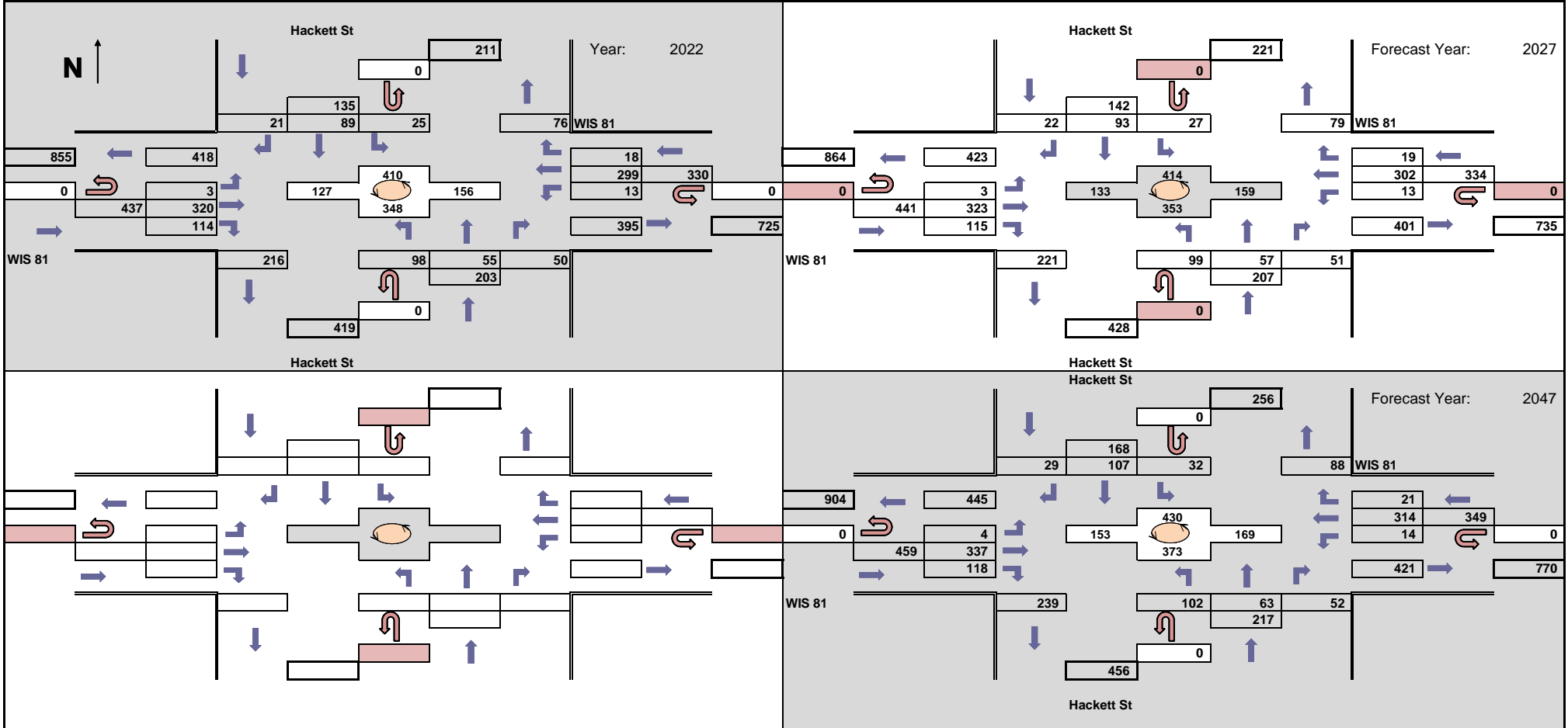
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Hackett St

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

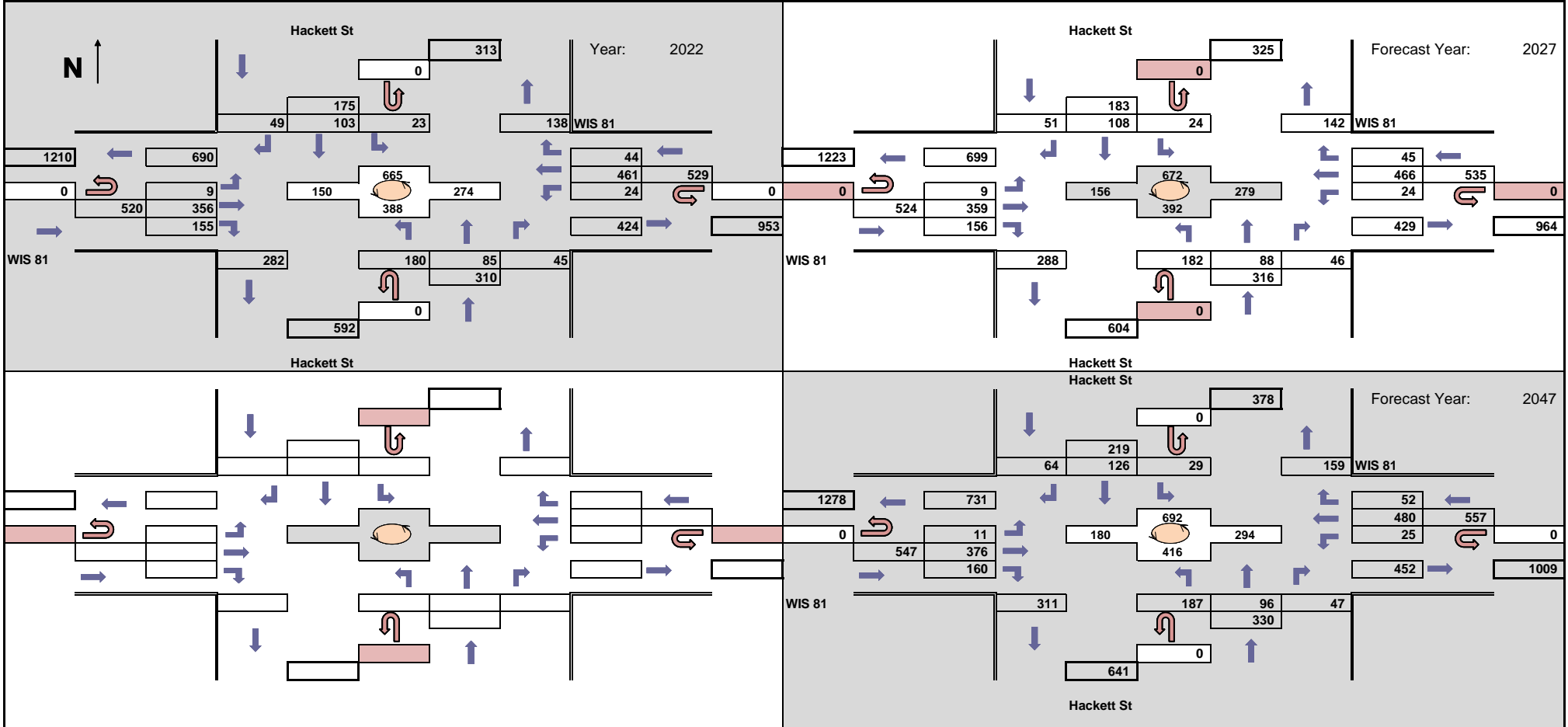
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**

Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Hackett St

Design Hour Turning Movement Data



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**Projected AM Design Hour Traffic Volumes**

 Indicates roundabout

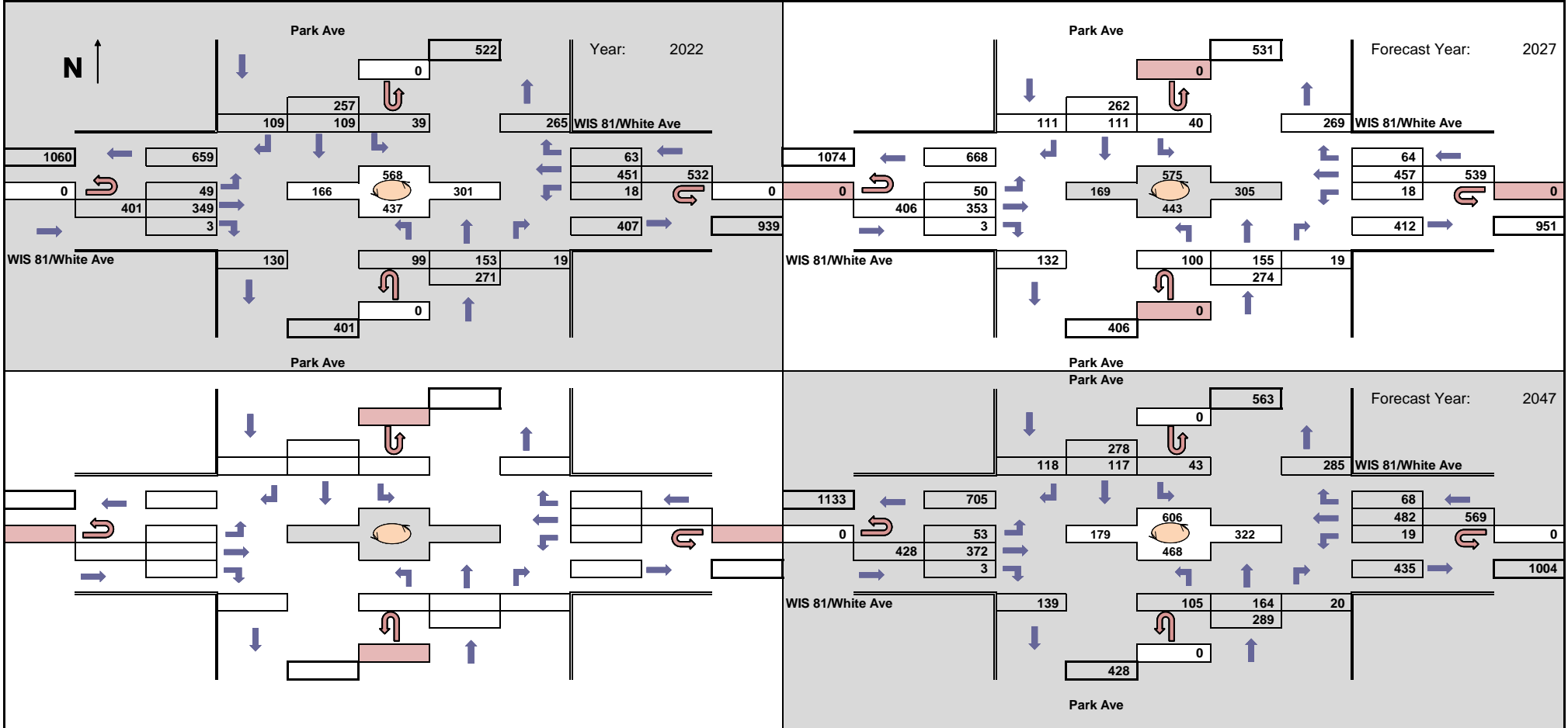
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**

Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Park Ave.

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

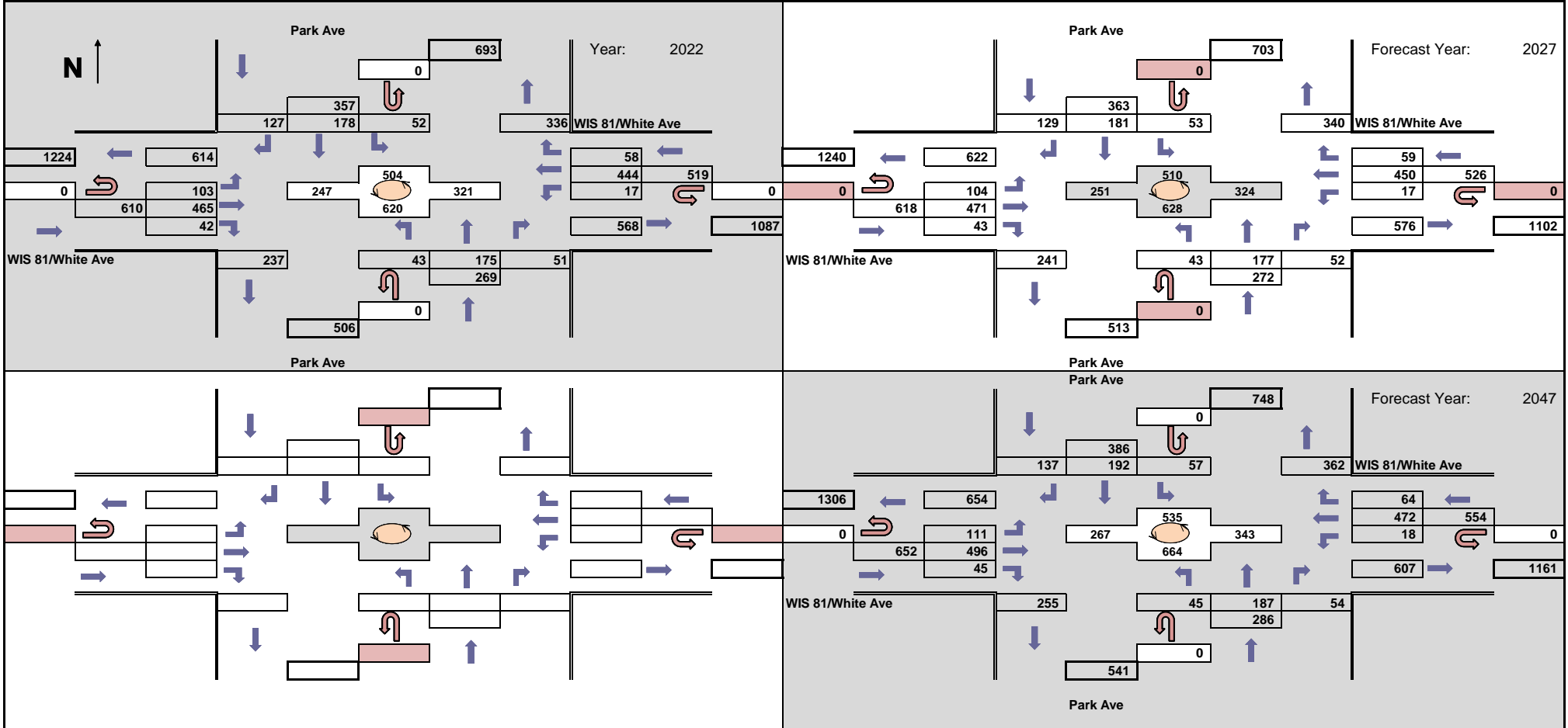
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Park Ave.

Design Hour Turning Movement Data



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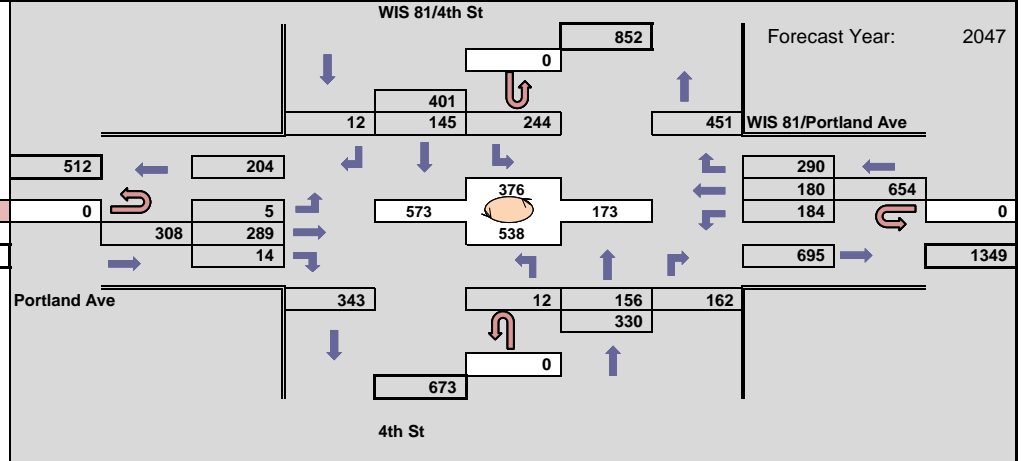
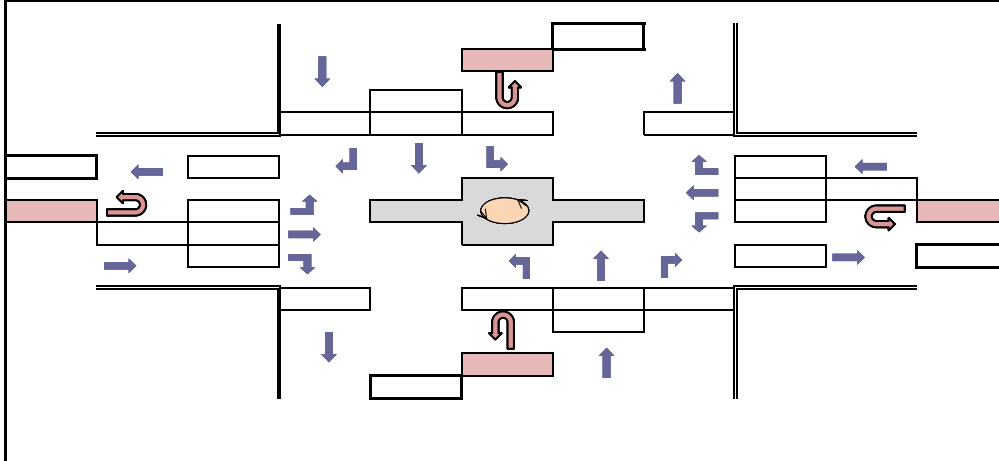
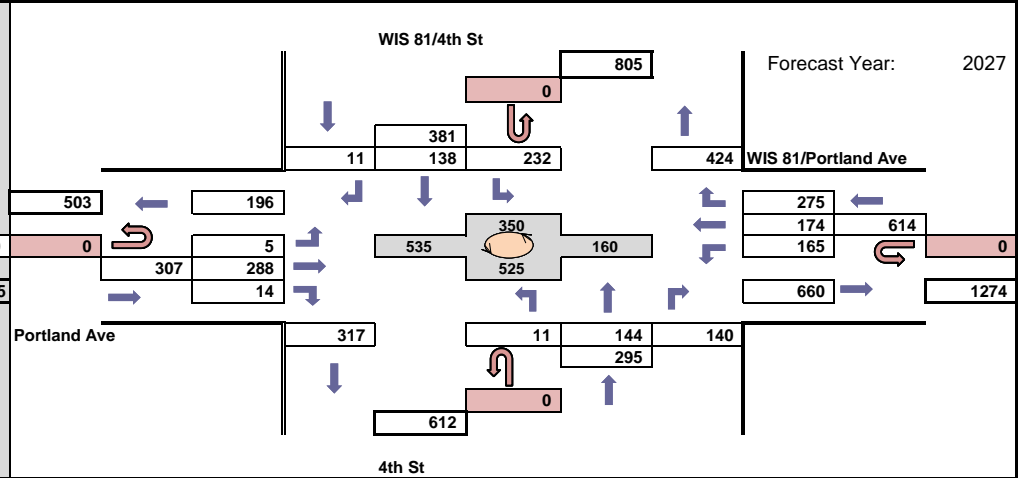
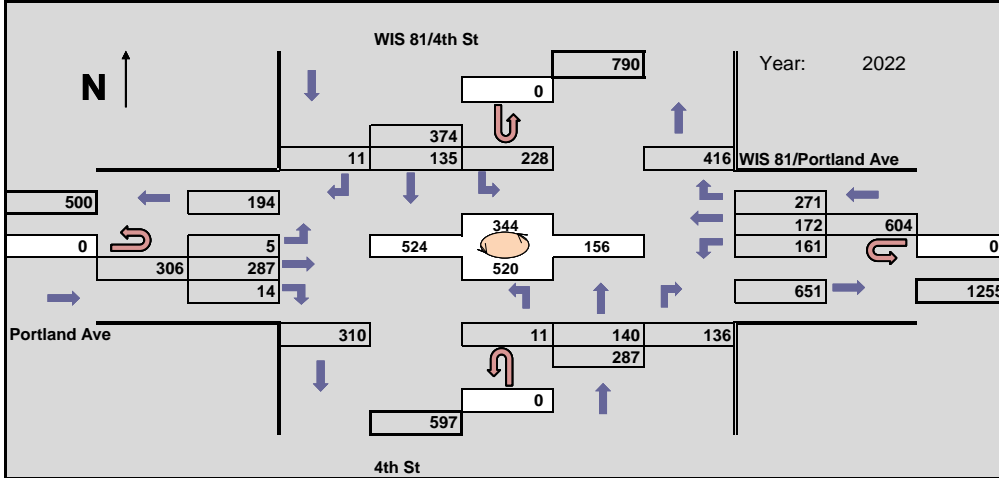
Design Hour: 7:15-8:15am

Forecast Completed: 8/18/2022

**Project Description**


Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Portland Ave

Design Hour Turning Movement Data



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**Projected PM Design Hour Traffic Volumes**

 Indicates roundabout

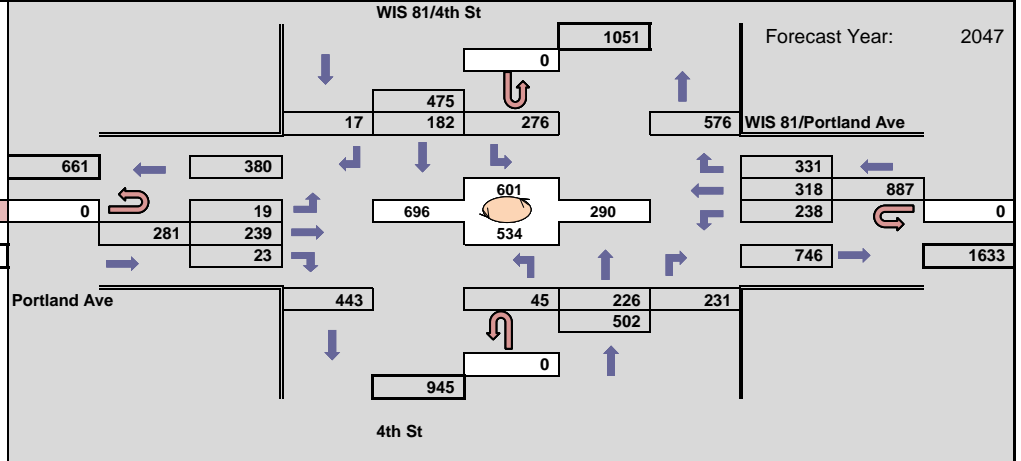
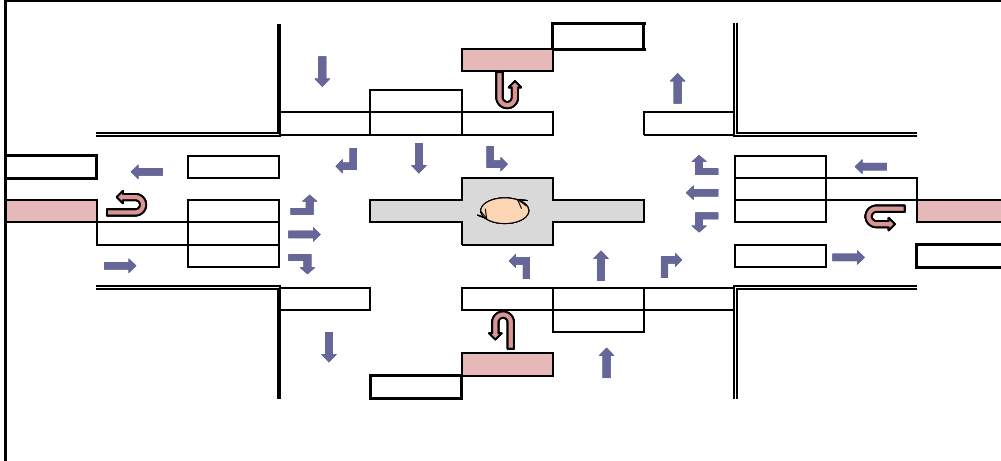
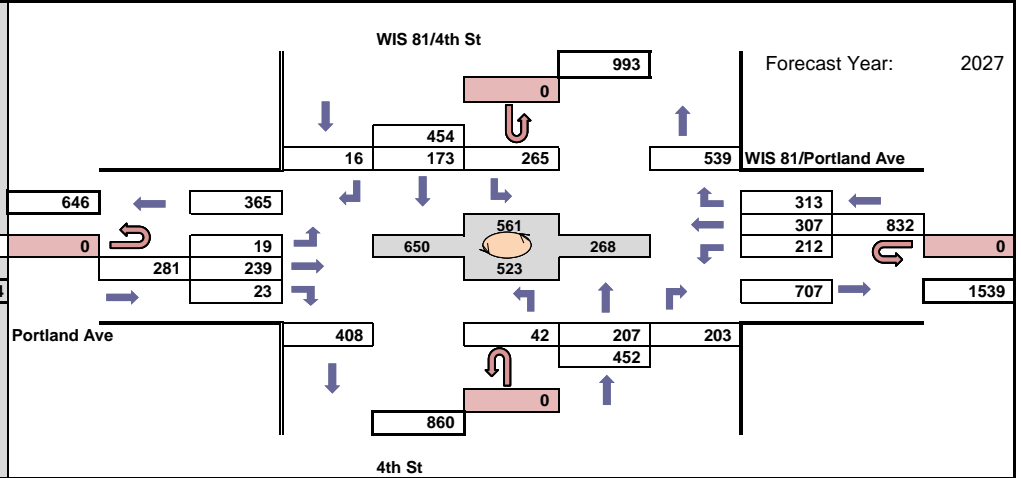
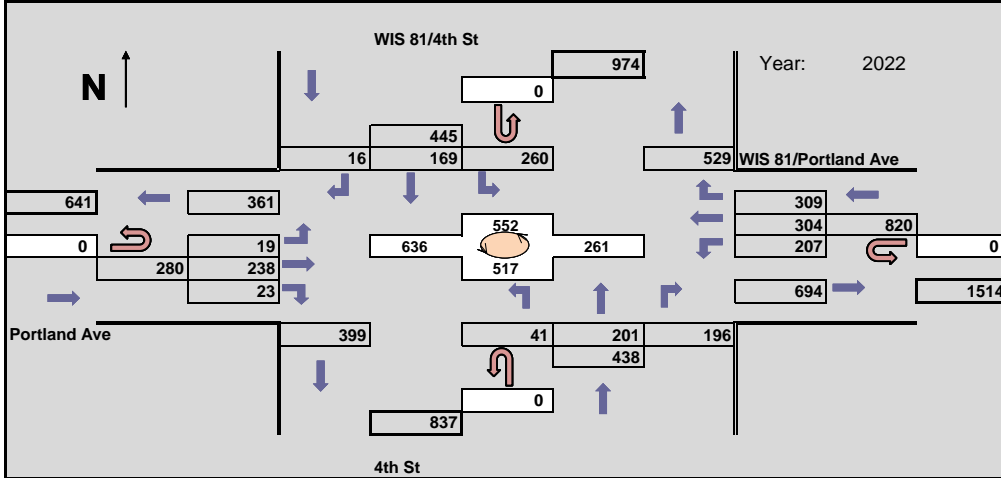
Design Hour: 3:15-4:15pm

Forecast Completed: 8/18/2022

**Project Description**

Project ID(s): 0000-00-00  
 Route(s): STH 81, STH 213  
 Region/COUNTY(IES): SW/Rock  
 Location: WIS 81 & Portland Ave

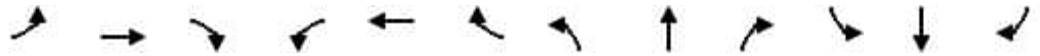
Design Hour Turning Movement Data



**Appendix D: Future-Year (Year 2047) Traffic Operations  
Analysis Worksheets**

HCM 6th Signalized Intersection Summary  
 2: Hackett Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	350	120	15	330	20	100	65	50	30	105	30
Future Volume (veh/h)	5	350	120	15	330	20	100	65	50	30	105	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	0.99		0.99	0.98		0.98
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	1811	1668	1811	1767	1567	1767	1856	1548	1856	1870	1560	1870
Adj Flow Rate, veh/h	5	372	79	16	351	21	106	69	53	32	112	32
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	9	9	9	3	3	3	2	2	2
Cap, veh/h	97	659	605	106	565	33	679	319	245	144	235	60
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.09	0.39	0.39	0.23	0.23	0.23
Sat Flow, veh/h	5	1659	1523	23	1422	83	1767	807	620	146	1027	261
Grp Volume(v), veh/h	377	0	79	388	0	0	106	0	122	176	0	0
Grp Sat Flow(s),veh/h/ln	1664	0	1523	1527	0	0	1767	0	1427	1433	0	0
Q Serve(g_s), s	0.0	0.0	1.3	0.0	0.0	0.0	1.6	0.0	2.2	0.3	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	1.3	7.8	0.0	0.0	1.6	0.0	2.2	4.0	0.0	0.0
Prop In Lane	0.01		1.00	0.04		0.05	1.00		0.43	0.18		0.18
Lane Grp Cap(c), veh/h	756	0	605	704	0	0	679	0	564	439	0	0
V/C Ratio(X)	0.50	0.00	0.13	0.55	0.00	0.00	0.16	0.00	0.22	0.40	0.00	0.00
Avail Cap(c_a), veh/h	1983	0	1739	1813	0	0	822	0	1037	1126	0	0
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(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.0	0.0	7.4	9.3	0.0	0.0	8.2	0.0	7.7	13.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.2	1.4	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.0
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(95%),veh/ln	3.7	0.0	0.6	4.0	0.0	0.0	0.8	0.0	1.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	0.0	7.6	10.8	0.0	0.0	8.2	0.0	7.9	13.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		456			388			228				176
Approach Delay, s/veh		9.7			10.8			8.0				13.6
Approach LOS		A			B			A				B
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		19.3	6.4	12.8		19.3		19.2				
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		44.0	6.5	28.0		44.0		28.0				
Max Q Clear Time (g_c+I1), s		8.8	3.6	6.0		9.8		4.2				
Green Ext Time (p_c), s		6.0	0.0	1.0		5.5		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				10.3								
HCM 6th LOS				B								



# HCM 6th Signalized Intersection Summary

## 4: Fourth Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	25	5	280	5	5	5	250	205	1	1	125	35
Future Volume (veh/h)	25	5	280	5	5	5	250	205	1	1	125	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	0.99		0.99	0.99		0.99
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		No	
Adj Sat Flow, veh/h/ln	1752	1614	1752	1900	1585	1900	1781	1580	1781	1870	1560	1870
Adj Flow Rate, veh/h	34	7	238	7	7	7	342	281	1	1	171	48
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	10	10	10	0	0	0	8	8	8	2	2	2
Cap, veh/h	430	71	682	195	160	115	795	837	3	94	268	75
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.20	0.53	0.53	0.23	0.23	0.23
Sat Flow, veh/h	994	270	1474	270	612	441	1697	1573	6	2	1167	326
Grp Volume(v), veh/h	41	0	238	21	0	0	342	0	282	220	0	0
Grp Sat Flow(s),veh/h/ln	1264	0	1474	1322	0	0	1697	0	1579	1495	0	0
Q Serve(g_s), s	0.4	0.0	4.0	0.0	0.0	0.0	5.1	0.0	3.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	4.0	0.4	0.0	0.0	5.1	0.0	3.9	5.1	0.0	0.0
Prop In Lane	0.83		1.00	0.33		0.33	1.00		0.00	0.00		0.22
Lane Grp Cap(c), veh/h	501	0	682	470	0	0	795	0	840	436	0	0
V/C Ratio(X)	0.08	0.00	0.35	0.04	0.00	0.00	0.43	0.00	0.34	0.50	0.00	0.00
Avail Cap(c_a), veh/h	916	0	1171	880	0	0	1245	0	1997	1134	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	6.7	10.7	0.0	0.0	6.6	0.0	5.2	13.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.7	0.0	0.0	0.0	0.4	0.0	0.5	0.9	0.0	0.0
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(95%),veh/ln	0.4	0.0	1.8	0.2	0.0	0.0	2.4	0.0	1.7	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	7.4	10.7	0.0	0.0	6.9	0.0	5.7	14.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		279			21			624			220	
Approach Delay, s/veh		7.9			10.7			6.4			14.4	
Approach LOS		A			B			A			B	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		14.1	11.7	12.9		14.1		24.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		23.0	18.0	27.0		23.0		49.0				
Max Q Clear Time (g_c+I1), s		6.0	7.1	7.1		2.4		5.9				
Green Ext Time (p_c), s		2.0	0.8	1.2		0.1		3.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			8.4									
HCM 6th LOS			A									

# HCM 6th Signalized Intersection Summary

## 7: Fourth Street & Portland Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	305	15	205	180	310	10	165	160	285	155	15
Future Volume (veh/h)	10	305	15	205	180	310	10	165	160	285	155	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
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	1672	1885	1841	1666	1841	1826	1653	1826	1781	1613	1781
Adj Flow Rate, veh/h	12	355	17	238	209	223	12	192	186	331	180	17
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	4	4	4	5	5	5	8	8	8
Cap, veh/h	402	456	22	385	650	608	353	315	278	470	1022	96
Arrive On Green	0.01	0.29	0.29	0.12	0.39	0.39	0.01	0.20	0.20	0.18	0.36	0.36
Sat Flow, veh/h	1795	1582	76	1753	1666	1558	1739	1570	1388	1697	2830	264
Grp Volume(v), veh/h	12	0	372	238	209	223	12	192	186	331	97	100
Grp Sat Flow(s),veh/h/ln	1795	0	1658	1753	1666	1558	1739	1570	1388	1697	1532	1562
Q Serve(g_s), s	0.3	0.0	15.1	6.5	6.4	7.4	0.4	8.1	9.0	10.6	3.1	3.2
Cycle Q Clear(g_c), s	0.3	0.0	15.1	6.5	6.4	7.4	0.4	8.1	9.0	10.6	3.1	3.2
Prop In Lane	1.00		0.05	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	402	0	478	385	650	608	353	315	278	470	553	564
V/C Ratio(X)	0.03	0.00	0.78	0.62	0.32	0.37	0.03	0.61	0.67	0.70	0.17	0.18
Avail Cap(c_a), veh/h	523	0	771	444	889	831	470	451	399	589	692	705
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(l)	1.00	0.00	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	17.9	0.0	23.9	16.2	15.5	15.9	22.7	26.6	27.0	17.4	15.9	15.9
Incr Delay (d2), s/veh	0.0	0.0	5.8	1.1	0.6	0.8	0.0	4.1	5.8	1.7	0.3	0.3
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(95%),veh/lr	0.3	0.0	10.6	4.6	4.4	4.8	0.3	6.0	6.1	7.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	29.7	17.3	16.1	16.6	22.7	30.7	32.8	19.2	16.2	16.3
LnGrp LOS	B	A	C	B	B	B	C	C	C	B	B	B
Approach Vol, veh/h		384			670			390			528	
Approach Delay, s/veh		29.3			16.7			31.4			18.1	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.1	5.1	30.4	5.1	32.5	16.8	18.6					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	34.0	6.0	33.0	6.0	39.0	18.0	21.0					
Max Q Clear Time (g_c+1/3), s	17.1	2.4	5.2	2.3	9.4	12.6	11.0					
Green Ext Time (p_c), s	0.1	3.8	0.0	2.2	0.0	4.5	0.3	2.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

HCM 6th Signalized Intersection Summary  
 10: Pleasant Street & Portland Avenue/White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑		↘	↑↑		↘	↑↑	
Traffic Volume (veh/h)	205	525	45	40	470	40	40	260	75	70	215	175
Future Volume (veh/h)	205	525	45	40	470	40	40	260	75	70	215	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
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	1856	1699	1856	1826	1653	1826	1811	1640	1811	1841	1666	1841
Adj Flow Rate, veh/h	238	610	32	47	547	47	47	302	87	81	250	203
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	5	5	5	6	6	6	4	4	4
Cap, veh/h	337	981	474	257	663	57	416	976	276	463	703	548
Arrive On Green	0.12	0.30	0.30	0.09	0.45	0.45	0.04	0.41	0.41	0.04	0.42	0.42
Sat Flow, veh/h	1767	3229	1562	1739	2926	251	1725	2394	677	1753	1689	1318
Grp Volume(v), veh/h	238	610	32	47	293	301	47	195	194	81	234	219
Grp Sat Flow(s),veh/h/ln	1767	1614	1562	1739	1570	1607	1725	1558	1513	1753	1583	1424
Q Serve(g_s), s	9.8	16.2	1.5	2.0	16.3	16.4	1.6	8.5	8.7	2.7	10.1	10.6
Cycle Q Clear(g_c), s	9.8	16.2	1.5	2.0	16.3	16.4	1.6	8.5	8.7	2.7	10.1	10.6
Prop In Lane	1.00		1.00	1.00		0.16	1.00		0.45	1.00		0.93
Lane Grp Cap(c), veh/h	337	981	474	257	356	364	416	635	617	463	659	592
V/C Ratio(X)	0.71	0.62	0.07	0.18	0.82	0.83	0.11	0.31	0.32	0.17	0.35	0.37
Avail Cap(c_a), veh/h	408	1211	586	295	440	450	439	635	617	473	659	592
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	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	25.5	29.9	24.7	26.5	25.6	25.6	16.4	20.0	20.1	16.1	20.0	20.2
Incr Delay (d2), s/veh	4.3	0.9	0.1	0.3	11.2	11.2	0.1	1.2	1.3	0.2	1.5	1.8
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(95%),veh/ln	8.0	10.6	1.0	1.5	9.6	9.9	1.1	5.9	6.0	2.0	7.2	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	30.8	24.8	26.8	36.8	36.9	16.5	21.3	21.5	16.3	21.5	21.9
LnGrp LOS	C	C	C	C	D	D	B	C	C	B	C	C
Approach Vol, veh/h		880			641			436			534	
Approach Delay, s/veh		30.3			36.1			20.8			20.9	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	46.8	8.4	36.4	7.6	47.6	16.1	28.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.0	4.0	6.0	4.0	6.0				
Max Green Setting (Gmax), s	5.0	30.9	6.6	37.5	5.0	30.9	16.1	28.0				
Max Q Clear Time (g_c+14), s	14.5	10.7	4.0	18.2	3.6	12.6	11.8	18.4				
Green Ext Time (p_c), s	0.0	3.3	0.0	5.9	0.0	3.8	0.3	3.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay					28.1							
HCM 6th LOS					C							

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	535	135	1	495	50	5
Future Vol, veh/h	535	135	1	495	50	5
Conflicting Peds, #/hr	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	3	3	0	0
Mvmt Flow	622	157	1	576	58	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	782	0	1206
Stage 1	-	-	-	-	625
Stage 2	-	-	-	-	581
Critical Hdwy	-	-	4.13	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.227	-	3.5
Pot Cap-1 Maneuver	-	-	831	-	205
Stage 1	-	-	-	-	537
Stage 2	-	-	-	-	563
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	829	-	203
Mov Cap-2 Maneuver	-	-	-	-	203
Stage 1	-	-	-	-	535
Stage 2	-	-	-	-	560

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	-	-	829	-
HCM Lane V/C Ratio	0.299	-	-	0.001	-
HCM Control Delay (s)	28.8	-	-	9.3	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

# HCM 6th Signalized Intersection Summary

## 12: White Avenue & Prince Hall Drive

03/10/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↖	↘	↘
Traffic Volume (veh/h)	90	450	485	170	15	15
Future Volume (veh/h)	90	450	485	170	15	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1632	1548	1856	1737	1737
Adj Flow Rate, veh/h	105	523	564	198	17	11
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	4	4	3	3	11	11
Cap, veh/h	654	1372	919	323	72	64
Arrive On Green	1.00	1.00	1.00	1.00	0.04	0.04
Sat Flow, veh/h	692	1632	1094	384	1654	1472
Grp Volume(v), veh/h	105	523	0	762	17	11
Grp Sat Flow(s),veh/h/ln	692	1632	0	1477	1654	1472
Q Serve(g_s), s	0.0	0.0	0.0	0.0	1.0	0.7
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	1.0	0.7
Prop In Lane	1.00			0.26	1.00	1.00
Lane Grp Cap(c), veh/h	654	1372	0	1242	72	64
V/C Ratio(X)	0.16	0.38	0.00	0.61	0.24	0.17
Avail Cap(c_a), veh/h	654	1372	0	1242	366	325
HCM Platoon Ratio	2.00	2.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.78	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	46.2	46.1
Incr Delay (d2), s/veh	0.5	0.8	0.0	1.8	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.6	0.0	1.1	0.8	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.5	0.8	0.0	1.8	46.9	46.6
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		628	762		28	
Approach Delay, s/veh		0.8	1.8		46.8	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		89.9		10.1		89.9
Change Period (Y+Rc), s		* 5.8		* 5.8		* 5.8
Max Green Setting (Gmax), s		* 66		* 22		* 66
Max Q Clear Time (g_c+I1), s		2.0		3.0		2.0
Green Ext Time (p_c), s		5.4		0.0		7.7
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			2.2			
HCM 6th LOS			A			

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

## 13: Park Avenue & White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	60	380	5	20	500	70	105	165	20	45	115	130
Future Volume (veh/h)	60	380	5	20	500	70	105	165	20	45	115	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
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	1796	1626	1796	1826	1653	1826	1856	1714	1856	1826	1687	1826
Adj Flow Rate, veh/h	70	442	0	23	581	50	122	192	14	52	134	94
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	7	7	7	5	5	5	3	3	3	5	5	5
Cap, veh/h	417	964		648	941	879	261	263	239	205	206	187
Arrive On Green	0.10	1.00	0.00	0.03	0.57	0.57	0.08	0.15	0.15	0.05	0.12	0.12
Sat Flow, veh/h	1711	1626	1522	1739	1653	1543	1767	1714	1562	1739	1687	1528
Grp Volume(v), veh/h	70	442	0	23	581	50	122	192	14	52	134	94
Grp Sat Flow(s),veh/h/ln	1711	1626	1522	1739	1653	1543	1767	1714	1562	1739	1687	1528
Q Serve(g_s), s	1.6	0.0	0.0	0.5	23.3	1.4	5.8	10.7	0.8	2.6	7.6	5.8
Cycle Q Clear(g_c), s	1.6	0.0	0.0	0.5	23.3	1.4	5.8	10.7	0.8	2.6	7.6	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	417	964		648	941	879	261	263	239	205	206	187
V/C Ratio(X)	0.17	0.46		0.04	0.62	0.06	0.47	0.73	0.06	0.25	0.65	0.50
Avail Cap(c_a), veh/h	440	964		712	941	879	381	326	297	377	320	290
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.8	0.0	0.0	8.2	14.3	9.6	33.6	40.4	36.2	36.0	41.9	41.1
Incr Delay (d2), s/veh	0.2	1.5	0.0	0.0	3.0	0.1	1.3	9.7	0.2	0.6	7.2	4.4
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(95%),veh/ln	1.0	0.7	0.0	0.4	14.1	0.9	4.6	8.9	0.5	2.0	6.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	1.5	0.0	8.2	17.3	9.7	34.9	50.0	36.4	36.6	49.1	45.5
LnGrp LOS	A	A		A	B	A	C	D	D	D	D	D
Approach Vol, veh/h		512	A		654			328			280	
Approach Delay, s/veh		2.6			16.4			43.8			45.6	
Approach LOS		A			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	64.3	11.2	18.2	8.6	62.0	8.1	21.3				
Change Period (Y+Rc), s	3.5	5.0	3.5	6.0	3.5	5.0	3.5	6.0				
Max Green Setting (Gmax), s	6.5	42.0	14.5	19.0	6.5	42.0	14.5	19.0				
Max Q Clear Time (g_c+1), s	12.5	2.0	7.8	9.6	3.6	25.3	4.6	12.7				
Green Ext Time (p_c), s	0.0	3.3	0.1	1.2	0.0	3.9	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

### Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	15.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	330	250	10	1	235	85	1	10	5	50	10	160
Future Vol, veh/h	330	250	10	1	235	85	1	10	5	50	10	160
Conflicting Peds, #/hr	4	0	7	7	0	4	7	0	7	4	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	90	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	6	6	6	12	12	12	0	0	0	2	2	2
Mvmt Flow	402	305	12	1	287	104	1	12	6	61	12	195

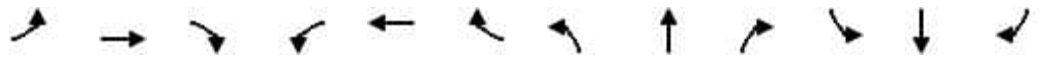
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	324	0	0	1574	1519	325	1424	1421	298
Stage 1	-	-	-	-	-	-	1122	1122	-	293	293	-
Stage 2	-	-	-	-	-	-	452	397	-	1131	1128	-
Critical Hdwy	4.16	-	-	4.22	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.308	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1142	-	-	1182	-	-	90	120	721	113	136	741
Stage 1	-	-	-	-	-	-	252	284	-	715	670	-
Stage 2	-	-	-	-	-	-	591	607	-	247	279	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1138	-	-	1174	-	-	42	77	711	71	87	733
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	77	-	71	87	-
Stage 1	-	-	-	-	-	-	162	182	-	460	667	-
Stage 2	-	-	-	-	-	-	422	604	-	147	179	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	5.5			0			49.5			64.1		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	100	1138	-	-	1174	-	-	73	733
HCM Lane V/C Ratio	0.195	0.354	-	-	0.001	-	-	1.002	0.266
HCM Control Delay (s)	49.5	9.9	-	-	8.1	0	-	204	11.7
HCM Lane LOS	E	A	-	-	A	A	-	F	B
HCM 95th %tile Q(veh)	0.7	1.6	-	-	0	-	-	5.2	1.1

HCM 6th Signalized Intersection Summary  
 23: Bluff Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Volume (veh/h)	1	450	20	60	335	5	20	15	120	15	30	10
Future Volume (veh/h)	1	450	20	60	335	5	20	15	120	15	30	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
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	1811	1511	1811	1781	1580	1781	1841	1695	1841	1811	1511	1811
Adj Flow Rate, veh/h	1	556	25	74	414	6	25	19	92	19	37	12
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	8	8	8	4	4	4	6	6	6
Cap, veh/h	98	834	37	621	904	13	280	163	311	164	188	49
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	0	1434	64	793	1553	23	632	814	1549	194	937	242
Grp Volume(v), veh/h	582	0	0	74	0	420	44	0	92	68	0	0
Grp Sat Flow(s),veh/h/ln	1499	0	0	793	0	1576	1446	0	1549	1373	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	5.6	0.0	0.0	1.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.8	0.0	0.0	1.9	0.0	5.6	0.8	0.0	1.9	1.4	0.0	0.0
Prop In Lane	0.00		0.04	1.00		0.01	0.57		1.00	0.28		0.18
Lane Grp Cap(c), veh/h	970	0	0	621	0	917	444	0	311	401	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.12	0.00	0.46	0.10	0.00	0.30	0.17	0.00	0.00
Avail Cap(c_a), veh/h	2256	0	0	1303	0	2271	882	0	801	811	0	0
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.3	0.0	0.0	3.6	0.0	4.4	12.1	0.0	12.5	12.3	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	0.0	0.8	0.1	0.0	0.5	0.2	0.0	0.0
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(95%),veh/ln	3.4	0.0	0.0	0.3	0.0	2.0	0.5	0.0	1.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	3.8	0.0	5.1	12.2	0.0	13.0	12.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		582			494			136				68
Approach Delay, s/veh		6.5			4.9			12.7				12.5
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.4		11.4		25.4		11.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		53.0		19.0		53.0		19.0				
Max Q Clear Time (g_c+I1), s		11.8		3.4		7.6		3.9				
Green Ext Time (p_c), s		9.6		0.2		7.6		0.4				

Intersection Summary

HCM 6th Ctrl Delay	6.9
HCM 6th LOS	A



HCM 6th TWSC  
29: Milwaukee Road & White Avenue

03/10/2023

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	430	55	95	445	65	110
Future Vol, veh/h	430	55	95	445	65	110
Conflicting Peds, #/hr	0	1	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	5	5	3	3
Mvmt Flow	473	60	104	489	71	121

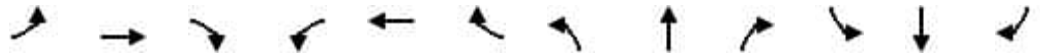
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	534	0	1202 504
Stage 1	-	-	-	-	504 -
Stage 2	-	-	-	-	698 -
Critical Hdwy	-	-	4.15	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.245	-	3.527 3.327
Pot Cap-1 Maneuver	-	-	1019	-	203 566
Stage 1	-	-	-	-	605 -
Stage 2	-	-	-	-	492 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1018	-	182 565
Mov Cap-2 Maneuver	-	-	-	-	182 -
Stage 1	-	-	-	-	604 -
Stage 2	-	-	-	-	441 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	32.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	317	-	-	1018	-
HCM Lane V/C Ratio	0.607	-	-	0.103	-
HCM Control Delay (s)	32.4	-	-	8.9	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	3.7	-	-	0.3	-

HCM 6th Signalized Intersection Summary  
 31: Prairie Avenue & White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↘		↗	↘	
Traffic Volume (veh/h)	65	400	5	20	485	50	20	215	30	65	165	115
Future Volume (veh/h)	65	400	5	20	485	50	20	215	30	65	165	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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	1826	1619	1826	1826	1619	1826	1870	1659	1870	1856	1646	1856
Adj Flow Rate, veh/h	76	471	6	24	571	59	24	253	35	76	194	135
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	5	5	5	5	5	5	2	2	2	3	3	3
Cap, veh/h	266	763	10	380	649	67	250	307	42	248	294	205
Arrive On Green	0.05	0.48	0.48	0.03	0.45	0.45	0.22	0.22	0.22	0.05	0.33	0.33
Sat Flow, veh/h	1739	1595	20	1739	1443	149	1048	1425	197	1767	902	628
Grp Volume(v), veh/h	76	0	477	24	0	630	24	0	288	76	0	329
Grp Sat Flow(s),veh/h/ln	1739	0	1616	1739	0	1592	1048	0	1623	1767	0	1530
Q Serve(g_s), s	1.6	0.0	15.5	0.5	0.0	25.5	1.4	0.0	12.0	2.2	0.0	13.1
Cycle Q Clear(g_c), s	1.6	0.0	15.5	0.5	0.0	25.5	6.6	0.0	12.0	2.2	0.0	13.1
Prop In Lane	1.00		0.01	1.00		0.09	1.00		0.12	1.00		0.41
Lane Grp Cap(c), veh/h	266	0	772	380	0	716	250	0	349	248	0	499
V/C Ratio(X)	0.29	0.00	0.62	0.06	0.00	0.88	0.10	0.00	0.83	0.31	0.00	0.66
Avail Cap(c_a), veh/h	318	0	820	481	0	808	350	0	503	400	0	777
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	13.7	11.2	0.0	17.8	26.7	0.0	26.6	19.8	0.0	20.5
Incr Delay (d2), s/veh	0.6	0.0	2.0	0.1	0.0	11.5	0.2	0.0	7.3	0.7	0.0	1.5
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(95%),veh/ln	1.1	0.0	9.5	0.3	0.0	16.2	0.7	0.0	8.9	1.7	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	15.8	11.2	0.0	29.3	26.9	0.0	33.9	20.4	0.0	22.0
LnGrp LOS	B	A	B	B	A	C	C	A	C	C	A	C
Approach Vol, veh/h		553			654			312				405
Approach Delay, s/veh		15.6			28.6			33.4				21.7
Approach LOS		B			C			C				C
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	37.9		27.1	7.9	35.9	7.9	19.3				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	6.0	36.0		36.0	6.0	36.0	10.0	22.0				
Max Q Clear Time (g_c+I1), s	2.5	17.5		15.1	3.6	27.5	4.2	14.0				
Green Ext Time (p_c), s	0.0	5.4		2.1	0.0	4.4	0.1	1.1				

Intersection Summary

HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

HCM 6th TWSC  
 34: Wisconsin Avenue & White Avenue

03/10/2023

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	450	5	5	600	15	5	35	1	10	25	15
Future Vol, veh/h	10	450	5	5	600	15	5	35	1	10	25	15
Conflicting Peds, #/hr	2	0	1	1	0	2	1	0	1	2	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	4	4	4	5	5	5	0	0	0	4	4	4
Mvmt Flow	12	529	6	6	706	18	6	41	1	12	29	18

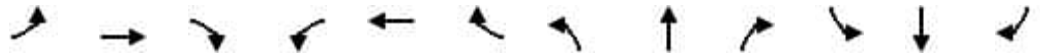
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	726	0	0	536	0	0	1310	1295	535	1308	1289	719
Stage 1	-	-	-	-	-	-	557	557	-	729	729	-
Stage 2	-	-	-	-	-	-	753	738	-	579	560	-
Critical Hdwy	4.14	-	-	4.15	-	-	7.1	6.5	6.2	7.14	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.54	-
Follow-up Hdwy	2.236	-	-	2.245	-	-	3.5	4	3.3	3.536	4.036	3.336
Pot Cap-1 Maneuver	868	-	-	1017	-	-	137	164	549	135	162	425
Stage 1	-	-	-	-	-	-	518	515	-	411	425	-
Stage 2	-	-	-	-	-	-	405	427	-	497	507	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	866	-	-	1016	-	-	110	159	547	105	157	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	110	159	-	105	157	-
Stage 1	-	-	-	-	-	-	507	504	-	402	420	-
Stage 2	-	-	-	-	-	-	357	422	-	445	496	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			39			36.4		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	153	866	-	-	1016	-	-	172
HCM Lane V/C Ratio	0.315	0.014	-	-	0.006	-	-	0.342
HCM Control Delay (s)	39	9.2	0	-	8.6	0	-	36.4
HCM Lane LOS	E	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	1.4

HCM 6th Signalized Intersection Summary  
 2: Hackett Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	10	435	160	25	550	50	185	95	45	30	125	65
Future Volume (veh/h)	10	435	160	25	550	50	185	95	45	30	125	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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	1826	1682	1826	1841	1632	1841	1870	1560	1870	1841	1536	1841
Adj Flow Rate, veh/h	11	483	110	28	611	56	206	106	50	33	139	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	4	4	4
Cap, veh/h	58	885	826	70	756	68	448	352	166	82	180	85
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.10	0.35	0.35	0.21	0.21	0.21
Sat Flow, veh/h	11	1655	1544	31	1413	127	1781	1001	472	114	873	413
Grp Volume(v), veh/h	494	0	110	695	0	0	206	0	156	244	0	0
Grp Sat Flow(s),veh/h/ln	1666	0	1544	1570	0	0	1781	0	1474	1400	0	0
Q Serve(g_s), s	0.0	0.0	2.5	6.5	0.0	0.0	6.1	0.0	5.4	6.1	0.0	0.0
Cycle Q Clear(g_c), s	13.6	0.0	2.5	25.4	0.0	0.0	6.1	0.0	5.4	11.7	0.0	0.0
Prop In Lane	0.02		1.00	0.04		0.08	1.00		0.32	0.14		0.30
Lane Grp Cap(c), veh/h	943	0	826	893	0	0	448	0	518	347	0	0
V/C Ratio(X)	0.52	0.00	0.13	0.78	0.00	0.00	0.46	0.00	0.30	0.70	0.00	0.00
Avail Cap(c_a), veh/h	1274	0	1140	1204	0	0	448	0	634	454	0	0
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(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	8.2	13.4	0.0	0.0	17.4	0.0	16.5	26.7	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.2	3.7	0.0	0.0	0.3	0.0	0.3	3.3	0.0	0.0
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(95%),veh/ln	8.3	0.0	1.4	13.6	0.0	0.0	4.3	0.0	3.2	7.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.7	0.0	8.3	17.1	0.0	0.0	17.7	0.0	16.8	30.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	B	C	A	A
Approach Vol, veh/h		604			695			362			244	
Approach Delay, s/veh		11.1			17.1			17.3			30.0	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		41.5	10.2	18.5		41.5		28.7				
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		51.8	7.2	20.0		51.8		30.2				
Max Q Clear Time (g_c+I1), s		15.6	8.1	13.7		27.4		7.4				
Green Ext Time (p_c), s		8.6	0.0	0.7		10.1		0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary  
 4: Fourth Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔			↔	
Traffic Volume (veh/h)	45	20	370	20	55	5	510	90	5	5	155	65
Future Volume (veh/h)	45	20	370	20	55	5	510	90	5	5	155	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.95	0.97		0.94	1.00		0.97	0.95		0.93
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		No		No
Adj Sat Flow, veh/h/ln	1781	1641	1781	1900	1585	1900	1841	1632	1841	1900	1585	1900
Adj Flow Rate, veh/h	65	29	332	29	80	7	739	130	7	7	225	94
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Percent Heavy Veh, %	8	8	8	0	0	0	4	4	4	0	0	0
Cap, veh/h	283	107	822	115	246	19	846	1000	54	59	268	110
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.33	0.65	0.65	0.26	0.26	0.26
Sat Flow, veh/h	841	475	1431	205	1093	83	1753	1532	83	10	1031	422
Grp Volume(v), veh/h	94	0	332	116	0	0	739	0	137	326	0	0
Grp Sat Flow(s),veh/h/ln	1316	0	1431	1382	0	0	1753	0	1615	1463	0	0
Q Serve(g_s), s	0.0	0.0	8.8	0.0	0.0	0.0	18.0	0.0	2.1	2.4	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	8.8	4.1	0.0	0.0	18.0	0.0	2.1	13.8	0.0	0.0
Prop In Lane	0.69		1.00	0.25		0.06	1.00		0.05	0.02		0.29
Lane Grp Cap(c), veh/h	390	0	822	380	0	0	846	0	1054	437	0	0
V/C Ratio(X)	0.24	0.00	0.40	0.31	0.00	0.00	0.87	0.00	0.13	0.75	0.00	0.00
Avail Cap(c_a), veh/h	470	0	916	464	0	0	964	0	1310	570	0	0
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.8	0.0	8.4	21.2	0.0	0.0	9.2	0.0	4.3	23.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.4	0.0	0.0	8.2	0.0	0.1	3.8	0.0	0.0
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(95%),veh/ln	2.1	0.0	4.3	2.7	0.0	0.0	11.6	0.0	1.0	8.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	0.0	8.7	21.6	0.0	0.0	17.3	0.0	4.4	26.8	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	C	A	A
Approach Vol, veh/h		426			116			876			326	
Approach Delay, s/veh		11.5			21.6			15.3			26.8	
Approach LOS		B			C			B			C	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		18.7	25.6	21.0		18.7		46.6				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0				
Max Green Setting (Gmax), s		19.0	26.0	23.0		19.0		53.0				
Max Q Clear Time (g_c+I1), s		10.8	20.0	15.8		6.1		4.1				
Green Ext Time (p_c), s		1.2	1.6	1.2		0.5		0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

# HCM 6th Signalized Intersection Summary

## 7: Fourth Street & Portland Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	245	25	250	330	360	45	275	230	345	205	25
Future Volume (veh/h)	30	245	25	250	330	360	45	275	230	345	205	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
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	1856	1646	1856	1885	1707	1885	1870	1693	1870	1826	1653	1826
Adj Flow Rate, veh/h	35	285	29	291	384	260	52	320	267	401	238	29
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	3	3	3	1	1	1	2	2	2	5	5	5
Cap, veh/h	259	353	36	383	578	540	438	421	343	466	1116	134
Arrive On Green	0.03	0.24	0.24	0.13	0.34	0.34	0.04	0.25	0.25	0.19	0.40	0.40
Sat Flow, veh/h	1767	1468	149	1795	1707	1595	1781	1678	1368	1739	2820	340
Grp Volume(v), veh/h	35	0	314	291	384	260	52	306	281	401	131	136
Grp Sat Flow(s),veh/h/ln	1767	0	1618	1795	1707	1595	1781	1609	1437	1739	1570	1590
Q Serve(g_s), s	1.2	0.0	15.4	9.8	16.1	10.8	1.8	14.8	15.3	13.5	4.6	4.7
Cycle Q Clear(g_c), s	1.2	0.0	15.4	9.8	16.1	10.8	1.8	14.8	15.3	13.5	4.6	4.7
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.95	1.00		0.21
Lane Grp Cap(c), veh/h	259	0	389	383	578	540	438	404	361	466	622	629
V/C Ratio(X)	0.14	0.00	0.81	0.76	0.66	0.48	0.12	0.76	0.78	0.86	0.21	0.22
Avail Cap(c_a), veh/h	391	0	597	383	669	625	482	479	428	494	681	689
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(l)	1.00	0.00	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	23.0	0.0	30.0	20.7	23.7	21.9	21.6	29.1	29.3	18.6	16.7	16.8
Incr Delay (d2), s/veh	0.1	0.0	8.6	7.7	3.3	1.4	0.0	8.0	10.0	12.8	0.4	0.4
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(95%),veh/lr	0.9	0.0	11.1	8.4	11.1	7.5	1.3	10.7	10.2	11.1	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	0.0	38.6	28.5	27.0	23.4	21.7	37.1	39.3	31.4	17.1	17.1
LnGrp LOS	C	A	D	C	C	C	C	D	D	C	B	B
Approach Vol, veh/h		349			935			639			668	
Approach Delay, s/veh		37.1			26.4			36.8			25.7	
Approach LOS		D			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	25.1	15.0	24.2	7.5	37.2	6.8	32.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	17.0	25.0	11.0	31.0	5.6	36.4	9.1	32.9				
Max Q Clear Time (g_c+11.5), s	17.3	17.3	11.8	17.4	3.8	6.7	3.2	18.1				
Green Ext Time (p_c), s	0.1	3.6	0.0	2.8	0.0	3.2	0.0	5.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay											30.2	
HCM 6th LOS											C	

# HCM 6th Signalized Intersection Summary

## 10: Pleasant Street & Portland Avenue/White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑		↖	↑↑		↖	↑↑	
Traffic Volume (veh/h)	190	595	45	75	690	80	55	300	60	65	320	265
Future Volume (veh/h)	190	595	45	75	690	80	55	300	60	65	320	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	0.99		0.98
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	1856	1699	1856	1870	1693	1870	1841	1666	1841	1870	1693	1870
Adj Flow Rate, veh/h	200	626	29	79	726	84	58	316	63	68	337	279
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
Percent Heavy Veh, %	3	3	3	2	2	2	4	4	4	2	2	2
Cap, veh/h	505	1600	773	252	944	109	155	489	96	296	396	321
Arrive On Green	0.22	0.50	0.50	0.02	0.11	0.11	0.04	0.19	0.19	0.09	0.24	0.24
Sat Flow, veh/h	1767	3229	1561	1781	2903	336	1753	2629	517	1781	1675	1358
Grp Volume(v), veh/h	200	626	29	79	402	408	58	189	190	68	323	293
Grp Sat Flow(s),veh/h/ln	1767	1614	1561	1781	1609	1630	1753	1583	1562	1781	1609	1424
Q Serve(g_s), s	2.1	10.9	0.6	2.9	21.9	21.9	0.0	9.9	10.2	0.0	17.3	17.8
Cycle Q Clear(g_c), s	2.1	10.9	0.6	2.9	21.9	21.9	0.0	9.9	10.2	0.0	17.3	17.8
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.33	1.00		0.95
Lane Grp Cap(c), veh/h	505	1600	773	252	523	530	155	295	291	296	380	337
V/C Ratio(X)	0.40	0.39	0.04	0.31	0.77	0.77	0.38	0.64	0.66	0.23	0.85	0.87
Avail Cap(c_a), veh/h	505	1600	773	277	590	598	193	390	385	296	393	348
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	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	27.2	14.2	6.4	24.7	36.9	36.9	41.3	33.8	34.0	35.3	32.8	33.0
Incr Delay (d2), s/veh	0.2	0.7	0.1	0.3	10.4	10.3	0.6	4.9	5.3	0.1	17.3	21.5
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(95%),veh/ln	6.2	7.3	0.6	2.3	16.3	16.5	2.3	7.5	7.6	2.5	13.3	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	14.9	6.5	25.0	47.3	47.2	41.8	38.7	39.2	35.5	50.2	54.6
LnGrp LOS	C	B	A	C	D	D	D	D	D	D	D	D
Approach Vol, veh/h		855			889			437			684	
Approach Delay, s/veh		17.6			45.3			39.3			50.6	
Approach LOS		B			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	48.6	7.8	25.3	23.6	33.3	12.4	20.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.6	40.6	5.8	22.0	13.2	33.0	5.6	22.2				
Max Q Clear Time (g_c+14), s	14.9	12.9	2.0	19.8	4.1	23.9	2.0	12.2				
Green Ext Time (p_c), s	0.0	9.0	0.0	1.3	0.2	5.3	0.0	2.7				

### Intersection Summary

HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

### Notes

User approved pedestrian interval to be less than phase max green.

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	570	140	5	775	50	5
Future Vol, veh/h	570	140	5	775	50	5
Conflicting Peds, #/hr	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	2	2	2	2
Mvmt Flow	626	154	5	852	55	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	783	0	1494 632
Stage 1	-	-	-	-	629 -
Stage 2	-	-	-	-	865 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	835	-	136 480
Stage 1	-	-	-	-	531 -
Stage 2	-	-	-	-	412 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	833	-	134 477
Mov Cap-2 Maneuver	-	-	-	-	134 -
Stage 1	-	-	-	-	529 -
Stage 2	-	-	-	-	406 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	47.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	143	-	-	833	-
HCM Lane V/C Ratio	0.423	-	-	0.007	-
HCM Control Delay (s)	47.5	-	-	9.3	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.9	-	-	0	-



# HCM 6th Signalized Intersection Summary

## 12: White Avenue & Prince Hall Drive

03/10/2023



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	575	750	25	105	65
Future Volume (veh/h)	10	575	750	25	105	65
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.99	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1856	1646	1560	1870	1870	1870
Adj Flow Rate, veh/h	11	632	824	27	115	44
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	584	1292	1179	39	153	136
Arrive On Green	0.79	0.79	1.00	1.00	0.09	0.09
Sat Flow, veh/h	642	1646	1502	49	1781	1585
Grp Volume(v), veh/h	11	632	0	851	115	44
Grp Sat Flow(s),veh/h/ln	642	1646	0	1551	1781	1585
Q Serve(g_s), s	0.3	12.0	0.0	0.0	5.7	2.3
Cycle Q Clear(g_c), s	0.3	12.0	0.0	0.0	5.7	2.3
Prop In Lane	1.00			0.03	1.00	1.00
Lane Grp Cap(c), veh/h	584	1292	0	1218	153	136
V/C Ratio(X)	0.02	0.49	0.00	0.70	0.75	0.32
Avail Cap(c_a), veh/h	584	1292	0	1218	435	387
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	0.85	1.00	1.00
Uniform Delay (d), s/veh	2.1	3.4	0.0	0.0	40.2	38.7
Incr Delay (d2), s/veh	0.1	1.3	0.0	2.9	2.8	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	5.9	0.0	1.7	4.7	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	2.2	4.7	0.0	2.9	43.0	39.2
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		643	851		159	
Approach Delay, s/veh		4.6	2.9		42.0	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		76.5		13.5		76.5
Change Period (Y+Rc), s		* 5.8		* 5.8		* 5.8
Max Green Setting (Gmax), s		* 56		* 22		* 56
Max Q Clear Time (g_c+I1), s		14.0		7.7		2.0
Green Ext Time (p_c), s		5.5		0.2		9.0
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			7.3			
HCM 6th LOS			A			
<b>Notes</b>						
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.						

# HCM 6th Signalized Intersection Summary

## 13: Park Avenue & White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	120	535	45	20	520	65	45	185	55	55	190	135
Future Volume (veh/h)	120	535	45	20	520	65	45	185	55	55	190	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	1.00		0.99
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	1856	1680	1856	1841	1666	1841	1870	1728	1870	1870	1728	1870
Adj Flow Rate, veh/h	126	563	0	21	547	42	47	195	36	58	200	88
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
Percent Heavy Veh, %	3	3	3	4	4	4	2	2	2	2	2	2
Cap, veh/h	580	1037		388	650	605	179	241	219	190	247	223
Arrive On Green	0.50	1.00	0.00	0.02	0.39	0.39	0.04	0.14	0.14	0.04	0.14	0.14
Sat Flow, veh/h	1767	1680	1572	1753	1666	1552	1781	1728	1574	1781	1728	1563
Grp Volume(v), veh/h	126	563	0	21	547	42	47	195	36	58	200	88
Grp Sat Flow(s),veh/h/ln	1767	1680	1572	1753	1666	1552	1781	1728	1574	1781	1728	1563
Q Serve(g_s), s	0.0	0.0	0.0	0.7	26.8	1.5	0.0	9.9	1.6	0.0	10.1	4.6
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.7	26.8	1.5	0.0	9.9	1.6	0.0	10.1	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	580	1037		388	650	605	179	241	219	190	247	223
V/C Ratio(X)	0.22	0.54		0.05	0.84	0.07	0.26	0.81	0.16	0.31	0.81	0.39
Avail Cap(c_a), veh/h	580	1037		456	841	783	218	326	297	223	326	295
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	18.2	24.9	17.2	40.8	37.6	25.8	40.5	37.4	35.0
Incr Delay (d2), s/veh	0.1	1.8	0.0	0.0	12.6	0.2	0.3	10.5	0.3	0.3	10.8	1.1
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(95%),veh/ln	2.4	0.9	0.0	0.5	18.3	1.0	1.8	8.4	1.3	2.2	8.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	1.8	0.0	18.3	37.5	17.4	41.1	48.0	26.2	40.8	48.2	36.2
LnGrp LOS	B	A		B	D	B	D	D	C	D	D	D
Approach Vol, veh/h		689	A		610			278			346	
Approach Delay, s/veh		4.3			35.5			44.0			43.9	
Approach LOS		A			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	59.6	7.5	16.9	26.5	39.1	7.8	16.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	5.5	46.0	5.5	17.0	6.1	45.4	5.5	17.0				
Max Q Clear Time (g_c+1), s	12.5	2.0	2.0	12.1	2.0	28.8	2.0	11.9				
Green Ext Time (p_c), s	0.0	9.3	0.0	0.6	0.1	6.2	0.0	0.5				

### Intersection Summary

HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

### Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC  
20: Sixth Street & Liberty Avenue

03/10/2023

Intersection												
Int Delay, s/veh	124.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	315	315	5	5	450	160	5	10	10	115	15	335
Future Vol, veh/h	315	315	5	5	450	160	5	10	10	115	15	335
Conflicting Peds, #/hr	9	0	4	4	0	9	4	0	4	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	-	-	90	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	4	4	4	6	6	6	2	2	2
Mvmt Flow	366	366	6	6	523	186	6	12	12	134	17	390

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	718	0	0	376	0	0	1946	1835	382	1666	1652	541
Stage 1	-	-	-	-	-	-	1105	1105	-	544	544	-
Stage 2	-	-	-	-	-	-	841	730	-	1122	1108	-
Critical Hdwy	4.16	-	-	4.14	-	-	7.16	6.56	6.26	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.236	-	-	3.554	4.054	3.354	3.518	4.018	3.318
Pot Cap-1 Maneuver	865	-	-	1172	-	-	48	74	657	~ 77	98	541
Stage 1	-	-	-	-	-	-	251	282	-	523	519	-
Stage 2	-	-	-	-	-	-	354	422	-	250	286	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	858	-	-	1168	-	-	6	41	649	~ 39	55	532
Mov Cap-2 Maneuver	-	-	-	-	-	-	6	41	-	~ 39	55	-
Stage 1	-	-	-	-	-	-	143	161	-	298	510	-
Stage 2	-	-	-	-	-	-	90	414	-	~ 130	163	-

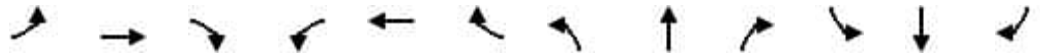
Approach	EB		WB		NB		SB	
HCM Control Delay, s	6.1		0.1		\$ 525.1		\$ 427.8	
HCM LOS					F		F	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	23	858	-	-	1168	-	-	40	532
HCM Lane V/C Ratio	1.264	0.427	-	-	0.005	-	-	3.779	0.732
HCM Control Delay (s)	\$ 525.1	12.3	-	-	8.1	0	\$ 1457.9	28.1	
HCM Lane LOS	F	B	-	-	A	A	-	F	D
HCM 95th %tile Q(veh)	3.7	2.2	-	-	0	-	-	17.2	6.1

Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

HCM 6th Signalized Intersection Summary  
 23: Bluff Street & Liberty Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕		↕	
Traffic Volume (veh/h)	5	515	25	85	690	10	55	25	100	15	55	20
Future Volume (veh/h)	5	515	25	85	690	10	55	25	100	15	55	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
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	1811	1511	1811	1856	1646	1856	1885	1736	1885	1781	1486	1781
Adj Flow Rate, veh/h	6	636	31	105	852	12	68	31	77	19	68	25
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	3	3	3	1	1	1	8	8	8
Cap, veh/h	80	916	44	573	1043	15	291	107	286	113	172	56
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	3	1421	69	763	1619	23	877	586	1571	120	943	305
Grp Volume(v), veh/h	673	0	0	105	0	864	99	0	77	112	0	0
Grp Sat Flow(s),veh/h/ln	1492	0	0	763	0	1641	1463	0	1571	1368	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	18.3	0.0	0.0	1.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.4	0.0	0.0	4.3	0.0	18.3	2.3	0.0	1.9	3.2	0.0	0.0
Prop In Lane	0.01		0.05	1.00		0.01	0.69		1.00	0.17		0.22
Lane Grp Cap(c), veh/h	1041	0	0	573	0	1058	398	0	286	340	0	0
V/C Ratio(X)	0.65	0.00	0.00	0.18	0.00	0.82	0.25	0.00	0.27	0.33	0.00	0.00
Avail Cap(c_a), veh/h	1780	0	0	956	0	1882	701	0	646	643	0	0
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(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.3	0.0	0.0	3.7	0.0	6.2	16.4	0.0	16.3	16.8	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.2	0.0	1.6	0.3	0.0	0.5	0.6	0.0	0.0
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(95%),veh/ln	4.6	0.0	0.0	0.5	0.0	7.1	1.5	0.0	1.2	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	3.8	0.0	7.8	16.7	0.0	16.8	17.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		673			969			176				112
Approach Delay, s/veh		6.0			7.3			16.7				17.3
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.8		12.4		33.8		12.4				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		53.0		19.0		53.0		19.0				
Max Q Clear Time (g_c+I1), s		15.4		5.2		20.3		4.3				
Green Ext Time (p_c), s		6.0		0.4		9.5		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				8.3								
HCM 6th LOS				A								

HCM 6th TWSC  
 29: Milwaukee Road & White Avenue

03/10/2023

Intersection						
Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	495	30	135	475	25	150
Future Vol, veh/h	495	30	135	475	25	150
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	3	3	1	1
Mvmt Flow	563	34	153	540	28	170

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	597	0	1426
Stage 1	-	-	-	-	580
Stage 2	-	-	-	-	846
Critical Hdwy	-	-	4.13	-	6.41
Critical Hdwy Stg 1	-	-	-	-	5.41
Critical Hdwy Stg 2	-	-	-	-	5.41
Follow-up Hdwy	-	-	2.227	-	3.509
Pot Cap-1 Maneuver	-	-	975	-	150
Stage 1	-	-	-	-	562
Stage 2	-	-	-	-	422
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	975	-	126
Mov Cap-2 Maneuver	-	-	-	-	126
Stage 1	-	-	-	-	562
Stage 2	-	-	-	-	356

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	26.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	358	-	-	975	-
HCM Lane V/C Ratio	0.555	-	-	0.157	-
HCM Control Delay (s)	26.9	-	-	9.4	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	3.2	-	-	0.6	-

# HCM 6th Signalized Intersection Summary

## 31: Prairie Avenue & White Avenue

03/10/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	455	5	20	435	50	15	235	30	65	245	110
Future Volume (veh/h)	125	455	5	20	435	50	15	235	30	65	245	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
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	1826	1619	1826	1841	1632	1841	1870	1659	1870	1900	1685	1900
Adj Flow Rate, veh/h	144	523	6	23	500	57	17	270	34	75	282	126
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	4	4	4	2	2	2	0	0	0
Cap, veh/h	303	735	8	310	600	68	200	322	41	239	370	165
Arrive On Green	0.07	0.46	0.46	0.03	0.42	0.42	0.22	0.22	0.22	0.05	0.34	0.34
Sat Flow, veh/h	1739	1598	18	1753	1438	164	977	1443	182	1810	1103	493
Grp Volume(v), veh/h	144	0	529	23	0	557	17	0	304	75	0	408
Grp Sat Flow(s),veh/h/ln	1739	0	1616	1753	0	1602	977	0	1625	1810	0	1595
Q Serve(g_s), s	3.4	0.0	19.8	0.6	0.0	23.4	1.2	0.0	13.5	2.3	0.0	17.2
Cycle Q Clear(g_c), s	3.4	0.0	19.8	0.6	0.0	23.4	10.0	0.0	13.5	2.3	0.0	17.2
Prop In Lane	1.00		0.01	1.00		0.10	1.00		0.11	1.00		0.31
Lane Grp Cap(c), veh/h	303	0	744	310	0	668	200	0	363	239	0	535
V/C Ratio(X)	0.48	0.00	0.71	0.07	0.00	0.83	0.08	0.00	0.84	0.31	0.00	0.76
Avail Cap(c_a), veh/h	311	0	889	393	0	881	299	0	527	276	0	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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	16.3	13.8	0.0	19.7	30.6	0.0	28.0	20.9	0.0	22.4
Incr Delay (d2), s/veh	0.4	0.0	3.3	0.0	0.0	7.4	0.2	0.0	7.8	0.3	0.0	3.2
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(95%),veh/ln	2.3	0.0	12.0	0.4	0.0	14.6	0.5	0.0	9.8	1.7	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.6	0.0	19.6	13.8	0.0	27.1	30.8	0.0	35.7	21.1	0.0	25.6
LnGrp LOS	B	A	B	B	A	C	C	A	D	C	A	C
Approach Vol, veh/h		673			580			321				483
Approach Delay, s/veh		18.8			26.6			35.5				24.9
Approach LOS		B			C			D				C
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	39.2		29.8	9.7	36.0	8.5	21.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.5	41.5		34.5	5.5	41.5	5.5	24.5				
Max Q Clear Time (g_c+I1), s	2.6	21.8		19.2	5.4	25.4	4.3	15.5				
Green Ext Time (p_c), s	0.0	6.3		2.4	0.0	6.0	0.0	1.3				

### Intersection Summary

HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

HCM 6th TWSC  
 34: Wisconsin Avenue & White Avenue

03/10/2023

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	600	5	5	545	25	5	40	5	5	50	10
Future Vol, veh/h	10	600	5	5	545	25	5	40	5	5	50	10
Conflicting Peds, #/hr	4	0	5	3	0	2	5	0	3	2	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	652	5	5	592	27	5	43	5	5	54	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	623	0	0	662	0	0	1335	1315	663	1324	1304	615
Stage 1	-	-	-	-	-	-	682	682	-	620	620	-
Stage 2	-	-	-	-	-	-	653	633	-	704	684	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	958	-	-	927	-	-	131	158	461	133	160	491
Stage 1	-	-	-	-	-	-	440	450	-	476	480	-
Stage 2	-	-	-	-	-	-	456	473	-	428	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	954	-	-	923	-	-	90	152	457	100	154	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	152	-	100	154	-
Stage 1	-	-	-	-	-	-	430	440	-	466	474	-
Stage 2	-	-	-	-	-	-	390	467	-	373	439	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			41.3			42.6		
HCM LOS							E			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	152	954	-	-	923	-	-	164
HCM Lane V/C Ratio	0.358	0.011	-	-	0.006	-	-	0.431
HCM Control Delay (s)	41.3	8.8	0	-	8.9	0	-	42.6
HCM Lane LOS	E	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	1.5	0	-	-	0	-	-	1.9