VILLAGE OF OAK PARK
TRANSPORTATION COMMISSION MEETING
MONDAY, JULY 31, 2017 - 7:00 PM
COUNCIL CHAMBERS – VILLAGE HALL

AGENDA

1. Call to Order

2. Non-agenda Public Comment - up to 15 minutes

3. Agenda Approval

4. Approval of Draft Transportation Commission Meeting Minutes

   4.1 Draft June 26, 2017 Transportation Commission meeting minutes

5. REVIEW OF PARKING AND TRAFFIC RELATED IMPACTS OF THE RUSH OAK PARK HOSPITAL PLAN DEVELOPMENT APPLICATION

   5.1 Staff Agenda Item Commentary
   5.2 Background Information
   5.3 Traffic Impact Study by KLOA, Inc.
   5.4 Presentation
   5.5 Public Testimony
   5.6 Letter to Area Residents

6. Adjourn

DRAFT Meeting Minutes
Transportation Commission
Monday, June 26, 2017
Council Chambers – Village Hall

Call to Order and Roll Call

Chair Chalabian called the meeting to order at 7:01 PM.

Present: Jack Chalabian, Kyle Eichenberger, James Thompson, Roya Basirirad, Michael Stewart

Excused: Craig Chesney, Joel Schoenmeyer

Staff: Mike Koperniak, Mary Avinger, Jill Velan, John Youkhana, Allison Von Ebbers,

Parking Consultant: Julie Dixon of Dixon Resources Unlimited

Chair Chalabian opened the meeting with an explanation of public comment.

There was no non-agenda public testimony.

Approval of Tonight's Meeting Agenda

Commissioner Eichenberger motioned to approve the agenda as presented and was seconded by Commissioner Stewart. The motion was approved by a unanimous voice vote.

Approval of the Draft May 22, 2017 Meeting Minutes

Commissioner Thompson motioned to approve the draft May 22, 2017, Transportation Commission meeting minutes as modified and was seconded by Commissioner Eichenberger. The motion was approved by a unanimous voice vote.

REVIEW OF ORD 17-183 G 022117 (REFERRED BY THE VILLAGE BOARD OF TRUSTEES AT ITS JUNE 5, 2017 MEETING)

Parking Services Director Jill Velan gave a presentation going over the history of the parking review and study done in the Y2, Y3, and Y4 permit parking zones, those results, and what staff recommended and presented to the Transportation Commission before going to the Village Board of Trustees. The Village Board passed the ordinance for the recommendation in February 2017 then sent the ordinance back for the Transportation Commission to look at after several complaints.

Commissioner Stewart stated it was a long process to get there including studies and surveys done by members of the Commission.

Chair Chalabian asked how many spaces were in lots 115 & 108. Ms. Velan responded there were 75 – 24 hour spaces in lot 115 and approximately 60 overnight spaces in lot 108. Chair Chalabian also asked what the rate for lot 119 is and Ms. Velan responded $250 per quarter.

Commissioner Eichenberger asked about utilization in lot 119. Ms. Velan responded the lot sold out in five minutes as well as the spaces on South Blvd.

Chair Chalabian asked when current permits end and Ms. Velan responded on June 30th but the Parking Department currently has an administrative hold on renewals due to Commission meeting.

Chair Chalabian asked about the use of spaces on Mills Park Tower property. Mr. Youkhana stated he spoke to the building manager about other parking options for staff and caregivers and was told it would be difficult, they can't make changes, and limited spaces are for residents with a current 2-3 year wait list if not longer.

Chair Chalabian asked about using valet or shuttle service to help residents and staff and Ms. Velan responded they had not looked into it but the Village had shuttle service years ago and it ended due to its approximate cost of 60k per year.

Commissioner Thompson questioned if the seven spots on Pleasant Place were made unrestricted again what would happen. Ms. Velan responded she can't speak on that but when doing the parking study, it would be first come first served and permit holders still occupy most all spaces throughout the day.

The floor was opened to public testimony.

Tom Dwyer of 1025 Pleasant Place is a resident of Mills Park Tower and stated they are working at a disadvantage because no one in the building knew the hearings were held. Mr. Dwyer spoke about various service vehicles and visitors that come and go in their building and with the seven spots taken that leaves five spaces for them. Mr. Dwyer wants the decision to remove the seven spaces rescinded.

Cathy Estrada of 1025 Pleasant Place stated she is on a three year wait list for a parking space. Ms. Estrada spoke about how most people have some physical problem and she has to constantly move her car. Ms. Estrada spoke on the difficulties for visitors to come and she cannot walk long distances. She stated she can't afford permit parking for herself or her caregiver.

Martin Gaspar of 1025 Pleasant Place stated he agrees with Jill Velan that parking was first come first serve but now it's no come no serve. Mr. Gaspar stated Randolph seems to be open all day and caregivers are getting tickets based on old restrictions and he wants to make sure police know of the changes. He also mentioned cars on

private property at Mills Park Tower are getting tickets and thinks the five spa remaining are on private property.

Joy Aaronson of 949 Pleasant stated she is disappointed the seven spaces were taken away. Ms. Aaronson said she knows how difficult parking is in the area and wants the 24 hour parking permits rescinded to address the parking situation.

Jay Chatla of 1025 Pleasant Place stated that he believes Oak Park is “no park” because it is difficult to have visitors or caregivers come to the building and the residents are requesting the Transportation Commission does something about this.

Joseph Sarpy of 1025 Pleasant Place Apt 7A stated that reinstating the seven spots won’t alleviate problems, just make things easier. Mr. Sarpy explained he has an assigned space at Mills Park Tower and sometimes when he leaves and comes back someone is in his space. He doesn’t think there should be an overnight ban and mentioned he had a list of 65 residents of the building who wanted to attend the meeting but were afraid if they moved their cars they would lose their spaces.

Catherine Terrell of 208 S Maple stated she was parking in Holley Court and has two young children, a four year old and 18 month old and understands parking struggles when walking with two young kids home can take 30 minutes or more. Mrs. Terrell stated she pays for one of the seven spaces in lot 119 and needs closer access to her car. She explained her family life, her husband’s occupation and how he was robbed in the area. Mrs. Terrell mentioned the Carlton Hotel and other places in the area with parking lots that are mostly unoccupied. She thinks the Village should work with them to see about using some of their spaces.

Chris Donovan of 733 S Elmwood stated he came to the wrong meeting but wanted to let everyone know that state law for meetings says it doesn’t have to be posted until 48 hours prior and that even if someone comments at a Board meeting, they won’t respond at that meeting.

Eileen Gerges of 1025 Pleasant Place Apt 16C stated she knows three caregivers who do not come anymore because of parking. Ms. Gerges stated she doesn’t get visitors anymore. She was on the wait list for a parking space for four years and when it came her turn she couldn’t get it due to her medical condition so it went to someone else. Ms. Gerges wants the Commission to look for other options for permit holders.

Elaine Valenta of 1700 River Woods Drive in Melrose Park stated she is the sister to Eileen Gerges and is a registered nurse and had lived in Oak Park for many years. Ms. Valenta feels people don’t realize the amount of seniors in Mills Park Tower that have problems. She said a caregiver quit and she cannot visit due to the parking situation. Ms. Valenta stated they (Mills Park Tower residents) need their spaces.

Tyler Tankson of 264 S Marion stated he parks on Pleasant and has to move from s to spot. Mr. Tankson feels even with those spaces it's going to be a problem. He mentioned he's another parking permit holder.

John Youkhana went over emails sent in as public testimony.
Public testimony was closed out.

Commissioner Stewart stated the Commission started looking at zones after the YMCA sold their lot and local residents were looking for other options. He said the Transportation Commission went out and studied the area and saw the unrestricted spaces and around the community spending a lot of time doing the study.

A member of the audience asked if when study was done if the Commission looked at who was parking there and not just at the spaces.

Jill Velan stated notices for every meeting were sent to 4000 people in the area and she has the documentation to prove it. Ms. Velan stated she knows people are busy which is why the Commission does make an effort to go back and relook at things and would like the Commission to make a recommendation.

Commissioner Basirirad asked if staff looked at how much parking buildings have versus the population. Jill Velan responded one reason why there's a parking issue is because Oak Park has built out since the early 1900's when people didn't have many vehicles and parking dynamics have changed over time.

A discussion on potential parking in the new development and options for overnight and daytime parking was had including talking about metered spaces on Marion and changing parking on Pleasant Place. The Commission also talked about a shuttle system for Mills Park Tower from parking garages to the building.

Jill Velan reiterated the Village had a shuttle service and it was very expensive to run. She explained there are unrestricted spaces on Randolph and metered spaces on Marion as well as discounted spaces in the parking garages for employees. They would need to prove their wages to qualify and there are other caretakers that use those permits.

The Commission continued to discuss the spaces being a Village issue versus a Mills Park Tower management issue and that there's a problem that needs to be corrected.

Jill Velan asked the Commission to give staff an idea where other parking spaces they recommend for Mills Park Tower so staff can make sure everyone in area is notified because any changes will affect other people.

Chair Chalabian said staff should look at metered spaces south of Pleasant Place and north to the funeral home.

Commissioner Eichenberger stated the purpose of the recommendation is to addr the problem the residents brought to the Commission regarding the seven spaces and motioned to direct staff to look at metered spaces south of Pleasant Place on Marion.

The voice vote was as follows:
Ayes: Chalabian, Thompson, Eichenberger, Stewart
Nays: Basirirad

The motion passed four to one.

INTRODUCTION OF VILLAGE-WIDE PARKING STUDY CONSULTANT, DIXON RESOURCES UNLIMITED

Julie Dixon of Dixon Resources Unlimited gave a presentation on the upcoming Village-wide parking study taking place over the next six months.

A brief discussion was had about marketing solutions for parking, parking dynamics, and parking hierarchy was had.

DISCUSS POSSIBLE ADDITIONAL COMMISSION MEETING DATE FOR 08/01/2017 (or 08/02/2017) REGARDING RUSH HOSPITAL REFERRAL

Jill Velan stated the Village Board of Trustees referred Rush Hospital to the Plan Commission at its July 17th meeting and it would come to the Transportation Commission on July 31st. There would be a possible meeting on August 2nd if discussion doesn't finish on the 31st.

Commissioner Eichenberger motioned to adjourn the meeting and the motion was seconded by Commissioner Basirirad.

The voice vote was unanimous to adjourn the meeting.

The meeting was adjourned at 9:39 PM.

Respectively submitted

Mary Avinger

Mary Avinger,
Administrative Secretary

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Village Of Oak Park

Transportation Commission Agenda Item

Item Title:	Referral of the Rush Oak Park Hospital Plan Development Application to the Transportation Commission for Comments on Potential Parking and Traffic Impacts of the Proposed New Emergency Room

Review Date: July 31, 2017

Prepared By: Jill Juliano

Abstract (briefly describe the item being reviewed):

On July 17, 2017, the Village Board of Trustees referred the Rush Oak Park Hospital plan development application to the Transportation Commission to provide comments to the Plan Commission on potential parking and traffic impacts to the Village's transportation system resulting from the proposed new emergency room.

Included in the application are proposed modifications to the existing traffic diverter and a potential cul-de-sac, potential turn restrictions on Madison Street, and the removal of on-street resident overnight permit parking on Maple Avenue south of Madison Street in the areas related to the new emergency room.

Staff Recommendation(s):

The Transportation Commission is to provide comments to the Plan Commission as to the potential parking and traffic impacts resulting from the proposed new emergency room.

Supporting Documentation Is Attached

Memorandum

Date: July 27, 2017

To: The Transportation Commission

From: Jill Juliano, Transportation Engineer JJ

Re: Background Information Related to Referral of the Rush Oak Park Hospital Plan Development Application to the Transportation Commission for Comments on Potential Parking and Traffic Impacts of the Proposed New Emergency Room

Rush Oak Park Hospital is proposing to build a new emergency room on the southeast corner of Madison Street and Maple Avenue. It will replace the five-story Oak Park Medical Arts Building. Rush Oak Park Hospital has submitted a plan development application to the Village of Oak Park.

The plan development application includes relocating the emergency room to the corner of Maple Avenue and Madison Street which creates potential impacts to the Village's transportation system, specifically to the local street network south of the hospital complex as well as on Madison Street. Potential changes include modifications to the existing traffic diverter or a potential cul-de-sac as well as potential turn restrictions on Madison Street. The plan development application also includes the removal of on-street resident overnight permit parking on Maple Avenue south of Madison Street in the areas related to the new emergency room.

On July 17, 2017, the Village Board of Trustees referred the Rush Oak Park Hospital plan development application to the Transportation Commission to provide comments to the Plan Commission on potential parking and traffic impacts to the Village's transportation system resulting from the proposed new emergency room. It is expected that the Plan Commission will review the Transportation Commission's comments at its August 3rd public meeting. A copy of the KLOA, Inc. parking and traffic study extracted from the full plan development application is included in this agenda package. A copy of the full Rush Oak Park Hospital plan development application can be found on the Village's website. Below is the link to this document:

http://www.oak-park.us/sites/default/files/planning-documents/2017-07-17-rush-oak-park-hospital-planned-development-application.pdf

The plan development application has been reviewed by staff.

Staff's primary parking and traffic concerns are:

- Traffic, safety and geometric impacts of the new emergency room main entrance located at Madison Street/Maple Avenue intersection on this and adjacent intersections.

Memorandum

- Impacts of closing off Maple Avenue to all traffic at the southern border of the Rush Oak Park Hospital campus (presently a northbound only traffic diverter) – for both the neighborhood (north and south of the diverter) and hospital access.
- Circulation or maneuvers of emergency room traffic on Maple Avenue, in porte-cochere or lay-by area, and accessing emergency room parking lot.
- Potential loss of 12 on-street parking spaces on Madison Street due to the westbound left turn lane at Maple Avenue.
- Potential loss of up to 12 on-street permitted parking spaces on Maple Avenue associated with the new emergency room and potential closure of Maple Avenue at the southern border of the Rush Oak Park Hospital campus.

Alternatives have been provided in the KLOA, Inc. study to possibly address the potential parking and traffic impacts of relocating the emergency room and will be discussed at the meeting.

Representatives from Rush Oak Park Hospital and KLOA, Inc. will be making a presentation to the Commission regarding the relocation of the emergency room and its impacts. Ultimately, the Transportation Commission will provide comments as to potential parking and traffic impacts resulting from the proposed new emergency room design. Staff will generate a report outlining the Commission's comments and forward them on to the Plan Commission.

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Traffic Impact Study

Proposed Emergency Room Relocation
Oak Park, Illinois

Prepared for:

RUSH
OAK PARK HOSPITAL

Prepared by:

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

June 29, 2017

Introduction

This report summarizes the methodologies, results and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed emergency room expansion and relocation for the Rush Oak Park Hospital campus located at 520 South Maple Avenue in Oak Park, Illinois.

The emergency room is currently located on the east side of the main hospital building with access off Wisconsin Avenue. The plans call for the expanded emergency room to be relocated to the west side of the main hospital building with access off Maple Avenue. A lay-by is proposed on the east side of Maple Avenue to allow for the vehicle drop-off/pick-up of passengers. Ambulances will access the new emergency room from the existing truck delivery access drive off Madison Street, located between Maple Avenue and Wisconsin Avenue. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows a proposed site plan of the relocated emergency room with the proposed pick-up/drop-off lay-by and the ambulance entrance off Madison Street.

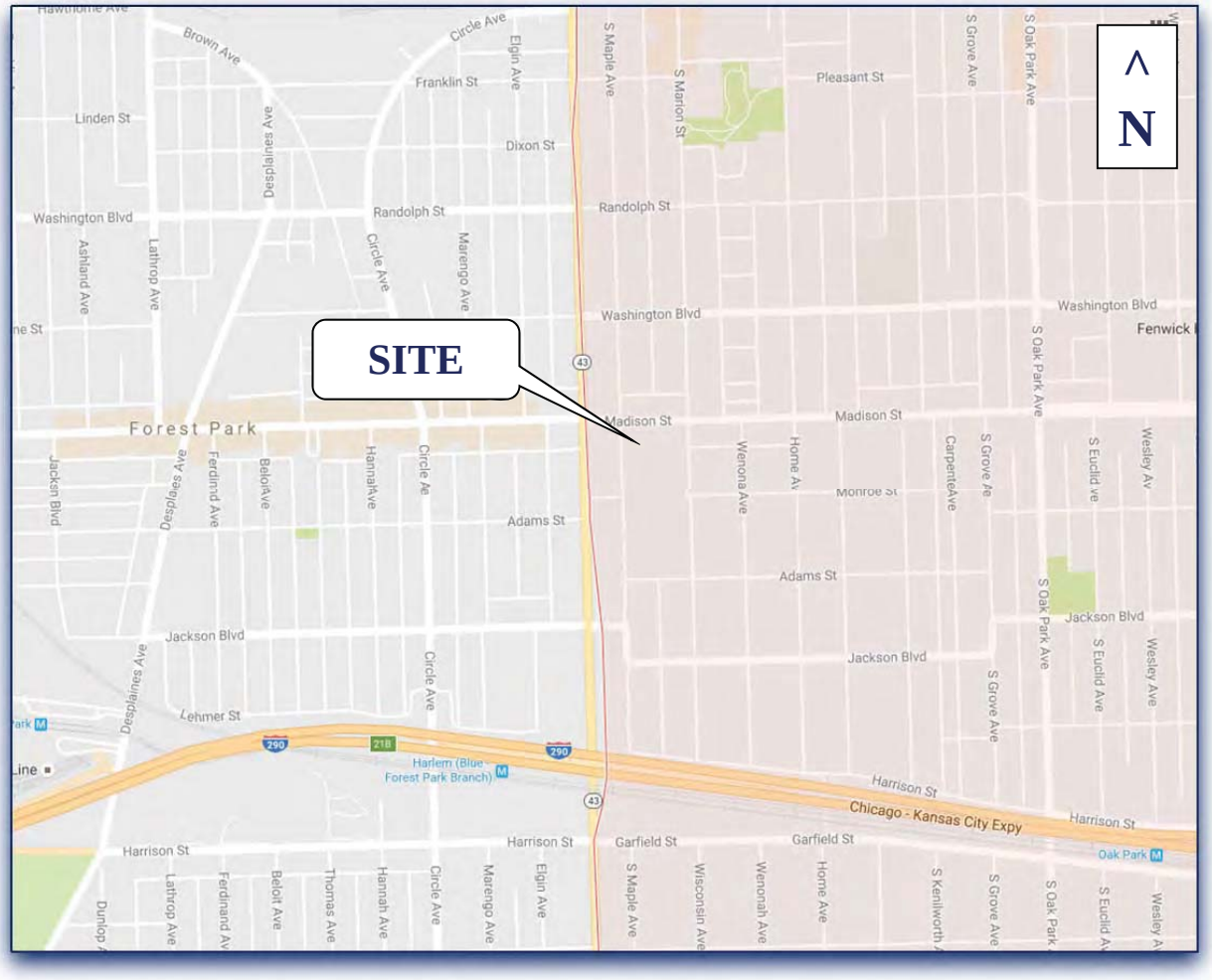
Access to the ROPH campus will continue to be primarily from Harlem Avenue via Monroe Street and Madison Street via Maple Avenue and Wisconsin Avenue. With the exception of the proposed lay-by for the proposed emergency room with access on Maple Avenue, no new access driveways are proposed as part of this conceptual plan.

The following sections of this report present the following.

- Existing roadway characteristics
- Existing weekday morning and weekday evening peak hour traffic volumes
- A detailed description of the proposed development
- Vehicle trip generation for the proposed development
- Directional distribution of development-generated traffic
- Future transportation conditions including access to and from the development

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following two conditions.

1. Existing Condition - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes to establish a base condition.



Site Location **Figure 1**

Proposed Site Plan **Figure 2**

2. Future Condition (Year 2022) – This condition projects total Year 2022 traffic conditions, which includes the existing traffic volumes increased by a regional growth factor plus the estimated development-generated traffic from the proposed emergency room expansion.

The purpose of this study is as follows:

1. To examine existing roadway and traffic conditions to establish a base condition

2. Determine the vehicle trips to be generated by the proposed development and then determine its impact on the surrounding roadway network

3. Determine the roadway, traffic control, and/or pedestrian mobility improvements needed within the traffic study area to accommodate both the traffic from the proposed development as well as anticipated traffic projections for Year 2022 total traffic conditions.

4. Determine the parking demand and parking area designation for the proposed emergency room.

Existing Conditions

Existing traffic and roadway conditions were documented based on field visits and previous traffic counts conducted by KLOA, Inc. The following provides a detailed description of the physical characteristics of the roadways including geometry and traffic control and adjacent land uses along area roadways.

Existing Roadway System Characteristics

The characteristics of the existing roadways that surround the proposed development are illustrated in **Figure 3** and described below.

Harlem Avenue (Illinois State Route 43) is a north-south arterial roadway that provides two through lanes in each direction and has a posted speed limit of 35 mph. Sidewalks are provided on both sides of the roadway, and parking is restricted on both sides of the roadway. Harlem Avenue is served by CTA Bus Route 307 and has several bus stops (sign only) for both directions of travel on Harlem Avenue in the vicinity of the campus. Harlem Avenue is under the jurisdiction of the Illinois Department of Transportation (IDOT). According to IDOT's website, Harlem Avenue carries an ADT of 37,000 vehicles.

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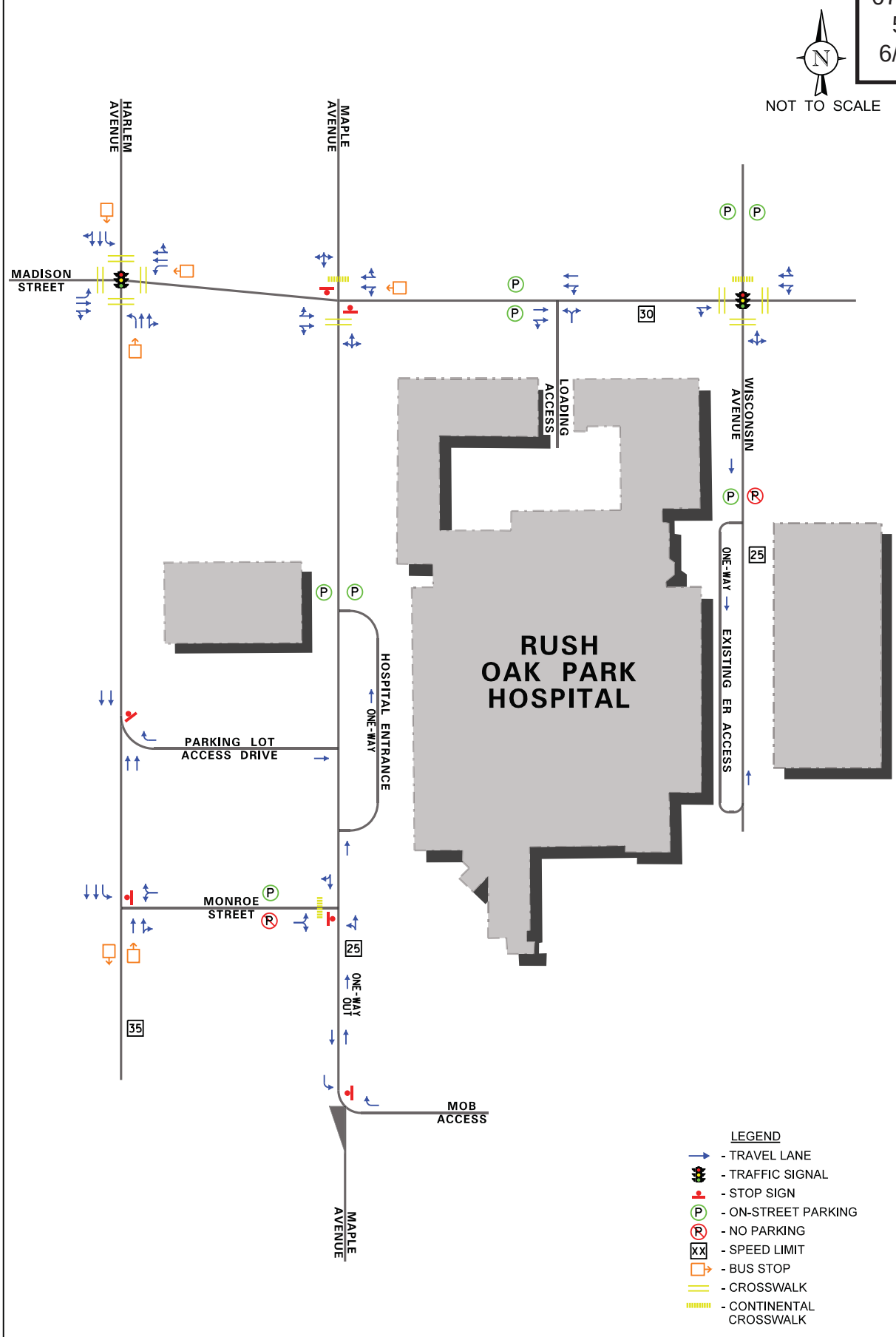

ROPH
Emergency Room
Relocation
Oak Park, Illinois

EXISTING ROADWAY CHARACTERISTICS

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.
Job No: 16-170 Figure: 3

Madison Street is an east-west roadway that provides two lanes in each direction. Parking is permitted on both sides of the roadway and is limited to two-hour parking between 9:00 A.M. and 5:00 P.M. Monday through Saturday. Madison Street is under the jurisdiction of the Village of Oak Park, has an average daily traffic (ADT) volume of 17,400 vehicles, and a posted speed limit of 30 miles per hour. Madison Street is served by CTA Bus Route 320 and has several bus stops (sign only) for both directions of travel on Madison Street in the vicinity of the campus.

Maple Avenue is a north-south two-lane local road providing one lane in each direction. South of Monroe Street and just south of the access drive serving the professional medical office building on the east side of the road, a bump-out restricts vehicles from continuing southbound, only allowing northbound through vehicles. Two-way traffic flow is continued on Maple Avenue south of the bump-out. Parking is permitted on both sides of the street and the posted speed limit is 25 mph. North of Monroe Street, Maple Avenue provides access to a ROPH parking lot on the west side of the roadway, and also access to the port-cochere for the main entrance to the hospital that has a one-way northbound orientation. Maple Avenue is under the jurisdiction of the Village of Oak Park.

Wisconsin Avenue is a north-south two-lane local road providing one lane in each direction. Parking is permitted on both sides of the street and the posted speed limit is 25 mph. Wisconsin Avenue currently provides access to the existing emergency room port-cochere, which has a one-way southbound orientation, as well as the hospital parking garage located on the east side of Wisconsin Avenue. Wisconsin Avenue is under the jurisdiction of the Village of Oak Park.

Existing Traffic Volumes

Manual turning movement traffic counts were conducted on Thursday, May 19, 2016 during the morning (7:00 to 9:00 A.M.) and the evening (4:00 to 6:00 P.M.) peak hour periods and on Saturday, May 21, 2016 (12:00 to 2:00 P.M.) at the following seven intersections.

1. Harlem Avenue and Madison Street (signal)
2. Wisconsin Avenue and Madison Street (signal)
3. Maple Avenue and Madison Street (stop sign)
4. Maple Avenue and Monroe Street (stop sign)
5. Harlem Avenue and Monroe Street (stop sign)
6. Parking Lot Access Drive/Monroe Street (stop sign)
7. Hospital Port-Cochere Drives and Monroe Street (stop sign)

From the manual turning movement count data, it was determined that the weekday morning peak hour generally occurs between 7:15 and 8:15 A.M. and the weekday evening peak hour generally occurs between 5:00 and 6:00 P.M. These two respective peak hours will be used for the traffic capacity analyses and are presented later in this report.

The existing vehicle peak hour traffic volumes and the respective ADTs are shown in **Figure 4**.

The existing pedestrian and bicycle peak hour traffic volumes are shown in **Figure 5**.

Field Observations

The following observations were noted during the weekday peak periods.

- Pedestrian and bicycle activity was observed and reported to be low at the study intersections.
- Westbound traffic on Madison Street stopped at Harlem Avenue was frequently queued past Maple Avenue, particularly during the weekday morning peak hour. This queue was observed to typically clear the Harlem Avenue traffic signal by the next green phase.
- Northbound traffic on Harlem Avenue stopped at Madison Street was frequently queued past Monroe Street. Vehicles desiring to turn left from Monroe Street to travel southbound on Harlem Avenue had to wait for courtesy gaps in queuing traffic to be able to pull out onto Harlem Avenue. This primarily observed during the weekday evening peak hour, but also did occur during the weekday morning peak hour.
- No turning movement conflicts or back-ups were observed on Maple Avenue between Monroe Street and Madison Street.

Madison Street Improvements

Streetscape improvements are proposed for Madison Street to reduce the four-lane roadway to one lane with a dedicated bicycle lane in each direction. High-visibility crosswalks will be provided on all major crossings along the corridor, including the signalized intersections at Harlem Avenue and at Wisconsin Avenue. At its westbound approach to Harlem Avenue, Madison Street will continue to provide two through lanes through the intersection. Further, the westbound left-turn lane, which currently provides approximately 90 feet of storage, will be extended to provide approximately 300 feet of storage. This westbound left-turn lane will then extend east of Maple Avenue and ending just before reaching the existing access drive that will become the ambulance driveway access to the ROPH campus. These improvements are under consideration and may be implemented in the next few years.

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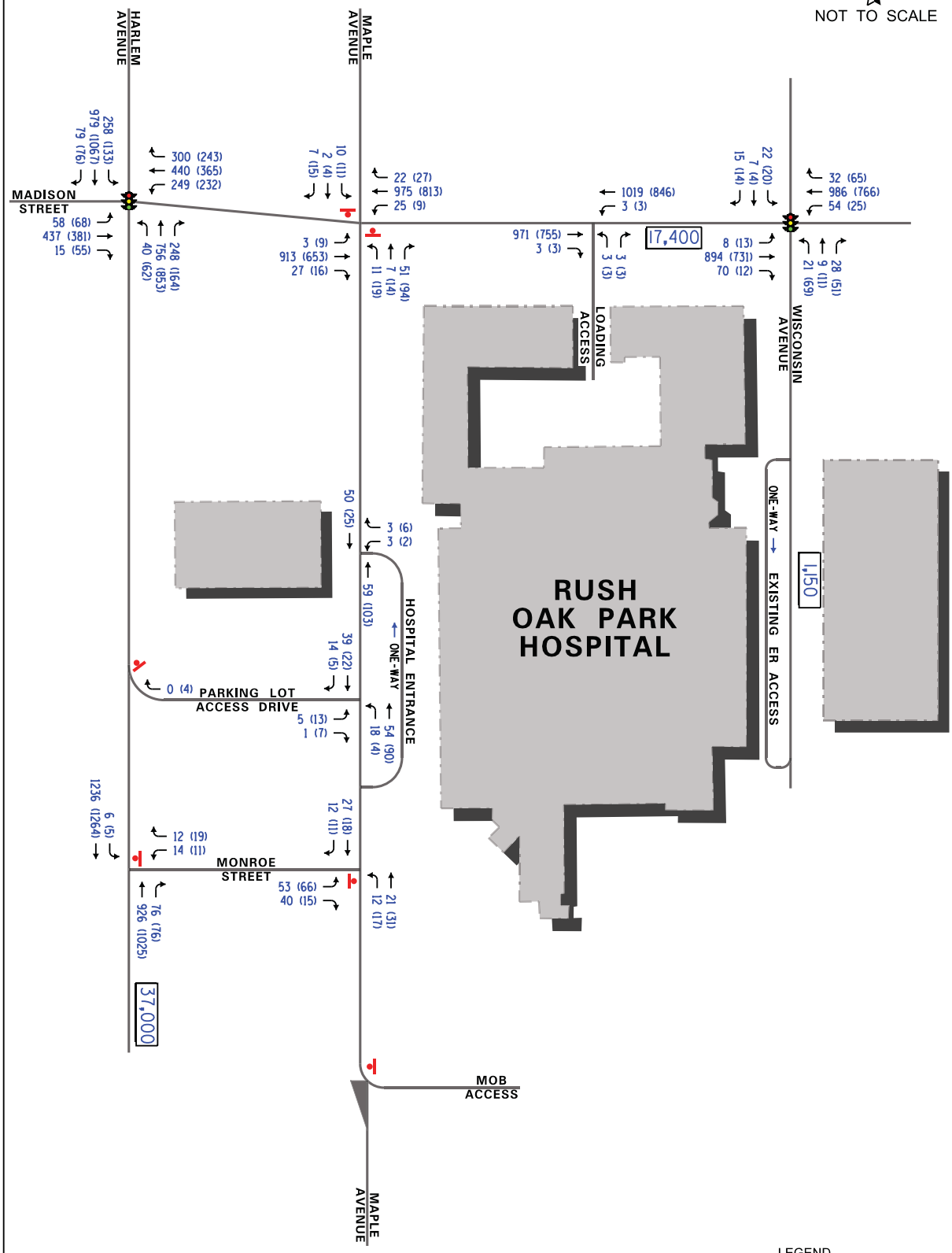

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EXISTING TRAFFIC VOLUMES

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.
Job No: 16-170 Figure: 4

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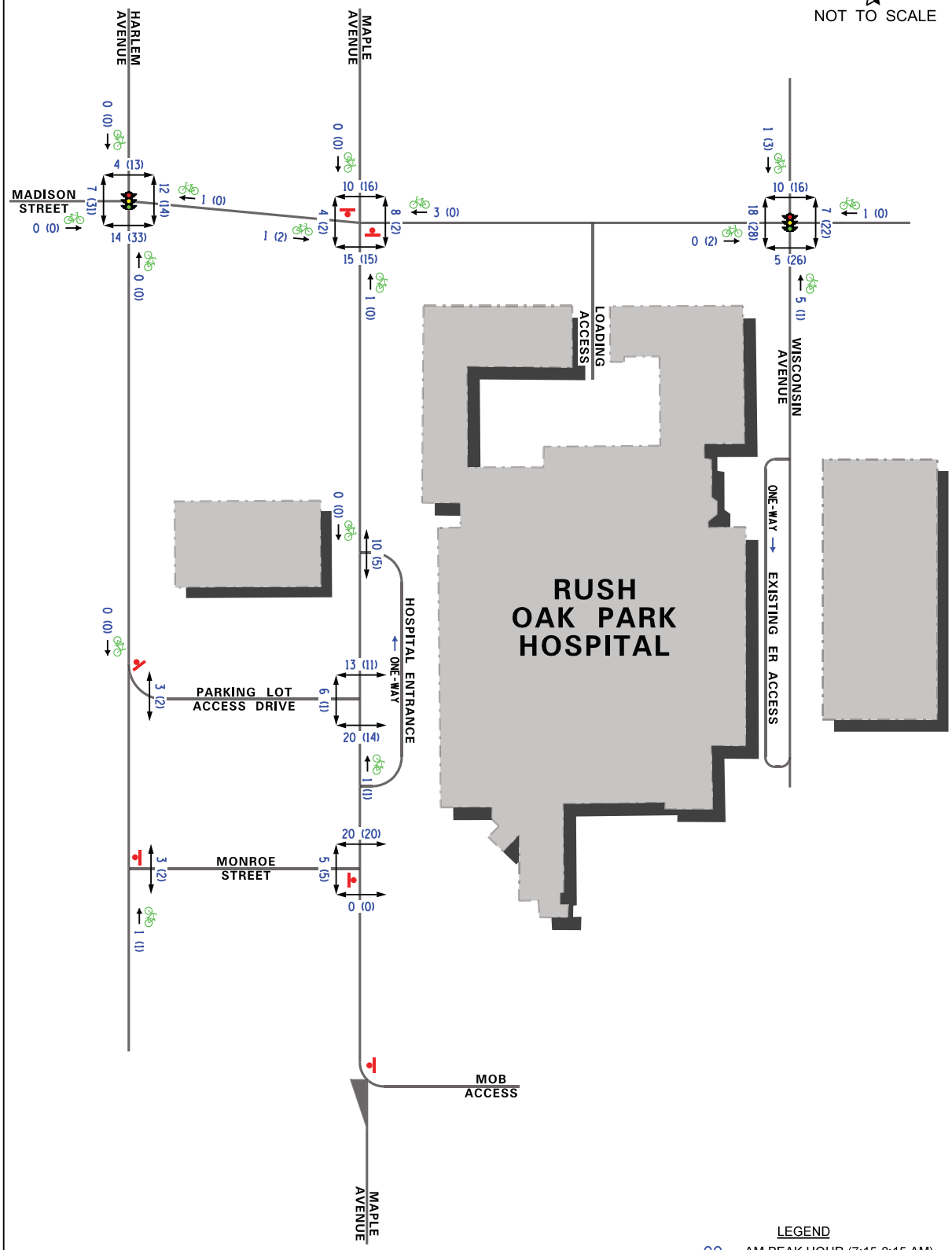


ROPH
Emergency Room
Relocation
Oak Park, Illinois

EXISTING PEDESTRIAN AND BICYCLE TRAFFIC VOLUMES

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 16-170 Figure: 5

Maple Avenue Corridor

The following is a discussion regarding the Maple Avenue Corridor from Madison Street to south of the existing bump-out/diverter and the proposed improvements to this corridor.

Maple Avenue Southbound Through Traffic at Bump-Out/Diverter

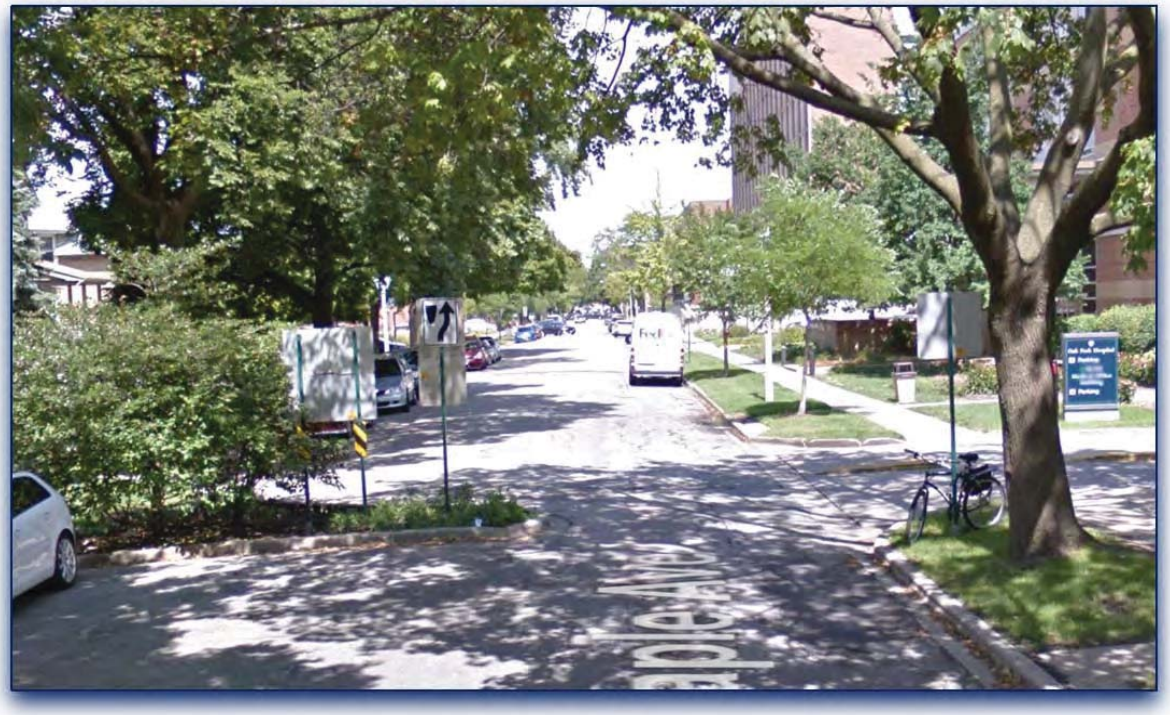
As noted, south of Monroe Street and just south of the access drive serving the professional medical office building on the east side of the road, a bump-out restricts vehicles from continuing southbound, only allowing northbound through vehicles. The bump-out restricts traffic to northbound only. The northbound through traffic is under freeflow conditions. Do Not Enter signage is posted on either side of the northbound through lane facing opposing traffic to deter vehicles from continuing southbound on Maple Avenue. In addition, a left-turn only sign is posted to direct southbound vehicles to turn into the access drive, rather than proceeding southbound on Maple Avenue. Further, the medical access drive has a narrow, barrier median that channelizes exiting vehicles to right-turn movements only.

Figure 6A shows a street view of Maple Avenue from the vantage point of a vehicle travelling southbound as it approaches the bump-out. **Figure 6B** shows a street view of Maple Avenue from the vantage point of a vehicle travelling northbound as it approaches the bump-out.

It is important to note that to continue southbound on Maple Avenue past the bump-out, vehicles travelling southbound on Maple Avenue have to proceed left-of-center and enter the northbound through only lane that is created by the bump-out, and then steer right.

As a result of concerns raised in neighborhood meetings as to the effectiveness of this bump-out, traffic counts were conducted at the bump-out/access drive on Maple Avenue for 72-hours beginning midnight on Tuesday, December 6, 2016 to Thursday, December 8, 2016. The counts were reviewed to quantify the number of vehicles proceeding southbound on Maple Avenue that proceed south of the bump-out (southbound through movement) and the left-turning vehicles that are exiting from the access drive and proceeding southbound on Maple Avenue past the bump-out (westbound left-turn movement).

Maple Avenue – Looking Southbound at Bump-Out **Figure 6A**



Maple Avenue – Looking Northbound at Bump-Out **Figure 6B**

Table 1 shows the hourly volumes for each movement for each of the three days, the total volumes for each movement for each day, and the average hourly and daily volumes for all three days.

As Table 1 shows, the bump-out on Maple Avenue, south of Monroe Street, has a limited effect in deterring southbound travelling vehicles from continuing south of the bump-out that is designed to physically restrict traffic movements to northbound through traffic only.

The following options were considered to further enhance this roadway restriction.

- Improve the signage, which may include advanced warning signage at Monroe Street.

- Modify the access drive to the medical office building to provide enhanced physical restrictions via channelization to physically restrict and channelize vehicles to outbound right-turning movements only. Signage should also be added indicating the restriction.

- Improve enforcement of the restrictions.

- Alternatively, gate Maple Avenue at the bump-out (similar to the existing gate at the Wisconsin Avenue/Monroe Street intersection) with access restricted to emergency response vehicles only. Signage should be posted on Maple Street at Adams Street indicating the closure of the road to the north.

- Alternatively, close Maple Avenue with a cul-de-sac in place of the existing bump-out.

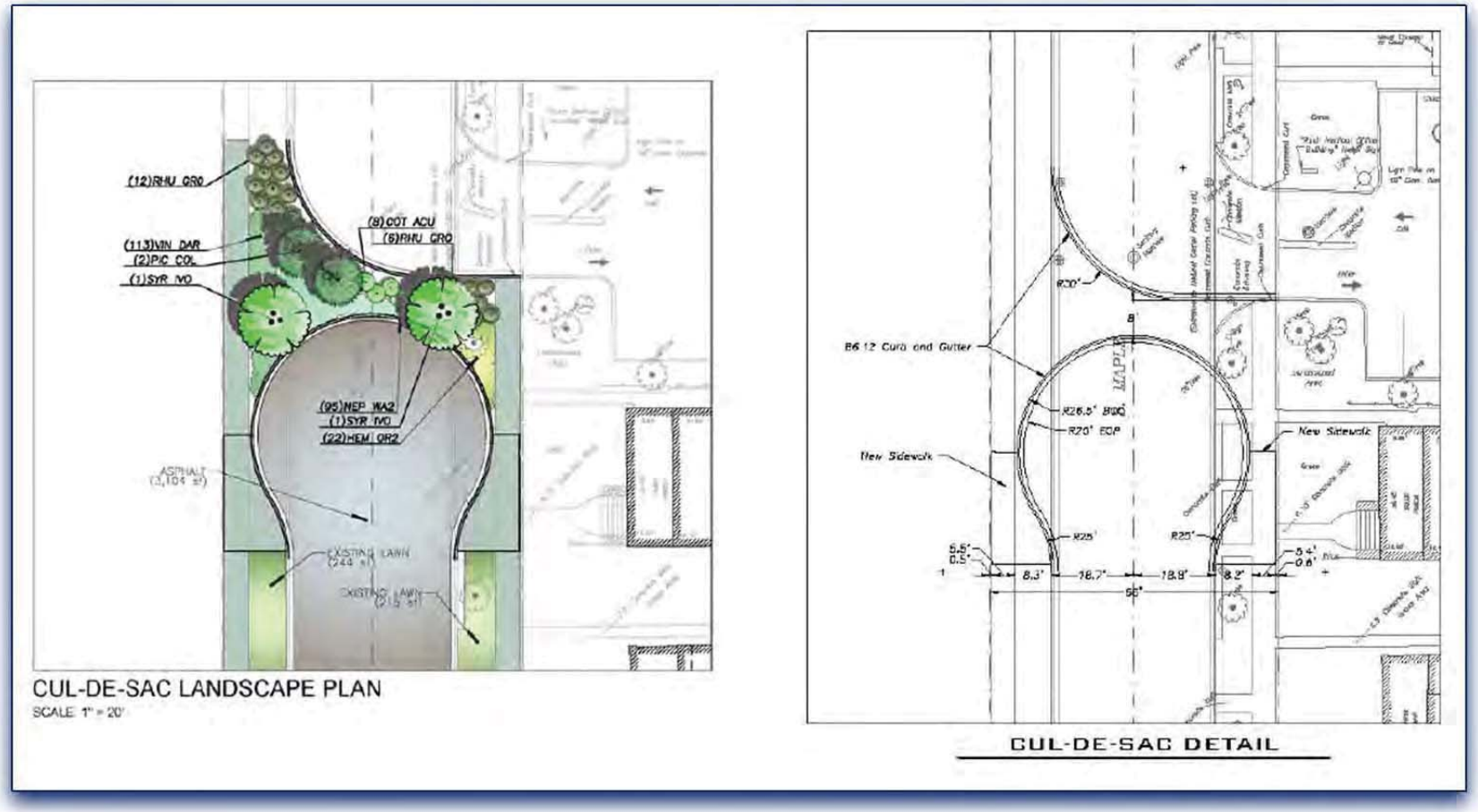
Cul-de-sac on Maple Avenue

In conjunction with the proposed development, a cul-de-sac is proposed to be constructed at the existing bump-out, south of Monroe Street. The cul-de-sac will be designed to block traffic from proceeding northbound (or southbound) on Maple Avenue. As such, Maple Avenue, between Monroe Street and the proposed cul-de-sac, will continue to serve the single-family homes fronting Maple Avenue on the west side and the medical office building access drives on the east side. **Figure 6C** shows the proposed geometry and landscaping for the cul-de-sac design.

Table 1
MAPLE AVENUE TRAFFIC VOLUMES

	Tuesday			Wednesday			Thursday			Average		
Hour Begin	SBT	WBL	Total	SBT	WBL	Total	SBT	WBL	Total	SBT	WBL	Total
12:00 AM	1	0	1	0	0	0	0	1	1	1	1	2
1:00 AM	0	0	0	0	0	0	1	0	1	1	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	1	0	1	0	2	2	0	1	1
4:00 AM	0	0	0	0	1	1	0	0	0	0	1	1
5:00 AM	1	0	1	1	0	1	0	2	2	1	1	2
6:00 AM	4	1	5	4	1	5	5	1	6	4	1	5
7:00 AM	3	1	4	5	2	7	8	3	11	5	2	7
8:00 AM	2	1	3	4	1	5	1	1	2	2	1	3
9:00 AM	3	0	3	1	3	4	2	2	4	2	2	4
10:00 AM	11	1	12	4	1	5	3	2	5	6	1	7
11:00 AM	9	6	15	3	3	6	4	3	7	5	4	9
12:00 PM	5	3	8	5	3	8	10	4	14	7	3	10
1:00 PM	5	2	7	9	3	12	10	2	12	8	2	10
2:00 PM	10	3	13	8	2	10	1	6	7	6	4	10
3:00 PM	6	7	13	7	3	10	15	4	19	9	5	14
4:00 PM	7	2	9	8	6	14	13	3	16	9	4	13
5:00 PM	4	6	10	6	5	11	10	1	11	7	4	11
6:00 PM	7	0	7	6	6	12	5	6	11	6	4	10
7:00 PM	6	3	9	3	1	4	2	2	4	4	2	6
8:00 PM	6	1	7	2	2	4	3	1	4	4	1	5
9:00 PM	5	0	5	2	0	2	9	2	11	5	1	6
10:00 PM	1	3	4	2	0	2	1	0	1	1	1	2
11:00 PM	2	2	4	1	1	2	0	0	0	1	1	2
Total:	**98**	**42**	**140**	**82**	**44**	**126**	**103**	**48**	**151**	**94**	**47**	**141**

- SBT = Southbound Through Movement. Vehicles proceeding south on Maple Avenue past the bump-out.
- WBL = Westbound Left-turn Movement. Vehicles making an exiting left-turn from the access driveway and proceeding south on Maple Avenue past the bump-out.



Proposed Cul-de-sac Plan on Maple Avenue **Figure 6C**

A cul-de-sac is proposed for the following reasons.

- Existing traffic data shows that the existing bump-out is not deterring southbound traffic, either from Maple Avenue or the medical access drive, from proceeding southbound on Maple Avenue past the bump-out.
- Gating Maple Avenue at the bump-out will result in a dead end situation without a turnaround for vehicles.
- Providing a cul-de-sac allows for easier turnaround for residents leaving to the south.
- Signage is subject to enforcement.

To further enhance and enforce the closure of Maple Avenue, the following signage is recommended. **Figure 6D** illustrates the signage locations and descriptions.

- Post a Dead End/Local Traffic Only sign on Maple Avenue, just south of Monroe Street. This signage will direct southbound traffic on Maple Avenue to Monroe Street to exit onto Harlem Avenue.
- On Monroe Street, just west of Maple Avenue, post a Dead End/Local Traffic Only sign with a right arrow for eastbound traffic.
- Post a Dead End/Local Traffic Only sign on Maple Avenue, just north of Adams Street to deter non-local vehicles travelling northbound on Maple Avenue to proceed all the way to the cul-de-sac.
- As a possible temporary measure, a sign should be posted at Jackson Boulevard alerting northbound drivers that Maple Avenue is closed north of Adams Street and there is no access to the ROPH campus.

Impact of Cul-de-sac on Maple Avenue

To evaluate the impact of closing Maple Avenue and installing a cul-de-sac at the existing bump-out, peak hour traffic counts were conducted on Tuesday, May 23, 2017 at the intersections of Maple Avenue with Adams Street and Jackson Boulevard. **Figure 6E** shows the weekday morning and weekday evening traffic volumes.

As shown in Figure 6E, there is a low volume of peak hour traffic that travels northbound on Maple Avenue north of Jackson Boulevard. Further, a majority of the westbound traffic on Adams Street at its intersection with Maple Avenue continues south to Jackson Boulevard, where it continues west to Harlem Avenue. Providing a cul-de-sac on Maple Avenue will further reduce the amount of traffic turning northbound onto Maple Avenue from Adams Street and will divert this traffic to Harlem Avenue via Jackson Boulevard. **Figure 6F** illustrates the traffic flow pattern assuming a cul-de-sac at the existing bump-out.

Therefore, providing a cul-de-sac on Maple Avenue at the existing bump-out will help to further remove through traffic from the neighborhood/local streets and will have a low impact on the existing circulation throughout the adjoining roadway network.

It is important to note that the total projected traffic conditions discussed later in this report assumes the cul-de-sac on Maple Avenue.

Gate Maple Avenue at Existing Bump-Out

As noted, another alternative is to gate Maple Avenue at the bump-out, similar to the existing gate at the Wisconsin Avenue/Monroe Street intersection. The gate would be accessible and restricted to emergency response vehicles only.

Signage similar to what is illustrated in Figure 6D is recommended to warn drivers of the closure. Figure 6F illustrates the traffic flow pattern as a result of this alternative improvement.

Close Southbound Maple Avenue at Jackson Boulevard

A further alternative to reduce non-compliant southbound vehicles on Maple Avenue is to close southbound Maple Avenue at its intersection with Jackson Boulevard. This closure will also impact local traffic on westbound Adams Street that currently turns south at Maple Avenue to access Harlem Avenue via Jackson Boulevard. This diverted traffic would then either need to travel southbound to Jackson Boulevard via Wisconsin Avenue, Wenonah Avenue, or Home Avenue, or proceed north through the diverter on Maple Avenue to access Harlem Avenue via Monroe Street. Further, closing southbound Maple Avenue at Jackson Boulevard will require modification to Maple Avenue to provide for a turnaround at this closure, considering northbound free-flow traffic on Maple Avenue will continue to be allowed. Lastly, this closure will remove on-street parking on the west side of Maple Avenue near Jackson Boulevard, at a minimum.

Figure 6G illustrates the traffic flow pattern as a result of this alternative improvement.

Comparison of Maple Avenue Alternatives

The following summarizes the comparisons of the three Maple Avenue alternatives.

Cul-de-Sac on Maple Avenue

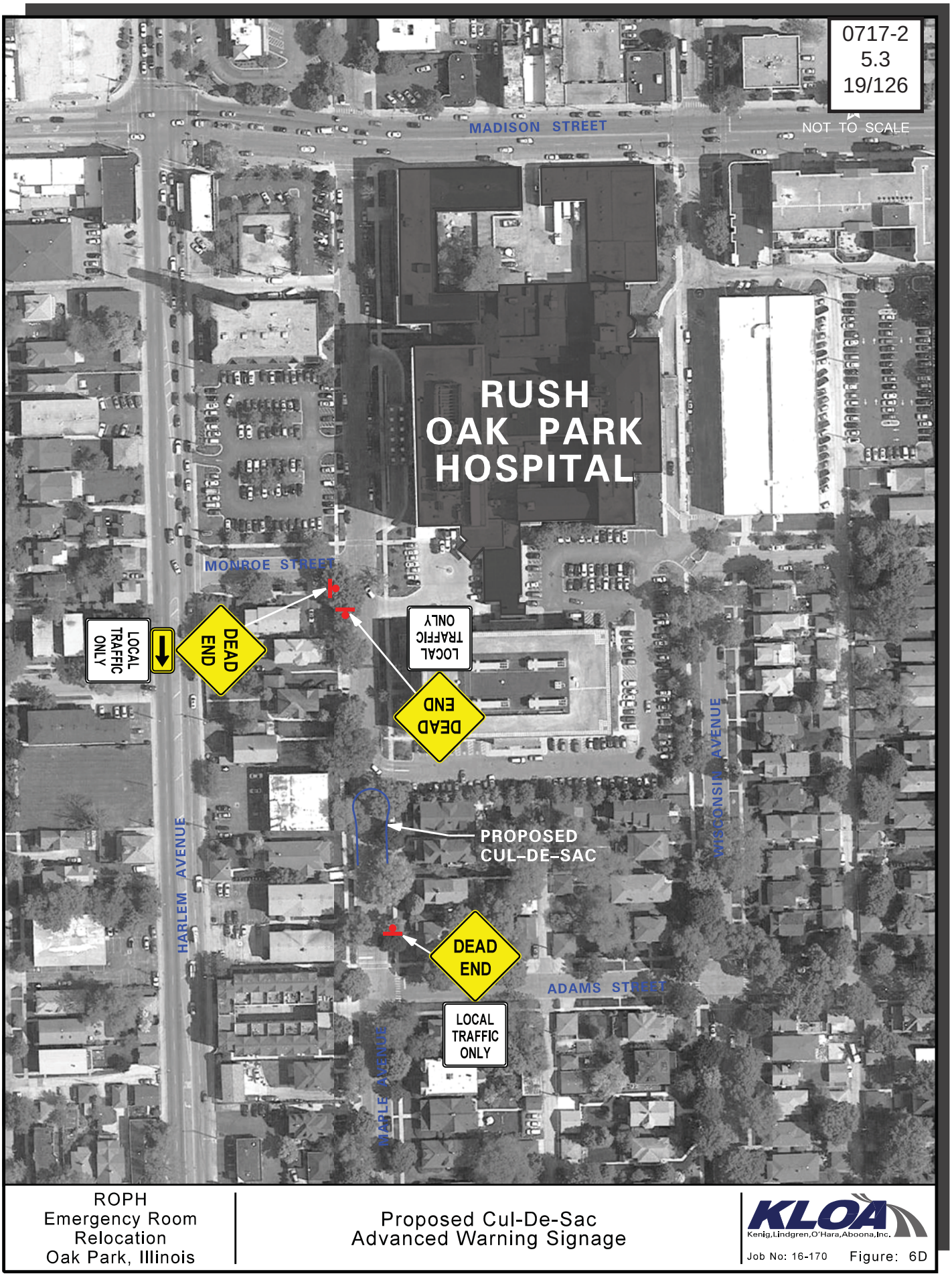
- Disconnects Maple Avenue, thereby removing all cross-traffic, including emergency response vehicles.
- Existing northbound traffic will access Harlem Avenue via Jackson Boulevard.
- All hospital traffic using Maple Avenue will be restricted to Harlem Avenue or Madison Street.
- A turnaround on Maple Avenue will be needed.
- On-street residential parking will be lost to accommodate the turnaround.
- Additional signage will be needed alerting drivers of the dead end.

Gate on Maple Avenue

- Disconnects Maple Avenue, thereby removing all cross-traffic.
- Access will be restricted to emergency response vehicles only.
- Existing northbound traffic will access Harlem Avenue via Jackson Boulevard.
- All hospital traffic using Maple Avenue will be restricted to Harlem Avenue or Madison Street.
- A turnaround on Maple Avenue will be needed.
- On-street residential parking will be lost to accommodate the turnaround.
- Additional signage will be needed alerting drivers of the dead end.

Close Southbound Maple Avenue at Jackson Boulevard

- Existing westbound traffic on Adams will either proceed northbound on Maple Avenue to Monroe Street, or travel south to Jackson Boulevard via one of the existing north-south residential streets to the east of Maple Avenue.
- Further prevents non-compliant drivers who continue southbound on Maple Avenue at the diverter.
- Arriving hospital traffic will still be able to travel north of the existing bump-out on Maple Avenue.
- A turnaround on Maple Avenue will be needed.
- Additional signage will be needed alerting drivers of the dead end.
- On-street residential parking will be lost to accommodate the turnaround.



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Proposed Cul-De-Sac
Advanced Warning Signage

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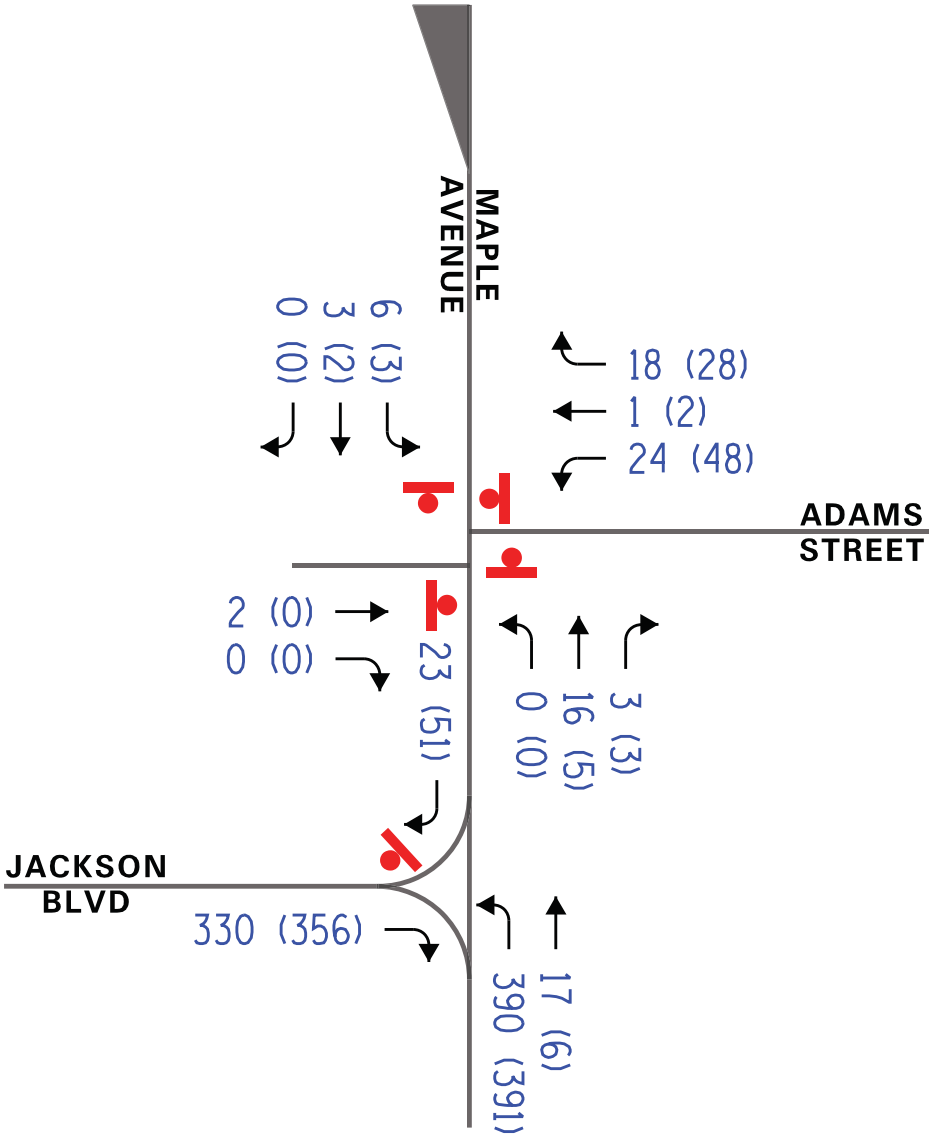
Job No: 16-170 Figure: 6D

0717-2
5.3
20/126

NOT TO SCALE



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Existing Traffic Volumes on
Maple Avenue

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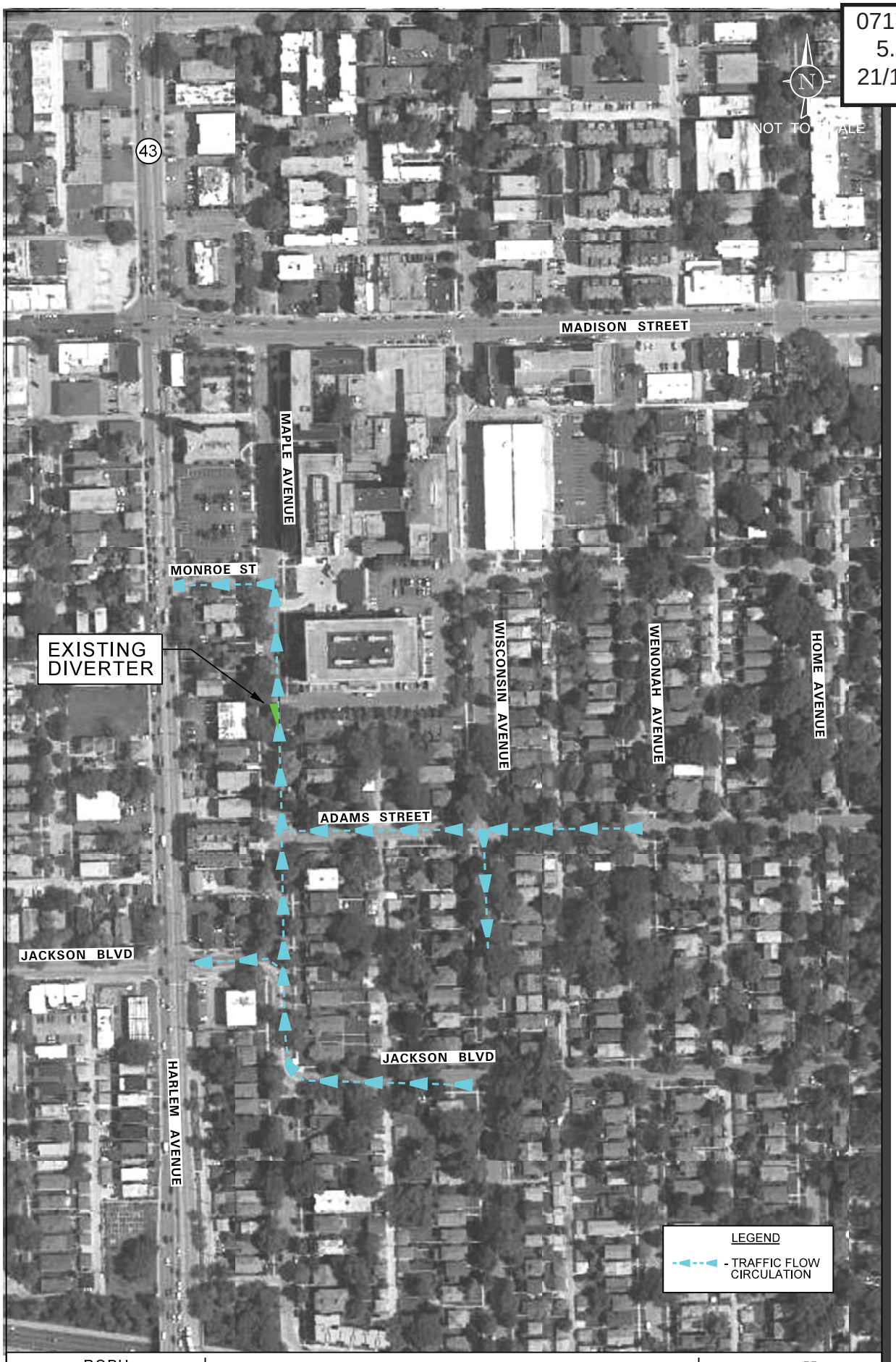
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43
MADISON STREET
MAPLE AVENUE
MONROE ST
EXISTING DIVERTER
WISCONSIN AVENUE
WENONAH AVENUE
HOME AVENUE
ADAMS STREET
JACKSON BLVD
JACKSON BLVD
HARLEM AVENUE
LEGEND
- TRAFFIC FLOW CIRCULATION
ROPH
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CLOSURE TO SOUTHBOUND TRAFFIC
AT JACKSON
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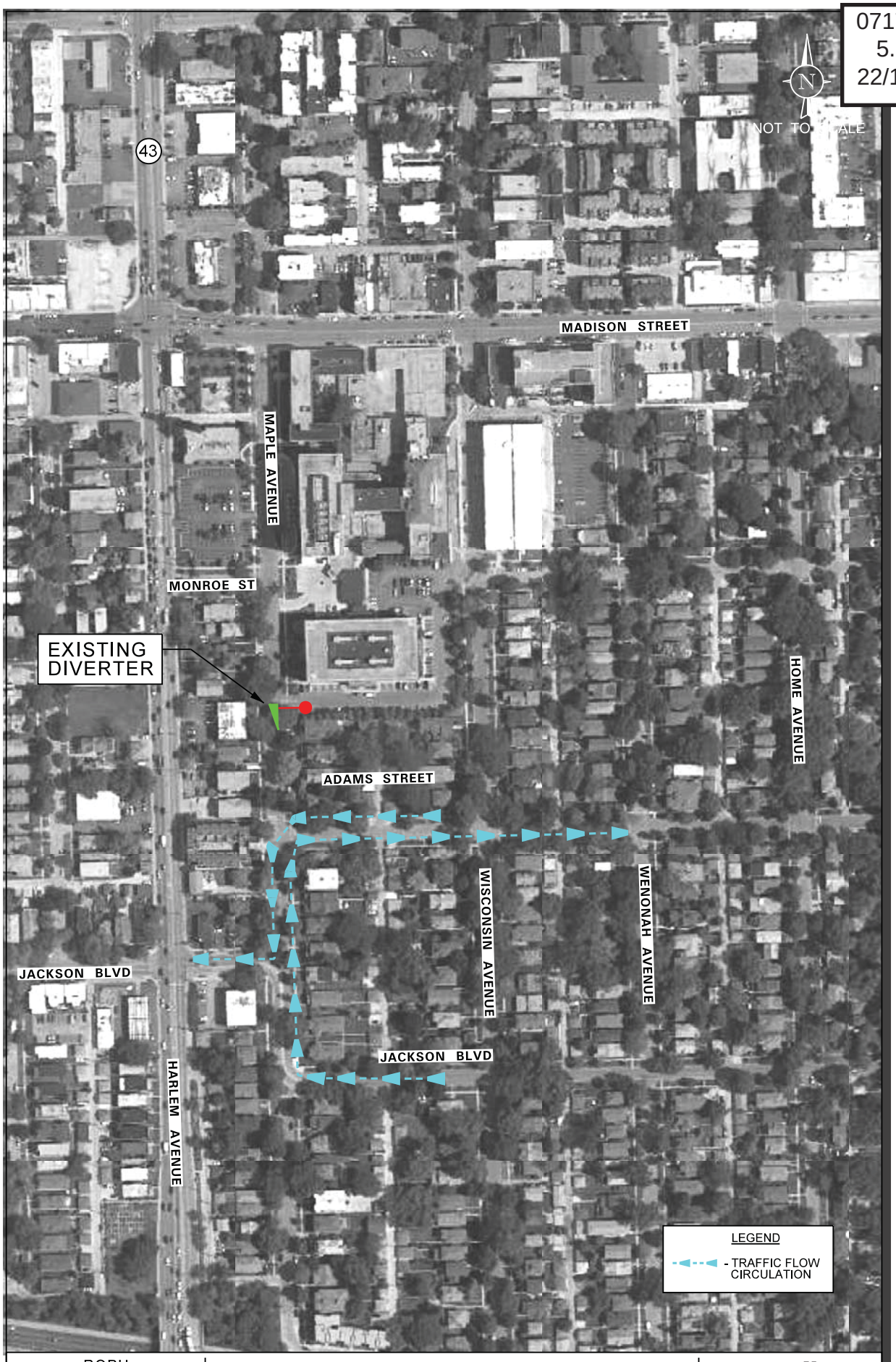
Job No: 16-170
Figure: 6F


0717-2
5.3
22/126
NOT TO SCALE
43
MADISON STREET
MAPLE AVENUE
MONROE ST
EXISTING DIVERTER
HOME AVENUE
ADAMS STREET
WISCONSIN AVENUE
WENONAH AVENUE
JACKSON BLVD
JACKSON BLVD
HARLEM AVENUE
LEGEND
- TRAFFIC FLOW CIRCULATION
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CUL-DE-SAC OR GATE AT EXISTING BUMP-OUT
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Job No: 16-170
Figure: 6G

Traffic Characteristics of the Proposed Development

To evaluate the impact of the development on the area roadway system, it was necessary to understand the type of development being proposed, quantify the number of vehicle trips the overall site will generate during peak hour periods, and determine the directions from which this traffic will approach and depart the site based on existing travel patterns of the ROPH campus and the location of the proposed emergency room location with respect to the surrounding roadways, roadway restrictions, and traffic control.

Proposed Development Plan

The emergency room is currently located on the east side of the main hospital building with access off Wisconsin Avenue. The conceptual plans call for the expanded emergency room to be relocated to the west side of the main hospital building with access off Maple Avenue.

Emergency Room Vehicle Access

A lay-by is proposed on the east side of Maple Avenue between the main entrance port-cochere and Madison Street. The lay-by, which will have a one-way northbound orientation, will be separated from the two-way traffic flow on Madison Street by a raised median. The lay-by will be wide enough to allow for two lanes. The curb side lane will be for the dropping off/picking up of passengers. The outside lane will serve as a bypass lane to those vehicles parked curbside. The outbound lanes at its intersection with Maple Avenue will be under stop sign control. According to the site plan, the lay-by is designed to provide curbside parking for approximately six vehicles without impeding on the through traffic flow on Maple Avenue.

Vehicles desiring to enter the lay-by from the north will travel southbound on Maple Avenue and make a left-turn into the lay-by area. Upon exiting the lay-by, the vehicle will have the option to turn right to proceed north to Madison Street, to turn left to proceed south on Maple Avenue to exit to Harlem Avenue via Monroe Street, or proceed through or westbound across Maple Avenue to access the existing hospital parking lot located between the east-west public alley and Madison Street. The parking lot will be modified to provide an access drive directly on Maple Avenue and the existing one-way clockwise circulation pattern will be reversed to provide a counter-clockwise rotation for easier access from the emergency room drop-off exit.

Figure A in the Appendix of this report shows a turning movement diagram of vehicles making the turning maneuvers to access the proposed emergency room lay-by drop-off/pick-up area. To accommodate these turning movements, on-street parking on both sides of Maple Avenue along the frontage of the lay-by may need to be removed.

Ambulance Access

Ambulances currently access the hospital from Wisconsin Avenue. Under the proposed development plan, ambulances will now access the emergency room via the existing access drive on Madison Street, located between Maple Avenue and Wisconsin Avenue, which currently serves the hospital truck delivery area. The access will continue to provide one lane inbound and one lane outbound under stop sign control. The ambulances will drive into a one-way southbound enclosed garage, where doors are located at both ends of the garage and will be closed when transferring patients. As such, the ambulance operations will not conflict with the truck delivery operations. Upon exiting, the ambulance will proceed south and exit out of the enclosed garage and make a U-Turn in the turnaround area by the truck loading area, and proceed north to exit the site onto Madison Street. Ambulances will have a low impact on the driveway and turnaround operations since ambulance activity is intermittent throughout the day and its operations will be separate from the truck delivery operations.

Truck Delivery Access

As noted above, the truck docks will continue to be accessed from the delivery access drive off Madison Street. The truck docks will be separate from the ambulance garage. Therefore, ambulance operations and truck delivery operations will be separated and will not impact the other. The hospital receives a minimum of 10 deliveries throughout the day.

ROPH Vehicle Access

Access to the ROPH campus will continue to be primarily from Harlem Avenue via Monroe Street and also Madison Street via Maple Avenue and Wisconsin Avenue. With the exception of the proposed lay-by for the proposed emergency room with access on Maple Avenue, no new access driveways are proposed as part of this conceptual plan.

ROPH Pedestrian Access

Pedestrians will continue to access the ROPH campus and proposed relocated emergency room using the existing sidewalk and crosswalk infrastructure that surrounds the campus. Recommendations to enhance pedestrian mobility in the immediate surrounding area are found further in this report.

Emergency Room Parking

The existing parking lot located on the west side of Maple Avenue between the east-west public alley and Madison Street will be designated for emergency room patients and visitor use. Visitors can also continue to use the parking garage located on Wisconsin Avenue that is accessed via the intersection of Madison Street and Wisconsin Avenue.

Hospital staff and employees, specifically serving the emergency room, will continue to park in the parking garage off Wisconsin Avenue.

Directional Distribution of Development Traffic

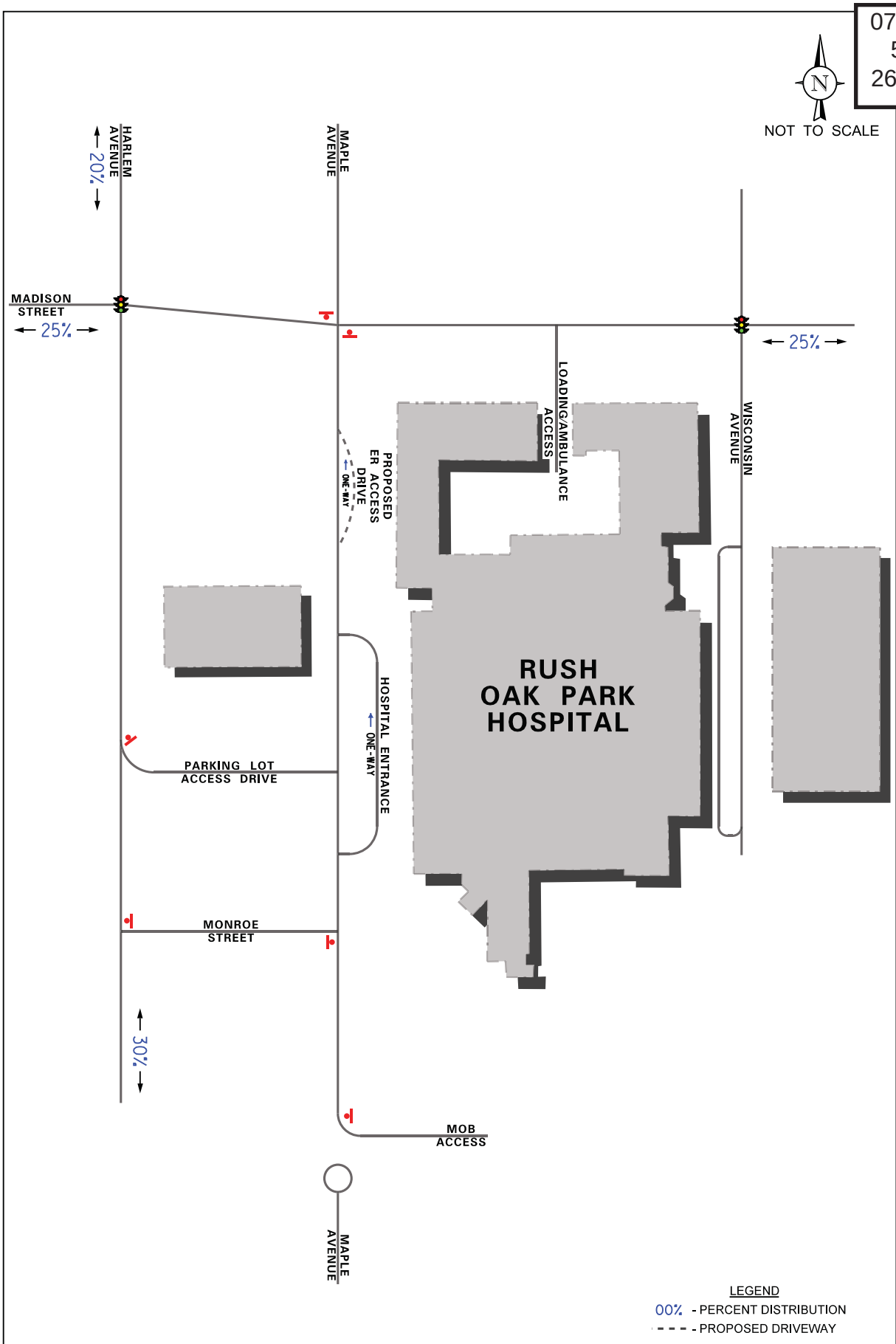
The directional distribution of how traffic will approach and depart the area was estimated based on the existing travel patterns through the study area derived from the peak hour traffic volumes, as well as the location and orientation of the proposed relocated emergency room and pick-up/drop-off area. **Figure 7** shows the directional distribution established for this development.

Development Traffic Generation

The estimate of vehicle traffic to be generated by the proposed developments is based upon the proposed land uses and respective densities. The volume of traffic generated for the proposed development is typically estimated using data published in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. However, ITE provides limited data for hospitals, specifically when isolating a single department, such as the proposed emergency room. ITE encourages the use of empirical data whenever possible when projecting traffic estimations for proposed developments.

ROPH provided hourly emergency room visit information for a typical week in June 2016. From this data, the existing emergency room has an average daily attendance of 102 visits, of which, on average, there are 3 visits coinciding with the weekday morning peak hour of adjacent roadway traffic, and there are 7 visits coinciding with the weekday evening peak hour of adjacent roadway traffic. In addition, the hospital receives, on average, 12 ambulances per day.

Further data provided by ROPH, from December 2015 to May 2017, shows that the month of March was the peak month in 2016 and also the highest so far in 2017 (approximately 3,400 emergency room visits each month). However, the average daily attendance for the emergency room over this 18 month is in the range of 98 to 112 visits. As such, no seasonal adjustment is necessary to account for peak periods of emergency room activity.



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Relocation
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ESTIMATED DIRECTIONAL DISTRIBUTION

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The ROPH emergency room reported approximately 38,000 annual visits in 2015. Upon completion of the expanded and relocated emergency room, ROPH estimates annual visits to increase to 45,000 visits, which equates to an 18 percent growth in patient visits. This 18 percent growth factor was applied to the existing peak hour emergency room patient visits and ambulances to establish peak hour vehicle trips upon completion of the expanded and relocated emergency room.

Emergency room staff will continue to park in the parking garage located east of Wisconsin Avenue. No additional staff is projected as part of this relocation.

Table 2A tabulates the vehicle trips anticipated for this development for the weekday morning and weekday evening midday peak hours. It is important to note that these numbers are inclusive of vehicles that are already arriving/departing the existing emergency room. The traffic generated by the existing emergency room was not removed. Therefore, the projected estimates are conservative and present a worst-case scenario.

Further, it is important to note that traffic counts at the existing ER drop off area/port-cochere on Wisconsin Avenue were conducted for a 72-hour period beginning Tuesday, May 23, 2017 to Thursday, May 25, 2017. The traffic was classified between ambulances and passenger vehicles. The data shows that the ER drop off area had a daily average of 70 passenger vehicles and 10 ambulances. As such, this data confirms the hourly peak traffic accessing the ER for both passenger vehicles and ambulances. This data is included in the Appendix of this report. **Table 2B** summarizes the daily average, as well as the weekday morning and weekday evening average totals by passenger vehicle and ambulance.

Development Traffic Assignment

The peak hour traffic volumes projected to be generated by the proposed development (refer to Table 2) were assigned to the area roadways based on the directional distribution analyses (Figure 7) and are shown in **Figure 8**.

Table 2A
ESTIMATED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

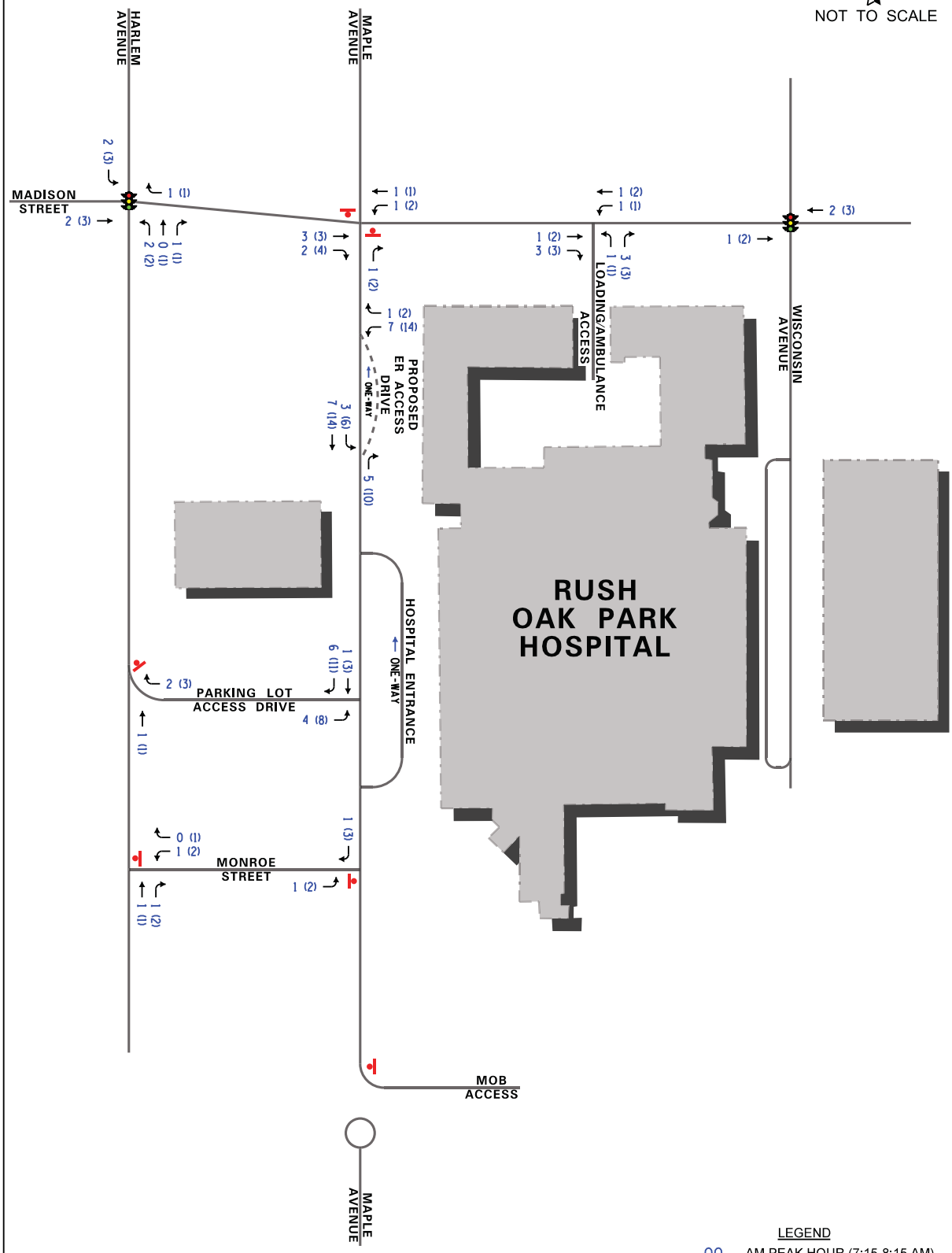
Source	Type/Size	Weekday A.M. Peak Hour In	Weekday A.M. Peak Hour Out	Weekday P.M. Peak Hour In	Weekday P.M. Peak Hour Out
ROPH	Emergency Room	4	4	8	8
ROPH	Ambulance	4	4	4	4
Total Gross Traffic:[1]		8	8	12	12

[1]Vehicle totals assume a new development and are not reduced to account for vehicle trips generated by the existing emergency room, thereby providing a conservative estimate.

Table 2B
EXISTING EMERGENCY ROOM PORT-COCHERE TRAFFIC VOLUMES[1]

	Passenger Vehicle	Ambulance	Total
Daily Average	65	11	76
AM Peak Average	1	0	1
PM Peak Average	5	0	5

[1]Based on 72-hour counts conducted May 23-25, 2017. Complete data is included in the Appendix of this report.



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ESTIMATED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

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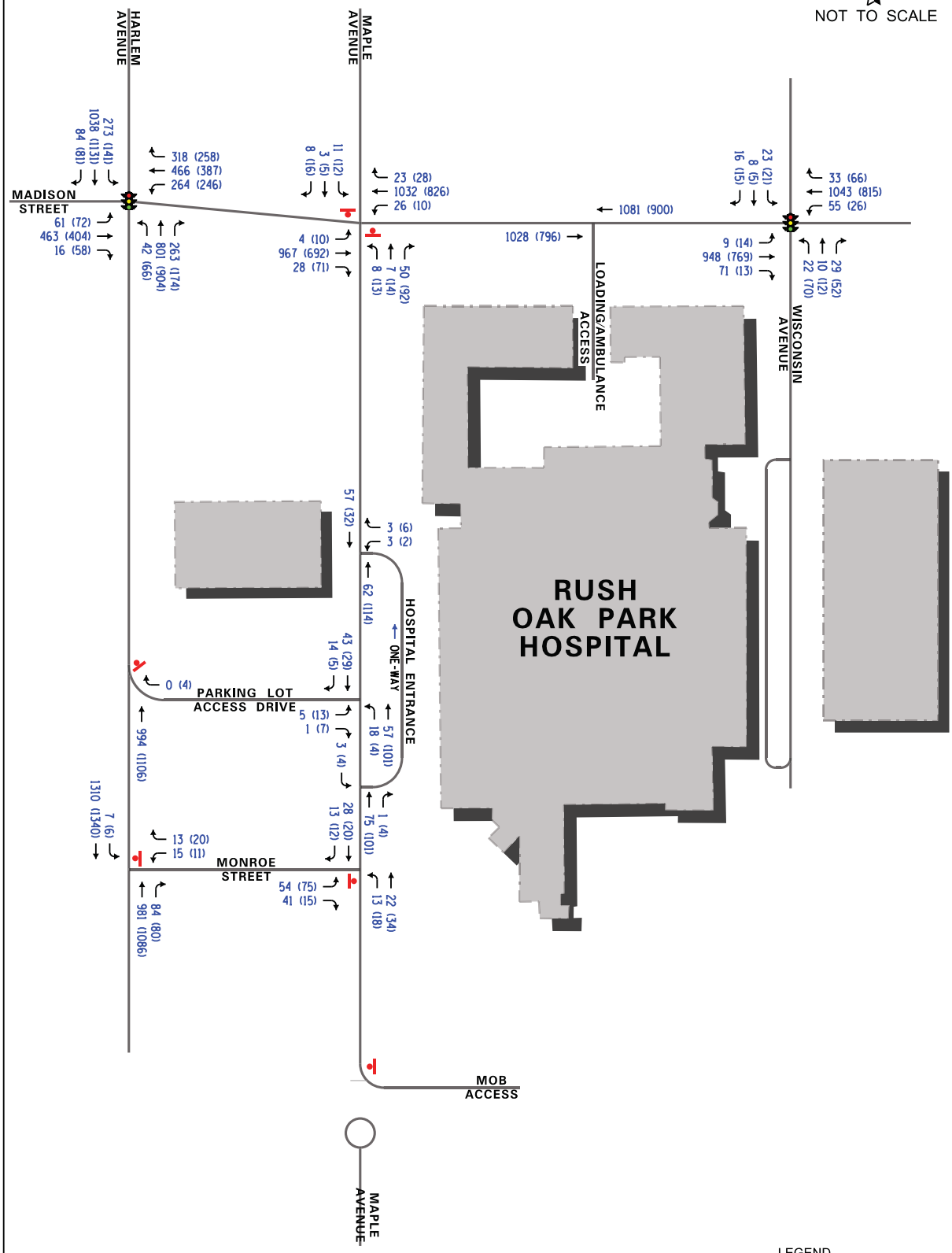
Regional Traffic Growth

To account for the increase in existing traffic related to regional growth in the area (i.e. not attributable to any particular planned development) for Year 2022 conditions, the existing traffic volumes were increased by a total of 6 percent (or 1 percent per year for 6 years). This percentage increase is based on ADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP). **Figure 9** shows the Year 2022 Base Traffic Volumes (no-build condition) that does not include the traffic estimated to be generated by the proposed development.

Total Projected Traffic Conditions

The total projected traffic includes the Year 2022 Base traffic volumes (Figure 9) and the proposed development-generated traffic volumes (Figure 8) and is shown in **Figure 10**. It is important to note that the total projected traffic volumes include the traffic generated by the existing emergency room. Therefore, the projected traffic volumes are conservative. Further, the projected traffic conditions assume the proposed cul-de-sac on Maple Avenue at the existing bump-out, and the turning restrictions proposed on Maple Avenue at its intersection with Madison Street.



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YEAR 2022 BASE (NO-BUILD) TRAFFIC VOLUMES

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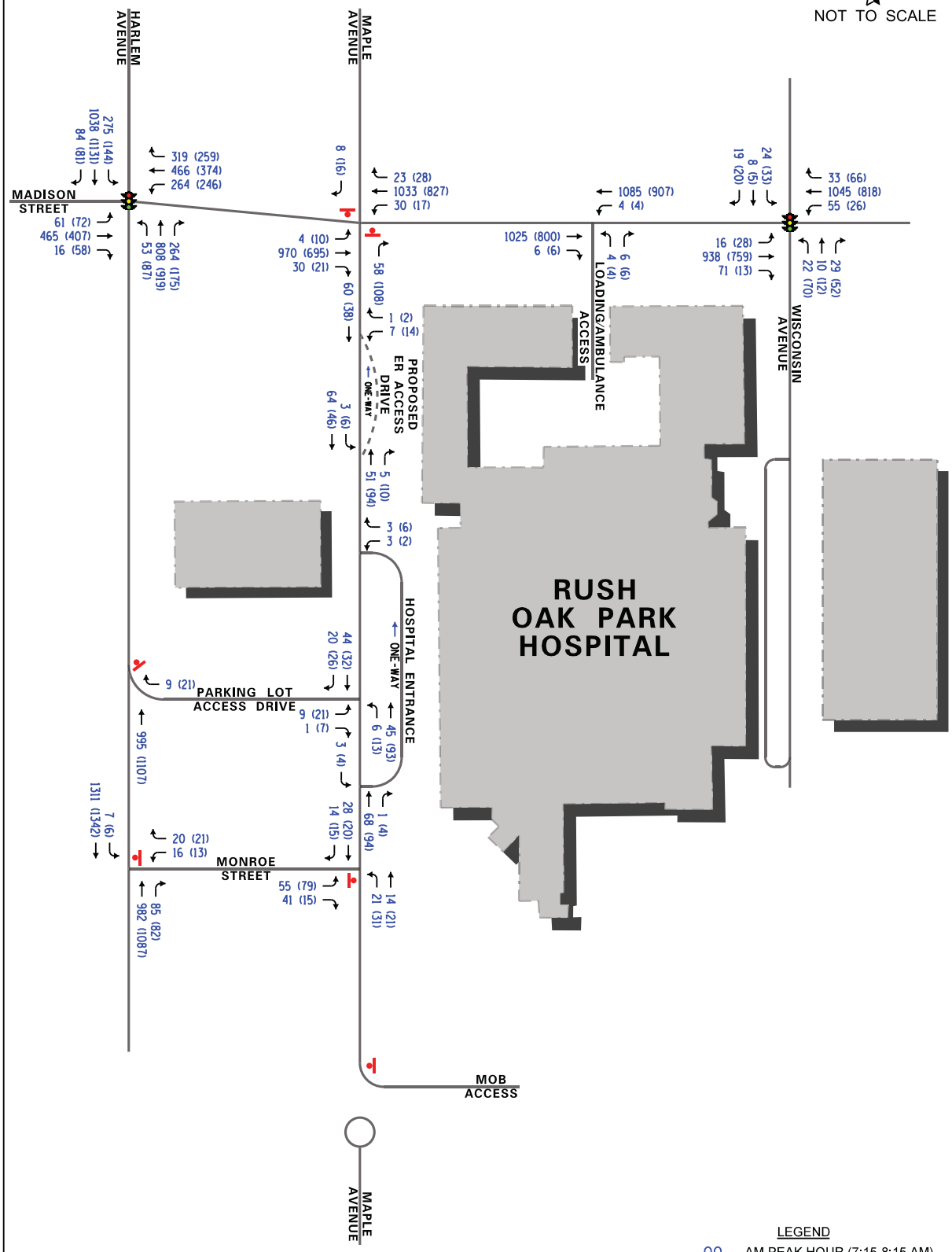

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TOTAL PROJECTED TRAFFIC VOLUMES

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Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hour periods. The analysis includes conducting capacity analyses to provide an indication of how well the roadway facilities serve the anticipated traffic demands placed upon them. The primary focus of the analyses is to determine if roadway and/or traffic control improvements are required to accommodate the development-generated traffic and the growth in existing traffic for future conditions.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for both existing (Year 2016) and future (Year 2022) total projected traffic conditions.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2010* and analyzed using Synchro/SimTraffic software.

The analysis for the traffic-signal controlled intersections were accomplished using programmed cycle lengths and offsets to determine the average overall vehicle delay and levels of service. The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are shown in **Table 3**.

Summaries of the traffic analysis results showing the LOS and overall intersection delay (measured in seconds) for the existing and future conditions are presented in **Table 4** and **Table 5**, respectively. A discussion of the intersections follows.

Table 3
LEVEL OF SERVICE CRITERIA

Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
A	0 - 10
B	> 10 - 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Signalized Intersections

Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10
B	Good progression, with more vehicles stopping than for Level of Service A.	> 10 - 20
C	Individual cycle failures (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	> 35 – 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	> 55 – 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80

Source: *Highway Capacity Manual, 2010.*

Table 4
CAPACITY ANALYSES RESULTS—EXISTING CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS – Delay	Weekday P.M. Peak Hour LOS – Delay
Harlem Ave and Madison St (signal)	D – 45.0	D – 35.3
Wisconsin Ave and Madison St (signal)	A – 3.6	A – 6.1
Maple Ave and Madison St (stop sign)	NBA: C – 18.7 SBA: D – 32.1	NBA: B – 14.4 SBA: C – 20.3
Harlem Ave and Monroe St (stop sign)	WBA: C – 16.3 SBL: B – 10.7	WBA: C – 16.6 SBL: B – 11.3
Maple Ave and Monroe St (stop sign)	EBA: A – 9.4	EBA: A – 9.6
Maple Ave and Parking Lot Access (stop sign)	EBA: A – 9.4	EBA: A – 9.1
Harlem Ave and Parking Lot Access (stop sign)	WBA: B – 9.1	WBA: B – 12.8
Delivery Access and Madison St (stop sign)	NBA: C – 17.3	B – 13.4

LOS = Level of Service
Delay is measured in seconds.
NBA = Northbound approach.
SBA = Southbound approach.
WBA = Westbound approach.
SBL = Southbound left-turn movement.
EBA = Eastbound approach.

Table 5
CAPACITY ANALYSES RESULTS—FUTURE CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS – Delay	Weekday P.M. Peak Hour LOS – Delay
Harlem Ave and Madison St (signal)	D – 53.8	D – 39.9
Wisconsin Ave and Madison St (signal)	A – 3.9	A – 6.2
Maple Ave and Madison St (stop sign)[1]	WBL: B – 10.4 NBR: B – 10.6 SBR: B – 11.1	WBL: A – 8.9 NBR: A – 9.7 SBR: B – 10.4
Harlem Ave and Monroe St (stop sign)	WBA: C – 17.0 SBL: B – 11.1	WBA: C – 17.9 SBL: B – 11.7
Maple Ave and Monroe St (stop sign)	EBA: A – 9.5	EBA: A – 9.9
Maple Ave and Parking Lot Access (stop sign)	EBA: A – 9.4	EBA: A – 9.5
Harlem Ave and Parking Lot Access (stop sign)	WBA: B – 12.6	WBA: B – 13.6
Delivery/Ambulance Access and Madison St (stop sign)	NBA: C – 16.8	NBA: B – 13.0
ER Exit and Maple Ave (stop sign)	WBA: A – 9.1	WBA: A – 9.3

LOS = Level of Service
Delay is measured in seconds.
NBA = Northbound approach.
SBA = Southbound approach.
WBA = Westbound approach.
SBL = Southbound left-turn movement.
EBA = Eastbound approach.
WBL = Westbound left-turn movement.
[1]Turning movements on Maple Avenue restricted to right-turns only during peak hours of commuter traffic.

Discussion and Recommendations

The capacity analyses show that the studied intersections will continue to operate at the same levels of service under projected future conditions, which includes the low volume of traffic estimated to be generated by the proposed subject development, in addition to a regional growth factor of 6 percent. The following summarizes each intersection and identifies any improvements that may be needed to accommodate the future conditions.

Madison Street Improvements

Streetscape improvements are proposed for Madison Street to reduce the four-lane roadway to one lane with a dedicated bicycle lane in each direction. High-visibility crosswalks will be provided on all major crossings along the corridor, including the signalized intersections at Harlem Avenue and at Wisconsin Avenue. At its westbound approach to Harlem Avenue, Madison Street will continue to provide two through lanes through the intersection. Further, the westbound left-turn lane, which currently provides approximately 90 feet of storage, will be extended to provide approximately 300 feet of storage. This westbound left-turn lane will then extend east of Maple Avenue and ending just before reaching the existing access drive that will become the ambulance driveway access to the ROPH campus. These improvements are under consideration and may be implemented in the next few years. As such, these improvements were not included in the capacity analyses for projected conditions.

Harlem Avenue (IL 43) and Madison Street

The intersection will continue to operate at the same LOS for both peak hours under future projected conditions. No further geometric or traffic control improvements are recommended at this intersection than what is already proposed as part of the Madison Street improvements.

Wisconsin Avenue and Madison Street

This signalized intersection will continue to operate at an acceptable LOS and delay under existing geometrics. No further roadway or traffic control improvements are recommended at this intersection.

Maple Avenue and Madison Street

The westbound queue on Madison Street at Harlem Avenue has been observed to extend east of Maple Avenue, primarily during the weekday morning peak hour. Further, the proposed Madison Street improvements include reducing Madison Street to one lane in each direction and extending the westbound left-turn lane at Harlem Avenue through this intersection, east of Maple Avenue. As a result, it will be increasingly difficult for vehicles on Maple Avenue to turn left to travel westbound on Harlem Avenue or to proceed across Madison Street to continue travelling northbound on Maple Avenue.

As such, signage should be posted restricting northbound and southbound turning movements on Maple Avenue at Madison Street to right-turns only during peak hours of the day. The projected traffic condition analyses include this restriction.

Further, via restriping of existing pavement, a westbound left-turn lane on Madison Street at Maple Avenue is proposed in conjunction with this development. **Figure B**, located in the Appendix of this report, shows the proposed improvements. This improvement will result in the loss of four on-street parking spaces on the north side of Madison Street and eight on-street parking spaces on the south side of Madison Street. The queue analyses for both peak hours show that the proposed storage of 50 feet with a 100-foot taper will be adequate.

A traffic signal is not warranted at this intersection since the projected traffic volumes on Maple Avenue do not meet the minimum traffic volume thresholds needed to satisfy traffic signal warrants. Further, Maple Avenue is too close to Harlem Avenue, which is signalized, and therefore does not meet minimum traffic signal distance requirements.

Maple Avenue and Monroe Street

This T-intersection will continue to operate at an acceptable LOS and delay. There is already a high-visibility crosswalk on the west leg of the intersection crossing Maple Avenue. No roadway or traffic control improvements are recommended at this intersection in conjunction with the proposed development.

Harlem Avenue and Monroe Street

As noted, the northbound traffic queues on Harlem Avenue at Madison Street were observed to extend south of Monroe Street.

A traffic signal is not warranted at this intersection since the projected traffic volumes on Monroe Street Avenue do not meet the minimum traffic volume thresholds needed to satisfy traffic signal warrants. The projected traffic volumes reviewed included the addition of the projected northbound left- and through movement traffic volumes on Maple Avenue at Madison Street (assuming turning movements are restricted to right-turns only) and the outbound turning movements from the hospital parking lot, located just north of Monroe Street.

Therefore, Monroe Street will continue to be under stop sign control with Harlem Avenue. A high-visibility crosswalk is recommended crossing Monroe Street. The existing ROPH monument sign should continue to direct emergency room traffic from Harlem Avenue to use Monroe Street.

Emergency Room Vehicle Access and Maple Avenue

Maple Avenue, between Madison Street and Monroe Street, provides one lane in each direction and allows on-street parking on both sides of the street. Consideration should be given to removing the on-street parking on both sides of the street along the proposed emergency room lay-by frontage to allow for vehicle turning movements and improve through traffic and circulation through the area. This will result in the loss of approximately five on-street parking spaces on both sides of the roadway.

A lay-by is proposed on the east side of Maple Avenue between the main entrance port-cochere and Madison Street. The lay-by, which will have a one-way northbound orientation, will be separated from the two-way traffic flow on Madison Street by a raised median. The lay-by will be wide enough to allow for two lanes. The curb side lane will be for the dropping off/picking up of passengers. The outside lane will serve as a bypass lane to those vehicles parked curbside. The outbound lanes at its intersection with Maple Avenue will be under stop sign control.

According to the site plan, the lay-by is designed to provide curbside parking for approximately six vehicles without impeding on the through traffic flow on Maple Avenue. Given the estimated emergency room visits during peak hours, the six vehicle stacking should be adequate to accommodate peak periods.

Vehicles desiring to enter the lay-by from the north will travel southbound on Maple Avenue and make a left-turn into the lay-by area. Upon exiting the lay-by, the vehicle will have the option to turn right to proceed north to Madison Street, to turn left to proceed south on Maple Avenue to exit to Harlem Avenue via Monroe Street, or proceed through or westbound across Maple Avenue to access the existing hospital parking lot located between the east-west public alley and Madison Street. The parking lot will be modified to provide an access drive directly on Maple Avenue and the existing one-way clockwise circulation pattern will be reversed to provide a counter-clockwise rotation for easier access from the emergency room drop-off exit.

Figure A in the Appendix of this report shows a turning movement diagram of vehicles making the turning maneuvers to access the proposed emergency room lay-by drop-off/pick-up area. To accommodate these turning movements, on-street parking on both sides of Maple Avenue along the frontage of the lay-by need to be removed, resulting in the loss of approximately five on-street parking spaces on each side of the roadway.

Ambulance/Delivery Access and Madison Street

Under the proposed development plan, ambulances will now access the emergency room via the existing truck delivery access drive on Madison Street, located between Maple Avenue and Wisconsin Avenue. The access will continue to provide one lane inbound and one lane outbound under stop sign control.

The ambulances will drive into a one-way southbound enclosed garage, where doors are located at both ends of the garage and will be closed when transferring patients. As such, the ambulance operations will not conflict with the truck delivery operations. Upon exiting, the ambulance will proceed south and exit out of the enclosed garage and make a U-Turn in the turnaround area by the truck loading area, and proceed north to exit the site onto Madison Street. Ambulances will have a low impact on the driveway and turnaround operations since ambulance activity is intermittent throughout the day and its operations will be separate from the truck delivery operations.

Given the low number of ambulances that are projected to travel to/from the ROPH campus on a daily basis (less than 20), this access will operate at an acceptable LOS and delay. Ambulances travelling westbound on Harlem Avenue will make a left onto the access drive from the proposed two-way left-turn lane that will be implemented between Maple Avenue and Wisconsin Avenue as part of the Madison Street streetscape improvement plan.

Included in the Appendix of this report are turning movement diagrams that show the ambulance circulation patterns and that the ambulances will not conflict with the truck delivery area.

Truck Delivery Access

As noted above, the truck docks will continue to be accessed from the delivery access drive off Madison Street. The truck docks will be separate from the ambulance garage. Therefore, ambulance operations and truck delivery operations will be separated and will not impact the other. The hospital receives a minimum of 10 deliveries throughout the day.

Included in the Appendix of this report are turning movement diagrams that show the truck turning movements for the three truck berths provided.

Maple Avenue Cul-de-sac

Based on the previous evaluation and the capacity analyses of projected traffic conditions, providing a cul-de-sac on Maple Avenue in the position of the current bump-out will help improve traffic operations through the Maple Avenue corridor.

ROPH Parking

In order to accommodate the parking demand of the proposed emergency room, the northerly parking lot (ComEd parking lot north of the public alley on the west side of Maple Avenue) will be designated parking for emergency room visitors and patients. The existing users of this lot will be relocated to the parking garage on Wisconsin Avenue or elsewhere. This lot, which will be modified to provide direct access on Maple Avenue and will be converted to provide a one-way counter-clockwise circulation (currently it has a one-way clockwise circulation), will have approximately 16 parking spaces for the exclusive use of the emergency room. Employees/staff will continue to park in the parking garage on Wisconsin Avenue. In addition, the parking spaces along Wisconsin Avenue currently being used by the Emergency Room will become available for use by the hospital.

Based on data provided by the hospital and the counts conducted at the existing Emergency Room, the parking demand generated will be easily accommodated by the parking lot. Further, it is further important to note that based on information provided by ROPH, approximately 40 percent of emergency room visits arrive by other means of transportation, thereby further reducing the demand for parking.

Conclusion

KLOA, Inc. prepared a traffic impact study report for the proposed emergency room expansion and relocation for the Rush Oak Park Hospital campus located at 520 South Maple Avenue in Oak Park, Illinois. The emergency room is currently located on the east side of the main hospital building with access off Wisconsin Avenue. The conceptual plans call for the expanded emergency room to be relocated to the west side of the main hospital building with access off Maple Avenue. A lay-by is proposed on the east side of Maple Avenue to allow for the vehicle drop-off/pick-up of passengers. Ambulances will access the new emergency room from the access drive off Madison Street, located between Maple Avenue and Wisconsin Avenue. Further, a cul-de-sac is proposed on Maple Avenue at the current bump-out, south of Monroe Street. The following summarizes the findings and recommendations of the study.

- The emergency room will continue to generate a low volume of vehicle trips during the weekday morning and evening peak hours.

- The relocation of the emergency room to Maple Avenue will have a low impact on the surrounding roadway network.

- Several alternatives to address traffic concerns on Maple Avenue were presented and evaluated that included gating Maple Avenue at the existing bump-out, providing a cul-de-sac on Maple Avenue at the existing bump-out, or closing southbound Maple Avenue at Jackson Boulevard.

- The proposed cul-de-sac on Maple Avenue will improve traffic operations along Maple Avenue.

- The proposed lay-by on Maple Avenue for the drop-off/pick-up of emergency room visitors will accommodate approximately six vehicles, which is adequate to satisfy peak demands.

- Based on projected peak hour traffic volumes, a traffic signal is not warranted at the intersection of Maple Avenue and Madison Street or at Harlem Avenue and Monroe Street.

- During peak hours and via signage, northbound and southbound turning movements on Maple Avenue at Madison Street will be restricted to right-turns only.

- A westbound left-turn lane is proposed on Madison Street at Maple Avenue to remove left-turning movements desiring to make a left-turn movement at Maple Avenue from the westbound through traffic flow.

- Wayfinding signage is recommended to direct exiting emergency room traffic to exit to Harlem Avenue via Monroe Street rather than Madison Street.

- High-visibility crosswalks are recommended where standard crosswalks exist.

- On-street parking will need to be removed on both sides of Maple Avenue along the emergency room lay-by to allow for turning vehicles and through traffic along Maple Avenue.

- The ambulance access drive on Madison Street will continue to provide one lane inbound and one lane outbound under stop sign control. Given the low volume of turning movements at this intersection, no roadway improvements on Madison Street are recommended.

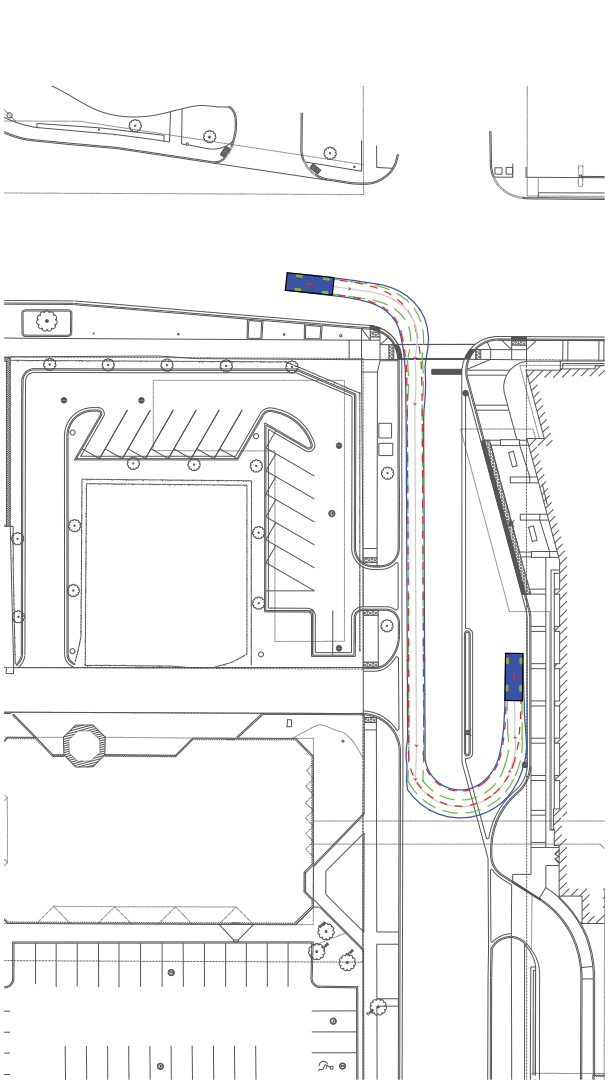
- Ambulances will have a low impact on the driveway and turnaround operations since ambulance activity is intermittent throughout the day and its operations will be separate from the truck delivery operations.

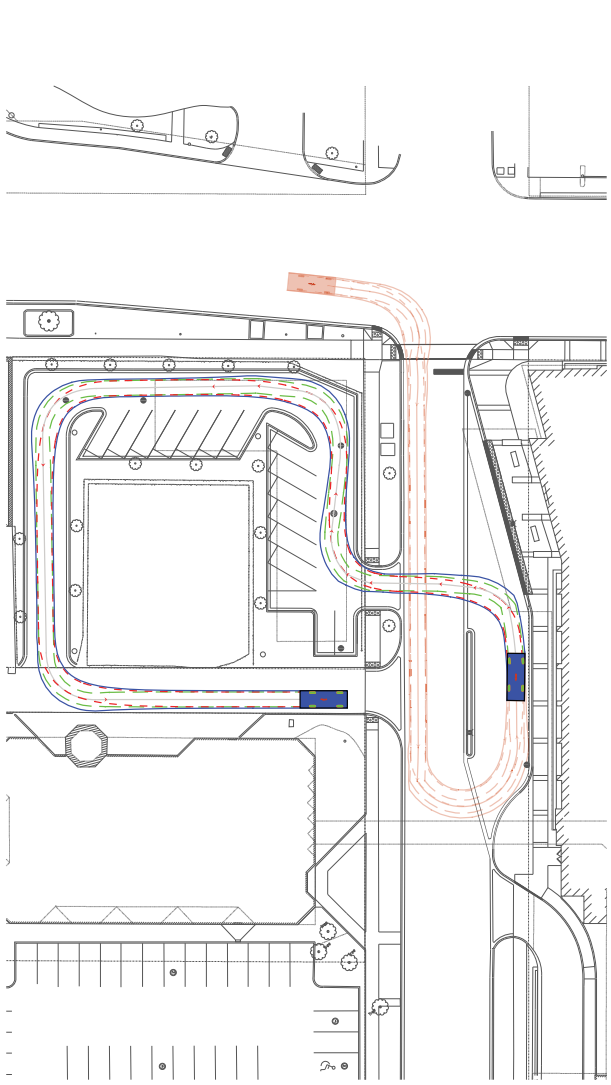
- Based on data provided by the hospital and the counts conducted at the existing Emergency Room, the parking demand generated will be accommodated by the existing parking lot west of Maple Avenue, between the east-west public alley and Madison Street that will be designated for emergency room patients and visitors. Further, it is further important to note that based on information provided by ROPH, approximately 40 percent of emergency room visits arrive by other means of transportation, thereby further reducing the demand for parking.

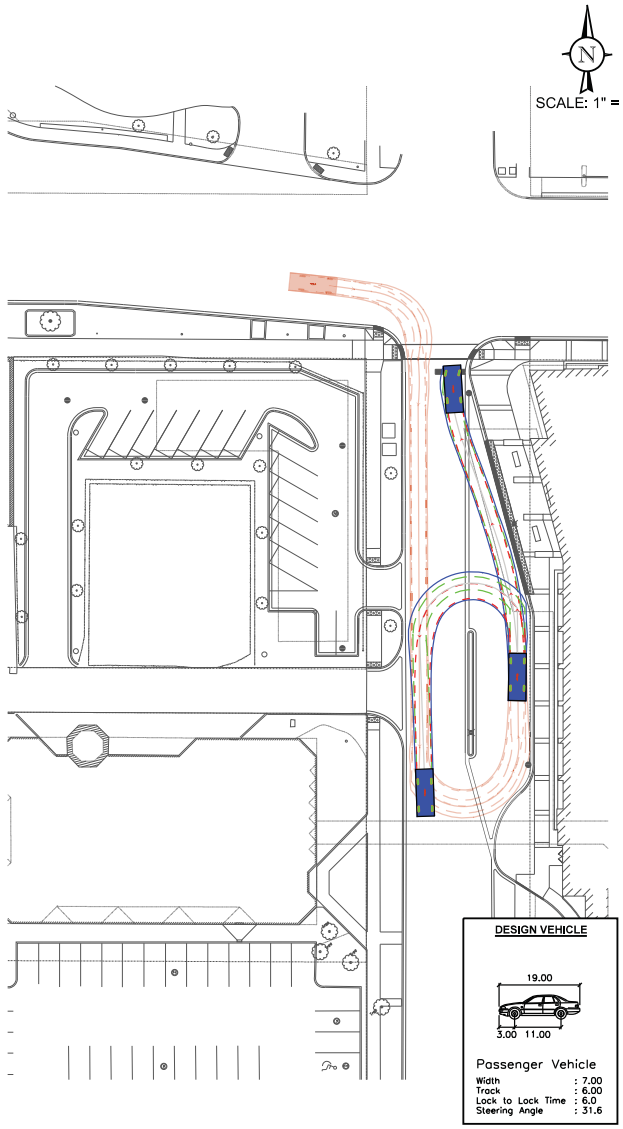
0717-2
5.3
44/126

Technical Appendix

Turning Movement Diagrams
Figures A – E







SCALE: 1" = 40'

RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

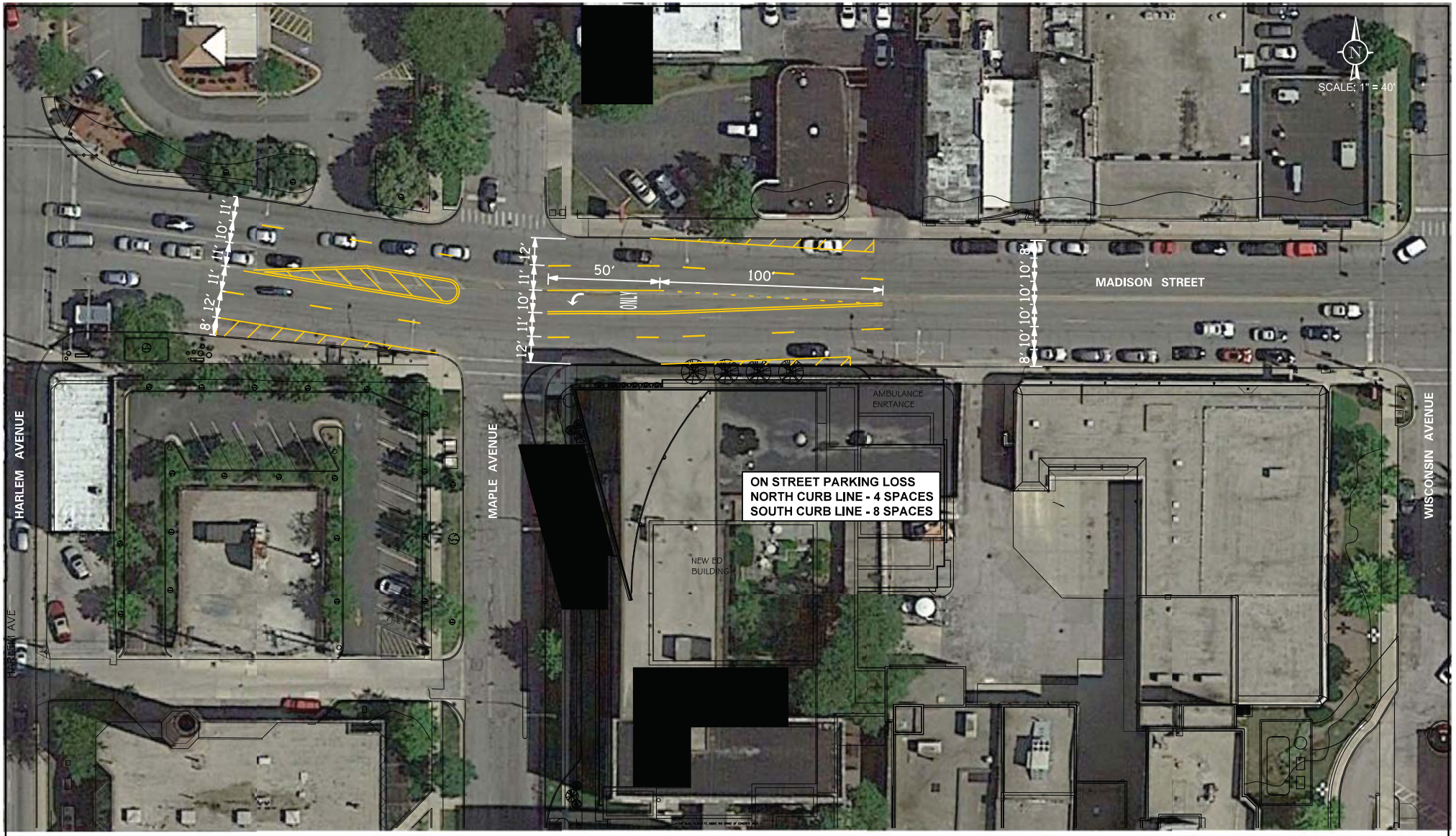
EMERGENCY ROOM PORTE COCHERE
PASSENGER VEHICLE MANEUVERS

A - 3

DRAWN: MD
DATE: 10-11-16
PROJECT # 16-170
FIGURE: A

CHECKED: WW
REV: 06-07-17

0717-2
5.3
46/126



RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

PRELIMINARY PROPOSED GEOMETRICS
MADISON STREET AND MAPLE AVENUE

A - 4

DRAWN: MD
DATE: 05-25-17
PROJECT # 16-170
FIGURE: B

CHECKED: DS
REV: 06-22-17

Kenig,Lin

0717-2
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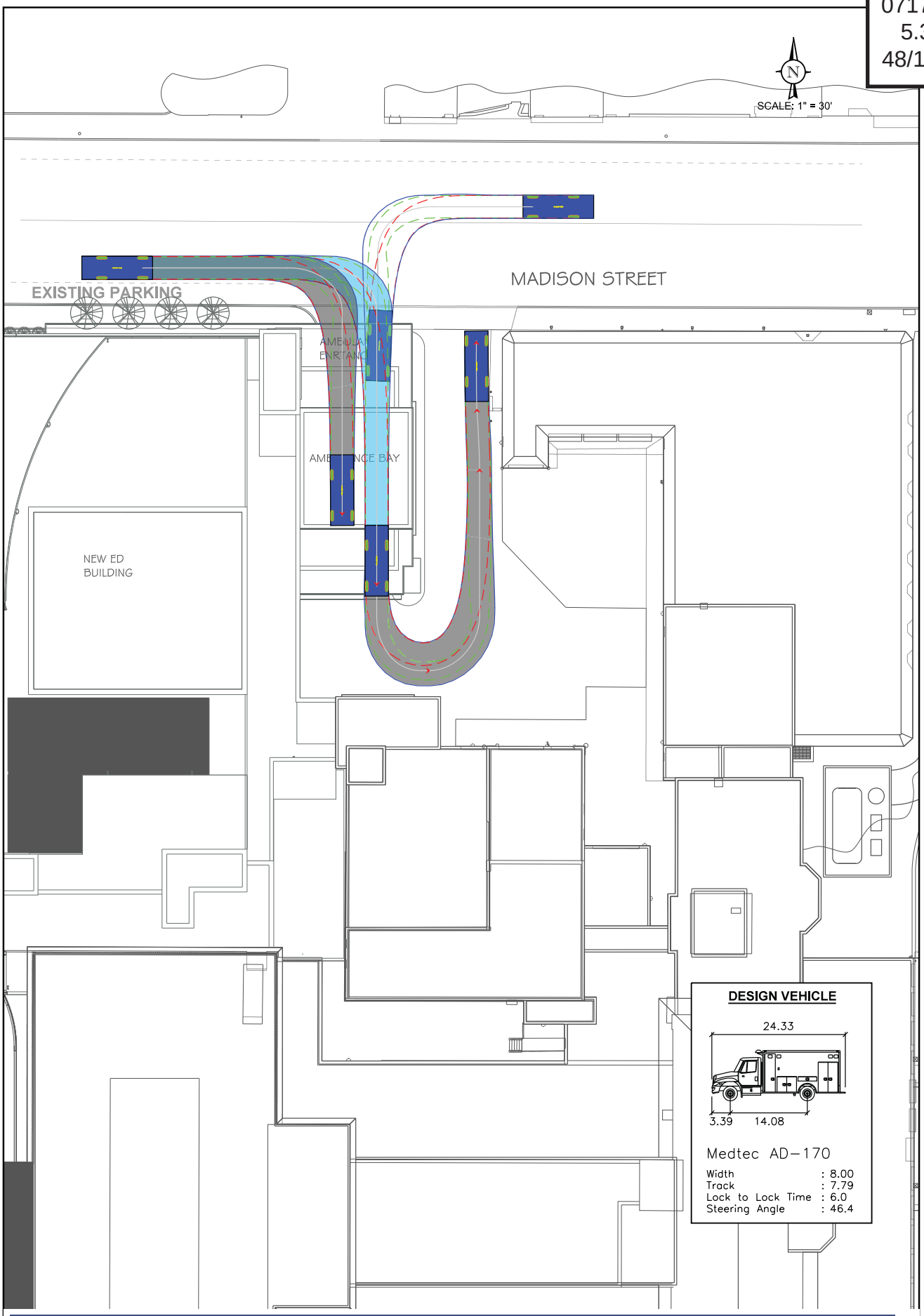
47/126



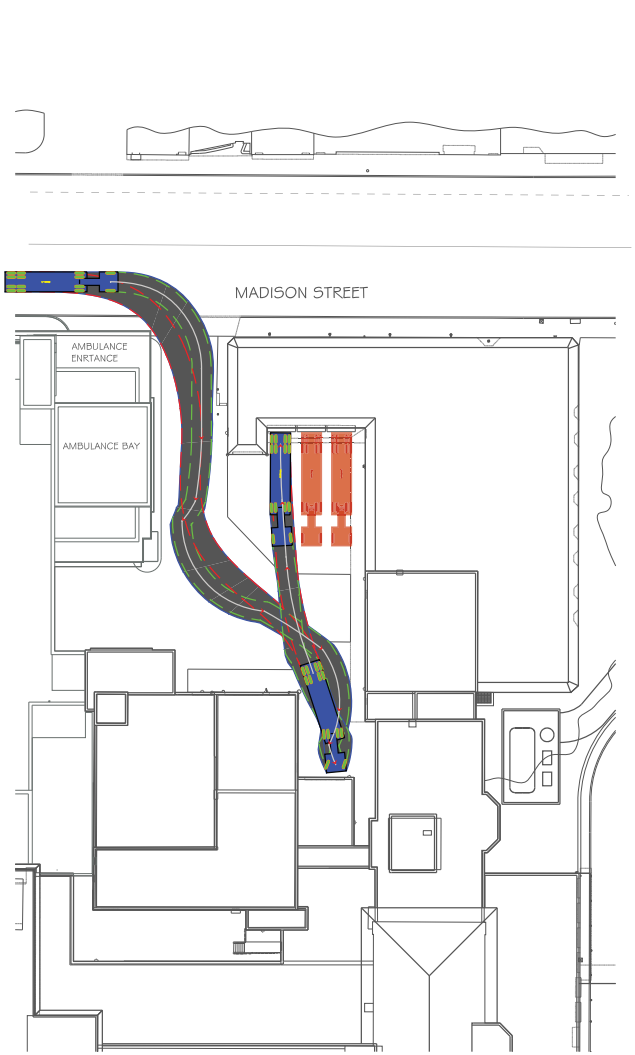
RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

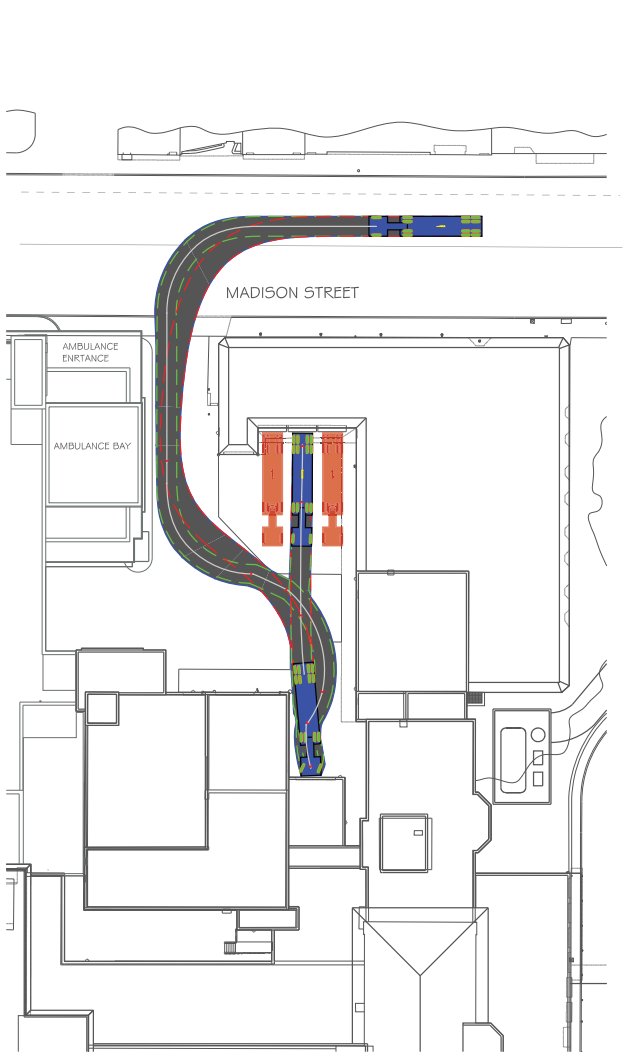
AMBULANCE VEHICLE MANEUVERS

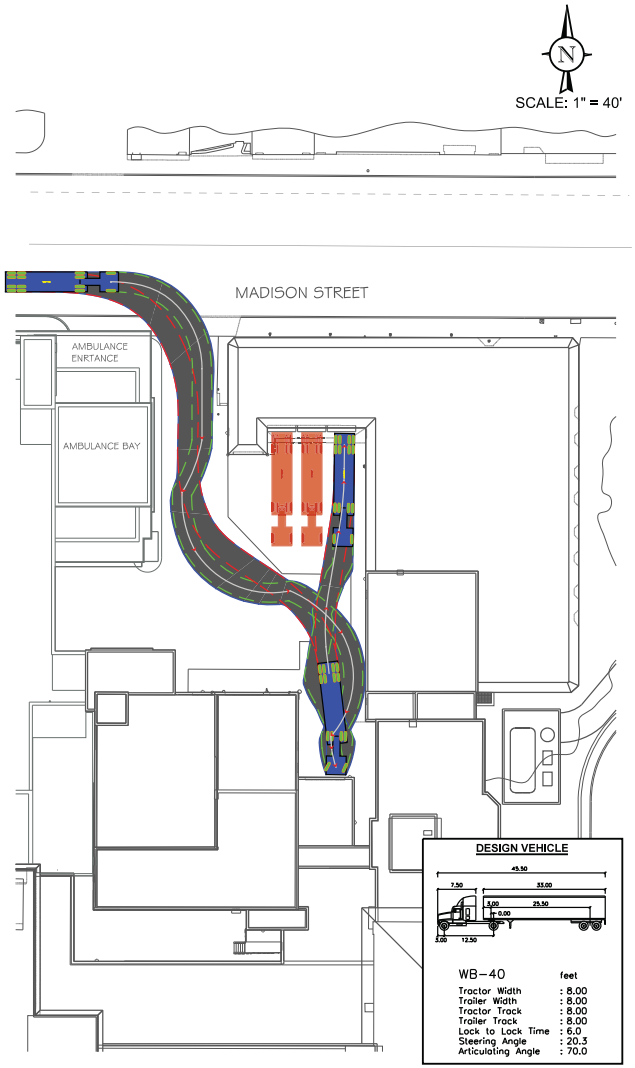
A - 5

DRAWN: MD CHECKED: DS
DATE: 10-11-16 REV: 06-05-17
PROJECT # 16-170
FIGURE: C

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.







SCALE: 1" = 40'

RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

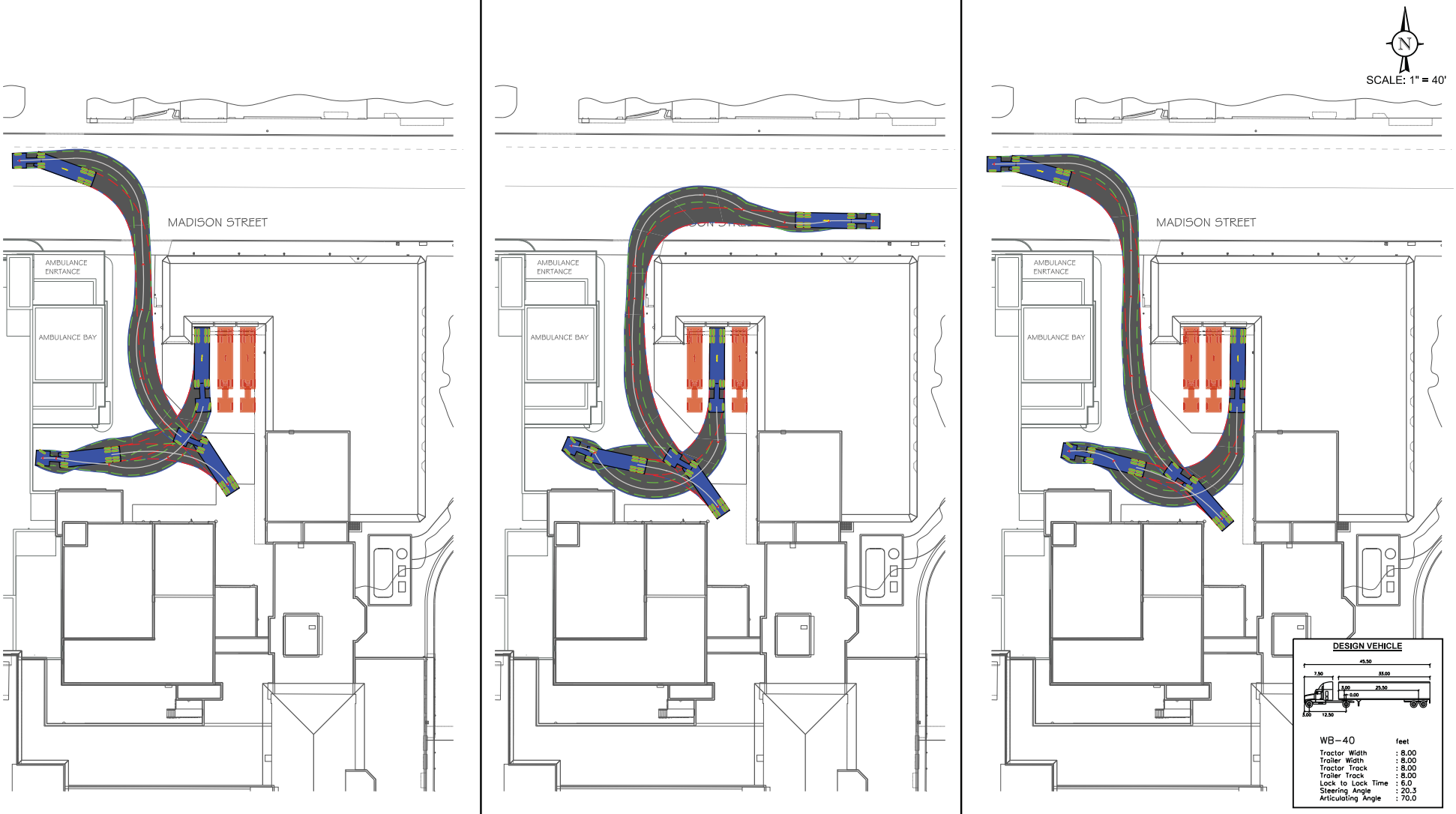
WB-40 INBOUND MANEUVERS

A - 6

DRAWN: MD
DATE: 10-11-16
PROJECT # 16-170
FIGURE: D

CHECKED: WW
REV: 06-05-17

0717-2
5.3
49/126



RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

WB-40 OUTBOUND MANEUVERS

A - 7

DRAWN: MD CHECKED: WW
DATE: 10-11-16 REV: 06-05-17
PROJECT # 16-170
FIGURE: E

Kenig,Lin

0717-2
5.3
50/126

Traffic Counts

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Harlem Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Data

Start Time	Madison Street Eastbound						Madison Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	15	122	5	1	142	0	48	100	58	1	206	0	7	159	44	2	210	0	79	233	12	1	324	882
7:15 AM	0	14	120	2	3	136	0	49	113	58	1	220	0	4	163	65	4	232	0	80	266	21	1	367	955
7:30 AM	0	12	116	1	1	129	0	47	103	77	2	227	0	9	204	60	3	273	0	74	233	20	1	327	956
7:45 AM	0	10	90	4	2	104	0	67	96	87	2	250	0	16	209	77	3	302	0	58	258	19	1	335	991
Hourly Total	0	51	448	12	7	511	0	211	412	280	6	903	0	36	735	246	12	1017	0	291	990	72	4	1353	3784
8:00 AM	0	22	111	8	1	141	0	86	128	78	7	292	0	11	180	46	4	237	0	46	222	19	1	287	957
8:15 AM	0	13	116	5	2	134	0	64	108	69	0	241	0	13	193	40	6	246	0	56	220	14	2	290	911
8:30 AM	0	14	116	6	2	136	0	63	114	53	2	230	0	15	214	42	1	271	0	46	226	22	2	294	931
8:45 AM	0	20	104	13	0	137	0	65	103	46	3	214	0	9	215	50	2	274	0	45	223	16	0	284	909
Hourly Total	0	69	447	32	5	548	0	278	453	246	12	977	0	48	802	178	13	1028	0	193	891	71	5	1155	3708
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	29	90	11	6	130	0	64	105	33	8	202	0	16	228	34	9	278	0	24	230	24	9	278	888
4:15 PM	0	18	83	13	9	114	0	55	86	61	8	202	0	10	187	27	16	224	0	36	274	8	10	318	858
4:30 PM	0	21	85	17	9	123	0	63	63	47	3	173	0	12	210	36	8	258	0	27	205	21	6	253	807
4:45 PM	0	10	70	19	6	99	0	67	71	57	5	195	1	16	211	33	4	261	0	28	252	19	5	299	854
Hourly Total	0	78	328	60	30	466	0	249	325	198	24	772	1	54	836	130	37	1021	0	115	961	72	30	1148	3407
5:00 PM	0	28	93	13	9	134	0	54	85	60	1	199	0	16	210	40	5	266	0	29	261	19	3	309	908
5:15 PM	0	20	97	16	6	133	0	62	90	71	4	223	0	13	197	37	12	247	0	44	255	15	4	314	917
5:30 PM	0	11	100	12	7	123	0	58	82	56	6	196	0	17	225	48	9	290	0	34	270	14	2	318	927
5:45 PM	0	9	91	14	9	114	0	58	108	56	3	222	0	16	221	39	7	276	0	26	281	28	4	335	947
Hourly Total	0	68	381	55	31	504	0	232	365	243	14	840	0	62	853	164	33	1079	0	133	1067	76	13	1276	3699
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	0	27	90	19	5	136	0	63	94	46	6	203	0	17	266	49	6	332	0	31	265	15	5	311	982
12:15 PM	0	21	88	25	5	134	0	56	125	44	4	225	0	14	208	48	7	270	0	27	304	21	3	352	981
12:30 PM	0	25	92	18	2	135	0	61	116	39	7	216	0	17	253	46	8	316	0	19	279	17	6	315	982
12:45 PM	0	6	98	12	3	116	0	60	134	51	5	245	0	24	215	37	8	276	0	32	250	28	6	310	947
Hourly Total	0	79	368	74	15	521	0	240	469	180	22	889	0	72	942	180	29	1194	0	109	1098	81	20	1288	3892
1:00 PM	0	25	93	20	6	138	0	64	119	52	2	235	0	19	253	37	11	309	0	28	259	22	11	309	991
1:15 PM	0	28	100	23	9	151	0	61	123	48	5	232	0	15	208	44	10	267	0	33	252	15	14	300	950
1:30 PM	0	27	85	16	9	128	0	68	105	53	3	226	0	14	241	36	3	291	0	23	280	18	7	321	966
1:45 PM	0	26	89	22	3	137	0	57	119	49	3	225	0	15	229	41	5	285	0	20	279	10	5	309	956
Hourly Total	0	106	367	81	27	554	0	250	466	202	13	918	0	63	931	158	29	1152	0	104	1070	65	37	1239	3863
Grand Total	0	451	2339	314	115	3104	0	1460	2490	1349	91	5299	1	335	5099	1056	153	6491	0	945	6077	437	109	7459	22353
Approach %	0.0	14.5	75.4	10.1	-	-	0.0	27.6	47.0	25.5	-	-	0.0	5.2	78.6	16.3	-	-	0.0	12.7	81.5	5.9	-	-	-
Total %	0.0	2.0	10.5	1.4	-	13.9	0.0	6.5	11.1	6.0	-	23.7	0.0	1.5	22.8	4.7	-	29.0	0.0	4.2	27.2	2.0	-	-	-
Lights	0	419	2289	305	-	3013	0	1435	2430	1317	-	5182	1	329	4904	1023	-	6257	0	922	5888	410	-	-	-
% Lights	-	92.9	97.9	97.1	-	97.1	-	98.3	97.6	97.6	-	97.8	100.0	98.2	96.2	96.9	-	96.4	-	97.6	96.9	93.8	-	-	-

Buses	0	19	17	2	-	38	0	1	24	4	-	29	0	1	35	6	-	42	0	5	31	21	-	57	166
% Buses	-	4.2	0.7	0.6	-	1.2	-	0.1	1.0	0.3	-	0.5	0.0	0.3	0.7	0.6	-	0.6	-	0.5	0.5	4.8	-	0.8	0.7
Single-Unit Trucks	0	10	31	7	-	48	0	23	27	22	-	72	0	3	101	22	-	126	0	17	99	5	-	121	367
% Single-Unit Trucks	-	2.2	1.3	2.2	-	1.5	-	1.6	1.1	1.6	-	1.4	0.0	0.9	2.0	2.1	-	1.9	-	1.8	1.6	1.1	-	1.6	1.6
Articulated Trucks	0	2	2	0	-	4	0	1	3	6	-	10	0	2	57	5	-	64	0	0	58	1	-	59	137
% Articulated Trucks	-	0.4	0.1	0.0	-	0.1	-	0.1	0.1	0.4	-	0.2	0.0	0.6	1.1	0.5	-	1.0	-	0.0	1.0	0.2	-	0.8	0.6
Bicycles on Road	0	1	0	0	-	1	0	0	6	0	-	6	0	0	2	0	-	2	0	1	1	0	-	2	11
% Bicycles on Road	-	0.2	0.0	0.0	-	0.0	-	0.0	0.2	0.0	-	0.1	0.0	0.0	0.0	0.0	-	0.0	-	0.1	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	115	-	-	-	-	-	91	-	-	-	-	-	153	-	-	-	-	-	109	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Harlem Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	14	120	2	3	136	0	49	113	58	1	220	0	4	163	65	4	232	0	80	266	21	1	367	955
7:30 AM	0	12	116	1	1	129	0	47	103	77	2	227	0	9	204	60	3	273	0	74	233	20	1	327	956
7:45 AM	0	10	90	4	2	104	0	67	96	87	2	250	0	16	209	77	3	302	0	58	258	19	1	335	991
8:00 AM	0	22	111	8	1	141	0	86	128	78	7	292	0	11	180	46	4	237	0	46	222	19	1	287	957
Total	0	58	437	15	7	510	0	249	440	300	12	989	0	40	756	248	14	1044	0	258	979	79	4	1316	3859
Approach %	0.0	11.4	85.7	2.9	-	-	0.0	25.2	44.5	30.3	-	-	0.0	3.8	72.4	23.8	-	-	0.0	19.6	74.4	6.0	-	-	-
Total %	0.0	1.5	11.3	0.4	-	13.2	0.0	6.5	11.4	7.8	-	25.6	0.0	1.0	19.6	6.4	-	27.1	0.0	6.7	25.4	2.0	-	34.1	-
PHF	0.000	0.659	0.910	0.469	-	0.904	0.000	0.724	0.859	0.862	-	0.847	0.000	0.625	0.904	0.805	-	0.864	0.000	0.806	0.920	0.940	-	0.896	0.974
Lights	0	46	418	12	-	476	0	247	433	293	-	973	0	37	694	240	-	971	0	251	928	73	-	1252	3672
% Lights	-	79.3	95.7	80.0	-	93.3	-	99.2	98.4	97.7	-	98.4	-	92.5	91.8	96.8	-	93.0	-	97.3	94.8	92.4	-	95.1	95.2
Buses	0	5	5	1	-	11	0	0	2	2	-	4	0	0	4	3	-	7	0	1	5	5	-	11	33
% Buses	-	8.6	1.1	6.7	-	2.2	-	0.0	0.5	0.7	-	0.4	-	0.0	0.5	1.2	-	0.7	-	0.4	0.5	6.3	-	0.8	0.9
Single-Unit Trucks	0	6	13	2	-	21	0	2	3	4	-	9	0	1	38	4	-	43	0	6	30	1	-	37	110
% Single-Unit Trucks	-	10.3	3.0	13.3	-	4.1	-	0.8	0.7	1.3	-	0.9	-	2.5	5.0	1.6	-	4.1	-	2.3	3.1	1.3	-	2.8	2.9
Articulated Trucks	0	1	1	0	-	2	0	0	1	1	-	2	0	2	20	1	-	23	0	0	16	0	-	16	43
% Articulated Trucks	-	1.7	0.2	0.0	-	0.4	-	0.0	0.2	0.3	-	0.2	-	5.0	2.6	0.4	-	2.2	-	0.0	1.6	0.0	-	1.2	1.1
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.2	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	7	-	-	-	-	-	12	-	-	-	-	-	14	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Harlem Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Harlem Avenue Northbound						Harlem Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	28	93	13	9	134	0	54	85	60	1	199	0	16	210	40	5	266	0	29	261	19	3	309	908
5:15 PM	0	20	97	16	6	133	0	62	90	71	4	223	0	13	197	37	12	247	0	44	255	15	4	314	917
5:30 PM	0	11	100	12	7	123	0	58	82	56	6	196	0	17	225	48	9	290	0	34	270	14	2	318	927
5:45 PM	0	9	91	14	9	114	0	58	108	56	3	222	0	16	221	39	7	276	0	26	281	28	4	335	947
Total	0	68	381	55	31	504	0	232	365	243	14	840	0	62	853	164	33	1079	0	133	1067	76	13	1276	3699
Approach %	0.0	13.5	75.6	10.9	-	-	0.0	27.6	43.5	28.9	-	-	0.0	5.7	79.1	15.2	-	-	0.0	10.4	83.6	6.0	-	-	-
Total %	0.0	1.8	10.3	1.5	-	13.6	0.0	6.3	9.9	6.6	-	22.7	0.0	1.7	23.1	4.4	-	29.2	0.0	3.6	28.8	2.1	-	34.5	-
PHF	0.000	0.607	0.953	0.859	-	0.940	0.000	0.935	0.845	0.856	-	0.942	0.000	0.912	0.948	0.854	-	0.930	0.000	0.756	0.949	0.679	-	0.952	0.977
Lights	0	63	376	55	-	494	0	232	355	239	-	826	0	62	833	162	-	1057	0	130	1035	73	-	1238	3615
% Lights	-	92.6	98.7	100.0	-	98.0	-	100.0	97.3	98.4	-	98.3	-	100.0	97.7	98.8	-	98.0	-	97.7	97.0	96.1	-	97.0	97.7
Buses	0	4	2	0	-	6	0	0	4	0	-	4	0	0	7	0	-	7	0	1	6	3	-	10	27
% Buses	-	5.9	0.5	0.0	-	1.2	-	0.0	1.1	0.0	-	0.5	-	0.0	0.8	0.0	-	0.6	-	0.8	0.6	3.9	-	0.8	0.7
Single-Unit Trucks	0	1	3	0	-	4	0	0	5	4	-	9	0	0	3	2	-	5	0	2	17	0	-	19	37
% Single-Unit Trucks	-	1.5	0.8	0.0	-	0.8	-	0.0	1.4	1.6	-	1.1	-	0.0	0.4	1.2	-	0.5	-	1.5	1.6	0.0	-	1.5	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	10	0	-	10	0	0	9	0	-	9	20
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.3	0.0	-	0.1	-	0.0	1.2	0.0	-	0.9	-	0.0	0.8	0.0	-	0.7	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	31	-	-	-	-	-	14	-	-	-	-	-	33	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Wisconsin Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Data

Start Time	Madison Street Eastbound						Madison Street Westbound						Wisconsin Avenue Northbound						Wisconsin Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	2	233	14	3	249	0	6	195	4	1	205	0	3	0	4	1	7	0	4	1	9	5	14	475
7:15 AM	0	2	272	11	3	285	0	11	229	2	1	242	0	4	2	4	2	10	0	5	2	7	0	14	551
7:30 AM	0	1	257	25	1	283	0	5	245	5	1	255	0	8	2	8	1	18	0	7	2	3	4	12	568
7:45 AM	0	4	232	18	8	254	0	20	277	13	2	310	0	6	3	6	1	15	0	6	1	2	2	9	588
Hourly Total	0	9	994	68	15	1071	0	42	946	24	5	1012	0	21	7	22	5	50	0	22	6	21	11	49	2182
8:00 AM	0	1	214	16	6	231	0	18	287	12	3	317	0	3	2	10	1	15	0	4	2	3	4	9	572
8:15 AM	0	2	204	14	3	220	0	28	252	15	2	295	0	9	1	1	2	11	0	6	1	0	4	7	533
8:30 AM	0	5	182	6	5	193	0	12	218	7	0	237	0	9	0	4	2	13	0	6	1	2	3	9	452
8:45 AM	0	5	201	19	2	225	0	15	216	5	0	236	0	10	0	2	2	12	0	9	3	5	7	17	490
Hourly Total	0	13	801	55	16	869	0	73	973	39	5	1085	0	31	3	17	7	51	0	25	7	10	18	42	2047
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	3	156	2	4	161	0	7	187	14	2	208	0	13	2	19	5	34	0	5	0	3	11	8	411
4:15 PM	0	5	166	8	5	179	0	10	209	12	3	231	0	15	2	18	3	35	0	8	0	0	10	8	453
4:30 PM	0	2	167	3	2	172	0	10	194	12	4	216	0	19	4	20	3	43	0	4	1	2	7	7	438
4:45 PM	0	3	153	5	1	161	0	3	189	23	4	215	0	14	7	20	1	41	0	7	0	4	1	11	428
Hourly Total	0	13	642	18	12	673	0	30	779	61	13	870	0	61	15	77	12	153	0	24	1	9	29	34	1730
5:00 PM	0	0	188	4	2	192	0	12	170	22	4	204	0	21	5	15	3	41	0	3	0	2	7	5	442
5:15 PM	0	6	189	3	5	198	0	10	209	19	4	238	0	18	2	13	2	33	0	3	0	4	3	7	476
5:30 PM	0	2	197	3	19	202	0	2	188	19	8	209	0	13	1	15	13	29	0	5	1	2	4	8	448
5:45 PM	0	5	176	2	2	183	0	1	208	5	6	214	0	17	3	8	8	28	0	9	3	6	2	18	443
Hourly Total	0	13	750	12	28	775	0	25	775	65	22	865	0	69	11	51	26	131	0	20	4	14	16	38	1809
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	0	2	178	3	9	183	0	4	213	11	4	228	0	4	0	4	6	8	0	6	1	7	15	14	433
12:15 PM	0	8	163	6	12	177	0	5	231	13	6	249	0	5	0	3	9	8	0	3	3	2	18	8	442
12:30 PM	0	3	174	4	8	181	0	3	231	7	5	241	0	4	0	7	5	11	0	6	0	7	11	13	446
12:45 PM	0	4	175	2	3	181	0	5	227	6	3	238	0	4	0	3	6	7	0	3	0	2	9	5	431
Hourly Total	0	17	690	15	32	722	0	17	902	37	18	956	0	17	0	17	26	34	0	18	4	18	53	40	1752
1:00 PM	0	5	164	8	6	177	1	5	238	2	0	246	0	8	1	5	8	14	0	5	0	5	2	10	447
1:15 PM	0	2	188	5	9	195	0	4	227	9	4	240	0	4	0	8	6	12	0	7	1	8	23	16	463
1:30 PM	0	2	163	5	8	170	0	5	210	3	1	218	0	4	1	2	4	7	0	6	0	5	7	11	406
1:45 PM	0	2	161	0	3	163	0	5	227	7	2	239	0	6	0	2	9	8	0	7	1	3	10	11	421
Hourly Total	0	11	676	18	26	705	1	19	902	21	7	943	0	22	2	17	27	41	0	25	2	21	42	48	1737
Grand Total	0	76	4553	186	129	4815	1	206	5277	247	70	5731	0	221	38	201	103	460	0	134	24	93	169	251	11257
Approach %	0.0	1.6	94.6	3.9	-	-	0.0	3.6	92.1	4.3	-	-	0.0	48.0	8.3	43.7	-	-	0.0	53.4	9.6	37.1	-	-	-
Total %	0.0	0.7	40.4	1.7	-	42.8	0.0	1.8	46.9	2.2	-	50.9	0.0	2.0	0.3	1.8	-	4.1	0.0	1.2	0.2	0.8	-		
Lights	0	76	4440	182	-	4698	1	199	5171	240	-	5611	0	212	30	198	-	440	0	131	19	91	-		
% Lights	-	100.0	97.5	97.8	-	97.6	100.0	96.6	98.0	97.2	-	97.9	-	95.9	78.9	98.5	-	95.7	-	97.8	79.2	97.8	-		

Buses	0	0	31	0	-	31	0	3	28	3	-	34	0	0	0	0	-	0	0	0	0	0	-	0	65
% Buses	-	0.0	0.7	0.0	-	0.6	0.0	1.5	0.5	1.2	-	0.6	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Single-Unit Trucks	0	0	64	3	-	67	0	4	66	1	-	71	0	7	1	3	-	11	0	3	0	0	-	3	152
% Single-Unit Trucks	-	0.0	1.4	1.6	-	1.4	0.0	1.9	1.3	0.4	-	1.2	-	3.2	2.6	1.5	-	2.4	-	2.2	0.0	0.0	-	1.2	1.4
Articulated Trucks	0	0	11	0	-	11	0	0	8	0	-	8	0	0	0	0	-	0	0	0	0	0	-	0	19
% Articulated Trucks	-	0.0	0.2	0.0	-	0.2	0.0	0.0	0.2	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	0	7	1	-	8	0	0	4	3	-	7	0	2	7	0	-	9	0	0	5	2	-	7	31
% Bicycles on Road	-	0.0	0.2	0.5	-	0.2	0.0	0.0	0.1	1.2	-	0.1	-	0.9	18.4	0.0	-	2.0	-	0.0	20.8	2.2	-	2.8	0.3
Pedestrians	-	-	-	-	129	-	-	-	-	-	70	-	-	-	-	-	103	-	-	-	-	-	169	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Wisconsin Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Wisconsin Avenue Northbound						Wisconsin Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	2	272	11	3	285	0	11	229	2	1	242	0	4	2	4	2	10	0	5	2	7	0	14	551
7:30 AM	0	1	257	25	1	283	0	5	245	5	1	255	0	8	2	8	1	18	0	7	2	3	4	12	568
7:45 AM	0	4	232	18	8	254	0	20	277	13	2	310	0	6	3	6	1	15	0	6	1	2	2	9	588
8:00 AM	0	1	214	16	6	231	0	18	287	12	3	317	0	3	2	10	1	15	0	4	2	3	4	9	572
Total	0	8	975	70	18	1053	0	54	1038	32	7	1124	0	21	9	28	5	58	0	22	7	15	10	44	2279
Approach %	0.0	0.8	92.6	6.6	-	-	0.0	4.8	92.3	2.8	-	-	0.0	36.2	15.5	48.3	-	-	0.0	50.0	15.9	34.1	-	-	-
Total %	0.0	0.4	42.8	3.1	-	46.2	0.0	2.4	45.5	1.4	-	49.3	0.0	0.9	0.4	1.2	-	2.5	0.0	1.0	0.3	0.7	-	1.9	-
PHF	0.000	0.500	0.896	0.700	-	0.924	0.000	0.675	0.904	0.615	-	0.886	0.000	0.656	0.750	0.700	-	0.806	0.000	0.786	0.875	0.536	-	0.786	0.969
Lights	0	8	937	69	-	1014	0	52	1023	31	-	1106	0	19	3	26	-	48	0	21	6	15	-	42	2210
% Lights	-	100.0	96.1	98.6	-	96.3	-	96.3	98.6	96.9	-	98.4	-	90.5	33.3	92.9	-	82.8	-	95.5	85.7	100.0	-	95.5	97.0
Buses	0	0	10	0	-	10	0	0	6	1	-	7	0	0	0	0	-	0	0	0	0	0	-	0	17
% Buses	-	0.0	1.0	0.0	-	0.9	-	0.0	0.6	3.1	-	0.6	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.7
Single-Unit Trucks	0	0	23	1	-	24	0	2	7	0	-	9	0	2	1	2	-	5	0	1	0	0	-	1	39
% Single-Unit Trucks	-	0.0	2.4	1.4	-	2.3	-	3.7	0.7	0.0	-	0.8	-	9.5	11.1	7.1	-	8.6	-	4.5	0.0	0.0	-	2.3	1.7
Articulated Trucks	0	0	5	0	-	5	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	6
% Articulated Trucks	-	0.0	0.5	0.0	-	0.5	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	0	5	0	-	5	0	0	1	0	-	1	7
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	55.6	0.0	-	8.6	-	0.0	14.3	0.0	-	2.3	0.3
Pedestrians	-	-	-	-	18	-	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street and Wisconsin Avenue
Site Code:
Start Date: 05/19/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Wisconsin Avenue Northbound						Wisconsin Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	188	4	2	192	0	12	170	22	4	204	0	21	5	15	3	41	0	3	0	2	7	5	442
5:15 PM	0	6	189	3	5	198	0	10	209	19	4	238	0	18	2	13	2	33	0	3	0	4	3	7	476
5:30 PM	0	2	197	3	19	202	0	2	188	19	8	209	0	13	1	15	13	29	0	5	1	2	4	8	448
5:45 PM	0	5	176	2	2	183	0	1	208	5	6	214	0	17	3	8	8	28	0	9	3	6	2	18	443
Total	0	13	750	12	28	775	0	25	775	65	22	865	0	69	11	51	26	131	0	20	4	14	16	38	1809
Approach %	0.0	1.7	96.8	1.5	-	-	0.0	2.9	89.6	7.5	-	-	0.0	52.7	8.4	38.9	-	-	0.0	52.6	10.5	36.8	-	-	-
Total %	0.0	0.7	41.5	0.7	-	42.8	0.0	1.4	42.8	3.6	-	47.8	0.0	3.8	0.6	2.8	-	7.2	0.0	1.1	0.2	0.8	-	2.1	-
PHF	0.000	0.542	0.952	0.750	-	0.959	0.000	0.521	0.927	0.739	-	0.909	0.000	0.821	0.550	0.850	-	0.799	0.000	0.556	0.333	0.583	-	0.528	0.950
Lights	0	13	738	11	-	762	0	24	759	65	-	848	0	68	10	50	-	128	0	20	1	14	-	35	1773
% Lights	-	100.0	98.4	91.7	-	98.3	-	96.0	97.9	100.0	-	98.0	-	98.6	90.9	98.0	-	97.7	-	100.0	25.0	100.0	-	92.1	98.0
Buses	0	0	3	0	-	3	0	0	4	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	7
% Buses	-	0.0	0.4	0.0	-	0.4	-	0.0	0.5	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.4
Single-Unit Trucks	0	0	7	1	-	8	0	1	11	0	-	12	0	1	0	1	-	2	0	0	0	0	-	0	22
% Single-Unit Trucks	-	0.0	0.9	8.3	-	1.0	-	4.0	1.4	0.0	-	1.4	-	1.4	0.0	2.0	-	1.5	-	0.0	0.0	0.0	-	0.0	1.2
Articulated Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.1	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	0	0	1	0	-	1	0	0	3	0	-	3	6
% Bicycles on Road	-	0.0	0.3	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	9.1	0.0	-	0.8	-	0.0	75.0	0.0	-	7.9	0.3
Pedestrians	-	-	-	-	28	-	-	-	-	-	22	-	-	-	-	-	26	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street with Maple Avenue
Site Code:
Start Date: 07/20/2016

Turning Movement Data

Start Time	Madison Street Eastbound						Madison Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	1	178	2	0	181	0	7	200	3	0	210	0	0	0	11	4	11	0	2	0	3	1	5	407
7:15 AM	0	0	202	3	0	205	0	3	204	3	0	210	0	1	1	4	3	6	0	1	0	0	0	1	422
7:30 AM	0	0	183	8	0	191	0	9	211	4	0	224	0	3	0	12	4	15	0	2	1	4	4	7	437
7:45 AM	0	0	226	8	1	234	0	9	241	6	6	256	0	2	3	19	4	24	0	4	0	1	3	5	519
Hourly Total	0	1	789	21	1	811	0	28	856	16	6	900	0	6	4	46	15	56	0	9	1	8	8	18	1785
8:00 AM	0	3	213	8	3	224	0	4	216	9	2	229	0	1	2	14	4	17	0	3	1	2	3	6	476
8:15 AM	0	0	175	13	0	188	0	8	187	7	1	202	0	1	2	16	7	19	0	1	2	3	5	6	415
8:30 AM	0	1	162	9	0	172	0	10	192	9	2	211	0	2	1	10	0	13	0	2	2	3	3	7	403
8:45 AM	0	3	174	10	0	187	0	7	174	9	1	190	0	6	0	17	4	23	0	2	1	6	4	9	409
Hourly Total	0	7	724	40	3	771	0	29	769	34	6	832	0	10	5	57	15	72	0	8	6	14	15	28	1703
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	3	173	6	2	182	0	5	197	12	0	214	0	5	1	30	9	36	0	2	0	3	3	5	437
4:15 PM	0	3	158	3	0	164	0	5	188	6	3	199	0	4	2	19	5	25	0	1	4	3	2	8	396
4:30 PM	0	4	172	5	0	181	0	5	211	6	4	222	0	4	1	24	4	29	0	4	2	1	7	7	439
4:45 PM	0	1	172	8	2	181	0	4	200	10	0	214	0	4	3	15	2	22	0	5	1	2	3	8	425
Hourly Total	0	11	675	22	4	708	0	19	796	34	7	849	0	17	7	88	20	112	0	12	7	9	15	28	1697
5:00 PM	0	0	175	5	0	180	0	2	198	8	0	208	0	4	6	31	4	41	0	3	0	2	5	5	434
5:15 PM	0	5	171	4	0	180	1	1	184	8	1	194	0	3	2	18	2	23	0	2	2	3	2	7	404
5:30 PM	0	3	185	3	1	191	0	2	194	3	0	199	0	3	2	21	3	26	0	5	2	2	5	9	425
5:45 PM	0	1	193	4	1	198	0	3	193	8	1	204	0	2	3	22	6	27	0	1	0	8	4	9	438
Hourly Total	0	9	724	16	2	749	1	8	769	27	2	805	0	12	13	92	15	117	0	11	4	15	16	30	1701
Grand Total	0	28	2912	99	10	3039	1	84	3190	111	21	3386	0	45	29	283	65	357	0	40	18	46	54	104	6886
Approach %	0.0	0.9	95.8	3.3	-	-	0.0	2.5	94.2	3.3	-	-	0.0	12.6	8.1	79.3	-	-	0.0	38.5	17.3	44.2	-	-	-
Total %	0.0	0.4	42.3	1.4	-	44.1	0.0	1.2	46.3	1.6	-	49.2	0.0	0.7	0.4	4.1	-	5.2	0.0	0.6	0.3	0.7	-	1.5	-
Lights	0	26	2823	97	-	2946	1	83	3091	110	-	3285	0	45	27	280	-	352	0	38	17	44	-	99	6682
% Lights	-	92.9	96.9	98.0	-	96.9	100.0	98.8	96.9	99.1	-	97.0	-	100.0	93.1	98.9	-	98.6	-	95.0	94.4	95.7	-	95.2	97.0
Buses	0	1	23	0	-	24	0	1	18	0	-	19	0	0	0	3	-	3	0	0	0	1	-	1	47
% Buses	-	3.6	0.8	0.0	-	0.8	0.0	1.2	0.6	0.0	-	0.6	-	0.0	0.0	1.1	-	0.8	-	0.0	0.0	2.2	-	1.0	0.7
Single-Unit Trucks	0	1	58	0	-	59	0	0	65	1	-	66	0	0	0	0	-	0	0	2	1	1	-	4	129
% Single-Unit Trucks	-	3.6	2.0	0.0	-	1.9	0.0	0.0	2.0	0.9	-	1.9	-	0.0	0.0	0.0	-	0.0	-	5.0	5.6	2.2	-	3.8	1.9
Articulated Trucks	0	0	4	0	-	4	0	0	11	0	-	11	0	0	0	0	-	0	0	0	0	0	-	0	15
% Articulated Trucks	-	0.0	0.1	0.0	-	0.1	0.0	0.0	0.3	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	0	4	2	-	6	0	0	5	0	-	5	0	0	2	0	-	2	0	0	0	0	-	0	13
% Bicycles on Road	-	0.0	0.1	2.0	-	0.2	0.0	0.0	0.2	0.0	-	0.1	-	0.0	6.9	0.0	-	0.6	-	0.0	0.0	0.0	-		
Pedestrians	-	-	-	-	10	-	-	-	-	-	21	-	-	-	-	-	65	-	-	-	-	-	54		


% Pedestrians
100.0
100.0
100.0
100.0

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street with Maple Avenue
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	0	202	3	0	205	0	3	204	3	0	210	0	1	1	4	3	6	0	1	0	0	0	1	422
7:30 AM	0	0	183	8	0	191	0	9	211	4	0	224	0	3	0	12	4	15	0	2	1	4	4	7	437
7:45 AM	0	0	226	8	1	234	0	9	241	6	6	256	0	2	3	19	4	24	0	4	0	1	3	5	519
8:00 AM	0	3	213	8	3	224	0	4	216	9	2	229	0	1	2	14	4	17	0	3	1	2	3	6	476
Total	0	3	824	27	4	854	0	25	872	22	8	919	0	7	6	49	15	62	0	10	2	7	10	19	1854
Approach %	0.0	0.4	96.5	3.2	-	-	0.0	2.7	94.9	2.4	-	-	0.0	11.3	9.7	79.0	-	-	0.0	52.6	10.5	36.8	-	-	-
Total %	0.0	0.2	44.4	1.5	-	46.1	0.0	1.3	47.0	1.2	-	49.6	0.0	0.4	0.3	2.6	-	3.3	0.0	0.5	0.1	0.4	-	1.0	-
PHF	0.000	0.250	0.912	0.844	-	0.912	0.000	0.694	0.905	0.611	-	0.897	0.000	0.583	0.500	0.645	-	0.646	0.000	0.625	0.500	0.438	-	0.679	0.893
Lights	0	3	785	27	-	815	0	24	839	22	-	885	0	7	5	47	-	59	0	10	2	6	-	18	1777
% Lights	-	100.0	95.3	100.0	-	95.4	-	96.0	96.2	100.0	-	96.3	-	100.0	83.3	95.9	-	95.2	-	100.0	100.0	85.7	-	94.7	95.8
Buses	0	0	11	0	-	11	0	1	4	0	-	5	0	0	0	2	-	2	0	0	0	1	-	1	19
% Buses	-	0.0	1.3	0.0	-	1.3	-	4.0	0.5	0.0	-	0.5	-	0.0	0.0	4.1	-	3.2	-	0.0	0.0	14.3	-	5.3	1.0
Single-Unit Trucks	0	0	25	0	-	25	0	0	20	0	-	20	0	0	0	0	-	0	0	0	0	0	-	0	45
% Single-Unit Trucks	-	0.0	3.0	0.0	-	2.9	-	0.0	2.3	0.0	-	2.2	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	2.4
Articulated Trucks	0	0	2	0	-	2	0	0	6	0	-	6	0	0	0	0	-	0	0	0	0	0	-	0	8
% Articulated Trucks	-	0.0	0.2	0.0	-	0.2	-	0.0	0.7	0.0	-	0.7	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.4
Bicycles on Road	0	0	1	0	-	1	0	0	3	0	-	3	0	0	1	0	-	1	0	0	0	0	-	0	5
% Bicycles on Road	-	0.0	0.1	0.0	-	0.1	-	0.0	0.3	0.0	-	0.3	-	0.0	16.7	0.0	-	1.6	-	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	-	4	-	-	-	-	-	8	-	-	-	-	-	15	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Madison Street with Maple Avenue
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Madison Street Eastbound						Madison Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	175	5	0	180	0	2	198	8	0	208	0	4	6	31	4	41	0	3	0	2	5	5	434
5:15 PM	0	5	171	4	0	180	1	1	184	8	1	194	0	3	2	18	2	23	0	2	2	3	2	7	404
5:30 PM	0	3	185	3	1	191	0	2	194	3	0	199	0	3	2	21	3	26	0	5	2	2	5	9	425
5:45 PM	0	1	193	4	1	198	0	3	193	8	1	204	0	2	3	22	6	27	0	1	0	8	4	9	438
Total	0	9	724	16	2	749	1	8	769	27	2	805	0	12	13	92	15	117	0	11	4	15	16	30	1701
Approach %	0.0	1.2	96.7	2.1	-	-	0.1	1.0	95.5	3.4	-	-	0.0	10.3	11.1	78.6	-	-	0.0	36.7	13.3	50.0	-	-	-
Total %	0.0	0.5	42.6	0.9	-	44.0	0.1	0.5	45.2	1.6	-	47.3	0.0	0.7	0.8	5.4	-	6.9	0.0	0.6	0.2	0.9	-	1.8	-
PHF	0.000	0.450	0.938	0.800	-	0.946	0.250	0.667	0.971	0.844	-	0.968	0.000	0.750	0.542	0.742	-	0.713	0.000	0.550	0.500	0.469	-	0.833	0.971
Lights	0	9	719	16	-	744	1	8	759	27	-	795	0	12	13	92	-	117	0	10	4	15	-	29	1685
% Lights	-	100.0	99.3	100.0	-	99.3	100.0	100.0	98.7	100.0	-	98.8	-	100.0	100.0	100.0	-	100.0	-	90.9	100.0	100.0	-	96.7	99.1
Buses	0	0	1	0	-	1	0	0	4	0	-	4	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	-	0.0	0.1	0.0	-	0.1	0.0	0.0	0.5	0.0	-	0.5	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	2	0	-	2	0	0	6	0	-	6	0	0	0	0	-	0	0	1	0	0	-	1	9
% Single-Unit Trucks	-	0.0	0.3	0.0	-	0.3	0.0	0.0	0.8	0.0	-	0.7	-	0.0	0.0	0.0	-	0.0	-	9.1	0.0	0.0	-	3.3	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	2	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	0.0	0.3	0.0	-	0.3	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	15	-	-	-	-	-	16	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Monroe Street
Site Code:
Start Date: 07/20/2016

Turning Movement Data

Start Time	Monroe Street Eastbound					Maple Avenue Northbound				Maple Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	Peds	App. Total	
7:00 AM	0	14	6	1	20	1	3	0	4	2	1	2	2	5	29
7:15 AM	0	7	5	0	12	0	4	2	6	0	2	2	1	4	22
7:30 AM	0	11	5	1	16	0	2	4	6	2	8	3	6	13	35
7:45 AM	0	20	20	0	40	0	3	9	12	0	13	3	8	16	68
Hourly Total	0	52	36	2	88	1	12	15	28	4	24	10	17	38	154
8:00 AM	0	15	10	4	25	0	3	6	9	0	4	4	5	8	42
8:15 AM	0	17	10	2	27	0	2	5	7	3	9	1	7	13	47
8:30 AM	1	7	7	2	15	0	2	9	11	2	10	4	7	16	42
8:45 AM	0	12	11	2	23	0	7	11	18	1	12	0	7	13	54
Hourly Total	1	51	38	10	90	0	14	31	45	6	35	9	26	50	185
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	15	6	6	21	0	12	11	23	1	6	2	10	9	53
4:15 PM	2	13	4	1	19	0	6	10	16	3	9	3	4	15	50
4:30 PM	0	12	4	5	16	0	10	11	21	1	7	3	5	11	48
4:45 PM	1	8	5	2	14	0	7	9	16	1	5	5	4	11	41
Hourly Total	3	48	19	14	70	0	35	41	76	6	27	13	23	46	192
5:00 PM	0	26	3	1	29	0	8	10	18	0	4	4	6	8	55
5:15 PM	0	14	5	2	19	0	3	11	14	0	8	3	4	11	44
5:30 PM	0	14	2	0	16	0	2	6	8	0	4	0	4	4	28
5:45 PM	0	14	5	2	19	0	4	4	8	0	2	4	6	6	33
Hourly Total	0	68	15	5	83	0	17	31	48	0	18	11	20	29	160
Grand Total	4	219	108	31	331	1	78	118	197	16	104	43	86	163	691
Approach %	1.2	66.2	32.6	-	-	0.5	39.6	59.9	-	9.8	63.8	26.4	-	-	-
Total %	0.6	31.7	15.6	-	47.9	0.1	11.3	17.1	28.5	2.3	15.1	6.2	-	23.6	-
Lights	4	218	108	-	330	1	78	111	190	16	101	42	-	159	679
% Lights	100.0	99.5	100.0	-	99.7	100.0	100.0	94.1	96.4	100.0	97.1	97.7	-	97.5	98.3
Buses	0	0	0	-	0	0	0	3	3	0	0	1	-	1	4
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.0	2.5	1.5	0.0	0.0	2.3	-	0.6	0.6
Single-Unit Trucks	0	0	0	-	0	0	0	2	2	0	0	0	-	0	2
% Single-Unit Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	1.7	1.0	0.0	0.0	0.0	-	0.0	0.3
Articulated Trucks	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	1	0	-	1	0	0	2	2	0	3	0	-	3	6
% Bicycles on Road	0.0	0.5	0.0	-	0.3	0.0	0.0	1.7	1.0	0.0	2.9	0.0	-	1.8	0.9
Pedestrians	-	-	-	31	-	-	-	-	-	-	-	-	86	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Monroe Street
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Monroe Street Eastbound					Maple Avenue Northbound				Maple Avenue Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	7	5	0	12	0	4	2	6	0	2	2	1	4	22
7:30 AM	0	11	5	1	16	0	2	4	6	2	8	3	6	13	35
7:45 AM	0	20	20	0	40	0	3	9	12	0	13	3	8	16	68
8:00 AM	0	15	10	4	25	0	3	6	9	0	4	4	5	8	42
Total	0	53	40	5	93	0	12	21	33	2	27	12	20	41	167
Approach %	0.0	57.0	43.0	-	-	0.0	36.4	63.6	-	4.9	65.9	29.3	-	-	-
Total %	0.0	31.7	24.0	-	55.7	0.0	7.2	12.6	19.8	1.2	16.2	7.2	-	24.6	-
PHF	0.000	0.663	0.500	-	0.581	0.000	0.750	0.583	0.688	0.250	0.519	0.750	-	0.641	0.614
Lights	0	52	40	-	92	0	12	17	29	2	27	11	-	40	161
% Lights	-	98.1	100.0	-	98.9	-	100.0	81.0	87.9	100.0	100.0	91.7	-	97.6	96.4
Buses	0	0	0	-	0	0	0	2	2	0	0	1	-	1	3
% Buses	-	0.0	0.0	-	0.0	-	0.0	9.5	6.1	0.0	0.0	8.3	-	2.4	1.8
Single-Unit Trucks	0	0	0	-	0	0	0	2	2	0	0	0	-	0	2
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	9.5	6.1	0.0	0.0	0.0	-	0.0	1.2
Articulated Trucks	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	1	0	-	1	0	0	0	0	0	0	0	-	0	1
% Bicycles on Road	-	1.9	0.0	-	1.1	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.6
Pedestrians	-	-	-	5	-	-	-	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Monroe Street
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Monroe Street Eastbound					Maple Avenue Northbound				Maple Avenue Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
5:00 PM	0	26	3	1	29	0	8	10	18	0	4	4	6	8	55
5:15 PM	0	14	5	2	19	0	3	11	14	0	8	3	4	11	44
5:30 PM	0	14	2	0	16	0	2	6	8	0	4	0	4	4	28
5:45 PM	0	14	5	2	19	0	4	4	8	0	2	4	6	6	33
Total	0	68	15	5	83	0	17	31	48	0	18	11	20	29	160
Approach %	0.0	81.9	18.1	-	-	0.0	35.4	64.6	-	0.0	62.1	37.9	-	-	-
Total %	0.0	42.5	9.4	-	51.9	0.0	10.6	19.4	30.0	0.0	11.3	6.9	-	18.1	-
PHF	0.000	0.654	0.750	-	0.716	0.000	0.531	0.705	0.667	0.000	0.563	0.688	-	0.659	0.727
Lights	0	68	15	-	83	0	17	30	47	0	18	11	-	29	159
% Lights	-	100.0	100.0	-	100.0	-	100.0	96.8	97.9	-	100.0	100.0	-	100.0	99.4
Buses	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0
% Buses	-	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
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	0.0	0.0
Articulated Trucks	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	1	1	0	0	0	-	0	1
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	3.2	2.1	-	0.0	0.0	-	0.0	0.6
Pedestrians	-	-	-	5	-	-	-	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Parking Lot Access Drive
Site Code:
Start Date: 07/20/2016

Turning Movement Data

Start Time	Parking Lot Access Drive Eastbound						Drop-Off Lane Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	2	0	1	1	3	0	0	1	1	1	2	0	6	7	0	7	13	0	0	2	4	4	6	24
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	4	5	0	0	9	1	0	4	2	4	7	17
7:30 AM	0	4	0	0	0	4	0	0	1	0	1	1	0	4	8	0	6	12	1	0	11	4	4	16	33
7:45 AM	0	0	0	0	3	0	0	0	0	0	5	0	0	5	26	0	7	31	0	0	16	3	4	19	50
Hourly Total	0	6	0	1	4	7	0	0	2	2	7	4	0	19	46	0	20	65	2	0	33	13	16	48	124
8:00 AM	0	1	0	1	3	2	0	2	0	2	4	4	0	5	15	0	7	20	0	0	5	4	1	9	35
8:15 AM	0	1	0	0	0	1	0	0	1	0	6	1	0	6	15	0	11	21	0	0	12	9	2	21	44
8:30 AM	0	2	0	2	0	4	0	0	0	2	0	2	0	5	13	0	9	18	0	0	13	9	5	22	46
8:45 AM	0	1	0	1	1	2	0	0	0	1	3	1	0	5	15	0	7	20	0	0	10	4	3	14	37
Hourly Total	0	5	0	4	4	9	0	2	1	5	13	8	0	21	58	0	34	79	0	0	40	26	11	66	162
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	3	0	5	3	8	0	1	0	6	5	7	0	1	24	0	0	25	0	0	7	4	0	11	51
4:15 PM	0	1	0	1	0	2	0	0	0	6	2	6	1	1	19	0	5	21	1	0	11	2	3	14	43
4:30 PM	0	5	0	2	0	7	0	0	0	2	3	2	0	2	19	0	4	21	0	0	12	1	3	13	43
4:45 PM	0	3	0	1	1	4	0	0	0	2	3	2	1	0	14	0	3	15	0	0	11	3	9	14	35
Hourly Total	0	12	0	9	4	21	0	1	0	16	13	17	2	4	76	0	12	82	1	0	41	10	15	52	172
5:00 PM	0	5	0	2	0	7	0	1	0	1	2	2	0	3	32	0	9	35	0	0	5	1	3	6	50
5:15 PM	0	0	0	3	0	3	0	1	0	3	2	4	0	1	22	0	3	23	0	0	6	0	4	6	36
5:30 PM	0	5	0	0	0	5	0	0	0	1	0	1	0	0	20	0	1	20	1	0	4	2	1	7	33
5:45 PM	0	3	0	2	1	5	0	0	0	1	1	1	0	0	16	0	1	16	0	0	5	2	3	7	29
Hourly Total	0	13	0	7	1	20	0	2	0	6	5	8	0	4	90	0	14	94	1	0	20	5	11	26	148
Grand Total	0	36	0	21	13	57	0	5	3	29	38	37	2	48	270	0	80	320	4	0	134	54	53	192	606
Approach %	0.0	63.2	0.0	36.8	-	-	0.0	13.5	8.1	78.4	-	-	0.6	15.0	84.4	0.0	-	-	2.1	0.0	69.8	28.1	-	-	-
Total %	0.0	5.9	0.0	3.5	-	9.4	0.0	0.8	0.5	4.8	-	6.1	0.3	7.9	44.6	0.0	-	52.8	0.7	0.0	22.1	8.9	-	31.7	-
Lights	0	36	0	21	-	57	0	5	3	29	-	37	2	48	261	0	-	311	4	0	130	54	-	188	593
% Lights	-	100.0	-	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	96.7	-	-	97.2	100.0	-	97.0	100.0	-	97.9	97.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	3	0	-	3	0	0	1	0	-	1	4
% Buses	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.1	-	-	0.9	0.0	-	0.7	0.0	-	0.5	0.7
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	3
% Single-Unit Trucks	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.7	-	-	0.6	0.0	-	0.7	0.0	-	0.5	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	4	0	-	4	0	0	2	0	-	2	6
% Bicycles on Road	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	1.5	-	-	1.3	0.0	-	1.5	0.0	-	1.1	1.0
Pedestrians	-	-	-	-	13	-	-	-	-	-	38	-	-	-	-	-	80	-	-	-	-	-	53	-	


% Pedestrians
100.0
100.0
100.0
100.0

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Parking Lot Access Drive
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Parking Lot Access Drive Eastbound						Drop-Off Lane Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	4	5	0	0	9	1	0	4	2	4	7	17
7:30 AM	0	4	0	0	0	4	0	0	1	0	1	1	0	4	8	0	6	12	1	0	11	4	4	16	33
7:45 AM	0	0	0	0	3	0	0	0	0	0	5	0	0	5	26	0	7	31	0	0	16	3	4	19	50
8:00 AM	0	1	0	1	3	2	0	2	0	2	4	4	0	5	15	0	7	20	0	0	5	4	1	9	35
Total	0	5	0	1	6	6	0	2	1	3	10	6	0	18	54	0	20	72	2	0	36	13	13	51	135
Approach %	0.0	83.3	0.0	16.7	-	-	0.0	33.3	16.7	50.0	-	-	0.0	25.0	75.0	0.0	-	-	3.9	0.0	70.6	25.5	-	-	-
Total %	0.0	3.7	0.0	0.7	-	4.4	0.0	1.5	0.7	2.2	-	4.4	0.0	13.3	40.0	0.0	-	53.3	1.5	0.0	26.7	9.6	-	37.8	-
PHF	0.000	0.313	0.000	0.250	-	0.375	0.000	0.250	0.250	0.375	-	0.375	0.000	0.900	0.519	0.000	-	0.581	0.500	0.000	0.563	0.813	-	0.671	0.675
Lights	0	5	0	1	-	6	0	2	1	3	-	6	0	18	49	0	-	67	2	0	35	13	-	50	129
% Lights	-	100.0	-	100.0	-	100.0	-	100.0	100.0	100.0	-	100.0	-	100.0	90.7	-	-	93.1	100.0	-	97.2	100.0	-	98.0	95.6
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	1	0	-	1	3
% Buses	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	3.7	-	-	2.8	0.0	-	2.8	0.0	-	2.0	2.2
Single-Unit Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	0	0	0	0	-	0	2
% Single-Unit Trucks	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	3.7	-	-	2.8	0.0	-	0.0	0.0	-	0.0	1.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	1.9	-	-	1.4	0.0	-	0.0	0.0	-	0.0	0.7
Pedestrians	-	-	-	-	6	-	-	-	-	-	10	-	-	-	-	-	20	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Parking Lot Access Drive
Site Code:
Start Date: 07/20/2016

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Parking Lot Access Drive Eastbound						Drop-Off Lane Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	5	0	2	0	7	0	1	0	1	2	2	0	3	32	0	9	35	0	0	5	1	3	6	50
5:15 PM	0	0	0	3	0	3	0	1	0	3	2	4	0	1	22	0	3	23	0	0	6	0	4	6	36
5:30 PM	0	5	0	0	0	5	0	0	0	1	0	1	0	0	20	0	1	20	1	0	4	2	1	7	33
5:45 PM	0	3	0	2	1	5	0	0	0	1	1	1	0	0	16	0	1	16	0	0	5	2	3	7	29
Total	0	13	0	7	1	20	0	2	0	6	5	8	0	4	90	0	14	94	1	0	20	5	11	26	148
Approach %	0.0	65.0	0.0	35.0	-	-	0.0	25.0	0.0	75.0	-	-	0.0	4.3	95.7	0.0	-	-	3.8	0.0	76.9	19.2	-	-	-
Total %	0.0	8.8	0.0	4.7	-	13.5	0.0	1.4	0.0	4.1	-	5.4	0.0	2.7	60.8	0.0	-	63.5	0.7	0.0	13.5	3.4	-	17.6	-
PHF	0.000	0.650	0.000	0.583	-	0.714	0.000	0.500	0.000	0.500	-	0.500	0.000	0.333	0.703	0.000	-	0.671	0.250	0.000	0.833	0.625	-	0.929	0.740
Lights	0	13	0	7	-	20	0	2	0	6	-	8	0	4	89	0	-	93	1	0	20	5	-	26	147
% Lights	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-	100.0	98.9	-	-	98.9	100.0	-	100.0	100.0	-	100.0	99.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	-	0.0	-	0.0	-	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
% 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
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	1
% Bicycles on Road	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	1.1	-	-	1.1	0.0	-	0.0	0.0	-	0.0	0.7
Pedestrians	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	14	-	-	-	-	-	11	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Adams Street
Site Code:
Start Date: 05/23/2017

Turning Movement Data

Start Time	Access Drive Eastbound						Adams Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	0	0	1	0	0	8	0	1	0	9	0	0	8	0	1	8	0	0	0	0	2	0	17
7:15 AM	0	0	2	0	0	2	0	6	0	2	0	8	0	0	4	2	0	6	0	0	0	0	4	0	16
7:30 AM	0	0	0	0	5	0	0	7	1	2	0	10	0	0	3	0	1	3	0	4	2	0	9	6	19
7:45 AM	0	0	0	0	1	0	0	4	0	7	0	11	0	0	5	1	1	6	0	2	0	0	1	2	19
Hourly Total	0	0	2	0	7	2	0	25	1	12	0	38	0	0	20	3	3	23	0	6	2	0	16	8	71
8:00 AM	0	0	0	0	0	0	0	7	0	7	0	14	0	0	4	0	0	4	0	0	1	0	1	1	19
8:15 AM	0	0	0	0	2	0	0	5	0	0	0	5	0	0	5	1	0	6	0	0	0	0	1	0	11
8:30 AM	0	0	1	2	0	3	0	10	1	5	0	16	0	0	8	1	0	9	0	1	1	0	1	2	30
8:45 AM	0	0	1	0	3	1	0	9	1	5	0	15	0	0	8	3	2	11	1	0	1	0	1	2	29
Hourly Total	0	0	2	2	5	4	0	31	2	17	0	50	0	0	25	5	2	30	1	1	3	0	4	5	89
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	0	0	14	0	19	0	33	0	0	2	0	0	2	0	0	2	0	5	2	37
4:15 PM	0	0	0	0	1	0	0	21	1	11	0	33	0	0	0	1	2	1	0	1	2	0	1	3	37
4:30 PM	0	0	1	0	1	1	0	26	0	20	0	46	0	0	3	1	0	4	0	0	1	0	1	1	52
4:45 PM	0	0	0	1	0	1	0	15	1	10	0	26	0	0	1	0	1	1	1	3	4	0	1	8	36
Hourly Total	0	0	1	1	2	2	0	76	2	60	0	138	0	0	6	2	3	8	1	4	9	0	8	14	162
5:00 PM	0	0	0	0	0	0	0	18	1	10	0	29	0	0	0	0	0	0	0	2	1	0	0	3	32
5:15 PM	0	0	0	0	0	0	0	12	1	9	0	22	0	0	2	0	0	2	0	0	0	0	3	0	24
5:30 PM	0	0	0	0	1	0	0	15	0	2	0	17	0	0	2	1	1	3	0	1	1	0	2	2	22
5:45 PM	0	0	0	0	3	0	0	3	0	7	0	10	0	0	1	2	1	3	0	0	0	0	1	0	13
Hourly Total	0	0	0	0	4	0	0	48	2	28	0	78	0	0	5	3	2	8	0	3	2	0	6	5	91
Grand Total	0	0	5	3	18	8	0	180	7	117	0	304	0	0	56	13	10	69	2	14	16	0	34	32	413
Approach %	0.0	0.0	62.5	37.5	-	-	0.0	59.2	2.3	38.5	-	-	0.0	0.0	81.2	18.8	-	-	6.3	43.8	50.0	0.0	-	-	-
Total %	0.0	0.0	1.2	0.7	-	1.9	0.0	43.6	1.7	28.3	-	73.6	0.0	0.0	13.6	3.1	-	16.7	0.5	3.4	3.9	0.0	-	7.7	-
Lights	0	0	5	3	-	8	0	177	7	113	-	297	0	0	55	13	-	68	2	13	16	0	-	31	404
% Lights	-	-	100.0	100.0	-	100.0	-	98.3	100.0	96.6	-	97.7	-	-	98.2	100.0	-	98.6	100.0	92.9	100.0	-	-	96.9	97.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	-	0.0	0.0	-	0.0	-	0.0	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	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.9	-	0.3	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	0	0	-	0	0	3	0	3	-	6	0	0	1	0	-	1	0	1	0	0	-	1	8
% Bicycles on Road	-	-	0.0	0.0	-	0.0	-	1.7	0.0	2.6	-	2.0	-	-	1.8	0.0	-	1.4	0.0	7.1	0.0	-	-	2.4	1.9
Pedestrians	-	-	-	-	18	-	-	-	-	-	0	-	-	-	-	-	10	-	-	-	-	-	34	-	-


100.0
100.0
100.0
% Pedestrians

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Adams Street
Site Code:
Start Date: 05/23/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Access Drive Eastbound						Adams Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	0	2	0	0	2	0	6	0	2	0	8	0	0	4	2	0	6	0	0	0	0	4	0	16
7:30 AM	0	0	0	0	5	0	0	7	1	2	0	10	0	0	3	0	1	3	0	4	2	0	9	6	19
7:45 AM	0	0	0	0	1	0	0	4	0	7	0	11	0	0	5	1	1	6	0	2	0	0	1	2	19
8:00 AM	0	0	0	0	0	0	0	7	0	7	0	14	0	0	4	0	0	4	0	0	1	0	1	1	19
Total	0	0	2	0	6	2	0	24	1	18	0	43	0	0	16	3	2	19	0	6	3	0	15	9	73
Approach %	0.0	0.0	100.0	0.0	-	-	0.0	55.8	2.3	41.9	-	-	0.0	0.0	84.2	15.8	-	-	0.0	66.7	33.3	0.0	-	-	-
Total %	0.0	0.0	2.7	0.0	-	2.7	0.0	32.9	1.4	24.7	-	58.9	0.0	0.0	21.9	4.1	-	26.0	0.0	8.2	4.1	0.0	-	12.3	-
PHF	0.000	0.000	0.250	0.000	-	0.250	0.000	0.857	0.250	0.643	-	0.768	0.000	0.000	0.800	0.375	-	0.792	0.000	0.375	0.375	0.000	-	0.375	0.961
Lights	0	0	2	0	-	2	0	22	1	16	-	39	0	0	16	3	-	19	0	5	3	0	-	8	68
% Lights	-	-	100.0	-	-	100.0	-	91.7	100.0	88.9	-	90.7	-	-	100.0	100.0	-	100.0	-	83.3	100.0	-	-	88.9	93.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	-	0.0	-	-	0.0	-	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	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	-	-	0.0	-	-	0.0	-	0.0	0.0	5.6	-	2.3	-	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	1.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated 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
Bicycles on Road	0	0	0	0	-	0	0	2	0	1	-	3	0	0	0	0	-	0	0	1	0	0	-	1	4
% Bicycles on Road	-	-	0.0	-	-	0.0	-	8.3	0.0	5.6	-	7.0	-	-	0.0	0.0	-	0.0	-	16.7	0.0	-	-	11.1	5.5
Pedestrians	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	15	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Adams Street
Site Code:
Start Date: 05/23/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Access Drive Eastbound						Adams Street Westbound						Maple Avenue Northbound						Maple Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	0	0	0	0	0	0	18	1	10	0	29	0	0	0	0	0	0	0	2	1	0	0	3	32
5:15 PM	0	0	0	0	0	0	0	12	1	9	0	22	0	0	2	0	0	2	0	0	0	0	3	0	24
5:30 PM	0	0	0	0	1	0	0	15	0	2	0	17	0	0	2	1	1	3	0	1	1	0	2	2	22
5:45 PM	0	0	0	0	3	0	0	3	0	7	0	10	0	0	1	2	1	3	0	0	0	0	1	0	13
Total	0	0	0	0	4	0	0	48	2	28	0	78	0	0	5	3	2	8	0	3	2	0	6	5	91
Approach %	NaN	NaN	NaN	NaN	-	-	0.0	61.5	2.6	35.9	-	-	0.0	0.0	62.5	37.5	-	-	0.0	60.0	40.0	0.0	-	-	-
Total %	0.0	0.0	0.0	0.0	-	0.0	0.0	52.7	2.2	30.8	-	85.7	0.0	0.0	5.5	3.3	-	8.8	0.0	3.3	2.2	0.0	-	5.5	-
PHF	0.000	0.000	0.000	0.000	-	0.000	0.000	0.667	0.500	0.700	-	0.672	0.000	0.000	0.625	0.375	-	0.667	0.000	0.375	0.500	0.000	-	0.417	0.711
Lights	0	0	0	0	-	0	0	48	2	26	-	76	0	0	5	3	-	8	0	3	2	0	-	5	89
% Lights	-	-	-	-	-	-	-	100.0	100.0	92.9	-	97.4	-	-	100.0	100.0	-	100.0	-	100.0	100.0	-	-	100.0	97.8
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	-	-	-	-	-	-	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
% 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
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	-	-	-	-	-	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	2	-	2	0	0	0	0	-	0	0	0	0	0	-	0	2
% Bicycles on Road	-	-	-	-	-	-	-	0.0	0.0	7.1	-	2.6	-	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	2.2
Pedestrians	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Jackson Boulevard
Site Code:
Start Date: 05/23/2017

Turning Movement Data

Start Time	Jackson Boulevard Eastbound					Maple Avenue Northbound					Maple Avenue Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	1	54	0	55	0	80	7	0	87	0	0	7	0	7	149
7:15 AM	0	0	88	0	88	0	80	4	0	84	0	0	5	0	5	177
7:30 AM	0	0	82	0	82	0	92	3	0	95	0	0	10	0	10	187
7:45 AM	0	0	94	0	94	0	88	6	0	94	0	0	2	0	2	190
Hourly Total	0	1	318	0	319	0	340	20	0	360	0	0	24	0	24	703
8:00 AM	0	0	66	0	66	0	130	4	0	134	0	0	6	1	6	206
8:15 AM	0	0	55	1	55	0	94	5	0	99	0	0	7	0	7	161
8:30 AM	0	0	58	0	58	0	73	7	0	80	0	0	11	1	11	149
8:45 AM	0	0	51	1	51	0	99	9	0	108	0	0	8	1	8	167
Hourly Total	0	0	230	2	230	0	396	25	0	421	0	0	32	3	32	683
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	54	0	54	0	101	2	0	103	0	0	16	0	16	173
4:15 PM	0	0	78	1	78	0	107	0	0	107	1	0	25	1	26	211
4:30 PM	0	0	78	0	78	0	94	3	0	97	0	0	23	0	23	198
4:45 PM	0	0	70	1	70	0	93	1	0	94	0	0	21	0	21	185
Hourly Total	0	0	280	2	280	0	395	6	0	401	1	0	85	1	86	767
5:00 PM	0	0	82	0	82	0	81	0	0	81	0	0	20	0	20	183
5:15 PM	0	0	82	0	82	0	100	2	0	102	0	0	10	0	10	194
5:30 PM	0	0	96	0	96	0	99	2	0	101	0	0	18	0	18	215
5:45 PM	0	0	96	0	96	0	111	2	0	113	0	0	3	0	3	212
Hourly Total	0	0	356	0	356	0	391	6	0	397	0	0	51	0	51	804
Grand Total	0	1	1184	4	1185	0	1522	57	0	1579	1	0	192	4	193	2957
Approach %	0.0	0.1	99.9	-	-	0.0	96.4	3.6	-	-	0.5	0.0	99.5	-	-	-
Total %	0.0	0.0	40.0	-	40.1	0.0	51.5	1.9	-	53.4	0.0	0.0	6.5	-	6.5	-
Lights	0	0	1167	-	1167	0	1504	57	-	1561	1	0	191	-	192	2920
% Lights	-	0.0	98.6	-	98.5	-	98.8	100.0	-	98.9	100.0	-	99.5	-	99.5	98.7
Buses	0	0	10	-	10	0	8	0	-	8	0	0	0	-	0	18
% Buses	-	0.0	0.8	-	0.8	-	0.5	0.0	-	0.5	0.0	-	0.0	-	0.0	0.6
Single-Unit Trucks	0	0	6	-	6	0	9	0	-	9	0	0	0	-	0	15
% Single-Unit Trucks	-	0.0	0.5	-	0.5	-	0.6	0.0	-	0.6	0.0	-	0.0	-	0.0	0.5
Articulated Trucks	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	-	100.0	0.0	-	0.1	-	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0
Bicycles on Road	0	0	1	-	1	0	1	0	-	1	0	0	1	-	1	3
% Bicycles on Road	-	0.0	0.1	-	0.1	-	0.1	0.0	-	0.1	0.0	-	0.5	-	0.5	0.1
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
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Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Jackson Boulevard
Site Code:
Start Date: 05/23/2017

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Jackson Boulevard Eastbound					Maple Avenue Northbound					Maple Avenue Southbound					
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	0	88	0	88	0	80	4	0	84	0	0	5	0	5	177
7:30 AM	0	0	82	0	82	0	92	3	0	95	0	0	10	0	10	187
7:45 AM	0	0	94	0	94	0	88	6	0	94	0	0	2	0	2	190
8:00 AM	0	0	66	0	66	0	130	4	0	134	0	0	6	1	6	206
Total	0	0	330	0	330	0	390	17	0	407	0	0	23	1	23	760
Approach %	0.0	0.0	100.0	-	-	0.0	95.8	4.2	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	0.0	43.4	-	43.4	0.0	51.3	2.2	-	53.6	0.0	0.0	3.0	-	3.0	-
PHF	0.000	0.000	0.878	-	0.878	0.000	0.750	0.708	-	0.759	0.000	0.000	0.575	-	0.575	0.922
Lights	0	0	323	-	323	0	384	17	-	401	0	0	23	-	23	747
% Lights	-	-	97.9	-	97.9	-	98.5	100.0	-	98.5	-	-	100.0	-	100.0	98.3
Buses	0	0	3	-	3	0	3	0	-	3	0	0	0	-	0	6
% Buses	-	-	0.9	-	0.9	-	0.8	0.0	-	0.7	-	-	0.0	-	0.0	0.8
Single-Unit Trucks	0	0	4	-	4	0	2	0	-	2	0	0	0	-	0	6
% Single-Unit Trucks	-	-	1.2	-	1.2	-	0.5	0.0	-	0.5	-	-	0.0	-	0.0	0.8
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	-	-	0.0	-	0.0	-	0.3	0.0	-	0.2	-	-	0.0	-	0.0	0.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Maple Avenue with Jackson Boulevard
Site Code:
Start Date: 05/23/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Jackson Boulevard Eastbound					Maple Avenue Northbound					Maple Avenue Southbound					Int. Total
	U-Turn	Left	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	
5:00 PM	0	0	82	0	82	0	81	0	0	81	0	0	20	0	20	183
5:15 PM	0	0	82	0	82	0	100	2	0	102	0	0	10	0	10	194
5:30 PM	0	0	96	0	96	0	99	2	0	101	0	0	18	0	18	215
5:45 PM	0	0	96	0	96	0	111	2	0	113	0	0	3	0	3	212
Total	0	0	356	0	356	0	391	6	0	397	0	0	51	0	51	804
Approach %	0.0	0.0	100.0	-	-	0.0	98.5	1.5	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	0.0	44.3	-	44.3	0.0	48.6	0.7	-	49.4	0.0	0.0	6.3	-	6.3	-
PHF	0.000	0.000	0.927	-	0.927	0.000	0.881	0.750	-	0.878	0.000	0.000	0.638	-	0.638	0.935
Lights	0	0	353	-	353	0	388	6	-	394	0	0	51	-	51	798
% Lights	-	-	99.2	-	99.2	-	99.2	100.0	-	99.2	-	-	100.0	-	100.0	99.3
Buses	0	0	1	-	1	0	2	0	-	2	0	0	0	-	0	3
% Buses	-	-	0.3	-	0.3	-	0.5	0.0	-	0.5	-	-	0.0	-	0.0	0.4
Single-Unit Trucks	0	0	1	-	1	0	1	0	-	1	0	0	0	-	0	2
% Single-Unit Trucks	-	-	0.3	-	0.3	-	0.3	0.0	-	0.3	-	-	0.0	-	0.0	0.2
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0
Bicycles on Road	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Bicycles on Road	-	-	0.3	-	0.3	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A
Rush Hospital Emergency Porte Cochere

Tuesday, May 23, 2017

Hour Begin	Passenger Vehicles	Ambulances	Total
12:00 AM	2	0	2
1:00 AM	0	1	1
2:00 AM	1	1	2
3:00 AM	1	1	2
4:00 AM	1	0	1
5:00 AM	1	0	1
6:00 AM	3	1	4
7:00 AM	1	0	1
8:00 AM	2	2	4
9:00 AM	3	0	3
10:00 AM	5	1	6
11:00 AM	12	0	12
12:00 PM	4	0	4
1:00 PM	4	0	4
2:00 PM	4	1	5
3:00 PM	7	0	7
4:00 PM	9	0	9
5:00 PM	9	0	9
6:00 PM	4	0	4
7:00 PM	3	0	3
8:00 PM	2	0	2
9:00 PM	4	1	5
10:00 PM	2	0	2
11:00 PM	1	0	1
Total:	**85**	**9**	**94**

Table A
Rush Hospital Emergency Porte Cochere

Wednesday, May 24, 2017

Hour Begin	Passenger Vehicles	Ambulances	Total
12:00 AM	1	1	2
1:00 AM	0	0	0
2:00 AM	1	2	3
3:00 AM	1	1	2
4:00 AM	1	0	1
5:00 AM	1	0	1
6:00 AM	1	0	1
7:00 AM	1	0	1
8:00 AM	0	0	0
9:00 AM	2	1	3
10:00 AM	3	1	4
11:00 AM	3	0	3
12:00 PM	5	0	5
1:00 PM	2	1	3
2:00 PM	6	0	6
3:00 PM	3	0	3
4:00 PM	4	0	4
5:00 PM	3	0	3
6:00 PM	3	0	3
7:00 PM	6	1	7
8:00 PM	3	0	3
9:00 PM	3	0	3
10:00 PM	3	0	3
11:00 PM	2	0	2
Total:	**58**	**8**	**66**

Table A
Rush Hospital Emergency Porte Cochere

Thursday, May 25, 2017

Hour Begin	Passenger Vehicles	Ambulances	Total
12:00 AM	2	2	4
1:00 AM	0	0	0
2:00 AM	0	1	1
3:00 AM	1	1	2
4:00 AM	2	1	3
5:00 AM	1	1	2
6:00 AM	1	0	1
7:00 AM	2	0	2
8:00 AM	0	0	0
9:00 AM	3	1	4
10:00 AM	2	0	2
11:00 AM	7	1	8
12:00 PM	2	1	3
1:00 PM	1	2	3
2:00 PM	3	1	4
3:00 PM	8	0	8
4:00 PM	1	0	1
5:00 PM	2	0	2
6:00 PM	2	1	3
7:00 PM	2	1	3
8:00 PM	2	1	3
9:00 PM	5	0	5
10:00 PM	2	0	2
11:00 PM	2	0	2
Total:	**53**	**15**	**68**

DAILY AVERAGE:

Passenger Vehicles	Ambulances	Total
65	11	76

Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	437	15	249	440	300	40	756	248	256	979	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	140		0	170		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			40			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.85	0.95	1.00	*0.85	0.95
Ped Bike Factor	1.00	1.00		0.99	0.99			0.99		1.00	1.00	
Frt		0.995			0.939			0.963			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1313	3433	0	1573	3301	0	1671	2897	0	1752	3031	0
Flt Permitted	0.143			0.261			0.124			0.083		
Satd. Flow (perm)	197	3433	0	429	3301	0	218	2897	0	153	3031	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			130			38			8	
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		258			250			382			1942	
Travel Time (s)		7.0			5.7			8.7			44.1	
Confl. Peds. (#/hr)	4		14	14		4	7		12	12		7
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	21%	4%	20%	1%	2%	2%	8%	8%	3%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	2	0	0	4	0	0	4
Parking (#/hr)	4		4	4								
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	466	0	257	763	0	41	1035	0	264	1090	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	8.0		3.0	15.0		3.0	8.0	
Minimum Split (s)	10.0	35.0		10.0	37.0		10.0	46.0		10.0	40.0	
Total Split (s)	14.0	37.0		14.0	37.0		14.0	60.0		14.0	60.0	
Total Split (%)	11.2%	29.6%		11.2%	29.6%		11.2%	48.0%		11.2%	48.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	1.0	-2.0		1.0	-2.0		1.0	-2.0		1.0	-2.0	
Total Lost Time (s)	4.5	4.0		4.5	4.0		4.5	4.0		4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	37.6	30.2		42.0	34.9		60.2	54.9		70.2	63.0	
Actuated g/C Ratio	0.30	0.24		0.34	0.28		0.48	0.44		0.56	0.50	
v/c Ratio	0.47	0.56		1.07	0.75		0.24	0.80		1.09	0.71	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	38.4	43.6		111.9	39.8		16.1	34.7		114.2	28.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	38.4	43.6		111.9	39.8		16.1	34.7		114.2	28.1	
LOS	D	D		F	D		B	C		F	C	
Approach Delay		43.0			58.0			34.0			44.9	
Approach LOS		D			E			C			D	
Queue Length 50th (ft)	32	168		~176	251		14	397		~210	409	
Queue Length 95th (ft)	63	223		#311	332		32	499		#387	520	
Internal Link Dist (ft)		178			170			302			1862	
Turn Bay Length (ft)	125			140			170			130		
Base Capacity (vph)	146	908		241	1023		221	1318		242	1532	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.51		1.07	0.75		0.19	0.79		1.09	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 49 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 92.4%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 1: Harlem Avenue & Madison St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	894	70	54	986	32	21	9	28	22	7	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.99	
Frt		0.989			0.996			0.935			0.955	
Flt Protected					0.997			0.982			0.975	
Satd. Flow (prot)	0	3433	0	0	3537	0	0	1457	0	0	1672	0
Flt Permitted		0.946			0.842			0.886			0.859	
Satd. Flow (perm)	0	3248	0	0	2987	0	0	1306	0	0	1468	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			5			29			15	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		215			683			159			159	
Travel Time (s)		4.9			15.5			4.3			4.3	
Confl. Peds. (#/hr)	10		5	5		10	18		7	7		18
Confl. Bikes (#/hr)			1			5			1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	1%	4%	1%	3%	10%	77%	7%	5%	14%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	4		4	4		4	4		4	4		4
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1002	0	0	1105	0	0	60	0	0	45	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		31.0	31.0		31.0	31.0	
Total Split (s)	52.0	52.0		52.0	52.0		38.0	38.0		38.0	38.0	
Total Split (%)	57.8%	57.8%		57.8%	57.8%		42.2%	42.2%		42.2%	42.2%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		74.1			74.1			11.5			11.5	
Actuated g/C Ratio		0.82			0.82			0.13			0.13	
v/c Ratio		0.37			0.45			0.31			0.23	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		3.3			1.7			25.7			28.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.3			1.7			25.7			28.2	
LOS		A			A			C			C	
Approach Delay		3.3			1.7			25.7			28.2	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		65			32			16			16	
Queue Length 95th (ft)		114			41			51			46	
Internal Link Dist (ft)		135			603			79			79	
Turn Bay Length (ft)												
Base Capacity (vph)		2677			2460			511			563	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.37			0.45			0.12			0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 56 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Wisconsin Ave. & Madison St.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	913	27	25	975	22	7	6	49	10	2	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	992	29	27	1060	24	8	7	53	11	2	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		250			412							
pX, platoon unblocked	0.92			0.89			0.93	0.93	0.89	0.93	0.93	0.92
vC, conflicting volume	1084			1022			1607	2152	511	1685	2154	542
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	913			769			1102	1690	193	1187	1692	323
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			95	92	93	90	97	99
cM capacity (veh/h)	681			746			145	82	723	113	82	617

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	499	526	557	554	67	21
Volume Left	3	0	27	0	8	11
Volume Right	0	29	0	24	53	8
cSH	681	1700	746	1700	328	153
Volume to Capacity	0.00	0.31	0.04	0.33	0.21	0.14
Queue Length 95th (ft)	0	0	3	0	19	11
Control Delay (s)	0.1	0.0	1.0	0.0	18.8	32.3
Lane LOS	A		A		C	D
Approach Delay (s)	0.1		0.5		18.8	32.3
Approach LOS					C	D

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	12	926	76	6	1236
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	13	1007	83	7	1343
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						562
pX, platoon unblocked	0.74					
vC, conflicting volume	1736	548			1092	
vC1, stage 1 conf vol	1051					
vC2, stage 2 conf vol	685					
vCu, unblocked vol	1281	548			1092	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	279	479			633	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	671	418	7	672	672
Volume Left	15	0	0	7	0	0
Volume Right	13	0	83	0	0	0
cSH	346	1700	1700	633	1700	1700
Volume to Capacity	0.08	0.39	0.25	0.01	0.40	0.40
Queue Length 95th (ft)	7	0	0	1	0	0
Control Delay (s)	16.3	0.0	0.0	10.7	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	16.3	0.0		0.1		
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	40	12	21	27	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	43	13	23	29	13
Pedestrians	5				20	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	110	41	47			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	110	41	47			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	99			
cM capacity (veh/h)	862	1026	1553			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	101	36	42
Volume Left	58	13	0
Volume Right	43	0	13
cSH	925	1553	1700
Volume to Capacity	0.11	0.01	0.02
Queue Length 95th (ft)	9	1	0
Control Delay (s)	9.4	2.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	2.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	1	18	54	39	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	20	59	42	15
Pedestrians	6			20	13	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			2	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	167	76	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	76	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	800	964	1531			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	7	78	58
Volume Left	5	20	0
Volume Right	1	0	15
cSH	824	1531	1700
Volume to Capacity	0.01	0.01	0.03
Queue Length 95th (ft)	1	1	0
Control Delay (s)	9.4	1.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	1.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	1	938	0	0	1236
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	1020	0	0	1343
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						382
pX, platoon unblocked	0.73					
vC, conflicting volume	1691	510			1020	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1206	510			1020	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	128	509			676	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	510	510	672	672
Volume Left	0	0	0	0	0
Volume Right	1	0	0	0	0
cSH	509	1700	1700	1700	1700
Volume to Capacity	0.00	0.30	0.30	0.40	0.40
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.1	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	972	3	3	1022	3	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1057	3	3	1111	3	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	447			215		
pX, platoon unblocked			0.89		0.94	0.89
vC, conflicting volume			1060		1620	530
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			826		1106	232
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			714		191	687

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	704	355	374	741	7
Volume Left	0	0	3	0	3
Volume Right	0	3	0	0	3
cSH	1700	1700	714	1700	299
Volume to Capacity	0.41	0.21	0.00	0.44	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.1	0.0	17.3
Lane LOS			A		C
Approach Delay (s)	0.0		0.0		17.3
Approach LOS					C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	465	16	264	466	319	53	808	264	275	1038	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	140		0	170		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			40			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.85	0.95	1.00	*0.85	0.95
Ped Bike Factor	1.00	1.00		0.99	0.99			0.99		1.00	1.00	
Frt		0.995			0.939			0.963			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1313	3433	0	1573	3301	0	1671	2896	0	1752	3031	0
Flt Permitted	0.140			0.248			0.098			0.071		
Satd. Flow (perm)	193	3433	0	408	3301	0	172	2896	0	131	3031	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			133			38			8	
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		258			250			382			1942	
Travel Time (s)		7.0			5.7			8.7			44.1	
Confl. Peds. (#/hr)	4		14	14		4	7		12	12		7
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	21%	4%	20%	1%	2%	2%	8%	8%	3%	3%	5%	8%
Bus Blockages (#/hr)	0	0	0	0	0	2	0	0	4	0	0	4
Parking (#/hr)	4		4	4								
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	495	0	272	809	0	55	1105	0	284	1157	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	8.0		3.0	15.0		3.0	8.0	
Minimum Split (s)	10.0	35.0		10.0	37.0		10.0	46.0		10.0	40.0	
Total Split (s)	14.0	37.0		14.0	37.0		14.0	60.0		14.0	60.0	
Total Split (%)	11.2%	29.6%		11.2%	29.6%		11.2%	48.0%		11.2%	48.0%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	1.0	-2.0		1.0	-2.0		1.0	-2.0		1.0	-2.0	
Total Lost Time (s)	4.5	4.0		4.5	4.0		4.5	4.0		4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	38.2	30.8		41.8	34.7		61.4	55.6		69.9	62.7	
Actuated g/C Ratio	0.31	0.25		0.33	0.28		0.49	0.44		0.56	0.50	
v/c Ratio	0.49	0.58		1.19	0.80		0.34	0.84		1.27	0.76	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	39.4	43.9		153.4	42.1		18.9	37.0		180.3	30.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.4	43.9		153.4	42.1		18.9	37.0		180.3	30.3	
LOS	D	D		F	D		B	D		F	C	
Approach Delay		43.4			70.1			36.2			59.8	
Approach LOS		D			E			D			E	
Queue Length 50th (ft)	33	180		~171	274		20	442		~263	454	
Queue Length 95th (ft)	66	237		#349	358		40	553		#447	578	
Internal Link Dist (ft)		178			170			302			1862	
Turn Bay Length (ft)	125			140			170			130		
Base Capacity (vph)	146	908		228	1012		202	1318		224	1524	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.55		1.19	0.80		0.27	0.84		1.27	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 49 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 53.8	Intersection LOS: D
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 1: Harlem Avenue & Madison St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	938	71	55	1045	33	22	10	29	24	8	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.98			0.99	
Frt		0.990			0.996			0.936			0.949	
Flt Protected		0.999			0.998			0.982			0.977	
Satd. Flow (prot)	0	3434	0	0	3541	0	0	1451	0	0	1666	0
Flt Permitted		0.929			0.837			0.895			0.860	
Satd. Flow (perm)	0	3193	0	0	2969	0	0	1314	0	0	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			5			30			20	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		215			683			159			159	
Travel Time (s)		4.9			15.5			4.3			4.3	
Confl. Peds. (#/hr)	10		5	5		10	18		7	7		18
Confl. Bikes (#/hr)			1			5			1			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	1%	4%	1%	3%	10%	77%	7%	5%	14%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	4		4	4		4	4		4	4		4
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1056	0	0	1168	0	0	63	0	0	53	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		31.0	31.0		31.0	31.0	
Total Split (s)	52.0	52.0		52.0	52.0		38.0	38.0		38.0	38.0	
Total Split (%)	57.8%	57.8%		57.8%	57.8%		42.2%	42.2%		42.2%	42.2%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		74.0			74.0			11.6			11.6	
Actuated g/C Ratio		0.82			0.82			0.13			0.13	
v/c Ratio		0.40			0.48			0.32			0.26	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		3.5			2.0			25.9			27.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.5			2.0			25.9			27.3	
LOS		A			A			C			C	
Approach Delay		3.5			2.0			25.9			27.3	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		71			31			17			17	
Queue Length 95th (ft)		126			45			53			49	
Internal Link Dist (ft)		135			603			79			79	
Turn Bay Length (ft)												
Base Capacity (vph)		2628			2442			515			564	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.48			0.12			0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 56 (62%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 3.9		Intersection LOS: A	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 2: Wisconsin Ave. & Madison St.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	970	30	30	1033	23	0	0	58	0	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1054	33	33	1123	25	0	0	63	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		250			412							
pX, platoon unblocked	0.91			0.88			0.92	0.92	0.88	0.92	0.92	0.91
vC, conflicting volume	1148			1087			1715	2292	543	1799	2296	574
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	967			823			1175	1801	205	1267	1805	338
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			95			100	100	91	100	100	99
cM capacity (veh/h)	645			705			128	69	705	101	69	600

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	532	560	33	749	399	63	9
Volume Left	4	0	33	0	0	0	0
Volume Right	0	33	0	0	25	63	9
cSH	645	1700	705	1700	1700	705	600
Volume to Capacity	0.01	0.33	0.05	0.44	0.23	0.09	0.01
Queue Length 95th (ft)	1	0	4	0	0	7	1
Control Delay (s)	0.2	0.0	10.4	0.0	0.0	10.6	11.1
Lane LOS	A		B			B	B
Approach Delay (s)	0.1		0.3			10.6	11.1
Approach LOS						B	B

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	39.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	16	21	982	85	7	1311
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	23	1067	92	8	1425
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						562
pX, platoon unblocked	0.71					
vC, conflicting volume	1844	583			1163	
vC1, stage 1 conf vol	1117					
vC2, stage 2 conf vol	728					
vCu, unblocked vol	1366	583			1163	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	95			99	
cM capacity (veh/h)	257	455			595	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	40	712	448	8	712	712
Volume Left	17	0	0	8	0	0
Volume Right	23	0	92	0	0	0
cSH	341	1700	1700	595	1700	1700
Volume to Capacity	0.12	0.42	0.26	0.01	0.42	0.42
Queue Length 95th (ft)	10	0	0	1	0	0
Control Delay (s)	17.0	0.0	0.0	11.1	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	17.0	0.0		0.1		
Approach LOS	C					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	55	41	21	14	28	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	45	23	15	30	15
Pedestrians	5				20	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	124	43	51			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124	43	51			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	99			
cM capacity (veh/h)	840	1023	1549			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	104	38	46
Volume Left	60	23	0
Volume Right	45	0	15
cSH	910	1549	1700
Volume to Capacity	0.11	0.01	0.03
Queue Length 95th (ft)	10	1	0
Control Delay (s)	9.5	4.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	4.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	1	6	54	44	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	1	7	59	48	22
Pedestrians	6			20	13	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			2	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	149	85	76			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	149	85	76			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	826	953	1516			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	65	70
Volume Left	10	7	0
Volume Right	1	0	22
cSH	837	1516	1700
Volume to Capacity	0.01	0.00	0.04
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.4	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	9	995	0	0	1236
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	10	1082	0	0	1343
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						382
pX, platoon unblocked	0.70					
vC, conflicting volume	1753	541			1082	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1221	541			1082	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	121	486			641	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	10	541	541	672	672
Volume Left	0	0	0	0	0
Volume Right	10	0	0	0	0
cSH	486	1700	1700	1700	1700
Volume to Capacity	0.02	0.32	0.32	0.40	0.40
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	12.6	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.6	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1025	6	4	1085	4	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1114	7	4	1179	4	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	447			215		
pX, platoon unblocked			0.88		0.93	0.88
vC, conflicting volume			1121		1716	560
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			875		1157	241
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			678		176	672

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	743	378	397	786	11
Volume Left	0	0	4	0	4
Volume Right	0	7	0	0	7
cSH	1700	1700	678	1700	315
Volume to Capacity	0.44	0.22	0.01	0.46	0.03
Queue Length 95th (ft)	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.2	0.0	16.8
Lane LOS			A		C
Approach Delay (s)	0.0		0.1		16.8
Approach LOS					C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	1	51	0	0	60
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	1	55	0	0	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	55			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	55			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	875	1011			1549	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	55	65
Volume Left	8	0	0
Volume Right	1	0	0
cSH	890	1700	1700
Volume to Capacity	0.01	0.03	0.04
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	381	55	232	365	243	62	853	164	133	1067	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	140		0	170		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			40			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.85	0.95	1.00	*0.85	0.95
Ped Bike Factor	0.99	0.99		0.98	0.99			1.00		1.00	1.00	
Frt		0.981			0.940			0.976			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1484	3487	0	1588	3270	0	1805	3083	0	1770	3093	0
Flt Permitted	0.230			0.260			0.092			0.109		
Satd. Flow (perm)	358	3487	0	426	3270	0	175	3083	0	203	3093	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			122			20			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		258			259			422			1942	
Travel Time (s)		7.0			7.1			9.6			44.1	
Confl. Peds. (#/hr)	13		33	33		13	31		14	14		31
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	1%	0%	0%	3%	2%	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	2	0	0	4	0	0	4
Parking (#/hr)	4		4	4								
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	445	0	237	620	0	63	1037	0	136	1167	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	10.0	35.0		10.0	35.0		10.0	46.0		10.0	40.0	
Total Split (s)	14.0	35.0		14.0	35.0		14.0	62.0		14.0	62.0	
Total Split (%)	11.2%	28.0%		11.2%	28.0%		11.2%	49.6%		11.2%	49.6%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	1.0	-2.0		1.0	-2.0		1.0	-2.0		1.0	-2.0	
Total Lost Time (s)	4.5	4.0		4.5	4.0		4.5	4.0		4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	Min		None	Min		None	C-Min		None	C-Min	
Act Effct Green (s)	36.2	28.8		40.9	33.8		65.8	59.9		70.2	63.6	
Actuated g/C Ratio	0.29	0.23		0.33	0.27		0.53	0.48		0.56	0.51	
v/c Ratio	0.39	0.55		0.98	0.64		0.36	0.70		0.62	0.74	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	34.5	43.6		90.9	36.1		17.9	28.4		26.9	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	43.6		90.9	36.1		17.9	28.4		26.9	28.5	
LOS	C	D		F	D		B	C		C	C	
Approach Delay		42.4			51.3			27.8			28.3	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	37	159		~153	192		22	377		49	440	
Queue Length 95th (ft)	72	213		#285	262		42	473		92	559	
Internal Link Dist (ft)		178			179			342			1862	
Turn Bay Length (ft)	125			140			170			130		
Base Capacity (vph)	193	873		241	972		220	1486		233	1578	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.36	0.51		0.98	0.64		0.29	0.70		0.58	0.74	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 50 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			
* User Entered Value			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

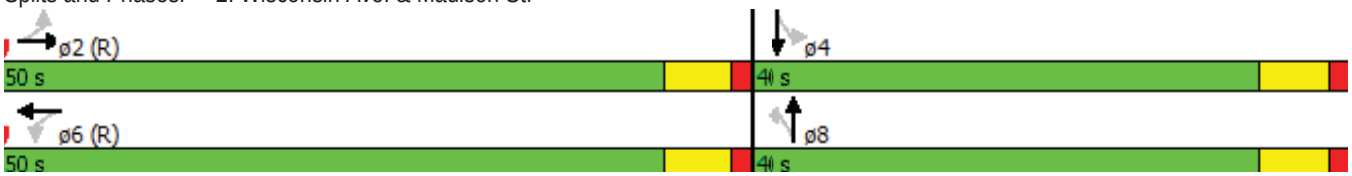
Splits and Phases: 1: Harlem Avenue & Madison St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	731	12	25	766	65	69	11	51	20	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.97			0.97	
Frt		0.998			0.989			0.948			0.949	
Flt Protected		0.999			0.999			0.974			0.974	
Satd. Flow (prot)	0	3522	0	0	3485	0	0	1694	0	0	1608	0
Flt Permitted		0.935			0.918			0.820			0.833	
Satd. Flow (perm)	0	3296	0	0	3201	0	0	1405	0	0	1362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			42			15	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		195			683			159			159	
Travel Time (s)		4.4			15.5			4.3			4.3	
Confl. Peds. (#/hr)	16		26	26		16	28		22	22		28
Confl. Bikes (#/hr)			3			1			2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	8%	4%	2%	0%	1%	9%	2%	0%	75%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	4		4	4		4	4		4	4		4
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	796	0	0	900	0	0	139	0	0	40	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		31.0	31.0		31.0	31.0	
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	
Total Split (%)	55.6%	55.6%		55.6%	55.6%		44.4%	44.4%		44.4%	44.4%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		67.1			67.1			14.9			14.9	
Actuated g/C Ratio		0.75			0.75			0.17			0.17	
v/c Ratio		0.32			0.38			0.52			0.17	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		4.7			2.9			29.9			22.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.7			2.9			29.9			22.8	
LOS		A			A			C			C	
Approach Delay		4.7			2.9			29.9			22.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		63			34			50			12	
Queue Length 95th (ft)		115			55			101			37	
Internal Link Dist (ft)		115			603			79			79	
Turn Bay Length (ft)												
Base Capacity (vph)		2459			2391			587			553	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.38			0.24			0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 54 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 64.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Wisconsin Ave. & Madison St.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	653	16	9	813	27	12	13	92	11	4	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	710	17	10	884	29	13	14	100	12	4	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		259			403							
pX, platoon unblocked	0.93			0.90			0.93	0.93	0.90	0.93	0.93	0.93
vC, conflicting volume	913			727			1218	1671	364	1399	1665	457
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	752			468			746	1231	63	940	1224	260
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			95	91	89	93	97	98
cM capacity (veh/h)	792			978			265	161	887	166	162	686

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	365	372	452	471	127	33
Volume Left	10	0	10	0	13	12
Volume Right	0	17	0	29	100	16
cSH	792	1700	978	1700	509	266
Volume to Capacity	0.01	0.22	0.01	0.28	0.25	0.12
Queue Length 95th (ft)	1	0	1	0	24	10
Control Delay (s)	0.4	0.0	0.3	0.0	14.4	20.4
Lane LOS	A		A		B	C
Approach Delay (s)	0.2		0.1		14.4	20.4
Approach LOS					B	C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	19	1025	76	5	1264
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	21	1114	83	5	1374
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						572
pX, platoon unblocked	0.71					
vC, conflicting volume	1855	600			1199	
vC1, stage 1 conf vol	1157					
vC2, stage 2 conf vol	698					
vCu, unblocked vol	1392	600			1199	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			99	
cM capacity (veh/h)	246	443			577	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	743	454	5	687	687
Volume Left	12	0	0	5	0	0
Volume Right	21	0	83	0	0	0
cSH	342	1700	1700	577	1700	1700
Volume to Capacity	0.10	0.44	0.27	0.01	0.40	0.40
Queue Length 95th (ft)	8	0	0	1	0	0
Control Delay (s)	16.6	0.0	0.0	11.3	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	16.6	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	68	15	17	31	19	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	16	18	34	21	12
Pedestrians	5				20	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	32	38			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	32	38			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	98	99			
cM capacity (veh/h)	845	1038	1566			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	90	52	33
Volume Left	74	18	0
Volume Right	16	0	12
cSH	874	1566	1700
Volume to Capacity	0.10	0.01	0.02
Queue Length 95th (ft)	9	1	0
Control Delay (s)	9.6	2.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	2.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	7	4	90	22	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	8	4	98	24	5
Pedestrians	1			14	11	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	145	42	30			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	145	42	30			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	837	1016	1581			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	102	29
Volume Left	14	4	0
Volume Right	8	0	5
cSH	892	1581	1700
Volume to Capacity	0.02	0.00	0.02
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.1	0.3	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	4	1044	0	0	1269
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	1135	0	0	1379
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						422
pX, platoon unblocked	0.71					
vC, conflicting volume	1824	567			1135	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339	567			1135	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	102	466			611	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	567	567	690	690
Volume Left	0	0	0	0	0
Volume Right	4	0	0	0	0
cSH	466	1700	1700	1700	1700
Volume to Capacity	0.01	0.33	0.33	0.41	0.41
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	12.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	756	3	3	849	3	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	822	3	3	923	3	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	467			195		
pX, platoon unblocked			0.91		0.95	0.91
vC, conflicting volume			825		1291	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			603		810	148
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			881		300	791

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	548	277	311	615	7
Volume Left	0	0	3	0	3
Volume Right	0	3	0	0	3
cSH	1700	1700	881	1700	435
Volume to Capacity	0.32	0.16	0.00	0.36	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.1	0.0	13.4
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		13.4
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	407	58	246	374	259	87	919	175	144	1131	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	125		0	140		0	170		0	130		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			40			100			100		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.85	0.95	1.00	*0.85	0.95
Ped Bike Factor	1.00	0.99		0.98	0.99			1.00		1.00	1.00	
Frt		0.981			0.939			0.976			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1484	3487	0	1588	3266	0	1805	3083	0	1770	3093	0
Flt Permitted	0.202			0.243			0.072			0.085		
Satd. Flow (perm)	314	3487	0	399	3266	0	137	3083	0	158	3093	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			133			20			7	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		258			259			422			1942	
Travel Time (s)		7.0			7.1			9.6			44.1	
Confl. Peds. (#/hr)	13		33	33		13	31		14	14		31
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	1%	0%	0%	3%	2%	0%	2%	1%	2%	3%	4%
Bus Blockages (#/hr)	0	0	0	0	0	2	0	0	4	0	0	4
Parking (#/hr)	4		4	4								
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	474	0	251	646	0	89	1117	0	147	1237	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	10.0	35.0		10.0	35.0		10.0	46.0		10.0	40.0	
Total Split (s)	14.0	35.0		14.0	35.0		14.0	62.0		14.0	62.0	
Total Split (%)	11.2%	28.0%		11.2%	28.0%		11.2%	49.6%		11.2%	49.6%	
Yellow Time (s)	3.5	4.5		3.5	4.5		3.5	4.5		3.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	1.0	-2.0		1.0	-2.0		1.0	-2.0		1.0	-2.0	
Total Lost Time (s)	4.5	4.0		4.5	4.0		4.5	4.0		4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Recall Mode	None	Min		None	Min		None	C-Min		None	C-Min	
Act Effct Green (s)	36.6	29.1		40.7	33.6		66.3	59.6		69.3	61.1	
Actuated g/C Ratio	0.29	0.23		0.33	0.27		0.53	0.48		0.55	0.49	
v/c Ratio	0.44	0.58		1.09	0.66		0.53	0.76		0.73	0.82	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	36.2	44.2		120.8	36.4		26.8	30.6		41.1	33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.2	44.2		120.8	36.4		26.8	30.6		41.1	33.0	
LOS	D	D		F	D		C	C		D	C	
Approach Delay		43.1			60.0			30.4			33.9	
Approach LOS		D			E			C			C	
Queue Length 50th (ft)	40	171		~151	200		31	427		53	491	
Queue Length 95th (ft)	76	227		#323	271		69	530		#148	627	
Internal Link Dist (ft)		178			179			342			1862	
Turn Bay Length (ft)	125			140			170			130		
Base Capacity (vph)	184	873		230	974		202	1479		211	1514	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.54		1.09	0.66		0.44	0.76		0.70	0.82	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 50 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 89.7%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

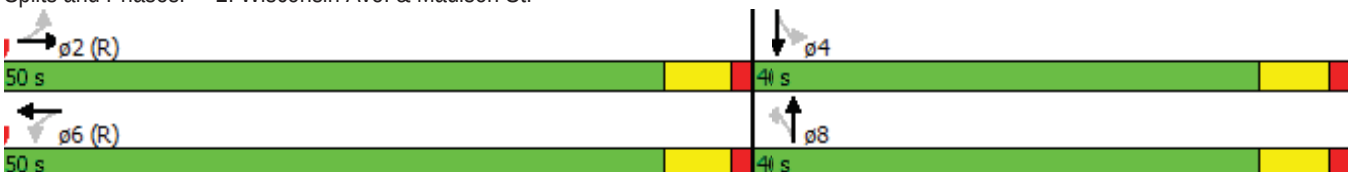
Splits and Phases: 1: Harlem Avenue & Madison St.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	759	13	26	818	66	70	12	52	33	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.97			0.98	
Frt		0.998			0.989			0.948			0.954	
Flt Protected		0.998			0.999			0.975			0.972	
Satd. Flow (prot)	0	3519	0	0	3485	0	0	1696	0	0	1636	0
Flt Permitted		0.898			0.915			0.833			0.779	
Satd. Flow (perm)	0	3166	0	0	3191	0	0	1428	0	0	1298	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			13			42			21	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		195			683			159			159	
Travel Time (s)		4.4			15.5			4.3			4.3	
Confl. Peds. (#/hr)	16		26	26		16	28		22	22		28
Confl. Bikes (#/hr)			3			1			2			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	8%	4%	2%	0%	1%	9%	2%	0%	75%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)	4		4	4		4	4		4	4		4
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	957	0	0	142	0	0	61	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		31.0	31.0		31.0	31.0	
Total Split (s)	50.0	50.0		50.0	50.0		40.0	40.0		40.0	40.0	
Total Split (%)	55.6%	55.6%		55.6%	55.6%		44.4%	44.4%		44.4%	44.4%	
Yellow Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Act Effct Green (s)		66.9			66.9			15.1			15.1	
Actuated g/C Ratio		0.74			0.74			0.17			0.17	
v/c Ratio		0.36			0.40			0.52			0.26	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		5.0			2.7			29.7			24.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.0			2.7			29.7			24.7	
LOS		A			A			C			C	
Approach Delay		5.0			2.7			29.7			24.7	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)		70			32			52			20	
Queue Length 95th (ft)		128			60			101			51	
Internal Link Dist (ft)		115			603			79			79	
Turn Bay Length (ft)												
Base Capacity (vph)		2354			2375			596			531	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.36			0.40			0.24			0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 54 (60%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 6.2		Intersection LOS: A	
Intersection Capacity Utilization 66.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Wisconsin Ave. & Madison St.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	695	21	17	827	28	0	0	108	0	0	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	755	23	18	899	30	0	0	117	0	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		259			403							
pX, platoon unblocked	0.93			0.89			0.93	0.93	0.89	0.93	0.93	0.93
vC, conflicting volume	929			778			1292	1755	389	1468	1751	465
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762			502			795	1294	65	985	1290	260
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			100	100	87	100	100	97
cM capacity (veh/h)	783			941			245	145	877	158	145	683

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	389	401	18	599	330	117	17
Volume Left	11	0	18	0	0	0	0
Volume Right	0	23	0	0	30	117	17
cSH	783	1700	941	1700	1700	877	683
Volume to Capacity	0.01	0.24	0.02	0.35	0.19	0.13	0.03
Queue Length 95th (ft)	1	0	2	0	0	12	2
Control Delay (s)	0.4	0.0	8.9	0.0	0.0	9.7	10.4
Lane LOS	A		A			A	B
Approach Delay (s)	0.2		0.2			9.7	10.4
Approach LOS						A	B

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	33.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	13	21	1087	82	6	1342
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	23	1182	89	7	1459
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						572
pX, platoon unblocked	0.68					
vC, conflicting volume	1970	637			1273	
vC1, stage 1 conf vol	1228					
vC2, stage 2 conf vol	742					
vCu, unblocked vol	1485	637			1273	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	95			99	
cM capacity (veh/h)	225	419			541	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	37	788	483	7	729	729
Volume Left	14	0	0	7	0	0
Volume Right	23	0	89	0	0	0
cSH	315	1700	1700	541	1700	1700
Volume to Capacity	0.12	0.46	0.28	0.01	0.43	0.43
Queue Length 95th (ft)	10	0	0	1	0	0
Control Delay (s)	17.9	0.0	0.0	11.7	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	17.9	0.0		0.1		
Approach LOS	C					

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	79	15	31	21	20	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	16	34	23	22	16
Pedestrians	5				20	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	145	35	43			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	145	35	43			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	98	98			
cM capacity (veh/h)	812	1034	1559			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	102	57	38
Volume Left	86	34	0
Volume Right	16	0	16
cSH	841	1559	1700
Volume to Capacity	0.12	0.02	0.02
Queue Length 95th (ft)	10	2	0
Control Delay (s)	9.9	4.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.9	4.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	21	7	13	93	32	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	8	14	101	35	28
Pedestrians	1			14	11	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190	64	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190	64	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	783	988	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	30	115	63
Volume Left	23	14	0
Volume Right	8	0	28
cSH	826	1537	1700
Volume to Capacity	0.04	0.01	0.04
Queue Length 95th (ft)	3	1	0
Control Delay (s)	9.5	1.0	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	1.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	21	1107	0	0	1269
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	1203	0	0	1379
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						422
pX, platoon unblocked	0.67					
vC, conflicting volume	1893	602			1203	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1356	602			1203	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	95	443			576	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	23	602	602	690	690
Volume Left	0	0	0	0	0
Volume Right	23	0	0	0	0
cSH	443	1700	1700	1700	1700
Volume to Capacity	0.05	0.35	0.35	0.41	0.41
Queue Length 95th (ft)	4	0	0	0	0
Control Delay (s)	13.6	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.6	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	800	6	4	907	4	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	870	7	4	986	4	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	467			195		
pX, platoon unblocked			0.90		0.94	0.90
vC, conflicting volume			876		1374	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			639		846	152
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		98	99
cM capacity (veh/h)			847		283	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	580	296	333	657	11
Volume Left	0	0	4	0	4
Volume Right	0	7	0	0	7
cSH	1700	1700	847	1700	458
Volume to Capacity	0.34	0.17	0.01	0.39	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.2	0.0	13.0
Lane LOS			A		B
Approach Delay (s)	0.0		0.1		13.0
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	2	94	0	0	46
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	2	102	0	0	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	152	102			102	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	152	102			102	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	840	953			1490	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	17	102	50
Volume Left	15	0	0
Volume Right	2	0	0
cSH	852	1700	1700
Volume to Capacity	0.02	0.06	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

14. PARKING STUDY

Emergency Room Parking

Based on data provided by the hospital and the counts conducted at the existing Emergency Room, the parking demand generated will be accommodated by the existing parking lot west of Maple Avenue, between the east-west public alley and Madison Street that will be designated for emergency room patients and visitors. Visitors can also continue to use the parking garage located on Wisconsin Avenue that is accessed via the intersection of Madison Street and Wisconsin Avenue. Hospital staff and employees, specifically serving the emergency room, will continue to park in the parking garage off Wisconsin Avenue. Further, it is important to note that based on information provided by ROPH, approximately 40 percent of emergency room visits arrive by other means of transportation, thereby further reducing the demand for parking.

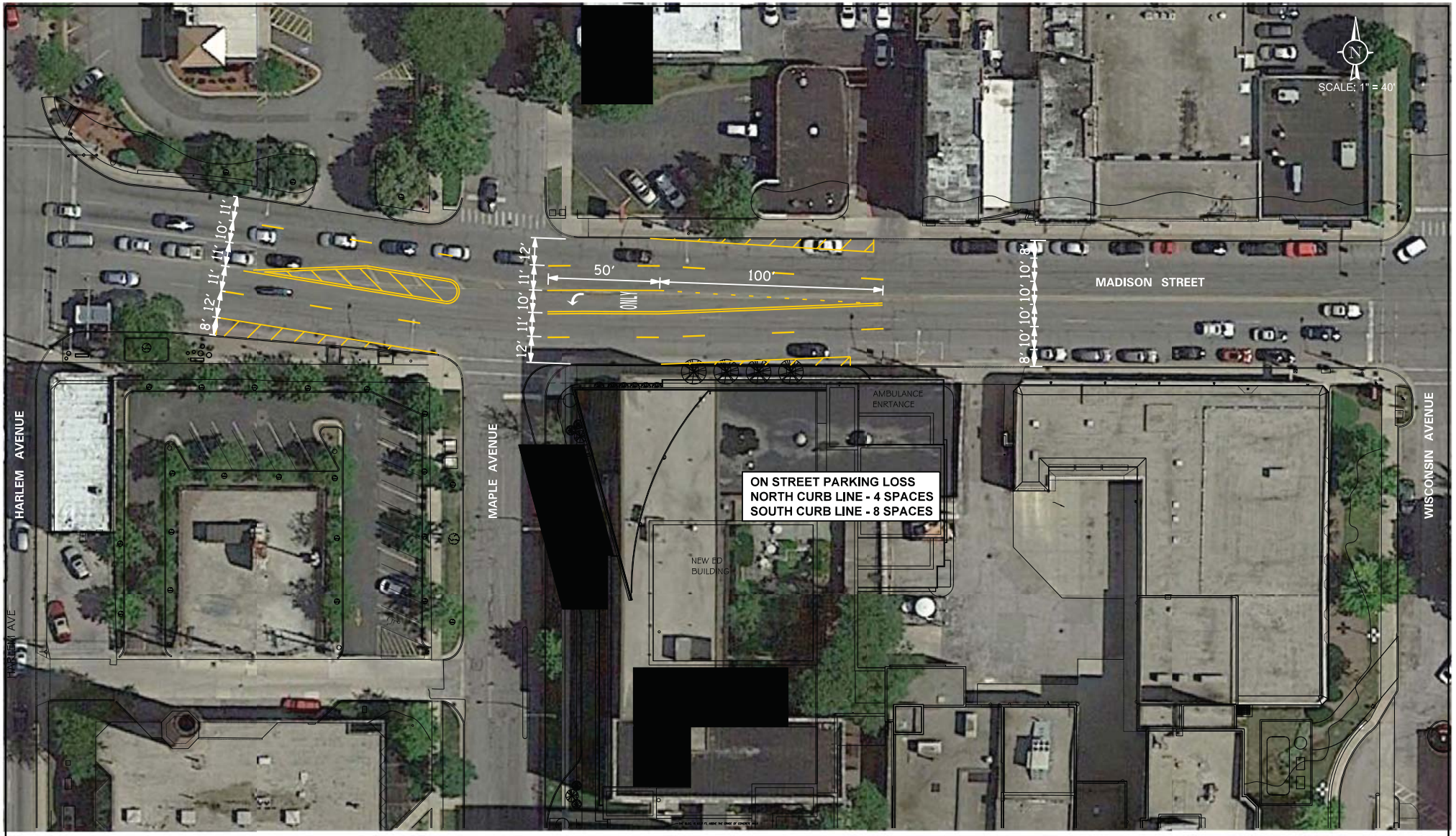
On-Street Parking Loss

Madison Street

In conjunction with the proposed westbound left-turn lane on Madison Street at Maple Avenue, a total of 12 on-street parking spaces will need to be removed from Madison Street. Please refer to the attached Figure B that was included in the Appendix of the traffic study report.

Maple Avenue

To accommodate the proposed lay-by for the emergency room and the proposed parking lot modification to provide an access drive directly on Maple Avenue, a total of 8 on-street permit parking spaces will need to be removed from Maple Avenue. Further, with the implementation of the cul-de-sac on Maple Avenue at the existing bump-out, located south of Monroe Street, an additional 4 on-street permit parking spaces will need to be removed. These parking spaces will be replaced by designating 12 spaces within the existing on-site campus parking facilities.



RUSH HOSPITAL
EMERGENCY ROOM
RELOCATION
OAK PARK, ILLINOIS

PRELIMINARY PROPOSED GEOMETRICS
MADISON STREET AND MAPLE AVENUE

DRAWN: MD CHECKED: DS
DATE: 05-25-17 REV: 06-22-17
PROJECT # 16-170
FIGURE: B

Kenig,Lin

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126/126

Emergency Department Addition

Village of Oak Park-Transportation Committee

Rush Oak Park Hospital

July 31, 2017

IMEG

ERIKSSON ENGINEERING ASSOCIATES, LTD.

KLOA Kenig, Lindgren, O'Hara, Aboona, Inc.

WALSH Walsh Construction

Anderson Mikos Architects ltd.

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Agenda

Welcome

Project Background (narrative)

Current and Projected Volumes

Existing Pictures

Solution

- Plans
- Elevations
- Renderings

Traffic Impact/Parking

Requested Variances

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NEW REPLACEMENT EMERGENCY DEPARTMENT PROJECT

The project, commissioned by **Rush Oak Park Hospital** in Oak Park, Illinois, is for a new replacement Emergency Department. The project is located on the northwest corner of Maple Avenue and Madison Street in Oak Park, Illinois.

The project consists of approximately a 55,134 square foot addition. The first floor at 27,528 sq ft, second floor mechanical at 4,316 sq ft. , a finished 7,959 sq ft basement, and the remainder mechanical spaces.

Project goals include improvement of operations, image, character and efficiency for families, patients, and staff.

The project work scope includes:

1. A new emergency department complete with eight Acute Care exam rooms, nine Quick Care exam rooms, two Behavioral health rooms, two Isolation rooms, centralized team station and support space.
2. A public bi-pass corridor with a two story communicating stair connecting the emergency department with the existing West building of the hospital. Remodeling of the existing ground floor in this area will be required to accommodate the new connection to the emergency department.
3. Three new elevators double sided (two patient and one passenger) to serve the lower level and ground floor as well as the future bed tower.
4. New lounge/ locker, staff office facilities and mechanical space on the lower level.
5. New patient drop-off canopy and drive off of Maple Avenue for walk in patients.
6. New ambulance garage off of Madison Street for ambulance patients.
7. Site work and signage for the new addition.
8. Relocation of the existing medical gas farm.
9. Landscaping work for the entire addition.
10. The new ED will have a green roof.
11. Project will follow LEED Standards

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Project Facts

- 21 ED rooms
- 18,036 sf ED area
- 55,134 sf total project area
- Construction Cost of approximately $20 million
- Operational in early 2019

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Current Emergency Department

- **Constructed 1960's on the east side of the campus**
- **9,560 SF**
- **16 Open Bays - curtains between patients**
- **1 Private Room for OB, Isolation and Behavioral**
- **Single shared lane drive up for Ambulances and Cars**
- **Outdated HVAC system is not equipped to handle outbreaks/decontamination**
- **Lack of support space**
- **No Family spaces**
- **Inadequate circulation space**
- **Inefficient linear design**
- **Lack of direct visibility to all patients**

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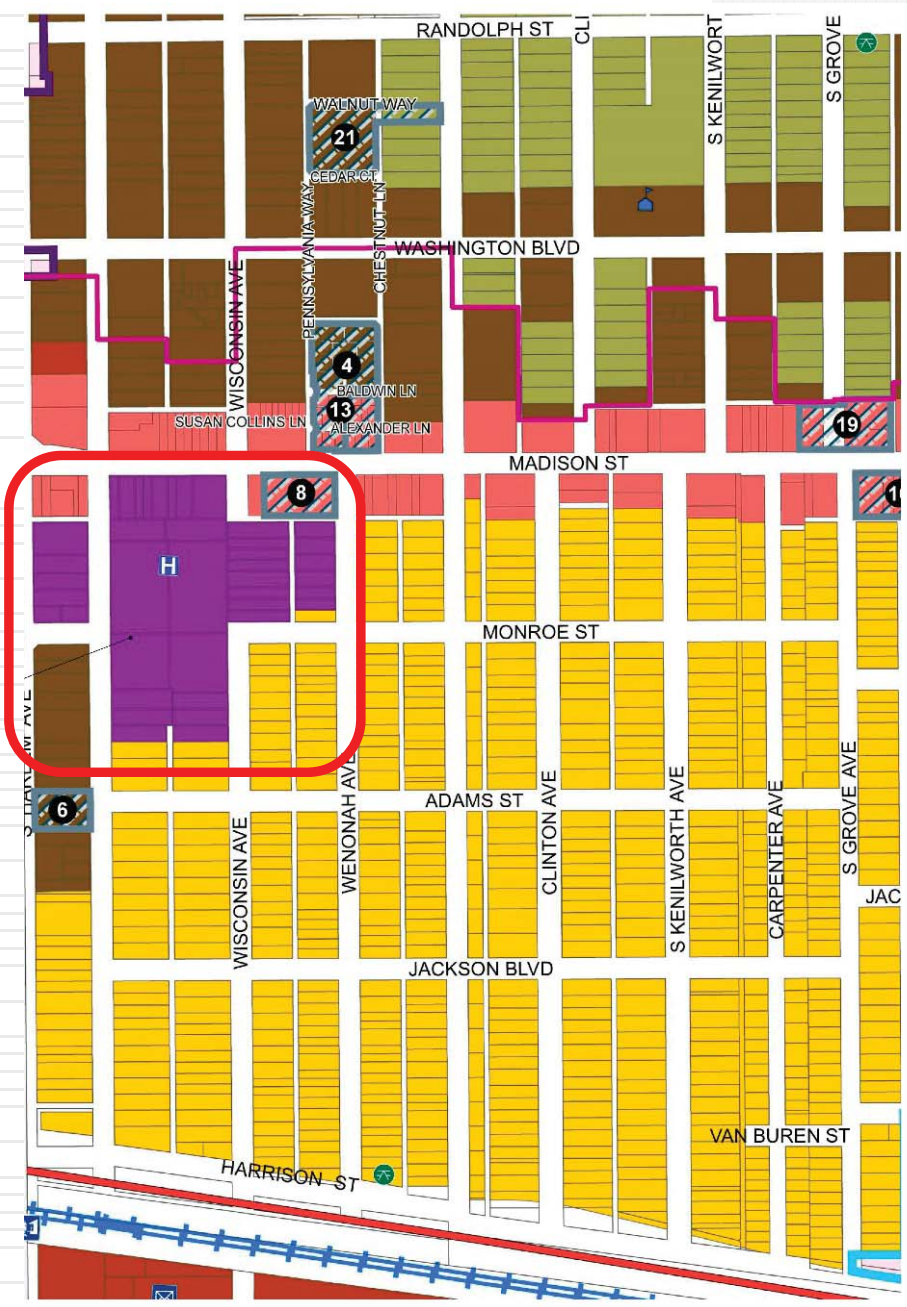
Oak Park Zoning Map

Rush Oak Park Hospital



Oak Park

Zoning Districts

- B-1/B-2 General Business
- B-3 Central Business
- B-4 Downtown Business
- C Commercial
- H Hospital
- Public ROW
- R-1 Single Family
- R-2 Single Family
- R-3 Single Family
- R-4 Single Family
- R-5 Two Family
- R-6 Multiple Family
- R-7 Multiple Family

- Gunderson Historic Dist.
- Ridgeland/Oak Park Historic Dist.
- Frank Lloyd Wright Historic Dist.
- Perimeter Overlay Dist.
- Transit Overlay Dist.
- Planned Developments

1. Elmwood Avenue Townhomes 2000-O-42
2. Euclid Terraces 2002-O-14,15 2003-O-22
3. Maple Square Townhomes 2001-O-80
4. 1030 Madison 2003-O-25
5. Euclid Place 1985-O-70
6. 100 Forest Place 1994-O-30
7. Ridgeland Station Parcel B 2002-O-06
8. Oak Park Library 2001-O-34
9. The Ridgeland 2003-O-26
10. Belmont Village 2003-O-12
11. The Oak Park Opera Club 2004-O-56
12. WhiteCo Residential 2005-O-14

N W E S

175 0 875 Feet

Adopted Date: 02/04/2002
Printed Date: 02/18/2005
Amended Date: 02/19/2002
Tax Parcel Base Map Date: Dec. 31, 1998
File: Zoning_map_20050927.mxd

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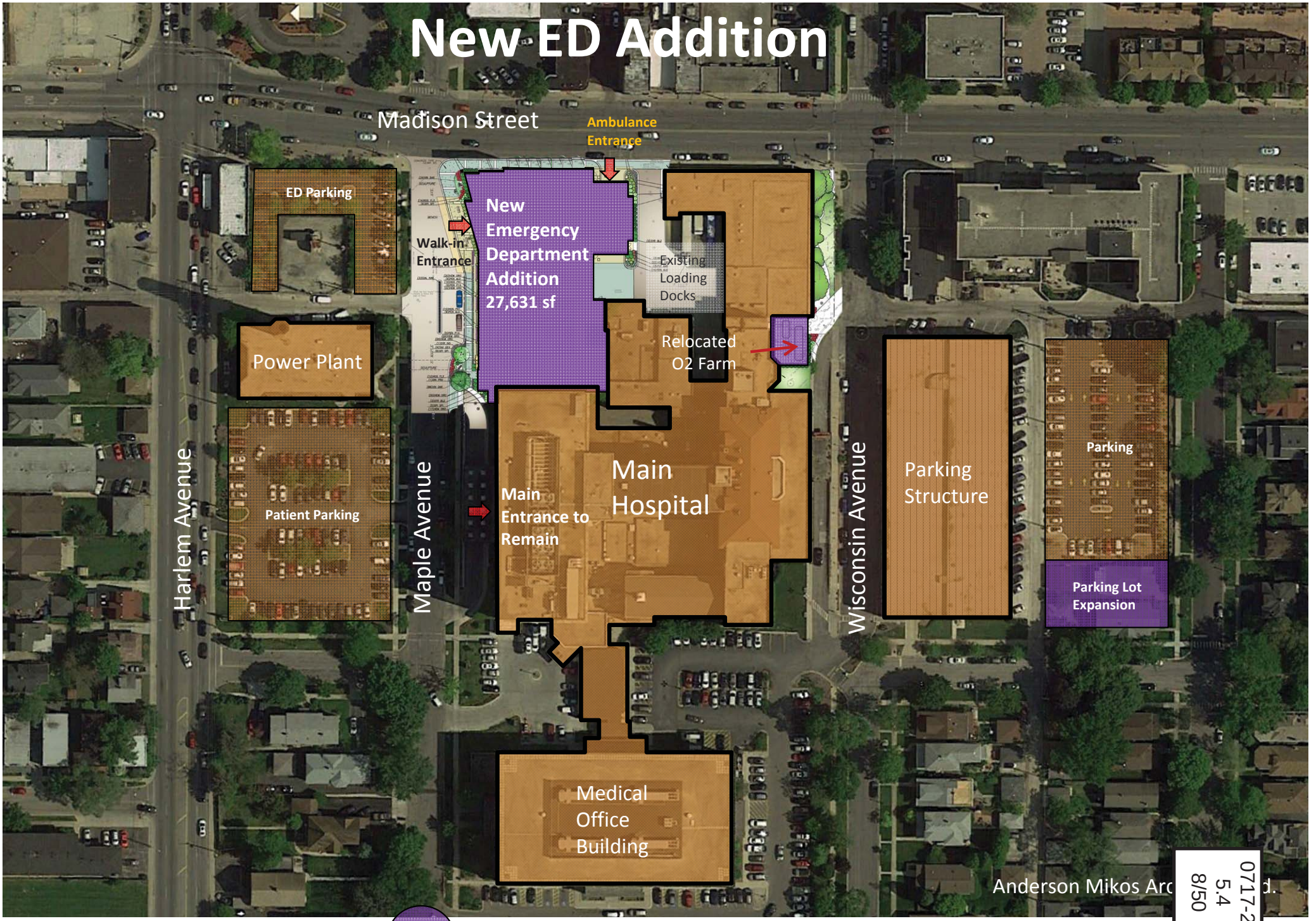
Existing Site


New ED Addition
Madison Street
Ambulance Entrance
ED Parking
New Emergency Department Addition 27,631 sf
Walk-in Entrance
Existing Loading Docks
Relocated O2 Farm
Power Plant
Patient Parking
Harlem Avenue
Maple Avenue
Main Entrance to Remain
Main Hospital
Wisconsin Avenue
Parking Structure
Parking
Parking Lot Expansion
Medical Office Building
Anderson Mikos Arc
d.
New Cul-de-Sac on Maple Avenue
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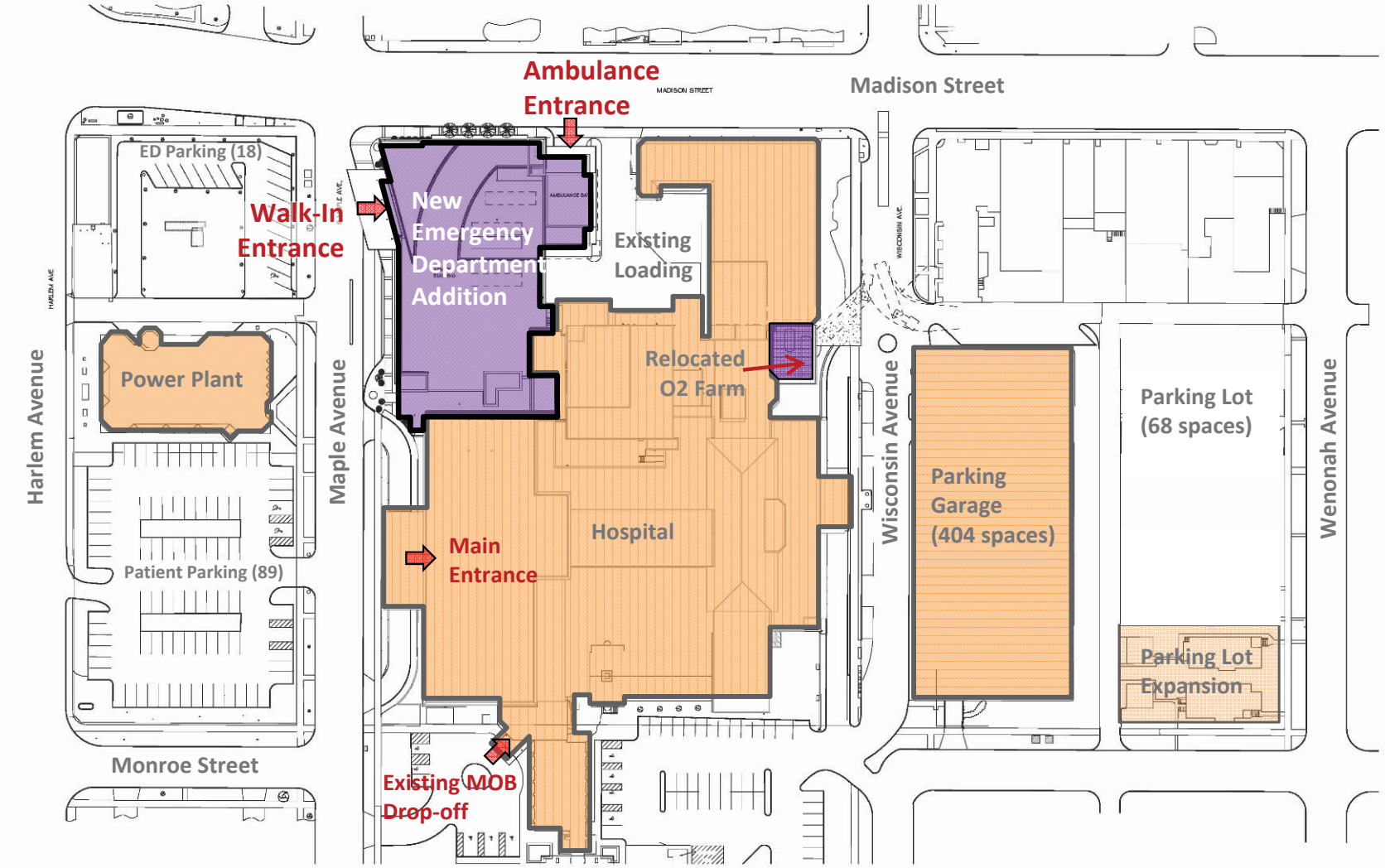
Emergency Department Entrances and Parking



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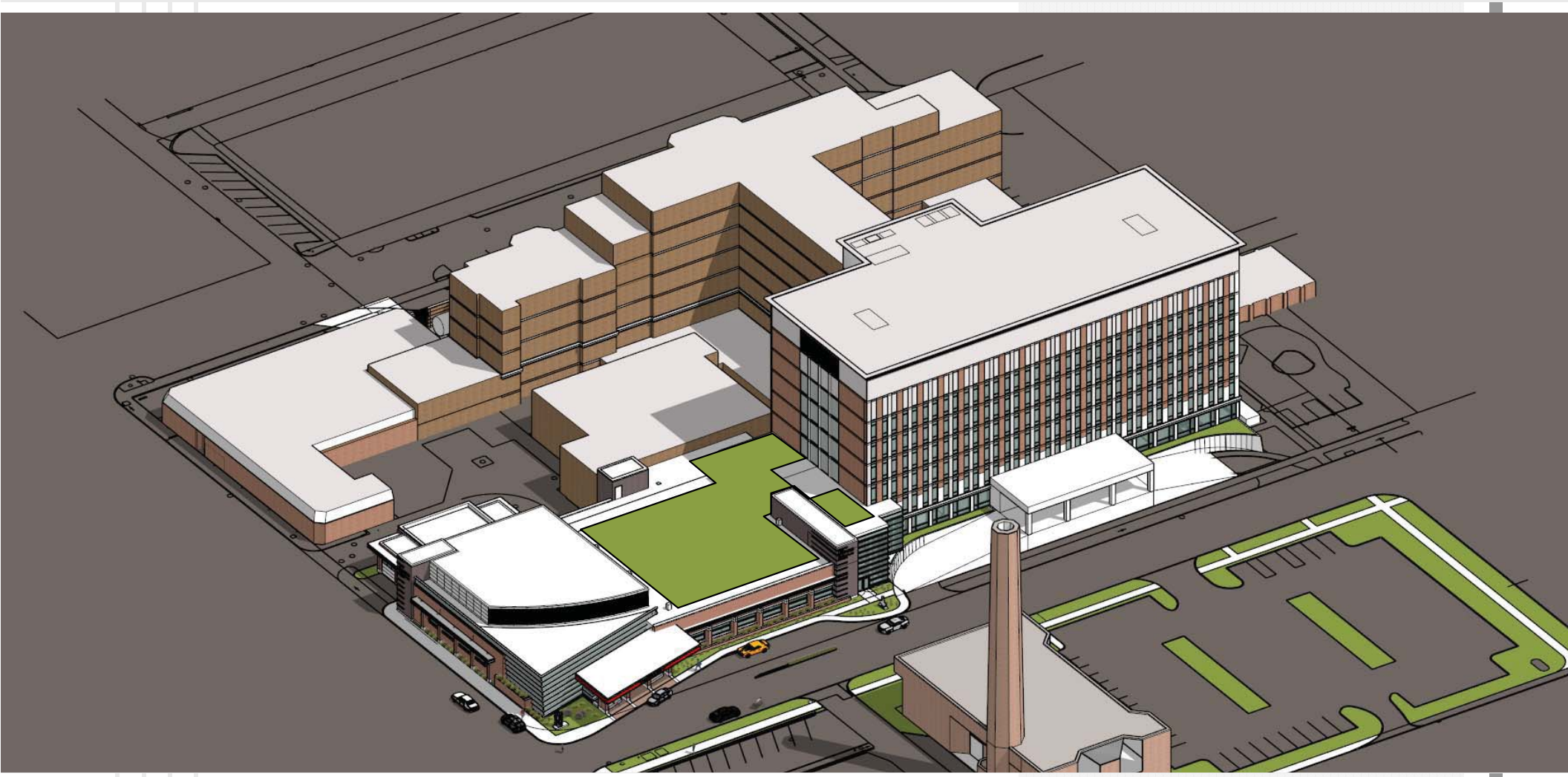

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Madison Street looking southeast

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Maple Avenue looking northeast

0717-2
5.4
13/50

Madison Street looking west

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Anderson
Mikos Architects ltd.
"Architecture through Listening"®
One Parkview Plaza
17W110 22nd Street, Suite 200
Oakbrook Terrace, Illinois 60181
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Fax 630 - 573 - 5176

RUSH
OAK PARK HOSPITAL

RUSH OAK PARK HOSPITAL
EMERGENCY DEPARTMENT
ADDITION

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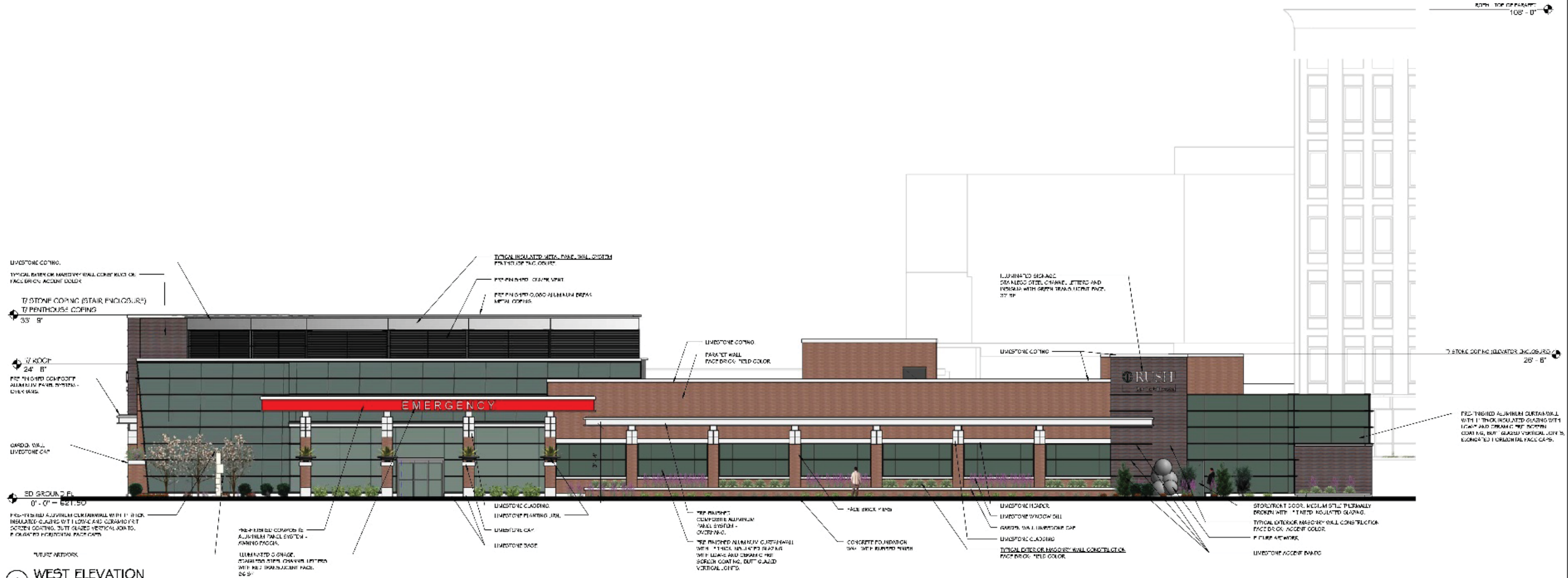
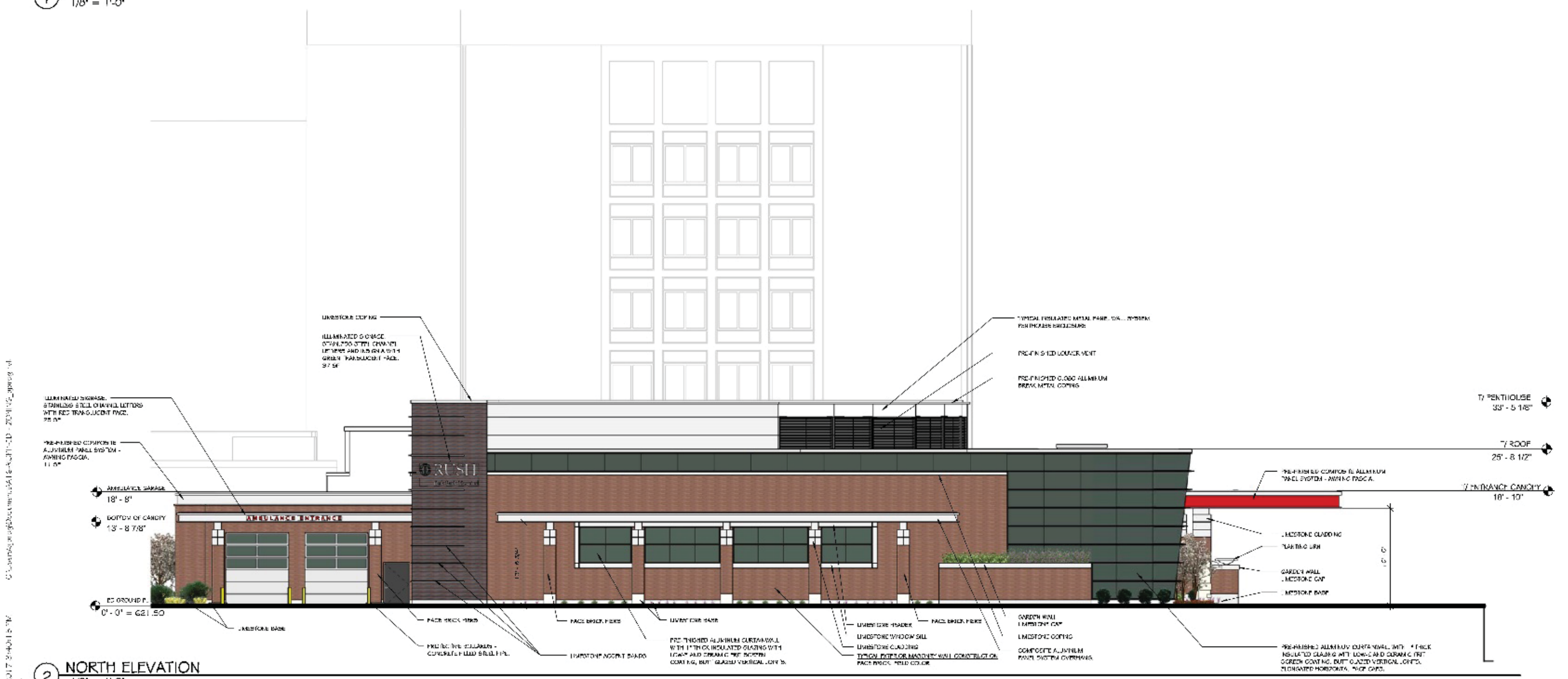
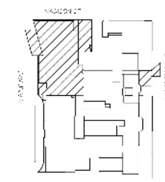


1 WEST ELEVATION
1/8" = 1'-0"



2 NORTH ELEVATION
1/8" = 1'-0"



KEY PLAN

DATE | NO. | DESCRIPTION

STATE OF ILLINOIS
DAVID E. MIKOS
001-009835
LICENSED ARCHITECT

EXTERIOR ELEVATIONS

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5.4
15/50

8

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RUSH OAK PARK HOSPITAL
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ADDITION
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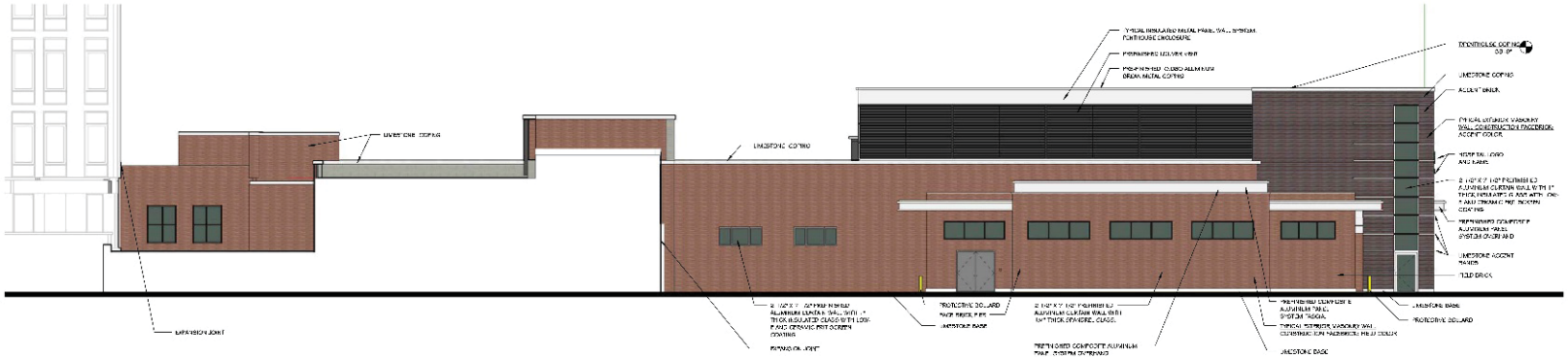
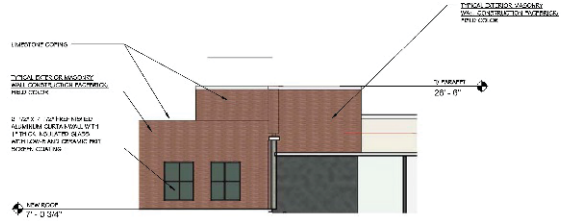
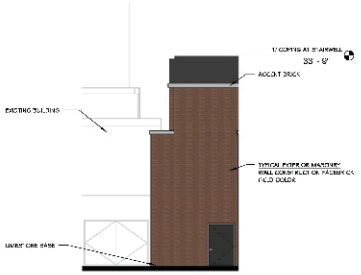


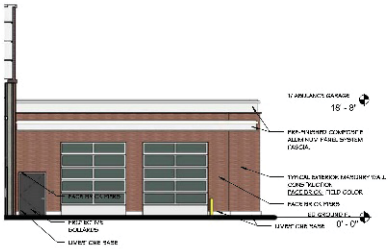
1 EAST ELEVATION AT AMBULANCE BAY
1/16" = 1'-0"



4 EAST ELEVATION
1/16" = 1'-0"

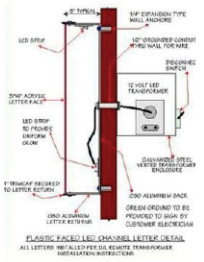


3 NORTH ELEVATION NEW BLD. MEETS EXISTING BLD.
1/16" = 1'-0"

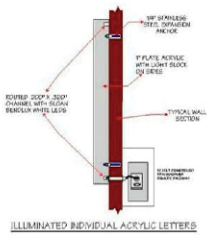


2 SOUTH ELEVATION AT AMBULANCE BAY
1/16" = 1'-0"

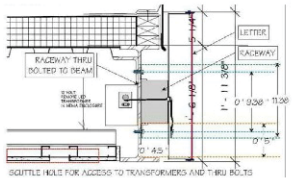
9 MATERIALS



8 LOGO DETAIL

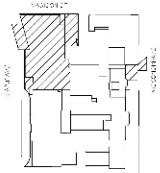


7 LETTER DETAIL



6 EMERGENCY AND AMBULANCE SIGN DETAIL

5 SIGNAGE DETAIL



KEY PLAN

DATE	NO.	DESCRIPTION

STATE OF ILLINOIS
DAVID E. MIKOS
001-009835
LICENSED ARCHITECT

EXTERIOR ELEVATIONS &

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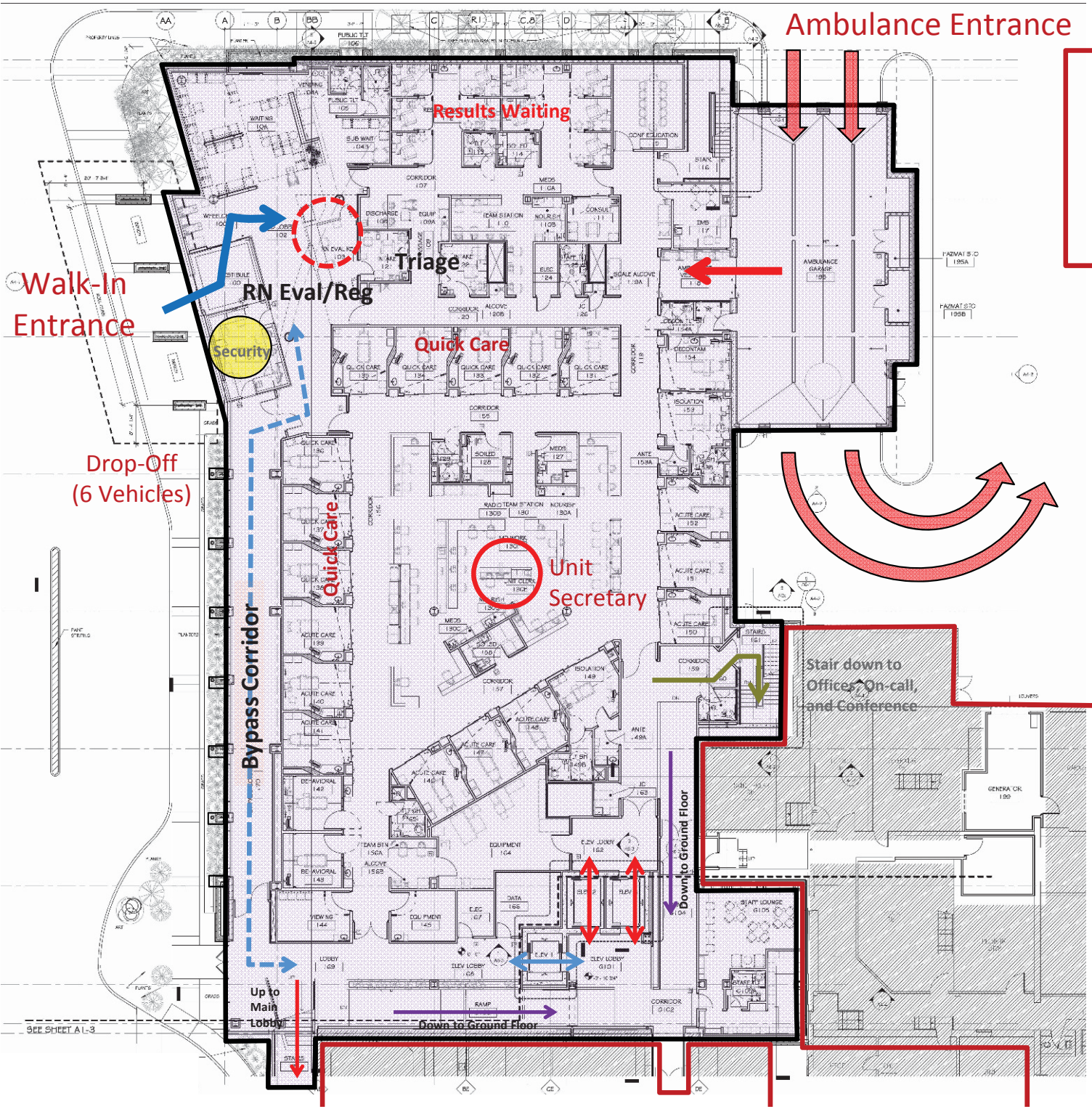
First Floor ED Plan



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Typical ED Exam Room

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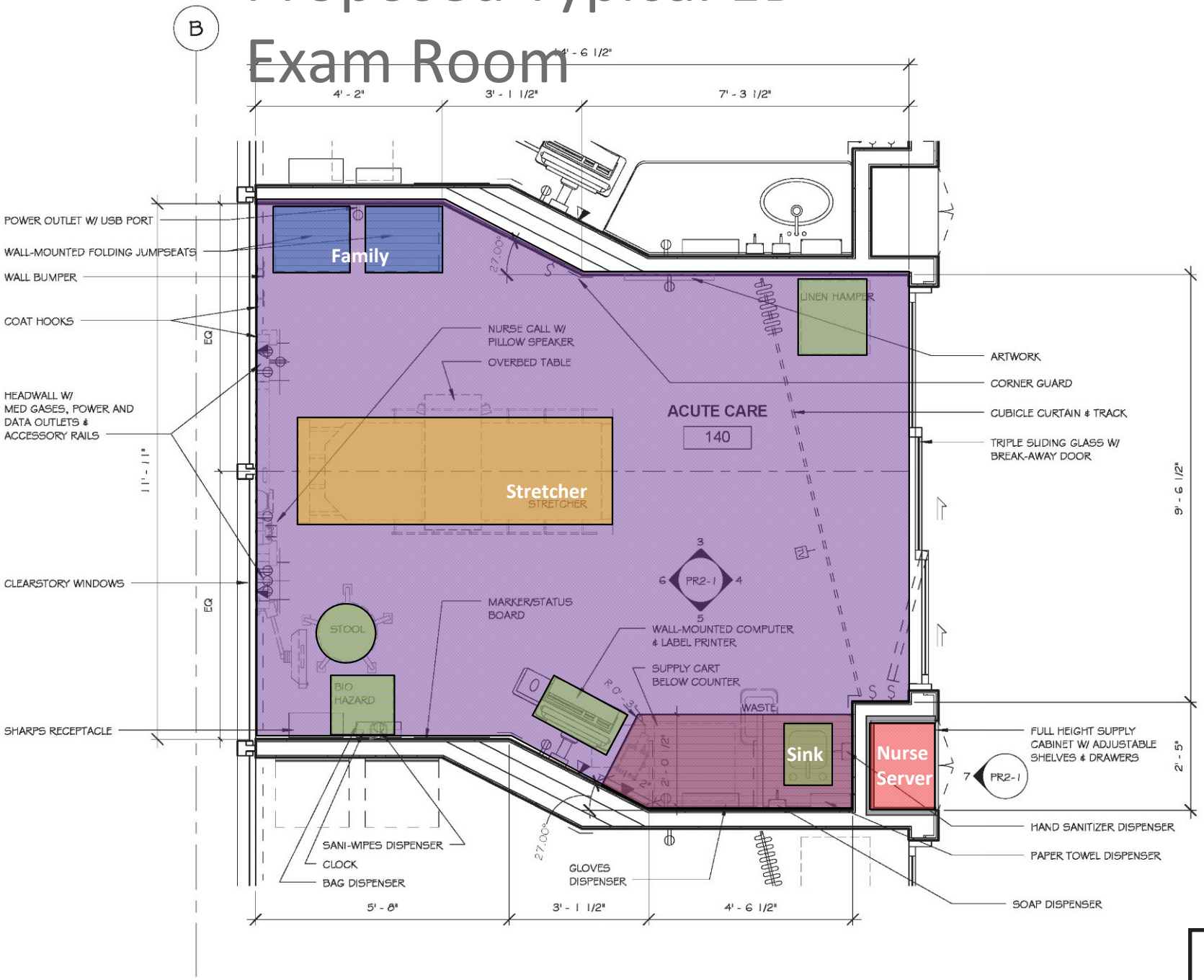
Proposed Typical ED Exam Room



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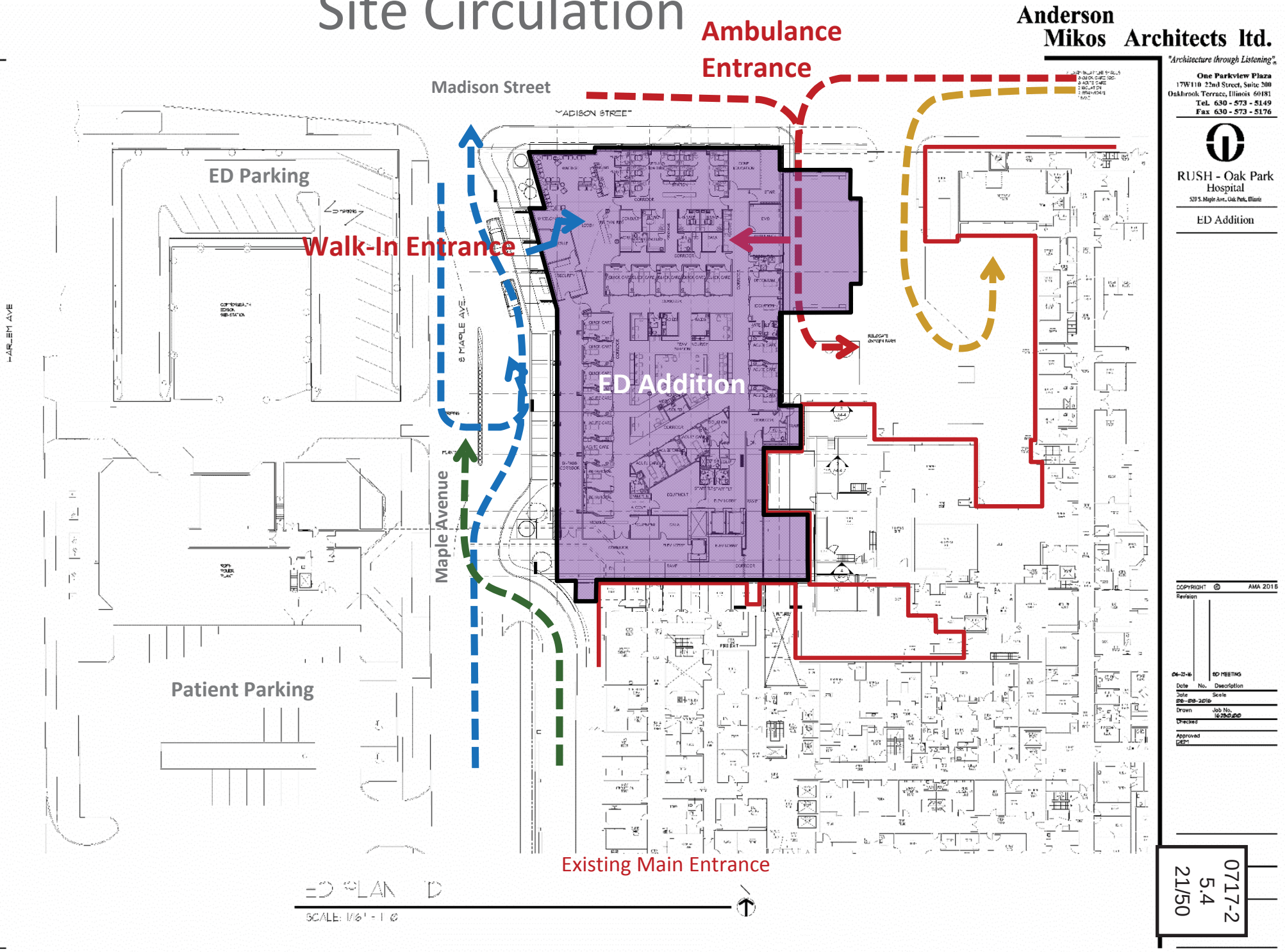
Site Circulation



Anderson Mikos Architects ltd.
"Architecture through Listening"
One Parkview Plaza
17W110 22nd Street, Suite 200
Oakbrook Terrace, Illinois 60181
Tel. 630 - 573 - 5149
Fax 630 - 573 - 5176

RUSH - Oak Park Hospital
520 S. Maple Ave., Oak Park, Illinois

ED Addition

Revision

06-22-16 ED MEETING

Date No. Description

Date 06-22-2016 Scale

Drawn Job No. 1625.00

Checked

Approved DEM

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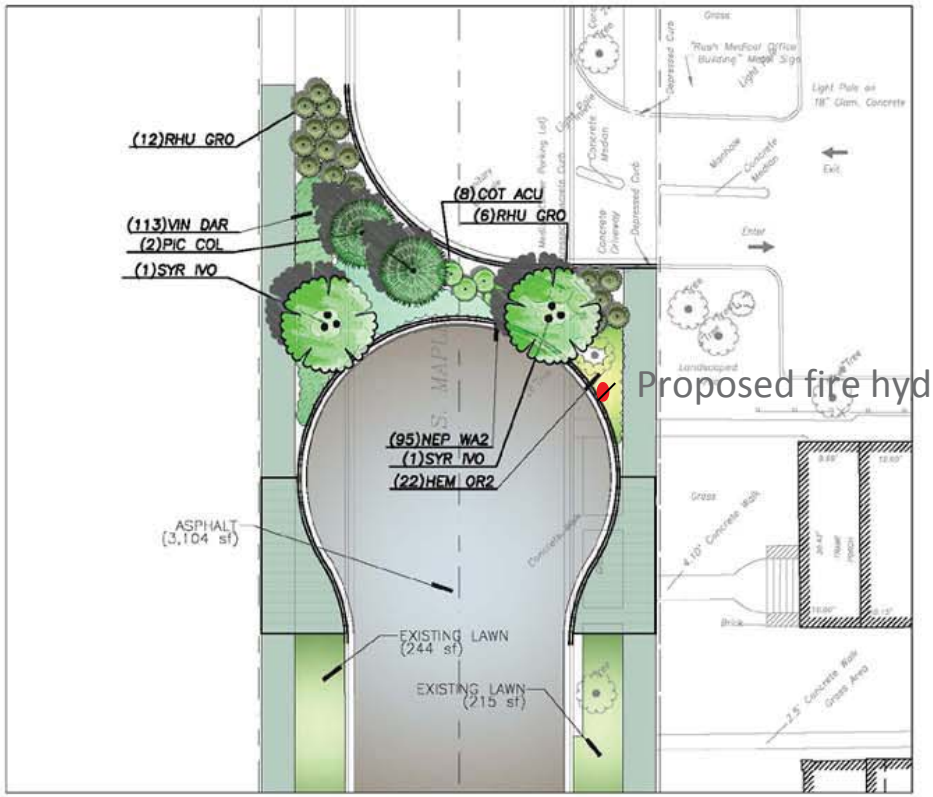
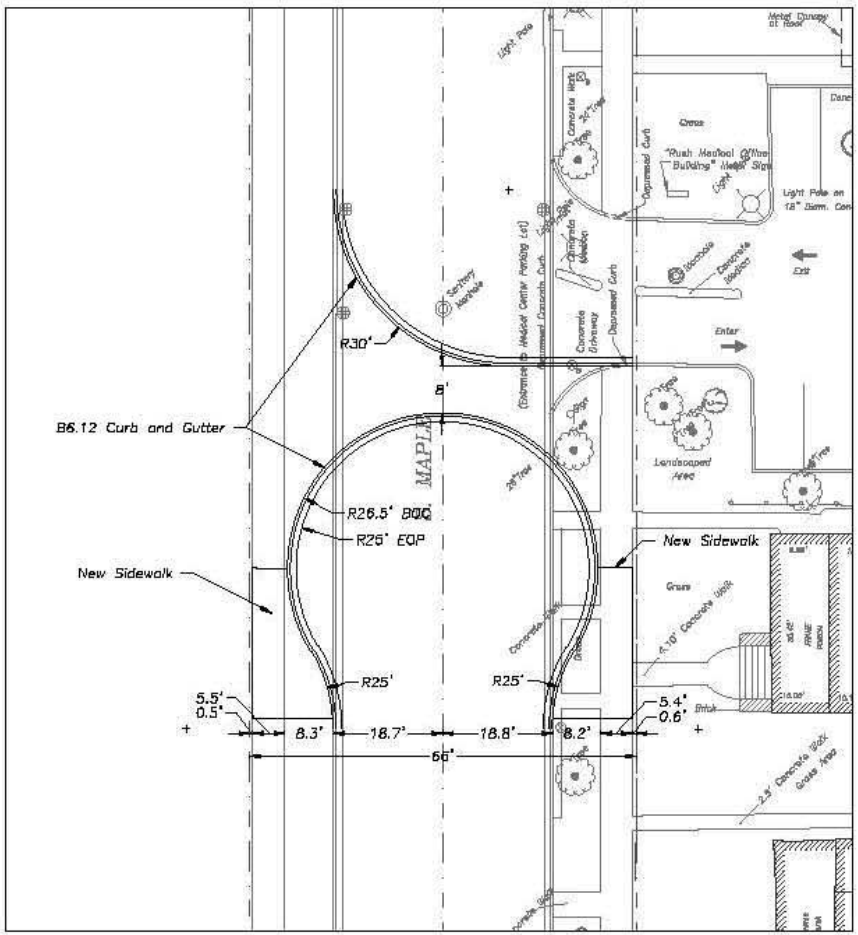
Proposed Cul de Sac



CUL-DE-SAC LANDSCAPE PLAN

SCALE: 1" = 20'



CUL-DE-SAC DETAIL

Maple Avenue Cul de Sac

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Questions?

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Thank you

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Traffic Impact Study

Proposed Emergency Room Relocation
Oak Park, Illinois

Prepared for:

RUSH
OAK PARK HOSPITAL

Prepared by:

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

June 29, 2017

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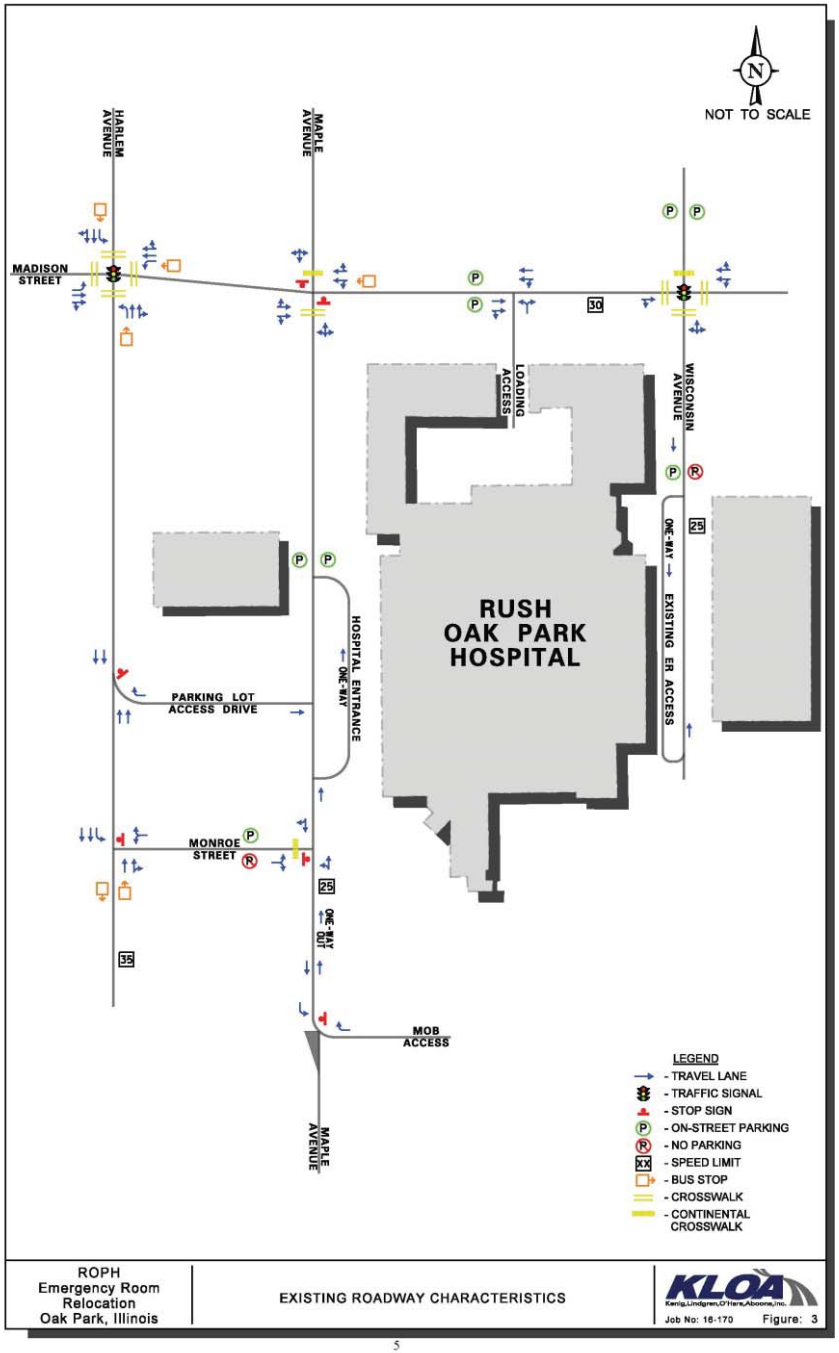

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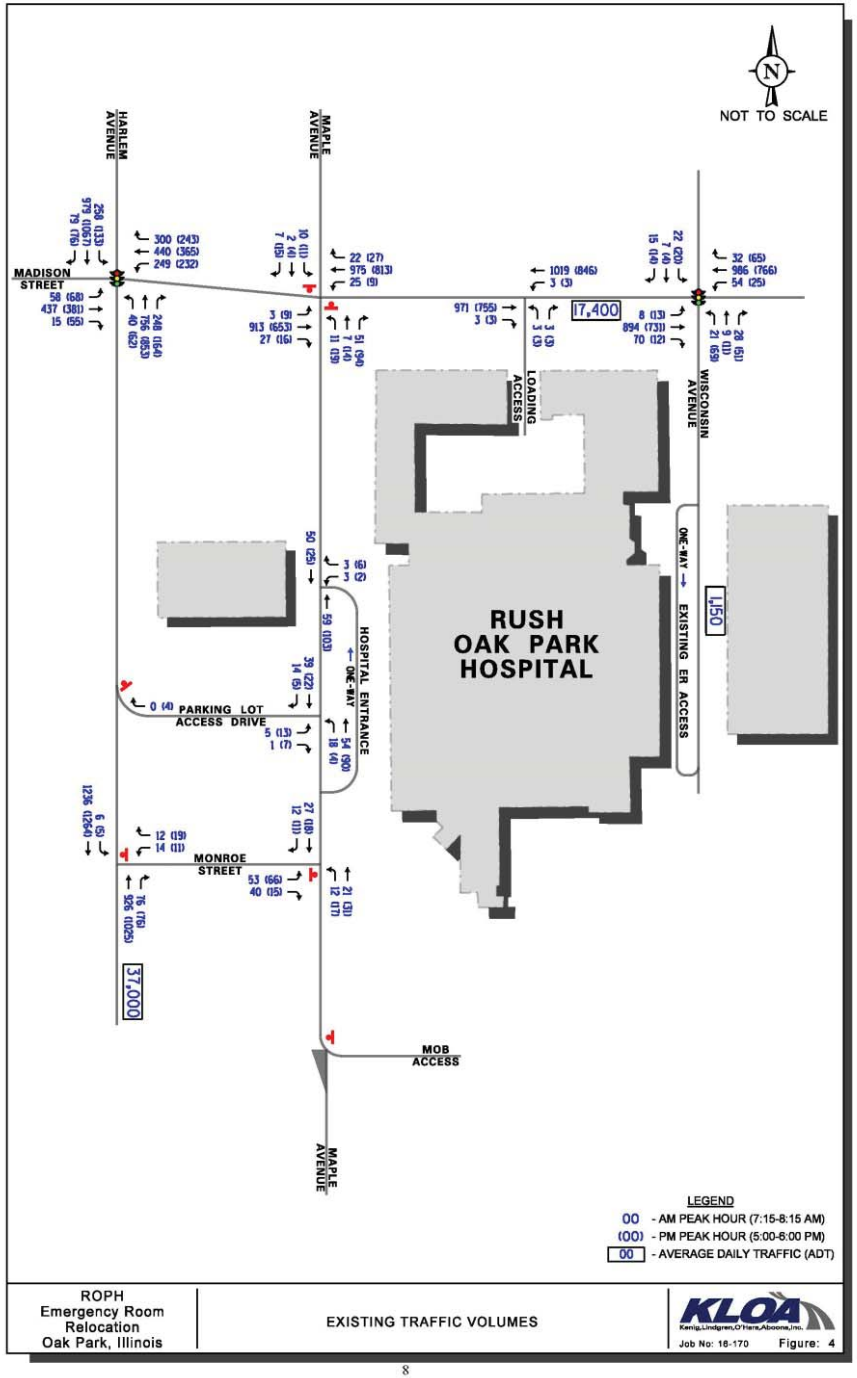

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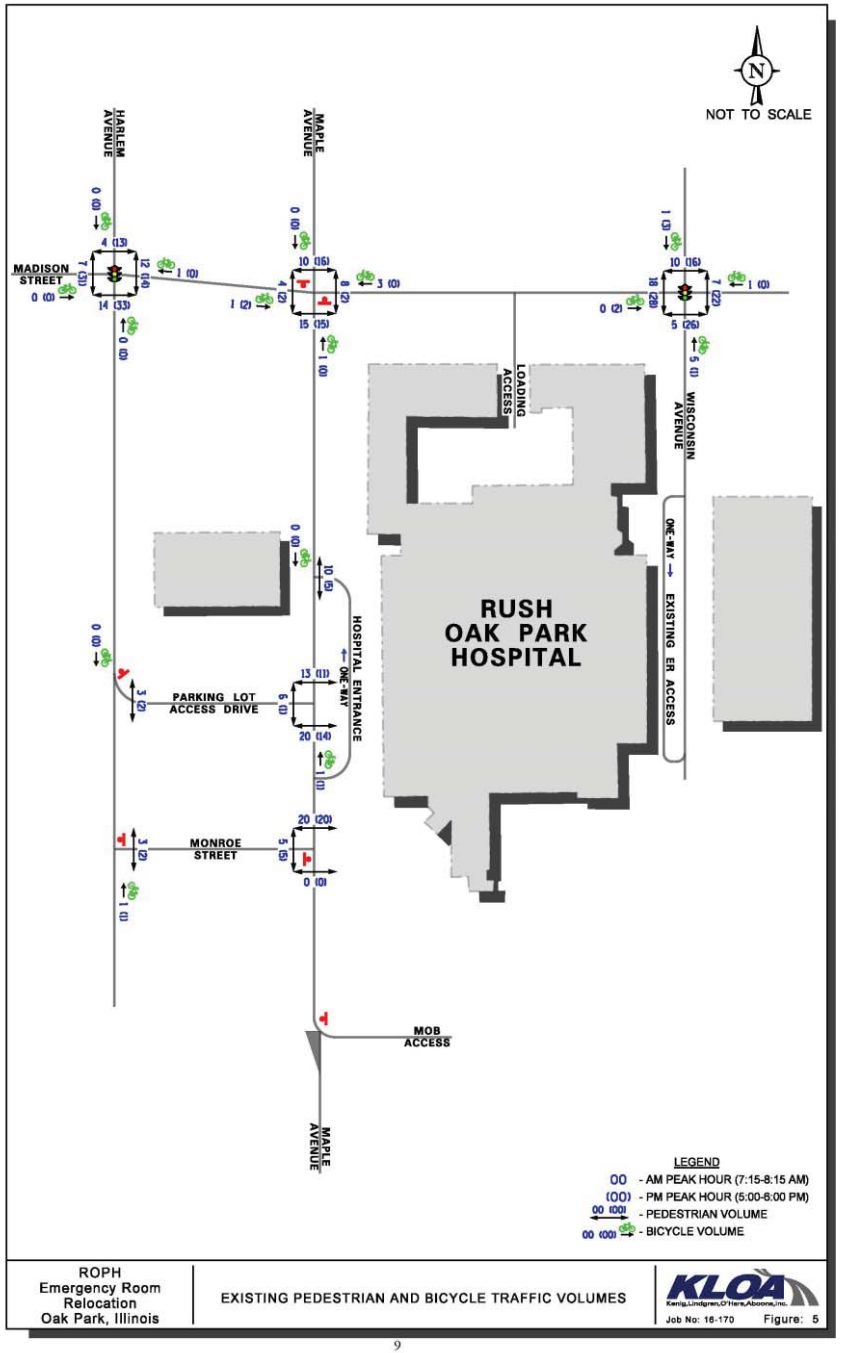

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Maple Avenue – Looking Southbound at Bump-Out Figure 6A

Maple Avenue – Looking Northbound at Bump-Out Figure 6B

Table 1
MAPLE AVENUE TRAFFIC VOLUMES

	Tuesday			Wednesday			Thursday			Average		
Hour Begin	SBT	WBL	Total	SBT	WBL	Total	SBT	WBL	Total	SBT	WBL	Total
12:00 AM	1	0	1	0	0	0	0	1	1	1	1	2
1:00 AM	0	0	0	0	0	0	1	0	1	1	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	1	0	1	0	2	2	0	1	1
4:00 AM	0	0	0	0	1	1	0	0	0	0	1	1
5:00 AM	1	0	1	1	0	1	0	2	2	1	1	2
6:00 AM	4	1	5	4	1	5	5	1	6	4	1	5
7:00 AM	3	1	4	5	2	7	8	3	11	5	2	7
8:00 AM	2	1	3	4	1	5	1	1	2	2	1	3
9:00 AM	3	0	3	1	3	4	2	2	4	2	2	4
10:00 AM	11	1	12	4	1	5	3	2	5	6	1	7
11:00 AM	9	6	15	3	3	6	4	3	7	5	4	9
12:00 PM	5	3	8	5	3	8	10	4	14	7	3	10
1:00 PM	5	2	7	9	3	12	10	2	12	8	2	10
2:00 PM	10	3	13	8	2	10	1	6	7	6	4	10
3:00 PM	6	7	13	7	3	10	15	4	19	9	5	14
4:00 PM	7	2	9	8	6	14	13	3	16	9	4	13
5:00 PM	4	6	10	6	5	11	10	1	11	7	4	11
6:00 PM	7	0	7	6	6	12	5	6	11	6	4	10
7:00 PM	6	3	9	3	1	4	2	2	4	4	2	6
8:00 PM	6	1	7	2	2	4	3	1	4	4	1	5
9:00 PM	5	0	5	2	0	2	9	2	11	5	1	6
10:00 PM	1	3	4	2	0	2	1	0	1	1	1	2
11:00 PM	2	2	4	1	1	2	0	0	0	1	1	2
Total:	**98**	**42**	**140**	**82**	**44**	**126**	**103**	**48**	**151**	**94**	**47**	**141**

- SBT = Southbound Through Movement. Vehicles proceeding south on Maple Avenue past the bump-out.
- WBL = Westbound Left-turn Movement. Vehicles making an exiting left-turn from the access driveway and proceeding south on Maple Avenue past the bump-out.

- Improve the signage-warning signage at Monroe
- Modify access drive to medical office building and add signage
- Improve enforcement of restrictions
- Alternatively, gate Maple Ave. at bump-out and add signage
- Alternatively, close Maple Ave. with cul-de-sac in place of the existing bump-out

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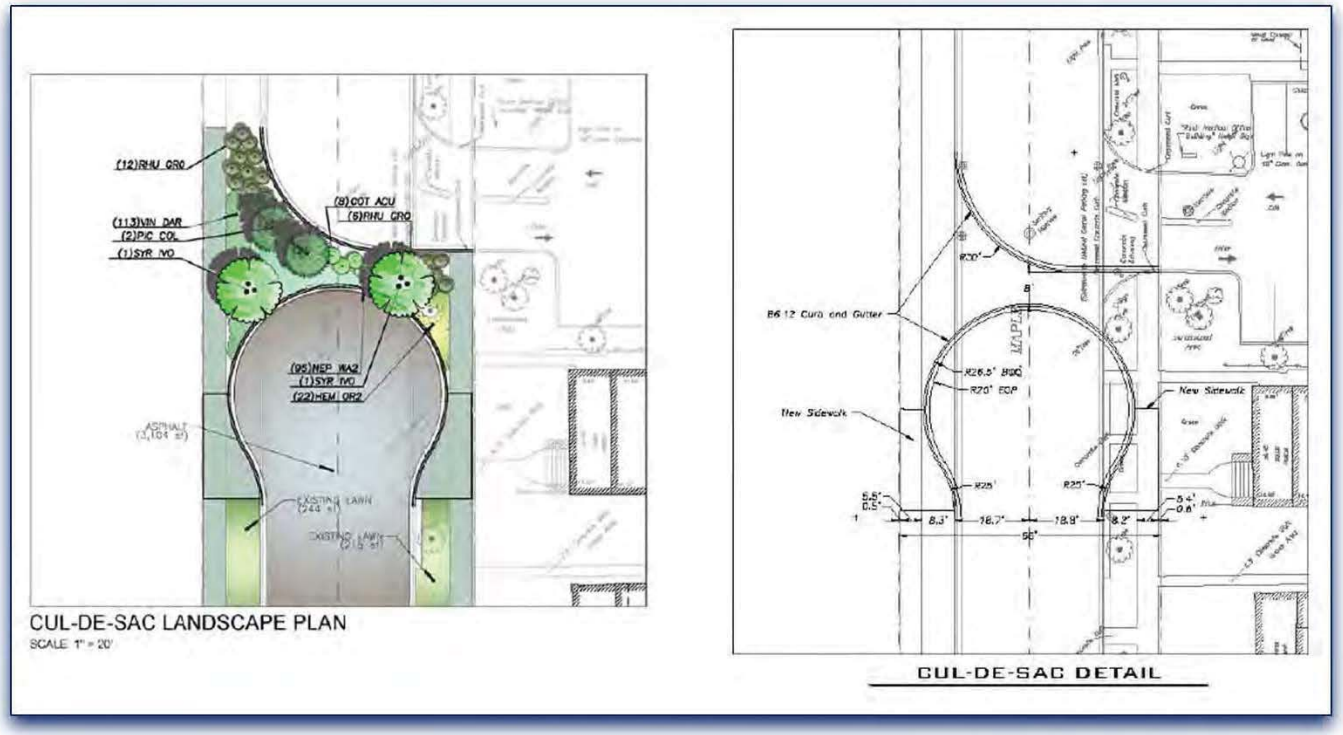
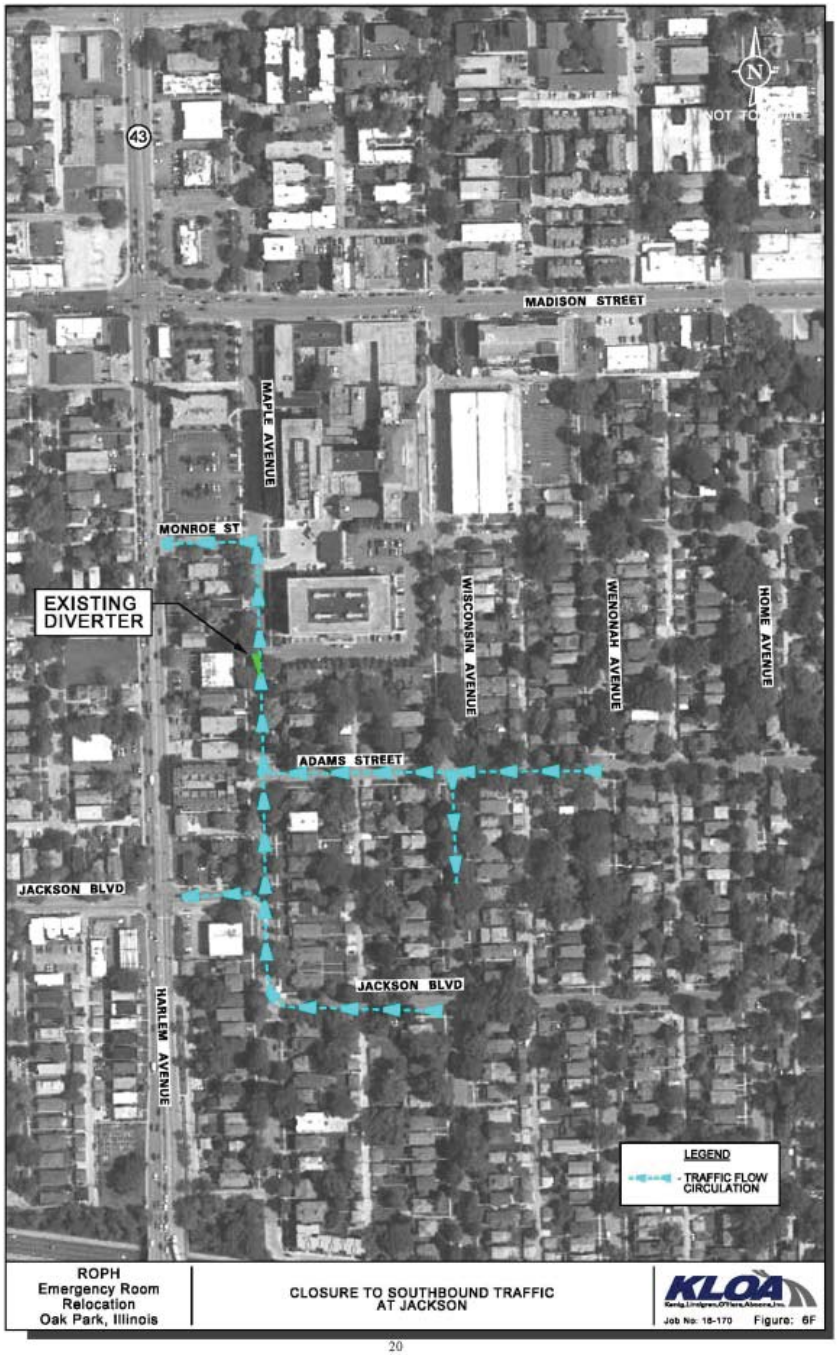


Proposed Cul-de-sac Plan on Maple Avenue **Figure 6C**



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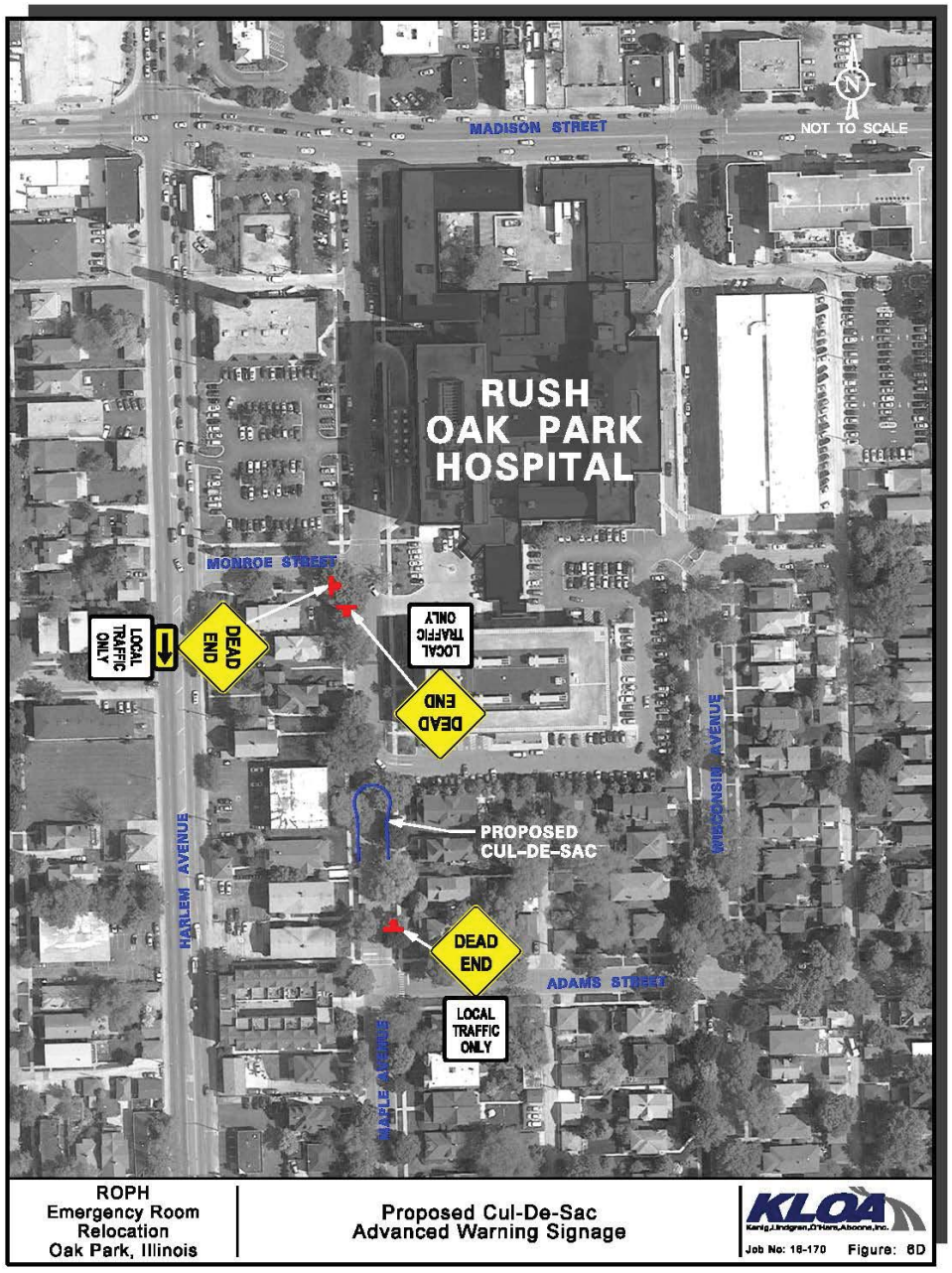

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Comparison of Maple Avenue Alternatives

The following summarizes the comparisons of the three Maple Avenue alternatives.

Cul-de-Sac on Maple Avenue

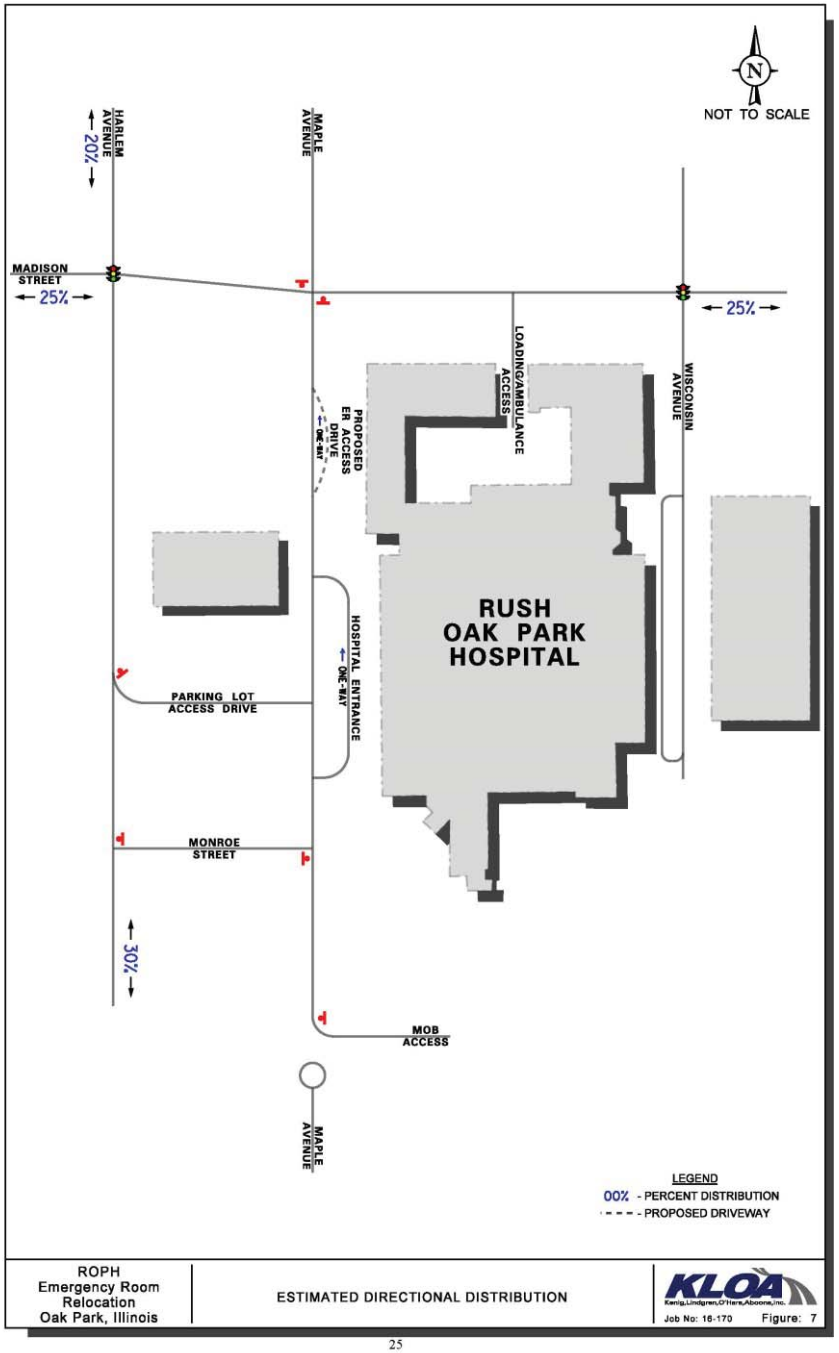
- Disconnects Maple Avenue, thereby removing all cross-traffic, including emergency response vehicles.
- Existing northbound traffic will access Harlem Avenue via Jackson Boulevard.
- All hospital traffic using Maple Avenue will be restricted to Harlem Avenue or Madison Street.
- A turnaround on Maple Avenue will be needed.
- On-street residential parking will be lost to accommodate the turnaround.
- Additional signage will be needed alerting drivers of the dead end.

Gate on Maple Avenue

- Disconnects Maple Avenue, thereby removing all cross-traffic.
- Access will be restricted to emergency response vehicles only.
- Existing northbound traffic will access Harlem Avenue via Jackson Boulevard.
- All hospital traffic using Maple Avenue will be restricted to Harlem Avenue or Madison Street.
- A turnaround on Maple Avenue will be needed.
- On-street residential parking will be lost to accommodate the turnaround.
- Additional signage will be needed alerting drivers of the dead end.

Close Southbound Maple Avenue at Jackson Boulevard

- Existing westbound traffic on Adams will either proceed northbound on Maple Avenue to Monroe Street, or travel south to Jackson Boulevard via one of the existing north-south residential streets to the east of Maple Avenue.
- Further prevents non-compliant drivers who continue southbound on Maple Avenue at the diverter.
- Arriving hospital traffic will still be able to travel north of the existing bump-out on Maple Avenue.
- A turnaround on Maple Avenue will be needed.
- Additional signage will be needed alerting drivers of the dead end.
- On-street residential parking will be lost to accommodate the turnaround.


NOT TO SCALE
HARLEM AVENUE
20%
MAPLE AVENUE
MADISON STREET
25%
25%
LOADING/AMBULANCE ACCESS
WISCONSIN AVENUE
PROPOSED ER ACCESS DRIVE ONE-WAY
RUSH OAK PARK HOSPITAL
HOSPITAL ENTRANCE ONE-WAY
PARKING LOT ACCESS DRIVE
MONROE STREET
30%
MOB ACCESS
MAPLE AVENUE
LEGEND
00% - PERCENT DISTRIBUTION
- - - - PROPOSED DRIVEWAY
ROPH
Emergency Room
Relocation
Oak Park, Illinois
ESTIMATED DIRECTIONAL DISTRIBUTION
KLOA
Job No: 16-170
Figure: 7

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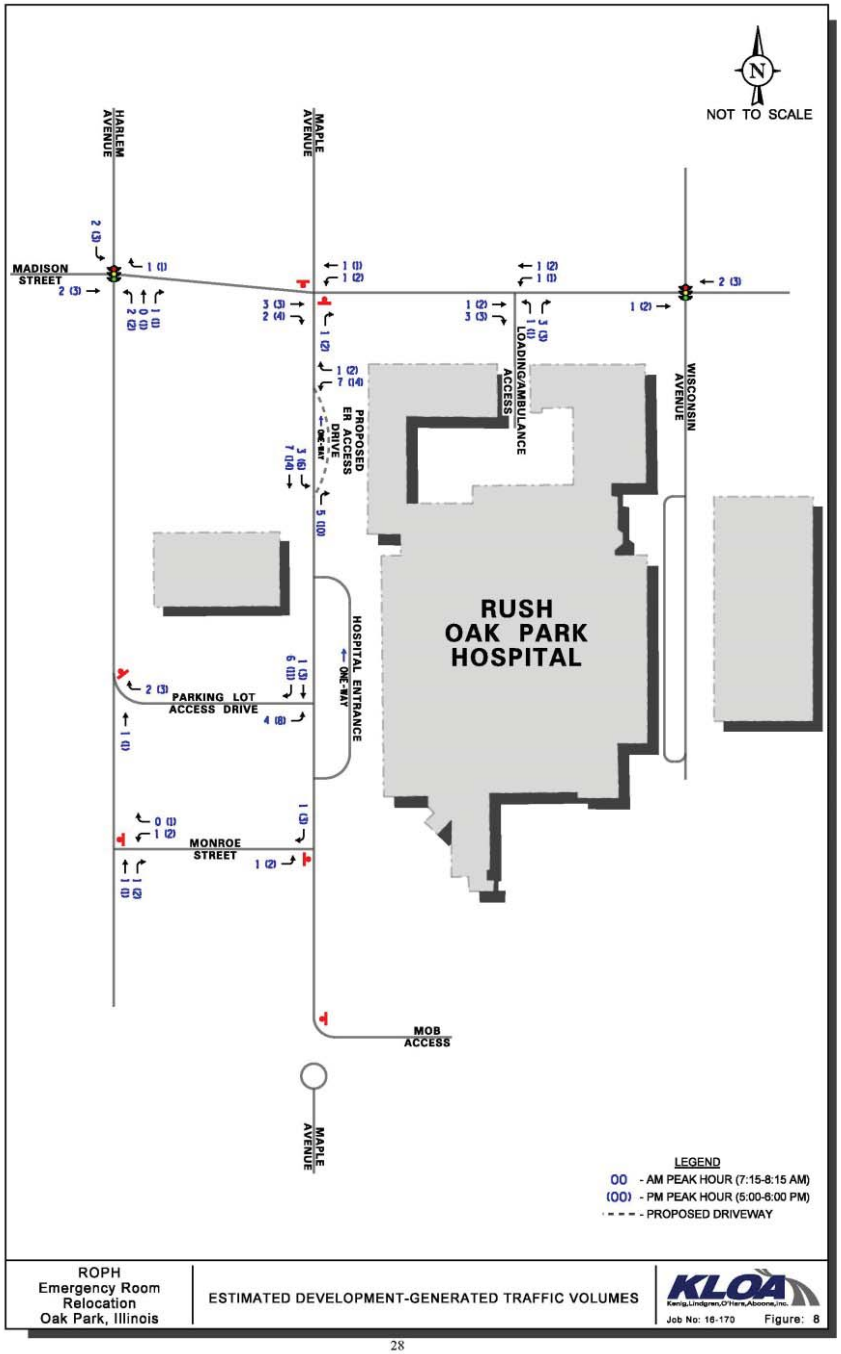

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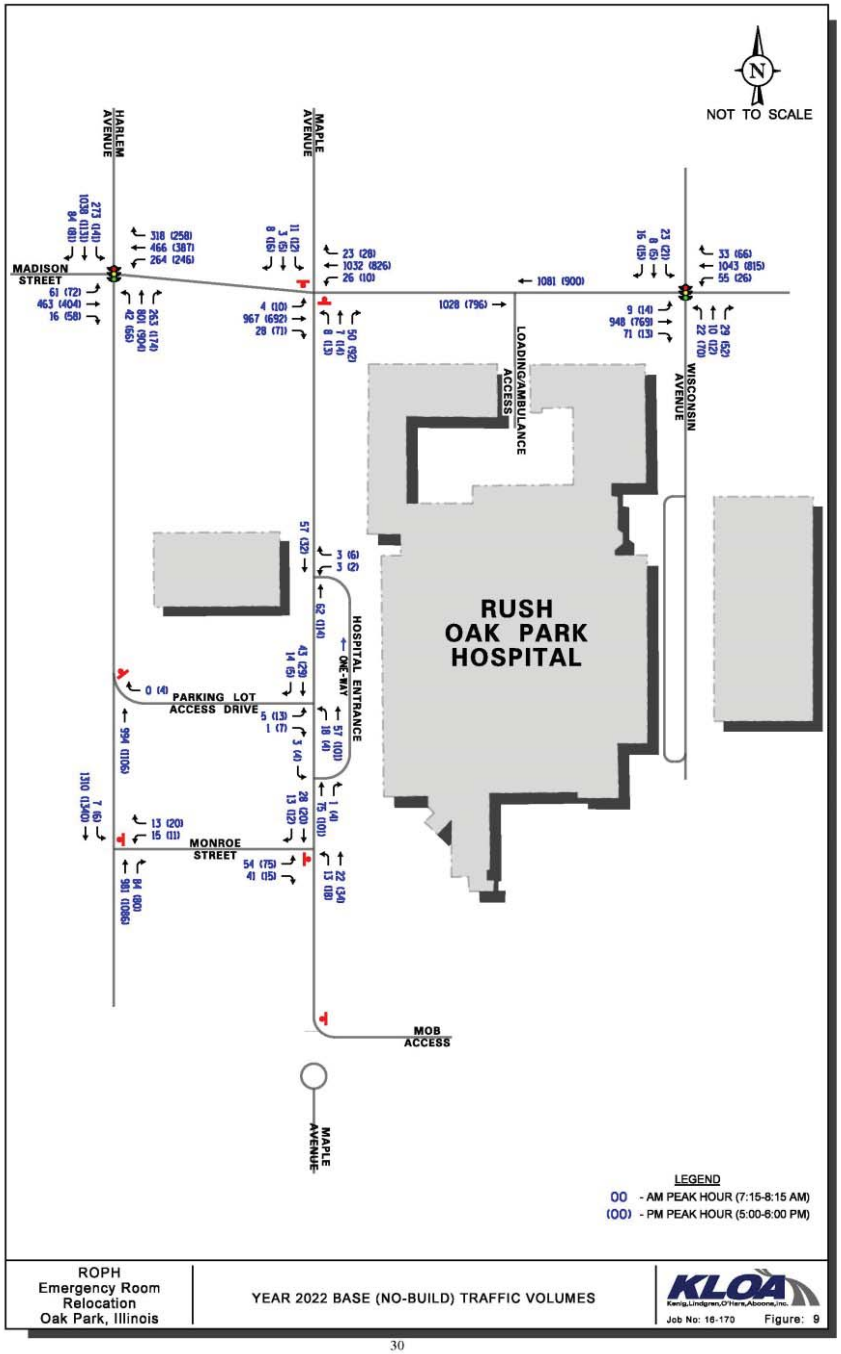

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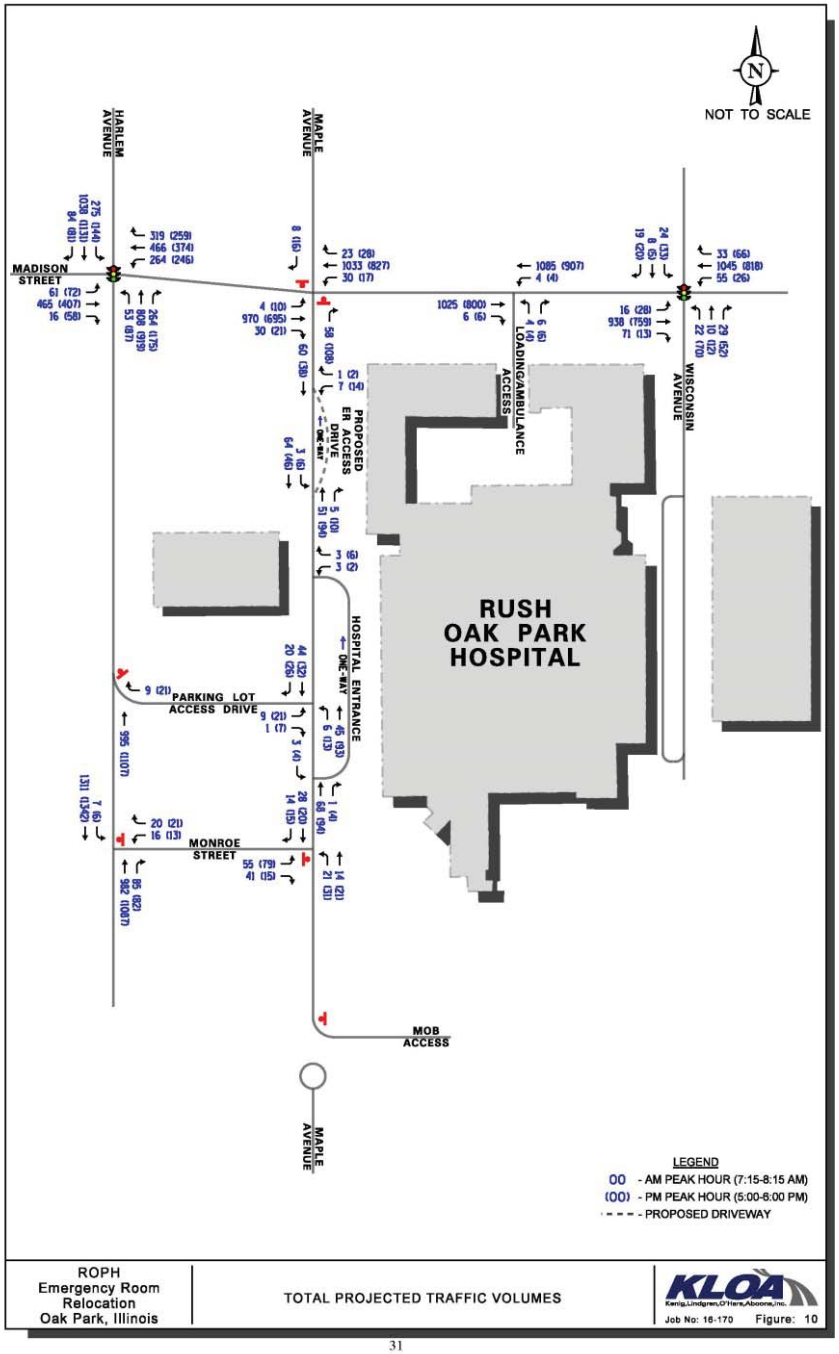

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Table 3 LEVEL OF SERVICE CRITERIA	
Unsignalized Intersections	
Level of Service	Average Control Delay (seconds per vehicle)
A	0 - 10
B	> 10 - 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤ 10
B	Good progression, with more vehicles stopping than for Level of Service A.	> 10 - 20
C	Individual cycle failures (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	> 35 – 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	> 55 – 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80

Source: *Highway Capacity Manual, 2010.*

Table 4
CAPACITY ANALYSES RESULTS—EXISTING CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS – Delay	Weekday P.M. Peak Hour LOS – Delay
Harlem Ave and Madison St (signal)	D – 45.0	D – 35.3
Wisconsin Ave and Madison St (signal)	A – 3.6	A – 6.1
Maple Ave and Madison St (stop sign)	NBA: C – 18.7 SBA: D – 32.1	NBA: B – 14.4 SBA: C – 20.3
Harlem Ave and Monroe St (stop sign)	WBA: C – 16.3 SBL: B – 10.7	WBA: C – 16.6 SBL: B – 11.3
Maple Ave and Monroe St (stop sign)	EBA: A – 9.4	EBA: A – 9.6
Maple Ave and Parking Lot Access (stop sign)	EBA: A – 9.4	EBA: A – 9.1
Harlem Ave and Parking Lot Access (stop sign)	WBA: B – 9.1	WBA: B – 12.8
Delivery Access and Madison St (stop sign)	NBA: C – 17.3	B – 13.4

LOS = Level of Service
Delay is measured in seconds.
NBA = Northbound approach.
SBA = Southbound approach.
WBA = Westbound approach.
SBL = Southbound left-turn movement.
EBA = Eastbound approach.

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Table 5
CAPACITY ANALYSES RESULTS—FUTURE CONDITIONS

Intersection	Weekday A.M. Peak Hour LOS – Delay	Weekday P.M. Peak Hour LOS – Delay
Harlem Ave and Madison St (signal)	D – 53.8	D – 39.9
Wisconsin Ave and Madison St (signal)	A – 3.9	A – 6.2
Maple Ave and Madison St (stop sign)[1]	WBL: B – 10.4 NBR: B – 10.6 SBR: B – 11.1	WBL: A – 8.9 NBR: A – 9.7 SBR: B – 10.4
Harlem Ave and Monroe St (stop sign)	WBA: C – 17.0 SBL: B – 11.1	WBA: C – 17.9 SBL: B – 11.7
Maple Ave and Monroe St (stop sign)	EBA: A – 9.5	EBA: A – 9.9
Maple Ave and Parking Lot Access (stop sign)	EBA: A – 9.4	EBA: A – 9.5
Harlem Ave and Parking Lot Access (stop sign)	WBA: B – 12.6	WBA: B – 13.6
Delivery/Ambulance Access and Madison St (stop sign)	NBA: C – 16.8	NBA: B – 13.0
ER Exit and Maple Ave (stop sign)	WBA: A – 9.1	WBA: A – 9.3

LOS = Level of Service
Delay is measured in seconds.
NBA = Northbound approach.
SBA = Southbound approach.
WBA = Westbound approach.
SBL = Southbound left-turn movement.
EBA = Eastbound approach.
WBL = Westbound left-turn movement.
[1]Turning movements on Maple Avenue restricted to right-turns only during peak hours of commuter traffic.

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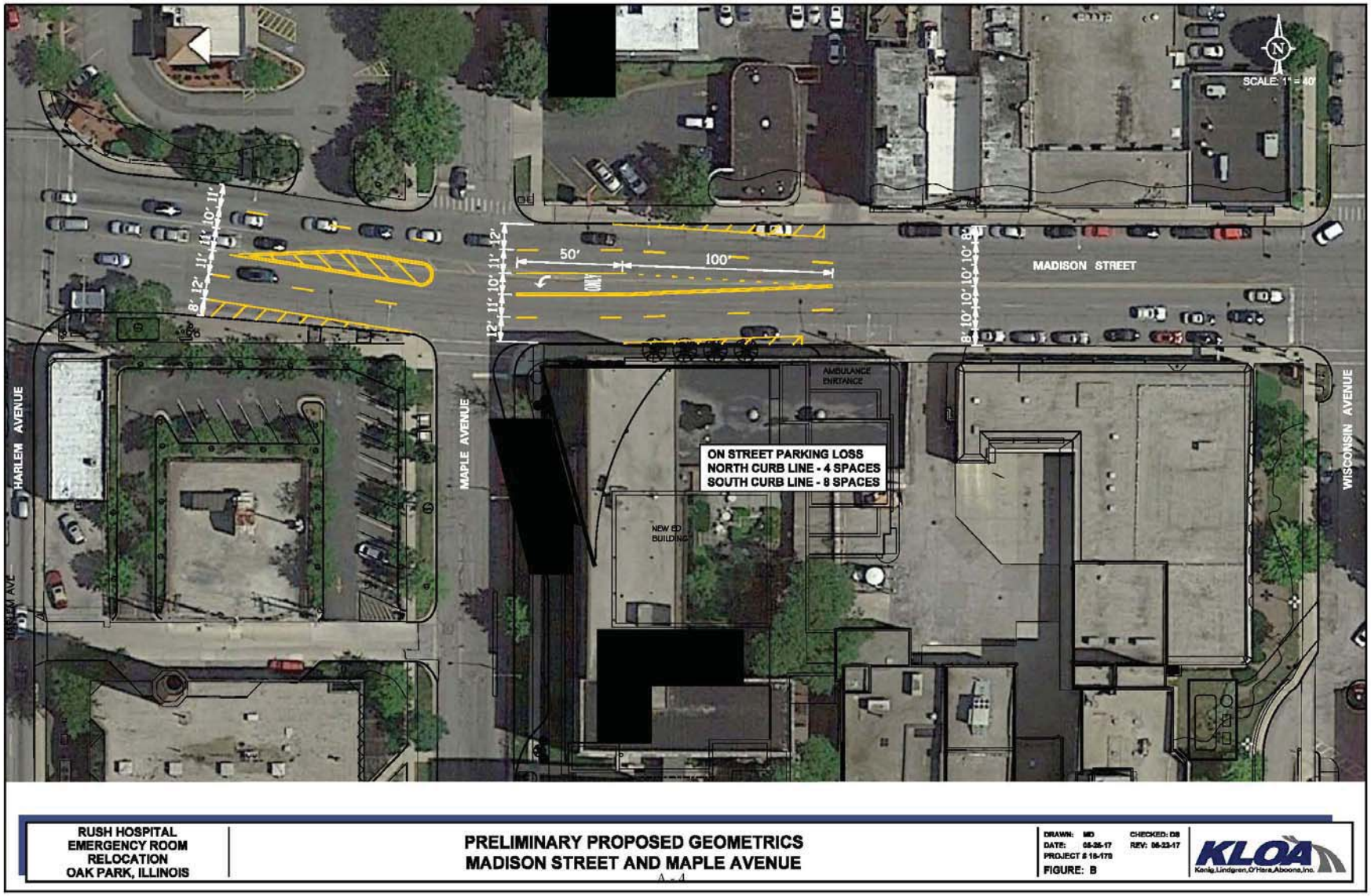

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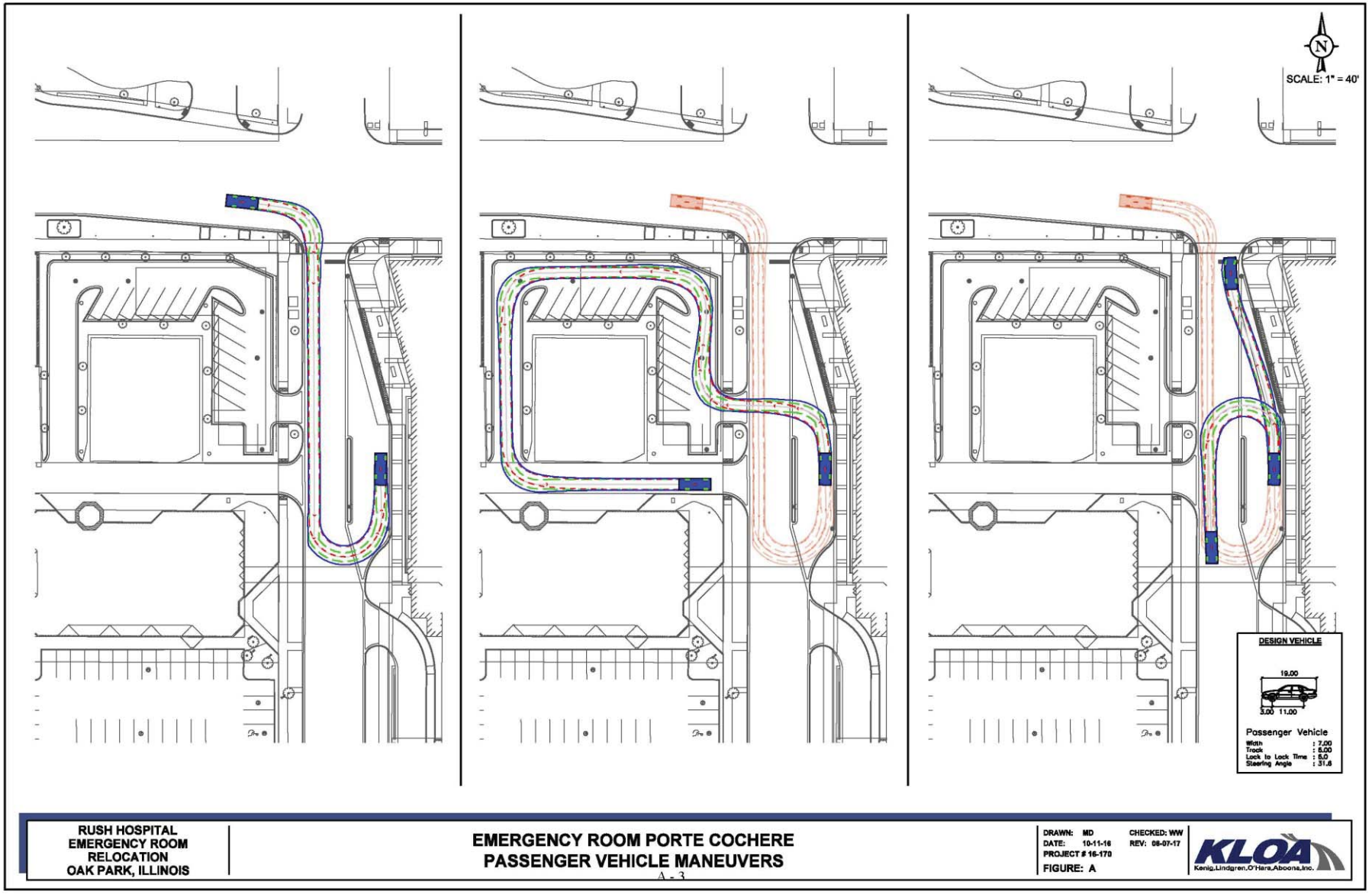

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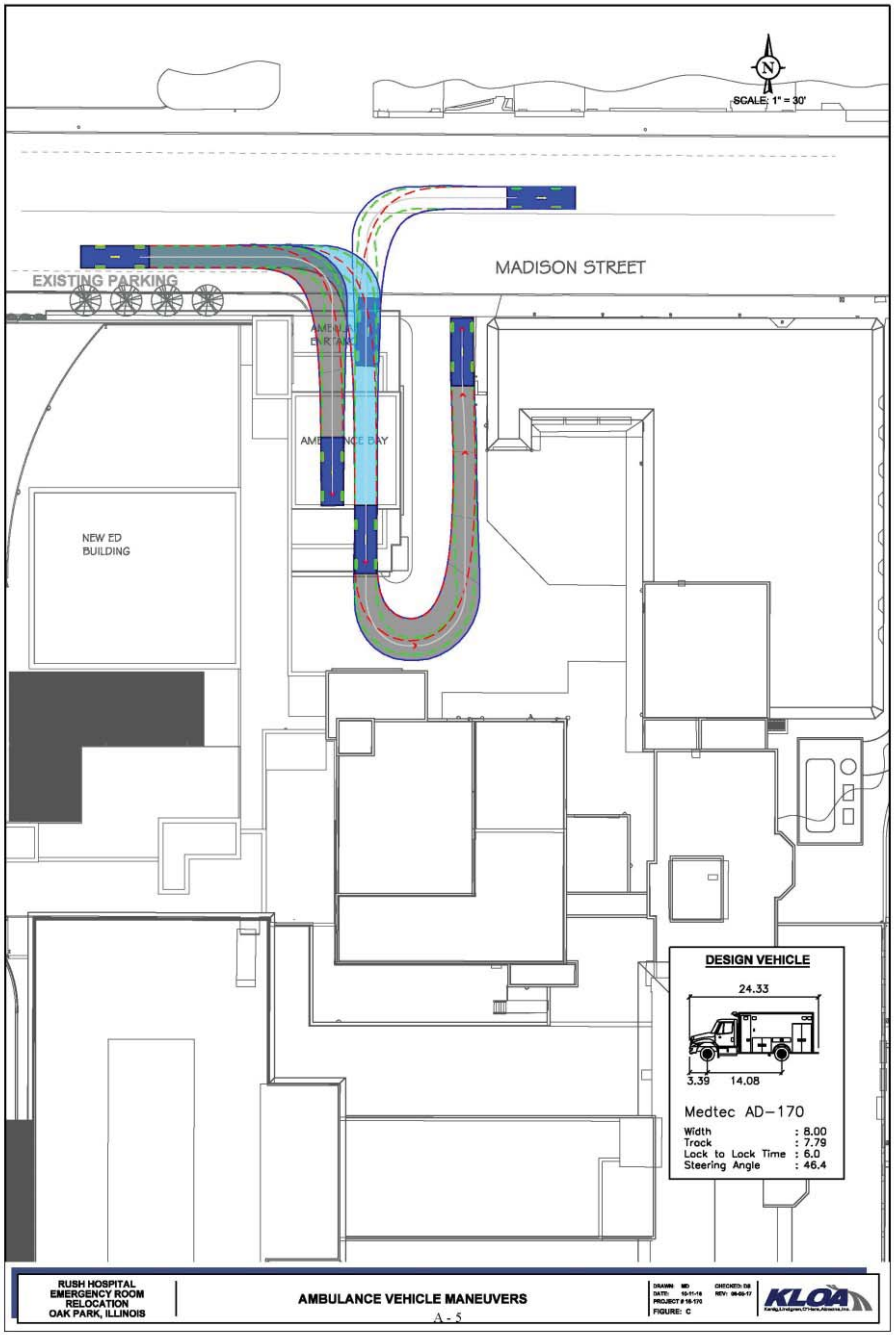

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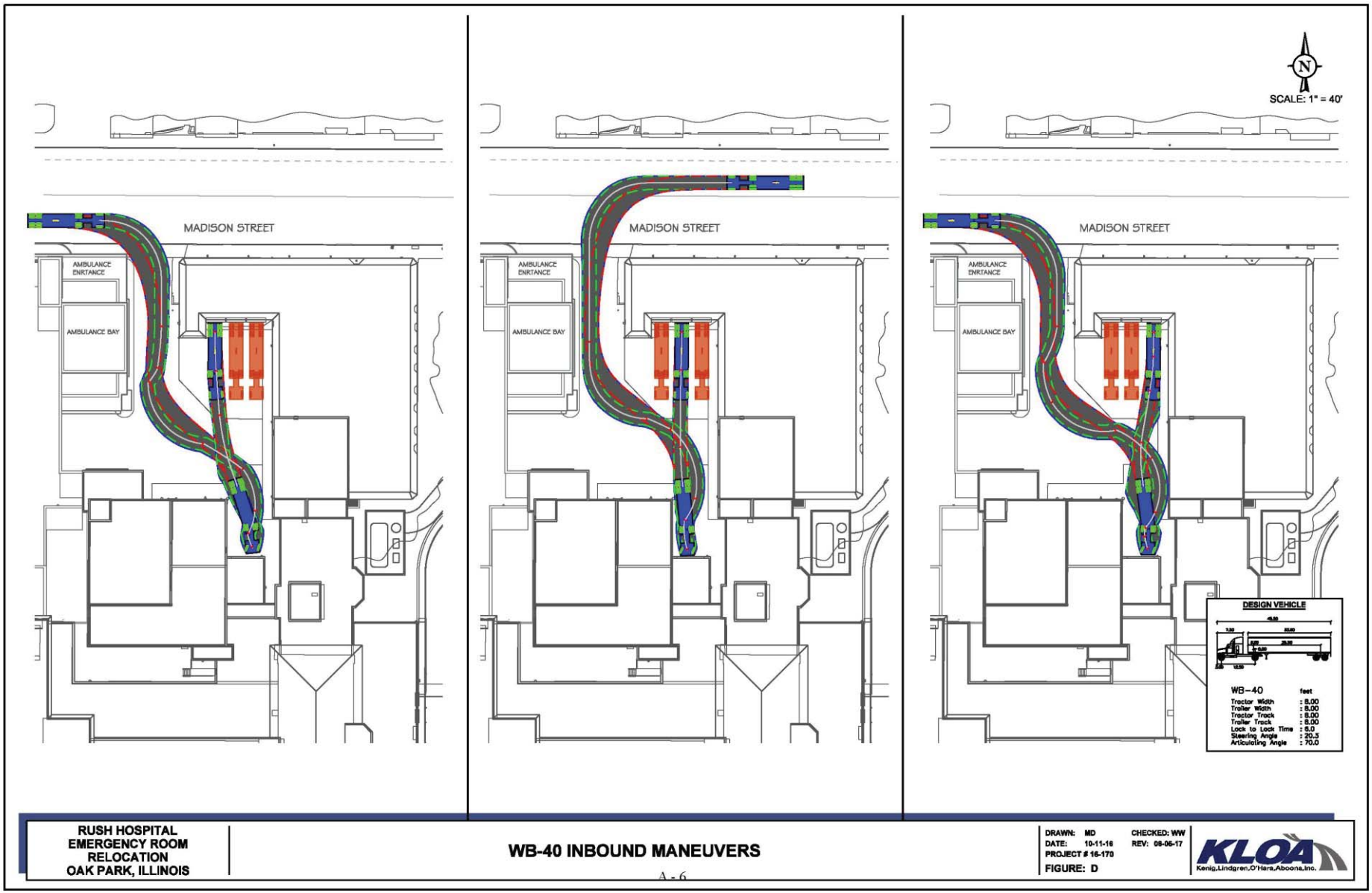

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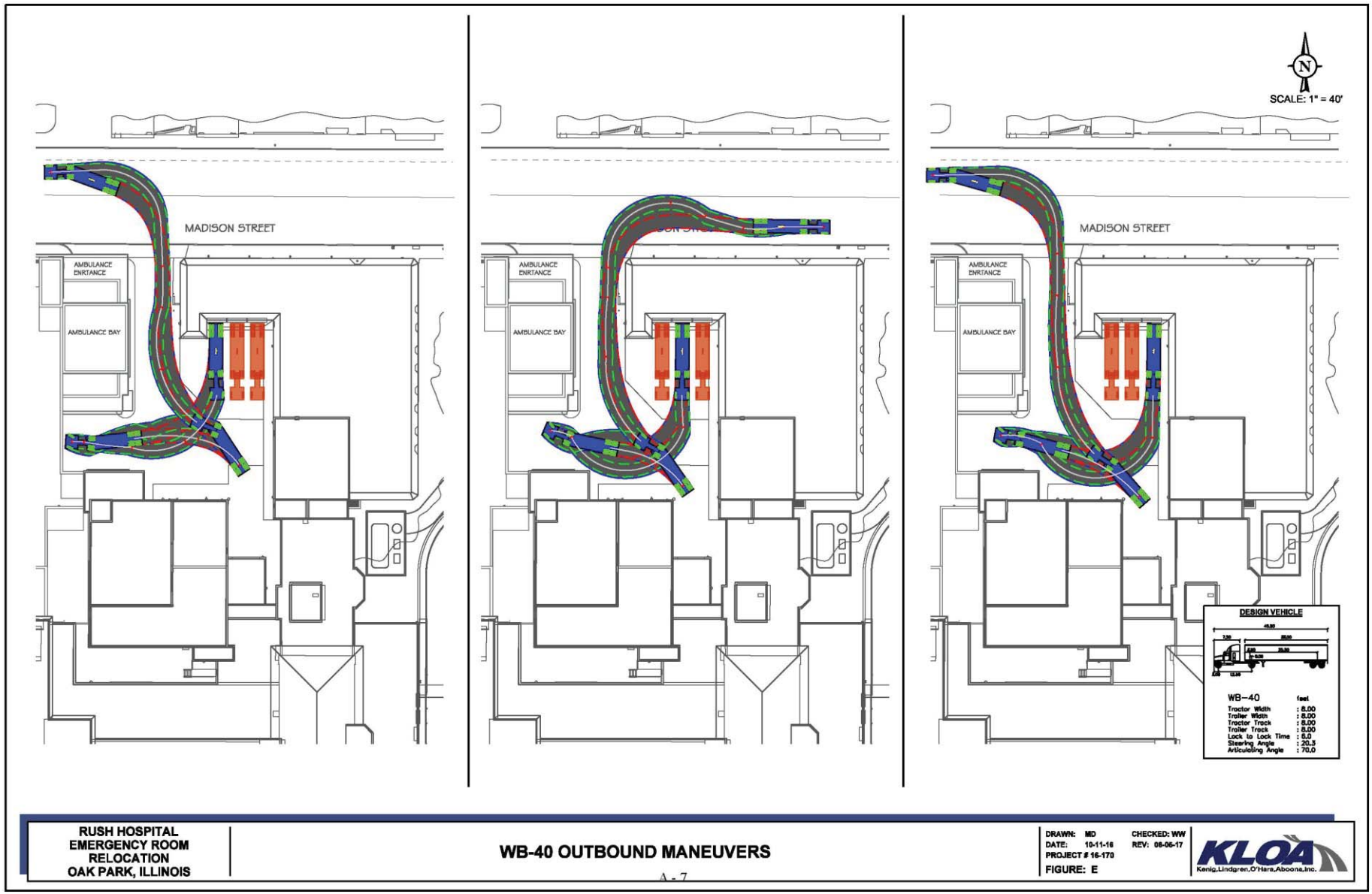

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Conclusion

KLOA, Inc. prepared a traffic impact study report for the proposed emergency room expansion and relocation for the Rush Oak Park Hospital campus located at 520 South Maple Avenue in Oak Park, Illinois. The emergency room is currently located on the east side of the main hospital building with access off Wisconsin Avenue. The conceptual plans call for the expanded emergency room to be relocated to the west side of the main hospital building with access off Maple Avenue. A lay-by is proposed on the east side of Maple Avenue to allow for the vehicle drop-off/pick-up of passengers. Ambulances will access the new emergency room from the access drive off Madison Street, located between Maple Avenue and Wisconsin Avenue. Further, a cul-de-sac is proposed on Maple Avenue at the current bump-out, south of Monroe Street. The following summarizes the findings and recommendations of the study.

- The emergency room will continue to generate a low volume of vehicle trips during the weekday morning and evening peak hours.
- The relocation of the emergency room to Maple Avenue will have a low impact on the surrounding roadway network.
- Several alternatives to address traffic concerns on Maple Avenue were presented and evaluated that included gating Maple Avenue at the existing bump-out, providing a cul-de-sac on Maple Avenue at the existing bump-out, or closing southbound Maple Avenue at Jackson Boulevard.
- The proposed cul-de-sac on Maple Avenue will improve traffic operations along Maple Avenue.
- The proposed lay-by on Maple Avenue for the drop-off/pick-up of emergency room visitors will accommodate approximately six vehicles, which is adequate to satisfy peak demands.
- Based on projected peak hour traffic volumes, a traffic signal is not warranted at the intersection of Maple Avenue and Madison Street or at Harlem Avenue and Monroe Street.
- During peak hours and via signage, northbound and southbound turning movements on Maple Avenue at Madison Street will be restricted to right-turns only.
- A westbound left-turn lane is proposed on Madison Street at Maple Avenue to remove left-turning movements desiring to make a left-turn movement at Maple Avenue from the westbound through traffic flow.

- Wayfinding signage is recommended to direct exiting emergency room traffic to exit to Harlem Avenue via Monroe Street rather than Madison Street.
- High-visibility crosswalks are recommended where standard crosswalks exist.
- On-street parking will need to be removed on both sides of Maple Avenue along the emergency room lay-by to allow for turning vehicles and through traffic along Maple Avenue.
- The ambulance access drive on Madison Street will continue to provide one lane inbound and one lane outbound under stop sign control. Given the low volume of turning movements at this intersection, no roadway improvements on Madison Street are recommended.
- Ambulances will have a low impact on the driveway and turnaround operations since ambulance activity is intermittent throughout the day and its operations will be separate from the truck delivery operations.
- Based on data provided by the hospital and the counts conducted at the existing Emergency Room, the parking demand generated will be accommodated by the existing parking lot west of Maple Avenue, between the east-west public alley and Madison Street that will be designated for emergency room patients and visitors. Further, it is further important to note that based on information provided by ROPH, approximately 40 percent of emergency room visits arrive by other means of transportation, thereby further reducing the demand for parking.

> From: Val Gee [mailto:val@mjlearning.com]
> Sent: Thursday, July 27, 2017 11:11 AM
> To: VOP Public Works
> Subject: Cul-de-sac plans on Maple Avenue, Oak Park.
>
> Good morning
>
> Concerning plans for a cul-de-sac on Maple Avenue opposite Rush Hospital
>
> I live at 605 South Maple Avenue. And I am concerned about the garbage trucks. There are plans currently underway to create a full cut-de-sac on our street. We have a half cul-de-sac at the moment. After living in this home for almost 2 years we have noticed a huge amount of traffic entering and exiting the parking lot. Cars have a really hard time exiting onto Maple and then to Monroe and Madison.
>
> I am very concerned about how garbage trucks get our garbage and exit the street. Currently they exit through the half cu;-de-sac to the other side of Maple Avenue. If they close the cut-de-sac off, how are garbage trucks going to exit Maple? Reverse? That will be really tough with all the cars parked on both sides of the street. Turn around? There is no turn around.
>
> I appreciate your response
>
> Sarah Gee
>
> Home owner
> 605 South Maple Avenue
> Oak Park, Il

-----Original Message-----
From: vopnews@oak-park.us [mailto:vopnews@oak-park.us]
Sent: Tuesday, July 18, 2017 8:21 AM
To: VOP Public Works
Subject: Report a Problem: Clinton/Jackson

Submitted on Tuesday, July 18, 2017 - 8:21am Submitted by anonymous user: 144.74.1.194 Submitted values are:

First Name: Geri & Therese
Last Name: Brennock
Address of Problem: Clinton/Jackson
E-mail address: tbrennock@att.net
Daytime Telephone Number: 708-502-5926
Choose from the list below: Clean up public property Include details below, such as location: The parkways on Jackson and Kenilworth and Jackson and Clinton need to be cleaned up in order to see properly when making left turns from the north side of Jackson. Also, Maple and Madison should be one way turning right/eastbound from the south to prevent traffic backups and accidents on Madison and Maple. We have witnessed several near misses lately leaving Rush OP Hospital.
Upload Images:

The results of this submission may be viewed at:
http://www.oak-park.us/node/75/submission/10513

Koperniak, Mike

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From: Ron Burke <rburke616@gmail.com>
Sent: Monday, July 24, 2017 2:36 PM
To: Juliano, Jill; Transportation
Cc: Trina Sandschafer
Subject: Rush Oak Park Hospital parking management, traffic

Jill - I am unable to attend the July Transpo Commission meeting, but wanted to share a few comments about hospital-related parking and traffic.

Cars are increasingly parking on my street and others that didn't see much parking before. On some days, the entire 600 block of Wenonah has parked cars and the same is true for Monroe between Wisconsin and Home. This change is at least partially because of relatively recent parking restrictions on the 500 block of Wenonah and 600 block of Wisconsin, although I do think there is more hospital parking period and it's not simply that the parking has shifted.

Some of it may be related to additional vehicles from the ER construction. However, even if the crunch will lessen when the ER construction is over, clearly the long term trend is more people going to the hospital and Medical Center. Absent new strategies, the number of cars will increasingly outnumber available spaces on hospital property.

And this gets me to my main point: Rush Oak Park Hospital (ROPH) has a parking problem but, as far as I can tell, they are not utilizing most best practices for parking management nor does ROPH have a plan for managing future customer growth.

More cars going to and from the hospital adds to noise and traffic in the village, and ROPH will have to build up to add parking, which is expensive. It's in everyone's interest to minimize vehicle travel to and from the hospital by shifting trips to other modes.

With this in mind, I'd like to request a comprehensive parking management study and strategy for ROPH, and the hospital should pay for it with a community advisory group and/or the Traffic Commission to oversee it.

The hospital and the village have relied almost entirely on tearing down homes/buildings to create surface parking to manage customer growth. Surface parking here is hardly the highest and best use of this land, and it's costing us tens of thousands of dollars annually in lost property taxes. It's also an expensive and inefficient way to manage travel to the hospital.

What's missing are demand side strategies to reduce driving to the hospital, particularly among employees. ROPH is in a relatively dense, urban setting along side a residential neighborhood and with good transit access. Hospitals in this type of setting charge for parking (e.g.,West Suburban), provide priority spots for carpools, run shuttles from train stations, provide employees incentives for not driving, and so forth. These types of strategies significantly reduce parking demand.

These hospitals also ensure patients get free or discounted parking closest to the hospital and often provide discounted parking for low-income patients, and cities will enact parking restrictions on nearby residential streets, because people will want to avoid the parking fees. These are some of the ideas I would expect a parking management study to assess. And frankly, some of these ideas don't need a study and could be implemented in short order.

In the meantime, I think the moratorium on new parking limits should be waived for my block and other residential streets near ROPH. I prefer permit parking as we see on the east side of 600 Wisconsin. Thanks.

Ron Burke
616 Wenonah

Koperniak, Mike

0717-2
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From: David Osta <davidosta@gmail.com>
Sent: Friday, July 21, 2017 9:15 AM
To: Transportation
Subject: Rush Oak Park Hospital Plan

Dear Ms. Juliano:

I am an Oak Park resident (620 Wenonah) that lives in the residential neighborhood near Rush Oak Park. I am also part of an organized group of residents that has been working to engage Rush Oak Park since their current round of expansion began just over two years ago.

Please remember that the hospital is expanding (to the east) into residential areas. All possible impacts should be examined including:

1. Smokers. Rush employees currently have to go off campus to smoke - and they do. Better plans need to be in place to keep smokers out of residential neighborhoods. If Rush is allowed to demolish the two remaining homes on the west side of the 500 block of Wenonah, smokers could easily be "pushed" further into the neighborhood.

2. The intersection at Harlem and Madison is currently a failure from a traffic flow standpoint. The Rush Hospital expansion is an opportunity to improve - not worsen traffic - in this area. Currently westbound Madison traffic frequently backs up to Wisconsin and even Wenonah. I recommend traffic study and data collection to develop better solutions for the residents and businesses in this part of the village.

Rush Oak Park has a mixed record in regards to communication and public engagement. The current strategy is to handle neighborhood concerns in separate meetings and groupings. It is the Village that can make sure that a systemic approach is taken instead of the piecemeal negotiation that is currently favored.

Finally, I renew the call for Rush Oak Park to publicly share its long term (10 year) plan with residents.

Thank you for your consideration.
David Osta
620 Wenonah

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July 19, 2017

TO: NEIGHBORS OF RUSH OAK PARK HOSPITAL

RE: PARKING AND TRAFFIC PORTIONS OF THE RUSH OAK PARK HOSPITAL PLAN DEVELOPMENT APPLICATION

Dear Neighbor:

On Monday, the Village Board of Trustees referred the Rush Oak Park Hospital plan development application to the Transportation Commission to provide comments to the Plan Commission on potential impacts to the Village's transportation system resulting from the proposed new emergency room. Included in the application are proposed modifications to the existing traffic diverters and a potential cul-de-sac, potential turning restrictions on Madison Street, and the removal of on-street resident overnight permit parking on Maple Avenue south of Madison Street in the areas related to the new emergency room.

The Transportation Commission is scheduled to review the parking and traffic portions of the Rush Oak Park Hospital plan development application at its upcoming public meeting being held at 7:00 PM on Monday, July 31, 2017, in the Council Chambers of Village Hall.

You are invited to attend this public meeting to give testimony. If you wish to comment but are unable to attend, you may submit your comments in writing to the undersigned by U.S. mail, by fax to (708) 434-1600 or by email at transportation@oak-park.us. All comments must be received by Wednesday, July 26, 2017 at 5:00pm for inclusion in the Commission's agenda.

A copy of the Transportation Commission's agenda will be posted on the Village of Oak Park's website (www.oak-park.us) on Thursday, July 27th for public review and inspection.

Sincerely,

THE VILLAGE OF OAK PARK

Jill Juliano

Jill Juliano, P.E.
Transportation Engineer

Village of Oak Park
Public Works Center
201 South Boulevard
Oak Park, IL 60302