AGENDA

EAST GRAND RAPIDS PLANNING COMMISSION
January 13, 2026 - 5:30 PM
Community Center – Commission Chambers

Citizens may also stream the meeting via the following link: https://bit.ly/2xXlLvn
Comments not accepted via the livestream.

1. Call to Order
2. Pledge of Allegiance
3. Approval of the Agenda
4. Approval of Minutes: December 9, 2025 Meeting
5. Public Comment on Non-Agenda Items
6. Site Plan Review for 1840 Wealthy St. (Blodgett Hospital)
   - Ramp 2 (north) Vertical Expansion
7. Master Plan Update
8. Report of the City Commission
9. Next Regular PC Meeting: February 10, 2026
10. Adjournment

PROCEEDINGS OF THE EAST GRAND RAPIDS PLANNING COMMISSION

December 9, 2025
East Grand Rapids Community Center – Commission Chambers

Present: Chairperson Mary Mapes, Commissioners Greg Metz, Brian Miller, Chris Rosmarin, Laura Schwartz, Steve Achram

Absent: Tom Tilma, Matt Feyen, Peter Michell

Also Present: Zoning Administrator Jay Gianotti, City Attorney John Huff, City Manager Shea Charles, Deputy City Manager Doug LaFave, City Planner Paul LeBlanc of PLB Planning, and representing the City Commission Abbie Groff-Blaszak

1. CALL TO ORDER

Chairperson Mapes called the meeting to order at 5:30 PM.

2. PLEDGE OF ALLEGIANCE

Chairperson Mapes led the attendees in the Pledge of Allegiance.

3. APPROVAL OF AGENDA

A motion was made by Chairperson Mapes and supported by Commissioner Miller to approve the agenda as presented.

Yeas: Mapes, Metz, Miller, Rosmarin, Schwartz, and Achram. -6

Nays: -0-

4. APPROVAL OF MINUTES – September 9, 2025

A motion was made by Commissioner Schwartz and supported by Commissioner Miller to approve the minutes as presented.

Yeas: Mapes, Metz, Miller, Rosmarin, Schwartz, and Achram. -6

Nays: -0-

5. PUBLIC COMMENT ON NON-AGENDA ITEMS

No public comment was made.

6. DRAFT MASTER PLAN REVIEW

Paul LeBlanc of PLB Planning gave a presentation regarding the final draft of the master plan update. This presentation included the following.

- Plan Purpose to amend/supplement 2018 Master Plan and reinforce 2018 recommendations
- Highlight new issues

- Update data
- Assess public opinion
- Summarize Public engagement and input
- Subarea Plans for NW Wealthy, Greenwood, Gaslight Village and St. Stephen: Changing conditions, unforeseen challenges and new opportunities
- Vision Statement was given; goals were discussed; recommendations were made; zoning plans were shared along with next steps.

Following this presentation, Commissioners made the following comments.

- Chairman Mapes asked if is it possible to incorporate John Collins Park as a Gaslight Village activity space, and to consider relocating the boat launch.
- Commissioner Achram noted the nuisance of the ducks and geese. Deputy City Manager LaFave shares the permit we have from the DNR to help control the duck and goose population.
- Commissioner Miller talked about shading Waterfront Park bright green on the master plan page and shade access area across from Waterfront Park. He also asked about the survey response rate and what that means. Mr. LeBlanc answered that he took 613 responses divided by the number of households in the City.
- Commissioner Rosmarin had a few questions:
    - Page 12 states screening parking lots. What is screening? Paul LeBlanc answers that it is mainly to the Gaslight plaza and screening so you cannot see the parking lots
    - The goal of reducing non-conformities, does that mean existing? Paul LeBlanc answers “Yes”, mainly existing. Commissioner Miller explained what the non-conforming changes might mean as a resident. Deputy City Manager LaFave talked about the zoning code and how it might work with setbacks and tear downs.
    - Greenwood neighborhood-it’s an odd area with a variety of different uses. Something needs to be done but it is not the right time. Chairman Mapes states that would leave the door more open when the Master Plan is updated in the future.
- Commissioner Schwartz commented on the vision: she wished to see a more encompassing term for non-motorized traffic, making sure we are including all of those different buckets. It was noted that this would be modified by Mr. LaFave to include this language.

7. CITY COMMISSION COMMENTS REGARDING THE SITE PLAN REVIEW

Abbie Groff-Blaszak made a statement about traffic enforcement that complaints were not outdated and she hears talk about unsafe behavior on the roads. It was noted that this would be modified by Mr. LaFave.

A motion was made by Commissioner Miller and supported by Commissioner Schwartz to set the public hearing for the master plan update for February 10, 2026.

Yeas: Mapes, Metz, Miller, Rosmarin, Schwartz, and Achram-6

Nays: 0

8. REPORT OF THE CITY COMMISSION

Commissioner Schwartz reported the following.

- Grant of $500,000 was received to redevelop Waterfront Park phase 2.
- Commissioners Schwartz and Chris Wessely were sworn in last week.
- An approved update to the poverty policy was passed.
- A lawsuit was brought against the City by a group of residents regarding the Gaslight Investors PUD referendum and protest petitions.

Deputy City Manager LaFave added that winter maintenance has started and leaf pick up has ended.

9. NEXT REGULAR PLANNING COMMISSION MEETING-January 13, 2026

10. ADJOURNMENT

A motion was made by Commissioner Schwartz and supported by Commissioner Miller to adjourn the meeting at 6:37 pm.

Yeas: Mapes, Metz, Miller, Rosmarin, Schwartz, and Achram-6

Nays: 0

YouTube link to meeting -__ December 9, 2025 Planning Commission Meeting

Respectfully submitted,

Tracey Alwood

Recording Secretary

CITY OF
EAST GRAND RAPIDS

750 LAKESIDE DRIVE SE • EAST GRAND RAPIDS, MICHIGAN 49506
(616) 940-4817 www.eastgrmi.gov

JAY GIANOTTI, AICP
ZONING ADMINISTRATOR

Hearing Required?	Yes
Notices Mailed	10/20/2025
Notice Published	10/23/2025

MEMORANDUM

TO: East Grand Rapids Planning Commission
FROM: Jay Gianotti, Zoning Administrator
DATE: January 7, 2026

RE: **Site Plan Approval for a Parking Garage Expansion at 1840 Wealthy St. SE (PPN: 41-14-33-127-014)**
Zoned: R-1 Single Family Residential

Action Requested:
That the Planning Commission continues its review on the proposed site plan for an expansion of the north parking garage at 1840 Wealthy St. (Blodgett Hospital). The Planning Commission may take action on this item at this meeting.

Background:
The applicant, Corewell Health, has applied for a site plan modification to add an additional story to the parking garage (Ramp 2) at the northwest corner of the Blodgett Hospital campus. Exhibit 1 shows the Ramp 2 location in context with the entire campus. The current parking deck in this location was originally constructed in 2018 as part of a larger campus expansion plan that spanned from 2018-2022. The parking expansion is intended to provide more on-site parking for employees and visitors while reducing the reliance of off-site facilities for employee parking. In total, approximately 206 parking spaces would be added to the campus with this proposed plan.

Exhibit 1 – Map of Blodgett Hospital campus. Location of Ramp 2, subject of the proposed work, is highlighted in the northwest corner of the campus.

The hospital campus would be considered part of the R-1 Zoning District as the majority of the property lies in this district area. Hospitals are allowed in this zoning district as a special use. In 2008, the City formally granted special use approval to Blodgett Hospital[1]. Since then, site plan modifications and approvals have been made in 2018 and 2020 for various new buildings and campus reconfigurations. These included approved variances for overall building coverage and a reduced

[1] Special uses are uses that are generally acceptable in a zoning district, but have unique operational characteristics that may require additional review regarding its impact on surrounding areas. This is more clearly defined in Section 5.91 of the zoning ordinance.

building setback on Sherman St. Corewell Health is not seeking a variance for this proposed work as it is intended to comply with the standard zoning requirements for the R-1 District.

This request was first introduced at a public hearing at the November 12, 2025 Planning Commission meeting. A copy of Corewell's presentation at that meeting is included in these materials for reference. Following this presentation and public comment, the Planning Commission requested additional information and revisions on the following:

- Information on light temperature and glare with preference for warmer light and glare shields to screen from properties and a way to screen headlights internal to the top level of the ramp.
- Additional building vertical metal screening options for open air gaps in the ramp.
- More architectural design features for façade facing Wealthy.
- Consideration of a condition for deed restriction to prevent any additional height be added to the ramp to align with current zoning for this area.
- More focused summary of traffic and impacts.

The applicants have made revisions to their plans based on this feedback. This is summarized in their "Site Plan Review Project Update" memo attached to these materials. Since this meeting, the City also coordinated with Grand Rapids to adjust traffic signal timings at the Plymouth/Lake intersection, based on recommendations made in the traffic study by Fishbeck. This is discussed in more detail below.

Review of Standards:

According to Section 5.87 of the Zoning Ordinance, a site plan shall be approved only upon a finding of compliance with the following standards:

A. *The site plan must comply with all standards of this article and all applicable requirements of this chapter and all other applicable laws and regulations.*

Staff comments: This standard appears to be met. The proposed expansion is to be built entirely on top of the existing footprint. While several variances regarding building height and lot coverage, and setbacks have been granted to the campus over the years, Ramp 2 was only included in a building coverage variance request in 2020 (though the overall lot coverage decreased with modifications to the building and internal circulation locations.) Because the garage footprint is not changing, no new variances for this are needed as long as the garage meets the standards R-1 zoning requirements related to height. These standards are discussed below.

- *Number of stories*: In the R-1 District, buildings may not exceed 2.5 stories. While the submitted drawings list four levels of parking, this does not necessarily translate to a four-story building. Level A would be more than 50% underground or below grade, so it would not count as a story. Similarly, Level 3 is entirely open to the air. This would then function as the roof of the building, not a story itself. Thus, for zoning purposes, the City would consider the proposed garage modification to constitute a two-story building.
- *Building Height*: In the R-1 District, buildings may not exceed 35' in height. Because this is essentially a flat roof building, the height would be measured to the top of the roof. The City calculates the height of the proposed building as appx. 25'-10". [2] Exhibit 2 shows this calculation graphically. In summary:

[2] The renderings provided by the applicant ("west elevation" on the "Exhibit B: Renderings – Elevations" shows a measured height of 35' from the average grade to the midpoint of the stair tower. However, that rendering shows a level grade for much of the west elevation, whereas the elevation drawing on Sheet S301 shows more of a grade change along this face. As this appears to show more overall exposed building area, the City has taken its measurements from this latter drawing.

Exhibit 2 – West elevation drawing of proposed parking garage vertical expansion with City's height calculation notes.

- The roof of the proposed building (Level 3) is listed as elevation 780'-10". The City estimates that the highest grade of the slope on the west elevation is appx. 760'. Thus, the height from Level 3 to this highest point of this slope would be 20'-10".
- Because the lowest part of the building is on a slope, City practice is to take the average height of the exposed area of the building for such areas. The City estimates that the difference in grade between the highest and lowest parts of this slope is 13-2'. The City further estimates that appx. 37.6% of the building elevation is exposed in the sloping area. Thus, this would effectively add 5' to the overall building height.
- Adding these two numbers together results in 25'-10", which the City would use as the overall height of the proposed building.

Similarly, the hospital ingress/egress at the southeast corner of the parking ramp would be raised. The addition is required by the building code to provide stairwells for safety. The indicated height of this structure would be 2-stories above ground and a height of appx. 30.5' to its roof midpoint. Both of these would also comply with the zoning ordinance.

Beyond this, certain building elements are allowed to exceed this maximum height requirement[3]. Two that are relevant here are parapets and cupolas. The former is allowed to exceed the standard height requirements by 4'. The panel along the Level 3 roof would constitute a parapet. Since the tallest of these is measured to be 5' height, they would still satisfy the maximum height requirement without the need for an exception. With regards to cupolas, these are allowed to exceed the maximum height requirement by 15.' Based on the relative size and function of the stair tower, this can be reasonably construed to meet this definition and thus qualify for a height exception. When accounting for this part of the building, the City estimates that the maximum height would be appx. 40'-10" to the stair tower roof midpoint. This would be a height exception of 5'-10", well within what would be permissible.

With regards to parking: the approved plan from 2020 indicated a minimum parking requirement of 1,859 spaces. The site plan drawings from 2019 showed a total of 2,080 parking spaces provided between on-site (1,448 spaces) and off-site leased facilities (632 spaces at three facilities). Minor revisions to the Ramp 1 access removed some of these spaces. The proposed parking ramp expansion would thus increase on-site parking to appx. 1,617 spaces and overall parking on- and off-site to appx. 2,249 spaces. Normally, off-street parking is limited to no more than 10% over the minimum amount required. However, the Planning Commission can still approve a site plan with more parking upon demonstration "that the parking is needed to accommodate the use on a typical day.[4]" The applicant's narrative does note that the existing

[3] See Section 5.59 of the zoning ordinance.
[4] See Section 5.78E of the zoning ordinance.

parking facilities are "regularly at or near full capacity." At minimum, the proposed parking expansion here would appear to reduce the parking impacts of off-site facilities and on-street spaces during the day and reduce congestion from users having to travel from the hospital to an off-site facility. The proposed plan would also incorporate 20 accessible parking spaces on Levels 2 & 3, an increase of 12 found in the current ramp. This, combined with the 40 accessible spaces already onsite, would comply with federal ADA requirements[5].

B. *The site must be designed in a manner that is harmonious, to the greatest extent possible, with the character of the surrounding area.*

Staff comments: This standard appears to be met. As noted above, the proposed work appears to be compliant with the zoning ordinance. The function of the parking ramp is not changing, so the existing character of the site would remain essentially the same. Additionally, this corner in particular has generally been used for elevated buildings and structures, with additional landscaping over time added to soften the overall view from the street. Images ranging from October 2007-August 2025 of this area are included as an appendix to these materials.

C. *The site must be designed so as to minimize hazards to adjacent property, and to reduce the negative effects of traffic, noise, smoke, fumes and glare to the maximum extent possible.*

Staff comments: This standard appears to be met. As there is no change to the existing ramp footprint, no excavation work would be needed with this plan. Site work is reported to be minimal, confined mostly to the northwest corner of the campus at Wealthy & Plymouth. Of note:

- The project does not include any mass excavation or foundation construction. Since the project is vertically expanding a portion of the existing north parking structure #2, no driven or drilled foundations are required.
- The total project duration is estimated to be 7 months.
- There will only be five concrete pours.
- The precast vertical assembly installation will take 15 days.
- No traffic closures on Wealthy St. are currently contemplated. Minor, periodic closures of northbound traffic on Plymouth St. will not exceed a total of appx. one week duration.

Based on this, the amount of construction activity is anticipated to be far less than what was needed for the 2018-2022 work.

Issues related to traffic are discussed in more detail below.

D. *Unless a more specific design standard is required by the city through a different ordinance, all uses and structures subject to site plan review shall comply with the following design standards.*
   1. *Traffic Circulation. The number, location, size of access and entry points, and internal vehicular and pedestrian circulation routes shall be designed to promote safe and efficient access to and from the site, and circulation within the site. In reviewing traffic features, the number, spacing and alignment of existing and proposed access points shall be considered relative to their impact on traffic movement on abutting streets and adjacent properties.*

Staff comments: This standard appears to be met. To analyze potential traffic impacts with this proposed plan, the applicants have submitted a traffic impact study from Fishbeck. The original study was completed in March 2025 and was discussed at the November 2025 Planning Commission meeting. This discussion included possible intersection improvements on Plymouth

[5] The minimum ADA parking requirements for just this parking ramp would be 2% of the overall parking total. With a total of 771 parking spaces proposed, 15 accessible parking spaces would need to be provided. The minimum ADA parking requirements for the entire campus would be 20 spaces, plus 1 for each 100, or fraction thereof, over 1000 spaces. Based on this standard, 34 accessible parking spaces for the entire campus would be required to meet federal guidelines.

and modifying signal timings to reduce traffic delays. Since then, following requests from the Planning Commission to implement the recommended signal timing changes now, Fishbeck updated their traffic study in December 2025 to include the effects of the timing changes. In studying these changes, the updated study concluded that all intersections in the study area now operate at an acceptable Level of Service (D or better) at all study periods and would continue to do so with the proposed parking ramp expansion. This timing change also removed the need to add pushbuttons for pedestrian crossings.

The updated traffic study also analyzed crash and near-miss data. Of the crashes reported since 2020, nearly half involved a vehicle disregarding a red light signal. None of these were deemed to be related to hospital traffic (though the City could perform additional studies to mitigate this concern in the future.) Among the other reported crashes, the study did not identify any significant trends warranting action. With regards to near-misses, none were reported in the vicinity of the hospital.

Beyond this, the overall access to the hospital campus would not be changing with this plan. The traffic study further noted that because the parking ramp expansion is intended to move parking from adjacent streets and off-site facilities to the campus proper, most if not all of the anticipated trips being generated with this plan are already accounted for in the traffic network. Similarly, the proposed plan is not anticipated to generate any significant new traffic as functions of the hospital buildings themselves are not changing. The City also retained Progressive Companies to review this updated traffic analysis and they concurred with these findings. Their review is attached to these materials.

Taken together, these studies conclude that the proposed plan would not result in any traffic deficiencies and that no additional traffic improvements are needed at this time. As was done with the 2020 site plan approval, the City would recommend requiring a post-construction traffic study to confirm no overall negative impacts with this work and to address any level of service deficiencies.

2. *Stormwater. Storm water detention and drainage systems shall be designed so the removal of surface waters will not adversely affect neighboring properties or public storm water drainage systems. Unless impractical, storm water shall be removed from all roofs, canopies and paved areas by underground surface drainage system.*

Staff comments: This standard appears to be met. As part of the 2008 special use and site plan approval in 2008, the hospital was required to install a storm sewer separator to filter stormwater draining to Fisk Lake. This included contributing the lesser of 50% of the construction cost or $150,000 for the design and installation of this mechanism. As the actual footprint of the garage is not changing, there is no additional impervious area created, and thus, no addition stormwater runoff expected. This has been reviewed by engineering consultant Jarid Halverson (memo attached).

3. *Landscaping. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing unnecessary tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas. Provision or preservation of landscaping, buffers or greenbelts may be required to ensure that the proposed uses will be adequately buffered from one another and from surrounding property.*

Staff comments: This standard appears to be met. The existing landscaping is mostly indicated to remain, with only those plant materials directly in the area of construction being removed. Additional landscape screening and retaining walls are proposed around the northwest and southwest corners of the ramp along Plymouth Rd. Renderings indicate the extended retaining

wall will be in the same design style as the existing wall. A new landscaping plan (included in these materials) shows new plantings and landscaping walls would be installed in this location. Plant materials shown here and in the accompanying renderings appear to be at an equal or larger size and screening opacity compared to existing landscaping. It is also noted that the existing landscaping has not yet achieved its final size, with most trees not yet reaching 50% of their mature height. As they continue to grow, the building screening is expected to improve over time.

4. Screening. *Where nonresidential uses abut residential uses, appropriate screening shall be provided to shield residential properties from noise, headlights and glare.*

Staff comments: This standard appears to be met. All walls along each parking level appear to be at least 5' in height, which would be sufficient to block light glare from vehicles. The updated elevations and design drawings show architectural screening elements over the windows to reduce light spillage and glare from the interior garage level on Plymouth and Wealthy. Exhibit 3 shows a rendering of what this might look like. A larger version of this rendering is included in the agenda materials.

Exhibit 3 – Rendering of NW garage corner showing increase architectural screening of interior garage levels.

5. Lighting. *Lighting shall be designed to minimize glare on adjacent properties and public streets. As a condition of site plan approval, reduction of lighting during non-business hours may be required.*

Staff comments: This standard appears to be met. Lighting for the deck would incorporate pole lights atop the upper level and pendant lights on the ceilings of lower levels. In accordance with the building code, one wall mounted light would be provided at the northwest corner of the garage where there is a door access. The provided photometric calculations show no to minimal light spillage at grade level from the proposed lights. To address concerns regarding light glare, Corewell has modified the proposed rooftop lighting to use warmer colored lights (3500K compared to 4000K for interior lights.) This would help reduce impacts from light glare. Exhibit 4 shows a comparison of different color temperatures for reference. Corewell has also planned to add light shields for the rooftop lights which were not present before.

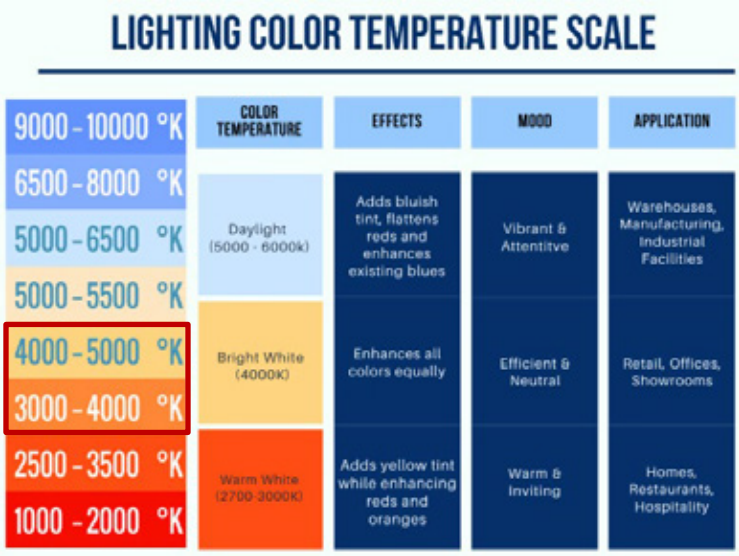


Exhibit 4 – Comparison of direct color temperatures. Corewell is proposing to use 3500K for rooftop lighting and 4000K for interior lighting.

6. *Utility Service. All utility service shall be underground, unless impractical.*

Staff comments: This standard is not applicable. Utility service is not expected to change with this plan.

7. *Exterior Uses. Exposed storage areas, machinery, heating and cooling units, service areas, loading areas, utility buildings and structures, and similar accessory areas shall be located to have a minimum negative effect on adjacent properties, and shall be screened, if reasonably necessary, to ensure compatibility with surrounding properties.*

Staff comments: This standard is not applicable as no such areas are being proposed here.

8. *Emergency Access. All buildings and structures shall be readily accessible to emergency vehicles.*

Staff comments: This standard appears to be met. The City's Public Safety Department has reviewed these plans and determined that proper and adequate emergency vehicle and personnel access would be maintained with this plan. A memo from Public Safety Director Ric Buikema is attached for reference.

9. *Water and Sewer. Water and sewer installations shall comply with all city specifications and requirements.*

Staff comments: This standard is not applicable. Water and sewer service is not expected to change with this plan. This has been reviewed by engineering consultant Jarid Halverson (memo attached).

10. *Signs. Permitted signs shall be located to avoid creating distractions and visual clutter.*

Staff comments: This standard is not applicable. No new signage is proposed at this time.

11. *Building Design. New or substantially remodeled buildings shall be reasonably compatible in appearance with, or shall enhance, the established general character of other buildings in the immediate vicinity.*

Staff comments: This standard appears to be met. The included drawings show that the expanded building would be architecturally similar to the existing garage. The architecture of the raised stairway is currently modeled after the existing hospital and the former Withey Building that was demolished in 2008 at this location. This design would be retained in the current plan.

Recommended Conditions:

The Planning Commission is tasked with determining if the proposed site plan meets all of the standards of review and the materials presented. If the Planning Commission decides to take action on this plan tonight, it may do one of the following:

- Approve the site plan as submitted.
- Approve the site plan with conditions.
- Deny the site plan if applicable requirements and standards have not been met.

If the Planning Commission decides not to take action on this plan at this meeting, they may still make comments and offer feedback on the presented plans. The applicant may make revisions to their plan based on feedback received and present their updated plans at a future public hearing. A standard of review worksheet has been provided to the Planning Commission to assist in the review process.

If the Planning Commission does elect to approve this site plan, City staff recommends that the following conditions be attached.

1. Off-site leased parking spaces for employees shall be maintained until or unless Corewell Health submits a parking study showing that the need for such spaces is no longer necessary. The Director of Public Works, upon consultation with staff and City consultants, shall verify any such request.
2. Corewell Health shall coordinate with The Rapid and the City to construct two covered bus shelters near the Wealthy St. entrance. Corewell Health shall cover the cost of such improvements
3. All visible bare concrete shall be stained to match existing brick to the extent possible.
4. If desired, authorize City Staff and the City Attorney to execute an agreement or deed restriction with Corewell Health that the site plan area for "Ramp 2" will not be subject to height variance requests with the Zoning Board of Appeals until or unless the City amends the zoning ordinance as it pertains to the Blodgett Hospital campus.
5. The following conditions from the 2020 site plan approval are also recommended:
    - Construction shall be limited to 7am-6pm on weekdays, and Saturdays as needed;
    - Construction traffic shall be restricted to designated major streets (Wealthy Street, Plymouth Road, and Lake Drive);
    - Require the applicant to provide the name and contact information of an individual to whom complaints can be directed during construction;
    - Construction workers shall be required to park on campus and/or shuttled into the campus. No adjacent neighborhood parking shall be used by construction workers;
    - Corewell Health will submit post-construction verification 6 months after occupancy regarding the resulting traffic impact relative to the Traffic Impact Study findings and operation at or above Level Of Service D under all conditions. If the Level of Service (LOS) for any intersection is below an LOS D, Corewell Health will remedy the situation, with approval from the City, to bring the LOS back to a D or better at Corewell's expense; and
    - Parking spaces on the campus shall be used for staff, patients, and visitors on this campus only. Spaces are not to be leased, sold, or used commercially for non-campus uses without prior City approval.

APPENDIX

GOOGLE STREETVIEW IMAGES OF PARKING RAMP SITE FROM PLYMOUTH RD.

October 2007

June 2011

October 2016

October 2020

June 2021

October 2022

August 2025

Views Southeast-Wealthy Street/Plymouth Road

Current 2025

Proposed 2026

2007-surface lot and four-story Withey Building

2011

2016

2018

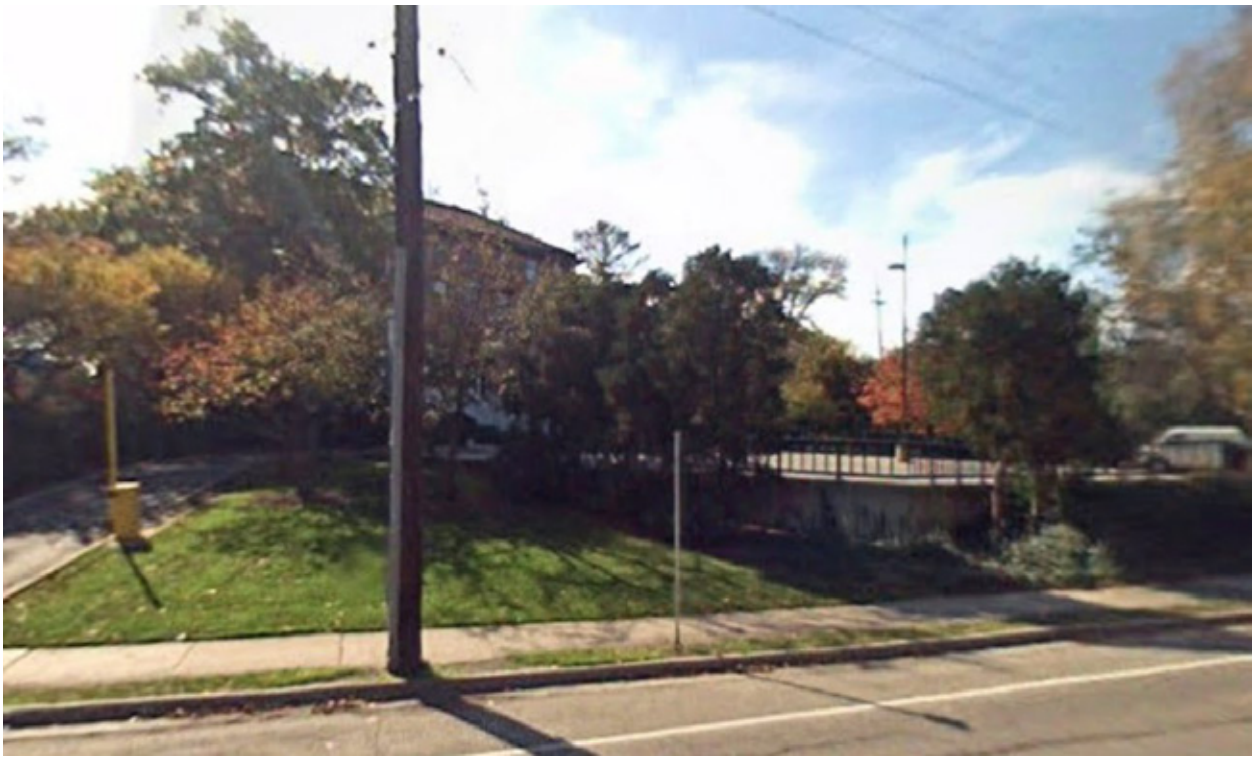
2022

2025

Views Southwest-Wealthy Street

Current 2025

Proposed 2026

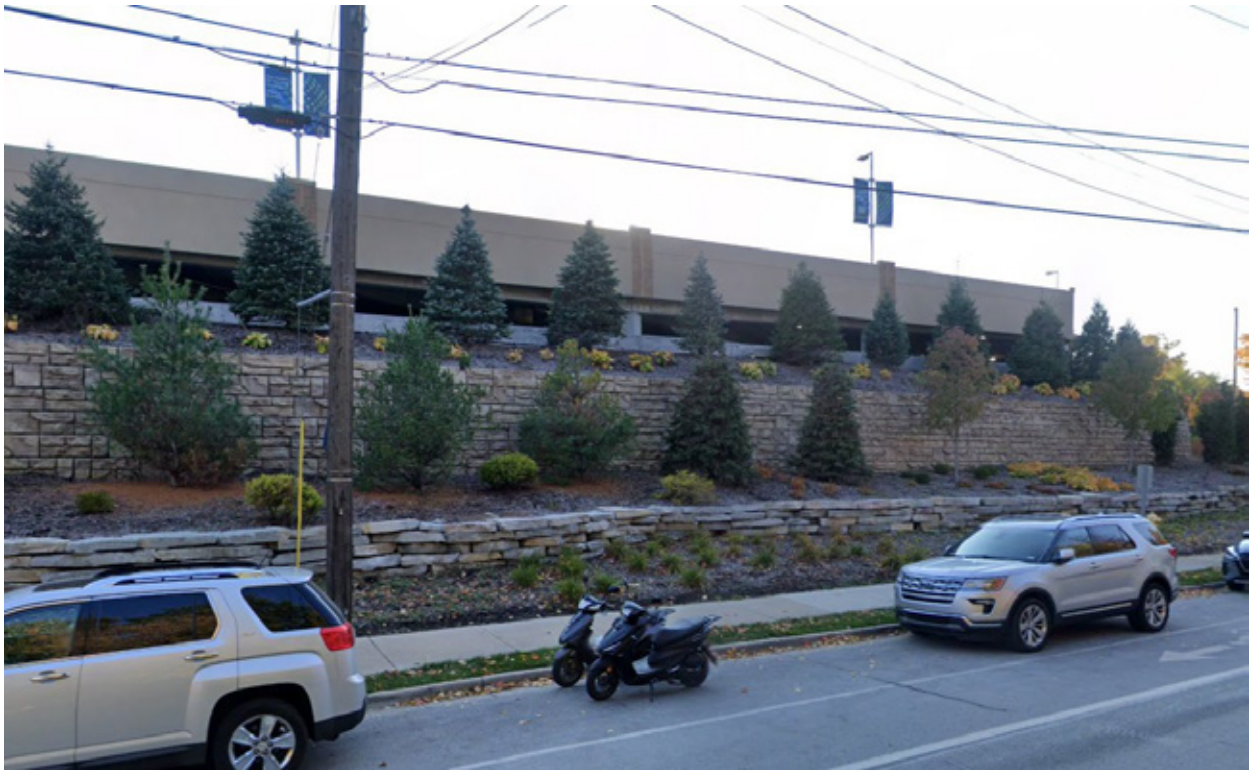


2007

2011

2016

2018



2022

2025

Views Northeast-Plymouth Road

Current 2025

Proposed 2026

2007

2011

2016

2018

2022

2025

CITY OF EAST GRAND RAPIDS

750 LAKESIDE DRIVE SE • EAST GRAND RAPIDS, MICHIGAN 49506

Zoning Review Application

Project Name: Ramp 2 Vertical Expansion

Property Address: 1840 Wealthy St SE

Permanent Parcel No.: 41-14-33-127-014

Zoning District: R-1 Single Family Residential

Current Property Use: Hospital

	Type of Request (Check)	Fee
	Site Plan Review (Sketch Plan)	$200
X	Site Plan Review (Complete)	$500
	Amendment or Rezoning Application	$800
	Special Use Permit	$500
	Planned Unit Development	$1,000

Escrow fees are also required.

($1,000 initial deposit.)

Project Description: Vertical Expansion of parking ramp 2 at the Corewell Health Blodgett campus. Project will also include grade change at northwest corner of the parking ramp along Plymouth Ave SE. See provided documentation for further detail.

(Attach separate sheet if necessary.)

Contact Information (Please provide email addresses.)

	Company	Address	Contact Person	Daytime Phone
Applicant	N/A - Refer to Owner			
Owner	Corewell Health	100 Corewell Dr Grand Rapids, MI 49503	Rodney VanderZand	616.450.2299
Developer	N/A - Refer to Owner			
Designer	Fishbeck	1515 Arboretum Drive, SE Grand Rapids, MI 49546	Greg Ehmke	269.350.3910

See the back of this form for items that must be attached to this application at the time of submission.

Property Owner Signature

N/A - Refer to Owner

Applicant Signature (if different)

09/11/2025

Date

N/A - Refer to Owner

Date

Submittal Requirements for Site Plan Review (Article 10)

Each sketch plan or site plan shall contain the following information, as applicable, unless waived by the Director of Public Works as unnecessary or not applicable to the proposed project. Incomplete plans will be returned to the applicant without further processing:

Required Information	Sketch Plan	Site Plan
General Information		
Date, north arrow, and scale	X	X
Name and firm address of the professional individual responsible for preparing site plan	X	X
Name and address of the property owner or petitioner	X	X
Location sketch showing site, adjacent streets and properties within 500 feet	X	X
Legal description of the subject property		X
Size of subject property in acres (square feet, if less than one acre)	X	X
Boundary survey		X
Preparer's professional seal		X
Existing Conditions		
Existing zoning classification of subject property	X	X
Property lines and required setbacks (dimensioned)	X	X
Location, width and purpose of all existing easements	X	X
Location and dimension of all existing structures on the subject property	X	X
Location of all existing driveways, parking areas and total number of existing parking spaces on subject property	X	X
Abutting street right-of-way width		X
Location of all existing structures, driveways, and parking areas within 300 feet of the subject property's boundary		X
Existing water bodies (lakes, rivers, creeks, wetlands, etc.)	X	X
Existing landscaping and vegetation on the subject property	X	X
Size and location of existing utilities		X
Location of all existing surface water drainage facilities		X
Proposed Development		
Location and dimensions of all proposed buildings	X	X
Driveways, interior streets and parking areas (including number of parking spaces required and proposed)	X	
Location of all proposed drives (including dimensions and radii), acceleration/deceleration lanes, sidewalks, walls, fences, signs (location, number and size), exterior lighting (location and type of fixture), curbing, parking areas (including dimensions of a typical parking space and the total number of spaces required and to be provided), and unloading areas		X
Recreation areas, common use areas, dedicated open space and areas to be conveyed for public use		X
Flood plain areas and basement and finished floor elevations of all Buildings		X
Landscape plan (showing location of proposed materials, size and type)		X
Layout and typical dimensions of proposed parcels and lots		X
Number of proposed dwelling units (by type), including typical floor plans for each type of unit		X
Number and location (by code, if necessary) of efficiency and one or more bedroom units		X
All deed restrictions or covenants		X
Brief narrative description of the project including proposed use, existing floor area (square feet), size of proposed expansion (square feet), and any change in the number of parking spaces	X	X
Engineering		
Proposed method of handling sanitary sewage and providing potable water	X	
Location and size of proposed utilities, including connections to public sewer and water supply systems		X
Location and spacing of fire hydrants		X
Location and type of all proposed surface water drainage facilities		X
Grading plan at no more than five foot contour intervals		X
Proposed streets (including pavement width, materials, and easement or right-of-way dimensions)		X
Building Details		
Description of building materials	X	X
Typical elevation views of all sides of each building type		X
Gross and net floor area		X
Elevation views of building additions	X	X
Building height	X	X
Additional Information		
Any other information required by the Director of Public Works, Planning Commission or City Commission to demonstrate compliance with other applicable provisions of this ordinance	X	X

This list is provided as a summary of ordinance requirements, and additional information may be required in some cases. Please see the appropriate section of the City's zoning ordinance for complete details of all the above.

Other Submittal Requirements:

- Amendments or Rezoning – Article 13
- Special Use Permit – Article 11
- Planned Unit Development – Article 6

Rev. 2/23/17

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4775 Campus Drive
Kalamazoo, Michigan 49008

269.375.3824 | fishbeck.com

September 12, 2025
Project No. 241354

Rodney VanderZand, RA, LEED AP
Director; Planning, Design, and Construction
Corewell Health
648 Monroe Avenue NW
Grand Rapids, MI 49503

Corewell Blodgett Ramp 2 Vertical Expansion
Project Introduction and Summary

This letter provides a project summary and overview for the Ramp 2 vertical expansion project. Parking facilities on Corewell's Blodgett campus in East Grand Rapids, Michigan include a combination of surface parking lots (281-spaces) and two parking structures (921-spaces) for use by team members and hospital visitors. The southernmost parking structure is designated Parking Ramp 1, and the northernmost parking structure is designated Parking Ramp 2. Due to high demand, the parking facilities are regularly at or near full capacity, and there is a desire to provide additional parking supply to meet the high demand. The primary goal of this project is to provide additional parking supply by vertically expanding Parking Ramp 2 by one level.

Overview

Parking Ramp 2, constructed in 2018, was designed with capacity for future vertical expansion for parking or other use. Parking Ramp 2 currently contains 564-spaces, and the proposed one level vertical expansion will provide a net gain of 207-spaces for a proposed quantity of 771-spaces total.

The existing structure has a footprint area of 71,200 sf/level with parking on levels designated as Levels A, 1, and 2. Levels A and 1 are enclosed and below grade with the vehicular entry/exit from site grade to the south end of Level 2. The vertical expansion will provide one full floor plate above Level 2 and be designated Level 3.

Building Façade

The exterior architecture of the expansion is designed to be in compliance with City ordinances, including building height, and match the visible elements of the existing structure. The northwest stair and southeast stair/elevator are both proposed to be vertically expanded to serve the main structure, including an additional stop for each of the two elevators in the southeast stair/elevator.

The typical perimeter of the new Level 3 will be faced with architectural precast concrete spandrels matching those present at existing Level 2. The features of the spandrels include:

- Integrally colored precast concrete.
- Horizontal reveals.
- Cast-in thin brick at columns, including separate column covers.
- Column cap pieces.

Spandrel panels will be provided on all building elevations, including the east elevation that does not have them at the existing Level 2.

Perforated metal screens consistent with the existing ones will be mounted to galvanized steel frames to partially infill the openings between the spandrels.

Construction Activities

The planned vertical expansion is expected to be less impactful than the original construction project, which included full construction of both Ramp 1 and Ramp 2 over multiple construction seasons.

1. Duration – The current project is anticipated to take place over one construction season (approximately 7-months) during 2026.
2. Extents – The vertical expansion is entirely within the footprint of the existing structure. The project is not increasing the amount of impervious area on the site.
3. Site Work – Only minor site work and improvements are planned at the west face near the northwest corner (at Plymouth and Wealthy). The proposed scope includes extending an existing retaining wall, backfilling and raising the grade behind the new wall, and replacing landscaping. The purpose of this work is to visually screen the portion of exposed gray concrete foundation wall adjacent to the stair tower.
4. Where any existing landscaping is disturbed as necessary for new construction activities, it will be fully restored. This is envisioned to occur at crane staging locations in turf areas with no tree removals being required.
5. Noise and Vibration – The project does not include any mass excavation or foundation construction. Since the project is vertically expanding the existing structure, no driven or drilled foundations are required.
6. Selective Demolition – Selective demolition will be required at the stair/elevator towers and at the tops of existing concrete stub columns to accommodate the vertical expansion.
7. Concrete Pours:
    a. The proposed expansion is designed to only require five primary concrete pours.
    b. For comparison, the existing structure required 13 large concrete pours for its superstructure. In addition, the existing structure required multiple concrete pours for foundations, perimeter retaining walls, and slab-on-grade, none of which will be required for the vertical expansion.
    c. Each concrete pour is planned to occur during one workday and within allowable working hours. There will be other minor concrete pours at various times for elements such as columns and stair/elevator tower elements.
8. Site Logistics and Lane Closures:
    a. Traffic disruption will be minimized with the vast majority of construction staging and material deliveries occurring on Corewell property.
    b. Two-way Wealthy Street traffic will be maintained at all times. There are no planned interruptions to Wealthy Street traffic.
    c. On Plymouth Street, periodic temporary closure of northbound traffic is anticipated, totaling up to approximately one week. This is required to accommodate the delivery trucks carrying precast concrete façade panels.

Traffic Impact Study

Fishbeck performed a traffic impact study evaluating the effects of the new development on the nearby streets and intersections. The Traffic Impact Study is being provided in its entirety as a separate document. The following is a high-level summary of the study and its findings.

The overall approach to the traffic study was to first model current conditions, then future conditions without the new development reflective of background growth, then future conditions with the new development. The current conditions model allows validation of existing conditions with recent data collection and observations. The future build and no-build conditions analyzes how the new development affects the anticipated traffic.

The study included the following intersections:

- Plymouth Avenue and Wealthy Street
- Plymouth Avenue and North Driveway (which captures traffic exiting from Ramp 2)
- Plymouth Avenue and Middle Driveway (which captures traffic entering Ramp 2)
- Plymouth Avenue and South Driveway (which is associated with Ramp 1)
- Plymouth Avenue and Lake Drive
- Wealthy Street and East Driveway (the east vehicular access to the medical campus)

The primary finding of the traffic impact study is the proposed development will not result in any significant operational impacts to the adjacent road network with the proposed improvements. The proposed site access configuration is appropriate and will acceptably facilitate site ingress and egress.

In all cases considered (existing, background, and future conditions), the delay and queueing issues identified at Plymouth Avenue and Lake Drive can be addressed by adjusting signal timing splits. And, additionally, installing pedestrian push buttons at the same intersection to allow the pedestrian phases and leading pedestrian intervals (LPIs) to only activate when called.

Fishbeck's scope of work also includes collecting field data approximately six months after the new addition opens for service. The purpose of the follow-up data collection is to evaluate actual in-service conditions at the study intersections during peak hour traffic volumes and document differences, if any, from the projected levels of service in the current study.

Closing

If you have any questions or require additional information, please contact me at 269.350.3910 or gehmke@fishbeck.com.

Sincerely,

F. Greg Ehmke, PE
Project Manager – Parking and Restoration

By email
Copy: Corewell – Brad Pries, Rodney VanderZand
Fishbeck – Kegan Gibson

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Engineers | Architects | Scientists | Constructors

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Kalamazoo, Michigan 49008

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January 6, 2026
Project No. 241354

Rodney VanderZand, RA, LEED AP
Director; Planning, Design, and Construction
Corewell Health West
648 Monroe Avenue NW
Grand Rapids, MI 49503

Corewell Blodgett Ramp 2 Vertical Expansion
Site Plan Review Project Update

This letter provides a summary of updates on the Corewell Blodgett Ramp 2 Vertical Expansion project. The primary goal of this project is to provide additional hospital campus parking supply by vertically expanding Parking Ramp 2 by one level. The project was previously presented to the Planning Commission on November 12, 2025. During that meeting, which ended with no final action, there were several comments and concerns expressed. The design team has implemented design changes and performed additional analysis on the specific items described below.

Building Façade

There was concurrence from City of East Grand Rapids (City) staff that the building height is in compliance with City ordinances.

As originally presented the typical perimeter of the new Level 3 would be faced with architectural precast concrete spandrels matching those present at existing Level 2. Also, architectural metal mesh screens consistent with the existing ones were to be mounted to galvanized steel frames to partially infill the openings between the spandrels.

Comments were mixed with respect to the exterior architecture. On the one hand there was praise for the appearance of the existing structure, which is consistent with Ramp 1 (the south ramp), which also has Plymouth Avenue frontage. There were concerns with the headlight spill-out and the amount of unadorned precast concrete panel faces.

The design in its current iteration retains the precast spandrels for consistency with Ramp 1 and the existing levels of Ramp 2. The previous architectural metal mesh screens have been eliminated, and additional headlight screening and façade elements have been incorporated into the design, both at the southwest corner and along the typical façade.

The new elements contain horizontal slats visibly blocking the openings above and below the spandrels to minimize headlight and interior lighting spill-out. The connection and detailing of the new façade elements preserves natural ventilation and airflow where required.

The renderings have also been updated to show exposed gray foundation walls receiving a textured elastomeric coating to be color matched to the precast spandrels. The specific locations to be included in the coating extents are the west façade immediately south of the northwest stair tower and the east façade where the wall is visible from Wealthy Street (approximately two column bays).

Exterior Lighting

As originally presented, the existing pole-mounted roof light fixtures were to be removed, salvaged, and reinstalled at the new roof level. There were comments at the November Planning Commission meeting regarding the color temperature of the lighting possibly being too cold as well as light spill-out being undesirable.

The design team evaluated the color temperature and consulted with Corewell's Security staff. Providing neutral white light is important for security to be able to identify facial features and details, which becomes more difficult with warmer lighting. The existing fixtures and campus standard is 4,000-Kelvin, but it would be acceptable to provide new roof level fixtures at 3,500-Kelvin, which is a warmer color temperature.

The current design includes salvaging the existing, roof mounted light poles, but then retrofitting them with new, 3,500-Kelvin fixtures and adding cutoff shields, which the existing fixtures do not have.

The covered levels will still have new 4,000-Kelvin fixtures provided for consistency with the existing covered level fixtures and to simplify maintenance by having a singular fixture type for covered levels. The transition from cold to warm color saturation would be visible, noticeable, and undesirable for users traversing from one covered level to the next. The architectural façade modifications are intended to mitigate light spill-out concerns from the covered levels. Therefore, considering what is visible at the exterior, the importance of the color temperature of fixtures on the covered levels is less than that of the new roof level.

Landscaping Study and Enhancements

Although not explicitly discussed in detail at the November Planning Commission meeting the amount of visual screening the landscaping provides to the structure is significant and will increase over time as the existing plants continue to grow. The Landscape Architect performed field verification of the existing trees and prepared an Exhibit A documenting the current and future tree heights and extents. In general, the existing trees are approximately a third to a half the size of their anticipated final sizes. Many larger trees are present on site that were existing before the construction of the parking deck as well as well contributing to the overall screening.

Referring to the Landscaping Plan, enhancements are also proposed at the northwest and southwest corners of the structure, which are visible from Plymouth Street. At the northwest corner, the existing retaining walls are being reconfigured cover more of the exposed foundation wall (which is being coated with elastomeric coating). Select landscaping is being removed and replaced to infill between existing landscape elements and enhance the visual screening. Similarly, the southwest corner will receive additional evergreen plantings which will screen this corner. Existing plant selections were replaced with taller varieties to provide the desired future screening. New planting species have been selected to match existing species and for design consistency. Plants were also selected with an emphasis on native varieties as well as more waterwise and low maintenance plant choices for greater sustainability.

Exhibit B includes elevation views showing approximate current growth heights. Future, ultimate growth heights may approach trees growing to approximately twice as large as shown.

Additional Traffic Impact and Pedestrian Study

Fishbeck performed additional traffic analysis based on comments received at the November Planning Commission meeting. The analysis included collecting new traffic vehicular and pedestrian volume data, reanalyzing the existing and proposed conditions with the parking expansion, safety analysis, and providing additional information related to traffic volumes in the area. The results of the traffic analysis revealed that no improvements are necessary to the study intersections to mitigate traffic impacts related to the vertical expansion of the north parking structure. This conclusion is supported by the following findings.

- Every movement, approach, and intersection within the study network operates at an acceptable Level of Service (LOS) D or better in all analysis periods, with and without the proposed expansion.
- The addition of push buttons at the intersection of Plymouth Avenue and Lake Drive is not necessary as recent adjustments to the traffic signal timings result in acceptable LOS D for all movements and approaches. The vehicular LOS is acceptable with the leading pedestrian intervals being active during each signal cycle; therefore, the push buttons are not necessary.
- The vehicles that will utilize the expanded parking structure are already in the adjacent roadway network, utilizing an off-site parking lot or on-street parking.
- The review of existing crash data indicated that the clearance intervals, corridor progression, and flash schedules at the signalized intersections could be reviewed to reduce the number of red-light running crashes.

Fishbeck's scope of work also includes collecting field data approximately six months after the new addition opens for service. The purpose of the follow-up data collection is to evaluate actual in-service conditions at the study intersections during peak hour traffic volumes and document differences, if any, from the projected levels of service in the current study.

Closing

If you have any questions or require additional information, please contact me at 269.350.3910 or gehmke@fishbeck.com.

Sincerely,

F. Greg Ehmke, PE
Project Manager – Parking and Restoration

By email
Copy: Corewell Health – Brad Pries
Fishbeck – Kegan Gibson, Kyle Reidsma, Rachel Lodes

Corewell Health

Ramp 2 Vertical Expansion

East Grand Rapids, Michigan

Issued for Site Plan Review 09/12/2025

Project Number: 241354

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800.456.3824

4775 Campus Drive
Kalamazoo, Michigan

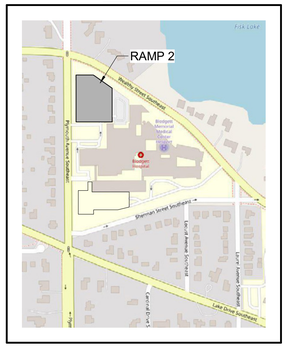
BUILDING CODE INFORMATION

THE DRAWINGS HAVE BEEN PREPARED IN ACCORDANCE WITH THE FOLLOWING CODES. NOTIFY THE ARCHITECT OF ANY CONFLICTS.

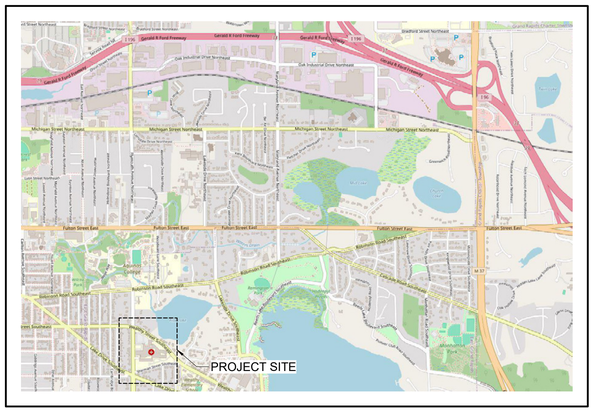
20__ MICHIGAN BUILDING CODE (MBC)
20__ MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS (MRCEB)
20__ MICHIGAN MECHANICAL CODE (MMC)
20__ MICHIGAN PLUMBING CODE (MPC)
20__ NATIONAL ELECTRIC CODE (NEC) (AS AMENDED - MICHIGAN AMENDMENTS PART 8 RULES)
20__ INTERNATIONAL FIRE CODE
20__ ACCESSIBILITY AND USABLE BUILDINGS AND FACILITIES ICC A117.1-2009 PER 2015 MBC
20__ INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)
20__ MICHIGAN ENERGY CODE

NEW COMMERCIAL CONSTRUCTION SHALL COMPLY WITH CHAPTER 4 OF THE MEC WHICH DIRECTLY REFERENCES THE 2013 ASHRAE 90.1 STANDARD. *"COMMERCIAL BUILDINGS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/ASHRAE/IESNA 90.1-2013"*

PROJECT SITE



LOCATION PLAN



GRAPHIC SYMBOLS

ELEVATION, SECTION, ENLARGED PLAN, AND DETAIL DESIGNATION
ALT TEXT
1 View Name
SCALE: 1/8" = 1'-0"

PLAN DESIGNATION
ALT TEXT
PLAN
SCALE: 1/8" = 1'-0"
NORTH

NORTH ARROW DESIGNATIONS
TRUE NORTH
NORTH
NORTH

EXTERIOR ELEVATION TAG
3 XXXX

INTERIOR ELEVATION / PHOTO TAG
A
C XXXX D
B

ENLARGED DETAIL FRAME
1 A201

SECTION CUT LINE
1 A501

LEVEL CALLOUT — LEVEL ONE 0'-0"
ELEVATION TARGET
SPOT ELEVATION — EL. 100'-0"

UP — RAMP HINGE LINE - **UP** INDICATES THE SURFACE SLOPES UP. **DN** INDICATES THE SURFACE SLOPES DOWN.

NEW GRID SYMBOL 1
EXISTING GRID SYMBOL 1
FUTURE GRID SYMBOL 1
PLAN MATCH LINE (RAMP)

BULLETIN IDENTIFICATION B1
ADDENDUM IDENTIFICATION A1
REVISION CLOUD
KEY NOTE TAG 1
DEMOLITION NOTE TAG 1

SHEET INDEX

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Engineers | Architects | Scientists | Constructors

Corewell Health
East Grand Rapids, Michigan
Ramp 2 Vertical Expansion

REVISIONS

NOT FOR CONSTRUCTION

09/12/2025 SITE PLAN REVIEW

Drawn By RMULVANEY
Designer EFIELD - RMULVANEY
Reviewer JROZEBOOM
Manager GEHMKE

Hard copy is intended to be 30"x42" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.
241354

SHEET NO.
G001

Autodesk Docs://241354/2024_PK_241354.rvt
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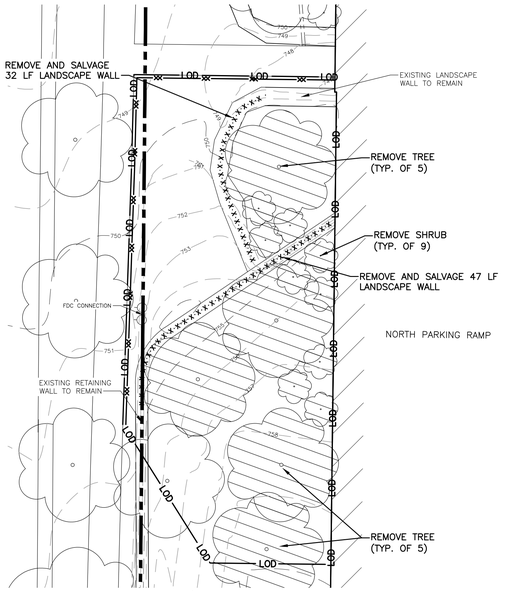
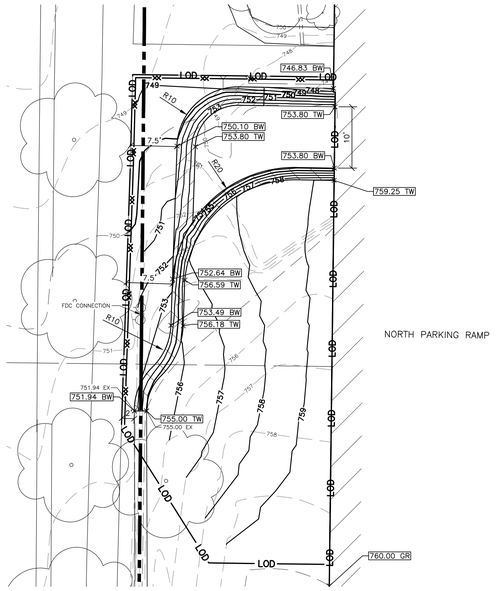


DEMOLITION ENLARGEMENT

SCALE: 1" = 10'

NORTH 0 5 10 20



GRADING ENLARGEMENT

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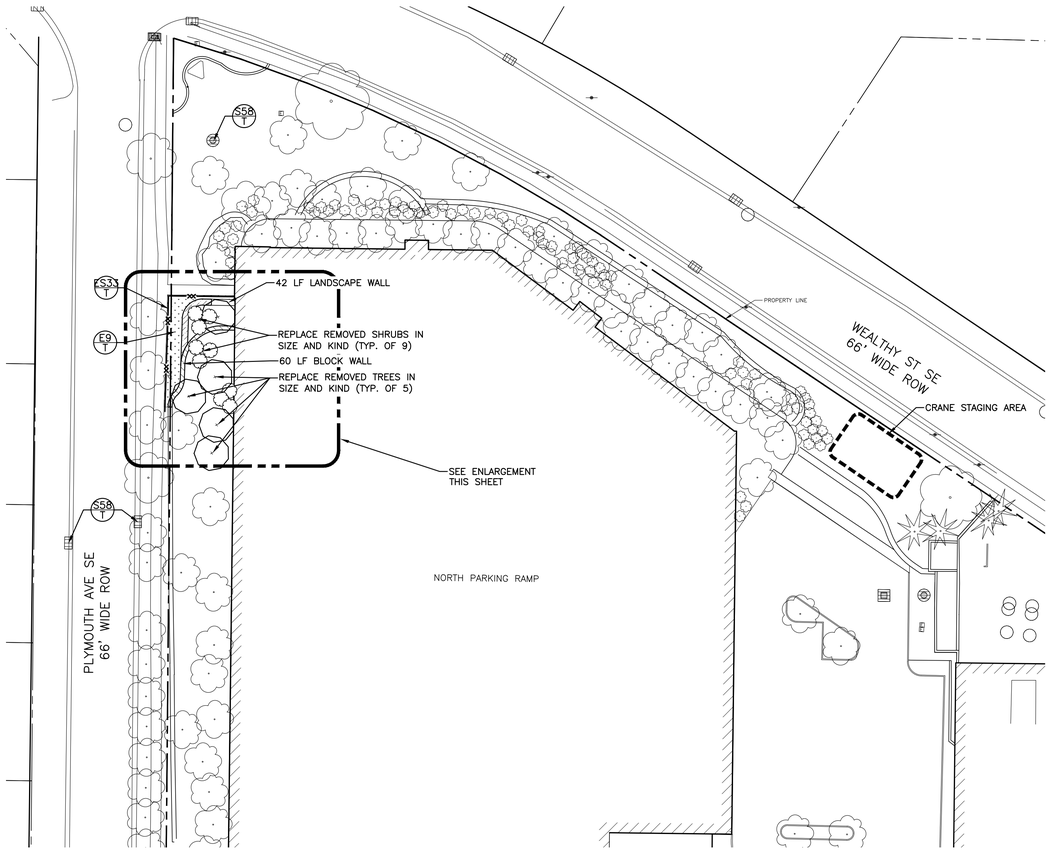
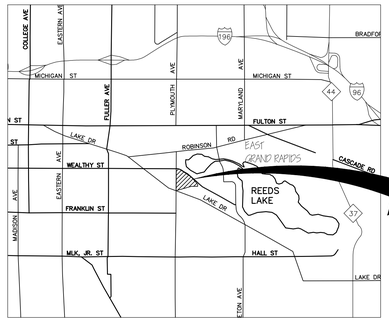


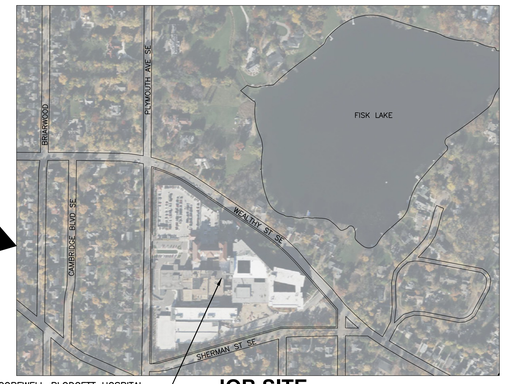
SITE LAYOUT PLAN

SCALE: 1" = 30'

NORTH 0 15 30 60



PROJECT LOCATION



COREWELL BLODGETT HOSPITAL
1840 WEALTHY ST SE
PPN: 41-14-33-127-014
R-1 SINGLE FAMILY RESIDENTIAL

JOB SITE

LEGAL DESCRIPTION

PART OF THE EAST 1/2 OF THE NORTHWEST QUARTER AND PART OF THE EICHELSDOERFER SUBDIVISION DESCRIBED AS FOLLOWS: COMMENCING AT THE INTERSECTION OF THE EAST LINE OF PLYMOUTH AVENUE (66 FOOT RIGHT OF WAY) AND THE SOUTH LINE OF WEALTHY STREET (66 FOOT RIGHT OF WAY), THENCE SOUTHEASTERLY ALONG THE SOUTHERLY LINE OF SAID WEALTHY STREET TO THE EAST LINE OF LAUREL AVENUE, THENCE SOUTH ALONG SAID EAST LINE TO THE NORTHWEST CORNER OF SHERMAN STREET AND LAUREL AVENUE, THENCE SOUTHWESTERLY ALONG THE NORTH LINE OF SHERMAN STREET TO THE EAST LINE OF PLYMOUTH AVENUE, THENCE NORTH ALONG THE EAST LINE OF SAID AVENUE TO THE POINT OF BEGINNING.
LOCATED IN SECTION 33, TOWNSHIP 7 NORTH, RANGE 11 WEST.
TOTAL AREA: 16.05 ACRES.
PROPERTY WAS SPLIT/COMBINED ON JUNE 9, 2021, FROM PARCEL NUMBERS:
- 41-14-33-127-013
- 41-14-33-127-012
- 41-14-33-127-010
- 41-14-33-127-008

GRADING NOTES

1. FINISH GRADE OF SOIL EDGES ALONG PAVEMENT TO MATCH EDGE OF PAVEMENT.
2. STRIP AND STOCKPILE TOPSOIL FROM GRADING AREAS. USE STOCKPILED TOPSOIL AND IMPORTED TOPSOIL AS NECESSARY FOR SURFACE RESTORATION.
3. GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENT OF TOPSOIL.
4. ADA PARKING AREAS NOT TO EXCEED 2.0% SLOPE IN ALL DIRECTIONS.
5. GRADE AREAS AT SITE PERIMETER TO MATCH GRADES OF ADJACENT PARCELS.
6. REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.
7. PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS.

SYMBOL LEGEND

	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	LANDSCAPE WALL
	BLOCK RETAINING WALL
	WALL REMOVAL
	SILT LOG
LOD	LIMITS OF DISTURBANCE
	TREE REMOVAL
725	EXISTING MAJOR CONTOUR
724	EXISTING MINOR CONTOUR
725	PROPOSED MAJOR CONTOUR
724	PROPOSED MINOR CONTOUR
(L)	LANDING (2% MAX. SLOPE ALL DIRECTIONS)
(R)	RAMP
724.50 XX	SPOT ELEVATION
BW	BOTTOM OF WALL
EW	EDGE OF WALK
FF	FINISH FLOOR
GP	GUTTER PAN
GR	GRADE ELEVATION
HP	HIGH POINT
LP	LOW POINT
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL
(L)	LANDING (2% MAX. SLOPE ALL DIRECTIONS)
(R)	RAMP (8.33% MAX. RUNNING SLOPE)
6	PARKING SPACE COUNT
	SITE LIGHT POLE

LAYOUT NOTES

1. DIMENSIONS ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING, AND EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. KEEP THE APPROVED AND/OR MOST CURRENT SET OF PROJECT DRAWINGS ON SITE AT ALL TIMES. CONTRACTOR TO CONFIRM THEY ARE IN POSSESSION OF THE MOST CURRENT DRAWING FILES.
3. LIMITS OF DISTURBANCE AREA: 2,550 SFT
4. NEAREST BODY OF WATER: FISK LAKE
   - DISTANCE FROM EARTHWORK: 598'
   - DISTANCE FROM CONCRETE WORK: 355'

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on the web at: www.missdig.org

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Corewell Health
1840 Wealthy St SE, East Grand Rapids, Michigan
Ramp 2 Vertical Expansion

REVISIONS

NOT FOR CONSTRUCTION

09/12/2025 SITE PLAN REVIEW

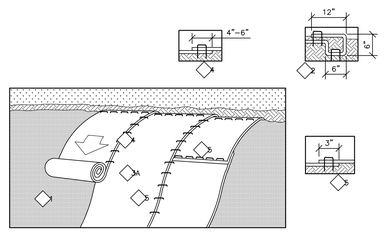
Drawn By	KGIBSON
Designer	KGIBSON
Reviewer	
Manager	GEHMKE

Hard copy is intended to be 30"x42" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.
241354

SHEET NO.
C201

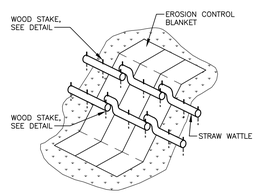
PLOT INFO: Z:\2020\241354\CAD\SD\C201_241354.DWG LAYOUT: C201 DATE: 9/11/2025 TIME: 9:29:48 AM USER: RMULVANEY



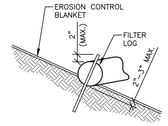
NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP x 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACK FILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS DOWN LONGER SLOPES. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS IN ACCORDANCE MANUFACTURES RECOMMENDATIONS.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 4"–6" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAY. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. PLACE STAPLES OR WOODEN STAKES IN ACCORDANCE MANUFACTURE RECOMMENDATIONS FOR THE APPROPRIATE SLOPE BEING APPLIED.
7. USE ONLY WOODEN STAKES IF SLOPE WILL BE MOWED BY OWNER AFTER PROJECT COMPLETION.

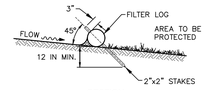
E9 MULCH BLANKET (EROSION PROTECTION) (SLOPE INSTALLATION)
NO SCALE SE-010



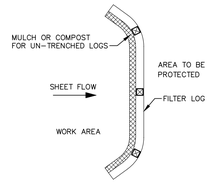
SLOPE DETAIL



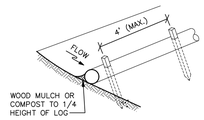
TRENCH INSTALLATION



SECTION



PLAN



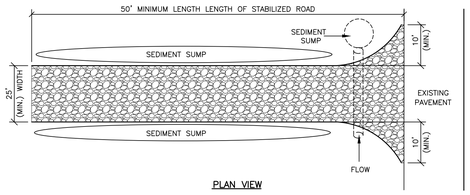
ISOMETRIC VIEW

NOTES:

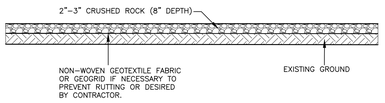
1. CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG PRIOR TO INSTALLATION.
2. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
3. HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG TO PREVENT WATER FROM GOING UNDER FILTER LOG FOR UN-TRENCHED INSTALLATION.
4. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 2 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
5. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
6. OVERLAP ENDS 12 INCHES MINIMUM AND STAKE WHEN MORE THAN ONE LOG IS NEEDED.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF 3/4 THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT.

ES33 FILTER LOG DETAIL
NO SCALE SE-021

DIVERSION RIDGE CROSS-SECTION



PLAN VIEW

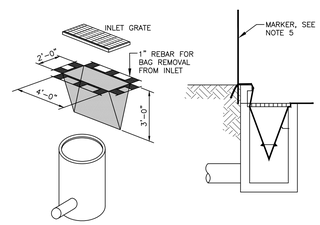


PROFILE

NOTES:

1. ESTABLISH STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INITIATION OF SITE CONSTRUCTION ACTIVITIES IN LOCATION SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. REMOVE ALL VEGETATION, TOPSOIL, AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA.
3. GRADE FOUNDATION AND CROWN FOR POSITIVE DRAINAGE AWAY FROM PUBLIC ROAD IF POSSIBLE. IF THE SLOPE OF THE CONSTRUCTION ENTRANCE IS TOWARD A PUBLIC ROAD AND EXCEEDS TWO PERCENT, CONSTRUCT AN EIGHT INCH HIGH DIVERSION RIDGE WITH A RATIO OF 3-TO-1 SIDE SLOPES ACROSS THE FOUNDATION AREA ABOUT 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE ROAD.
4. INSTALL A CULVERT PIPE UNDER THE PAD IF NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.
5. PLACE AGGREGATE TO THE DIMENSIONS AND GRADE SHOWN IN THE CONSTRUCTION PLANS, LEAVING THE SURFACE SMOOTH AND SLOPED FOR DRAINAGE.
6. DIVERT ALL STORM WATER RUNOFF AND DRAINAGE FROM THE INGRESS,/EGRESS PAD TO A SEDIMENT TRAP OR BASIN.
7. INSPECT DAILY.
8. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
9. TOP DRESS WITH CLEAN AGGREGATE AS NEEDED.
10. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS.
11. FLUSHING SHOULD ONLY BE USED IF THE WATER CAN BE CONVEYED INTO A SEDIMENT TRAP OR BASIN.

S53 STABILIZED CONSTRUCTION ACCESS
NO SCALE SE-057



ISOMETRIC VIEW

INSTALLATION DETAIL

NOTES:

1. PLACE FILTER FABRIC BAG INSIDE THE INLET BENEATH THE GRATE.
2. REPLACE GRATE, WHICH WILL HOLD BAG IN PLACE.
3. ANCHOR FILTER BAG SO IT WILL NOT DROP INTO CATCH BASIN.
4. EXTEND FLAPS OF BAG BEYOND THE BAG. BURY IN SOIL IN EARTH AREAS.
5. IF CATCH BASIN IS IN A LOW DEPRESSION – MARK CB LOCATION WITH A MARKER TO ASSIST LOCATING CATCH BASIN IF FLOODING OCCURS.
6. INSPECT DROP INLET FILTERS ROUTINELY AND AFTER EACH RAIN EVENT.
7. REPLACE DAMAGED FILTER BAGS IMMEDIATELY.
8. CLEAN AND/OR REPLACE FILTER BAG WHEN 1/2 FULL. REPLACE CLOGGED FABRIC IMMEDIATELY.
9. VACUUM OUT CATCH BASIN SUMP IF FILTER BAG TEARS.
10. REMOVE ENTIRE PROTECTIVE MECHANISM WHEN UP GRADIENT AREAS ARE STABILIZED AND STREETS HAVE BEEN SWEPT AND/OR DIRECTLY DETECTED BY ENGINEER/OWNER.

S58 INLET PROTECTION – FABRIC DROP
NO SCALE SE-056

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Corewell Health

1840 Wealthy St SE, East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

NOT FOR CONSTRUCTION

09/12/2025 SITE PLAN REVIEW

Drawn By	KGIBSON
Designer	KGIBSON
Reviewer	
Manager	GEHMKE

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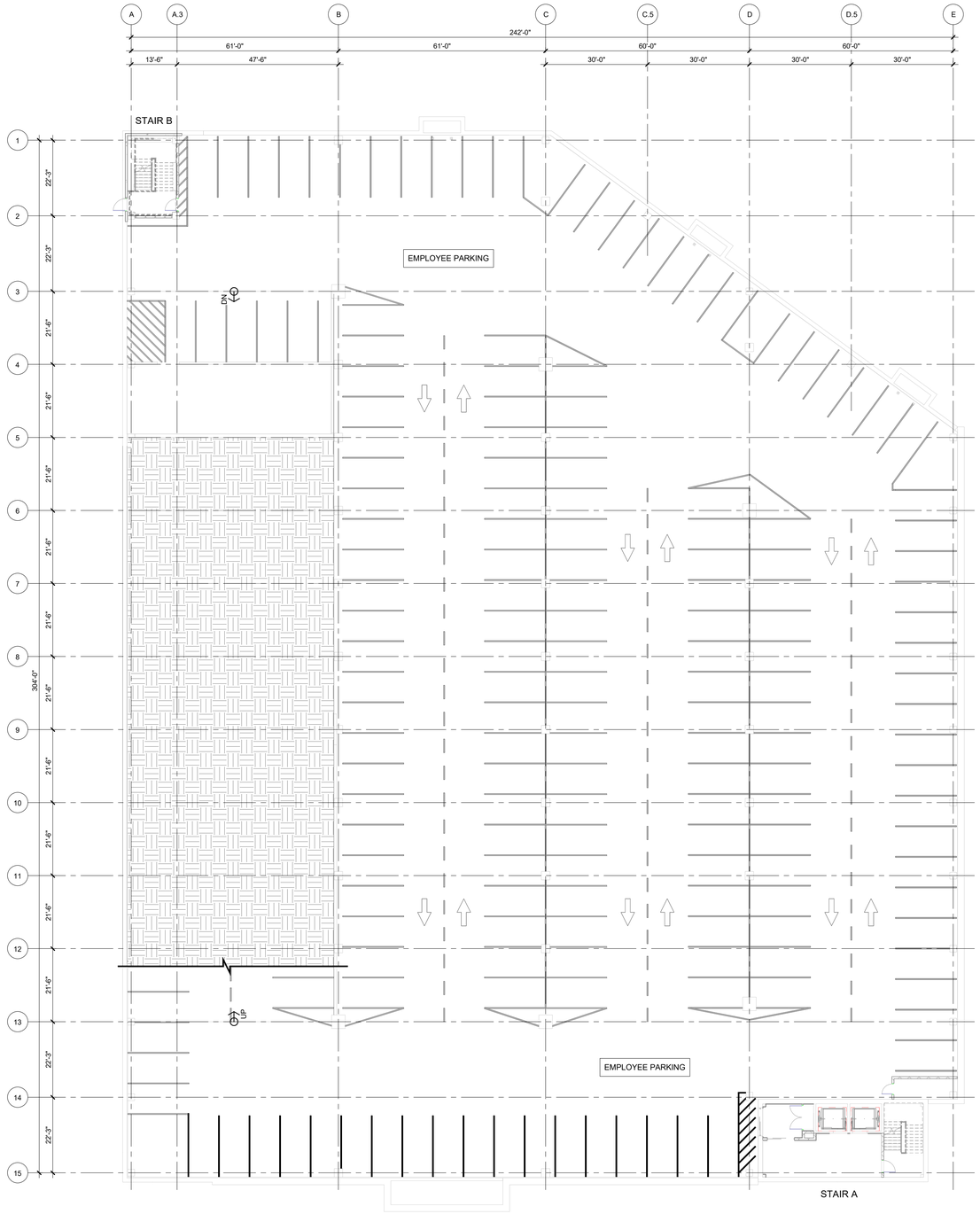
PROJECT NO.
241354

SHEET NO.
C501



LEVEL A PLAN

SCALE: 1/16" = 1'-0"

NORTH

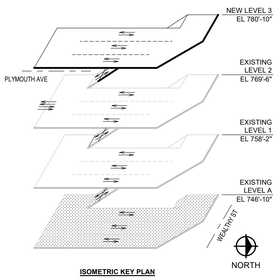
PLAN SYMBOLS

- PLAN MATCH LINE (RAMP)
- UP — RAMP HINGE LINE - **UP** INDICATES THE SURFACE SLOPES UP. **DN** INDICATES THE SURFACE SLOPES DOWN.
- XX • 0 — SIGN; THE FIRST SET OF CHARACTERS IS THE SIGN MARK, REFER TO SIGN LEGEND. THE SECOND DIGIT IS THE SIGN MOUNTING MARK, REFER TO SIGN MOUNTING SCHEDULE. SIGN TO BE PLACED AS SHOWN ON PLAN.
- PRECAST CONCRETE BOLLARD, REFER TO SHEET XXXX FOR ADDITIONAL INFORMATION.
- 6"ø ROUND STEEL POST BOLLARD, REFER TO STRUCTURAL AND SHEET XXXX FOR ADDITIONAL INFORMATION.

SPACE TABULATION

DESCRIPTION	VISITOR			EMPLOYEE			TOTAL
	STANDARD	ACCESSIBLE	ACC VAN	STANDARD	ACCESSIBLE	ACC VAN	
LEVEL 3	202	4	0	0	0	0	206
LEVEL 2	79	6	2	87	6	2	182
LEVEL 1	0	0	0	212	0	0	212
LEVEL A	0	0	0	171	0	0	171
TOTAL	281	10	2	470	6	2	771

NOTE - ADDITIONAL EMPLOYEE PARKING IS LOCATED IN A SUFACE LOT CONNECTED ON THE EAST SIDE OF LEVEL 2. THE LOT CONTAINS AN ADDITIONAL 38 STANDARD SPACES AND 8 ACCESSIBLE SPACES.



ISOMETRIC KEY PLAN

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East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

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09/12/2025 SITE PLAN REVIEW

Drawn By	RMULVANEY
Designer	EFIELD - RMULVANEY
Reviewer	JROZEBOOM
Manager	GEHMKE

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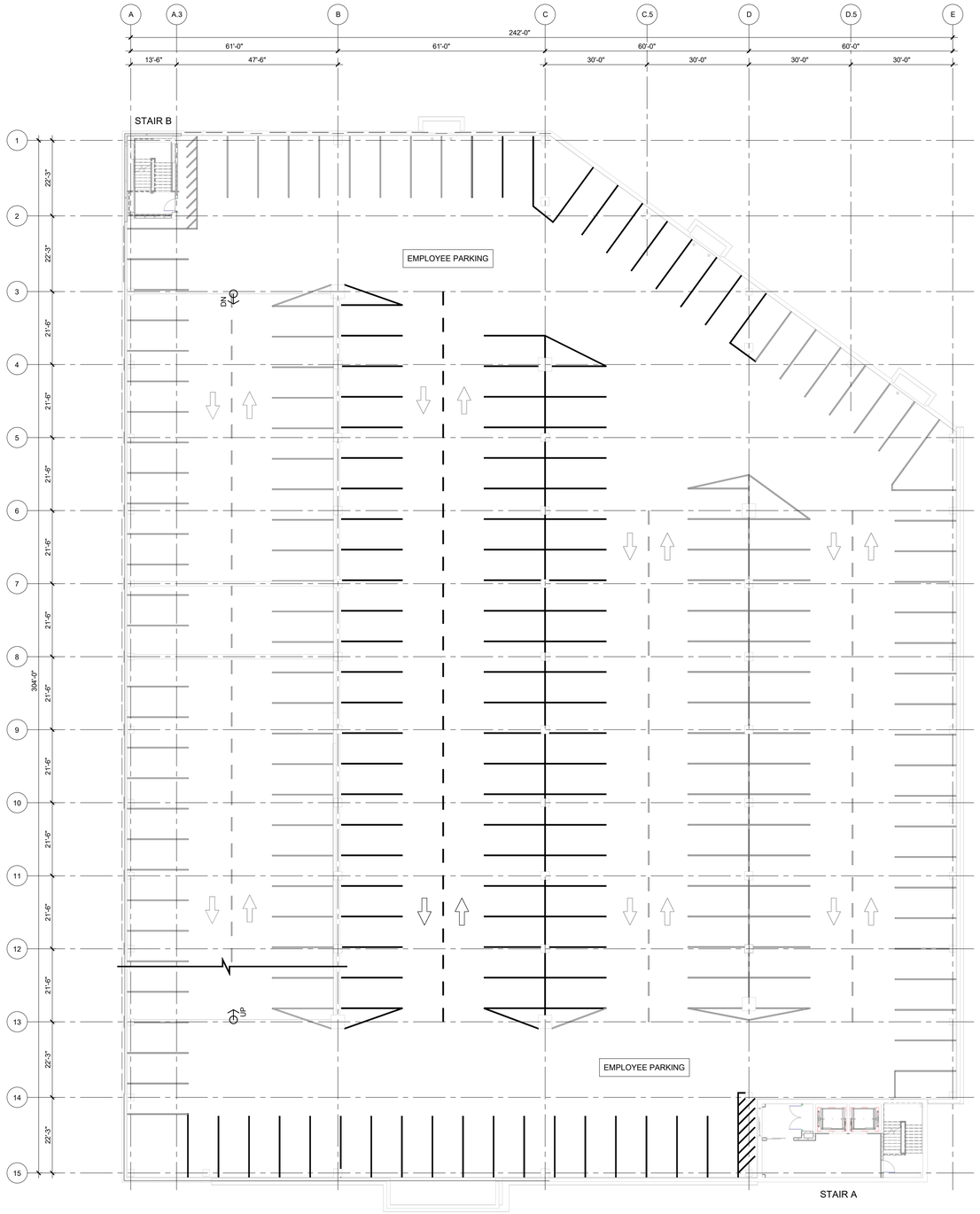
PROJECT NO.
241354

SHEET NO.
AP100

PLOT INFO: 9/11/2025 9:13:57 AM Autodesk Docs://241354/2024_PK_241354.rvt



LEVEL 1 PLAN

SCALE: 1/16" = 1'-0"

NORTH

PLAN SYMBOLS

PLAN MATCH LINE (RAMP)

UP

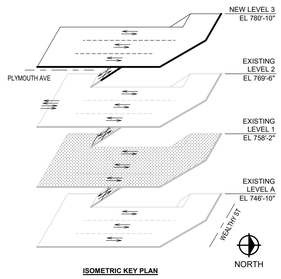
RAMP HINGE LINE - **UP** INDICATES THE SURFACE SLOPES UP. **DN** INDICATES THE SURFACE SLOPES DOWN.

XX • 0

SIGN; THE FIRST SET OF CHARACTERS IS THE SIGN MARK, REFER TO SIGN LEGEND. THE SECOND DIGIT IS THE SIGN MOUNTING MARK, REFER TO SIGN MOUNTING SCHEDULE. SIGN TO BE PLACED AS SHOWN ON PLAN.

PRECAST CONCRETE BOLLARD, REFER TO SHEET XXXX FOR ADDITIONAL INFORMATION.

6"ø ROUND STEEL POST BOLLARD, REFER TO STRUCTURAL AND SHEET XXXX FOR ADDITIONAL INFORMATION.



ISOMETRIC KEY PLAN

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REVISIONS

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09/12/2025 SITE PLAN REVIEW

Drawn By	RMULVANEY
Designer	EFIELD - RMULVANEY
Reviewer	JROZEBOOM
Manager	GEHMKE

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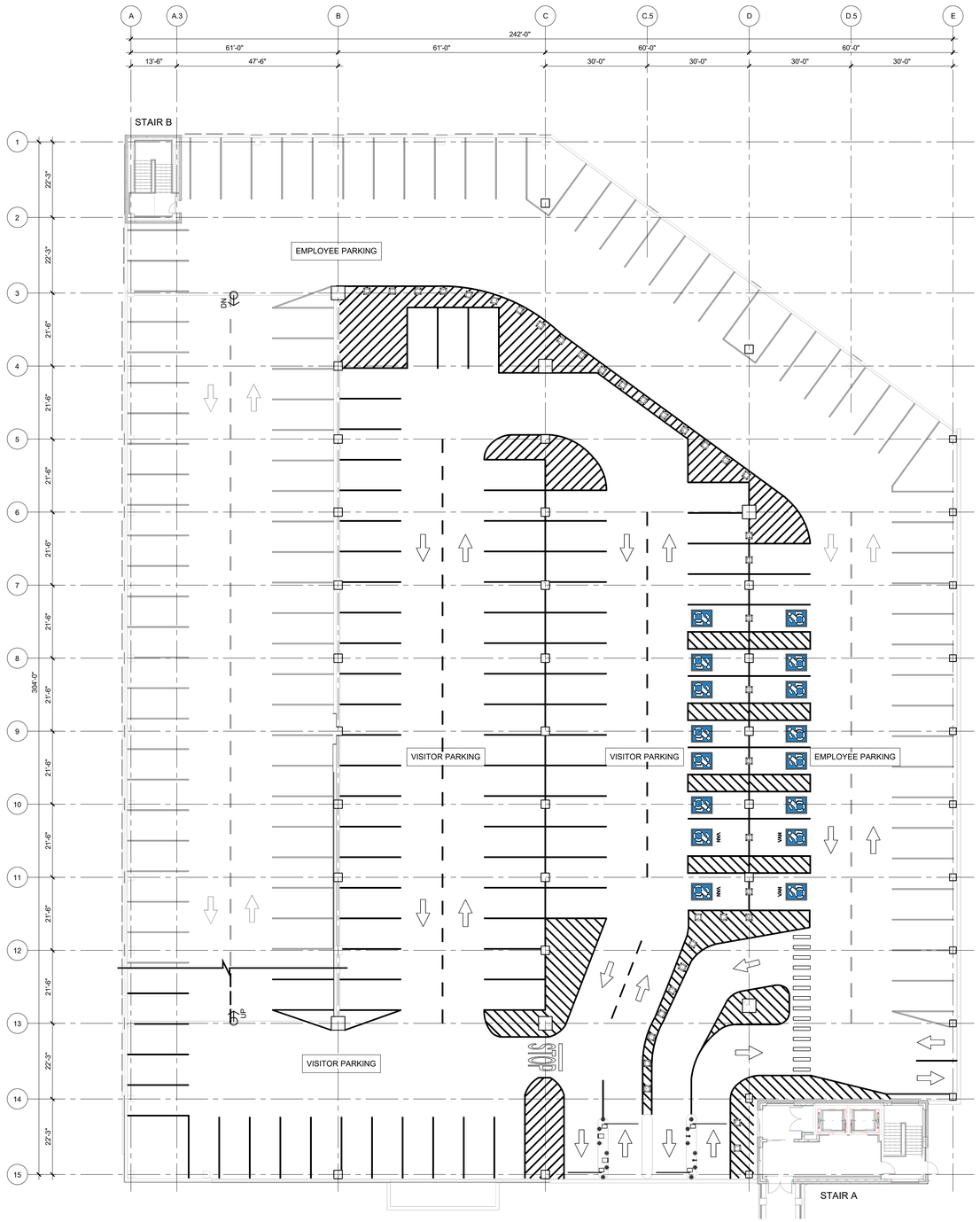
PROJECT NO.
241354

SHEET NO.
AP101

PLOT INFO: 9/11/2025 9:13:58 AM Autodesk Docs://241354/2024_PK_241354.rvt

PLAN SYMBOLS

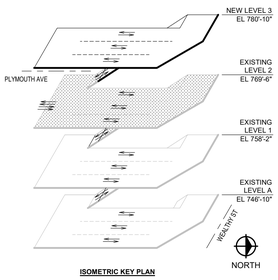
- PLAN MATCH LINE (RAMP)
- UP — RAMP HINGE LINE - **UP** INDICATES THE SURFACE SLOPES UP. **DN** INDICATES THE SURFACE SLOPES DOWN.
- XX • 0 — SIGN; THE FIRST SET OF CHARACTERS IS THE SIGN MARK, REFER TO SIGN LEGEND. THE SECOND DIGIT IS THE SIGN MOUNTING MARK, REFER TO SIGN MOUNTING SCHEDULE. SIGN TO BE PLACED AS SHOWN ON PLAN.
- PRECAST CONCRETE BOLLARD, REFER TO SHEET XXXX FOR ADDITIONAL INFORMATION.
- 6"ø ROUND STEEL POST BOLLARD, REFER TO STRUCTURAL AND SHEET XXXX FOR ADDITIONAL INFORMATION.



LEVEL 2 PLAN

SCALE: 1/16" = 1'-0"

NORTH



ISOMETRIC KEY PLAN

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East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

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09/12/2025 SITE PLAN REVIEW

Drawn By	RMULVANEY
Designer	EFIELD - RMULVANEY
Reviewer	JROZEBOOM
Manager	GEHMKE

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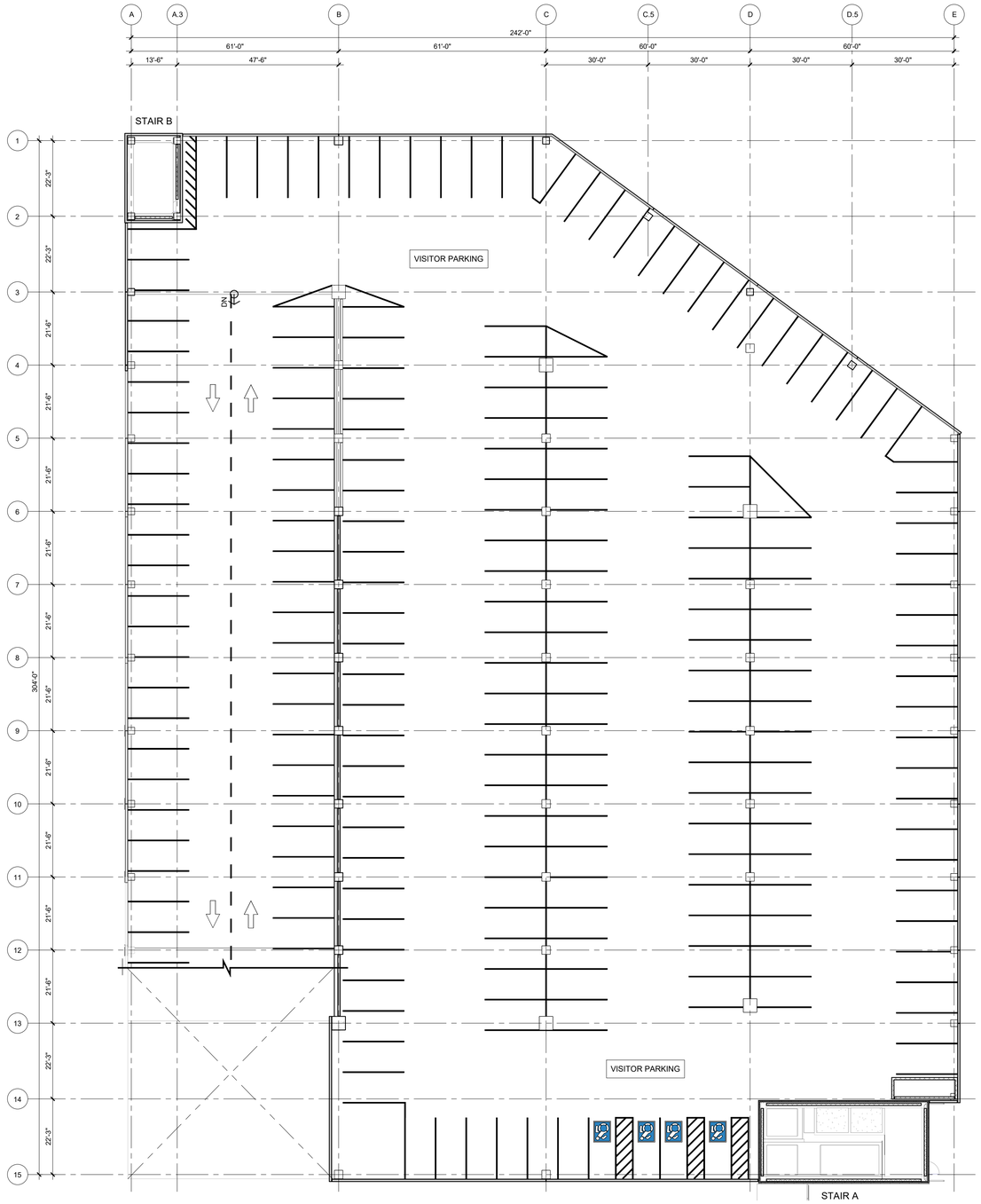
PROJECT NO.

241354

SHEET NO.

AP102

PLOT INFO: 9/11/2025 9:13:59 AM Autodesk Docs://241354/2024_PK_241354.rvt



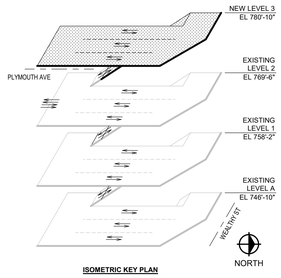
NORTH

LEVEL 3 PLAN

SCALE: 1/16" = 1'-0"

PLAN SYMBOLS

- PLAN MATCH LINE (RAMP)
- UP — RAMP HINGE LINE - **UP** INDICATES THE SURFACE SLOPES UP. **DN** INDICATES THE SURFACE SLOPES DOWN.
- XX • 0 — SIGN; THE FIRST SET OF CHARACTERS IS THE SIGN MARK, REFER TO SIGN LEGEND. THE SECOND DIGIT IS THE SIGN MOUNTING MARK, REFER TO SIGN MOUNTING SCHEDULE. SIGN TO BE PLACED AS SHOWN ON PLAN.
- PRECAST CONCRETE BOLLARD, REFER TO SHEET XXXX FOR ADDITIONAL INFORMATION.
- 6"ø ROUND STEEL POST BOLLARD, REFER TO STRUCTURAL AND SHEET XXXX FOR ADDITIONAL INFORMATION.



ISOMETRIC KEY PLAN

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East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

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09/12/2025 SITE PLAN REVIEW

Drawn By	RMULVANEY
Designer	EFIELD - RMULVANEY
Reviewer	JROZEBOOM
Manager	GEHMKE

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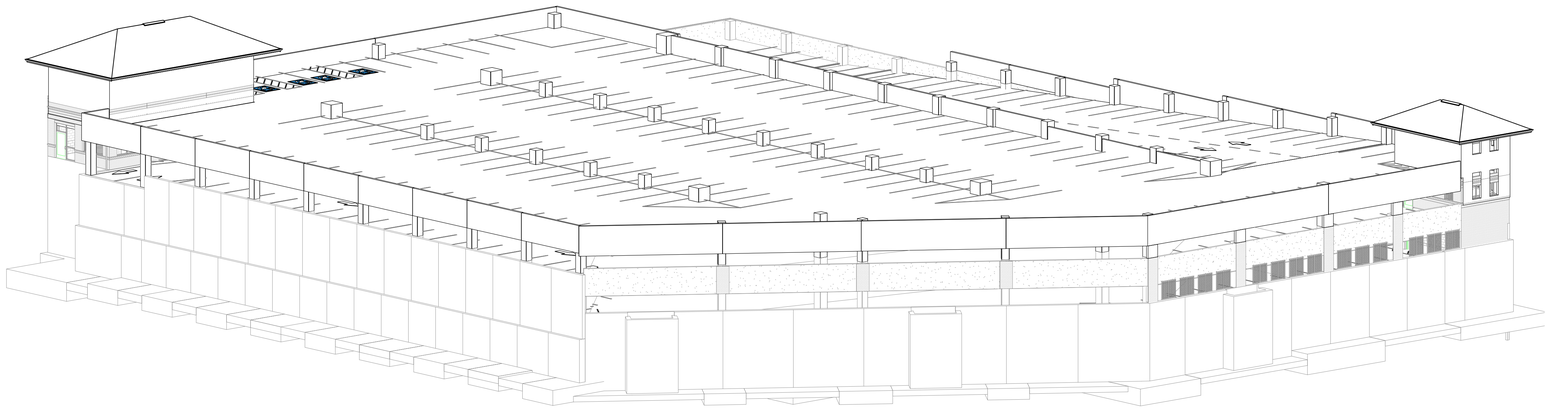
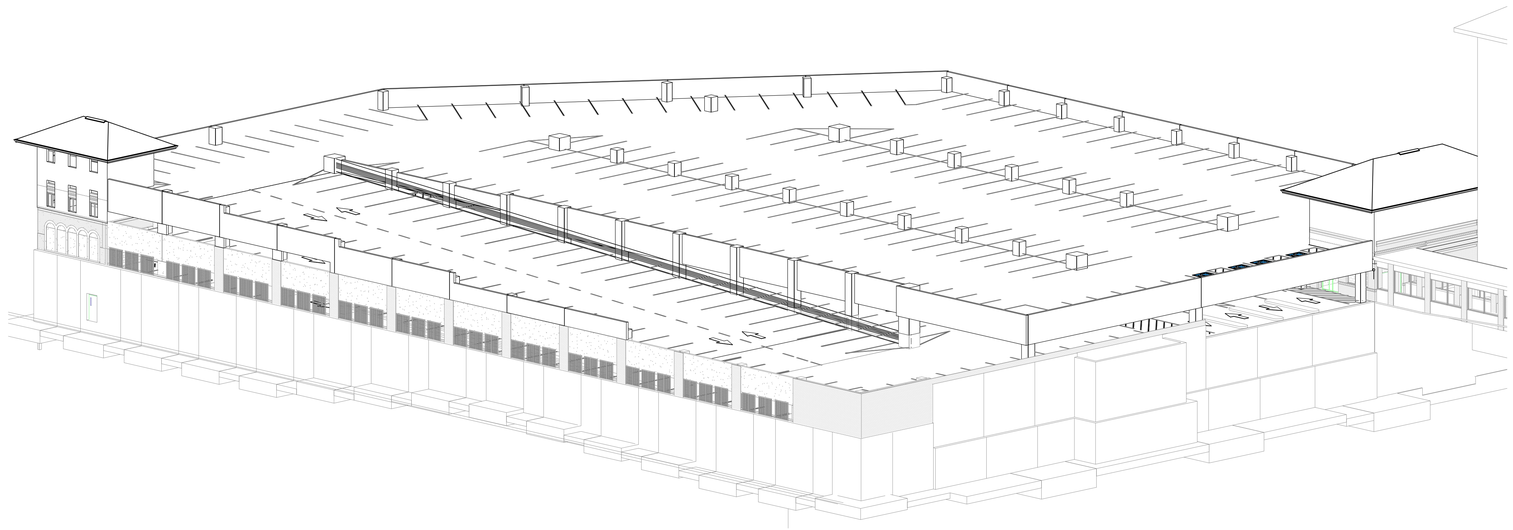
PROJECT NO.
241354

SHEET NO.
AP103

PLOT INFO: 9/11/2025 9:13:59 AM Autodesk Docs://241354/2024_PK_241354.rvt



2 NORTHEAST 3D VIEW
SCALE: NOT TO SCALE



1 SOUTHWEST 3D VIEW
SCALE: NOT TO SCALE

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09/12/2025 SITE PLAN REVIEW

Drawn By	RMULVANEY
Designer	EFIELD - RMULVANEY
Reviewer	JROZEBOOM
Manager	GEHMKE

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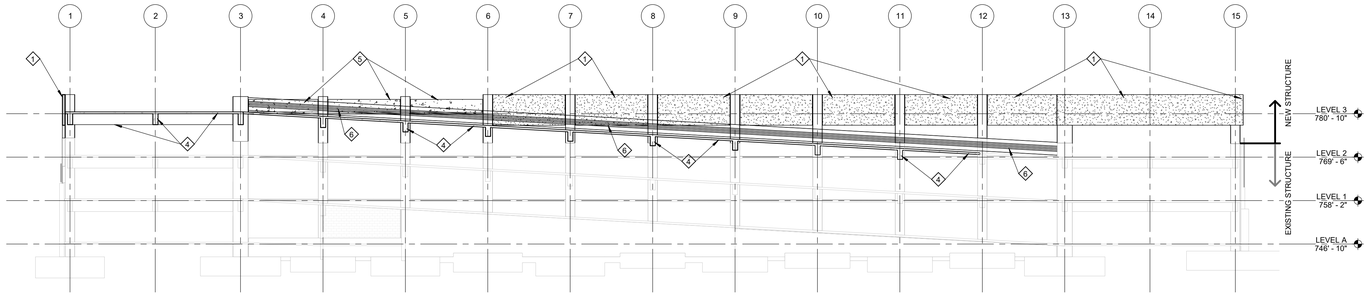
PROJECT NO.
241354

SHEET NO.

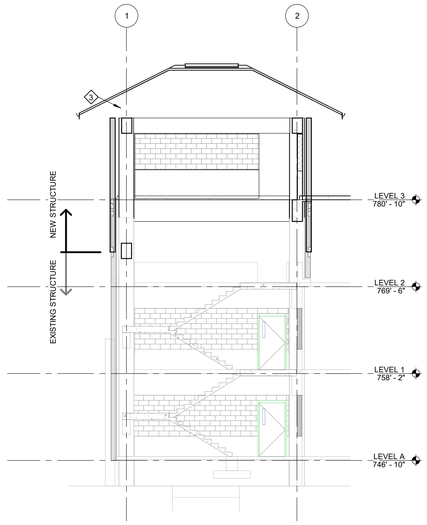
S201

KEY NOTES

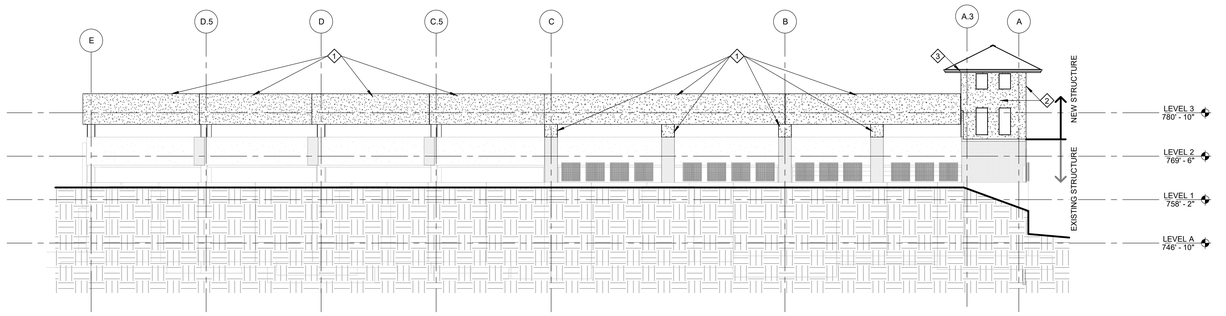
1 NEW PCC PANEL/SPANDREL, REFER TO RENDERINGS FOR FINISHES
2 NEW PCC WALL PANEL, REFER TO RENDERINGS FOR FINISHES AND OPENINGS
3 NEW ROOF, REFER TO RENDERINGS FOR FINISHES
4 NEW PT SLAB, BEAMS, AND GIRDERS
5 NEW UPTURNED CIP WALL
6 NEW BARRIER STRAND AND FENCE, ALIGNED WITH NEW RAMP SLAB



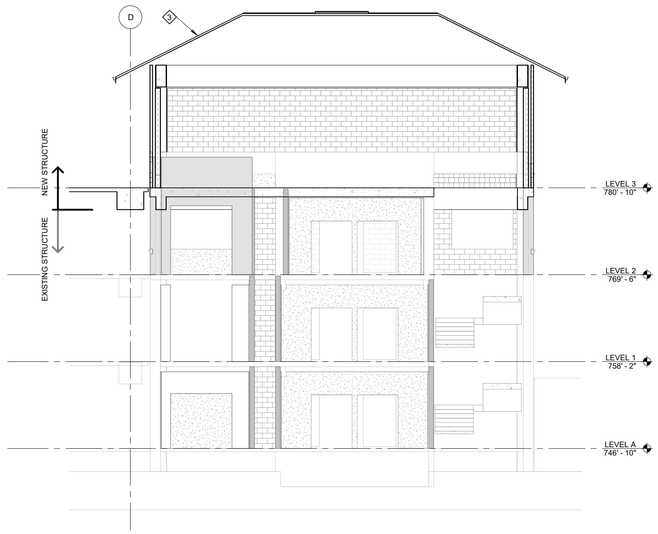
3 SECTION - GRID B (LOOKING EAST)
SCALE: 1/16" = 1'-0"



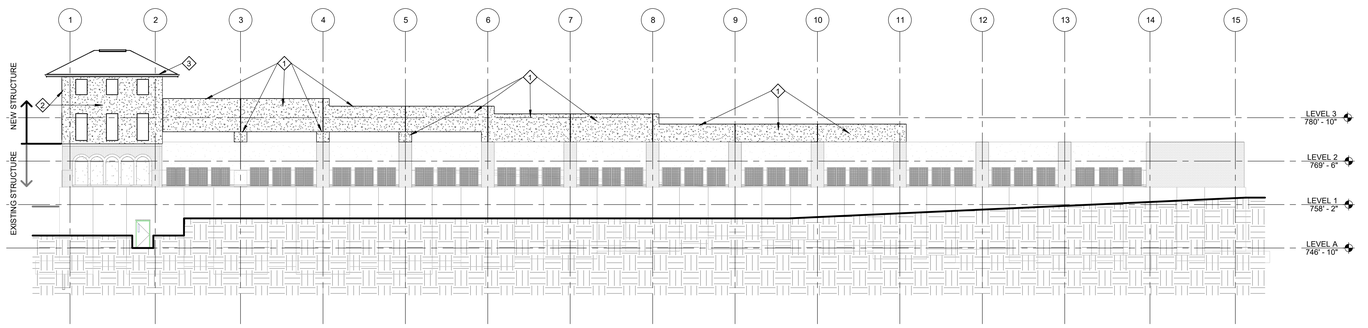
5 SECTION - STAIR B (LOOKING EAST)
SCALE: 1/8" = 1'-0"



2 NORTH STRUCTURAL ELEVATION
SCALE: 1/16" = 1'-0"



6 SECTION - STAIR A (LOOKING NORTH)
SCALE: 1/8" = 1'-0"



1 WEST STRUCTURAL ELEVATION
SCALE: 1/16" = 1'-0"

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East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

NOT FOR CONSTRUCTION

09/12/2025 SITE PLAN REVIEW

Drawn By RMULVANEY
Designer EFIELD - RMULVANEY
Reviewer JROZEBOOM
Manager GEHMKE

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PROJECT NO.
241354

SHEET NO.

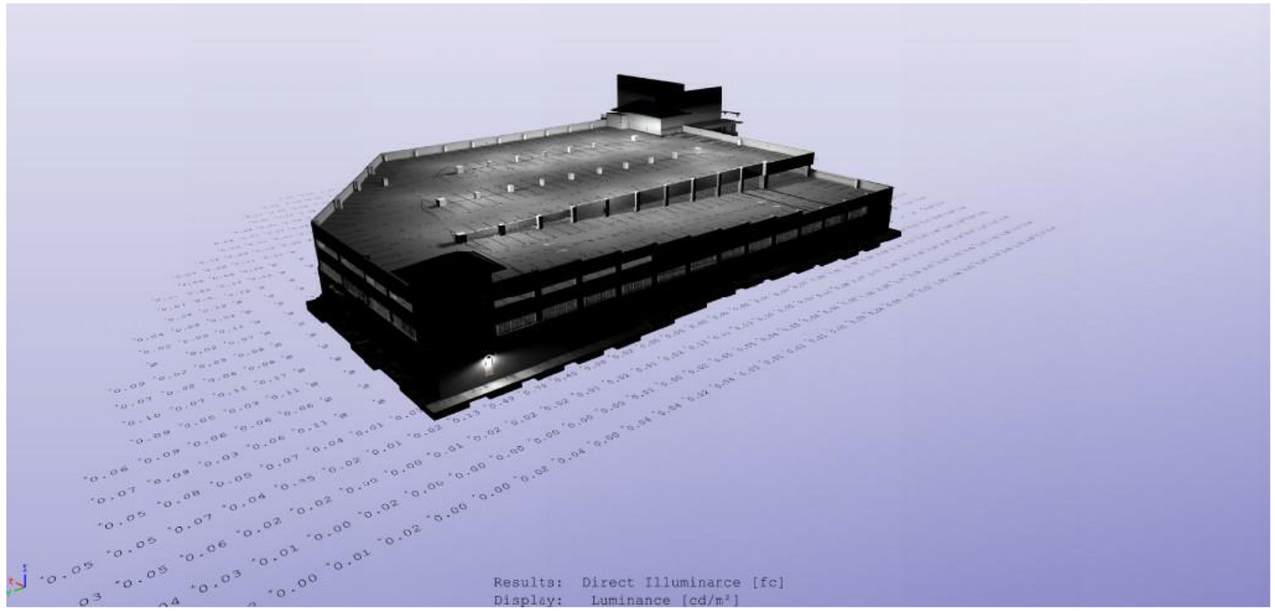
S301

PLOT INFO: 9/11/2025 9:14:02 AM Autodesk Docs://241354/2024_PK_241354.rvt

ElumTools General Use Direct Illuminance Results 2					
Calculation Points Name	Average	Maximum	Minimum	Avg/Min	Max/Min
Top Level	3.72 fc	15.45 fc	0.00 fc	0.00	0.00
Grade Level Perimeter	0.08 fc	17.99 fc	0.00 fc	0.00	0.00

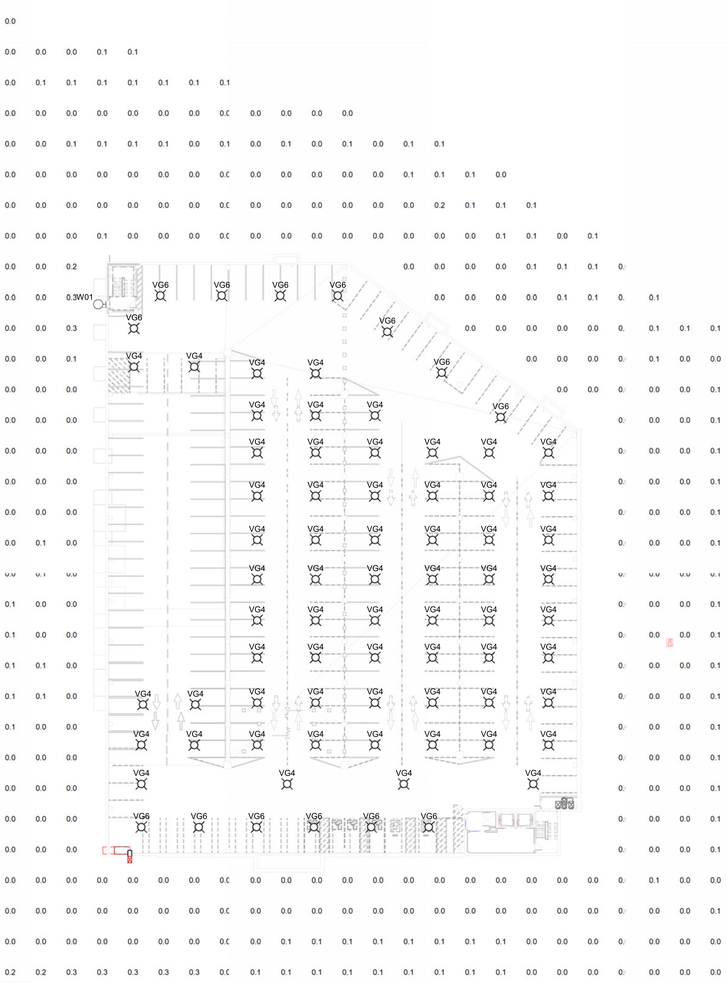
LUMINAIRE SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	CATALOG NO.	OR EQUAL BY	LUMINAIRE DATA						REMARKS
					VOLTAGE	LOAD	LUMENS	CCT	CRI	DIMMING	
P01	LED POLE MOUNTED TYPE 5	CREE	OSQ-HO-A-OSQ-AA-V-5ME-50L-40K-UL-OSQ-PML	TBD	277 V	420 VA	48,000 lm	4000 K	70		
VG4	PENDANT MOUNTED EVEN WITH BOTTOM OF PRECAST	CREE	VG-B-PD-5W-4L-40K-UL-WH-PML	TBD	277 V	33 VA	3,800 lm	4000 K	70		
VG6	PENDANT MOUNTED EVEN WITH BOTTOM OF PRECAST	CREE	VG-B-PD-5W-6L-40K-UL-WH-PML	TBD	277 V	54 VA	5,700 lm	4000 K	70		
W01	WALL MOUNTED LED WITH PHOTOCELL	CREE	XSPW-A-0-3-F-C-2-XX-P-Y	TBD	277 V	42 VA	3,800 lm	4000 K	70		



PHOTOMETRICS CALCULATIONS ISOMETRIC

SCALE: NOT TO SCALE



NORTH

PHOTOMETRIC CALCULATIONS - GRADE LEVEL

SCALE: 1/32" = 1'-0"

NORTH

PHOTOMETRIC CALCULATIONS - TOP OF PARKING DECK

SCALE: 1/32" = 1'-0"

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East Grand Rapids, Michigan

Ramp 2 Vertical Expansion

REVISIONS

NOT FOR CONSTRUCTION

09/12/2025 SITE PLAN REVIEW

Drawn By BGARRISON
Designer BGARRISON
Reviewer
Manager GEHMKE

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PROJECT NO.
241354

SHEET NO.

E800

Autodesk Docs://241354/2024_E_241354.rvt

PLOT INFO: 9/10/2025 10:26:40 AM

Corewell Health™

Blodgett Ramp 2 (North Ramp) Parking Expansion

NOVEMBER 12, 2025

01

Opening remarks

Corewell Health™

Mission

Improve health, instill humanity and inspire hope.

Vision

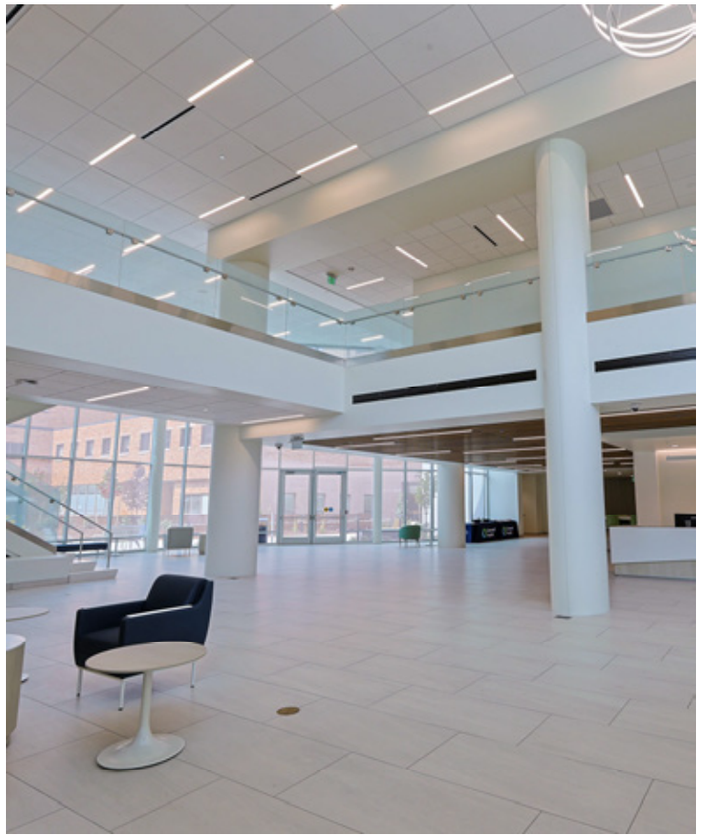
A future where health is simple, affordable, equitable and exceptional.

Values

Compassion. Collaboration. Clarity. Curiosity. Courage.

Corewell Health™

Recent Projects



- Commitment to EGR and the community.
- Investment into the facility and community
- Increasing Community Demand
  - Emergency Department Volume
  - Surgical Volume
    - Inpatient
    - Outpatient

02

Parking analysis

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Parking supply

Count Strategy

- We implemented a strategy of daily manual counts every hour for a month to identify peak times.
- After the peak times were identified we moved forward with manual counts at those peak times on a daily basis.
- Using manual counts we were able to identify utilization concerns such as parkers utilizing non-marked spaces, or multiple spaces for one vehicle. These events were more common when supply reached levels of less than 10 spaces.
- Parking spaces in open lots were consistently < 5 at all counting times.
- Parking in team-member only parking was at capacity at all counting times.

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Parking supply

Industry standards

"The parking industry considers the ideal target parking occupancy rate to be 85 percent. This minimizes congestion and maximizes parking utilization. Areas that exceed 85 percent occupancy can appear full to the parking public and contribute to congestion as motorists circle looking for an available space. Likewise, areas that are below 85 percent are considered underutilized."[1]

This cushion reduces frustration, provides for standard fluctuations such as mis-parked cars, snow cover/removal, and provides space for extra peaks in demand." [2]

[1] Donald Shoup, The High Price of Free Parking (Planners Press, 2011)
[2] Urban Land Institute, Shared Parking, 3rd ed. (Washington, DC: Urban Land Institute, 2020), 27.

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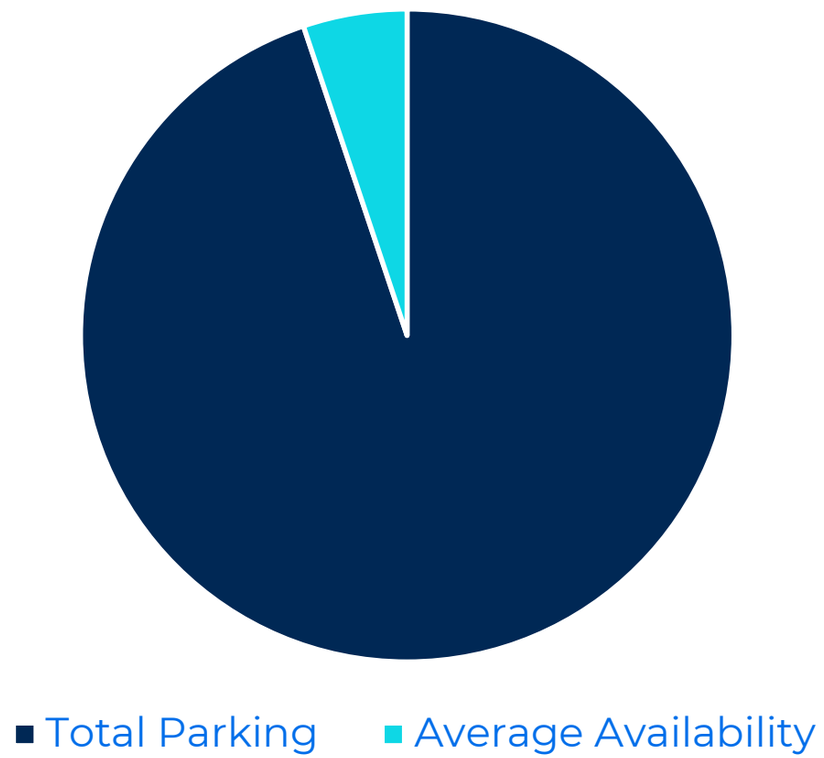
Parking Supply for Blodgett Campus

Total Campus Parking:
1,421 spaces

Ramp 1 Patient Available Avg:
~65 spaces (≈4.6% of total)

Ramp 2 Patient Available Avg:
~0.8 spaces (≈0.06% of total)

Patient available spaces represent less than 5% of total capacity with industry standard recommending 15%



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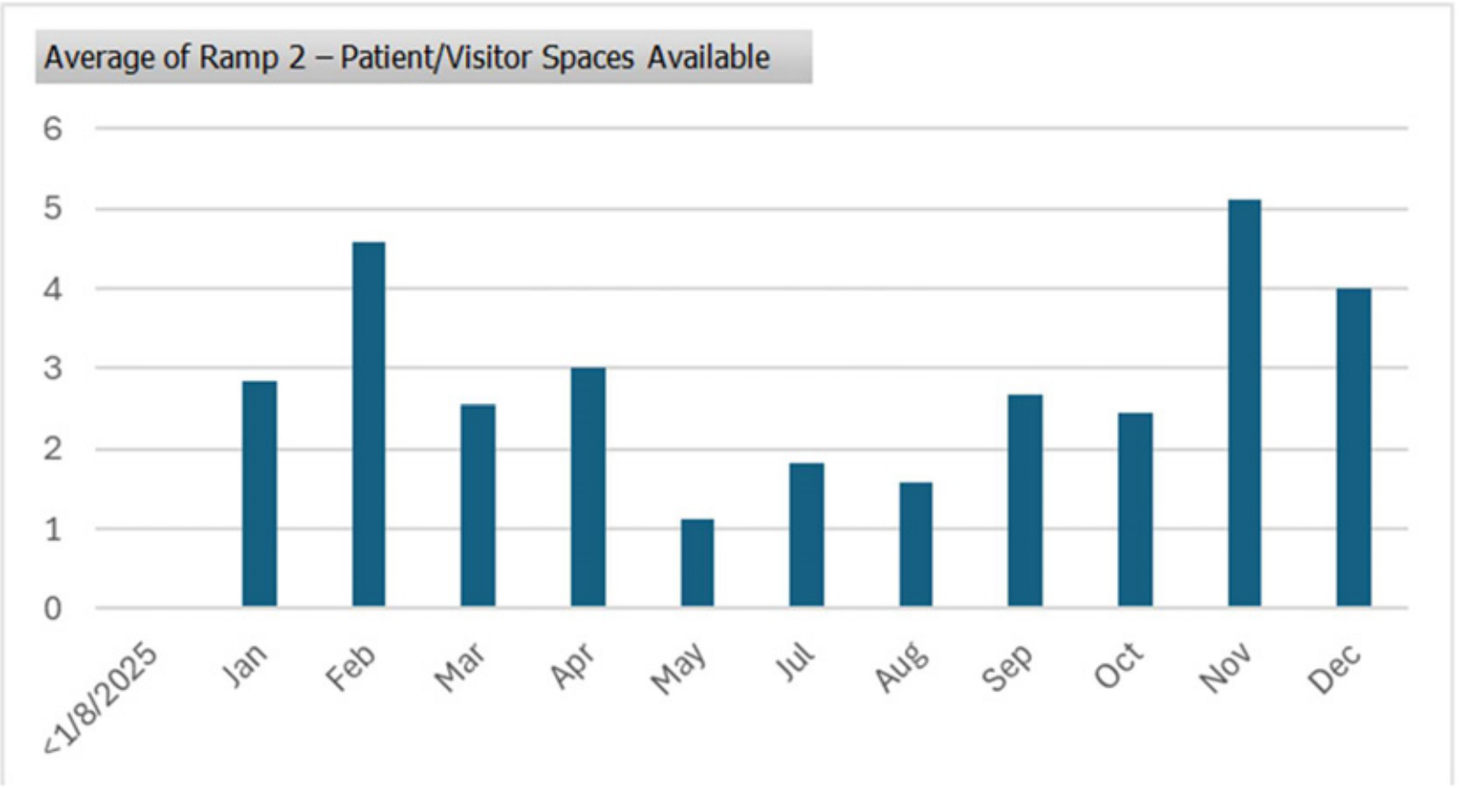
Parking supply for Ramp 2 (North Ramp)

- Using manual counts at peak times, Ramp 2 has had over 90 weekdays with less than 10 parking spaces available, with 33 of those days being at 0 parking available.



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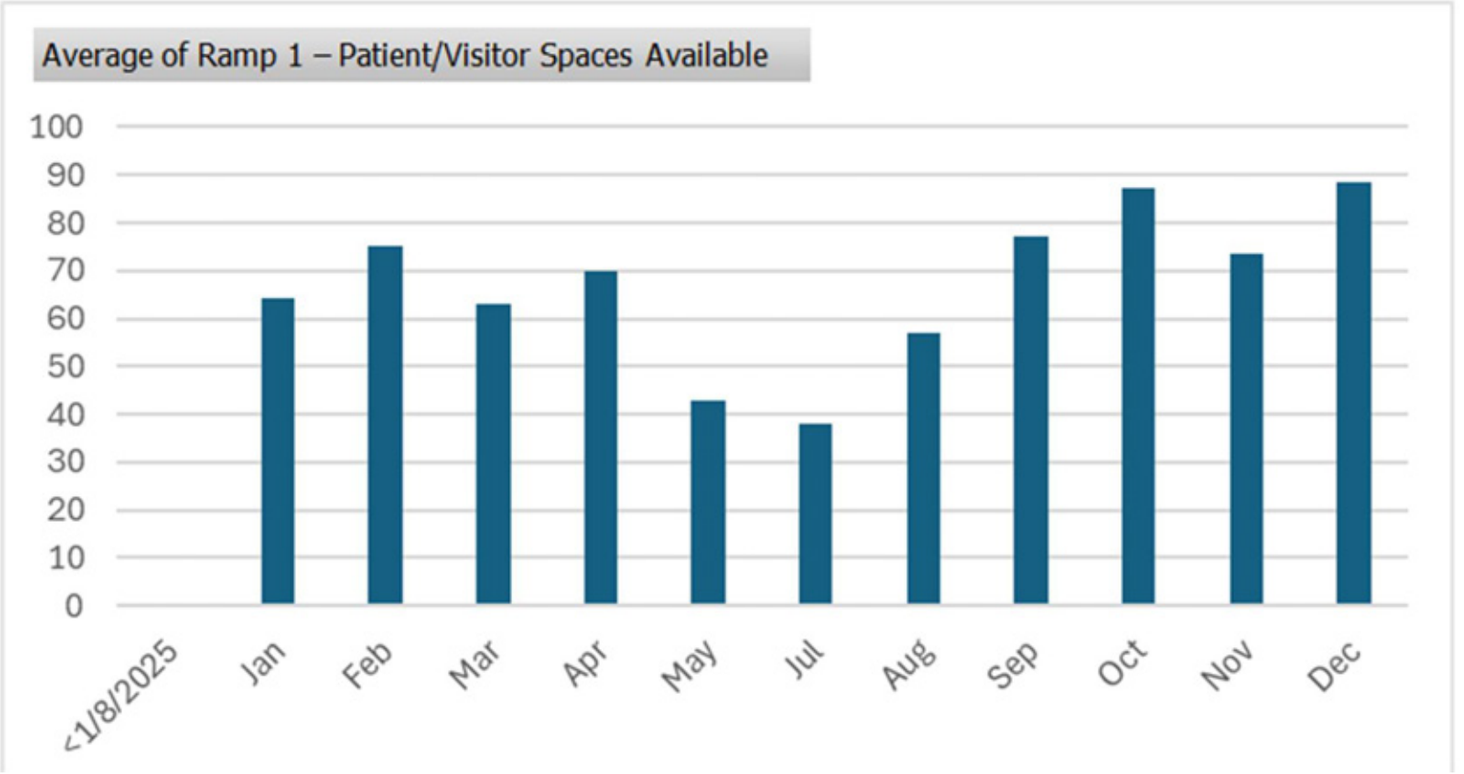
Parking supply for Ramp 1 (South Ramp)

- Using manual counts at peak times, Ramp 1 has shown varied utilization dropping to less than 40 patient spots available at times.



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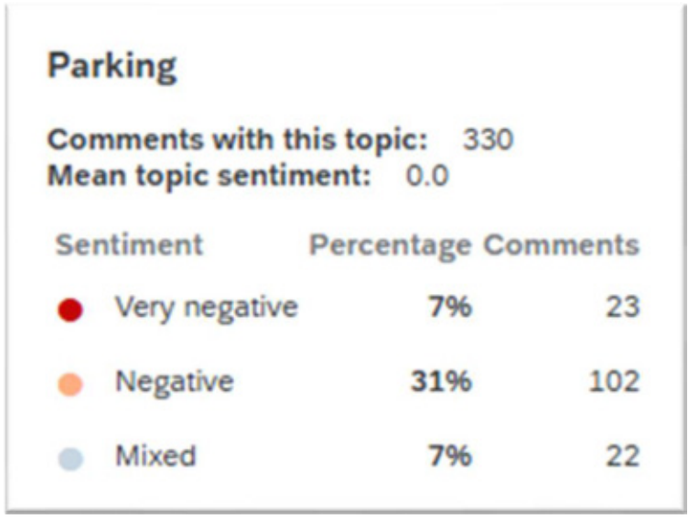
Parking supply

Mitigation measures

- Valet parking moved offsite for long term parking.
- Contractor and Student parking moved offsite.
- Team member overflow parking utilizing top level of Ramp 1 (visitor spaces)

Patient comments related to Ramp 2 (North Ramp)



Parking

Comments with this topic: 330
Mean topic sentiment: 0.0

Sentiment	Percentage	Comments
Very negative	7%	23
Negative	31%	102
Mixed	7%	22

- According to our Qualtrics patient experience survey 45% of comments relating to parking for patients at Blodgett Hospital ranged from mixed to very negative.
  - "There is inadequate parking for patients, especially someone like myself who will be in the building for less than 10 minutes. I ended up parking in a place that was not a designated parking space so that I would not be late for my appointment. "
  - "The parking was a nightmare. I circled the parking ramp 4-5 times, basically had to wait until someone left."
  - "The parking situation was really terrible. I drove around for 15 minutes to find a free parking space. I almost missed my appointment. It has been like this the last 2 times that I have come to Blodgett Hospital for an appointment."

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Parking supply

Construction Parking Solution

- Patients will all be directed to park in Ramp 1 (South Ramp)
- Team members will be displaced from Ramp 1 and 2 and will be assigned to offsite locations
- Currently in discussions with area property owners to determine location for displaced team members during construction

03

Traffic Impact Study (TIS)

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Study Area

- 6 Study intersections:
  - Plymouth Ave/Wealthy St
  - Plymouth Ave/Lake Dr
  - Plymouth at 3 site driveways
  - Wealth at site driveway
- Included traffic volume data collection and analyses of traffic operations with and without the parking deck expansion for the morning and afternoon peak hours.

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Traffic Study Analysis

- Traffic operational analysis was performed for each intersection .
- Level-of-Service (LOS) is based on average delay per vehicle at an intersection.
- LOS is assigned a letter grade A-F, with A-D as being acceptable.
- Anticipated trips generated by the parking expansion based on existing traffic counts. This traffic was added to the road network and intersections were analyzed.
- All intersection LOS are D or better with and without the parking deck expansion.

Background LOS Results	
Intersection	LOS (AM/PM)
Plymouth/Lake	C/D
Plymouth/Wealthy	A/B
Plymouth/N Driveway	A/A
Plymouth/S Driveway	A/A
Wealth/E Driveway	A/A

Build LOS Results	
Intersection	LOS (AM/PM)
Plymouth/Lake	D/D
Plymouth/Wealthy	A/B
Plymouth/N Driveway	A/A
Plymouth/S Driveway	A/A
Wealth/E Driveway	A/A

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Traffic Analysis Conclusions

- No significant operational impacts to the intersections with the proposed expansion.
- LOS remains acceptable at all intersections.
- Signal timings could be optimized to reduce vehicle delays and queueing, with or without this project.
- Pedestrian pushbuttons could be installed at signalized intersections to reduce vehicle delays and queueing, with or without this project.
- A post-construction study will be completed 6 months after construction is complete to evaluate if the findings of the traffic study are reflective of new traffic conditions.

04

Design

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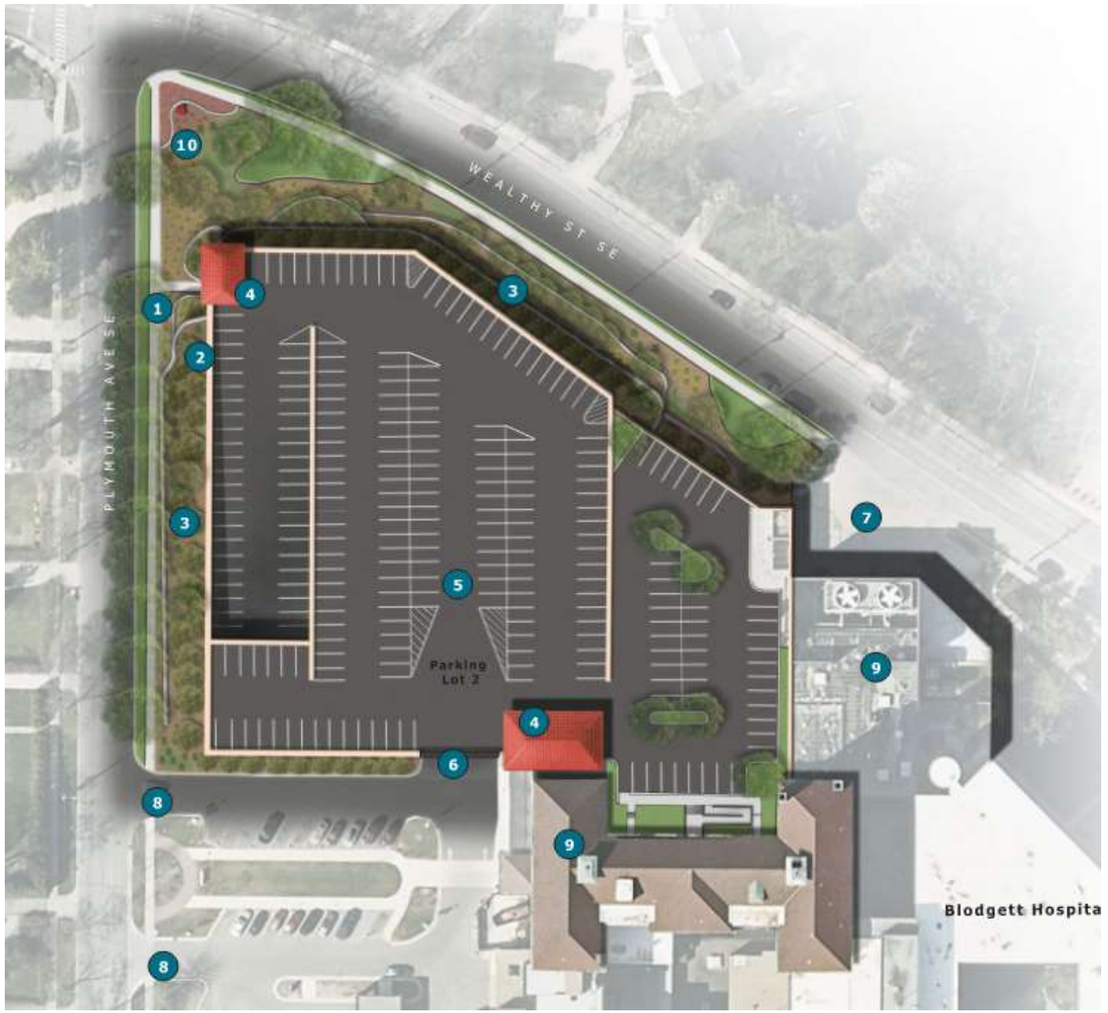
Site Plan



Building change

- Add one level
- Additional 207 spaces

Building footprint

- Building lot coverage remains at 48.9%
- Impervious surface area remains at 72.2%
- Green space coverage remains at 27.8%

LEGEND

1. Landscape Retaining Wall Extension
2. Proposed Landscape Screening
3. Existing Landscaping to Remain
4. Parking Garage Tower Vertical Expansion
5. Parking Garage Vertical Expansion
6. Parking Garage Entrance
7. Existing Service Area to Remain
8. Temporary Construction Road, Existing Drive to be Restored
9. Existing Building to Remain
10. Existing Monument Sign and Corner Landscaping to Remain

Becker's Hospital Review — 50 of the greenest hospitals in America

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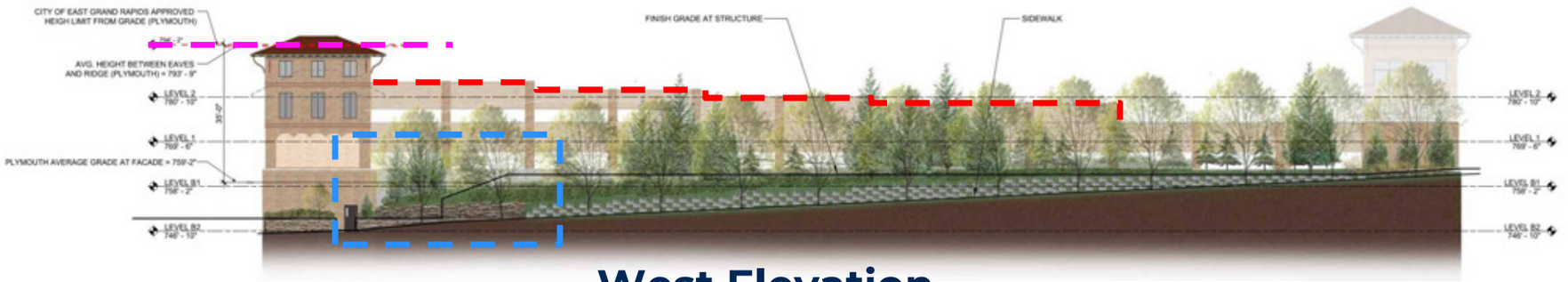
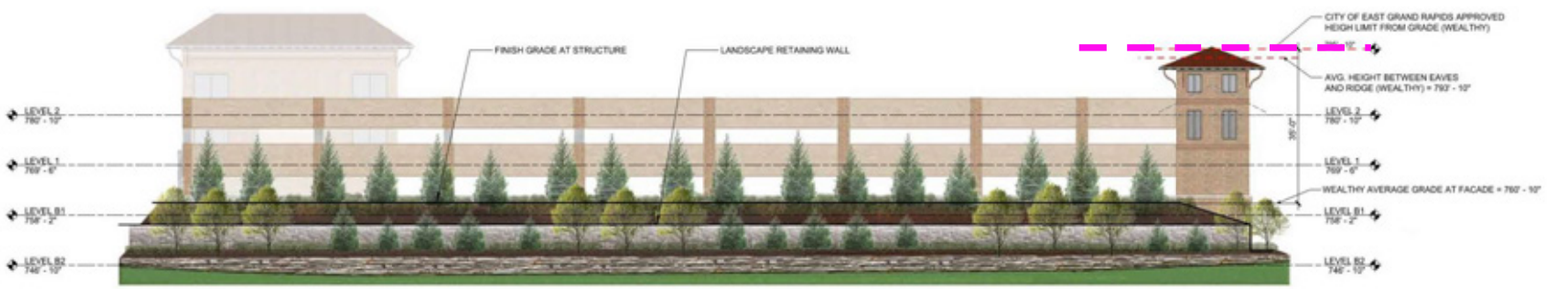
Building Elevations

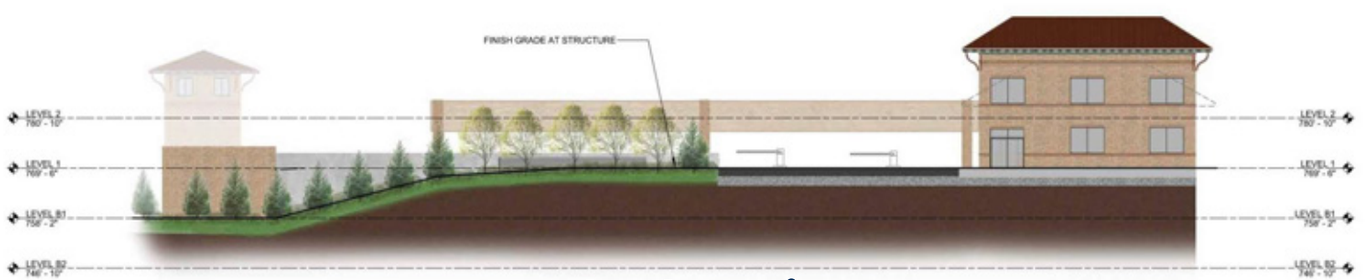
- Building height is below 2020 approved height
- Materials match existing structure
- Plymouth elevation steps down to existing height at southwest corner
- Minimal impact to landscaping except for NW corner



West Elevation



North Elevation



South Elevation

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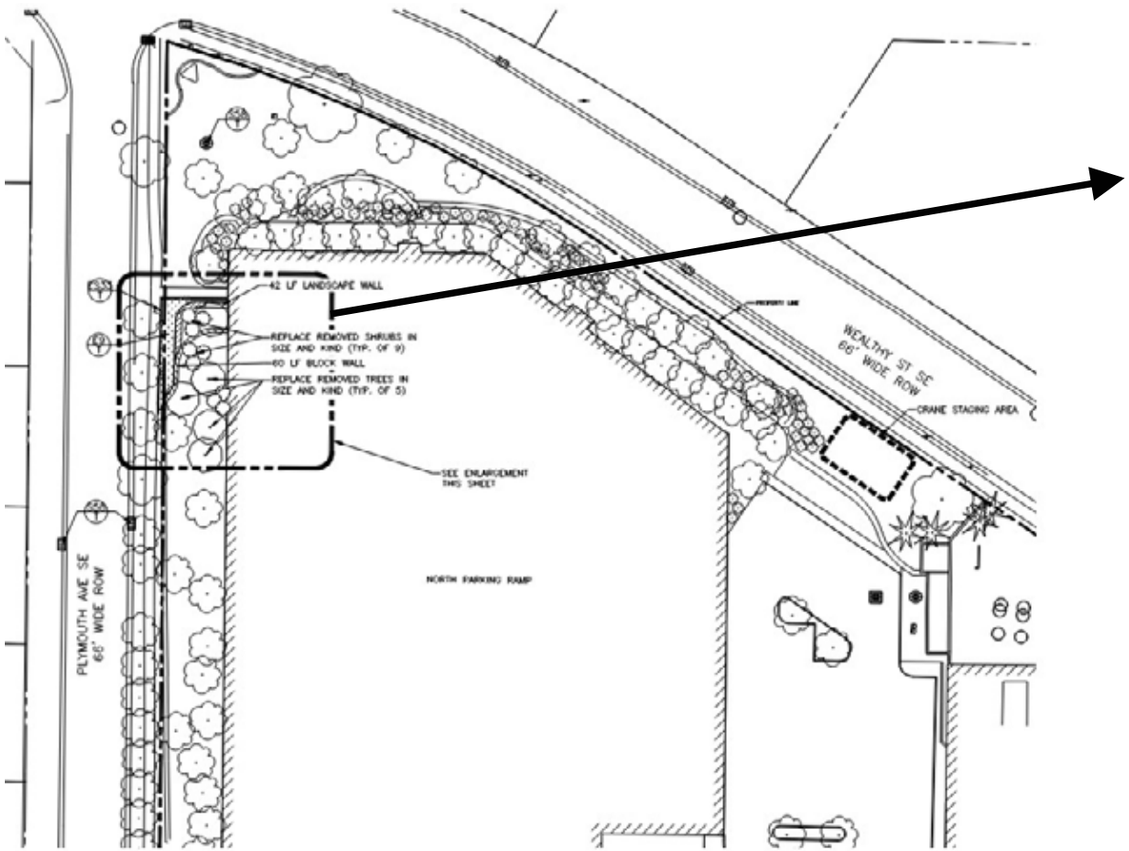
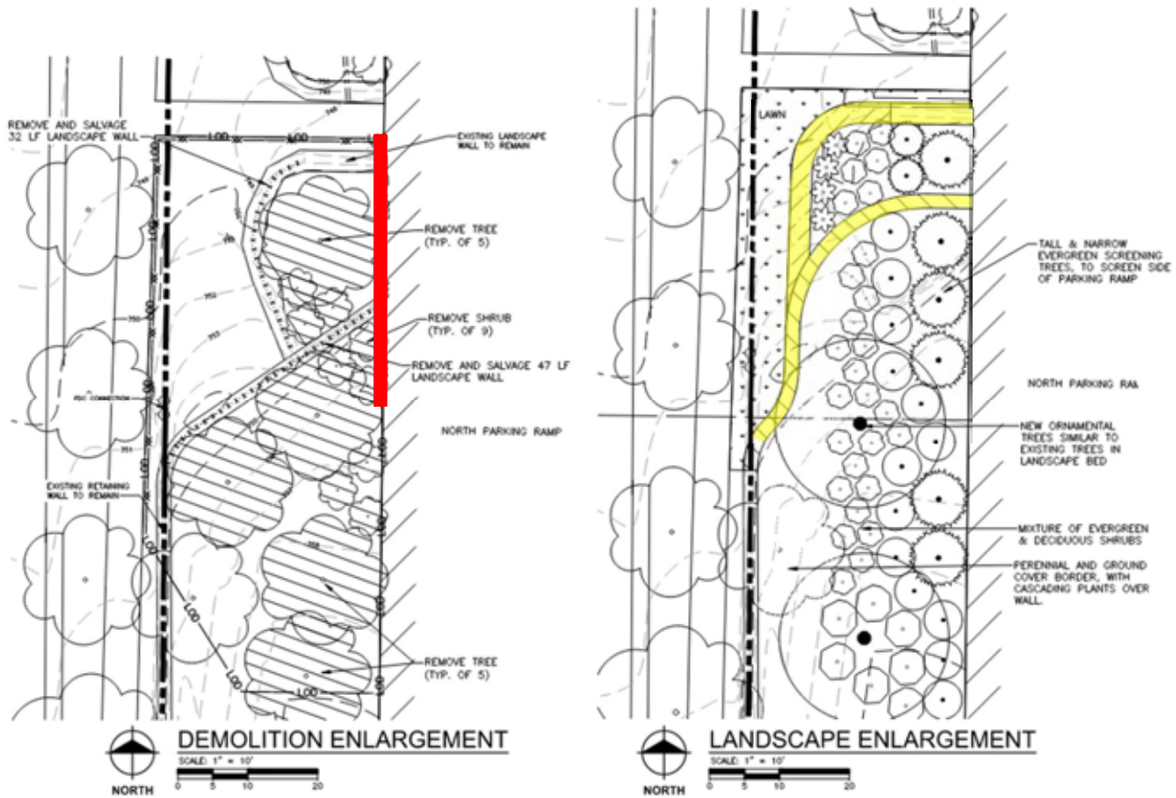
Landscape Plan



Landscape Plan



Enlarged Landscape Plans

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View from Northwest

Current

With addition

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View from Northeast

Current

With addition

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View from Southwest

Current

With addition

05

Site logistics

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Site Logistics and Schedule

- Vast majority of work will be internal to site
- Spring 2026 start
- 7-month duration

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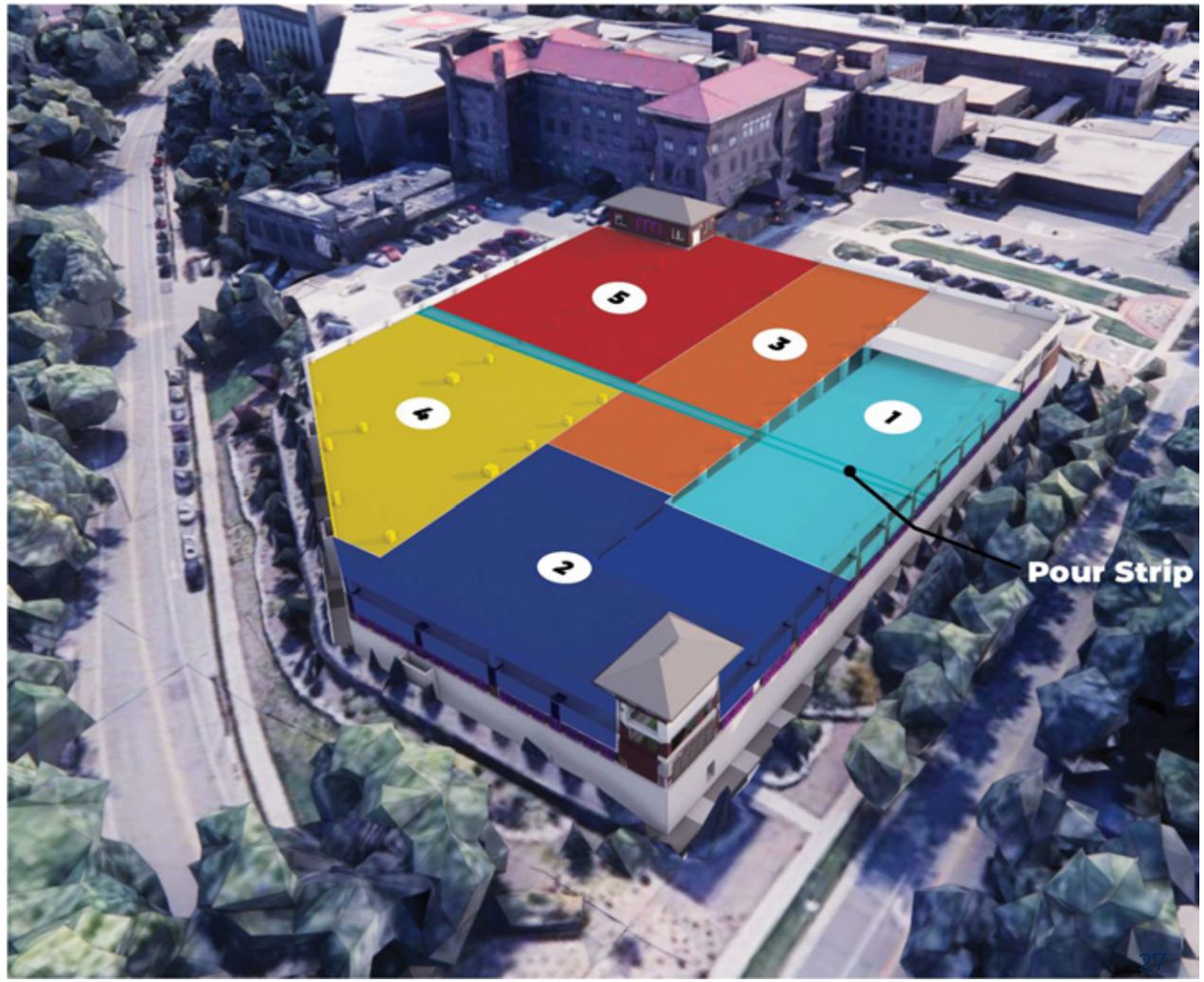
Concrete Pour Sequence

- The pump truck will be located to the south in the designated construction zone
- There will be 5 main pours
- Pours will take place approximately every 3 weeks
- The pours will start as early as permitted to allow for continuous concrete deliveries and avoid traffic delays



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Precast Panel Sequence

- Crane locations
  - 2 work zone
  - 1 road (lane closure)
  - 1 parking deck (lane closure)
- Install duration = 15 days

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Summary

- **Investment to make sure our community members can continue to receive the care they rely on, without the added stress of parking challenges.**
- Very limited demolition
- No heavy earthwork or vibration
- Working within our site
- Limited days of intense activity
- Shorter duration
- Limited lane closures
- Negligible traffic impact
- Complies with Zoning requirements
  - The building footprint and coverage areas do not change
  - Continuation of existing approved aesthetic
  - Below height allowed for the site and shorter than the prior Withey building at corner of Wealthy-Plymouth
  - Onsite parking count remains below the ordinance requirement of 1,859. With this project, 1,617 will be provided onsite.


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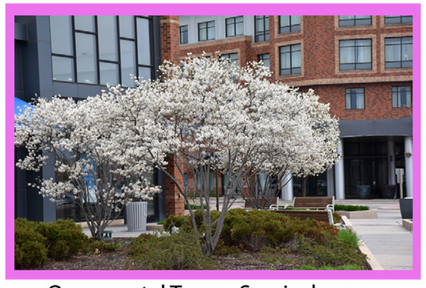
LABELS

- Existing Street Trees
  CURRENT SIZE - 25' ht , 20' width
  FUTURE SIZE - 40-50' ht, 30-50' width
- Deciduous Trees - Maples & Oaks
  CURRENT SIZE: 18-20ft ht, 10-15 spread
  FINAL SIZE: 40-50 feet tall, 30-50 ft spread
- Ornamental Trees - Serviceberry
  CURRENT SIZE - 8-10' ht , 6-8' width
  FINAL SIZE: 15-25 feet tall, 15-25 ft spread
- Younger Evergreens - Firs & Spruces
  CURRENT SIZE: 15 - 18 ft
  FINAL SIZE: 40-60 feet tall, 10-20 ft wide
- Younger Evergreens - Firs & Spruces
  CURRENT SIZE: 18 - 20 ft
  FINAL SIZE: 40-60 feet tall, 10-20 ft wide
- Older Evergreens - Firs & Spruces
  CURRENT SIZE: 20-25 ft
  FINAL SIZE: 40-60 feet tall, 10-20 ft wide

Full Size Tree Example

Deciduous Trees - Maples & Oaks
FINAL SIZE: 40-50 feet tall, 30-50 ft spread

Younger Evergreens - Firs & Spruces
FINAL SIZE: 40-60 feet tall, 10-20 ft wide



Ornamental Trees - Serviceberry
FINAL SIZE: 15-25 feet tall, 15-25 ft spread

Existing Trees & Site Photos

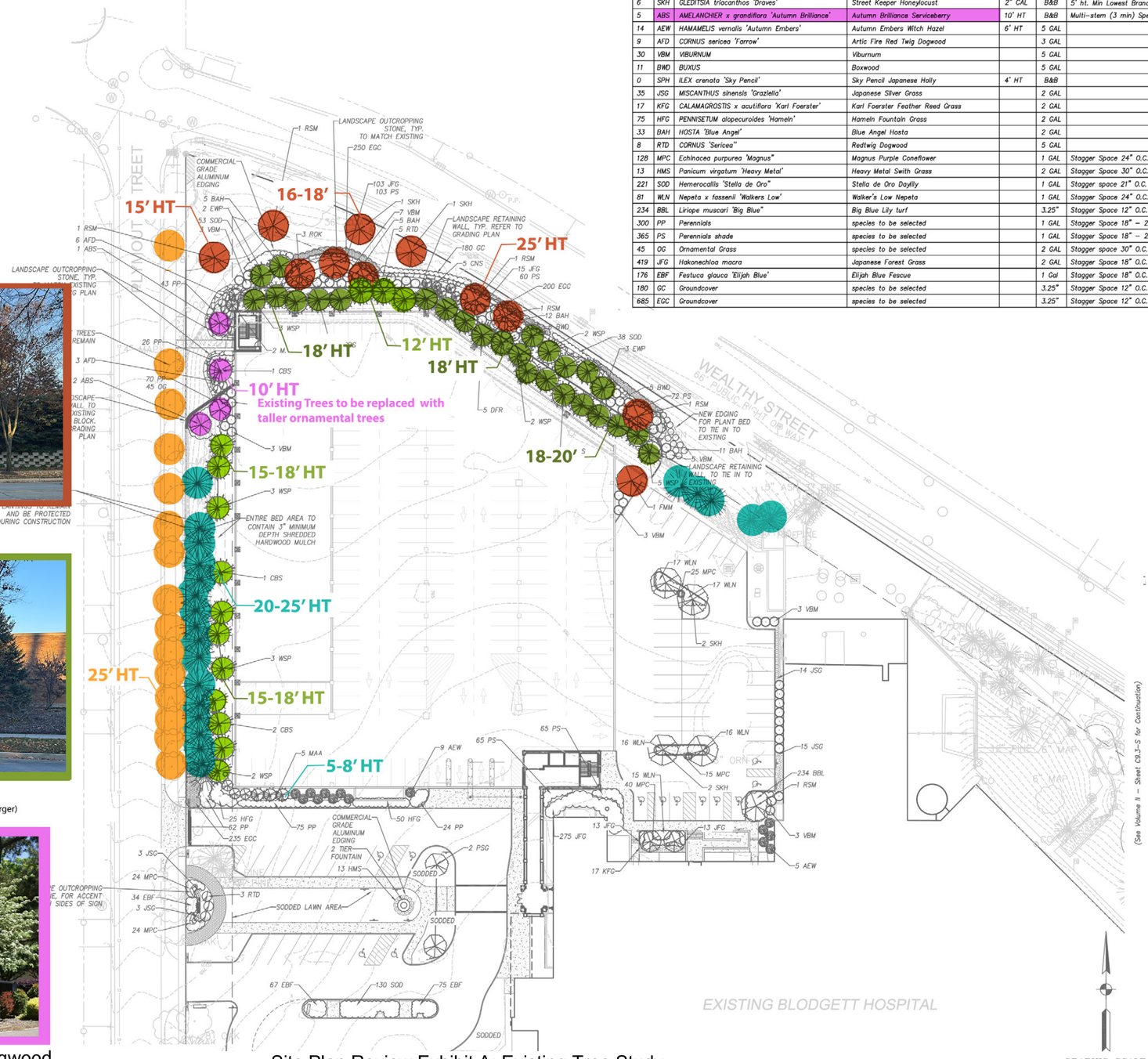
Deciduous Trees - Maples & Oaks
CURRENT SIZE: 18-20ft ht, 10-15 spread , Street trees 25' ht

Existing Tree- Firs & Spruce
CURRENT SIZE - 15-20' ht , 8-12' width (Trees on North side are larger)

Existing Tree- Serviceberry
CURRENT SIZE - 8-10' ht , 6-8' width

Proposed - Starlight Dogwood
FINAL SIZE: 22-30' ht, 20' spread

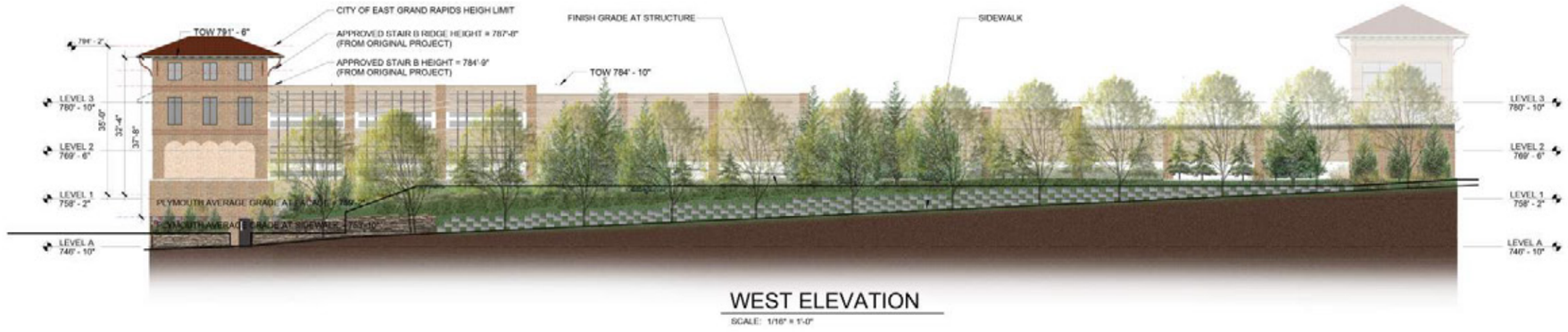
QTY	SYM	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	NOTES
5	CNS	Picea abies 'Cupressina'	Columnar Norway Spruce	10' HT	B&B	
5	DFR	PSEUDOTSUGA menziesii	Douglas Fir	10' HT	B&B	
5	EWP	PINUS strobus	Eastern White Pine	10' HT	B&B	
20	WSP	PICEA glauca	White Spruce	10' HT	B&B	
11	CBS	PICEA pungens 'Glauca'	Colorado Blue Spruce	10' HT	B&B	
7	MAA	THUJA occidentalis 'Techny'	Mission American Arborvitae	8' HT	B&B	
6	RSM	ACER rubrum 'Franksred'	Red Sunset Maple	3" CAL	B&B	6' ht. Min Lowest Branches
1	FMM	ACER x freemanii "Armstrong'	Armstrong Maple	3" CAL	B&B	6' ht. Min Lowest Branches
0	KSO	QUERCUS robur x bicolor 'Nadler'	Kindred Spirit Columnar Oak	2" CAL	B&B	5' ht. Min Lowest Branches
3	ROK	QUERCUS rubra	Red Oak	3" CAL	B&B	6' ht. Min Lowest Branches
2	PSG	GINKGO biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	3" CAL	B&B	6' ht. Min Lowest Branches
6	SKH	GLEDITSIA triacanthos 'Draves'	Street Keeper Honeylocust	2" CAL	B&B	5' ht. Min Lowest Branches
5	ABS	AMELANCHIER x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	10' HT	B&B	Multi-stem (3 min) Specimen
14	AEW	HAMAMELIS vernalis 'Autumn Embers'	Autumn Embers Witch Hazel	6' HT	5 GAL	
9	AFD	CORNUS sericea 'Farrow'	Artic Fire Red Twig Dogwood		3 GAL	
30	VBM	VIBURNUM	Viburnum		5 GAL	
11	BWD	BUXUS	Boxwood		5 GAL	
0	SPH	ILEX crenata 'Sky Pencil'	Sky Pencil Japanese Holly	4' HT	B&B	
35	JSG	MISCANTHUS sinensis 'Graziella'	Japanese Silver Grass		2 GAL	
17	KFG	CALAMAGROSTIS x acutiflora 'Karl Foerster'	Karl Foerster Feather Reed Grass		2 GAL	
75	HFG	PENNISETUM alopecuroides 'Hameln'	Hameln Fountain Grass		2 GAL	
33	BAH	HOSTA 'Blue Angel'	Blue Angel Hosta		2 GAL	
8	RTD	CORNUS 'Sericea"	Redtwig Dogwood		5 GAL	
128	MPC	Echinacea purpurea 'Magnus"	Magnus Purple Coneflower		1 GAL	Stagger Space 24" O.C.
13	HMS	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass		2 GAL	Stagger Space 30" O.C.
221	SOD	Hemerocallis 'Stella de Oro"	Stella de Oro Daylily		1 GAL	Stagger space 21" O.C.
81	WLN	Nepeta x fassenii 'Walkers Low'	Walker's Low Nepeta		1 GAL	Stagger Space 24" O.C.
234	BBL	Liriope muscari 'Big Blue"	Big Blue Lily turf		3.25"	Stagger Space 12" O.C.
300	PP	Perennials	species to be selected		1 GAL	Stagger Space 18" – 24" O.C.
365	PS	Perennials shade	species to be selected		1 GAL	Stagger Space 18" – 24" O.C.
45	OG	Ornamental Grass	species to be selected		2 GAL	Stagger space 30" O.C.
419	JFG	Hakonechloa macra	Japanese Forest Grass		2 GAL	Stagger Space 18" O.C.
176	EBF	Festuca glauca 'Elijah Blue'	Elijah Blue Fescue		1 Gal	Stagger Space 18" O.C.
180	GC	Groundcover	species to be selected		3.25"	Stagger Space 12" O.C.
685	EGC	Groundcover	species to be selected		3.25"	Stagger Space 12" O.C.



Site Plan Review Exhibit A: Existing Tree Study
Corewell Blodgett Ramp 2 Vertical Expansion

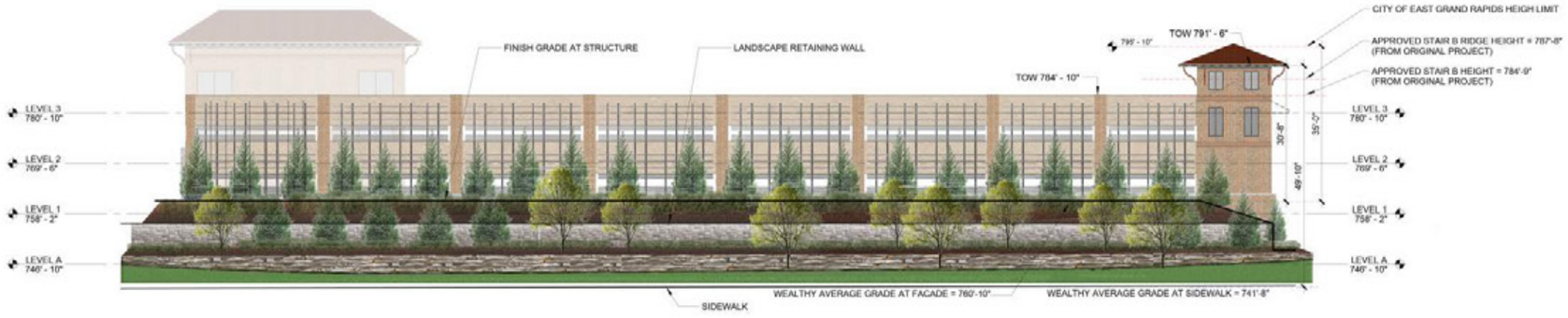
01/06/2026
SHEET 1 OF 1

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.



WEST ELEVATION

SCALE: 1/16" = 1'-0"



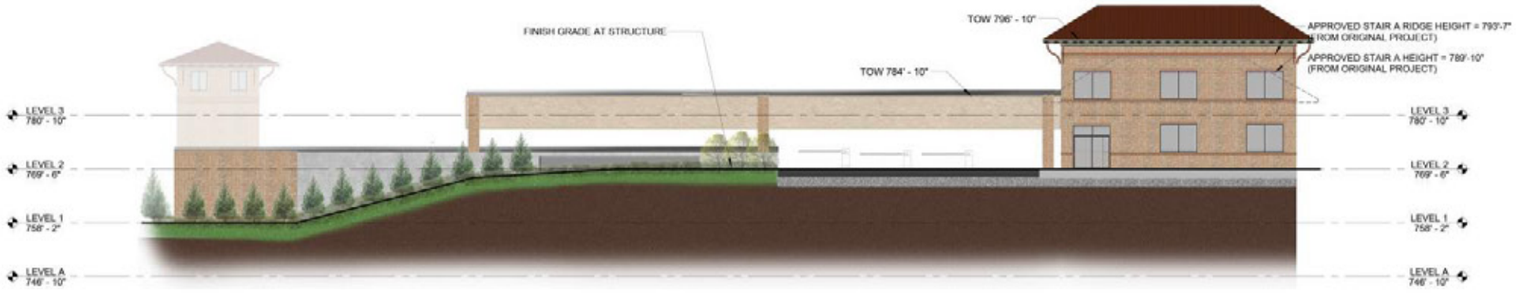
NORTH ELEVATION

SCALE: 1/16" = 1'-0"

Site Plan Review Exhibit B: Elevations - After Construction

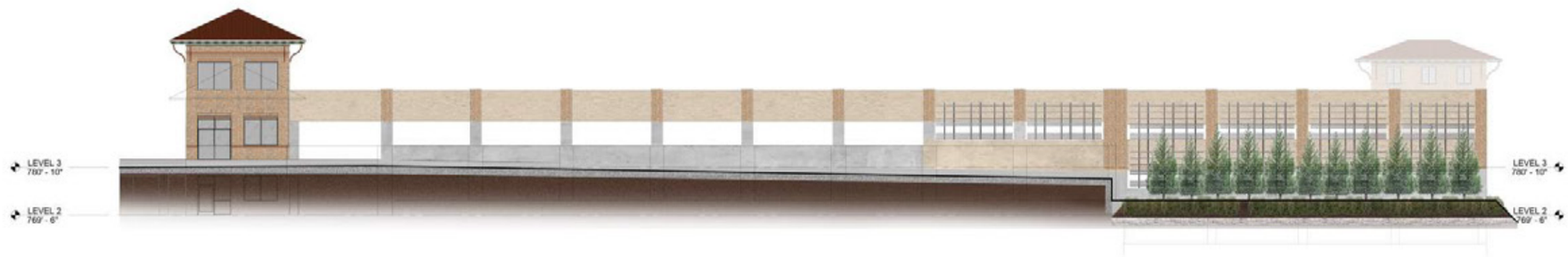
Corewell Blodgett Ramp 2 Vertical Expansion

R1 01/06/2026
12/23/2025



SOUTH ELEVATION

SCALE: 1/16" = 1'-0"



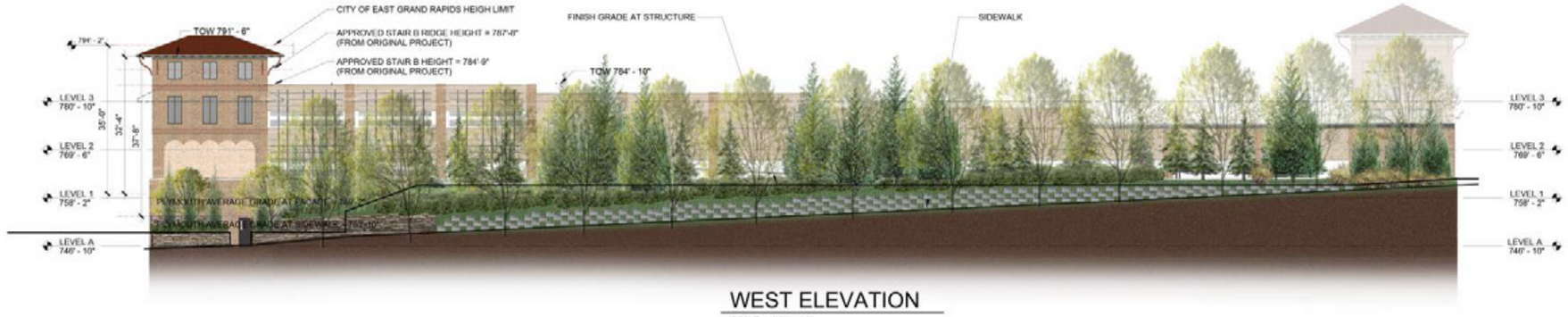
EAST ELEVATION

SCALE: 1/16" = 1'-0"

Site Plan Review Exhibit B: Elevations - After Construction

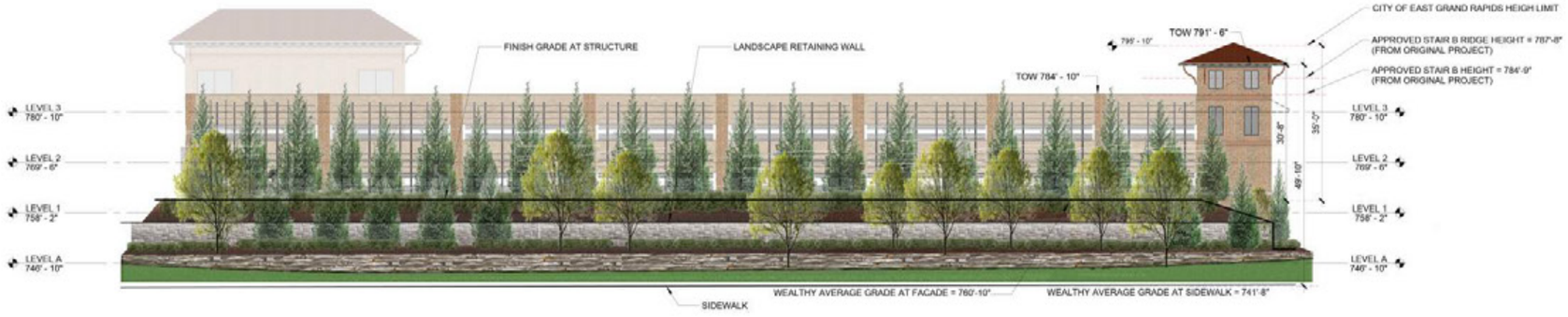
Corewell Blodgett Ramp 2 Vertical Expansion

R1 01/06/2026
12/23/2025



WEST ELEVATION

SCALE: 1/16" = 1'-0"



NORTH ELEVATION

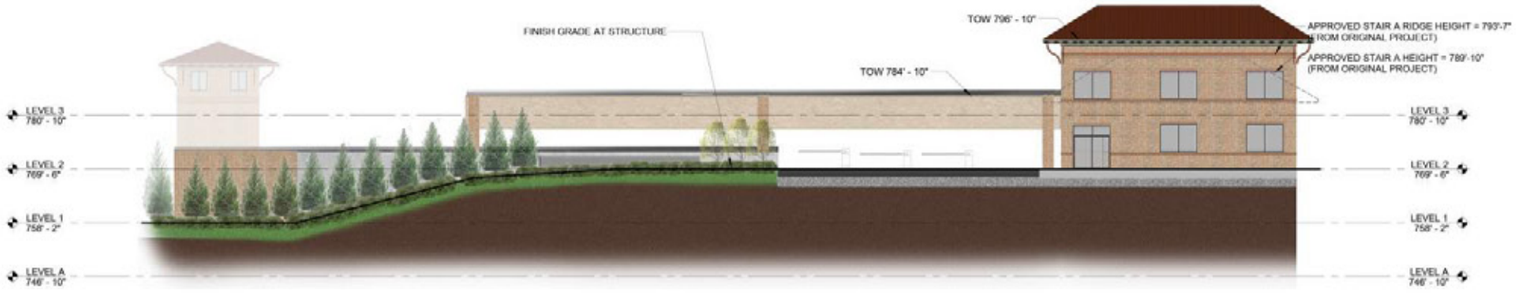
SCALE: 1/16" = 1'-0"

Site Plan Review Exhibit B: Elevations - Projected 10-year Landscape Growth

01/06/2026

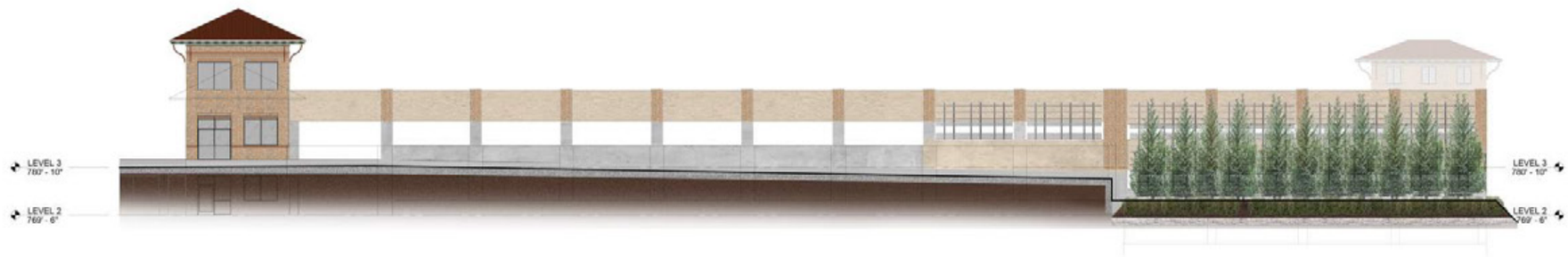
Corewell Blodgett Ramp 2 Vertical Expansion

Projected Average Growth - Results depend on environmental factors and are highly variable



SOUTH ELEVATION

SCALE: 1/16" = 1'-0"



EAST ELEVATION

SCALE: 1/16" = 1'-0"

Site Plan Review Exhibit B: Elevations - Projected 10-year Landscape Growth

01/06/2026

Corewell Blodgett Ramp 2 Vertical Expansion

Projected Average Growth - Results depend on environmental factors and are highly variable

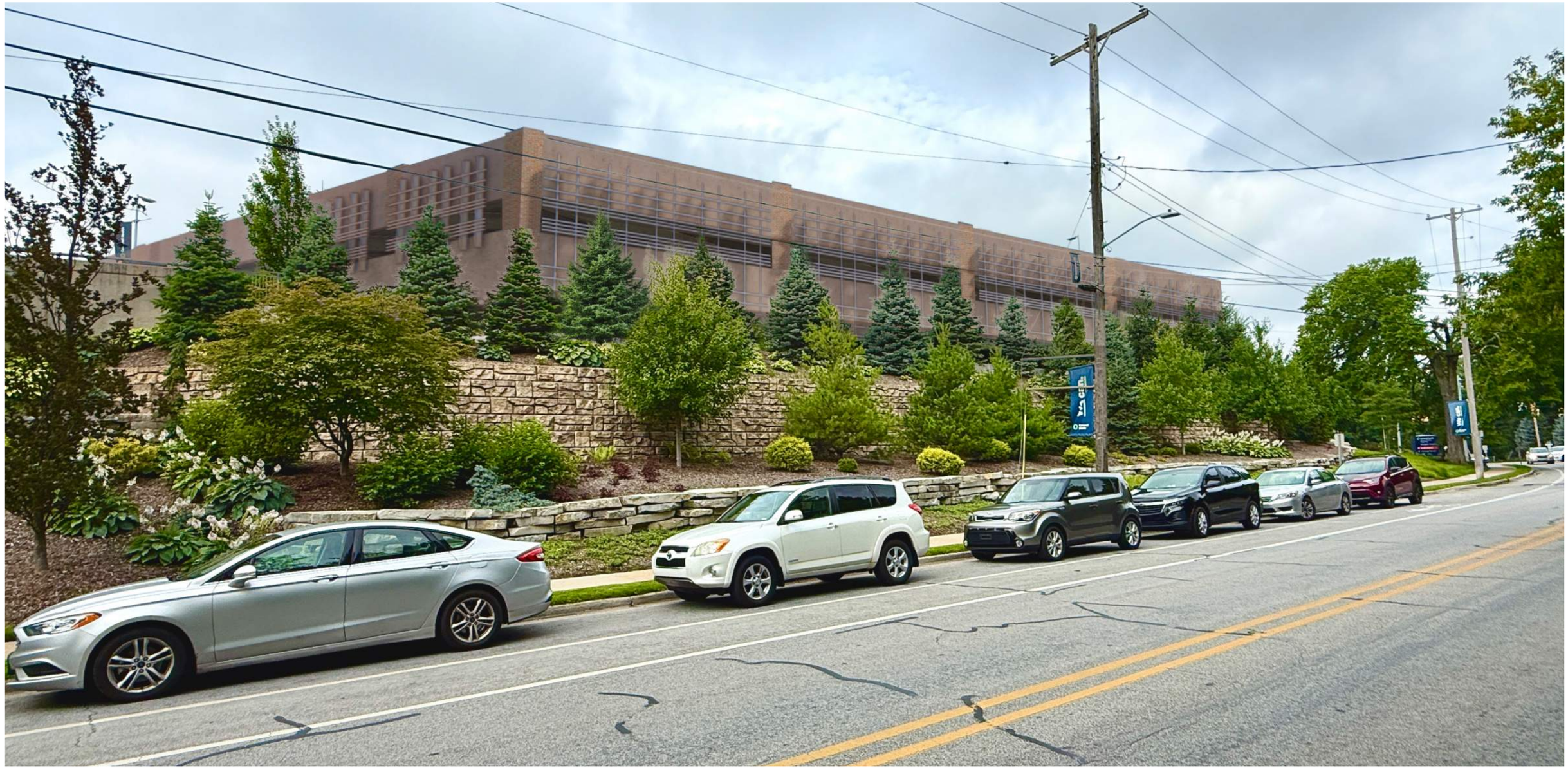
VIEW 1 - WEALTHY/PLYMOUTH CORNER - BEFORE

VIEW 1 - WEALTHY/PLYMOUTH CORNER - AFTER

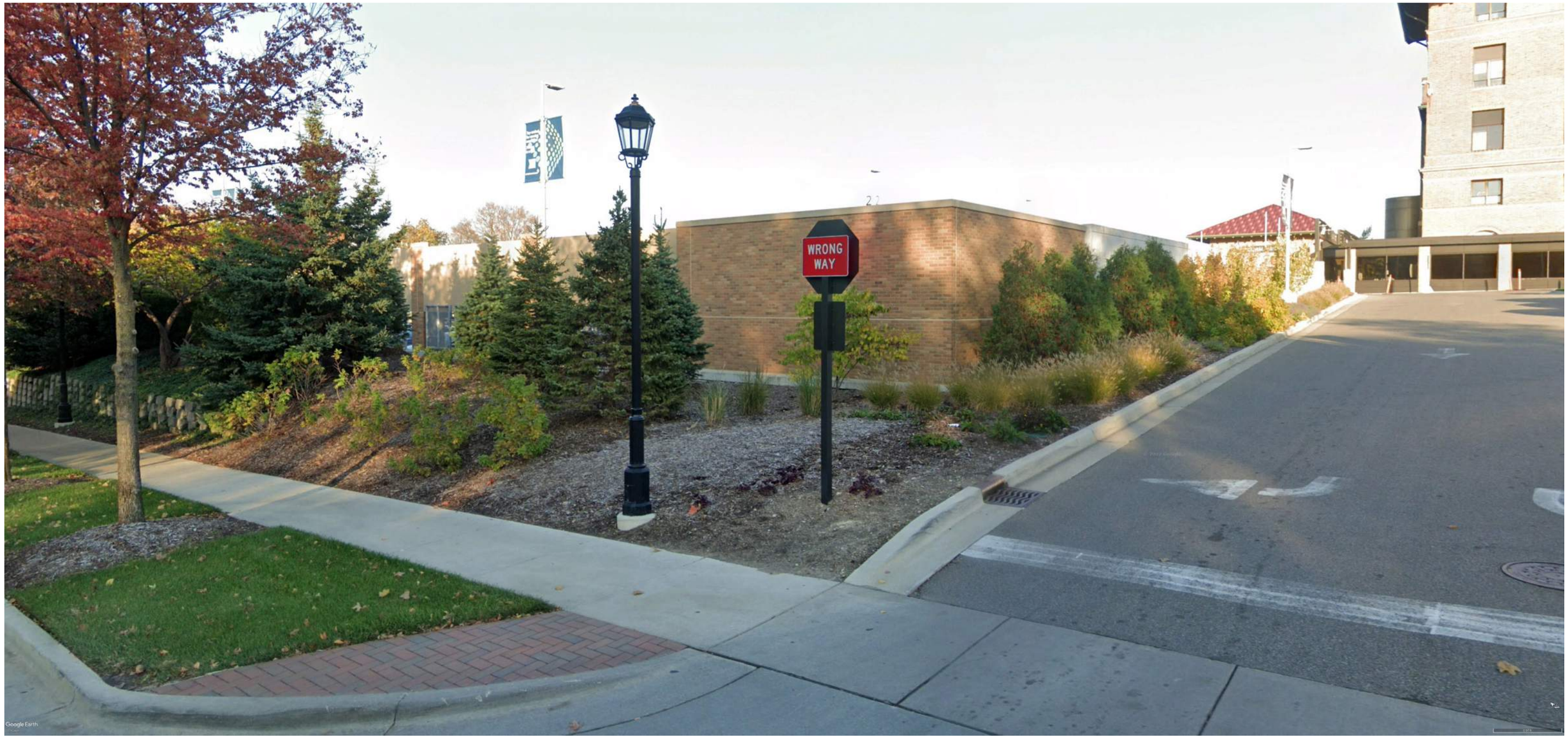
VIEW 1 - WEALTHY/PLYMOUTH CORNER - 10 Year Growth

VIEW 2 - WEALTHY ST - BEFORE

VIEW 2 - WEALTHY ST - AFTER



VIEW 3 - PLYMOUTH AVE - BEFORE



VIEW 3 - PLYMOUTH AVE - AFTER

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Technical Memo

SUBJECT: Corewell Health Blodgett Hospital Campus Traffic Impact Study

FROM: Alyssa Wambold, PE, PTOE and Kyle Reidsma, PE, PTOE

DATE: December 22, 2025 **PROJECT NO.:** 241354

Executive Summary

Fishbeck has conducted a traffic impact study (TIS) to evaluate the impacts of the vertical expansion of the north parking structure at the Corewell Health Blodgett Hospital Campus. The results of the analysis revealed that no improvements are necessary to the study intersections to mitigate traffic impacts related to the vertical expansion of the north parking structure. This conclusion is supported by the following findings:

- Every movement, approach, and intersection within the study network operates at an acceptable Level of Service (LOS) D or better in all analysis periods, with and without the proposed expansion.
- The addition of push buttons at the intersection of Plymouth Avenue and Lake Drive is not necessary as recent adjustments to the traffic signal timings result in acceptable LOS D for all movements and approaches. The vehicular LOS is acceptable with the leading pedestrian intervals (LPI) being active during each signal cycle and therefore the push buttons are not necessary.
- The vehicles that will utilize the expanded parking structure are already in the adjacent roadway network, utilizing an off-site parking lot or on-street parking.
- The review of existing crash data indicated the clearance intervals, corridor progression, and flash schedules at the signalized intersections could be reviewed to reduce the number of red-light running crashes.

Introduction

Project Overview

On behalf of Corewell Health Hospitals, Fishbeck has conducted a TIS to evaluate the impacts of the vertical expansion of the north parking structure at the Corewell Health Blodgett Hospital Campus located between Plymouth Avenue, Wealthy Street, and Sherman Street in the City of East Grand Rapids (City), Michigan. The construction includes the vertical expansion of the existing north parking structure to increase the amount of parking on campus, which is anticipated to be completed and open in 2027. The expansion of the parking structure is to allow vehicles to park on campus and not on adjacent streets or in the employee satellite parking lot. The project location and study intersections are displayed in Figure 1.

Figure 1 – Project Location and Study Network

Maps Data: Google, ©2025 Airbus, Maxar Technologies

Study Methodology

The objectives of this TIS were to analyze the operations of the road network surrounding the Corewell Health Blodgett Hospital Campus and to quantify the impacts of the proposed parking structure expansion construction. Study analyses were completed relative to typical weekday morning and afternoon peak periods.

This study was conducted according to the methodologies and guidance published by the Institute of Transportation Engineers (ITE), American Association of State Highway and Transportation Officials (AASHTO), Michigan Department of Transportation (MDOT), and the City.

In January 2020, Abonmarche Consultants, Inc. completed a TIS to review changes to parking and access at the Corewell Health Blodgett Hospital Campus. A subsequent TIS from November 6, 2024, completed by Fishbeck, evaluated the post-construction conditions following the construction of the parking/access reconfiguration to review traffic operations. The findings of the post-construction TIS recommended adjusting signal timing splits at the intersection of Plymouth Avenue and Lake Drive to improve delays and queueing. These adjustments were recently implemented by the City. Additionally, it was recommended to consider installing pedestrian push buttons at the same intersection to allow the LPI to only activate when called. The LPIs were installed between the original 2020 TIS and the post-construction 2024 TIS. The pedestrian volumes at this intersection are high and pedestrians are often present throughout the day, and the addition of push buttons would likely not significantly change operations at the intersection, as the push buttons would be activated most cycles.

Intersection Characteristics

Based on the type and size of the proposed development and the likely area of influence for the site trips, traffic operations were analyzed for the following intersections:

- Plymouth Avenue and Wealthy Street (signalized)
- Plymouth Avenue and North Driveway (unsignalized)
- Plymouth Avenue and Middle Driveway (unsignalized)
- Plymouth Avenue and South Driveway (unsignalized)
- Plymouth Avenue and Lake Drive (signalized)
- Wealthy Street and East Driveway (unsignalized)

A figure showing the existing intersection lane configurations, traffic controls, and posted speed limits is included in Attachment 1.

The intersection of Plymouth Avenue and Lake Drive has LPIs on all approaches. An LPI is where the pedestrian walk phase starts while all vehicle phases are red. This allows the pedestrians to enter the crosswalk and establish their presence before vehicles turn or have the right of way. Typically, LPIs are activated by pedestrian push buttons and only occur when requested by a pedestrian via the push button. At this intersection, no push buttons are present, and the LPI activates during every cycle whether there are pedestrians present or not. The LPI is currently set at 3 seconds.

Roadway Characteristics

The characteristics of the study area roadways are described in Table 1. Table 2 provides Average Annual Daily Traffic (AADT) volumes on the roadways surrounding the Corewell Health Blodgett Hospital Campus from 2013 to 2024. The data points referenced were from the MDOT and Grand Valley Metropolitan Council (GVMC) Traffic Count Database Systems (TCDS). The AADT data has remained consistent over that time period, with the exception of the reduction of volumes in 2020. The 2020 AADT volumes were affected by the COVID-19 pandemic which resulted in less traffic on roadways throughout the city, state, and country. The AADT numbers show that traffic volumes have increased following 2020 and are similar to the pre-pandemic years.

Table 1 – Roadway Characteristics

Roadway	Jurisdiction	Speed Limit (mph)	No. of Lanes	Roadway Classification
Plymouth Avenue	City	25	2-3	Major Collector
Wealthy Street	City	25	2-3	Major Collector
Lake Drive	City	25	2-3	Minor Arterial

Table 2 – Historical Traffic Volumes (AADT Volumes)

Roadway	2024	2023	2020	2019	2016	2013
Plymouth Avenue: Wealthy Street and Lake Drive	-	-	6,529	-	7,267	6,880
Wealthy Street: West of Plymouth Avenue	6,700	-	4,518	-	6,765	6,540
Wealthy Street: East of Plymouth Avenue	5,430	-	4,402	-	7,373	6,235
Lake Drive: West of Plymouth Avenue	-	8,341	-	8,314	10,506	12,016
Lake Drive: East of Plymouth Avenue	-	7,457	-	8,024	8,423	9,293

Figure 2 presents the 2024 AADT volumes in a larger context to the surrounding area. The AADT volumes are from the MDOT TCDS and are a combination of 2024 volume counts and projected volumes based on older volume counts grown to 2024 based on regional growth rates, depending on the available data. The volumes within the study area are similar to other collector and arterial roadways in the immediate network.

Figure 2 – Estimated Area 2024 AADT Volumes

Maps Data: Google, ©2025 Airbus, Maxar Technologies

Existing Traffic Volumes

Vehicular, pedestrian, and cyclist turning movement counts (TMCs) were collected at the following study intersections during the weekday morning (7 a.m. to 9 a.m.) and afternoon (2 p.m. to 7 p.m.) peak periods of the road network on Wednesday, November 19, 2025:

- Plymouth Avenue and Wealthy Street
- Plymouth Avenue and North Driveway
- Plymouth Avenue and Middle Driveway
- Plymouth Avenue and South Driveway
- Plymouth Avenue and Lake Drive
- Wealthy Street and East Driveway

The a.m. peak hour of each intersection occurs between 7:30 a.m. and 8:30 a.m. The p.m. peak hour at most of the intersections occurs between 4:30 p.m. and 5:30 p.m. The p.m. peak hour at the intersection of Wealthy Street and East Driveway occurs between 2:45 p.m. and 3:45 p.m. The differences in p.m. peak hours along Wealthy Street may be attributed to school traffic with three nearby schools dismissing around 3:00 p.m.

A comparison was completed between the traffic counts collected for this study, traffic counts collected on Tuesday, May 14, 2024 (from Fishbeck TIS), and traffic counts collected on Thursday, June 1, 2017 (from Abonmarche Consultants, Inc. TIS). The 2025 and 2017 counts included pedestrian and cyclist counts, while the 2024 counts did not. Comparison of the vehicular volumes between the three sets of counts revealed little

difference in traffic volumes. Comparison of the 2017 and 2025 pedestrian and cyclist counts revealed the pedestrian and cyclist counts were higher in 2017 than 2025, likely due to the 2017 counts being collected in June and the 2025 counts being collected in November. For this study, the 2025 vehicular volumes were utilized and the 2017 pedestrian and cyclist volumes were utilized to be conservative. The traffic volume information is provided in Attachment 1, including a figure depicting the existing traffic volumes used in this study.

2025 Existing Conditions Analysis

Traffic Operations Analysis Methodology

Synchro was used to perform Highway Capacity Manual (HCM) operational analyses during the a.m. and p.m. peak hours for all intersections within this study. According to the most recent editions of the HCM, Level of Service (LOS) is a qualitative measure describing operational conditions of a traffic stream or intersection. LOS ranges from A to F, with LOS A representing desirable traffic operations characterized by low delay and LOS F representing extremely poor traffic operations characterized by excessive delays and long vehicle queues. LOS D is generally considered acceptable for most areas. Table 3 presents the HCM LOS criteria for unsignalized and signalized intersections. The color coding in the table is used in the operational analysis summary tables later in this report.

Table 3 – LOS Criteria

LOS	Control Delay (s/veh)	
	Unsignalized	Signalized
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50 or v/c > 1.0	> 80 or v/c > 1.0

s/veh seconds per vehicle
v/c volume to capacity ratio

2025 Existing Conditions Traffic Analysis

Synchro models for the existing network were created based on the existing roadway configurations and traffic controls, as observed in the field and from available aerial and street level imagery. The traffic signal timing permits for the signalized intersections were provided by the City for use in the models. The City recently installed optimized signal timing splits at the intersection of Plymouth Avenue and Lake Drive to reduce delays identified in the previous TIS. These revised timing splits were utilized in this analysis. The intersection of Plymouth Avenue and Lake Drive cannot be evaluated using HCM 6th Edition or HCM 7th edition methods due to the LPIs; therefore, HCM 2000 calculations were utilized for this intersection. The resulting LOS and delay for the existing conditions are provided in Table 4.

Table 4 – LOS Analysis for 2025 Existing Conditions

Approach	LOS/Delay (s/veh)			
	a.m. Peak Hour		p.m. Peak Hour	
Plymouth Avenue and Lake Drive (Signalized)				
EB Lake Drive	C	26.4	D	39.0
WB Lake Drive	C	26.9	C	29.7
NB Plymouth Avenue	D	35.3	D	36.2
SB Plymouth Avenue	C	33.3	D	36.4
Overall	C	30.9	D	35.6
Plymouth Avenue and Wealthy Street (Signalized)				
EB Wealthy Street	B	15.6	B	14.6
WB Wealthy Street	B	16.0	B	15.9
NB Plymouth Avenue	A	3.0	B	10.3
SB Plymouth Avenue	B	13.3	B	13.8
Overall	B	11.1	B	13.2
Plymouth Avenue and North Driveway (WB Stop-Controlled)				
WB North Driveway	B	12.0	B	12.2
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	A	2.0	A	2.4
Plymouth Avenue and Middle Driveway (Inbound Traffic Only)				
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	Free		Free	
Plymouth Avenue and South Driveway (WB Stop-Controlled)				
WB South Driveway	B	12.2	B	12.6
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	A	0.8	A	0.1
Overall	A	1.0	A	0.9
Wealthy Street and East Driveway (EB Stop-Controlled)				
EB East Driveway	B	13.7	B	13.9
NB Wealthy Street	A	1.6	A	0.6
SB Wealthy Street	Free		Free	
Overall	B	3.7	A	4.2

Further analysis of the LOS results for existing conditions revealed all movements and approaches operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours.

SimTraffic simulations were also reviewed to observe network operations and vehicle queues. For existing conditions, study network operations are generally acceptable. The existing conditions LOS reports and queueing analysis reports are provided in Attachment 2.

Safety Analysis

Reported Crash Data

In addition to operational analyses, historical crash data for the study area was reviewed. Crash data was obtained at the two signalized intersections for the most recent five years (January 1, 2020 – December 31, 2024) of available data on Michigan Traffic Crash Facts website, which references the Michigan State Police database. There was a total of 34 reported crashes at these locations. Of these crashes, there were no fatal crashes, one serious injury (A) crash, one minor injury (B) crash, five potential injury (C) crashes, and 27 property damage only (PDO) crashes. A breakdown of crashes by location and crash type is provided in Tables 5 and 6.

Table 5 – Crash Summary by Location (January 1, 2020 – December 31, 2024)

Intersection	Total Crashes	Fatal	A	B	C	PDO
Plymouth Avenue and Lake Drive	24	-	1	1	4	18
Plymouth Avenue and Wealthy Street	10	-	-	-	1	9
Total	34	-	1	1	5	27

Table 6 – Crash Summary by Type (January 1, 2020 – December 31, 2024)

Crash Type	Total Crashes	Fatal	A	B	C	PDO
Angle	18	-	-	1	4	13
Head-On	1	-	-	-	-	1
Other	1	-	-	-	-	1
Pedestrian	3	-	1	-	1	1
Rear-End	7	-	-	-	-	7
Sideswipe Opposite Directions	1	-	-	-	-	1
Sideswipe Same Direction	3	-	-	-	-	3
Total	34	-	1	1	5	27

The UD-10 crash reports were reviewed for each crash. Sixteen crashes involved a vehicle that disregarded a solid red or flashing red signal indication, with 13 of these crashes occurring at the intersection of Plymouth Avenue and Lake Drive and three of these crashes occurring at the intersection of Plymouth Avenue and Wealthy Street. At the intersection of Plymouth Avenue and Lake Drive, nine of these crashes occurred while the signal was in flash mode (EB/WB Lake Drive has flashing red indication, NB/SB Plymouth Avenue has flashing yellow indication), while the remaining four crashes occurred while the signal was fully operational. All of these crashes except for one occurred on the EB or WB approach. At the intersection of Plymouth Avenue and Wealthy Street, all three crashes occurred while the signal was fully operational and were caused by a vehicle on a different approach. The clearance intervals, corridor progression, and flash schedules could be reviewed at both of the signalized intersections to help reduce these crash types. Additionally, backplates could be installed on the signal heads to improve visibility of the signal.

Three crashes involved a pedestrian and no crashes involved a bicyclist. The first crash occurred at the intersection of Plymouth Avenue and Wealthy Street and involved an EB vehicle attempting to turn right, failing to yield to the pedestrian in the crosswalk, and striking the pedestrian. The crash narrative described the pedestrian sustaining a knee injury. This crash was coded as no injury (PDO) as the responding officer failed to assign an injury level to the pedestrian on the UD-10 crash report. The second crash occurred at the intersection of Plymouth Avenue and Lake Drive and involved a NB vehicle striking a pedestrian that was crossing the intersection in the crosswalk on the north leg of the intersection. The vehicle had the right of way and the pedestrian disregarded the “Do Not Walk” signal head. The pedestrian sustained a serious injury (A). The final crash occurred at the intersection of Plymouth Avenue and Wealthy Street and involved a NB vehicle attempting

to turn left, failing to yield to a pedestrian in the crosswalk, and striking the pedestrian, who sustained a potential injury (C). The installation of the LPI at some point between 2020 and 2024 allows the pedestrians to enter the crosswalk and establish their presence before vehicles turn or have the right of way, which can improve pedestrian safety.

Of the remaining 15 crashes, seven crashes involved a vehicle failing to stop for stopped or slowing traffic ahead, three crashes involved a vehicle attempting to change lanes without assured clear distance, two crashes involved a vehicle being unable to stop due to snowy road conditions, two crashes involved a vehicle turning into or from the incorrect lane, and one crash involved a vehicle attempting to turn left without assured clear distance.

Based on the results of the existing conditions analysis, the City could review the clearance intervals, corridor progression, and flash schedules at the signalized intersections in an attempt to reduce the number of red-light running crashes. No other crash patterns were identified. See Attachment 3 for a summary of the crash data.

Near-Miss Data

Traditional review of crash data is limited to crashes that were reported to the police and documented. This review does not typically highlight locations where safety issues may exist or locations where a crash almost occurred, known as a near-miss because there is usually not data related to near-misses. In order to try and locate and quantify near-misses and areas of concern, the GVMC has created a dashboard where citizens can anonymously report safety concerns and near-miss data. Review of this dashboard (reports through September 30, 2025) revealed no near-miss crashes or safety concerns have been reported on any of the roadways surrounding the Corewell Health Blodgett Hospital Campus since this database was created in 2023. It is acknowledged that the GVMC's database has limited information because it requires citizens to report the events.

2027 Background Conditions Analysis

Historical population data from the US Census Bureau was referenced to determine the applicable growth rate for the existing traffic volumes to the project completion in 2027. Based on this review, a background growth rate of 0.5% per year was utilized. A figure depicting the 2027 background volumes is provided in Attachment 1.

2027 Background Conditions Traffic Analysis

The resulting LOS and delay for the background conditions are provided in Table 7.

Table 7 – LOS Analysis for 2027 Background Conditions

Approach	LOS/Delay (s/veh)			
	a.m. Peak Hour		p.m. Peak Hour	
Plymouth Avenue and Lake Drive (Signalized)				
EB Lake Drive	C	26.5	D	39.5
WB Lake Drive	C	27.0	C	29.9
NB Plymouth Avenue	D	35.5	D	36.5
SB Plymouth Avenue	C	33.4	D	36.7
Overall	C	31.1	D	35.9
Plymouth Avenue and Wealthy Street (Signalized)				
EB Wealthy Street	B	15.6	B	14.7
WB Wealthy Street	B	16.1	B	16.0
NB Plymouth Avenue	A	3.0	B	10.4
SB Plymouth Avenue	B	13.1	B	13.9
Overall	B	11.1	B	13.3

Table 7 – LOS Analysis for 2027 Background Conditions

Approach	LOS/Delay (s/veh)			
	a.m. Peak Hour		p.m. Peak Hour	
Plymouth Avenue and North Driveway (WB Stop-Controlled)				
WB North Driveway	B	12.1	B	12.3
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	A	2.0	A	2.4
Plymouth Avenue and Middle Driveway (Inbound Traffic Only)				
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	Free		Free	
Plymouth Avenue and South Driveway (WB Stop-Controlled)				
WB South Driveway	B	12.2	B	12.7
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	A	0.8	A	0.1
Overall	A	1.0	A	0.9
Wealthy Street and East Driveway (EB Stop-Controlled)				
EB East Driveway	B	13.8	B	14.0
NB Wealthy Street	A	1.6	A	0.6
SB Wealthy Street	Free		Free	
Overall	B	3.7	A	4.2

Further analysis of the LOS results for background conditions revealed all movements, approaches, and intersections are expected to continue to operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours similar to existing conditions.

SimTraffic simulations were also reviewed to observe network operations and vehicle queues. For background conditions, study network operations are generally acceptable. The background conditions LOS reports and queueing analysis reports are provided in Attachment 4.

Site Traffic Characteristics

For a typical TIS, site trip generation would be forecast based on the proposed land use, density, and data published in *Trip Generation* by ITE. In the case of new parking supply, vehicular traffic demand is relative to the land uses served by the parking supply, mix of expected users, expected turnover rates of each parking area, as well as the ability to process entry/exit.

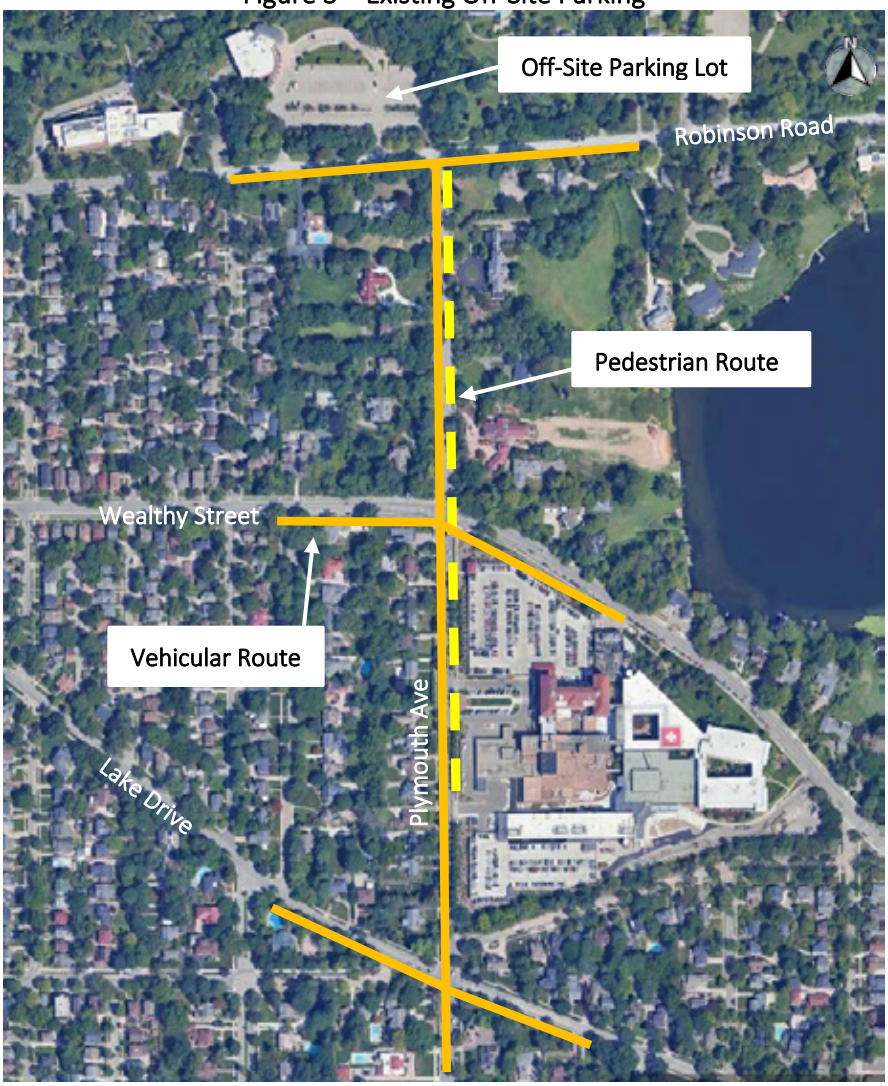
Fishbeck parking engineers/planners provided calculations for the number of hourly vehicular trips expected in and out of each parking area based on knowledge of the mix of expected users and extensive experience with turnover/service rates and overall parking structure operations. Table 8 presents the resulting trip generation for the parking structure.

Table 8 – Trip Generation

Scenario	a.m. Peak Hour			p.m. Peak Hour		
	In	Out	Total	In	Out	Total
Existing Trip Generation	135	92	227	52	123	175
Projected Trip Generation	165	126	291	126	166	292
Projected Traffic Increase	30	34	64	74	43	117

With this project, there are no proposed changes to the hospital building that would generate additional trips. The expansion of the parking structure is intended to provide additional parking on the Blodgett campus. The additional parking would allow existing vehicles that are parking on city streets to park on-site. Additionally, hospital staff currently utilizes an off-site parking lot at Aquinas College for overflow parking and then walks to the campus. The vehicular traffic that will utilize the parking lot expansion is already in the roadway network adjacent to the Blodgett campus as vehicles find off-site parking. Depending on the origin of the vehicle, it is likely that a vehicle (or pedestrian) passes through one or more of the study area intersections today and is already accounted for in the background volumes that have been analyzed. Figure 3 shows the location of the off-site parking lot at Aquinas College.

Figure 3 – Existing Off-Site Parking



Maps Data: Google, ©2025 Airbus, Maxar Technologies

The directions that site traffic will travel to and from were based upon existing traffic patterns during the a.m. and p.m. peak hours. The existing traffic patterns reflect the gravity between origins and destinations in the study area, and therefore an accurate indication of where the proposed trips would be coming from and going to. Table 9 provides the probable distribution based on existing traffic patterns. Figures presenting the trip generation volumes and the future traffic volumes are included in Attachment 1.

Table 9 – Trip Distribution

Direction	Via	a.m. Peak Hour		p.m. Peak Hour	
		To	From	To	From
North	Plymouth Avenue	22%	25%	22%	21%
South	Plymouth Avenue	20%	24%	21%	19%
East	Wealthy Street	7%	10%	7%	9%
	Lake Drive	18%	15%	19%	19%
West	Wealthy Street	13%	10%	11%	9%
	Lake Drive	20%	16%	20%	23%

2027 Future Conditions Analysis

2027 Future Conditions Traffic Analysis

The resulting LOS and delay for the future conditions are presented in Table 10.

Table 10 – LOS Analysis for 2027 Future Conditions

Approach	LOS/Delay (s/veh)			
	a.m. Peak Hour		p.m. Peak Hour	
Plymouth Avenue and Lake Drive (Signalized)				
EB Lake Drive	C	26.4	D	39.1
WB Lake Drive	C	27.3	C	30.6
NB Plymouth Avenue	D	36.2	D	37.4
SB Plymouth Avenue	D	35.1	D	38.9
Overall	C	31.7	D	36.8
Plymouth Avenue and Wealthy Street (Signalized)				
EB Wealthy Street	B	15.7	B	14.8
WB Wealthy Street	B	16.1	B	16.0
NB Plymouth Avenue	A	3.1	B	10.7
SB Plymouth Avenue	B	13.2	B	14.3
Overall	B	11.2	B	13.5
Plymouth Avenue and North Driveway (WB Stop-Controlled)				
WB North Driveway	B	12.6	B	12.8
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	A	2.6	A	2.9
Plymouth Avenue and Middle Driveway (Inbound Traffic Only)				
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	Free		Free	
Overall	Free		Free	

Table 10 – LOS Analysis for 2027 Future Conditions

Approach	LOS/Delay (s/veh)			
	a.m. Peak Hour		p.m. Peak Hour	
Plymouth Avenue and South Driveway (WB Stop-Controlled)				
WB South Driveway	B	12.4	B	13.3
NB Plymouth Avenue	Free		Free	
SB Plymouth Avenue	A	0.8	A	0.1
Overall	A	0.9	A	0.9
Wealthy Street and East Driveway (EB Stop-Controlled)				
EB East Driveway	B	13.9	B	14.1
NB Wealthy Street	A	1.6	A	0.6
SB Wealthy Street	Free		Free	
Overall	B	3.7	A	4.2

Further analysis of the LOS results for future conditions revealed that all movements, approaches, and intersections are expected to continue to operate at an acceptable LOS D or better during both the a.m. and p.m. peak hours similar to background conditions without the proposed parking expansion.

SimTraffic simulations were also reviewed to observe network operations and vehicle queues. For future conditions, study network operations are generally acceptable. The future conditions LOS reports and queueing analysis reports are provided in Attachment 5.

Findings and Recommendations

The analyses conducted for this TIS indicate the proposed parking expansion will not result in any significant operational impacts to the adjacent road network. The proposed parking expansion is intended to allow existing vehicles parking on adjacent streets or staff parking in the Aquinas lot to have the ability to park on the Blodgett campus. These vehicles are already in the roadway network to access the hospital and are likely accounted for in the background traffic volumes that were collected. The proposed site access configuration is appropriate and will acceptably facilitate site ingress and egress.

Based on the results of the safety analysis of existing crash data, a review of the clearance intervals, corridor progression, and flash schedules at the signalized intersections could be reviewed to reduce the number of red-light running crashes.

The addition of pushbuttons at the intersection of Plymouth Avenue and Lake Drive was reviewed, which would allow the LPIs to only activate when a call is placed. The addition of pushbuttons to activate the LPIs was not considered as part of this analysis as there is a constant presence of nonmotorized traffic throughout the day, which would cause the LPIs and pedestrian phases to call most cycles. Recent adjustments to the traffic signal timings result in acceptable LOS D for all movements and approaches as well. If additional delay and LOS for vehicles becomes an issue, the addition of pushbuttons could be considered to reallocate green time; however, the signal timing adjustments recently implemented by the City indicate that pushbuttons are not needed.

Based on the findings of the HCM operational analyses and site traffic generation, no improvements are necessary to the study intersections to mitigate traffic impacts related to the vertical expansion of the north parking structure.

fishbeck

Attachment

Traffic Data

1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3560 - Plymouth Avenue and Lake Drive	a.m. Peak Hour		PHF		0.89			0.72			0.87			0.85	
	11/19/25		% Heavy		2%			0%			2%			5%	
	7:30 - 8:30 a.m.	2025	Existing	20	257	43	38	237	29	105	343	31	25	283	15
		2025	Existing Adj.	20	257	43	38	237	29	105	343	31	25	283	15
		2027	Background	20	260	43	38	239	29	106	346	31	25	286	15
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	20	260	43	38	239	29	106	346	31	25	286	15
			Site Generated	5					5		7		6	7	7
			Pass By												
			Total Site Gen	5	0	0	0	0	5	0	7	0	6	7	7
			Total Future	25	260	43	38	239	34	106	353	31	31	293	22

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
40	2	5	57	10	3	5	6

Count Date: 11/19/2025
Nonmotorized Count Date: 6/1/2017
Count Year: 2025
Existing Adj. Year: 2025

Existing Adjustment Rate: 1.00
Growth Rate: 0.5%
Buildout Year: 2027
Scenario: a.m. Peak Hour

Bckgrd. Dev. A:
Bckgrd. Dev. B:
Bckgrd. Dev. C:

Volume Balancing:

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3562 - Plymouth Avenue and Wealthy Street	a.m. Peak Hour		PHF		0.82			0.84			0.86			0.84	
	11/19/25		% Heavy		4%			3%			2%			4%	
	7:30 - 8:30 a.m.	2025	Existing	37	98	53	38	153	44	47	302	28	89	373	37
		2025	Existing Adj.	37	101	53	38	153	44	47	302	28	89	373	37
		2027	Background	37	102	54	38	156	44	47	305	28	90	377	37
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	37	102	54	38	156	44	47	305	28	90	377	37
			Site Generated			3	3			5	7	2		7	
			Pass By												
			Total Site Gen	0	0	3	3	0	0	5	7	2	0	7	0
			Total Future	37	102	57	41	156	44	52	312	30	90	384	37

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
3	3	9	12	3	1	5	4

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9001 - Plymouth Avenue and North Driveway	a.m. Peak Hour		PHF					0.60			0.88			0.80	
	11/19/25		% Heavy					2%			3%			3%	
	7:30 - 8:30 a.m.	2025	Existing				36		79		295			466	1
		2025	Existing Adj.				36		79		322			470	
		2027	Background				36		80		324			475	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				36		80		324			475	
			Site Generated				20		14					13	
			Pass By												
			Total Site Gen				20		14		0			13	
			Total Future				56		94		324			488	

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	6	0	2	-	2	1	1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9002 - Plymouth Avenue and South Driveway	a.m. Peak Hour		PHF					0.60			0.88			0.80	
	11/19/25		% Heavy					0%			3%			5%	
	7:30 - 8:30 a.m.	2025	Existing				8		20		344	22	33	314	
		2025	Existing Adj.				8		20		370	22	33	315	
		2027	Background				8		20		373	22	33	318	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				8		20		373	22	33	318	
			Site Generated								17			20	
			Pass By												
			Total Site Gen				0		0		17	0	0	20	
			Total Future				8		20		390	22	33	338	

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	1	0	0	-	0	1	1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9003 - Wealthy Street and East Driveway	a.m. Peak Hour		PHF		0.60						0.84			0.78	
	11/19/25		% Heavy		0%						2%			2%	
	7:30 - 8:30 a.m.	2025	Existing	67		26				42	163			91	127
		2025	Existing Adj.	67		26				42	168			91	127
		2027	Background	68		26				42	170			92	128
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	68		26				42	170			92	128
			Site Generated								3			2	
			Pass By												
			Total Site Gen	0		0				0	3			2	0
			Total Future	68		26				42	173			94	128

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
5	-	0	0	0	-	0	6

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9901 - Plymouth Avenue and Middle Driveway	a.m. Peak Hour		PHF								0.89			0.80	
	11/19/25		% Heavy								3%			3%	
	7:30 - 8:30 a.m.	2025	Existing								296	68	158	346	
		2025	Existing Adj.								322	68	158	348	
		2027	Background								324	69	160	351	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background								324	69	160	351	
			Site Generated									17	13	20	
			Pass By												
			Total Site Gen								0	17	13	20	
			Total Future								324	86	173	371	

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	3	0	0	-	-	1	0

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3560 - Plymouth Avenue and Lake Drive	p.m. Peak Hour		PHF		0.87			0.95			0.95			0.94	
	11/18/25		% Heavy		1%			0%			2%			0%	
	4:30 - 5:30 p.m.	2025	Existing	25	386	100	32	371	24	77	322	18	50	359	36
		2025	Existing Adj.	25	386	100	32	371	24	77	322	18	50	380	36
		2027	Background	25	390	101	32	375	24	78	326	18	51	384	36
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	25	390	101	32	375	24	78	326	18	51	384	36
			Site Generated	17					14		14		8	9	9
			Pass By												
			Total Site Gen	17	0	0	0	0	14	0	14	0	8	9	9
			Total Future	42	390	101	32	375	38	78	340	18	59	393	45

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
6	5	11	24	1	7	8	2

Count Date:	11/18/2025
Nonmotorized Count Date:	6/1/2017
Count Year:	2025
Existing Adj. Year:	2025
Existing Adjustment Rate:	1.00
Growth Rate:	0.5%
Buildout Year:	2027
Scenario:	p.m. Peak Hour
Bckgrd. Dev. A:	
Bckgrd. Dev. B:	
Bckgrd. Dev. C:	
Volume Balancing:	

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#3562 - Plymouth Avenue and Wealthy Street	p.m. Peak Hour		PHF		0.88			0.84			0.94			0.95	
	11/18/25		% Heavy		3%			1%			1%			1%	
	4:30 - 5:30 p.m.	2025	Existing	42	93	19	38	150	83	53	391	21	35	374	58
		2025	Existing Adj.	42	141	19	38	150	83	53	391	21	35	374	58
		2027	Background	42	143	19	38	152	84	54	395	21	35	378	59
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	42	143	19	38	152	84	54	395	21	35	378	59
			Site Generated			7	6			5	9	3		16	
			Pass By												
			Total Site Gen	0	0	7	6	0	0	5	9	3	0	16	0
			Total Future	42	143	26	44	152	84	59	404	24	35	394	59

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
6	9	11	13	1	4	4	1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9001 - Plymouth Avenue and North Driveway	p.m. Peak Hour		PHF					0.79			0.95			0.95	
	11/18/25		% Heavy					2%			1%			1%	
	4:30 - 5:30 p.m.	2025	Existing				55		106		361			424	
		2025	Existing Adj.				55		106		371			424	
		2027	Background				56		107		375			428	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				56		107		375			428	
			Site Generated				26		17					29	
			Pass By												
			Total Site Gen				26		17		0			29	
			Total Future				82		124		375			457	

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	7	0	1	-	0	1	2

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9002 - Plymouth Avenue and South Driveway	p.m. Peak Hour		PHF					0.74			0.92			0.95	
	11/18/25		% Heavy					0%			1%			1%	
	4:30 - 5:30 p.m.	2025	Existing			1	21		29		357	5	3	436	2
		2025	Existing Adj.				21		29		366	5	3	445	
		2027	Background				21		29		370	5	3	450	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background				21		29		370	5	3	450	
			Site Generated								45			26	
			Pass By												
			Total Site Gen				0		0		45	0	0	26	
			Total Future				21		29		415	5	3	476	

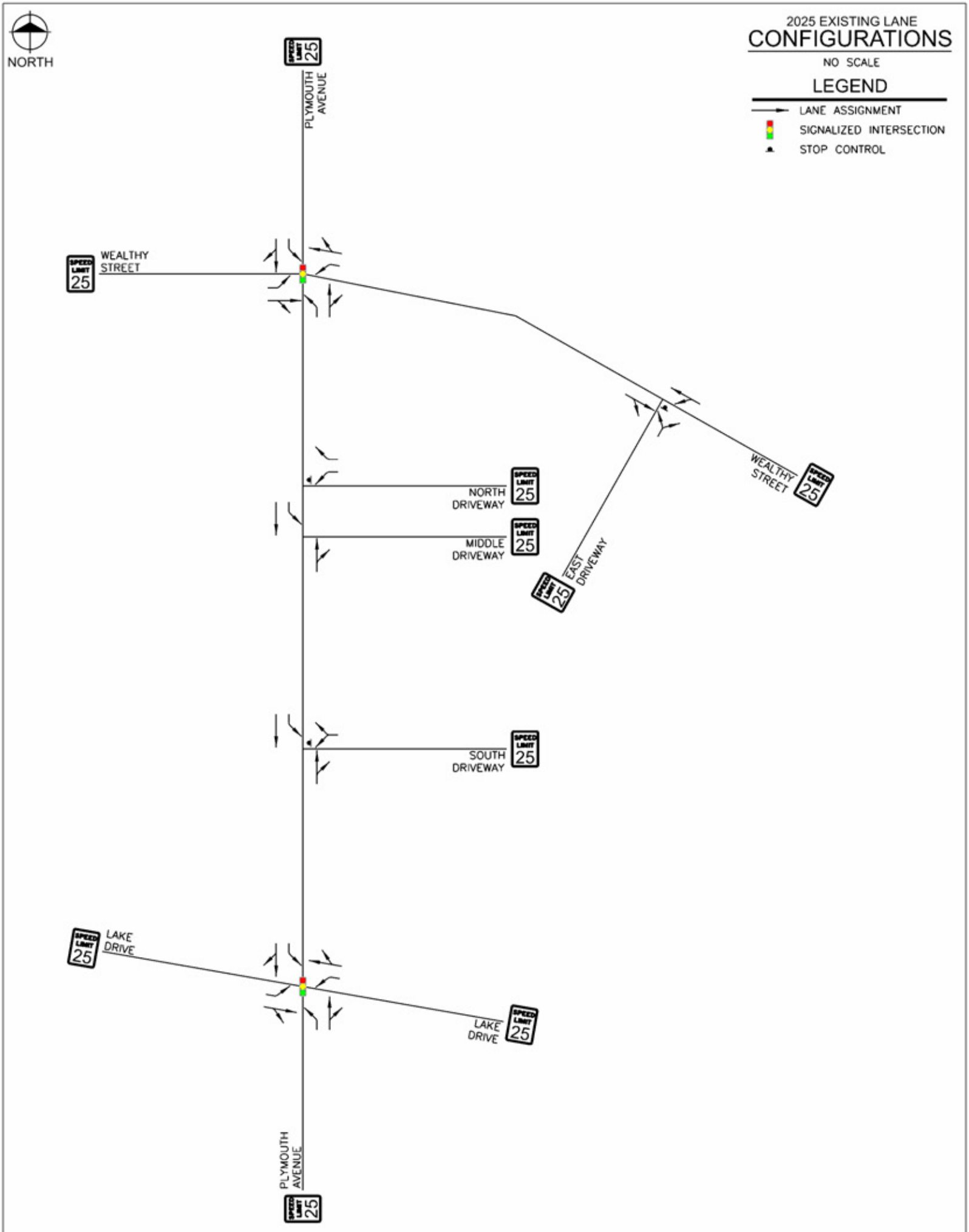
Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	8	0	0	-	0	1	2

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9003 - Wealthy Street and East Driveway	p.m. Peak Hour		PHF		0.73						0.88			0.78	
	11/18/25		% Heavy		0%						2%			1%	
	2:45 - 3:45 p.m.	2025	Existing	98		39				14	173			132	65
		2025	Existing Adj.	98		39				14	173			132	65
		2027	Background	99		39				14	175			133	66
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background	99		39				14	175			133	66
			Site Generated								6			3	
			Pass By												
			Total Site Gen	0		0				0	6			3	0
			Total Future	99		39				14	181			136	66

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
25	-	4	0	0	-	4	1

Intersection	Time period	Year	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#9901 - Plymouth Avenue and Middle Driveway	p.m. Peak Hour		PHF								0.92			0.95	
	11/18/25		% Heavy								1%			1%	
	4:30 - 5:30 p.m.	2025	Existing								369	24	31	445	
		2025	Existing Adj.								371	24	31	448	
		2027	Background								375	24	31	453	
			Bckgrd. Dev. A												
			Bckgrd. Dev. B												
			Bckgrd. Dev. C												
			Total Background								375	24	31	453	
			Site Generated									45	29	26	
			Pass By												
			Total Site Gen								0	45	29	26	
			Total Future								375	69	60	479	

Peds				Bike			
EB Leg	WB Leg	NB Leg	SB Leg	EB	WB	NB	SB
-	6	0	0	-	-	2	1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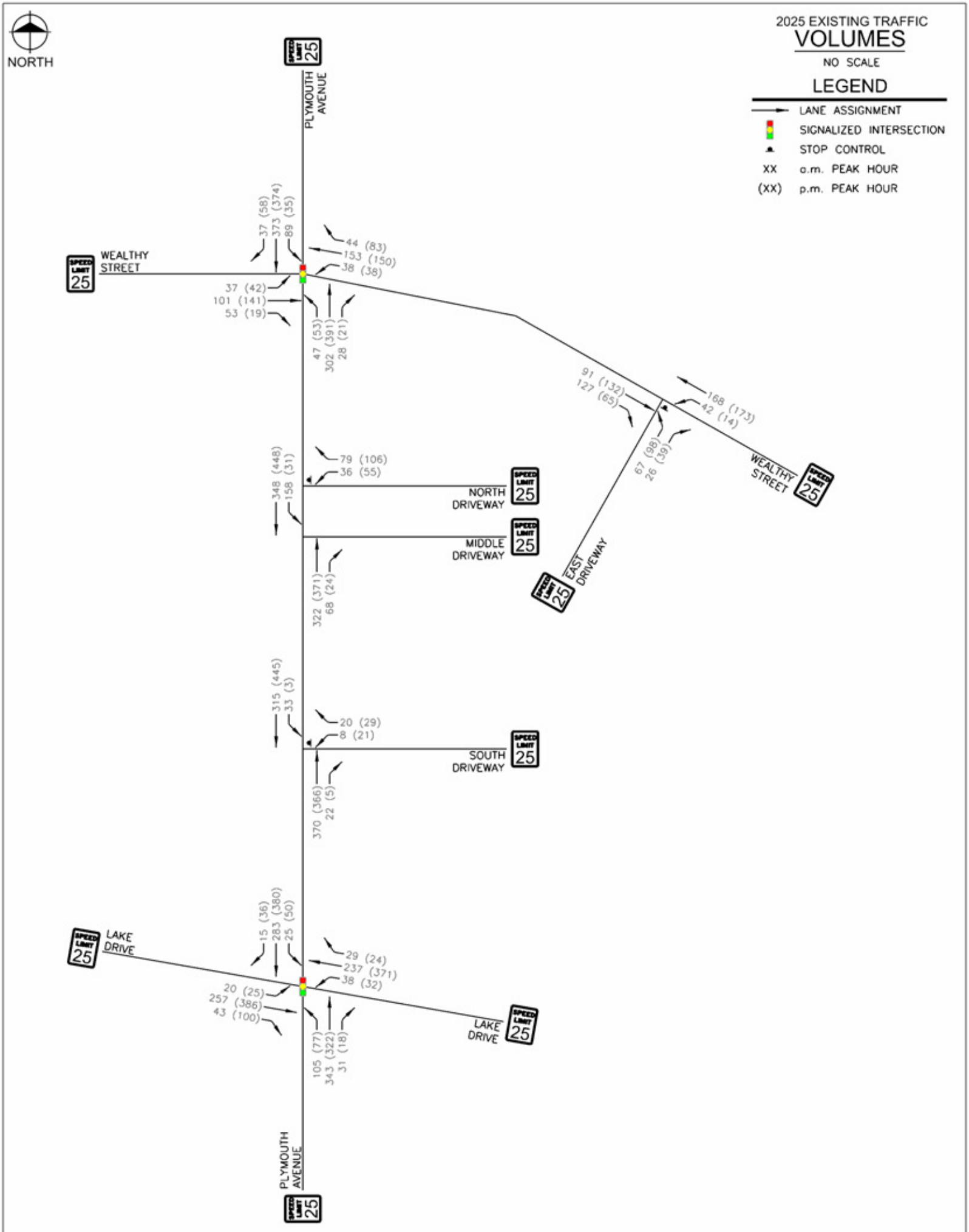
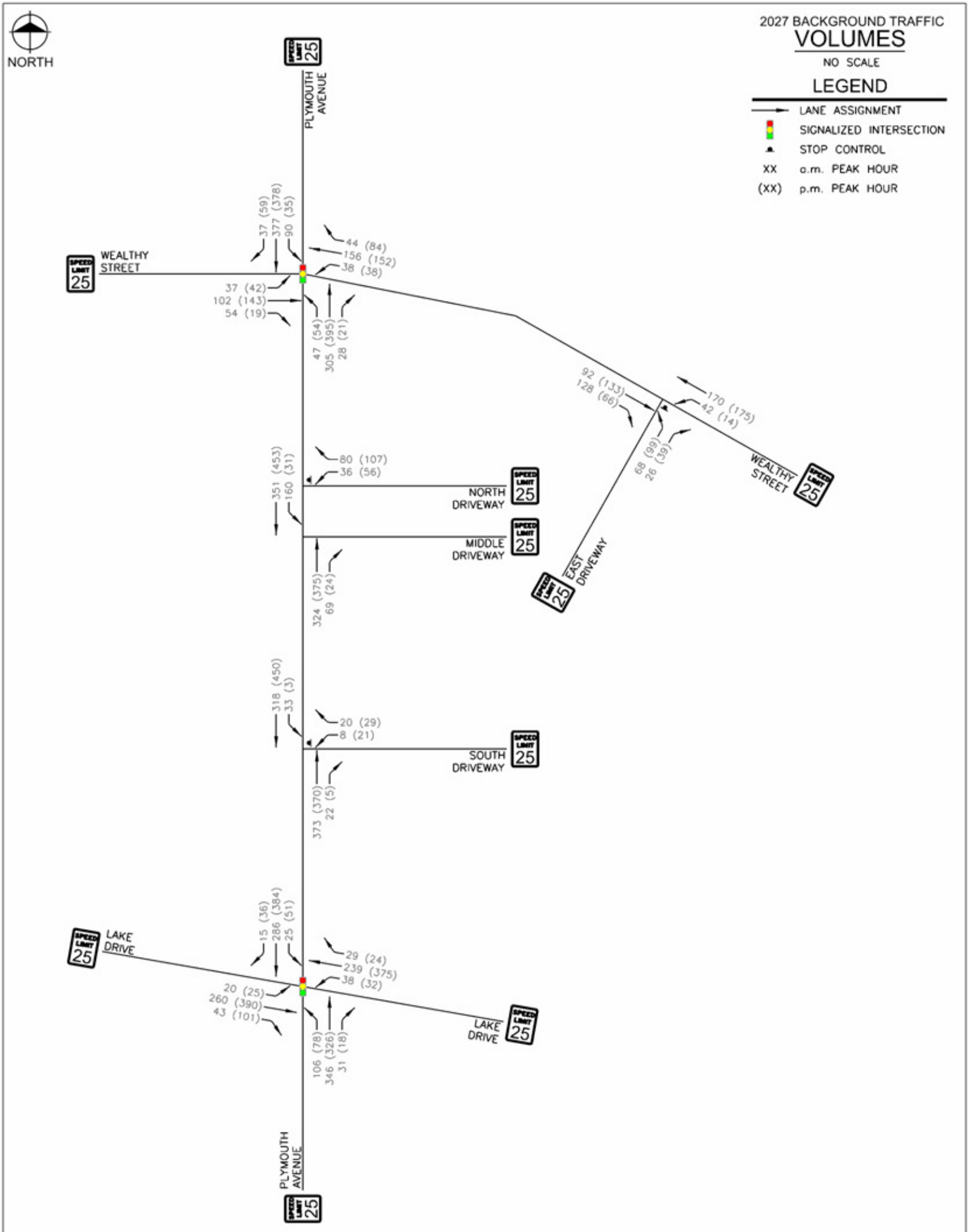
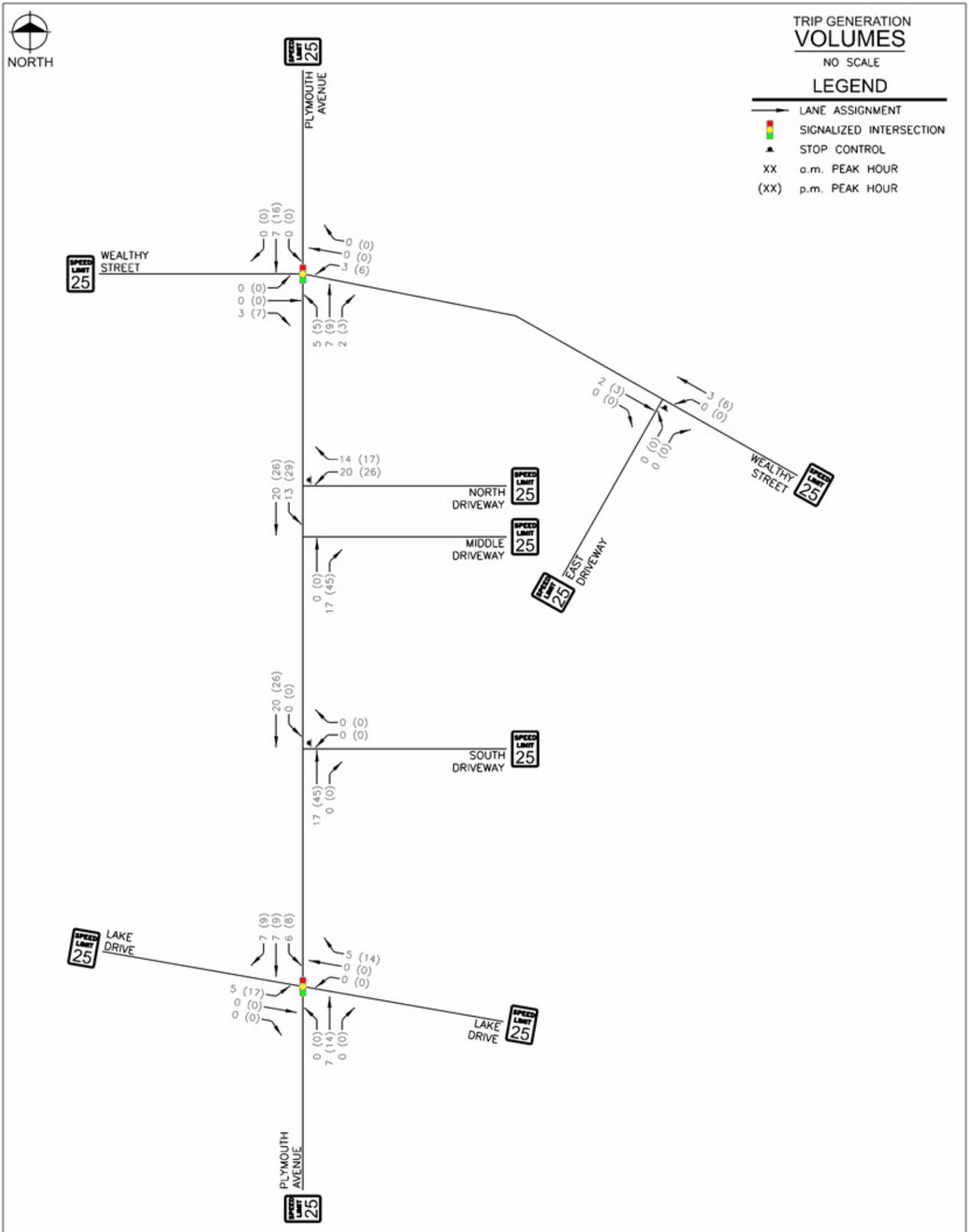
2025 EXISTING LANE
CONFIGURATIONS
NO SCALE
LEGEND
LANE ASSIGNMENT
SIGNALIZED INTERSECTION
STOP CONTROL
PLYMOUTH AVENUE
SPEED LIMIT 25
WEALTHY STREET
NORTH DRIVEWAY
MIDDLE DRIVEWAY
EAST DRIVEWAY
SOUTH DRIVEWAY
LAKE DRIVE
PLYMOUTH AVENUE


NORTH
2025 EXISTING TRAFFIC
VOLUMES
NO SCALE
LEGEND
LANE ASSIGNMENT
SIGNALIZED INTERSECTION
STOP CONTROL
XX a.m. PEAK HOUR
(XX) p.m. PEAK HOUR
PLYMOUTH AVENUE
SPEED LIMIT 25
WEALTHY STREET
37 (58)
373 (374)
89 (35)
44 (83)
153 (150)
38 (38)
37 (42)
101 (141)
53 (19)
47 (53)
302 (391)
28 (21)
91 (132)
127 (65)
168 (173)
42 (14)
67 (98)
26 (39)
348 (448)
158 (31)
79 (106)
36 (55)
NORTH DRIVEWAY
MIDDLE DRIVEWAY
322 (371)
68 (24)
EAST DRIVEWAY
315 (445)
33 (3)
20 (29)
8 (21)
SOUTH DRIVEWAY
370 (366)
22 (5)
LAKE DRIVE
15 (36)
283 (380)
25 (50)
29 (24)
237 (371)
38 (32)
20 (25)
257 (386)
43 (100)
105 (77)
343 (322)
31 (18)


NORTH
2027 BACKGROUND TRAFFIC
VOLUMES
NO SCALE
LEGEND
LANE ASSIGNMENT
SIGNALIZED INTERSECTION
STOP CONTROL
XX a.m. PEAK HOUR
(XX) p.m. PEAK HOUR
PLYMOUTH AVENUE
SPEED LIMIT 25
WEALTHY STREET
37 (59)
377 (378)
90 (35)
44 (84)
156 (152)
38 (38)
37 (42)
102 (143)
54 (19)
47 (54)
305 (395)
28 (21)
92 (133)
128 (66)
170 (175)
42 (14)
68 (99)
26 (39)
NORTH DRIVEWAY
80 (107)
36 (56)
351 (453)
160 (31)
MIDDLE DRIVEWAY
324 (375)
69 (24)
EAST DRIVEWAY
318 (450)
33 (3)
20 (29)
8 (21)
SOUTH DRIVEWAY
373 (370)
22 (5)
LAKE DRIVE
15 (36)
286 (384)
25 (51)
29 (24)
239 (375)
38 (32)
20 (25)
260 (390)
43 (101)
106 (78)
346 (326)
31 (18)


NORTH
TRIP GENERATION
VOLUMES
NO SCALE
LEGEND
LANE ASSIGNMENT
SIGNALIZED INTERSECTION
STOP CONTROL
XX a.m. PEAK HOUR
(XX) p.m. PEAK HOUR
PLYMOUTH AVENUE
SPEED LIMIT 25
WEALTHY STREET
NORTH DRIVEWAY
MIDDLE DRIVEWAY
SOUTH DRIVEWAY
EAST DRIVEWAY
LAKE DRIVE
0 (0)
7 (16)
0 (0)
0 (0)
0 (0)
3 (6)
0 (0)
0 (0)
3 (7)
5 (5)
7 (9)
2 (3)
2 (3)
0 (0)
3 (6)
0 (0)
0 (0)
0 (0)
0 (0)
14 (17)
20 (26)
20 (26)
13 (29)
0 (0)
17 (45)
20 (26)
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0 (0)
7 (9)
7 (9)
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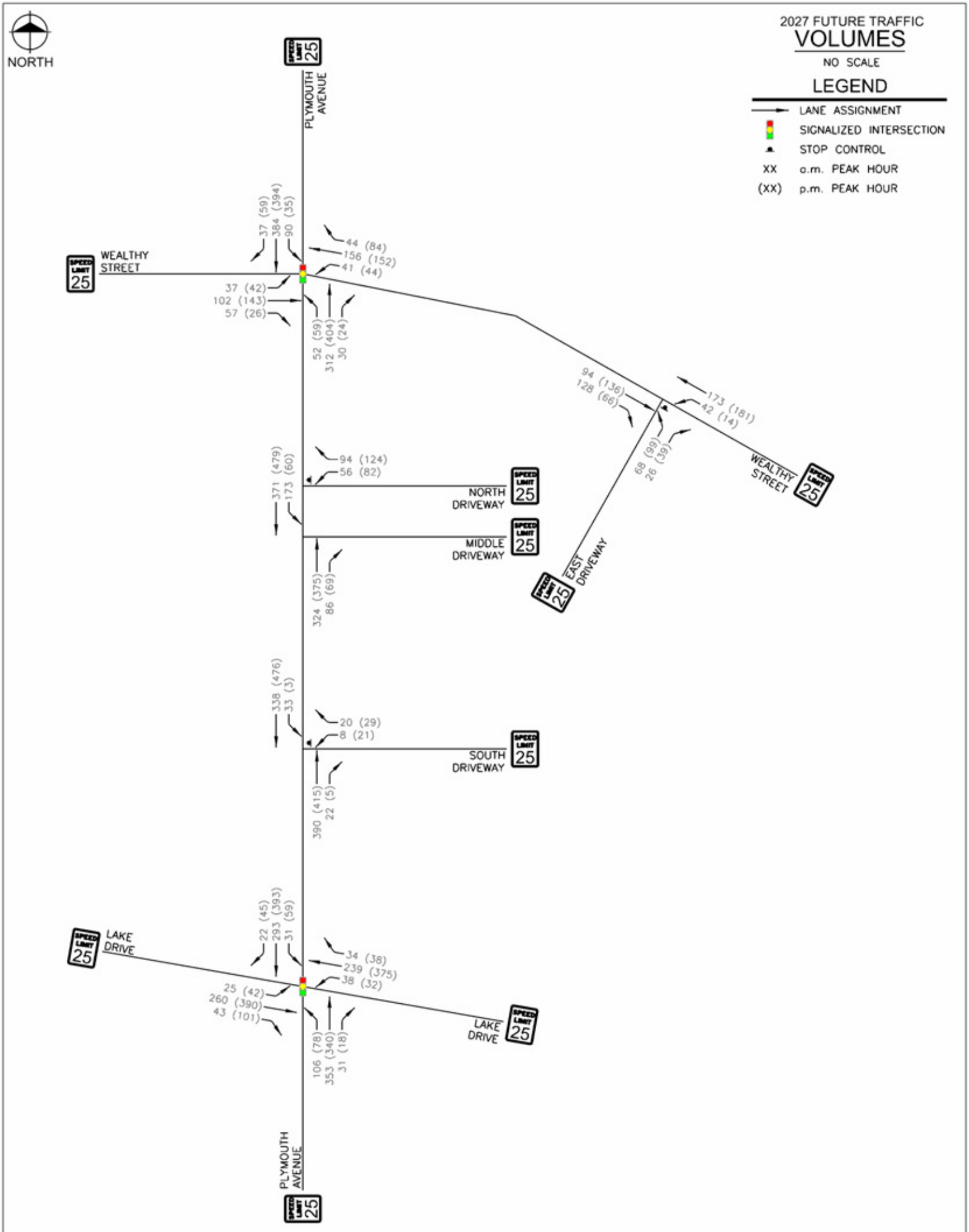
7 (14)
0 (0)


NORTH
2027 FUTURE TRAFFIC
VOLUMES
NO SCALE
LEGEND
LANE ASSIGNMENT
SIGNALIZED INTERSECTION
STOP CONTROL
XX a.m. PEAK HOUR
(XX) p.m. PEAK HOUR
PLYMOUTH AVENUE
SPEED LIMIT 25
WEALTHY STREET
37 (59)
384 (394)
90 (35)
44 (84)
156 (152)
41 (44)
37 (42)
102 (143)
57 (26)
52 (59)
312 (404)
30 (24)
94 (136)
128 (66)
173 (181)
42 (14)
68 (99)
26 (39)
NORTH DRIVEWAY
MIDDLE DRIVEWAY
EAST DRIVEWAY
371 (479)
173 (60)
94 (124)
56 (82)
324 (375)
86 (69)
338 (476)
33 (3)
20 (29)
8 (21)
SOUTH DRIVEWAY
390 (415)
22 (5)
LAKE DRIVE
22 (45)
293 (393)
31 (59)
34 (38)
239 (375)
38 (32)
25 (42)
260 (390)
43 (101)
106 (78)
353 (340)
31 (18)

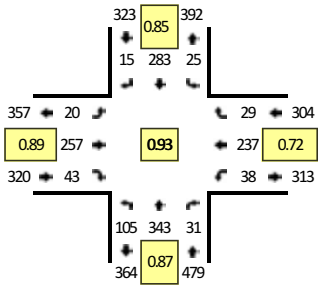
Type of peak hour being reported: Intersection Peak

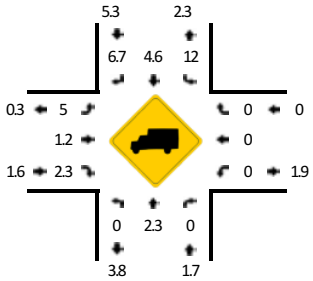
Method for determining peak hour: Total Entering Volume

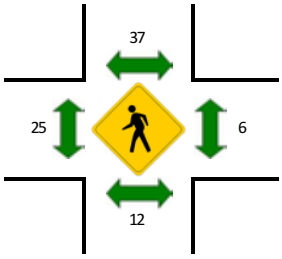
LOCATION: Plymouth Ave -- Lake Dr
CITY/STATE: East Grand Rapids, MI

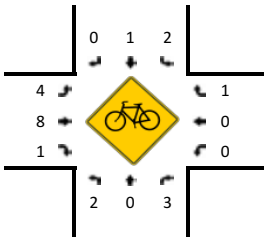
QC JOB #: 17342909
DATE: Wed, Nov 19 2025

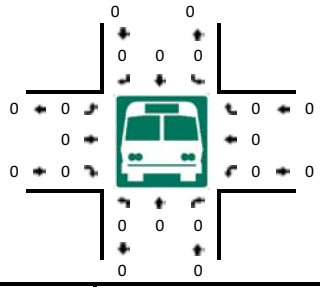
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

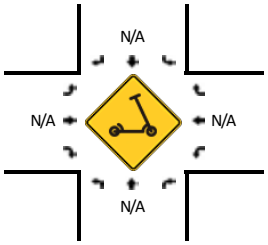












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Lake Dr (Eastbound)				Lake Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	15	51	2	0	2	27	3	0	3	30	6	0	0	19	4	0	162	
7:15 AM	19	60	3	0	3	34	1	0	9	46	14	0	5	32	3	0	229	
7:30 AM	30	70	4	0	6	57	1	0	7	63	8	0	9	47	4	0	306	
7:45 AM	29	102	6	0	4	82	4	0	4	64	10	0	4	59	3	0	371	1068
8:00 AM	15	74	17	0	9	83	3	0	5	70	15	0	10	51	12	0	364	1270
8:15 AM	31	97	4	0	6	61	7	0	4	60	10	0	15	80	10	0	385	1426
8:30 AM	24	65	4	0	6	48	2	0	12	61	10	0	7	62	3	0	304	1424
8:45 AM	23	68	5	0	2	56	2	0	4	57	14	0	6	65	12	0	314	1367

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	124	388	16	0	24	244	28	0	16	240	40	0	60	320	40	0	1540
Heavy Trucks	0	8	0		0	8	4		0	8	4		0	0	0		32
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		16				24				4				12			56
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

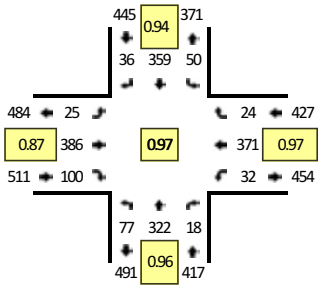
Report generated on 12/3/2025 2:17 PM

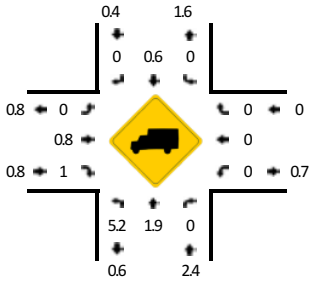
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

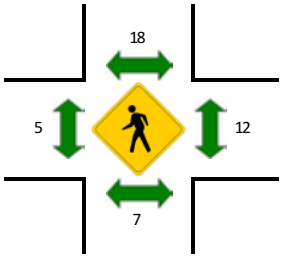
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

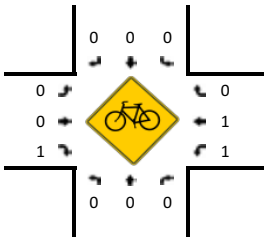
LOCATION: Plymouth Ave -- Lake Dr | **QC JOB #:** 17342910
CITY/STATE: East Grand Rapids, MI | **DATE:** Tue, Nov 18 2025

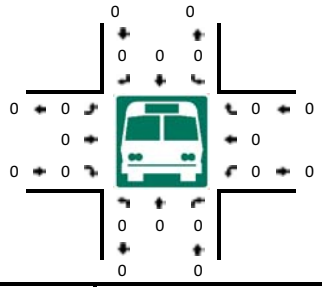
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

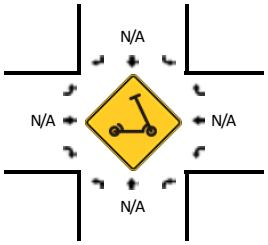












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Lake Dr (Eastbound)				Lake Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	14	50	4	0	5	53	2	0	5	68	16	0	5	39	4	0	265	
2:15 PM	10	49	3	0	8	52	5	0	4	73	22	0	3	54	5	0	288	
2:30 PM	16	47	4	0	5	57	6	0	8	82	20	0	4	53	6	0	308	
2:45 PM	15	62	7	0	6	78	4	0	5	73	28	0	5	43	3	0	329	1190
3:00 PM	29	59	14	0	8	80	4	0	7	74	24	0	4	45	5	0	353	1278
3:15 PM	23	80	10	0	9	90	7	0	4	64	20	0	14	57	7	0	385	1375
3:30 PM	28	59	0	0	9	71	7	0	6	69	17	0	18	75	11	0	370	1437
3:45 PM	25	64	2	0	5	70	3	0	6	59	21	0	7	51	8	0	321	1429
4:00 PM	14	48	2	0	7	77	6	0	2	79	20	0	3	62	4	0	324	1400
4:15 PM	14	64	8	0	4	77	4	0	5	97	22	0	5	71	7	0	378	1393
4:30 PM	16	86	4	0	14	94	10	0	8	86	21	0	10	87	6	0	442	1465
4:45 PM	20	74	9	0	14	91	5	0	3	90	32	0	9	94	7	0	448	1592
5:00 PM	16	82	1	0	13	86	10	0	7	120	20	0	9	92	7	0	463	1731
5:15 PM	25	80	4	0	9	88	11	0	7	90	27	0	4	98	4	0	447	1800
5:30 PM	21	82	3	0	10	94	14	0	8	83	23	0	9	83	6	0	436	1794
5:45 PM	26	55	6	0	6	68	7	0	5	91	26	0	7	65	11	0	373	1719
6:00 PM	13	55	4	0	7	57	2	0	4	67	14	0	4	69	6	0	302	1558
6:15 PM	18	31	5	0	6	44	6	0	7	46	24	0	4	64	5	0	260	1371
6:30 PM	23	34	0	0	9	43	2	0	6	52	12	0	9	46	5	0	241	1176
6:45 PM	11	33	2	0	5	39	2	0	4	51	26	0	2	62	3	0	240	1043

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	328	4	0	52	344	40	0	28	480	80	0	36	368	28	0	1852
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		8				12				0				4			24
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

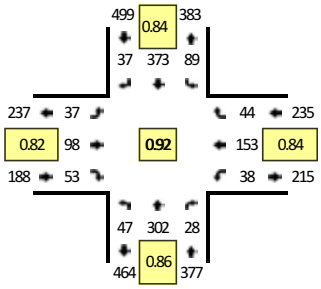
Type of peak hour being reported: Intersection Peak

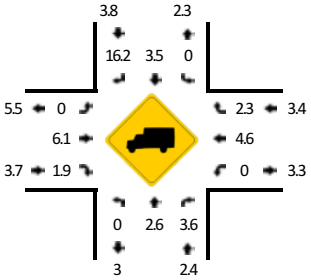
Method for determining peak hour: Total Entering Volume

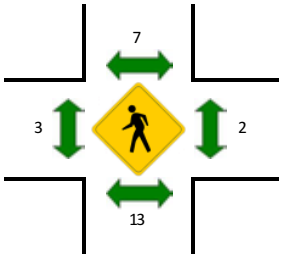
LOCATION: Plymouth Ave -- Wealthy St
CITY/STATE: East Grand Rapids, MI

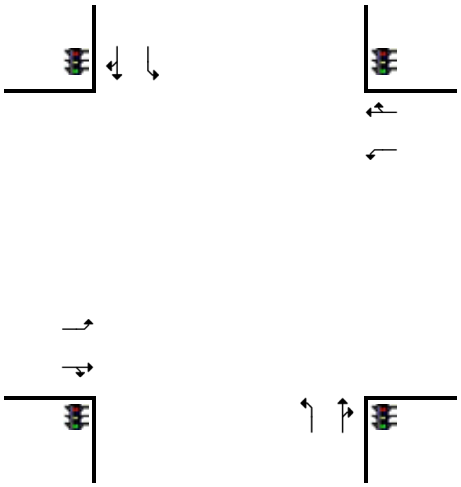
QC JOB #: 17342901
DATE: Wed, Nov 19 2025

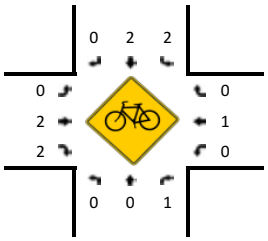
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

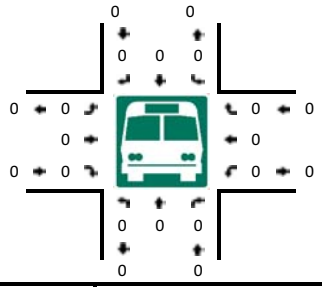


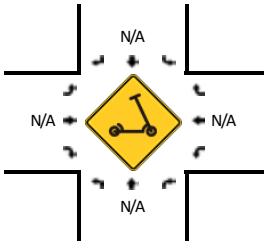












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Wealthy St (Eastbound)				Wealthy St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	48	11	0	26	48	2	0	7	18	6	0	3	17	7	0	201	
7:15 AM	7	46	7	0	20	57	3	0	6	20	11	0	6	14	5	0	202	
7:30 AM	16	84	9	0	27	82	9	0	9	32	16	0	7	45	18	0	354	
7:45 AM	13	87	8	0	19	122	7	0	6	21	11	0	16	38	4	0	352	1109
8:00 AM	9	62	4	0	33	102	11	0	9	30	7	0	6	30	10	0	313	1221
8:15 AM	9	69	7	0	10	67	10	0	13	15	19	0	9	40	12	0	280	1299
8:30 AM	3	67	4	0	14	74	5	0	6	15	9	0	4	18	8	0	227	1172
8:45 AM	7	58	7	0	13	66	8	0	9	23	8	0	3	21	8	0	231	1051

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	336	36	0	108	328	36	0	36	128	64	0	28	180	72	0	1416
Heavy Trucks	0	16	0		0	12	8		0	16	4		0	4	0		60
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		16				4				8				4			32
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

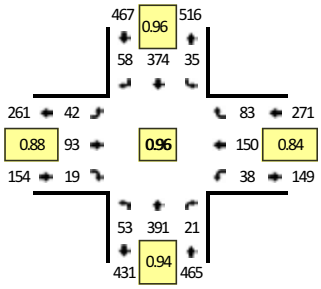
Type of peak hour being reported: Intersection Peak

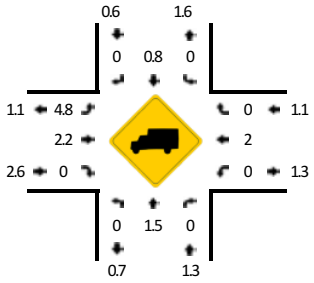
Method for determining peak hour: Total Entering Volume

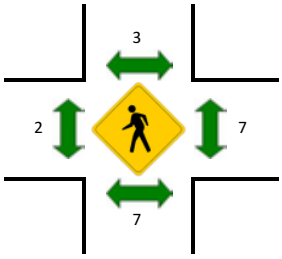
LOCATION: Plymouth Ave -- Wealthy St
CITY/STATE: East Grand Rapids, MI

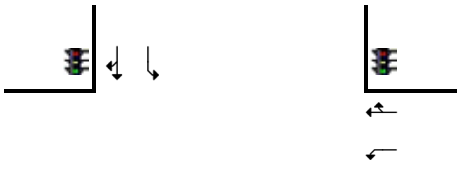
QC JOB #: 17342902
DATE: Tue, Nov 18 2025

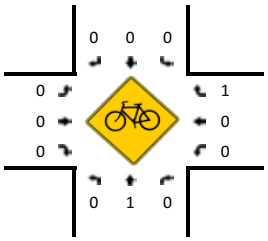
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

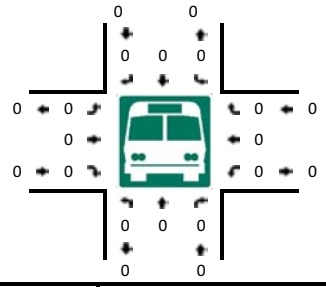


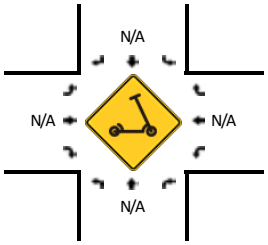












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Wealthy St (Eastbound)				Wealthy St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	7	44	8	0	10	49	11	0	8	24	2	0	9	34	9	0	215	
2:15 PM	5	52	7	0	15	60	10	0	15	18	3	0	7	23	20	0	235	
2:30 PM	12	58	8	0	9	56	10	0	4	28	6	0	9	26	9	0	235	
2:45 PM	8	69	10	0	20	84	8	0	8	34	9	0	9	31	16	0	306	991
3:00 PM	13	77	5	0	18	76	11	0	9	21	6	0	11	48	14	0	309	1085
3:15 PM	12	86	4	0	14	77	9	0	5	27	5	0	12	42	15	0	308	1158
3:30 PM	36	91	4	0	16	63	8	0	11	23	6	0	10	40	25	0	333	1256
3:45 PM	14	74	4	0	9	69	13	0	9	30	7	0	10	34	27	0	300	1250
4:00 PM	15	69	3	0	7	70	14	0	13	24	2	0	5	34	23	0	279	1220
4:15 PM	16	77	7	0	10	57	9	0	11	27	5	0	10	34	9	0	272	1184
4:30 PM	12	102	10	0	14	92	16	0	12	19	4	0	10	36	27	0	354	1205
4:45 PM	13	99	4	0	6	95	13	0	8	32	4	0	10	33	12	0	329	1234
5:00 PM	17	101	4	0	10	90	16	0	12	20	3	0	9	49	23	0	354	1309
5:15 PM	11	89	3	0	5	97	13	0	10	22	8	0	9	32	21	0	320	1357
5:30 PM	13	86	12	0	14	87	14	0	7	24	8	0	14	25	15	0	319	1322
5:45 PM	8	69	6	0	7	60	10	0	10	18	2	0	6	43	11	0	250	1243
6:00 PM	6	56	2	0	9	54	11	0	3	24	10	0	4	25	9	0	213	1102
6:15 PM	11	44	3	0	12	58	7	0	6	20	5	0	6	29	5	0	206	988
6:30 PM	4	26	3	0	18	59	8	0	2	15	13	0	6	19	5	0	178	847
6:45 PM	7	27	2	0	17	62	7	0	3	26	15	0	5	20	4	0	195	792

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	408	40	0	56	368	64	0	48	76	16	0	40	144	108	0	1416
Heavy Trucks	0	8	0		0	8	0		4	0	0		0	4	0		24
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		8				4				4				16			32
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

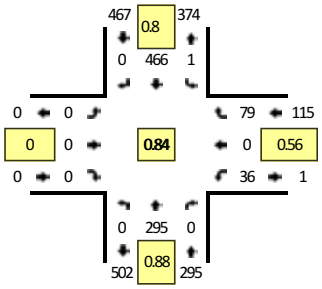
Type of peak hour being reported: Intersection Peak

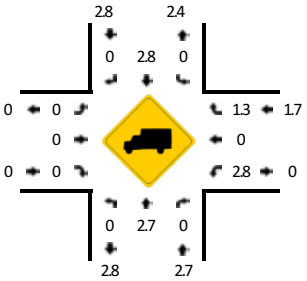
Method for determining peak hour: Total Entering Volume

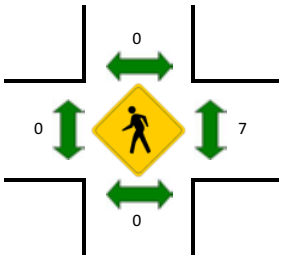
LOCATION: Plymouth Ave -- North Hospital Dwy
CITY/STATE: East Grand Rapids, MI

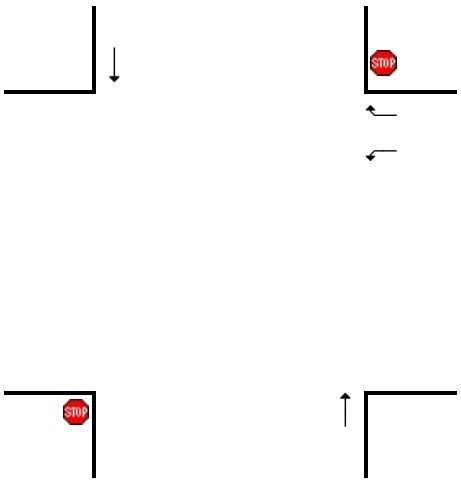
QC JOB #: 17342903
DATE: Wed, Nov 19 2025

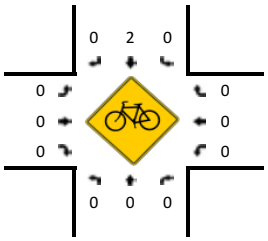
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

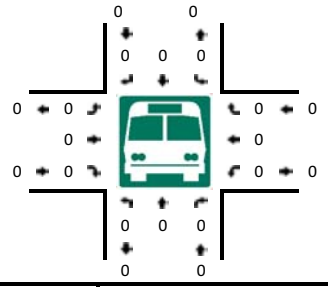


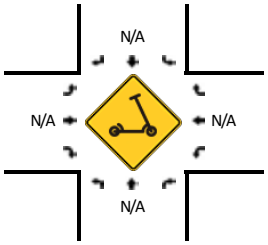












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				North Hospital Dwy (Eastbound)				North Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	46	0	0	0	56	0	0	0	0	0	0	13	0	21	0	136	
7:15 AM	0	46	0	0	0	73	0	0	0	0	0	0	7	0	16	0	142	
7:30 AM	0	68	0	0	0	107	0	0	0	0	0	0	11	0	40	0	226	
7:45 AM	0	84	0	0	1	145	0	0	0	0	0	0	8	0	23	0	261	765
8:00 AM	0	69	0	0	0	117	0	0	0	0	0	0	11	0	6	0	203	832
8:15 AM	0	74	0	0	0	97	0	0	0	0	0	0	6	0	10	0	187	877
8:30 AM	0	65	0	0	0	87	0	0	0	0	0	0	2	0	6	0	160	811
8:45 AM	0	61	0	0	0	78	0	0	0	0	0	0	9	0	13	0	161	711

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	336	0	0	4	580	0	0	0	0	0	0	32	0	92	0	1044
Heavy Trucks	0	16	0		0	12	0		0	0	0		0	0	0		28
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				12			12
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

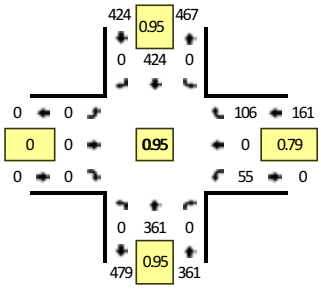
Type of peak hour being reported: Intersection Peak

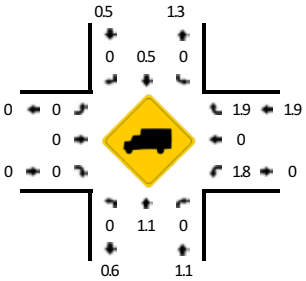
Method for determining peak hour: Total Entering Volume

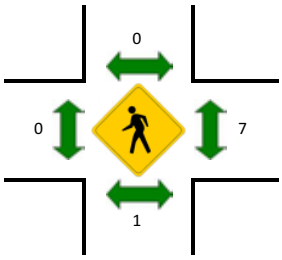
LOCATION: Plymouth Ave -- North Hospital Dwy
CITY/STATE: East Grand Rapids, MI

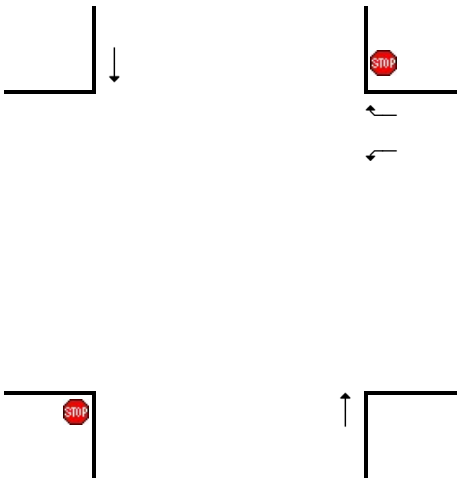
QC JOB #: 17342904
DATE: Tue, Nov 18 2025

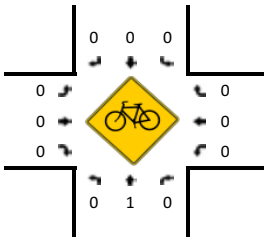
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

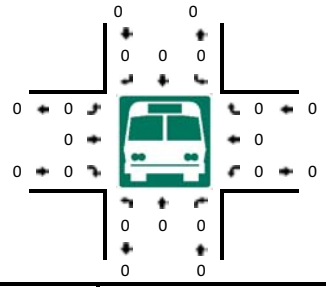


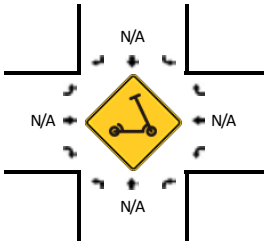












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				North Hospital Dwy (Eastbound)				North Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	45	0	0	0	63	0	0	0	0	0	0	10	0	13	0	131	
2:15 PM	0	47	0	0	0	71	0	0	0	0	0	0	4	0	16	0	138	
2:30 PM	0	65	0	0	0	70	0	0	0	0	0	0	12	0	22	0	169	
2:45 PM	0	64	0	0	0	102	0	0	0	0	0	0	11	0	14	0	191	629
3:00 PM	0	63	0	0	0	94	0	0	0	0	0	0	13	0	36	0	206	704
3:15 PM	0	81	0	0	0	94	0	0	0	0	0	0	12	0	19	0	206	772
3:30 PM	0	79	0	0	0	79	0	0	0	0	0	0	20	0	47	0	225	828
3:45 PM	0	72	0	0	0	85	0	0	0	0	0	0	13	0	23	0	193	830
4:00 PM	0	56	0	0	0	77	0	0	0	0	0	0	15	0	27	0	175	799
4:15 PM	0	71	0	0	0	70	0	0	0	0	0	0	14	0	30	0	185	778
4:30 PM	0	95	0	0	0	102	0	0	0	0	0	0	19	0	32	0	248	801
4:45 PM	0	90	0	0	0	104	0	0	0	0	0	0	11	0	27	0	232	840
5:00 PM	0	93	0	0	0	107	0	0	0	0	0	0	18	0	27	0	245	910
5:15 PM	0	83	0	0	0	111	0	0	0	0	0	0	7	0	20	0	221	946
5:30 PM	0	87	0	0	0	110	0	0	0	0	0	0	8	0	24	0	229	927
5:45 PM	0	63	0	0	0	71	0	0	0	0	0	0	6	0	25	0	165	860
6:00 PM	0	57	0	0	0	69	0	0	0	0	0	0	6	0	10	0	142	757
6:15 PM	0	39	0	0	0	69	0	0	0	0	0	0	5	0	13	0	126	662
6:30 PM	0	24	0	0	0	79	0	0	0	0	0	0	10	0	11	0	124	557
6:45 PM	0	23	0	0	1	81	0	0	0	0	0	0	5	0	12	0	122	514

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	380	0	0	0	408	0	0	0	0	0	0	76	0	128	0	992
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	4		12
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				0				0				12			16
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

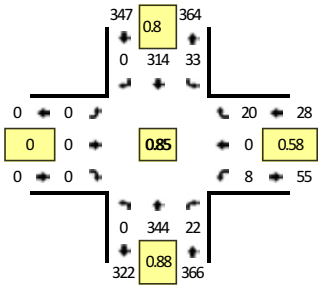
Type of peak hour being reported: Intersection Peak

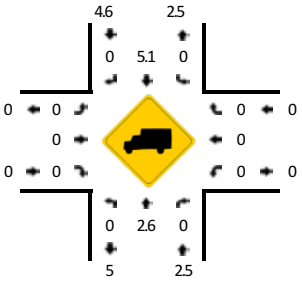
Method for determining peak hour: Total Entering Volume

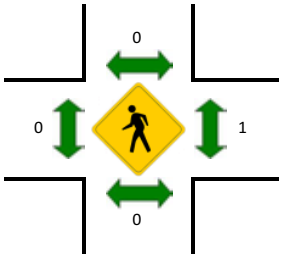
LOCATION: Plymouth Ave -- South Hospital Dwy
CITY/STATE: East Grand Rapids, MI

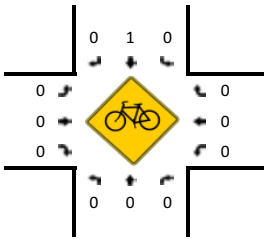
QC JOB #: 17342907
DATE: Wed, Nov 19 2025

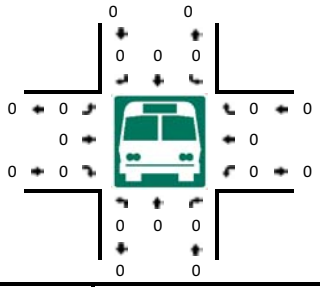
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

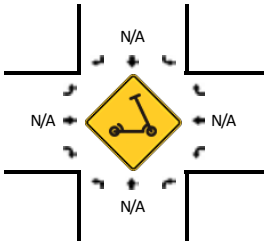












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				South Hospital Dwy (Eastbound)				South Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	55	3	0	8	32	0	0	1	0	0	0	0	0	3	0	102	
7:15 AM	0	59	7	0	6	42	0	0	0	0	0	0	0	0	3	0	117	
7:30 AM	0	74	3	0	7	61	0	0	0	0	0	0	2	0	1	0	148	
7:45 AM	0	95	9	0	14	94	0	0	0	0	0	0	0	0	6	0	218	585
8:00 AM	0	77	4	0	6	92	0	0	0	0	0	0	2	0	10	0	191	674
8:15 AM	0	98	6	0	6	67	0	0	0	0	0	0	4	0	3	0	184	741
8:30 AM	0	70	6	0	6	55	0	0	0	0	0	0	1	0	3	0	141	734
8:45 AM	0	71	7	0	3	62	0	0	0	0	0	0	2	0	0	0	145	661

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	380	36	0	56	376	0	0	0	0	0	0	0	0	24	0	872
Heavy Trucks	0	16	0		0	16	0		0	0	0		0	0	0		32
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

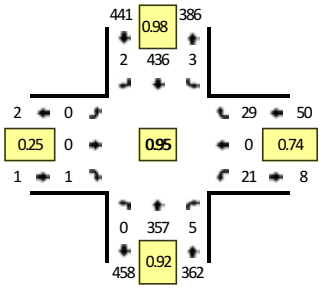
Type of peak hour being reported: Intersection Peak

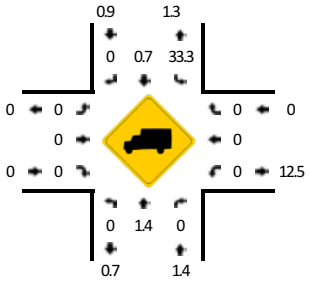
Method for determining peak hour: Total Entering Volume

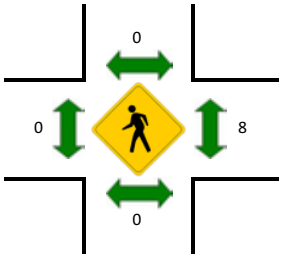
LOCATION: Plymouth Ave -- South Hospital Dwy
CITY/STATE: East Grand Rapids, MI

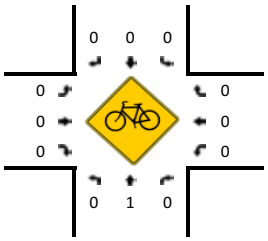
QC JOB #: 17342908
DATE: Tue, Nov 18 2025

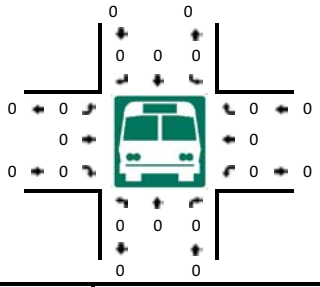
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

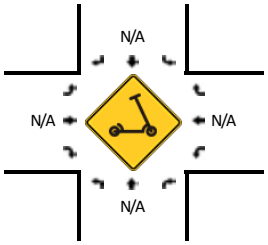












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				South Hospital Dwy (Eastbound)				South Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	50	4	0	1	60	0	0	0	0	0	0	3	0	2	0	120	
2:15 PM	0	51	5	0	4	63	0	1	0	0	0	0	3	0	7	0	134	
2:30 PM	0	53	5	0	5	66	0	0	0	0	0	0	6	0	16	0	151	
2:45 PM	0	59	1	0	4	88	0	0	0	0	1	0	4	0	12	0	169	574
3:00 PM	0	64	1	0	2	88	0	0	0	0	0	0	6	0	5	0	166	620
3:15 PM	0	81	4	0	2	97	0	0	0	0	0	0	4	0	7	0	195	681
3:30 PM	0	71	1	0	2	85	1	0	0	0	1	0	4	0	13	0	178	708
3:45 PM	0	69	5	0	1	81	0	0	0	0	0	0	3	0	8	0	167	706
4:00 PM	0	51	1	0	1	83	0	0	0	0	0	0	6	0	7	0	149	689
4:15 PM	0	65	2	0	3	81	0	0	0	0	0	0	7	0	9	0	167	661
4:30 PM	0	94	4	0	2	108	0	0	0	0	0	0	9	0	8	0	225	708
4:45 PM	0	88	1	0	0	109	0	0	0	0	0	0	5	0	8	0	211	752
5:00 PM	0	91	0	0	0	108	1	0	0	0	1	0	4	0	9	0	214	817
5:15 PM	0	84	0	0	1	111	1	0	0	0	0	0	3	0	4	0	204	854
5:30 PM	0	85	4	0	0	113	0	0	0	0	0	0	3	0	5	0	210	839
5:45 PM	0	63	1	0	1	76	0	0	0	0	1	0	0	0	1	0	143	771
6:00 PM	0	58	0	0	3	63	0	0	0	0	0	0	4	0	2	0	130	687
6:15 PM	0	39	0	0	0	60	0	0	0	0	0	0	0	0	4	0	103	586
6:30 PM	0	38	1	0	2	54	0	0	0	0	0	0	3	0	0	0	98	474
6:45 PM	1	38	1	0	1	46	1	0	0	0	0	0	0	0	2	0	90	421

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	376	16	0	8	432	0	0	0	0	0	0	36	0	32	0	900
Heavy Trucks	0	4	0		4	4	0		0	0	0		0	0	0		12
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				16			16
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

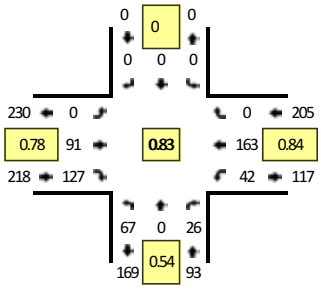
Report generated on 12/3/2025 2:17 PM

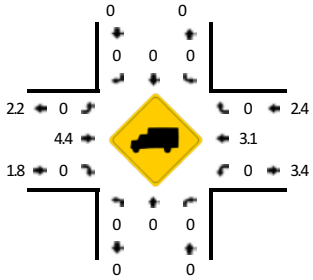
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

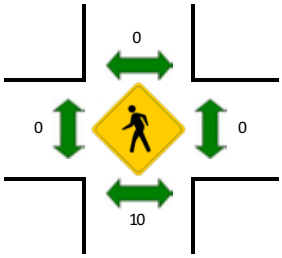
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

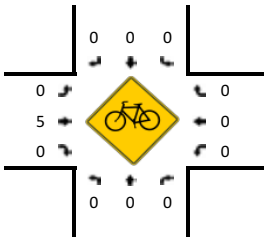
LOCATION: East Hospital Access -- Wealthy St | **QC JOB #:** 17342911
CITY/STATE: East Grand Rapids, MI | **DATE:** Wed, Nov 19 2025

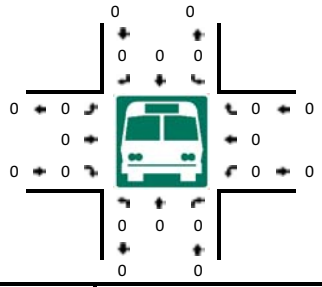
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

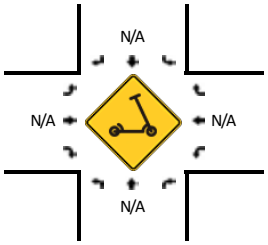












15-Min Count Period Beginning At	East Hospital Access (Northbound)				East Hospital Access (Southbound)				Wealthy St (Eastbound)				Wealthy St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	0	3	0	0	0	0	0	0	16	41	0	12	16	0	0	95	
7:15 AM	10	0	2	0	0	0	0	0	0	15	28	0	13	17	0	0	85	
7:30 AM	32	0	11	0	0	0	0	0	0	21	49	0	7	35	0	0	155	
7:45 AM	17	0	6	0	0	0	0	0	0	14	35	0	17	42	0	0	131	466
8:00 AM	11	0	4	0	0	0	0	0	0	43	26	0	9	34	0	0	127	498
8:15 AM	7	0	5	0	0	0	0	0	0	13	17	0	9	52	0	0	103	516
8:30 AM	7	0	5	0	0	0	0	0	0	15	17	0	10	21	0	1	76	437
8:45 AM	6	0	3	0	0	0	0	0	0	25	18	0	4	23	0	0	79	385

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	0	44	0	0	0	0	0	0	84	196	0	28	140	0	0	620
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

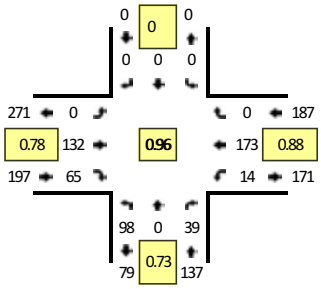
Type of peak hour being reported: Intersection Peak

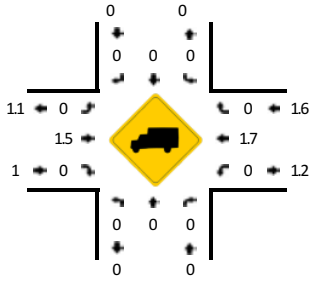
Method for determining peak hour: Total Entering Volume

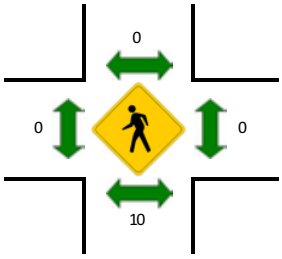
LOCATION: East Hospital Access -- Wealthy St
CITY/STATE: East Grand Rapids, MI

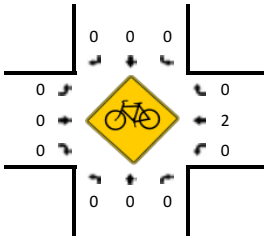
QC JOB #: 17342912
DATE: Tue, Nov 18 2025

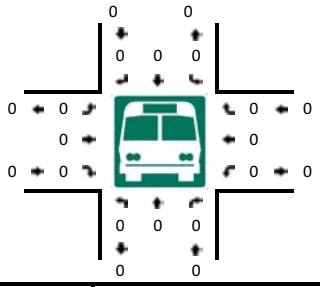
Peak-Hour: 2:45 PM -- 3:45 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

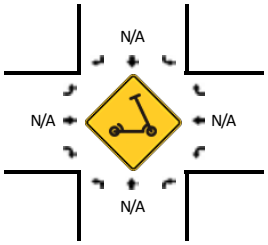












15-Min Count Period Beginning At	East Hospital Access (Northbound)				East Hospital Access (Southbound)				Wealthy St (Eastbound)				Wealthy St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	22	0	8	0	0	0	0	0	0	24	21	0	1	30	0	0	106	
2:15 PM	12	0	2	0	0	0	0	0	0	21	19	0	2	25	0	0	81	
2:30 PM	21	0	9	0	0	0	0	0	0	26	18	0	6	24	0	0	104	
2:45 PM	25	0	9	0	0	0	0	0	0	38	25	0	8	27	0	0	132	423
3:00 PM	19	0	10	0	0	0	0	0	0	29	14	0	0	53	0	0	125	442
3:15 PM	22	0	5	0	0	0	0	0	0	33	16	0	3	50	0	0	129	490
3:30 PM	32	0	15	0	0	0	0	0	0	32	10	0	3	43	0	0	135	521
3:45 PM	34	0	15	0	0	0	0	0	0	29	16	0	2	35	0	0	131	520
4:00 PM	29	0	12	0	0	0	0	0	0	35	4	0	2	33	0	0	115	510
4:15 PM	23	0	5	0	0	0	0	0	0	30	11	0	4	31	0	0	104	485
4:30 PM	33	0	17	0	0	0	0	0	0	36	7	0	6	33	0	0	132	482
4:45 PM	23	0	7	0	0	0	0	0	0	34	8	0	0	32	0	0	104	455
5:00 PM	36	0	12	0	0	0	0	0	0	27	6	0	2	42	0	0	125	465
5:15 PM	27	0	16	0	0	0	0	0	0	30	1	0	2	36	0	0	112	473
5:30 PM	24	0	10	0	0	0	0	0	0	47	5	0	2	33	0	0	121	462
5:45 PM	11	0	1	0	0	0	0	0	0	29	4	0	0	49	0	0	94	452
6:00 PM	10	0	5	0	0	0	0	0	0	27	5	0	1	26	0	0	74	401
6:15 PM	8	0	3	0	0	0	0	0	0	20	13	0	5	34	0	0	83	372
6:30 PM	10	0	2	0	0	0	0	0	0	14	22	0	5	18	0	0	71	322
6:45 PM	9	0	1	0	0	0	0	0	0	24	23	0	4	21	0	0	82	310

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	128	0	60	0	0	0	0	0	0	128	40	0	12	172	0	0	540
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		16				0				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

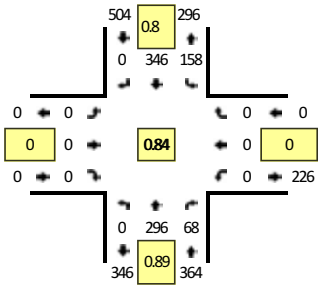
Method for determining peak hour: Total Entering Volume

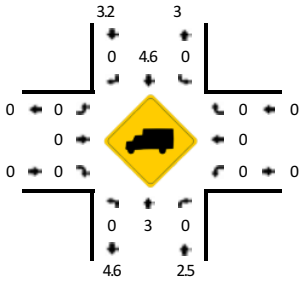
LOCATION: Plymouth Ave -- Middle Hospital Dwy
CITY/STATE: East Grand Rapids, MI

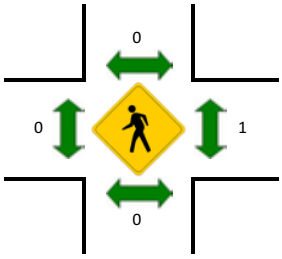
QC JOB #: 17342905
DATE: Wed, Nov 19 2025

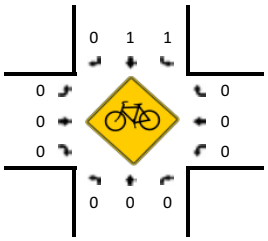
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

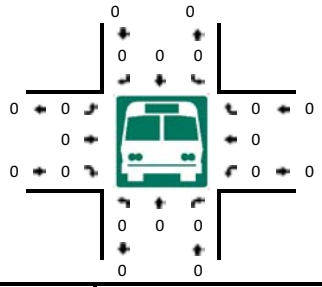
TRUE DATA TO IMPROVE MOBILITY

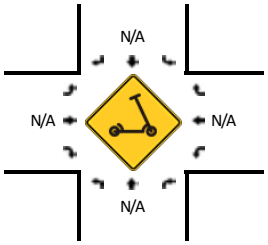












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Middle Hospital Dwy (Eastbound)				Middle Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	46	14	0	31	40	0	0	0	0	0	0	0	0	0	0	131	
7:15 AM	0	46	15	0	35	47	0	0	0	0	0	0	0	0	0	0	143	
7:30 AM	0	67	9	0	49	68	0	0	0	0	0	0	0	0	0	0	193	
7:45 AM	0	85	17	0	50	107	0	0	0	0	0	0	0	0	0	0	259	726
8:00 AM	0	69	18	0	29	99	0	0	0	0	0	0	0	0	0	0	215	810
8:15 AM	0	75	24	0	30	72	0	0	0	0	0	0	0	0	0	0	201	868
8:30 AM	0	65	10	0	29	62	0	0	0	0	0	0	0	0	0	0	166	841
8:45 AM	0	60	11	0	21	65	0	0	0	0	0	0	0	0	0	0	157	739

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	340	68	0	200	428	0	0	0	0	0	0	0	0	0	0	1036
Heavy Trucks	0	16	0		0	12	0		0	0	0		0	0	0		28
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

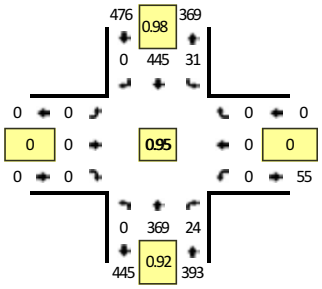
Type of peak hour being reported: Intersection Peak

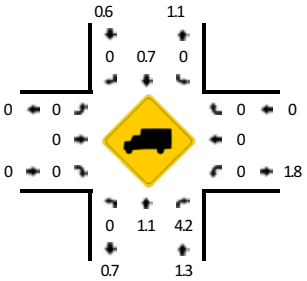
Method for determining peak hour: Total Entering Volume

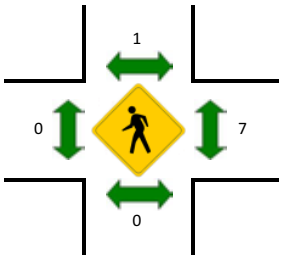
LOCATION: Plymouth Ave -- Middle Hospital Dwy
CITY/STATE: East Grand Rapids, MI

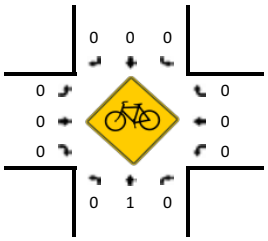
QC JOB #: 17342906
DATE: Tue, Nov 18 2025

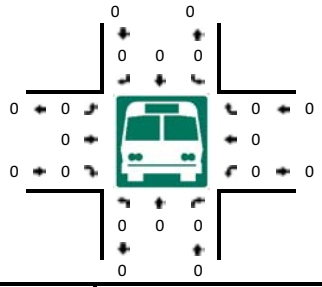
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

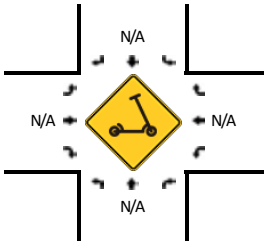












15-Min Count Period Beginning At	Plymouth Ave (Northbound)				Plymouth Ave (Southbound)				Middle Hospital Dwy (Eastbound)				Middle Hospital Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	0	43	9	0	11	61	0	0	0	0	0	0	0	0	0	0	124	
2:15 PM	0	47	11	0	8	68	0	0	0	0	0	0	0	0	0	0	134	
2:30 PM	0	64	5	0	12	70	0	0	0	0	0	0	0	0	0	0	151	
2:45 PM	0	64	8	0	21	92	0	0	0	0	0	0	0	0	0	0	185	594
3:00 PM	0	62	5	0	10	95	0	0	0	0	0	0	0	0	0	0	172	642
3:15 PM	0	81	5	0	12	94	0	0	0	0	0	0	0	0	0	0	192	700
3:30 PM	0	80	6	0	12	88	0	0	0	0	0	0	0	0	0	0	186	735
3:45 PM	0	71	6	0	15	82	0	0	0	0	0	0	0	0	0	0	174	724
4:00 PM	0	58	2	0	6	85	0	0	0	0	0	0	0	0	0	0	151	703
4:15 PM	0	73	3	0	4	82	0	0	0	0	0	0	0	0	0	0	162	673
4:30 PM	0	102	5	0	11	110	0	0	0	0	0	0	0	0	0	0	228	715
4:45 PM	0	90	8	0	5	110	0	0	0	0	0	0	0	0	0	0	213	754
5:00 PM	0	92	7	0	12	110	0	0	0	0	0	0	0	0	0	0	221	824
5:15 PM	0	85	4	0	3	115	0	0	0	0	0	0	0	0	0	0	207	869
5:30 PM	0	87	5	0	6	111	0	0	0	0	0	0	0	0	0	0	209	850
5:45 PM	0	59	3	0	6	72	0	0	0	0	0	0	0	0	0	0	140	777
6:00 PM	0	57	5	0	9	64	0	0	0	0	0	0	1	0	0	0	136	692
6:15 PM	0	39	4	0	16	60	0	0	0	0	0	0	0	0	0	0	119	604
6:30 PM	0	24	13	0	34	54	0	0	0	0	0	0	0	0	0	0	125	520
6:45 PM	0	22	17	0	38	47	0	0	0	0	0	0	0	0	0	0	124	504

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	408	20	0	44	440	0	0	0	0	0	0	0	0	0	0	912
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Buses	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				16			20
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 12/3/2025 2:17 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Traffic Data Collection

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

Count Name: TMC_1
Plymouth Ave. SE & Wealthy ST. SE
Site Code: TMC_1
Start Date: 06/01/2017

Turning Movement Data

Start Time	Plymouth Ave. SE Southbound					Wealthy ST. SE Westbound					Plymouth Ave. SE Northbound					Wealthy ST. SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
7:00 AM	5	34	21	1	60	7	13	5	0	25	7	45	7	4	59	5	16	8	0	29	173
7:15 AM	4	57	20	4	81	5	21	7	1	33	8	51	6	3	65	11	32	10	0	53	232
7:30 AM	7	48	19	5	74	13	63	10	1	86	12	64	15	7	91	8	39	9	0	56	307
7:45 AM	4	48	17	9	69	14	47	10	0	71	18	63	12	1	93	13	40	12	0	65	298
Hourly Total	20	187	77	19	284	39	144	32	2	215	45	223	40	15	308	37	127	39	0	203	1010
8:00 AM	2	45	16	1	63	7	44	8	1	59	22	54	19	1	95	10	43	15	2	68	285
8:15 AM	8	27	16	0	51	4	36	10	1	50	19	72	13	2	104	24	50	7	1	81	286
8:30 AM	5	55	18	5	78	5	17	2	0	24	20	51	14	1	85	9	44	11	0	64	251
8:45 AM	5	50	25	2	80	7	29	9	2	45	22	35	21	0	78	14	41	10	1	65	268
Hourly Total	20	177	75	8	272	23	126	29	4	178	83	212	67	4	362	57	178	43	4	278	1090
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	11	42	14	1	67	13	56	11	1	80	11	39	11	0	61	8	46	8	0	62	270
2:15 PM	4	68	12	2	84	10	30	10	0	50	12	60	15	1	87	9	45	9	0	63	284
2:30 PM	9	60	14	0	83	12	53	9	0	74	9	42	15	2	66	8	32	11	0	51	274
2:45 PM	11	69	22	4	102	8	34	6	3	48	13	56	8	2	77	12	52	11	0	75	302
Hourly Total	35	239	62	7	336	43	173	36	4	252	45	197	49	5	291	37	175	39	0	251	1130
3:00 PM	9	78	13	3	100	19	69	12	3	100	13	71	19	9	103	12	43	14	4	69	372
3:15 PM	9	55	20	9	84	11	59	5	7	75	13	94	17	4	124	4	44	11	1	59	342
3:30 PM	6	81	20	9	107	17	69	9	6	95	6	79	23	9	108	4	30	16	2	50	360
3:45 PM	18	95	17	4	130	18	50	8	3	76	4	79	15	4	98	13	40	10	2	63	367
Hourly Total	42	309	70	25	421	65	247	34	19	346	36	323	74	26	433	33	157	51	9	241	1441
4:00 PM	10	64	6	3	80	17	45	3	2	65	10	60	8	2	78	6	32	12	2	50	273
4:15 PM	7	67	17	2	91	15	51	3	2	69	6	61	14	4	81	13	47	15	2	75	316
4:30 PM	16	90	17	2	123	20	56	2	3	78	12	82	7	1	101	10	44	15	1	69	371
4:45 PM	14	80	17	5	111	21	45	11	1	77	10	76	9	6	95	5	34	17	4	56	339
Hourly Total	47	301	57	12	405	73	197	19	8	289	38	279	38	13	355	34	157	59	9	250	1299
5:00 PM	16	99	18	4	133	21	47	14	4	82	9	89	15	5	113	8	42	12	1	62	390
5:15 PM	16	96	12	2	124	17	60	8	1	85	7	88	9	1	104	7	39	14	0	60	373
5:30 PM	13	88	11	8	112	12	57	7	2	76	5	84	15	2	104	7	42	23	1	72	364
5:45 PM	14	85	11	6	110	14	48	6	1	68	6	77	14	0	97	6	48	8	0	62	337
Hourly Total	59	368	52	20	479	64	212	35	8	311	27	338	53	8	418	28	171	57	2	256	1464
6:00 PM	21	62	8	10	91	13	34	4	3	51	8	77	8	4	93	7	45	13	0	65	300
6:15 PM	8	58	14	2	80	15	45	13	1	73	12	62	13	2	87	7	23	8	0	38	278
6:30 PM	6	60	21	9	87	14	31	2	7	47	7	68	11	4	86	10	28	13	0	51	271
6:45 PM	7	40	24	3	71	6	43	7	4	56	10	53	14	4	77	7	56	10	2	73	277
Hourly Total	42	220	67	24	329	48	153	26	15	227	37	260	46	14	343	31	152	44	2	227	1126
7:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	265	1802	460	115	2527	355	1252	211	60	1818	311	1832	367	85	2510	257	1117	332	26	1706	8561
Approach %	10.5	71.3	18.2	-	-	19.5	68.9	11.6	-	-	12.4	73.0	14.6	-	-	15.1	65.5	19.5	-	-	-
Total %	3.1	21.0	5.4	-	29.5	4.1	14.6	2.5	-	21.2	3.6	21.4	4.3	-	29.3	3.0	13.0	3.9	-	19.9	-
Motorcycles	2	0	4	-	6	1	4	2	-	7	0	7	2	-	9	1	9	3	-	13	35
% Motorcycles	0.8	0.0	0.9	-	0.2	0.3	0.3	0.9	-	0.4	0.0	0.4	0.5	-	0.4	0.4	0.8	0.9	-	0.8	0.4
Cars	237	1605	420	-	2262	324	1110	185	-	1619	279	1619	307	-	2205	213	996	298	-	1507	7593
% Cars	89.4	89.1	91.3	-	89.5	91.3	88.7	87.7	-	89.1	89.7	88.4	83.7	-	87.8	82.9	89.2	89.8	-	88.3	88.7
Light Goods Vehicles	20	130	28	-	178	24	72	15	-	111	26	144	30	-	200	26	60	27	-	113	602
% Light Goods Vehicles	7.5	7.2	6.1	-	7.0	6.8	5.8	7.1	-	6.1	8.4	7.9	8.2	-	8.0	10.1	5.4	8.1	-	6.6	7.0
Buses	1	41	1	-	43	1	28	3	-	32	4	35	18	-	57	7	24	2	-	33	165
% Buses	0.4	2.3	0.2	-	1.7	0.3	2.2	1.4	-	1.8	1.3	1.9	4.9	-	2.3	2.7	2.1	0.6	-	1.9	1.9
Single-Unit Trucks	5	21	6	-	32	2	5	5	-	12	1	18	7	-	26	8	2	2	-	12	82
% Single-Unit Trucks	1.9	1.2	1.3	-	1.3	0.6	0.4	2.4	-	0.7	0.3	1.0	1.9	-	1.0	3.1	0.2	0.6	-	0.7	1.0
Articulated Trucks	0	0	0	-	0	0	2	0	-	2	0	0	1	-	1	0	3	0	-	3	6

% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	0.1	0.0	0.0	0.3	-	0.0	0.0	0.3	0.0	-	0.2	0.1
Bicycles on Road	0	5	1	-	6	3	31	1	-	35	1	9	2	-	12	2	23	0	-	25	78
% Bicycles on Road	0.0	0.3	0.2	-	0.2	0.8	2.5	0.5	-	1.9	0.3	0.5	0.5	-	0.5	0.8	2.1	0.0	-	1.5	0.9
Bicycles on Crosswalk	-	-	-	7	-	-	-	-	2	-	-	-	-	21	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	6.1	-	-	-	-	3.3	-	-	-	-	24.7	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	108	-	-	-	-	58	-	-	-	-	64	-	-	-	-	26	-	-
% Pedestrians	-	-	-	93.9	-	-	-	-	96.7	-	-	-	-	75.3	-	-	-	-	100.0	-	-

Traffic Data Collection, LLC
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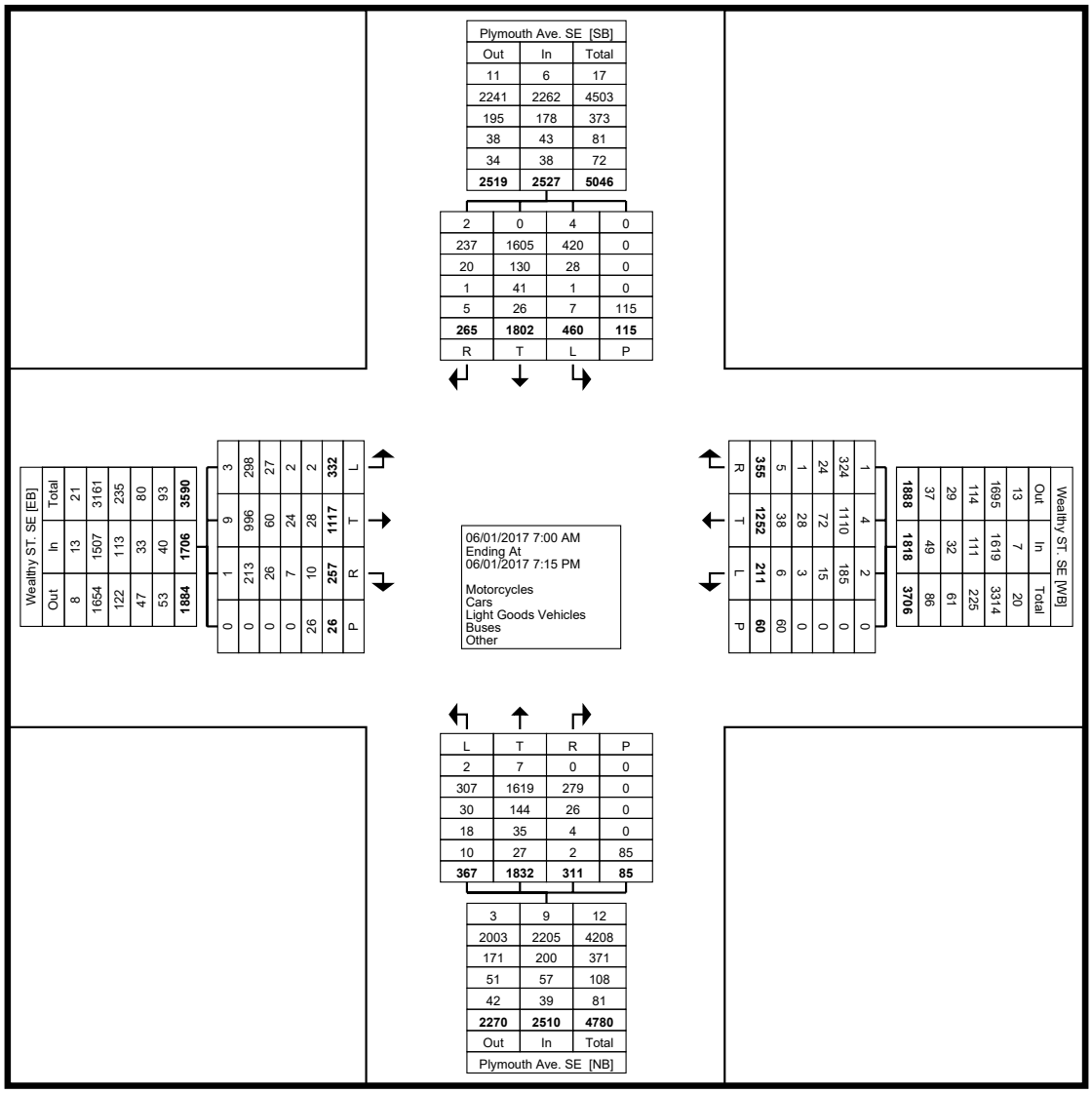
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

Count Name: TMC_1
Plymouth Ave. SE & Wealthy ST. SE
Site Code: TMC_1
Start Date: 06/01/2017



Turning Movement Data Plot

Traffic Data Collection

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Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

Count Name: TMC_1
Plymouth Ave. SE & Wealthy ST. SE
Site Code: TMC_1
Start Date: 06/01/2017

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Plymouth Ave. SE Southbound					Wealthy ST. SE Westbound					Plymouth Ave. SE Northbound					Wealthy ST. SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
7:30 AM	7	48	19	5	74	13	63	10	1	86	12	64	15	7	91	8	39	9	0	56	307
7:45 AM	4	48	17	9	69	14	47	10	0	71	18	63	12	1	93	13	40	12	0	65	298
8:00 AM	2	45	16	1	63	7	44	8	1	59	22	54	19	1	95	10	43	15	2	68	285
8:15 AM	8	27	16	0	51	4	36	10	1	50	19	72	13	2	104	24	50	7	1	81	286
Total	21	168	68	15	257	38	190	38	3	266	71	253	59	11	383	55	172	43	3	270	1176
Approach %	8.2	65.4	26.5	-	-	14.3	71.4	14.3	-	-	18.5	66.1	15.4	-	-	20.4	63.7	15.9	-	-	-
Total %	1.8	14.3	5.8	-	21.9	3.2	16.2	3.2	-	22.6	6.0	21.5	5.0	-	32.6	4.7	14.6	3.7	-	23.0	-
PHF	0.656	0.875	0.895	-	0.868	0.679	0.754	0.950	-	0.773	0.807	0.878	0.776	-	0.921	0.573	0.860	0.717	-	0.833	0.958
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.6	0.0	-	0.4	0.1
Cars	17	155	67	-	239	35	175	34	-	244	61	234	46	-	341	43	150	39	-	232	1056
% Cars	81.0	92.3	98.5	-	93.0	92.1	92.1	89.5	-	91.7	85.9	92.5	78.0	-	89.0	78.2	87.2	90.7	-	85.9	89.8
Light Goods Vehicles	3	9	0	-	12	1	8	2	-	11	7	15	5	-	27	7	13	3	-	23	73
% Light Goods Vehicles	14.3	5.4	0.0	-	4.7	2.6	4.2	5.3	-	4.1	9.9	5.9	8.5	-	7.0	12.7	7.6	7.0	-	8.5	6.2
Buses	0	2	1	-	3	1	5	2	-	8	3	2	6	-	11	2	4	0	-	6	28
% Buses	0.0	1.2	1.5	-	1.2	2.6	2.6	5.3	-	3.0	4.2	0.8	10.2	-	2.9	3.6	2.3	0.0	-	2.2	2.4
Single-Unit Trucks	1	1	0	-	2	1	0	0	-	1	0	1	0	-	1	2	0	1	-	3	7
% Single-Unit Trucks	4.8	0.6	0.0	-	0.8	2.6	0.0	0.0	-	0.4	0.0	0.4	0.0	-	0.3	3.6	0.0	2.3	-	1.1	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	0	2	0	-	2	3
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.5	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.0	1.2	0.0	-	0.7	0.3
Bicycles on Road	0	1	0	-	1	0	1	0	-	1	0	1	2	-	3	1	2	0	-	3	8
% Bicycles on Road	0.0	0.6	0.0	-	0.4	0.0	0.5	0.0	-	0.4	0.0	0.4	3.4	-	0.8	1.8	1.2	0.0	-	1.1	0.7
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	20.0	-	-	-	-	0.0	-	-	-	-	18.2	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	12	-	-	-	-	3	-	-	-	-	9	-	-	-	-	3	-	-
% Pedestrians	-	-	-	80.0	-	-	-	-	100.0	-	-	-	-	81.8	-	-	-	-	100.0	-	-

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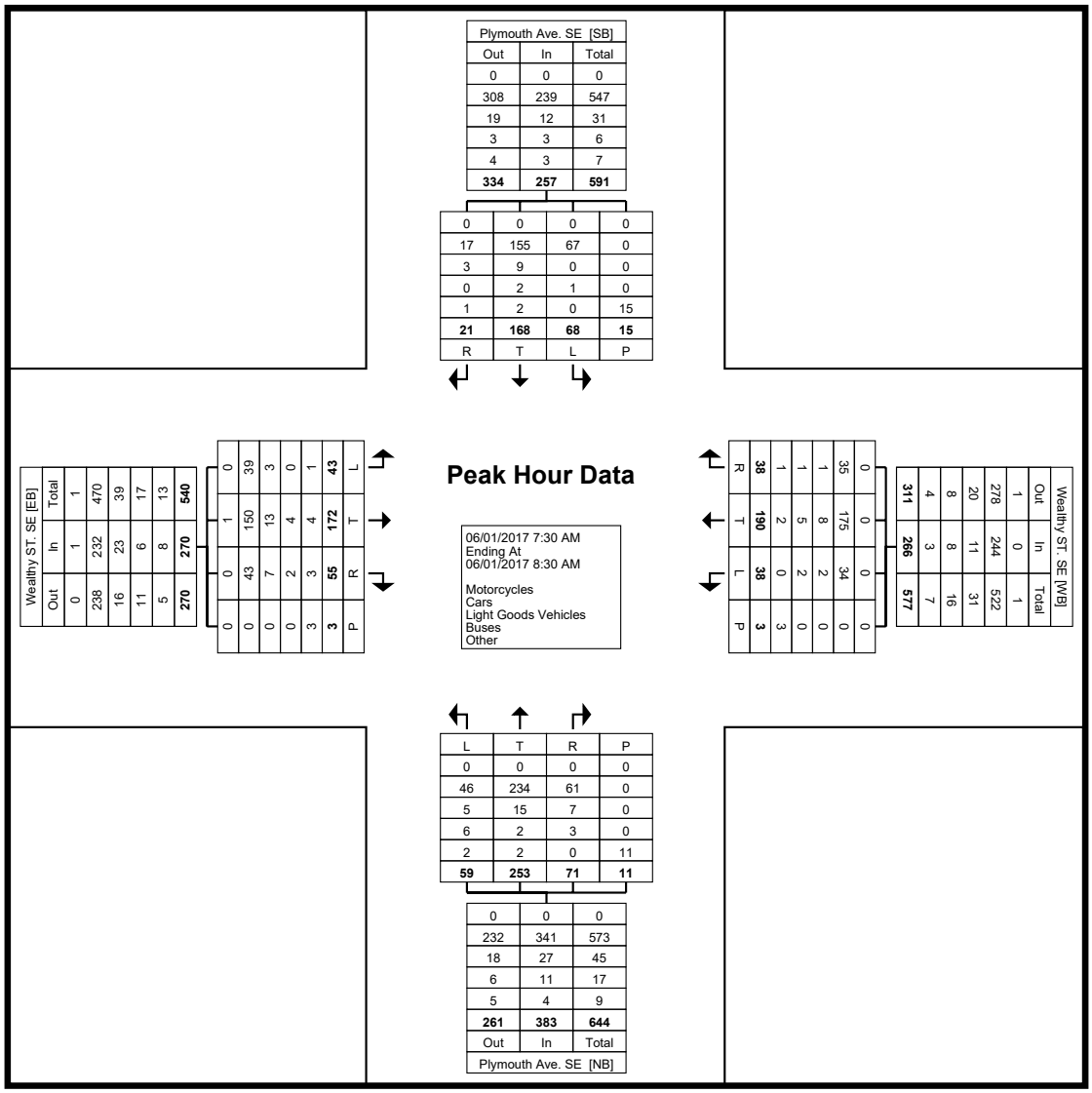
Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

Count Name: TMC_1
Plymouth Ave. SE & Wealthy ST. SE
Site Code: TMC_1
Start Date: 06/01/2017



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

Count Name: TMC_1
Plymouth Ave. SE & Wealthy ST. SE
Site Code: TMC_1
Start Date: 06/01/2017

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Plymouth Ave. SE Southbound					Wealthy ST. SE Westbound					Plymouth Ave. SE Northbound					Wealthy ST. SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
4:30 PM	16	90	17	2	123	20	56	2	3	78	12	82	7	1	101	10	44	15	1	69	371
4:45 PM	14	80	17	5	111	21	45	11	1	77	10	76	9	6	95	5	34	17	4	56	339
5:00 PM	16	99	18	4	133	21	47	14	4	82	9	89	15	5	113	8	42	12	1	62	390
5:15 PM	16	96	12	2	124	17	60	8	1	85	7	88	9	1	104	7	39	14	0	60	373
Total	62	365	64	13	491	79	208	35	9	322	38	335	40	13	413	30	159	58	6	247	1473
Approach %	12.6	74.3	13.0	-	-	24.5	64.6	10.9	-	-	9.2	81.1	9.7	-	-	12.1	64.4	23.5	-	-	-
Total %	4.2	24.8	4.3	-	33.3	5.4	14.1	2.4	-	21.9	2.6	22.7	2.7	-	28.0	2.0	10.8	3.9	-	16.8	-
PHF	0.969	0.922	0.889	-	0.923	0.940	0.867	0.625	-	0.947	0.792	0.941	0.667	-	0.914	0.750	0.903	0.853	-	0.895	0.944
Motorcycles	1	0	0	-	1	0	0	0	-	0	0	3	0	-	3	0	0	0	-	0	4
% Motorcycles	1.6	0.0	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	0.9	0.0	-	0.7	0.0	0.0	0.0	-	0.0	0.3
Cars	54	337	59	-	450	74	186	30	-	290	33	298	31	-	362	27	151	52	-	230	1332
% Cars	87.1	92.3	92.2	-	91.6	93.7	89.4	85.7	-	90.1	86.8	89.0	77.5	-	87.7	90.0	95.0	89.7	-	93.1	90.4
Light Goods Vehicles	7	16	4	-	27	5	14	2	-	21	4	25	4	-	33	3	3	5	-	11	92
% Light Goods Vehicles	11.3	4.4	6.3	-	5.5	6.3	6.7	5.7	-	6.5	10.5	7.5	10.0	-	8.0	10.0	1.9	8.6	-	4.5	6.2
Buses	0	7	0	-	7	0	4	0	-	4	0	4	3	-	7	0	4	1	-	5	23
% Buses	0.0	1.9	0.0	-	1.4	0.0	1.9	0.0	-	1.2	0.0	1.2	7.5	-	1.7	0.0	2.5	1.7	-	2.0	1.6
Single-Unit Trucks	0	4	1	-	5	0	1	2	-	3	0	4	2	-	6	0	0	0	-	0	14
% Single-Unit Trucks	0.0	1.1	1.6	-	1.0	0.0	0.5	5.7	-	0.9	0.0	1.2	5.0	-	1.5	0.0	0.0	0.0	-	0.0	1.0
Articulated Trucks	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
Bicycles on Road	0	1	0	-	1	0	3	1	-	4	1	1	0	-	2	0	1	0	-	1	8
% Bicycles on Road	0.0	0.3	0.0	-	0.2	0.0	1.4	2.9	-	1.2	2.6	0.3	0.0	-	0.5	0.0	0.6	0.0	-	0.4	0.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	15.4	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	13	-	-	-	-	9	-	-	-	-	11	-	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	84.6	-	-	-	-	100.0	-	-

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 4SY SE

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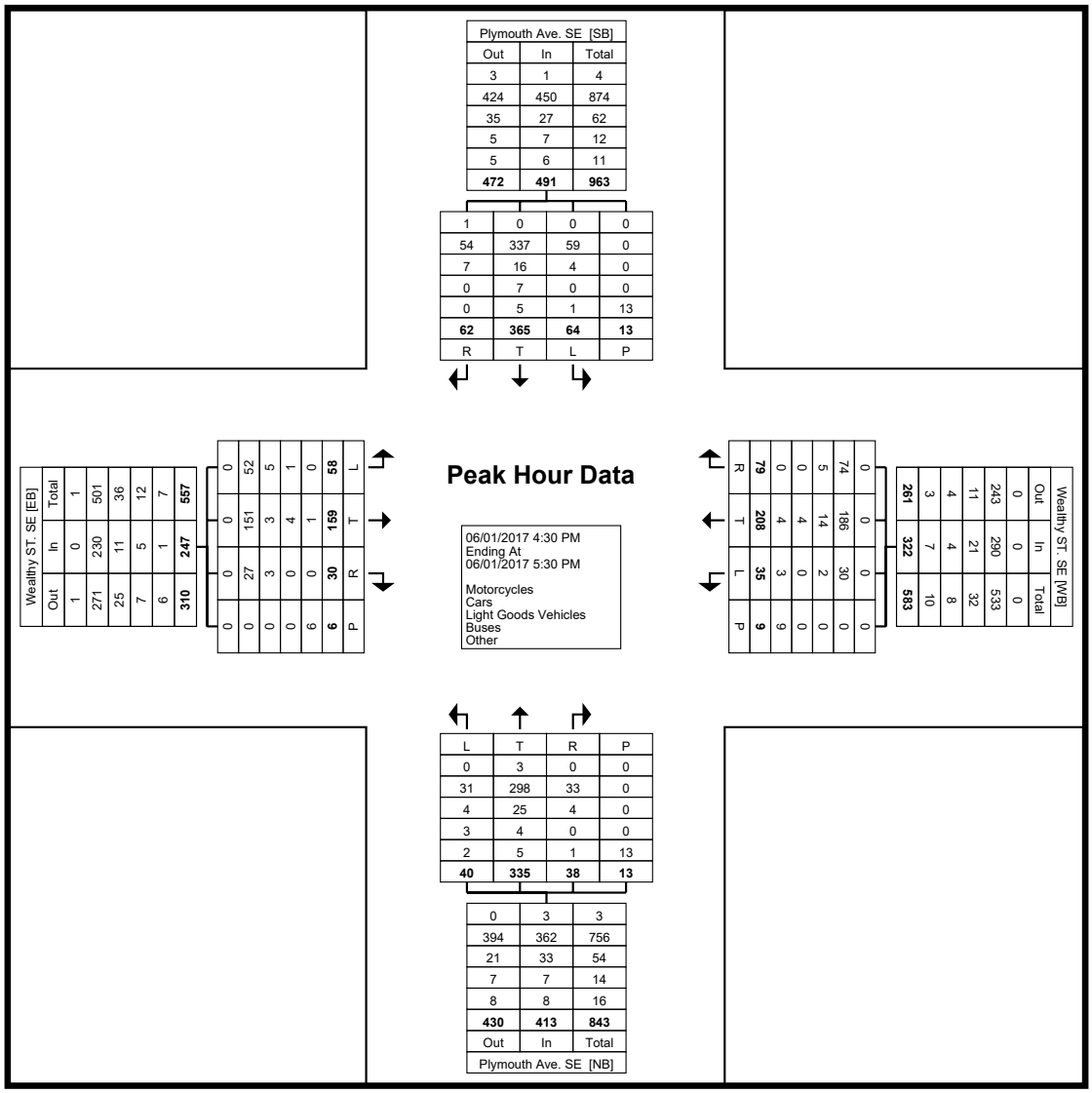

Turning Movement Peak Hour Data Plot (4:30 PM)

Traffic Data Collection, LLC
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Ph. (586) 786-5407
Reliable Traffic Data

Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Signalized intersection with pedestrian signals for all quadrants, no push buttons. Blodgett Hospital and video VCU camera was located at SE intersection quadrant.

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

7)Pedestrians Includes: All pedestrians using crosswalk

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017

Turning Movement Data

Start Time	Plymouth Ave. SE Southbound					Lake Drive SE Westbound					Plymouth Ave. SE Northbound					Lake Drive SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
7:00 AM	1	43	2	0	46	6	36	2	0	44	3	59	22	0	84	11	39	2	0	52	226
7:15 AM	2	44	4	4	50	2	48	1	1	51	4	62	19	2	85	10	50	8	1	68	254
7:30 AM	6	60	1	4	67	0	73	6	2	79	5	85	54	9	144	17	56	9	8	82	372
7:45 AM	1	55	3	15	59	6	65	5	1	76	3	96	41	0	140	22	52	5	10	79	354
Hourly Total	10	202	10	23	222	14	222	14	4	250	15	302	136	11	453	60	197	24	19	281	1206
8:00 AM	3	38	5	38	46	5	85	11	0	101	13	85	31	0	129	19	60	5	25	84	360
8:15 AM	3	48	4	5	55	11	79	16	1	106	4	92	41	0	137	12	52	4	4	68	366
8:30 AM	3	46	3	3	52	7	72	5	3	84	0	66	26	1	92	14	42	10	0	66	294
8:45 AM	6	41	2	0	49	2	59	6	0	67	5	54	36	0	95	14	51	8	0	73	284
Hourly Total	15	173	14	46	202	25	295	38	4	358	22	297	134	1	453	59	205	27	29	291	1304
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	7	42	7	6	56	15	38	7	1	60	2	44	26	0	72	22	63	2	0	87	275
2:15 PM	6	70	5	0	81	10	43	5	0	58	4	55	20	1	79	25	54	9	0	88	306
2:30 PM	5	57	9	6	71	4	55	5	0	64	2	41	19	5	62	20	63	7	1	90	287
2:45 PM	11	68	7	1	86	10	51	7	2	68	8	56	32	1	96	29	71	7	0	107	357
Hourly Total	29	237	28	13	294	39	187	24	3	250	16	196	97	7	309	96	251	25	1	372	1225
3:00 PM	8	91	8	14	107	5	62	8	2	75	12	81	20	2	113	31	89	6	5	126	421
3:15 PM	6	67	4	52	77	15	47	9	3	71	8	88	27	11	123	30	73	5	28	108	379
3:30 PM	6	84	7	42	97	9	64	19	2	92	4	78	33	0	115	19	74	5	33	98	402
3:45 PM	2	93	8	13	103	5	58	7	0	70	5	81	26	2	112	23	61	4	8	88	373
Hourly Total	22	335	27	121	384	34	231	43	7	308	29	328	106	15	463	103	297	20	74	420	1575
4:00 PM	9	65	6	5	80	6	82	7	4	95	3	53	16	3	72	33	62	6	0	101	348
4:15 PM	5	80	5	4	90	5	60	9	2	74	4	56	29	1	89	29	62	9	0	100	353
4:30 PM	8	89	12	4	109	5	71	8	2	84	4	79	26	3	109	28	89	13	1	130	432
4:45 PM	5	93	6	6	104	2	55	11	2	68	6	76	27	6	109	31	75	8	5	114	395
Hourly Total	27	327	29	19	383	18	268	35	10	321	17	264	98	13	379	121	288	36	6	445	1528
5:00 PM	1	98	11	3	110	8	63	8	3	79	5	80	21	6	106	28	93	15	0	136	431
5:15 PM	8	105	12	6	125	5	83	7	1	95	9	91	26	2	126	32	87	11	1	130	476
5:30 PM	9	87	14	4	110	4	89	12	0	105	8	89	38	5	135	26	91	10	0	127	477
5:45 PM	6	81	8	11	95	8	90	8	1	106	10	66	46	3	122	49	84	7	5	140	463
Hourly Total	24	371	45	24	440	25	325	35	5	385	32	326	131	16	489	135	355	43	6	533	1847
6:00 PM	5	59	2	2	66	12	72	11	2	95	9	81	32	5	122	24	77	5	2	106	389
6:15 PM	5	63	6	5	74	5	69	4	4	78	6	73	29	4	108	25	77	8	2	110	370
6:30 PM	6	52	5	11	63	4	60	8	6	72	3	56	31	6	90	21	62	9	2	92	317
6:45 PM	6	40	3	2	49	13	69	10	1	92	6	57	20	4	83	37	75	7	3	119	343
Hourly Total	22	214	16	20	252	34	270	33	13	337	24	267	112	19	403	107	291	29	9	427	1419
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	149	1859	169	266	2177	189	1798	222	46	2209	155	1980	814	82	2949	681	1884	204	144	2769	10104
Approach %	6.8	85.4	7.8	-	-	8.6	81.4	10.0	-	-	5.3	67.1	27.6	-	-	24.6	68.0	7.4	-	-	-
Total %	1.5	18.4	1.7	-	21.5	1.9	17.8	2.2	-	21.9	1.5	19.6	8.1	-	29.2	6.7	18.6	2.0	-	27.4	-
Motorcycles	0	2	0	-	2	1	9	0	-	10	0	6	4	-	10	3	12	0	-	15	37
% Motorcycles	0.0	0.1	0.0	-	0.1	0.5	0.5	0.0	-	0.5	0.0	0.3	0.5	-	0.3	0.4	0.6	0.0	-	0.5	0.4
Cars	133	1729	154	-	2016	173	1640	197	-	2010	143	1773	748	-	2664	642	1774	193	-	2609	9299
% Cars	89.3	93.0	91.1	-	92.6	91.5	91.2	88.7	-	91.0	92.3	89.5	91.9	-	90.3	94.3	94.2	94.6	-	94.2	92.0
Light Goods Vehicles	9	75	13	-	97	9	110	21	-	140	10	130	51	-	191	22	63	8	-	93	521
% Light Goods Vehicles	6.0	4.0	7.7	-	4.5	4.8	6.1	9.5	-	6.3	6.5	6.6	6.3	-	6.5	3.2	3.3	3.9	-	3.4	5.2
Buses	6	35	0	-	41	1	6	1	-	8	0	49	4	-	53	5	6	1	-	12	114
% Buses	4.0	1.9	0.0	-	1.9	0.5	0.3	0.5	-	0.4	0.0	2.5	0.5	-	1.8	0.7	0.3	0.5	-	0.4	1.1
Single-Unit Trucks	0	14	2	-	16	3	15	0	-	18	1	12	3	-	16	4	7	1	-	12	62
% Single-Unit Trucks	0.0	0.8	1.2	-	0.7	1.6	0.8	0.0	-	0.8	0.6	0.6	0.4	-	0.5	0.6	0.4	0.5	-	0.4	0.6
Articulated Trucks	0	0	0	-	0	1	1	1	-	3	0	0	1	-	1	0	1	1	-	2	6

% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.5	0.1	0.5	-	0.1	0.0	0.0	0.1	-	0.0	0.0	0.1	0.5	-	0.1	0.1
Bicycles on Road	1	4	0	-	5	1	17	2	-	20	1	10	3	-	14	5	21	0	-	26	65
% Bicycles on Road	0.7	0.2	0.0	-	0.2	0.5	0.9	0.9	-	0.9	0.6	0.5	0.4	-	0.5	0.7	1.1	0.0	-	0.9	0.6
Bicycles on Crosswalk	-	-	-	22	-	-	-	-	12	-	-	-	-	27	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	8.3	-	-	-	-	26.1	-	-	-	-	32.9	-	-	-	-	7.6	-	-
Pedestrians	-	-	-	244	-	-	-	-	34	-	-	-	-	55	-	-	-	-	133	-	-
% Pedestrians	-	-	-	91.7	-	-	-	-	73.9	-	-	-	-	67.1	-	-	-	-	92.4	-	-

Traffic Data Collection, LLC
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Washington, Michigan, United States 48094
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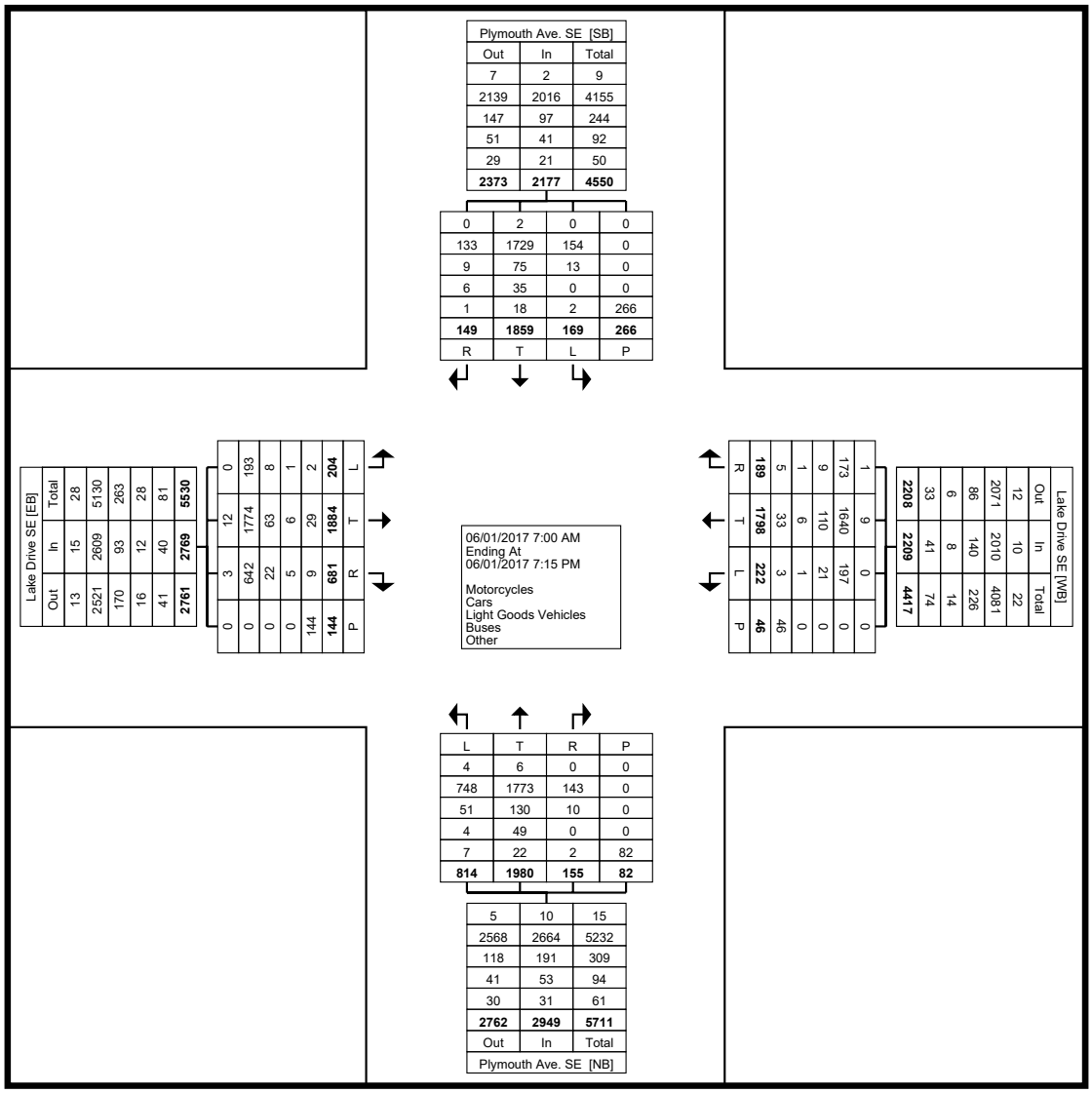
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017
Page No: 3



Turning Movement Data Plot

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Plymouth Ave. SE Southbound					Lake Drive SE Westbound					Plymouth Ave. SE Northbound					Lake Drive SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
7:30 AM	6	60	1	4	67	0	73	6	2	79	5	85	54	9	144	17	56	9	8	82	372
7:45 AM	1	55	3	15	59	6	65	5	1	76	3	96	41	0	140	22	52	5	10	79	354
8:00 AM	3	38	5	38	46	5	85	11	0	101	13	85	31	0	129	19	60	5	25	84	360
8:15 AM	3	48	4	5	55	11	79	16	1	106	4	92	41	0	137	12	52	4	4	68	366
Total	13	201	13	62	227	22	302	38	4	362	25	358	167	9	550	70	220	23	47	313	1452
Approach %	5.7	88.5	5.7	-	-	6.1	83.4	10.5	-	-	4.5	65.1	30.4	-	-	22.4	70.3	7.3	-	-	-
Total %	0.9	13.8	0.9	-	15.6	1.5	20.8	2.6	-	24.9	1.7	24.7	11.5	-	37.9	4.8	15.2	1.6	-	21.6	-
PHF	0.542	0.838	0.650	-	0.847	0.500	0.888	0.594	-	0.854	0.481	0.932	0.773	-	0.955	0.795	0.917	0.639	-	0.932	0.976
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	-	0.2	0.0	0.0	0.0	-	0.0	0.1
Cars	11	184	10	-	205	21	284	32	-	337	23	327	155	-	505	65	204	22	-	291	1338
% Cars	84.6	91.5	76.9	-	90.3	95.5	94.0	84.2	-	93.1	92.0	91.3	92.8	-	91.8	92.9	92.7	95.7	-	93.0	92.1
Light Goods Vehicles	1	8	3	-	12	1	15	5	-	21	1	18	9	-	28	2	7	1	-	10	71
% Light Goods Vehicles	7.7	4.0	23.1	-	5.3	4.5	5.0	13.2	-	5.8	4.0	5.0	5.4	-	5.1	2.9	3.2	4.3	-	3.2	4.9
Buses	1	8	0	-	9	0	0	0	-	0	0	11	1	-	12	0	3	0	-	3	24
% Buses	7.7	4.0	0.0	-	4.0	0.0	0.0	0.0	-	0.0	0.0	3.1	0.6	-	2.2	0.0	1.4	0.0	-	1.0	1.7
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	1	2	0	-	3	2	4	0	-	6	11
% Single-Unit Trucks	0.0	0.0	0.0	-	0.0	0.0	0.7	0.0	-	0.6	4.0	0.6	0.0	-	0.5	2.9	1.8	0.0	-	1.9	0.8
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	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	0.1
Bicycles on Road	0	1	0	-	1	0	0	1	-	1	0	0	1	-	1	1	2	0	-	3	6
% Bicycles on Road	0.0	0.5	0.0	-	0.4	0.0	0.0	2.6	-	0.3	0.0	0.0	0.6	-	0.2	1.4	0.9	0.0	-	1.0	0.4
Bicycles on Crosswalk	-	-	-	5	-	-	-	-	2	-	-	-	-	4	-	-	-	-	7	-	-
% Bicycles on Crosswalk	-	-	-	8.1	-	-	-	-	50.0	-	-	-	-	44.4	-	-	-	-	14.9	-	-
Pedestrians	-	-	-	57	-	-	-	-	2	-	-	-	-	5	-	-	-	-	40	-	-
% Pedestrians	-	-	-	91.9	-	-	-	-	50.0	-	-	-	-	55.6	-	-	-	-	85.1	-	-

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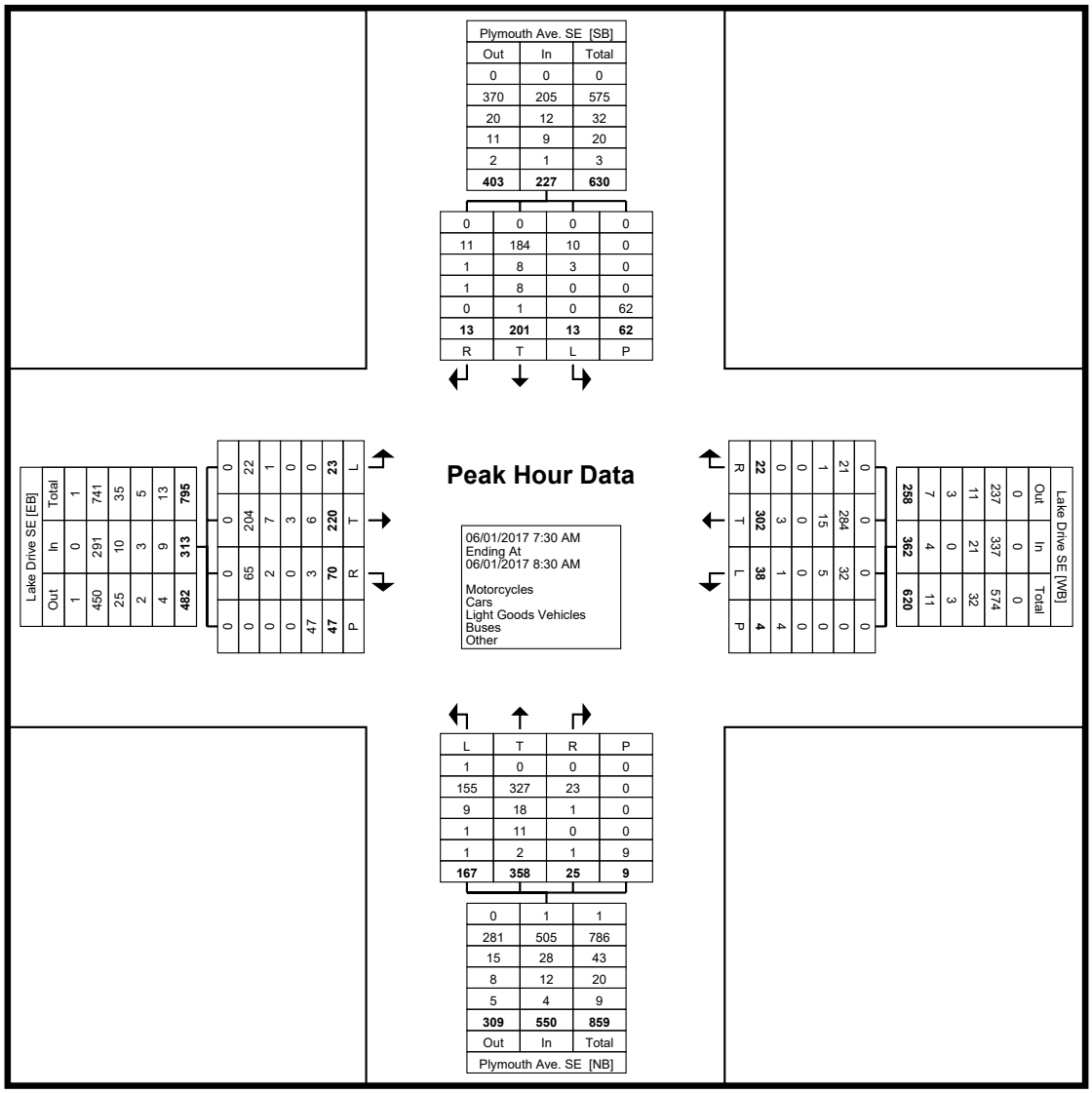
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017
Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Plymouth Ave. SE Southbound					Lake Drive SE Westbound					Plymouth Ave. SE Northbound					Lake Drive SE Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
5:00 PM	1	98	11	3	110	8	63	8	3	79	5	80	21	6	106	28	93	15	0	136	431
5:15 PM	8	105	12	6	125	5	83	7	1	95	9	91	26	2	126	32	87	11	1	130	476
5:30 PM	9	87	14	4	110	4	89	12	0	105	8	89	38	5	135	26	91	10	0	127	477
5:45 PM	6	81	8	11	95	8	90	8	1	106	10	66	46	3	122	49	84	7	5	140	463
Total	24	371	45	24	440	25	325	35	5	385	32	326	131	16	489	135	355	43	6	533	1847
Approach %	5.5	84.3	10.2	-	-	6.5	84.4	9.1	-	-	6.5	66.7	26.8	-	-	25.3	66.6	8.1	-	-	-
Total %	1.3	20.1	2.4	-	23.8	1.4	17.6	1.9	-	20.8	1.7	17.7	7.1	-	26.5	7.3	19.2	2.3	-	28.9	-
PHF	0.667	0.883	0.804	-	0.880	0.781	0.903	0.729	-	0.908	0.800	0.896	0.712	-	0.906	0.689	0.954	0.717	-	0.952	0.968
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	3	1	-	4	0	2	0	-	2	7
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	0.9	0.8	-	0.8	0.0	0.6	0.0	-	0.4	0.4
Cars	21	354	42	-	417	22	300	33	-	355	31	297	125	-	453	130	339	42	-	511	1736
% Cars	87.5	95.4	93.3	-	94.8	88.0	92.3	94.3	-	92.2	96.9	91.1	95.4	-	92.6	96.3	95.5	97.7	-	95.9	94.0
Light Goods Vehicles	1	12	3	-	16	1	17	1	-	19	1	16	5	-	22	5	13	1	-	19	76
% Light Goods Vehicles	4.2	3.2	6.7	-	3.6	4.0	5.2	2.9	-	4.9	3.1	4.9	3.8	-	4.5	3.7	3.7	2.3	-	3.6	4.1
Buses	1	0	0	-	1	0	0	0	-	0	0	6	0	-	6	0	0	0	-	0	7
% Buses	4.2	0.0	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	1.8	0.0	-	1.2	0.0	0.0	0.0	-	0.0	0.4
Single-Unit Trucks	0	4	0	-	4	1	1	0	-	2	0	1	0	-	1	0	0	0	-	0	7
% Single-Unit Trucks	0.0	1.1	0.0	-	0.9	4.0	0.3	0.0	-	0.5	0.0	0.3	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.4
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	0.0	4.0	0.0	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	1	1	0	-	2	0	6	1	-	7	0	3	0	-	3	0	1	0	-	1	13
% Bicycles on Road	4.2	0.3	0.0	-	0.5	0.0	1.8	2.9	-	1.8	0.0	0.9	0.0	-	0.6	0.0	0.3	0.0	-	0.2	0.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	31.3	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	24	-	-	-	-	5	-	-	-	-	11	-	-	-	-	6	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	68.8	-	-	-	-	100.0	-	-

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3DQ SE

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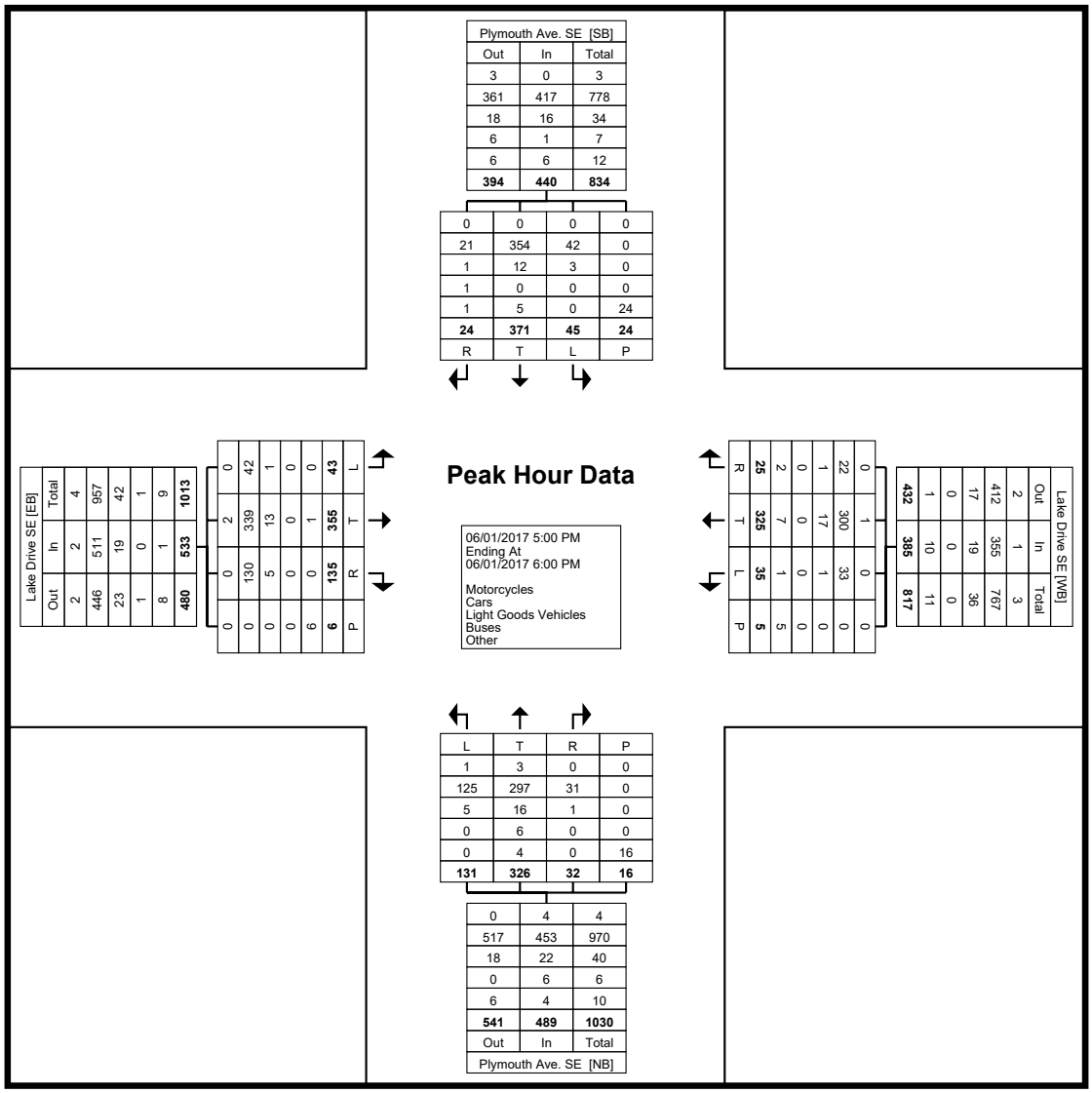
Count Name: TMC_5
Plymouth Ave. SE & Lake Drive SE
Site Code: TMC_5
Start Date: 06/01/2017



Turning Movement Peak Hour Data Plot (5:00 PM)

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Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Signalized intersection with pedestrian signals for all quadrants, no push buttons. NTOR signed for all approach legs. Video VCU camera was located at SE intersection quadrant..

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

7)Pedestrians Includes: All pedestrians using crosswalk

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017

Turning Movement Data

Start Time	Plymouth Ave. SE . Southbound				Blodgett Hospital North Egress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
7:00 AM	42	1	0	43	7	6	2	13	0	51	0	51	107
7:15 AM	79	0	2	79	7	4	0	11	0	61	0	61	151
7:30 AM	66	2	0	68	13	5	2	18	0	77	0	77	163
7:45 AM	67	0	0	67	10	7	1	17	0	86	0	86	170
Hourly Total	254	3	2	257	37	22	5	59	0	275	0	275	591
8:00 AM	60	2	2	62	15	4	2	19	0	80	0	80	161
8:15 AM	62	0	0	62	5	3	1	8	0	92	0	92	162
8:30 AM	64	3	2	67	11	5	4	16	0	78	0	78	161
8:45 AM	70	1	0	71	19	3	3	22	0	54	0	54	147
Hourly Total	256	6	4	262	50	15	10	65	0	304	0	304	631
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	62	1	1	63	12	9	3	21	1	57	0	58	142
2:15 PM	84	0	0	84	19	6	2	25	0	61	0	61	170
2:30 PM	78	0	0	78	15	6	2	21	0	55	0	55	154
2:45 PM	85	1	0	86	19	12	3	31	0	57	0	57	174
Hourly Total	309	2	1	311	65	33	10	98	1	230	0	231	640
3:00 PM	101	1	1	102	22	9	2	31	0	80	0	80	213
3:15 PM	65	0	0	65	21	11	2	32	0	105	0	105	202
3:30 PM	92	1	0	93	16	6	6	22	0	83	0	83	198
3:45 PM	116	1	0	117	12	8	2	20	0	86	0	86	223
Hourly Total	374	3	1	377	71	34	12	105	0	354	0	354	836
4:00 PM	71	0	0	71	16	9	2	25	0	66	0	66	162
4:15 PM	83	1	0	84	19	8	2	27	0	68	0	68	179
4:30 PM	106	0	1	106	19	6	0	25	0	87	0	87	218
4:45 PM	97	0	0	97	17	8	1	25	0	76	0	76	198
Hourly Total	357	1	1	358	71	31	5	102	0	297	0	297	757
5:00 PM	119	0	0	119	15	8	4	23	0	98	0	98	240
5:15 PM	110	1	0	111	10	7	0	17	0	95	0	95	223
5:30 PM	101	0	1	101	10	12	2	22	0	99	0	99	222
5:45 PM	97	0	0	97	14	6	4	20	0	79	0	79	196
Hourly Total	427	1	1	428	49	33	10	82	0	371	0	371	881
6:00 PM	73	1	0	74	7	1	5	8	0	85	0	85	167
6:15 PM	74	0	0	74	11	3	2	14	0	75	0	75	163
6:30 PM	72	1	0	73	17	6	2	23	1	69	0	70	166
6:45 PM	55	0	1	55	10	5	2	15	0	67	0	67	137
Hourly Total	274	2	1	276	45	15	11	60	1	296	0	297	633
Grand Total	2251	18	11	2269	388	183	63	571	2	2127	0	2129	4969
Approach %	99.2	0.8	-	-	68.0	32.0	-	-	0.1	99.9	-	-	-
Total %	45.3	0.4	-	45.7	7.8	3.7	-	11.5	0.0	42.8	-	42.8	-
Motorcycles	4	1	-	5	2	0	-	2	0	7	-	7	14
% Motorcycles	0.2	5.6	-	0.2	0.5	0.0	-	0.4	0.0	0.3	-	0.3	0.3
Cars	2014	16	-	2030	286	140	-	426	2	1938	-	1940	4396
% Cars	89.5	88.9	-	89.5	73.7	76.5	-	74.6	100.0	91.1	-	91.1	88.5
Light Goods Vehicles	150	1	-	151	40	14	-	54	0	147	-	147	352
% Light Goods Vehicles	6.7	5.6	-	6.7	10.3	7.7	-	9.5	0.0	6.9	-	6.9	7.1
Buses	52	0	-	52	47	28	-	75	0	14	-	14	141
% Buses	2.3	0.0	-	2.3	12.1	15.3	-	13.1	0.0	0.7	-	0.7	2.8
Single-Unit Trucks	26	0	-	26	11	1	-	12	0	10	-	10	48
% Single-Unit Trucks	1.2	0.0	-	1.1	2.8	0.5	-	2.1	0.0	0.5	-	0.5	1.0
Articulated Trucks	0	0	-	0	0	0	-	0	0	1	-	1	1
% 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	5	0	-	5	2	0	-	2	0	10	-	10	17
% Bicycles on Road	0.2	0.0	-	0.2	0.5	0.0	-	0.4	0.0	0.5	-	0.5	0.3
Bicycles on Crosswalk	-	-	0	-	-	-	3	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	4.8	-	-	-	-	-	-
Pedestrians	-	-	11	-	-	-	60	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	95.2	-	-	-	-	-	-

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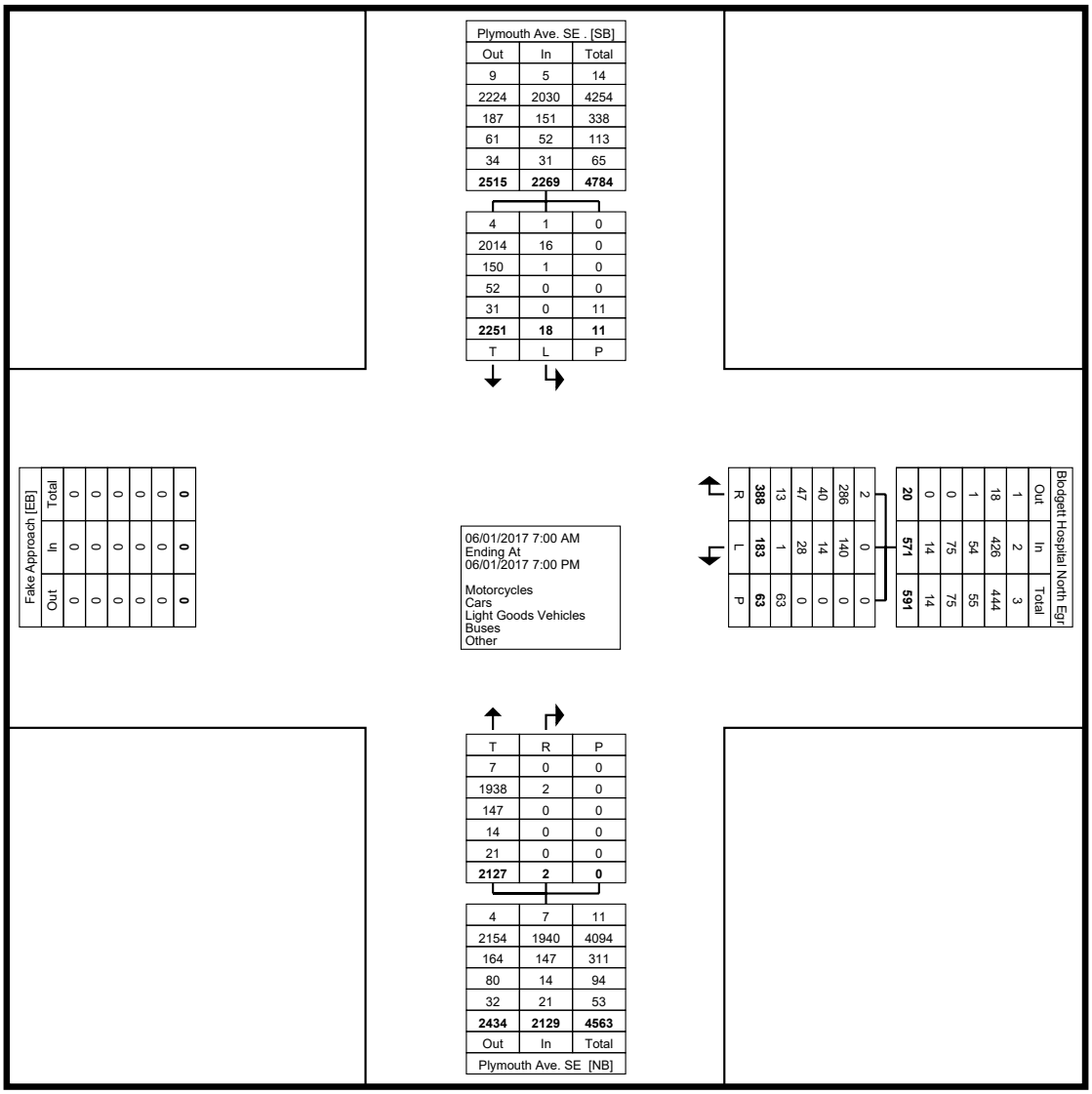
Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017
Page No: 2



Turning Movement Data Plot

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017

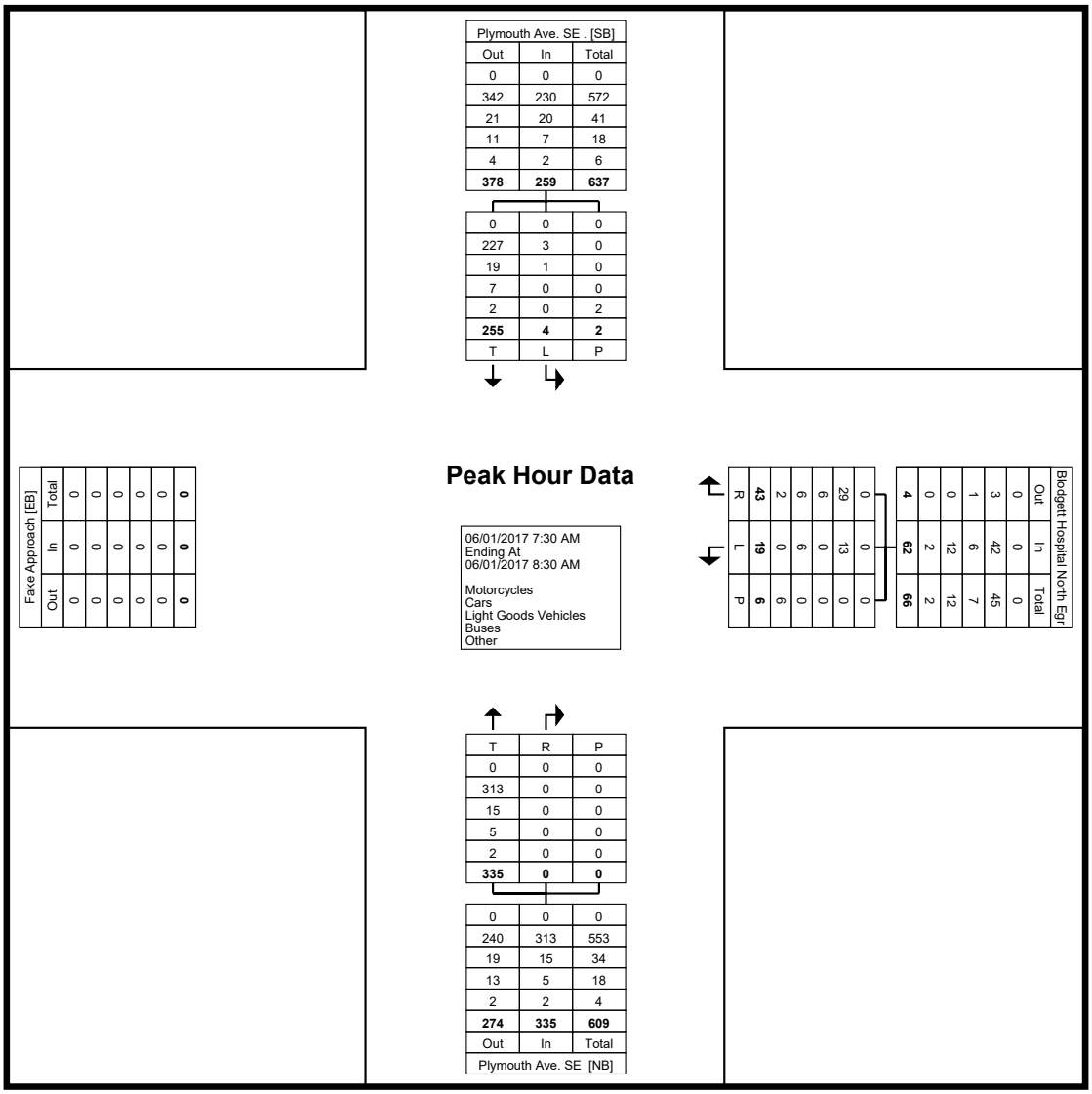
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Plymouth Ave. SE . Southbound				Blodgett Hospital North Egress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
7:30 AM	66	2	0	68	13	5	2	18	0	77	0	77	163
7:45 AM	67	0	0	67	10	7	1	17	0	86	0	86	170
8:00 AM	60	2	2	62	15	4	2	19	0	80	0	80	161
8:15 AM	62	0	0	62	5	3	1	8	0	92	0	92	162
Total	255	4	2	259	43	19	6	62	0	335	0	335	656
Approach %	98.5	1.5	-	-	69.4	30.6	-	-	0.0	100.0	-	-	-
Total %	38.9	0.6	-	39.5	6.6	2.9	-	9.5	0.0	51.1	-	51.1	-
PHF	0.951	0.500	-	0.952	0.717	0.679	-	0.816	0.000	0.910	-	0.910	0.965
Motorcycles	0	0	-	0	0	0	-	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	-	0.0	0.0
Cars	227	3	-	230	29	13	-	42	0	313	-	313	585
% Cars	89.0	75.0	-	88.8	67.4	68.4	-	67.7	-	93.4	-	93.4	89.2
Light Goods Vehicles	19	1	-	20	6	0	-	6	0	15	-	15	41
% Light Goods Vehicles	7.5	25.0	-	7.7	14.0	0.0	-	9.7	-	4.5	-	4.5	6.3
Buses	7	0	-	7	6	6	-	12	0	5	-	5	24
% Buses	2.7	0.0	-	2.7	14.0	31.6	-	19.4	-	1.5	-	1.5	3.7
Single-Unit Trucks	1	0	-	1	0	0	-	0	0	1	-	1	2
% Single-Unit Trucks	0.4	0.0	-	0.4	0.0	0.0	-	0.0	-	0.3	-	0.3	0.3
Articulated Trucks	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
Bicycles on Road	1	0	-	1	2	0	-	2	0	1	-	1	4
% Bicycles on Road	0.4	0.0	-	0.4	4.7	0.0	-	3.2	-	0.3	-	0.3	0.6
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	2	-	-	-	6	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Plymouth Ave. SE . Southbound				Blodgett Hospital North Egress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
4:45 PM	97	0	0	97	17	8	1	25	0	76	0	76	198
5:00 PM	119	0	0	119	15	8	4	23	0	98	0	98	240
5:15 PM	110	1	0	111	10	7	0	17	0	95	0	95	223
5:30 PM	101	0	1	101	10	12	2	22	0	99	0	99	222
Total	427	1	1	428	52	35	7	87	0	368	0	368	883
Approach %	99.8	0.2	-	-	59.8	40.2	-	-	0.0	100.0	-	-	-
Total %	48.4	0.1	-	48.5	5.9	4.0	-	9.9	0.0	41.7	-	41.7	-
PHF	0.897	0.250	-	0.899	0.765	0.729	-	0.870	0.000	0.929	-	0.929	0.920
Motorcycles	1	0	-	1	0	0	-	0	0	2	-	2	3
% Motorcycles	0.2	0.0	-	0.2	0.0	0.0	-	0.0	-	0.5	-	0.5	0.3
Cars	404	1	-	405	37	26	-	63	0	335	-	335	803
% Cars	94.6	100.0	-	94.6	71.2	74.3	-	72.4	-	91.0	-	91.0	90.9
Light Goods Vehicles	13	0	-	13	3	5	-	8	0	28	-	28	49
% Light Goods Vehicles	3.0	0.0	-	3.0	5.8	14.3	-	9.2	-	7.6	-	7.6	5.5
Buses	6	0	-	6	9	3	-	12	0	0	-	0	18
% Buses	1.4	0.0	-	1.4	17.3	8.6	-	13.8	-	0.0	-	0.0	2.0
Single-Unit Trucks	1	0	-	1	3	1	-	4	0	1	-	1	6
% Single-Unit Trucks	0.2	0.0	-	0.2	5.8	2.9	-	4.6	-	0.3	-	0.3	0.7
Articulated Trucks	0	0	-	0	0	0	-	0	0	1	-	1	1
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	-	0.3	-	0.3	0.1
Bicycles on Road	2	0	-	2	0	0	-	0	0	1	-	1	3
% Bicycles on Road	0.5	0.0	-	0.5	0.0	0.0	-	0.0	-	0.3	-	0.3	0.3
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	1	-	-	-	7	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-

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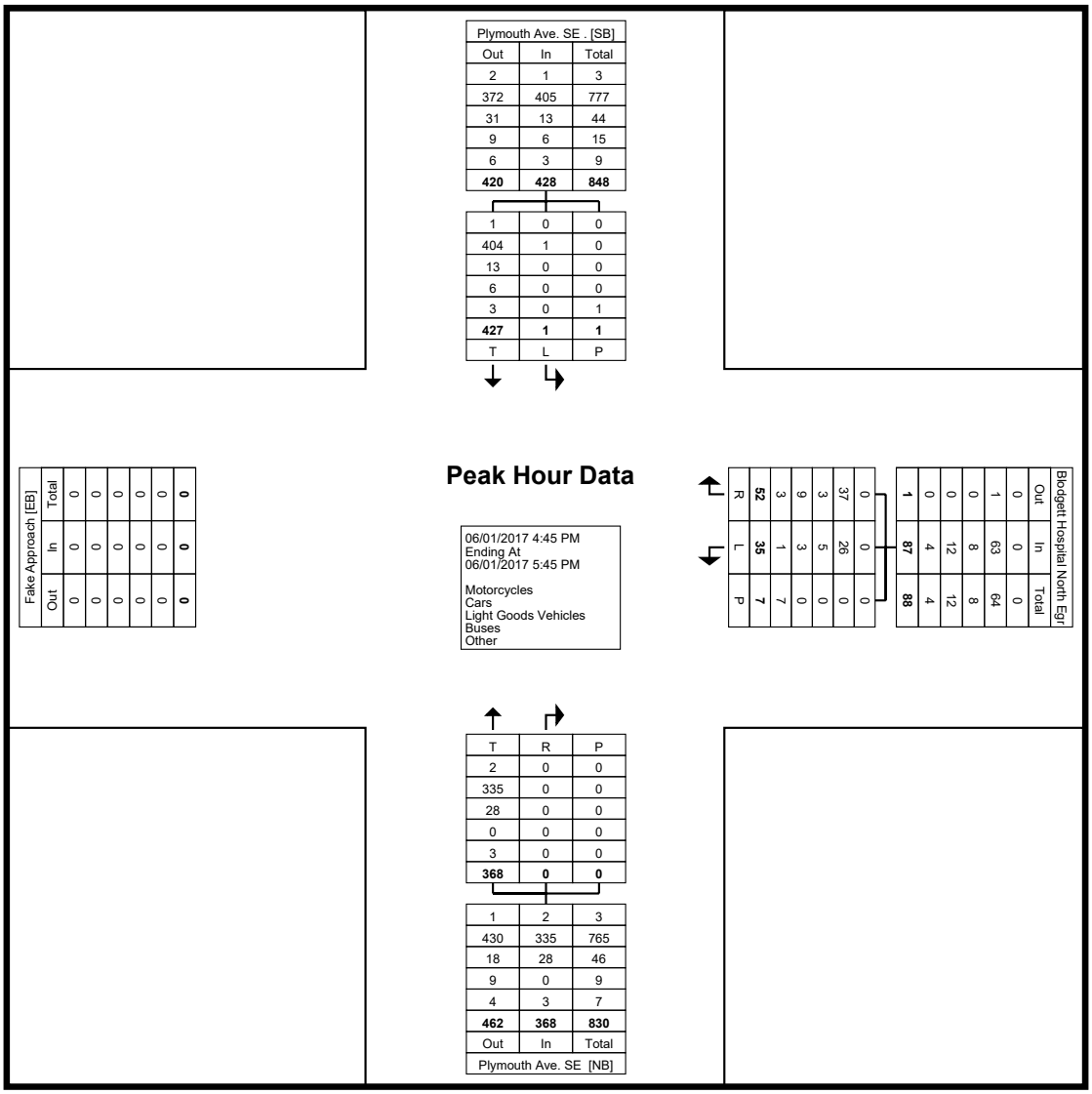
Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 24L NE

Count Name: TMC_2
Plymouth Ave. SE & Blodgett Hospital North Egress Driveway
Site Code: TMC_2
Start Date: 06/01/2017



Turning Movement Peak Hour Data Plot (4:45 PM)

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Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Non-signalized "T" intersection. VCU camera was located at NE intersection quadrant.

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

7)Pedestrians Includes: All pedestrians using crosswalk

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE & Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
Start Date: 06/01/2017

Turning Movement Data

Start Time	Plymouth Ave. SE Southbound				Blodgett Hospital Center Ingress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
7:00 AM	42	9	0	51	0	0	0	0	10	55	0	65	116
7:15 AM	37	23	0	60	0	0	0	0	6	58	0	64	124
7:30 AM	58	8	0	66	0	0	2	0	12	84	0	96	162
7:45 AM	57	15	0	72	1	0	1	1	18	78	0	96	169
Hourly Total	194	55	0	249	1	0	3	1	46	275	0	321	571
8:00 AM	48	17	0	65	0	0	0	0	10	80	0	90	155
8:15 AM	49	15	0	64	0	0	0	0	11	90	0	101	165
8:30 AM	53	19	0	72	0	0	6	0	7	75	1	82	154
8:45 AM	51	20	0	71	0	0	3	0	7	58	0	65	136
Hourly Total	201	71	0	272	0	0	9	0	35	303	1	338	610
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	59	11	0	70	0	0	2	0	7	56	0	63	133
2:15 PM	70	14	0	84	0	0	2	0	7	62	0	69	153
2:30 PM	65	16	0	81	1	2	2	3	6	51	0	57	141
2:45 PM	79	16	0	95	0	0	4	0	13	60	0	73	168
Hourly Total	273	57	0	330	1	2	10	3	33	229	0	262	595
3:00 PM	99	11	0	110	0	0	3	0	8	77	0	85	195
3:15 PM	65	10	0	75	0	0	2	0	5	107	0	112	187
3:30 PM	89	10	0	99	0	0	5	0	7	83	0	90	189
3:45 PM	98	23	0	121	1	0	1	1	10	87	0	97	219
Hourly Total	351	54	0	405	1	0	11	1	30	354	0	384	790
4:00 PM	75	9	1	84	0	0	1	0	10	65	0	75	159
4:15 PM	83	9	2	92	0	0	1	0	10	68	0	78	170
4:30 PM	103	10	1	113	1	0	1	1	9	87	0	96	210
4:45 PM	93	9	0	102	0	0	1	0	4	76	0	80	182
Hourly Total	354	37	4	391	1	0	4	1	33	296	0	329	721
5:00 PM	112	11	0	123	0	1	3	1	6	99	0	105	229
5:15 PM	109	11	0	120	0	0	1	0	6	96	0	102	222
5:30 PM	106	7	0	113	1	0	1	1	6	94	0	100	214
5:45 PM	94	9	0	103	0	0	1	0	2	78	0	80	183
Hourly Total	421	38	0	459	1	1	6	2	20	367	0	387	848
6:00 PM	65	6	0	71	1	0	4	1	3	90	0	93	165
6:15 PM	76	5	0	81	0	0	3	0	4	78	0	82	163
6:30 PM	62	11	0	73	0	0	2	0	5	68	0	73	146
6:45 PM	48	8	0	56	0	0	1	0	6	66	0	72	128
Hourly Total	251	30	0	281	1	0	10	1	18	302	0	320	602
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	2045	342	4	2387	6	3	53	9	215	2126	1	2341	4737
Approach %	85.7	14.3	-	-	66.7	33.3	-	-	9.2	90.8	-	-	-
Total %	43.2	7.2	-	50.4	0.1	0.1	-	0.2	4.5	44.9	-	49.4	-
Motorcycles	2	0	-	2	0	0	-	0	1	5	-	6	8
% Motorcycles	0.1	0.0	-	0.1	0.0	0.0	-	0.0	0.5	0.2	-	0.3	0.2
Cars	1896	260	-	2156	5	3	-	8	159	2007	-	2166	4330
% Cars	92.7	76.0	-	90.3	83.3	100.0	-	88.9	74.0	94.4	-	92.5	91.4
Light Goods Vehicles	98	30	-	128	0	0	-	0	16	81	-	97	225
% Light Goods Vehicles	4.8	8.8	-	5.4	0.0	0.0	-	0.0	7.4	3.8	-	4.1	4.7
Buses	37	40	-	77	0	0	-	0	35	13	-	48	125
% Buses	1.8	11.7	-	3.2	0.0	0.0	-	0.0	16.3	0.6	-	2.1	2.6
Single-Unit Trucks	10	10	-	20	0	0	-	0	3	11	-	14	34
% Single-Unit Trucks	0.5	2.9	-	0.8	0.0	0.0	-	0.0	1.4	0.5	-	0.6	0.7
Articulated Trucks	0	0	-	0	0	0	-	0	0	1	-	1	1
% 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	2	2	-	4	1	0	-	1	1	8	-	9	14
% Bicycles on Road	0.1	0.6	-	0.2	16.7	0.0	-	11.1	0.5	0.4	-	0.4	0.3
Bicycles on Crosswalk	-	-	0	-	-	-	3	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	5.7	-	-	-	0.0	-	-
Pedestrians	-	-	4	-	-	-	50	-	-	-	1	-	-

% Pedestrians	-	-	100.0	-	-	-	94.3	-	-	-	100.0	-	-

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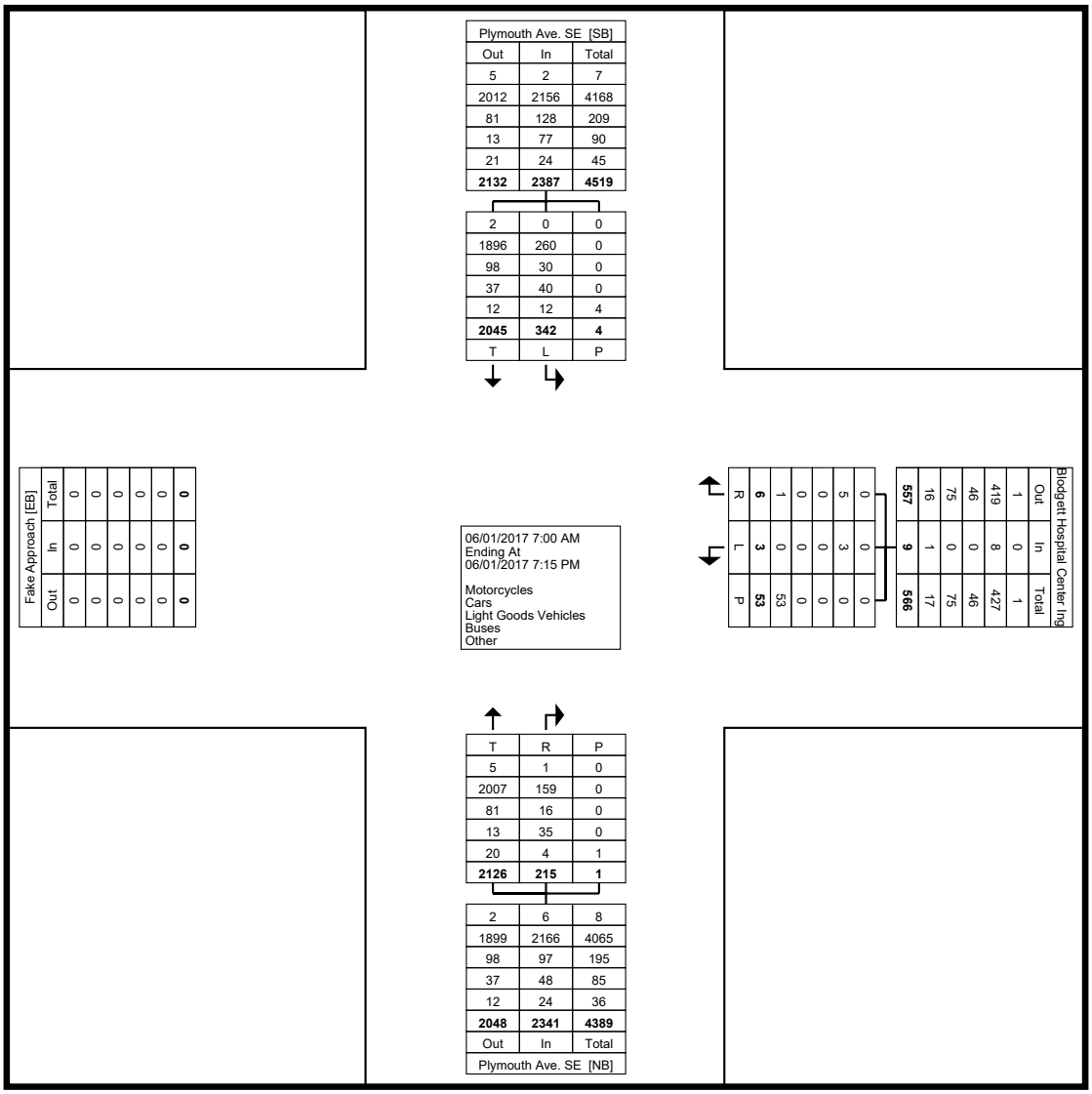
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE & Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
Start Date: 06/01/2017
Page No: 3



Turning Movement Data Plot

Traffic Data Collection

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Corridor: Plymouth Ave. SE
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Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE & Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
Start Date: 06/01/2017

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Plymouth Ave. SE Southbound				Blodgett Hospital Center Ingress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
7:30 AM	58	8	0	66	0	0	2	0	12	84	0	96	162
7:45 AM	57	15	0	72	1	0	1	1	18	78	0	96	169
8:00 AM	48	17	0	65	0	0	0	0	10	80	0	90	155
8:15 AM	49	15	0	64	0	0	0	0	11	90	0	101	165
Total	212	55	0	267	1	0	3	1	51	332	0	383	651
Approach %	79.4	20.6	-	-	100.0	0.0	-	-	13.3	86.7	-	-	-
Total %	32.6	8.4	-	41.0	0.2	0.0	-	0.2	7.8	51.0	-	58.8	-
PHF	0.914	0.809	-	0.927	0.250	0.000	-	0.250	0.708	0.922	-	0.948	0.963
Motorcycles	0	0	-	0	0	0	-	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	0.0	0.0	-	-	0.0	0.0	0.0	-	0.0	0.0
Cars	191	45	-	236	1	0	-	1	42	318	-	360	597
% Cars	90.1	81.8	-	88.4	100.0	-	-	100.0	82.4	95.8	-	94.0	91.7
Light Goods Vehicles	13	4	-	17	0	0	-	0	3	7	-	10	27
% Light Goods Vehicles	6.1	7.3	-	6.4	0.0	-	-	0.0	5.9	2.1	-	2.6	4.1
Buses	7	5	-	12	0	0	-	0	6	5	-	11	23
% Buses	3.3	9.1	-	4.5	0.0	-	-	0.0	11.8	1.5	-	2.9	3.5
Single-Unit Trucks	1	1	-	2	0	0	-	0	0	1	-	1	3
% Single-Unit Trucks	0.5	1.8	-	0.7	0.0	-	-	0.0	0.0	0.3	-	0.3	0.5
Articulated Trucks	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
Bicycles on Road	0	0	-	0	0	0	-	0	0	1	-	1	1
% Bicycles on Road	0.0	0.0	-	0.0	0.0	-	-	0.0	0.0	0.3	-	0.3	0.2
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	3	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	-	-

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Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE & Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
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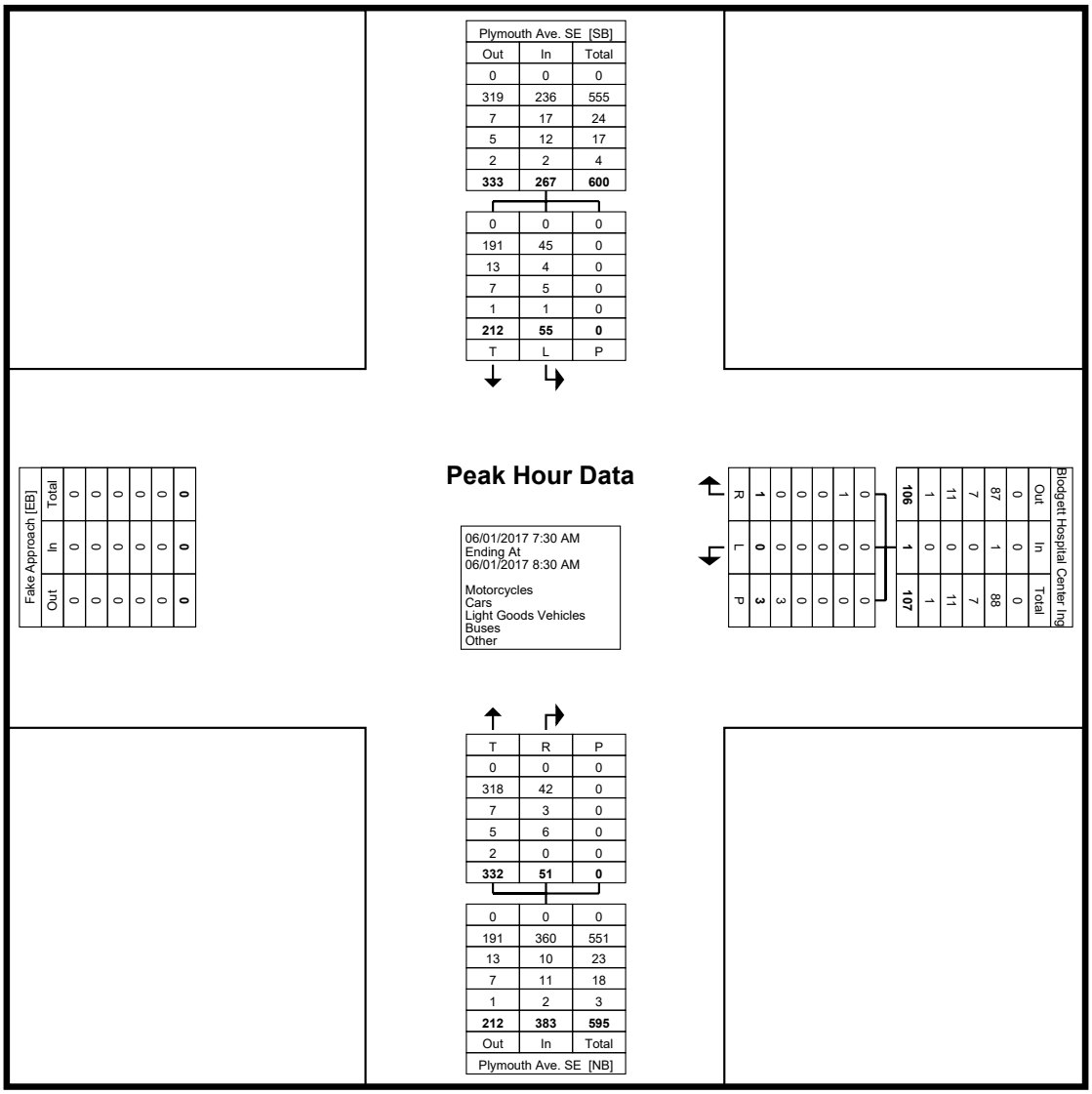
Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE & Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
Start Date: 06/01/2017

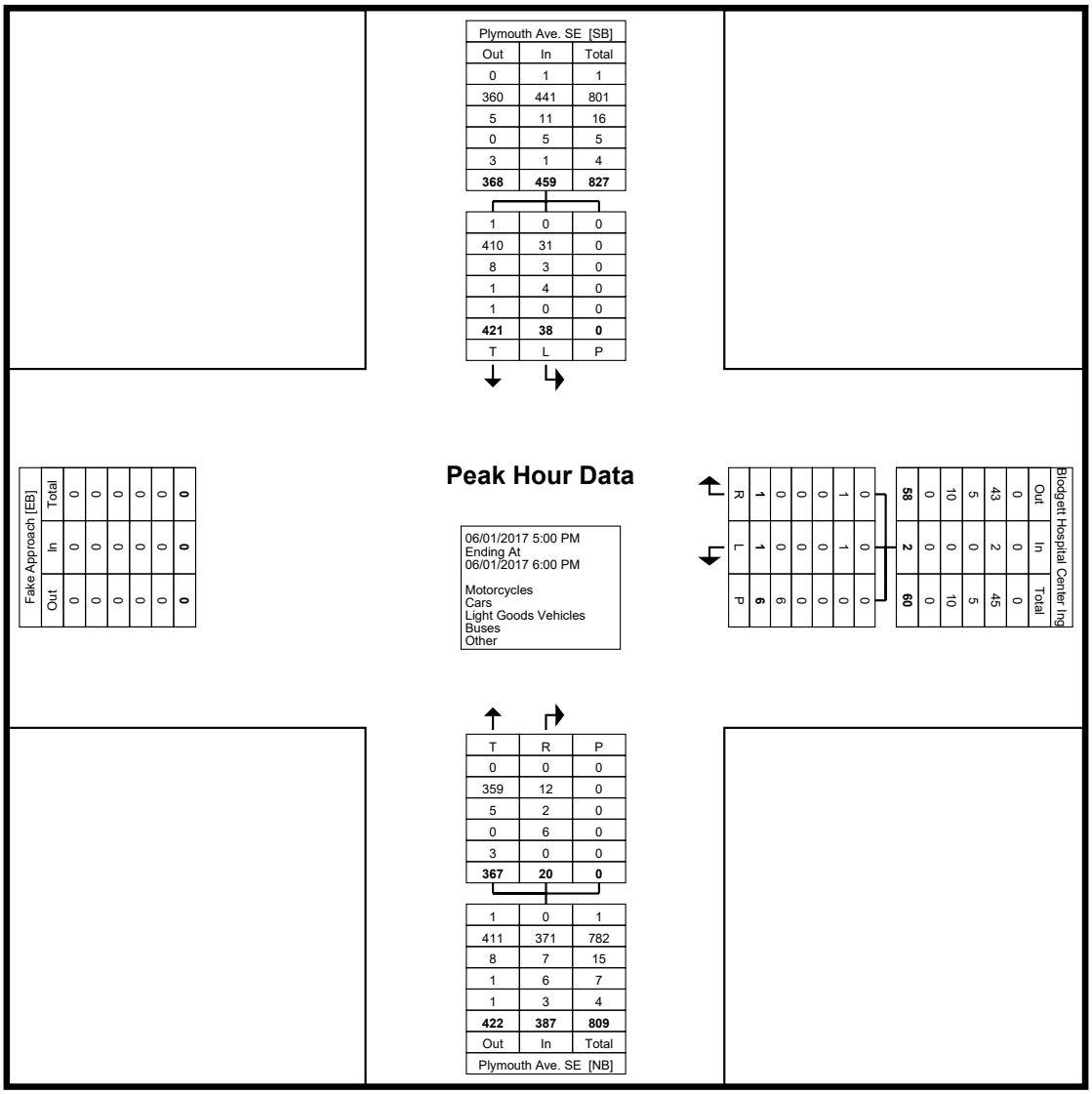
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Plymouth Ave. SE Southbound				Blodgett Hospital Center Ingress Driveway Westbound				Plymouth Ave. SE Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
5:00 PM	112	11	0	123	0	1	3	1	6	99	0	105	229
5:15 PM	109	11	0	120	0	0	1	0	6	96	0	102	222
5:30 PM	106	7	0	113	1	0	1	1	6	94	0	100	214
5:45 PM	94	9	0	103	0	0	1	0	2	78	0	80	183
Total	421	38	0	459	1	1	6	2	20	367	0	387	848
Approach %	91.7	8.3	-	-	50.0	50.0	-	-	5.2	94.8	-	-	-
Total %	49.6	4.5	-	54.1	0.1	0.1	-	0.2	2.4	43.3	-	45.6	-
PHF	0.940	0.864	-	0.933	0.250	0.250	-	0.500	0.833	0.927	-	0.921	0.926
Motorcycles	1	0	-	1	0	0	-	0	0	0	-	0	1
% Motorcycles	0.2	0.0	-	0.2	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Cars	410	31	-	441	1	1	-	2	12	359	-	371	814
% Cars	97.4	81.6	-	96.1	100.0	100.0	-	100.0	60.0	97.8	-	95.9	96.0
Light Goods Vehicles	8	3	-	11	0	0	-	0	2	5	-	7	18
% Light Goods Vehicles	1.9	7.9	-	2.4	0.0	0.0	-	0.0	10.0	1.4	-	1.8	2.1
Buses	1	4	-	5	0	0	-	0	6	0	-	6	11
% Buses	0.2	10.5	-	1.1	0.0	0.0	-	0.0	30.0	0.0	-	1.6	1.3
Single-Unit Trucks	0	0	-	0	0	0	-	0	0	1	-	1	1
% Single-Unit Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.3	-	0.3	0.1
Articulated Trucks	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	1	0	-	1	0	0	-	0	0	2	-	2	3
% Bicycles on Road	0.2	0.0	-	0.2	0.0	0.0	-	0.0	0.0	0.5	-	0.5	0.4
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	6	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	-	-

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 3FX NE

Count Name: TMC_3
Plymouth Ave. SE &
Blodgett Hospital Center Ingress Driveway
Site Code: TMC_3
Start Date: 06/01/2017
Page No: 7



Turning Movement Peak Hour Data Plot (5:00 PM)

Traffic Data Collection, LLC
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Washington, Michigan, United States 48094
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Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Non-signalized "T" intersection. VCU camera was located at NE intersection quadrant.

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

7)Pedestrians Includes: All pedestrians using crosswalk

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017

Turning Movement Data

Start Time	Plymouth Ave. SE Southbound					Blodgett Hospital Main Driveway Westbound					Plymouth Ave. SE Northbound					Residential Dw. Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
7:00 AM	0	41	0	0	41	7	0	7	0	14	0	56	0	0	56	0	0	0	0	0	111
7:15 AM	0	57	0	0	57	2	0	2	0	4	0	64	0	0	64	0	0	0	0	0	125
7:30 AM	0	63	0	0	63	10	0	10	0	20	0	80	0	0	80	0	0	0	0	0	163
7:45 AM	0	61	0	0	61	6	0	3	1	9	0	94	0	0	94	0	0	0	0	0	164
Hourly Total	0	222	0	0	222	25	0	22	1	47	0	294	0	0	294	0	0	0	0	0	563
8:00 AM	0	46	0	0	46	2	0	1	0	3	0	92	0	0	92	0	0	0	0	0	141
8:15 AM	0	49	0	0	49	9	0	5	0	14	0	101	0	0	101	0	0	0	0	0	164
8:30 AM	0	51	0	0	51	6	0	3	5	9	0	90	0	0	90	0	0	0	0	0	150
8:45 AM	1	53	0	0	54	11	0	6	0	17	0	62	0	0	62	0	0	0	0	0	133
Hourly Total	1	199	0	0	200	28	0	15	5	43	0	345	0	0	345	0	0	0	0	0	588
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	0	58	0	0	58	8	0	5	2	13	0	56	0	0	56	0	0	0	0	0	127
2:15 PM	0	76	0	0	76	8	0	2	3	10	0	59	3	0	62	0	0	2	0	2	150
2:30 PM	0	68	0	1	68	10	0	11	1	21	0	48	0	0	48	0	0	0	0	0	137
2:45 PM	0	83	0	0	83	10	0	1	4	11	0	61	0	0	61	0	0	0	0	0	155
Hourly Total	0	285	0	1	285	36	0	19	10	55	0	224	3	0	227	0	0	2	0	2	569
3:00 PM	0	97	0	0	97	9	0	13	5	22	0	76	0	0	76	0	0	0	0	0	195
3:15 PM	0	65	0	0	65	10	0	12	2	22	0	99	0	0	99	0	0	0	0	0	186
3:30 PM	0	90	0	0	90	12	0	9	2	21	0	82	0	0	82	0	0	0	0	0	193
3:45 PM	0	101	0	0	101	14	0	9	0	23	0	82	0	0	82	0	0	0	0	0	206
Hourly Total	0	353	0	0	353	45	0	43	9	88	0	339	0	0	339	0	0	0	0	0	780
4:00 PM	0	74	0	0	74	9	0	11	0	20	0	66	0	0	66	0	0	0	0	0	160
4:15 PM	0	83	0	0	83	13	0	10	1	23	0	64	0	0	64	0	0	0	0	0	170
4:30 PM	0	101	0	0	101	9	0	11	1	20	0	86	0	0	86	0	0	0	0	0	207
4:45 PM	0	96	0	0	96	6	0	9	1	15	0	74	0	0	74	0	0	0	0	0	185
Hourly Total	0	354	0	0	354	37	0	41	3	78	0	290	0	0	290	0	0	0	0	0	722
5:00 PM	0	104	0	0	104	7	0	10	4	17	0	98	0	0	98	0	0	0	0	0	219
5:15 PM	0	118	0	0	118	8	0	5	2	13	0	94	0	0	94	0	0	0	0	0	225
5:30 PM	0	104	0	0	104	7	0	6	1	13	0	101	0	0	101	0	0	0	0	0	218
5:45 PM	0	96	0	0	96	5	0	2	3	7	0	77	0	0	77	0	0	0	0	0	180
Hourly Total	0	422	0	0	422	27	0	23	10	50	0	370	0	0	370	0	0	0	0	0	842
6:00 PM	0	64	0	0	64	2	0	5	2	7	0	88	0	0	88	0	0	0	0	0	159
6:15 PM	0	73	0	0	73	4	0	3	3	7	0	73	0	0	73	0	0	0	0	0	153
6:30 PM	0	62	0	0	62	6	0	0	2	6	0	69	0	1	69	0	0	0	0	0	137
6:45 PM	0	48	0	0	48	5	0	3	2	8	0	66	0	0	66	0	0	0	0	0	122
Hourly Total	0	247	0	0	247	17	0	11	9	28	0	296	0	1	296	0	0	0	0	0	571
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	1	2082	0	1	2083	215	0	174	47	389	0	2159	3	1	2162	0	0	2	0	2	4636
Approach %	0.0	100.0	0.0	-	-	55.3	0.0	44.7	-	-	0.0	99.9	0.1	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	44.9	0.0	-	44.9	4.6	0.0	3.8	-	8.4	0.0	46.6	0.1	-	46.6	0.0	0.0	0.0	-	0.0	-
Motorcycles	0	3	0	-	3	1	0	1	-	2	0	7	0	-	7	0	0	0	-	0	12
% Motorcycles	0.0	0.1	-	-	0.1	0.5	-	0.6	-	0.5	-	0.3	0.0	-	0.3	-	-	0.0	-	0.0	0.3
Cars	1	1851	0	-	1852	191	0	161	-	352	0	1918	3	-	1921	0	0	2	-	2	4127
% Cars	100.0	88.9	-	-	88.9	88.8	-	92.5	-	90.5	-	88.8	100.0	-	88.9	-	-	100.0	-	100.0	89.0
Light Goods Vehicles	0	160	0	-	160	22	0	8	-	30	0	158	0	-	158	0	0	0	-	0	348
% Light Goods Vehicles	0.0	7.7	-	-	7.7	10.2	-	4.6	-	7.7	-	7.3	0.0	-	7.3	-	-	0.0	-	0.0	7.5
Buses	0	42	0	-	42	1	0	1	-	2	0	49	0	-	49	0	0	0	-	0	93
% Buses	0.0	2.0	-	-	2.0	0.5	-	0.6	-	0.5	-	2.3	0.0	-	2.3	-	-	0.0	-	0.0	2.0
Single-Unit Trucks	0	21	0	-	21	0	0	2	-	2	0	17	0	-	17	0	0	0	-	0	40
% Single-Unit Trucks	0.0	1.0	-	-	1.0	0.0	-	1.1	-	0.5	-	0.8	0.0	-	0.8	-	-	0.0	-	0.0	0.9
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	0.1	0.0	-	0.1	-	-	0.0	-	0.0	0.0
Bicycles on Road	0	5	0	-	5	0	0	1	-	1	0	8	0	-	8	0	0	0	-	0	14
% Bicycles on Road	0.0	0.2	-	-	0.2	0.0	-	0.6	-	0.3	-	0.4	0.0	-	0.4	-	-	0.0	-	0.0	0.3

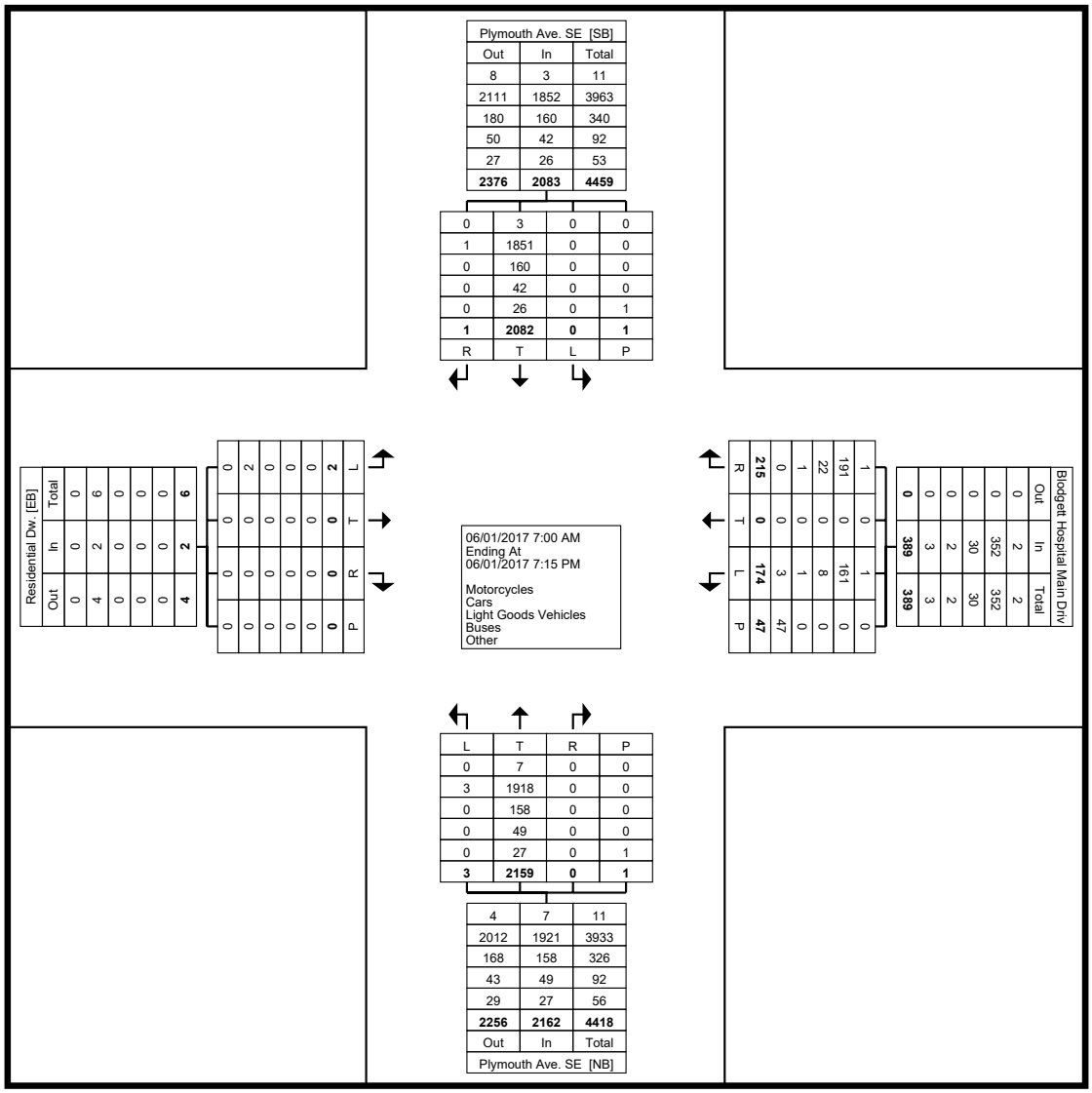
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	8.5	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	43	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	91.5	-	-	-	-	100.0	-	-	-	-	-	-	-

Traffic Data Collection

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017
Page No: 3



Turning Movement Data Plot

Traffic Data Collection

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7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Plymouth Ave. SE Southbound					Blodgett Hospital Main Driveway Westbound					Plymouth Ave. SE Northbound					Residential Dw. Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
7:30 AM	0	63	0	0	63	10	0	10	0	20	0	80	0	0	80	0	0	0	0	0	163
7:45 AM	0	61	0	0	61	6	0	3	1	9	0	94	0	0	94	0	0	0	0	0	164
8:00 AM	0	46	0	0	46	2	0	1	0	3	0	92	0	0	92	0	0	0	0	0	141
8:15 AM	0	49	0	0	49	9	0	5	0	14	0	101	0	0	101	0	0	0	0	0	164
Total	0	219	0	0	219	27	0	19	1	46	0	367	0	0	367	0	0	0	0	0	632
Approach %	0.0	100.0	0.0	-	-	58.7	0.0	41.3	-	-	0.0	100.0	0.0	-	-	NaN	NaN	NaN	-	-	-
Total %	0.0	34.7	0.0	-	34.7	4.3	0.0	3.0	-	7.3	0.0	58.1	0.0	-	58.1	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.869	0.000	-	0.869	0.675	0.000	0.475	-	0.575	0.000	0.908	0.000	-	0.908	0.000	0.000	0.000	-	0.000	0.963
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	0.0	-	-	0.0	-	-	-	-	-	0.0
Cars	0	194	0	-	194	23	0	15	-	38	0	333	0	-	333	0	0	0	-	0	565
% Cars	-	88.6	-	-	88.6	85.2	-	78.9	-	82.6	-	90.7	-	-	90.7	-	-	-	-	-	89.4
Light Goods Vehicles	0	14	0	-	14	3	0	2	-	5	0	21	0	-	21	0	0	0	-	0	40
% Light Goods Vehicles	-	6.4	-	-	6.4	11.1	-	10.5	-	10.9	-	5.7	-	-	5.7	-	-	-	-	-	6.3
Buses	0	8	0	-	8	1	0	1	-	2	0	11	0	-	11	0	0	0	-	0	21
% Buses	-	3.7	-	-	3.7	3.7	-	5.3	-	4.3	-	3.0	-	-	3.0	-	-	-	-	-	3.3
Single-Unit Trucks	0	2	0	-	2	0	0	1	-	1	0	1	0	-	1	0	0	0	-	0	4
% Single-Unit Trucks	-	0.9	-	-	0.9	0.0	-	5.3	-	2.2	-	0.3	-	-	0.3	-	-	-	-	-	0.6
Articulated Trucks	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
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	2
% Bicycles on Road	-	0.5	-	-	0.5	0.0	-	0.0	-	0.0	-	0.3	-	-	0.3	-	-	-	-	-	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Washington, Michigan, United States 48094
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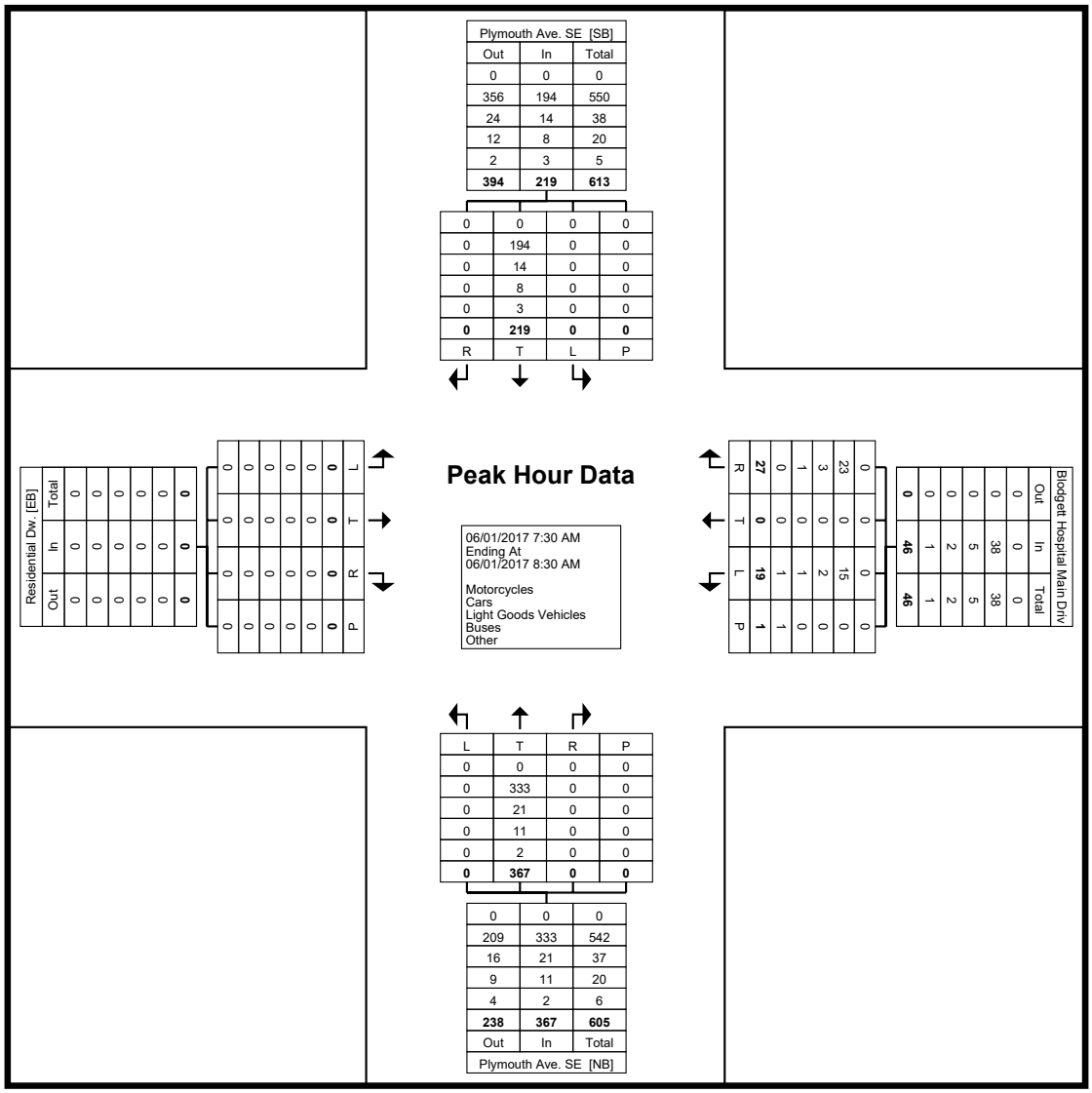
Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017
Page No: 5



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017

Turning Movement Peak Hour Data (4:45 PM)

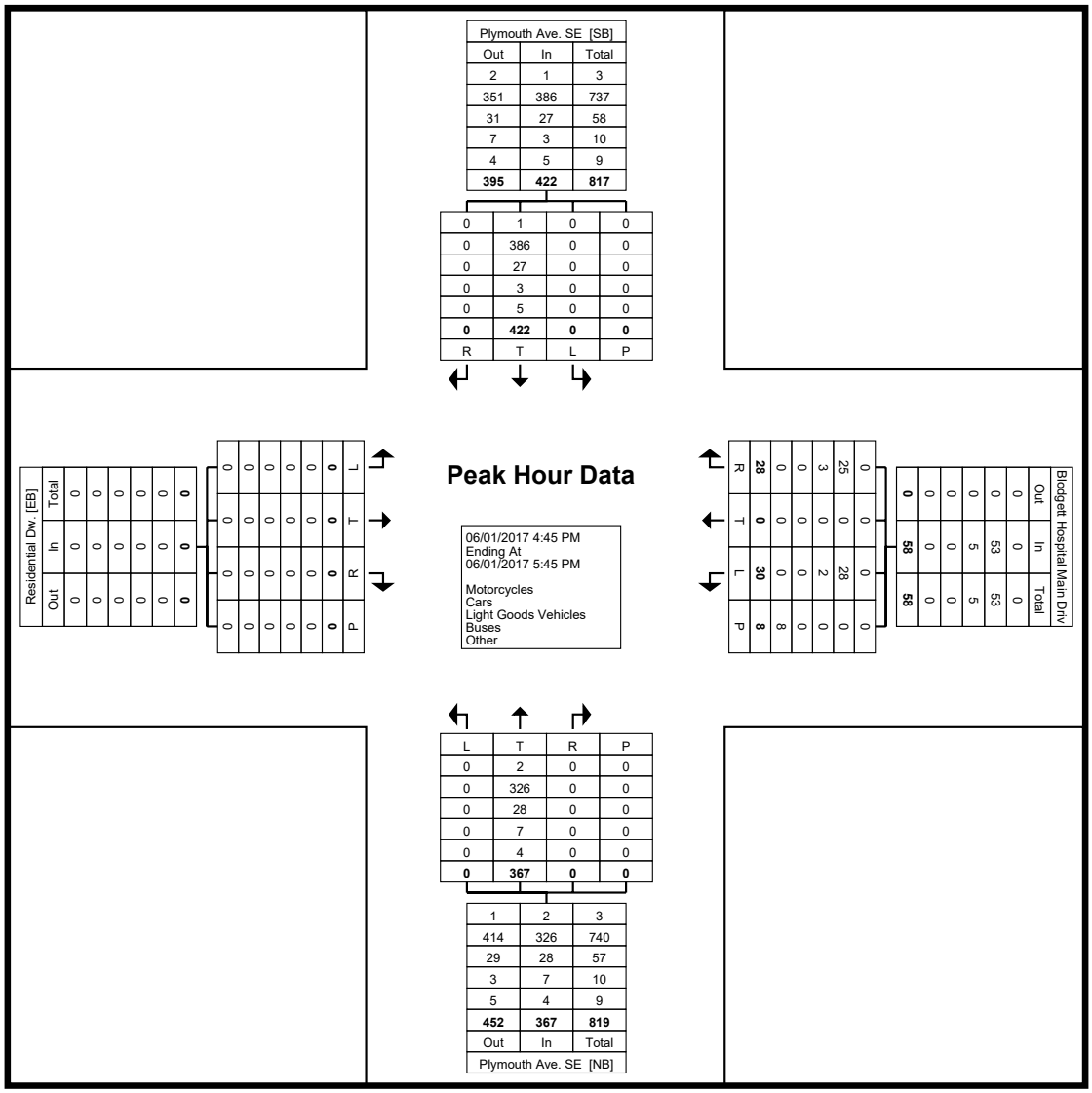
Start Time	Plymouth Ave. SE Southbound					Blodgett Hospital Main Driveway Westbound					Plymouth Ave. SE Northbound					Residential Dw. Eastbound					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
4:45 PM	0	96	0	0	96	6	0	9	1	15	0	74	0	0	74	0	0	0	0	0	185
5:00 PM	0	104	0	0	104	7	0	10	4	17	0	98	0	0	98	0	0	0	0	0	219
5:15 PM	0	118	0	0	118	8	0	5	2	13	0	94	0	0	94	0	0	0	0	0	225
5:30 PM	0	104	0	0	104	7	0	6	1	13	0	101	0	0	101	0	0	0	0	0	218
Total	0	422	0	0	422	28	0	30	8	58	0	367	0	0	367	0	0	0	0	0	847
Approach %	0.0	100.0	0.0	-	-	48.3	0.0	51.7	-	-	0.0	100.0	0.0	-	-	NaN	NaN	NaN	-	-	-
Total %	0.0	49.8	0.0	-	49.8	3.3	0.0	3.5	-	6.8	0.0	43.3	0.0	-	43.3	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.894	0.000	-	0.894	0.875	0.000	0.750	-	0.853	0.000	0.908	0.000	-	0.908	0.000	0.000	0.000	-	0.000	0.941
Motorcycles	0	1	0	-	1	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	3
% Motorcycles	-	0.2	-	-	0.2	0.0	-	0.0	-	0.0	-	0.5	-	-	0.5	-	-	-	-	-	0.4
Cars	0	386	0	-	386	25	0	28	-	53	0	326	0	-	326	0	0	0	-	0	765
% Cars	-	91.5	-	-	91.5	89.3	-	93.3	-	91.4	-	88.8	-	-	88.8	-	-	-	-	-	90.3
Light Goods Vehicles	0	27	0	-	27	3	0	2	-	5	0	28	0	-	28	0	0	0	-	0	60
% Light Goods Vehicles	-	6.4	-	-	6.4	10.7	-	6.7	-	8.6	-	7.6	-	-	7.6	-	-	-	-	-	7.1
Buses	0	3	0	-	3	0	0	0	-	0	0	7	0	-	7	0	0	0	-	0	10
% Buses	-	0.7	-	-	0.7	0.0	-	0.0	-	0.0	-	1.9	-	-	1.9	-	-	-	-	-	1.2
Single-Unit Trucks	0	3	0	-	3	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	5
% Single-Unit Trucks	-	0.7	-	-	0.7	0.0	-	0.0	-	0.0	-	0.5	-	-	0.5	-	-	-	-	-	0.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Articulated Trucks	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	0.3	-	-	0.3	-	-	-	-	-	0.1
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	3
% Bicycles on Road	-	0.5	-	-	0.5	0.0	-	0.0	-	0.0	-	0.3	-	-	0.3	-	-	-	-	-	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	8	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Data Collection

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Plymouth Ave. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 1TM NW

Count Name: TMC_4
Plymouth Ave. SE & Blodgett Hospital South Driveway
Site Code: TMC_4
Start Date: 06/01/2017
Page No: 7



Turning Movement Peak Hour Data Plot (4:45 PM)

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Non-signalized "T" intersection. VCU camera was located at NW intersection quadrant.

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

7)Pedestrians Includes: All pedestrians using crosswalk

Traffic Data Collection

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Project: Blodgett Hospital Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017

Turning Movement Data

Start Time	Wealthy ST. SE Westbound					Blodgett Hospital Main Driveway Northbound					Wealthy ST. SE Eastbound					Int. Total
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	
7:00 AM	15	19	0	0	34	3	12	0	0	15	31	11	0	0	42	91
7:15 AM	26	19	0	0	45	0	4	0	1	4	30	30	0	0	60	109
7:30 AM	64	25	0	0	89	6	27	0	1	33	35	37	0	0	72	194
7:45 AM	51	29	0	0	80	4	15	0	0	19	34	37	0	0	71	170
Hourly Total	156	92	0	0	248	13	58	0	2	71	130	115	0	0	245	564
8:00 AM	48	14	0	0	62	2	8	0	0	10	25	55	0	0	80	152
8:15 AM	46	21	0	0	67	2	3	0	4	5	47	34	0	0	81	153
8:30 AM	21	13	0	0	34	6	3	0	2	9	39	46	0	1	85	128
8:45 AM	35	11	0	0	46	7	12	0	0	19	43	47	0	0	90	155
Hourly Total	150	59	0	0	209	17	26	0	6	43	154	182	0	1	336	588
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	47	5	0	0	52	12	22	0	4	34	26	41	1	0	68	154
2:15 PM	44	12	0	0	56	10	5	0	0	15	27	42	0	0	69	140
2:30 PM	53	10	0	1	63	8	15	0	4	23	20	37	0	0	57	143
2:45 PM	36	9	0	2	45	9	12	0	3	21	30	52	0	0	82	148
Hourly Total	180	36	0	3	216	39	54	0	11	93	103	172	1	0	276	585
3:00 PM	74	5	0	0	79	14	23	0	11	37	18	51	0	0	69	185
3:15 PM	66	9	0	0	75	5	15	0	7	20	21	54	0	0	75	170
3:30 PM	64	10	0	2	74	10	24	0	4	34	20	38	0	0	58	166
3:45 PM	48	8	0	0	56	8	21	0	0	29	22	40	0	0	62	147
Hourly Total	252	32	0	2	284	37	83	0	22	120	81	183	0	0	264	668
4:00 PM	51	11	0	0	62	16	20	0	3	36	15	32	0	0	47	145
4:15 PM	45	9	0	1	54	6	21	0	5	27	21	47	1	0	69	150
4:30 PM	56	6	0	0	62	13	29	0	3	42	17	54	0	0	71	175
4:45 PM	52	5	0	0	57	11	22	0	3	33	15	51	0	0	66	156
Hourly Total	204	31	0	1	235	46	92	0	14	138	68	184	1	0	253	626
5:00 PM	52	6	0	0	58	20	36	0	0	56	12	56	0	2	68	182
5:15 PM	56	3	0	0	59	10	20	0	2	30	10	46	0	0	56	145
5:30 PM	56	2	0	1	58	10	18	0	3	28	8	56	0	0	64	150
5:45 PM	51	4	0	1	55	6	15	0	2	21	5	58	0	0	63	139
Hourly Total	215	15	0	2	230	46	89	0	7	135	35	216	0	2	251	616
6:00 PM	39	3	0	0	42	8	13	0	0	21	9	50	0	0	59	122
6:15 PM	51	8	0	0	59	7	19	0	0	26	10	35	0	0	45	130
6:30 PM	38	10	0	0	48	2	10	0	0	12	25	33	0	0	58	118
6:45 PM	44	11	0	1	55	6	7	0	0	13	34	54	0	0	88	156
Hourly Total	172	32	0	1	204	23	49	0	0	72	78	172	0	0	250	526
7:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1330	297	0	9	1627	221	451	0	62	672	649	1224	2	3	1875	4174
Approach %	81.7	18.3	0.0	-	-	32.9	67.1	0.0	-	-	34.6	65.3	0.1	-	-	-
Total %	31.9	7.1	0.0	-	39.0	5.3	10.8	0.0	-	16.1	15.5	29.3	0.0	-	44.9	-
Motorcycles	4	0	0	-	4	0	0	0	-	0	1	10	0	-	11	15
% Motorcycles	0.3	0.0	-	-	0.2	0.0	0.0	-	-	0.0	0.2	0.8	0.0	-	0.6	0.4
Cars	1194	288	0	-	1482	209	430	0	-	639	613	1103	2	-	1718	3839
% Cars	89.8	97.0	-	-	91.1	94.6	95.3	-	-	95.1	94.5	90.1	100.0	-	91.6	92.0
Light Goods Vehicles	48	6	0	-	54	12	21	0	-	33	30	38	0	-	68	155
% Light Goods Vehicles	3.6	2.0	-	-	3.3	5.4	4.7	-	-	4.9	4.6	3.1	0.0	-	3.6	3.7
Buses	30	0	0	-	30	0	0	0	-	0	2	27	0	-	29	59
% Buses	2.3	0.0	-	-	1.8	0.0	0.0	-	-	0.0	0.3	2.2	0.0	-	1.5	1.4
Single-Unit Trucks	11	2	0	-	13	0	0	0	-	0	2	5	0	-	7	20
% Single-Unit Trucks	0.8	0.7	-	-	0.8	0.0	0.0	-	-	0.0	0.3	0.4	0.0	-	0.4	0.5
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	0	1	0	-	1	2
% Articulated Trucks	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	0.1	0.0
Bicycles on Road	42	1	0	-	43	0	0	0	-	0	1	40	0	-	41	84
% Bicycles on Road	3.2	0.3	-	-	2.6	0.0	0.0	-	-	0.0	0.2	3.3	0.0	-	2.2	2.0

All Pedestrians	-	-	-	9	-	-	-	-	62	-	-	-	-	3	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Traffic Data Collection, LLC
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Washington, Michigan, United States 48094
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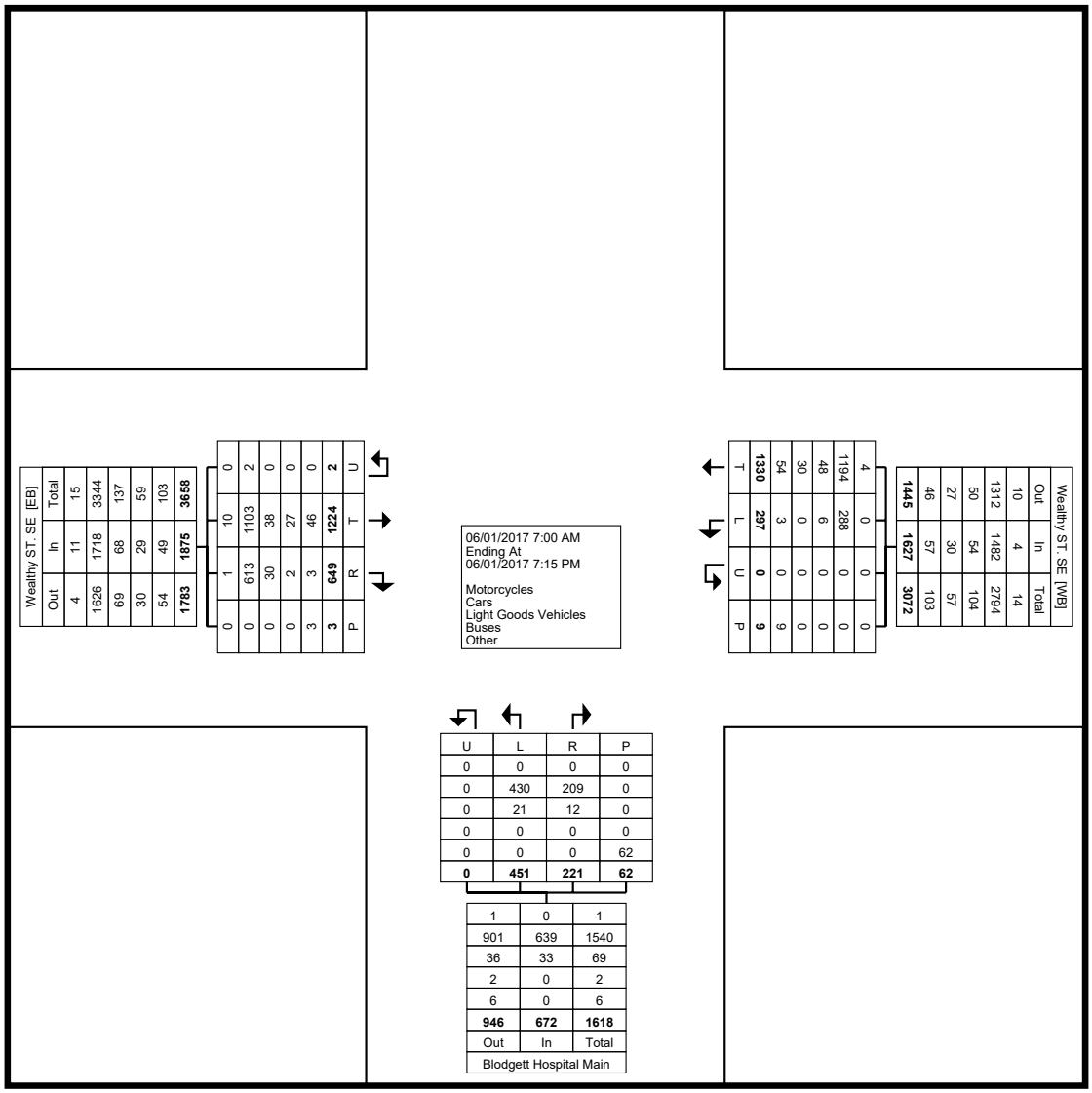
Reliable Traffic Data

Project: Blodgett Hospital
Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017
Page No: 3



Wealthy ST. SE [EB]		
Out	In	Total
4	11	15
1626	1718	3344
69	68	137
30	29	59
54	49	103
1783	**1875**	**3658**

U	T	R	L	P
0	10	1	613	0
2	1103	38	30	0
0	38	30	0	0
0	27	2	0	0
0	46	3	3	3
2	**1224**	**649**	**3**	**3**

T	L	U	P
1330	**297**	**0**	**9**
54	3	0	9
30	0	0	0
48	6	0	0
1194	288	0	0
4	0	0	0

Wealthy ST. SE [WB]		
Out	In	Total
10	4	14
1312	1482	2794
50	54	104
27	30	57
46	57	103
1445	**1627**	**3072**

U	L	R	P
0	0	0	0
0	430	209	0
0	21	12	0
0	0	0	0
0	0	0	62
0	**451**	**221**	**62**

1	0	1
901	639	1540
36	33	69
2	0	2
6	0	6
946	**672**	**1618**
Out	In	Total
Blodgett Hospital Main		

Turning Movement Data Plot

Traffic Data Collection

Traffic Data Collection, LLC
7504 Sawgrass Drive
www.tdccounts.com
Washington, Michigan, United States 48094
Ph. (586) 786-5407
Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Wealthy ST. SE Westbound					Blodgett Hospital Main Driveway Northbound					Wealthy ST. SE Eastbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
7:30 AM	64	25	0	0	89	6	27	0	1	33	35	37	0	0	72	194
7:45 AM	51	29	0	0	80	4	15	0	0	19	34	37	0	0	71	170
8:00 AM	48	14	0	0	62	2	8	0	0	10	25	55	0	0	80	152
8:15 AM	46	21	0	0	67	2	3	0	4	5	47	34	0	0	81	153
Total	209	89	0	0	298	14	53	0	5	67	141	163	0	0	304	669
Approach %	70.1	29.9	0.0	-	-	20.9	79.1	0.0	-	-	46.4	53.6	0.0	-	-	-
Total %	31.2	13.3	0.0	-	44.5	2.1	7.9	0.0	-	10.0	21.1	24.4	0.0	-	45.4	-
PHF	0.816	0.767	0.000	-	0.837	0.583	0.491	0.000	-	0.508	0.750	0.741	0.000	-	0.938	0.862
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars	195	88	0	-	283	13	52	0	-	65	138	147	0	-	285	633
% Cars	93.3	98.9	-	-	95.0	92.9	98.1	-	-	97.0	97.9	90.2	-	-	93.8	94.6
Light Goods Vehicles	4	1	0	-	5	1	1	0	-	2	1	2	0	-	3	10
% Light Goods Vehicles	1.9	1.1	-	-	1.7	7.1	1.9	-	-	3.0	0.7	1.2	-	-	1.0	1.5
Buses	7	0	0	-	7	0	0	0	-	0	2	6	0	-	8	15
% Buses	3.3	0.0	-	-	2.3	0.0	0.0	-	-	0.0	1.4	3.7	-	-	2.6	2.2
Single-Unit Trucks	2	0	0	-	2	0	0	0	-	0	0	2	0	-	2	4
% Single-Unit Trucks	1.0	0.0	-	-	0.7	0.0	0.0	-	-	0.0	0.0	1.2	-	-	0.7	0.6
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.5	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	6	0	-	6	6
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	3.7	-	-	2.0	0.9
All Pedestrians	-	-	-	0	-	-	-	-	5	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

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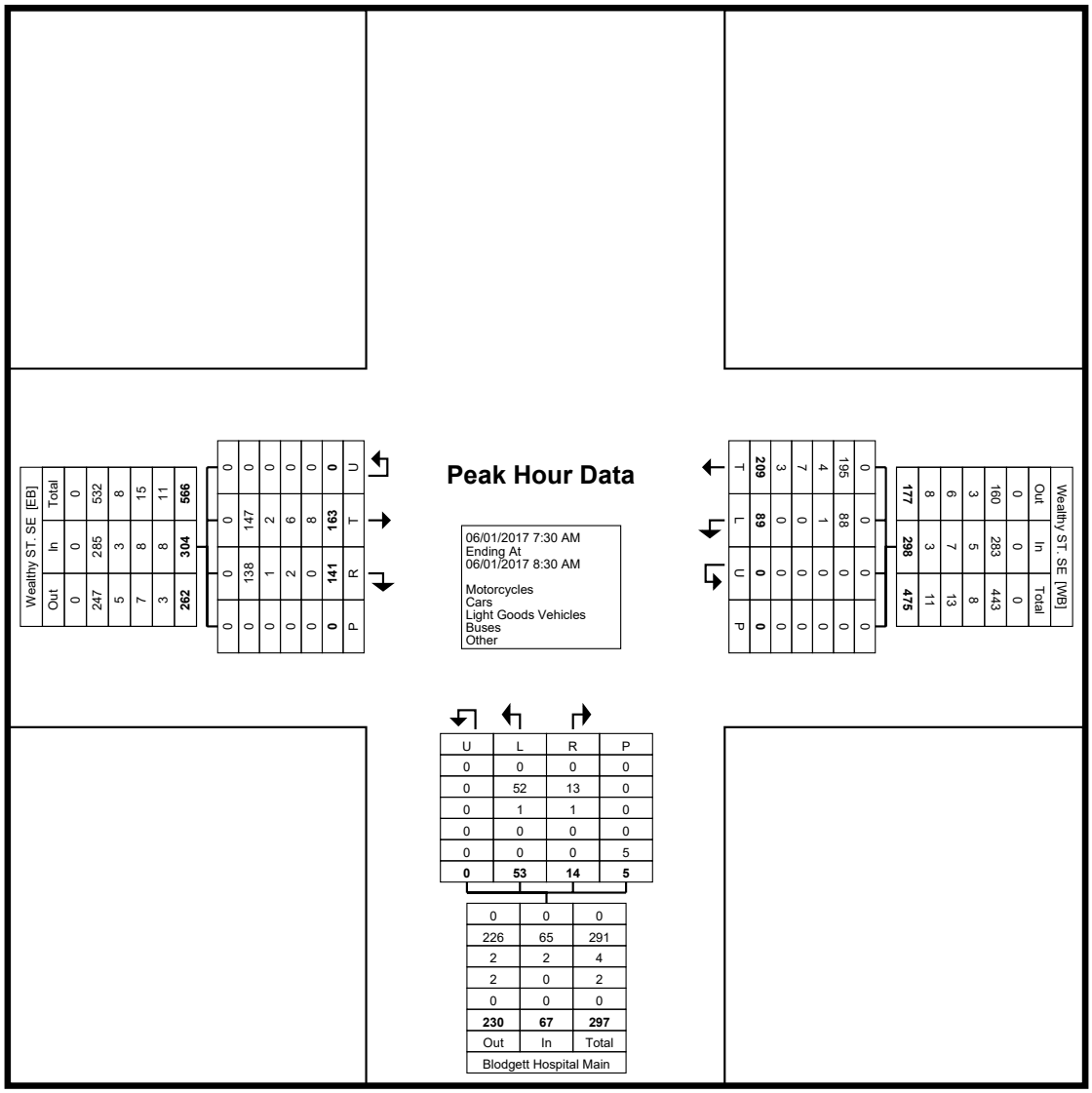
Project: Blodgett Hospital
Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017



Turning Movement Peak Hour Data Plot (7:30 AM)

Traffic Data Collection

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Reliable Traffic Data

Project: Blodgett Hospital Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017

Turning Movement Peak Hour Data (2:45 PM)

Start Time	Wealthy ST. SE Westbound					Blodgett Hospital Main Driveway Northbound					Wealthy ST. SE Eastbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
2:45 PM	36	9	0	2	45	9	12	0	3	21	30	52	0	0	82	148
3:00 PM	74	5	0	0	79	14	23	0	11	37	18	51	0	0	69	185
3:15 PM	66	9	0	0	75	5	15	0	7	20	21	54	0	0	75	170
3:30 PM	64	10	0	2	74	10	24	0	4	34	20	38	0	0	58	166
Total	240	33	0	4	273	38	74	0	25	112	89	195	0	0	284	669
Approach %	87.9	12.1	0.0	-	-	33.9	66.1	0.0	-	-	31.3	68.7	0.0	-	-	-
Total %	35.9	4.9	0.0	-	40.8	5.7	11.1	0.0	-	16.7	13.3	29.1	0.0	-	42.5	-
PHF	0.811	0.825	0.000	-	0.864	0.679	0.771	0.000	-	0.757	0.742	0.903	0.000	-	0.866	0.904
Motorcycles	3	0	0	-	3	0	0	0	-	0	0	8	0	-	8	11
% Motorcycles	1.3	0.0	-	-	1.1	0.0	0.0	-	-	0.0	0.0	4.1	-	-	2.8	1.6
Cars	215	32	0	-	247	35	69	0	-	104	85	175	0	-	260	611
% Cars	89.6	97.0	-	-	90.5	92.1	93.2	-	-	92.9	95.5	89.7	-	-	91.5	91.3
Light Goods Vehicles	14	1	0	-	15	3	5	0	-	8	4	8	0	-	12	35
% Light Goods Vehicles	5.8	3.0	-	-	5.5	7.9	6.8	-	-	7.1	4.5	4.1	-	-	4.2	5.2
Buses	4	0	0	-	4	0	0	0	-	0	0	2	0	-	2	6
% Buses	1.7	0.0	-	-	1.5	0.0	0.0	-	-	0.0	0.0	1.0	-	-	0.7	0.9
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.4	0.1
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	4	0	0	-	4	0	0	0	-	0	0	1	0	-	1	5
% Bicycles on Road	1.7	0.0	-	-	1.5	0.0	0.0	-	-	0.0	0.0	0.5	-	-	0.4	0.7
All Pedestrians	-	-	-	4	-	-	-	-	25	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

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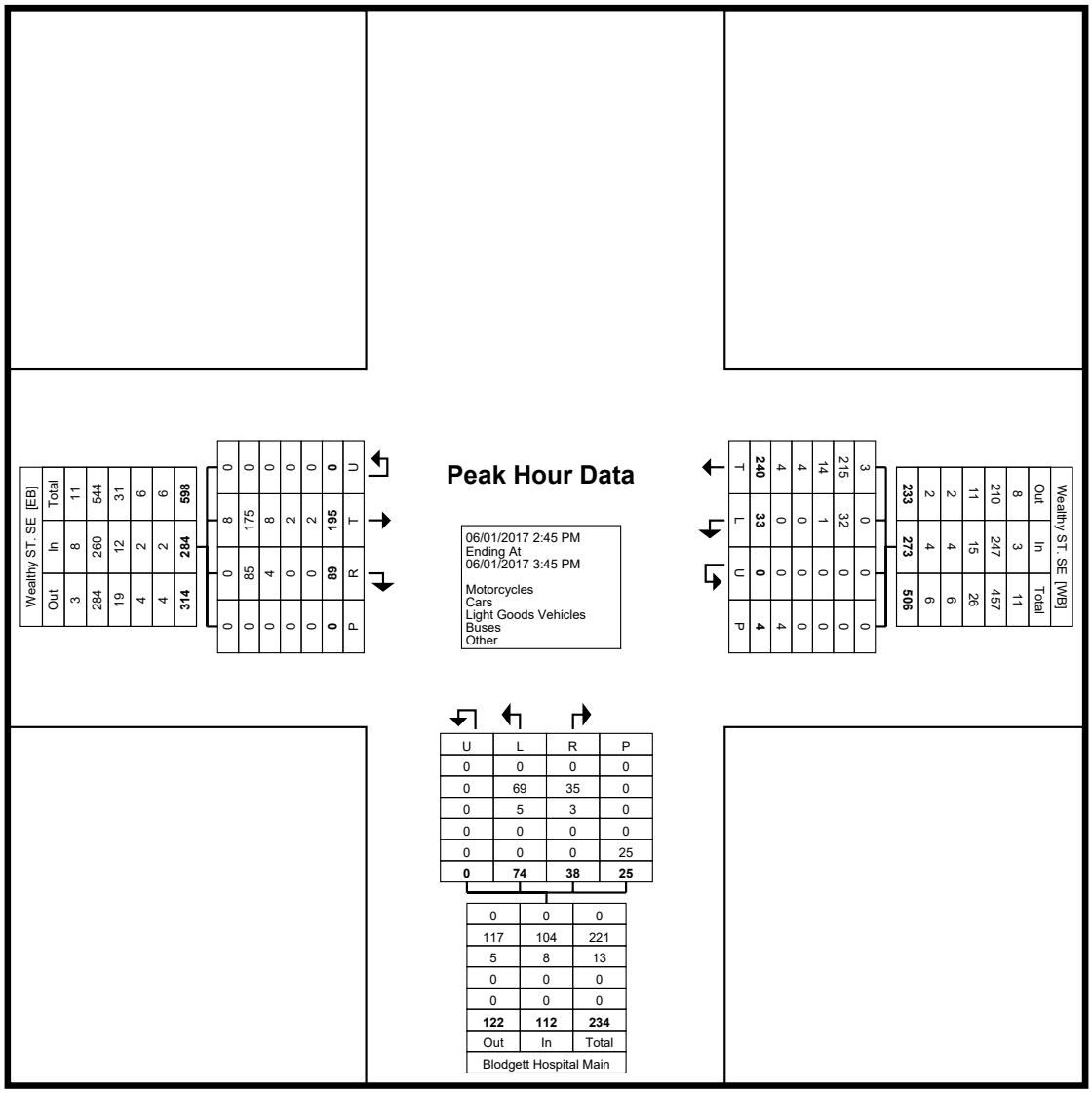
Project: Blodgett Hospital
Traffic Impact Study
Corridor: Wealthy ST. SE
Weather: Sunny, Dry, Temp. 70's
Video VCU ID#: SCU 34O SE

Count Name: TMC_6
Wealthy ST. SE & Blodgett Hospital East Driveway
Site Code: TMC_6
Start Date: 06/01/2017
Page No: 7



Turning Movement Peak Hour Data Plot (2:45 PM)

Traffic Data Collection, LLC
7504 Sawgrass Drive
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Reliable Traffic Data

Comments: 7 hour video intersection classification turning movement count conducted during typical weekday (Thursday) 7:00-9:00 AM morning & 2:00-7:00 PM afternoon peak hours, while school was in session. TMC was performed with Miovision video SCU recording cameras for Spectrum Health – Blodgett Hospital Traffic Impact Study for Abonmarche Consultants, Inc.

Non-signalized "T" intersection. Video VCU camera was located at SE intersection quadrant..

Classification Summary Details & Percentages: Seven (7) Groupings:

1)Lights Includes: FHWA Classes 1-3 (Motorcycles, Cars, Light Goods Vehicles)

2)Buses Includes: FHWA Class 4 (School Buses & Regional Transportation Metro Buses)

3)Single-Unit Trucks Includes: FHWA Classes 5-7 (2-4 Axle SU Medium Trucks)

4)Articulated Trucks Includes: FHWA Classes 8-12 (Heavy Trucks W/Single & Multi Unit Trailers)

5)Bicycles On Road Includes: All bicycles on the roadway

6)Bicycles On Crosswalk Includes: All bicycles using sidewalk

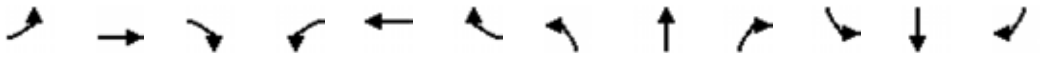
7)Pedestrians Includes: All pedestrians using crosswalk

fishbeck

Attachment

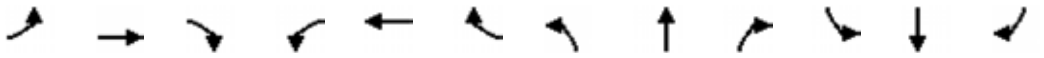
Existing LOS Output Reports

2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	257	43	38	237	29	105	343	31	25	283	15
Future Volume (vph)	20	257	43	38	237	29	105	343	31	25	283	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.99	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1591	1751		1733	1771		1684	1773		1661	1724	
Flt Permitted	0.41	1.00		0.44	1.00		0.37	1.00		0.26	1.00	
Satd. Flow (perm)	680	1751		805	1771		654	1773		456	1724	
Peak-hour factor, PHF	0.89	0.89	0.89	0.72	0.72	0.72	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	22	289	48	53	329	40	121	394	36	29	333	18
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	332	0	53	365	0	121	430	0	29	351	0
Confl. Peds. (#/hr)	57		5	5		57	40		2	2		40
Confl. Bikes (#/hr)			10			3			5			6
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Effective Green, g (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.43	0.35		0.34	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	272	700		322	708		354	623		196	536	
v/s Ratio Prot		0.19			c0.21		c0.03	c0.24		0.00	0.20	
v/s Ratio Perm	0.03			0.07			0.12			0.05		
v/c Ratio	0.08	0.47		0.16	0.52		0.34	0.69		0.15	0.65	
Uniform Delay, d1	20.5	24.4		21.2	24.9		29.9	30.5		37.2	32.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.92	0.84	
Incremental Delay, d2	0.6	2.3		1.1	2.7		0.6	6.2		0.3	5.6	
Delay (s)	21.0	26.7		22.3	27.6		30.5	36.7		34.5	33.2	
Level of Service	C	C		C	C		C	D		C	C	
Approach Delay (s/veh)		26.4			26.9			35.3			33.3	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	101	53	38	153	44	47	302	28	89	373	37
Future Volume (veh/h)	37	101	53	38	153	44	47	302	28	89	373	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	45	123	65	45	182	52	55	351	33	106	444	44
Peak Hour Factor	0.82	0.82	0.82	0.84	0.84	0.84	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	4	4	4
Cap, veh/h	393	375	198	429	462	132	376	785	74	567	768	76
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.93	0.93	0.93	0.47	0.47	0.47
Sat Flow, veh/h	1116	1116	590	1172	1374	393	907	1679	158	982	1643	163
Grp Volume(v), veh/h	45	0	188	45	0	234	55	0	384	106	0	488
Grp Sat Flow(s),veh/h/ln	1116	0	1705	1172	0	1766	907	0	1837	982	0	1806
Q Serve(g_s), s	1.8	0.0	4.5	1.6	0.0	5.6	1.7	0.0	1.3	3.7	0.0	10.8
Cycle Q Clear(g_c), s	7.3	0.0	4.5	6.2	0.0	5.6	12.6	0.0	1.3	5.0	0.0	10.8
Prop In Lane	1.00		0.35	1.00		0.22	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	393	0	574	429	0	594	376	0	858	567	0	844
V/C Ratio(X)	0.11	0.00	0.33	0.10	0.00	0.39	0.15	0.00	0.45	0.19	0.00	0.58
Avail Cap(c_a), veh/h	393	0	574	429	0	594	376	0	858	567	0	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	13.6	15.9	0.0	14.0	4.2	0.0	1.0	9.5	0.0	10.7
Incr Delay (d2), s/veh	0.6	0.0	1.5	0.5	0.0	2.0	0.8	0.0	1.7	0.7	0.0	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	0.5	0.0	2.3	0.2	0.0	0.7	0.8	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.4	0.0	15.1	16.4	0.0	15.9	5.0	0.0	2.7	10.3	0.0	13.6
LnGrp LOS	B		B	B		B	A		A	B		B
Approach Vol, veh/h		233			279			439			594	
Approach Delay, s/veh		15.6			16.0			3.0			13.0	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	24.0	31.0	24.0	31.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	18.5	25.7	18.5	25.7
Max Q Clear Time (g_c+I1), s	9.3	14.6	8.2	12.8
Green Ext Time (p_c), s	0.2	0.5	0.2	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	11.1
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	79	322	0	0	470
Future Vol, veh/h	36	79	322	0	0	470
Conflicting Peds, #/hr	0	2	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	60	132	366	0	0	588

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	660	368	0	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	412	677	-	0	0	-
Stage 1	701	-	-	0	0	-
Stage 2	731	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	412	675	-	-	-	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.02	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	514	675	-
HCM Lane V/C Ratio	-	0.117	0.195	-
HCM Ctrl Dly (s/v)	-	12.9	11.6	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.4	0.7	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	370	22	33	315
Future Vol, veh/h	8	20	370	22	33	315
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	0	0	3	3	5	5
Mvmt Flow	13	33	420	25	41	394

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	910	434	0	0	446	0
Stage 1	434	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	307	626	-	-	1098	-
Stage 1	658	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	295	626	-	-	1097	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	605	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.15	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	550	1097	-
HCM Lane V/C Ratio	-	-	0.085	0.038	-
HCM Ctrl Dly (s/v)	-	-	12.2	8.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	26	42	168	91	127
Future Vol, veh/h	67	26	42	168	91	127
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	78	78
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	112	43	50	200	117	163

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	503	203	284	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	532	843	1278	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	506	839	1272	-	-	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	756	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.68	1.59	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	360	-	569	-	-
HCM Lane V/C Ratio	0.039	-	0.272	-	-
HCM Ctrl Dly (s/v)	7.9	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	95	242	85	246	174	359	152	354
Average Queue (ft)	17	127	30	135	98	227	28	178
95th Queue (ft)	60	214	66	233	198	360	99	295
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)						2		0
Queuing Penalty (veh)						0		1
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		3		2	4	34		14
Queuing Penalty (veh)		1		1	18	40		4

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	68	141	62	149	99	202	234	199
Average Queue (ft)	27	59	21	64	31	108	61	123
95th Queue (ft)	59	111	48	124	68	190	146	195
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						2		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	1	0	5		2	0	6
Queuing Penalty (veh)	0	1	0	2		1	2	6

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	T	T	T
Maximum Queue (ft)	70	103	37	82	39
Average Queue (ft)	29	44	1	10	2
95th Queue (ft)	60	77	13	44	21
Link Distance (ft)	187	187	47		160
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	63	4	47	24
Average Queue (ft)	25	0	12	2
95th Queue (ft)	52	3	38	23
Link Distance (ft)	120	389		201
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9003: Wealthy Street & East Driveway

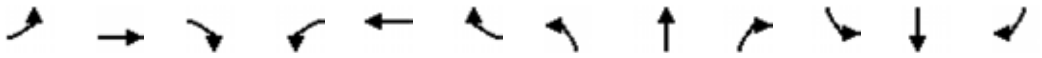
Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	98	80	6
Average Queue (ft)	43	14	0
95th Queue (ft)	77	54	4
Link Distance (ft)	161	178	318
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

Movement	NB	SB
Directions Served	TR	L
Maximum Queue (ft)	56	58
Average Queue (ft)	3	32
95th Queue (ft)	28	62
Link Distance (ft)	201	47
Upstream Blk Time (%)		3
Queuing Penalty (veh)		9
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

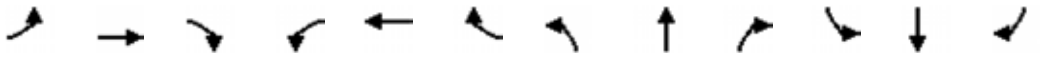
Zone Summary

Zone wide Queuing Penalty: 88



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	386	100	32	371	24	77	322	18	50	380	36
Future Volume (vph)	25	386	100	32	371	24	77	322	18	50	380	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	1743		1745	1810		1709	1782		1742	1807	
Flt Permitted	0.35	1.00		0.20	1.00		0.25	1.00		0.36	1.00	
Satd. Flow (perm)	618	1743		366	1810		450	1782		652	1807	
Peak-hour factor, PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	29	444	115	34	391	25	81	339	19	53	404	38
RTOR Reduction (vph)	0	9	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	29	550	0	34	414	0	81	358	0	53	442	0
Confl. Peds. (#/hr)	24		11	11		24	6		5	5		6
Confl. Bikes (#/hr)			1			7			8			2
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Effective Green, g (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.37	0.33		0.37	0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	241	681		143	707		219	588		288	596	
v/s Ratio Prot		c0.32			0.23		c0.02	0.20		0.01	c0.24	
v/s Ratio Perm	0.05			0.09			0.12			0.06		
v/c Ratio	0.12	0.81		0.24	0.59		0.37	0.61		0.18	0.74	
Uniform Delay, d1	21.4	29.8		22.5	26.5		38.2	30.9		32.1	32.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.99	0.90	
Incremental Delay, d2	1.0	10.0		3.9	3.5		1.1	4.6		0.3	7.5	
Delay (s)	22.4	39.8		26.4	30.0		39.2	35.5		32.0	36.9	
Level of Service	C	D		C	C		D	D		C	D	
Approach Delay (s/veh)		39.0			29.7			36.2			36.4	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	141	19	38	150	83	53	391	21	35	374	58
Future Volume (veh/h)	42	141	19	38	150	83	53	391	21	35	374	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	48	160	22	45	179	99	56	416	22	37	394	61
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	1	1	1
Cap, veh/h	382	563	77	468	398	220	382	795	42	428	712	110
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.60	0.60	0.60	0.45	0.45	0.45
Sat Flow, veh/h	1081	1588	218	1196	1121	620	940	1771	94	954	1586	246
Grp Volume(v), veh/h	48	0	182	45	0	278	56	0	438	37	0	455
Grp Sat Flow(s),veh/h/ln	1081	0	1806	1196	0	1741	940	0	1865	954	0	1832
Q Serve(g_s), s	2.0	0.0	4.0	1.5	0.0	6.7	2.3	0.0	7.6	1.5	0.0	10.0
Cycle Q Clear(g_c), s	8.7	0.0	4.0	5.5	0.0	6.7	12.3	0.0	7.6	9.1	0.0	10.0
Prop In Lane	1.00		0.12	1.00		0.36	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	382	0	640	468	0	617	382	0	837	428	0	823
V/C Ratio(X)	0.13	0.00	0.28	0.10	0.00	0.45	0.15	0.00	0.52	0.09	0.00	0.55
Avail Cap(c_a), veh/h	382	0	640	468	0	617	382	0	837	428	0	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	12.7	14.7	0.0	13.6	12.1	0.0	7.6	13.6	0.0	11.1
Incr Delay (d2), s/veh	0.7	0.0	1.1	0.4	0.0	2.4	0.8	0.0	2.3	0.4	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.7	0.4	0.0	2.8	0.5	0.0	2.8	0.3	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.7	0.0	13.9	15.1	0.0	16.0	12.9	0.0	10.0	14.0	0.0	13.8
LnGrp LOS	B		B	B		B	B		A	B		B
Approach Vol, veh/h		230			323			494			492	
Approach Delay, s/veh		14.6			15.9			10.3			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	25.0	30.0	25.0	30.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	19.5	24.7	19.5	24.7
Max Q Clear Time (g_c+I1), s	10.7	14.3	8.7	12.0
Green Ext Time (p_c), s	0.2	0.5	0.3	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	106	371	0	0	424
Future Vol, veh/h	55	106	371	0	0	424
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	95	95	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	70	134	391	0	0	446

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	614	392	0	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	439	656	-	0	0	-
Stage 1	683	-	-	0	0	-
Stage 2	793	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	439	656	-	-	-	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	533	656	-
HCM Lane V/C Ratio	-	0.131	0.205	-
HCM Ctrl Dly (s/v)	-	12.8	11.9	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.4	0.8	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	29	366	5	3	445
Future Vol, veh/h	21	29	366	5	3	445
Conflicting Peds, #/hr	0	0	0	8	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	92	92	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	28	39	398	5	3	468

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	883	409	0	0	411	0
Stage 1	409	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	319	647	-	-	1153	-
Stage 1	675	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	316	643	-	-	1145	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.64	0	0.05
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	538	1145	-
HCM Lane V/C Ratio	-	-	0.126	0.003	-
HCM Ctrl Dly (s/v)	-	-	12.6	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	98	39	14	173	132	65
Future Vol, veh/h	98	39	14	173	132	65
Conflicting Peds, #/hr	0	4	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	88	88	78	78
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	134	53	16	197	169	83

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	464	240	278	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	560	804	1285	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	540	784	1257	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.87	0.59	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	135	-	592	-	-
HCM Lane V/C Ratio	0.013	-	0.317	-	-
HCM Ctrl Dly (s/v)	7.9	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	249	396	166	329	174	350	174	370
Average Queue (ft)	37	281	55	178	69	183	53	217
95th Queue (ft)	145	433	150	293	162	312	153	341
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)		7				0		0
Queuing Penalty (veh)		0				0		1
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		31	3	6	2	24		23
Queuing Penalty (veh)		9	11	2	8	19		12

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	70	147	65	141	157	204	231	200
Average Queue (ft)	28	60	22	68	38	119	31	121
95th Queue (ft)	59	112	52	119	106	204	114	195
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						5		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	1	0	5		4		6
Queuing Penalty (veh)	0	1	0	2		2		2

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	NB	SB
Directions Served	L	R	T	T
Maximum Queue (ft)	76	108	21	25
Average Queue (ft)	37	42	1	1
95th Queue (ft)	67	76	11	12
Link Distance (ft)	187	187	47	160
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	83	6	6	29
Average Queue (ft)	33	0	1	1
95th Queue (ft)	63	4	7	16
Link Distance (ft)	120	389		201
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)			150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9003: Wealthy Street & East Driveway

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	114	40	11
Average Queue (ft)	49	5	0
95th Queue (ft)	85	24	6
Link Distance (ft)	161	178	318
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

Movement	NB	SB
Directions Served	TR	L
Maximum Queue (ft)	40	40
Average Queue (ft)	2	9
95th Queue (ft)	17	34
Link Distance (ft)	201	47
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 74

fishbeck

Attachment

Crash Data

3

Crash Data January 1, 2020 - December 31, 2024

ID #	Date	Crash Type	Road Conditions	Light	Injury	Alcohol or Drugs	Ped or Bike	Cause	Intersection
2020101778	6/25/2020	Angle	Dry	Daylight	O	No	No	WB vehicle disregarded red signal.	Plymouth Avenue and Lake Drive
2020222732	11/30/2020	Angle	Dry	Dark - Unlighted	O	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
20218711	1/20/2021	Angle	Dry	Dark - Lighted	C	Yes	No	WB vehicle disregarded red signal.	Plymouth Avenue and Lake Drive
202112526	1/26/2021	Head-On - Left Turn	Ice	Dark - Lighted	O	No	No	WB vehicle attempted to turn left without assured clear distance.	Plymouth Avenue and Lake Drive
202144913	3/10/2021	Pedestrian	Dry	Daylight	O	No	Yes	An EB vehicle attempted to turn right and failed to yield to the pedestrian in the crosswalk.	Plymouth Avenue and Wealthy Street
202156116	3/29/2021	Angle	Dry	Daylight	O	No	No	EB vehicle disregarded red signal.	Plymouth Avenue and Lake Drive
2021142466	7/28/2021	Angle	Dry	Dark - Lighted	O	No	No	WB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2021259041	11/16/2021	Angle	Dry	Daylight	O	No	No	WB vehicle disregarded red signal.	Plymouth Avenue and Wealthy Street
202253	1/1/2022	Other	Snow	Dusk	O	No	No	SB vehicle was unable to stop at red signal due to snowy road conditions.	Plymouth Avenue and Wealthy Street
202211483	1/22/2022	Rear-End	Ice	Daylight	O	No	No	EB vehicle failed to stop for stopped traffic at signal.	Plymouth Avenue and Lake Drive
202211484	1/22/2022	Rear-End - Right Turn	Snow	Daylight	O	No	No	WB vehicle failed to stop for stopped traffic at signal.	Plymouth Avenue and Lake Drive
202234459	2/17/2022	Angle	Dry	Daylight	O	No	No	NB vehicle disregarded red signal.	Plymouth Avenue and Lake Drive
202262450	3/26/2022	Angle	Wet	Dark - Lighted	O	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2022101987	5/20/2022	Rear-End	Dry	Daylight	O	No	No	NB vehicle failed to stop for stopped traffic at signal.	Plymouth Avenue and Lake Drive
2022106853	5/28/2022	Angle	Dry	Dark - Lighted	B	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2022134335	7/1/2022	Angle	Dry	Daylight	O	No	No	SB vehicle disregarded red signal.	Plymouth Avenue and Wealthy Street
2022199905	9/29/2022	Pedestrian	Dry	Daylight	A	No	Yes	NB vehicle struck a pedestrian on the north leg of the intersection. The pedestrian disregarded the no walk signal.	Plymouth Avenue and Lake Drive
2022236359	11/6/2022	Angle	Dry	Dark - Lighted	C	Yes	No	WB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2023270287	1/20/2023	Sideswipe - Same Direction	Unknown	Unknown	O	No	No	NB vehicle attempted to change lanes without assured clear distance.	Plymouth Avenue and Lake Drive
2023149469	7/24/2023	Rear-End - Left Turn	Dry	Daylight	O	No	No	NB vehicle failed to stop for slowing traffic at signal.	Plymouth Avenue and Lake Drive
2023153109	7/30/2023	Rear-End - Right Turn	Dry	Dark - Unlighted	O	No	No	EB vehicle attempted to turn right from the left turn lane.	Plymouth Avenue and Lake Drive
2023156097	8/2/2023	Rear-End	Dry	Daylight	O	No	No	NB vehicle failed to stop for stopped traffic at signal.	Plymouth Avenue and Wealthy Street
2023175346	8/23/2023	Angle	Dry	Dark - Lighted	O	Yes	No	NB vehicle failed to stop for stopped traffic ahead.	Plymouth Avenue and Wealthy Street
2023190533	9/17/2023	Angle	Dry	Dark - Lighted	O	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2023279785	12/18/2023	Pedestrian	Wet	Daylight	C	No	Yes	NB vehicle attempted to turn left and failed to yield to the pedestrian in the crosswalk.	Plymouth Avenue and Wealthy Street
2023283664	12/22/2023	Angle	Wet	Dark - Lighted	O	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
20242611	1/9/2024	Angle	Slush	Dark - Lighted	C	No	No	EB vehicle was unable to stop at flashing red signal due to snowy road conditions.	Plymouth Avenue and Lake Drive
202411937	1/22/2024	Angle	Ice	Daylight	O	No	No	EB or NB vehicle disregarded red signal.	Plymouth Avenue and Wealthy Street
202498222	5/22/2024	Sideswipe - Same Direction	Dry	Daylight	O	No	No	EB vehicle in left turn lane failed to maintain lane and struck a vehicle in the EB through lane.	Plymouth Avenue and Lake Drive
2024131537	7/3/2024	Sideswipe - Same Direction	Dry	Daylight	O	No	No	WB vehicle attempted to change lanes without assured clear distance.	Plymouth Avenue and Lake Drive
2024159323	8/8/2024	Rear-End	Dry	Daylight	O	No	No	EB vehicle failed to stop for stopped traffic at signal.	Plymouth Avenue and Wealthy Street
2024179846	9/5/2024	Angle	Dry	Dawn	O	No	No	EB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive
2024181123	9/7/2024	Sideswipe - Opposite Directions	Dry	Daylight	O	No	No	SB vehicle turned left into the opposing traffic lane.	Plymouth Avenue and Wealthy Street
2024211378	10/14/2024	Angle	Dry	Dark - Lighted	C	No	No	WB vehicle disregarded flashing red signal.	Plymouth Avenue and Lake Drive

Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0041138 | Crash ID 2682728

File Class 93001

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 223032

ORI: MI 4136100
Department Name: East Grand Rapids Department of Public Safety
Reviewer: ERIC SMITH

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
09/29/2022	18:30	02	Single Motor Vehicle	● None ○ Hit and Run ○ School Bus ○ Fleeing Police ○ Unknown ○ Animal	○ Fatal ○ Non-Traffic Area ○ ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
41 - Kent	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
66 - East Grand Rapids	None		Daylight	Dry	02	25	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
	PLYMOUTH			

Distance / Direction: AT
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
	LAKE DR			

UNIT / DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01	Yes	MI	##########	##/##/#### (37)	● Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F	B	05	None

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
MV	########## ########## GRAND RAPIDS, MI 49507 (###) ###-####	Yes	O	Front - Left	Shoulder and Lap Belt

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
Appeared Normal		Not Distracted			Not Deployed

Hospital	Ambulance
NONE	NONE

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color
DPQ955	MI		2014	VOLVO	XC90	WHI

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
YV4952CZ0E1690345	Passenger Car, SUV, Van	Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	No Automation	No Automation

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########	MERLS	MERLS

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
02	02	Minor Damage	N	Private	Going Straight Ahead

Sequence of Events (● indicates MOST harmful event): First: ● 15 - Pedestrian | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## GRAND RAPIDS, MI 49507 (###) ###-####	##/##/#### (38)	M	B	Front - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Deployed

Hospital	Ambulance
NONE	NONE

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
########## ########## GRAND RAPIDS, MI 49506 (###) ###-####	##/##/#### (20)	M	B	2nd Row - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Deployed

Hospital	Ambulance
NONE	NONE

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type | Endorsements: ○ H ○ P ○ T ○ N ○ S ○ X | CDL Exempt: ○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State	Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
01					O Operator O Chauffeur O Moped	O Cycle O Farm O Recreation				

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint

Driver Condition at Time of Crash	Driver Distracted By	Ejected	Trapped	Airbag Deployed
1st 2nd				

Hospital	Ambulance

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
		O Breath O Blood O Urine O Field O PBT O Refused O Not Offered	O Pending Test Results:	

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
		O Blood O Urine O Field O Refused O Not Offered	O Pending Test Results:	O Hazardous O Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash

Insurance Company	Insurance Policy #	Towed By	Towed To

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
################################ ################################ GRAND RAPIDS, MI 49544 (###) ###-####	##/##/#### (19)	M	B	2nd Row - Left	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Equipped

Hospital	Ambulance
NONE	NONE

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint
################################ ################################ GRAND RAPIDS, MI 49507 (###) ###-####	##/##/#### (29)	M	B	2nd Row - Right	Shoulder and Lap Belt

Injury	Ejected	Trapped	Airbag Deployed
O			Not Equipped

Hospital	Ambulance
NONE	NONE

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	O H O P O T O N O S O X	O Farm O Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
O 10,000 lbs. or Less O 10,001 - 26,000 lbs. O Greater than 26,000 lbs.				O Placard O Cargo Spill		

OWNERS

Owner Information	Owner Information

WITNESS

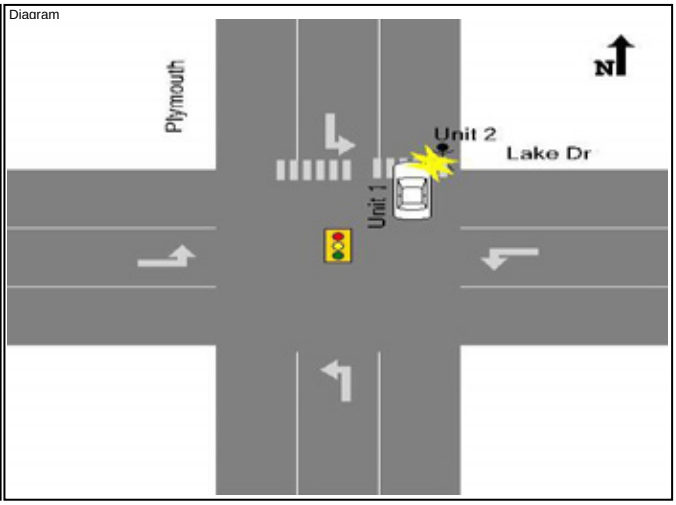
Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos
Yes	09/29/2022 (18:30)	BRIAN DURAN-CHAVEZ (508)		Yes

Narrative

The vehicle 1 was heading northbound on Plymouth near Lake Dr. The pedestrian was in the corner of Lake and Pylmouth trying to cross over plymouth going westbound. The driver had a green light for traffic going northbound when the pedestrian walked onto the street causing vehicle 1 to strike them.

Diagram



Authority: 1949 PA 300, Sec.257.622
Compliance: Required MSP UD-10E
Penalty: $100 and/or 90 days (Rev 11/2020)

External # 0041138 | Crash ID 2682728

File Class 93001

STATE OF MICHIGAN TRAFFIC CRASH REPORT

Incident # 223032

ORI: MI 4136100
Department Name: East Grand Rapids Department of Public Safety
Reviewer: ERIC SMITH

Crash Date	Crash Time	No. of Units	Crash Type	Special Circumstances	Special Checks
09/29/2022	18:30	02	Single Motor Vehicle	● None ○ Hit and Run ○ School Bus ○ Fleeing Police ○ Unknown ○ Animal	○ Fatal ○ Non-Traffic Area ○ ORV/Snowmobile

County	Traffic Control	Relation to Roadway	Weather	Area
41 - Kent	Signal	On the Road	Clear	INTR Within Intersection

City/Twsp	Contributing Circumstances 1st	2nd	Light	Road Surface Condition	Total Lanes	Speed Limit	Posted
66 - East Grand Rapids	None		Daylight	Dry	02	25	Yes

Work Zone (if applicable): Type | Workers Present | Activity | Location

LOCATION

Prefix	Primary Road Name	Road Type	Suffix	Divided Roadway
	PLYMOUTH			

Distance / Direction: AT
Trafficway: Not Physically Divided

Prefix	Intersecting Road Name	Road Type	Suffix	Divided Roadway
	LAKE DR			

UNIT / DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type	Endorsements	Sex	Race	Total Occupants	Hazardous Action
02	Yes	MI ##########	##/##/#### (20)	○ Operator ○ Chauffeur ○ Moped	○ Cycle ○ Farm ○ Recreation	F	W	00	Other

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint
P	########## ########## GRAND RAPIDSM, MI 49506 (###) ###-####	No	A	Pedestrian	No Belts Available

Driver Condition at Time of Crash 1st	2nd	Driver Distracted By	Ejected	Trapped	Airbag Deployed
		Unknown			Not Equipped

Hospital: SPECTRUM HEALTH HOSPITAL
Ambulance: PARAMED INC

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
No	No	○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ● Not Offered	○ Pending Test Results:	No

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
No	No	○ Blood ○ Urine ○ Field ○ Refused ● Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect
		Not Applicable		

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash
No	No Automation	No Automation

Insurance Company	Insurance Policy #	Towed By	Towed To
##########	##########		

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior
11	11	No Damage			Crossing at Intersection

Sequence of Events (● indicates MOST harmful event): First ● 17 - Motor Veh in Transport | Second | Third | Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital | Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type	Endorsements	CDL Exempt
	○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information

Damaged Property	Public	Owner & Phone

UNIT/DRIVER

Unit Number	Unit Known	State Driver License Number	Date of Birth (Age)	License Type / Endorsements	Sex	Race	Total Occupants	Hazardous Action
				○ Operator ○ Chauffeur ○ Moped / ○ Cycle ○ Farm ○ Recreation				

Unit Type	Driver Information	Driver is Owner	Injury	Position	Restraint

Driver Condition at Time of Crash (1st / 2nd)	Driver Distracted By	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Alcohol Suspected	Contributing Factor	Alcohol Test Type	Alcohol Test Results	Interlock Device
		○ Breath ○ Blood ○ Urine ○ Field ○ PBT ○ Refused ○ Not Offered	○ Pending Test Results:	

Drug Suspected	Contributing Factor	Drug Test Type	Drug Test Results	Citation Issued
		○ Blood ○ Urine ○ Field ○ Refused ○ Not Offered	○ Pending Test Results:	○ Hazardous ○ Other

Vehicle Registration	State	Vehicle Description	Year	Make	Model	Color

VIN	Vehicle Type	Special Vehicles	Private Trailer Type	Vehicle Defect

Automation System(s) in Vehicle	Automation System Level in Vehicle	Automation System Level Engaged at Time of Crash

Insurance Company	Insurance Policy #	Towed By	Towed To

Location of Greatest Damage	First Impact	Extent of Damage (Power Unit and/or Trailers)	Vehicle Direction	Vehicle Use	Action Prior

Sequence of Events (● indicates MOST harmful event)	First	Second	Third	Fourth

PASSENGERS

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

Passenger Information	Date of Birth (Age)	Sex	Race	Position	Restraint

Injury	Ejected	Trapped	Airbag Deployed

Hospital	Ambulance

TRUCK/BUS

Carrier Information	USDOT	MC	MPSC

Driver's CDL Type / Endorsements	CDL Exempt
○ H ○ P ○ T ○ N ○ S ○ X	○ Farm ○ Other

GVWR/GCWR	Vehicle Configuration	Cargo Body Type	Medical Card	Hazardous Material	ID #	Class #
○ 10,000 lbs. or Less ○ 10,001 - 26,000 lbs. ○ Greater than 26,000 lbs.				○ Placard ○ Cargo Spill		

OWNERS

Owner Information	Owner Information

WITNESS

Witness Information	Witness Information

Investigated at Scene	Reported Date (Time)	1st Investigator Name (Badge)	2nd Investigator Name (Badge)	Photos

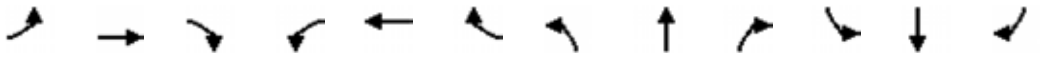
Narrative	Diagram

fishbeck

Attachment

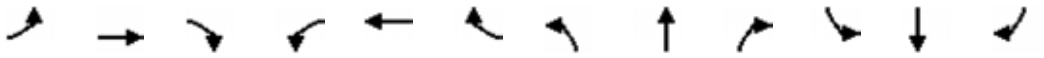
Background LOS Output Reports

4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	260	43	38	239	29	106	346	31	25	286	15
Future Volume (vph)	20	260	43	38	239	29	106	346	31	25	286	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.99	1.00		0.98	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1592	1752		1733	1771		1685	1774		1661	1724	
Flt Permitted	0.40	1.00		0.44	1.00		0.37	1.00		0.26	1.00	
Satd. Flow (perm)	675	1752		799	1771		648	1774		447	1724	
Peak-hour factor, PHF	0.89	0.89	0.89	0.72	0.72	0.72	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	22	292	48	53	332	40	122	398	36	29	336	18
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	22	335	0	53	368	0	122	434	0	29	354	0
Confl. Peds. (#/hr)	57		5	5		57	40		2	2		40
Confl. Bikes (#/hr)			10			3			5			6
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Effective Green, g (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.43	0.35		0.34	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	270	700		319	708		352	624		193	536	
v/s Ratio Prot		0.19			c0.21		c0.03	c0.24		0.00	0.21	
v/s Ratio Perm	0.03			0.07			0.12			0.05		
v/c Ratio	0.08	0.48		0.17	0.52		0.35	0.70		0.15	0.66	
Uniform Delay, d1	20.5	24.5		21.2	25.0		30.1	30.6		37.4	32.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.92	0.84	
Incremental Delay, d2	0.6	2.3		1.1	2.7		0.6	6.3		0.3	5.8	
Delay (s)	21.1	26.8		22.3	27.7		30.7	36.9		34.8	33.3	
Level of Service	C	C		C	C		C	D		C	C	
Approach Delay (s/veh)		26.5			27.0			35.5			33.4	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	102	54	38	156	44	47	305	28	90	377	37
Future Volume (veh/h)	37	102	54	38	156	44	47	305	28	90	377	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	45	124	66	45	186	52	55	355	33	107	449	44
Peak Hour Factor	0.82	0.82	0.82	0.84	0.84	0.84	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	4	4	4
Cap, veh/h	390	374	199	427	465	130	372	785	73	565	769	75
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.93	0.93	0.93	0.47	0.47	0.47
Sat Flow, veh/h	1112	1112	592	1170	1382	386	903	1681	156	978	1645	161
Grp Volume(v), veh/h	45	0	190	45	0	238	55	0	388	107	0	493
Grp Sat Flow(s),veh/h/ln	1112	0	1704	1170	0	1768	903	0	1837	978	0	1807
Q Serve(g_s), s	1.8	0.0	4.6	1.6	0.0	5.7	1.8	0.0	1.3	3.8	0.0	11.0
Cycle Q Clear(g_c), s	7.5	0.0	4.6	6.2	0.0	5.7	12.8	0.0	1.3	5.1	0.0	11.0
Prop In Lane	1.00		0.35	1.00		0.22	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	390	0	573	427	0	595	372	0	858	565	0	844
V/C Ratio(X)	0.12	0.00	0.33	0.11	0.00	0.40	0.15	0.00	0.45	0.19	0.00	0.58
Avail Cap(c_a), veh/h	390	0	573	427	0	595	372	0	858	565	0	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	13.6	16.0	0.0	14.0	4.3	0.0	1.0	9.6	0.0	10.7
Incr Delay (d2), s/veh	0.6	0.0	1.5	0.5	0.0	2.0	0.8	0.0	1.7	0.7	0.0	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	0.5	0.0	2.4	0.2	0.0	0.7	0.8	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.5	0.0	15.2	16.5	0.0	16.0	5.1	0.0	2.7	10.3	0.0	13.7
LnGrp LOS	B		B	B		B	A		A	B		B
Approach Vol, veh/h		235			283			443			600	
Approach Delay, s/veh		15.6			16.1			3.0			13.1	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	24.0	31.0	24.0	31.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	18.5	25.7	18.5	25.7
Max Q Clear Time (g_c+I1), s	9.5	14.8	8.2	13.0
Green Ext Time (p_c), s	0.2	0.5	0.2	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	11.1
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	80	324	0	0	475
Future Vol, veh/h	36	80	324	0	0	475
Conflicting Peds, #/hr	0	2	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	60	133	368	0	0	594

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	665	370	0	-	-	-
Stage 1	368	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	409	675	-	0	0	-
Stage 1	699	-	-	0	0	-
Stage 2	729	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	409	673	-	-	-	-
Mov Cap-2 Maneuver	512	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.06	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	512	673	-
HCM Lane V/C Ratio	-	0.117	0.198	-
HCM Ctrl Dly (s/v)	-	13	11.7	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.4	0.7	-

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	373	22	33	318
Future Vol, veh/h	8	20	373	22	33	318
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	0	0	3	3	5	5
Mvmt Flow	13	33	424	25	41	398

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	917	437	0	0	450	0
Stage 1	437	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	304	623	-	-	1095	-
Stage 1	655	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	293	623	-	-	1094	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	603	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.19	0	0.79
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	547	1094	-
HCM Lane V/C Ratio	-	-	0.085	0.038	-
HCM Ctrl Dly (s/v)	-	-	12.2	8.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	26	42	170	92	128
Future Vol, veh/h	68	26	42	170	92	128
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	78	78
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	113	43	50	202	118	164

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	507	205	287	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	529	841	1275	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	503	837	1269	-	-	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	754	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.79	1.58	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	357	-	565	-	-
HCM Lane V/C Ratio	0.039	-	0.277	-	-
HCM Ctrl Dly (s/v)	8	0	13.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	87	293	84	257	174	383	126	306
Average Queue (ft)	15	132	30	140	90	242	23	168
95th Queue (ft)	54	235	68	240	185	401	82	274
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)						3		0
Queuing Penalty (veh)						0		0
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		4		3	4	32		14
Queuing Penalty (veh)		1		1	16	38		4

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	74	129	66	142	156	201	249	200
Average Queue (ft)	26	59	21	64	34	113	64	131
95th Queue (ft)	61	110	49	119	91	198	160	195
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						3		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	1	0	4	0	3	0	7
Queuing Penalty (veh)	0	0	0	2	0	2	1	7

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	T	T	T
Maximum Queue (ft)	91	104	34	62	14
Average Queue (ft)	31	44	2	9	1
95th Queue (ft)	68	76	18	38	9
Link Distance (ft)	187	187	47		160
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	61	66
Average Queue (ft)	24	13
95th Queue (ft)	50	45
Link Distance (ft)	120	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9003: Wealthy Street & East Driveway

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	91	61	4
Average Queue (ft)	44	10	0
95th Queue (ft)	77	40	3
Link Distance (ft)	161	178	318
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

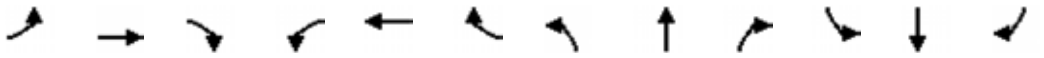
Movement	NB	SB
Directions Served	TR	L
Maximum Queue (ft)	55	58
Average Queue (ft)	4	33
95th Queue (ft)	25	64
Link Distance (ft)	201	47
Upstream Blk Time (%)		4
Queuing Penalty (veh)		12
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 87

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	390	101	32	375	24	78	326	18	51	384	36
Future Volume (vph)	25	390	101	32	375	24	78	326	18	51	384	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1686	1743		1745	1810		1709	1783		1742	1807	
Flt Permitted	0.34	1.00		0.19	1.00		0.24	1.00		0.35	1.00	
Satd. Flow (perm)	610	1743		356	1810		439	1783		643	1807	
Peak-hour factor, PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	29	448	116	34	395	25	82	343	19	54	409	38
RTOR Reduction (vph)	0	9	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	29	555	0	34	418	0	82	362	0	54	447	0
Confl. Peds. (#/hr)	24		11	11		24	6		5	5		6
Confl. Bikes (#/hr)			1			7			8			2
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Effective Green, g (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.37	0.33		0.37	0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	238	681		139	707		216	588		285	596	
v/s Ratio Prot		c0.32			0.23		c0.02	0.20		0.01	c0.25	
v/s Ratio Perm	0.05			0.10			0.13			0.06		
v/c Ratio	0.12	0.82		0.24	0.59		0.38	0.62		0.19	0.75	
Uniform Delay, d1	21.4	30.0		22.6	26.5		38.6	31.0		32.4	32.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.98	0.90	
Incremental Delay, d2	1.0	10.4		4.1	3.6		1.1	4.8		0.3	7.8	
Delay (s)	22.5	40.4		26.7	30.2		39.7	35.8		32.1	37.3	
Level of Service	C	D		C	C		D	D		C	D	
Approach Delay (s/veh)		39.5			29.9			36.5			36.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	143	19	38	152	84	54	395	21	35	378	59
Future Volume (veh/h)	42	143	19	38	152	84	54	395	21	35	378	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	48	163	22	45	181	100	57	420	22	37	398	62
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	1	1	1
Cap, veh/h	379	564	76	466	398	220	378	796	42	425	712	111
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.60	0.60	0.60	0.45	0.45	0.45
Sat Flow, veh/h	1078	1592	215	1193	1122	620	936	1772	93	951	1585	247
Grp Volume(v), veh/h	48	0	185	45	0	281	57	0	442	37	0	460
Grp Sat Flow(s),veh/h/ln	1078	0	1807	1193	0	1742	936	0	1865	951	0	1832
Q Serve(g_s), s	2.0	0.0	4.1	1.6	0.0	6.8	2.4	0.0	7.7	1.5	0.0	10.2
Cycle Q Clear(g_c), s	8.8	0.0	4.1	5.6	0.0	6.8	12.5	0.0	7.7	9.2	0.0	10.2
Prop In Lane	1.00		0.12	1.00		0.36	1.00		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	379	0	641	466	0	617	378	0	837	425	0	823
V/C Ratio(X)	0.13	0.00	0.29	0.10	0.00	0.46	0.15	0.00	0.53	0.09	0.00	0.56
Avail Cap(c_a), veh/h	379	0	641	466	0	617	378	0	837	425	0	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	12.8	14.8	0.0	13.7	12.2	0.0	7.6	13.6	0.0	11.1
Incr Delay (d2), s/veh	0.7	0.0	1.1	0.4	0.0	2.4	0.8	0.0	2.4	0.4	0.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.7	0.4	0.0	2.8	0.5	0.0	2.8	0.4	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.7	0.0	13.9	15.2	0.0	16.1	13.1	0.0	10.0	14.0	0.0	13.9
LnGrp LOS	B		B	B		B	B		B	B		B
Approach Vol, veh/h		233			326			499			497	
Approach Delay, s/veh		14.7			16.0			10.4			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	25.0	30.0	25.0	30.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	19.5	24.7	19.5	24.7
Max Q Clear Time (g_c+I1), s	10.8	14.5	8.8	12.2
Green Ext Time (p_c), s	0.2	0.5	0.3	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	13.3
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	107	375	0	0	428
Future Vol, veh/h	56	107	375	0	0	428
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	95	95	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	71	135	395	0	0	451

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	620	396	0	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	225	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	435	653	-	0	0	-
Stage 1	680	-	-	0	0	-
Stage 2	791	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	435	652	-	-	-	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	791	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.26	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	530	652	-
HCM Lane V/C Ratio	-	0.134	0.208	-
HCM Ctrl Dly (s/v)	-	12.8	12	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.5	0.8	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	29	370	5	3	450
Future Vol, veh/h	21	29	370	5	3	450
Conflicting Peds, #/hr	0	0	0	8	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	92	92	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	28	39	402	5	3	474

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	893	413	0	0	416	0
Stage 1	413	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	315	644	-	-	1149	-
Stage 1	672	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	312	639	-	-	1141	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.7	0	0.05
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	535	1141	-
HCM Lane V/C Ratio	-	-	0.126	0.003	-
HCM Ctrl Dly (s/v)	-	-	12.7	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	99	39	14	175	133	66
Future Vol, veh/h	99	39	14	175	133	66
Conflicting Peds, #/hr	0	4	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	88	88	78	78
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	136	53	16	199	171	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	469	242	280	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	557	802	1282	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	782	1254	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	778	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.97	0.59	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	133	-	589	-	-
HCM Lane V/C Ratio	0.013	-	0.321	-	-
HCM Ctrl Dly (s/v)	7.9	0	14	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	200	322	136	268	140	278	140	310
Average Queue (ft)	50	280	68	188	77	182	56	229
95th Queue (ft)	176	441	186	298	163	307	157	360
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)		8				0		0
Queuing Penalty (veh)		0				0		2
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		29	8	8	3	25	0	25
Queuing Penalty (veh)		6	26	2	8	16	0	11

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	62	110	52	120	118	162	206	159
Average Queue (ft)	28	55	18	69	36	113	41	132
95th Queue (ft)	64	103	46	127	95	190	150	203
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						3		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	1	0	5		3		8
Queuing Penalty (veh)	0	0	0	2		1		2

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	SB
Directions Served	L	R	T
Maximum Queue (ft)	64	69	11
Average Queue (ft)	32	45	0
95th Queue (ft)	61	73	9
Link Distance (ft)	187	187	160
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	46	18	37
Average Queue (ft)	29	1	3
95th Queue (ft)	50	10	24
Link Distance (ft)	120		201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9003: Wealthy Street & East Driveway

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	91	39	12
Average Queue (ft)	52	5	1
95th Queue (ft)	89	28	7
Link Distance (ft)	161	178	318
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

Movement	NB	SB
Directions Served	TR	L
Maximum Queue (ft)	6	29
Average Queue (ft)	0	7
95th Queue (ft)	5	28
Link Distance (ft)	201	47
Upstream Blk Time (%)		0
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

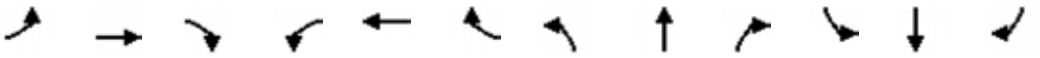
Zone wide Queuing Penalty: 79

fishbeck

Attachment

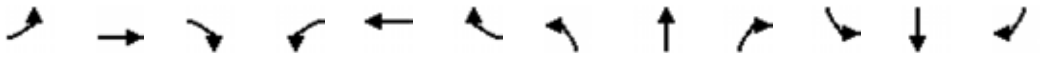
Future LOS Output Reports

5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	260	43	38	239	34	106	353	31	31	293	22
Future Volume (vph)	25	260	43	38	239	34	106	353	31	31	293	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.99	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1595	1752		1733	1761		1688	1774		1661	1715	
Flt Permitted	0.40	1.00		0.44	1.00		0.34	1.00		0.25	1.00	
Satd. Flow (perm)	663	1752		799	1761		611	1774		430	1715	
Peak-hour factor, PHF	0.89	0.89	0.89	0.72	0.72	0.72	0.87	0.87	0.87	0.85	0.85	0.85
Adj. Flow (vph)	28	292	48	53	332	47	122	406	36	36	345	26
RTOR Reduction (vph)	0	5	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	28	335	0	53	374	0	122	442	0	36	371	0
Confl. Peds. (#/hr)	57		5	5		57	40		2	2		40
Confl. Bikes (#/hr)			10			3			5			6
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	5%	5%	5%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Effective Green, g (s)	44.0	44.0		44.0	44.0		46.8	38.7		37.8	34.2	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.43	0.35		0.34	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	265	700		319	704		339	624		188	533	
v/s Ratio Prot		0.19			c0.21		c0.03	c0.25		0.01	0.22	
v/s Ratio Perm	0.04			0.07			0.13			0.06		
v/c Ratio	0.11	0.48		0.17	0.53		0.36	0.71		0.19	0.70	
Uniform Delay, d1	20.7	24.5		21.2	25.1		31.1	30.8		38.2	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.91	0.85	
Incremental Delay, d2	0.8	2.3		1.1	2.9		0.7	6.7		0.5	6.8	
Delay (s)	21.5	26.8		22.3	28.0		31.7	37.4		35.2	35.1	
Level of Service	C	C		C	C		C	D		D	D	
Approach Delay (s/veh)		26.4			27.3			36.2			35.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	102	57	41	156	44	52	312	30	90	384	37
Future Volume (veh/h)	37	102	57	41	156	44	52	312	30	90	384	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	45	124	70	49	186	52	60	363	35	107	457	44
Peak Hour Factor	0.82	0.82	0.82	0.84	0.84	0.84	0.86	0.86	0.86	0.84	0.84	0.84
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	4	4	4
Cap, veh/h	390	365	206	423	465	130	367	782	75	559	770	74
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.93	0.93	0.93	0.47	0.47	0.47
Sat Flow, veh/h	1112	1086	613	1165	1382	386	896	1675	161	969	1648	159
Grp Volume(v), veh/h	45	0	194	49	0	238	60	0	398	107	0	501
Grp Sat Flow(s),veh/h/ln	1112	0	1700	1165	0	1768	896	0	1836	969	0	1807
Q Serve(g_s), s	1.8	0.0	4.7	1.8	0.0	5.7	2.0	0.0	1.4	3.8	0.0	11.2
Cycle Q Clear(g_c), s	7.5	0.0	4.7	6.5	0.0	5.7	13.3	0.0	1.4	5.2	0.0	11.2
Prop In Lane	1.00		0.36	1.00		0.22	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	390	0	572	423	0	595	367	0	858	559	0	844
V/C Ratio(X)	0.12	0.00	0.34	0.12	0.00	0.40	0.16	0.00	0.46	0.19	0.00	0.59
Avail Cap(c_a), veh/h	390	0	572	423	0	595	367	0	858	559	0	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	13.7	16.1	0.0	14.0	4.5	0.0	1.0	9.6	0.0	10.8
Incr Delay (d2), s/veh	0.6	0.0	1.6	0.6	0.0	2.0	1.0	0.0	1.8	0.8	0.0	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.9	0.5	0.0	2.4	0.2	0.0	0.7	0.8	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.5	0.0	15.3	16.7	0.0	16.0	5.4	0.0	2.8	10.4	0.0	13.9
LnGrp LOS	B		B	B		B	A		A	B		B
Approach Vol, veh/h		239			287			458			608	
Approach Delay, s/veh		15.7			16.1			3.1			13.2	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	24.0	31.0	24.0	31.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	18.5	25.7	18.5	25.7
Max Q Clear Time (g_c+I1), s	9.5	15.3	8.5	13.2
Green Ext Time (p_c), s	0.2	0.5	0.2	0.7

Intersection Summary	
HCM 7th Control Delay, s/veh	11.2
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	94	324	0	0	488
Future Vol, veh/h	56	94	324	0	0	488
Conflicting Peds, #/hr	0	2	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	93	157	368	0	0	610

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	673	370	0	-	-	-
Stage 1	368	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	404	675	-	0	0	-
Stage 1	699	-	-	0	0	-
Stage 2	722	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	404	673	-	-	-	-
Mov Cap-2 Maneuver	509	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	509	673	-
HCM Lane V/C Ratio	-	0.184	0.233	-
HCM Ctrl Dly (s/v)	-	13.7	12	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.7	0.9	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	390	22	33	338
Future Vol, veh/h	8	20	390	22	33	338
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	60	60	88	88	80	80
Heavy Vehicles, %	0	0	3	3	5	5
Mvmt Flow	13	33	443	25	41	423

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	962	457	0	0	469	0
Stage 1	457	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.15	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.245	-
Pot Cap-1 Maneuver	286	608	-	-	1077	-
Stage 1	642	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	275	608	-	-	1076	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	587	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.42	0	0.75
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1076	-
HCM Lane V/C Ratio	-	-	0.088	0.038	-
HCM Ctrl Dly (s/v)	-	-	12.4	8.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	26	42	173	94	128
Future Vol, veh/h	68	26	42	173	94	128
Conflicting Peds, #/hr	0	0	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	84	84	78	78
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	113	43	50	206	121	164

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	514	208	290	0	-	0
Stage 1	208	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	524	838	1272	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	499	834	1267	-	-	-
Mov Cap-2 Maneuver	499	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	13.88	1.55	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	352	-	561	-	-
HCM Lane V/C Ratio	0.039	-	0.279	-	-
HCM Ctrl Dly (s/v)	8	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	92	262	133	322	175	383	174	353
Average Queue (ft)	22	137	35	150	97	242	32	189
95th Queue (ft)	74	234	92	263	190	401	108	306
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)						4		0
Queuing Penalty (veh)						0		1
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		5		4	6	36	0	17
Queuing Penalty (veh)		1		2	26	42	0	6

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	97	127	62	142	156	195	304	200
Average Queue (ft)	29	63	23	66	35	108	74	128
95th Queue (ft)	69	113	54	121	88	183	195	204
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						2		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	2	0	4	0	3	1	7
Queuing Penalty (veh)	0	1	0	2	0	1	2	7

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	T	T	T
Maximum Queue (ft)	114	101	16	92	34
Average Queue (ft)	43	45	1	15	1
95th Queue (ft)	83	75	11	57	14
Link Distance (ft)	187	187	47		160
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	54	65	10
Average Queue (ft)	25	13	0
95th Queue (ft)	50	47	8
Link Distance (ft)	120		201
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 9003: Wealthy Street & East Driveway

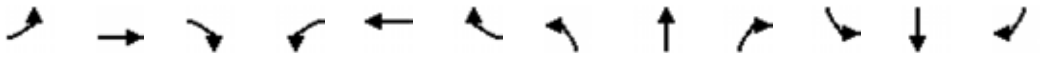
Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	91	80	20
Average Queue (ft)	43	15	1
95th Queue (ft)	71	52	11
Link Distance (ft)	161	178	318
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

Movement	NB	SB
Directions Served	TR	L
Maximum Queue (ft)	40	67
Average Queue (ft)	3	39
95th Queue (ft)	23	67
Link Distance (ft)	201	47
Upstream Blk Time (%)		5
Queuing Penalty (veh)		15
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 111



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	390	101	32	375	38	78	340	18	59	393	45
Future Volume (vph)	42	390	101	32	375	38	78	340	18	59	393	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.98	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1688	1743		1745	1796		1711	1783		1742	1801	
Flt Permitted	0.33	1.00		0.19	1.00		0.22	1.00		0.33	1.00	
Satd. Flow (perm)	583	1743		356	1796		397	1783		608	1801	
Peak-hour factor, PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	48	448	116	34	395	40	82	358	19	63	418	48
RTOR Reduction (vph)	0	9	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	48	555	0	34	432	0	82	377	0	63	466	0
Confl. Peds. (#/hr)	24		11	11		24	6		5	5		6
Confl. Bikes (#/hr)			1			7			8			2
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	2%	2%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		10			14		5	2		1	6	
Permitted Phases	10			14			2			6		
Actuated Green, G (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Effective Green, g (s)	43.0	43.0		43.0	43.0		40.9	36.3		40.9	36.3	
Actuated g/C Ratio	0.39	0.39		0.39	0.39		0.37	0.33		0.37	0.33	
Clearance Time (s)	6.0	6.0		6.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	0.2	0.2		0.2	0.2		3.0	0.2		3.0	0.2	
Lane Grp Cap (vph)	227	681		139	702		202	588		273	594	
v/s Ratio Prot		c0.32			0.24		c0.02	0.21		0.01	c0.26	
v/s Ratio Perm	0.08			0.10			0.13			0.08		
v/c Ratio	0.21	0.82		0.24	0.62		0.41	0.64		0.23	0.78	
Uniform Delay, d1	22.2	30.0		22.6	26.9		39.9	31.3		33.5	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.97	0.91	
Incremental Delay, d2	2.1	10.4		4.1	4.0		1.3	5.3		0.4	9.4	
Delay (s)	24.4	40.4		26.7	30.9		41.2	36.6		32.9	39.8	
Level of Service	C	D		C	C		D	D		C	D	
Approach Delay (s/veh)		39.1			30.6			37.4			38.9	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	143	26	44	152	84	59	404	24	35	394	59
Future Volume (veh/h)	42	143	26	44	152	84	59	404	24	35	394	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	48	163	30	52	181	100	63	430	26	37	415	62
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	1	1	1	1	1	1	1	1	1
Cap, veh/h	379	537	99	459	398	220	366	788	48	415	716	107
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.60	0.60	0.60	0.45	0.45	0.45
Sat Flow, veh/h	1078	1514	279	1184	1122	620	921	1756	106	939	1595	238
Grp Volume(v), veh/h	48	0	193	52	0	281	63	0	456	37	0	477
Grp Sat Flow(s),veh/h/ln	1078	0	1792	1184	0	1742	921	0	1862	939	0	1833
Q Serve(g_s), s	2.0	0.0	4.3	1.8	0.0	6.8	2.7	0.0	8.0	1.6	0.0	10.7
Cycle Q Clear(g_c), s	8.8	0.0	4.3	6.1	0.0	6.8	13.4	0.0	8.0	9.6	0.0	10.7
Prop In Lane	1.00		0.16	1.00		0.36	1.00		0.06	1.00		0.13
Lane Grp Cap(c), veh/h	379	0	635	459	0	617	366	0	836	415	0	823
V/C Ratio(X)	0.13	0.00	0.30	0.11	0.00	0.46	0.17	0.00	0.55	0.09	0.00	0.58
Avail Cap(c_a), veh/h	379	0	635	459	0	617	366	0	836	415	0	823
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	12.8	15.1	0.0	13.7	12.7	0.0	7.7	13.9	0.0	11.3
Incr Delay (d2), s/veh	0.7	0.0	1.2	0.5	0.0	2.4	1.0	0.0	2.6	0.4	0.0	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.8	0.5	0.0	2.8	0.6	0.0	2.9	0.4	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.7	0.0	14.1	15.6	0.0	16.1	13.7	0.0	10.3	14.3	0.0	14.2
LnGrp LOS	B		B	B		B	B		B	B		B
Approach Vol, veh/h		241			333			519			514	
Approach Delay, s/veh		14.8			16.0			10.7			14.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	25.0	30.0	25.0	30.0
Change Period (Y+Rc), s	5.5	5.3	5.5	5.3
Max Green Setting (Gmax), s	19.5	24.7	19.5	24.7
Max Q Clear Time (g_c+I1), s	10.8	15.4	8.8	12.7
Green Ext Time (p_c), s	0.2	0.5	0.3	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	13.5
HCM 7th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	82	124	375	0	0	457
Future Vol, veh/h	82	124	375	0	0	457
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	95	95	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	104	157	395	0	0	481

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	635	396	0	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Critical Hdwy	6.63	6.23	-	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	-	-
Pot Cap-1 Maneuver	426	653	-	0	0	-
Stage 1	680	-	-	0	0	-
Stage 2	778	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	426	652	-	-	-	-
Mov Cap-2 Maneuver	524	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	12.78	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	WBLn1	WBLn2	SBT
Capacity (veh/h)	-	524	652	-
HCM Lane V/C Ratio	-	0.198	0.241	-
HCM Ctrl Dly (s/v)	-	13.6	12.3	-
HCM Lane LOS	-	B	B	-
HCM 95th %tile Q(veh)	-	0.7	0.9	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	29	415	5	3	476
Future Vol, veh/h	21	29	415	5	3	476
Conflicting Peds, #/hr	0	0	0	8	8	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	92	92	95	95
Heavy Vehicles, %	0	0	1	1	1	1
Mvmt Flow	28	39	451	5	3	501

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	969	462	0	0	465	0
Stage 1	462	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.209	-
Pot Cap-1 Maneuver	284	604	-	-	1102	-
Stage 1	639	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	600	-	-	1094	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	607	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	13.27	0	0.05
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	503	1094	-
HCM Lane V/C Ratio	-	-	0.134	0.003	-
HCM Ctrl Dly (s/v)	-	-	13.3	8.3	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	99	39	14	181	136	66
Future Vol, veh/h	99	39	14	181	136	66
Conflicting Peds, #/hr	0	4	25	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	88	88	78	78
Heavy Vehicles, %	0	0	2	2	1	1
Mvmt Flow	136	53	16	206	174	85

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	479	246	284	0	-	0
Stage 1	242	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	549	798	1278	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	529	778	1250	-	-	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	774	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	14.14	0.57	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	129	-	582	-	-
HCM Lane V/C Ratio	0.013	-	0.325	-	-
HCM Ctrl Dly (s/v)	7.9	0	14.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection: 3560: Plymouth Avenue & Lake Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	250	392	133	332	174	379	172	376
Average Queue (ft)	59	283	44	190	76	200	68	237
95th Queue (ft)	188	433	107	303	169	336	173	374
Link Distance (ft)		377		429		360		389
Upstream Blk Time (%)		7				1		1
Queuing Penalty (veh)		0				0		7
Storage Bay Dist (ft)	175		200		100		150	
Storage Blk Time (%)		30		8	2	28		28
Queuing Penalty (veh)		14		3	8	23		17

Intersection: 3562: Plymouth Avenue & Wealthy Street

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	97	148	66	159	174	208	278	200
Average Queue (ft)	29	59	26	73	42	128	37	127
95th Queue (ft)	70	111	55	135	108	206	125	192
Link Distance (ft)		517		852		197	796	
Upstream Blk Time (%)						1		
Queuing Penalty (veh)						7		
Storage Bay Dist (ft)	100		80		150			125
Storage Blk Time (%)	0	1	0	5	0	4		7
Queuing Penalty (veh)	0	1	0	3	0	2		3

Intersection: 9001: Plymouth Avenue & North Driveway

Movement	WB	WB	NB	SB	SB
Directions Served	L	R	T	T	T
Maximum Queue (ft)	92	94	17	12	36
Average Queue (ft)	43	46	1	0	2
95th Queue (ft)	74	76	8	6	16
Link Distance (ft)	187	187	47		160
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)				100	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9002: Plymouth Avenue & South Driveway

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	86	12	118
Average Queue (ft)	34	1	9
95th Queue (ft)	63	8	67
Link Distance (ft)	120		201
Upstream Blk Time (%)	0		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Intersection: 9003: Wealthy Street & East Driveway

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	114	41	22
Average Queue (ft)	48	6	1
95th Queue (ft)	81	27	10
Link Distance (ft)	161	178	318
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9901: Plymouth Avenue & Middle Driveway

Movement	NB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	30	49	22
Average Queue (ft)	2	18	1
95th Queue (ft)	22	49	10
Link Distance (ft)	201	47	47
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		2	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 91

January 6, 2026

Doug La Fave
Deputy City Manager
City of East Grand Rapids
750 Lakeside Drive SE
East Grand Rapids, MI 49506

Re: Review of Corewell Health Blodgett Hospital Campus Traffic Impact Study (December 22, 2025)
East Grand Rapids, Michigan

Dear Doug,

Progressive Companies conducted a peer review of the revised Traffic Impact Study, dated December 22, 2025 performed for the Corewell Health Blodgett Hospital Campus proposed parking ramp expansion in the City of East Grand Rapids (City). The expansion is to add a third level to the existing two-level parking ramp. The Traffic Impact Study was performed by Fishbeck, Inc.

As requested by the City, this revised study incorporated new traffic counts at the study area intersections that included pedestrian and bicycle traffic volumes. Additionally, the City provided historic traffic count data from 2017. These new traffic counts showed similar vehicular traffic to the 2024 traffic counts and less pedestrian/bicycle traffic volumes than traffic counts taken in 2017. The revised analysis continued with the 2017 pedestrian/bicycle traffic and the 2025 vehicle traffic to represent the highest traffic volumes for all modes of transportation. This analysis also incorporated the updated signal timing that was implemented in December 2025 at the request of the City.

The results of this analysis showed that the Plymouth Avenue and Lake Drive intersection is expected to operate acceptably with no approach worse than a level of service (LOS) “D” with the additional parking ramp traffic, leading pedestrian intervals, and optimized signal timing. The LOS “D” should be considered acceptable with no further recommendations, as it is common practice for a LOS “D” or better to be utilized in urban locations. This analysis shows that LOS “D” typically only occurs during the peak traffic hour of any given weekday. The criteria for each LOS is shown below with the average delay per vehicle for each LOS:

LOS	Control Delay (s/veh)	
	Unsignalized	Signalized
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50 or v/c > 1.0	> 80 or v/c > 1.0

The revised study also included a crash analysis that found a number of crashes are occurring at the study area intersections while the traffic signal is in flash mode, typically overnight. The study recommended reviewing the traffic signal timing for clearance intervals, corridor progression, and flash schedules to potentially improve the safety of these intersections. Progressive Companies has been working with City staff to perform this review. An additional memo will be published with the results at a later date.

In conclusion, the revised study properly incorporated the updated traffic counts, pedestrian and bicycle data, and crash analysis requested previously. The report followed industry standards and shows that the traffic impact of the parking ramp addition should be minimal with the updated signal timing recently implemented by the City at the Plymouth Avenue/Lake Drive intersection. Furthermore, Progressive Companies will review the signal timings at the study area intersections for proper clearance intervals, progression, and flash schedules to ensure that they are operating safely. These existing operations are not believed to be related to the expansion of the parking ramp and should be treated as an independent topic. Progressive Companies recommends acceptance of the revised Traffic Impact Study, dated December 22, 2025.

Sincerely,

Joseph P. Eberle, PE
Transportation Engineer

JPE/CEZ/ecy
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November 3, 2025

RE: East Grand Rapids – Blodgett Hospital/Corewell Health Site Plan Review

City of East Grand Rapids
Attn: Mr. Doug La Fave
750 Lakeside Dr SE
East Grand Rapids, MI 49506

Dear Doug,

We reviewed the Corewell Blodgett Ramp 2 Vertical Expansion Project letter and construction plans prepared by Fishbeck dated September 12, 2025.

Below is a summary of the items reviewed as related to the Standards for Site Plan Approval:

1. Stormwater: There is no additional impervious surface area being added to the current site as this is a vertical expansion/addition of another parking deck level over the existing parking ramp footprint. Stormwater shall be removed from the new parking deck and directed to the existing storm system network.

   The applicant has submitted minor landscape changes to the northwest corner of the campus and included a grading plan and erosion control plan for sediment control.

2. Utility Service: No new utility services are proposed.

3. Water and Sewer: There are no new proposed water or sewer connections to the City of East Grand Rapids.

We recommend the Corewell Blodgett Ramp 2 Vertical Expansion be submitted to the Planning commission for site plan approval consideration.

Sincerely,

Jarid Halverson, P.E.

Halverson Engineering, LLC

4875 Fulton Street East
Ada, MI 49301

Office: 616.560.6142
Fax: 866.860.8602
jarid@halversoneng.com

CITY OF
EAST GRAND RAPIDS

770 LAKESIDE DRIVE SE • EAST GRAND RAPIDS, MICHIGAN 49506
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RIC BUIKEMA
PUBLIC SAFETY DIRECTOR

MEMORANDUM

October 29, 2025

Mr. Jay Gianotti
City of East Grand Rapids
750 Lakeside Dr. SE
Grand Rapids, MI 49506

Mr. Gianotti:

I have reviewed the site plan and associated documents for the planned Ramp 2 vertical expansion project on Corewell's Blodgett campus at 1840 Wealthy SE in East Grand Rapids. I have determined that, as planned, proper and adequate emergency vehicle and personnel access is maintained. Most notably, proper ingress and egress is planned for as noted in the memo from Fishbeck which states in part:

"The primary finding of the traffic impact study is the proposed development will not result in any significant operational impacts to the adjacent road network with the proposed improvements. The proposed site access configuration is appropriate and will acceptably facilitate site ingress and egress".

Please feel free to contact me with any questions or concerns,

.

Chief Ric Buikema
East Grand Rapids Department of Public Safety

CITY OF EAST GRAND RAPIDS PLANNING COMMISSION
NOTICE OF PUBLIC HEARING

A public hearing will be held at the date, time, and place below to consider a site plan review for the property at 1840 Wealthy St. SE, a.k.a. Blodgett Hospital. The Planning Commission will be reviewing a plan from Corewell Health for a one-story vertical expansion of the northwest parking ramp (Parking Ramp 2). The proposed plans may be viewed in the Public Works Administration office at the Community Center, or by linking from this notice at www.eastgrmi.gov/notices. Plans will be posted within seven days of the public hearing date. The Planning Commission may make a decision on this matter at the end of this public hearing.

In accordance with the Michigan Planning Enabling Act, you are receiving this notice because you live or own property within 300' of this address. The Planning Commission invites those with any facts or evidence related to this request to present them at the scheduled meeting or by writing to the Planning Commission at 750 Lakeside Drive SE, East Grand Rapids, MI 49506. To be included in the hearing, written communications must contain the sender's name and address.

If you have any questions regarding this request, please contact the undersigned at (616)940-4817, or jgianotti@eastgrmi.gov.

Date: Wednesday, November 12, 2025
Time: 5:30 p.m.
Place: East Grand Rapids Community Center Commission Chambers
750 Lakeside Drive SE, East Grand Rapids, MI 49506

Jay Gianotti, AICP
Zoning Administrator

Grand Rapids Press

LEGAL AFFIDAVIT

AD#: 0011039089

State of Ohio,) ss
County of Cuyahoga)
Joe Rosa being duly sworn, deposes that he/she is principal clerk of MLive Media Group; that Grand Rapids Press is a public newspaper published in the city of Grand Rapids, with general circulation in Kent and Ottawa county, and this notice is an accurate and true copy of this notice as printed in said newspaper, was printed and published in the regular edition and issue of said newspaper on the following date(s):
Grand Rapids Press 10/23/2025

_____
Principal Clerk of the Publisher

Sworn to and subscribed before me this 23rd day of October 2025

_____
Notary Public

CITY OF EAST GRAND RAPIDS PLANNING COMMISSION
NOTICE OF PUBLIC HEARING

The City of East Grand Rapids Planning Commission will hold a public hearing on Wednesday, November 12, 2025, at 5:30 PM in the Commission Chambers, 750 Lakeside Drive SE, East Grand Rapids, 49506, to consider a site plan review for the property at 1840 Wealthy St. SE, a.k.a. Blodgett Hospital. Complete information, descriptions, and information on how to give input on this matter can be found at www.eastgr.org/notices.

11039089-01

Planning Commission – Site Plan Review Worksheet

For each standard, please note whether you believe the standard has been met by checking "yes" or "no" and provide your reasoning why, including but not limited to staff and consultant reports as well as any other provided information. All standards must be sufficiently met with a "yes" determination for an overall affirmative vote.

Name: _____ Meeting Date: _____

Address of Request: _____

A. The site plan must comply with all standards of this article and all applicable requirements of this chapter and all other applicable laws and regulations.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
B. The site must be designed in a manner that is harmonious, to the greatest extent possible, with the character of the surrounding area.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
C. The site must be designed so as to minimize hazards to adjacent property, and to reduce the negative effects of traffic, noise, smoke, fumes and glare to the maximum extent possible.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

D. DESIGN STANDARDS

1. Traffic circulation – The number, location, size of access and entry points, and internal vehicular and pedestrian circulation routes shall be designed to promote safe and efficient access to and from the site, and circulation within the site. In reviewing traffic features, the number, spacing and alignment of existing and proposed access points shall be considered relative to their impact on traffic movement on abutting streets and adjacent properties.

❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

2. Storm water – Storm water detention and drainage systems shall be designed so the removal of surface waters will not adversely affect neighboring properties or public storm water drainage systems. Unless impractical, storm water shall be removed from all roofs, canopies and paved areas by underground surface drainage system.

❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

3. Landscaping – The landscape shall be preserved in its natural state, insofar as practicable, by minimizing unnecessary tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas. Provision or preservation of landscaping, buffers or greenbelts may be required to ensure that the proposed uses will be adequately buffered from one another and from surrounding property.

❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

4. Screening – Where nonresidential uses abut residential uses, appropriate screening shall be provided to shield residential properties from noise, headlights and glare.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
5. Lighting – Lighting shall be designed to minimize glare on adjacent properties and public streets. As a condition of site plan approval, reduction of lighting during non-business hours may be required.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
6. Utility service – All utility service shall be underground, unless impractical.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
7. Exterior uses – Exposed storage areas, machinery, heating and cooling units, service areas, loading areas, utility buildings and structures, and similar accessory areas shall be located to have a minimum negative effect on adjacent properties, and shall be screened, if reasonably necessary, to ensure compatibility with surrounding properties.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

8. Emergency access – All buildings and structures shall be readily accessible to emergency vehicles.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
9. Water and sewer – Water and sewer installations shall comply with all city specifications and requirements.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
10. Signs – Permitted signs shall be located to avoid creating distractions and visual clutter.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____
11. Building design – New or substantially remodeled buildings shall be reasonably compatible in appearance with, or shall enhance, the established general character of other buildings in the immediate vicinity.	
❑ Yes ❑ No	Comments _____ _____ _____ _____ _____

CITY OF
EAST GRAND RAPIDS

750 LAKESIDE DRIVE SE • EAST GRAND RAPIDS, MICHIGAN 49506
(616) 940-4817 www.eastgrmi.gov

JAY GIANOTTI, AICP
ZONING ADMINISTRATOR

MEMORANDUM

TO: East Grand Rapids Planning Commission
FROM: Jay Gianotti, Zoning Administrator
DATE: January 7, 2026

RE: **Draft Master Plan Update**

Action Requested:
N/A

Background:
At the December 2025 Planning Commission meeting, the Planning Commission received the most recent drat of the master plan update. After suggesting some minor revisions, the Commission voted to schedule a public hearing for the February 10, 2026 meeting. The City has prepared and sent out the required legal notices for this hearing. In the interim, the draft plan is being updated based on the comments from the December meeting. Once the updates are finalized, the final draft plan will be sent to the Planning Commission members for review, as well as posted to the project website at masterplanupdate.eastgrmi.gov