September 20, 2024

Syracuse University Responses to City Comments
New Residence Hall – Ostrom Avenue
Main Campus PID – Subdistrict 8

Syracuse University ("University") has received the attached Part 2 Full Environmental Assessment Form dated September 16, 2024 ("Part 2 – FEAF"). See **Exhibit A**. The City comments were made with respect to the original project proposal, which included the 727 Comstock Avenue lot, ±703 beds, and a 6-story A-wing near the E. M. Mills Rose Garden. The current proposal excludes the 727 Comstock Avenue lot, reduces the beds to ±570 and reduces the A-wing height to 5-stories ("Project").

The University has submitted a revised Part 1 – FEAF in connection with the Project. That document demonstrates that most of the Part 1 – FEAF answers remain the same. To the extent they changed, they reflect the smaller Project. Accordingly, responding to the Part 2 – FEAF necessarily responds to any concerns regarding the Project.

In response to the City's comments on the Part 2 – FEAF where it identified that a moderate to large impact may occur, the University is providing the following additional information (the numbered items correspond to Part 2 – FEAF. Copies of the questions are also presented in Part A below. This information, together with Part 1 – FEAF, demonstrates that there will be no significant environmental impacts resulting from the Project.

In addition, City Zoning staff has asked for further information regarding certain related issues. Such information is presented in Part B – Further Information. Public comments have also been received. Substantive comments are responded to in Part C – Public Comments.

Part A – Part 2 – FEAF

1. Impacts on Land [1(c), (d), (e)]

c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e

Response: Excavation/Grading. Excavation of soil and bedrock will be accomplished by standard mechanical equipment (excavators and drill rigs). No blasting or driving of piles is being proposed. Sheet piling and shoring will be used to stabilize the site. Pilings will be installed by drilling and auguring holes. These methods will minimize vibrations and avoid any moderate or large off-site impacts.

Excavated soils will be disposed of off-site at a properly permitted facility. Currently, that is proposed to be the Hanson (Heidelberg Materials) Jamesville Quarry facility. This approach will avoid any moderate or large off-site impacts.

Duration of Construction. The site work (clearing and excavation) is expected to take approximately 7 months. Construction of the building shell is expected to take approximately 18 months. Construction of interior building improvements and systems and final site improvements is expected to take approximately 15 months.

Any off-site impacts would be most likely during the site work period. Such impacts would likely be noise and dust. All contractors will be obligated to comply with the City of Syracuse Noise Ordinance, which will avoid any significant impacts to area residences. Standard dust management practices for projects such as this one will be followed. Those include watering down the Site, stabilized stone construction entrance and stone drive lanes around the building. As a result, no such impacts will be significant.

10. Impacts on Historical and Archeological Resources[10(a), (e)]

a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e

e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:	
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3

Response: The Project is not proposed to be constructed on any lands that have been listed or deemed eligible for the National or State Register. The 727 Comstock Avenue property has been removed from the Project. The Project site is located across the street from the E.M. Mills Rose-Garden of Thornden Park ("Rose Garden") approximately 99 feet away.

The application materials demonstrate that, based on a computer-modeled shadowing study, taking into account the Project height, the Rose Garden will continue to get at least 8 hours of daylight during the growing season.

The project site is located across Ostrom Avenue from the southwest corner of Thornden Park, an urban park listed on the National Register of Historic Places. That corner is the site of the Rose Garden, discussed in greater detail below.

Thornden Park is located in an urban area and consists of +/- 76 acres of parks, structures, gardens, and the like. At the time of its listing on the National Register of Historic Places, the stretch of the park, including the Rose Garden along Ostrom Avenue, was and continues to be across the street from a row of large University-owned buildings, and more generally, the campus itself. This proximity to large buildings, and the activities and noise associated with it, along Ostrom Avenue is part of the park's overall setting. Attached as **Exhibit B** are historic photographs showing the relationship over time of Ostrom Avenue development in the vicinity of Thornden Park, including the Rose Garden. They demonstrate that large buildings have been constructed over time and before the 1994 National Register listing.

While the Project will add another building, the impacts of doing so will not alter the overall character or setting of Thornden Park, including the Rose Garden. The Project will not significantly alter the setting or integrity of Thornden Park, including the Rose Garden. It will not introduce significant visual elements out of character with Thornden Park, including the Rose Garden and its surroundings.

Notwithstanding the above, the University has sought to determine the impacts of the Project on the growth of the roses in the Rose Garden. In addition to the shadow study included in the Project application, the University retained: M/E Engineering Services to prepare a Computational Fluid Dynamics ("CFD") Wind Study to evaluate expected wind impacts to local wind patterns at the Rose Garden resulting from the Project ("Wind Study"); and Terry L. Ettinger Horticultural Consulting Services ("Ettinger"), a local professional horticulture consultant, to assess the impacts of the Project, including wind, on the Rose Garden.

The Wind Study is attached as **Exhibit C**. The Wind Study concludes: the overall average speed of the prevailing winds (SW/W/NW) are reduced slightly (3.7%); winds directly down University Place from the west show a decrease in maximum velocity and an increase in average velocity in the Rose Garden (the increase is from the increase in the average minimum wind speed); and winds from the north and south are unchanged. The Ettinger Report, discussed below, relies on the Wind Study.

The Ettinger Report, relying on: the shadow study prepared by Bohlin Cywinski Jackson ("BCJ") submitted as part of the Project application; the Wind Study; his professional knowledge and experience; and personal inspection of the Rose Garden, prepared an impact assessment ("Ettinger Report"). It is attached as **Exhibit D**. The Ettinger Report concludes: "that there will be sufficient 'Photosynthetically Active Radiation' (PAR) available for satisfactory growth and flowering"; that the shadow study is confirmed by his actual on-site visits; and "that there will continue to be sufficient air movement throughout the entire garden to limit disease establishment."

In summary, the Ettinger Report finds "that there will be very little to no impact on the Rose Garden due to the shadow/shade and air movement associated with" the Project.

The following measures are also being proposed by the University to be taken in connection with the Project construction to avoid significant impacts to the Rose Garden: implementation of a SWPPP and dust control plan, coordinated storage of any construction waste in containers on-site, installation of construction fencing and a program to inform subcontractors and suppliers that parking of vehicles is prohibited on Ostrom Avenue, University Place, and within Thornden Park.

No significant impacts to Thornden Park or the Rose Garden are expected.

Notwithstanding the above, despite the limited to no impact from the Project on the Rose Garden, the University is actively discussing with the Rose Society funding of measures to support the maintenance and preservation of the Rose Garden. Such measures would permit actions that would more than offset any minor impacts to the Rose Garden resulting from the Project.

14. Impact on Energy [14(c), (d)]

c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g

Response: There is sufficient existing electricity capacity and infrastructure to accommodate the projected Project demands. To reduce electricity demand the Project design includes LED lighting. LED lighting utilizes less energy and lasts 3-5 times longer than standard incandescent lights. Additional methods and practices may later be identified and incorporated to reduce electricity demand and/or operate more efficiently.

As a result, there will be little to no impact from electricity usage.

Regarding heating and cooling, the Project design includes installation of ground source geothermal wells, air handling unit heat recovery wheels and high efficiency heat pumps. Ground source geothermal wells heat and cool water to the building heat pumps by transferring heat to or from the ground, reducing the cooling/heating needed from the central heating and cooling systems. Air handling unit heat recovery wheels are positioned within the air handling unit between the supply and exhaust airstreams. While the wheel is slowly rotating, it takes the energy from the exhaust airstream and transfers it to the supply airstream, reducing the amount of cooling/heating needed from the central heating and cooling systems. High efficiency heat pumps are designed to provide high EER's (energy efficiency ratios) and heating COPs (coefficients of performance) and meet the requirements of the latest edition of ISO/AHRI/ASHRAE/ISO 13256-1.

As a result, there will be little to no impact from heating and cooling. Moreover, the above features further the NYS goals relating to responding to climate change.

15. Impact on Noise [15(a)]

a. The proposed action may produce sound above noise levels established by local regulation.	D2m

Response: The City of Syracuse has adopted a Noise Ordinance. The Noise Ordinance specifically addresses noise associated with construction. Section 40-6 Noise Ordinance states:

> "Except as otherwise provided herein, no person shall conduct or permit to be conducted construction, alone or in combination with other construction conducted or permitted by such person in a manner as to cause unnecessary noise between 9:00 p.m. and 7:00 a.m. Monday to Saturday, inclusive, or at any time on Sundays or holidays."

As discussed in Response to Impacts on Land above, contractors will be obligated to comply with the City of Syracuse Noise Ordinance. There will be no prohibited unnecessary noise produced. Accordingly, there will be little to no impact on surrounding neighborhoods from construction noise.

18. Consistency with Community Character [18(e)]

e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3

Response: See the attached map identifying buildings and structures in close proximity to the Project site and the below discussion. The predominant architectural scale and character is that of the University campus. While there are "residences" also located nearby, those residences are either Greek organization University housing or "rental" housing for University students. See **Exhibit E.**

In addition, the discussion below has previously been submitted in response to City department comments.

The proposed building is located at the eastern edge of SU's campus, both an edge condition and gateway. The development is intended to fit within scale and character at the juncture of a variety of building massing typologies, from existing 2-3 story residential rentals to Greek organizations along Comstock and larger, high-rise SU residence halls.

The building's varied setbacks are designed to help break down the massing of the building. Each wing functions as a distinct neighborhood for student communities, each anchored with open spaces, allowing ample space for greenspace supporting informal activities and gatherings. 'B' and 'D' wings are set back to be similar to the existing setbacks of the residential rental houses across the street and the setback at Shaw Hall. 'A' Wing is situated further back to provide separation from the Rose Garden and Thornden Park. Fronting 'C' wing is an open space aligned with the termination of Clarendon Street. The two wings closest to Ostrom step down to 4-stories to be consistent with the residential rental neighborhood context.

Given the proximity to Thornden Park, a 76-acre community park, exterior programming was not as great a driver on the project as the interior amenities. Student Engagement was also conducted to garner feedback for preferred use of common spaces.

The varied setbacks also help with the massing reading where only B and D wings that are closest to the street are perceived from an oblique angle, such as walking along the sidewalk along Ostrom Ave.

The primary building entrance has been relocated to University Place and a secondary entry is located at Shaw Hall. These new entry points help connect and activate the streetscape along Ostrom Ave and University Place as a pedestrian-centric and bicycle friendly district. The streetscape also provides a sense of continuity with a tree-lined buffer along the frontage of Ostrom Ave and University Place.

Careful consideration has been given to the building. Wings "B" and "C" are 4 stories fronting on Ostrom Avenue and 6 stories to the rear closest to the Greek buildings along Comstock Avenue. The two different levels break up the facades. The building massing at 'A' wing has been reduced from 6 stories to 5 to respect the Rose Garden. The only 6-story portion directly facing Ostrom Ave is at 'C' wing, where it is set furthest back from the street. Loading and access are also carefully concealed behind the building.

Single and double-height story "porches" that project out beyond the main building massing are also located along the Ostrom Avenue frontage, breaking down the façade. Each wing also incorporates a bend/crank in the façade, which increases the aperture of daylight at the ends of each corridor and reduces any uninterrupted lengths of the building façade. These cranks appear on both the front and rear of the building.

Please note that the total building length is approximately 680'. Each wing is broken down to a length of approximately 180', which is consistent with the 'wings' of the adjacent DellPlain, Booth, and Shaw Student Residence Halls, all of which front Ostrom Avenue in a similar manner as this project.

Building materials such as masonry are being considered particularly at the shorter massing elements to be consistent with the residential rental houses across Ostrom Ave. Projecting building canopies at the main entrances and porches are similar to them. The design team has also explored the fenestration patterning to be dynamic in a series of paired and single windows, and to be consistent with the window typologies of the residential rental houses. All student bedroom windows will be operable and the further subdivision of this window scale will provide another layering of scale and depth.

Smaller sidewalks that are shown connecting the exit stairs of the building to the Ostrom Ave sidewalks are for emergency egress use only. Staffed entrances are located at the north and south ends of the new residence hall to reflect modern building security and safety procedures.

The University's Campus Plan – 2023 Refresh is a SU planning document that is meant to evolve. The relevant document for City review is the Syracuse Zoning Ordinance. While earlier campus master plans from 2003 called for the site to be a 3-story parking garage for 330-450 cars totaling +/- 200,000 GSF, this project reflects SU's commitment to bring sophomore housing closer to the

academic core to realize the creation of a new holistic residential campus community that will support student success.

The ground floor is programmed with social spaces to serve as catalysts for student activity and interaction. The ground floor of 'A' wing is a shared amenity for all SU students to use. Single and two-story glazed enclosed "porches" are massing elements that project out similar to the porches at the buildings across the street. These expanses of glass maintain transparency for both residents and neighbors, providing porosity to outdoor spaces. Activating these "porches" within are multipurpose meeting rooms, lounges, group wellness, and spaces for shared social activity. Also fundamental to the building design and programming is a priority on student experience regarding inclusivity and accessibility to provide a welcoming residence for all students to belong.

A variety of different sized lounges are designed to be integral to the student community and reading along the building face. Smaller mid-wing locations are more intimate gathering spaces that are playfully distributed across the facade. Each of the mid-wing lounges have angled, architectural projections that pick up on the angled readings of the hipped roofs of the residential rental houses.

At the ends of the wings are larger, corner meetings areas, and then between B and C wings are shared lounges that are the social hubs of each floor. These social hubs bring daylight and views to both the west towards campus and east towards the residential rental houses.

Notably, and in addition to the above, the Site is properly zoned to accommodate the use, size and design of the Project. It has been zoned that way for more than 30 years and was most recently re-affirmed in the 2023 ReZone Syracuse. That is a critical consideration in assessing impacts to community character. Zoning requirements establish community character. While the Project architecture may differ from some existing buildings, there are no significant adverse impacts to community character resulting from the Project.

Part B – Further Information

1. Comment: How will stormwater be managed?

   Response: See Klepper, Hahn & Hyatt letter dated September 2, 2024, attached as **Exhibit F**. A sophisticated on-site system is being designed to hold stormwater underground temporarily, thereafter discharging into the existing combined system along Ostrom Avenue and University Place.

2. Comment: Please identify traffic impacts.

   Response: See Passero Engineering Architecture assessment dated September 9, 2024, attached as **Exhibit G**. The Project will generate little to no new traffic. Existing pedestrian facilities are sufficient to accommodate the additional students. There is sufficient remaining parking on the University campus to accommodate vehicles no longer able to use the existing Ostrom lot.

3. Comment: Please address infiltration issues relating to the existing combined sewer.

   Response: Peterson Guadagnolo Consulting Engineers PC is coordinating with the City of Syracuse Engineering Department regarding measures to meet the County's 1:1 offset requirement. These issues are under review and will be addressed consistent with City and County practices.

Part C – Public Comments

There have also been public comments submitted to the City relating to the original project proposal (e.g., received by the City through August 27, 2024 but all dated prior to August 1, 2024) and to the current Project. Responses to substantive comments are below.

The University responds as follows:

I. Public Comments [Comments Received on Original 703-bed proposals, including 727 Comstock Avenue]:

A. Gregg Johnson, 7/28/24; Megan Kayser, 7/27/24; Olivia Matz, 7/28/24

Comment: Generalized concern regarding impacts to Rose Garden.

Response: See Response to "Part 2 – Impacts on Historic and Archeological Resources"

B. Syracuse Rose Society, 7/29/24

1. Comment: Please study the full growing season dates (April 1 – October 31); examine actual sun exposure including existing shading from tree canopy; and offer differences in impact from 4-6 stories.

   Response: See Response to Part A – 10. Impacts on Historical and Archeological Resources.

2. Comment: Please identify the financial impact of having to redesign the garden plantings to adjust for increased shade.

   Response: See Response to Part A – 10. Impacts on Historical and Archeological Resources.

3. Comment: There is likely to be significant noise impacts to the Rose Garden from construction.

   Response: See Response to Part A – 10. Impacts on Historical and Archeological Resources and Response to Part A – 15. Impact on Noise.

The Rose Garden has been located here for approximately 100 years and has survived in this urban area, adjacent to busy public streets, an internal Thornden Park Road, a University-owned parking lot, a large University dormitory, and more. Users of the Rose Garden will experience typical urban area noise, including from the nearby building and the University campus. Such noise is expected to be loud during the typical day at this location. There have been large construction projects built nearby with no significant impacts to the Rose Garden. Construction noise will add to the existing noise, but such noise is expected to be temporary and will not significantly impact the Rose Garden and its surroundings.

4. Comment: There may be increased student usage of the Rose Garden because of the proximity of the Project building to it.

   Response: Comment noted. The Rose Garden is part of a public park.

5. Comment: Can construction at the portion of the Site located across from the Rose Garden be completed November – March (non-growing season) and heavy equipment be turned off when not in use?

   Response: The University's goal is to schedule clearing and excavation at the north end outside the growing season. Assuming prompt approval, the current University construction schedule calls for such work at the north end to begin in January 2025. In any event, to the extent feasible, the University will coordinate with the contractor regarding implementation of construction practices at the north end that take into account the Rose Garden.

C. Peter Wirth, (undated)

1. Comment: SU should be sensitive to and incorporate technologies and practices consistent with NYS Climate goals.

   Response: Comment noted. The Project will be constructed to meet NYS requirements and designed consistent with the University's own Climate Action Plan.

D. Greek Organizations

1. Comment: Oppose inclusion of 727 Comstock Avenue in the Project.

   Response: The Project has been revised to remove 727 Comstock Avenue

E. Robert Haley, 7/29/24

1. Comment: Project Differs from SU 2003 Campus Plan

Response: The commenter described the structure shown in the 2003 University Plan as being "a dorm for 300-400 students". The plan actually shows a 3-story ±200,000 GSF parking garage for 330-450 vehicles accessing directly to Ostrom Avenue.

The Project is for student housing that generates no-to-minimal vehicular traffic on Ostrom Avenue, is slightly larger (231,000 GSF v 200,000 GSF) is slightly taller (4-6 stories v 3 stories) and far more attractive and consistent with the character of the surrounding area than the 2003 parking garage plan.

2. Comment: Project is too large

Response: This comment was made with respect to the 703 – bed proposal. The Project has been reduced to 570 beds. See also Response to Part C – E.1 above.

F. Rex Giardine, (undated)

1. Comment: Neighbors have been requesting that SU build more on-campus housing for years.

Response: Comment noted. The University continues to plan to upgrade on-campus student housing to current standards and remain competitive with other universities.

2. Comment: SU benefits the City and nearby neighborhoods

Response: Comment noted.

3. Comment: Project Design Comments – move the 4-story wing to the north and 6-story to the south; and extend the pedestrian path from Clarendon Street.

Response:

Response: See Response to Part A - 18. Consistency with Community Character.

4. Comment: General Support as forward thinking

Response: Comment noted.

II. Public Comments on Current ±570-bed Project (excluding 727 Comstock Avenue):

A. South East University Neighborhood Association, Inc., (September 9, 2024)

1. Comment: Please ensure there are ample areas within the new dormitory for students to gather informally.

   Response: See Response to Part A – 18. Consistency with Community Character.

B. Lee Kennard, (September 9, 2024)

1. Comment: Commenter supports increased dormitory housing on SU's campus.

   Response: Comment noted.

2. Comment: Existing parking lots near the JMA Wireless Dome should be considered as the location for the Project.

   Response: University representatives met with commenter to discuss his ideas. The University does not own all of the identified lands. In any event, the University has determined that the undergraduate student experience would be enhanced by new undergraduate student housing located generally between and immediately approximate to other existing on-campus housing and dining facilities at Shaw, Ernie Davis and Dell-plain Halls.

3. Comment: Commenter expressed generalized concern that the Project's proximity to existing party houses may further disrupt families with school-age children in the University neighborhood.

   Response: University representatives met with commenter to discuss his concerns. The commenter's concerns exist today. The number of students leasing in that neighborhood is not expected to increase as a result of the Project. To the extent the commenter is concerned regarding quality of life issues for those living in the neighborhood, the neighborhood and the City government are best positioned do so.

C. Robert Haley, (September 9, 2024)

1. Comment: Commenter supports bringing more undergraduates to the Main Campus.

   Response: Comment noted.

2. Comment: The Project will increase student pedestrian and vehicular traffic on the already busy corridor.

   Response: See Passero Engineering Architecture assessment dated September 9, 2024 attached as **Exhibit G**.

3. Comment: The 4-story height is appropriate; the 6-story height presents as a solid wall facade.

   Response: See Response to Part A – 18. Consistency with Community Character.

4. Comment: The 4-story segments should be further broken, once or twice per section.

   Response: See Response to Part A – 18. Consistency with Community Character.

5. Comment: The interior space planning is not obvious.

   Response: See Response to Part A – 18. Consistency with Community Character.

6. Comment: Reduce the Project size to ±450 beds.

   Response: Comment noted. The University has already significantly reduced the Project size from 703 to 570, a total reduction of 133 beds. See also Response to Part A – 18. Consistency with Community Character.

Exhibit A: Part 2 - FEAF received September 16, 2024
Exhibit B: Historic Photographs
Exhibit C: Animated Wind Study dated September 17, 2024
Exhibit D: Ettinger Report
Exhibit E: Neighborhood Character Graphic
Exhibit F: Klepper, Hahn & Hyatt Analysis, dated September 3, 2024
Exhibit G: Passero Engineering Architecture Analysis, dated September 9, 2024

Exhibit A

Part 2 - FEAF received September 16, 2024

Agency Use Only [If applicable]

Project: Z-2870

Date:

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)

☐ NO ☑ YES

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☑	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☑
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☑
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☑
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☑	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☑	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____ _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☑ NO ☐ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☐	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: _____ _____		☐	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t)

☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☐	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☐	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☐	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☐	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☐	☐
h. Other impacts: _____ _____		☐	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2)

☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) ☐NO ☐YES

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☑	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☑	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☑	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☑	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☑	☐
vi. 43 tons/year or more of methane	D2h	☑	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☑	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☑	☐
f. Other impacts: _____ _____		☑	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑NO ☐YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☐	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☐	☐
j. Other impacts: _____ _____		☐	☐

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1 a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: _____		☐	☐

9. Impact on Aesthetic Resources
The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)
If "Yes", answer questions a - g. If "No", go to Section 10.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	 ☐ ☐	 ☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	 ☐ ☐	 ☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____ _____		☐	☐

10. Impact on Historic and Archeological Resources
The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)
If "Yes", answer questions a - e. If "No", go to Section 11.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e	☐	☑
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☑	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☑	☐

d. Other impacts: _____ _____		☑	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☑	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☑
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☑

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: _____ _____		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____ _____		☐	☐

13. Impact on Transportation
The proposed action may result in a change to existing transportation systems. ☐ NO ☑ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☑	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☑	☐
c. The proposed action will degrade existing transit access.	D2j	☑	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☑	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☑	☐
f. Other impacts: _____ _____		☑	☐

14. Impact on Energy
The proposed action may cause an increase in the use of any form of energy. ☐ NO ☑ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☑	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☑
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☑
e. Other Impacts: _____ _____		☑	☐

15. Impact on Noise, Odor, and Light
The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☑ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☐	☑
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☑	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☑	☐
f. Other impacts: _____ _____		☑	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☑	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☑	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☑	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☑	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☑
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☑	☐
g. Other impacts: _____ _____		☑	☐

PRINT FULL FORM

Exhibit B

Historic Photographs

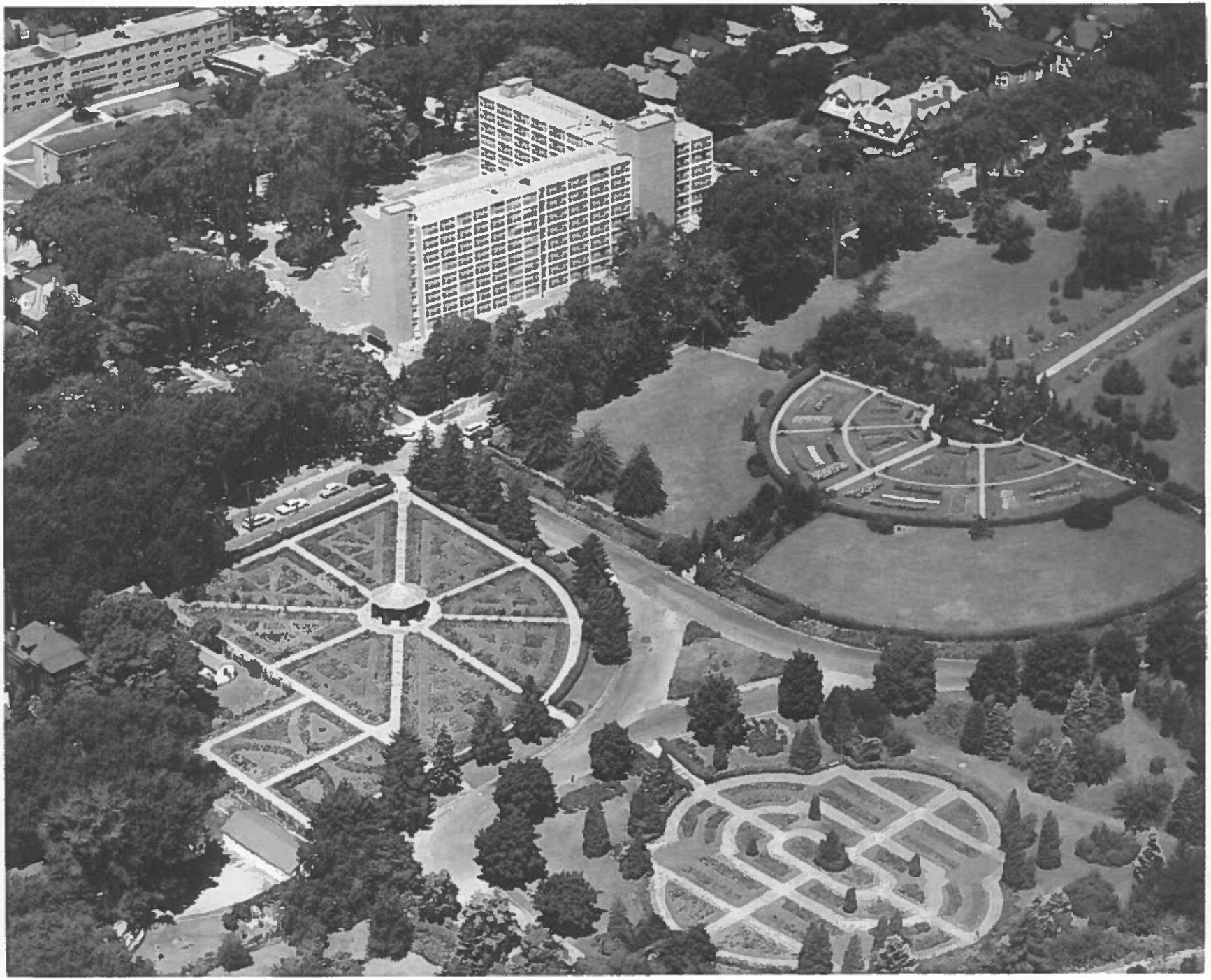


Exhibit C

Animated Wind Study dated September 17, 2024

Exhibit D

Ettinger Report

Terry L. Ettinger Horticulture Consulting Services

Landscape Design and Management • Communication • Education • Research

September 20, 2024

Mr. Mark Hance, PE
Campus Planning, Design, and Construction
1320 Jamesville Avenue Syracuse, NY 13244

RE: EM Mills Rose Garden Shadow/Shade and Wind Impact Report

Mark:

As requested, please find below my professional opinion regarding the potential impact of shadow/shade and wind currents associated with the proposed Ostrom Avenue dormitory on the growth of the roses in the EM Mills Rose Garden. As I explain below, the impact of both shadow/shade and wind currents will be minimal to non-existent.

I first visited the Dr. E.M. Mills Rose Garden in Thornden Park in June of 1987 when I introduced myself to members of the Syracuse Rose Society as the new Cornell Cooperative Extension-Onondaga County horticulture extension agent. I was impressed by the vigor and overall appearance of the garden considering it was maintained almost completely by Syracuse Rose Society volunteers with limited assistance from City of Syracuse Department of Parks and Recreation staff. I have visited the garden frequently ever since as I have lived in the Thornden Park neighborhood since 1992.

I also have decades of experience growing roses – from my time as a work-study student at the Southern Illinois University Horticulture Research Station in southern Illinois, to my first home in Apple Valley, Minnesota, and since 1992 in the shaded backyard of my home on Concord Place here in Syracuse – four blocks from the Rose Garden.

Considering the above, I confidently offer my professional opinion that the afternoon/early evening shadow/shade cast by the proposed dormitory along Ostrom Avenue between University Place and Shaw Hall as per the shadow/shade study conducted by the project architect, will have minimal to no impact on the vigor of the roses growing in the western half of the garden and no impact on the roses growing in the eastern half of the garden. Likewise, based on my review of the CFD Wind Study submitted by the project architect, air movement throughout the garden will not be impacted.

In support of this opinion, I offer the following observations and recommendations.

It is apparent from the shade/shadow studies conducted by the project architect, that the westernmost section of the Rose Garden will continue to receive at least eight hours of direct sunlight every day throughout the growing season (April through November) once the new dormitory is built. In combination with "open sky" sunlight, and early morning sunlight reflected from the new dormitory structure there will be sufficient "Photosynthetically Active Radiation" (PAR) available for satisfactory rose growth and flowering. I have confirmed the shade/shadow study conclusions by visiting the Rose Garden several times over the past month. During these visits I have also observed many roses (the shrub rose *Rosa* 'Lady Elsie May'™, for example) at the southwest corner of the garden growing and flowering under the dense, dry shade of several Norway maple trees, further supporting my opinion.

119 Concord Place • Syracuse, New York 13210-2649 • Phone/Facsimile (315) 471-5854
www.tlehcs.com • terry@tlehcs.com

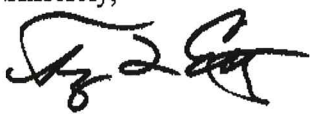
As a side note, I have reviewed several historical aerial images of the Rose Garden. Two of the images clearly show mature street trees (I estimate their height at approximately forty feet) within several feet of Ostrom Avenue. These trees would have cast significant shade for many years on the western portion of the garden with no apparent consequence. As a comparison, my understanding is that the northernmost section of the new dormitory will be approximately sixty-one feet tall but set back significantly from Ostrom Avenue resulting in shadow/shade patterns like those cast by the street trees many years ago.

Along with adequate sunlight, the vigorous growth of roses requires good air circulation to keep leaf surfaces dry, thus limiting the opportunity for various leaf diseases such as Black spot from becoming severe on an annual basis. There has been some concern that the new dormitory will prevent prevailing westerly breezes from moving across the garden, resulting in pockets of stagnant air and therefore increased prevalence of disease in the garden. However, based on my familiarity with the location of the Rose Garden and my review of the Computational Fluid Dynamics (CFD) wind study performed by M/E Engineering for the project architect, I'm confident that there will continue to be sufficient air movement throughout the entire garden to limit disease establishment once the new dormitory has been built.

In summary, it is my professional opinion that there will be minimal to no impact on the Rose Garden due to the shadow/shade and air movement associated with construction of the new dormitory. Going further, I suggest there are several opportunities for the University to collaborate with the Syracuse Rose Society, as the caretaker of the Rose Garden, to address any unanticipated impacts of the new dormitory and even enhance the garden to ensure it remains a treasure to be enjoyed by residents and visitors far into the future.

Should you have any questions/concerns regarding this report, please contact me at your earliest convenience.

Sincerely,

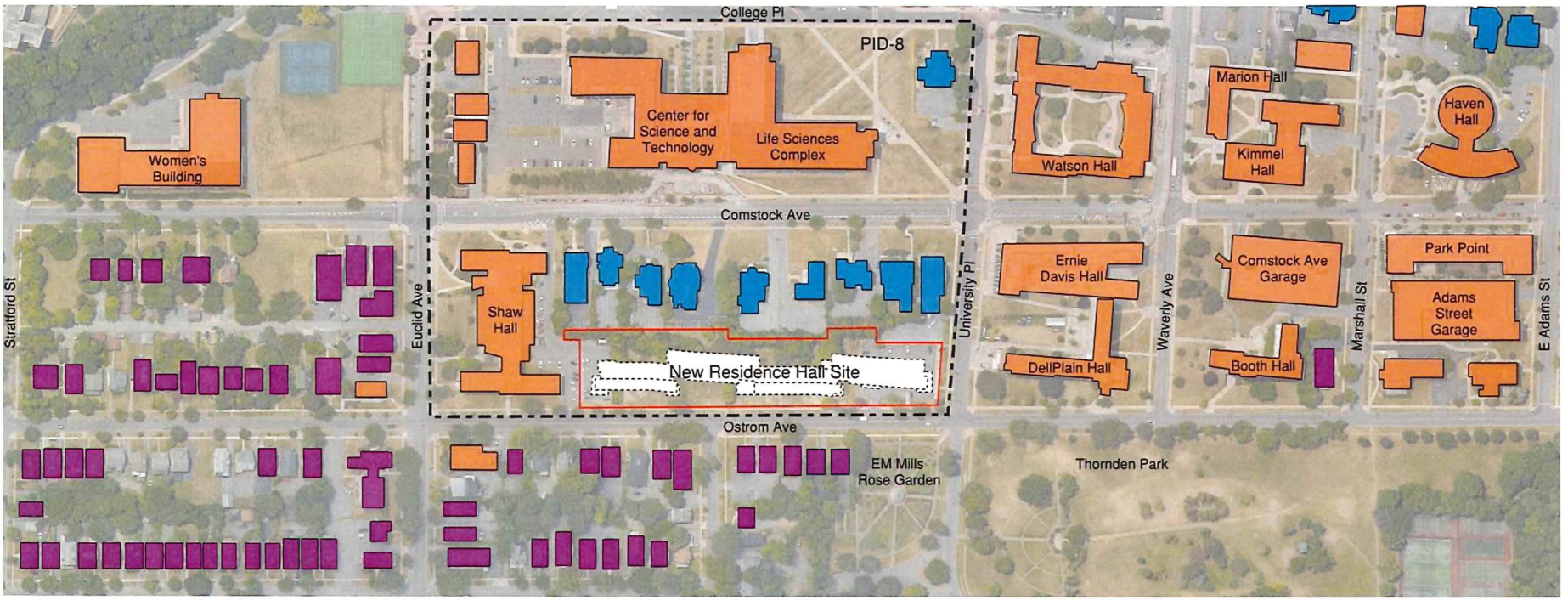


Terry L. Ettinger

Exhibit E

Neighborhood Character Graphic

Neighborhood Character



PROJECT LOCATION PLAN

Syracuse University New Residence Hall
Syracuse, NY

Exhibit F

Klepper, Hahn & Hyatt Analysis dated September 3, 2024

FINAL - 9/5/24

Klepper, Hahn & Hyatt
STRUCTURAL ENGINEERING · LANDSCAPE ARCHITECTURE · BUILDING ENVELOPE SYSTEMS

3 September 2024

Syracuse University Campus Planning, Design, and Construction
1320 Jamesville Ave.
Syracuse, NY 13244

Attn: Mr. Joseph Alfieri PE, PMP

Re: Syracuse University New Residence Hall - Stormwater Permitting Requirements
KHH Project No: 123003ORH

Dear Mr. Alfieri:

This letter summarizes stormwater permitting compliance for the proposed New Residence Hall at the west side of the 700 block of Ostrom Avenue and pertaining comments received to date.

Because the project involves disturbance of more than 10,000 square feet of land, a Stormwater Pollution Prevention Plan (SWPPP) in accordance with City of Syracuse Chapter 17 and State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) will be prepared.

It is anticipated that the City will require the installation of stormwater detention facilities to attenuate runoff from the 10-year, 30-minute rainstorm to 0.5 cubic feet per second (cfs) or less per acre. This will be accomplished through the installation of two underground pipe detention systems, one to the east of the building, one to the west of the building. The stormwater management systems will individually outlet at the required controlled rates and enter the municipal combined sewer systems at University Place, and Ostrom Avenue, respectively. These detention facilities will collect stormwater from on-site rooftops and pavements, then slowly discharge it to the combined sewer system.

The project site is tributary to the Metropolitan Syracuse Wastewater Treatment Plant and Onondaga Lake, therefore on-site stormwater quality treatment is not mandatory; however, landscaping elements will be designed to reduce pollutant loading on the public sewer infrastructure and preserve the site's natural infiltration capacity to the extent practical. Adjacent properties and the municipal combined sewer system will be protected from sediment pollution during construction in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. Surface runoff will be redirected around open excavations, and no blasting is anticipated. Any needed temporary removal of stormwater from excavated areas will be handled as part of the overall site stormwater management measures.

It is recommended that a preliminary review of the project's SWPPP be requested of the City's Engineering Department prior to the formal submission of building permits to expedite the overall process. Stormwater Maintenance and Access Agreements with the City must be developed and executed prior to the issuance of demolition or building permits. Once-weekly SWPPP inspections by a GP-0-20-001 qualified inspector will be required during construction.

Sincerely,

KLEPPER, HAHN & HYATT

James A. Palumbo, RLA, ASLA
Principal

p:\123003\123003orh\docs\khh l sucpdc 2024-09-03 new res hall stormwater requirements.docx

5710 Commons Park Drive
East Syracuse, New York 13057-9492
Voice: 315.446.9201
Fax: 315.446.9205
mailbox@khhpc.com
www.khhpc.com

Exhibit G

Passero Engineering Architecture Analysis dated September 9, 2024

PASSERO
engineering architecture

242 West Main Street, Suite 100
Rochester, NY 14614
585.325.1000 | passero.com

September 9, 2024

Attn: **Mr. Mark Hance, P.E. // Associate Director**
Campus Planning, Design, and Construction
Syracuse University
1320 Jamesville Avenue
Syracuse, NY 13244

Re: **Ostrom Residence Hall Development, Syracuse University, Syracuse, NY**
Traffic Impact Assessment
Passero Project No: 2024866.0001

Dear Mr. Hance:

The purpose of this technical letter is to evaluate the potential traffic impacts related to the proposed Ostrom Residence Hall development to be located along Ostrom Avenue in the City of Syracuse, NY. As discussed below, the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Syracuse University is undertaking a project that will create a new ±570 bed residence hall for second-year students located along Ostrom Avenue between University Place and Shaw Hall. There are approximately ±1,500 second-year students currently living on South Campus and the goal is to begin moving many of these second-year students onto the main campus. The project will provide a new main campus housing option for second-year students that currently reside on South Campus. There is no plan to increase the overall attendance at the University.

The main building entrance of the new residence hall will be located on University Place opposite DellPlain Hall. Another pedestrian entrance to the building will be located at the south end of the building facing Shaw Hall. Vehicular access to the building will utilize the existing driveways to the Shaw Hall parking lot and a new driveway on University Place. The vehicular access will be a designated fire lane and will only be used for move in/out and emergency access. The existing Ostrom Parking Lot will be removed and a portion of the Shaw Hall Parking Lot will be modified. This parking will be absorbed in other locations on the Syracuse University Campus. The Overall Site Plan is included at the end of this letter.

The new residence hall will not provide parking for the student residents therefore it is anticipated that second-year students living in the new residence hall will obtain parking permits for either the Sky Lot on South Campus or possibly other Syracuse University owned parking facilities. There is no on-street parking along either Ostrom Ave or University Place in vicinity of the site; both roadways are posted "No Stopping Any Time" along the site frontage. The roadway entering Thornden Park from Ostrom Ave is posted for "No Overnight Parking" and "One Hour Parking 9AM – 6PM" which is not conducive to student resident parking.

Given that the new residence hall will not provide parking for the student residents, very little if any traffic will be generated during peak hours. The new residence hall is within easy walking distance of both the shuttle bus stops and the academic buildings. In addition, the University anticipates adding to/or otherwise modifying shuttle stops once the project is open. Students will walk or use shuttle buses to access their vehicles when needed. Although student vehicular activity is not anticipated to increase significantly during

the peak commuting intervals, the influx of ±570 students living in a new residence hall on Ostrom Avenue will result in an increase in pedestrian activity. New pedestrian and/or bicycle trips between the residence hall and the various buildings on the main campus will create additional pedestrian and bicycle flow back and forth throughout the day.

Given that the proposed Ostrom Residence Hall development will generate a very small amount of vehicular traffic and the existing pedestrian facilities in place can accommodate the projected demand, no significant traffic impacts are anticipated as a result of the proposed project. The following sets forth the conclusions based upon the results of the analyses:

1. Given that the new residence hall will not provide parking for the student residents, very little if any vehicular traffic will be generated during the peak hours studied.

2. Traffic volumes entering and exiting the Ostrom Lot and Shaw Hall Lot are relatively low and will be redistributed to other area parking facilities.

3. Parking lot counts for campus lots indicate that there is ample University owned campus parking available after 5PM to accommodate all of the current vehicles currently using the Ostrom Lot after 5PM.

4. Second-year students that reside in the new residence hall are currently living in other housing options on either Main campus or South campus and will continue to park in the various parking options that are available to them.

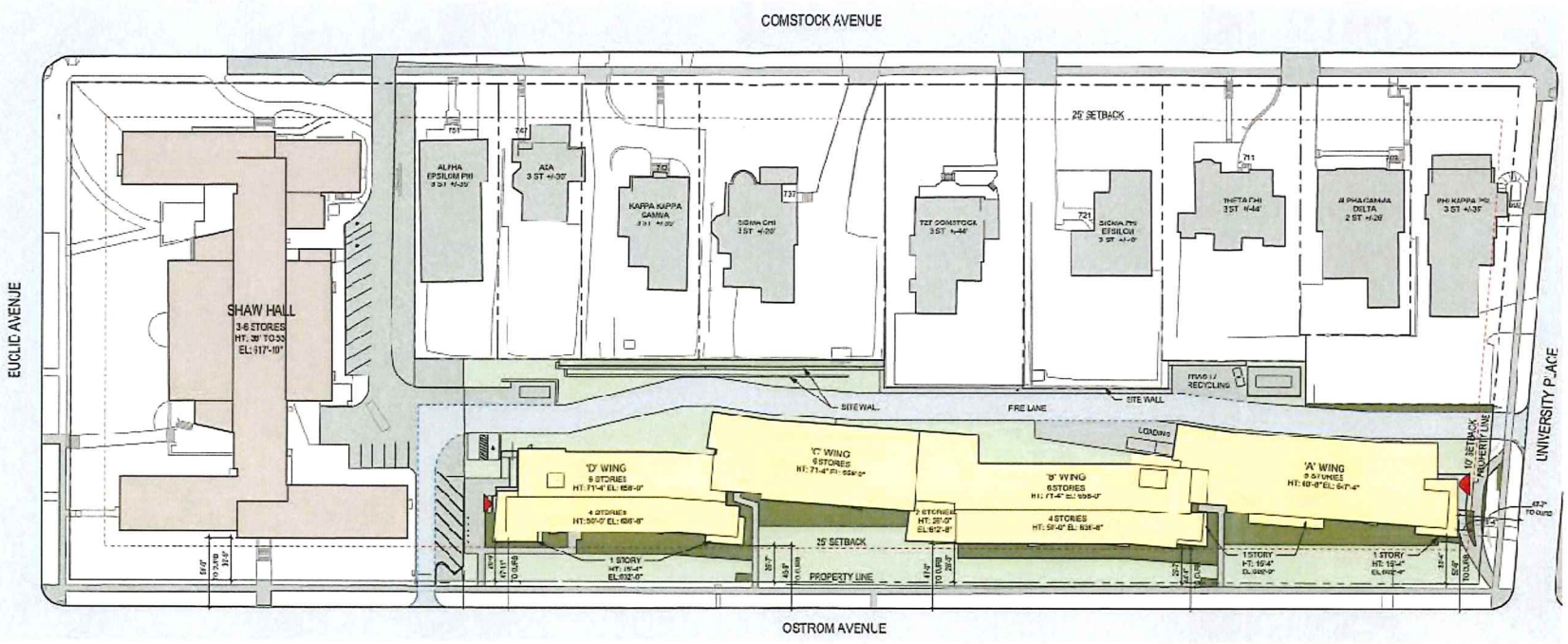
5. The analysis has considered student morning and afternoon peak intervals that overlap with surrounding commuter traffic. These are peak intervals when students are going to or coming from class. As such, very little if any new student vehicles will be added to the surrounding system, during the critical peaks.

Please feel free to contact me directly with any questions.

Sincerely,
Passero Associates

Amy C. Dake

Amy C. Dake, P.E., PTOE
Senior Managing Traffic Engineer
adake@passero.com • 585-314-5078



PROJECT COMPLIANCE WITH TABLE 2.15 DEVELOPMENT STANDARDS

STANDARD	REQUIRED	PROVIDED - COMPLIES WITH ALL APPLICABLE DIMENSIONAL REGULATIONS
FRONT SETBACK	25 FOOT SETBACK FROM OSTROM AVENUE, 10 FOOT SETBACK FROM UNIVERSITY PLACE	PROJECT CONFORMS TO REQUIRED SETBACKS
SIDE SETBACK	NONE	≥ 10 FEET
REAR SETBACK	NONE	≥ 24 FEET
MAXIMUM BUILDING HEIGHT	NONE	≤ 71 FEET 4 IN
MINIMUM LOT WIDTH	NONE	129' FEET 7 IN
MINIMUM LOT AREA	N/A - ALREADY ZONING PID	~2.55 ACRES
MAXIMUM IMPERVIOUS COVERAGE	90%	~61%
OFF STREET LOADING	NONE	-
LANDSCAPING, BUFFERING, AND SCREENING	NONE	PER UNIVERSITY TYPICAL STANDARDS
EXTERIOR LIGHTING	NO OFF-SITE SPILLOVER GLARE	WILL MEET REQUIRED STANDARD
OFF STREET PARKING	57 SPACES (1 SPACE / 10 BEDROOMS EXCEPT AS OTHERWISE APPROVED BY CPC AS PART OF PROJECT PLAN REVIEW)	2-10 SPACES ON SITE. 50-47 SPACES - SUFFICIENT PARKING EXISTS OFF-SITE TO SATISFY ZONING REQUIREMENT.
SIGNS	TBD	SUBJECT TO LATER ZONING REVIEW

BUILDING HEIGHTS ARE FROM AVERAGE GRADE TO TOP OF PARAPET.

ELEVATIONS ARE TO TOP OF PARAPET, EXCLUDING PENTHOUSES AND ELEVATOR OVERHEADS

KEY:
PROPERTY LINE
SETBACK LINE TO PROPERTY LINE

1"=80' PRINTED HALF SCALE ON 11X17

		Seal	Bohlin Cywinski Jackson Architecture Planning Interior Design Wilkes-Barre Pittsburgh Philadelphia Seattle San Francisco 123 South Broad Street Suite 2300 Philadelphia, PA 19109 v: 215.790.5100 ©2023 Bohlin Cywinski Jackson	No.	Description	Date	SYRACUSE UNIVERSITY NEW RESIDENCE HALL 700 OSTROM AVENUE	ZONING - SITE PLAN DESIGN DEVELOPMENT	DATE: AUGUST 22, 2024 BCJ PROJECT NUMBER: 23311	SCALE: 1" = 40'-0" SHEET NUMBER: Z-05

Klepper, Hahn & Hyatt
STRUCTURAL ENGINEERING · LANDSCAPE ARCHITECTURE · BUILDING ENVELOPE SYSTEMS

26 September 2024

Syracuse University Campus Planning, Design, and Construction
1320 Jamesville Ave.
Syracuse, NY 13244

Attn: Mr. Joseph Alfieri PE, PMP

Re: Syracuse University New Residence Hall - Stormwater Permitting Requirements
KHH Project No: 123003ORH

Dear Mr. Alfieri:

This letter is being provided to supplement our previous letter dated 3 September 2024. We have been advised that additional questions have been asked regarding design of the stormwater management system for the Ostrom Avenue University Housing Project. As previously noted, the design will comply with applicable requirements of the City of Syracuse Building Code Chapter 17 relating to requirements for site preparation work, and of the NYS Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001).

The proposed design concept will avoid sediment erosion of excavated areas and stormwater surface runoff off-site. Erosion and sediment control features would include the following:

- Sediment Basin/Trap
- Compost Filter Socks/Straw Wattles
- Stabilized Construction Access
- Storm Drain Inlet Protection

Implementation of these practices would remove sediment contamination from stormwater prior to discharge to the combined sewer. The features will be sized and located to accommodate projected volumes in accordance with the NYSDEC's Standards and Specifications for Erosion and Sediment Control.

As set forth in our earlier letter, in the event stormwater builds up in an excavated area, such stormwater will be treated to remove sediment prior to discharge to the combined sewer.

Additionally, we would also point out that as noted in our earlier letter and we advised in the City department review comments, the actual Stormwater Pollution Prevention Plan (SWPPP) must be reviewed and approved by the City Engineering Department. To approve the SWPPP, the City Engineering Department must find that the quality and quantity of stormwater meets the applicable City and NYS standards to protect water quality. It is generally accepted that approval of a SWPPP means that there are no significant environmental concerns regarding stormwater in connection with a project.

Issuance of Syracuse Building Code Chapter 17 (Article 17.1) is intended to prevent damage to the environment from erosion, sedimentation, and improper drainage.

University consultants have already engaged with the City of Syracuse Engineering Department regarding the Onondaga County Department of Water Environment Protection (OCDWEP) regarding steps needed to meet the required 1:1 off-set ratio. See attached letter dated August 29, 2024, and subsequent email communications.

5710 Commons Park Drive
East Syracuse, New York 13057-9492
Voice: 315.446.9201
Fax: 315.446.9205
mailbox@khhpc.com
www.khhpc.com

As set forth in the letter, the University expects that the City will likely require installation of a “cured-in-place pipe” as determined by City Engineering.

Sincerely,

KLEPPER, HAHN & HYATT

James A. Palumbo, RLA, ASLA
Principal

Jim Palumbo

From: Kivlehan, John <jkivlehan@syr.gov>
Sent: Thursday, September 26, 2024 9:31 AM
To: Derek Guadagnolo
Cc: Jim Palumbo; 'Tina Faust'; 'Ryan Simpson'; 'Tom Breslin'; 'Mark S Hance'; 'Jason Plumpton'; 'Scott Kolbeck'
Subject: RE: [EXTERNAL] RE: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

Derek

Still waiting, asked them for an update yesterday.

Thank you.

John

From: Derek Guadagnolo <derek@pgengineers.com>
Sent: Thursday, September 26, 2024 9:01 AM
To: Kivlehan, John <jkivlehan@syr.gov>
Cc: 'Jim Palumbo, RLA' <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; 'Scott Kolbeck' <scott@pgengineers.com>
Subject: [EXTERNAL] RE: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

John,
Any update from DPW yet?
Derek

--
Derek J. Guadagnolo, P.E.
Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Ave
Syracuse, NY 13210
Office: 315-476-8311 ext. 204
Cell: 315-256-4684

From: Kivlehan, John <jkivlehan@syr.gov>
Sent: Thursday, September 19, 2024 10:47 AM
To: Derek Guadagnolo <derek@pgengineers.com>
Cc: Jim Palumbo, RLA <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; Scott Kolbeck <scott@pgengineers.com>
Subject: RE: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

Derek

Just waiting for DPW to confirm the location of the offset to respond in detail.

Thank you.

John

From: Derek Guadagnolo <derek@pgengineers.com>
Sent: Monday, September 16, 2024 10:17 AM
To: Kivlehan, John <jkivlehan@syr.gov>
Cc: Jim Palumbo, RLA <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; Scott Kolbeck <scott@pgengineers.com>
Subject: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

John,
Can you provide a status update on the sewer offset review?
Derek

--
Derek J. Guadagnolo, P.E.
Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Ave
Syracuse, NY 13210
Office: 315-476-8311 ext. 204
Cell: 315-256-4684

From: Derek Guadagnolo <derek@pgengineers.com>
Sent: Thursday, August 29, 2024 10:50 AM
To: John Kivlehan <jkivlehan@syr.gov>
Cc: Jim Palumbo, RLA <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; Scott Kolbeck <scott@pgengineers.com>
Subject: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

John,
Attached is a letter with attachments summarizing the sanitary sewer load calculations for the proposed 700 Ostrom Ave Residence Hall. Per our conversation, it is our understanding that City Engineering will review our calculations and analysis to confirm sewer volumes and City Engineering will proposed 1:1 offset mitigation approaches for this project.

Please feel free to contact me with any questions.
Thanks,
Derek

--
Derek J. Guadagnolo, P.E.
Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Ave
Syracuse, NY 13210
Office: 315-476-8311 ext. 204
Cell: 315-256-4684

Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Avenue
Syracuse, NY 13210-4144

August 29, 2024

Mr. John Kivlehan, Division Engineer
City of Syracuse Engineering Department
201 East Washington Street
Syracuse, NY 13202

Re: SU 700 Ostrom Avenue Residence Hall
SU Project Number 21106

Subject: Proposed 1:1 Sanitary Sewer Offset Mitigation Plan

Dear John,

Peterson Guadagnolo Consulting Engineers PC, on behalf of Syracuse University, is submitting the proposed sanitary sewer offset mitigation plan for your department review for the 700 Ostrom Avenue Residence Hall Project. Per the Onondaga County Department of Water Environment Protection (OCDWEP) sewer offset program, the goal is to reduce the impact of wet weather events on the combined sewer system tributary to the various County treatment facilities.

The sanitary sewer offset requirement for this project is located within the Metropolitan Syracuse Wastewater Treatment Plant service area which requires a 1:1 offset ratio.

The sanitary sewer discharge from the 700 Ostrom Avenue Residence Hall is planned to connect to the existing 12″ City of Syracuse combined sewer main located in Ostrom Avenue. See attached progress Drawing G1.01 which depicts the proposed residence hall and sewer connections to Ostrom Avenue.

The table below summarizes the proposed additional residence hall sanitary sewer load. The attached table summarizes the calculations for the proposed sanitary sewer load in more detail.

Sanitary Sewer Load Description	GPD
Proposed 700 Ostrom Avenue Residence Hall	**15,000**

The proposed sanitary sewer discharge load was determined by analyzing the average daily water usage at the three adjacent Residence Hall which are DellPlain Hall, Booth Hall, and Watson Hall. Based upon the Syracuse Water Department meter data for the three residence halls, the calculated 3-year average water usage per student bed is 18.9 GPD/bed. See attached table with the supporting calculations from the water meter data from the three residence halls.

Telephone: (315) 476-8311
E-mail: email@pgengineers.com

It is our understanding that the most likely sewer offset mitigation plan for this project is to install a Cured-In-Place Pipe (CIPP) at a location determined by City Engineering. Based upon our conversation, City Engineering will be reviewing the mitigation approach internally and will provide feedback to our office and the University.

We would be happy to review the proposed sanitary sewer offset in more detail, if desired.

Very Truly Yours,

PETERSON GUADAGNOLO CONSULTING ENGINEERS PC

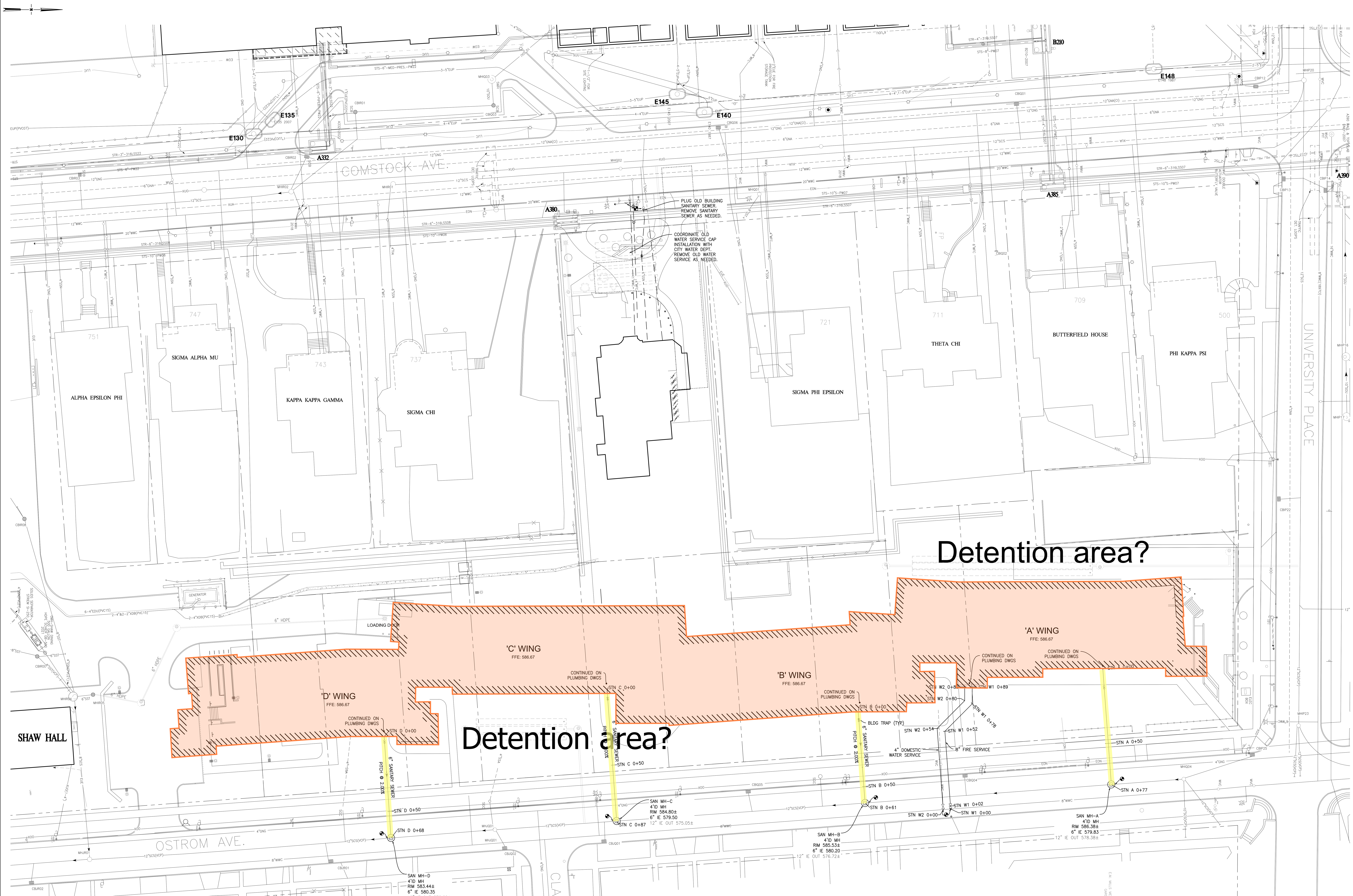
Derek J. Guadagnolo, P.E.

DJG/lkm

Encl. Progress Drawing G1.01
Water Meter Data Analysis for DellPlain, Booth, & Watson Halls
700 Ostrom Avenue Residence Hall Sanitary Sewer Load Calculations

cc: Jim Palumbo - KHH
Tina Faust, Ryan Simpson, Tom Breslin - BCJ
Mark Hance, Jason Plumpton – SU CPDC
Scott Kolbeck - PGPC

165.012/lkm



SANITARY SEWER AND WATER SITE UTILITY PLAN

1 / G1.01 SCALE: 1" = 20'–0"

1" = 20'–0"

Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Avenue
Syracuse, New York 13210-4144
Telephone: (315) 476-8311
email: email@pgengineers.com

Bohlin Cywinski Jackson
Architecture Planning Interior Design
Wilkes-Barre Pittsburgh Philadelphia Seattle San Francisco
123 South Broad Street
Suite 2900
Philadelphia, PA 19109
v: 215.790.5900

No.	Description	Date

SYRACUSE UNIVERSITY

NEW RESIDENCE HALL

727 COMSTOCK AVENUE

SANITARY SEWER AND WATER SITE UTILITY PLAN

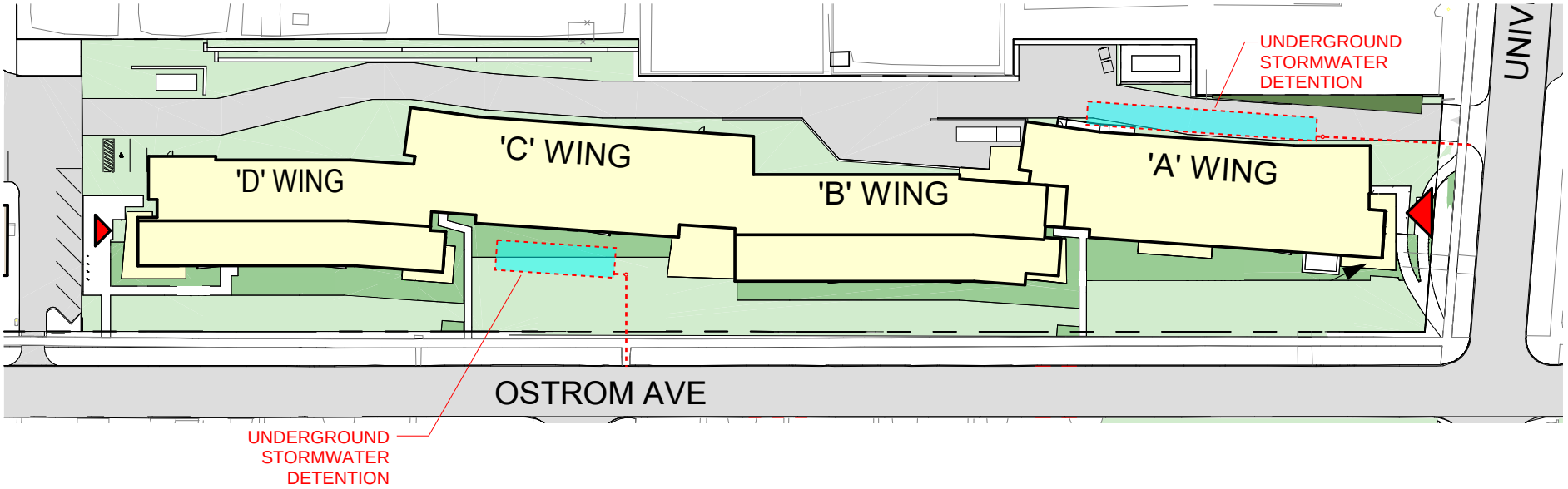
PROGRESS PRINT
8-29-2024

DATE
23311
BCJ PROJECT NUMBER

SCALE
AS NOTED

G1.01
SHEET NUMBER

Site Plan | Stormwater Detention Area



From:	Kivlehan, John
To:	DereK Guadagnolo
Cc:	Jim Palumbo, RLA; Tina Faust; "Ryan Simpson"; "Tom Breslin"; Mark S Hance; Jason Plumpton; Scott Kolbeck (PGPC)
Subject:	RE: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset
Date:	Thursday, September 19, 2024 10:47:24 AM

Derek

Just waiting for DPW to confirm the location of the offset to respond in detail.

Thank you.

John

From: Derek Guadagnolo <derek@pgengineers.com>
Sent: Monday, September 16, 2024 10:17 AM
To: Kivlehan, John <jkivlehan@syr.gov>
Cc: Jim Palumbo, RLA <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; Scott Kolbeck <scott@pgengineers.com>
Subject: [EXTERNAL] RE: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

John,
Can you provide a status update on the sewer offset review?
Derek

--
Derek J. Guadagnolo, P.E.
Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Ave
Syracuse, NY 13210
Office: 315-476-8311 ext. 204
Cell: 315-256-4684

From: Derek Guadagnolo <derek@pgengineers.com>
Sent: Thursday, August 29, 2024 10:50 AM
To: John Kivlehan <jkivlehan@syr.gov>
Cc: Jim Palumbo, RLA <jp@khhpc.com>; 'Tina Faust' <tfaust@bcj.com>; 'Ryan Simpson' <rsimpson@bcj.com>; 'Tom Breslin' <tbreslin@bcj.com>; 'Mark S Hance' <mshance@syr.edu>; 'Jason Plumpton' <jplumpto@syr.edu>; Scott Kolbeck <scott@pgengineers.com>
Subject: Syracuse University 700 Ostrom Ave Residence Hall - Proposed Sanitary Sewer Offset

John,
Attached is a letter with attachments summarizing the sanitary sewer load calculations for the proposed 700 Ostrom Ave Residence Hall. Per our conversation, it is our understanding that City Engineering will review our calculations and analysis to confirm sewer volumes and City Engineering

will proposed 1:1 offset mitigation approaches for this project.

Please feel free to contact me with any questions.
Thanks,
Derek

--
Derek J. Guadagnolo, P.E.
Peterson Guadagnolo Consulting Engineers PC
476 East Brighton Ave
Syracuse, NY 13210
Office: 315-476-8311 ext. 204
Cell: 315-256-4684

PASSERO
engineering architecture

242 West Main Street, Suite 100
Rochester, NY 14614
585.325.1000 | passero.com

September 26, 2024

Attn: **Mr. Mark Hance, P.E. // Associate Director**
Campus Planning, Design, and Construction
Syracuse University
1320 Jamesville Avenue
Syracuse, NY 13244

Re: **Ostrom Residence Hall Development, Syracuse University, Syracuse, NY**
Traffic Impact Assessment
Passero Project No: 2024866.0001

Dear Mr. Hance:

The purpose of this technical letter is to present the supporting documentation and analysis supporting my letter dated September 9, 2024 evaluating the potential traffic impacts related to the proposed Ostrom Residence Hall development to be located along Ostrom Avenue in the City of Syracuse, NY. Within this report, the operating characteristics of the proposed access point and impacts to the adjacent roadway network are evaluated and measures are identified (if needed) to address any identified operational concerns. To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project. All supporting analysis materials are included in a separate attachment.

The following conclusions are the result of the analysis contained in this letter.

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Ostrom Residence Hall development located along the west side of Ostrom Avenue, between University Place and Shaw Hall, on the Syracuse University Campus in the City of Syracuse, NY. **The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections with no mitigation.** The following sets forth the conclusions based upon the results of the analyses:

1. Given that the new residence hall will not provide parking for the student residents, very little if any vehicular traffic will be generated during the peak hours studied.

2. Traffic volumes entering and exiting the Ostrom Lot and Shaw Hall Lot are relatively low and will be redistributed to other area parking facilities. Thus, no changes to study area traffic volumes were made as a result of removing the Ostrom Lot.

3. Parking lot counts for various nearby campus lots indicate that there is ample University owned parking available after 5PM to accommodate all of the current vehicles using the Ostrom Lot after 5PM.

4. Second-year students that reside in the new residence hall are currently living in other housing options on either main campus or south campus and will continue to park in the various parking options that are available to them.

5. The analysis contained in this report focuses on morning and afternoon peak intervals that overlap with surrounding commuter traffic. These are peak intervals when students are going to or coming from class. As such, very little if any new student vehicles will be added to the surrounding system, during the critical peaks.

6. Data related to food delivery services on college campuses is limited, however, recent studies indicate that students use food delivery apps approximately two times a week, the busiest time period for food deliveries occurs between 2-4 AM, and the busiest day of the week for food deliveries is Sunday. Therefore, food deliveries are expected to occur largely during off-peak hours and will not have a significant impact on peak hour vehicular or pedestrian traffic. Key strategies for managing curb space around residence halls include the implementation of designated delivery zones, dynamic pricing for curb access, and time-restricted loading zones. The University is currently considering alternatives to manage curb access.

7. It is estimated that approximately 380(494)[273] pedestrian trips will be added to the surrounding roadway network during the AM(PM)[SAT] peak time hours. These pedestrians will travel and from campus via University Place and/or adjacent to Shaw Hall and will not travel to/from the east of Ostrom Ave or towards Thornden Park.

8. All of the study intersections operate at LOS "D" or better on all approaches under existing, background, and full build conditions. LOS "D" or better is generally considered an acceptable level of service for vehicles in urban environments. No significant increases in delay or changes in levels of service are anticipated as a result of the proposed residence hall development.

9. The proposed project will not add any new vehicular traffic related to special events. Additionally, the proposed project will result in fewer students using the shuttle bus system between South Campus and the main campus as more students will reside on the main campus and will not need to use the shuttle system to attend events. Special events will generate new pedestrian trips between the proposed residence hall and the main campus. No improvements are warranted or recommended during special events as a result of the proposed project.

10. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

1. PROJECT LOCATION AND STUDY AREA

The project site is located along the west side of Ostrom Avenue, between University Place and Shaw Hall in the City of Syracuse, NY. The site is bounded by the University campus, fraternity housing, and Comstock Ave to the west, Ostrom Ave to the east, University Place to the north, and Shaw Hall to the south. The project site is currently mostly undeveloped with the existing Ostrom Parking Lot at the north end of the site and a portion of the existing Shaw Parking Lot at the south end of the site. The project site is currently occupied by the Ostrom Parking Lot, several vacant lots (originally single-family homes) along Ostrom Avenue, and a portion of the Shaw Parking Lot. Land uses within the vicinity of the project site are generally educational and residential rental.

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following five (5) intersections:

1. Ostrom Ave/University Pl/Thornden Park
2. Ostrom Ave/Ostrom Parking Lot Driveway
3. Ostrom Ave/Euclid Ave
4. Comstock Ave/University Pl
5. Comstock Ave/Euclid Ave

The project site location and study area are illustrated in **Figure 1** (all figures are included at the end of this letter).

2. EXISTING ROADWAY CONDITIONS

The information outlined in **Table 1** provides a description of the existing roadway network within the study area. **Figure 2** illustrates the lane geometry and traffic controls at each of the study intersections and the Annual ADT (AADT) volumes on the study roadways. The AADTs, in vehicles per day (vpd), reflect the most recently collected data obtained from the NYSDOT.

Functional classification of roadways is determined by the NYSDOT and the Federal Highway Administration (FHWA). Both the NYSDOT and FHWA groups roads, streets, and highways into different classes based on how they are used. This is called functional classification. Roads and streets do not work alone to move traffic. Instead, they form a network. Functional classification defines how each road or street fits into this network, how it provides access to nearby properties, and whether it is in an urban or rural area.

Table 1: *Existing Highway System*

ROADWAY	CLASS[1]	AGENCY[2]	SPEED LIMIT	TYPICAL CROSS SECTION[3]	AADT
Comstock Ave	16	City of Syracuse	30 mph	2-lane undivided	6,972 NYSDOT (2018)
Euclid Ave	16	City of Syracuse	30 mph	2-lane undivided	6,078 NYSDOT (2018)
Ostrom Ave	19	City of Syracuse	30 mph	2-lane undivided	N/A
University Pl	19	City of Syracuse	30 mph	2-lane undivided	N/A

Notes:
1. Functional Classification.
2. Roadway ownership.
3. Excludes turning lanes at intersections.

Urban Minor Arterial (Class 16)

An urban minor arterial interconnects and augments the higher-level arterials as well as serves trips of moderate length at a somewhat lower level of travel mobility than Principal Arterials. They distribute traffic to smaller geographic areas than those served by higher-level Arterials and provide more land access than Principal Arterials without penetrating identifiable neighborhoods. They also provide urban connections for Rural Collectors.

Urban Local (Class 19)
According to the FHWA, this class of roadway includes all facilities not in one of the higher systems (e.g., arterial, collector, etc.). It primarily permits direct access to abutting lands and connections to the higher order systems and is not intended for use in long distance travel. As public roads, they should be accessible for public use throughout the year. Generally, the streets carry little to no through-traffic flows.

3. EXISTING CONDITIONS ANALYSIS

Given the functional characteristics of the corridors, adjacent land uses, and the proposed land use for the project site, the peak hours selected for analysis are the weekday commuter AM, weekday commuter PM, and Saturday midday peak periods. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

Turning movement traffic counts were collected by Passero Associates at the study area intersections noted in Section 1 above. Data collection occurred during the weekday AM, weekday PM and Saturday midday time periods to document typical traffic conditions. The actual count dates for each intersection are summarized in **Table 2.**

Table 2: *Existing Traffic Volume Data Collection*

INTERSECTION	WEEKDAY AM PEAK	WEEKDAY PM PEAK	SAT MIDDAY PEAK
Comstock Ave/University Pl	Wednesday, March 6th, 2024	Wednesday, March 6th, 2024	Saturday, March 23rd, 2024
Ostrom Ave/University Pl/Thornden Park Dr	Friday, March 1st, 2024	Thursday, February 29th, 2024	Saturday, March 2nd, 2024
Ostrom Ave/Parking	Friday, March 1st, 2024	Thursday, February 29th, 2024	Saturday, March 2nd, 2024
Ostrom Ave/Euclid Ave	Friday, March 1st, 2024	Thursday, February 29th, 2024	Saturday, March 2nd, 2024
Comstock Ave/Euclid Ave	Friday, March 1st, 2024	Thursday, February 29th, 2024	Saturday, March 2nd, 2024

Traffic counts were conducted between 7:00-10:00 AM for the weekday AM peak period, 3:00-6:00 PM for the weekday PM peak period, and 11:00 AM-2:00 PM for the SAT peak period. The peak hour traffic periods generally occurred between 8:30-9:30 AM, 4:45-5:45 PM, and 12:30-1:30 PM, respectively. The existing peak hour traffic volumes are shown in **Figure 3A**.

All turning movement count data was collected on a typical weekday while Syracuse University classes and local schools were in session. No adverse weather conditions impacted the traffic counts. The traffic volumes were reviewed for seasonality and to confirm the accuracy and relative balance of the collective traffic counts. The actual differences in traffic volumes can be attributed to temporal variations in traffic volumes as well as activity related to driveways located in the segments between the study intersections.

Pedestrian traffic volumes using the various crosswalks were documented at each of the study intersections during the peak hours. **Figures 3B through 3D** show the peak hour pedestrian crossing volumes.

The study intersections were observed during peak intervals to assess current traffic operations. Signal timing and phasing information was requested from the City of Syracuse to determine peak hour phasing plans and phase durations during each interval at the study intersections. This information will be used to support and/or calibrate capacity analysis models described in detail later in this report. In the interim, signal timings were determined by field observations during the traffic count time periods.

4. EXISTING SECOND-YEAR RESIDENCE AND PARKING CONDITIONS

Second-year students that attend Syracuse University have the following residence options shown on the map to the right: Oron Lyons Hall (401 Euclid Ave.), Booth Hall, Watson Hall, Haven Hall, DellPlain Hall, Walnut Hall, Washington Arms, and Marion Kimmel are all located on the main campus; students may also choose to live in the independent residences on South Campus. Currently ±1,500 second-year students live on South Campus.

Approximately one third of second-year students living on South Campus currently park on South Campus. And less than 10% of second-year students living on the main campus are currently authorized to park in University-owned parking facilities.

The Ostrom Lot located at the northeast corner of the project site (southwest corner of the Ostrom Ave/University Place intersection) currently provides 60 parking spaces that are utilized by Syracuse University staff during the day. After 5 PM, students and staff with parking permits for other lots (such as South Campus and Sky Lot) may utilize this lot. Traffic volumes entering and exiting the Ostrom Lot were counted during each of the peak hours studied and are summarized in **Table 3** below.

Table 3: *Peak Hour Ostrom Lot Vehicular Trips*

PEAK TIME PERIOD	ENTER	EXIT	TOTAL
AM Peak Hour	12	4	16
PM Peak Hour	15	12	27
SAT Peak Hour	14	7	21

Additionally, there is 2-hour paid on-street parking along the east side of Comstock Avenue between University Place and 747 Comstock Ave (ΛXA House). Approximately 28 vehicles can currently park on the street in this area. On-street parking is prohibited along both Ostrom Ave and University Pl in vicinity of the site; both roadways are posted "No Stopping Any Time" along the site frontage as shown in the images below.

The roadway entering Thornden Park from Ostrom Ave is also posted for "No Overnight Parking" and "One Hour Parking 9AM – 6PM" which is not conducive to student resident parking.

5. BACKGROUND (NO BUILD) CONDITIONS

Background traffic volumes represent the traffic conditions during the proposed build year without development of the project. Construction of the proposed project is anticipated to reach full build-out within two years (2026). The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. No nearby projects were identified.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic decreased between 2010 and 2018 on all the roadway segments in the study area. To account for normal increases in background traffic growth, as well as any unforeseen developments in the study area, a growth rate of 0.5% per year was applied to the existing traffic volumes for the two-year study time period. **Figure 4A** illustrates the background traffic conditions during the peak hours studied. **Figures 4B through 4D** show the peak hour pedestrian crossing volumes under the background conditions, however, it is noted that there are no changes in background pedestrian volumes at the study intersections

6. PROJECT DESCRIPTION

Syracuse University is undertaking a project that will create a new ±570 bed residence hall for second-year students located along Ostrom Avenue between University Place and Shaw Hall. There are approximately ±1,500 second-year students currently living on South Campus and the goal is to begin moving many of these second-year students onto the main campus. The project will provide a new main campus housing option for second-year students that currently reside on South Campus. There is no plan to increase the overall attendance at the University.

The main building entrance of the new residence hall will be located on University Place opposite DellPlain Hall. Another pedestrian entrance to the building will be located at the south end of the building facing Shaw Hall. Vehicular access to the building will utilize the existing driveways to the Shaw Hall parking lot and a new driveway on University Place. The vehicular access will be a designated fire lane and will only be used for move in/out and emergency access. The existing Ostrom Parking Lot and a portion of the Shaw Hall Parking Lot will be modified. The parking will be absorbed in other locations on the Syracuse University Campus. The Overall Site Plan is included at the end of this report.

7. FUTURE SITE PARKING AND CURB MANAGEMENT

Future Site Parking

The new residence hall will not provide parking for the student residents therefore it is anticipated that second-year students living in the new residence hall needing parking will continue to obtain parking permits for either the Sky Lot or other Syracuse University owned parking facilities. As noted above, there is no on-street parking along either Ostrom Ave or University Pl in vicinity of the site; both roadways are posted "No Stopping Any Time" along the site frontage. Additionally, the roadway entering Thornden Park from Ostrom Ave is posted for "No Overnight Parking" and "One Hour Parking 9AM – 6PM" which is not conducive to student resident parking.

The proposed project will displace vehicles using the existing Ostrom Lot located at the southwest corner of the Ostrom Ave/University Place intersection as well as a few vehicles that currently use the Shaw Hall lot. Staff that currently parks in these lots during the day will be relocated to other campus parking facilities. Students and staff that want to park closer to main campus after 5 PM will be able to park in other nearby University owned parking facilities where there is ample parking available.

Curb Management

The rise of food delivery services such as Uber Eats, DoorDash, and Grubhub has significantly altered the landscape of curb management on college campuses, particularly around residence halls. As the demand for food delivery increases among students, universities face the challenge of managing curb space efficiently to ensure safety, reduce congestion, and maintain smooth traffic flow. Effective curb management is crucial for optimizing the use of limited space and addressing the unique logistical needs of a campus environment.

Key strategies for managing curb space around residence halls include the implementation of designated delivery zones, dynamic pricing for curb access, and time-restricted loading zones. Designated delivery zones can reduce congestion by providing a specific area for delivery vehicles to park temporarily while completing transactions. Dynamic pricing models for curb access can help manage demand by charging higher fees during peak hours, encouraging delivery services to stagger their operations. Time-restricted loading zones ensure that delivery vehicles do not occupy curb space for extended periods, allowing for a more equitable distribution of this limited resource.

Data related to food delivery services on college campuses is limited, however, recent studies indicate that students use food delivery apps approximately two times a week, the busiest time period for food deliveries occurs between 2-4 AM, and the busiest day of the week for food deliveries is Sunday.

8. VEHICULAR AND PEDESTRIAN TRIP GENERATION AND DISTRIBUTION

Vehicular Traffic Generation

Given that the new residence hall will not provide parking for the student residents, very little if any traffic will be generated during the peak hours studied. The new residence hall is within easy walking distance of both the shuttle bus stops and the academic buildings. Students will walk or use shuttle buses to access their vehicles when needed.

Changes to vehicular traffic in the study area will be very small for the following reasons:

1. Traffic volumes entering and exiting the Ostrom Lot are relatively low and will be redistributed to other area parking facilities. Thus, no changes to study area traffic volumes were made as a result of removing the Ostrom Lot.
2. Second-year students that reside in the new residence hall are currently living in other housing options on either main campus or south campus and will continue to park in the various University owned parking options that are available to them.
3. The analysis contained in this report focuses on morning and afternoon peak intervals that overlap with surrounding commuter traffic. These are peak intervals when students are going to or coming from class. Therefore, very little, if any, new student vehicular traffic will be added to the surrounding system during the critical peaks.
4. As noted above, food delivery vehicle traffic is expected to occur largely during off-peak hours and will not have a significant impact on peak hour vehicular or pedestrian traffic.

Figure 5A shows the vehicular traffic volumes at the study area intersections during the peak hours evaluated.

Pedestrian Trip Generation During Peak Vehicular Hours

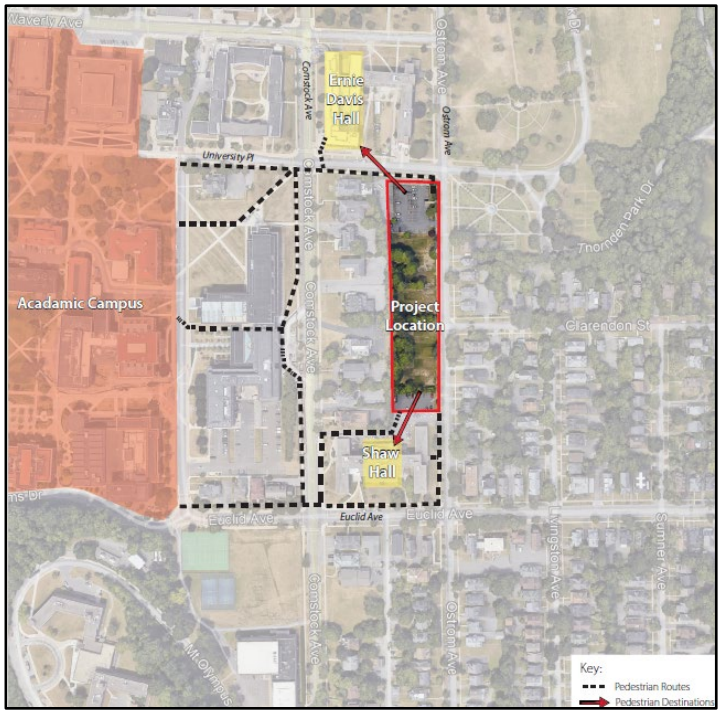
Although student vehicular activity is not anticipated to increase significantly during the peak commuting intervals, the influx of ±570 students living in a new residence hall on Ostrom Avenue will result in increased pedestrian activity traveling to and from the adjacent dining halls and the academic campus. New pedestrian trips traveling to/from the west between the residence hall and the various buildings on the main campus result in additional pedestrian and bicycle flow back and forth throughout the day. Flow to and from classes on campus will coincide with the morning and evening commuting peaks as shown in Figures 3B through 3D.

The volume of pedestrian traffic added to the study area is projected based on the following methodology:

- The volume of pedestrians entering the northeast corner of the Comstock/University intersection from the north and east who then crossed the intersection was determined based on count data and observations.
- The volume of pedestrians that exited the crosswalks in the northeast corner of the intersection and then proceeded to the north or east was determined based on count data and observations.
- It is estimated that 45% of the pedestrian crossings are walking to/from destinations other than the Ernie Davis and Dellplain Hall residences therefore 65% of the pedestrian traffic is attributed to other nearby residences (e.g. Booth Hall).
- Ernie Davis Hall and Dellplain Hall support 725 beds.
- The proposed residence hall will provide approximately ±570 beds, therefore it is assumed that the proposed residence hall will generate a proportional volume of pedestrian traffic as compared to the 725 beds in Ernie Davis Hall and Dellplain Hall.

Based on an analysis of the above information, it is estimated that approximately 380(494)[273] pedestrian trips traveling to/from the west towards the academic campus will be added to Comstock Ave via University Pl and/or the Shaw Hall lot during the AM(PM)[SAT] peak hours.

The cumulative effect of site-generated vehicular and/or pedestrian traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives and pedestrian entrances/exits of the buildings serving the site. The figure to the right shows the pedestrian pathways leading to and from the proposed building. Ernie Davis Hall and Shaw Hall provide the closest dining hall options for the new residence hall.



Figures 5B through 5D show the future pedestrian volumes at the study intersections at the time of full build out.

Pedestrian volumes along Ostrom Ave and to the east remain the same. No new students are being added to the neighborhood to the east. All new pedestrian traffic will be traveling to/from the dining halls to the north and south and to the main academic campus to the west.

9. TRAFFIC OPERATIONS AND ANALYSIS

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the *Highway Capacity Manual (HCM) 7th Edition* published by the TRB. Traffic analysis software, Synchro 12, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a level of service based on the HCM as an indicator of how well intersections operate.

Six levels of service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the conditions with little to no delay, and LOS "F" conditions with very long delays. LOS "C" or better is desirable, but LOS "D" for signalized locations and LOS "E" for unsignalized locations are generally thresholds of acceptable operation during peak periods so long as the volume to capacity ratio (v/c) is below 1.0. **Table 4** depicts level of service criteria for both signalized and unsignalized intersections.

Table 4: *Level of Service Criteria*

LEVEL OF SERVICE	SIGNALIZED CONTROL DELAY PER VEHICLE (seconds)	STOP CONTROL DELAY PER VEHICLE (seconds)
A	< 10	< 10
B	10 – 20	10 – 15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	> 80	> 50

LOS for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15-minute analysis period. LOS for unsignalized intersections, however, are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals.

The v/c ratio, also referred to as degree of saturation, represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur.

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. Future traffic conditions generated by the project (i.e. additional pedestrian traffic) are analyzed to assess the vehicular operation of the study area intersections. **Table 5** describes the capacity results for existing, background, and full development conditions. The discussion following the table summarizes capacity conditions.

Table 5: *Capacity Analysis Results*

INTERSECTION	2024 EXISTING BASE CONDITIONS						2025 BACKGROUND CONDITIONS						2025 FULL BUILD CONDITIONS					
	AM		PM		SAT MD		AM		PM		SAT MD		AM		PM		SAT MD	
1. Comstock Ave @ University Pl (S)																		
EB - University Pl	D	40.2	C	34.7	C	23.6	D	40.3	C	34.7	C	23.6	D	41.3	D	35.1	C	24.5
WB - University Pl	C	24.4	C	33.3	B	19.8	C	24.4	C	33.3	B	19.8	C	24.8	C	34.7	C	20.6
NB - Comstock Ave	A	8.2	A	6.5	A	4.3	A	8.2	A	6.5	A	4.3	A	8.7	A	7.1	A	4.1
SB - Comstock Ave	A	4.7	A	4.8	A	3.3	A	4.7	A	4.8	A	3.3	A	5.0	A	5.0	A	3.3
OVERALL LOS	**B**	**12.1**	**B**	**12.0**	**A**	**8.0**	**B**	**12.0**	**B**	**12.0**	**A**	**8.0**	**B**	**12.5**	**B**	**12.6**	**A**	**8.1**
v/c RATIO	**0.55**		**0.54**		**0.27**		**0.55**		**0.54**		**0.27**		**0.56**		**0.57**		**0.29**	
2. Ostrom Ave @ University Pl/Thorden Park Dr (U)																		
EB - University Ave	A	8.0	A	8.8	A	8.0	A	8.0	A	8.8	A	8.0	A	8.0	A	8.8	A	8.0
NB - Ostrom Ave	A	8.7	A	9.3	A	8.3	A	8.8	A	9.4	A	8.4	A	8.8	A	9.4	A	8.4
SB - Ostrom Ave	A	8.5	B	14.5	A	9.5	A	8.5	B	14.8	A	9.5	A	8.5	B	14.8	A	9.5
3. Ostrom Ave @ Ostrum Parking Lot Driveway (U)																		
EB - Parking Lot Driveway	A	9.8	B	12.7	B	10.4	A	9.8	B	12.7	B	10.4	N/A		N/A		N/A	
NB Left - Parking Lot Driveway	A	7.6	A	8.3	A	7.8	A	7.6	A	8.4	A	7.8						
4. Ostrom Ave @ Euclid Ave (S)																		
EB - Euclid Ave	A	9.7	B	10.8	A	9.8	A	9.7	B	10.9	A	9.8	A	9.7	B	10.9	A	9.8
WB - Euclid Ave	A	9.2	A	9.1	A	8.5	A	9.3	A	9.1	A	8.5	A	9.3	A	9.1	A	8.5
NB - Ostrom Ave	B	12.4	B	12.0	B	10.0	B	12.4	B	12.0	B	10.0	B	12.4	B	12.0	B	10.0
SB - Ostrom Ave	B	13.2	C	28.6	B	16.5	B	13.3	C	29.2	B	16.6	B	13.3	C	29.2	B	16.6
OVERALL LOS	**B**	**10.8**	**B**	**18.2**	**B**	**12.1**	**B**	**10.9**	**B**	**18.5**	**B**	**12.1**	**B**	**10.9**	**B**	**18.5**	**B**	**12.1**
v/c RATIO	**0.41**		**0.78**		**0.46**		**0.41**		**0.79**		**0.46**		**0.41**		**0.79**		**0.46**	
5. Comstock Ave @ Euclid Ave (S)																		
EB - Euclid Ave	D	48.7	D	40.7	D	38.8	D	48.4	D	40.4	D	38.7	D	48.4	D	40.3	D	39.0
WB Right - Euclid Ave	C	34.6	C	27.0	D	43.3	C	34.5	C	26.8	D	43.5	C	34.4	C	26.7	D	43.5
WB Thru/Left - Euclid	D	38.8	D	36.2	D	35.3	D	38.7	D	36.0	D	35.3	D	42.4	D	43.1	D	40.3
NB Left - Comstock Ave	A	7.4	B	10.2	A	4.1	A	7.5	B	10.3	A	4.2	A	7.5	B	10.3	A	4.2
NB Thru/Right - Comstock Ave	A	8.3	B	11.1	A	4.2	A	8.4	B	11.2	A	4.3	A	8.4	B	11.2	A	4.3
SB Left - Comstock Ave	B	11.7	B	14.8	A	3.5	B	11.8	B	15.0	A	3.6	B	11.7	B	14.9	A	3.6
SB Thru/Right - Comstock Ave	B	10.8	B	14.3	A	3.5	B	11.0	B	14.5	A	3.5	B	10.8	B	14.4	A	3.5
OVERALL LOS	**C**	**22.4**	**C**	**23.1**	**B**	**19.4**	**C**	**22.4**	**C**	**23.1**	**B**	**19.5**	**C**	**22.6**	**C**	**23.6**	**B**	**20.0**
v/c RATIO	**0.72**		**0.74**		**0.61**		**0.72**		**0.74**		**0.62**		**0.72**		**0.74**		**0.62**	

A(2.8) = Level of Service (Delay in seconds per vehicle)

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

N/A = Approach does not exist and/or was not analyzed during this condition

Green shaded cells indicate low delays, yellow shaded cells indicate moderate delays, red shaded cells indicate long delays.

(S) = Signalized; (U) = Unsignalized

1. Comstock Ave at University Pl

All approaches operate at LOS D or better under existing conditions during all peak hours. The eastbound approach changes from LOS C to D during the PM peak hour between background and full build conditions. This level of service change is the result of borderline conditions as the threshold between LOS C and D is 35 seconds per vehicle. The actual increase in delay is 0.4 seconds per vehicle. Additionally, the westbound approach changes from LOS B to C during the SAT peak hour between background and full build conditions. This level of service change is the result of borderline conditions as the threshold between LOS B and C is 20 seconds per vehicle. The actual increase in delay is 0.8 seconds per vehicle. As noted above, LOS "D" for signalized locations are generally thresholds of acceptable operation during peak periods. No improvements are warranted or recommended at this intersection.

2. Ostrom Ave at University Pl at Thorden Park Dr

All approaches operate at LOS B or better under existing and background conditions during all peak hours. No changes in levels of service are expected under full build conditions. No improvements are warranted or recommended at this intersection.

3. Ostrom Ave at Ostrom Parking Lot Driveway

All approaches operate at LOS B or better under existing conditions during all peak hours. This parking lot and driveway will be removed as a result of the proposed residence hall development.

4. Ostrom Ave at Euclid Ave

All approaches operate at LOS C or better under existing and background conditions during all peak hours. No changes in levels of service are expected under full build conditions. No improvements are warranted or recommended at this intersection.

5. Comstock Ave at Euclid Ave

All approaches operate at LOS D or better under existing and background conditions during all peak hours. No changes in levels of service are expected under full build conditions. No improvements are warranted or recommended at this intersection.

10. SPECIAL EVENT TRAFFIC

The proposed project will not add any new vehicular traffic related to special events. Additionally, the proposed project will result in fewer students using the shuttle bus system between South Campus and the main campus as more students will reside on the main campus and will not need to use the shuttle system to attend events. Special events will generate new pedestrian trips between the proposed residence hall and the main campus. No improvements are warranted or recommended during special events as a result of the proposed project.

11. CONCLUSIONS

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Ostrom Residence Hall development located along the west side of Ostrom Avenue, between University Place and Shaw Hall, on the Syracuse University Campus in the City of Syracuse, NY. **The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area intersections with no improvements warranted or recommended.** The following sets forth the conclusions based upon the results of the analyses:

1. Given that the new residence hall will not provide parking for the student residents, very little if any vehicular traffic will be generated during the peak hours studied.

2. Traffic volumes entering and exiting the Ostrom Lot and Shaw Hall Lot are relatively low and will be redistributed to other area parking facilities. Thus, no changes to study area traffic volumes were made as a result of removing the Ostrom Lot.

3. Parking lot counts for various nearby campus lots indicate that there is ample University owned parking available after 5PM to accommodate all of the current vehicles using the Ostrom Lot after 5PM.

4. Second-year students that reside in the new residence hall are currently living in other housing options on either main campus or south campus and will continue to park in the various parking options that are available to them.

5. The analysis contained in this report focuses on morning and afternoon peak intervals that overlap with surrounding commuter traffic. These are peak intervals when students are going to or coming from class. As such, very little if any new student vehicles will be added to the surrounding system, during the critical peaks.

6. Data related to food delivery services on college campuses is limited, however, recent studies indicate that students use food delivery apps approximately two times a week, the busiest time period for food deliveries occurs between 2-4 AM, and the busiest day of the week for food deliveries is Sunday. Therefore, food deliveries are expected to occur largely during off-peak hours and will not have a significant impact on peak hour vehicular or pedestrian traffic. Key strategies for managing curb space around residence halls include the implementation of designated delivery zones, dynamic pricing for curb access, and time-restricted loading zones. The University is currently considering alternatives to manage curb access.

7. It is estimated that approximately 380(494)[273] pedestrian trips will be added to the surrounding roadway network during the AM(PM)[SAT] peak time hours. These pedestrians will travel and from campus via University Place and/or adjacent to Shaw Hall and will not travel to/from the east of Ostrom Ave or towards Thornden Park.

8. All of the study intersections operate at LOS "D" or better on all approaches under existing, background, and full build conditions. LOS "D" or better is generally considered an acceptable level of service for vehicles in urban environments. No significant increases in delay or changes in levels of service are anticipated as a result of the proposed residence hall development.

9. The proposed project will not add any new vehicular traffic related to special events. Additionally, the proposed project will result in fewer students using the shuttle bus system between South Campus and the main campus as more students will reside on the main campus and will not need to use the shuttle system to attend events. Special events will generate new pedestrian trips between the proposed residence hall and the main campus. No improvements are warranted or recommended during special events as a result of the proposed project.

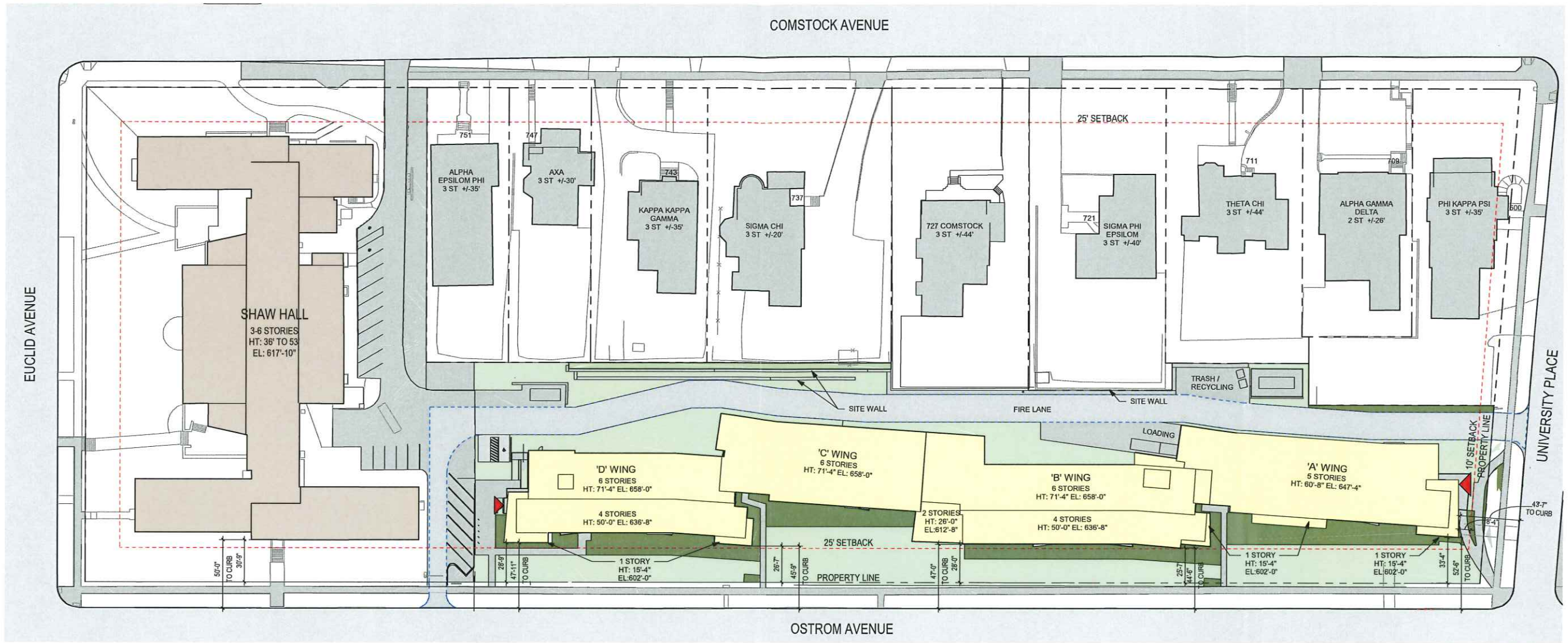
10. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Please feel free to contact me directly with any questions.

Sincerely,
Passero Associates

Amy C. Dake, P.E., PTOE
Senior Managing Traffic Engineer
adake@passero.com • 585-314-5078

Attachments



PROJECT COMPLIANCE WITH TABLE 2.15 DEVELOPMENT STANDARDS

STANDARD	REQUIRED	PROVIDED - COMPLIES WITH ALL APPLICABLE DIMENSIONAL REGULATIONS
FRONT SETBACK	25 FOOT SETBACK FROM OSTROM AVENUE, 10 FOOT SETBACK FROM UNIVERSITY PLACE	PROJECT CONFORMS TO REQUIRED SETBACKS
SIDE SETBACK	NONE	≥ 10 FEET
REAR SETBACK	NONE	≤ 24 FEET
MAXIMUM BUILDING HEIGHT	NONE	≤ 71 FEET 4 IN
MINIMUM LOT WIDTH	NONE	129' FEET 7 IN
MINIMUM LOT AREA	N/A - ALREADY ZONING PID	±2.55 ACRES
MAXIMUM IMPERVIOUS COVERAGE	90%	±61%
OFF STREET LOADING	NONE	1
LANDSCAPING, BUFFERING, AND SCREENING	NONE	PER UNIVERSITY TYPICAL STANDARDS
EXTERIOR LIGHTING	NO OFF-SITE SPILLOVER GLARE	WILL MEET REQUIRED STANDARD
OFF STREET PARKING	57 SPACES (1 SPACE / 10 BEDROOMS EXCEPT AS OTHERWISE APPROVED BY CPC AS PART OF PROJECT PLAN REVIEW)	2-10 SPACES ON SITE. 55-47 SPACES - SUFFICIENT PARKING EXISTS OFF-SITE TO SATISFY ZONING REQUIREMENT.
SIGNS	TBD	SUBJECT TO LATER ZONING REVIEW

BUILDING HEIGHTS ARE FROM AVERAGE GRADE TO TOP OF PARAPET.

ELEVATIONS ARE TO TOP OF PARAPET, EXCLUDING PENTHOUSES AND ELEVATOR OVERHEADS.

KEY:
- PROPERTY LINE
- SETBACK LINE TO PROPERTY LINE

0' 20' 40' 80'

1"=80' PRINTED HALF SCALE ON 11X17

Seal

Bohlin Cywinski Jackson
Architecture Planning Interior Design
Wilkes-Barre Pittsburgh Philadelphia Seattle San Francisco
123 South Broad Street
Suite 2900
Philadelphia, PA 19109
v: 215.790.5900

No.	Description	Date

SYRACUSE UNIVERSITY

NEW RESIDENCE HALL

700 OSTROM AVENUE

ZONING - SITE PLAN

DESIGN DEVELOPMENT

AUGUST 22, 2024 (DATE)	1" = 40'-0" (SCALE)
23311 (BCJ PROJECT NUMBER)	
	Z-05 (SHEET NUMBER)

8/7/2024 3:10:01 PM

Figure 1

PASSERO engineering architecture

Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

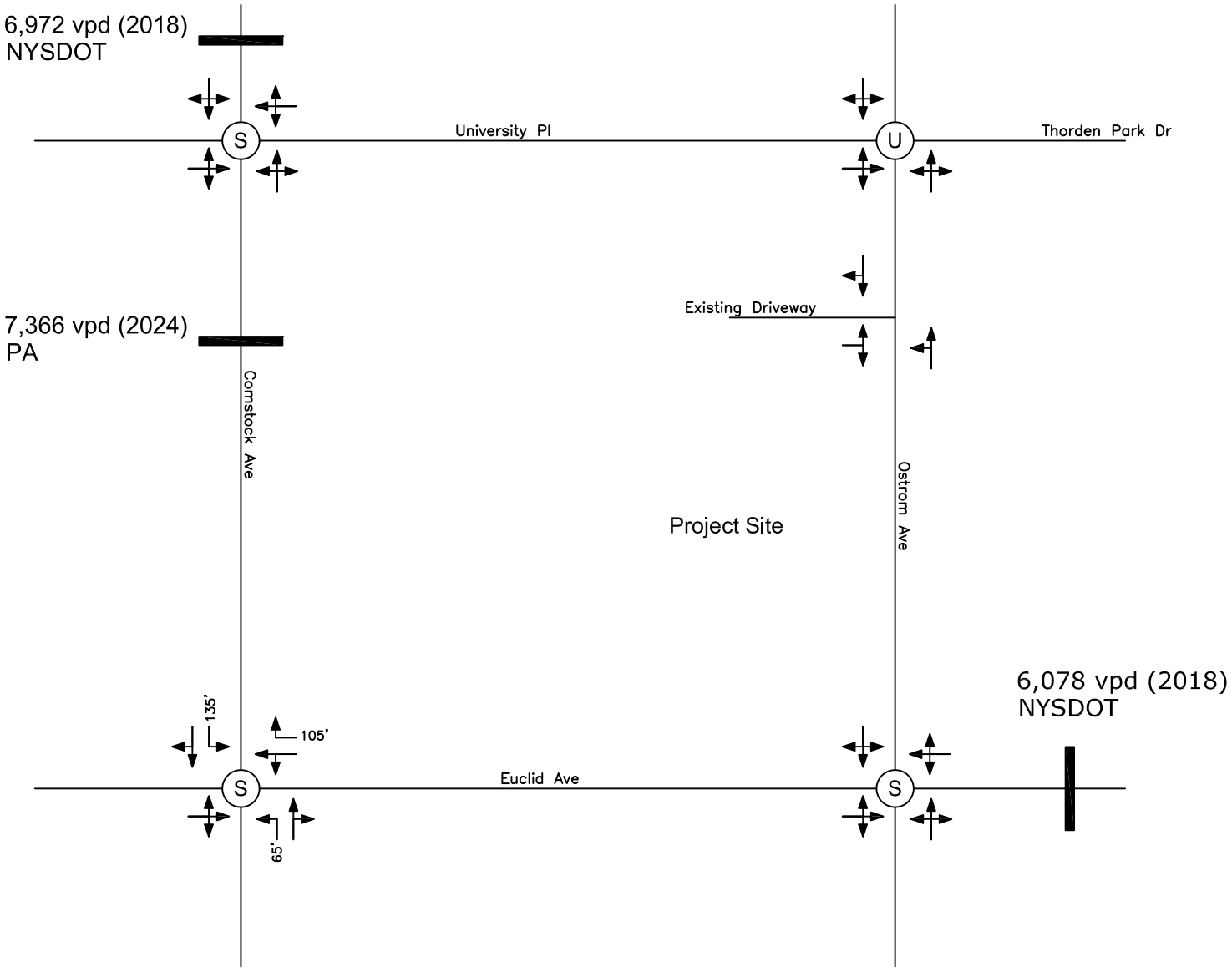
Site Location and Study Area

Key:
- # Study Intersection
- # Study/Proposed Intersection
- Study Area

Project Number: 20243789.0001

Figure 2

Notes:
1. All AADT volumes by those noted:
   1.1. NYSDOT = New York State Department of Transportation.
   1.2. PA = Passero Associates.
2. vpd = Vehicles per day.
3. Turn lane lengths shown include only storage.



Ostrom Residence Hall Development, Syracuse University | Syracuse, NY

N
NOT TO SCALE

Lane Geometry and Average Daily Traffic

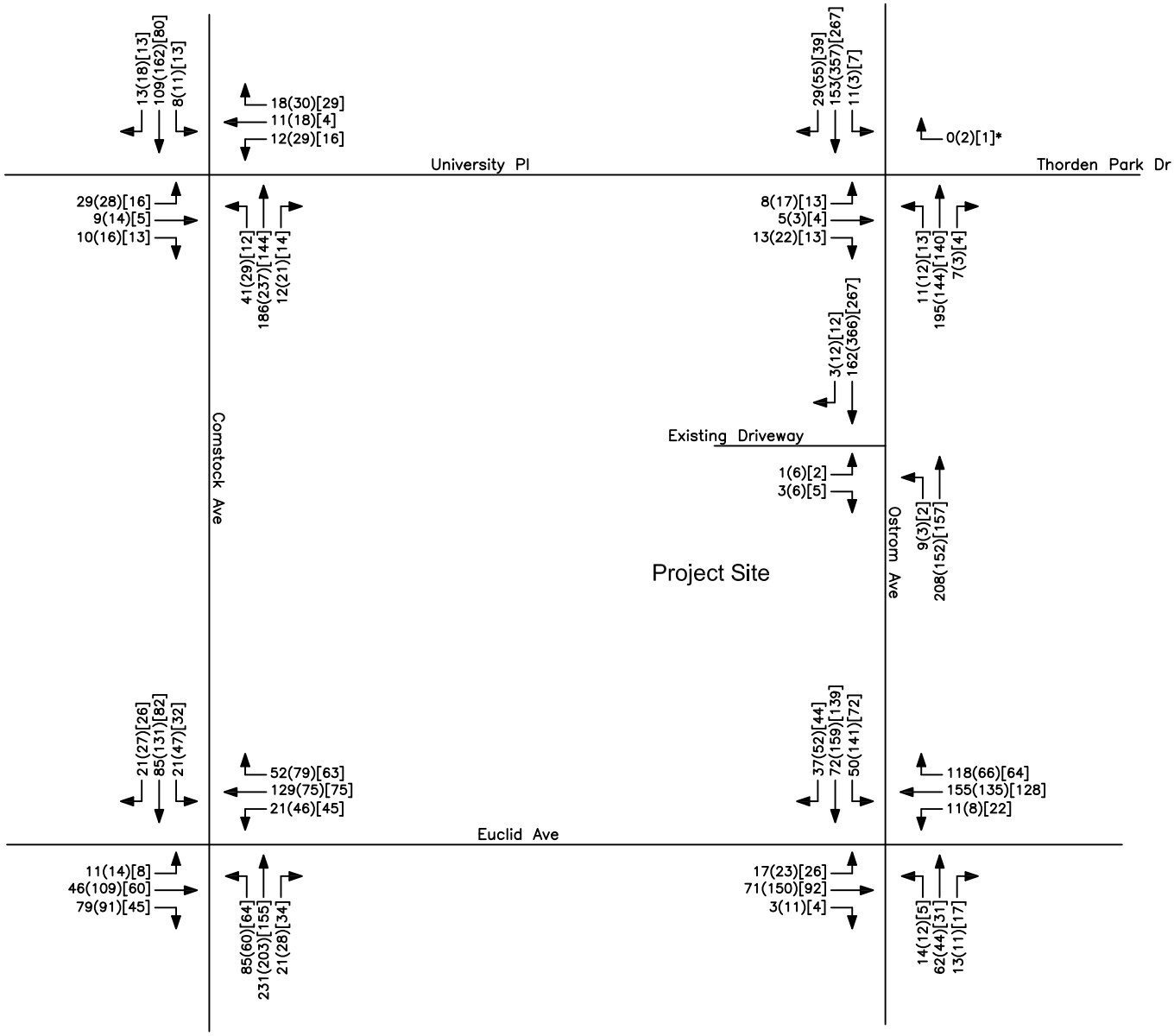
KEY:

– – – Proposed Roadway
U = Unsignalized
S = Signalized

Project Number: 20243789.0001

Figure 3A

PASSERO
engineering architecture



Ostrom Residence Hall Development, Syracuse University | Syracuse, NY

N
NOT TO SCALE

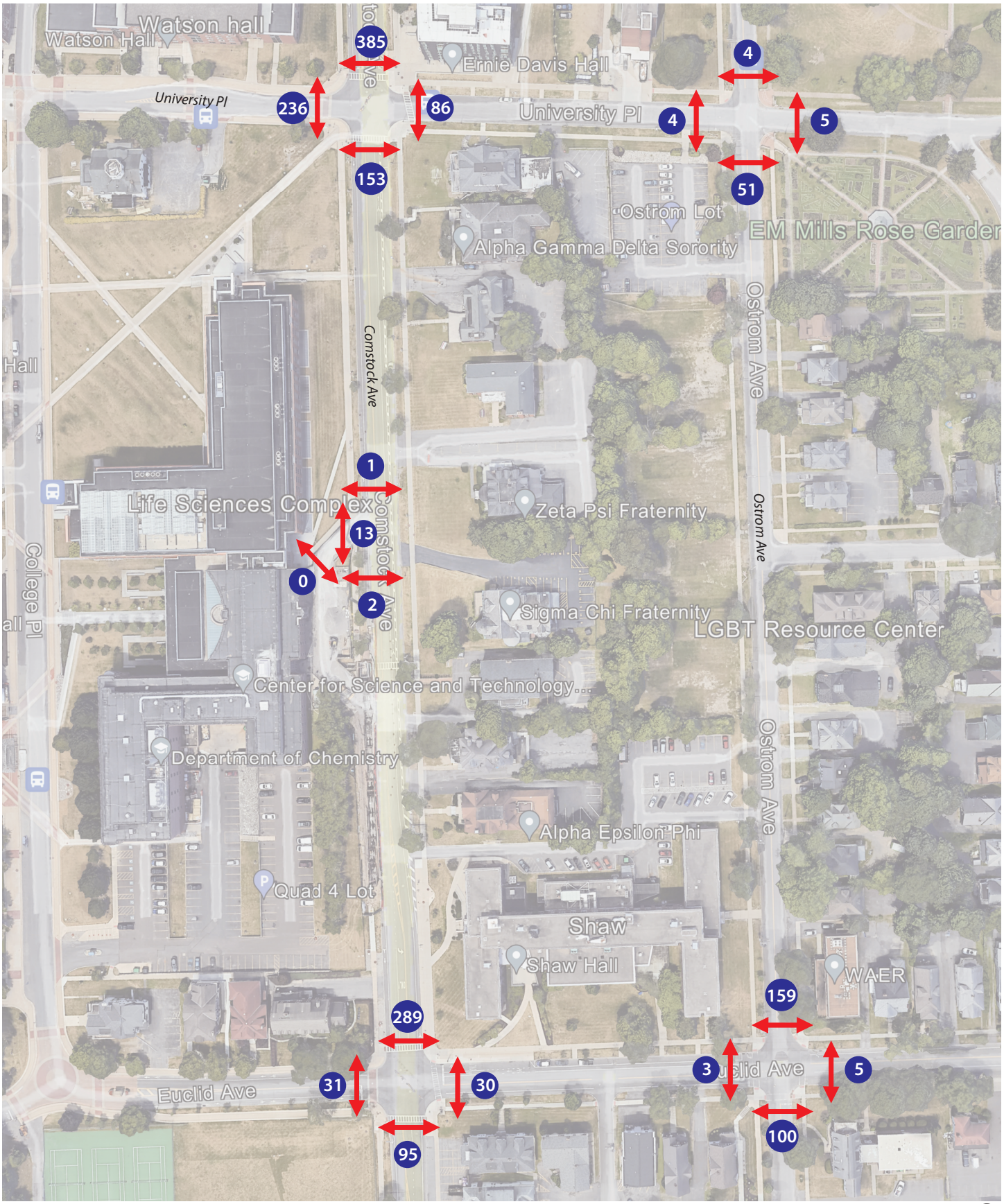
Peak Hour Volumes
2024 Existing Conditions
8:30-9:30 AM (4:45-5:45 PM) [12:30-1:30 PM]

KEY:
00(00)[00] = AM(PM)(SAT)
– – – Proposed Roadway
00* = Non-Compliant Movement

Project Number: 20243789.0001

Figure 3B

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

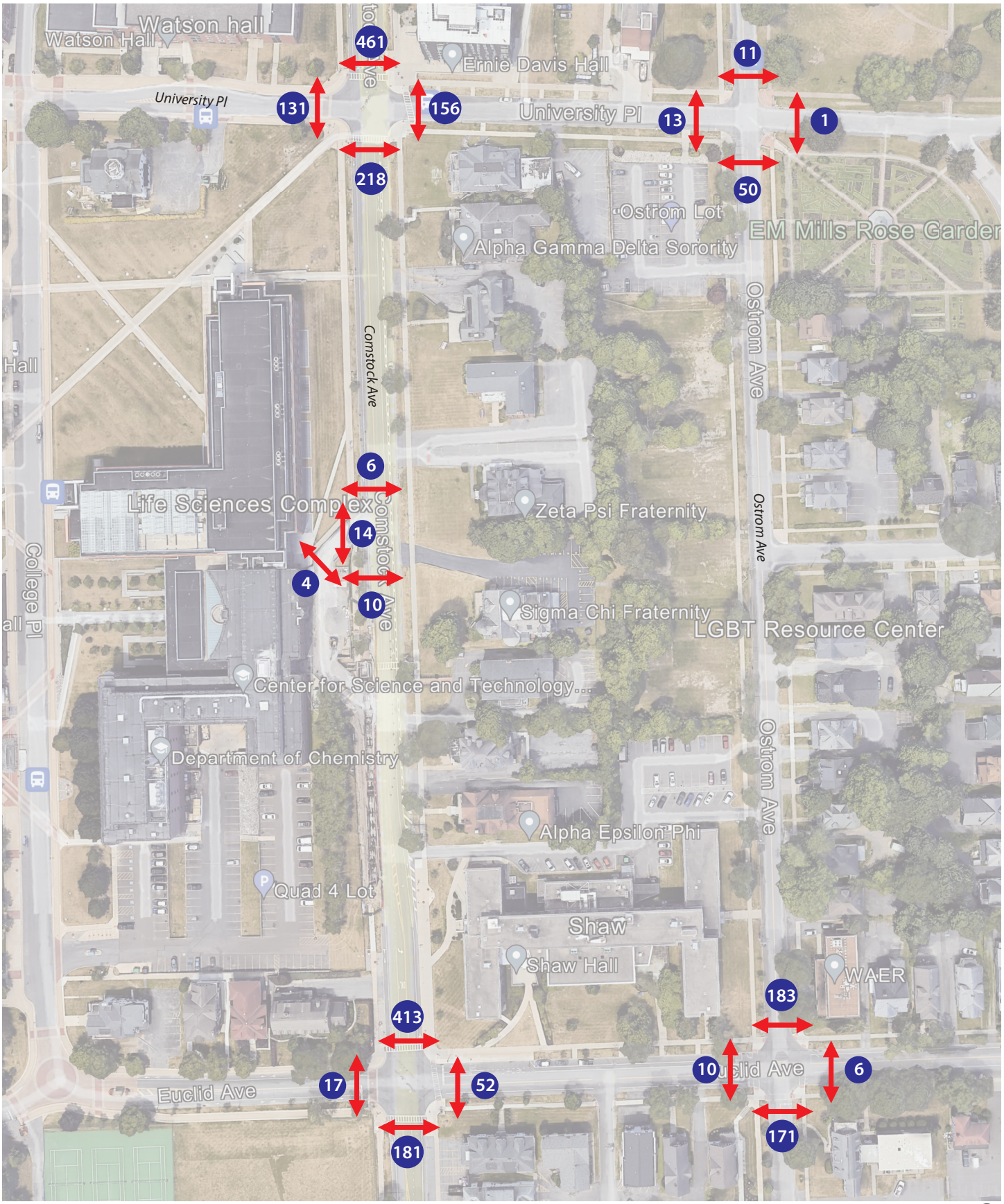
Existing Pedestrian Crossing Volumes - AM Peak Hour
(8:30-9:30 AM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 3C

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

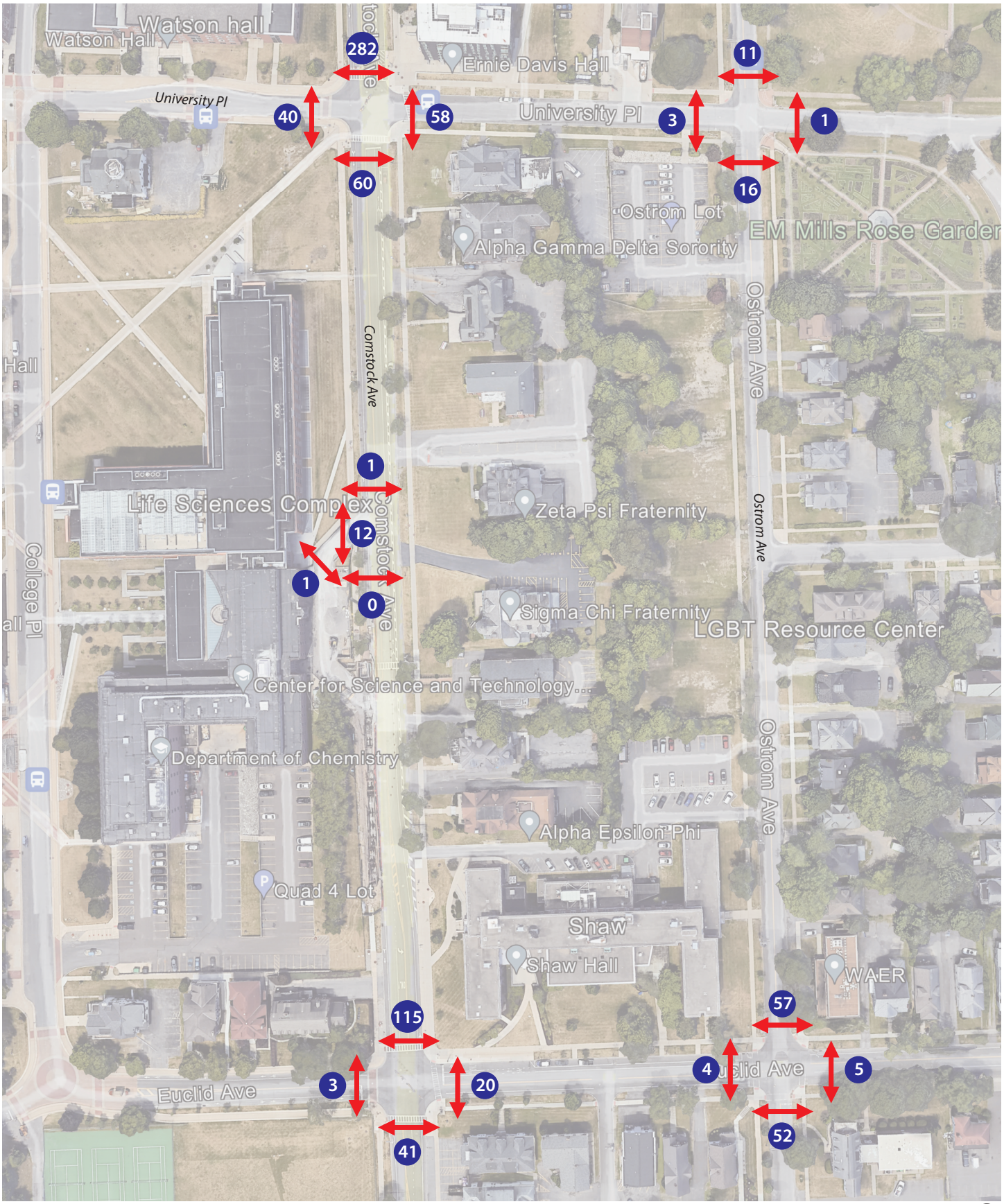
Existing Pedestrian Crossing Volumes - PM Peak Hour
(4:45-5:45 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 3D

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

0 100 200 400 Feet N

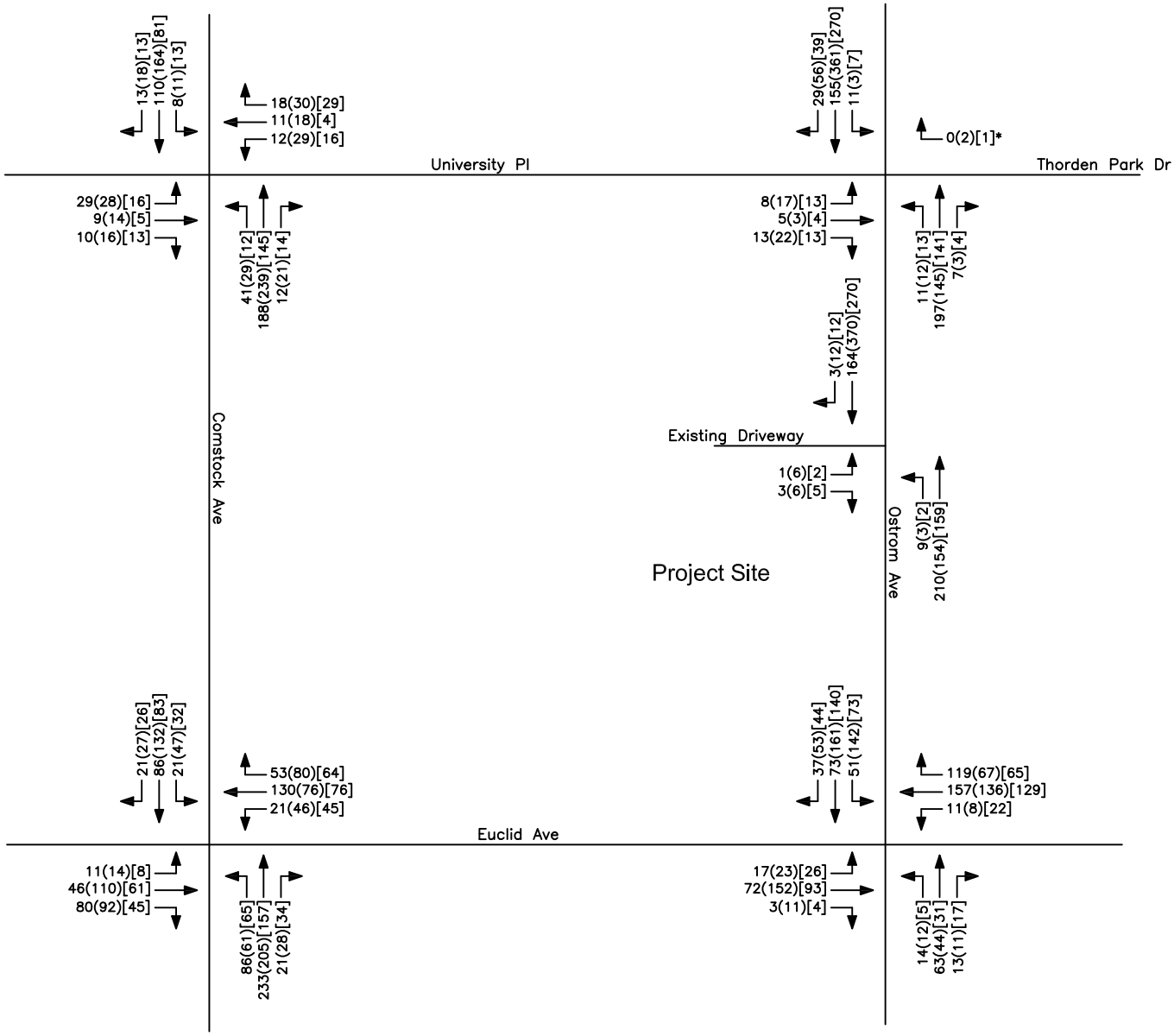
Existing Pedestrian Crossing Volumes - Saturday Midday Peak Hour
(12:30-1:30 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 4A

PASSERO engineering architecture



Ostrom Residence Hall Development, Syracuse University | Syracuse, NY

N
NOT TO SCALE

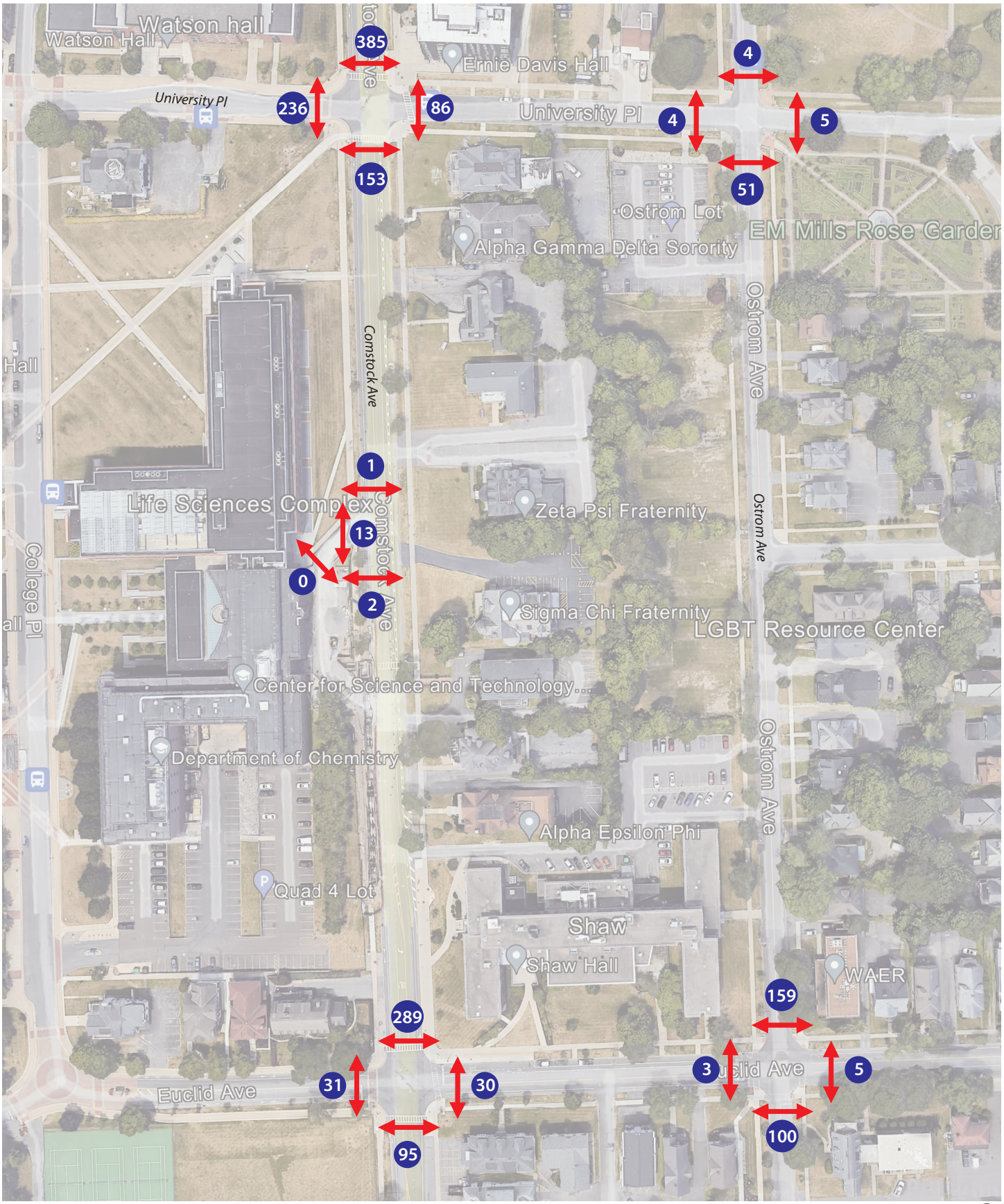
Peak Hour Volumes
2026 Background Conditions
8:30-9:30 AM (4:45-5:45 PM) [12:30-1:30 PM]

KEY:
00(00)[00] = AM(PM)[SAT]
– – – Proposed Roadway

Project Number: 20243789.0001

Figure 4B

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

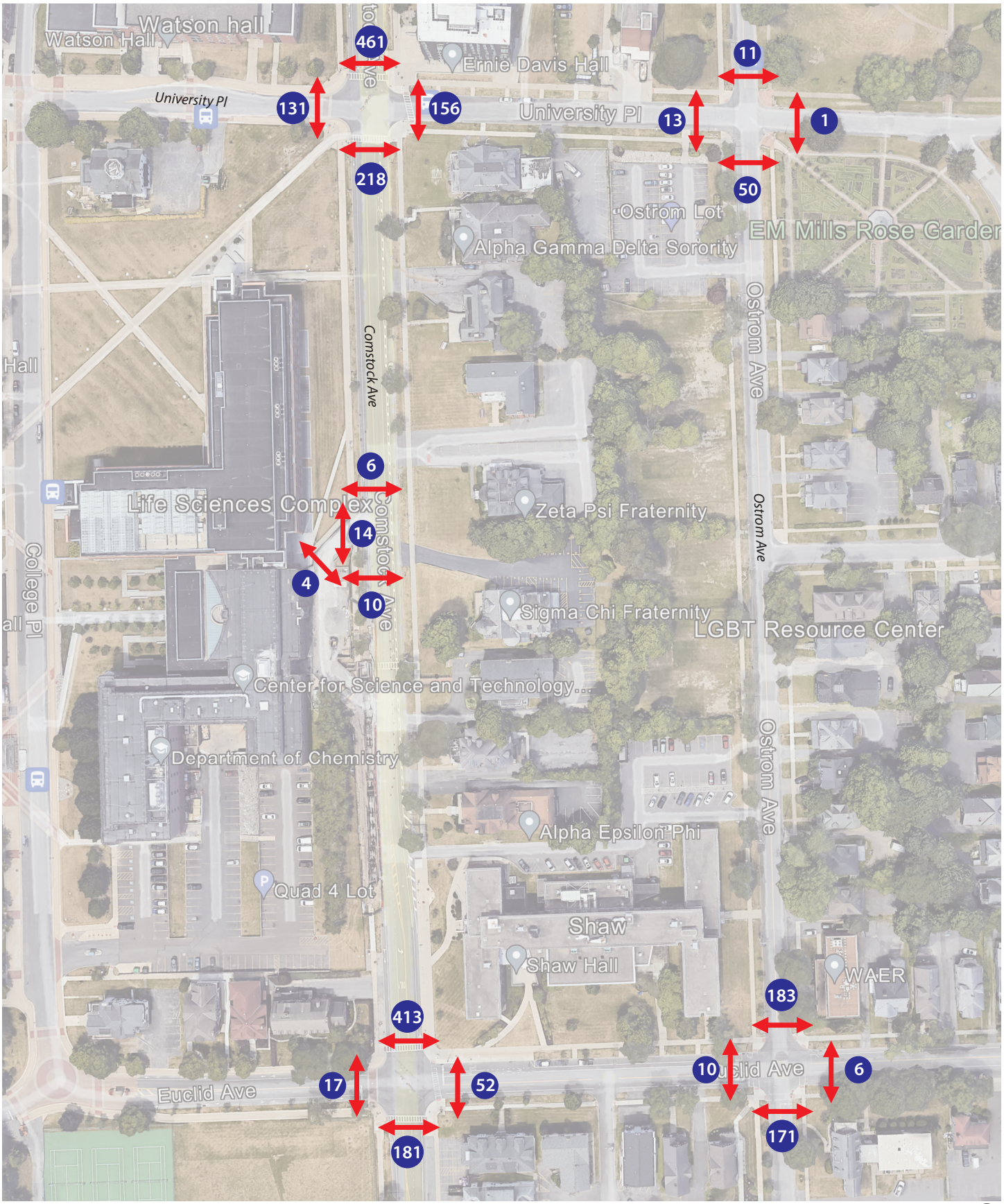
Background Pedestrian Crossing Volumes - AM Peak Hour
(8:30-9:30 AM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 4C

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

0 100 200 400 Feet N

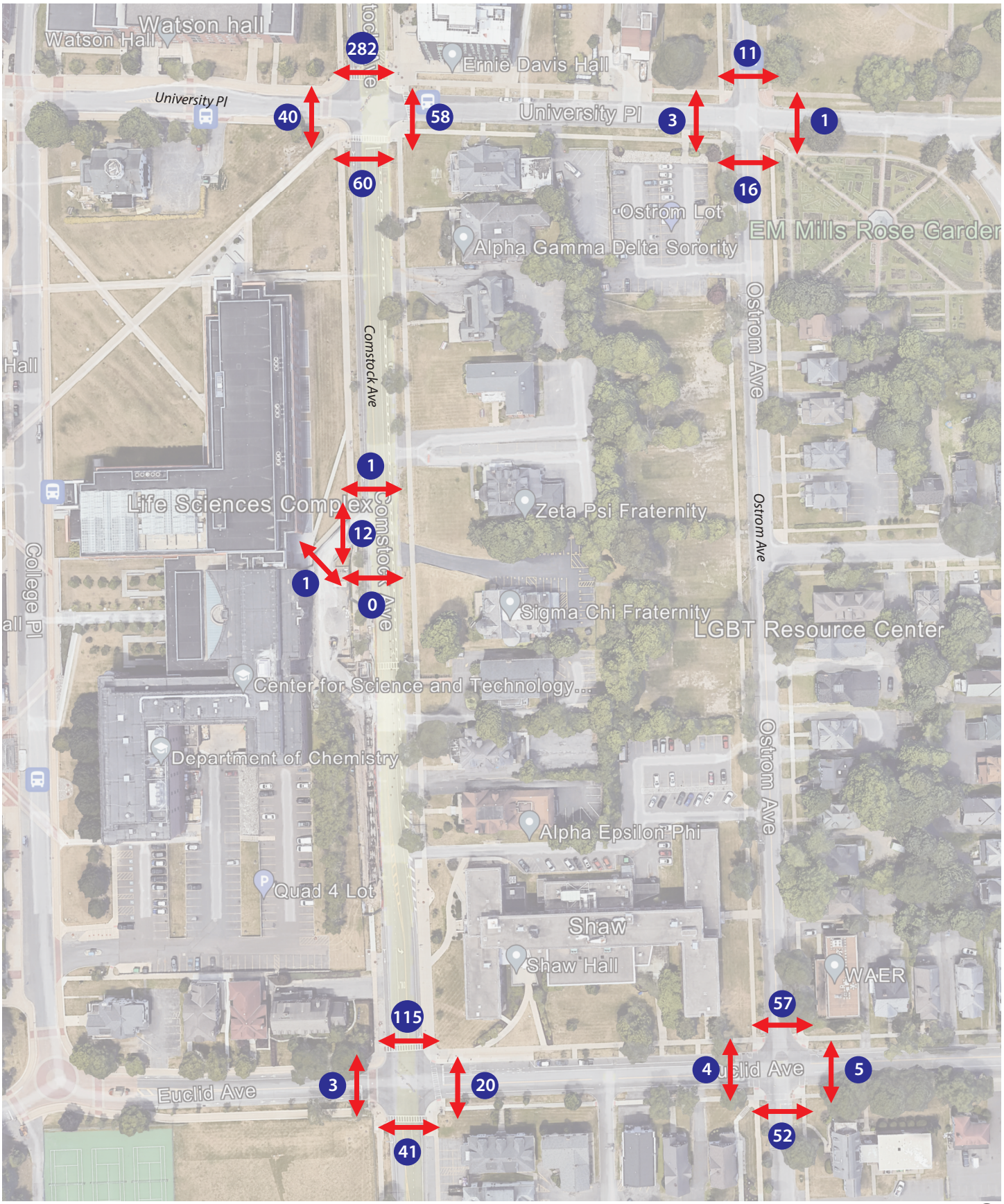
Background Pedestrian Crossing Volumes - PM Peak Hour
(4:45-5:45 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 4D

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

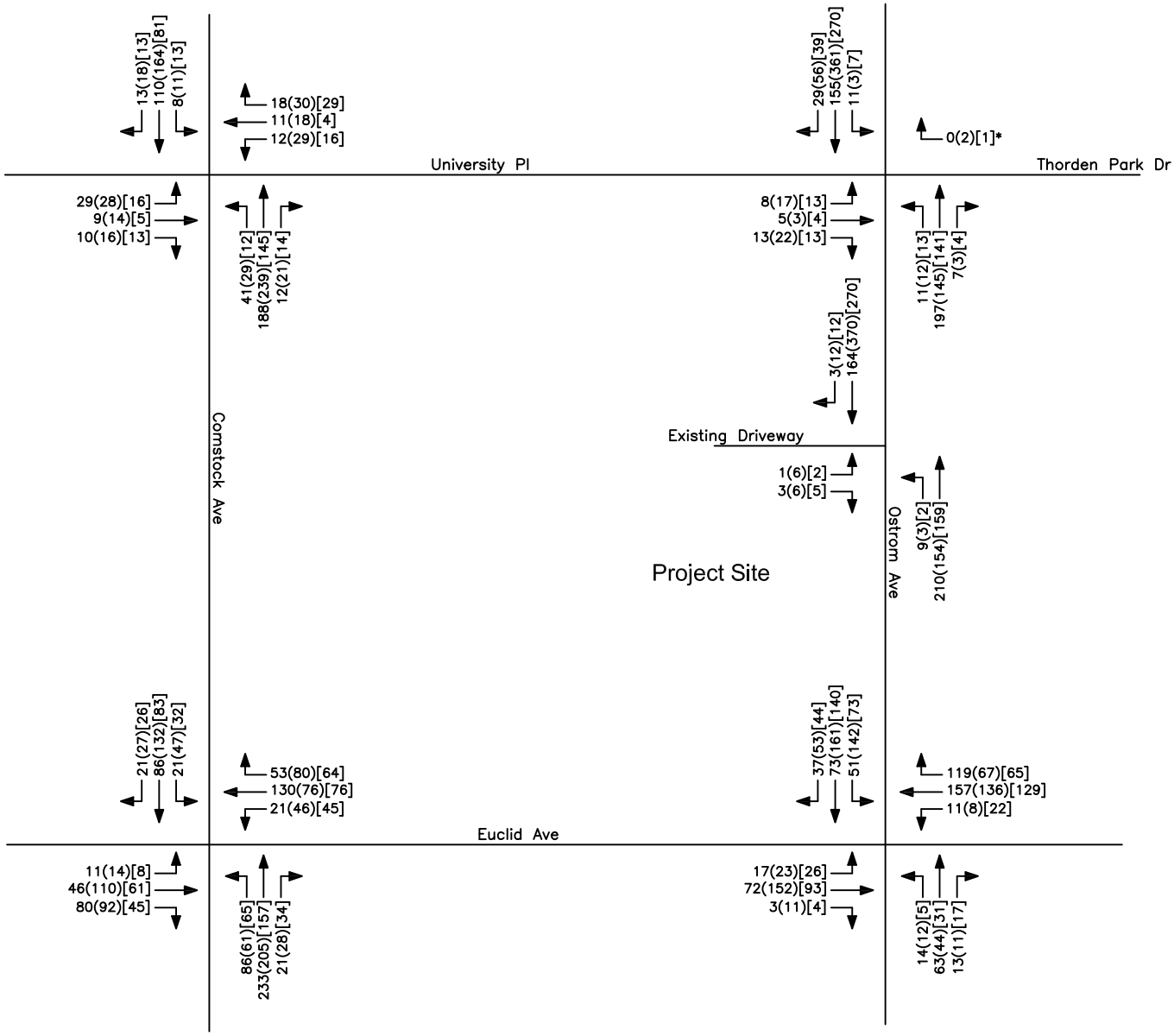
Background Pedestrian Crossing Volumes - Saturday Midday Peak Hour
(12:30-1:30 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 5A

PASSERO
engineering architecture



Ostrom Residence Hall Development, Syracuse University | Syracuse, NY

N
NOT TO SCALE

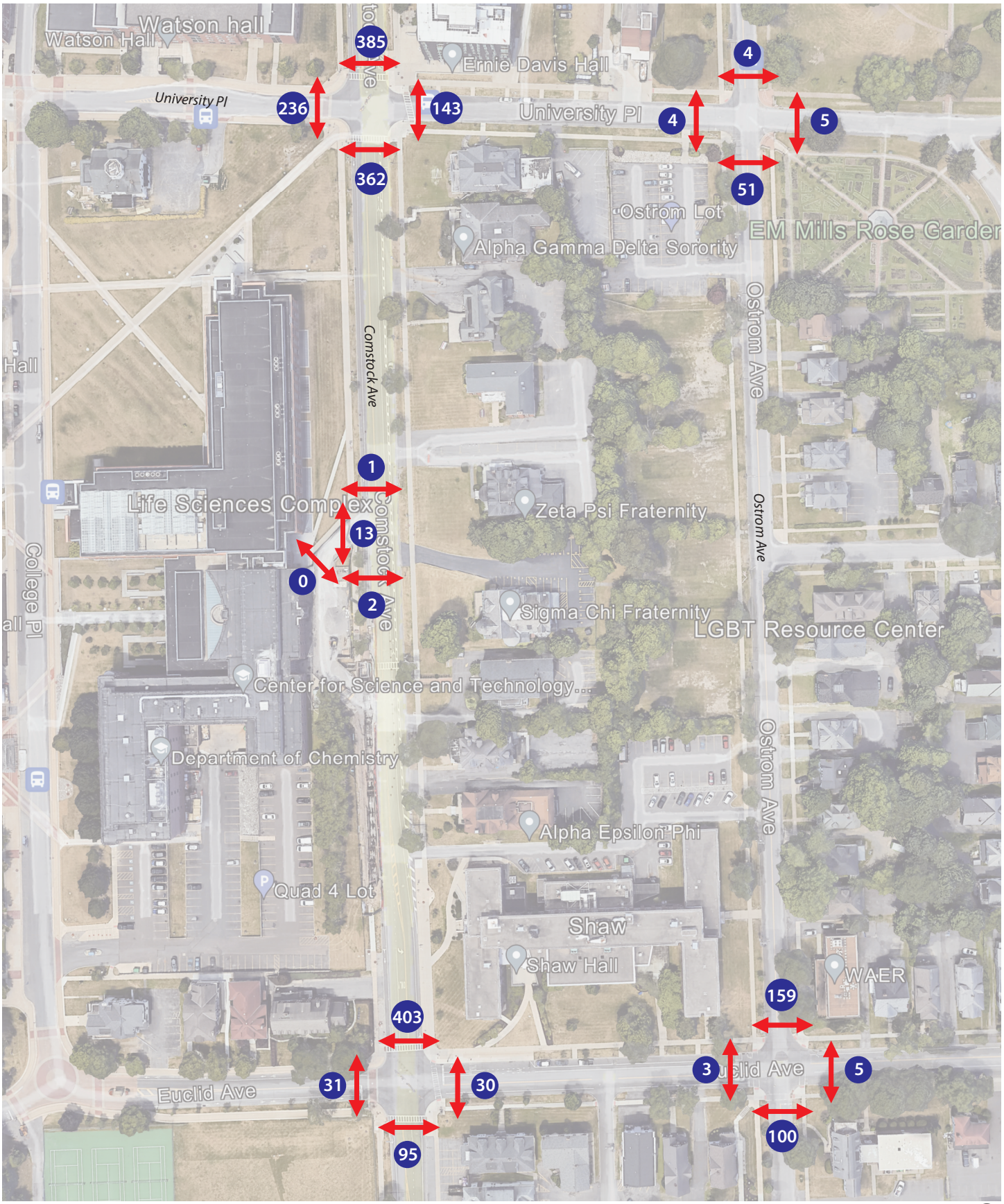
Peak Hour Volumes
Full Build Conditions
8:30-9:30 AM (4:45-5:45 PM) [12:30-1:30 PM]

KEY:
00(00)[00] = AM(PM)[SAT]
– – – Proposed Roadway

Project Number: 20243789.0001

Figure 5B

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

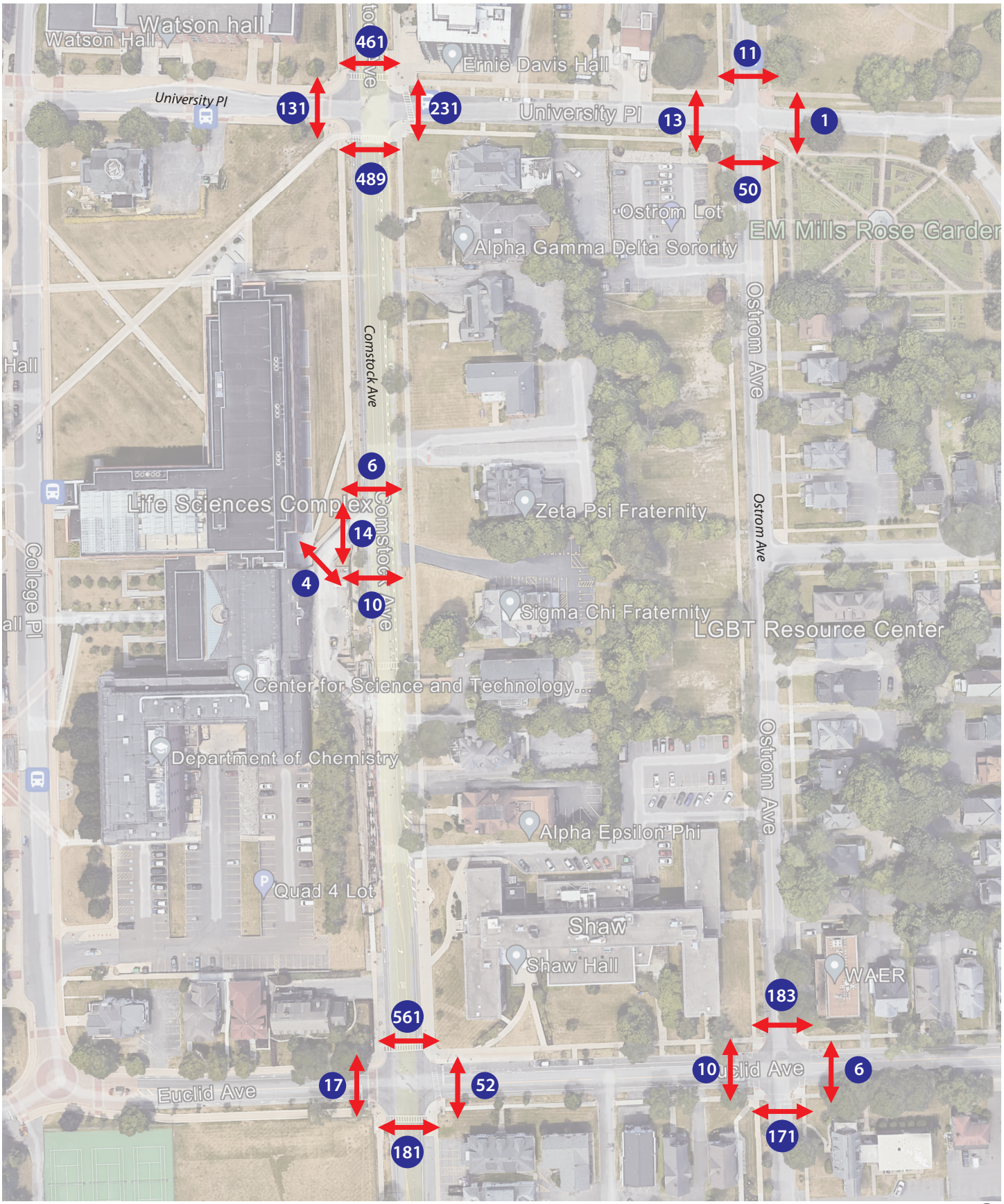
Full Build Pedestrian Crossing Volumes - AM Peak Hour
(8:30-9:30 AM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 5C

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

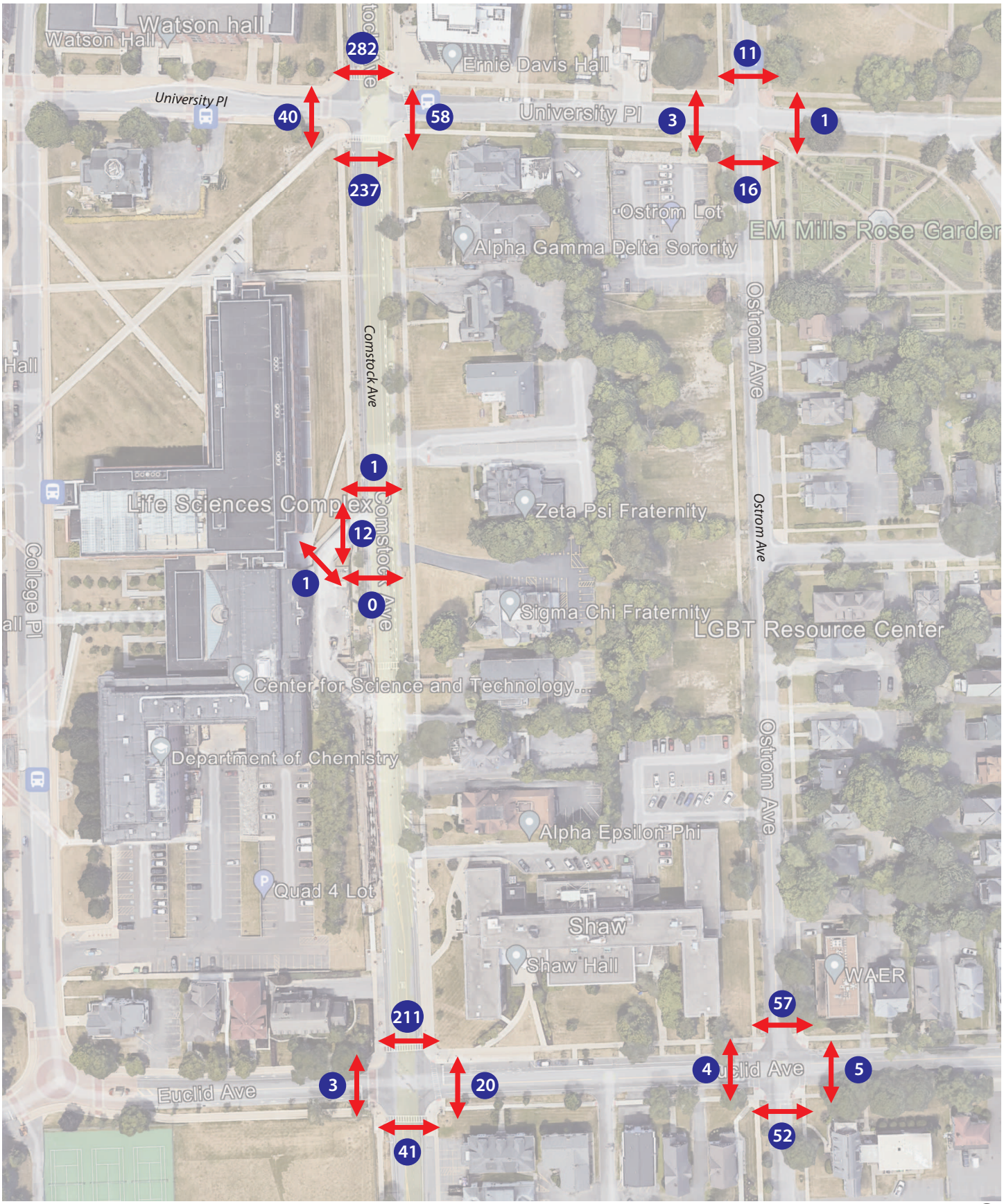
Full Build Pedestrian Crossing Volumes - PM Peak Hour
(4:45-5:45 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

Figure 5D

PASSERO engineering architecture



Ostrom Residence Hall Development |
Syracuse University, Syracuse, NY

0 100 200 400 Feet N

Full Build Pedestrian Crossing Volumes - Saturday Midday Peak Hour
(12:30-1:30 PM)

Key:
Peak Hour Pedestrian Volume
Pedestrian Direction

Project Number: 20243789.0001

ATTACHMENTS

September 26, 2024

Letter to
Mr. Mark Hance, P.E. // Associate Director

Ostrom Residence Hall Development

Trip Impact Assessment

Syracuse University, Syracuse
Onondaga County, New York

PASSERO
engineering architecture
242 West Main Street, Suite 100 Rochester, NY 14614
T 585.325.1000 | www.srfa.net | www.passero.com

PASSERO
engineering architecture

Ostrom Residence Hall Development, Syracuse University, Syracuse, NY

Documentation of Ambient Traffic Volume Growth

Roadway	Segment starts at	Segment end at	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth
Comstock Ave	Waverly Ave	Euclid Ave	7,415			8,538					6,972		-0.77%
Euclid Ave	College Pl	Westcott St			6,683			6,958			6,078		-1.57%
												AVERAGE	**-1.17%**

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid FRI AM
Site Code : 55555555
Start Date : 3/1/2024
Page No : 1

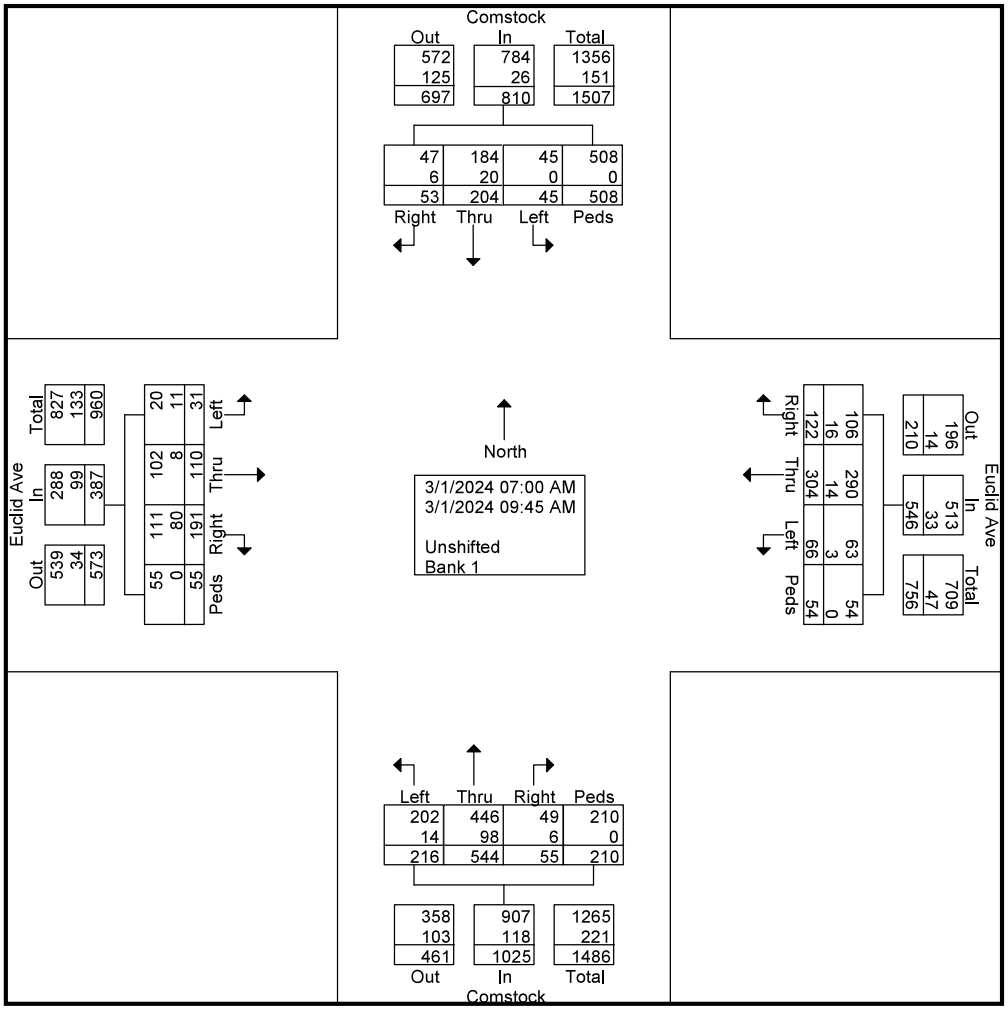
Groups Printed- Unshifted - Bank 1

	Comstock From North					Euclid Ave From East					Comstock From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	13	3	6	24	8	10	1	1	20	5	19	7	1	32	6	7	2	0	15	91
07:15 AM	5	10	0	11	26	7	12	7	1	27	4	29	13	4	50	5	4	3	2	14	117
07:30 AM	2	10	3	15	30	8	11	6	2	27	2	35	12	16	65	10	5	1	2	18	140
07:45 AM	4	12	0	30	46	7	31	7	2	47	6	48	21	15	90	16	9	2	0	27	210
Total	13	45	6	62	126	30	64	21	6	121	17	131	53	36	237	37	25	8	4	74	558
08:00 AM	5	12	6	36	59	10	32	3	3	48	6	62	26	23	117	18	6	3	3	30	254
08:15 AM	2	15	2	34	53	10	37	5	2	54	4	54	18	15	91	23	13	1	5	42	240
08:30 AM	9	23	4	37	73	13	24	3	2	42	9	62	23	12	106	9	13	2	5	29	250
08:45 AM	4	31	10	64	109	12	36	8	10	66	6	67	18	23	114	28	9	3	5	45	334
Total	20	81	22	171	294	45	129	19	17	210	25	245	85	73	428	78	41	9	18	146	1078
09:00 AM	4	11	6	60	81	10	27	4	14	55	5	44	20	23	92	25	9	4	8	46	274
09:15 AM	4	20	1	128	153	17	42	6	4	69	1	58	24	37	120	17	15	2	13	47	389
09:30 AM	8	21	7	53	89	10	25	11	7	53	4	35	17	16	72	18	12	6	2	38	252
09:45 AM	4	26	3	34	67	10	17	5	6	38	3	31	17	25	76	16	8	2	10	36	217
Total	20	78	17	275	390	47	111	26	31	215	13	168	78	101	360	76	44	14	33	167	1132
Grand Total	53	204	45	508	810	122	304	66	54	546	55	544	216	210	1025	191	110	31	55	387	2768
Apprch %	6.5	25.2	5.6	62.7		22.3	55.7	12.1	9.9		5.4	53.1	21.1	20.5		49.4	28.4	8	14.2		
Total %	1.9	7.4	1.6	18.4	29.3	4.4	11	2.4	2	19.7	2	19.7	7.8	7.6	37	6.9	4	1.1	2	14	
Unshifted	47	184	45	508	784	106	290	63	54	513	49	446	202	210	907	111	102	20	55	288	2492
% Unshifted	88.7	90.2	100	100	96.8	86.9	95.4	95.5	100	94	89.1	82	93.5	100	88.5	58.1	92.7	64.5	100	74.4	90
Bank 1	6	20	0	0	26	16	14	3	0	33	6	98	14	0	118	80	8	11	0	99	276
% Bank 1	11.3	9.8	0	0	3.2	13.1	4.6	4.5	0	6	10.9	18	6.5	0	11.5	41.9	7.3	35.5	0	25.6	10

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid FRI AM
Site Code : 55555555
Start Date : 3/1/2024
Page No : 2

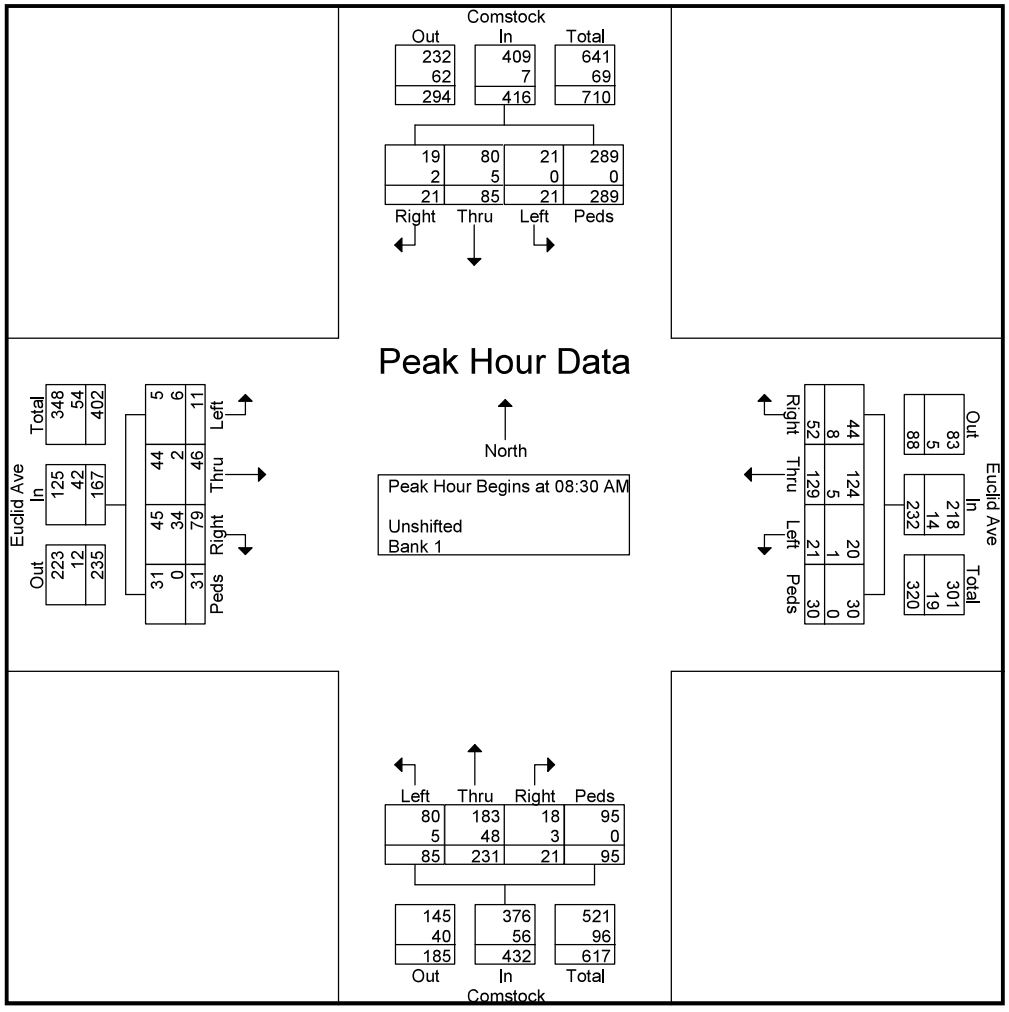


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid FRI AM
Site Code : 55555555
Start Date : 3/1/2024
Page No : 3

	Comstock From North					Euclid Ave From East					Comstock From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	**9**	23	4	37	73	13	24	3	2	42	**9**	62	23	12	106	9	13	2	5	29	250
08:45 AM	4	**31**	**10**	64	109	12	36	**8**	10	66	6	**67**	18	23	114	**28**	9	3	5	45	334
09:00 AM	4	11	6	60	81	10	27	4	**14**	55	5	44	20	23	92	25	9	**4**	8	46	274
09:15 AM	4	20	1	**128**	**153**	**17**	**42**	6	4	**69**	1	58	**24**	**37**	**120**	17	**15**	2	**13**	**47**	**389**
Total Volume	21	85	21	289	416	52	129	21	30	232	21	231	85	95	432	79	46	11	31	167	1247
% App. Total	5	20.4	5	69.5		22.4	55.6	9.1	12.9		4.9	53.5	19.7	22		47.3	27.5	6.6	18.6		
PHF	.583	.685	.525	.564	.680	.765	.768	.656	.536	.841	.583	.862	.885	.642	.900	.705	.767	.688	.596	.888	.801
Unshifted	19	80	21	289	409	44	124	20	30	218	18	183	80	95	376	45	44	5	31	125	1128
% Unshifted	90.5	94.1	100	100	98.3	84.6	96.1	95.2	100	94.0	85.7	79.2	94.1	100	87.0	57.0	95.7	45.5	100	74.9	90.5
Bank 1	2	5	0	0	7	8	5	1	0	14	3	48	5	0	56	34	2	6	0	42	119
% Bank 1	9.5	5.9	0	0	1.7	15.4	3.9	4.8	0	6.0	14.3	20.8	5.9	0	13.0	43.0	4.3	54.5	0	25.1	9.5



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at University 2 AM
Site Code : 33333333
Start Date : 3/6/2024
Page No : 1

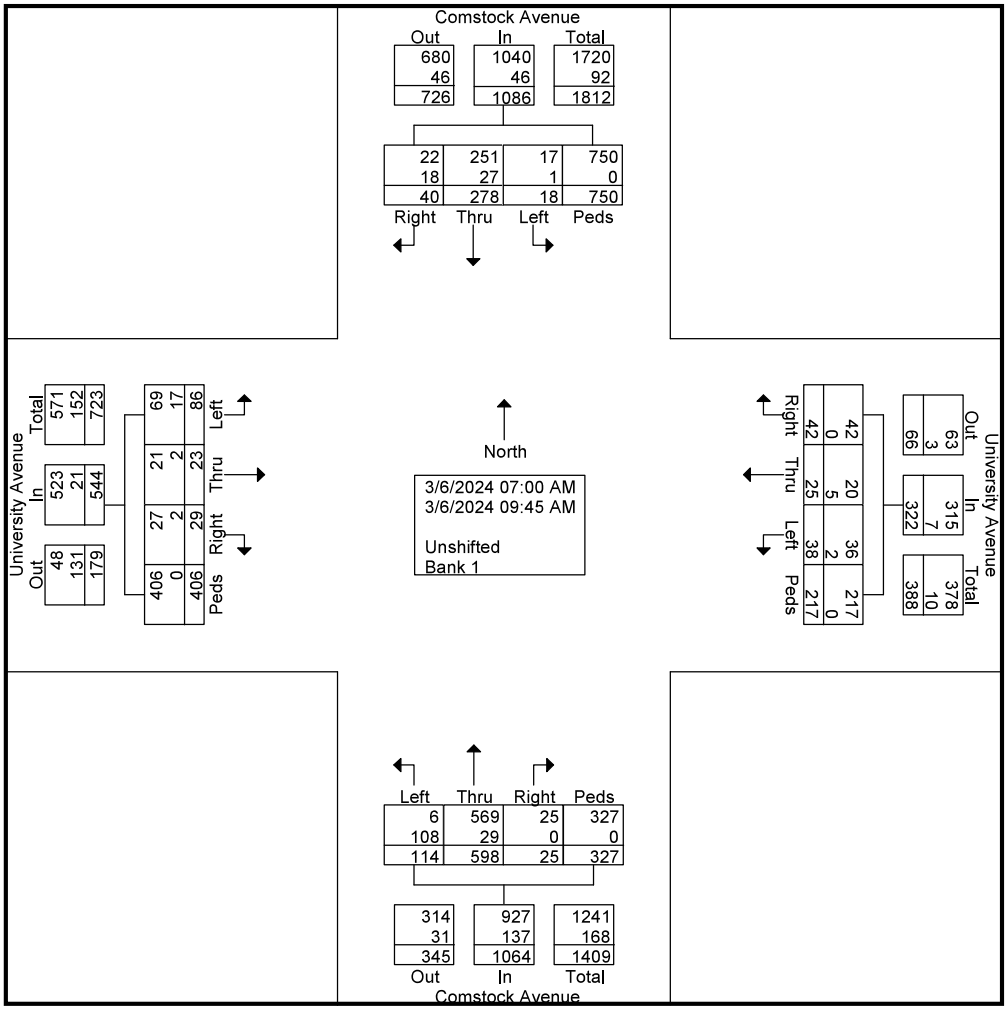
Groups Printed- Unshifted - Bank 1

	Comstock Avenue From North					University Avenue From East					Comstock Avenue From South					University Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	14	1	30	48	2	3	0	3	8	2	45	5	5	57	0	2	3	10	15	128
07:15 AM	5	15	1	44	65	4	3	1	34	42	1	74	9	40	124	1	3	5	22	31	262
07:30 AM	4	21	1	15	41	3	1	2	9	15	1	44	10	21	76	2	1	4	11	18	150
07:45 AM	2	20	1	27	50	1	3	3	10	17	0	59	11	13	83	4	0	8	15	27	177
Total	14	70	4	116	204	10	10	6	56	82	4	222	35	79	340	7	6	20	58	91	717
08:00 AM	4	19	2	17	42	3	0	8	10	21	3	49	12	10	74	5	2	8	7	22	159
08:15 AM	3	29	0	45	77	4	1	5	7	17	0	48	9	17	74	2	3	7	18	30	198
08:30 AM	4	19	1	69	93	1	6	1	16	24	3	44	14	33	94	1	0	9	37	47	258
08:45 AM	2	33	3	200	238	6	1	4	37	48	7	69	14	72	162	4	5	8	145	162	610
Total	13	100	6	331	450	14	8	18	70	110	13	210	49	132	404	12	10	32	207	261	1225
09:00 AM	4	25	2	52	83	8	3	4	12	27	0	32	7	25	64	4	3	5	35	47	221
09:15 AM	3	32	2	64	101	3	1	3	21	28	2	41	6	23	72	1	1	7	19	28	229
09:30 AM	3	27	2	67	99	3	1	5	23	32	3	47	6	26	82	2	1	12	14	29	242
09:45 AM	3	24	2	120	149	4	2	2	35	43	3	46	11	42	102	3	2	10	73	88	382
Total	13	108	8	303	432	18	7	14	91	130	8	166	30	116	320	10	7	34	141	192	1074
Grand Total	40	278	18	750	1086	42	25	38	217	322	25	598	114	327	1064	29	23	86	406	544	3016
Apprch %	3.7	25.6	1.7	69.1		13	7.8	11.8	67.4		2.3	56.2	10.7	30.7		5.3	4.2	15.8	74.6		
Total %	1.3	9.2	0.6	24.9	36	1.4	0.8	1.3	7.2	10.7	0.8	19.8	3.8	10.8	35.3	1	0.8	2.9	13.5	18	
Unshifted	22	251	17	750	1040	42	20	36	217	315	25	569	6	327	927	27	21	69	406	523	2805
% Unshifted	55	90.3	94.4	100	95.8	100	80	94.7	100	97.8	100	95.2	5.3	100	87.1	93.1	91.3	80.2	100	96.1	93
Bank 1	18	27	1	0	46	0	5	2	0	7	0	29	108	0	137	2	2	17	0	21	211
% Bank 1	45	9.7	5.6	0	4.2	0	20	5.3	0	2.2	0	4.8	94.7	0	12.9	6.9	8.7	19.8	0	3.9	7

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at University 2 AM
Site Code : 33333333
Start Date : 3/6/2024
Page No : 2

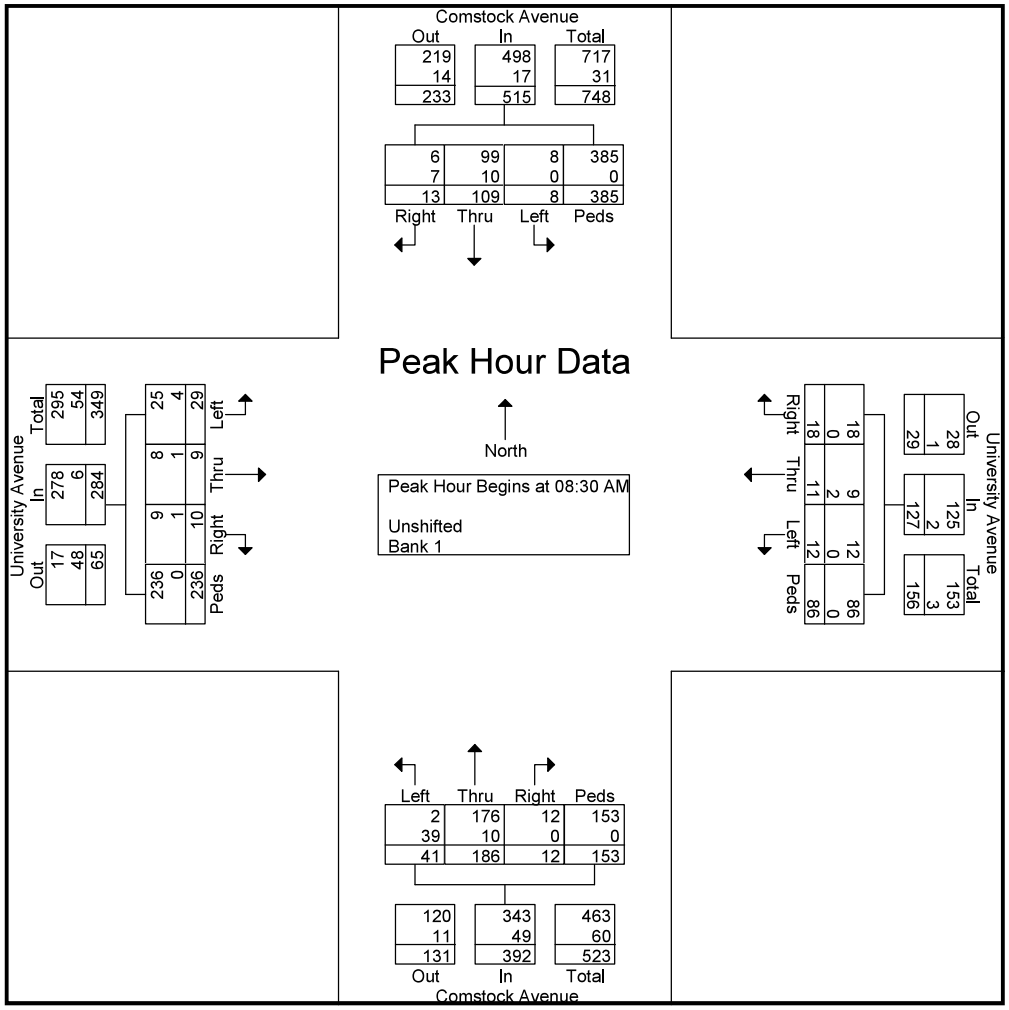


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at University 2 AM
Site Code : 33333333
Start Date : 3/6/2024
Page No : 3

	Comstock Avenue From North					University Avenue From East					Comstock Avenue From South					University Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	**4**	19	1	69	93	1	**6**	1	16	24	3	44	**14**	33	94	1	0	**9**	37	47	258
08:45 AM	2	**33**	**3**	**200**	**238**	6	1	**4**	**37**	**48**	**7**	**69**	14	**72**	**162**	**4**	**5**	8	**145**	**162**	**610**
09:00 AM	4	25	2	52	83	**8**	3	4	12	27	0	32	7	25	64	4	3	5	35	47	221
09:15 AM	3	32	2	64	101	3	1	3	21	28	2	41	6	23	72	1	1	7	19	28	229
Total Volume	13	109	8	385	515	18	11	12	86	127	12	186	41	153	392	10	9	29	236	284	1318
% App. Total	2.5	21.2	1.6	74.8		14.2	8.7	9.4	67.7		3.1	47.4	10.5	39		3.5	3.2	10.2	83.1		
PHF	.813	.826	.667	.481	.541	.563	.458	.750	.581	.661	.429	.674	.732	.531	.605	.625	.450	.806	.407	.438	.540
Unshifted	6	99	8	385	498	18	9	12	86	125	12	176	2	153	343	9	8	25	236	278	1244
% Unshifted	46.2	90.8	100	100	96.7	100	81.8	100	100	98.4	100	94.6	4.9	100	87.5	90.0	88.9	86.2	100	97.9	94.4
Bank 1	7	10	0	0	17	0	2	0	0	2	0	10	39	0	49	1	1	4	0	6	74
% Bank 1	53.8	9.2	0	0	3.3	0	18.2	0	0	1.6	0	5.4	95.1	0	12.5	10.0	11.1	13.8	0	2.1	5.6



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid FRI AM
Site Code : 44444444
Start Date : 3/1/2024
Page No : 1

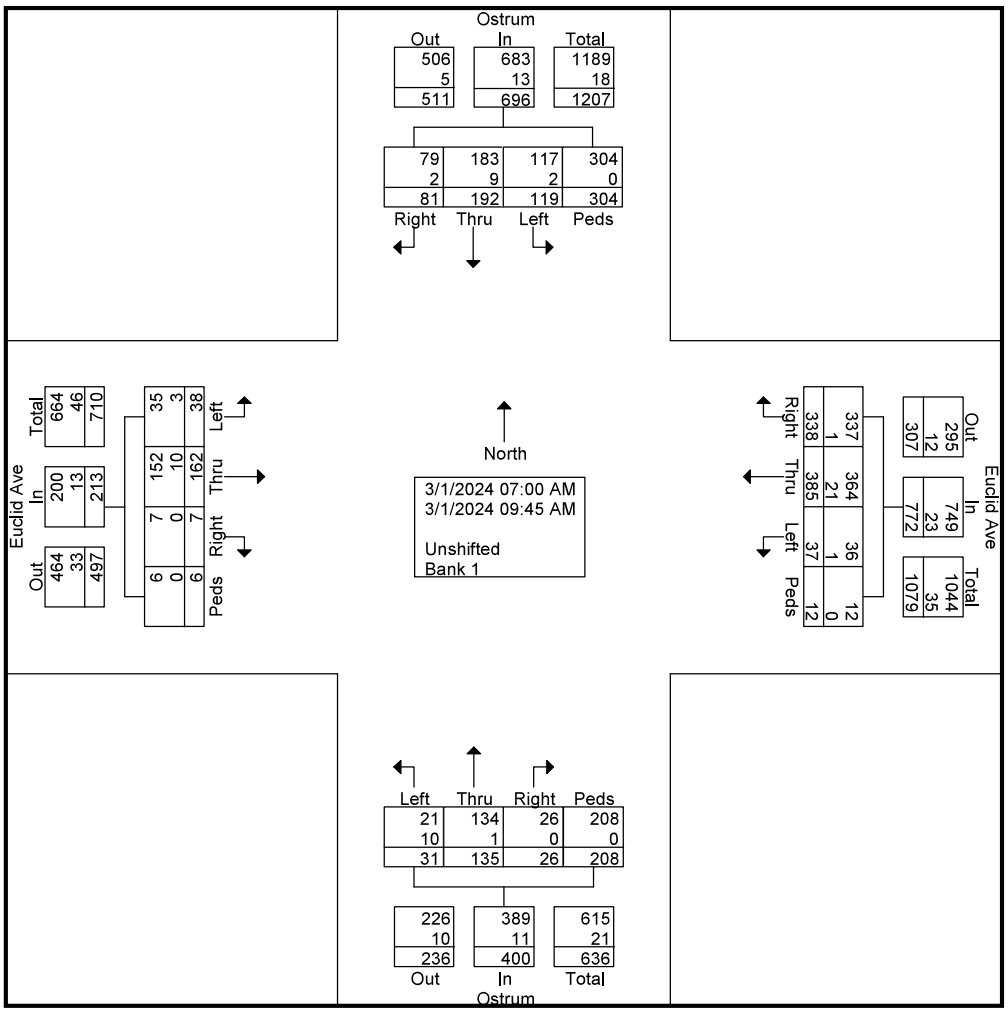
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	4	2	3	8	17	24	14	0	0	38	0	1	2	2	5	0	12	0	0	12	72
07:15 AM	3	7	7	9	26	19	22	1	0	42	2	7	0	6	15	0	5	3	0	8	91
07:30 AM	3	7	4	9	23	27	28	4	1	60	0	12	0	10	22	1	6	2	1	10	115
07:45 AM	4	14	5	19	42	33	33	0	0	66	1	12	5	14	32	0	10	5	0	15	155
Total	14	30	19	45	108	103	97	5	1	206	3	32	7	32	74	1	33	10	1	45	433
08:00 AM	5	21	10	24	60	28	38	7	1	74	1	12	1	19	33	0	18	1	0	19	186
08:15 AM	10	20	7	25	62	47	39	5	2	93	3	18	3	22	46	1	13	3	0	17	218
08:30 AM	9	21	21	28	79	29	31	1	2	63	5	16	4	11	36	1	21	6	1	29	207
08:45 AM	10	16	10	38	74	34	36	7	1	78	3	24	1	30	58	2	16	3	2	23	233
Total	34	78	48	115	275	138	144	20	6	308	12	70	9	82	173	4	68	13	3	88	844
09:00 AM	7	10	9	45	71	20	36	2	1	59	5	12	6	26	49	0	18	5	0	23	202
09:15 AM	11	25	10	48	94	35	52	1	1	89	0	10	3	33	46	0	16	3	0	19	248
09:30 AM	10	25	16	29	80	21	29	5	3	58	2	5	3	12	22	2	18	4	2	26	186
09:45 AM	5	24	17	22	68	21	27	4	0	52	4	6	3	23	36	0	9	3	0	12	168
Total	33	84	52	144	313	97	144	12	5	258	11	33	15	94	153	2	61	15	2	80	804
Grand Total	81	192	119	304	696	338	385	37	12	772	26	135	31	208	400	7	162	38	6	213	2081
Apprch %	11.6	27.6	17.1	43.7		43.8	49.9	4.8	1.6		6.5	33.8	7.8	52		3.3	76.1	17.8	2.8		
Total %	3.9	9.2	5.7	14.6	33.4	16.2	18.5	1.8	0.6	37.1	1.2	6.5	1.5	10	19.2	0.3	7.8	1.8	0.3	10.2	
Unshifted	79	183	117	304	683	337	364	36	12	749	26	134	21	208	389	7	152	35	6	200	2021
% Unshifted	97.5	95.3	98.3	100	98.1	99.7	94.5	97.3	100	97	100	99.3	67.7	100	97.2	100	93.8	92.1	100	93.9	97.1
Bank 1	2	9	2	0	13	1	21	1	0	23	0	1	10	0	11	0	10	3	0	13	60
% Bank 1	2.5	4.7	1.7	0	1.9	0.3	5.5	2.7	0	3	0	0.7	32.3	0	2.8	0	6.2	7.9	0	6.1	2.9

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid FRI AM
Site Code : 44444444
Start Date : 3/1/2024
Page No : 2

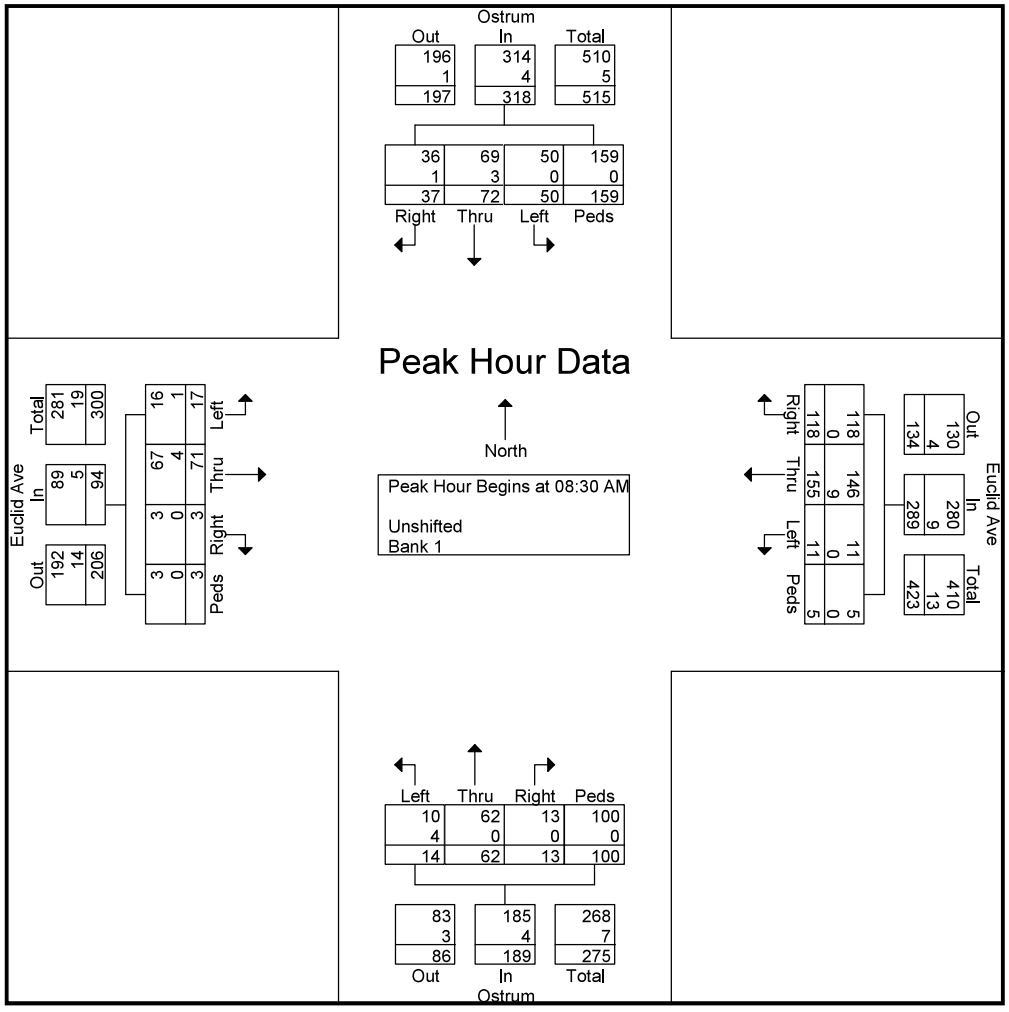


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid FRI AM
Site Code : 44444444
Start Date : 3/1/2024
Page No : 3

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	9	21	**21**	28	79	29	31	1	**2**	63	**5**	16	4	11	36	1	**21**	**6**	1	**29**	207
08:45 AM	10	16	10	38	74	34	36	**7**	1	78	3	**24**	1	30	**58**	**2**	16	3	**2**	23	233
09:00 AM	7	10	9	45	71	20	36	2	1	59	5	12	**6**	26	49	0	18	5	0	23	202
09:15 AM	**11**	**25**	10	**48**	**94**	**35**	**52**	1	1	**89**	0	10	3	**33**	46	0	16	3	0	19	**248**
Total Volume	37	72	50	159	318	118	155	11	5	289	13	62	14	100	189	3	71	17	3	94	890
% App. Total	11.6	22.6	15.7	50		40.8	53.6	3.8	1.7		6.9	32.8	7.4	52.9		3.2	75.5	18.1	3.2		
PHF	.841	.720	.595	.828	.846	.843	.745	.393	.625	.812	.650	.646	.583	.758	.815	.375	.845	.708	.375	.810	.897
Unshifted	36	69	50	159	314	118	146	11	5	280	13	62	10	100	185	3	67	16	3	89	868
% Unshifted	97.3	95.8	100	100	98.7	100	94.2	100	100	96.9	100	100	71.4	100	97.9	100	94.4	94.1	100	94.7	97.5
Bank 1	1	3	0	0	4	0	9	0	0	9	0	0	4	0	4	0	4	1	0	5	22
% Bank 1	2.7	4.2	0	0	1.3	0	5.8	0	0	3.1	0	0	28.6	0	2.1	0	5.6	5.9	0	5.3	2.5



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at University FRI AM
Site Code : 11111111
Start Date : 3/1/2024
Page No : 1

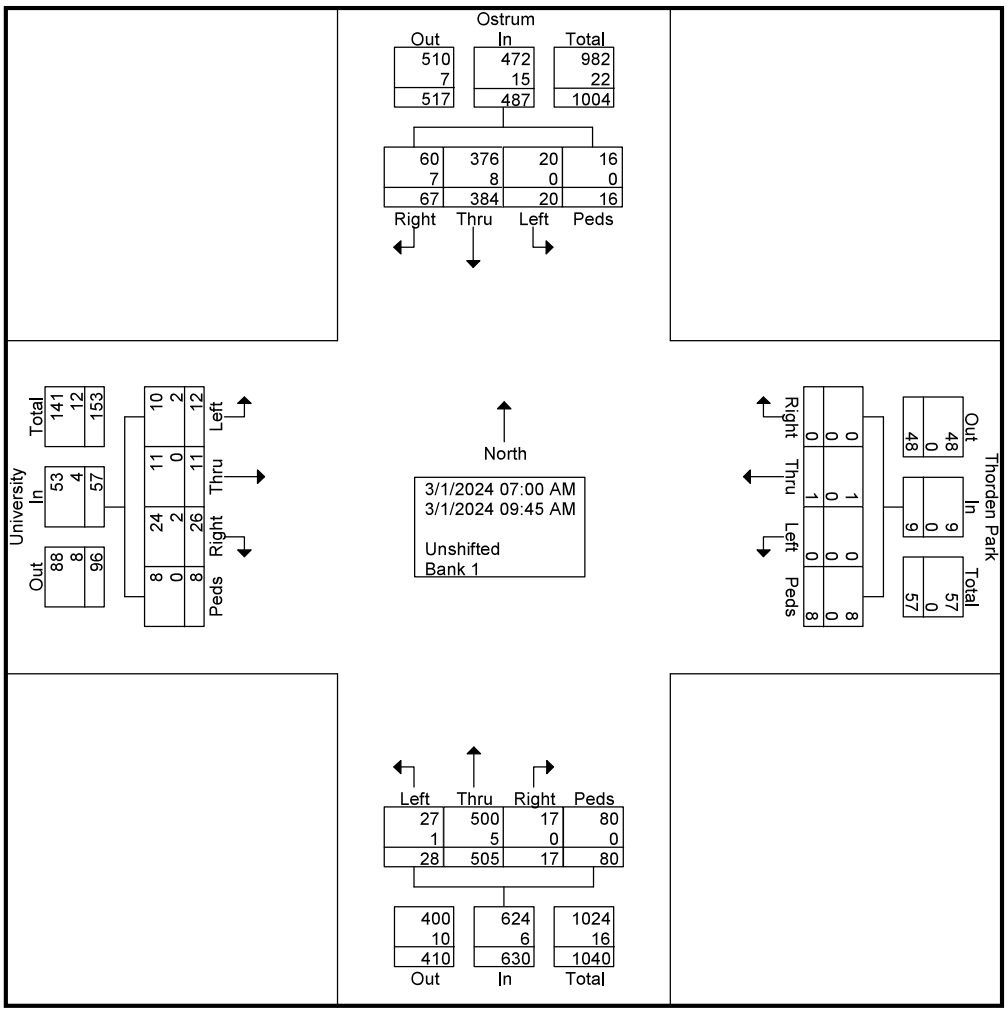
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Thorden Park From East					From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	11	1	1	15	0	1	0	0	1	0	25	1	0	26	0	1	0	0	1	43
07:15 AM	0	16	1	1	18	0	0	0	0	0	1	23	3	1	28	2	0	0	0	2	48
07:30 AM	4	13	1	2	20	0	0	0	0	0	0	43	3	3	49	1	0	1	0	2	71
07:45 AM	4	25	1	1	31	0	0	0	1	1	3	54	4	3	64	2	2	1	1	6	102
Total	10	65	4	5	84	0	1	0	1	2	4	145	11	7	167	5	3	2	1	11	264
08:00 AM	4	36	0	1	41	0	0	0	0	0	1	35	1	6	43	2	0	0	1	3	87
08:15 AM	9	39	2	2	52	0	0	0	0	0	1	69	1	3	74	0	0	0	0	0	126
08:30 AM	10	39	1	0	50	0	0	0	0	0	0	57	2	7	66	7	1	2	1	11	127
08:45 AM	8	32	4	4	48	0	0	0	3	3	2	57	3	5	67	2	0	3	1	6	124
Total	31	146	7	7	191	0	0	0	3	3	4	218	7	21	250	11	1	5	3	20	464
09:00 AM	5	32	3	0	40	0	0	0	0	0	1	39	5	14	59	2	1	1	2	6	105
09:15 AM	6	50	3	0	59	0	0	0	2	2	4	42	1	25	72	2	3	2	0	7	140
09:30 AM	12	45	1	2	60	0	0	0	2	2	3	32	2	8	45	4	2	1	1	8	115
09:45 AM	3	46	2	2	53	0	0	0	0	0	1	29	2	5	37	2	1	1	1	5	95
Total	26	173	9	4	212	0	0	0	4	4	9	142	10	52	213	10	7	5	4	26	455
Grand Total	67	384	20	16	487	0	1	0	8	9	17	505	28	80	630	26	11	12	8	57	1183
Apprch %	13.8	78.9	4.1	3.3		0	11.1	0	88.9		2.7	80.2	4.4	12.7		45.6	19.3	21.1	14		
Total %	5.7	32.5	1.7	1.4	41.2	0	0.1	0	0.7	0.8	1.4	42.7	2.4	6.8	53.3	2.2	0.9	1	0.7	4.8	
Unshifted	60	376	20	16	472	0	1	0	8	9	17	500	27	80	624	24	11	10	8	53	1158
% Unshifted	89.6	97.9	100	100	96.9	0	100	0	100	100	100	99	96.4	100	99	92.3	100	83.3	100	93	97.9
Bank 1	7	8	0	0	15	0	0	0	0	0	0	5	1	0	6	2	0	2	0	4	25
% Bank 1	10.4	2.1	0	0	3.1	0	0	0	0	0	0	1	3.6	0	1	7.7	0	16.7	0	7	2.1

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at University FRI AM
Site Code : 11111111
Start Date : 3/1/2024
Page No : 2

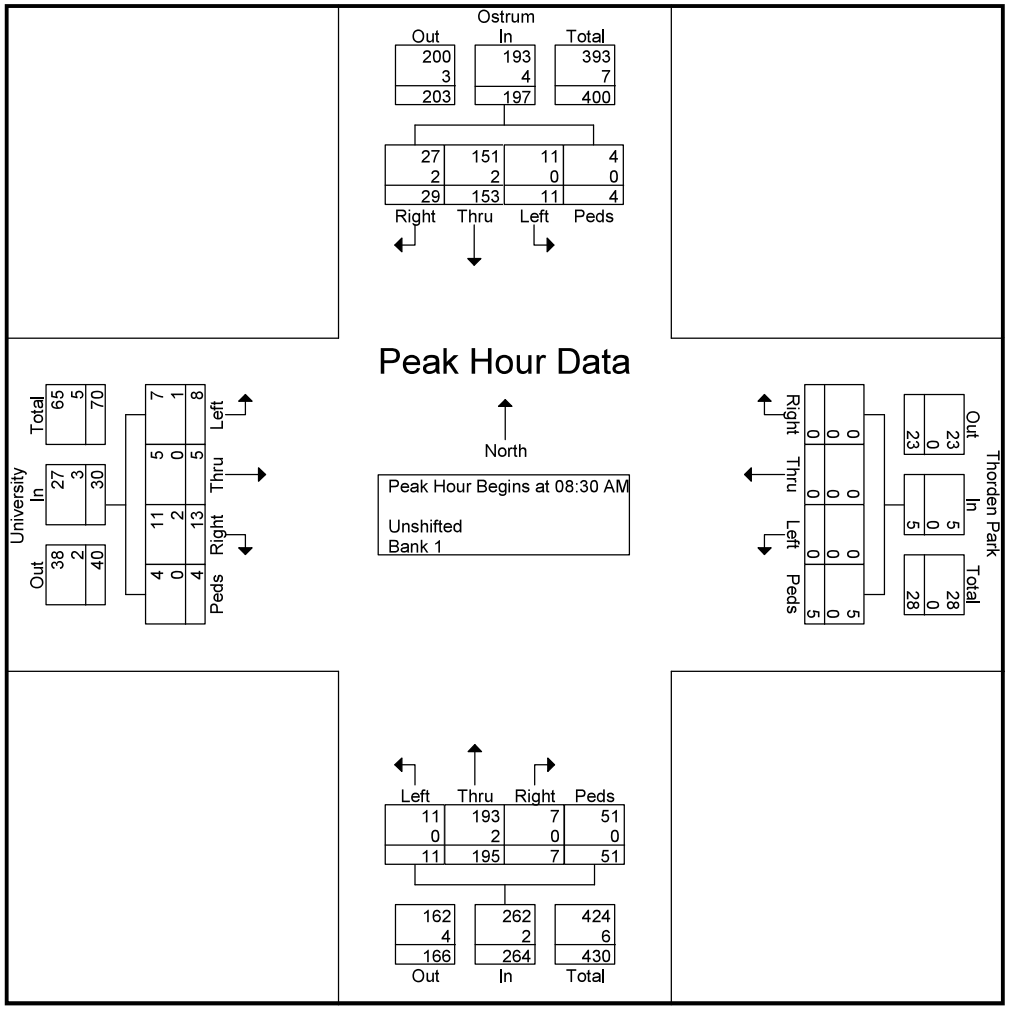


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at University FRI AM
Site Code : 11111111
Start Date : 3/1/2024
Page No : 3

	Ostrum From North					Thorden Park From East					From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	**10**	39	1	0	50	0	0	0	0	0	0	**57**	2	7	66	**7**	1	2	1	**11**	127
08:45 AM	8	32	**4**	**4**	48	0	0	0	**3**	**3**	2	57	3	5	67	2	0	**3**	1	6	124
09:00 AM	5	32	3	0	40	0	0	0	0	0	1	39	**5**	14	59	2	1	1	**2**	6	105
09:15 AM	6	**50**	3	0	**59**	0	0	0	2	2	**4**	42	1	**25**	**72**	2	**3**	2	0	7	**140**
Total Volume	29	153	11	4	197	0	0	0	5	5	7	195	11	51	264	13	5	8	4	30	496
% App. Total	14.7	77.7	5.6	2		0	0	0	100		2.7	73.9	4.2	19.3		43.3	16.7	26.7	13.3		
PHF	.725	.765	.688	.250	.835	.000	.000	.000	.417	.417	.438	.855	.550	.510	.917	.464	.417	.667	.500	.682	.886
Unshifted	27	151	11	4	193	0	0	0	5	5	7	193	11	51	262	11	5	7	4	27	487
% Unshifted	93.1	98.7	100	100	98.0	0	0	0	100	100	100	99.0	100	100	99.2	84.6	100	87.5	100	90.0	98.2
Bank 1	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	2	0	1	0	3	9
% Bank 1	6.9	1.3	0	0	2.0	0	0	0	0	0	0	1.0	0	0	0.8	15.4	0	12.5	0	10.0	1.8



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid PM
Site Code : 77777777
Start Date : 2/29/2024
Page No : 1

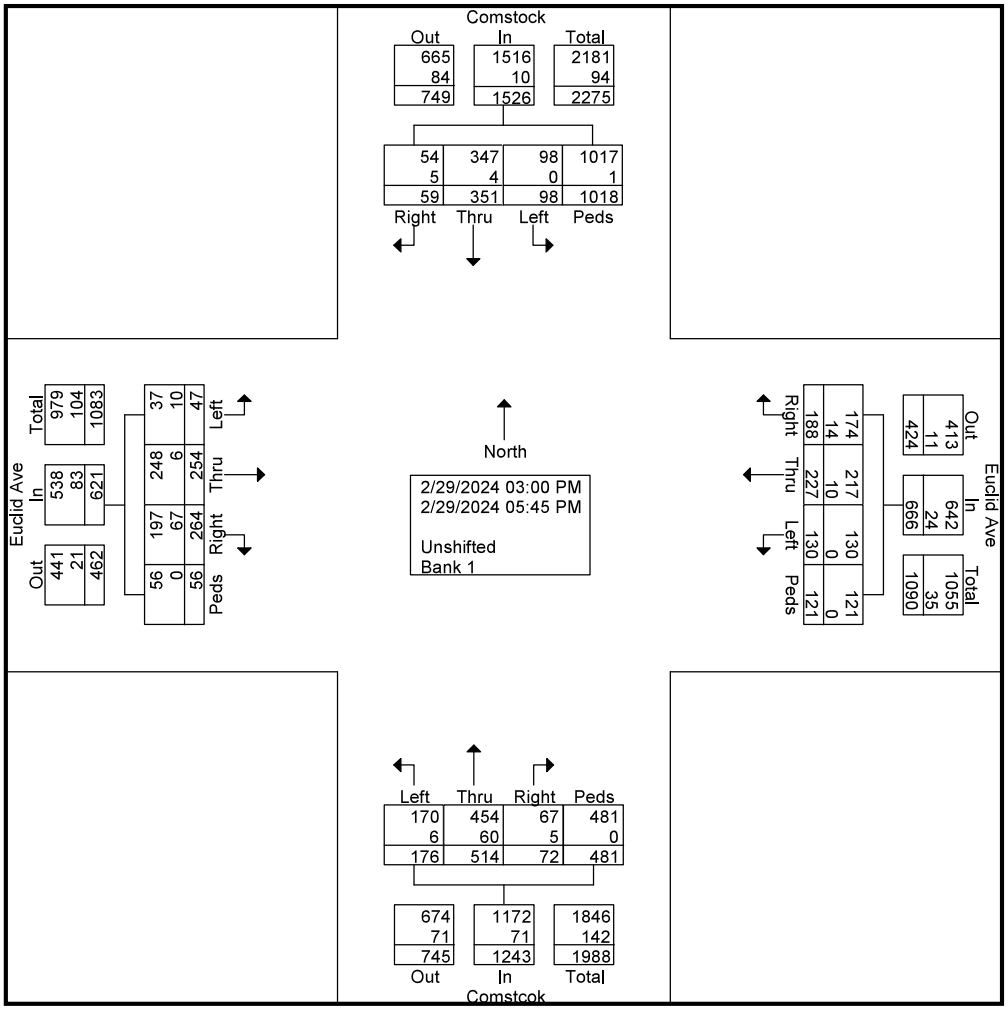
Groups Printed- Unshifted - Bank 1

	Comstock From North					Euclid Ave From East					Comstcok From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	4	29	4	82	119	12	19	12	6	49	3	41	17	32	93	19	11	2	3	35	296
03:15 PM	0	30	9	181	220	15	25	7	24	71	7	40	18	76	141	14	23	6	6	49	481
03:30 PM	7	32	3	63	105	13	15	15	8	51	3	39	13	40	95	21	26	3	8	58	309
03:45 PM	2	16	7	29	54	9	17	11	5	42	12	41	7	25	85	40	13	5	3	61	242
Total	13	107	23	355	498	49	76	45	43	213	25	161	55	173	414	94	73	16	20	203	1328
04:00 PM	6	33	7	43	89	12	14	10	3	39	5	41	12	24	82	21	18	3	4	46	256
04:15 PM	4	19	6	61	90	12	15	7	9	43	3	30	12	21	66	16	17	7	0	40	239
04:30 PM	6	26	6	72	110	16	23	4	9	52	7	43	16	37	103	22	21	5	0	48	313
04:45 PM	13	43	10	137	203	18	28	7	20	73	6	58	28	64	156	21	31	2	4	58	490
Total	29	121	29	313	492	58	80	28	41	207	21	172	68	146	407	80	87	17	8	192	1298
05:00 PM	3	34	7	106	150	19	22	17	7	65	8	68	14	59	149	29	43	4	3	79	443
05:15 PM	6	28	16	80	130	16	14	8	14	52	4	43	9	34	90	23	22	6	5	56	328
05:30 PM	5	26	14	90	135	26	11	14	11	62	10	34	9	24	77	18	13	2	5	38	312
05:45 PM	3	35	9	74	121	20	24	18	5	67	4	36	21	45	106	20	16	2	15	53	347
Total	17	123	46	350	536	81	71	57	37	246	26	181	53	162	422	90	94	14	28	226	1430
Grand Total	59	351	98	1018	1526	188	227	130	121	666	72	514	176	481	1243	264	254	47	56	621	4056
Apprch %	3.9	23	6.4	66.7		28.2	34.1	19.5	18.2		5.8	41.4	14.2	38.7		42.5	40.9	7.6	9		
Total %	1.5	8.7	2.4	25.1	37.6	4.6	5.6	3.2	3	16.4	1.8	12.7	4.3	11.9	30.6	6.5	6.3	1.2	1.4	15.3	
Unshifted	54	347	98	1017	1516	174	217	130	121	642	67	454	170	481	1172	197	248	37	56	538	3868
% Unshifted	91.5	98.9	100	99.9	99.3	92.6	95.6	100	100	96.4	93.1	88.3	96.6	100	94.3	74.6	97.6	78.7	100	86.6	95.4
Bank 1	5	4	0	1	10	14	10	0	0	24	5	60	6	0	71	67	6	10	0	83	188
% Bank 1	8.5	1.1	0	0.1	0.7	7.4	4.4	0	0	3.6	6.9	11.7	3.4	0	5.7	25.4	2.4	21.3	0	13.4	4.6

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid PM
Site Code : 77777777
Start Date : 2/29/2024
Page No : 2

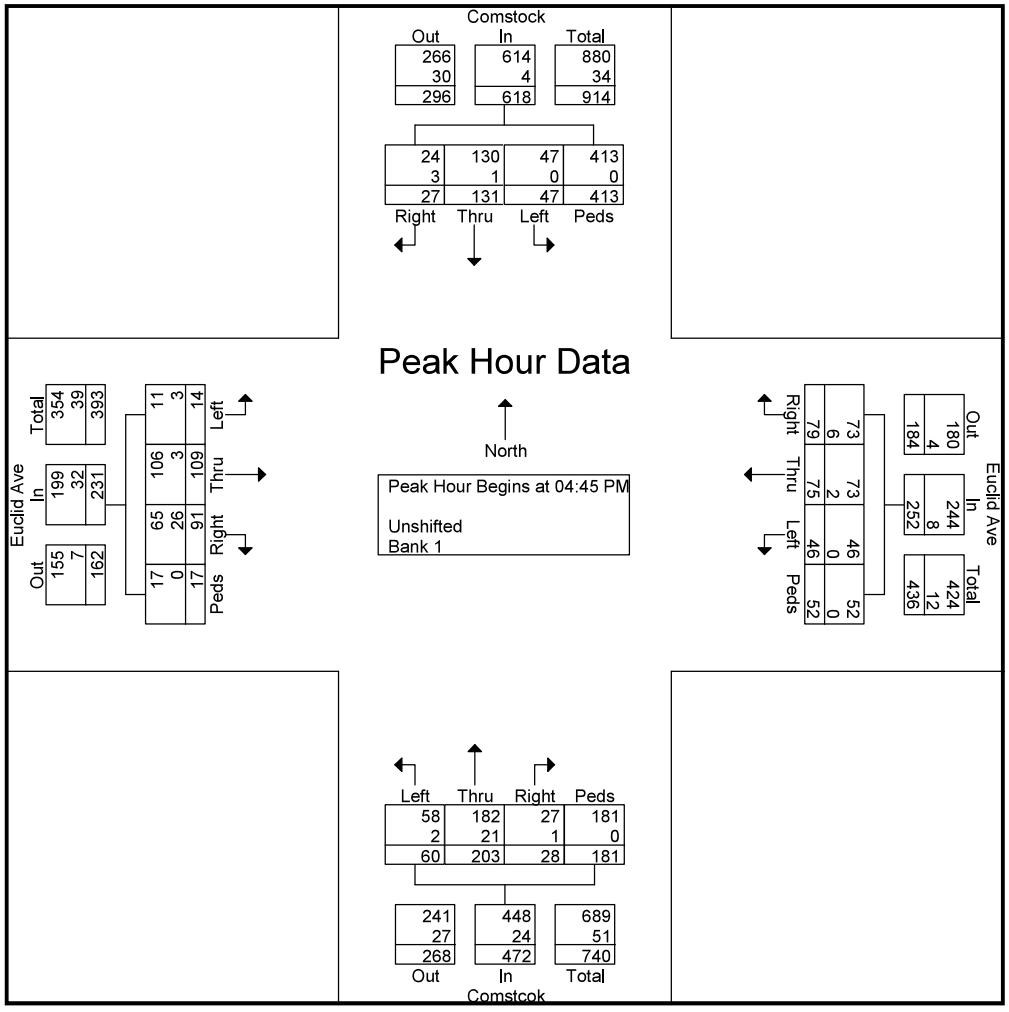


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid PM
Site Code : 77777777
Start Date : 2/29/2024
Page No : 3

	Comstock From North					Euclid Ave From East					Comstcok From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**13**	**43**	10	**137**	**203**	18	**28**	7	**20**	**73**	6	58	**28**	**64**	**156**	21	31	2	4	58	**490**
05:00 PM	3	34	7	106	150	19	22	**17**	7	65	8	**68**	14	59	149	**29**	**43**	4	3	**79**	443
05:15 PM	6	28	**16**	80	130	16	14	8	14	52	4	43	9	34	90	23	22	**6**	**5**	56	328
05:30 PM	5	26	14	90	135	**26**	11	14	11	62	**10**	34	9	24	77	18	13	2	5	38	312
Total Volume	27	131	47	413	618	79	75	46	52	252	28	203	60	181	472	91	109	14	17	231	1573
% App. Total	4.4	21.2	7.6	66.8		31.3	29.8	18.3	20.6		5.9	43	12.7	38.3		39.4	47.2	6.1	7.4		
PHF	.519	.762	.734	.754	.761	.760	.670	.676	.650	.863	.700	.746	.536	.707	.756	.784	.634	.583	.850	.731	.803
Unshifted	24	130	47	413	614	73	73	46	52	244	27	182	58	181	448	65	106	11	17	199	1505
% Unshifted	88.9	99.2	100	100	99.4	92.4	97.3	100	100	96.8	96.4	89.7	96.7	100	94.9	71.4	97.2	78.6	100	86.1	95.7
Bank 1	3	1	0	0	4	6	2	0	0	8	1	21	2	0	24	26	3	3	0	32	68
% Bank 1	11.1	0.8	0	0	0.6	7.6	2.7	0	0	3.2	3.6	10.3	3.3	0	5.1	28.6	2.8	21.4	0	13.9	4.3



PASSERO ASSOCIATES

242 West Main Street, Suite 100, Rochester, NY 14614

File Name : Comstock at University 2 PM
Site Code : 11111111
Start Date : 3/6/2024
Page No : 1

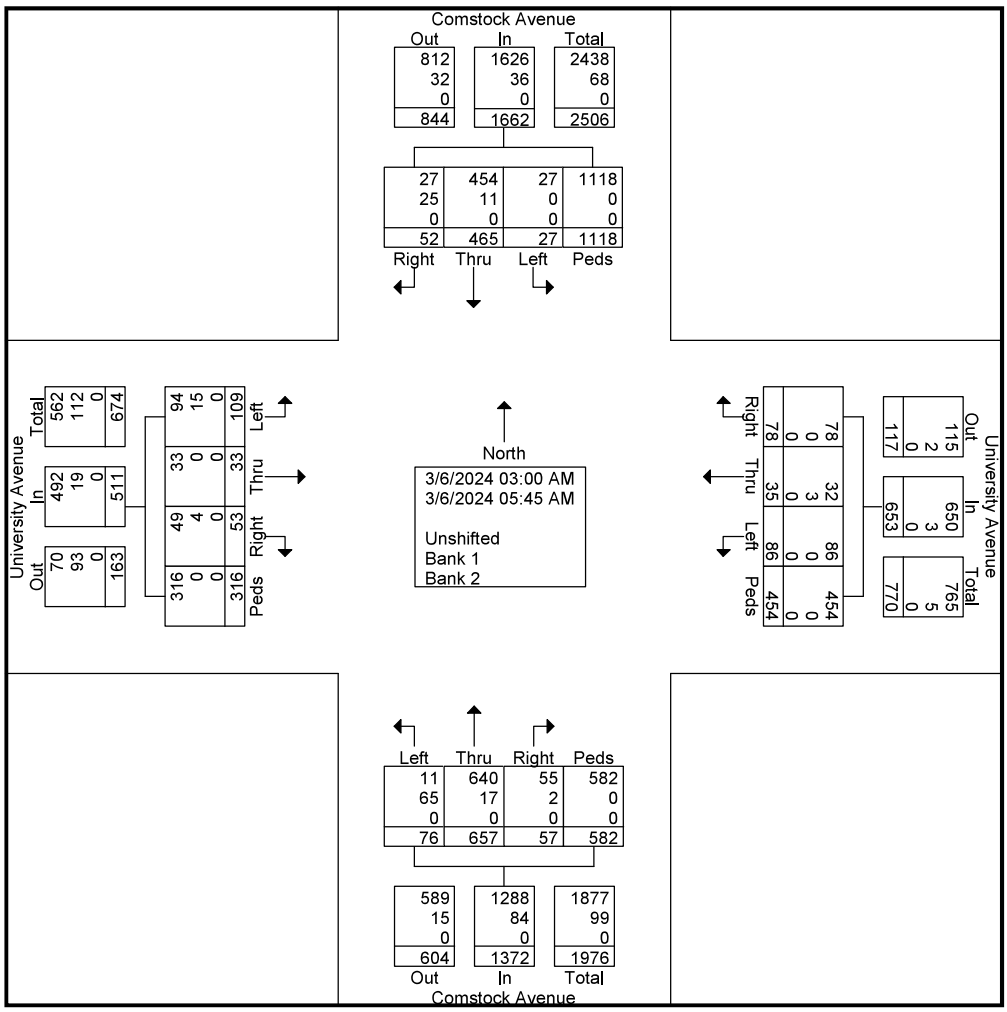
Groups Printed- Unshifted - Bank 1 - Bank 2

	Comstock Avenue Southbound				University Avenue Westbound				Comstock Avenue Northbound				University Avenue Eastbound				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
03:00 AM	2	26	1	83	3	0	2	28	5	45	6	40	2	1	5	22	271
03:15 AM	8	32	2	103	3	1	7	36	5	62	5	55	6	3	11	29	368
03:30 AM	4	44	2	170	11	3	7	70	7	63	7	103	11	4	13	62	581
03:45 AM	3	48	1	80	2	2	8	35	3	53	7	34	5	3	8	22	314
Total	17	150	6	436	19	6	24	169	20	223	25	232	24	11	37	135	1534
04:00 AM	7	36	3	53	7	2	6	17	7	48	8	22	2	2	8	9	237
04:15 AM	3	43	1	46	5	3	10	27	1	54	4	22	5	1	9	14	248
04:30 AM	3	35	4	61	6	2	9	37	4	48	7	42	3	2	16	16	295
04:45 AM	5	30	2	87	5	5	7	34	7	74	10	57	7	4	3	31	368
Total	18	144	10	247	23	12	32	115	19	224	29	143	17	9	36	70	1148
05:00 AM	7	50	0	170	7	2	12	74	4	74	8	96	4	5	6	55	574
05:15 AM	3	51	5	94	6	2	8	19	6	41	7	37	5	1	12	18	315
05:30 AM	3	31	4	110	12	9	2	29	4	48	4	28	0	4	7	27	322
05:45 AM	4	39	2	61	11	4	8	48	4	47	3	46	3	3	11	11	305
Total	17	171	11	435	36	17	30	170	18	210	22	207	12	13	36	111	1516
Grand Total	52	465	27	1118	78	35	86	454	57	657	76	582	53	33	109	316	4198
Apprch %	3.1	28	1.6	67.3	11.9	5.4	13.2	69.5	4.2	47.9	5.5	42.4	10.4	6.5	21.3	61.8	
Total %	1.2	11.1	0.6	26.6	1.9	0.8	2	10.8	1.4	15.7	1.8	13.9	1.3	0.8	2.6	7.5	
Unshifted	27	454	27	1118	78	32	86	454	55	640	11	582	49	33	94	316	4056
% Unshifted	51.9	97.6	100	100	100	91.4	100	100	96.5	97.4	14.5	100	92.5	100	86.2	100	96.6
Bank 1	25	11	0	0	0	3	0	0	2	17	65	0	4	0	15	0	142
% Bank 1	48.1	2.4	0	0	0	8.6	0	0	3.5	2.6	85.5	0	7.5	0	13.8	0	3.4
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PASSERO ASSOCIATES

242 West Main Street, Suite 100, Rochester, NY 14614

File Name : Comstock at University 2 PM
Site Code : 11111111
Start Date : 3/6/2024
Page No : 2

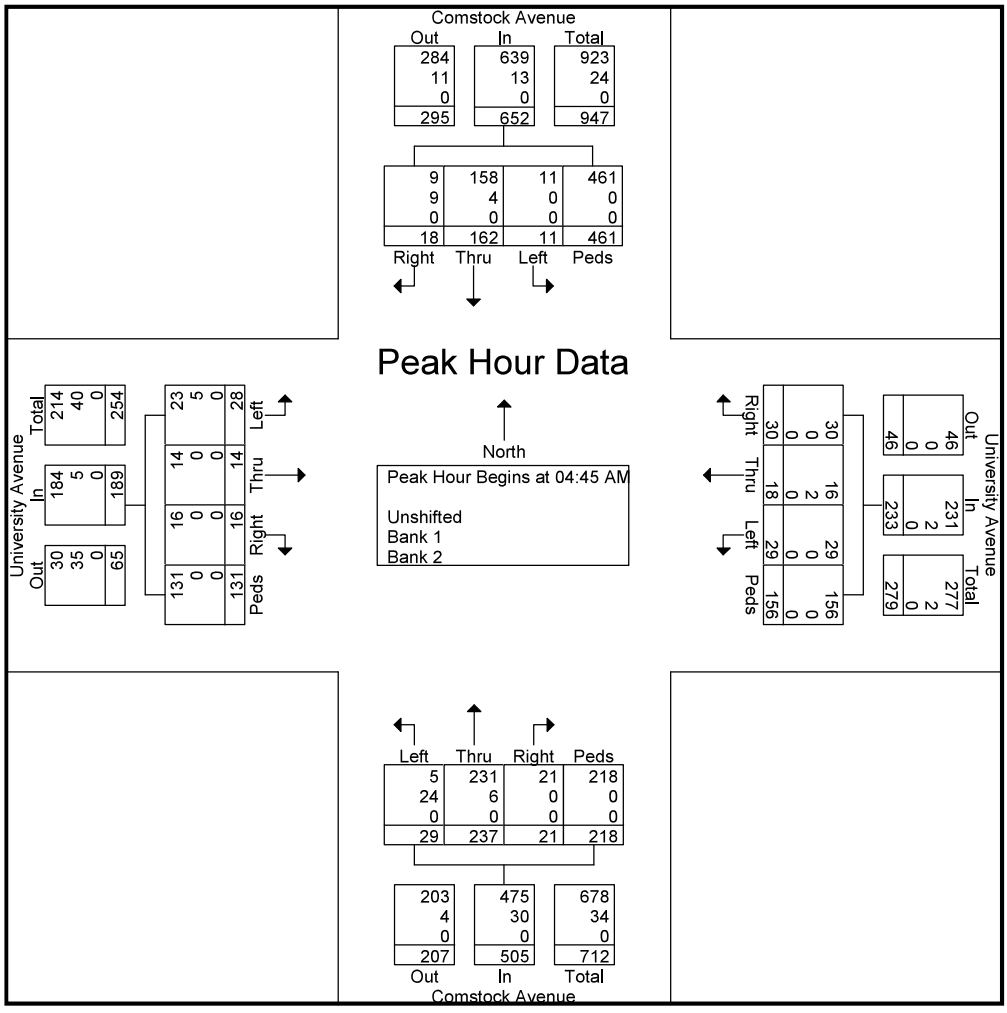


PASSERO ASSOCIATES

242 West Main Street, Suite 100, Rochester, NY 14614

File Name : Comstock at University 2 PM
Site Code : 11111111
Start Date : 3/6/2024
Page No : 3

	Comstock Avenue Southbound					University Avenue Westbound					Comstock Avenue Northbound					University Avenue Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 AM to 05:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 AM																					
04:45 AM	5	30	2	87	124	5	5	7	34	51	**7**	**74**	**10**	57	148	**7**	4	3	31	45	368
05:00 AM	**7**	50	0	**170**	**227**	7	2	**12**	**74**	**95**	4	74	8	**96**	**182**	4	**5**	6	**55**	**70**	**574**
05:15 AM	3	**51**	**5**	94	153	6	2	8	19	35	6	41	7	37	91	5	1	**12**	18	36	315
05:30 AM	3	31	4	110	148	**12**	**9**	2	29	52	4	48	4	28	84	0	4	7	27	38	322
Total Volume	18	162	11	461	652	30	18	29	156	233	21	237	29	218	505	16	14	28	131	189	1579
% App. Total	2.8	24.8	1.7	70.7		12.9	7.7	12.4	67		4.2	46.9	5.7	43.2		8.5	7.4	14.8	69.3		
PHF	.643	.794	.550	.678	.718	.625	.500	.604	.527	.613	.750	.801	.725	.568	.694	.571	.700	.583	.595	.675	.688
Unshifted	9	158	11	461	639	30	16	29	156	231	21	231	5	218	475	16	14	23	131	184	1529
% Unshifted	50.0	97.5	100	100	98.0	100	88.9	100	100	99.1	100	97.5	17.2	100	94.1	100	100	82.1	100	97.4	96.8
Bank 1	9	4	0	0	13	0	2	0	0	2	0	6	24	0	30	0	0	5	0	5	50
% Bank 1	50.0	2.5	0	0	2.0	0	11.1	0	0	0.9	0	2.5	82.8	0	5.9	0	0	17.9	0	2.6	3.2
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 1

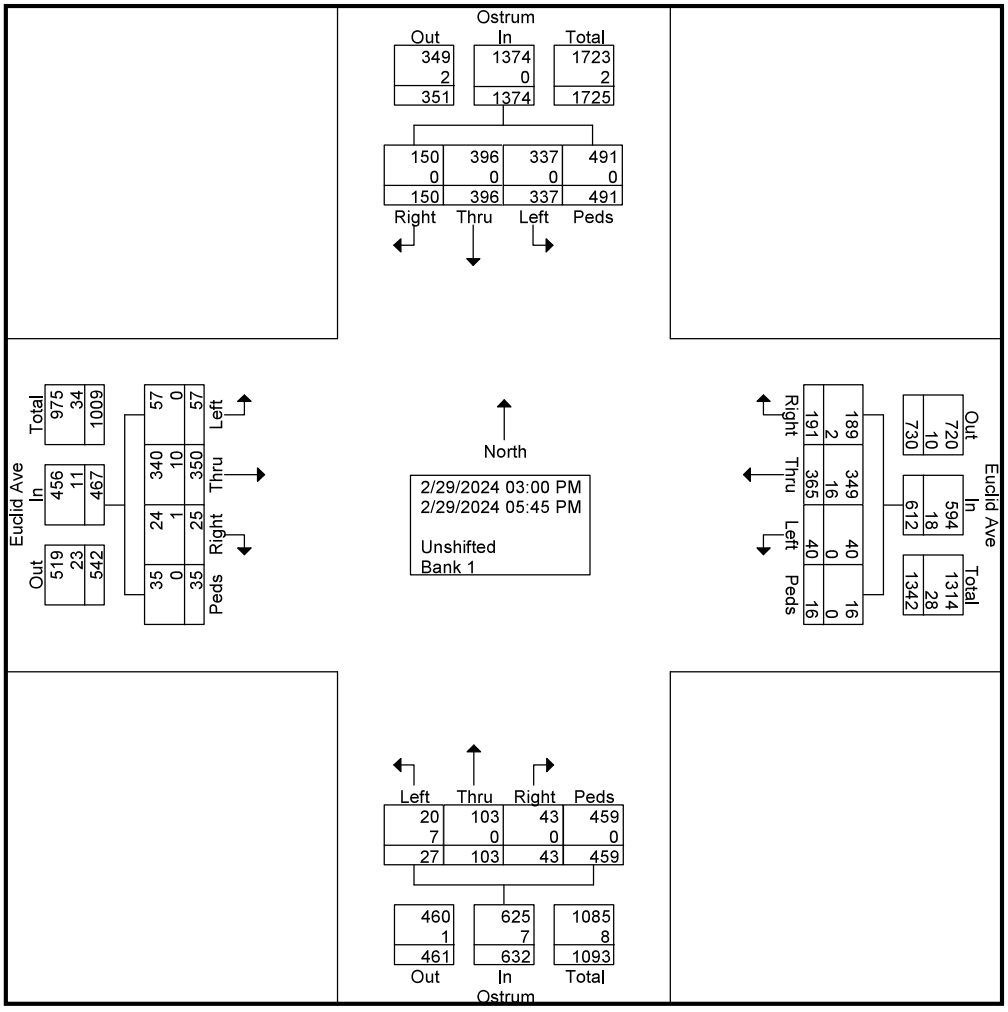
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	10	20	19	40	89	19	31	4	2	56	6	4	4	32	46	2	15	4	3	24	215
03:15 PM	12	31	26	77	146	17	38	7	1	63	4	5	4	70	83	4	37	1	0	42	334
03:30 PM	12	37	16	38	103	10	24	2	0	36	1	7	1	37	46	0	27	6	6	39	224
03:45 PM	13	17	23	20	73	15	23	5	0	43	3	4	1	21	29	1	24	5	3	33	178
Total	47	105	84	175	411	61	116	18	3	198	14	20	10	160	204	7	103	16	12	138	951
04:00 PM	16	31	25	32	104	18	20	3	2	43	6	7	0	21	34	5	23	6	1	35	216
04:15 PM	11	39	30	33	113	17	22	6	3	48	5	12	1	29	47	0	24	3	2	29	237
04:30 PM	9	31	29	37	106	18	37	1	0	56	4	9	2	39	54	2	25	6	7	40	256
04:45 PM	11	36	31	46	124	17	44	1	1	63	4	10	3	60	77	3	37	7	5	52	316
Total	47	137	115	148	447	70	123	11	6	210	19	38	6	149	212	10	109	22	15	156	1025
05:00 PM	19	49	46	63	177	23	31	2	2	58	2	13	2	43	60	4	47	7	3	61	356
05:15 PM	10	44	38	32	124	10	25	2	2	39	3	14	4	36	57	3	37	4	1	45	265
05:30 PM	12	30	26	42	110	16	35	3	1	55	2	7	3	32	44	1	29	5	1	36	245
05:45 PM	15	31	28	31	105	11	35	4	2	52	3	11	2	39	55	0	25	3	3	31	243
Total	56	154	138	168	516	60	126	11	7	204	10	45	11	150	216	8	138	19	8	173	1109
Grand Total	150	396	337	491	1374	191	365	40	16	612	43	103	27	459	632	25	350	57	35	467	3085
Apprch %	10.9	28.8	24.5	35.7		31.2	59.6	6.5	2.6		6.8	16.3	4.3	72.6		5.4	74.9	12.2	7.5		
Total %	4.9	12.8	10.9	15.9	44.5	6.2	11.8	1.3	0.5	19.8	1.4	3.3	0.9	14.9	20.5	0.8	11.3	1.8	1.1	15.1	
Unshifted	150	396	337	491	1374	189	349	40	16	594	43	103	20	459	625	24	340	57	35	456	3049
% Unshifted	100	100	100	100	100	99	95.6	100	100	97.1	100	100	74.1	100	98.9	96	97.1	100	100	97.6	98.8
Bank 1	0	0	0	0	0	2	16	0	0	18	0	0	7	0	7	1	10	0	0	11	36
% Bank 1	0	0	0	0	0	1	4.4	0	0	2.9	0	0	25.9	0	1.1	4	2.9	0	0	2.4	1.2

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 2

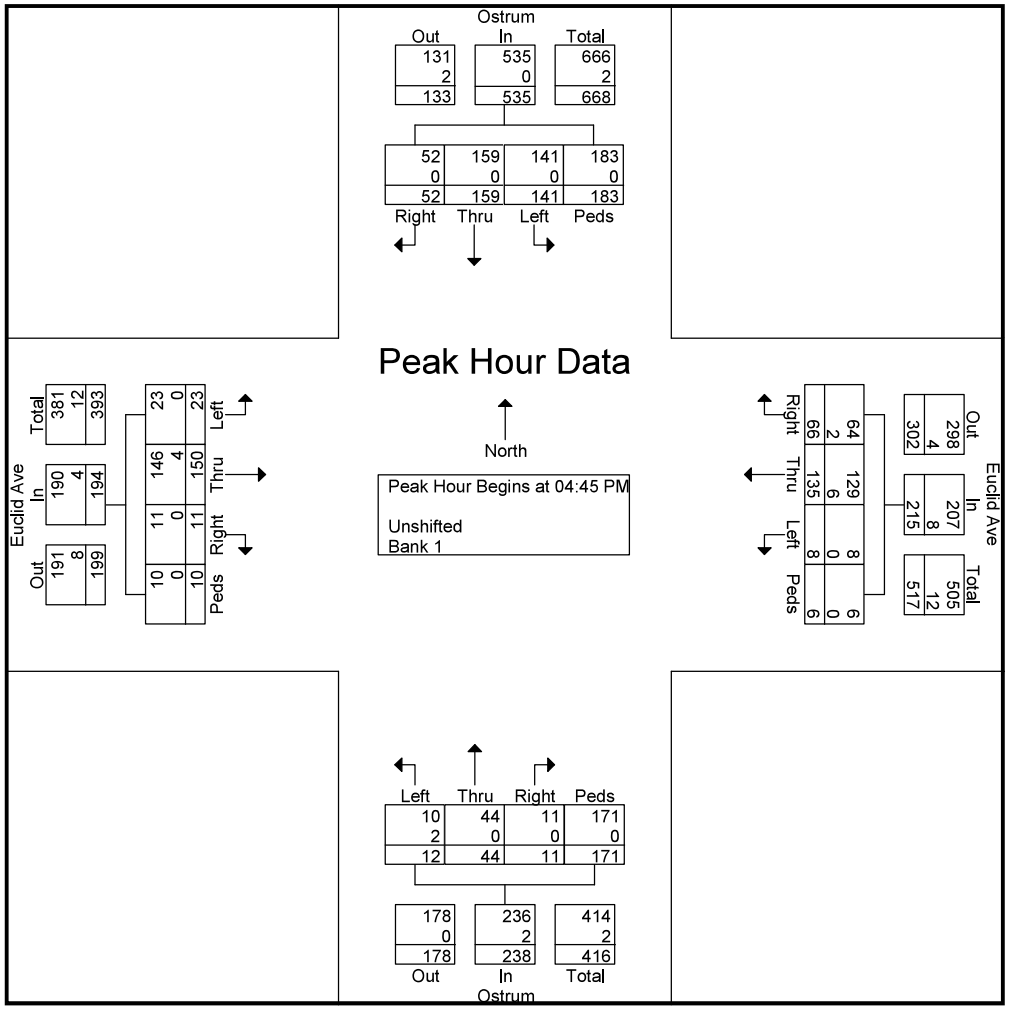


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 3

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	11	36	31	46	124	17	**44**	1	1	**63**	**4**	10	3	**60**	**77**	3	37	**7**	**5**	52	316
05:00 PM	**19**	**49**	**46**	**63**	**177**	**23**	31	2	**2**	58	2	13	2	43	60	**4**	**47**	7	3	**61**	**356**
05:15 PM	10	44	38	32	124	10	25	2	2	39	3	**14**	**4**	36	57	3	37	4	1	45	265
05:30 PM	12	30	26	42	110	16	35	**3**	1	55	2	7	3	32	44	1	29	5	1	36	245
Total Volume	52	159	141	183	535	66	135	8	6	215	11	44	12	171	238	11	150	23	10	194	1182
% App. Total	9.7	29.7	26.4	34.2		30.7	62.8	3.7	2.8		4.6	18.5	5	71.8		5.7	77.3	11.9	5.2		
PHF	.684	.811	.766	.726	.756	.717	.767	.667	.750	.853	.688	.786	.750	.713	.773	.688	.798	.821	.500	.795	.830
Unshifted	52	159	141	183	535	64	129	8	6	207	11	44	10	171	236	11	146	23	10	190	1168
% Unshifted	100	100	100	100	100	97.0	95.6	100	100	96.3	100	100	83.3	100	99.2	100	97.3	100	100	97.9	98.8
Bank 1	0	0	0	0	0	2	6	0	0	8	0	0	2	0	2	0	4	0	0	4	14
% Bank 1	0	0	0	0	0	3.0	4.4	0	0	3.7	0	0	16.7	0	0.8	0	2.7	0	0	2.1	1.2



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 1

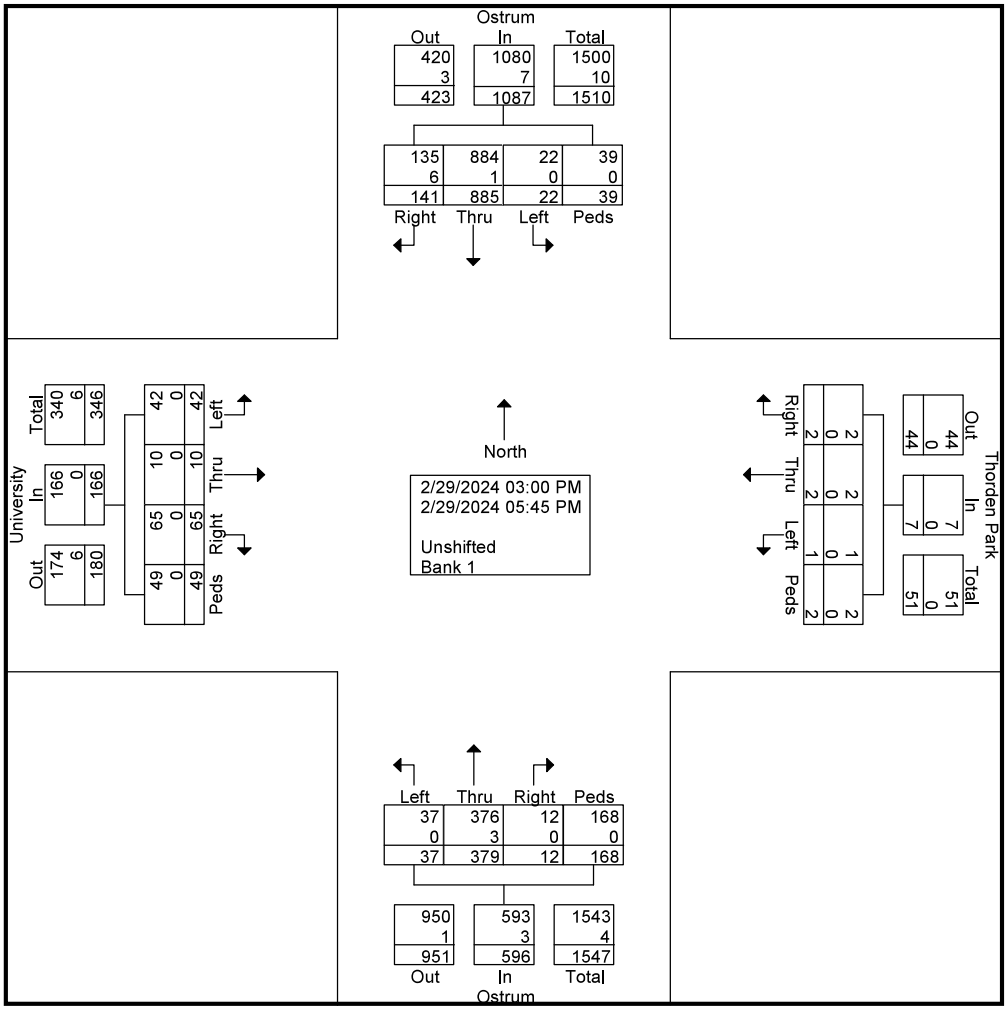
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Thorden Park From East					Ostrum From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	10	46	1	1	58	0	0	0	0	0	1	28	1	6	36	8	0	2	5	15	109
03:15 PM	8	67	1	4	80	0	0	0	0	0	3	25	4	28	60	7	1	4	5	17	157
03:30 PM	11	69	5	4	89	0	0	0	0	0	0	33	2	14	49	5	1	2	3	11	149
03:45 PM	10	60	4	5	79	0	0	0	0	0	0	28	0	19	47	3	0	2	3	8	134
Total	39	242	11	14	306	0	0	0	0	0	4	114	7	67	192	23	2	10	16	51	549
04:00 PM	12	77	3	4	96	0	0	0	0	0	1	35	7	7	50	5	3	3	2	13	159
04:15 PM	7	63	4	1	75	0	1	0	0	1	2	24	5	5	36	4	0	6	5	15	127
04:30 PM	16	73	0	0	89	0	0	0	1	1	2	30	3	24	59	6	1	3	3	13	162
04:45 PM	17	84	2	4	107	1	0	0	0	1	0	35	2	12	49	5	1	3	2	11	168
Total	52	297	9	9	367	1	1	0	1	3	5	124	17	48	194	20	5	15	12	52	616
05:00 PM	14	124	1	1	140	0	0	0	1	1	2	49	2	19	72	7	1	8	2	18	231
05:15 PM	11	85	0	4	100	0	0	0	0	0	1	25	6	7	39	1	0	4	6	11	150
05:30 PM	13	64	0	2	79	1	0	0	0	1	0	35	2	12	49	9	1	2	3	15	144
05:45 PM	12	73	1	9	95	0	1	1	0	2	0	32	3	15	50	5	1	3	10	19	166
Total	50	346	2	16	414	1	1	1	1	4	3	141	13	53	210	22	3	17	21	63	691
Grand Total	141	885	22	39	1087	2	2	1	2	7	12	379	37	168	596	65	10	42	49	166	1856
Apprch %	13	81.4	2	3.6		28.6	28.6	14.3	28.6		2	63.6	6.2	28.2		39.2	6	25.3	29.5		
Total %	7.6	47.7	1.2	2.1	58.6	0.1	0.1	0.1	0.1	0.4	0.6	20.4	2	9.1	32.1	3.5	0.5	2.3	2.6	8.9	
Unshifted	135	884	22	39	1080	2	2	1	2	7	12	376	37	168	593	65	10	42	49	166	1846
% Unshifted	95.7	99.9	100	100	99.4	100	100	100	100	100	100	99.2	100	100	99.5	100	100	100	100	100	99.5
Bank 1	6	1	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
% Bank 1	4.3	0.1	0	0	0.6	0	0	0	0	0	0	0.8	0	0	0.5	0	0	0	0	0	0.5

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 2

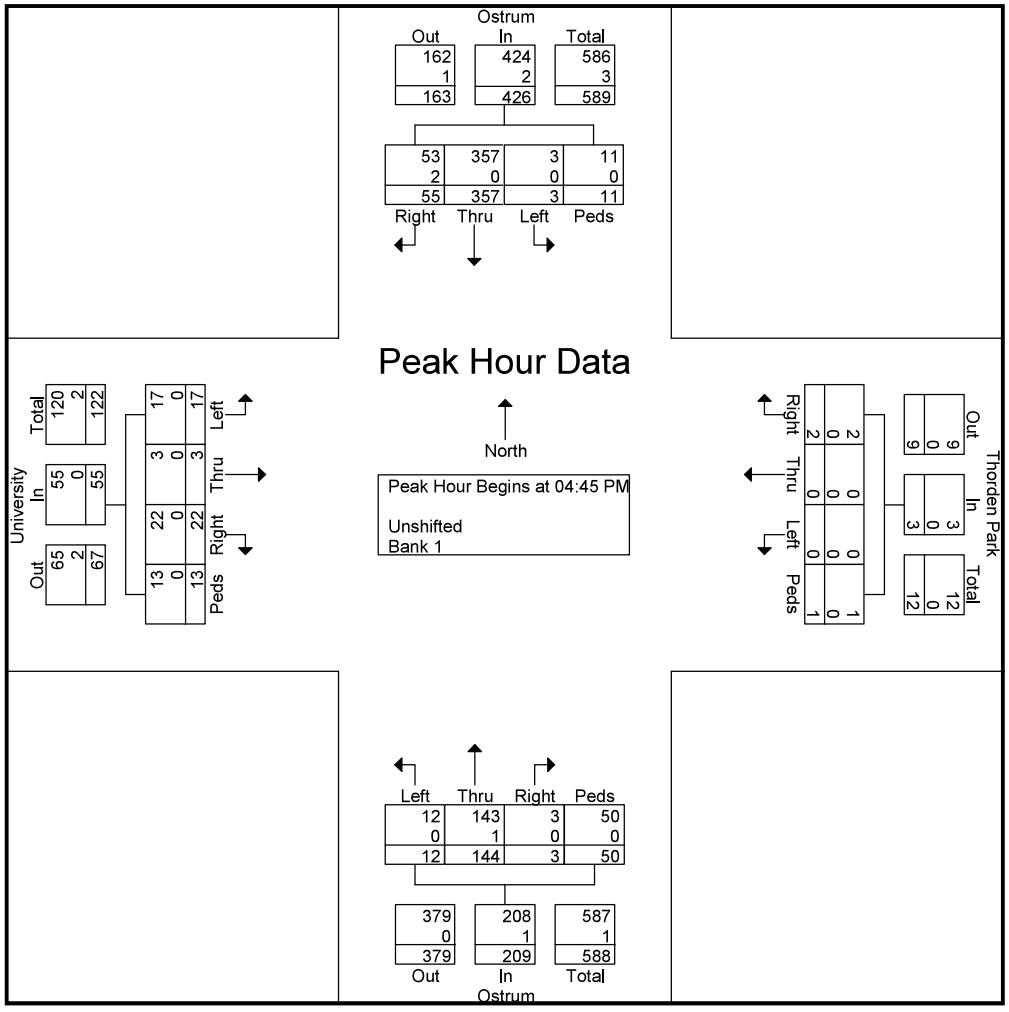


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum PM
Site Code : 33333333
Start Date : 2/29/2024
Page No : 3

	Ostrum From North					Thorden Park From East					Ostrum From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**17**	84	**2**	**4**	107	**1**	0	0	0	**1**	0	35	2	12	49	5	**1**	3	2	11	168
05:00 PM	14	**124**	1	1	**140**	0	0	0	**1**	1	**2**	**49**	2	**19**	**72**	7	1	**8**	2	**18**	**231**
05:15 PM	11	85	0	4	100	0	0	0	0	0	1	25	**6**	7	39	1	0	4	**6**	11	150
05:30 PM	13	64	0	2	79	1	0	0	0	1	0	35	2	12	49	**9**	1	2	3	15	144
Total Volume	55	357	3	11	426	2	0	0	1	3	3	144	12	50	209	22	3	17	13	55	693
% App. Total	12.9	83.8	0.7	2.6		66.7	0	0	33.3		1.4	68.9	5.7	23.9		40	5.5	30.9	23.6		
PHF	.809	.720	.375	.688	.761	.500	.000	.000	.250	.750	.375	.735	.500	.658	.726	.611	.750	.531	.542	.764	.750
Unshifted	53	357	3	11	424	2	0	0	1	3	3	143	12	50	208	22	3	17	13	55	690
% Unshifted	96.4	100	100	100	99.5	100	0	0	100	100	100	99.3	100	100	99.5	100	100	100	100	100	99.6
Bank 1	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Bank 1	3.6	0	0	0	0.5	0	0	0	0	0	0	0.7	0	0	0.5	0	0	0	0	0	0.4



National Data & Surveying Services

Intersection Turning Movement Count

Location: Comstock Ave & University Pl
City: Syracuse
Control: Signalized

Project ID: 24-400012-001
Date: 3/23/2024

Data - Total

NS/EW Streets:	Comstock Ave				Comstock Ave				University Pl				University Pl				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	1	17	1	0	0	26	3	1	2	4	1	0	2	0	1	0	59
11:15 AM	1	14	2	1	0	21	2	1	6	3	2	0	4	2	5	0	64
11:30 AM	3	24	2	0	0	14	3	0	5	1	1	0	5	1	4	0	63
11:45 AM	1	17	3	0	4	20	1	0	4	1	4	0	7	2	3	0	67
12:00 PM	1	39	1	0	2	25	1	0	3	0	2	0	1	1	10	0	86
12:15 PM	1	38	4	0	2	27	3	0	4	1	1	0	4	1	7	0	93
12:30 PM	2	24	5	0	4	25	2	0	2	2	3	0	8	0	11	0	88
12:45 PM	3	39	2	0	4	18	4	0	6	0	3	0	5	0	7	0	91
1:00 PM	4	40	4	0	2	18	4	0	6	3	4	0	2	3	5	0	95
1:15 PM	3	41	3	0	3	19	3	1	2	0	3	0	1	1	6	0	86
1:30 PM	1	46	2	0	3	25	1	0	6	1	2	0	3	5	5	0	100
1:45 PM	1	32	7	0	4	16	1	0	2	0	1	1	7	1	5	0	78
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	371	36	1	28	254	28	3	48	16	27	1	49	17	69	0	970
APPROACH %'s :	5.12%	86.28%	8.37%	0.23%	8.95%	81.15%	8.95%	0.96%	52.17%	17.39%	29.35%	1.09%	36.30%	12.59%	51.11%	0.00%	
FORCED PEAK HR :	12:30 PM - 01:30 PM																TOTAL
PEAK HR VOL :	12	144	14	0	13	80	13	1	16	5	13	0	16	4	29	0	360
PEAK HR FACTOR :																	0.947
HV%	33%	2%	7%	#DIV/0!	0%	0%	15%	0%	13%	20%	0%	#DIV/0!	0%	0%	0%	#DIV/0!	

National Data & Surveying Services

Intersection Turning Movement Count

Location: Comstock Ave & University Pl
City: Syracuse
Project ID: 24-400012-001
Date: 3/23/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Comstock Ave		Comstock Ave		University Pl		University Pl		
NOON	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
11:00 AM	19	9	6	5	9	4	3	5	60
11:15 AM	21	25	5	2	10	6	2	4	75
11:30 AM	35	24	3	7	7	12	0	10	98
11:45 AM	42	26	1	6	6	14	4	2	101
12:00 PM	28	27	10	6	17	11	4	5	108
12:15 PM	27	50	2	11	8	9	5	8	120
12:30 PM	31	22	4	1	19	6	2	4	89
12:45 PM	32	82	8	9	3	4	3	10	151
1:00 PM	28	22	10	17	7	6	9	5	104
1:15 PM	20	45	6	5	6	7	2	5	96
1:30 PM	31	41	6	3	3	0	4	11	99
1:45 PM	13	27	4	3	9	14	3	7	80
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	327	400	65	75	104	93	41	76	1181
APPROACH %'s :	44.98%	55.02%	46.43%	53.57%	52.79%	47.21%	35.04%	64.96%	
Forced PEAK HR :	12:30 - 1:30 PM								TOTAL
PEAK HR VOL :	111	171	28	32	35	23	16	24	440
PEAK HR FACTOR :	0.867	0.521	0.700	0.471	1.250	0.821	0.444	0.545	0.728
	0.618		0.556		1.115		0.667		

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid SAT MD
Site Code : 66666666
Start Date : 3/2/2024
Page No : 1

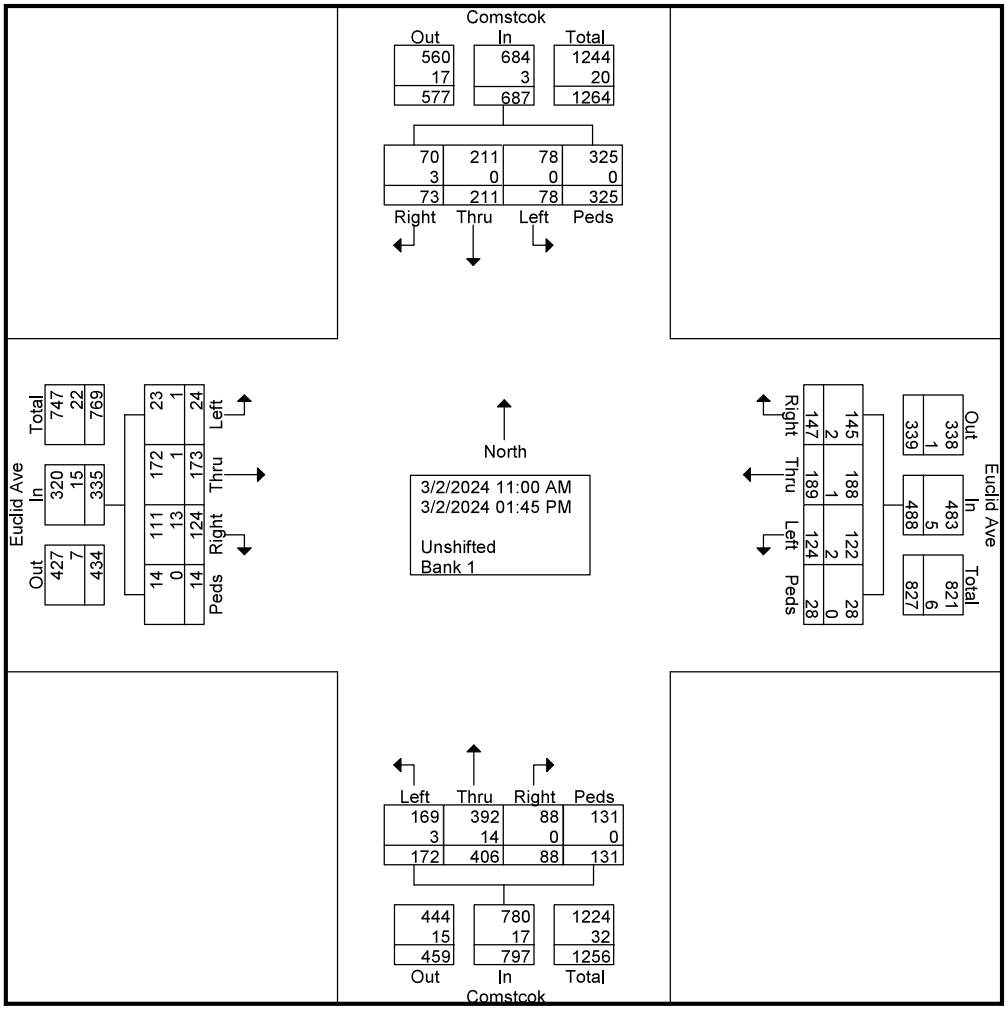
Groups Printed- Unshifted - Bank 1

	Comstcok From North					Euclid Ave From East					Comstcok From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	4	15	4	26	49	9	18	9	1	37	4	26	12	8	50	6	6	1	4	17	153
11:15 AM	5	12	4	12	33	8	15	11	0	34	7	25	15	6	53	4	8	2	1	15	135
11:30 AM	4	18	3	16	41	17	13	11	0	41	9	32	14	13	68	13	8	1	1	23	173
11:45 AM	7	15	6	19	47	14	18	14	3	49	6	30	19	22	77	12	22	2	1	37	210
Total	20	60	17	73	170	48	64	45	4	161	26	113	60	49	248	35	44	6	7	92	671
12:00 PM	2	17	7	32	58	8	13	11	2	34	7	40	14	12	73	15	17	3	1	36	201
12:15 PM	2	19	6	22	49	6	10	9	0	25	5	29	12	10	56	15	15	3	3	36	166
12:30 PM	8	24	10	29	71	16	23	13	8	60	7	40	21	12	80	12	16	0	0	28	239
12:45 PM	5	18	5	29	57	15	25	7	7	54	9	41	19	13	82	16	17	6	2	41	234
Total	17	78	28	112	235	45	71	40	17	173	28	150	66	47	291	58	65	12	6	141	840
01:00 PM	7	21	9	31	68	17	10	16	2	45	7	38	10	11	66	9	12	0	1	22	201
01:15 PM	6	19	8	26	59	15	17	9	3	44	11	36	14	5	66	8	15	2	0	25	194
01:30 PM	10	16	7	38	71	13	12	5	0	30	8	31	7	9	55	5	16	2	0	23	179
01:45 PM	13	17	9	45	84	9	15	9	2	35	8	38	15	10	71	9	21	2	0	32	222
Total	36	73	33	140	282	54	54	39	7	154	34	143	46	35	258	31	64	6	1	102	796
Grand Total	73	211	78	325	687	147	189	124	28	488	88	406	172	131	797	124	173	24	14	335	2307
Apprch %	10.6	30.7	11.4	47.3		30.1	38.7	25.4	5.7		11	50.9	21.6	16.4		37	51.6	7.2	4.2		
Total %	3.2	9.1	3.4	14.1	29.8	6.4	8.2	5.4	1.2	21.2	3.8	17.6	7.5	5.7	34.5	5.4	7.5	1	0.6	14.5	
Unshifted	70	211	78	325	684	145	188	122	28	483	88	392	169	131	780	111	172	23	14	320	2267
% Unshifted	95.9	100	100	100	99.6	98.6	99.5	98.4	100	99	100	96.6	98.3	100	97.9	89.5	99.4	95.8	100	95.5	98.3
Bank 1	3	0	0	0	3	2	1	2	0	5	0	14	3	0	17	13	1	1	0	15	40
% Bank 1	4.1	0	0	0	0.4	1.4	0.5	1.6	0	1	0	3.4	1.7	0	2.1	10.5	0.6	4.2	0	4.5	1.7

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid SAT MD
Site Code : 66666666
Start Date : 3/2/2024
Page No : 2

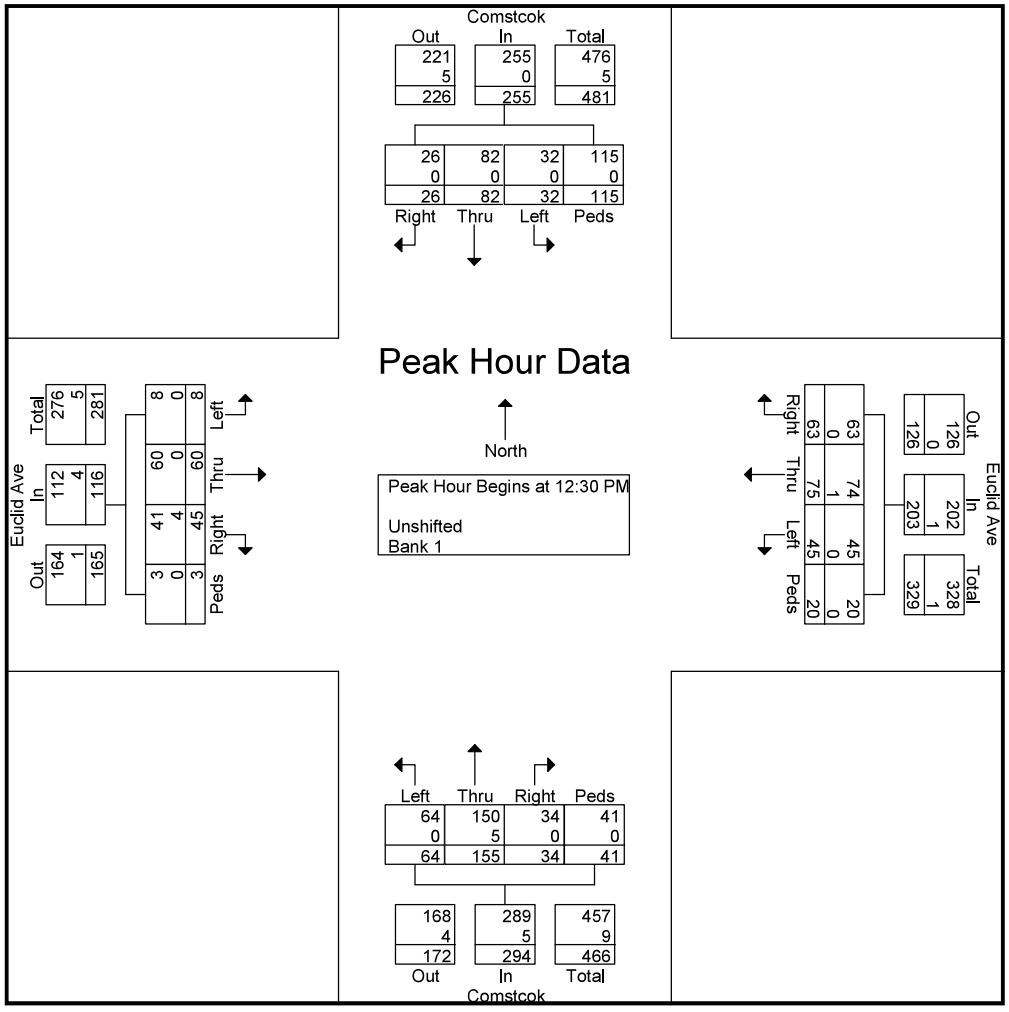


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Comstock at Euclid SAT MD
Site Code : 66666666
Start Date : 3/2/2024
Page No : 3

	Comstcok From North					Euclid Ave From East					Comstcok From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	**8**	**24**	**10**	29	**71**	16	23	13	**8**	**60**	7	40	**21**	12	80	12	16	0	0	28	**239**
12:45 PM	5	18	5	29	57	15	**25**	7	7	54	9	**41**	19	**13**	**82**	**16**	**17**	**6**	**2**	**41**	234
01:00 PM	7	21	9	**31**	68	**17**	10	**16**	2	45	7	38	10	11	66	9	12	0	1	22	201
01:15 PM	6	19	8	26	59	15	17	9	3	44	**11**	36	14	5	66	8	15	2	0	25	194
Total Volume	26	82	32	115	255	63	75	45	20	203	34	155	64	41	294	45	60	8	3	116	868
% App. Total	10.2	32.2	12.5	45.1		31	36.9	22.2	9.9		11.6	52.7	21.8	13.9		38.8	51.7	6.9	2.6		
PHF	.813	.854	.800	.927	.898	.926	.750	.703	.625	.846	.773	.945	.762	.788	.896	.703	.882	.333	.375	.707	.908
Unshifted	26	82	32	115	255	63	74	45	20	202	34	150	64	41	289	41	60	8	3	112	858
% Unshifted	100	100	100	100	100	100	98.7	100	100	99.5	100	96.8	100	100	98.3	91.1	100	100	100	96.6	98.8
Bank 1	0	0	0	0	0	0	1	0	0	1	0	5	0	0	5	4	0	0	0	4	10
% Bank 1	0	0	0	0	0	0	1.3	0	0	0.5	0	3.2	0	0	1.7	8.9	0	0	0	3.4	1.2



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 1

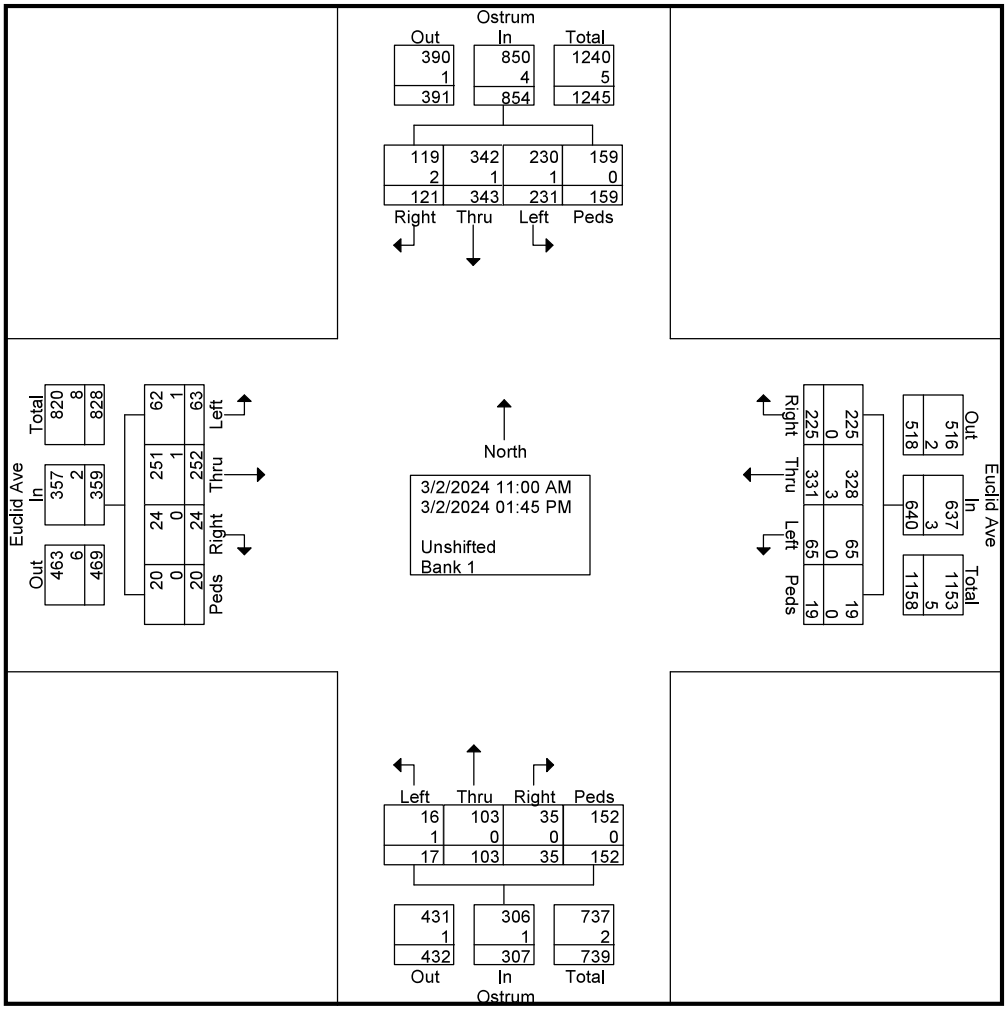
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	9	23	14	11	57	5	27	5	2	39	0	6	1	11	18	2	8	5	2	17	131
11:15 AM	6	20	20	5	51	15	26	2	1	44	7	5	0	3	15	1	15	2	1	19	129
11:30 AM	12	26	18	13	69	28	28	3	2	61	3	18	2	15	38	1	14	5	1	21	189
11:45 AM	8	22	20	14	64	27	37	3	1	68	2	4	3	26	35	5	23	4	3	35	202
Total	35	91	72	43	241	75	118	13	6	212	12	33	6	55	106	9	60	16	7	92	651
12:00 PM	11	28	20	9	68	23	20	5	2	50	4	10	2	16	32	3	26	2	2	33	183
12:15 PM	9	35	23	18	85	16	21	5	3	45	0	11	0	9	20	2	20	6	2	30	180
12:30 PM	11	29	24	10	74	21	38	3	1	63	2	7	2	17	28	2	27	4	1	34	199
12:45 PM	12	29	18	15	74	10	31	5	0	46	4	7	1	21	33	0	22	6	1	29	182
Total	43	121	85	52	301	70	110	18	6	204	10	35	5	63	113	7	95	18	6	126	744
01:00 PM	9	46	16	16	87	21	28	10	2	61	7	7	2	9	25	2	16	8	2	28	201
01:15 PM	12	35	14	16	77	12	31	4	2	49	4	10	0	5	19	0	27	8	0	35	180
01:30 PM	8	23	10	4	45	16	14	7	2	39	0	3	1	6	10	1	16	5	3	25	119
01:45 PM	14	27	34	28	103	31	30	13	1	75	2	15	3	14	34	5	38	8	2	53	265
Total	43	131	74	64	312	80	103	34	7	224	13	35	6	34	88	8	97	29	7	141	765
Grand Total	121	343	231	159	854	225	331	65	19	640	35	103	17	152	307	24	252	63	20	359	2160
Apprch %	14.2	40.2	27	18.6		35.2	51.7	10.2	3		11.4	33.6	5.5	49.5		6.7	70.2	17.5	5.6		
Total %	5.6	15.9	10.7	7.4	39.5	10.4	15.3	3	0.9	29.6	1.6	4.8	0.8	7	14.2	1.1	11.7	2.9	0.9	16.6	
Unshifted	119	342	230	159	850	225	328	65	19	637	35	103	16	152	306	24	251	62	20	357	2150
% Unshifted	98.3	99.7	99.6	100	99.5	100	99.1	100	100	99.5	100	100	94.1	100	99.7	100	99.6	98.4	100	99.4	99.5
Bank 1	2	1	1	0	4	0	3	0	0	3	0	0	1	0	1	0	1	1	0	2	10
% Bank 1	1.7	0.3	0.4	0	0.5	0	0.9	0	0	0.5	0	0	5.9	0	0.3	0	0.4	1.6	0	0.6	0.5

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 2

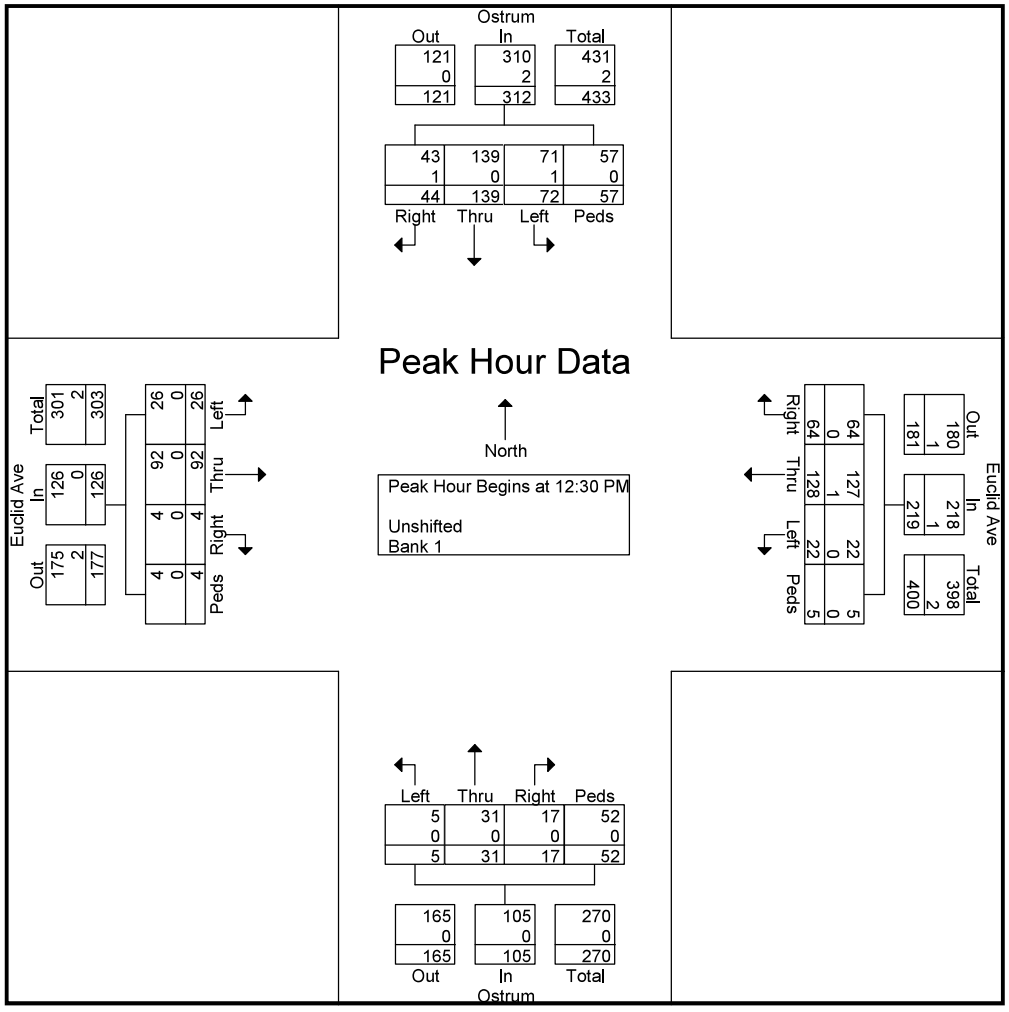


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : Ostrum at Euclid SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 3

	Ostrum From North					Euclid Ave From East					Ostrum From South					Euclid Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:30 PM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	11	29	**24**	10	74	**21**	**38**	3	1	**63**	2	7	**2**	17	28	**2**	**27**	4	1	34	199
12:45 PM	**12**	29	18	15	74	10	31	5	0	46	4	7	1	**21**	**33**	0	22	6	1	29	182
01:00 PM	9	**46**	16	**16**	**87**	21	28	**10**	**2**	61	**7**	7	2	9	25	2	16	**8**	**2**	28	**201**
01:15 PM	12	35	14	16	77	12	31	4	2	49	4	**10**	0	5	19	0	27	8	0	**35**	180
Total Volume	44	139	72	57	312	64	128	22	5	219	17	31	5	52	105	4	92	26	4	126	762
% App. Total	14.1	44.6	23.1	18.3		29.2	58.4	10	2.3		16.2	29.5	4.8	49.5		3.2	73	20.6	3.2		
PHF	.917	.755	.750	.891	.897	.762	.842	.550	.625	.869	.607	.775	.625	.619	.795	.500	.852	.813	.500	.900	.948
Unshifted	43	139	71	57	310	64	127	22	5	218	17	31	5	52	105	4	92	26	4	126	759
% Unshifted	97.7	100	98.6	100	99.4	100	99.2	100	100	99.5	100	100	100	100	100	100	100	100	100	100	99.6
Bank 1	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
% Bank 1	2.3	0	1.4	0	0.6	0	0.8	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.4



PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 1

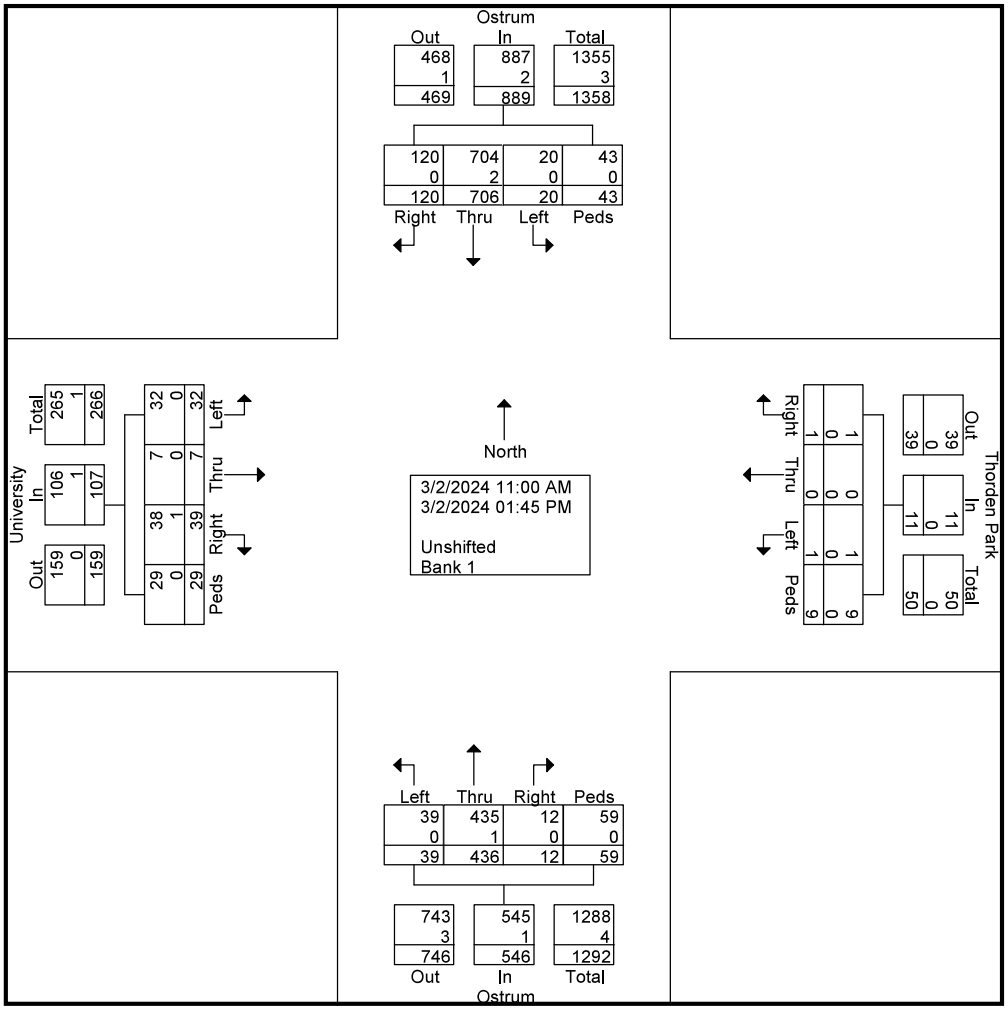
Groups Printed- Unshifted - Bank 1

	Ostrum From North					Thorden Park From East					Ostrum From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	6	43	1	0	50	0	0	0	0	0	0	19	3	9	31	5	0	2	0	7	88
11:15 AM	7	43	0	2	52	0	0	0	1	1	2	26	0	3	31	3	1	4	2	10	94
11:30 AM	7	59	4	4	74	0	0	0	2	2	1	46	7	8	62	2	0	0	6	8	146
11:45 AM	7	53	2	6	68	0	0	0	0	0	2	42	1	0	45	1	0	1	1	3	116
Total	27	198	7	12	244	0	0	0	3	3	5	133	11	20	169	11	1	7	9	28	444
12:00 PM	12	60	1	1	74	0	0	0	5	5	0	35	2	7	44	4	0	2	3	9	132
12:15 PM	11	61	2	7	81	0	0	1	0	1	1	37	6	4	48	3	0	4	8	15	145
12:30 PM	9	71	1	3	84	1	0	0	1	2	0	35	3	6	44	1	2	4	0	7	137
12:45 PM	12	61	0	3	76	0	0	0	0	0	1	38	3	4	46	5	0	5	1	11	133
Total	44	253	4	14	315	1	0	1	6	8	2	145	14	21	182	13	2	15	12	42	547
01:00 PM	12	72	3	3	90	0	0	0	0	0	2	35	3	5	45	5	1	0	1	7	142
01:15 PM	6	63	3	2	74	0	0	0	0	0	1	32	4	1	38	2	1	4	1	8	120
01:30 PM	17	57	2	3	79	0	0	0	0	0	1	47	5	9	62	4	0	2	6	12	153
01:45 PM	14	63	1	9	87	0	0	0	0	0	1	44	2	3	50	4	2	4	0	10	147
Total	49	255	9	17	330	0	0	0	0	0	5	158	14	18	195	15	4	10	8	37	562
Grand Total	120	706	20	43	889	1	0	1	9	11	12	436	39	59	546	39	7	32	29	107	1553
Apprch %	13.5	79.4	2.2	4.8		9.1	0	9.1	81.8		2.2	79.9	7.1	10.8		36.4	6.5	29.9	27.1		
Total %	7.7	45.5	1.3	2.8	57.2	0.1	0	0.1	0.6	0.7	0.8	28.1	2.5	3.8	35.2	2.5	0.5	2.1	1.9	6.9	
Unshifted	120	704	20	43	887	1	0	1	9	11	12	435	39	59	545	38	7	32	29	106	1549
% Unshifted	100	99.7	100	100	99.8	100	0	100	100	100	100	99.8	100	100	99.8	97.4	100	100	100	99.1	99.7
Bank 1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	4
% Bank 1	0	0.3	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.2	2.6	0	0	0	0.9	0.3

PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 2

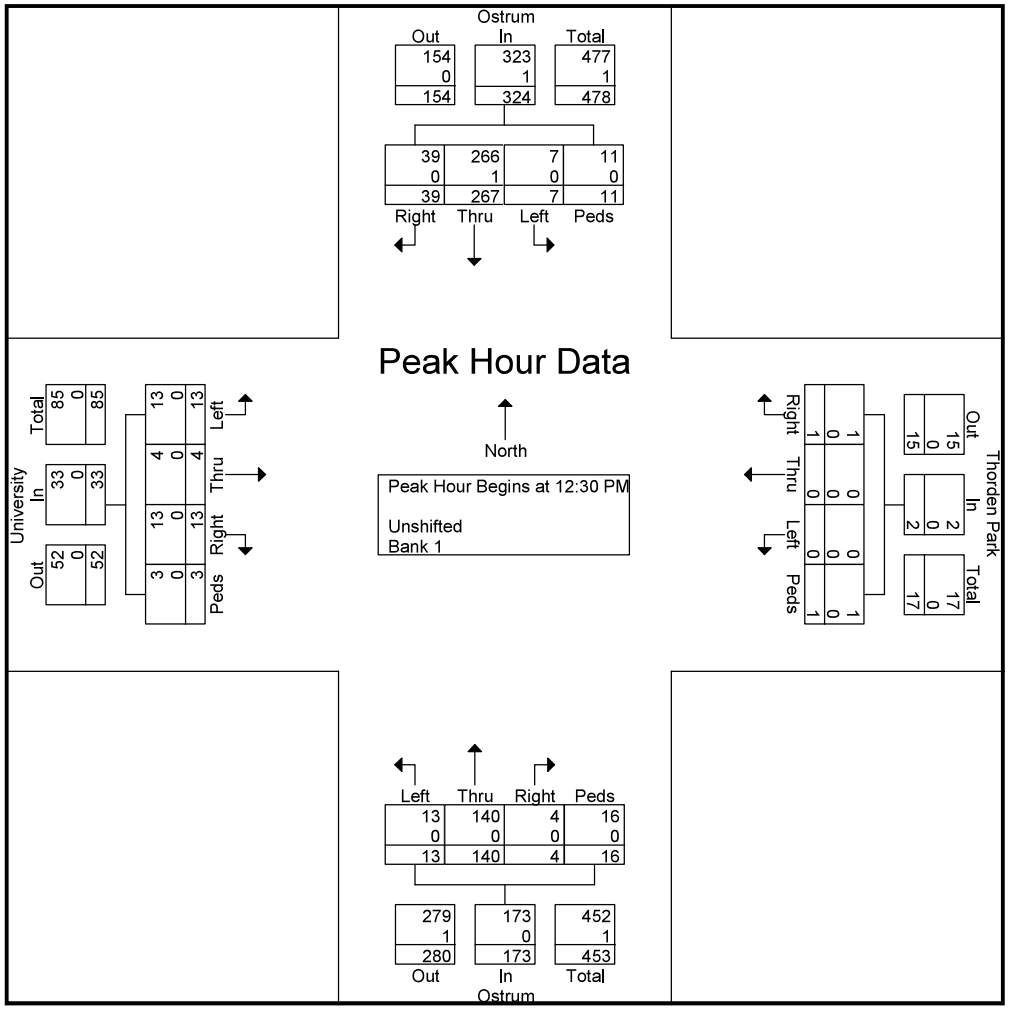


PASSERO ASSOCIATES

242 W Main St, Suite 100
Rochester, NY 14614

File Name : University at Ostrum SAT MD
Site Code : 22222222
Start Date : 3/2/2024
Page No : 3

	Ostrum From North					Thorden Park From East					Ostrum From South					University From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:30 PM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	9	71	1	**3**	84	**1**	0	0	**1**	**2**	0	35	3	**6**	44	1	**2**	4	0	7	137
12:45 PM	**12**	61	0	3	76	0	0	0	0	0	1	**38**	3	4	**46**	**5**	0	**5**	**1**	**11**	133
01:00 PM	12	**72**	**3**	3	**90**	0	0	0	0	0	**2**	35	3	5	45	5	1	0	1	7	**142**
01:15 PM	6	63	3	2	74	0	0	0	0	0	1	32	**4**	1	38	2	1	4	1	8	120
Total Volume	39	267	7	11	324	1	0	0	1	2	4	140	13	16	173	13	4	13	3	33	532
% App. Total	12	82.4	2.2	3.4		50	0	0	50		2.3	80.9	7.5	9.2		39.4	12.1	39.4	9.1		
PHF	.813	.927	.583	.917	.900	.250	.000	.000	.250	.250	.500	.921	.813	.667	.940	.650	.500	.650	.750	.750	.937
Unshifted	39	266	7	11	323	1	0	0	1	2	4	140	13	16	173	13	4	13	3	33	531
% Unshifted	100	99.6	100	100	99.7	100	0	0	100	100	100	100	100	100	100	100	100	100	100	100	99.8
Bank 1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bank 1	0	0.4	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2



Passero Associates

Project: S.U.-Ostrom Res. Hall *#20243779.0001* **Reviewer:** *DBDake*

Location:		SB (from North) *Ostrom Ave.*			WB (from East) ---			NB (from South) *Ostrom Ave.*			EB (from West) *parking lot*					
Ostrom Ave./Ostrom (parking) Lot		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***			
	0700-0715	0	10						25	1	0		1		37	
3/1/2024	0715-0730	0	20						26	1	3		0		50	
Weekday AM	0730-0745	0	14						46	1	0		0		61	
	0745-0800	1	23						58	0	0		0		82	230
	0800-0815	5	37						40	1	1		0		84	277
VEHICLES ONLY	0815-0830	1	38						70	2	0		0		111	338
	0830-0845	**2**	**45**						**59**	**2**	**2**		**0**		**110**	**387**
	0845-0900	**1**	**33**						**61**	**3**	**1**		**1**		**100**	**405**
	0900-0915	**0**	**34**						**45**	**3**	**0**		**0**		**82**	**403**
	0915-0930	**0**	**50**						**43**	**1**	**0**		**0**		**94**	**386**
	0930-0945	0	49						40	1	0		1		91	367
	0945-1000	0	48						32	0	0		1		81	348
Forced Peak Hour (0830-0930)		**3**	**162**	**0**	**0**	**0**	**0**	**0**	**208**	**9**	**3**	**0**	**1**	**0.87**		

		SB (from North) *Ostrom Ave.*			WB (from East) ---			NB (from South) *Ostrom Ave.*			EB (from West) *parking lot*		
Ostrom Ave./Ostrom (parking) Lot		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***
3/1/2024	0700-0715	0	0						0	0	0		0
	0715-0730	0	**1**						0	**1**	**1**		0
Weekday AM	0730-0745	0	0						0	0	0		0
	0745-0800	0	0						**1**	0	0		0
	0800-0815	1	1						2	0	1		0
TRUCKS ONLY	0815-0830	0	1						1	0	0		0
	0830-0845	**0**	**2**						**0**	**0**	**0**		**0**
	0845-0900	**0**	**0**						**1**	**0**	**0**		**0**
	0900-0915	**0**	**1**						**1**	**0**	**0**		**0**
	0915-0930	**0**	**0**						**0**	**0**	**0**		**0**
	0930-0945	0	**4**						**4**	0	0		0
	0945-1000	0	**1**						0	0	0		0
Forced Peak Hour (0830-0930)		**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

Passero Associates | **Project:** S.U.-Ostrom Res. Hall | #20243779.0001 | **Reviewer:** DBDake

Location:		SB (from North) Ostrom Ave.			WB (from East) ---			NB (from South) Ostrom Ave.			EB (from West) parking lot					
Ostrom Ave./Ostrom (parking) Lot		RT	Thru	LT	RT	Thru	LT	RT	Thru	LT	RT	Thru	LT			
	1500-1515	2	52						29	1	0		1		85	
2/29/2024	1515-1530	1	72						29	0	0		3		105	
Weekday PM	1530-1545	1	72						33	0	2		2		110	
	1545-1600	0	63						28	1	0		0		92	392
	1600-1615	1	71						40	1	0		2		115	422
VEHICLES ONLY	1615-1630	1	76						34	0	3		0		114	431
	1630-1645	4	74						33	0	2		0		113	434
	1645-1700	**4**	**83**						**36**	**3**	**0**		**1**		**127**	**469**
	1700-1715	**3**	**121**						**49**	**0**	**3**		**2**		**178**	**532**
	1715-1730	**2**	**92**						**31**	**0**	**1**		**2**		**128**	**546**
	1730-1745	**3**	**70**						**36**	**0**	**2**		**1**		**112**	**545**
	1745-1800	1	77						34	3	0		1		116	534
Forced Peak Hour (1645-1745)		**12**	**366**	**0**	**0**	**0**	**0**	**0**	**152**	**3**	**6**	**0**	**6**	**0.77**		

		SB (from North) Ostrom Ave.			WB (from East) ---			NB (from South) Ostrom Ave.			EB (from West) parking lot		
Ostrom Ave./Ostrom (parking) Lot		RT	Thru	LT	RT	Thru	LT	RT	Thru	LT	RT	Thru	LT
2/29/2024	1500-1515	0	**1**						0	0	0		0
	1515-1530	0	0						0	0	0		0
Weekday PM	1530-1545	0	0						0	0	0		0
	1545-1600	0	0						0	0	0		0
	1600-1615	0	0						**1**	0	0		0
TRUCKS ONLY	1615-1630	0	**1**						**1**	0	0		0
	1630-1645	0	0						0	0	0		0
	1645-1700	**0**	**0**						**0**	**0**	**0**		**0**
	1700-1715	**0**	**0**						**0**	**0**	**0**		**0**
	1715-1730	**0**	**0**						**0**	**0**	**0**		**0**
	1730-1745	**0**	**0**						**2**	**0**	**0**		**0**
	1745-1800	0	**1**						**1**	0	0		0
Forced Peak Hour (1645-1745)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

Passero Associates

Project: S.U.-Ostrom Res. Hall *#20243779.0001* **Reviewer:** *DBDake*

Location:		SB (from North) *Ostrom Ave.*			WB (from East) ---			NB (from South) *Ostrom Ave.*			EB (from West) *parking lot*					
Ostrom Ave./Ostrom (parking) Lot		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***			
	1100-1115	2	44						21	0	1		1		69	
3/2/2024	1115-1130	2	45						28	2	1		0		78	
Saturday Mid-Day	1130-1145	1	61						55	3	1		0		121	
	1145-1200	0	54						42	1	0		2		99	367
	1200-1215	1	61						37	1	2		0		102	400
VEHICLES ONLY	1215-1230	1	63						42	1	3		1		111	433
	1230-1245	**2**	**70**						**39**	**0**	**2**		**0**		**113**	**425**
	1245-1300	**5**	**61**						**41**	**0**	**0**		**1**		**108**	**434**
	1300-1315	**2**	**75**						**40**	**1**	**2**		**1**		**121**	**453**
	1315-1330	**3**	**61**						**37**	**1**	**1**		**0**		**103**	**445**
	1330-1345	2	59						51	1	3		1		117	449
	1345-1400	1	66						45	0	1		2		115	456
Forced Peak Hour (1230-1330)		**12**	**267**	**0**	**0**	**0**	**0**	**0**	**157**	**2**	**5**	**0**	**2**	**0.92**		

		SB (from North) *Ostrom Ave.*			WB (from East) ---			NB (from South) *Ostrom Ave.*			EB (from West) *parking lot*		
Ostrom Ave./Ostrom (parking) Lot		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***
3/2/2024	1100-1115	0	0						0	0	0		0
	1115-1130	0	**1**						0	0	0		0
Saturday Mid-Day	1130-1145	0	0						**1**	0	0		0
	1145-1200	0	0						0	0	0		0
	1200-1215	0	0						0	0	0		0
TRUCKS ONLY	1215-1230	0	0						0	0	0		0
	1230-1245	**0**	**1**						**0**	**0**	**0**		**0**
	1245-1300	**0**	**0**						**0**	**0**	**0**		**0**
	1300-1315	**0**	**0**						**0**	**0**	**0**		**0**
	1315-1330	**0**	**1**						**0**	**0**	**0**		**0**
	1330-1345	0	0						0	0	0		0
	1345-1400	0	0						0	0	0		0
Forced Peak Hour (1230-1330)		**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PASSERO

PROJECT: Ostrom Residence Hall, Syr
LOCATION: Syracuse, NY
PEAK HOUR: AM Peak

LOCATION NUMBER	INTERSECTION DESCRIPTION	2024 Existing Volumes	Num of yrs: 2 Bkgd Volumes 0.5%	Full Build Volumes
1	Comstock Ave/ University Pl			
	SR	13	13	13
	ST	109	110	110
	SL	8	8	8
	WR	18	18	18
	WT	11	11	11
	WL	12	12	12
	NR	12	12	12
	NT	186	188	188
	NL	41	41	41
	ER	10	10	10
	ET	9	9	9
	EL	29	29	29
2	Ostrom Ave/ University Pl/Thornden Park Dr			
	SR	29	29	29
	ST	153	155	155
	SL	11	11	11
	WR			
	WT			
	WL			
	NR	7	7	7
	NT	195	197	197
	NL	11	11	11
	ER	13	13	13
	ET	5	5	5
	EL	8	8	8
3	Ostrom Ave/ Parking Lot Driveway			
	SR	3	3	3
	ST	162	164	164
	SL			
	WR			
	WT			
	WL			
	NR			
	NT	208	210	210
	NL	9	9	9
	ER	3	3	3
	ET			
	EL	1	1	1
4	Ostrom Ave/ Euclid Ave			
	SR	37	37	37
	ST	72	73	73
	SL	50	51	51
	WR	118	119	119
	WT	155	157	157
	WL	11	11	11
	NR	13	13	13
	NT	62	63	63
	NL	14	14	14
	ER	3	3	3
	ET	71	72	72
	EL	17	17	17
5	Comstock Ave/ Euclid Ave			
	SR	21	21	21
	ST	85	86	86
	SL	21	21	21
	WR	52	53	53
	WT	129	130	130
	WL	21	21	21
	NR	21	21	21
	NT	231	233	233
	NL	85	86	86
	ER	79	80	80
	ET	46	46	46
	EL	11	11	11

PASSERO

PROJECT: Ostrom Residence Hall, Syr
LOCATION: Syracuse, NY
PEAK HOUR: Weekday Afternoon Peak

LOCATION NUMBER	INTERSECTION DESCRIPTION	2024 Existing Volumes	Num of yrs 2 Bkgd Volumes 0.5%	Full Build Volumes
1	Comstock Ave/ University Pl			
	SR	18	18	18
	ST	162	164	164
	SL	11	11	11
	WR	30	30	30
	WT	18	18	18
	WL	29	29	29
	NR	21	21	21
	NT	237	239	239
	NL	29	29	29
	ER	16	16	16
	ET	14	14	14
	EL	28	28	28
2	Ostrom Ave/ University Pl/Thornden Park Dr			
	SR	55	56	56
	ST	357	361	361
	SL	3	3	3
	WR	2	2	2
	WT			
	WL			
	NR	3	3	3
	NT	144	145	145
	NL	12	12	12
	ER	22	22	22
	ET	3	3	3
	EL	17	17	17
3	Ostrom Ave/ Parking Lot Driveway			
	SR	12	12	12
	ST	366	370	370
	SL			
	WR			
	WT			
	WL			
	NR			
	NT	152	154	154
	NL	3	3	3
	ER	6	6	6
	ET			
	EL	6	6	6
4	Ostrom Ave/ Euclid Ave			
	SR	52	53	53
	ST	159	161	161
	SL	141	142	142
	WR	66	67	67
	WT	135	136	136
	WL	8	8	8
	NR	11	11	11
	NT	44	44	44
	NL	12	12	12
	ER	11	11	11
	ET	150	152	152
	EL	23	23	23
5	Comstock Ave/ Euclid Ave			
	SR	27	27	27
	ST	131	132	132
	SL	47	47	47
	WR	79	80	80
	WT	75	76	76
	WL	46	46	46
	NR	28	28	28
	NT	203	205	205
	NL	60	61	61
	ER	91	92	92
	ET	109	110	110
	EL	14	14	14

PASSERO

PROJECT: Ostrom Residence Hall, Syr
LOCATION: Syracuse, NY
PEAK HOUR: SAT MD Peak

LOCATION NUMBER	INTERSECTION DESCRIPTION	2024 Existing Volumes	Num of yrs: 2 Bkgd Volumes 0.5%	Full Build Volumes
1	Comstock Ave/ University Pl			
	SR	13	13	13
	ST	80	81	81
	SL	13	13	13
	WR	29	29	29
	WT	4	4	4
	WL	16	16	16
	NR	14	14	14
	NT	144	145	145
	NL	12	12	12
	ER	13	13	13
	ET	5	5	5
	EL	16	16	16
2	Ostrom Ave/ University Pl/Thornden Park Dr			
	SR	39	39	39
	ST	267	270	270
	SL	7	7	7
	WR	1	1	1
	WT			
	WL			
	NR	4	4	4
	NT	140	141	141
	NL	13	13	13
	ER	13	13	13
	ET	4	4	4
	EL	13	13	13
3	Ostrom Ave/ Parking Lot Driveway			
	SR	12	12	12
	ST	267	270	270
	SL			
	WR			
	WT			
	WL			
	NR			
	NT	157	159	159
	NL	2	2	2
	ER	5	5	5
	ET			
	EL	2	2	2
4	Ostrom Ave/ Euclid Ave			
	SR	44	44	44
	ST	139	140	140
	SL	72	73	73
	WR	64	65	65
	WT	128	129	129
	WL	22	22	22
	NR	17	17	17
	NT	31	31	31
	NL	5	5	5
	ER	4	4	4
	ET	92	93	93
	EL	26	26	26
5	Comstock Ave/ Euclid Ave			
	SR	26	26	26
	ST	82	83	83
	SL	32	32	32
	WR	63	64	64
	WT	75	76	76
	WL	45	45	45
	NR	34	34	34
	NT	155	157	157
	NL	64	65	65
	ER	45	45	45
	ET	60	61	61
	EL	8	8	8

LMD9200 BASIC TIMINGS CHART

CITY OF SYRACUSE

DATE COMPILED: 2/28/24
INTERSECTION: Comstock & Euclid
TIMING CORRIDOR: University

	A= ACTUATED
	MNR = MIN RECALL-EXTENDIBLE
RECALL	MXR = MAX RECALL
TYPE	P = PED RECALL
	P/MX = PED & MAX RECALL

PHASE'S/OL'S	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***A***	***B***	***C***	***D***
PHASE-O/L USED	X					X	X					
PED's USED						X						
DESCRIPTION	Comstock					Ex-PED	Euclid					
PED DESCRIPTION						Ex-PED						
VEH ACTUATED?							Y					
PED ACTUATED?						TOD						
RECALL/TYPE	MINR					A	A					
MIN GREEEN	11					7	7					
EXTENSION	2.5					1	2.5					
YELLOW	4					3	4					
RED CLEAR	1					0	1					
MAX I	30						30					
MAX II	40						30					
WALK						8						
PED CLEAR						12						
COORD PHASE	X											
PRE-EMPT CALL	2						1					

CYC 1	90	40					23	27	<-These are total phase times within the				
CYC 2	80	30					23	27	indicated cycle when coord in effect (not free)				
CYC 3													
CYC 4													

OFFSETS

	C. LEN	1	2	3	4	5
CYC1	90	47				
CYC2	80	27				
CYC3						
CYC4						

NOTES:

A Note: Controller runs sequentially - 1 & 6 are
B not compatible.
C
D Exclusive ped is recalled whenever coord is in
E effect i.e. when not free.

TIME OF DAY SCHEDULE: Comstock & Euclid

DOW	***FROM***	***TO***	***PLAN / FUNCTION***	***DESCRIPTION / COMMENT***
M-F	MIDNIGHT	6:30	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1
	6:30	19:30	C1 S1 O1	Coordination in effect: Cycle 1, Split 1, Offset 1
	19:30	MIDNIGHT	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1
Sat-Sun	MIDNIGHT	MIDNIGHT	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1

LMD9200 BASIC TIMINGS CHART

CITY OF SYRACUSE

DATE COMPILED: 2/28/24
INTERSECTION: Comstock & University PL
TIMING CORRIDOR: University

	A= ACTUATED
	MNR = MIN RECALL-EXTENDIBLE
RECALL	MXR = MAX RECALL
TYPE	P = PED RECALL
	P/MX = PED & MAX RECALL

PHASE'S/OL'S	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***A***	***B***	***C***	***D***
PHASE-O/L USED		X		X		X						
PED's USED						X						
DESCRIPTION		Comstk		Univ PL		Excl-PED						
PED DESCRIPTION						Excl-PED						
VEH ACTUATED?				Y								
PED ACTUATED?						TOD						
RECALL/TYPE		MXR		A		A						
MIN GREEEN		10		13		5						
EXTENSION		2.5		3.2		2.5						
YELLOW		4		4		3						
RED CLEAR		1		1		0						
MAX I		25		27								
MAX II		25		27								
WALK						10						
PED CLEAR						11						
COORD PHASE		X										
PRE-EMPT CALL		1		2								

CYC 1	90		33		33		24		<-These are total phase times within the				
CYC 2	80		29		27		24		indicated cycle when coord in effect (not free)				
CYC 3													
CYC 4													

OFFSETS

	C. LEN	1	2	3	4	5
CYC1	90	81				
CYC2	80	36				
CYC3						
CYC4						

NOTES:

A Note: Controller runs sequentially - 2 & 6 are
B not compatible.
C
D Exclusive ped is recalled whenever coord is in
E effect i.e. when not free.

TIME OF DAY SCHEDULE: Comstock & University PL

DOW	FROM	TO	PLAN / FUNCTION	DESCRIPTION / COMMENT
M-F	MIDNIGHT	6:30	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1
	6:30	19:30	C1 S1 O1	Coordination in effect: Cycle 1, Split 1, Offset 1
	19:30	MIDNIGHT	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1
Sat-Sun	MIDNIGHT	MIDNIGHT	C2 S1 O1	Coordination in effect: Cycle 2, Split 1, Offset 1

CONTROLLER BASIC TIMINGS CHART

CITY OF SYRACUSE

CONTROLLER USED: NEMA LMD9200
DATE COMPILED: 2/22/2024
INTERSECTION: Euclid & Ostrom
TIMING CORRIDOR: None - Free Operation

	A= ACTUATED
	MNR = MIN RECALL-EXTENDIBLE
RECALL	MXR = MAX RECALL
TYPE	P = PED RECALL
	P/MX = PED & MAX RECALL

PHASE'S/OL'S	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***O/L A***	***O/L B***	***O/L C***	***O/L D***
PHASE-O/L USED	X	X										
PED's USED												
DESCRIPTION	EUCLID	OSTROM										
PED DESCRIPTION												
VEH ACTUATED?	NO	NO										
PED ACTUATED?	NO	YES	ALL PEDS ON RECALL									
RECALL/TYPE	MXR	P										
MIN GREEEN	10	8										
EXTENSION	4.0	4.0										
YELLOW	4.0	4.0										
RED CLEAR	1.8	1.8										
MAX I	30	22										
MAX II	30	30										
WALK	15	9										
PED CLEAR	11	11										
COORD PHASE												
PRE-EMPT CALL	1	2										

	CYCLE	SPLIT TIMINGS (in seconds, includes clearances)										
AVE												
AM PEAK	NO COORD - RUNS FREE-OP											
PM PEAK												

OFFSETS

	C. LEN	1	2	3	4	5
CYC1 (AVE)						
CYC2 (AM)						
CYC3 (PM)						

NOTES:

A

B Clearance both phases = 4 sec Yel + 1.8 sec All Red = 5.8 sec total from green to opposing green

C

D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	9	10	12	11	18	41	186	12	8	109	13
Future Volume (vph)	29	9	10	12	11	18	41	186	12	8	109	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.67			0.71			0.95			0.95	
Frt		0.971			0.941			0.993			0.987	
Flt Protected		0.971			0.986			0.991			0.997	
Satd. Flow (prot)	0	1503	0	0	1287	0	0	1543	0	0	1591	0
Flt Permitted		0.813			0.909			0.907			0.970	
Satd. Flow (perm)	0	905	0	0	1113	0	0	1356	0	0	1543	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			33			3			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	385		153	153		385	236		86	86		236
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	14%	11%	10%	0%	18%	0%	95%	5%	0%	0%	9%	54%
Adj. Flow (vph)	54	17	19	22	20	33	76	344	22	15	202	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	75	0	0	442	0	0	241	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.2			15.2			69.4			69.4	
Actuated g/C Ratio		0.17			0.17			0.77			0.77	
v/c Ratio		0.54			0.34			0.42			0.20	
Control Delay (s/veh)		40.2			24.4			8.2			4.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		40.2			24.4			8.2			4.7	
LOS		D			C			A			A	
Approach Delay (s/veh)		40.3			24.5			8.2			4.7	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		40			22			121			33	
Queue Length 95th (ft)		42			26			56			42	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		292			369			1047			1192	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.31			0.20			0.42			0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	5	13	0	0	0	11	195	7	11	153	29
Future Volume (vph)	8	5	13	0	0	0	11	195	7	11	153	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.932						0.995			0.979	
Flt Protected		0.985						0.997			0.997	
Satd. Flow (prot)	0	1570	0	0	0	0	0	1868	0	0	1821	0
Flt Permitted		0.985						0.997			0.997	
Satd. Flow (perm)	0	1570	0	0	0	0	0	1868	0	0	1821	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	4		51	51		4	4		5	5		4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	12%	0%	15%	0%	0%	0%	0%	1%	0%	0%	1%	7%
Adj. Flow (vph)	9	6	15	0	0	0	12	219	8	12	172	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	0	0	0	239	0	0	217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	13	0	0	0	11	195	7	11	153	29
Future Vol, veh/h	8	5	13	0	0	0	11	195	7	11	153	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	12	0	15	0	0	0	0	1	0	0	1	7
Mvmt Flow	9	6	15	0	0	0	12	219	8	12	172	33
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.7	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	5%	31%	6%
Vol Thru, %	92%	19%	79%
Vol Right, %	3%	50%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	213	26	193
LT Vol	11	8	11
Through Vol	195	5	153
RT Vol	7	13	29
Lane Flow Rate	239	29	217
Geometry Grp	1	1	1
Degree of Util (X)	0.273	0.039	0.244
Departure Headway (Hd)	4.105	4.829	4.052
Convergence, Y/N	Yes	Yes	Yes
Cap	866	746	874
Service Time	2.175	2.829	2.13
HCM Lane V/C Ratio	0.276	0.039	0.248
HCM Control Delay, s/veh	8.7	8	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.1	1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	208	162	3
Future Volume (vph)	1	3	9	208	162	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.998	
Flt Protected	0.988			0.998		
Satd. Flow (prot)	1688	0	0	1878	1860	0
Flt Permitted	0.988			0.998		
Satd. Flow (perm)	1688	0	0	1878	1860	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Adj. Flow (vph)	1	3	10	239	186	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	249	189	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	208	162	3
Future Vol, veh/h	1	3	9	208	162	3
Conflicting Peds, #/hr	0	0	0	0	0	0
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	1	3	10	239	186	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	448	188	190	0	-	0
Stage 1	188	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	572	859	1396	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	567	859	1396	-	-	-
Mov Cap-2 Maneuver	567	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	788	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.76	0.32	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	75	-	761	-	-
HCM Lane V/C Ratio	0.007	-	0.006	-	-
HCM Control Delay (s/veh)	7.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	71	3	11	155	118	14	62	13	50	72	37
Future Volume (vph)	17	71	3	11	155	118	14	62	13	50	72	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.92			0.99			0.99	
Frt		0.996			0.944			0.981			0.969	
Flt Protected		0.991			0.998			0.992			0.984	
Satd. Flow (prot)	0	1766	0	0	1606	0	0	1760	0	0	1758	0
Flt Permitted		0.919			0.990			0.943			0.879	
Satd. Flow (perm)	0	1607	0	0	1588	0	0	1672	0	0	1567	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			92			14			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	159		100	100		159	3		5	5		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	6%	0%	0%	6%	0%	29%	0%	0%	0%	4%	3%
Adj. Flow (vph)	19	79	3	12	172	131	16	69	14	56	80	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	315	0	0	99	0	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.13			0.41			0.16			0.31	
Control Delay (s/veh)		9.7			9.2			12.4			13.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.7			9.2			12.4			13.2	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.7			9.3			12.5			13.2	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		19			46			20			36	
Queue Length 95th (ft)		42			97			47			77	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		727			767			589			563	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.41			0.17			0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 10.8		Intersection LOS: B	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	46	79	21	129	52	85	231	21	21	85	21
Future Volume (vph)	11	46	79	21	129	52	85	231	21	21	85	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.85			0.98	0.47	0.96	0.99		0.97	0.98	
Frt		0.922				0.850		0.988			0.970	
Flt Protected		0.996			0.993		0.950			0.950		
Satd. Flow (prot)	0	1173	0	0	1812	1404	1703	1551	0	1805	1706	0
Flt Permitted		0.968			0.948		0.673			0.558		
Satd. Flow (perm)	0	1105	0	0	1698	663	1166	1551	0	1036	1706	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	289		95	95		289	31		30	30		31
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	54%	4%	43%	5%	4%	15%	6%	21%	14%	0%	6%	10%
Adj. Flow (vph)	14	58	99	26	161	65	106	289	26	26	106	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	187	65	106	315	0	26	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		19.3			19.3	19.3	60.7	60.7		60.7	60.7	
Actuated g/C Ratio		0.21			0.21	0.21	0.67	0.67		0.67	0.67	
v/c Ratio		0.72			0.51	0.45	0.13	0.30		0.03	0.11	
Control Delay (s/veh)		48.7			34.6	38.8	7.4	8.3		11.7	10.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		48.7			34.6	38.8	7.4	8.3		11.7	10.8	
LOS		D			C	D	A	A		B	B	
Approach Delay (s/veh)		48.7			35.7			8.1			11.0	
Approach LOS		D			D			A			B	
Queue Length 50th (ft)		92			95	33	18	62		6	33	
Queue Length 95th (ft)		120			118	55	46	125		23	78	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		290			446	174	786	1045		698	1150	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.42	0.37	0.13	0.30		0.04	0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 22.4		Intersection LOS: C	
Intersection Capacity Utilization 49.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	14	16	29	18	30	29	237	21	11	162	18
Future Volume (vph)	28	14	16	29	18	30	29	237	21	11	162	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.70			0.69			0.96			0.97	
Frt		0.963			0.948			0.990			0.987	
Flt Protected		0.976			0.981			0.995			0.997	
Satd. Flow (prot)	0	1478	0	0	1351	0	0	1668	0	0	1720	0
Flt Permitted		0.823			0.876			0.948			0.972	
Satd. Flow (perm)	0	972	0	0	1066	0	0	1570	0	0	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			37			5			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	461		218	218		461	131		156	156		131
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	18%	0%	0%	0%	11%	0%	83%	2%	0%	0%	2%	50%
Adj. Flow (vph)	41	20	23	42	26	43	42	343	30	16	235	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	111	0	0	415	0	0	277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.7			14.7			65.3			65.3	
Actuated g/C Ratio		0.16			0.16			0.73			0.73	
v/c Ratio		0.47			0.54			0.36			0.22	
Control Delay (s/veh)		34.7			33.3			6.5			4.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		34.7			33.3			6.5			4.8	
LOS		C			C			A			A	
Approach Delay (s/veh)		34.7			33.4			6.5			4.8	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		33			39			101			38	
Queue Length 95th (ft)		51			58			61			61	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		317			357			1141			1211	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.26			0.31			0.36			0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 12.0		Intersection LOS: B	
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	3	22	0	0	2	12	144	3	3	357	55
Future Volume (vph)	17	3	22	0	0	2	12	144	3	3	357	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.930			0.850			0.997			0.982	
Flt Protected		0.980						0.996				
Satd. Flow (prot)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Flt Permitted		0.980						0.996				
Satd. Flow (perm)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		50	50		11	13		1	1		13
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	4%
Adj. Flow (vph)	23	4	29	0	0	3	16	192	4	4	476	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	3	0	0	212	0	0	553	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	3	22	0	0	2	12	144	3	3	357	55
Future Vol, veh/h	17	3	22	0	0	2	12	144	3	3	357	55
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	4
Mvmt Flow	23	4	29	0	0	3	16	192	4	4	476	73
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.8	9.3	14.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	40%	1%
Vol Thru, %	91%	7%	86%
Vol Right, %	2%	52%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	159	42	415
LT Vol	12	17	3
Through Vol	144	3	357
RT Vol	3	22	55
Lane Flow Rate	212	56	553
Geometry Grp	1	1	1
Degree of Util (X)	0.271	0.082	0.645
Departure Headway (Hd)	4.598	5.284	4.198
Convergence, Y/N	Yes	Yes	Yes
Cap	782	676	863
Service Time	2.625	3.333	2.218
HCM Lane V/C Ratio	0.271	0.083	0.641
HCM Control Delay, s/veh	9.3	8.8	14.5
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1.1	0.3	4.8

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	152	366	12
Future Volume (vph)	6	6	3	152	366	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1728	0	0	1880	1892	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1728	0	0	1880	1892	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	8	8	4	197	475	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	201	491	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	3	152	366	12
Future Vol, veh/h	6	6	3	152	366	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	8	8	4	197	475	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	688	483	491	0	-	0
Stage 1	483	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	415	588	1083	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	413	588	1083	-	-	-
Mov Cap-2 Maneuver	413	-	-	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	834	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.66	0.16	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	35	-	485	-	-
HCM Lane V/C Ratio	0.004	-	0.032	-	-
HCM Control Delay (s/veh)	8.3	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

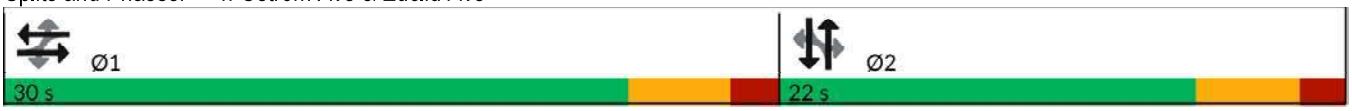
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	150	11	8	135	66	12	44	11	141	159	52
Future Volume (vph)	23	150	11	8	135	66	12	44	11	141	159	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.93			0.99			0.99	
Frt		0.992			0.957			0.978			0.980	
Flt Protected		0.994			0.998			0.991			0.980	
Satd. Flow (prot)	0	1809	0	0	1642	0	0	1780	0	0	1816	0
Flt Permitted		0.943			0.987			0.905			0.834	
Satd. Flow (perm)	0	1689	0	0	1616	0	0	1624	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			60			13			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	183		171	171		183	10		6	6		10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	3%	0%	0%	4%	3%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	28	181	13	10	163	80	14	53	13	170	192	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	253	0	0	80	0	0	425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.28			0.33			0.13			0.77	
Control Delay (s/veh)		10.8			9.1			12.0			28.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.8			9.1			12.0			28.6	
LOS		B			A			B			C	
Approach Delay (s/veh)		10.9			9.1			12.0			28.7	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)		44			39			15			122	
Queue Length 95th (ft)		75			72			36			#221	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		766			762			572			546	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.33			0.14			0.78	

Intersection Summary

Area Type: Other
Cycle Length: 52
Actuated Cycle Length: 57.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay (s/veh): 18.2 Intersection LOS: B
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Ostrom Ave & Euclid Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	109	91	46	75	79	60	203	28	47	131	27
Future Volume (vph)	14	109	91	46	75	79	60	203	28	47	131	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.81			0.92	0.42	0.98	0.98		0.95	0.99	
Frt		0.943				0.850		0.982			0.974	
Flt Protected		0.997			0.981		0.950			0.950		
Satd. Flow (prot)	0	1297	0	0	1830	1495	1752	1690	0	1805	1789	0
Flt Permitted		0.976			0.765		0.633			0.562		
Satd. Flow (perm)	0	1232	0	0	1322	632	1149	1690	0	1024	1789	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	413		181	181		413	17		52	52		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	21%	3%	29%	0%	3%	8%	3%	10%	4%	0%	1%	11%
Adj. Flow (vph)	18	136	114	58	94	99	75	254	35	59	164	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	268	0	0	152	99	75	289	0	59	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		26.4			26.4	26.4	53.6	53.6		53.6	53.6	
Actuated g/C Ratio		0.29			0.29	0.29	0.60	0.60		0.60	0.60	
v/c Ratio		0.74			0.39	0.53	0.10	0.28		0.09	0.18	
Control Delay (s/veh)		40.7			27.0	36.2	10.2	11.1		14.8	14.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		40.7			27.0	36.2	10.2	11.1		14.8	14.3	
LOS		D			C	D	B	B		B	B	
Approach Delay (s/veh)		40.8			30.6			10.9			14.5	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		135			68	46	18	76		17	60	
Queue Length 95th (ft)		169			93	75	40	127		43	111	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		373			400	191	683	1005		609	1064	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.72			0.38	0.52	0.11	0.29		0.10	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 23.1		Intersection LOS: C	
Intersection Capacity Utilization 56.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	5	13	16	4	29	12	144	14	13	80	13
Future Volume (vph)	16	5	13	16	4	29	12	144	14	13	80	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.74			0.67			0.98			0.98	
Frt		0.947			0.920			0.989			0.983	
Flt Protected		0.977			0.984			0.996			0.994	
Satd. Flow (prot)	0	1534	0	0	1195	0	0	1771	0	0	1803	0
Flt Permitted		0.849			0.895			0.984			0.968	
Satd. Flow (perm)	0	1039	0	0	1050	0	0	1743	0	0	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			31			6			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	282		60	60		282	40		58	58		40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	13%	20%	0%	0%	0%	0%	33%	2%	7%	0%	0%	15%
Adj. Flow (vph)	17	5	14	17	4	31	13	152	15	14	84	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	52	0	0	180	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		29.0	29.0		29.0	29.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	22.0	22.0		22.0	22.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	30%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.0			13.0			61.6			61.6	
Actuated g/C Ratio		0.16			0.16			0.77			0.77	
v/c Ratio		0.20			0.26			0.13			0.08	
Control Delay (s/veh)		23.6			19.8			4.3			3.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		23.6			19.8			4.3			3.3	
LOS		C			B			A			A	
Approach Delay (s/veh)		23.7			19.9			4.4			3.4	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)		10			9			33			13	
Queue Length 95th (ft)		36			41			56			26	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		295			311			1343			1343	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.17			0.13			0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 30.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	13	0	0	1	13	140	4	7	267	39
Future Volume (vph)	13	4	13	0	0	1	13	140	4	7	267	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.941			0.850			0.997			0.983	
Flt Protected		0.979						0.996			0.999	
Satd. Flow (prot)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Flt Permitted		0.979						0.996			0.999	
Satd. Flow (perm)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		16	16		11	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	14	4	14	0	0	1	14	149	4	7	284	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	1	0	0	167	0	0	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	4	13	0	0	1	13	140	4	7	267	39
Future Vol, veh/h	13	4	13	0	0	1	13	140	4	7	267	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	4	14	0	0	1	14	149	4	7	284	41
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.3	9.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	43%	2%
Vol Thru, %	89%	13%	85%
Vol Right, %	3%	43%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	157	30	313
LT Vol	13	13	7
Through Vol	140	4	267
RT Vol	4	13	39
Lane Flow Rate	167	32	333
Geometry Grp	1	1	1
Degree of Util (X)	0.195	0.042	0.371
Departure Headway (Hd)	4.206	4.781	4.01
Convergence, Y/N	Yes	Yes	Yes
Cap	840	754	889
Service Time	2.3	2.781	2.078
HCM Lane V/C Ratio	0.199	0.042	0.375
HCM Control Delay, s/veh	8.3	8	9.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	1.7

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	5	2	157	267	12
Future Volume (vph)	2	5	2	157	267	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904				0.994	
Flt Protected	0.986			0.999		
Satd. Flow (prot)	1694	0	0	1898	1871	0
Flt Permitted	0.986			0.999		
Satd. Flow (perm)	1694	0	0	1898	1871	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	2	5	2	171	290	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	173	303	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	5	2	157	267	12
Future Vol, veh/h	2	5	2	157	267	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	2	5	2	171	290	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	472	297	303	0	-	0
Stage 1	297	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	554	747	1269	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	553	747	1269	-	-	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	860	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.36	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	23	-	679	-	-
HCM Lane V/C Ratio	0.002	-	0.011	-	-
HCM Control Delay (s/veh)	7.8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	92	4	22	128	64	5	31	17	72	139	44
Future Volume (vph)	26	92	4	22	128	64	5	31	17	72	139	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.98			0.97			0.99			0.99	
Frt		0.996			0.960			0.957			0.977	
Flt Protected		0.990			0.995			0.996			0.986	
Satd. Flow (prot)	0	1869	0	0	1763	0	0	1796	0	0	1811	0
Flt Permitted		0.916			0.967			0.969			0.895	
Satd. Flow (perm)	0	1715	0	0	1706	0	0	1746	0	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			55			18			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	57		52	52		57	4		5	5		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	27	97	4	23	135	67	5	33	18	76	146	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	225	0	0	56	0	0	268	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.16			0.28			0.09			0.45	
Control Delay (s/veh)		9.8			8.5			10.0			16.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.8			8.5			10.0			16.5	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.8			8.5			10.1			16.5	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		24			34			9			64	
Queue Length 95th (ft)		51			71			28			122	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		776			800			618			583	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.16			0.28			0.09			0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	60	45	45	75	63	64	155	34	32	82	26
Future Volume (vph)	8	60	45	45	75	63	64	155	34	32	82	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.95			0.97	0.77	0.99	0.99		0.97	0.99	
Frt		0.947				0.850		0.973			0.963	
Flt Protected		0.996			0.982		0.950			0.950		
Satd. Flow (prot)	0	1667	0	0	1854	1615	1805	1788	0	1805	1819	0
Flt Permitted		0.972			0.795		0.681			0.628		
Satd. Flow (perm)	0	1606	0	0	1468	1252	1289	1788	0	1166	1819	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	115		41	41		115	3		20	20		3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	9%	0%	1%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	9	66	49	49	82	69	70	170	37	35	90	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	131	69	70	207	0	35	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	30.0	30.0		30.0	30.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%	33.8%	37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	29%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		11.7			11.7	11.7	58.3	58.3		58.3	58.3	
Actuated g/C Ratio		0.15			0.15	0.15	0.73	0.73		0.73	0.73	
v/c Ratio		0.52			0.60	0.37	0.07	0.15		0.04	0.08	
Control Delay (s/veh)		38.8			43.3	35.3	4.1	4.2		3.5	3.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		38.8			43.3	35.3	4.1	4.2		3.5	3.5	
LOS		D			D	D	A	A		A	A	
Approach Delay (s/veh)		38.8			40.6			4.3			3.5	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		58			62	32	8	25		3	12	
Queue Length 95th (ft)		102			108	65	24	60		12	30	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		441			403	344	938	1302		849	1324	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.28			0.33	0.20	0.07	0.16		0.04	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 27 (34%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay (s/veh): 19.4		Intersection LOS: B	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	9	10	12	11	18	41	188	12	8	110	13
Future Volume (vph)	29	9	10	12	11	18	41	188	12	8	110	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.67			0.71			0.95			0.95	
Frt		0.971			0.941			0.993			0.987	
Flt Protected		0.971			0.986			0.992			0.997	
Satd. Flow (prot)	0	1503	0	0	1287	0	0	1547	0	0	1592	0
Flt Permitted		0.813			0.909			0.907			0.970	
Satd. Flow (perm)	0	905	0	0	1113	0	0	1358	0	0	1544	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			33			3			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	385		153	153		385	236		86	86		236
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	14%	11%	10%	0%	18%	0%	95%	5%	0%	0%	9%	54%
Adj. Flow (vph)	54	17	19	22	20	33	76	348	22	15	204	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	75	0	0	446	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.2			15.2			69.4			69.4	
Actuated g/C Ratio		0.17			0.17			0.77			0.77	
v/c Ratio		0.54			0.34			0.42			0.20	
Control Delay (s/veh)		40.2			24.4			8.2			4.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		40.2			24.4			8.2			4.7	
LOS		D			C			A			A	
Approach Delay (s/veh)		40.3			24.5			8.2			4.7	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		40			22			122			33	
Queue Length 95th (ft)		42			26			54			42	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		292			369			1048			1192	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.31			0.20			0.43			0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay (s/veh): 12.0		Intersection LOS: B	
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	5	13	0	0	0	11	197	7	11	155	29
Future Volume (vph)	8	5	13	0	0	0	11	197	7	11	155	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.932						0.996			0.980	
Flt Protected		0.985						0.998			0.997	
Satd. Flow (prot)	0	1570	0	0	0	0	0	1871	0	0	1823	0
Flt Permitted		0.985						0.998			0.997	
Satd. Flow (perm)	0	1570	0	0	0	0	0	1871	0	0	1823	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	4		51	51		4	4		5	5		4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	12%	0%	15%	0%	0%	0%	0%	1%	0%	0%	1%	7%
Adj. Flow (vph)	9	6	15	0	0	0	12	221	8	12	174	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	0	0	0	241	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	13	0	0	0	11	197	7	11	155	29
Future Vol, veh/h	8	5	13	0	0	0	11	197	7	11	155	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	12	0	15	0	0	0	0	1	0	0	1	7
Mvmt Flow	9	6	15	0	0	0	12	221	8	12	174	33
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.8	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	5%	31%	6%
Vol Thru, %	92%	19%	79%
Vol Right, %	3%	50%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	215	26	195
LT Vol	11	8	11
Through Vol	197	5	155
RT Vol	7	13	29
Lane Flow Rate	242	29	219
Geometry Grp	1	1	1
Degree of Util (X)	0.276	0.039	0.247
Departure Headway (Hd)	4.106	4.84	4.054
Convergence, Y/N	Yes	Yes	Yes
Cap	865	744	874
Service Time	2.177	2.84	2.133
HCM Lane V/C Ratio	0.28	0.039	0.251
HCM Control Delay, s/veh	8.8	8	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.1	1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	210	164	3
Future Volume (vph)	1	3	9	210	164	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.998	
Flt Protected	0.988			0.998		
Satd. Flow (prot)	1688	0	0	1878	1860	0
Flt Permitted	0.988			0.998		
Satd. Flow (perm)	1688	0	0	1878	1860	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Adj. Flow (vph)	1	3	10	241	189	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	251	192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	210	164	3
Future Vol, veh/h	1	3	9	210	164	3
Conflicting Peds, #/hr	0	0	0	0	0	0
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	1	3	10	241	189	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	452	190	192	0	-	0
Stage 1	190	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	569	857	1394	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	564	857	1394	-	-	-
Mov Cap-2 Maneuver	564	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.78	0.31	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	74	-	758	-	-
HCM Lane V/C Ratio	0.007	-	0.006	-	-
HCM Control Delay (s/veh)	7.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	72	3	11	157	119	14	63	13	51	73	37
Future Volume (vph)	17	72	3	11	157	119	14	63	13	51	73	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.92			0.99			0.99	
Frt		0.996			0.944			0.981			0.969	
Flt Protected		0.991			0.998			0.992			0.984	
Satd. Flow (prot)	0	1766	0	0	1607	0	0	1760	0	0	1758	0
Flt Permitted		0.919			0.990			0.943			0.878	
Satd. Flow (perm)	0	1608	0	0	1589	0	0	1673	0	0	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			92			14			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	159		100	100		159	3		5	5		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	6%	0%	0%	6%	0%	29%	0%	0%	0%	4%	3%
Adj. Flow (vph)	19	80	3	12	174	132	16	70	14	57	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	318	0	0	100	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.14			0.41			0.16			0.31	
Control Delay (s/veh)		9.7			9.3			12.4			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.7			9.3			12.4			13.3	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.7			9.4			12.5			13.3	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		19			47			20			36	
Queue Length 95th (ft)		42			99			48			78	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		727			767			590			563	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.41			0.17			0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 10.9		Intersection LOS: B	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	46	80	21	130	53	86	233	21	21	86	21
Future Volume (vph)	11	46	80	21	130	53	86	233	21	21	86	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.85			0.98	0.47	0.96	0.99		0.97	0.98	
Frt		0.922				0.850		0.988			0.971	
Flt Protected		0.996			0.993		0.950			0.950		
Satd. Flow (prot)	0	1171	0	0	1812	1404	1703	1551	0	1805	1708	0
Flt Permitted		0.968			0.948		0.671			0.556		
Satd. Flow (perm)	0	1104	0	0	1698	663	1163	1551	0	1033	1708	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	289		95	95		289	31		30	30		31
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	54%	4%	43%	5%	4%	15%	6%	21%	14%	0%	6%	10%
Adj. Flow (vph)	14	58	100	26	163	66	108	291	26	26	108	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	189	66	108	317	0	26	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		19.5			19.5	19.5	60.5	60.5		60.5	60.5	
Actuated g/C Ratio		0.22			0.22	0.22	0.67	0.67		0.67	0.67	
v/c Ratio		0.72			0.51	0.46	0.13	0.30		0.03	0.11	
Control Delay (s/veh)		48.4			34.5	38.7	7.5	8.4		11.8	11.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		48.4			34.5	38.7	7.5	8.4		11.8	11.0	
LOS		D			C	D	A	A		B	B	
Approach Delay (s/veh)		48.4			35.6			8.2			11.2	
Approach LOS		D			D			A			B	
Queue Length 50th (ft)		92			96	33	19	64		6	33	
Queue Length 95th (ft)		119			119	56	48	127		23	79	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		291			448	175	781	1042		694	1148	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.42	0.38	0.14	0.30		0.04	0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 22.4		Intersection LOS: C	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	14	16	29	18	30	29	239	21	11	164	18
Future Volume (vph)	28	14	16	29	18	30	29	239	21	11	164	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.70			0.69			0.96			0.97	
Frt		0.963			0.948			0.990			0.987	
Flt Protected		0.976			0.981			0.995			0.997	
Satd. Flow (prot)	0	1478	0	0	1351	0	0	1669	0	0	1721	0
Flt Permitted		0.823			0.876			0.948			0.972	
Satd. Flow (perm)	0	972	0	0	1066	0	0	1571	0	0	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			37			4			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	461		218	218		461	131		156	156		131
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	18%	0%	0%	0%	11%	0%	83%	2%	0%	0%	2%	50%
Adj. Flow (vph)	41	20	23	42	26	43	42	346	30	16	238	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	111	0	0	418	0	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		14.7			14.7			65.3			65.3	
Actuated g/C Ratio		0.16			0.16			0.73			0.73	
v/c Ratio		0.47			0.54			0.36			0.23	
Control Delay (s/veh)		34.7			33.3			6.5			4.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		34.7			33.3			6.5			4.8	
LOS		C			C			A			A	
Approach Delay (s/veh)		34.7			33.4			6.6			4.9	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		33			39			102			39	
Queue Length 95th (ft)		51			58			61			61	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		317			357			1141			1212	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.26			0.31			0.37			0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 12.0		Intersection LOS: B	
Intersection Capacity Utilization 43.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	3	22	0	0	2	12	145	3	3	361	56
Future Volume (vph)	17	3	22	0	0	2	12	145	3	3	361	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.930			0.850			0.997			0.982	
Flt Protected		0.980						0.996				
Satd. Flow (prot)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Flt Permitted		0.980						0.996				
Satd. Flow (perm)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		50	50		11	13		1	1		13
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	4%
Adj. Flow (vph)	23	4	29	0	0	3	16	193	4	4	481	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	3	0	0	213	0	0	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	3	22	0	0	2	12	145	3	3	361	56
Future Vol, veh/h	17	3	22	0	0	2	12	145	3	3	361	56
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	4
Mvmt Flow	23	4	29	0	0	3	16	193	4	4	481	75
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.8	9.4	14.8
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	40%	1%
Vol Thru, %	91%	7%	86%
Vol Right, %	2%	52%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	160	42	420
LT Vol	12	17	3
Through Vol	145	3	361
RT Vol	3	22	56
Lane Flow Rate	213	56	560
Geometry Grp	1	1	1
Degree of Util (X)	0.273	0.082	0.653
Departure Headway (Hd)	4.605	5.302	4.2
Convergence, Y/N	Yes	Yes	Yes
Cap	781	674	862
Service Time	2.632	3.35	2.22
HCM Lane V/C Ratio	0.273	0.083	0.65
HCM Control Delay, s/veh	9.4	8.8	14.8
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1.1	0.3	5

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	154	370	12
Future Volume (vph)	6	6	3	154	370	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1728	0	0	1880	1892	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1728	0	0	1880	1892	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	8	8	4	200	481	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	204	497	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	3	154	370	12
Future Vol, veh/h	6	6	3	154	370	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	8	8	4	200	481	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	696	488	496	0	-	0
Stage 1	488	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	411	584	1078	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	584	1078	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	832	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.74	0.16	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	34	-	481	-	-
HCM Lane V/C Ratio	0.004	-	0.032	-	-
HCM Control Delay (s/veh)	8.4	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

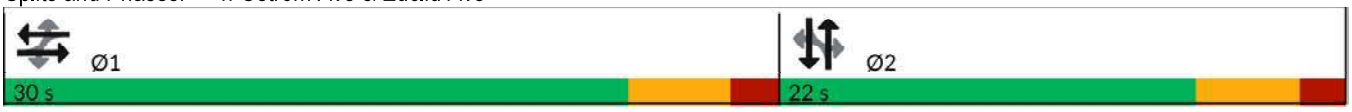
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	152	11	8	136	67	12	44	11	142	161	53
Future Volume (vph)	23	152	11	8	136	67	12	44	11	142	161	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.93			0.99			0.99	
Frt		0.992			0.957			0.978			0.980	
Flt Protected		0.994			0.998			0.991			0.980	
Satd. Flow (prot)	0	1809	0	0	1642	0	0	1780	0	0	1816	0
Flt Permitted		0.943			0.987			0.904			0.834	
Satd. Flow (perm)	0	1689	0	0	1616	0	0	1622	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			60			13			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	183		171	171		183	10		6	6		10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	3%	0%	0%	4%	3%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	28	183	13	10	164	81	14	53	13	171	194	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	255	0	0	80	0	0	429	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.29			0.33			0.14			0.78	
Control Delay (s/veh)		10.9			9.1			12.0			29.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.9			9.1			12.0			29.2	
LOS		B			A			B			C	
Approach Delay (s/veh)		10.9			9.2			12.0			29.2	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)		44			40			15			124	
Queue Length 95th (ft)		76			72			36			#224	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		766			762			571			546	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.33			0.14			0.79	

Intersection Summary

Area Type: Other
Cycle Length: 52
Actuated Cycle Length: 57.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay (s/veh): 18.5 Intersection LOS: B
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Ostrom Ave & Euclid Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	110	92	46	76	80	61	205	28	47	132	27
Future Volume (vph)	14	110	92	46	76	80	61	205	28	47	132	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.81			0.92	0.42	0.98	0.98		0.95	0.99	
Frt		0.943				0.850		0.982			0.974	
Flt Protected		0.997			0.981		0.950			0.950		
Satd. Flow (prot)	0	1298	0	0	1830	1495	1752	1690	0	1805	1789	0
Flt Permitted		0.977			0.767		0.633			0.559		
Satd. Flow (perm)	0	1235	0	0	1327	632	1149	1690	0	1018	1789	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	413		181	181		413	17		52	52		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	21%	3%	29%	0%	3%	8%	3%	10%	4%	0%	1%	11%
Adj. Flow (vph)	18	138	115	58	95	100	76	256	35	59	165	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	153	100	76	291	0	59	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		26.7			26.7	26.7	53.3	53.3		53.3	53.3	
Actuated g/C Ratio		0.30			0.30	0.30	0.59	0.59		0.59	0.59	
v/c Ratio		0.74			0.38	0.53	0.11	0.29		0.09	0.18	
Control Delay (s/veh)		40.4			26.8	36.0	10.3	11.2		15.0	14.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		40.4			26.8	36.0	10.3	11.2		15.0	14.5	
LOS		D			C	D	B	B		B	B	
Approach Delay (s/veh)		40.5			30.5			11.0			14.6	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		136			68	47	18	77		17	61	
Queue Length 95th (ft)		172			94	76	40	127		43	112	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		376			404	192	680	1000		602	1059	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.72			0.38	0.52	0.11	0.29		0.10	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 23.1		Intersection LOS: C	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	5	13	16	4	29	12	145	14	13	81	13
Future Volume (vph)	16	5	13	16	4	29	12	145	14	13	81	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.74			0.67			0.98			0.98	
Frt		0.947			0.920			0.989			0.983	
Flt Protected		0.977			0.984			0.996			0.994	
Satd. Flow (prot)	0	1534	0	0	1195	0	0	1772	0	0	1803	0
Flt Permitted		0.849			0.895			0.984			0.968	
Satd. Flow (perm)	0	1039	0	0	1050	0	0	1743	0	0	1741	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			31			6			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	282		60	60		282	40		58	58		40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	13%	20%	0%	0%	0%	0%	33%	2%	7%	0%	0%	15%
Adj. Flow (vph)	17	5	14	17	4	31	13	153	15	14	85	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	52	0	0	181	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		29.0	29.0		29.0	29.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	22.0	22.0		22.0	22.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	30%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.0			13.0			61.6			61.6	
Actuated g/C Ratio		0.16			0.16			0.77			0.77	
v/c Ratio		0.20			0.26			0.13			0.08	
Control Delay (s/veh)		23.6			19.8			4.3			3.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		23.6			19.8			4.3			3.3	
LOS		C			B			A			A	
Approach Delay (s/veh)		23.7			19.9			4.3			3.4	
Approach LOS		C			B			A			A	
Queue Length 50th (ft)		10			9			33			13	
Queue Length 95th (ft)		36			41			56			26	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		295			311			1343			1343	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.12			0.17			0.13			0.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.27			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 30.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl

Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	13	0	0	1	13	141	4	7	270	39
Future Volume (vph)	13	4	13	0	0	1	13	141	4	7	270	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.941			0.850			0.997			0.983	
Flt Protected		0.979						0.996			0.999	
Satd. Flow (prot)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Flt Permitted		0.979						0.996			0.999	
Satd. Flow (perm)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		16	16		11	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	14	4	14	0	0	1	14	150	4	7	287	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	1	0	0	168	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	4	13	0	0	1	13	141	4	7	270	39
Future Vol, veh/h	13	4	13	0	0	1	13	141	4	7	270	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	4	14	0	0	1	14	150	4	7	287	41
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.4	9.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	43%	2%
Vol Thru, %	89%	13%	85%
Vol Right, %	3%	43%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	158	30	316
LT Vol	13	13	7
Through Vol	141	4	270
RT Vol	4	13	39
Lane Flow Rate	168	32	336
Geometry Grp	1	1	1
Degree of Util (X)	0.197	0.042	0.375
Departure Headway (Hd)	4.209	4.792	4.011
Convergence, Y/N	Yes	Yes	Yes
Cap	839	752	887
Service Time	2.303	2.792	2.081
HCM Lane V/C Ratio	0.2	0.043	0.379
HCM Control Delay, s/veh	8.4	8	9.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	1.8

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	5	2	159	270	12
Future Volume (vph)	2	5	2	159	270	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904				0.994	
Flt Protected	0.986			0.999		
Satd. Flow (prot)	1694	0	0	1898	1871	0
Flt Permitted	0.986			0.999		
Satd. Flow (perm)	1694	0	0	1898	1871	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	2	5	2	173	293	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	175	306	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	5	2	159	270	12
Future Vol, veh/h	2	5	2	159	270	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	2	5	2	173	293	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	477	300	307	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	177	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	550	744	1266	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	744	1266	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	858	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.39	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	22	-	676	-	-
HCM Lane V/C Ratio	0.002	-	0.011	-	-
HCM Control Delay (s/veh)	7.8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	93	4	22	129	65	5	31	17	73	140	44
Future Volume (vph)	26	93	4	22	129	65	5	31	17	73	140	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.98			0.97			0.99			0.99	
Frt		0.996			0.960			0.957			0.977	
Flt Protected		0.990			0.995			0.996			0.986	
Satd. Flow (prot)	0	1869	0	0	1763	0	0	1796	0	0	1811	0
Flt Permitted		0.916			0.967			0.969			0.894	
Satd. Flow (perm)	0	1715	0	0	1706	0	0	1746	0	0	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			55			18			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	57		52	52		57	4		5	5		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	27	98	4	23	136	68	5	33	18	77	147	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	227	0	0	56	0	0	270	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.16			0.28			0.09			0.46	
Control Delay (s/veh)		9.8			8.5			10.0			16.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.8			8.5			10.0			16.6	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.8			8.6			10.1			16.6	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		24			34			9			64	
Queue Length 95th (ft)		51			72			28			123	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		776			800			618			582	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.17			0.28			0.09			0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	61	45	45	76	64	65	157	34	32	83	26
Future Volume (vph)	8	61	45	45	76	64	65	157	34	32	83	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.95			0.97	0.77	0.99	0.99		0.97	0.99	
Frt		0.947				0.850		0.974			0.964	
Flt Protected		0.996			0.982		0.950			0.950		
Satd. Flow (prot)	0	1668	0	0	1854	1615	1805	1790	0	1805	1821	0
Flt Permitted		0.972			0.795		0.680			0.626		
Satd. Flow (perm)	0	1607	0	0	1468	1252	1287	1790	0	1162	1821	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	115		41	41		115	3		20	20		3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	9%	0%	1%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	9	67	49	49	84	70	71	173	37	35	91	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	133	70	71	210	0	35	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	30.0	30.0		30.0	30.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%	33.8%	37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	29%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		11.8			11.8	11.8	58.2	58.2		58.2	58.2	
Actuated g/C Ratio		0.15			0.15	0.15	0.73	0.73		0.73	0.73	
v/c Ratio		0.52			0.61	0.38	0.07	0.16		0.04	0.09	
Control Delay (s/veh)		38.7			43.5	35.3	4.2	4.3		3.6	3.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		38.7			43.5	35.3	4.2	4.3		3.6	3.5	
LOS		D			D	D	A	A		A	A	
Approach Delay (s/veh)		38.7			40.7			4.3			3.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		59			63	32	8	26		4	13	
Queue Length 95th (ft)		102			110	65	25	61		12	30	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		441			403	344	936	1302		845	1324	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.28			0.33	0.20	0.08	0.16		0.04	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 27 (34%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 19.5		Intersection LOS: B	
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

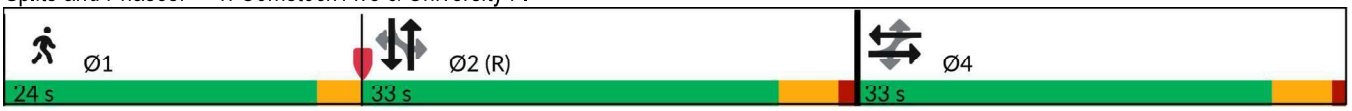
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	9	10	12	11	18	41	188	12	8	110	13
Future Volume (vph)	29	9	10	12	11	18	41	188	12	8	110	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.63			0.66			0.94			0.95	
Frt		0.971			0.941			0.993			0.987	
Flt Protected		0.971			0.986			0.992			0.997	
Satd. Flow (prot)	0	1414	0	0	1287	0	0	1540	0	0	1592	0
Flt Permitted		0.812			0.907			0.907			0.970	
Satd. Flow (perm)	0	850	0	0	1029	0	0	1352	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			33			3			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	385		362	362		385	236		143	143		236
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	14%	11%	10%	0%	18%	0%	95%	5%	0%	0%	9%	54%
Adj. Flow (vph)	54	17	19	22	20	33	76	348	22	15	204	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	75	0	0	446	0	0	243	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.6			15.6			69.0			69.0	
Actuated g/C Ratio		0.17			0.17			0.77			0.77	
v/c Ratio		0.56			0.36			0.43			0.20	
Control Delay (s/veh)		41.2			24.7			8.6			4.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		41.2			24.7			8.6			4.9	
LOS		D			C			A			A	
Approach Delay (s/veh)		41.3			24.8			8.7			5.0	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		40			21			123			34	
Queue Length 95th (ft)		42			26			73			44	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		275			342			1037			1183	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.33			0.22			0.43			0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.56			
Intersection Signal Delay (s/veh): 12.5		Intersection LOS: B	
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl



Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	5	13	0	0	0	11	197	7	11	155	29
Future Volume (vph)	8	5	13	0	0	0	11	197	7	11	155	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.932						0.996			0.980	
Flt Protected		0.985						0.998			0.997	
Satd. Flow (prot)	0	1570	0	0	0	0	0	1871	0	0	1823	0
Flt Permitted		0.985						0.998			0.997	
Satd. Flow (perm)	0	1570	0	0	0	0	0	1871	0	0	1823	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	4		51	51		4	4		5	5		4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	12%	0%	15%	0%	0%	0%	0%	1%	0%	0%	1%	7%
Adj. Flow (vph)	9	6	15	0	0	0	12	221	8	12	174	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	0	0	0	241	0	0	219	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	13	0	0	0	11	197	7	11	155	29
Future Vol, veh/h	8	5	13	0	0	0	11	197	7	11	155	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	12	0	15	0	0	0	0	1	0	0	1	7
Mvmt Flow	9	6	15	0	0	0	12	221	8	12	174	33
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.8	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	5%	31%	6%
Vol Thru, %	92%	19%	79%
Vol Right, %	3%	50%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	215	26	195
LT Vol	11	8	11
Through Vol	197	5	155
RT Vol	7	13	29
Lane Flow Rate	242	29	219
Geometry Grp	1	1	1
Degree of Util (X)	0.276	0.039	0.247
Departure Headway (Hd)	4.106	4.84	4.054
Convergence, Y/N	Yes	Yes	Yes
Cap	865	744	874
Service Time	2.177	2.84	2.133
HCM Lane V/C Ratio	0.28	0.039	0.251
HCM Control Delay, s/veh	8.8	8	8.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.1	1

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	210	164	3
Future Volume (vph)	1	3	9	210	164	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.998	
Flt Protected	0.988			0.998		
Satd. Flow (prot)	1688	0	0	1878	1860	0
Flt Permitted	0.988			0.998		
Satd. Flow (perm)	1688	0	0	1878	1860	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	1%	2%	0%
Adj. Flow (vph)	1	3	10	241	189	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	251	192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	210	164	3
Future Vol, veh/h	1	3	9	210	164	3
Conflicting Peds, #/hr	0	0	0	0	0	0
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	1	3	10	241	189	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	452	190	192	0	-	0
Stage 1	190	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	569	857	1394	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	564	857	1394	-	-	-
Mov Cap-2 Maneuver	564	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.78	0.31	0
HCM LOS	A		

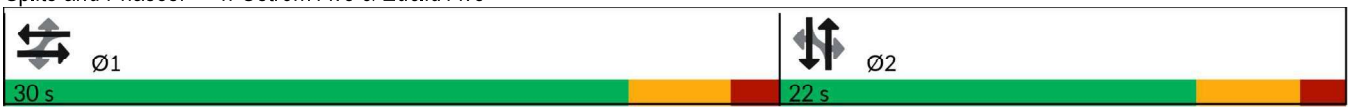
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	74	-	758	-	-
HCM Lane V/C Ratio	0.007	-	0.006	-	-
HCM Control Delay (s/veh)	7.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	72	3	11	157	119	14	63	13	51	73	37
Future Volume (vph)	17	72	3	11	157	119	14	63	13	51	73	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.92			0.99			0.99	
Frt		0.996			0.944			0.981			0.969	
Flt Protected		0.991			0.998			0.992			0.984	
Satd. Flow (prot)	0	1766	0	0	1607	0	0	1760	0	0	1758	0
Flt Permitted		0.919			0.990			0.943			0.878	
Satd. Flow (perm)	0	1608	0	0	1589	0	0	1673	0	0	1566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			92			14			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	159		100	100		159	3		5	5		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	6%	0%	0%	6%	0%	29%	0%	0%	0%	4%	3%
Adj. Flow (vph)	19	80	3	12	174	132	16	70	14	57	81	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	318	0	0	100	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.14			0.41			0.16			0.31	
Control Delay (s/veh)		9.7			9.3			12.4			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.7			9.3			12.4			13.3	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.7			9.4			12.5			13.3	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		19			47			20			36	
Queue Length 95th (ft)		42			99			48			78	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		727			767			590			563	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.41			0.17			0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 10.9		Intersection LOS: B	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave



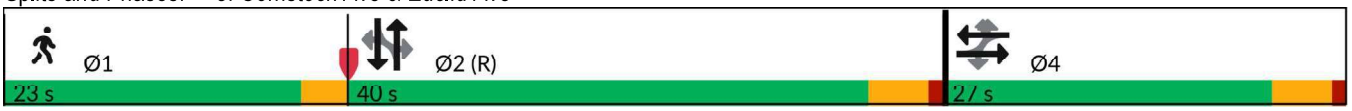
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	46	80	21	130	53	86	233	21	21	86	21
Future Volume (vph)	11	46	80	21	130	53	86	233	21	21	86	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.84			0.98	0.42	0.96	0.99		0.97	0.98	
Frt		0.922				0.850		0.988			0.971	
Flt Protected		0.996			0.993		0.950			0.950		
Satd. Flow (prot)	0	1171	0	0	1812	1404	1703	1551	0	1805	1708	0
Flt Permitted		0.968			0.948		0.671			0.556		
Satd. Flow (perm)	0	1101	0	0	1698	599	1163	1551	0	1033	1708	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	403		95	95		403	31		30	30		31
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	54%	4%	43%	5%	4%	15%	6%	21%	14%	0%	6%	10%
Adj. Flow (vph)	14	58	100	26	163	66	108	291	26	26	108	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	189	66	108	317	0	26	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		19.5			19.5	19.5	60.5	60.5		60.5	60.5	
Actuated g/C Ratio		0.22			0.22	0.22	0.67	0.67		0.67	0.67	
v/c Ratio		0.72			0.51	0.51	0.13	0.30		0.03	0.11	
Control Delay (s/veh)		48.4			34.4	42.4	7.5	8.4		11.7	10.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		48.4			34.4	42.4	7.5	8.4		11.7	10.8	
LOS		D			C	D	A	A		B	B	
Approach Delay (s/veh)		48.5			36.6			8.2			11.0	
Approach LOS		D			D			A			B	
Queue Length 50th (ft)		92			96	34	19	64		6	34	
Queue Length 95th (ft)		119			119	57	48	127		23	79	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		290			448	158	781	1042		694	1147	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.59			0.42	0.42	0.14	0.30		0.04	0.12	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 22.6		Intersection LOS: C	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave



Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

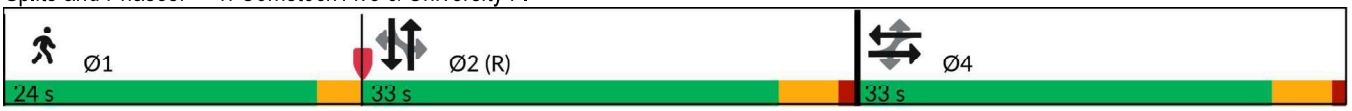
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	14	16	29	18	30	29	239	21	11	164	18
Future Volume (vph)	28	14	16	29	18	30	29	239	21	11	164	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.65			0.63			0.96			0.97	
Frt		0.963			0.948			0.990			0.987	
Flt Protected		0.976			0.981			0.995			0.997	
Satd. Flow (prot)	0	1387	0	0	1351	0	0	1655	0	0	1721	0
Flt Permitted		0.828			0.875			0.948			0.972	
Satd. Flow (perm)	0	918	0	0	982	0	0	1558	0	0	1663	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			37			4			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	461		489	489		461	131		231	231		131
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles (%)	18%	0%	0%	0%	11%	0%	83%	2%	0%	0%	2%	50%
Adj. Flow (vph)	41	20	23	42	26	43	42	346	30	16	238	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	111	0	0	418	0	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	33.0	33.0		33.0	33.0		33.0	33.0		33.0	33.0	
Total Split (%)	36.7%	36.7%		36.7%	36.7%		36.7%	36.7%		36.7%	36.7%	
Maximum Green (s)	28.0	28.0		28.0	28.0		28.0	28.0		28.0	28.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	27%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		15.1			15.1			64.9			64.9	
Actuated g/C Ratio		0.17			0.17			0.72			0.72	
v/c Ratio		0.48			0.56			0.37			0.23	
Control Delay (s/veh)		35.1			34.7			7.1			5.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		35.1			34.7			7.1			5.0	
LOS		D			C			A			A	
Approach Delay (s/veh)		35.1			34.7			7.2			5.1	
Approach LOS		D			C			A			A	
Queue Length 50th (ft)		33			40			102			39	
Queue Length 95th (ft)		51			58			65			64	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		300			331			1124			1201	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.34			0.37			0.23	

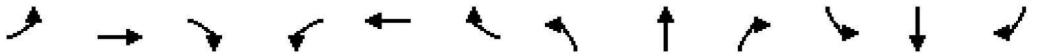
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 81 (90%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay (s/veh): 12.6		Intersection LOS: B	
Intersection Capacity Utilization 43.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl



Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	3	22	0	0	2	12	145	3	3	361	56
Future Volume (vph)	17	3	22	0	0	2	12	145	3	3	361	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.930			0.850			0.997			0.982	
Flt Protected		0.980						0.996				
Satd. Flow (prot)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Flt Permitted		0.980						0.996				
Satd. Flow (perm)	0	1732	0	0	0	0	0	1870	0	0	1856	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		50	50		11	13		1	1		13
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	4%
Adj. Flow (vph)	23	4	29	0	0	3	16	193	4	4	481	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	3	0	0	213	0	0	560	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	3	22	0	0	2	12	145	3	3	361	56
Future Vol, veh/h	17	3	22	0	0	2	12	145	3	3	361	56
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	4
Mvmt Flow	23	4	29	0	0	3	16	193	4	4	481	75
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8.8	9.4	14.8
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	40%	1%
Vol Thru, %	91%	7%	86%
Vol Right, %	2%	52%	13%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	160	42	420
LT Vol	12	17	3
Through Vol	145	3	361
RT Vol	3	22	56
Lane Flow Rate	213	56	560
Geometry Grp	1	1	1
Degree of Util (X)	0.273	0.082	0.653
Departure Headway (Hd)	4.605	5.302	4.2
Convergence, Y/N	Yes	Yes	Yes
Cap	781	674	862
Service Time	2.632	3.35	2.22
HCM Lane V/C Ratio	0.273	0.083	0.65
HCM Control Delay, s/veh	9.4	8.8	14.8
HCM Lane LOS	A	A	B
HCM 95th-tile Q	1.1	0.3	5

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	6	3	154	370	12
Future Volume (vph)	6	6	3	154	370	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1728	0	0	1880	1892	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1728	0	0	1880	1892	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	8	8	4	200	481	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	204	497	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	3	154	370	12
Future Vol, veh/h	6	6	3	154	370	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	8	8	4	200	481	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	696	488	496	0	-	0
Stage 1	488	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	411	584	1078	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	584	1078	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	832	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.74	0.16	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	34	-	481	-	-
HCM Lane V/C Ratio	0.004	-	0.032	-	-
HCM Control Delay (s/veh)	8.4	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	152	11	8	136	67	12	44	11	142	161	53
Future Volume (vph)	23	152	11	8	136	67	12	44	11	142	161	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.97			0.93			0.99			0.99	
Frt		0.992			0.957			0.978			0.980	
Flt Protected		0.994			0.998			0.991			0.980	
Satd. Flow (prot)	0	1809	0	0	1642	0	0	1780	0	0	1816	0
Flt Permitted		0.943			0.987			0.904			0.834	
Satd. Flow (perm)	0	1689	0	0	1616	0	0	1622	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			60			13			18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	183		171	171		183	10		6	6		10
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	3%	0%	0%	4%	3%	17%	0%	0%	0%	0%	0%
Adj. Flow (vph)	28	183	13	10	164	81	14	53	13	171	194	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	0	255	0	0	80	0	0	429	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.29			0.33			0.14			0.78	
Control Delay (s/veh)		10.9			9.1			12.0			29.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.9			9.1			12.0			29.2	
LOS		B			A			B			C	
Approach Delay (s/veh)		10.9			9.2			12.0			29.2	
Approach LOS		B			A			B			C	
Queue Length 50th (ft)		44			40			15			124	
Queue Length 95th (ft)		76			72			36			#224	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		766			762			571			546	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.33			0.14			0.79	

Intersection Summary

Area Type: Other
Cycle Length: 52
Actuated Cycle Length: 57.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay (s/veh): 18.5 Intersection LOS: B
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Ostrom Ave & Euclid Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	110	92	46	76	80	61	205	28	47	132	27
Future Volume (vph)	14	110	92	46	76	80	61	205	28	47	132	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.81			0.92	0.36	0.98	0.98		0.95	0.99	
Frt		0.943				0.850		0.982			0.974	
Flt Protected		0.997			0.981		0.950			0.950		
Satd. Flow (prot)	0	1298	0	0	1830	1495	1752	1690	0	1805	1789	0
Flt Permitted		0.977			0.768		0.633			0.559		
Satd. Flow (perm)	0	1231	0	0	1328	543	1149	1690	0	1018	1789	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	561		181	181		561	17		52	52		17
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	21%	3%	29%	0%	3%	8%	3%	10%	4%	0%	1%	11%
Adj. Flow (vph)	18	138	115	58	95	100	76	256	35	59	165	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	153	100	76	291	0	59	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	40.0	40.0		40.0	40.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%	30.0%	44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	35.0	35.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		26.8			26.8	26.8	53.2	53.2		53.2	53.2	
Actuated g/C Ratio		0.30			0.30	0.30	0.59	0.59		0.59	0.59	
v/c Ratio		0.74			0.38	0.62	0.11	0.29		0.09	0.18	
Control Delay (s/veh)		40.3			26.7	43.1	10.3	11.2		14.9	14.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		40.3			26.7	43.1	10.3	11.2		14.9	14.4	
LOS		D			C	D	B	B		B	B	
Approach Delay (s/veh)		40.4			33.2			11.1			14.5	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		136			68	48	18	77		17	61	
Queue Length 95th (ft)		172			94	81	40	127		43	112	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		376			405	165	678	998		601	1057	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.72			0.38	0.61	0.11	0.29		0.10	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 47 (52%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 23.6		Intersection LOS: C	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave

Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

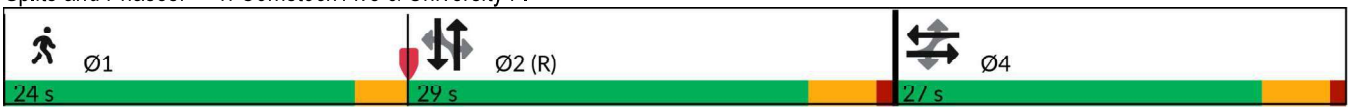
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	5	13	16	4	29	12	145	14	13	81	13
Future Volume (vph)	16	5	13	16	4	29	12	145	14	13	81	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.65			0.61			0.98			0.97	
Frt		0.947			0.920			0.989			0.983	
Flt Protected		0.977			0.984			0.996			0.994	
Satd. Flow (prot)	0	1367	0	0	1195	0	0	1762	0	0	1803	0
Flt Permitted		0.849			0.895			0.984			0.968	
Satd. Flow (perm)	0	925	0	0	957	0	0	1734	0	0	1731	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			31			6			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		145			436			1141			288	
Travel Time (s)		3.3			9.9			25.9			6.5	
Confl. Peds. (#/hr)	282		210	210		282	40		99	99		40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	13%	20%	0%	0%	0%	0%	33%	2%	7%	0%	0%	15%
Adj. Flow (vph)	17	5	14	17	4	31	13	153	15	14	85	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	52	0	0	181	0	0	113	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4			2			2		
Detector Phase	4	4		4	4		2	2		2	2	
Switch Phase												
Minimum Initial (s)	13.0	13.0		13.0	13.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		29.0	29.0		29.0	29.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	22.0	22.0		22.0	22.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)												

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	30%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.5
Recall Mode	None
Walk Time (s)	10.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		13.0			13.0			61.6			61.6	
Actuated g/C Ratio		0.16			0.16			0.77			0.77	
v/c Ratio		0.22			0.28			0.13			0.08	
Control Delay (s/veh)		24.5			20.6			4.1			3.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		24.5			20.6			4.1			3.3	
LOS		C			C			A			A	
Approach Delay (s/veh)		24.5			20.7			4.2			3.4	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)		10			9			33			13	
Queue Length 95th (ft)		36			41			55			26	
Internal Link Dist (ft)		65			356			1061			208	
Turn Bay Length (ft)												
Base Capacity (vph)		264			285			1336			1334	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.18			0.14			0.08	

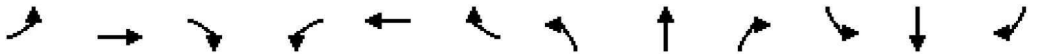
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 36 (45%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay (s/veh): 8.1		Intersection LOS: A	
Intersection Capacity Utilization 30.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Comstock Ave & University Pl



Lane Group	Ø1
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	4	13	0	0	1	13	141	4	7	270	39
Future Volume (vph)	13	4	13	0	0	1	13	141	4	7	270	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor												
Frt		0.941			0.850			0.997			0.983	
Flt Protected		0.979						0.996			0.999	
Satd. Flow (prot)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Flt Permitted		0.979						0.996			0.999	
Satd. Flow (perm)	0	1750	0	0	0	0	0	1887	0	0	1866	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		436			255			177			310	
Travel Time (s)		9.9			5.8			4.0			7.0	
Confl. Peds. (#/hr)	11		16	16		11	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	14	4	14	0	0	1	14	150	4	7	287	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	1	0	0	168	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	4	13	0	0	1	13	141	4	7	270	39
Future Vol, veh/h	13	4	13	0	0	1	13	141	4	7	270	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	14	4	14	0	0	1	14	150	4	7	287	41
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay, s/veh	8	8.4	9.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	43%	2%
Vol Thru, %	89%	13%	85%
Vol Right, %	3%	43%	12%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	158	30	316
LT Vol	13	13	7
Through Vol	141	4	270
RT Vol	4	13	39
Lane Flow Rate	168	32	336
Geometry Grp	1	1	1
Degree of Util (X)	0.197	0.042	0.375
Departure Headway (Hd)	4.209	4.792	4.011
Convergence, Y/N	Yes	Yes	Yes
Cap	839	752	887
Service Time	2.303	2.792	2.081
HCM Lane V/C Ratio	0.2	0.043	0.379
HCM Control Delay, s/veh	8.4	8	9.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	1.8

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	5	2	159	270	12
Future Volume (vph)	2	5	2	159	270	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904				0.994	
Flt Protected	0.986			0.999		
Satd. Flow (prot)	1694	0	0	1898	1871	0
Flt Permitted	0.986			0.999		
Satd. Flow (perm)	1694	0	0	1898	1871	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			932	177	
Travel Time (s)	4.0			21.2	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	2	5	2	173	293	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	175	306	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	5	2	159	270	12
Future Vol, veh/h	2	5	2	159	270	12
Conflicting Peds, #/hr	0	0	0	0	0	0
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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	1	0
Mvmt Flow	2	5	2	173	293	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	477	300	307	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	177	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	550	744	1266	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	744	1266	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	858	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	10.39	0.1	0
HCM LOS	B		

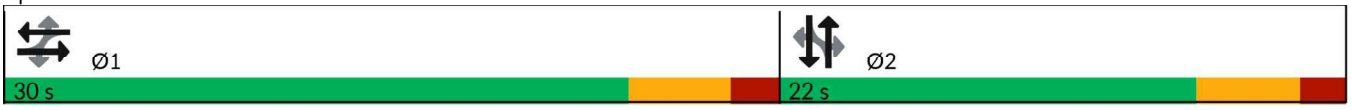
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	22	-	676	-	-
HCM Lane V/C Ratio	0.002	-	0.011	-	-
HCM Control Delay (s/veh)	7.8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	93	4	22	129	65	5	31	17	73	140	44
Future Volume (vph)	26	93	4	22	129	65	5	31	17	73	140	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	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 Factor		0.98			0.97			0.99			0.99	
Frt		0.996			0.960			0.957			0.977	
Flt Protected		0.990			0.995			0.996			0.986	
Satd. Flow (prot)	0	1869	0	0	1763	0	0	1796	0	0	1811	0
Flt Permitted		0.916			0.967			0.969			0.894	
Satd. Flow (perm)	0	1715	0	0	1706	0	0	1746	0	0	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			55			18			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		435			252			329			932	
Travel Time (s)		9.9			5.7			7.5			21.2	
Confl. Peds. (#/hr)	57		52	52		57	4		5	5		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	27	98	4	23	136	68	5	33	18	77	147	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	227	0	0	56	0	0	270	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	31.8	31.8		31.8	31.8		25.8	25.8		25.8	25.8	
Total Split (s)	30.0	30.0		30.0	30.0		22.0	22.0		22.0	22.0	
Total Split (%)	57.7%	57.7%		57.7%	57.7%		42.3%	42.3%		42.3%	42.3%	
Maximum Green (s)	24.2	24.2		24.2	24.2		16.2	16.2		16.2	16.2	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.8	1.8		1.8	1.8		1.8	1.8		1.8	1.8	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.8			5.8			5.8			5.8	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	15.0	15.0		15.0	15.0		9.0	9.0		9.0	9.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			20.0			20.0	
Actuated g/C Ratio		0.45			0.45			0.35			0.35	
v/c Ratio		0.16			0.28			0.09			0.46	
Control Delay (s/veh)		9.8			8.5			10.0			16.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.8			8.5			10.0			16.6	
LOS		A			A			B			B	
Approach Delay (s/veh)		9.8			8.6			10.1			16.6	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		24			34			9			64	
Queue Length 95th (ft)		51			72			28			123	
Internal Link Dist (ft)		355			172			249			852	
Turn Bay Length (ft)												
Base Capacity (vph)		776			800			618			582	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.17			0.28			0.09			0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 52			
Actuated Cycle Length: 57.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay (s/veh): 12.1		Intersection LOS: B	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Ostrom Ave & Euclid Ave



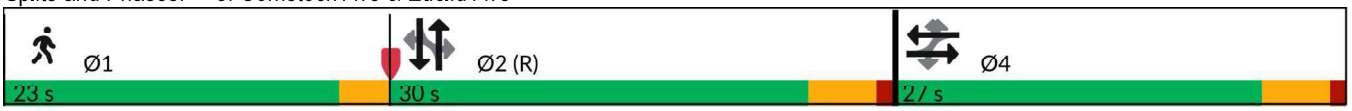
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	61	45	45	76	64	65	157	34	32	83	26
Future Volume (vph)	8	61	45	45	76	64	65	157	34	32	83	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		105	65		0	135		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	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 Factor		0.94			0.97	0.62	0.99	0.99		0.97	0.99	
Frt		0.947				0.850		0.974			0.964	
Flt Protected		0.996			0.982		0.950			0.950		
Satd. Flow (prot)	0	1668	0	0	1854	1615	1805	1790	0	1805	1821	0
Flt Permitted		0.972			0.795		0.680			0.626		
Satd. Flow (perm)	0	1593	0	0	1468	1016	1287	1790	0	1162	1821	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		242			435			335			1141	
Travel Time (s)		5.5			9.9			7.6			25.9	
Confl. Peds. (#/hr)	197		41	41		197	3		20	20		3
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	9%	0%	1%	0%	0%	3%	0%	0%	0%	0%
Adj. Flow (vph)	9	67	49	49	84	70	71	173	37	35	91	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	133	70	71	210	0	35	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			4			2			2	
Permitted Phases	4			4		4	2			2		
Detector Phase	4	4		4	4	4	2	2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	30.0	30.0		30.0	30.0	
Total Split (%)	33.8%	33.8%		33.8%	33.8%	33.8%	37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	22.0	22.0		22.0	22.0	22.0	25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lag	Lag		Lag	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	

Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	12.0
Total Split (s)	23.0
Total Split (%)	29%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5	
Recall Mode	None	None		None	None	None	C-Min	C-Min		C-Min	C-Min	
Act Effct Green (s)		11.8			11.8	11.8	58.2	58.2		58.2	58.2	
Actuated g/C Ratio		0.15			0.15	0.15	0.73	0.73		0.73	0.73	
v/c Ratio		0.53			0.61	0.46	0.07	0.16		0.04	0.09	
Control Delay (s/veh)		39.0			43.5	40.3	4.2	4.3		3.6	3.5	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)		39.0			43.5	40.3	4.2	4.3		3.6	3.5	
LOS		D			D	D	A	A		A	A	
Approach Delay (s/veh)		39.0			42.4			4.3			3.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		59			63	33	8	26		4	13	
Queue Length 95th (ft)		102			110	67	25	61		12	30	
Internal Link Dist (ft)		162			355			255			1061	
Turn Bay Length (ft)						105	65			135		
Base Capacity (vph)		438			403	279	936	1302		845	1324	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.29			0.33	0.25	0.08	0.16		0.04	0.09	

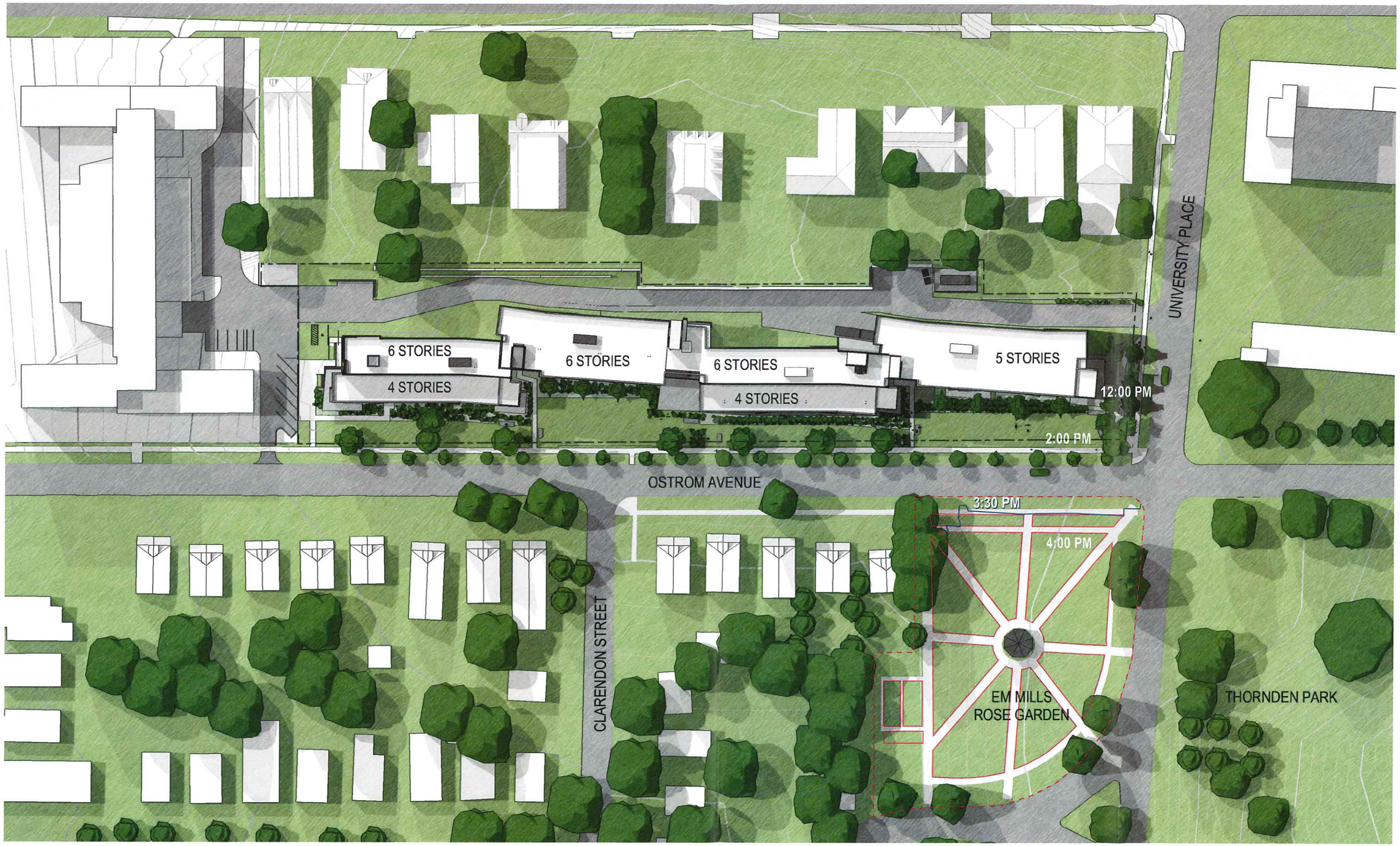
Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 27 (34%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 20.0		Intersection LOS: B	
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Comstock Ave & Euclid Ave



Lane Group	Ø1
Vehicle Extension (s)	1.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



0' 40' 80' 160'

KEY:

- PERIMETER OF ROSE GARDEN
- EXTENT OF ROSE PLANTS
- BUILDING SHADOW AT TIME OF DAY THAT CROSSES INTO ROSE GARDEN

(Represents Approximate Start of Growing Season)

Spring Equinox

March 21st

Sunrise: 7:05 AM
First Shadow: 3:30 PM
Full Sun: 8h25m

(Represents Approximate Peak Growing Season)

Summer Solstice

June 21st

Sunrise: 5:25 AM
First Shadow: 4:55 PM
Full Sun: 11h30m

(Represents Approximate End of Growing Season)

Autumnal Equinox

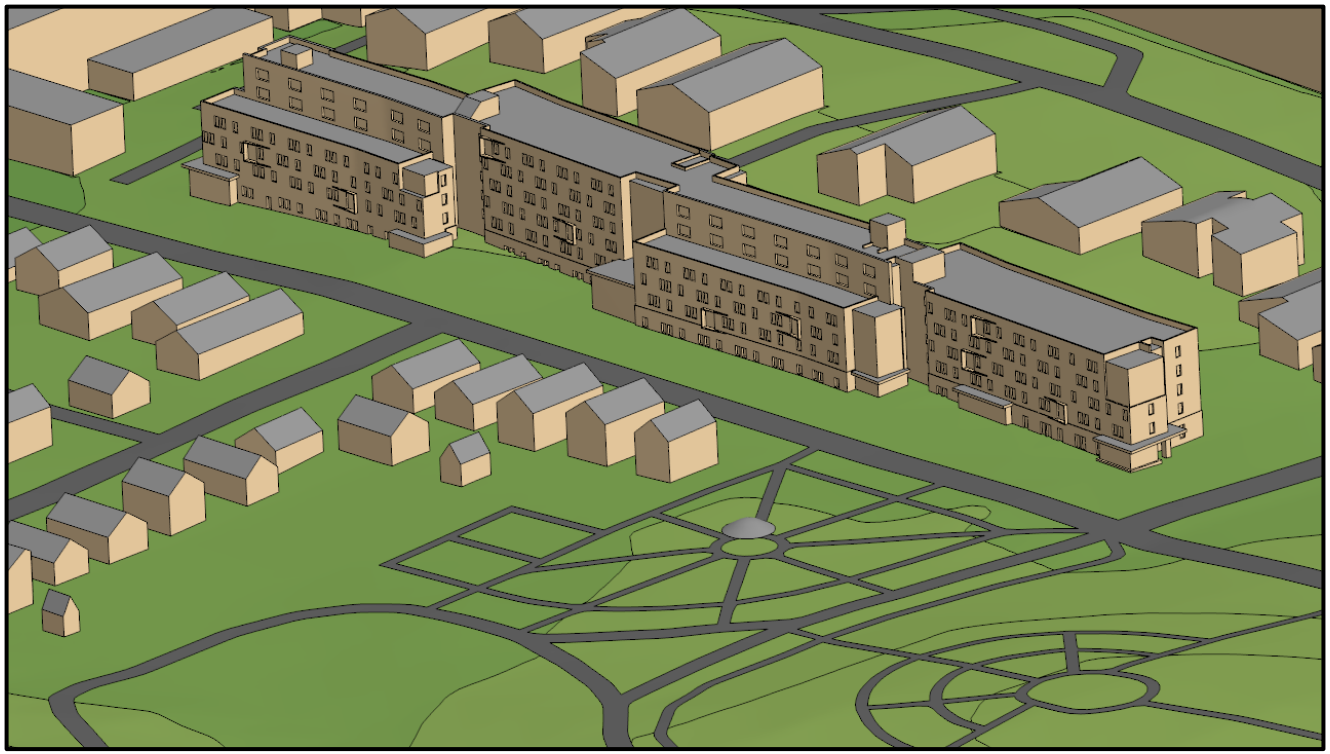
September 21st

Sunrise: 6:51 AM
First Shadow: 3:30 PM
Full Sun: 8h39m

Shadow Study

Note: Equinox shown in image above. Solstice not shown.

August 22, 2024



BCJ

Bohlin Cywinski Jackson

Syracuse University

CFD Wind Study of New Residence Hall Impact on Thornden Park E. M. Mills Rose Garden

September 17th, 2024

M/E Reference: 210431.03

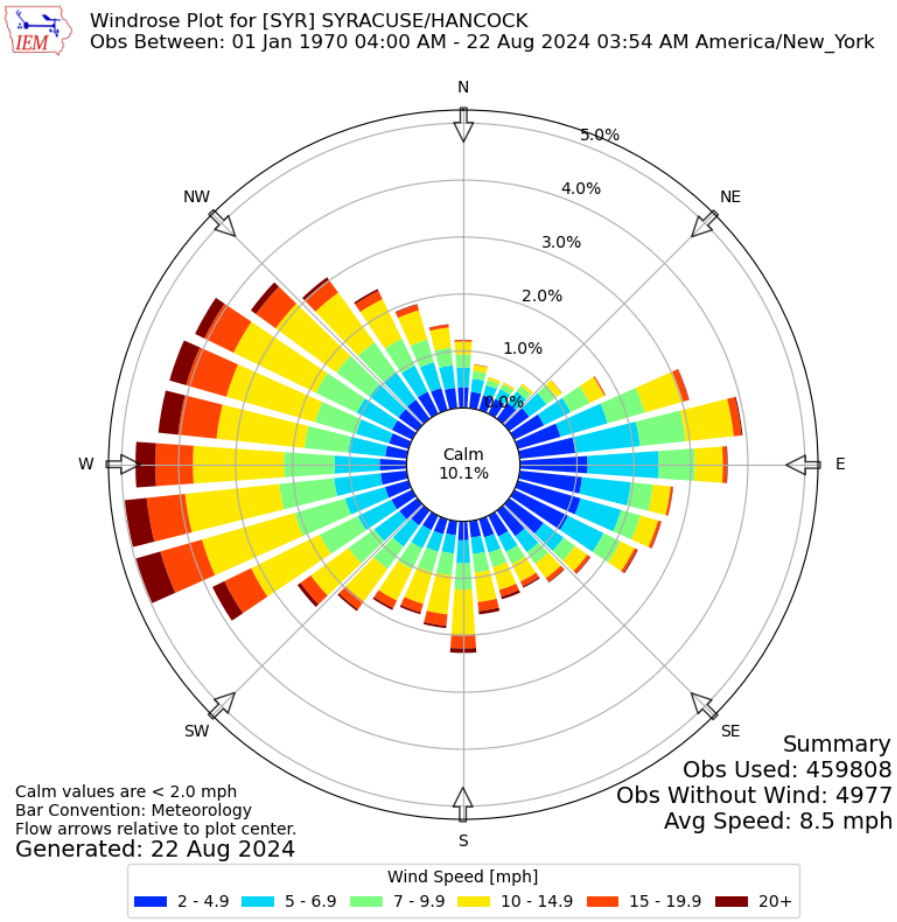
Table of Contents

ENGINEERING

Introduction
Overview of Study

- M/E Engineering has prepared a Computational Fluid Dynamics (CFD) wind study to evaluate the expected impact to local wind patterns at the Thornden Park E. M. Mills Rose Garden in Syracuse, NY due to the proposed design of an upcoming new residence hall on the east side of the main campus at Syracuse University. The study involves a comparative analysis, at a nominal wind speed, in which the local wind patterns throughout the Rose Garden are modeled both with and without the influence of the new residence hall.
- Two scenarios are evaluated:
  - Base Case: Evaluation of local wind speed in the E. M. Mills Rose Garden without the influence of new Residence Hall.
  - Case 1: Evaluation of local wind speed in the E. M. Mills Rose Garden with the influence of new residence hall.
- Display of results:
  - Local wind patterns will be displayed as colored velocity magnitude contours located 2' above the ground at all points.
  - Comparative plots of expected average wind velocity as calculated from a series of monitored locations throughout the Rose Garden.

Wind Direction and Speed Data



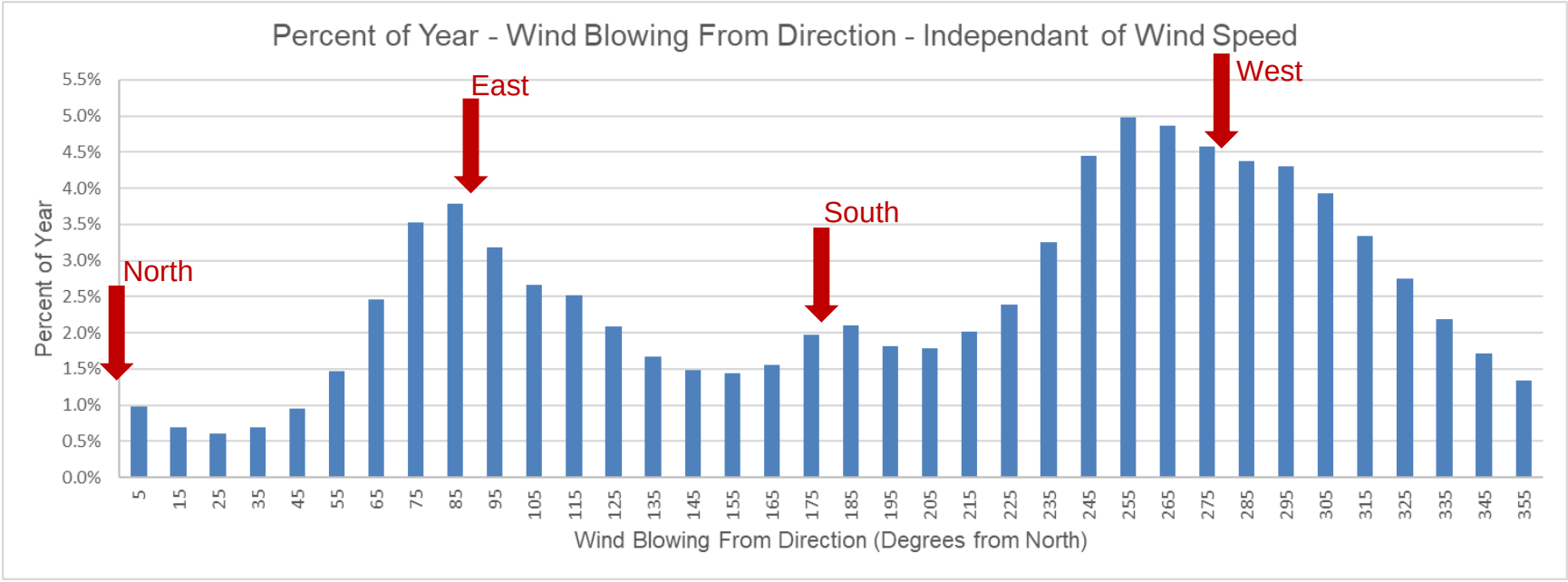
A historical wind rose plot is shown for Syracuse University. Data has been generated between 1970 and 2024 as measured from the Syracuse Hancock International Airport located in Syracuse, NY. The different colors shown on the wind rose represent the wind speed ranges for each compass direction. The length of the different color bands indicate the probability of that wind speed at the associated direction. The longer the color band, the higher the probability of that wind direction based on this historical data.

Average Wind Speed: 8.5 mph

Data Source:
http://mesonet.agron.iastate.edu

Wind Direction and Speed Data

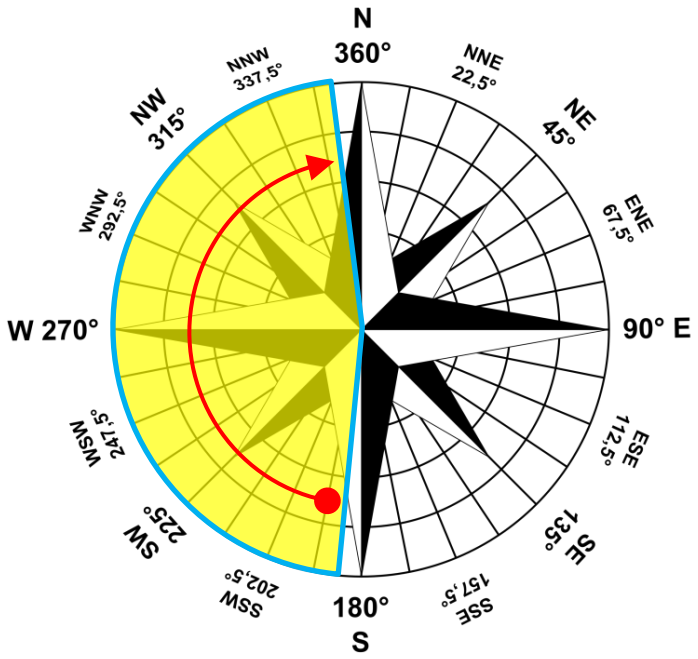
The bar chart below shows the same information as the wind rose plot, except that the probability of the wind direction here is independent of wind speed and calm days are not included (low wind velocity, therefore no discernable wind direction). The information below indicates that the most frequent wind directions are from the east and from south-west to north-west.



Wind Direction and Speed Data

- A wind speed of 8.5 mph was modelled. The wind direction was dynamically changed in ten-degree increments from 185°(SSW) to 355°(NNW). Each wind direction was maintained for a dwell time of 60 seconds. These directions were chosen to be modeled based on the historical likelihood of wind blowing from those directions as well as considering which wind directions may be most impacted by the presence new residence hall.
- Shown below is a compass that indicates the wind direction and corresponding wind 'blowing from' angle. For example; NE, 45°, indicates that the wind is blowing from the northeast which is equal to a compass direction of 45°.

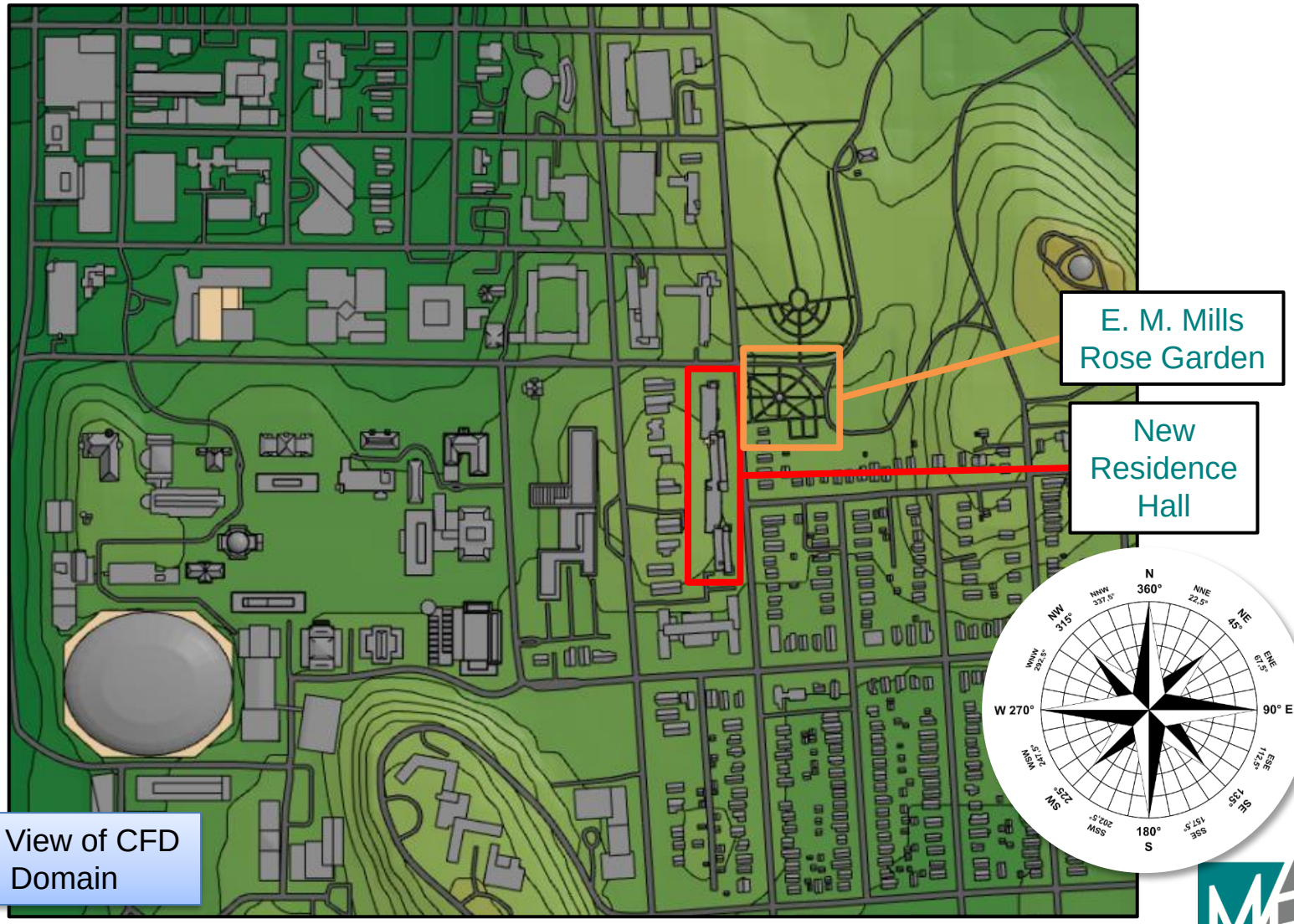
Yellow area indicates wind directions (in ten degree increments) used in the study where wind direction was varied



ENGINEERING

Model Parameters

Site Plan

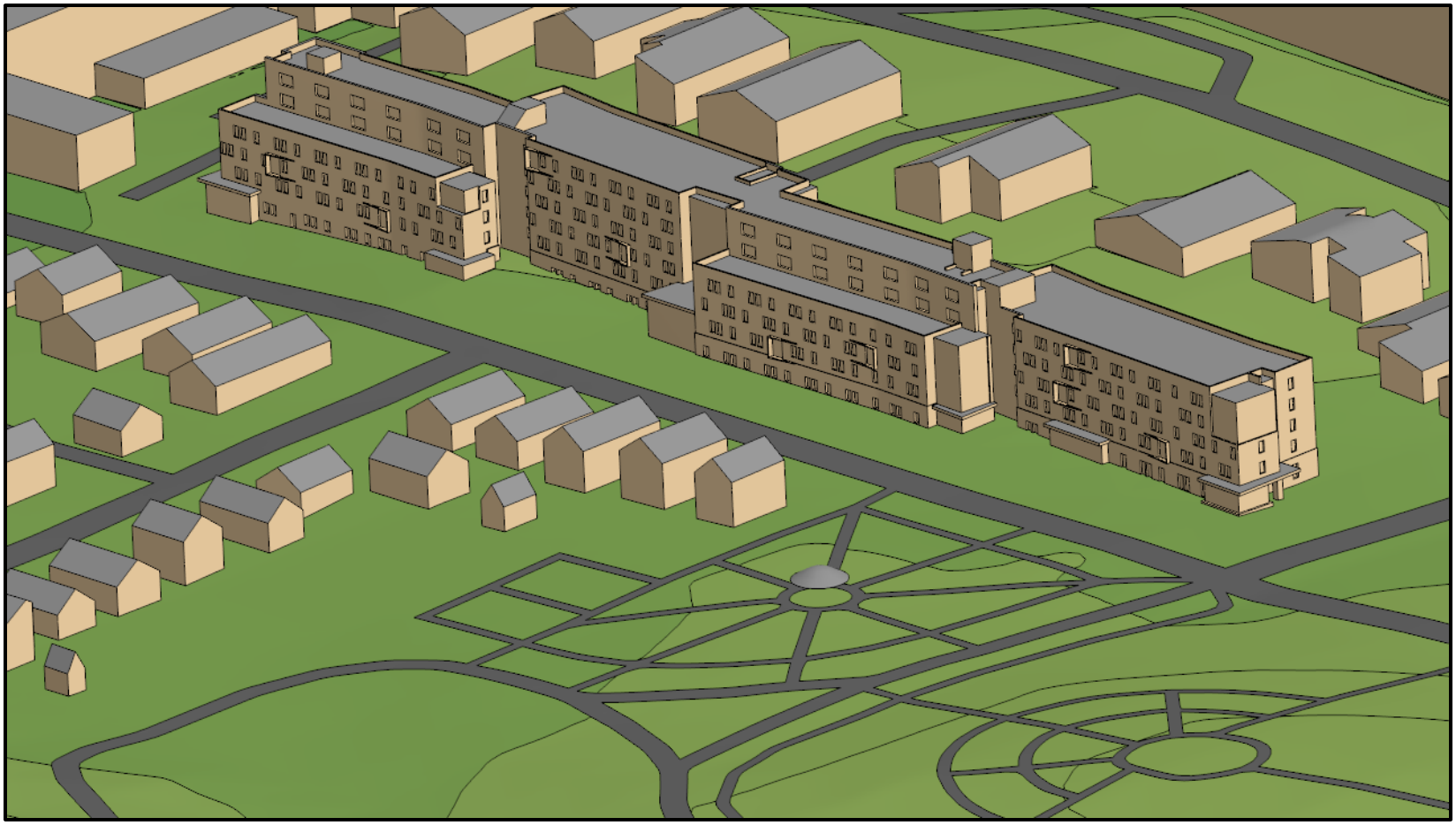


Aerial View of CFD Model Domain

ENGINEERING

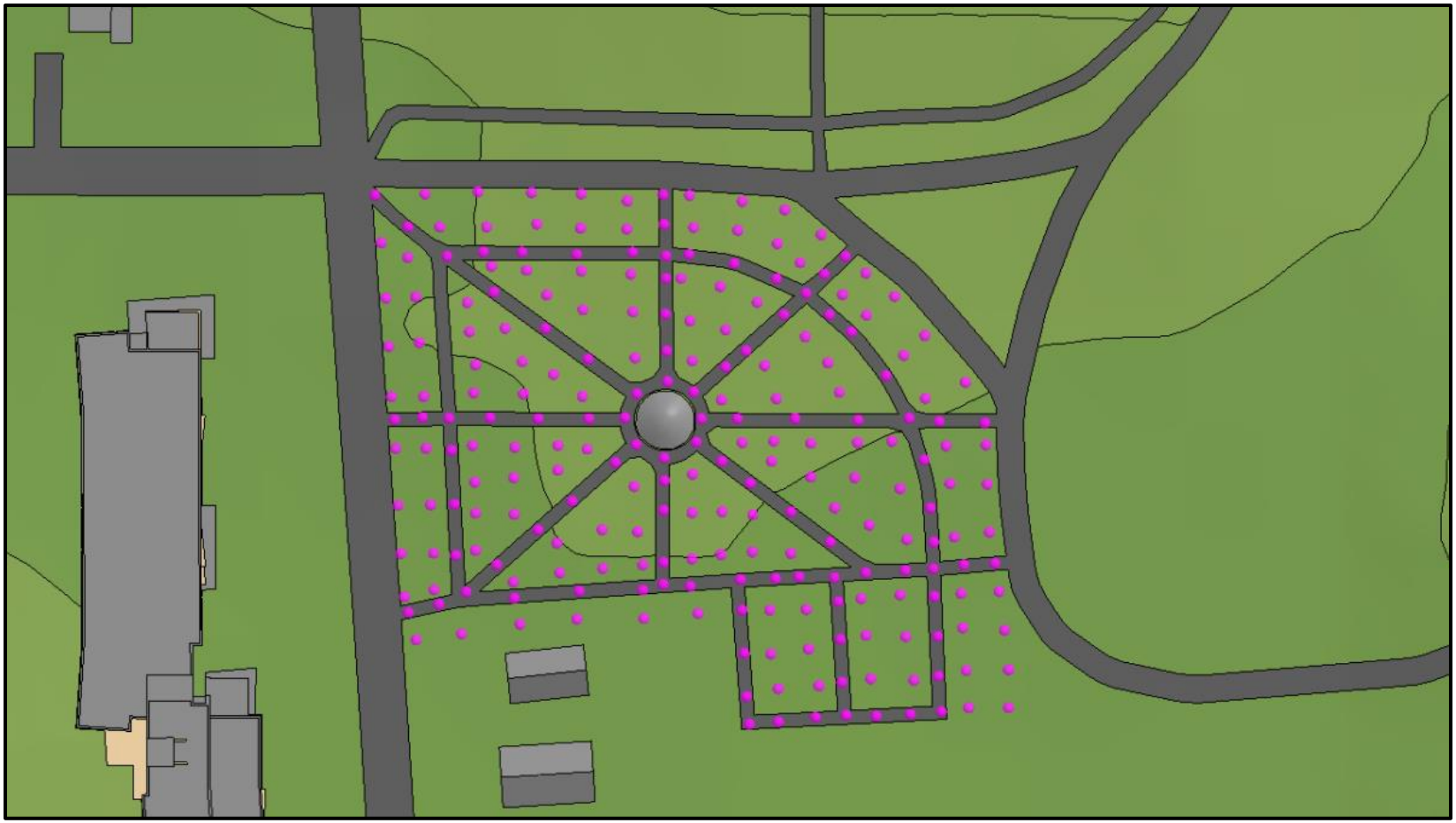
Model Parameters

Model Geometry – New Residence Hall & Rose Garden



Model Parameters

Monitor Locations



- 239 monitor points placed throughout the E. M. Mills Rose Garden are shown above denoted by pink dots.
- All monitor points are placed 2’ above the local ground elevation.

ENGINEERING

Base Case: Local Wind Patterns in E. M. Rose Garden without New Residence Hall

Objective: Evaluate the expected local wind patterns throughout the E. M. Mills Rose Garden, without the influence of the new residence hall, given a nominal wind speed of 8.5 mph.

Base Case
Plan View - Close

Note: Contours of wind velocity calculated 2' above ground.

Base Case

Plan View - Far

Note: Contours of wind velocity calculated 2' above ground.

ENGINEERING

Case 1: Local Wind Patterns in E. M. Rose Garden with New Residence Hall

Objective: Evaluate the expected local wind patterns throughout the E. M. Mills Rose Garden, with the influence of the new residence hall, given a nominal wind speed of 8.5 mph.

Case 1
Plan View - Close

Note: Contours of wind velocity calculated 2' above ground.

Case 1
Plan View - Far

Note: Contours of wind velocity calculated 2' above ground.

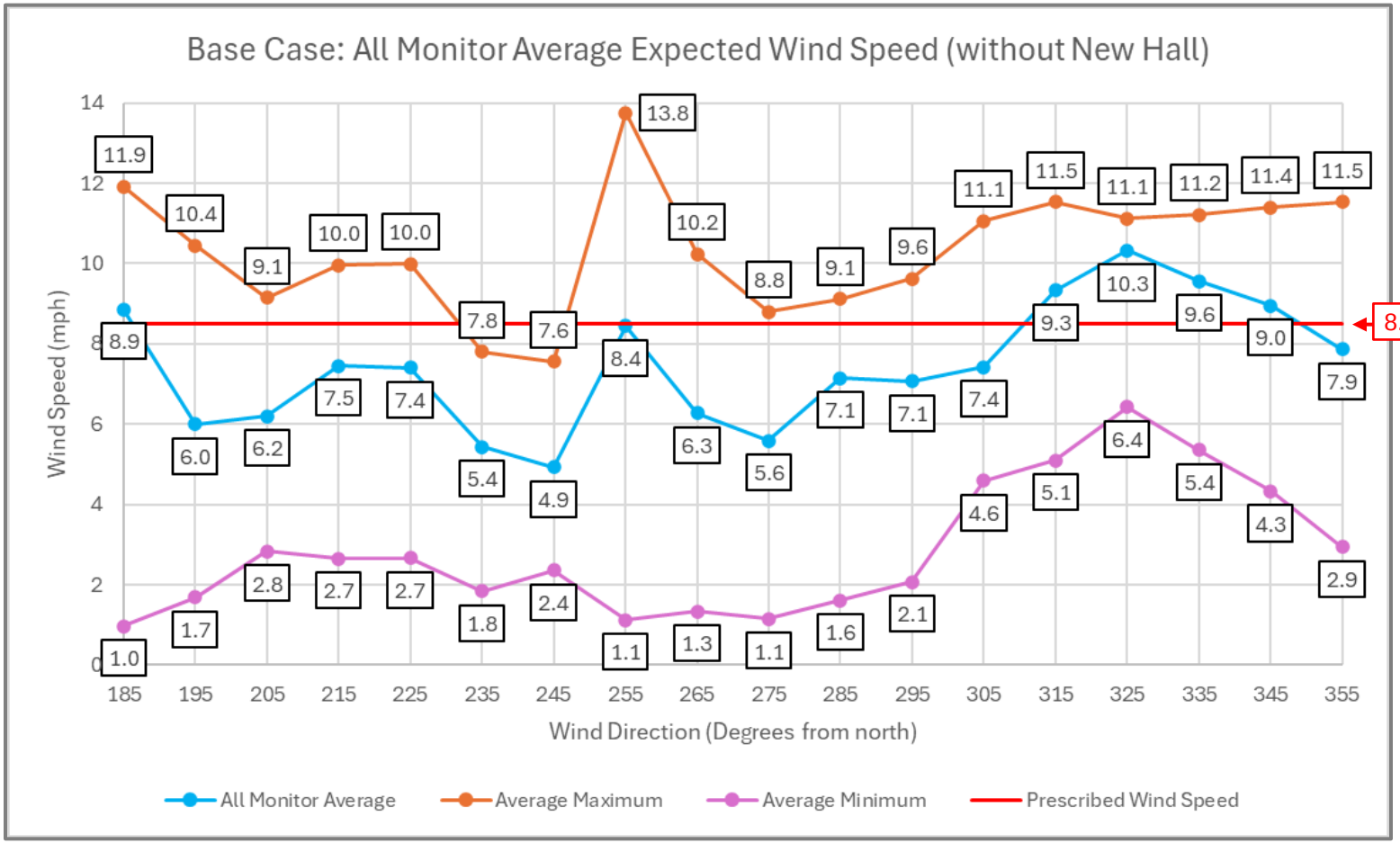
ENGINEERING

Comparative Analysis

- A comparative analysis, both with and without the new residence hall, was performed to quantify the difference in the average expected wind velocity throughout the E. M. Mills Rose Garden based on the modeled average wind velocity of 8.5 mph.
  - The data was gathered from calculations of velocity magnitude made at each of the monitor locations denoted on slide 9.
- The comparative methodology employed is as follows:
  - 12 velocity calculations are made at each monitor point for each wind direction.
    - The first 2 calculations are ignored to account for flow re-stabilization.
  - At each monitor point, the remaining 10 calculations are then averaged together for each wind direction.
  - Finally, for each wind direction, all monitors are averaged together and then reported as the average wind velocity throughout the Rose Garden for that wind direction.

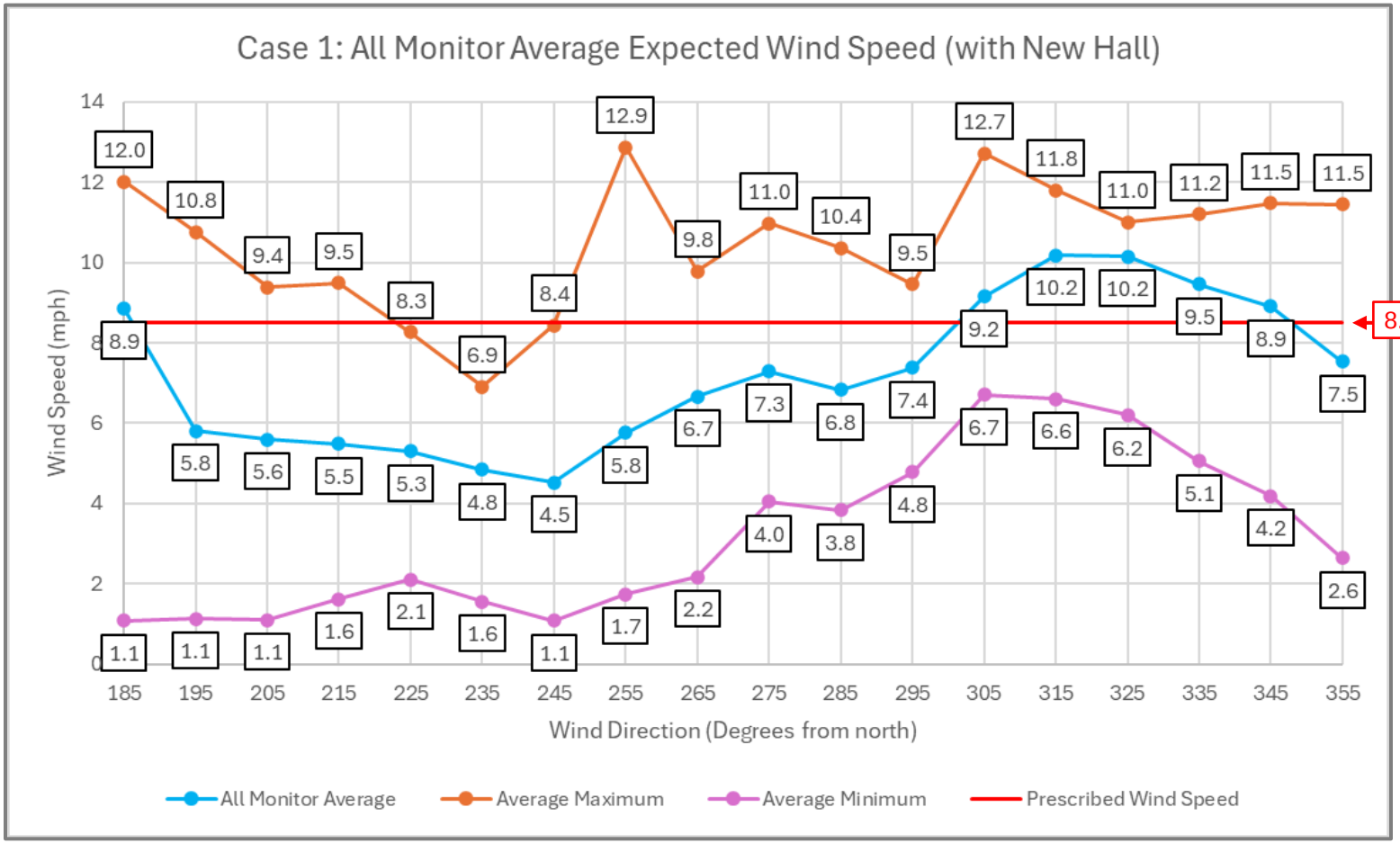
Comparative Analysis

Base Case – Average Expected Wind Speed (mph)



Comparative Analysis

Case 1 – Average Expected Wind Speed (mph)



Comparative Analysis
Summary

Wind Direction (Degrees from north)	Base Case (Without Hall)	Case 1 (With Hall)	Percent Change
185	8.9	8.9	0.1%
195	6.0	5.8	3.4%
205	6.2	5.6	10.2%
215	7.5	5.5	30.4%
225	7.4	5.3	33.1%
235	5.4	4.8	11.4%
245	4.9	4.5	8.6%
255	8.4	5.8	37.8%
265	6.3	6.7	5.9%
275	5.6	7.3	26.6%
285	7.1	6.8	4.6%
295	7.1	7.4	4.2%
305	7.8	9.2	15.7%
315	9.3	10.2	8.7%
325	10.3	10.2	1.7%
335	9.6	9.5	1.1%
345	9.0	8.9	0.5%
355	7.9	7.5	4.3%
Average over all wind directions	7.5	7.2	3.7%

Table entries are colored coded to signify whether the expected average velocity increases (red) or decreases (green) due to the presence of new residence hall for each wind direction

Note: Probability of prevailing wind direction is not included in comparative analysis.

ENGINEERING

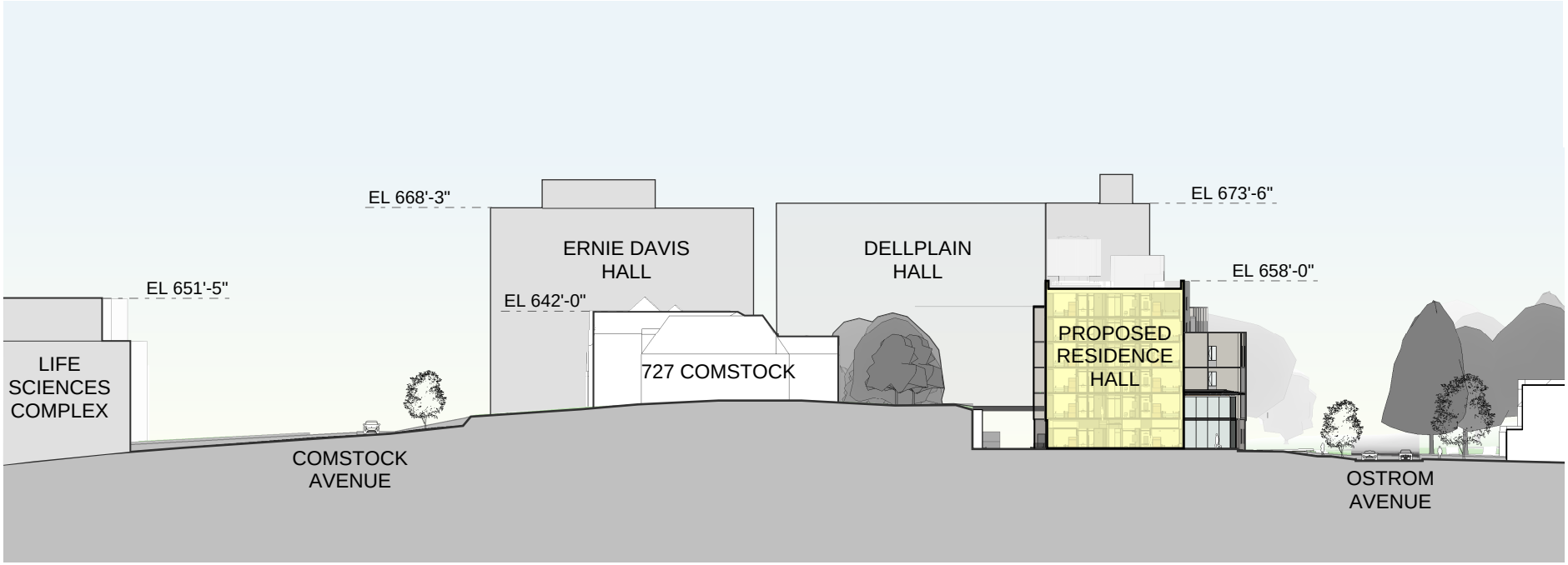
Conclusions & Recommendations

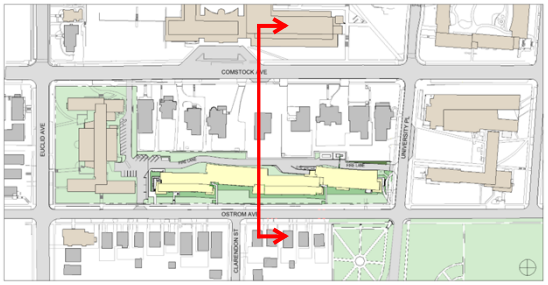
Conclusions:

- The comparative analysis shows that the combined average expected wind speeds throughout the E. M. Mills Rose Garden are reduced by approximately **3.7%** due to the presence of the new residence hall.
- Due to the presence of the new residence hall, approximately **72% (or 13/18)** of all wind directions evaluated showed an average overall decrease in local wind speed.
    - The percent change in these overall decreased wind speeds ranges from **0.1%** to **37.8%**.
    - The expected reduction in local wind speed is a result of the new residence hall breaking up and blocking prevailing winds which would have otherwise gone unimpeded through the parking lot and vacant space, to the east of the garden, where the proposed residence hall is to be located.
- Wind directions which are likely to result in an overall increase in average wind speed within the garden are aligned with University Place, which extends perpendicularly from the garden westward – north of new residence hall – along approximately 265° to 285° from north.
    - The percent change in these overall increased wind speeds ranges from **4.2%** to **26.6%**.
    - This is largely due to the leading north-side edge of new residence hall causing an increase in wind velocity through the Bernoulli Effect.
        - Additionally, a choke point is created between new residence hall and Ernie Davis and Dellplain Halls to the north, which also may increase the local wind velocity due to the Bernoulli effect.
        - Based on the wind rose on slide 4, these wind directions may be more probable, which could cause gusts to flow through the garden.
- The use of large foliage and/or other windbreaks around the E. M. Mills Rose Garden may aid to reduce any potentially unwanted impact on local wind patterns throughout the garden due to new residence hall.

ENGINEERING

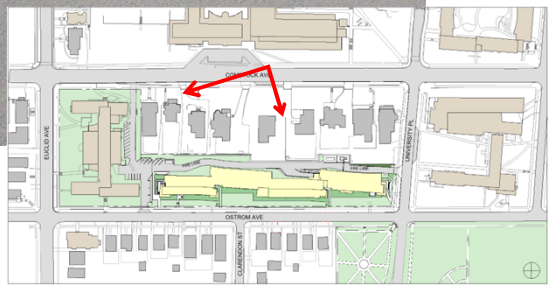
Section Study | Looking North Through C Wing



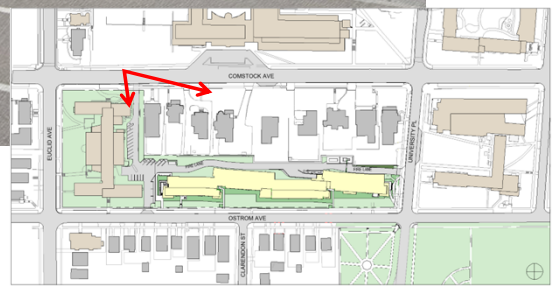


Perspective Studies | Looking South Along Comstock

Perspective Studies | Looking South Along Comstock



Perspective Studies | Looking North Along Comstock



Site Plan | Landscape

KEY:

- LAWN
- PERENNIAL / SHRUB
- TREE

Wu, Zhitong

From: Jennifer Champa Bybee <jchampa@syr.edu>
Sent: Monday, September 30, 2024 2:42 PM
To: Wu, Zhitong
Cc: Joseph Samuel Alfieri; Mark S Hance; Faucher, Gregory
Subject: [EXTERNAL] SU response - 30 September 2024 - Z-2870 - Landscape plan

Hi Zhitong.
I am following up on your earlier email and our discussion early this afternoon. SU proposes the following to screen:

- Construct an 8 ft aesthetically-appropriate screening fence along the top of the wall the length of the western boundary;
- To the extent there is room to do so, we will plant landscaping/trees along that boundary on the University's side of the property line.
- We have also had discussions with the owners of the Greek houses. We are prepared to commit to mutually-agreed, reasonable funding to each parcel and to coordinate with them the types and locations of plantings for additional screening at the rear of their properties.

You indicated when we spoke earlier today that this solution is acceptable. We believe this addresses the issues raised regarding possible impacts, even though we believe that any visual impacts are minimal given the setting of the Greek houses being currently surrounded on three (3) sides by existing tall buildings.

Thank you as always for your assistance.

Jennifer

Jennifer Champa Bybee
Mobile: 315.412.8533

From: Wu, Zhitong <zwu@syr.gov>
Sent: Monday, September 30, 2024 9:02 AM
To: Jennifer Champa Bybee <jchampa@syr.edu>
Cc: Joseph Samuel Alfieri <jsalfier@syr.edu>; Mark S Hance <mshance@syr.edu>; Faucher, Gregory <gfaucher@woh.com>
Subject: RE: [EXTERNAL] RE: [EXTERNAL] Z-2870 - Landscape plan - 27 September 2024 comments from Kate Auwaerter and Owen Kerney

Hi Jennifer,

Hope you enjoy the weekend.

Based on the comments sent to you last week from Kate Auwaerter and Owen Kerney, please submit a revised landscaping plan showing the landscaping buffer along west property boundary before 4:30 pm today. The landscaping plan is important for the SEQR review.

Best,
Zhitong

Zhitong Wu, Plans Examiner II

Office of Zoning Administration
City of Syracuse
300 South State Street, Suite 700
Syracuse, NY 13202
Tel: 315-448-8635
https://www.syr.gov/Departments/Zoning-Administration

Wu, Zhitong

From: jason etaconsults.com <jason@etaconsults.com>
Sent: Monday, September 30, 2024 4:40 PM
To: Zoning
Cc: jason etaconsults.com; Gabe Nugent
Subject: [EXTERNAL] Statement for Syracuse Board

Statement from the Comstock Greek Alumni Association

Permission from the GCAA to read this into the record by Syracuse University on our behalf:

As the property owners on Comstock Avenue who share the property line with the proposed new dormitory, we are appreciative that Syracuse University has recently involved our group in discussions that impact our fraternity and sorority houses.

All of our homes back up the Ostrom site where the dorm will be built. As such, we have communicated our concerns and thoughts on elements needed to ensure that the construction of this new dorm doesn't impact the physical properties we own or impact the living conditions of our members. It is important that we work with the school to ensure that issues related to fencing, walls, trees, bushes and plants along with assurances that our houses are properly secured during the build and that there is no land impact to our lots is addressed.

As such we have been meeting with the planning team, architects and University leadership to form a binding alignment to protect our interests and ensure that the construction and operation of the new facility is done correctly as to limit it's impact on us.

We collectively own the free standing single entity properties from Shaw Hall to University Place minus 727 Comstock which SU recently purchased.

SU has shared with us plans, elevations and information the execution of this project. We have work to do for full alignment to ensure any and all open issues are addressed, but are thus far pleased with the level of cooperation we're enjoying from the school.

Our expectation is that this relationship will bear a fruitful outcome that will achieve our goals of sustained Greek ownership, protected elevations and security between Ostrom and Comstock Avenue.

Comstock Greek Alumni Association

Comstock Greek Advisors Alliance
Alpha Phi Epsilon, Sigma Alpha Mu, Kappa Kappa Gamma, Sigma Chi, Delta Upsilon, Theta Chi, Alpha Gamma Delta, and Phi Kappa Psi

Conduit Contact for the CGAA

Jason Simon
President
Etasam, Inc

747 Comstock Avenue
215 264 4991