CITY OF MARSHALLTOWN
PLAN ZONING COMMISSION
NOTICE OF PUBLIC MEETING
CITY HALL COUNCIL CHAMBERS
10 WEST STATE STREET
MAY 14, 2026, 5:00 PM

AGENDA

CALL TO ORDER

ROLL CALL

Jon Boston, Matthew Brodin, Mahala Casady, Deirdre Gruendler, Benjamin Harris-Medina, Patrick Streit, Stephen Valbracht

APPROVAL OF MEETING MINUTES

1. Approval of Meeting Minutes From March 12, 2026

BUSINESS

2. Conduct a Public Hearing and Consider Making a Recommendation On a Special Use Permit for a Commercial Parking Lot to be Located at 1402 W State Street

3. Conduct a Public Hearing and Consider Making a Recommendation On a Special Use Permit for a Major Utility to be Located at 2114 E Nevada Street

ADJOURNMENT

Planning and Zoning Commission – Regular Meeting

Meeting Minutes – March 12th, 2026

Call to Order

Meeting was called to order at 5:00 PM in the City Council Chambers at 10 W. State Street

Roll Call:

Present: Boston, Harris-Medina, Brodin, Gruendler
Absent: Casady (Doyle), Streit, Valbrect

APPROVAL OF MEETING MINUTES

1. February 2026 meeting minutes.

   Minutes approved as distributed.

BUSINESS

2. **Conduct a Public Hearing and Consider Making A Recommendation of Zoning Text Amendments Relating to the Accessory Structure Locations and Definitions.**

   Public Hearing opened at 5:01 PM

   No oral or written public comments received.

   Pubic Hearing closed at 5:02 PM

   Clayton Ender, Assistant Director of Housing and Community Development, provided a staff review.

   Boston noted a proposed amendment to the text previously reviewed in February 2026 to clarify that accessory structures shall meet the greater distance of street side yard setback or behind the street side façade.

   Motion by Brodin to recommend approval of a zoning text amendment relating to accessory structure locations and definitions.

   Seconded by Gruendler.

   All ayes upon roll call. Motion carries.

ADJOURNMENT

Staff provided updates for next scheduled meeting.

Adjourned 5:10 pm

MARSHALLTOWN
IOWA
HOUSING & COMMUNITY DEVELOPMENT

Mike Ladehoff, Mayor
Carol Webb, City Administrator
Deb Millizer, Director
Clayton Ender, Assistant Director
24 North Center Street
Marshalltown, IA 50158-4911
Tel - (641) 754-5756
Fax - (641) 754-5717

TO: Planning and Zoning Commission
FROM: Clayton Ender, Assistant Housing & Community Development Director
DATE: May 14th, 2026
RE: Make a recommendation on a special use permit application for 1402 W State St

City Staff Contact:	Clayton Ender, AICP Assistant Director of Housing and Community Development Phone: 641-754-5756 Email: cender@marshalltown-ia.gov
Applicant / Property Owner:	Marshalltown Community School District 1002 S 3rd Ave Marshalltown, IA, 50158
Recommendation:	Staff recommends approval and provides the following motion for the commission's consideration: **The Planning and Zoning Commission recommends approval of the special use permit application for 1402 W State Street.**
Current Zoning District & Current Usage:	Current Zoning: RM, Medium Density Residential Zoning District Current Usage: Vacant Land (Former Single Family Detached Houses)
Proposed Zoning District & Proposed Usage:	Zoning: RM, Medium Density Residential Zoning District Proposed Usage: Commercial Parking Lot, Franklin Elementary/Field Parking

CITY COUNCIL
Sue Cahill, Melisa Fonseca, Marco A. Yepez-Gomez, Mark Mitchell,
Greg Nichols, Jeff Schneider, Gary Thompson

Review Criteria:

In determining whether to approve, approve with conditions, or deny a special use permit, the review bodies shall consider the following review criteria:

1. **The request complies with the applicable standards of this Zoning Ordinance, the City Code of Ordinances, and any applicable county, state, or federal requirements.**

   The proposed commercial parking lot use complies with the applicable special use permit standards of this Zoning Ordinance, the City Code of Ordinances, and any applicable county, state, or federal requirements

2. **The request substantially conforms to any associated prior approval for the development, including, but not limited to, a special use permit, Master Development Plan, or Site Plan.**

   The proposed development does not conflict with any prior approvals.

3. **The administrative body has considered the recommendation of staff.**

   Staff recommends approval of the special use permit application.

4. **The request is consistent with applicable policies of the Comprehensive Plan and applicable utility plans and capital improvements plans; or, if it addresses a topic that is not contained or not fully developed in the Comprehensive Plan, the request does not impair the implementation of the Comprehensive Plan.**

   The comprehensive plan identifies the future land use designation for the development site as low density residential.

   Commercial parking is not a regular use within this future land use category, but this specific case is for parking associated with an existing public elementary school and athletic fields. Education usage and athletic usage in a residential district is common and therefore the accessory parking associated with the primary use is common as well.

   Staff recommends that the usage does not conflict with the comprehensive plan and would not impair implementation of the comprehensive plan.

5. **The request promotes the purposes of this Zoning Ordinance as established in § 156.A.002, Purposes, and in other applicable purpose statements in this chapter.**

   § 156.A.002(D)(1) "Encouraging the most appropriate, efficient, and compatible use of land, buildings, and other structures throughout the city"

   § 156.A.002(D)(5) "Protecting property against blight and depreciation by facilitating reinvestment, redevelopment, and infill development"

   § 156.A.002(E)(1) "Promote contextually compatible redevelopment and infill development of vacant or underutilized properties"

6. **Adequate facilities, including public or private utilities, solid waste service, roads, drainage, and other improvements are present or are planned to be provided.**

   The subject property has adequate access to existing public streets, water, sanitary sewer, storm sewer and other utilities.

7. **The request demonstrates compatibility with surrounding conforming and permitted land uses and structures and with the general character of the area.**

   The proposed commercial parking lot usage is across the street from Franklin Elementary School and Franklin Field, which will be the primary users of this development. Adequate buffering will be provided to screen the parking from adjacent residential usage.

8. **The special use does not create an unwanted concentration of similar special uses that is likely to discourage permitted uses by making the vicinity less desirable for them.**

   While there is an existing parking lot to the north of this proposed parking lot, it is not sufficiently sized to accommodate demand from the school and athletic fields. The proposed development would mitigate ongoing neighborhood traffic and parking detriments that can be present during peak demands of school or athletic field usage.

9. **There is no practicable alternative location where the use is permitted by right within the general vicinity of the parcel proposed for development, or, if such a location exists, the proposed location is comparable or more favorable in terms of:**

    - **Providing a needed community service;**
    - **Providing a critical mass of related and mutually supportive land uses that promote quality economic development and opportunity;**
    - **Providing a balance of land uses, ensuring that appropriate supporting activities, such as employment, housing, leisure-time, and retail centers are in close proximity to one another; and**
    - **Making more efficient use of public infrastructure.**

    Considering that the elementary school and athletic field are existing institutions within the neighborhood and are unlikely to be relocated or discontinued in the foreseeable future it is reasonable to need accessory parking to support the facility. There is not a practical alternative to provide parking to meet demands unless significant distance was provided between the parking area and the facility itself.

Attachments: Aerial Vicinity Map
Special Use Permit Application
Site Plan

AERIAL VICINITY MAP



4/29/2026

Clayton Ender, City Planner
City of Marshalltown
Housing & Community Development Department
24 N. Center Street
Marshalltown, IA 50158

RE: Special Use Permit Application
MCSD Franklin Parking Lot
For Review by the Planning & Zoning Commission and the Board of Adjustment

Dear Clayton:

The project consists of the development of a new surface parking lot to serve Franklin School and Franklin Field in Marshalltown, Iowa. The site includes approximately 0.80 acres and is comprised of four adjacent parcels acquired by the Marshalltown Community School District for this purpose.

Improvements include construction of a paved parking lot with approximately 62 parking spaces, internal drive aisles, perimeter curb and gutter, sidewalks, pedestrian connections, and pavement markings. Site access is provided from adjacent public streets, with circulation designed to safely accommodate school-related traffic while minimizing impacts to surrounding residential streets.

The project also includes associated grading, stormwater management improvements, and utility connections. Stormwater runoff will be managed through a combination of surface drainage, storm sewer improvements, and stabilization measures.

New site lighting will be installed to provide safe illumination of parking and pedestrian areas. All lighting will utilize fixtures that direct light downward and limit spillover onto adjacent residential properties.

Landscaping improvements include perimeter plantings, trees, shrubs, and required buffering along property lines adjacent to residential uses. These features are intended to soften views of the parking lot, maintain neighborhood character, and comply with applicable zoning and landscaping requirements.

The proposed parking lot is intended solely to support existing school and athletic uses and does not introduce new principal uses to the site.

Sincerely,

CLAPSADDLE-GARBER ASSOCIATES, INC.

Adam C. Daters, PE
Vice President

MARSHALLTOWN
IOWA

DATE SUBMITTED: _____

Special Use Permit Application

Housing & Community Development Department - 24 N. Center Street, Marshalltown, IA 50158 Ph: 641-754-5756 - Fax: 641-754-5742 - E-mail: bldginsp@marshalltown-ia.gov

All applicable items listed must be submitted with this application:

✔ **Project Description.** Include a cover letter or project description summarizing the proposed project.

✔ **A site plan, drawn in ink to scale.** This site plan shall not be larger than 11" X 17."

✔ **Any other applicable drawings or diagrams.** This may include site improvements, design features, public services, and compatibility.

✔ **Application fee**. A $300 fee is required for a special use request. Make check payable to "City of Marshalltown." The fee must be paid when the application is submitted.

✔ **Full legal description of the property.** *Please note that the tax description on the Marshall County assessor's webpage is NOT the full legal description.* The legal description is listed on the property's abstract and/or a recorded deed or may be obtained from the Marshall County Recorder's Office for a fee.

See Sheet C.101 for Legal Desctiption

N/A **Owner's consent to apply (if applicable).** If the applicant is NOT the current title owner, a letter from the title owner shall be included indicating consent to apply.

It is the burden of the applicant to provide sufficient facts with this application and at the Board of Adjustment meeting to support a finding that all the standards for approval have been met.

For all special use requests, the Plan & Zoning Commission shall first review the proposal, hold a public hearing and make a recommendation to the Board of Adjustment which will also hold a public hearing prior to acting. A public hearing notice will be published and a sign will be posted on site for public information.

Attendance at all meetings is required.

Please type or print legibly in ink.

Property Address: 8 N 14th St, 10 N 14th St, 12 N 14th St, 1404 W State St	
Owner: Marshalltown Community School District, Dr. Theron Schutte, Superintendent	
Mailing Address: 1002 S 3rd Ave	
Phone: 641-754-1000	Email Address: tschutte@marshalltown.k12.ia.us
Agent Name (if applicable): Adam C. Daters, PE	
Owner's Agent Address: 16 E Main St, Marshalltown, IA 50158	
Agent Phone: 641-750-4152	Agent Email Address: adaters@cgaconsultants.com

Answer the following questions as part of the application. Responses may be provided as a separate document.

1. **Surrounding Properties.** How will this special use permit impact the surrounding properties? How will the proposed special use operate or be designed in a manner that does not diminish the use or functionality of surrounding properties? You may include supporting evidence from a professional appraiser, real estate professional, or other professional. *Additional review criteria:* The board shall consider if approval creates an unwanted concentration of similar special uses.

   See attached.

2. **Hours of Operation and Site Improvements.** Please state the following: Provisions for hours of operation, parking and loading areas, driveways, lighting, signs, landscaping, buffering, and other site improvements.

   See attached.

3. **Public Services Available**. Please state if adequate public services are available without disruption to existing uses (such as: streets, off-street parking, pedestrian facilities, water, sewer, gas, electricity, police and fire protection).

   See attached.

4. **Nuisance.** Is there any existing or potential of a nuisance if the special use permit is granted? (If, in the opinion of Plan and Zoning Commission or Board of Adjustment, the special use becomes a nuisance, the Special Use Permit may be recalled for further review, which could lead to the need for additional conditions, restrictions, or the revocation of the permit.)

   See attached.

5. **Design Features.** Please describe how design features will be incorporated to sufficiently protect adjacent uses. Address areas such as: service areas, pedestrian and vehicular circulation, safety provisions, access ways to and from the site, buffering, fencing, and building placement;

   See attached.

6. **Compatibility.** Will the proposed use be compatible with adjacent existing uses? (Compatibility shall be expressed in terms of appearance, architectural scale and features, site design and scope, landscaping, as well as the control of adverse environmental impacts, including noise and lighting, or other undesirable conditions.)

   See attached.

7. **Location.** Identify any other practicable alternative locations considered where a Special use would not be required

   See attached.

The board will use this information provided as part of the application in addition to information presented at the public meetings to review your request. Please attach any additional supporting information to be considered that has not previously been discussed. If you have any questions, please contact the Zoning Department at 641-754-5756 or bldginsp@marshalltown-ia.gov Meeting schedules will be set by the City Planner and agendas are posted to the City website: https://www.marshalltown-ia.gov/AgendaCenter

Owner/Agent Signature: __  ___ Date: 5/1/26

Question 1: Surrounding Properties

The proposed special use consists of the construction of a surface parking lot intended to serve Franklin School and Franklin Field, both long-established public and institutional uses in this area of the community. The parking improvements are intended to formalize and manage parking associated with these uses, which already generate periodic parking demand during school hours and scheduled athletic or community events.

School-related parking facilities are commonly located adjacent to residential zoning districts, and when properly designed, do not diminish the functionality or use of surrounding residential properties. In this case, the parking lot will be designed with appropriate setbacks, landscaped buffers, and lighting controls to reduce spillover impacts. Vehicular access will be clearly defined to minimize circulation through residential streets beyond what already occurs today.

The proposed use does not create an unwanted concentration of similar special uses. Parking that supports an existing public school and athletic facility is accessory in nature to those uses and helps reduce informal or uncontrolled on-street parking in surrounding neighborhoods, which is a net benefit to adjacent residential properties.

Question 2: Hours of Operation and Site Improvements

The parking lot will operate in conjunction with the normal hours of Franklin School and scheduled activities at Franklin Field. Typical use will occur during daytime school hours, with periodic evening or weekend use associated with athletic events, performances, or community activities already occurring at the site.

Site improvements will include paved parking stalls and defined drive aisles designed to City standards. Lighting will be limited to that necessary for safety and visibility within the parking lot and will consist of fixtures oriented downward to prevent light spillover onto adjacent residential properties. No illuminated signage is proposed.

Landscaping and buffering will be provided along the edges of the parking lot adjacent to residential areas to soften views and provide visual separation. All site improvements will comply with applicable City requirements.

Question 3: Public Services Available

Adequate public services are available to serve the proposed parking lot without disruption to existing uses. The site is already served by public streets, sidewalks, electrical, storm sewer and infrastructure.

Police, fire, and emergency services currently serve Franklin School and Franklin Field, and the addition of a parking lot does not materially change service demands. The project does not require extensions of utilities or public services beyond what already exists and operates successfully in the area.

Question 4: Nuisance

The proposed use is not expected to create a nuisance. Parking will be accessory to existing school and athletic uses that are already present and active on the site. Lighting will be directed on-site with minimal spillover per code allowances, traffic movements will be clearly organized, and landscaping buffers will be provided to reduce visual impacts.

Noise associated with the parking lot will be limited to normal vehicular movements consistent with existing conditions during school operations and events. The design and operational characteristics of the parking lot

are intended to reduce, not increase, uncontrolled neighborhood impacts such as informal parking or circulation conflicts.

Question 5: Design Features

The parking lot layout incorporates design features intended to protect adjacent residential uses, including:

- Defined vehicular access points to manage traffic flow and avoid unnecessary circulation through residential areas
- Landscaped buffers and yard areas along residential property lines
- Lighting fixtures focused on parking and drive areas only
- Clear pedestrian circulation to and from school and athletic facilities
- Compliance with safety and visibility

No service or loading areas are proposed. The parking lot is positioned to function as an extension of existing school and field facilities, rather than as a standalone commercial use.

Question 6: Compatibility

The proposed parking lot is compatible with surrounding uses in terms of scale, function, and appearance. Parking is a customary and necessary component of public and institutional uses such as schools and athletic fields.

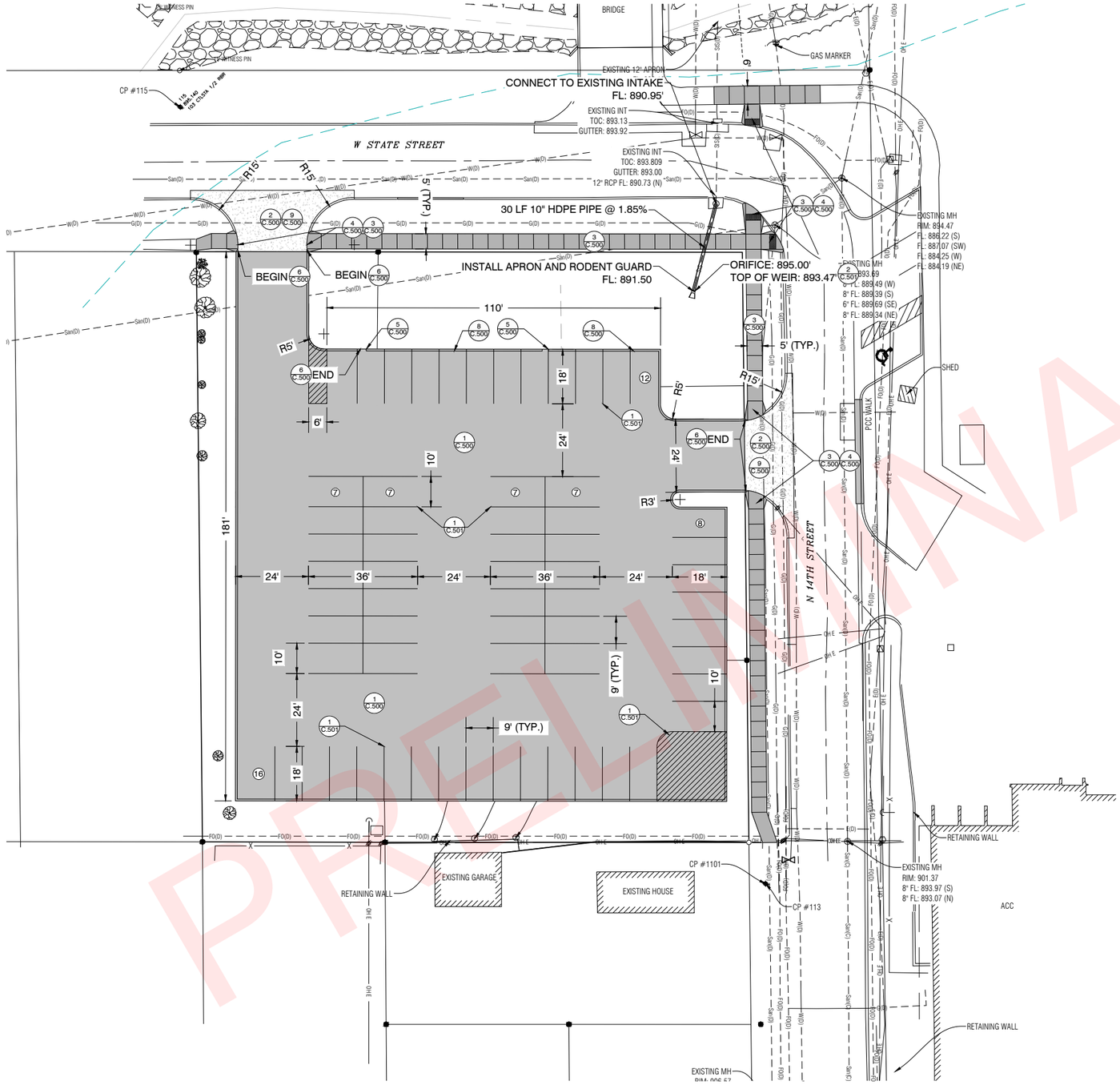
Public and institutional zoning classifications are widely recognized as compatible with residential districts when properly buffered and designed. The project incorporates lighting controls, landscaping, and limited site improvements to ensure neighborhood character is respected. The use does not introduce incompatible structures, excessive noise, or environmental impacts beyond what already exists with the current school and field operations.

Question 7: Location

There is no remaining area on the existing Franklin School or Franklin Field sites where additional parking can be constructed due to existing buildings, athletic facilities, circulation patterns, and required setbacks. As a result, on-site expansion of parking was not practicable.

The subject properties were acquired by the Marshalltown Community School District specifically for the purpose of providing additional parking to serve Franklin School and Franklin Field. Locating parking on these adjacent parcels allows the parking demand to be accommodated in close proximity to its primary users, reduces reliance on on-street parking, and minimizes vehicle circulation through surrounding residential streets.

Alternative locations farther from the school and field would increase pedestrian safety concerns, reduce accessibility, and potentially shift impacts to other neighborhoods not presently associated with school-related activity. Given these constraints and objectives, the proposed location represents the most practical and appropriate option to serve the existing facilities.



TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL DEVICES & BARRIERS SHALL BE FURNISHED, ERECTED, MAINTAINED, & REMOVED BY THE CONTRACTOR.
2. PROPOSED CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE REVIEWED WITH THE ENGINEER BEFORE CHANGES ARE MADE.
3. ACCESS TO NEIGHBORING BUILDINGS SHALL BE MAINTAINED AT ALL TIMES.
4. ALL UTILITY WORK WITHIN THE PUBLIC R.O.W. SHALL CONFORM TO THE CITY OF MARSHALLTOWN STANDARDS & THE CURRENT ADDITION OF THE MUTCD.
5. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ALONG W STATE ST. & N 14TH ST.
6. THE CONTRACTOR SHALL USE CARE WHEN WORKING UNDER/OVER/AROUND ELECTRICAL LINES.
7. FLASHING OR STEADY BURN WARNING LIGHTS ARE REQUIRED ON TYPE II BARRICADES FOR OVERNIGHT CLOSURES.
8. WORK AREA MUST BE ENCLOSED WITH BARRICADES, FENCING, OR A COMBINATION OF THE TWO.

GENERAL LAYOUT NOTES:

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES & STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH APPROPRIATE SAFETY REGULATIONS.
3. SITE LIGHTING SHALL BE DETERMINED BY THE OWNER.
4. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED & MULCHED UNLESS OTHERWISE NOTED IN PLANS. REFER TO LANDSCAPING PLAN.
5. ANY DAMAGE TO THE PAVEMENT NOT SHOWN FOR REMOVAL ON THE PLANS DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. ALL EFFORTS SHALL BE MADE TO NOT DISTURB EXISTING PAVEMENT.
6. COORDINATE GAS, ELECTRIC, TELEPHONE, & FIBER OPTIC WITH RESPECTIVE UTILITY COMPANIES.
7. ALL CONSTRUCTION MATERIALS, DUMPSTERS, DETACHED TRAILERS, OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN PUBLIC RIGHT-OF-WAY.

CONSTRUCTION DETAILS

- 1 C.500 — INSTALL 5" PCC PAVEMENT
- 2 C.500 — INSTALL 8" R.O.W. PAVEMENT
- 3 C.500 — INSTALL 4" PCC SIDEWALK PAVEMENT
- 4 C.500 — INSTALL PERPENDICULAR CURB RAMP (INSTALL DETECTABLE WARNING AT STREET CROSSINGS)
- 5 C.500 — INSTALL CURB CUTS
- 6 C.500 — INSTALL 6" STANDARD PCC CURB & GUTTER
- 7 C.500 — INSTALL CURB RUNOUT FOR ALL CURBS
- 8 C.500 — INSTALL DROP CURB
- 9 C.500 — INSTALL CONCRETE DRIVEWAY
- 1 C.501 — INSTALL MARKINGS
- 2 C.501 — INSTALL NYLOPLAST WEIR AND ORIFICE

PRELIMINARY

GRAPHIC SCALE 0 20' 40' 60'

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

Clapsaddle-Garber Associates, Inc
16 East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

DESIGNED: ---- DATE: ----
DRAWN: ---- DATE: ----
CHECKED: ---- DATE: ----
APPROVED: ---- DATE: ----

MCSD FRANKLIN PARKING LOT SITE PLAN
MARSHALLTOWN, IOWA

LAYOUT & UTILITY PLAN

PROJECT NO. 26-DS-0054
SHEET NO. C.200

J:\26-DS-0054\dwg\S_Sheet\260\S0054_C.200-Layout & Utility Plan.dwg - C.200 - 04-30-26 - 4:32pm - rhagerman

LANDSCAPE NOTES:

1. PLANT QUANTITIES ARE FOR INFORMATION ONLY; DRAWING SHALL PREVAIL IF CONFLICT OCCURS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING OWN QUANTITIES AND BASING BID ACCORDINGLY.
2. CONTRACTOR SHALL PLACE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES AND IN SPECIFIED PLANTING BEDS(SEE LANDSCAPE CONSTRUCTION NOTES) TO A DEPTH OF 3". WALNUT PRODUCTS ARE PROHIBITED.
3. KIND, SIZE AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK, ANSI 260-2004, OR MOST RECENT EDITION.
4. THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE ENGINEER.
5. THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS, ORNAMENTAL GRASSES WITHIN 21 DAYS FOLLOWING THE AWARD OF CONTRACT. TIMELY PROCUREMENT OF ALL PLANT MATERIAL IS ESSENTIAL TO THE SUCCESSFUL COMPLETION AND INITIAL ACCEPTANCE OF THE PROJECT.
6. SUBSTITUTIONS SHALL ONLY BE ALLOWED WHEN THE CONTRACTOR HAS EXHAUSTED ALL SOURCES FOR THE SPECIFIED MATERIAL, AND HAS PROVEN THAT THE SPECIFIED MATERIAL IS NOT AVAILABLE. THE CONTRACTOR MUST PROVIDE NAME AND VARIETY OF SUBSTITUTION TO THE ENGINEER FOR APPROVAL PRIOR TO TAGGING OR PLANTING. SUBSTITUTIONS SHALL BE NEAREST EQUIVALENT SIZE OF VARIETY OF PLANT HAVING SAME ESSENTIAL CHARACTERISTICS.
7. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE FROM INSECTS, DISEASE AND INJURIES, WITH HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES. SIZES SHALL BE EQUAL TO OR EXCEEDING SIZES INDICATED ON THE PLANT SCHEDULE. THE CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITY AS SHOWN ON DRAWINGS.
8. STAKE OR PLACE ALL PLANTS IN FIELD AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER FOR APPROVAL BY THE OWNER PRIOR TO PLANTING. REMOVE STAKING AT END OF WARRANTY PERIOD.
9. ALL DISTURBED AREAS NOT OTHERWISE COVERED BY BUILDING, PAVEMENT, AND LANDSCAPE BEDS SHALL BE SEEDED WITH TYPE 1 OR TYPE 2 GRASS AS APPROVED BY THE OWNER.
10. CONTRACTOR SHALL PLACE TOPSOIL FROM THE SITE OR SOIL CONDITIONED OR TILLED INTO THE TOP 6 INCHES WITH AT LEAST A 5% ORGANIC CONTENT, INTO REQUIRED PLANTING AREAS(YARD AREAS, BUFFER YARDS, OR PLANTERS).
11. STOCKPILED TOPSOIL SHOULD BE PLIABLE LOAM, SECURE FROM NATURALLY WELL-DRAINED AREAS, FREE OF ADMIXTURE OF SUBSOIL, FREE FROM CLAY LUMPS + STONE AND OTHER DEBRIS OVER 1 INCH IN DIAMETER.(PER IOWA DOT SPEC. SP-155079)
12. TOPSOIL SHALL HAVE A PH VALUE OF MINIMUM 5.5 AND MAXIMUM OF 7.0.(PER IOWA DOT SPEC. SP-155079)
13. CONTRACTOR IS RESPONSIBLE FOR TESTING TOPSOIL AND SUBMITTING TEST RESULTS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO USE AND PLACEMENT.(PER IOWA DOT SPEC. SP-155079)
14. THE REQUIRED LANDSCAPING, BOTH EXISTING AND PROPOSED, SHALL BE MAINTAINED FOR THE LIFE OF THE CERTIFICATE OF OCCUPANCY.
15. CONTACT THE MUNICIPAL FORESTRY DIVISION PRIOR TO PLANTING AT 515.283.4950.
16. ALL WIRE, TWINE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL OF TREES PRIOR TO PLANTING.

LANDSCAPE CONSTRUCTION NOTES:

- (A) TYPE 1 LAWN MIXTURE
- (B) TYPE 2 (PERMANENT COOL-SEASON SLOPE AND DITCH MIXTURE)
- (C) ORGANIC MULCH
- (D) NO-DIG PLASTIC EDGING TO BE INSTALLED AROUND SPECIFIED PLANTING BEDS
- (E) 20' X 20' VISION CLEARANCE TRIANGLE
- (F) RIP-RAP FLUME

SITE INFORMATION:

TOTAL SITE AREA: 35,041.13 SF (0.80 AC)

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
Deciduous Overstory Trees				
GD	Gymnocladius dioicus ' Espresso'	Espresso Kentucky Coffeetree	4	(50' H & 40' W)2" B&B
GB	Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo	4	(50' H & 35' W)2" B&B
Ornamental Understory Trees				
AP	Acer x pseudosieboldianum 'lslAJ'	Arctic Jade Maple	4	(20' H & 15' W)1.5" B&B
AG	Amelanchier x grandiflora	Autumn Brilliance Serviceberry(Multi-Stem)	4	(25' H & 25' W)1.5" B&B
Evergeen Trees				
TP	Thuja plicata	Spring Grove Western Arborvitae	3	(30' H & 15' W)6' B&B
Shrubs & Grasses				
TM	Taxus x media	Stonehenge Dark Druid Yew	22	(4' H & 3' W)#5 CNT
PO	Physocarpus opulifolius 'Donna May'	Little Devil Ninebark	13	(4' H & 4' W)#5 CNT
TO	Thuja occidentalis 'Hetz Midget'	Hetz Midget Thuja	22	(4' H & 5' W)#5 CNT
SN	Spiraea nipponica 'Snowmound'	Snowmound Spirea	20	(4' H & 4' W)#5 CNT

BUFFER REQUIREMENTS

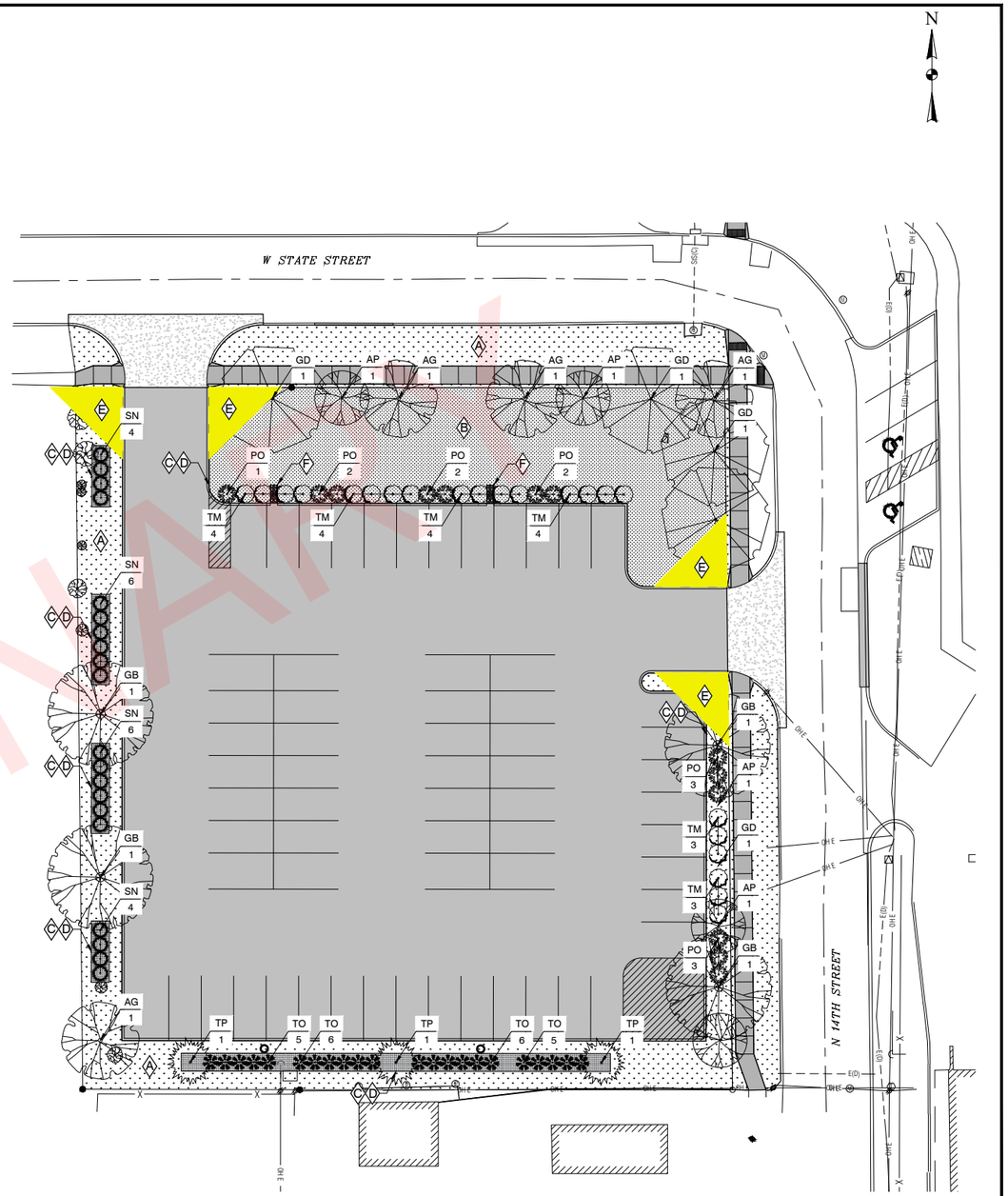
#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.004-1 Option 1: Landscape Only Bufferyard Type B: 10 FT Buffer 1 Overstory, 2 Understory, 1 Evergreen, and 12 Shrubs every 100 LF	350 LF 4 Overstory, 7 Understory, 4 Evergreens, and 42 Shrubs	2 Existing Overstory, 6 Existing Understory, 1 Existing Evergreen, 2 Proposed Overstory, 1 Proposed Understory, 3 Proposed Evergreens, and 42 Proposed shrubs

SITE TREE REQUIREMENTS

#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.003(3)(a) Development Landscaping A Minimum of Five Overstory Trees per Acre	5 Trees	9 Trees

PARKING LOT LANDSCAPING

#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.003(5) Development Landscaping Whenever an off-street parking area fronts along a public street, an average of one overstory and two understory trees shall be planted every 75 feet within the parking lot setback area. In areas of public utility easement, no trees, are required but the screening material must incorporate plant-scaping. Additionally, a minimum 3' screen shall be installed between the parking lot and the adjoining street along the entire frontage.	311 LF 5 Overstory, 9 Understory, and 3' Minimum Screen	6 Overstory, 7 Understory, and 3' Minimum Screen



PRELIMINARY

GRAPHIC SCALE 0 20' 40' 60'

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

Clapsaddle-Garber Associates, Inc
16 East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

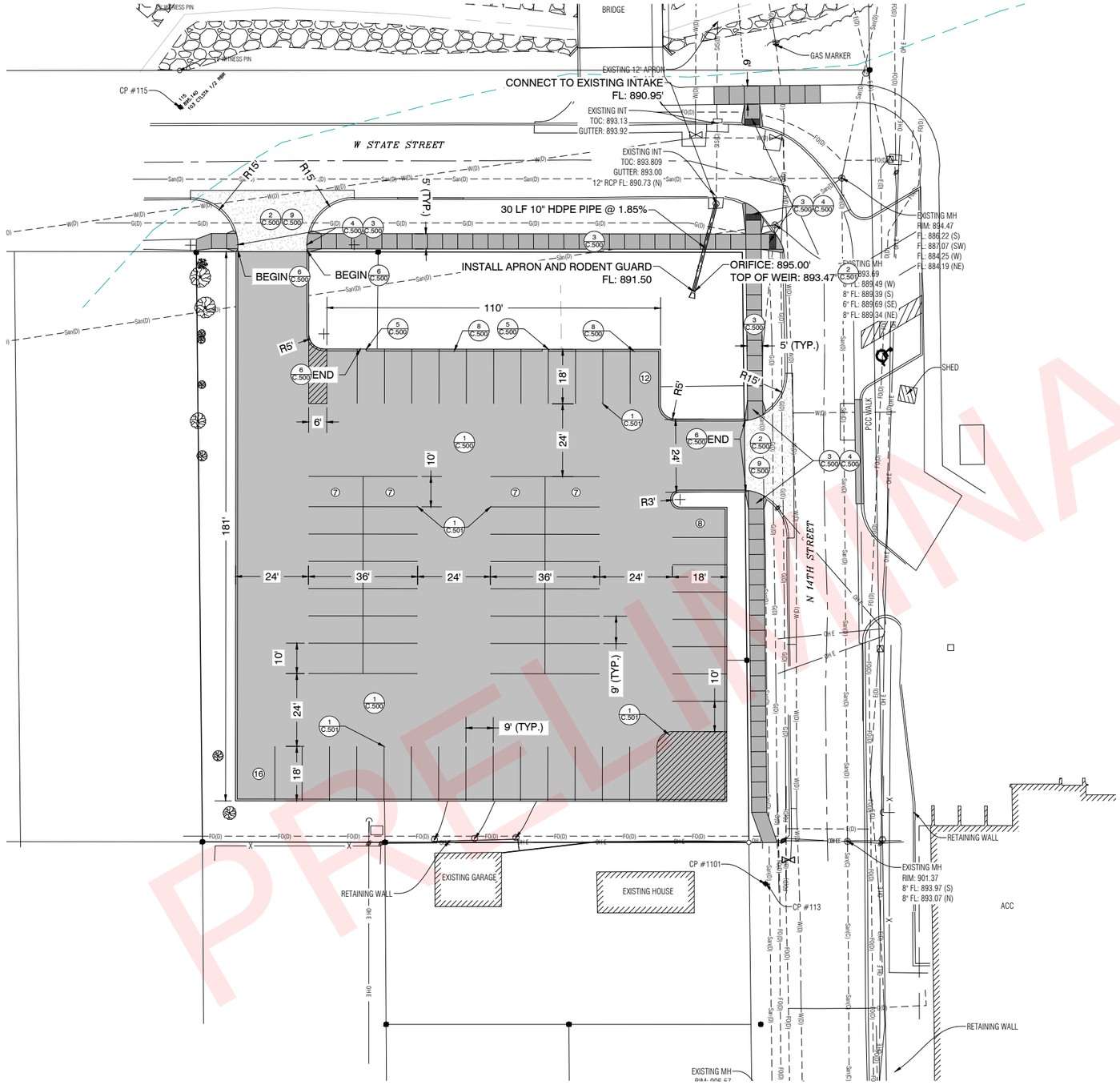
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MCSD FRANKLIN PARKING LOT SITE PLAN
MARSHALLTOWN, IOWA

LANDSCAPING PLAN

PROJECT NO. 26-DS-0054
SHEET NO. C.400

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TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL DEVICES & BARRIERS SHALL BE FURNISHED, ERECTED, MAINTAINED, & REMOVED BY THE CONTRACTOR.
2. PROPOSED CHANGES TO THE TRAFFIC CONTROL PLAN SHALL BE REVIEWED WITH THE ENGINEER BEFORE CHANGES ARE MADE.
3. ACCESS TO NEIGHBORING BUILDINGS SHALL BE MAINTAINED AT ALL TIMES.
4. ALL UTILITY WORK WITHIN THE PUBLIC R.O.W. SHALL CONFORM TO THE CITY OF MARSHALLTOWN STANDARDS & THE CURRENT ADDITION OF THE MUTCD.
5. TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ALONG W STATE ST. & N 14TH ST.
6. THE CONTRACTOR SHALL USE CARE WHEN WORKING UNDER/OVER/AROUND ELECTRICAL LINES.
7. FLASHING OR STEADY BURN WARNING LIGHTS ARE REQUIRED ON TYPE II BARRICADES FOR OVERNIGHT CLOSURES.
8. WORK AREA MUST BE ENCLOSED WITH BARRICADES, FENCING, OR A COMBINATION OF THE TWO.

GENERAL LAYOUT NOTES:

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES & STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH APPROPRIATE SAFETY REGULATIONS.
3. SITE LIGHTING SHALL BE DETERMINED BY THE OWNER.
4. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED & MULCHED UNLESS OTHERWISE NOTED IN PLANS. REFER TO LANDSCAPING PLAN.
5. ANY DAMAGE TO THE PAVEMENT NOT SHOWN FOR REMOVAL ON THE PLANS DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. ALL EFFORTS SHALL BE MADE TO NOT DISTURB EXISTING PAVEMENT.
6. COORDINATE GAS, ELECTRIC, TELEPHONE, & FIBER OPTIC WITH RESPECTIVE UTILITY COMPANIES.
7. ALL CONSTRUCTION MATERIALS, DUMPSTERS, DETACHED TRAILERS, OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN PUBLIC RIGHT-OF-WAY.

CONSTRUCTION DETAILS

- 1 C.500 — INSTALL 5" PCC PAVEMENT
- 2 C.500 — INSTALL 8" R.O.W. PAVEMENT
- 3 C.500 — INSTALL 4" PCC SIDEWALK PAVEMENT
- 4 C.500 — INSTALL PERPENDICULAR CURB RAMP (INSTALL DETECTABLE WARNING AT STREET CROSSINGS)
- 5 C.500 — INSTALL CURB CUTS
- 6 C.500 — INSTALL 6" STANDARD PCC CURB & GUTTER
- 7 C.500 — INSTALL CURB RUNOUT FOR ALL CURBS
- 8 C.500 — INSTALL DROP CURB
- 9 C.500 — INSTALL CONCRETE DRIVEWAY
- 1 C.501 — INSTALL MARKINGS
- 2 C.501 — INSTALL NYLOPLAST WEIR AND ORIFICE

PRELIMINARY

GRAPHIC SCALE 0 20' 40' 60'

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

Clapsaddle-Garber Associates, Inc
16 East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

DESIGNED: ---- DATE: ----
DRAWN: ---- DATE: ----
CHECKED: ---- DATE: ----
APPROVED: ---- DATE: ----

MCSD FRANKLIN PARKING LOT SITE PLAN
MARSHALLTOWN, IOWA

LAYOUT & UTILITY PLAN

PROJECT NO. 26-DS-0054
SHEET NO. C.200

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LANDSCAPE NOTES:

1. PLANT QUANTITIES ARE FOR INFORMATION ONLY; DRAWING SHALL PREVAIL IF CONFLICT OCCURS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING OWN QUANTITIES AND BASING BID ACCORDINGLY.
2. CONTRACTOR SHALL PLACE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES AND IN SPECIFIED PLANTING BEDS(SEE LANDSCAPE CONSTRUCTION NOTES) TO A DEPTH OF 3". WALNUT PRODUCTS ARE PROHIBITED.
3. KIND, SIZE AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK, ANSI 260-2004, OR MOST RECENT EDITION.
4. THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE ENGINEER.
5. THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS, ORNAMENTAL GRASSES WITHIN 21 DAYS FOLLOWING THE AWARD OF CONTRACT. TIMELY PROCUREMENT OF ALL PLANT MATERIAL IS ESSENTIAL TO THE SUCCESSFUL COMPLETION AND INITIAL ACCEPTANCE OF THE PROJECT.
6. SUBSTITUTIONS SHALL ONLY BE ALLOWED WHEN THE CONTRACTOR HAS EXHAUSTED ALL SOURCES FOR THE SPECIFIED MATERIAL, AND HAS PROVEN THAT THE SPECIFIED MATERIAL IS NOT AVAILABLE. THE CONTRACTOR MUST PROVIDE NAME AND VARIETY OF SUBSTITUTION TO THE ENGINEER FOR APPROVAL PRIOR TO TAGGING OR PLANTING. SUBSTITUTIONS SHALL BE NEAREST EQUIVALENT SIZE OF VARIETY OF PLANT HAVING SAME ESSENTIAL CHARACTERISTICS.
7. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE FROM INSECTS, DISEASE AND INJURIES, WITH HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES. SIZES SHALL BE EQUAL TO OR EXCEEDING SIZES INDICATED ON THE PLANT SCHEDULE. THE CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITY AS SHOWN ON DRAWINGS.
8. STAKE OR PLACE ALL PLANTS IN FIELD AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER FOR APPROVAL BY THE OWNER PRIOR TO PLANTING. REMOVE STAKING AT END OF WARRANTY PERIOD.
9. ALL DISTURBED AREAS NOT OTHERWISE COVERED BY BUILDING, PAVEMENT, AND LANDSCAPE BEDS SHALL BE SEEDED WITH TYPE 1 OR TYPE 2 GRASS AS APPROVED BY THE OWNER.
10. CONTRACTOR SHALL PLACE TOPSOIL FROM THE SITE OR SOIL CONDITIONED OR TILLED INTO THE TOP 6 INCHES WITH AT LEAST A 5% ORGANIC CONTENT, INTO REQUIRED PLANTING AREAS(YARD AREAS, BUFFER YARDS, OR PLANTERS).
11. STOCKPILED TOPSOIL SHOULD BE PLIABLE LOAM, SECURE FROM NATURALLY WELL-DRAINED AREAS, FREE OF ADMIXTURE OF SUBSOIL, FREE FROM CLAY LUMPS + STONE AND OTHER DEBRIS OVER 1 INCH IN DIAMETER.(PER IOWA DOT SPEC. SP-155079)
12. TOPSOIL SHALL HAVE A PH VALUE OF MINIMUM 5.5 AND MAXIMUM OF 7.0.(PER IOWA DOT SPEC. SP-155079)
13. CONTRACTOR IS RESPONSIBLE FOR TESTING TOPSOIL AND SUBMITTING TEST RESULTS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO USE AND PLACEMENT.(PER IOWA DOT SPEC. SP-155079)
14. THE REQUIRED LANDSCAPING, BOTH EXISTING AND PROPOSED, SHALL BE MAINTAINED FOR THE LIFE OF THE CERTIFICATE OF OCCUPANCY.
15. CONTACT THE MUNICIPAL FORESTRY DIVISION PRIOR TO PLANTING AT 515.283.4950.
16. ALL WIRE, TWINE AND BURLAP SHALL BE REMOVED FROM THE ROOT BALL OF TREES PRIOR TO PLANTING.

LANDSCAPE CONSTRUCTION NOTES:

- (A) TYPE 1 LAWN MIXTURE
- (B) TYPE 2 (PERMANENT COOL-SEASON SLOPE AND DITCH MIXTURE)
- (C) ORGANIC MULCH
- (D) NO-DIG PLASTIC EDGING TO BE INSTALLED AROUND SPECIFIED PLANTING BEDS
- (E) 20' X 20' VISION CLEARANCE TRIANGLE
- (F) RIP-RAP FLUME

SITE INFORMATION:

TOTAL SITE AREA: 35,041.13 SF (0.80 AC)

PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
Deciduous Overstory Trees				
GD	Gymnocladius dioicus ' Espresso'	Espresso Kentucky Coffeetree	4	(50' H & 40' W)2" B&B
GB	Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo	4	(50' H & 35' W)2" B&B
Ornamental Understory Trees				
AP	Acer x pseudosieboldianum 'lslAJ'	Arctic Jade Maple	4	(20' H & 15' W)1.5" B&B
AG	Amelanchier x grandiflora	Autumn Brilliance Serviceberry(Multi-Stem)	4	(25' H & 25' W)1.5" B&B
Evergeen Trees				
TP	Thuja plicata	Spring Grove Western Arborvitae	3	(30' H & 15' W)6' B&B
Shrubs & Grasses				
TM	Taxus x media	Stonehenge Dark Druid Yew	22	(4' H & 3' W)#5 CNT
PO	Physocarpus opulifolius 'Donna May'	Little Devil Ninebark	13	(4' H & 4' W)#5 CNT
TO	Thuja occidentalis 'Hetz Midget'	Hetz Midget Thuja	22	(4' H & 5' W)#5 CNT
SN	Spiraea nipponica 'Snowmound'	Snowmound Spirea	20	(4' H & 4' W)#5 CNT

BUFFER REQUIREMENTS

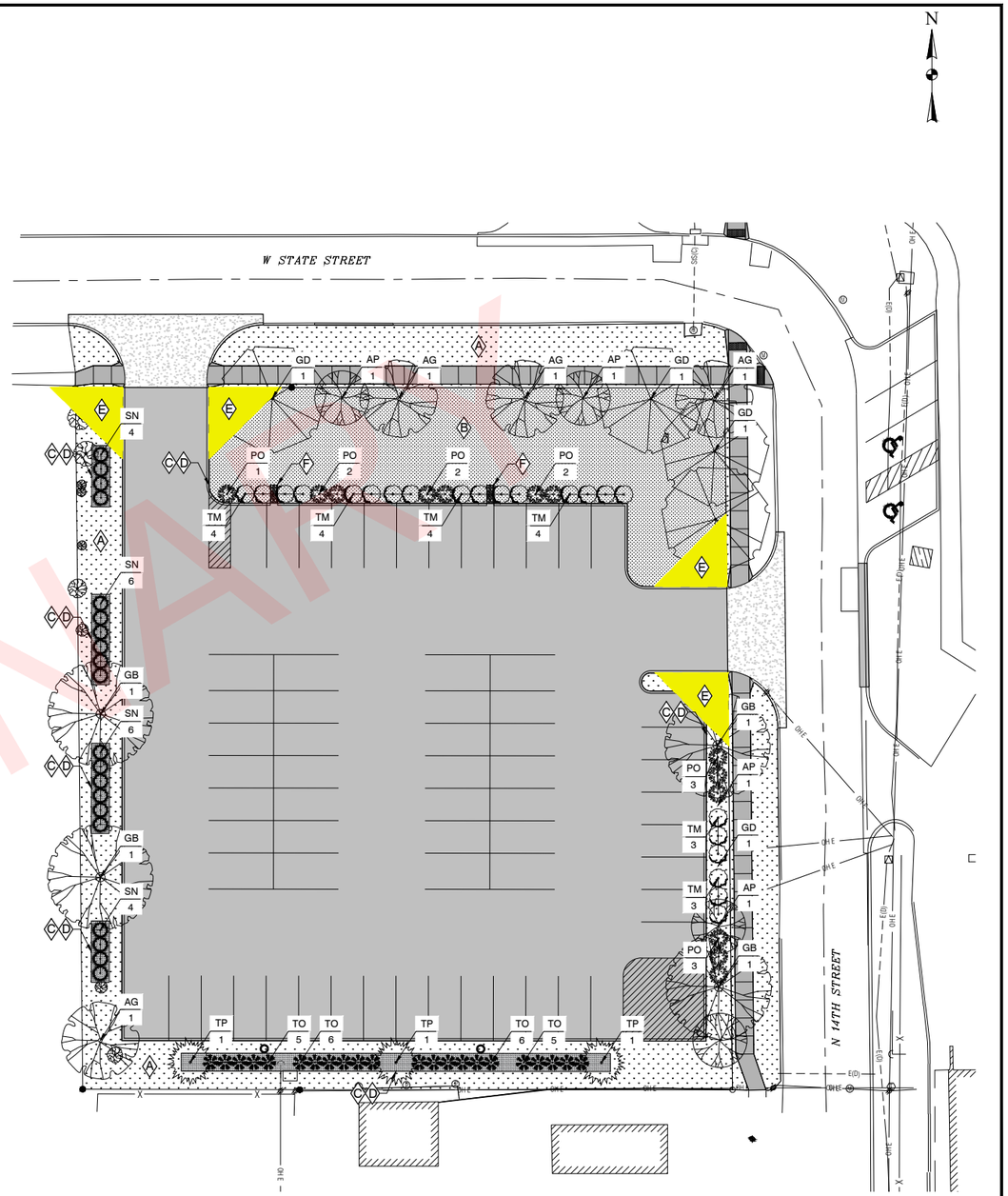
#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.004-1 Option 1: Landscape Only Bufferyard Type B: 10 FT Buffer 1 Overstory, 2 Understory, 1 Evergreen, and 12 Shrubs every 100 LF	350 LF 4 Overstory, 7 Understory, 4 Evergreens, and 42 Shrubs	2 Existing Overstory, 6 Existing Understory, 1 Existing Evergreen, 2 Proposed Overstory, 1 Proposed Understory, 3 Proposed Evergreens, and 42 Proposed shrubs

SITE TREE REQUIREMENTS

#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.003(3)(a) Development Landscaping A Minimum of Five Overstory Trees per Acre	5 Trees	9 Trees

PARKING LOT LANDSCAPING

#	ZONING DESCRIPTION	REQUIRED	PROPOSED
1	156.F.003(5) Development Landscaping Whenever an off-street parking area fronts along a public street, an average of one overstory and two understory trees shall be planted every 75 feet within the parking lot setback area. In areas of public utility easement, no trees, are required but the screening material must incorporate plant-scaping. Additionally, a minimum 3' screen shall be installed between the parking lot and the adjoining street along the entire frontage.	311 LF 5 Overstory, 9 Understory, and 3' Minimum Screen	6 Overstory, 7 Understory, and 3' Minimum Screen



PRELIMINARY

GRAPHIC SCALE 0 20' 40' 60'

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA
Clapsaddle-Garber Associates, Inc
16 East Main Street
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MARSHALLTOWN
IOWA
HOUSING & COMMUNITY DEVELOPMENT

Mike Ladehoff, Mayor
Carol Webb, City Administrator
Deb Millizer, Director
Clayton Ender, Assistant Director
24 North Center Street
Marshalltown, IA 50158-4911
Tel - (641) 754-5756
Fax - (641) 754-5717

TO: Planning and Zoning Commission
FROM: Clayton Ender, Assistant Housing & Community Development Director
DATE: May 14th, 2026
RE: Make a recommendation on a special use permit application for 2114 E Nevada St

City Staff Contact:	Clayton Ender, AICP Assistant Director of Housing and Community Development Phone: 641-754-5756 Email: cender@marshalltown-ia.gov
Applicant / Property Owner:	Interstate Power and Light Company, Alliant Energy 4902 N Biltmore Ln STE 1000 Madison, WI, 53718
Recommendation:	Staff recommends approval and provides the following motion for the commission's consideration: **The Planning and Zoning Commission recommends approval of the special use permit application for 2114 E Nevada St.**
Current Zoning District & Current Usage:	Current Zoning: GI, General Industrial Zoning District Current Usage: Major Utility and Open Space
Proposed Zoning District & Proposed Usage:	Zoning: GI, General Industrial Zoning District Proposed Usage: Major Utility, Electrical Generation Station

CITY COUNCIL
Sue Cahill, Melisa Fonseca, Marco A. Yepez-Gomez, Mark Mitchell,
Greg Nichols, Jeff Schneider, Gary Thompson

Review Criteria:

In determining whether to approve, approve with conditions, or deny a special use permit, the review bodies shall consider the following review criteria:

1. **The request complies with the applicable standards of this Zoning Ordinance, the City Code of Ordinances, and any applicable county, state, or federal requirements.**

   A full site plan will be required for administrative approval prior to issuance of a building permit, but generally the special use permit application demonstrates the ability to comply with the applicable standards of this Zoning Ordinance, the City Code of Ordinances, and any applicable county, state, or federal requirements

2. **The request substantially conforms to any associated prior approval for the development, including, but not limited to, a special use permit, Master Development Plan, or Site Plan.**

   The proposed development does not conflict with any prior approvals.

3. **The administrative body has considered the recommendation of staff.**

   Staff recommends approval of the special use permit application.

4. **The request is consistent with applicable policies of the Comprehensive Plan and applicable utility plans and capital improvements plans; or, if it addresses a topic that is not contained or not fully developed in the Comprehensive Plan, the request does not impair the implementation of the Comprehensive Plan.**

   The comprehensive plan identifies the future land use designation for the development site as heavy industrial.

   While utility is provided its own future land use category in the comprehensive plan, the use is allowed within the GC zoning district by special use permit. Development of the new facility would not impair implementation of the comprehensive plan. In fact, in staff's option the development of additional power generation capacity will support implementation of the comprehensive plan by ensuring adequate infrastructure is available to support development of the city and region.

5. **The request promotes the purposes of this Zoning Ordinance as established in § 156.A.002, Purposes, and in other applicable purpose statements in this chapter.**

   § 156.A.002(C)(1) "Encourage a diverse and stable economy with employment opportunities, particularly those that have meaningful multiplier effects in the local economy, by promoting the vitality and development of commercial and industrial districts"

   § 156.A.002(D)(1) "Encouraging the most appropriate, efficient, and compatible use of land, buildings, and other structures throughout the city"

6. **Adequate facilities, including public or private utilities, solid waste service, roads, drainage, and other improvements are present or are planned to be provided.**

   The subject property has adequate access to existing public streets, water, sanitary sewer, storm sewer and other utilities.

7. **The request demonstrates compatibility with surrounding conforming and permitted land uses and structures and with the general character of the area.**

   Adjacent land uses are open space, existing power generation facility, and existing industrial users. Development of additional power generation capacity at this site is compatible with surrounding usage.

8. **The special use does not create an unwanted concentration of similar special uses that is likely to discourage permitted uses by making the vicinity less desirable for them.**

   The Bobcat Energy Center will be built adjacent to the existing MGS power generation site. While this does represent a concentration of similar special uses, its location within an established industrial area, and its design that complements the existing facility, mitigates concerns about unwanted special use concentration. Furthermore, the Iowa Utilities Commission has unanimously approved the project's Certificate of Public Convenience, Use and Necessity, confirming it is in the public interest (approved on December 5, 2025 – Docket No. GCU-2025-011).

9. **There is no practicable alternative location where the use is permitted by right within the general vicinity of the parcel proposed for development, or, if such a location exists, the proposed location is comparable or more favorable in terms of:**

    - **Providing a needed community service;**
    - **Providing a critical mass of related and mutually supportive land uses that promote quality economic development and opportunity;**
    - **Providing a balance of land uses, ensuring that appropriate supporting activities, such as employment, housing, leisure-time, and retail centers are in close proximity to one another; and**
    - **Making more efficient use of public infrastructure.**

    While other sites in town exist which could be developed with a major utility the presence of electric transmission infrastructure already in place at the subject site makes this location the most logical for development. Development of this project will serve the public be making sure there is adequate electric generation capacity for local and regional users.

Attachments:

Aerial Vicinity Map
Special use Permit Application
Site Plan
Traffic Impact Study
Sound Study

AERIAL VICINITY MAP



Alliant Energy
4902 North Biltmore Lane
P.O. Box 77007
Madison, WI 53707-1007

1-800-ALLIANT (800-255-4268)
alliantenergy.com

April 28, 2026

Submitted electronically

Mr. Clayton Ender
Housing & Community Development Department
City of Marshalltown, IA
24 N. Center Street
Marshalltown, IA

Subject: **Special Use Permit Application – Bobcat Energy Center**
Interstate Power and Light Company
Cedar Rapids, IA

Dear Mr. Ender:

On behalf of Interstate Power and Light Company (IPL), Alliant Energy consents to Burns and McDonnell's submission of the enclosed Special Use Permit application and associated supporting documents, for the IPLs' proposed Bobcat Energy Center, adjacent to the existing Marshalltown Generating Station. The application has been prepared pursuant to Marshalltown IA Code of Ordinances Section §156.C.005, *Special Use Permit Standards*.

We appreciate your review of the enclosed application and supporting documents. Please call me at (346) 624-8416 if you have any questions or need additional information prior to approval.

Sincerely,

Ade Moronkeji
Lead Project Manager, Bobcat Energy Center
Alliant Energy

cc: Ali El Zein, Jeff Maxted – Alliant Energy
Chris Howell – Burns & McDonnell
Julianna Crumlish – Sargent & Lundy

April 28, 2026

Housing & Community Development Department
City of Marshalltown, IA
24 N. Center Street
Marshalltown, IA

Re: Bobcat Energy Center – Special User Permit Application

To whom it may concern:

Interstate Power and Light Company (IPL) is pleased to submit this application for a Special Use Permit (SUP) to authorize the construction and operation of the Bobcat Energy Center (BEC or Project). IPL is committed to providing safe, reliable, affordable service to its customers and transitioning to more cost-effective and sustainable capacity and energy resources. With this SUP application, IPL proposes to advance those commitments by constructing, owning, and operating a new 720-megawatt (MW) simple-cycle natural gas-fired electric generation facility, to be co-located with IPL's existing Marshalltown Generating Station (MGS) in Marshalltown, Iowa. The Project will assist IPL in transitioning its fleet to cleaner sources of generation while maintaining reliability and bringing economic benefits to the City of Marshalltown.

1. Introduction

IPL is requesting a SUP to authorize the construction and operation of the BEC, which will be collocated with the existing MGS on IPL-owned property. Figure 1 shows the general location and preliminary layout for the Project.

Figure 1 – General Location and Preliminary Layout



1.1 Special Use Permit

Pursuant to Marshalltown IA Code of Ordinances Section §156.C.005, *Special Use Permit Standards*, a SUP is required for "*All Other Major Utilities*" including the Project. An application for a SUP for the Project must be submitted to the Zoning Administrator, the Plan and Zoning Commission, and the Board of Adjustment for review, and approved, prior to commencing construction. The Project will be reviewed against the approval standards listed in §156.C.005(C)(1) for the following criteria:

- Surrounding properties
- Hours of operation and site improvements
- Public services
- Nuisance
- Design features, and
- Compatibility
- Location and alternatives

A completed SUP Application Form for the Project is included in Attachment 1. IPL requests that the City of Marshalltown generate and submit an invoice to Ade Moronkeji at ademoronkeji@alliantenergy.com for the $300 SUP filing fee upon receipt of this application.

2. Project Description

The Project will be constructed in the City of Marshalltown, Iowa, adjacent to the existing MGS. IPL owns approximately 278 acres in the City of Marshalltown, Iowa, and operates the MGS on a portion of that property. The Project will be constructed in an open field within this property, just north of the existing MGS.

The Project includes three (3) simple-cycle Siemens SGT6-5000F, F-class combustion turbines, housed inside a turbine building, and associated balance-of-plant (BOP) equipment. There will also be site civil work, foundations, a new switchyard, interconnection to the electrical grid via new transmission lines connected to an adjacent substation, a new natural gas lateral, and an onsite water supply pipeline. The Project is part of IPL's commitment to use a diverse portfolio of resources to provide safe, reliable, and affordable service to its customers. The installation of the Project is anticipated to be mobilized in the third quarter of 2026 and operations will commence progressively in 2029 with the individual in-service dates of the Project's three (3) simple-cycle gas turbines (SCGT) on April, June, and August of 2029. The expected lifespan of the Project is 30 years or more.

The Project construction will take place on approximately 65 acres of the existing MGS property. Construction of the Project involves civil preparation of the site, installation of equipment foundations, and installation of the three (3) SCGT and related equipment, wiring, and conduit to support their function. An equipment building with an integral bridge crane will enclose the turbines, generators, and ancillary equipment. The building may include additional maintenance and storage space as well as minor administrative areas which will be determined as part of detailed design.

Figures depicting the project site location, the overall generation site, temporary and permanent impacts, general arrangement, and a site plan are included as Figures 2-1 through 2-5 in Attachment 2.

2.1 Parcel Descriptions

The SUP Application requires a full legal description of the proposed project property. The following table identifies the impacted parcels, including their respective Parcel ID Numbers, zoning classifications, ownership details, and brief descriptions.

Table 1: Parcel Descriptions

Parcel ID Number	Class	Owner	Description
8417-31-127-001	Agricultural	IPL	Agricultural zoned pasture with mixed vegetation including grasses, weeds, and numerous scattered shrubs or small trees, as well as manmade drainage features.
8417-31-176-002	Commercial	IPL	This parcel is currently zoned for commercial use and is the site of the existing MGS, including the facility's security checkpoint and IPL's Native Prairie Nature Park.
8417-31-201-001	Agricultural	IPL	Agricultural zoned pasture with mixed vegetation including grasses, weeds, and numerous scattered shrubs or small trees, as well as manmade drainage features.
8417-31-251-005	Commercial	IPL	This parcel is currently zoned for commercial use and is the site of the existing MGS, including the facility's primary generating equipment.

IPL's consent to apply for a SUP is not required for the application because IPL is the current owner of all affected parcels. The full legal descriptions of the parcels impacted by the Project are included in Attachment 3.

3. Specific Requirements

Specific questions required as part of the SUP Application form are discussed in the following sections.

3.1 Surrounding Properties

SUP applicants must demonstrate the proposed special use will operate in a manner that does not diminish the use or functionality of surrounding properties or create an unwanted concentration of similar special uses.

The Bobcat Energy Center will be built adjacent to the existing MGS power generation site. While this does represent a concentration of similar special uses, its location within an established industrial area, and its design that complements the existing facility, mitigates concerns about unwanted special use concentration. Furthermore, the Iowa Utilities Commission has unanimously approved the project's Certificate of Public Convenience, Use and Necessity, confirming it is in the public interest (approved on December 5, 2025 – Docket No. GCU-2025-011).

3.2 Hours of Operation & Site Improvements

SUP applicants must state their provisions for hours of operation and site improvements, including parking and loading areas, driveways, lighting, signs and landscaping.

Typical construction work is planned for five (5) days per week and 10 hours per day; however, key construction and commissioning activities will require expanded construction hours. Site working days and hours will vary by craft/subcontractor, productivity, and conditions outside the control of the project (i.e. weather, equipment deliveries, resource availability). During construction, site staff will peak at around 450 people in March 2028. The Project site will

include paving for roads and parking, stormwater detention facilities, temporary construction/laydown zones, and lawn and landscaped areas.

Truck deliveries for construction and operation are anticipated to be delivered to the site coming north on 18th Ave from Highway 30 and turning east on to East Nevada St to enter the site. Several large deliveries are expected via rail (turbines, generators, and transformers). Rail deliveries during construction are anticipated to be offloaded from the Union Pacific line to a nearby site and transported to the Project site via East Nevada Street.

Once commercial operation begins, during summer months, capacity factors are expected to be highest throughout the afternoon and into the evening, often peaking as load is high, wind output is moderate or low, and as solar output declines and dispatchable resources are needed to meet net energy demands. This tends to be during the hours of 5 p.m. to 10 p.m. Operations into the overnight hours can be expected at times, particularly if overall system loads are higher and as shorter-duration storage capabilities diminish. This is typically from 10 p.m. to 1 a.m. During non-summer months, output is also generally expected to be highest during evening hours. Across all seasons, during periods of high demand and low renewable output, or extreme seasonal temperatures, the Facility could be expected to operate for longer sustained periods of time.

Construction of the Project would result in permanent visual changes to the Project site. Specifically, the proposed facility would be located on what is currently vacant, agricultural land. However, the proposed facility will have a design, appearance and landscaping that is consistent with the existing MGS. Temporary, exterior lighting during construction and permanent, exterior lighting for plant operations will be utilized. Exterior lighting will be designed to reduce the transmission of light beyond Project boundaries as practicable.

3.3 Public Services Available

SUP applicants must state if adequate public services, such as streets, off-street parking, pedestrian facilities, water, sewer, gas, electricity, and police and fire protection, are available without disruption to existing uses.

Adequate public services are available to the Project, and their use is not expected to cause significant disruption to existing users. The availability of these services is detailed below:

- **Streets**: The Project will utilize existing public roads for construction and operation. The project will adhere to all city and county ordinances, obtain necessary permits for road use, and will repair road damage determined to be caused by Project construction activities, in accordance with city and county requirements.

  At the request of the City of Marshalltown, a Traffic Impact Study was conducted for the Project to evaluate potential traffic effects associated primarily with construction activities and the temporary increase in on-site workforce. The purpose of the study was to assess existing traffic conditions, forecast construction-related traffic volumes, and identify potential impacts to the local roadway network during peak construction periods. The analysis focused on anticipated worker and construction vehicle trips and their influence on key intersections in the study area. The results indicate that temporary impacts to Level of Service – a measure of the quality of traffic operations – may occur at the intersection of 18th Avenue and Nevada Street during peak construction periods when worker arrival and departure volumes are highest. To address these temporary impacts, the study identified mitigation strategies that may be implemented in coordination with the City of Marshalltown on an as-needed basis. The study methods, findings, and recommended mitigation measures are discussed further in Attachment 4.

- **Off-street Parking**: The Project includes on-site parking for employees both during the initial construction phase and for normal BEC operations. Construction laborers will not utilize street parking, and the Project is not expected to have significant impact on the availability of street parking.

- **Pedestrian Facilities**: The project is located on a large, privately-owned industrial site, and significant impacts on public pedestrian facilities are not anticipated. IPL's Native Prairie Park will remain open during construction and operation of the BEC.

- **Water**: Water will be used for evaporative cooling and compressor water washes at the BEC. Water can also be used for fire protection and service use. Water will be supplied by Marshalltown Water Works (MWW), which has informed IPL that it has existing well field and water treatment capacity to supply the required raw water to the Project without affecting its (MWW's) current operations.

- **Sewer**: Wastewater from the project will be discharged to the Marshalltown Water Pollution Control Plant, which has informed IPL that it has the existing capacity to handle the increase in discharge for the Project. Wastewater streams include plant service water that has passed through an oil/water separator, plant sanitary waste, evaporative cooler blowdown water. Oil collected from the separator and wash water drain tanks will be transferred to a mobile truck for off-site disposal. In the event of contamination, or where maintenance requires, oil may be collected and disposed of as required by applicable regulations.

- **Gas**: Natural gas for the BEC will be supplied from the interstate Northern Border Pipeline (NBPL) near Gladbrook, IA. The Project will require about 6,300 to 7,500 thousand cubic feet of natural gas per hour while operating all three turbines at their maximum capacity. IPL will construct a new gas lateral to BEC that generally follows the path of the existing lateral that supplies MGS its natural gas.

- **Electricity**: BEC is an electricity generating facility. The power generated by the BEC will be interconnected to the existing transmission system via on-site transformers, switchyards located entirely within the IPL project and tie into the new ITC-Midwest 345-KV Twinkle Substation, which is being constructed adjacent to the BEC and MGS by ITC-Midwest.
- The interconnection of the BEC to the transmission system is designed to be consistent with standard utility practices and will not degrade the adequacy, reliability, or operating flexibility of the existing transmission system in the area.

- **Police and Fire Protection**: The project site is located within the service area of Marshalltown's police and fire departments. Because the BEC will be located adjacent to the MGS, no significant increase in demand for police or fire services is expected. IPL will coordinate with local first responders to develop appropriate emergency response measures at BEC similarly to current operations at MGS.

3.4 Nuisance

SUP applicants must state if there is any existing or potential for a nuisance if the special use permit is granted, understanding the permit may be recalled for further review if the use becomes a nuisance.

The Project will comply with the City of Marshalltown's noise ordinance, as outlined in Chapter 134 of the city's code. In addition to locating the Project's generating equipment inside an insulated building, the facility will also be equipped with

low-noise upgrades to further mitigate sound emissions during operation. A sound study was prepared for the Project to demonstrate conformity with §134.005 *Maximum Permissible Sound Levels by Zoned Land Use*. These low-noise options include an enclosure around the exhaust diffusers/expansion joints, an enclosure on the lower portion of the exhaust stacks (horizontal) and upgraded exhaust stack silencers. With these mitigation options included as part of the Project's acoustic design, sound levels for the future total facility (i.e., existing MGS plus the new Project) are expected to meet the Marshalltown noise limits. The sound study is included in Attachment 5.

A subsequent noise assessment, following the same process and using the same receptor locations as the baseline study, will be conducted during BEC commissioning to confirm compliance with the ordinance.

3.5 Design Features

SUP applicants must describe how design features, such as service areas, pedestrian and vehicular circulation, safety provisions, access ways, buffering, fencing and building placement, will be incorporated to sufficiently protect adjacent uses.

To protect adjacent uses during construction, several design and safety features will be implemented. Public safety will be directly protected by prohibiting public entry into the work zones, which will be enclosed by temporary security fencing to control access and physically separate the construction activities from surrounding areas. All waste generated during construction will be collected and disposed of in accordance with environmental regulations, in a manner intended to prevent negative impacts on adjacent properties.

Once construction is complete, pedestrian and vehicular access to the BEC will be completely restricted. The facility entrance will be accessible by E Nevada St. after passing IPL's existing security checkpoint to the MGS. Additionally, BEC will be completely enclosed by a security fence. The Project will be designed and constructed in compliance with all applicable zoning and special use agreements.

3.6 Compatibility

SUP applicants must demonstrate the proposed use will be compatible with adjacent existing uses in terms of appearance, architectural scale, site design, landscaping and control of adverse environmental impacts, such as noise and lighting.

Although the Project will be built on vacant agricultural land, its general design and landscaping will be consistent with the appearance of adjacent industrial facilities such as the existing MGS, which already has a dominant appearance in the landscape. To minimize impacts, exterior lighting will be designed to reduce light spillage beyond the project's boundaries and noise will be minimized as discussed in Section 3.4. Given that the Project does not alter the existing agricultural and industrial use of the surrounding properties, significant effects on nearby land values are not anticipated.

3.7 Location & Alternatives Analysis

SUP applicants must identify any other practicable alternative locations considered where a special use would not be required.

While other sites were evaluated by IPL, the proposed location adjacent to the MGS was selected as the most desirable. Major criteria used to identify preferred Project sites include availability of electrical and gas infrastructure and existing IPL owned land and facilities. For these reasons, no other practicable alternative locations that would not require a special use permit were identified.

IPL looks forward to working with the City of Marshalltown on this SUP application. This project is another step in IPL's ongoing commitment to providing safe, reliable, and affordable service to IPL's customers. If you have any questions related to this SUP application, please reach out to Ade Moronkeji at ademoronkeji@alliantenergy.com or (319) 786-3409, or myself at chowell@burnsmcd.com or (816) 822-4243.

Sincerely,

Burns & McDonnell Engineering Company, Inc.



Chris Howell
Senior Project Manager

Attachments
Attachment 1 – SUP Application Form
Attachment 2 – Figures
Attachment 3 – Parcel Legal Descriptions
Attachment 4 – Traffic Study
Attachment 5 – Sound Study

cc: Clayton Ender, Assistant Director, Housing & Community Development

Attachment 1 – SUP Application Form

MARSHALLTOWN
IOWA

DATE SUBMITTED: 4/27/26

Special Use Permit Application

Housing & Community Development Department - 24 N. Center Street, Marshalltown, IA 50158 Ph: 641-754-5756 - Fax: 641-754-5742 - E-mail: bldginsp@marshalltown-ia.gov

All applicable items listed must be submitted with this application:

✔ **Project Description.** Include a cover letter or project description summarizing the proposed project.

✔ **A site plan, drawn in ink to scale.** This site plan shall not be larger than 11" X 17."

✔ **Any other applicable drawings or diagrams.** This may include site improvements, design features, public services, and compatibility.

✔ **Application fee**. A $300 fee is required for a special use request. Make check payable to "City of Marshalltown." The fee must be paid when the application is submitted.

✔ **Full legal description of the property.** *Please note that the tax description on the Marshall County assessor's webpage is NOT the full legal description.* The legal description is listed on the property's abstract and/or a recorded deed or may be obtained from the Marshall County Recorder's Office for a fee.

_____ **Owner's consent to apply (if applicable).** If the applicant is NOT the current title owner, a letter from the title owner shall be included indicating consent to apply.

It is the burden of the applicant to provide sufficient facts with this application and at the Board of Adjustment meeting to support a finding that all the standards for approval have been met.

For all special use requests, the Plan & Zoning Commission shall first review the proposal, hold a public hearing and make a recommendation to the Board of Adjustment which will also hold a public hearing prior to acting. A public hearing notice will be published and a sign will be posted on site for public information.

Attendance at all meetings is required.

Please type or print legibly in ink.

Property Address: 2115 E Nevada St, Marshalltown, IA 50158	
Owner: INTERSTATE POWER & LIGHT COMPANY	
Mailing Address: INTERSTATE POWER/TAX DEPT 4902 N BILTMORE LN STE 1000 MADISON, WI 53718	
Phone: 319-936-9421	Email Address: aliel-zein@alliantenergy.com
Agent Name (if applicable): Chris Howell	
Owner's Agent Address: 9400 Ward Parkway, Kansas City MO 64114	
Agent Phone: +1 (816) 822-4243	Agent Email Address: chowell@burnsmcd.com

Answer the following questions as part of the application. Responses may be provided as a separate document.

1. **Surrounding Properties.** How will this special use permit impact the surrounding properties? How will the proposed special use operate or be designed in a manner that does not diminish the use or functionality of surrounding properties? You may include supporting evidence from a professional appraiser, real estate professional, or other professional. *Additional review criteria:* The board shall consider if approval creates an unwanted concentration of similar special uses.

   Please see Section 3.1 of the Special Use Permit (SUP) application report.

2. **Hours of Operation and Site Improvements.** Please state the following: Provisions for hours of operation, parking and loading areas, driveways, lighting, signs, landscaping, buffering, and other site improvements.

   Please see Section 3.2 of the Special Use Permit (SUP) application report.

3. **Public Services Available**. Please state if adequate public services are available without disruption to existing uses (such as: streets, off-street parking, pedestrian facilities, water, sewer, gas, electricity, police and fire protection).

   Please see Section 3.3 of the Special Use Permit (SUP) application report.

4. **Nuisance.** Is there any existing or potential of a nuisance if the special use permit is granted? (If, in the opinion of Plan and Zoning Commission or Board of Adjustment, the special use becomes a nuisance, the Special Use Permit may be recalled for further review, which could lead to the need for additional conditions, restrictions, or the revocation of the permit.)

   Please see Section 3.4 of the Special Use Permit (SUP) application report.

5. **Design Features.** Please describe how design features will be incorporated to sufficiently protect adjacent uses. Address areas such as: service areas, pedestrian and vehicular circulation, safety provisions, access ways to and from the site, buffering, fencing, and building placement;

   Please see Section 3.5 of the Special Use Permit (SUP) application report.

6. **Compatibility.** Will the proposed use be compatible with adjacent existing uses? (Compatibility shall be expressed in terms of appearance, architectural scale and features, site design and scope, landscaping, as well as the control of adverse environmental impacts, including noise and lighting, or other undesirable conditions.)

   Please see Section 3.6 of the Special Use Permit (SUP) application report.

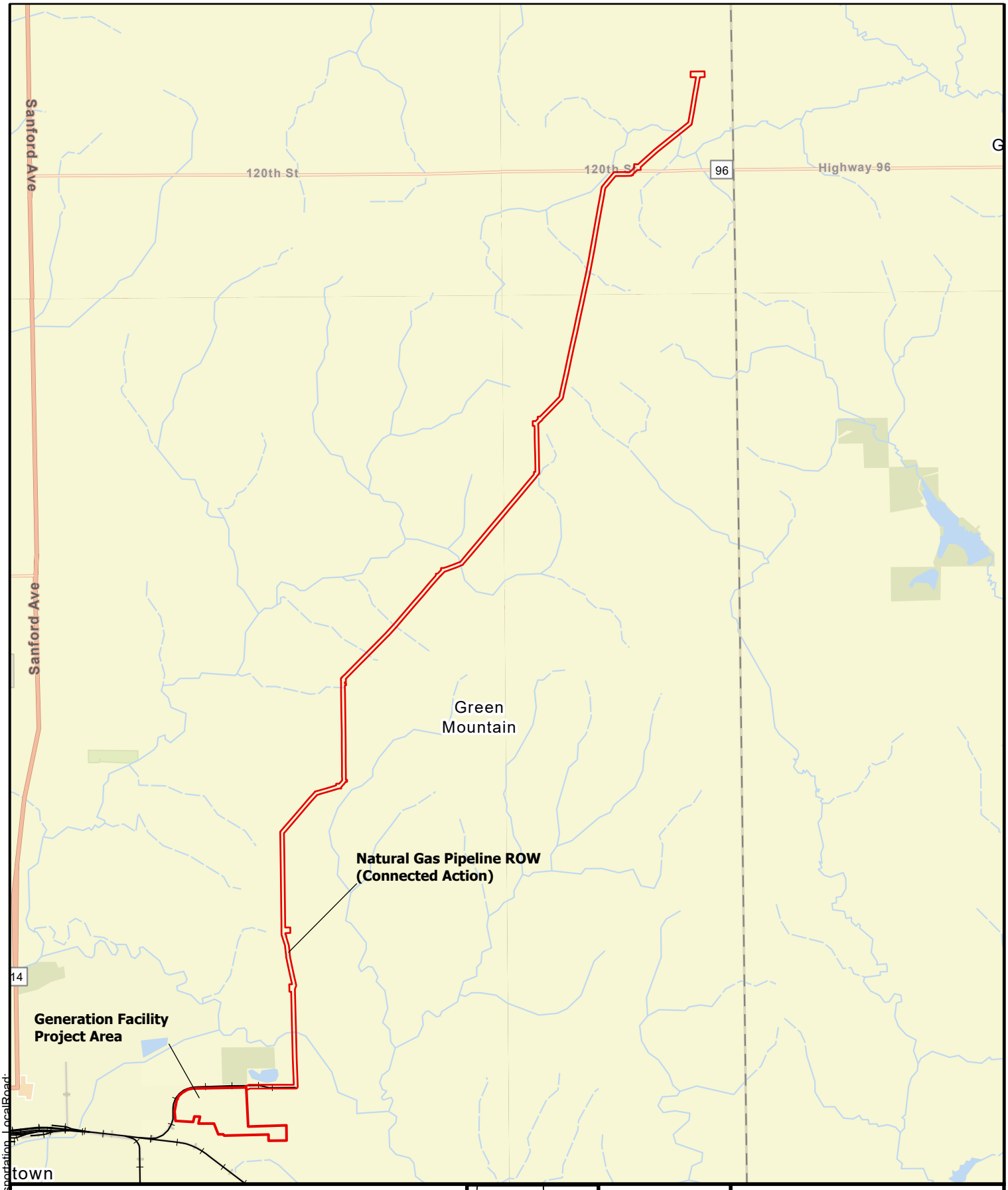
7. **Location.** Identify any other practicable alternative locations considered where a Special use would not be required

   Please see Section 3.7 of the Special Use Permit (SUP) application report.

The board will use this information provided as part of the application in addition to information presented at the public meetings to review your request. Please attach any additional supporting information to be considered that has not previously been discussed. If you have any questions, please contact the Zoning Department at 641-754-5756 or bldginsp@marshalltown-ia.gov Meeting schedules will be set by the City Planner and agendas are posted to the City website: https://www.marshalltown-ia.gov/AgendaCenter

Owner/Agent Signature: Ali El-Zein Digitally signed by Ali El-Zein DN: cn=Ali El-Zein, o=Alliant Energy, ou=Strategic Projects, email=aliel-zein@alliantenergy.com, c=US Date: 2026.04.28 12:54:52 -05'00' Date: 28APR2026

Attachment 2 – Figures


Sanford Ave
120th St
120th St
96
Highway 96
Sanford Ave
Green
Mountain
Natural Gas Pipeline ROW
(Connected Action)
14
Generation Facility
Project Area
town
Project Area
NORTH
0
500
1,000
US Feet
Iowa
BURNS McDONNELL
Figure 2-1
Project Location
Service Layer Credits: Transportation, LocalRoad;
Source: ESRI, Interstate Power and Light Company, and Burns & McDonnell

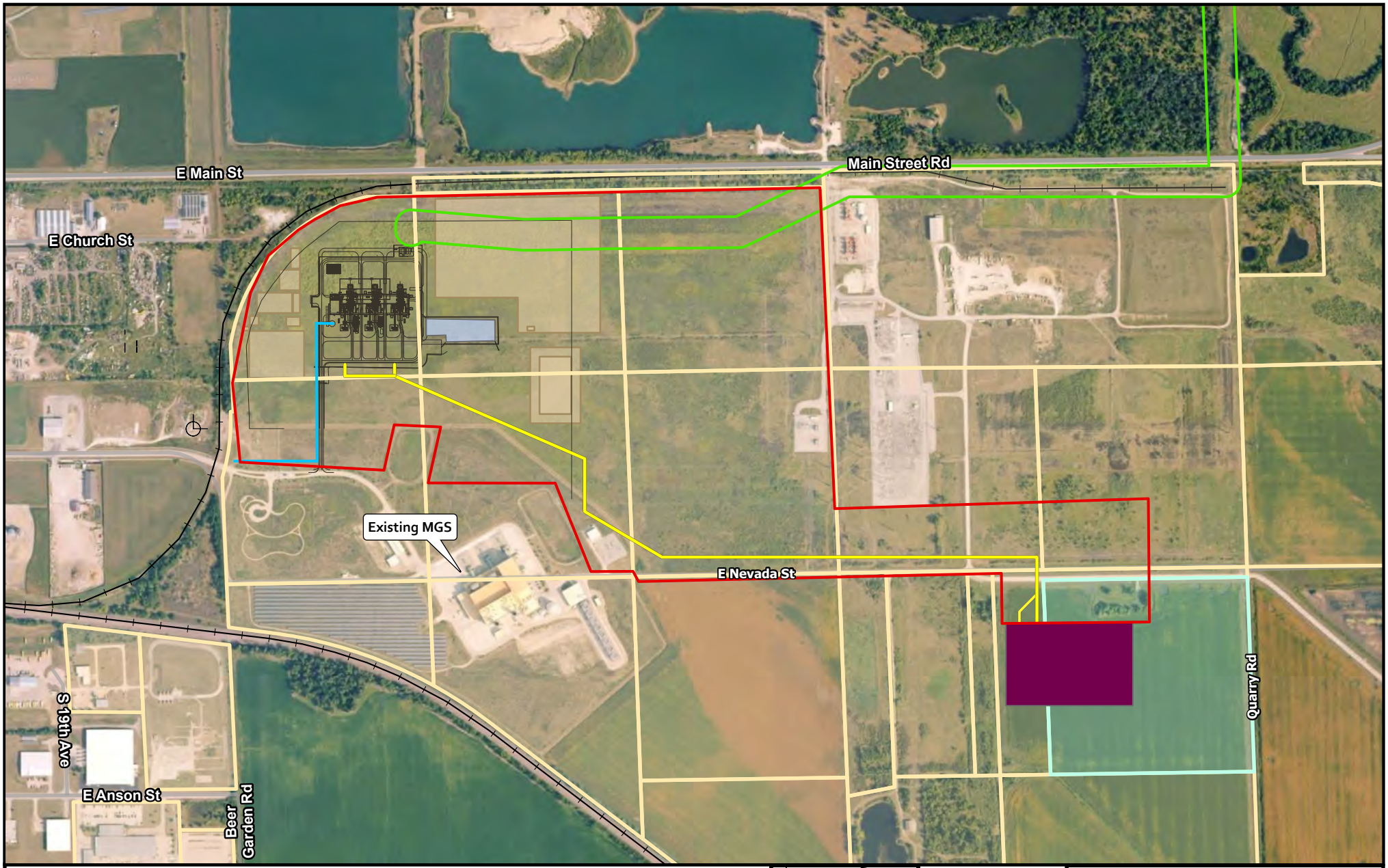


Figure 2-2
Bobcat Energy Center Generation Site

Source: ESRI, Interstate Power and Light, and Burns & McDonnell

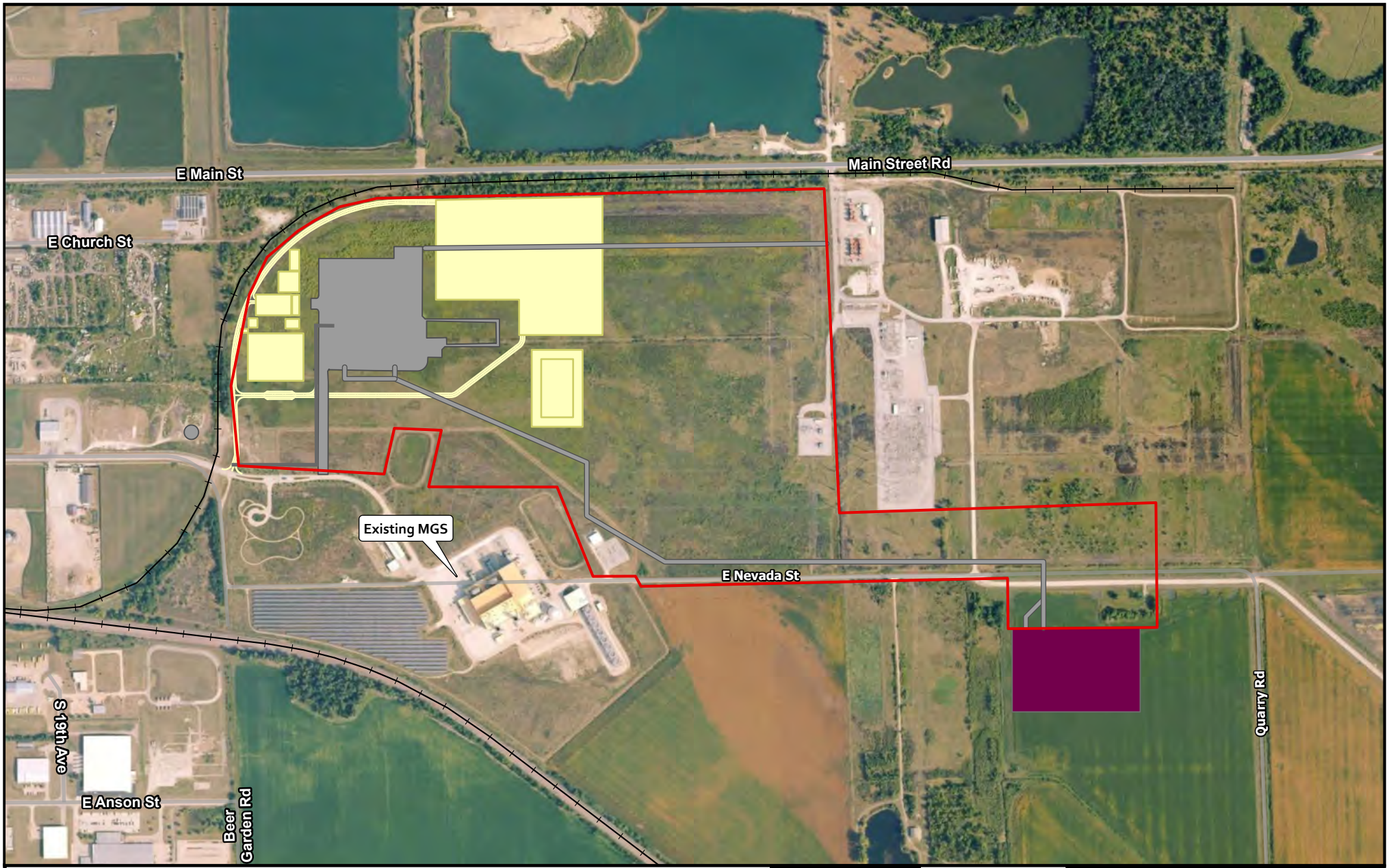


Figure 2-3
Project Temporary and Permanent Disturbances

Source: ESRI, Interstate Power and Light, and Burns & McDonnell



Figure 2-4
Bobcat Energy Center
General Arrangement

Source: ESRI, Interstate Power and Light, and Burns & McDonnell



NORTH

0 250' 500'
SCALE IN FEET

FOR BID - NOT FOR CONSTRUCTION

no.	date	by	ckd	description
0	03/23/26	AJM	RNO	INITIAL ISSUE

Figure 2-5
Bobcat Energy Center
Site Plan

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
Burns & McDonnell Engineering Co, Inc.

designed A. MUCKENTHALER | detailed B. COUFAL

ALLIANT ENERGY.
Bobcat Energy Center
MARSHALL COUNTY, IOWA

SITE PREPARATION
SITE PLAN

project 194268 | contract 5.8110
drawing **CS102** | rev. **0**
sheet of sheets
file 194268CS102.dwg

Attachment 3 – Parcel Legal Descriptions

EXHIBIT A

LOT 6 OF THE SUBDIVISION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER; THE NORTH ½ OF THE NORTHEAST QUARTER, BOTH SOUTH OF THE CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY PROPERTY; THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER; THE WEST 3/4THS OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER EXCEPT BEGINNING AT THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 31, TOWNSHIP 84 NORTH, RANGE 17 WEST OF THE 5TH P.M., THENCE NORTH 1311.8 FEET TO THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 31, THENCE 90 FEET EAST, THENCE 202 FEET SOUTH, THENCE 57 FEET WEST, THENCE 1109.8 FEET SOUTH, THENCE 33 FEET WEST TO POINT OF BEGINNING, AND EXCEPT COMMENCING AT THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 31, THENCE SOUTH 0° 03' 48" EAST ALONG THE WEST LINE OF SAID SOUTHEAST QUARTER OF THE NORTHWEST QUARTER 202 FEET; THENCE EAST 33.0 FEET TO BEGINNING, THENCE SOUTH 317.58 FEET; THENCE NORTHERLY ALONG A 1256.23 FEET RADIUS CURVE, CONCAVE WESTERLY 311.12 FEET; THENCE NORTH 8.82 FEET; THENCE NORTH 88° 47' 43" WEST 38.6 FEET TO POINT OF BEGINNING, ALL IN SECTION 31, TOWNSHIP 84 NORTH, RANGE 17 WEST OF THE 5TH P.M., MARSHALL COUNTY, IOWA, SUBJECT TO EASEMENTS OF RECORD.

AND

THE EAST ONE-FOURTH OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER EXCEPT THE SOUTH ONE HUNDRED TWENTY-FIVE FEET OF THE EAST SIXTY-SIX FEET THEREOF, AND EXCEPT A TRACT DESCRIBED AS BEGINNING AT THE SOUTHWEST CORNER OF THE EAST ONE-FOURTH OF THE SAID SOUTHWEST QUARTER OF THE NORTHEAST QUARTER, THENCE NORTH FOUR HUNDRED FEET, THENCE, SOUTH 54°37'41" EAST ONE HUNDRED SEVENTY-NINE FEET, THENCE SOUTH THREE HUNDRED FEET, THENCE, NORTH 88°34'40" WEST TO THE POINT OF BEGINNING, ALL LYING IN SECTION THIRTY-ONE, TOWNSHIP EIGHTY-FOUR NORTH, RANGE SEVENTEEN WEST OF THE FIFTH P.M., MARSHALL COUNTY, IOWA.

Attachment 4 – Traffic Study

INTERSTATE POWER AND LIGHT COMPANY

Traffic Impact Study

Bobcat Energy Center

Alliant Energy

Draft Study

April 27, 2026

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1.0 Introduction

1.1 Purpose and Study Objectives

Interstate Power and Light Company (IPL), an electric and gas utility subsidiary of Alliant Energy located in Iowa, is planning to construct a new 720-megawatt (MW) simple-cycle natural gas-fired electric generation facility, to be co-located with IPL's existing Marshalltown Generating Station (MGS) in Marshalltown, Iowa.

At the request of the City of Marshalltown, a Traffic Impact Study (TIS) was conducted for the Project to evaluate potential traffic effects associated primarily with construction activities and the temporary increase in on-site workforce. The purpose of the study was to assess existing traffic conditions, forecast construction-related traffic volumes, and identify potential impacts to the local roadway network during peak construction periods. The analysis focused on anticipated worker and construction vehicle trips and their influence on key intersections in the study area.

1.2 Project Description

The Project will assist IPL in transitioning its fleet to cleaner sources of generation while maintaining reliability and bringing economic benefits to the City of Marshalltown. The Project will be constructed in the City of Marshalltown, Iowa, adjacent to the existing Marshalltown Generating Station (MGS). Interstate Power & Light Company (IPL) owns approximately 278 acres in the City of Marshalltown, Iowa, and operates the MGS on a portion of that property. The Project will be constructed in an open field within this property, just north of the existing MGS.

The Project includes three (3) simple-cycle Siemens SGT6-5000F, F-class combustion turbines, housed inside a turbine building, and associated balance-of-plant (BOP) equipment. There will also be site civil work, foundations, a new switchyard, interconnection to the electrical grid via new transmission lines connected to an adjacent substation, a new natural gas lateral, and an onsite water supply pipeline. The Project is part of IPL's commitment to use a diverse portfolio of resources to provide safe, reliable, and affordable service to its customers. The installation of the Project is anticipated to be mobilized in the third quarter of 2026 and begin operation in the third quarter of 2029. The expected lifespan of the Project is 30 years or more.

The Project construction will take place on approximately 65 acres of the existing MGS property. Construction of the Project involves civil preparation of the site, installation of equipment foundations, and installation of the three (3) SCGT and related equipment, wiring, and conduit to support their function. An equipment building with an integral bridge crane will enclose the turbines, generators, and ancillary equipment. The building may include additional maintenance and storage space as well as minor administrative areas which will be determined as part of detailed design.

2.0 Existing Conditions

The existing traffic conditions within the study area were analyzed to establish a baseline for operational comparison. This analysis documents current traffic volumes and intersection performance throughout the study network. The existing conditions reflects pre-development operating conditions and provide a baseline to identify potential project-related traffic impacts and to assess the need for mitigation measures. **Figure 2-1** illustrates the site location and the study intersections included in the analysis.

2.1 Roadway Network

U.S. 30 is a four-lane divided highway that provides access to 18th Avenue via an interchange. In the vicinity of the U.S. 30 interchange, 18th Avenue is a four-lane divided facility with a posted speed limit of 55 mph. North of the interchange, 18th Avenue transitions to a four-lane undivided section with a posted speed limit of 35 mph near the project site. 18th Avenue is designated as a truck route by the City of Marshalltown.

Both U.S. 30 interchange ramps are stop-controlled at their intersections with 18th Avenue. The intersection of 18th Avenue and Nevada Street is a two-way stop-controlled intersection, with stop control provided on Nevada Street. The intersection of 18th Avenue and Main Street operates under all-way stop control.

2.2 Daily and Peak Hour Traffic Volumes

24-hour turning movement traffic counts were collected on Tuesday, March 24, 2026 at the following intersections. The raw traffic count data is provided in **Appendix A**.

- 18th Avenue & U.S. 30 Westbound Ramp
- 18th Avenue & U.S. 30 Eastbound Ramp
- 18th Avenue & Nevada Street
- 18th Avenue & Main Street

The AM peak hour was from 6:45 – 7:45 AM, while the PM peak hour was from 3:30 – 4:30 PM. The daily traffic volumes at each intersection are shown in **Table 2-1**.

Table 2-1: Daily Traffic Volumes

Intersection at 18th Avenue	North leg (veh/day)	South Leg (veh/day)	East Leg (veh/day)	West Leg (veh/day)
U.S 30 Eastbound Ramp	2,926	141	2,028	853
U.S 30 Westbound Ramp	5,909	2,971	2,192	876
Nevada Street	5,650	6,948	1,997	393
Main Street	2,206	5,408	3,174	2,684

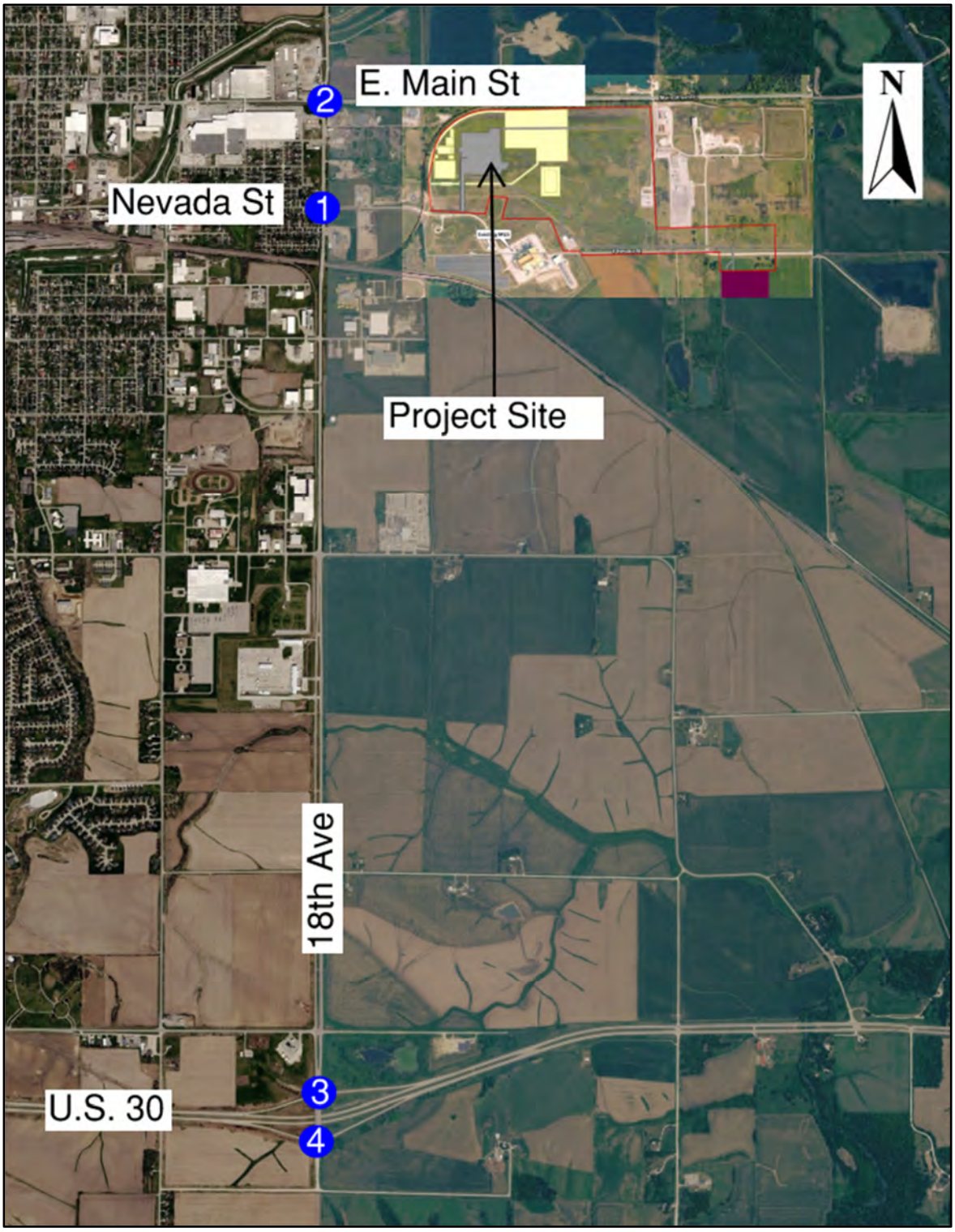


Figure 2-1: Project Site Location and Study Intersections

3.0 Trip Generation & Distribution

The trip generation is used to determine whether the Project would result in a measurable increase in traffic on the surrounding transportation network and whether additional mitigation is necessary. Trip generation is the process of estimating the number of vehicle trips that are expected to be generated by a development during a given time period.

Once construction begins, there will be an influx of vehicular and truck traffic bringing construction workers and materials to the site. The number of on-site construction personnel will vary depending on the overall stage and sequence of work. Construction work is planned for five (5) days per week and 10 hours per day. Site working days and hours will vary by craft/subcontractor, productivity, and conditions outside the control of the project (i.e. weather, equipment deliveries, resource availability).

The site will have one primary access point at the intersection of 18th Avenue & Nevada Street. All parking will be contained on-site. Several large deliveries are expected via rail (turbines, generators, and transformers). Rail deliveries during construction are anticipated to be offloaded from the Union Pacific line to a nearby site and transported to the Project site via East Nevada Street.

3.1 Estimated Construction Traffic Volumes

The installation of the Project is anticipated to be mobilized in the third quarter of 2026 and begin operation in the third quarter of 2029. Construction traffic was estimated during two main phases of work as part of this analysis. Based on workforce estimates and anticipated construction sequencing, two scenarios were analyzed to evaluate the construction impacts as described below.

- Construction Scenario #1 (July 2026 – December 2026)
  - Site preparation - anticipated haul trucks will fill and transport material at a volume of up to 100 loads per day. Trucks are anticipated to be distributed evenly throughout the day and generally do not coincide with the AM and PM peak hours.
  - 100 total personnel anticipated to be on site along with 5-15 deliveries per day.

- Construction Scenario #2 (March 2028)
  - 450 personnel on site daily during peak construction
  - 5-15 truck deliveries per day.

A 15 percent reduction in the total workforce was applied to account for ridesharing (carpooling) and normal absenteeism. For a conservative analysis, all employee arrivals and departures were assumed to occur during the existing peak-hour traffic period. The total number of trips during the AM and PM peak hour are shown in **Table 3-1** for each construction scenario.

Table 3-1: Construction Trip Generation Summary

Scenario	Estimated Daily Trucks	Estimated Workforce	Total AM Trips	Total PM trips
Construction Scenario #1	100 trucks	100 employees	95 trips (10 trucks + 85 employee)	95 trips (10 trucks + 85 employee)
Construction Scenario #2	5-15 trucks	450 employees	385 trips (2 trucks +383 employee)	385 trips (2 trucks +383 employee)

3.2 Permanent Operations Traffic

Upon completion of construction, the Project will transition to its permanent operational phase. The facility is anticipated to employ approximately four to ten full-time employees on site during normal operations and is expected to generate an estimated one to three delivery trips per day. Given the low level of employment and limited delivery activity, traffic associated with permanent operations is expected to be minimal and would constitute a negligible increase relative to existing daily traffic volumes on the surrounding roadway network. No operational traffic impacts are anticipated, and a detailed traffic analysis of permanent operations was not conducted for this scenario.

3.3 Trip Distribution

Truck deliveries for construction and operation are anticipated to be delivered to the site coming north on 18th Ave from U.S. Highway 30 and turning east on to East Nevada St to enter the site. Truck deliveries departing the site and anticipated to turn south on 18th Avenue and head to U.S. Highway 30.

Workforce travel to the project site is assumed to primarily occur via the U.S. Highway 30 interchange at 18th Avenue. The distribution of site-bound traffic was developed based on relative travel distances to the nearest population centers—Des Moines, Cedar Rapids, and Waterloo/Cedar Falls—supplemented by engineering judgment and existing traffic data. Based on this assessment, approximately 15 percent of workforce traffic is expected to approach the site from the north, while the remaining 85 percent is anticipated to approach from the south, consisting of approximately 45 percent to/from the west and 40 percent to/from the east.

4.0 Operations Analysis

Operational performance for the intersections was evaluated using Synchro 12 Software, which follows the procedures outlined in the Highway Capacity Manual, 7th Edition (HCM 7). Level of Service (LOS) is a performance measure used to describe the operational quality of an intersection based on control delay per vehicle. The HCM 7 defines distinct LOS thresholds, as shown in **Table 4-1**, based on the type of traffic control to reflect how drivers experience delay as well as the geometric and operational characteristics unique to each intersection type. The results of the analysis are shown in **Appendix B**.

Table 4-1: Level of Service Criteria for Unsignalized Intersections

Level of Service	Two-Way Stop Control and All-way Stop Control (sec/veh)
LOS A	≤ 10
LOS B	>10- 15
LOS C	>15 -25
LOS D	>25-35
LOS E	>35-50
LOS F	>50

4.1 Summary of Operations

Table 4-1, Table 4-2, and Table 4-3 summarizes the operations of the between the different scenarios with key findings described below:

- Under the Existing Conditions, all study intersections operate at LOS C or better during the AM and PM peak periods.
- Under Construction Scenario #1, the westbound approach at the intersection of 18th Avenue and Nevada Street operates at LOS F during the PM peak hour, primarily attributable to elevated outbound traffic volumes associated with construction worker departure. In addition, the eastbound approach of the U.S. 30 eastbound off-ramp operates at LOS D during the PM peak hour, with delays resulting from increased southbound turning movements.
- Under Construction Scenario #2, both the westbound approach at 18th Avenue and Nevada Street and the eastbound approach of the U.S. 30 eastbound off-ramp operate at LOS F during the PM peak hour.
- All remaining approaches at the study intersections operate at LOS C or better during the PM peak hour under both construction scenarios.

Table 4-2: Existing Conditions Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	A (B)	B (C)	-	-
	Delay (sec/veh)	-	9.9 (14.8)	13.9 (18.3)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.5 (11.5)	8.7 (10.8)	10.1 (11.3)	9.5 (12.2)	9.1 (10.9)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		10.1 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	B (C)	-	-	-
	Delay	-	12.7 (23.6)	-	-	-

Table 4-3: Construction Scenario #1 Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	B (B)	C (F)	-	-
	Delay (sec/veh)	-	10.1 (14.9)	15.2 (71.5)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.6 (11.7)	8.8 (10.9)	10.2 (11.4)	9.5 (12.5)	9.2 (11.0)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		10.7 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	B (D)	-	-	-
	Delay	-	13.6 (29.2)	-	-	-

Table 4-4: Construction Scenario #2 Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	B (C)	C (F)	-	-
	Delay (sec/veh)	-	10.4 (15.1)	20.7 (>100)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.9 (12.3)	9.0 (11.1)	10.5 (11.7)	9.8 (13.4)	9.6 (11.2)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		13.6 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	C (F)	-	-	-
	Delay	-	18.3 (69.5)	-	-	-

5.0 Summary of Findings and Mitigation

The capacity analysis identified two locations that would experience LOS degradation to LOS D or worse due to the additional construction traffic.

5.1 18th Avenue & Nevada Street Mitigation

The intersection of 18th Avenue and Nevada Street is the primary access location to the site. During the departure of construction workers, the westbound approach operates at LOS F during the PM peak period during Construction Scenario #1 and Construction Scenario #2.

A capacity analysis was conducted to determine the intersection performance with a temporary traffic signal impacts during the PM peak hour. The results are summarized in **Table 5-1.** A temporary traffic signal would allow all approaches to operate at LOS B or better during construction and would improve the westbound approach from LOS F to LOS A.

Table 5-1: Construction Scenario – Signalized Intersection Operations

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg (PM)			
			EB	WB	NB	SB
Construction Scenario #1						
Nevada Street	LOS	(A)	(A)	(A)	(A)	(A)
	Delay (sec/veh)	(6.5)	(7.9)	(7.5)	(5.7)	(6.1)
Construction Scenario #2						
Nevada Street	LOS	(A)	(A)	(A)	(B)	(B)
	Delay (sec/veh)	(9.7)	(5.9)	(8.0)	(10.7)	(11.6)

Values in table shown for PM peak periods only

5.2 US-30 Eastbound Ramp Mitigation

The eastbound approach on the US-30 Eastbound Ramp operates at LOS D during the PM peak hour in Construction Scenario #1, and LOS F during the PM peak hour in Construction Scenario #2. The increased construction traffic on 18th Avenue causes increased delay on the eastbound ramp because traffic on the ramp has less of an opportunity to select a gap in the major street traffic.

The 95th percentile queue length on the eastbound ramp was compared in each scenario and is shown in **Table 5-2**. There is a small increase in queue lengths during the construction scenario when compared to the existing conditions. The existing US-30 eastbound ramp is sufficiently long enough to store these vehicles without impacting traffic flow on US-30.

Table 5-2: Summary of PM Peak Hour Queuing at U.S. 30 Eastbound Ramp

Scenario	95th Percentile Queue Length (feet)
Existing Conditions	25 feet
Construction Scenario #1	32 feet
Construction Scenario #2	66 feet

Given the relatively low traffic volume, the temporary nature of peak construction activity, and the ability of the existing roadway geometry to accommodate the anticipated queue lengths, no specific mitigation measures are identified at this time. Traffic operations should be monitored throughout the construction period, and additional mitigation measures should be implemented if observed field conditions exceed projected queue lengths or result in unanticipated operational or safety issues.

As an optional measure to further minimize PM peak-hour delays on the eastbound U.S. 30 ramp during construction, construction-related trip departures may be staggered or shifted outside of the PM peak period in order to reduce concurrent traffic demand on 18th Avenue.

Appendix A –Traffic Count Data

18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	2	8	0	0	**10**	1	3	0	0	**4**	1	0	1	0	**2**	1	0	0	0	**1**	**17**
12:15AM	1	3	1	0	**5**	0	2	0	0	**2**	1	0	1	0	**2**	0	0	0	0	**0**	**9**
12:30AM	1	7	0	0	**8**	1	5	0	0	**6**	0	0	0	0	**0**	0	0	0	0	**0**	**14**
12:45AM	0	6	1	0	**7**	1	8	0	0	**9**	0	0	3	0	**3**	0	1	0	0	**1**	**20**
Hourly Total	4	24	2	0	**30**	3	18	0	0	**21**	2	0	5	0	**7**	1	1	0	0	**2**	**60**
1:00AM	0	5	0	0	**5**	2	16	0	0	**18**	0	0	4	0	**4**	2	0	0	0	**2**	**29**
1:15AM	0	4	0	0	**4**	0	2	0	0	**2**	0	0	10	0	**10**	0	0	1	0	**1**	**17**
1:30AM	2	8	0	0	**10**	0	10	0	0	**10**	1	0	3	0	**4**	0	0	0	0	**0**	**24**
1:45AM	2	3	0	0	**5**	0	10	0	0	**10**	1	0	6	0	**7**	1	0	1	0	**2**	**24**
Hourly Total	4	20	0	0	**24**	2	38	0	0	**40**	2	0	23	0	**25**	3	0	2	0	**5**	**94**
2:00AM	0	3	0	0	**3**	3	4	0	0	**7**	0	0	0	0	**0**	0	1	0	0	**1**	**11**
2:15AM	0	6	0	0	**6**	1	4	0	0	**5**	0	0	3	0	**3**	1	0	0	0	**1**	**15**
2:30AM	0	4	0	0	**4**	1	1	0	0	**2**	0	0	1	0	**1**	0	0	1	0	**1**	**8**
2:45AM	1	4	0	0	**5**	1	4	0	0	**5**	0	0	0	0	**0**	0	0	0	0	**0**	**10**
Hourly Total	1	17	0	0	**18**	6	13	0	0	**19**	0	0	4	0	**4**	1	1	1	0	**3**	**44**
3:00AM	0	2	0	0	**2**	1	9	0	0	**10**	0	0	0	0	**0**	1	0	0	0	**1**	**13**
3:15AM	1	2	0	0	**3**	0	11	0	0	**11**	0	0	4	0	**4**	1	0	0	0	**1**	**19**
3:30AM	1	3	0	0	**4**	1	3	0	0	**4**	0	0	0	0	**0**	0	0	1	0	**1**	**9**
3:45AM	1	2	0	0	**3**	2	2	0	0	**4**	0	0	1	0	**1**	0	0	0	0	**0**	**8**
Hourly Total	3	9	0	0	**12**	4	25	0	0	**29**	0	0	5	0	**5**	2	0	1	0	**3**	**49**
4:00AM	0	2	0	0	**2**	1	6	0	0	**7**	0	2	1	0	**3**	1	1	1	0	**3**	**15**
4:15AM	0	8	0	0	**8**	1	5	0	0	**6**	0	0	3	0	**3**	1	1	1	0	**3**	**20**
4:30AM	1	12	3	0	**16**	1	4	0	0	**5**	0	1	4	0	**5**	1	0	2	0	**3**	**29**
4:45AM	1	15	0	0	**16**	1	7	0	0	**8**	0	0	6	0	**6**	0	0	0	0	**0**	**30**
Hourly Total	2	37	3	0	**42**	4	22	0	0	**26**	0	3	14	0	**17**	3	2	4	0	**9**	**94**
5:00AM	0	15	0	0	**15**	1	9	0	0	**10**	0	1	2	0	**3**	0	0	2	0	**2**	**30**
5:15AM	4	25	1	0	**30**	0	18	1	0	**19**	1	0	6	0	**7**	1	0	0	0	**1**	**57**
5:30AM	4	24	1	0	**29**	0	17	0	0	**17**	1	0	11	0	**12**	0	0	1	0	**1**	**59**
5:45AM	6	43	4	0	**53**	1	33	0	0	**34**	2	2	13	0	**17**	0	0	1	0	**1**	**105**
Hourly Total	14	107	6	0	**127**	2	77	1	0	**80**	4	3	32	0	**39**	1	0	4	0	**5**	**251**
6:00AM	6	30	0	0	**36**	1	27	0	0	**28**	0	0	4	0	**4**	0	0	0	0	**0**	**68**
6:15AM	14	25	0	0	**39**	2	18	2	0	**22**	0	0	5	0	**5**	0	0	0	0	**0**	**66**
6:30AM	25	39	0	0	**64**	1	29	1	0	**31**	1	1	9	0	**11**	0	0	1	0	**1**	**107**
6:45AM	37	87	2	0	**126**	3	52	2	0	**57**	2	1	26	0	**29**	0	0	1	0	**1**	**213**
Hourly Total	82	181	2	0	**265**	7	126	5	0	**138**	3	2	44	0	**49**	0	0	2	0	**2**	**454**
7:00AM	10	31	1	0	**42**	0	56	2	0	**58**	2	0	16	0	**18**	2	1	2	0	**5**	**123**
7:15AM	20	30	4	0	**54**	2	64	5	0	**71**	0	0	13	0	**13**	0	0	0	0	**0**	**138**
7:30AM	17	35	3	0	**55**	2	58	4	0	**64**	1	0	16	0	**17**	3	0	0	0	**3**	**139**
7:45AM	22	42	1	0	**65**	2	57	4	0	**63**	5	0	5	0	**10**	3	0	1	0	**4**	**142**
Hourly Total	69	138	9	0	**216**	6	235	15	0	**256**	8	0	50	0	**58**	8	1	3	0	**12**	**542**
8:00AM	19	42	1	0	**62**	1	44	1	0	**46**	1	0	27	0	**28**	0	1	0	0	**1**	**137**
8:15AM	13	25	0	0	**38**	1	40	2	0	**43**	2	1	12	0	**15**	1	0	1	0	**2**	**98**
8:30AM	10	31	2	0	**43**	2	41	0	0	**43**	3	0	12	0	**15**	1	1	1	0	**3**	**104**
8:45AM	6	31	0	0	**37**	3	38	4	0	**45**	4	0	4	0	**8**	1	0	1	0	**2**	**92**
Hourly Total	48	129	3	0	**180**	7	163	7	0	**177**	10	1	55	0	**66**	3	2	3	0	**8**	**431**
9:00AM	4	24	1	0	**29**	1	30	2	0	**33**	2	0	10	0	**12**	0	0	0	0	**0**	**74**
9:15AM	5	25	2	0	**32**	0	29	4	0	**33**	0	0	6	0	**6**	1	0	1	0	**2**	**73**
9:30AM	8	39	0	0	**47**	2	35	2	0	**39**	2	2	6	0	**10**	1	0	2	0	**3**	**99**
9:45AM	8	32	0	0	**40**	1	46	6	0	**53**	2	0	7	0	**9**	0	1	2	0	**3**	**105**
Hourly Total	25	120	3	0	**148**	4	140	14	0	**158**	6	2	29	0	**37**	2	1	5	0	**8**	**351**
10:00AM	5	21	2	0	**28**	3	40	4	0	**47**	3	1	4	0	**8**	1	0	0	0	**1**	**84**
10:15AM	6	23	0	0	**29**	1	39	4	0	**44**	4	0	8	0	**12**	3	0	0	0	**3**	**88**
10:30AM	5	39	1	0	**45**	1	42	2	0	**45**	1	0	7	0	**8**	1	0	2	0	**3**	**101**
10:45AM	6	29	0	0	**35**	0	32	3	0	**35**	5	0	5	0	**10**	1	0	0	0	**1**	**81**

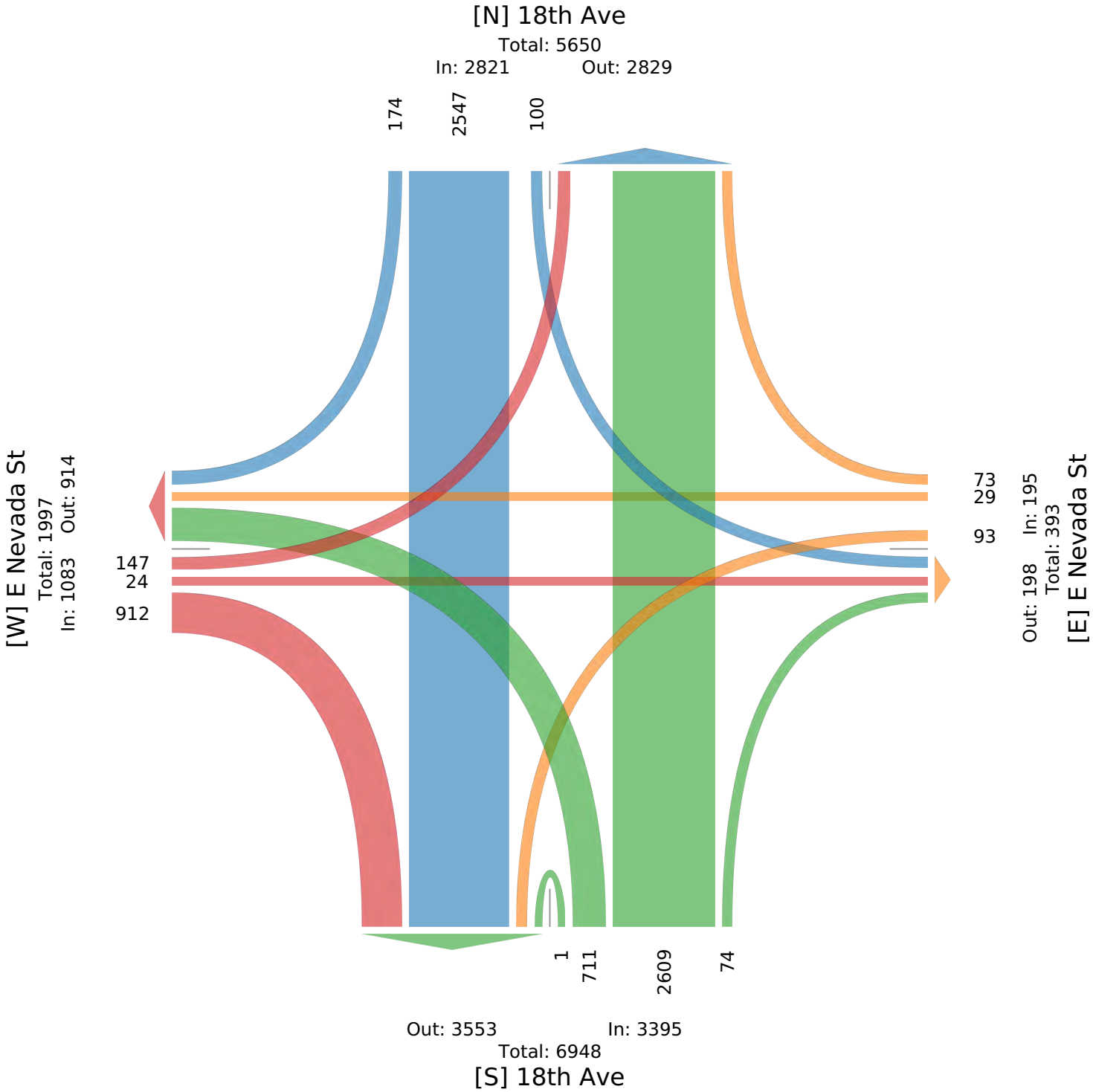
Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	22	112	3	0	**137**	5	153	13	0	**171**	13	1	24	0	**38**	6	0	2	0	**8**	**354**
11:00AM	13	33	1	0	**47**	2	36	1	0	**39**	3	0	8	0	**11**	0	0	0	0	**0**	**97**
11:15AM	4	37	2	0	**43**	1	27	0	0	**28**	2	2	5	0	**9**	1	0	1	0	**2**	**82**
11:30AM	11	31	2	0	**44**	0	34	4	0	**38**	0	0	7	0	**7**	1	0	1	0	**2**	**91**
11:45AM	11	34	2	0	**47**	1	49	3	0	**53**	0	0	21	0	**21**	2	1	1	0	**4**	**125**
Hourly Total	39	135	7	0	**181**	4	146	8	0	**158**	5	2	41	0	**48**	4	1	3	0	**8**	**395**
12:00PM	10	28	2	0	**40**	0	37	2	0	**39**	2	0	22	0	**24**	6	0	1	0	**7**	**110**
12:15PM	6	43	0	0	**49**	1	38	2	0	**41**	2	0	5	0	**7**	4	0	1	0	**5**	**102**
12:30PM	6	35	2	0	**43**	0	32	1	0	**33**	0	1	7	0	**8**	1	0	1	0	**2**	**86**
12:45PM	9	30	1	0	**40**	0	35	3	0	**38**	3	0	10	0	**13**	2	0	0	0	**2**	**93**
Hourly Total	31	136	5	0	**172**	1	142	8	0	**151**	7	1	44	0	**52**	13	0	3	0	**16**	**391**
1:00PM	9	46	3	0	**58**	0	19	4	0	**23**	1	0	10	0	**11**	0	0	2	0	**2**	**94**
1:15PM	5	32	1	0	**38**	1	25	3	0	**29**	3	0	12	0	**15**	1	0	1	0	**2**	**84**
1:30PM	6	28	0	0	**34**	0	41	2	0	**43**	2	0	14	0	**16**	3	1	2	0	**6**	**99**
1:45PM	9	34	0	0	**43**	1	35	0	0	**36**	5	0	10	0	**15**	0	1	0	0	**1**	**95**
Hourly Total	29	140	4	0	**173**	2	120	9	0	**131**	11	0	46	0	**57**	4	2	5	0	**11**	**372**
2:00PM	8	26	0	1	**35**	2	20	4	0	**26**	4	0	7	0	**11**	2	1	3	0	**6**	**78**
2:15PM	12	48	0	0	**60**	2	32	1	0	**35**	1	0	6	0	**7**	0	0	0	0	**0**	**102**
2:30PM	13	57	1	0	**71**	0	24	3	0	**27**	3	0	9	0	**12**	6	0	2	0	**8**	**118**
2:45PM	10	58	3	0	**71**	3	50	2	0	**55**	3	1	10	0	**14**	1	2	1	0	**4**	**144**
Hourly Total	43	189	4	1	**237**	7	126	10	0	**143**	11	1	32	0	**44**	9	3	6	0	**18**	**442**
3:00PM	11	69	2	0	**82**	1	42	3	0	**46**	1	2	22	0	**25**	4	1	2	0	**7**	**160**
3:15PM	15	67	1	0	**83**	1	57	7	0	**65**	3	0	31	0	**34**	2	0	2	0	**4**	**186**
3:30PM	17	70	0	0	**87**	0	174	10	0	**184**	2	0	68	0	**70**	2	0	1	0	**3**	**344**
3:45PM	19	70	2	0	**91**	1	60	5	0	**66**	3	3	30	0	**36**	1	1	0	0	**2**	**195**
Hourly Total	62	276	5	0	**343**	3	333	25	0	**361**	9	5	151	0	**165**	9	2	5	0	**16**	**885**
4:00PM	15	73	1	0	**89**	1	58	3	0	**62**	6	0	13	0	**19**	1	3	5	0	**9**	**179**
4:15PM	19	49	1	0	**69**	2	55	8	0	**65**	4	0	21	0	**25**	0	0	1	0	**1**	**160**
4:30PM	8	47	2	0	**57**	3	46	2	0	**51**	6	0	18	0	**24**	4	0	1	0	**5**	**137**
4:45PM	19	46	1	0	**66**	2	63	5	0	**70**	7	0	19	0	**26**	0	0	2	0	**2**	**164**
Hourly Total	61	215	5	0	**281**	8	222	18	0	**248**	23	0	71	0	**94**	5	3	9	0	**17**	**640**
5:00PM	9	60	1	0	**70**	1	40	1	0	**42**	1	0	34	0	**35**	1	2	1	0	**4**	**151**
5:15PM	13	54	0	0	**67**	1	38	2	0	**41**	2	0	32	0	**34**	1	0	0	0	**1**	**143**
5:30PM	17	33	1	0	**51**	0	30	6	0	**36**	5	1	11	0	**17**	0	0	1	0	**1**	**105**
5:45PM	20	42	1	0	**63**	1	42	1	0	**44**	4	0	14	0	**18**	1	0	0	0	**1**	**126**
Hourly Total	59	189	3	0	**251**	3	150	10	0	**163**	12	1	91	0	**104**	3	2	2	0	**7**	**525**
6:00PM	9	29	1	0	**39**	0	22	4	0	**26**	4	1	11	0	**16**	1	1	1	0	**3**	**84**
6:15PM	8	28	0	0	**36**	1	26	2	0	**29**	2	0	5	0	**7**	2	1	1	0	**4**	**76**
6:30PM	5	25	0	0	**30**	0	16	1	0	**17**	1	0	2	0	**3**	1	0	0	0	**1**	**51**
6:45PM	5	33	1	0	**39**	1	20	4	0	**25**	2	0	3	0	**5**	1	0	0	0	**1**	**70**
Hourly Total	27	115	2	0	**144**	2	84	11	0	**97**	9	1	21	0	**31**	5	2	2	0	**9**	**281**
7:00PM	12	24	3	0	**39**	2	14	4	0	**20**	1	0	12	0	**13**	2	0	1	0	**3**	**75**
7:15PM	6	22	1	0	**29**	1	17	5	0	**23**	2	0	8	0	**10**	0	2	0	0	**2**	**64**
7:30PM	5	22	1	0	**28**	2	13	0	0	**15**	0	0	8	0	**8**	1	1	0	0	**2**	**53**
7:45PM	6	23	0	0	**29**	0	14	1	0	**15**	1	0	12	0	**13**	1	0	2	0	**3**	**60**
Hourly Total	29	91	5	0	**125**	5	58	10	0	**73**	4	0	40	0	**44**	4	3	3	0	**10**	**252**
8:00PM	5	12	0	0	**17**	1	10	2	0	**13**	1	0	1	0	**2**	0	0	0	0	**0**	**32**
8:15PM	3	19	0	0	**22**	2	12	1	0	**15**	0	1	4	0	**5**	0	0	2	0	**2**	**44**
8:30PM	7	14	0	0	**21**	2	12	0	0	**14**	0	0	9	0	**9**	0	1	1	0	**2**	**46**
8:45PM	5	29	0	0	**34**	2	11	2	0	**15**	0	0	8	0	**8**	0	0	0	0	**0**	**57**
Hourly Total	20	74	0	0	**94**	7	45	5	0	**57**	1	1	22	0	**24**	0	1	3	0	**4**	**179**
9:00PM	6	18	0	0	**24**	0	14	2	0	**16**	0	0	7	0	**7**	0	0	1	0	**1**	**48**
9:15PM	5	20	1	0	**26**	0	10	0	0	**10**	1	0	9	0	**10**	1	0	0	0	**1**	**47**
9:30PM	1	8	0	0	**9**	1	10	2	0	**13**	0	0	5	0	**5**	0	0	0	0	**0**	**27**
9:45PM	8	14	0	0	**22**	1	10	1	0	**12**	1	0	7	0	**8**	0	0	0	0	**0**	**42**
Hourly Total	20	60	1	0	**81**	2	44	5	0	**51**	2	0	28	0	**30**	1	0	1	0	**2**	**164**
10:00PM	1	13	0	0	**14**	1	12	0	0	**13**	0	0	3	0	**3**	2	0	0	0	**2**	**32**
10:15PM	3	11	0	0	**14**	1	12	0	0	**13**	2	0	3	0	**5**	0	0	1	0	**1**	**33**
10:30PM	0	11	1	0	**12**	0	5	0	0	**5**	2	0	2	0	**4**	1	0	0	0	**1**	**22**
10:45PM	6	15	1	0	**22**	2	7	0	0	**9**	0	0	5	0	**5**	0	0	1	0	**1**	**37**

Leg Direction	18th Ave Northbound					18th Ave Southbound					E Nevada St Eastbound					E Nevada St Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	10	50	2	0	**62**	4	36	0	0	**40**	4	0	13	0	**17**	3	0	2	0	**5**	**124**
11:00PM	3	15	0	0	**18**	0	7	0	0	**7**	0	0	5	0	**5**	1	2	1	0	**4**	**34**
11:15PM	3	10	0	0	**13**	2	11	0	0	**13**	0	0	7	0	**7**	0	0	1	0	**1**	**34**
11:30PM	1	17	0	0	**18**	0	6	0	0	**6**	0	0	9	0	**9**	2	0	0	0	**2**	**35**
11:45PM	0	3	0	0	**3**	0	7	0	0	**7**	1	0	6	0	**7**	0	0	0	0	**0**	**17**
Hourly Total	7	45	0	0	**52**	2	31	0	0	**33**	1	0	27	0	**28**	3	2	2	0	**7**	**120**
Total	711	2609	74	1	**3395**	100	2547	174	0	**2821**	147	24	912	0	**1083**	93	29	73	0	**195**	**7494**
% Approach	20.9%	76.8%	2.2%	0%	**-**	3.5%	90.3%	6.2%	0%	**-**	13.6%	2.2%	84.2%	0%	**-**	47.7%	14.9%	37.4%	0%	**-**	-
% Total	9.5%	34.8%	1.0%	0%	**45.3%**	1.3%	34.0%	2.3%	0%	**37.6%**	2.0%	0.3%	12.2%	0%	**14.5%**	1.2%	0.4%	1.0%	0%	**2.6%**	-
Lights	695	2214	51	1	**2961**	32	2172	168	0	**2372**	141	24	886	0	**1051**	43	26	30	0	**99**	6483
% Lights	97.7%	84.9%	68.9%	100%	**87.2%**	32.0%	85.3%	96.6%	0%	**84.1%**	95.9%	100%	97.1%	0%	**97.0%**	46.2%	89.7%	41.1%	0%	**50.8%**	86.5%
Articulated Trucks	2	246	11	0	**259**	63	236	0	0	**299**	0	0	1	0	**1**	33	0	39	0	**72**	631
% Articulated Trucks	0.3%	9.4%	14.9%	0%	**7.6%**	63.0%	9.3%	0%	0%	**10.6%**	0%	0%	0.1%	0%	**0.1%**	35.5%	0%	53.4%	0%	**36.9%**	8.4%
Buses and Single-Unit Trucks	14	149	12	0	**175**	5	139	6	0	**150**	6	0	25	0	**31**	17	3	4	0	**24**	380
% Buses and Single-Unit Trucks	2.0%	5.7%	16.2%	0%	**5.2%**	5.0%	5.5%	3.4%	0%	**5.3%**	4.1%	0%	2.7%	0%	**2.9%**	18.3%	10.3%	5.5%	0%	**12.3%**	5.1%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

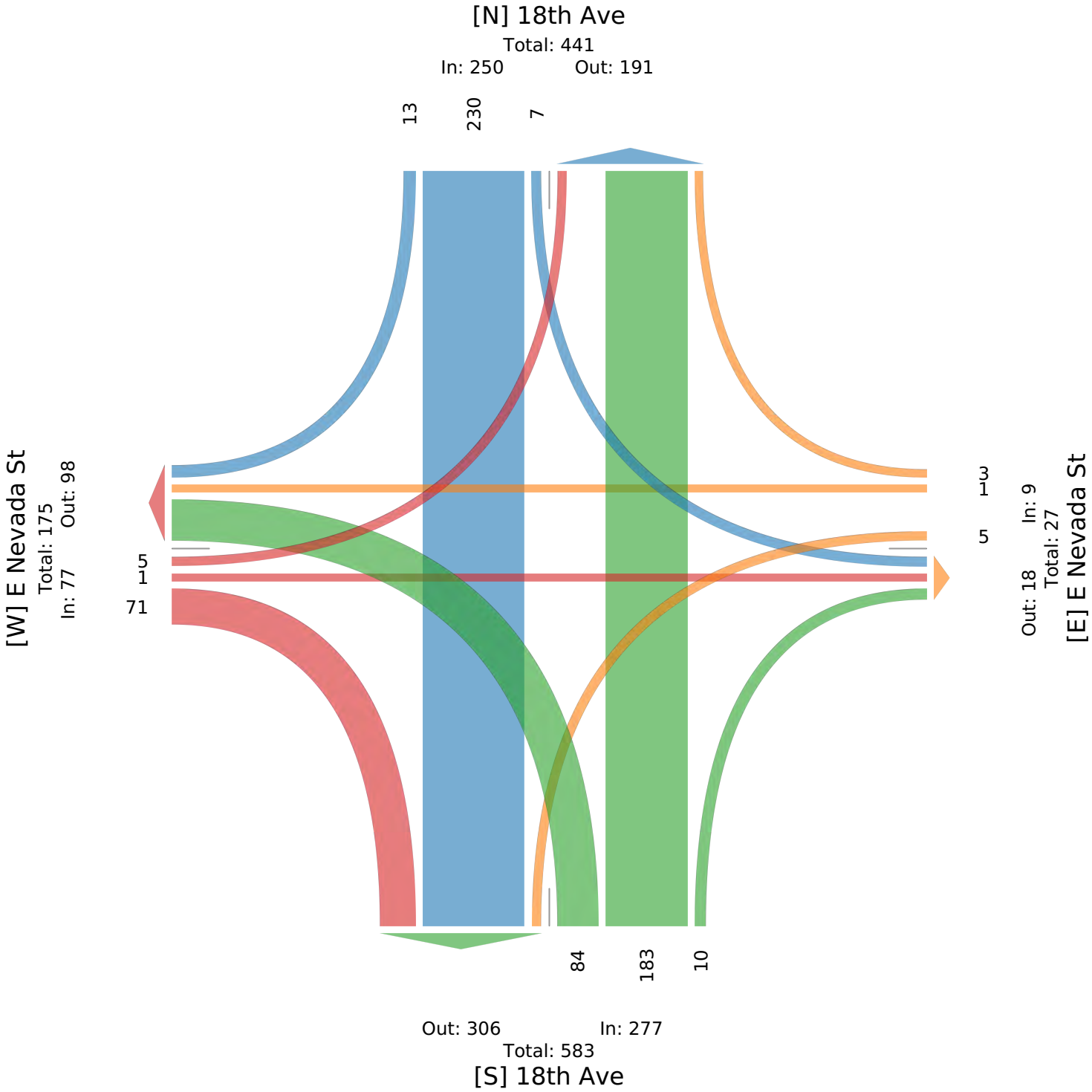
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	37	87	2	0	**126**	3	52	2	0	**57**	2	1	26	0	**29**	0	0	1	0	**1**	**213**
7:00AM	10	31	1	0	**42**	0	56	2	0	**58**	2	0	16	0	**18**	2	1	2	0	**5**	**123**
7:15AM	20	30	4	0	**54**	2	64	5	0	**71**	0	0	13	0	**13**	0	0	0	0	**0**	**138**
7:30AM	17	35	3	0	**55**	2	58	4	0	**64**	1	0	16	0	**17**	3	0	0	0	**3**	**139**
Total	84	183	10	0	**277**	7	230	13	0	**250**	5	1	71	0	**77**	5	1	3	0	**9**	**613**
% Approach	30.3%	66.1%	3.6%	0%	**-**	2.8%	92.0%	5.2%	0%	**-**	6.5%	1.3%	92.2%	0%	**-**	55.6%	11.1%	33.3%	0%	**-**	-
% Total	13.7%	29.9%	1.6%	0%	**45.2%**	1.1%	37.5%	2.1%	0%	**40.8%**	0.8%	0.2%	11.6%	0%	**12.6%**	0.8%	0.2%	0.5%	0%	**1.5%**	-
PHF	0.568	0.526	0.625	-	**0.550**	0.583	0.898	0.650	-	**0.880**	0.625	0.250	0.683	-	**0.664**	0.417	0.250	0.375	-	**0.450**	0.719
Lights	84	154	8	0	**246**	6	195	11	0	**212**	3	1	69	0	**73**	4	0	2	0	**6**	537
% Lights	100%	84.2%	80.0%	0%	**88.8%**	85.7%	84.8%	84.6%	0%	**84.8%**	60.0%	100%	97.2%	0%	**94.8%**	80.0%	0%	66.7%	0%	**66.7%**	87.6%
Articulated Trucks	0	15	0	0	**15**	1	16	0	0	**17**	0	0	0	0	**0**	1	0	1	0	**2**	34
% Articulated Trucks	0%	8.2%	0%	0%	**5.4%**	14.3%	7.0%	0%	0%	**6.8%**	0%	0%	0%	0%	**0%**	20.0%	0%	33.3%	0%	**22.2%**	5.5%
Buses and Single-Unit Trucks	0	14	2	0	**16**	0	19	2	0	**21**	2	0	2	0	**4**	0	1	0	0	**1**	42
% Buses and Single-Unit Trucks	0%	7.7%	20.0%	0%	**5.8%**	0%	8.3%	15.4%	0%	**8.4%**	40.0%	0%	2.8%	0%	**5.2%**	0%	100%	0%	0%	**11.1%**	6.9%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

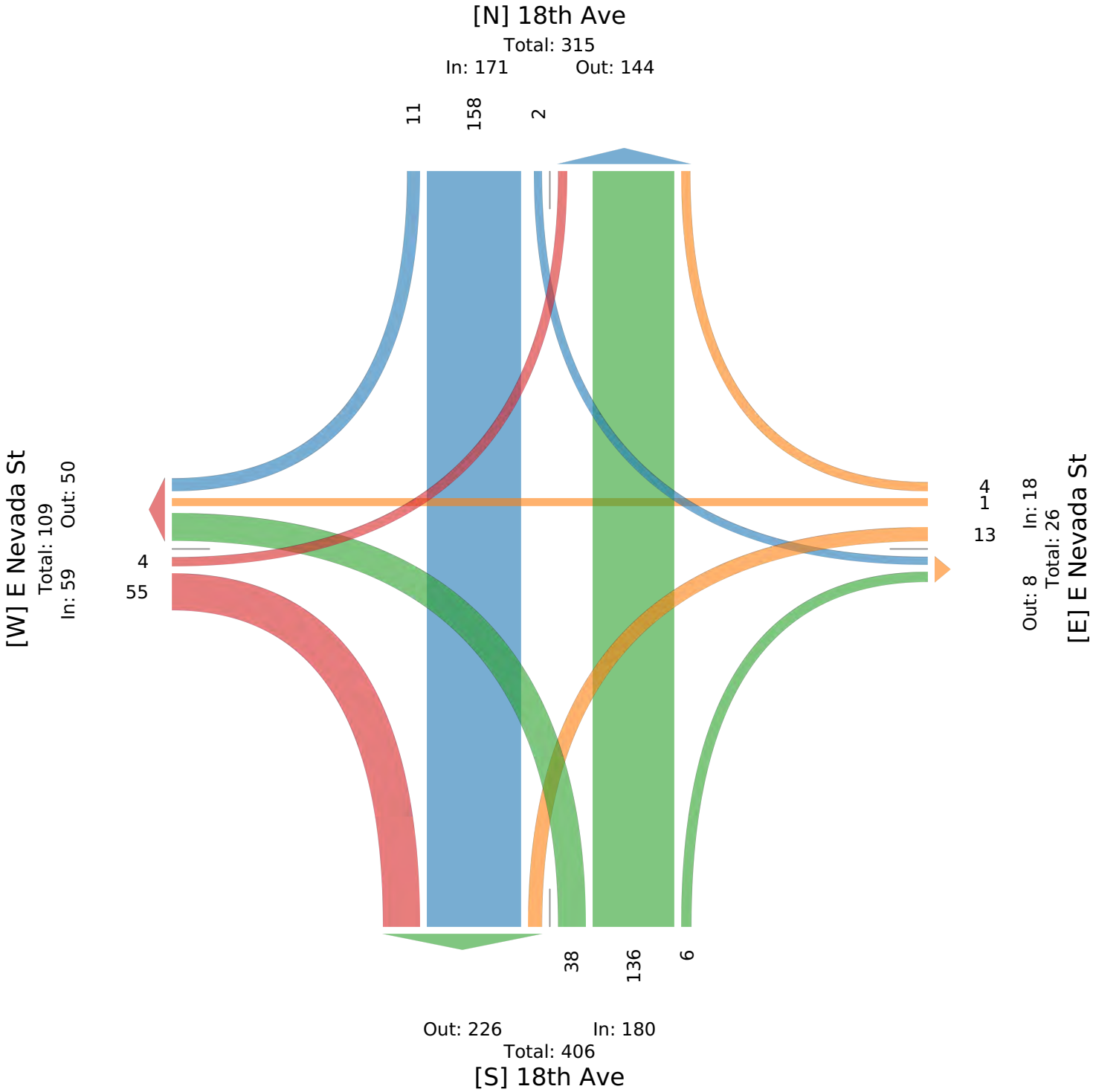
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:30AM	11	31	2	0	**44**	0	34	4	0	**38**	0	0	7	0	**7**	1	0	1	0	**2**	**91**
11:45AM	11	34	2	0	**47**	1	49	3	0	**53**	0	0	21	0	**21**	2	1	1	0	**4**	**125**
12:00PM	10	28	2	0	**40**	0	37	2	0	**39**	2	0	22	0	**24**	6	0	1	0	**7**	**110**
12:15PM	6	43	0	0	**49**	1	38	2	0	**41**	2	0	5	0	**7**	4	0	1	0	**5**	**102**
Total	38	136	6	0	**180**	2	158	11	0	**171**	4	0	55	0	**59**	13	1	4	0	**18**	**428**
% Approach	21.1%	75.6%	3.3%	0%	**-**	1.2%	92.4%	6.4%	0%	**-**	6.8%	0%	93.2%	0%	**-**	72.2%	5.6%	22.2%	0%	**-**	-
% Total	8.9%	31.8%	1.4%	0%	**42.1%**	0.5%	36.9%	2.6%	0%	**40.0%**	0.9%	0%	12.9%	0%	**13.8%**	3.0%	0.2%	0.9%	0%	**4.2%**	-
PHF	0.864	0.791	0.750	-	**0.918**	0.500	0.806	0.688	-	**0.807**	0.500	-	0.625	-	**0.615**	0.542	0.250	1.000	-	**0.643**	0.856
Lights	33	100	3	0	**136**	0	127	11	0	**138**	4	0	53	0	**57**	4	1	0	0	**5**	336
% Lights	86.8%	73.5%	50.0%	0%	**75.6%**	0%	80.4%	100%	0%	**80.7%**	100%	0%	96.4%	0%	**96.6%**	30.8%	100%	0%	0%	**27.8%**	78.5%
Articulated Trucks	0	18	2	0	**20**	2	18	0	0	**20**	0	0	0	0	**0**	3	0	4	0	**7**	47
% Articulated Trucks	0%	13.2%	33.3%	0%	**11.1%**	100%	11.4%	0%	0%	**11.7%**	0%	0%	0%	0%	**0%**	23.1%	0%	100%	0%	**38.9%**	11.0%
Buses and Single-Unit Trucks	5	18	1	0	**24**	0	13	0	0	**13**	0	0	2	0	**2**	6	0	0	0	**6**	45
% Buses and Single-Unit Trucks	13.2%	13.2%	16.7%	0%	**13.3%**	0%	8.2%	0%	0%	**7.6%**	0%	0%	3.6%	0%	**3.4%**	46.2%	0%	0%	0%	**33.3%**	10.5%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

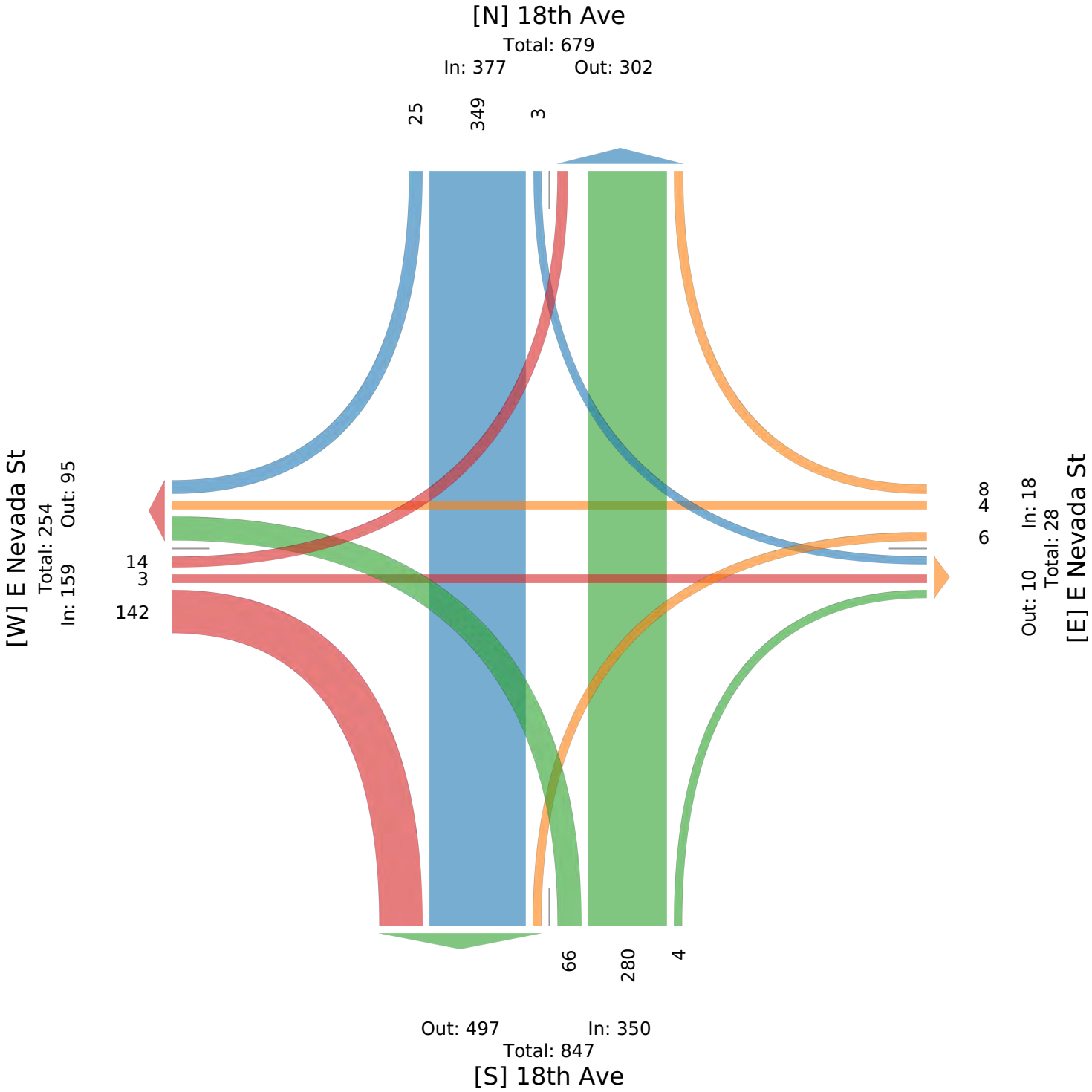
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 3:15PM	15	67	1	0	**83**	1	57	7	0	**65**	3	0	31	0	**34**	2	0	2	0	**4**	**186**
3:30PM	17	70	0	0	**87**	0	174	10	0	**184**	2	0	68	0	**70**	2	0	1	0	**3**	**344**
3:45PM	19	70	2	0	**91**	1	60	5	0	**66**	3	3	30	0	**36**	1	1	0	0	**2**	**195**
4:00PM	15	73	1	0	**89**	1	58	3	0	**62**	6	0	13	0	**19**	1	3	5	0	**9**	**179**
Total	66	280	4	0	**350**	3	349	25	0	**377**	14	3	142	0	**159**	6	4	8	0	**18**	**904**
% Approach	18.9%	80.0%	1.1%	0%	**-**	0.8%	92.6%	6.6%	0%	**-**	8.8%	1.9%	89.3%	0%	**-**	33.3%	22.2%	44.4%	0%	**-**	-
% Total	7.3%	31.0%	0.4%	0%	**38.7%**	0.3%	38.6%	2.8%	0%	**41.7%**	1.5%	0.3%	15.7%	0%	**17.6%**	0.7%	0.4%	0.9%	0%	**2.0%**	-
PHF	0.868	0.959	0.500	-	**0.962**	0.750	0.501	0.625	-	**0.512**	0.583	0.250	0.522	-	**0.568**	0.750	0.333	0.400	-	**0.500**	0.657
Lights	64	257	2	0	**323**	1	316	24	0	**341**	14	3	136	0	**153**	3	3	4	0	**10**	827
% Lights	97.0%	91.8%	50.0%	0%	**92.3%**	33.3%	90.5%	96.0%	0%	**90.5%**	100%	100%	95.8%	0%	**96.2%**	50.0%	75.0%	50.0%	0%	**55.6%**	91.5%
Articulated Trucks	0	16	0	0	**16**	0	22	0	0	**22**	0	0	0	0	**0**	1	0	2	0	**3**	41
% Articulated Trucks	0%	5.7%	0%	0%	**4.6%**	0%	6.3%	0%	0%	**5.8%**	0%	0%	0%	0%	**0%**	16.7%	0%	25.0%	0%	**16.7%**	4.5%
Buses and Single-Unit Trucks	2	7	2	0	**11**	2	11	1	0	**14**	0	0	6	0	**6**	2	1	2	0	**5**	36
% Buses and Single-Unit Trucks	3.0%	2.5%	50.0%	0%	**3.1%**	66.7%	3.2%	4.0%	0%	**3.7%**	0%	0%	4.2%	0%	**3.8%**	33.3%	25.0%	25.0%	0%	**27.8%**	4.0%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	4	4	3	0	**11**	0	3	0	0	**3**	0	0	0	0	**0**	1	1	0	0	**2**	**16**
12:15AM	1	2	1	0	**4**	0	0	0	0	**0**	0	1	1	0	**2**	0	0	0	0	**0**	**6**
12:30AM	4	1	2	0	**7**	0	3	0	0	**3**	0	1	5	0	**6**	0	2	0	0	**2**	**18**
12:45AM	4	2	1	0	**7**	0	4	0	0	**4**	0	0	3	0	**3**	0	1	0	0	**1**	**15**
Hourly Total	13	9	7	0	**29**	0	10	0	0	**10**	0	2	9	0	**11**	1	4	0	0	**5**	**55**
1:00AM	1	3	0	0	**4**	0	1	0	0	**1**	0	0	10	0	**10**	0	0	0	0	**0**	**15**
1:15AM	5	2	1	0	**8**	0	1	0	0	**1**	1	0	1	0	**2**	0	0	0	0	**0**	**11**
1:30AM	2	6	1	0	**9**	0	5	0	0	**5**	0	0	3	0	**3**	2	0	0	0	**2**	**19**
1:45AM	1	2	2	0	**5**	0	3	0	0	**3**	0	0	5	0	**5**	1	1	0	0	**2**	**15**
Hourly Total	9	13	4	0	**26**	0	10	0	0	**10**	1	0	19	0	**20**	3	1	0	0	**4**	**60**
2:00AM	1	2	0	0	**3**	0	6	0	0	**6**	0	0	1	0	**1**	0	1	0	0	**1**	**11**
2:15AM	2	3	1	0	**6**	0	2	0	0	**2**	0	0	2	0	**2**	0	1	0	0	**1**	**11**
2:30AM	0	4	1	0	**5**	0	2	1	0	**3**	0	1	0	0	**1**	0	1	0	0	**1**	**10**
2:45AM	2	1	0	0	**3**	0	5	0	0	**5**	0	0	1	0	**1**	0	0	0	0	**0**	**9**
Hourly Total	5	10	2	0	**17**	0	15	1	0	**16**	0	1	4	0	**5**	0	3	0	0	**3**	**41**
3:00AM	0	2	0	0	**2**	0	8	0	0	**8**	0	1	1	0	**2**	2	0	0	0	**2**	**14**
3:15AM	0	1	0	0	**1**	0	4	0	0	**4**	0	0	5	0	**5**	1	0	1	0	**2**	**12**
3:30AM	1	3	0	0	**4**	0	2	0	0	**2**	0	0	1	0	**1**	0	2	0	0	**2**	**9**
3:45AM	1	2	0	0	**3**	0	3	0	0	**3**	0	0	1	0	**1**	1	0	1	0	**2**	**9**
Hourly Total	2	8	0	0	**10**	0	17	0	0	**17**	0	1	8	0	**9**	4	2	2	0	**8**	**44**
4:00AM	1	2	0	0	**3**	0	3	0	0	**3**	0	0	1	0	**1**	2	2	0	0	**4**	**11**
4:15AM	3	5	0	0	**8**	0	2	0	0	**2**	0	0	1	0	**1**	2	0	0	0	**2**	**13**
4:30AM	2	6	1	0	**9**	0	3	0	0	**3**	0	1	1	0	**2**	4	1	1	0	**6**	**20**
4:45AM	1	11	0	0	**12**	0	1	0	0	**1**	0	0	4	0	**4**	2	2	1	0	**5**	**22**
Hourly Total	7	24	1	0	**32**	0	9	0	0	**9**	0	1	7	0	**8**	10	5	2	0	**17**	**66**
5:00AM	5	10	0	0	**15**	0	4	0	0	**4**	1	3	3	0	**7**	3	0	1	0	**4**	**30**
5:15AM	6	16	1	0	**23**	0	2	0	0	**2**	1	0	9	0	**10**	5	1	0	0	**6**	**41**
5:30AM	11	7	2	0	**20**	2	5	0	0	**7**	0	1	4	0	**5**	4	8	0	0	**12**	**44**
5:45AM	18	18	5	0	**41**	0	11	0	0	**11**	1	1	10	0	**12**	11	3	3	0	**17**	**81**
Hourly Total	40	51	8	0	**99**	2	22	0	0	**24**	3	5	26	0	**34**	23	12	4	0	**39**	**196**
6:00AM	9	16	5	0	**30**	0	12	0	0	**12**	0	0	7	0	**7**	10	6	1	0	**17**	**66**
6:15AM	9	10	6	0	**25**	0	5	0	0	**5**	2	2	5	0	**9**	14	11	4	0	**29**	**68**
6:30AM	8	12	6	0	**26**	0	9	3	0	**12**	1	3	7	0	**11**	19	11	0	0	**30**	**79**
6:45AM	30	11	10	0	**51**	0	23	2	0	**25**	3	2	8	0	**13**	29	20	1	0	**50**	**139**
Hourly Total	56	49	27	0	**132**	0	49	5	0	**54**	6	7	27	0	**40**	72	48	6	0	**126**	**352**
7:00AM	15	12	4	0	**31**	0	20	6	0	**26**	2	2	14	0	**18**	28	9	2	0	**39**	**114**
7:15AM	10	7	9	0	**26**	1	23	2	0	**26**	3	4	7	0	**14**	39	11	4	0	**54**	**120**
7:30AM	6	9	16	0	**31**	1	17	4	0	**22**	1	5	11	0	**17**	34	11	1	0	**46**	**116**
7:45AM	18	13	13	0	**44**	1	20	1	0	**22**	1	2	13	0	**16**	33	20	1	0	**54**	**136**
Hourly Total	49	41	42	0	**132**	3	80	13	0	**96**	7	13	45	0	**65**	134	51	8	0	**193**	**486**
8:00AM	27	2	9	0	**38**	1	18	0	0	**19**	1	4	16	0	**21**	19	8	2	0	**29**	**107**
8:15AM	10	9	11	0	**30**	2	18	0	0	**20**	0	8	10	0	**18**	20	7	0	0	**27**	**95**
8:30AM	9	10	13	0	**32**	0	9	1	0	**10**	0	9	11	0	**20**	24	8	0	0	**32**	**94**
8:45AM	15	8	15	0	**38**	1	17	1	0	**19**	2	7	10	0	**19**	20	16	1	0	**37**	**113**
Hourly Total	61	29	48	0	**138**	4	62	2	0	**68**	3	28	47	0	**78**	83	39	3	0	**125**	**409**
9:00AM	5	8	15	0	**28**	1	13	3	0	**17**	1	9	8	0	**18**	16	4	1	0	**21**	**84**
9:15AM	4	14	12	0	**30**	0	12	0	0	**12**	2	5	4	0	**11**	20	12	1	0	**33**	**86**
9:30AM	4	15	24	0	**43**	2	8	0	0	**10**	0	9	9	0	**18**	21	3	0	0	**24**	**95**
9:45AM	9	14	11	0	**34**	1	8	0	0	**9**	0	7	12	0	**19**	27	8	0	0	**35**	**97**
Hourly Total	22	51	62	0	**135**	4	41	3	0	**48**	3	30	33	0	**66**	84	27	2	0	**113**	**362**
10:00AM	9	7	8	0	**24**	0	15	1	0	**16**	0	8	5	0	**13**	22	10	2	0	**34**	**87**
10:15AM	6	6	10	0	**22**	1	9	1	0	**11**	3	7	5	0	**15**	28	10	0	0	**38**	**86**
10:30AM	14	12	13	0	**39**	0	16	0	0	**16**	0	5	13	0	**18**	18	9	0	0	**27**	**100**
10:45AM	14	11	9	0	**34**	2	12	1	0	**15**	2	7	10	0	**19**	13	9	0	0	**22**	**90**

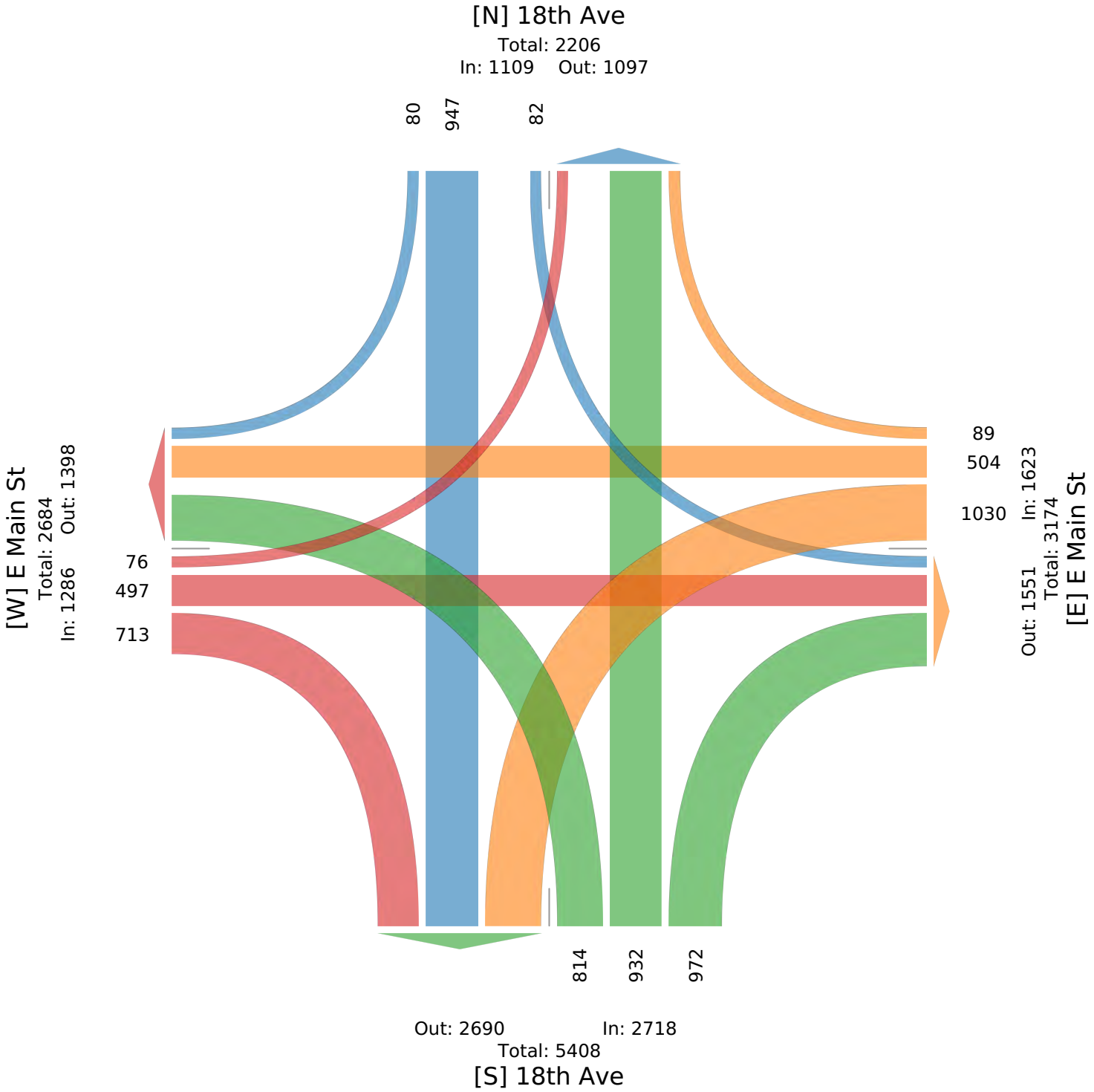
Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	43	36	40	0	**119**	3	52	3	0	**58**	5	27	33	0	**65**	81	38	2	0	**121**	**363**
11:00AM	9	13	16	0	**38**	1	10	2	0	**13**	0	8	12	0	**20**	16	6	1	0	**23**	**94**
11:15AM	6	12	21	0	**39**	1	8	2	0	**11**	1	5	7	0	**13**	16	7	2	0	**25**	**88**
11:30AM	10	15	11	0	**36**	2	14	1	0	**17**	1	8	9	0	**18**	17	5	1	0	**23**	**94**
11:45AM	13	16	9	0	**38**	2	21	1	0	**24**	1	5	10	0	**16**	15	4	1	0	**20**	**98**
Hourly Total	38	56	57	0	**151**	6	53	6	0	**65**	3	26	38	0	**67**	64	22	5	0	**91**	**374**
12:00PM	11	13	9	0	**33**	0	10	1	0	**11**	1	9	12	0	**22**	10	5	6	0	**21**	**87**
12:15PM	12	10	20	0	**42**	2	17	3	0	**22**	2	6	13	0	**21**	13	8	1	0	**22**	**107**
12:30PM	9	11	16	0	**36**	1	12	2	0	**15**	0	9	8	0	**17**	14	7	3	0	**24**	**92**
12:45PM	11	8	12	0	**31**	1	11	2	0	**14**	1	4	7	0	**12**	11	12	1	0	**24**	**81**
Hourly Total	43	42	57	0	**142**	4	50	8	0	**62**	4	28	40	0	**72**	48	32	11	0	**91**	**367**
1:00PM	11	13	18	0	**42**	4	10	3	0	**17**	1	8	6	0	**15**	9	2	1	0	**12**	**86**
1:15PM	15	12	9	0	**36**	0	11	1	0	**12**	3	8	8	0	**19**	7	5	1	0	**13**	**80**
1:30PM	9	9	15	0	**33**	2	17	3	0	**22**	3	4	6	0	**13**	18	6	1	0	**25**	**93**
1:45PM	8	14	17	0	**39**	0	11	2	0	**13**	0	4	8	0	**12**	19	9	2	0	**30**	**94**
Hourly Total	43	48	59	0	**150**	6	49	9	0	**64**	7	24	28	0	**59**	53	22	5	0	**80**	**353**
2:00PM	4	16	14	0	**34**	0	11	1	0	**12**	1	13	12	0	**26**	3	5	1	0	**9**	**81**
2:15PM	15	19	15	0	**49**	2	10	0	0	**12**	3	6	11	0	**20**	18	7	1	0	**26**	**107**
2:30PM	12	33	15	0	**60**	4	10	0	0	**14**	2	9	6	0	**17**	15	9	1	0	**25**	**116**
2:45PM	16	28	13	0	**57**	3	18	3	0	**24**	0	10	18	0	**28**	14	14	3	0	**31**	**140**
Hourly Total	47	96	57	0	**200**	9	49	4	0	**62**	6	38	47	0	**91**	50	35	6	0	**91**	**444**
3:00PM	23	21	18	0	**62**	3	18	2	0	**23**	1	13	14	0	**28**	13	5	0	0	**18**	**131**
3:15PM	28	16	24	0	**68**	4	23	3	0	**30**	0	15	19	0	**34**	17	6	4	0	**27**	**159**
3:30PM	37	38	23	0	**98**	1	35	1	0	**37**	4	30	47	0	**81**	12	7	1	0	**20**	**236**
3:45PM	26	24	29	0	**79**	1	22	1	0	**24**	2	15	21	0	**38**	26	9	2	0	**37**	**178**
Hourly Total	114	99	94	0	**307**	9	98	7	0	**114**	7	73	101	0	**181**	68	27	7	0	**102**	**704**
4:00PM	13	20	48	0	**81**	2	30	1	0	**33**	2	16	18	0	**36**	16	6	1	0	**23**	**173**
4:15PM	10	14	31	0	**55**	3	17	0	0	**20**	0	19	14	0	**33**	26	12	1	0	**39**	**147**
4:30PM	11	9	33	0	**53**	2	15	2	0	**19**	2	19	14	0	**35**	16	10	2	0	**28**	**135**
4:45PM	12	15	28	0	**55**	1	20	4	0	**25**	2	12	25	0	**39**	23	10	2	0	**35**	**154**
Hourly Total	46	58	140	0	**244**	8	82	7	0	**97**	6	66	71	0	**143**	81	38	6	0	**125**	**609**
5:00PM	11	20	28	0	**59**	5	15	3	0	**23**	1	21	12	0	**34**	13	12	2	0	**27**	**143**
5:15PM	9	14	27	0	**50**	4	14	1	0	**19**	1	15	11	0	**27**	14	11	3	0	**28**	**124**
5:30PM	8	11	21	0	**40**	1	15	2	0	**18**	2	7	9	0	**18**	13	7	1	0	**21**	**97**
5:45PM	9	16	22	0	**47**	4	15	0	0	**19**	1	6	7	0	**14**	17	7	0	0	**24**	**104**
Hourly Total	37	61	98	0	**196**	14	59	6	0	**79**	5	49	39	0	**93**	57	37	6	0	**100**	**468**
6:00PM	7	10	17	0	**34**	3	7	0	0	**10**	0	8	9	0	**17**	14	4	1	0	**19**	**80**
6:15PM	13	7	12	0	**32**	1	9	0	0	**10**	1	9	4	0	**14**	13	9	2	0	**24**	**80**
6:30PM	2	10	14	0	**26**	1	6	0	0	**7**	0	7	5	0	**12**	7	0	0	0	**7**	**52**
6:45PM	8	9	17	0	**34**	1	8	0	0	**9**	1	7	8	0	**16**	10	8	0	0	**18**	**77**
Hourly Total	30	36	60	0	**126**	6	30	0	0	**36**	2	31	26	0	**59**	44	21	3	0	**68**	**289**
7:00PM	6	7	12	0	**25**	0	4	1	0	**5**	1	9	5	0	**15**	8	4	2	0	**14**	**59**
7:15PM	6	8	11	0	**25**	0	10	0	0	**10**	0	7	5	0	**12**	8	4	1	0	**13**	**60**
7:30PM	6	7	10	0	**23**	0	5	1	0	**6**	1	5	4	0	**10**	5	4	1	0	**10**	**49**
7:45PM	8	5	10	0	**23**	0	7	1	0	**8**	3	3	2	0	**8**	2	4	1	0	**7**	**46**
Hourly Total	26	27	43	0	**96**	0	26	3	0	**29**	5	24	16	0	**45**	23	16	5	0	**44**	**214**
8:00PM	2	1	11	0	**14**	0	3	0	0	**3**	2	7	3	0	**12**	6	3	0	0	**9**	**38**
8:15PM	4	11	8	0	**23**	0	9	2	0	**11**	0	1	6	0	**7**	1	5	0	0	**6**	**47**
8:30PM	4	7	5	0	**16**	0	6	0	0	**6**	1	1	4	0	**6**	4	4	2	0	**10**	**38**
8:45PM	13	10	6	0	**29**	0	5	0	0	**5**	0	2	6	0	**8**	2	1	1	0	**4**	**46**
Hourly Total	23	29	30	0	**82**	0	23	2	0	**25**	3	11	19	0	**33**	13	13	3	0	**29**	**169**
9:00PM	4	7	7	0	**18**	1	2	0	0	**3**	0	1	4	0	**5**	6	0	0	0	**6**	**32**
9:15PM	4	6	5	0	**15**	0	4	1	0	**5**	0	0	4	0	**4**	2	0	0	0	**2**	**26**
9:30PM	1	5	1	0	**7**	0	7	0	0	**7**	0	1	2	0	**3**	4	1	0	0	**5**	**22**
9:45PM	6	2	8	0	**16**	0	7	0	0	**7**	0	3	2	0	**5**	2	3	0	0	**5**	**33**
Hourly Total	15	20	21	0	**56**	1	20	1	0	**22**	0	5	12	0	**17**	14	4	0	0	**18**	**113**
10:00PM	0	8	5	0	**13**	0	11	0	0	**11**	0	0	2	0	**2**	4	2	0	0	**6**	**32**
10:15PM	4	6	2	0	**12**	0	7	0	0	**7**	0	1	1	0	**2**	5	0	2	0	**7**	**28**
10:30PM	6	4	1	0	**11**	1	7	0	0	**8**	0	2	0	0	**2**	3	1	0	0	**4**	**25**
10:45PM	9	4	3	0	**16**	0	4	0	0	**4**	0	0	1	0	**1**	1	0	0	0	**1**	**22**

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	19	22	11	0	**52**	1	29	0	0	**30**	0	3	4	0	**7**	13	3	2	0	**18**	**107**
11:00PM	9	4	2	0	**15**	1	3	0	0	**4**	0	1	5	0	**6**	0	0	0	0	**0**	**25**
11:15PM	5	6	0	0	**11**	0	4	0	0	**4**	0	2	4	0	**6**	4	2	1	0	**7**	**28**
11:30PM	10	6	2	0	**18**	0	2	0	0	**2**	0	1	1	0	**2**	3	1	0	0	**4**	**26**
11:45PM	2	1	0	0	**3**	1	3	0	0	**4**	0	0	4	0	**4**	0	1	0	0	**1**	**12**
Hourly Total	26	17	4	0	**47**	2	12	0	0	**14**	0	4	14	0	**18**	7	4	1	0	**12**	**91**
Total	814	932	972	0	**2718**	82	947	80	0	**1109**	76	497	713	0	**1286**	1030	504	89	0	**1623**	**6736**
% Approach	29.9%	34.3%	35.8%	0%	**-**	7.4%	85.4%	7.2%	0%	**-**	5.9%	38.6%	55.4%	0%	**-**	63.5%	31.1%	5.5%	0%	**-**	**-**
% Total	12.1%	13.8%	14.4%	0%	**40.4%**	1.2%	14.1%	1.2%	0%	**16.5%**	1.1%	7.4%	10.6%	0%	**19.1%**	15.3%	7.5%	1.3%	0%	**24.1%**	**-**
Lights	729	679	881	0	**2289**	68	646	59	0	**773**	54	486	622	0	**1162**	957	487	82	0	**1526**	5750
% Lights	89.6%	72.9%	90.6%	0%	**84.2%**	82.9%	68.2%	73.8%	0%	**69.7%**	71.1%	97.8%	87.2%	0%	**90.4%**	92.9%	96.6%	92.1%	0%	**94.0%**	85.4%
Articulated Trucks	57	163	50	0	**270**	6	209	9	0	**224**	10	4	68	0	**82**	38	12	2	0	**52**	628
% Articulated Trucks	7.0%	17.5%	5.1%	0%	**9.9%**	7.3%	22.1%	11.3%	0%	**20.2%**	13.2%	0.8%	9.5%	0%	**6.4%**	3.7%	2.4%	2.2%	0%	**3.2%**	9.3%
Buses and Single-Unit Trucks	28	90	41	0	**159**	8	92	12	0	**112**	12	7	23	0	**42**	35	5	5	0	**45**	358
% Buses and Single-Unit Trucks	3.4%	9.7%	4.2%	0%	**5.8%**	9.8%	9.7%	15.0%	0%	**10.1%**	15.8%	1.4%	3.2%	0%	**3.3%**	3.4%	1.0%	5.6%	0%	**2.8%**	5.3%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

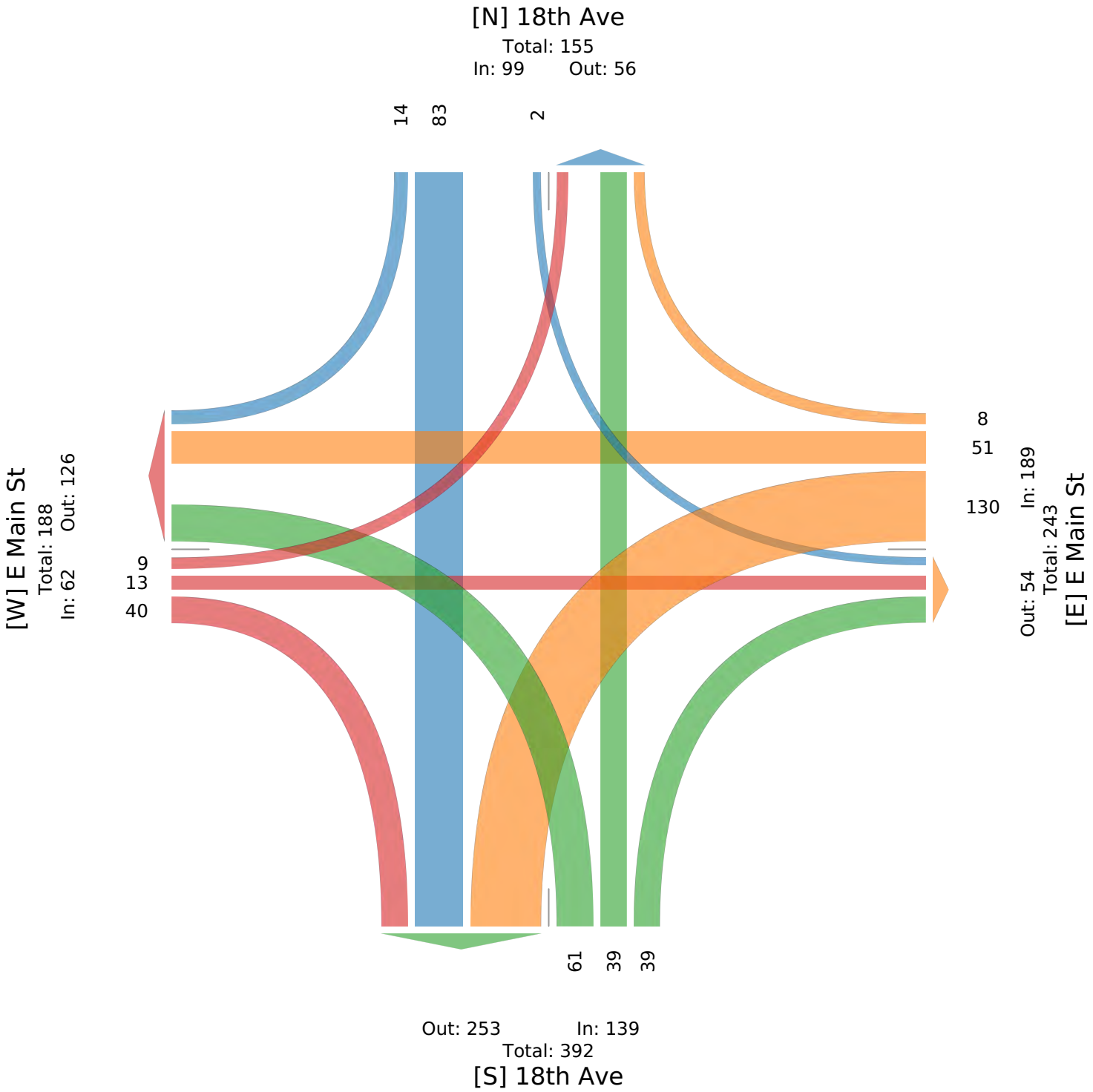
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 6:45AM	30	11	10	0	**51**	0	23	2	0	**25**	3	2	8	0	**13**	29	20	1	0	**50**	**139**
7:00AM	15	12	4	0	**31**	0	20	6	0	**26**	2	2	14	0	**18**	28	9	2	0	**39**	**114**
7:15AM	10	7	9	0	**26**	1	23	2	0	**26**	3	4	7	0	**14**	39	11	4	0	**54**	**120**
7:30AM	6	9	16	0	**31**	1	17	4	0	**22**	1	5	11	0	**17**	34	11	1	0	**46**	**116**
Total	61	39	39	0	**139**	2	83	14	0	**99**	9	13	40	0	**62**	130	51	8	0	**189**	**489**
% Approach	43.9%	28.1%	28.1%	0%	**-**	2.0%	83.8%	14.1%	0%	**-**	14.5%	21.0%	64.5%	0%	**-**	68.8%	27.0%	4.2%	0%	**-**	-
% Total	12.5%	8.0%	8.0%	0%	**28.4%**	0.4%	17.0%	2.9%	0%	**20.2%**	1.8%	2.7%	8.2%	0%	**12.7%**	26.6%	10.4%	1.6%	0%	**38.7%**	-
PHF	0.508	0.813	0.609	-	**0.681**	0.500	0.902	0.583	-	**0.952**	0.750	0.650	0.714	-	**0.861**	0.833	0.638	0.500	-	**0.875**	0.879
Lights	52	29	29	0	**110**	2	61	10	0	**73**	6	13	31	0	**50**	125	51	7	0	**183**	416
% Lights	85.2%	74.4%	74.4%	0%	**79.1%**	100%	73.5%	71.4%	0%	**73.7%**	66.7%	100%	77.5%	0%	**80.6%**	96.2%	100%	87.5%	0%	**96.8%**	85.1%
Articulated Trucks	4	6	6	0	**16**	0	7	3	0	**10**	0	0	8	0	**8**	1	0	0	0	**1**	35
% Articulated Trucks	6.6%	15.4%	15.4%	0%	**11.5%**	0%	8.4%	21.4%	0%	**10.1%**	0%	0%	20.0%	0%	**12.9%**	0.8%	0%	0%	0%	**0.5%**	7.2%
Buses and Single-Unit Trucks	5	4	4	0	**13**	0	15	1	0	**16**	3	0	1	0	**4**	4	0	1	0	**5**	38
% Buses and Single-Unit Trucks	8.2%	10.3%	10.3%	0%	**9.4%**	0%	18.1%	7.1%	0%	**16.2%**	33.3%	0%	2.5%	0%	**6.5%**	3.1%	0%	12.5%	0%	**2.6%**	7.8%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

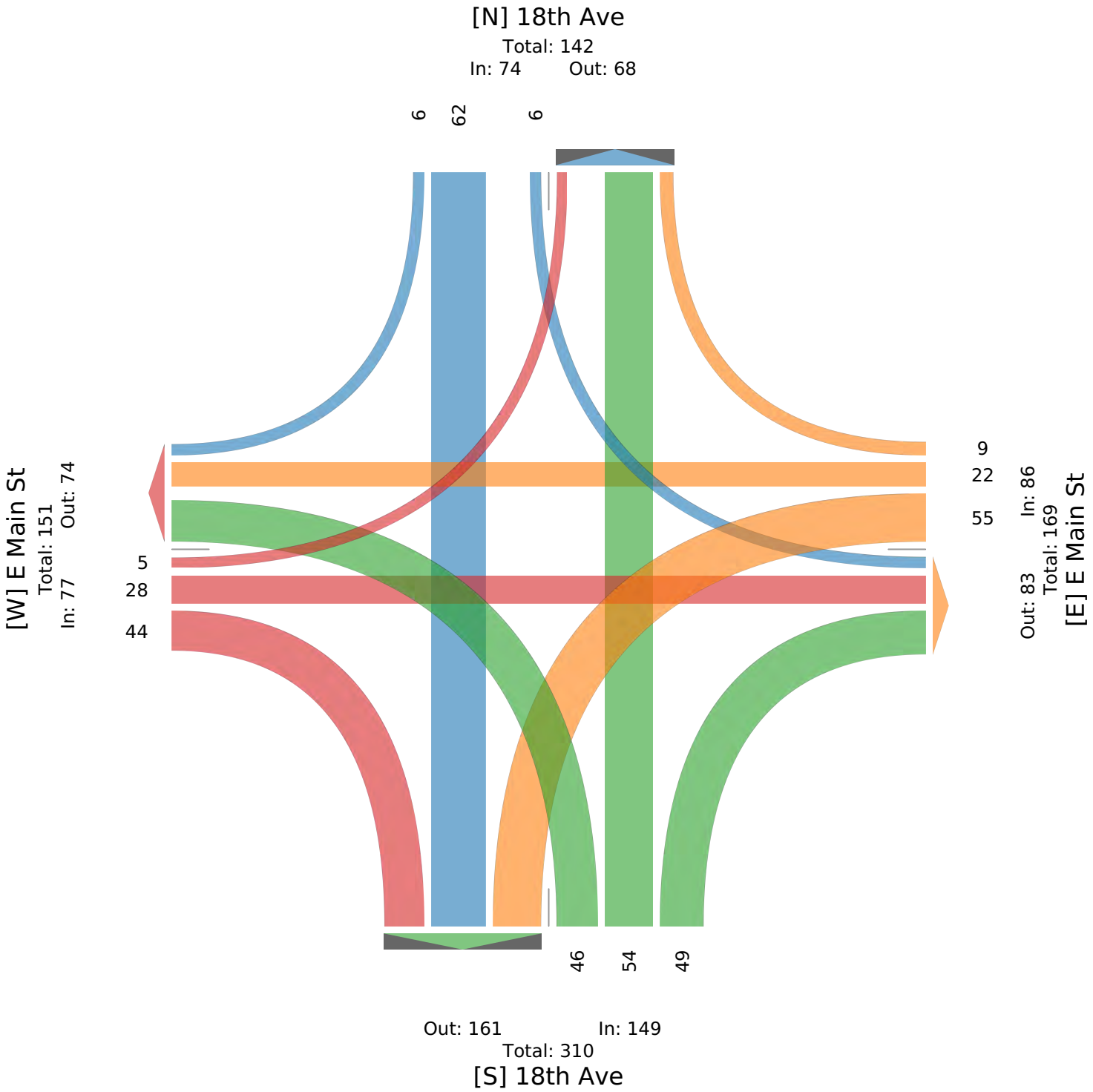
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 11:30AM	10	15	11	0	**36**	2	14	1	0	**17**	1	8	9	0	**18**	17	5	1	0	**23**	**94**
11:45AM	13	16	9	0	**38**	2	21	1	0	**24**	1	5	10	0	**16**	15	4	1	0	**20**	**98**
12:00PM	11	13	9	0	**33**	0	10	1	0	**11**	1	9	12	0	**22**	10	5	6	0	**21**	**87**
12:15PM	12	10	20	0	**42**	2	17	3	0	**22**	2	6	13	0	**21**	13	8	1	0	**22**	**107**
Total	46	54	49	0	**149**	6	62	6	0	**74**	5	28	44	0	**77**	55	22	9	0	**86**	**386**
% Approach	30.9%	36.2%	32.9%	0%	**-**	8.1%	83.8%	8.1%	0%	**-**	6.5%	36.4%	57.1%	0%	**-**	64.0%	25.6%	10.5%	0%	**-**	-
% Total	11.9%	14.0%	12.7%	0%	**38.6%**	1.6%	16.1%	1.6%	0%	**19.2%**	1.3%	7.3%	11.4%	0%	**19.9%**	14.2%	5.7%	2.3%	0%	**22.3%**	-
PHF	0.885	0.844	0.613	-	**0.887**	0.750	0.738	0.500	-	**0.771**	0.625	0.778	0.846	-	**0.875**	0.809	0.688	0.375	-	**0.935**	0.902
Lights	42	26	41	0	**109**	5	35	6	0	**46**	5	27	39	0	**71**	51	21	8	0	**80**	306
% Lights	91.3%	48.1%	83.7%	0%	**73.2%**	83.3%	56.5%	100%	0%	**62.2%**	100%	96.4%	88.6%	0%	**92.2%**	92.7%	95.5%	88.9%	0%	**93.0%**	79.3%
Articulated Trucks	2	17	6	0	**25**	0	15	0	0	**15**	0	0	4	0	**4**	3	0	0	0	**3**	47
% Articulated Trucks	4.3%	31.5%	12.2%	0%	**16.8%**	0%	24.2%	0%	0%	**20.3%**	0%	0%	9.1%	0%	**5.2%**	5.5%	0%	0%	0%	**3.5%**	12.2%
Buses and Single-Unit Trucks	2	11	2	0	**15**	1	12	0	0	**13**	0	1	1	0	**2**	1	1	1	0	**3**	33
% Buses and Single-Unit Trucks	4.3%	20.4%	4.1%	0%	**10.1%**	16.7%	19.4%	0%	0%	**17.6%**	0%	3.6%	2.3%	0%	**2.6%**	1.8%	4.5%	11.1%	0%	**3.5%**	8.5%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

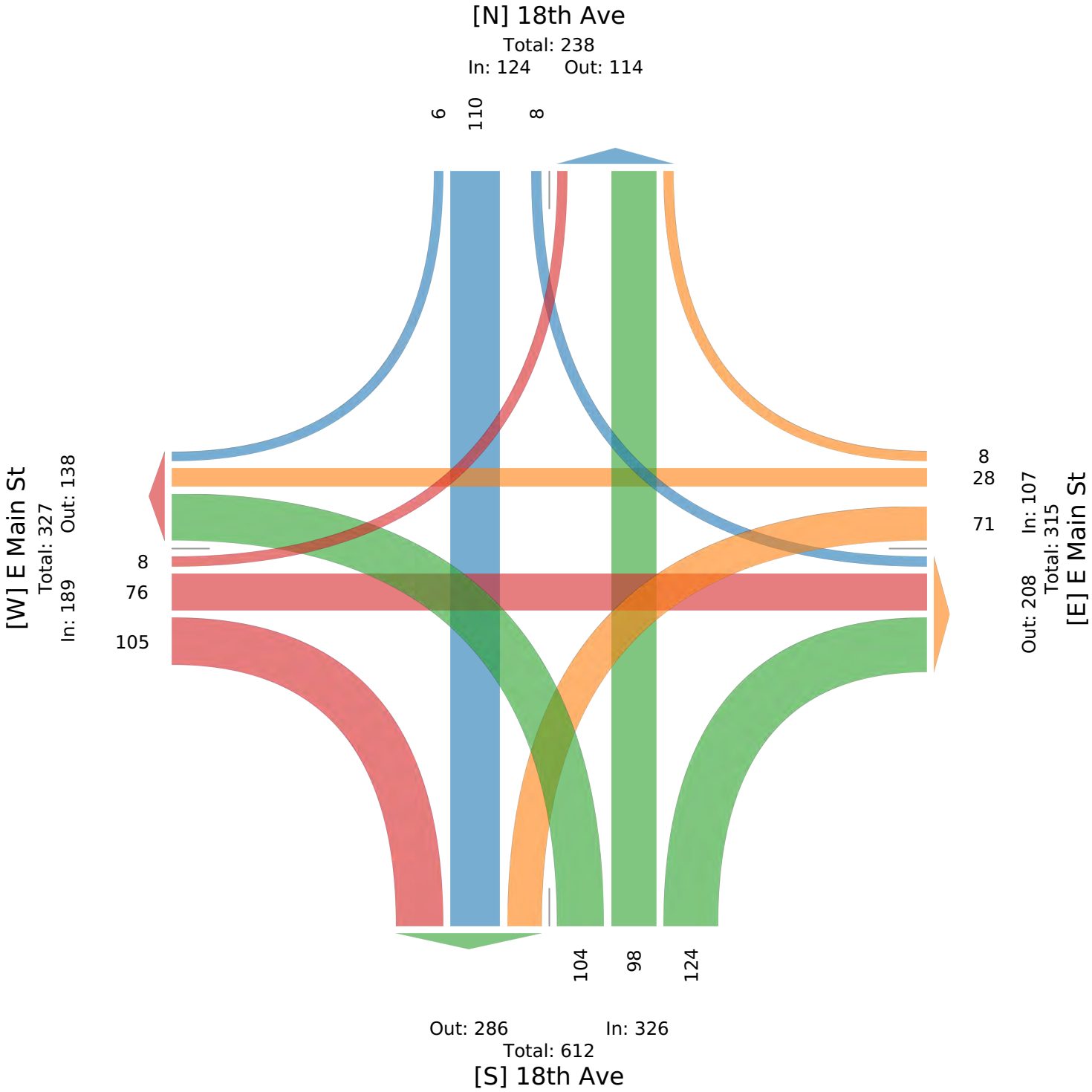
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 3:15PM	28	16	24	0	**68**	4	23	3	0	**30**	0	15	19	0	**34**	17	6	4	0	**27**	**159**
3:30PM	37	38	23	0	**98**	1	35	1	0	**37**	4	30	47	0	**81**	12	7	1	0	**20**	**236**
3:45PM	26	24	29	0	**79**	1	22	1	0	**24**	2	15	21	0	**38**	26	9	2	0	**37**	**178**
4:00PM	13	20	48	0	**81**	2	30	1	0	**33**	2	16	18	0	**36**	16	6	1	0	**23**	**173**
Total	104	98	124	0	**326**	8	110	6	0	**124**	8	76	105	0	**189**	71	28	8	0	**107**	**746**
% Approach	31.9%	30.1%	38.0%	0%	**-**	6.5%	88.7%	4.8%	0%	**-**	4.2%	40.2%	55.6%	0%	**-**	66.4%	26.2%	7.5%	0%	**-**	-
% Total	13.9%	13.1%	16.6%	0%	**43.7%**	1.1%	14.7%	0.8%	0%	**16.6%**	1.1%	10.2%	14.1%	0%	**25.3%**	9.5%	3.8%	1.1%	0%	**14.3%**	-
PHF	0.703	0.645	0.646	-	**0.832**	0.500	0.786	0.500	-	**0.838**	0.500	0.633	0.559	-	**0.583**	0.683	0.778	0.500	-	**0.723**	0.790
Lights	100	83	119	0	**302**	7	88	2	0	**97**	6	76	95	0	**177**	66	27	8	0	**101**	677
% Lights	96.2%	84.7%	96.0%	0%	**92.6%**	87.5%	80.0%	33.3%	0%	**78.2%**	75.0%	100%	90.5%	0%	**93.7%**	93.0%	96.4%	100%	0%	**94.4%**	90.8%
Articulated Trucks	3	11	2	0	**16**	0	12	2	0	**14**	0	0	7	0	**7**	3	0	0	0	**3**	40
% Articulated Trucks	2.9%	11.2%	1.6%	0%	**4.9%**	0%	10.9%	33.3%	0%	**11.3%**	0%	0%	6.7%	0%	**3.7%**	4.2%	0%	0%	0%	**2.8%**	5.4%
Buses and Single-Unit Trucks	1	4	3	0	**8**	1	10	2	0	**13**	2	0	3	0	**5**	2	1	0	0	**3**	29
% Buses and Single-Unit Trucks	1.0%	4.1%	2.4%	0%	**2.5%**	12.5%	9.1%	33.3%	0%	**10.5%**	25.0%	0%	2.9%	0%	**2.6%**	2.8%	3.6%	0%	0%	**2.8%**	3.9%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	0	0	0	0	**0**	5	0	0	0	**5**	1	0	1	0	**2**	0	0	0	0	**0**	**7**
12:15AM	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**	0	0	0	0	**0**	**4**
12:30AM	0	0	0	0	**0**	7	0	0	0	**7**	2	0	0	0	**2**	0	0	0	0	**0**	**9**
12:45AM	0	0	0	0	**0**	3	1	0	0	**4**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
Hourly Total	0	0	0	0	**0**	17	1	0	0	**18**	6	0	1	0	**7**	0	0	0	0	**0**	**25**
1:00AM	0	0	0	0	**0**	20	0	0	0	**20**	3	0	0	0	**3**	0	0	0	0	**0**	**23**
1:15AM	0	0	0	0	**0**	3	0	0	0	**3**	1	0	0	0	**1**	0	0	0	0	**0**	**4**
1:30AM	0	0	0	0	**0**	3	0	0	0	**3**	3	0	0	0	**3**	0	0	0	0	**0**	**6**
1:45AM	0	0	0	0	**0**	8	0	0	0	**8**	1	0	0	0	**1**	0	0	0	0	**0**	**9**
Hourly Total	0	0	0	0	**0**	34	0	0	0	**34**	8	0	0	0	**8**	0	0	0	0	**0**	**42**
2:00AM	0	0	0	0	**0**	3	0	0	0	**3**	2	0	0	0	**2**	0	0	0	0	**0**	**5**
2:15AM	0	0	0	0	**0**	4	0	0	0	**4**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
2:30AM	0	0	0	0	**0**	2	0	0	0	**2**	1	0	0	0	**1**	0	0	0	0	**0**	**3**
2:45AM	0	0	0	0	**0**	1	0	0	0	**1**	3	0	0	0	**3**	0	0	0	0	**0**	**4**
Hourly Total	0	0	0	0	**0**	10	0	0	0	**10**	7	0	0	0	**7**	0	0	0	0	**0**	**17**
3:00AM	0	0	0	0	**0**	2	0	0	0	**2**	1	0	0	0	**1**	0	0	0	0	**0**	**3**
3:15AM	0	0	0	0	**0**	3	0	0	0	**3**	0	0	0	0	**0**	0	0	0	0	**0**	**3**
3:30AM	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	**1**
3:45AM	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Hourly Total	0	0	0	0	**0**	5	0	0	0	**5**	3	0	0	0	**3**	0	0	0	0	**0**	**8**
4:00AM	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**	0	0	0	0	**0**	**4**
4:15AM	0	0	1	0	**1**	8	0	0	0	**8**	1	0	0	0	**1**	0	0	0	0	**0**	**10**
4:30AM	0	0	0	0	**0**	8	0	0	0	**8**	10	0	0	0	**10**	0	0	0	0	**0**	**18**
4:45AM	0	0	0	0	**0**	8	0	0	0	**8**	3	0	0	0	**3**	0	0	0	0	**0**	**11**
Hourly Total	0	0	1	0	**1**	26	0	0	0	**26**	16	0	0	0	**16**	0	0	0	0	**0**	**43**
5:00AM	0	0	0	0	**0**	17	0	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**25**
5:15AM	0	0	0	0	**0**	29	0	0	0	**29**	5	0	0	0	**5**	0	0	0	0	**0**	**34**
5:30AM	0	1	1	0	**2**	25	1	0	0	**26**	10	0	0	0	**10**	0	0	0	0	**0**	**38**
5:45AM	0	1	1	0	**2**	27	1	0	0	**28**	10	0	0	0	**10**	0	0	0	0	**0**	**40**
Hourly Total	0	2	2	0	**4**	98	2	0	0	**100**	33	0	0	0	**33**	0	0	0	0	**0**	**137**
6:00AM	0	0	0	0	**0**	17	0	0	0	**17**	9	0	0	0	**9**	0	0	0	0	**0**	**26**
6:15AM	0	1	0	0	**1**	22	0	0	0	**22**	10	0	1	0	**11**	0	0	0	0	**0**	**34**
6:30AM	0	2	0	0	**2**	24	0	0	0	**24**	24	0	0	0	**24**	0	0	0	0	**0**	**50**
6:45AM	0	2	1	0	**3**	14	0	0	0	**14**	47	0	0	0	**47**	0	0	0	0	**0**	**64**
Hourly Total	0	5	1	0	**6**	77	0	0	0	**77**	90	0	1	0	**91**	0	0	0	0	**0**	**174**
7:00AM	0	2	0	0	**2**	20	1	0	0	**21**	16	0	0	0	**16**	0	0	0	0	**0**	**39**
7:15AM	0	0	1	0	**1**	39	1	0	0	**40**	20	0	0	0	**20**	0	0	0	0	**0**	**61**
7:30AM	0	1	1	0	**2**	38	0	0	0	**38**	26	0	0	0	**26**	0	0	0	0	**0**	**66**
7:45AM	0	3	4	0	**7**	25	1	0	0	**26**	13	0	0	0	**13**	0	0	0	0	**0**	**46**
Hourly Total	0	6	6	0	**12**	122	3	0	0	**125**	75	0	0	0	**75**	0	0	0	0	**0**	**212**
8:00AM	0	1	0	0	**1**	32	1	0	0	**33**	9	0	0	0	**9**	0	0	0	0	**0**	**43**
8:15AM	0	0	1	0	**1**	25	1	0	0	**26**	15	0	1	0	**16**	0	0	0	0	**0**	**43**
8:30AM	0	1	0	0	**1**	19	1	0	0	**20**	14	0	0	0	**14**	0	0	0	0	**0**	**35**
8:45AM	0	0	0	0	**0**	13	0	0	0	**13**	12	0	0	0	**12**	0	0	0	0	**0**	**25**
Hourly Total	0	2	1	0	**3**	89	3	0	0	**92**	50	0	1	0	**51**	0	0	0	0	**0**	**146**
9:00AM	0	0	0	0	**0**	24	1	0	0	**25**	7	0	0	0	**7**	0	0	0	0	**0**	**32**
9:15AM	0	0	0	0	**0**	21	1	0	0	**22**	12	0	0	0	**12**	0	0	0	0	**0**	**34**
9:30AM	0	0	0	0	**0**	24	0	0	0	**24**	13	0	0	0	**13**	0	0	0	0	**0**	**37**
9:45AM	0	0	0	0	**0**	24	0	0	1	**25**	16	1	0	0	**17**	0	0	0	0	**0**	**42**
Hourly Total	0	0	0	0	**0**	93	2	0	1	**96**	48	1	0	0	**49**	0	0	0	0	**0**	**145**
10:00AM	0	0	1	0	**1**	19	0	0	0	**19**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
10:15AM	0	1	0	0	**1**	16	1	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**26**
10:30AM	0	0	0	0	**0**	29	0	0	0	**29**	17	0	0	0	**17**	0	0	0	0	**0**	**46**
10:45AM	0	0	0	0	**0**	18	0	0	0	**18**	8	0	0	0	**8**	0	0	0	0	**0**	**26**

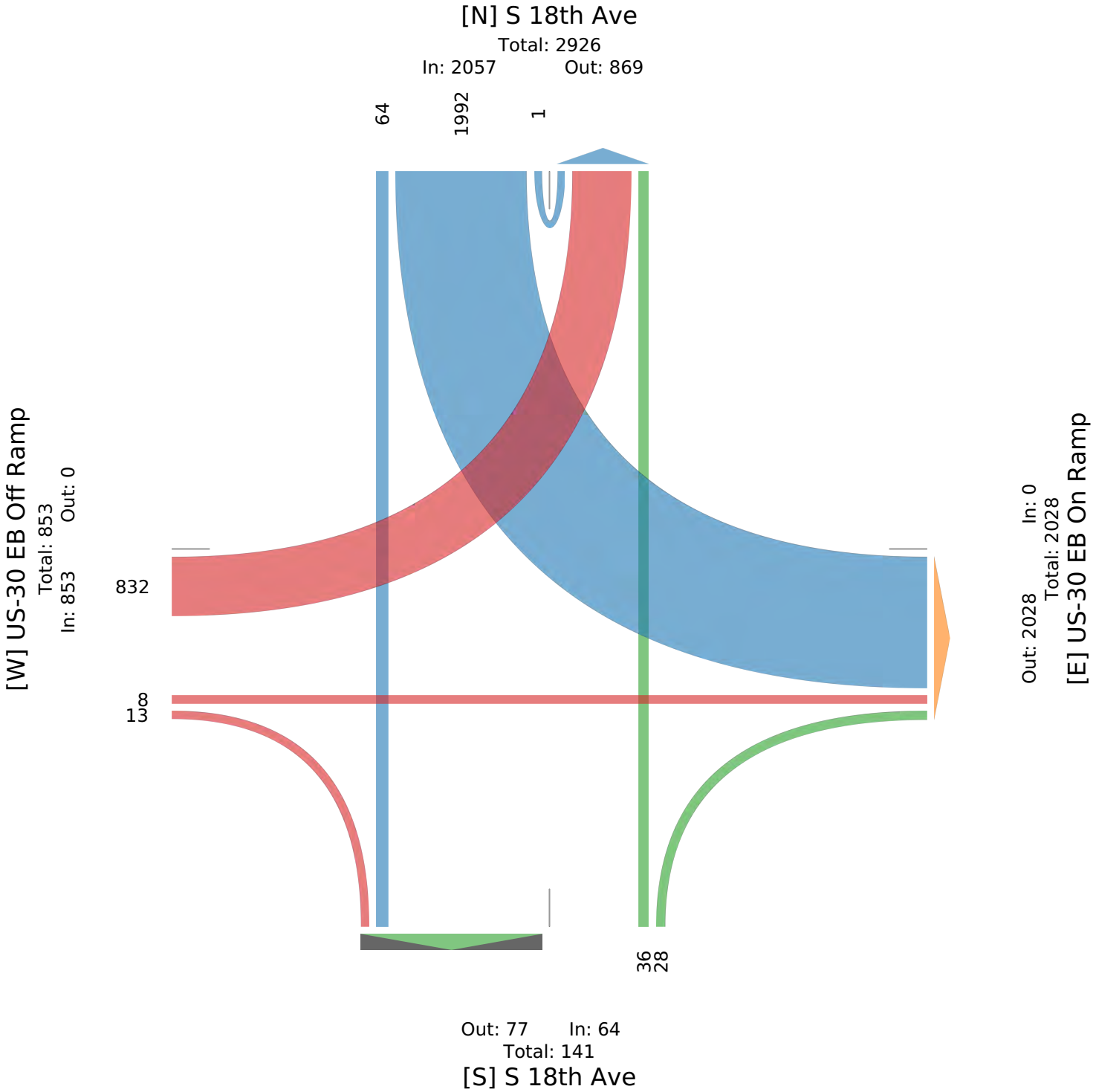
Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
Hourly Total	0	1	1	0	**2**	82	1	0	0	**83**	41	0	0	0	**41**	0	0	0	0	**0**	**126**
11:00AM	0	0	0	0	**0**	31	2	0	0	**33**	7	0	0	0	**7**	0	0	0	0	**0**	**40**
11:15AM	0	0	0	0	**0**	21	0	0	0	**21**	10	0	0	0	**10**	0	0	0	0	**0**	**31**
11:30AM	0	1	0	0	**1**	12	0	0	0	**12**	11	0	0	0	**11**	0	0	0	0	**0**	**24**
11:45AM	0	0	0	0	**0**	24	3	0	0	**27**	13	0	0	0	**13**	0	0	0	0	**0**	**40**
Hourly Total	0	1	0	0	**1**	88	5	0	0	**93**	41	0	0	0	**41**	0	0	0	0	**0**	**135**
12:00PM	0	0	2	0	**2**	24	3	0	0	**27**	10	0	1	0	**11**	0	0	0	0	**0**	**40**
12:15PM	0	0	0	0	**0**	28	1	0	0	**29**	16	0	1	0	**17**	0	0	0	0	**0**	**46**
12:30PM	0	1	0	0	**1**	25	0	0	0	**25**	13	0	0	0	**13**	0	0	0	0	**0**	**39**
12:45PM	0	1	0	0	**1**	19	0	0	0	**19**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
Hourly Total	0	2	2	0	**4**	96	4	0	0	**100**	47	0	2	0	**49**	0	0	0	0	**0**	**153**
1:00PM	0	0	1	0	**1**	15	2	0	0	**17**	15	0	0	0	**15**	0	0	0	0	**0**	**33**
1:15PM	0	0	0	0	**0**	23	1	0	0	**24**	6	0	0	0	**6**	0	0	0	0	**0**	**30**
1:30PM	0	2	0	0	**2**	25	0	0	0	**25**	3	0	0	0	**3**	0	0	0	0	**0**	**30**
1:45PM	0	0	0	0	**0**	31	0	0	0	**31**	12	0	0	0	**12**	0	0	0	0	**0**	**43**
Hourly Total	0	2	1	0	**3**	94	3	0	0	**97**	36	0	0	0	**36**	0	0	0	0	**0**	**136**
2:00PM	0	0	0	0	**0**	30	0	0	0	**30**	11	0	1	0	**12**	0	0	0	0	**0**	**42**
2:15PM	0	0	0	0	**0**	25	2	0	0	**27**	17	1	0	0	**18**	0	0	0	0	**0**	**45**
2:30PM	0	2	2	0	**4**	30	0	0	0	**30**	12	0	0	0	**12**	0	0	0	0	**0**	**46**
2:45PM	0	0	0	0	**0**	32	3	0	0	**35**	13	0	1	0	**14**	0	0	0	0	**0**	**49**
Hourly Total	0	2	2	0	**4**	117	5	0	0	**122**	53	1	2	0	**56**	0	0	0	0	**0**	**182**
3:00PM	0	2	1	0	**3**	43	1	0	0	**44**	6	0	0	0	**6**	0	0	0	0	**0**	**53**
3:15PM	0	0	1	0	**1**	42	3	0	0	**45**	13	0	0	0	**13**	0	0	0	0	**0**	**59**
3:30PM	0	0	0	0	**0**	71	5	0	0	**76**	19	0	0	0	**19**	0	0	0	0	**0**	**95**
3:45PM	0	1	1	0	**2**	54	4	0	0	**58**	16	1	0	0	**17**	0	0	0	0	**0**	**77**
Hourly Total	0	3	3	0	**6**	210	13	0	0	**223**	54	1	0	0	**55**	0	0	0	0	**0**	**284**
4:00PM	0	1	1	0	**2**	62	3	0	0	**65**	11	0	1	0	**12**	0	0	0	0	**0**	**79**
4:15PM	0	1	0	0	**1**	76	2	0	0	**78**	17	0	0	0	**17**	0	0	0	0	**0**	**96**
4:30PM	0	0	0	0	**0**	80	3	0	0	**83**	18	0	0	0	**18**	0	0	0	0	**0**	**101**
4:45PM	0	3	0	0	**3**	54	1	0	0	**55**	12	0	0	0	**12**	0	0	0	0	**0**	**70**
Hourly Total	0	5	1	0	**6**	272	9	0	0	**281**	58	0	1	0	**59**	0	0	0	0	**0**	**346**
5:00PM	0	0	1	0	**1**	50	2	0	0	**52**	7	1	0	0	**8**	0	0	0	0	**0**	**61**
5:15PM	0	0	0	0	**0**	49	2	0	0	**51**	8	0	1	0	**9**	0	0	0	0	**0**	**60**
5:30PM	0	0	1	0	**1**	33	1	0	0	**34**	13	0	1	0	**14**	0	0	0	0	**0**	**49**
5:45PM	0	1	0	0	**1**	36	2	0	0	**38**	15	1	1	0	**17**	0	0	0	0	**0**	**56**
Hourly Total	0	1	2	0	**3**	168	7	0	0	**175**	43	2	3	0	**48**	0	0	0	0	**0**	**226**
6:00PM	0	1	0	0	**1**	33	0	0	0	**33**	10	0	0	0	**10**	0	0	0	0	**0**	**44**
6:15PM	0	0	0	0	**0**	16	1	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**25**
6:30PM	0	1	0	0	**1**	16	0	0	0	**16**	7	2	0	0	**9**	0	0	0	0	**0**	**26**
6:45PM	0	0	0	0	**0**	18	0	0	0	**18**	8	0	0	0	**8**	0	0	0	0	**0**	**26**
Hourly Total	0	2	0	0	**2**	83	1	0	0	**84**	33	2	0	0	**35**	0	0	0	0	**0**	**121**
7:00PM	0	0	0	0	**0**	18	0	0	0	**18**	9	0	0	0	**9**	0	0	0	0	**0**	**27**
7:15PM	0	0	0	0	**0**	16	0	0	0	**16**	8	0	0	0	**8**	0	0	0	0	**0**	**24**
7:30PM	0	0	0	0	**0**	18	2	0	0	**20**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
7:45PM	0	0	0	0	**0**	13	0	0	0	**13**	5	0	1	0	**6**	0	0	0	0	**0**	**19**
Hourly Total	0	0	0	0	**0**	65	2	0	0	**67**	30	0	1	0	**31**	0	0	0	0	**0**	**98**
8:00PM	0	0	0	0	**0**	12	1	0	0	**13**	4	1	0	0	**5**	0	0	0	0	**0**	**18**
8:15PM	0	1	0	0	**1**	16	1	0	0	**17**	4	0	0	0	**4**	0	0	0	0	**0**	**22**
8:30PM	0	0	0	0	**0**	13	0	0	0	**13**	3	0	1	0	**4**	0	0	0	0	**0**	**17**
8:45PM	0	0	0	0	**0**	14	0	0	0	**14**	5	0	0	0	**5**	0	0	0	0	**0**	**19**
Hourly Total	0	1	0	0	**1**	55	2	0	0	**57**	16	1	1	0	**18**	0	0	0	0	**0**	**76**
9:00PM	0	0	0	0	**0**	8	0	0	0	**8**	5	0	0	0	**5**	0	0	0	0	**0**	**13**
9:15PM	0	0	3	0	**3**	14	0	0	0	**14**	4	0	0	0	**4**	0	0	0	0	**0**	**21**
9:30PM	0	0	1	0	**1**	13	0	0	0	**13**	8	0	0	0	**8**	0	0	0	0	**0**	**22**
9:45PM	0	1	0	0	**1**	5	0	0	0	**5**	9	0	0	0	**9**	0	0	0	0	**0**	**15**
Hourly Total	0	1	4	0	**5**	40	0	0	0	**40**	26	0	0	0	**26**	0	0	0	0	**0**	**71**
10:00PM	0	0	1	0	**1**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**12**
10:15PM	0	0	0	0	**0**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**11**
10:30PM	0	0	0	0	**0**	6	0	0	0	**6**	1	0	0	0	**1**	0	0	0	0	**0**	**7**
10:45PM	0	0	0	0	**0**	2	0	0	0	**2**	3	0	0	0	**3**	0	0	0	0	**0**	**5**

Leg Direction	S 18th Ave Northbound					S 18th Ave Southbound					US-30 EB Off Ramp Eastbound					US-30 EB On Ramp Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	0	1	0	**1**	26	0	0	0	**26**	8	0	0	0	**8**	0	0	0	0	**0**	**35**
11:00PM	0	0	0	0	**0**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**11**
11:15PM	0	0	0	0	**0**	8	1	0	0	**9**	0	0	0	0	**0**	0	0	0	0	**0**	**9**
11:30PM	0	0	0	0	**0**	5	0	0	0	**5**	6	0	0	0	**6**	0	0	0	0	**0**	**11**
11:45PM	0	0	0	0	**0**	3	0	0	0	**3**	2	0	0	0	**2**	0	0	0	0	**0**	**5**
Hourly Total	0	0	0	0	**0**	25	1	0	0	**26**	10	0	0	0	**10**	0	0	0	0	**0**	**36**
Total	0	36	28	0	**64**	1992	64	0	1	**2057**	832	8	13	0	**853**	0	0	0	0	**0**	**2974**
% Approach	0%	56.3%	43.8%	0%	**-**	96.8%	3.1%	0%	0%	**-**	97.5%	0.9%	1.5%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	1.2%	0.9%	0%	**2.2%**	67.0%	2.2%	0%	0%	**69.2%**	28.0%	0.3%	0.4%	0%	**28.7%**	0%	0%	0%	0%	**0%**	-
Lights	0	33	27	0	**60**	1807	60	0	1	**1868**	535	6	11	0	**552**	0	0	0	0	**0**	2480
% Lights	0%	91.7%	96.4%	0%	**93.8%**	90.7%	93.8%	0%	100%	**90.8%**	64.3%	75.0%	84.6%	0%	**64.7%**	0%	0%	0%	0%	**-**	83.4%
Articulated Trucks	0	0	1	0	**1**	123	1	0	0	**124**	198	1	1	0	**200**	0	0	0	0	**0**	325
% Articulated Trucks	0%	0%	3.6%	0%	**1.6%**	6.2%	1.6%	0%	0%	**6.0%**	23.8%	12.5%	7.7%	0%	**23.4%**	0%	0%	0%	0%	**-**	10.9%
Buses and Single-Unit Trucks	0	3	0	0	**3**	62	3	0	0	**65**	99	1	1	0	**101**	0	0	0	0	**0**	169
% Buses and Single-Unit Trucks	0%	8.3%	0%	0%	**4.7%**	3.1%	4.7%	0%	0%	**3.2%**	11.9%	12.5%	7.7%	0%	**11.8%**	0%	0%	0%	0%	**-**	5.7%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

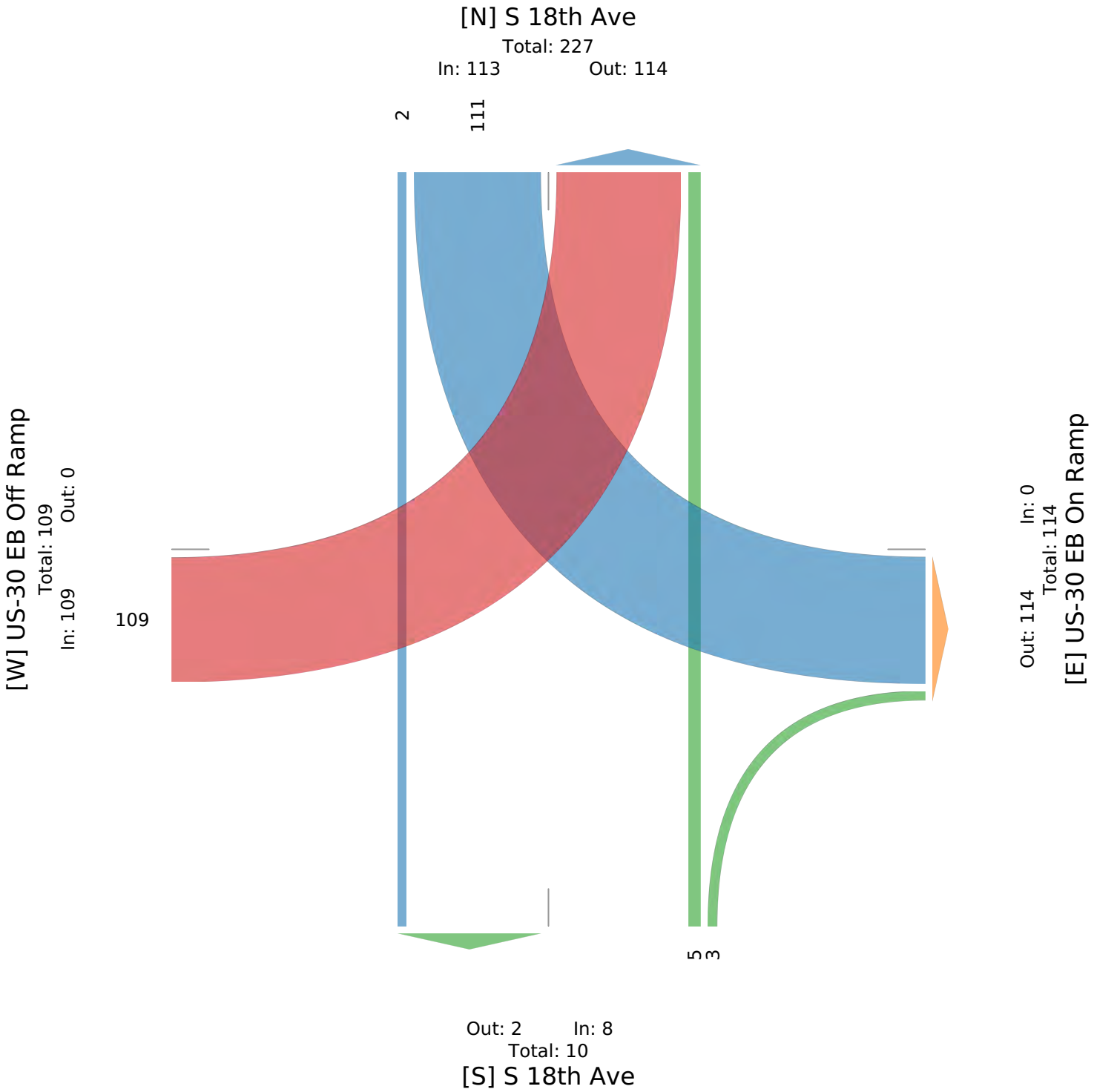
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	0	2	1	0	**3**	14	0	0	0	**14**	47	0	0	0	**47**	0	0	0	0	**0**	**64**
7:00AM	0	2	0	0	**2**	20	1	0	0	**21**	16	0	0	0	**16**	0	0	0	0	**0**	**39**
7:15AM	0	0	1	0	**1**	39	1	0	0	**40**	20	0	0	0	**20**	0	0	0	0	**0**	**61**
7:30AM	0	1	1	0	**2**	38	0	0	0	**38**	26	0	0	0	**26**	0	0	0	0	**0**	**66**
Total	0	5	3	0	**8**	111	2	0	0	**113**	109	0	0	0	**109**	0	0	0	0	**0**	**230**
% Approach	0%	62.5%	37.5%	0%	**-**	98.2%	1.8%	0%	0%	**-**	100%	0%	0%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	2.2%	1.3%	0%	**3.5%**	48.3%	0.9%	0%	0%	**49.1%**	47.4%	0%	0%	0%	**47.4%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.625	0.750	-	**0.667**	0.712	0.500	-	-	**0.706**	0.580	-	-	-	**0.580**	-	-	-	-	**-**	0.871
Lights	0	5	3	0	**8**	99	1	0	0	**100**	91	0	0	0	**91**	0	0	0	0	**0**	199
% Lights	0%	100%	100%	0%	**100%**	89.2%	50.0%	0%	0%	**88.5%**	83.5%	0%	0%	0%	**83.5%**	0%	0%	0%	0%	**-**	86.5%
Articulated Trucks	0	0	0	0	**0**	11	0	0	0	**11**	14	0	0	0	**14**	0	0	0	0	**0**	25
% Articulated Trucks	0%	0%	0%	0%	**0%**	9.9%	0%	0%	0%	**9.7%**	12.8%	0%	0%	0%	**12.8%**	0%	0%	0%	0%	**-**	10.9%
Buses and Single-Unit Trucks	0	0	0	0	**0**	1	1	0	0	**2**	4	0	0	0	**4**	0	0	0	0	**0**	6
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0.9%	50.0%	0%	0%	**1.8%**	3.7%	0%	0%	0%	**3.7%**	0%	0%	0%	0%	**-**	2.6%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

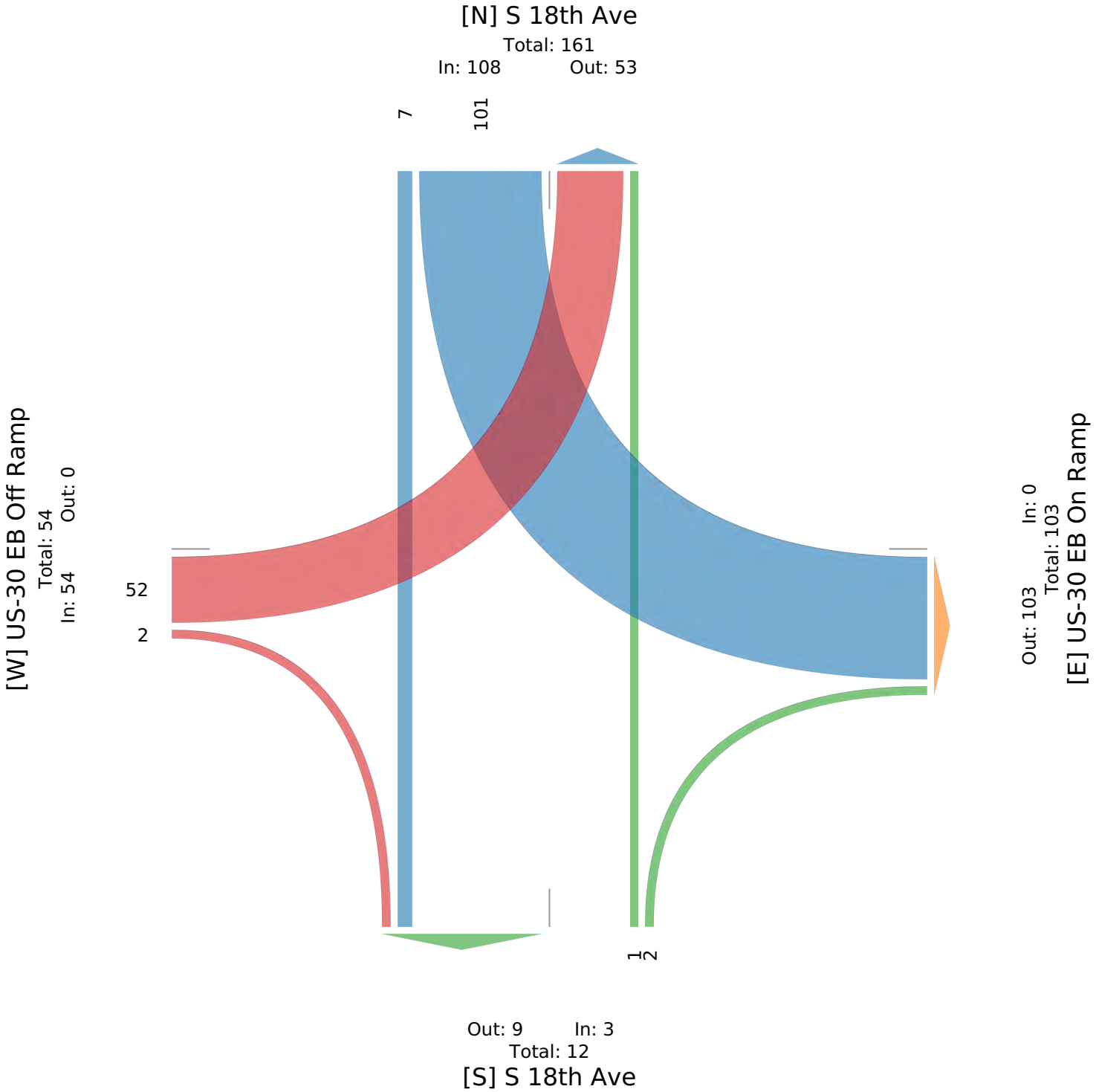
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:45AM	0	0	0	0	**0**	24	3	0	0	**27**	13	0	0	0	**13**	0	0	0	0	**0**	**40**
12:00PM	0	0	2	0	**2**	24	3	0	0	**27**	10	0	1	0	**11**	0	0	0	0	**0**	**40**
12:15PM	0	0	0	0	**0**	28	1	0	0	**29**	16	0	1	0	**17**	0	0	0	0	**0**	**46**
12:30PM	0	1	0	0	**1**	25	0	0	0	**25**	13	0	0	0	**13**	0	0	0	0	**0**	**39**
Total	0	1	2	0	**3**	101	7	0	0	**108**	52	0	2	0	**54**	0	0	0	0	**0**	**165**
% Approach	0%	33.3%	66.7%	0%	**-**	93.5%	6.5%	0%	0%	**-**	96.3%	0%	3.7%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	0.6%	1.2%	0%	**1.8%**	61.2%	4.2%	0%	0%	**65.5%**	31.5%	0%	1.2%	0%	**32.7%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.250	0.250	-	**0.375**	0.902	0.583	-	-	**0.931**	0.813	-	0.500	-	**0.794**	-	-	-	-	**-**	0.897
Lights	0	1	1	0	**2**	85	7	0	0	**92**	15	0	1	0	**16**	0	0	0	0	**0**	110
% Lights	0%	100%	50.0%	0%	**66.7%**	84.2%	100%	0%	0%	**85.2%**	28.8%	0%	50.0%	0%	**29.6%**	0%	0%	0%	0%	**-**	66.7%
Articulated Trucks	0	0	1	0	**1**	9	0	0	0	**9**	29	0	1	0	**30**	0	0	0	0	**0**	40
% Articulated Trucks	0%	0%	50.0%	0%	**33.3%**	8.9%	0%	0%	0%	**8.3%**	55.8%	0%	50.0%	0%	**55.6%**	0%	0%	0%	0%	**-**	24.2%
Buses and Single-Unit Trucks	0	0	0	0	**0**	7	0	0	0	**7**	8	0	0	0	**8**	0	0	0	0	**0**	15
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	6.9%	0%	0%	0%	**6.5%**	15.4%	0%	0%	0%	**14.8%**	0%	0%	0%	0%	**-**	9.1%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:45PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

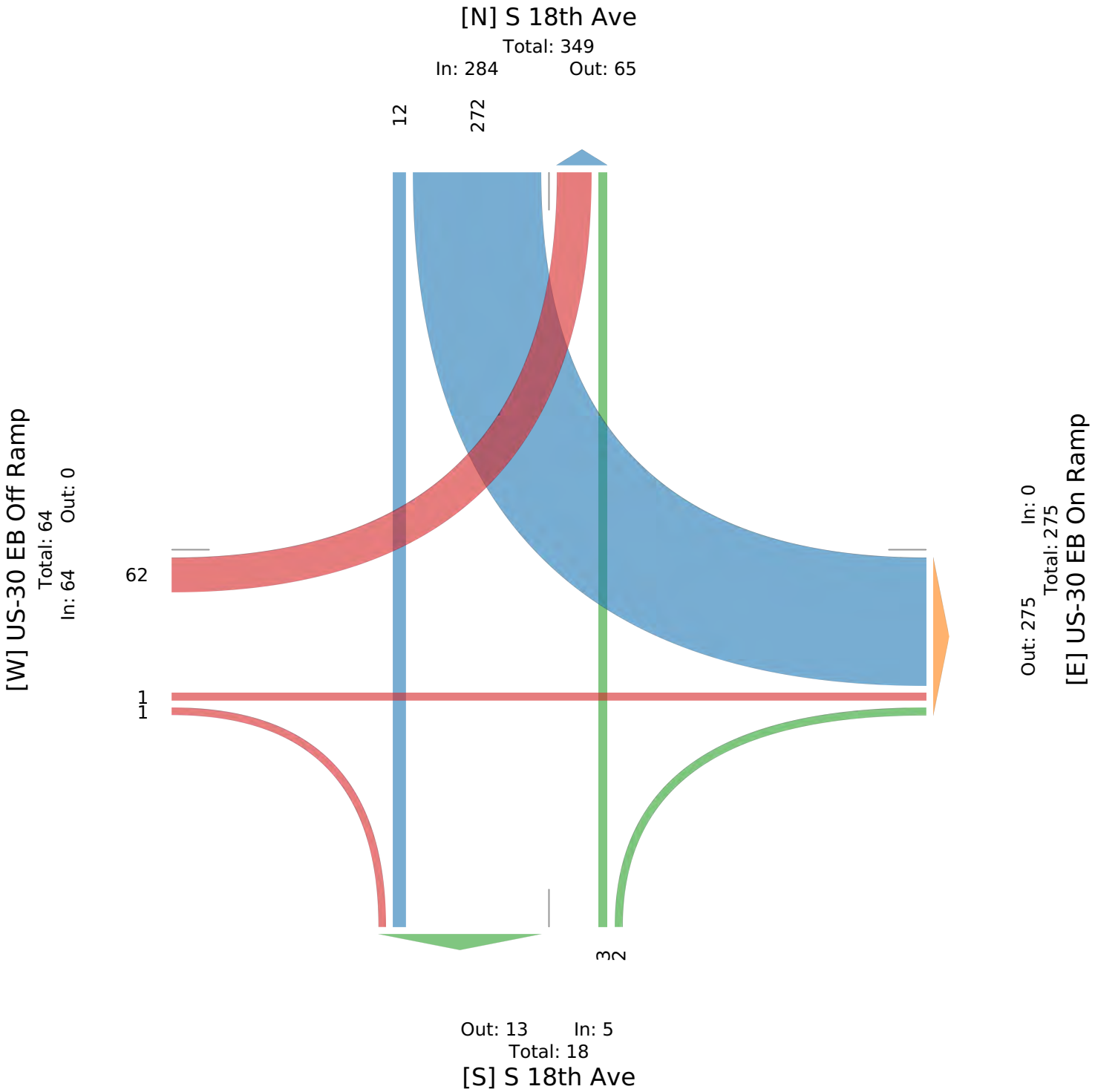
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 3:45PM	0	1	1	0	**2**	54	4	0	0	**58**	16	1	0	0	**17**	0	0	0	0	**0**	**77**
4:00PM	0	1	1	0	**2**	62	3	0	0	**65**	11	0	1	0	**12**	0	0	0	0	**0**	**79**
4:15PM	0	1	0	0	**1**	76	2	0	0	**78**	17	0	0	0	**17**	0	0	0	0	**0**	**96**
4:30PM	0	0	0	0	**0**	80	3	0	0	**83**	18	0	0	0	**18**	0	0	0	0	**0**	**101**
Total	0	3	2	0	**5**	272	12	0	0	**284**	62	1	1	0	**64**	0	0	0	0	**0**	**353**
% Approach	0%	60.0%	40.0%	0%	**-**	95.8%	4.2%	0%	0%	**-**	96.9%	1.6%	1.6%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	0.8%	0.6%	0%	**1.4%**	77.1%	3.4%	0%	0%	**80.5%**	17.6%	0.3%	0.3%	0%	**18.1%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.750	0.500	-	**0.625**	0.850	0.750	-	-	**0.855**	0.861	0.250	0.250	-	**0.889**	-	-	-	-	**-**	0.874
Lights	0	3	2	0	**5**	261	11	0	0	**272**	42	0	1	0	**43**	0	0	0	0	**0**	320
% Lights	0%	100%	100%	0%	**100%**	96.0%	91.7%	0%	0%	**95.8%**	67.7%	0%	100%	0%	**67.2%**	0%	0%	0%	0%	**-**	90.7%
Articulated Trucks	0	0	0	0	**0**	6	0	0	0	**6**	13	0	0	0	**13**	0	0	0	0	**0**	19
% Articulated Trucks	0%	0%	0%	0%	**0%**	2.2%	0%	0%	0%	**2.1%**	21.0%	0%	0%	0%	**20.3%**	0%	0%	0%	0%	**-**	5.4%
Buses and Single-Unit Trucks	0	0	0	0	**0**	5	1	0	0	**6**	7	1	0	0	**8**	0	0	0	0	**0**	14
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	1.8%	8.3%	0%	0%	**2.1%**	11.3%	100%	0%	0%	**12.5%**	0%	0%	0%	0%	**-**	4.0%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:45PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	0	1	0	0	**1**	0	5	3	0	**8**	0	0	0	0	**0**	0	0	5	0	**5**	**14**
12:15AM	0	2	0	0	**2**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	4	0	**4**	**10**
12:30AM	0	2	0	0	**2**	0	7	0	0	**7**	0	0	0	0	**0**	0	0	3	0	**3**	**12**
12:45AM	0	1	0	0	**1**	0	4	1	0	**5**	0	0	0	0	**0**	0	0	4	0	**4**	**10**
Hourly Total	0	6	0	0	**6**	0	18	6	0	**24**	0	0	0	0	**0**	0	0	16	0	**16**	**46**
1:00AM	0	3	0	0	**3**	0	20	2	0	**22**	0	0	0	0	**0**	0	0	5	0	**5**	**30**
1:15AM	0	1	0	0	**1**	0	3	3	0	**6**	0	0	0	0	**0**	0	0	0	0	**0**	**7**
1:30AM	0	3	0	0	**3**	0	3	1	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**10**
1:45AM	0	1	0	0	**1**	0	8	4	0	**12**	0	0	0	0	**0**	0	1	2	0	**3**	**16**
Hourly Total	0	8	0	0	**8**	0	34	10	0	**44**	0	0	0	0	**0**	0	1	10	0	**11**	**63**
2:00AM	0	2	0	0	**2**	0	3	2	0	**5**	0	0	0	0	**0**	0	0	1	0	**1**	**8**
2:15AM	0	1	0	0	**1**	0	5	1	0	**6**	0	0	0	0	**0**	0	0	4	0	**4**	**11**
2:30AM	0	1	0	0	**1**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	4	0	**4**	**9**
2:45AM	0	3	0	0	**3**	0	1	3	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**10**
Hourly Total	0	7	0	0	**7**	0	11	8	0	**19**	0	0	0	0	**0**	0	0	12	0	**12**	**38**
3:00AM	0	1	0	0	**1**	0	3	5	0	**8**	0	0	0	0	**0**	0	1	2	0	**3**	**12**
3:15AM	0	0	0	0	**0**	0	9	4	0	**13**	0	0	0	0	**0**	0	0	1	0	**1**	**14**
3:30AM	0	2	0	0	**2**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	2	0	**2**	**8**
3:45AM	0	1	0	0	**1**	0	2	3	0	**5**	0	0	0	0	**0**	0	0	2	0	**2**	**8**
Hourly Total	0	4	0	0	**4**	0	16	14	0	**30**	0	0	0	0	**0**	0	1	7	0	**8**	**42**
4:00AM	0	1	0	0	**1**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**8**
4:15AM	0	2	0	0	**2**	0	8	1	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**19**
4:30AM	0	9	0	0	**9**	0	8	1	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**26**
4:45AM	0	3	0	0	**3**	0	8	4	0	**12**	0	0	0	0	**0**	0	0	9	0	**9**	**24**
Hourly Total	0	15	0	0	**15**	0	26	8	0	**34**	0	0	0	0	**0**	0	0	28	0	**28**	**77**
5:00AM	0	8	0	0	**8**	0	17	4	0	**21**	0	0	0	0	**0**	0	0	13	0	**13**	**42**
5:15AM	0	5	0	0	**5**	0	30	6	0	**36**	0	0	0	0	**0**	0	0	18	0	**18**	**59**
5:30AM	0	10	0	0	**10**	0	28	10	0	**38**	0	0	0	0	**0**	0	0	23	0	**23**	**71**
5:45AM	0	11	0	0	**11**	0	26	12	0	**38**	0	0	0	0	**0**	0	1	29	0	**30**	**79**
Hourly Total	0	34	0	0	**34**	0	101	32	0	**133**	0	0	0	0	**0**	0	1	83	0	**84**	**251**
6:00AM	0	9	0	0	**9**	0	19	13	0	**32**	0	0	0	0	**0**	0	1	19	0	**20**	**61**
6:15AM	0	10	0	0	**10**	0	20	12	0	**32**	0	0	0	0	**0**	0	0	38	0	**38**	**80**
6:30AM	0	27	0	0	**27**	0	24	9	0	**33**	0	0	0	0	**0**	0	0	56	0	**56**	**116**
6:45AM	1	48	0	0	**49**	0	14	14	0	**28**	0	0	0	0	**0**	0	0	63	0	**63**	**140**
Hourly Total	1	94	0	0	**95**	0	77	48	0	**125**	0	0	0	0	**0**	0	1	176	0	**177**	**397**
7:00AM	2	17	0	0	**19**	0	22	15	0	**37**	0	0	0	0	**0**	0	0	53	0	**53**	**109**
7:15AM	0	20	0	0	**20**	0	39	19	0	**58**	0	0	0	0	**0**	1	0	68	0	**69**	**147**
7:30AM	1	28	0	0	**29**	0	40	15	0	**55**	0	0	0	0	**0**	2	1	58	0	**61**	**145**
7:45AM	1	15	0	0	**16**	0	23	20	0	**43**	0	0	0	0	**0**	1	0	54	0	**55**	**114**
Hourly Total	4	80	0	0	**84**	0	124	69	0	**193**	0	0	0	0	**0**	4	1	233	0	**238**	**515**
8:00AM	0	12	0	0	**12**	0	35	15	0	**50**	0	0	0	0	**0**	1	0	42	0	**43**	**105**
8:15AM	0	16	0	0	**16**	0	29	9	0	**38**	0	0	0	0	**0**	2	0	34	0	**36**	**90**
8:30AM	0	14	0	0	**14**	0	19	17	0	**36**	0	0	0	0	**0**	0	0	26	0	**26**	**76**
8:45AM	0	14	0	0	**14**	0	13	7	0	**20**	0	0	0	0	**0**	0	0	21	0	**21**	**55**
Hourly Total	0	56	0	0	**56**	0	96	48	0	**144**	0	0	0	0	**0**	3	0	123	0	**126**	**326**
9:00AM	0	8	0	0	**8**	0	26	9	0	**35**	0	0	0	0	**0**	1	0	16	0	**17**	**60**
9:15AM	1	12	0	0	**13**	0	22	10	0	**32**	0	0	0	0	**0**	0	0	25	0	**25**	**70**
9:30AM	0	13	0	0	**13**	0	23	9	0	**32**	0	0	0	0	**0**	0	0	18	0	**18**	**63**
9:45AM	0	15	0	0	**15**	0	24	9	0	**33**	0	0	0	0	**0**	0	0	26	0	**26**	**74**
Hourly Total	1	48	0	0	**49**	0	95	37	0	**132**	0	0	0	0	**0**	1	0	85	0	**86**	**267**
10:00AM	0	11	0	0	**11**	0	20	14	0	**34**	0	0	0	0	**0**	0	1	22	0	**23**	**68**
10:15AM	0	9	0	0	**9**	0	18	14	0	**32**	0	0	0	0	**0**	0	0	28	0	**28**	**69**
10:30AM	0	17	0	0	**17**	0	27	7	0	**34**	0	0	0	0	**0**	0	0	26	0	**26**	**77**
10:45AM	0	10	0	0	**10**	0	18	11	0	**29**	0	0	0	0	**0**	0	0	29	0	**29**	**68**

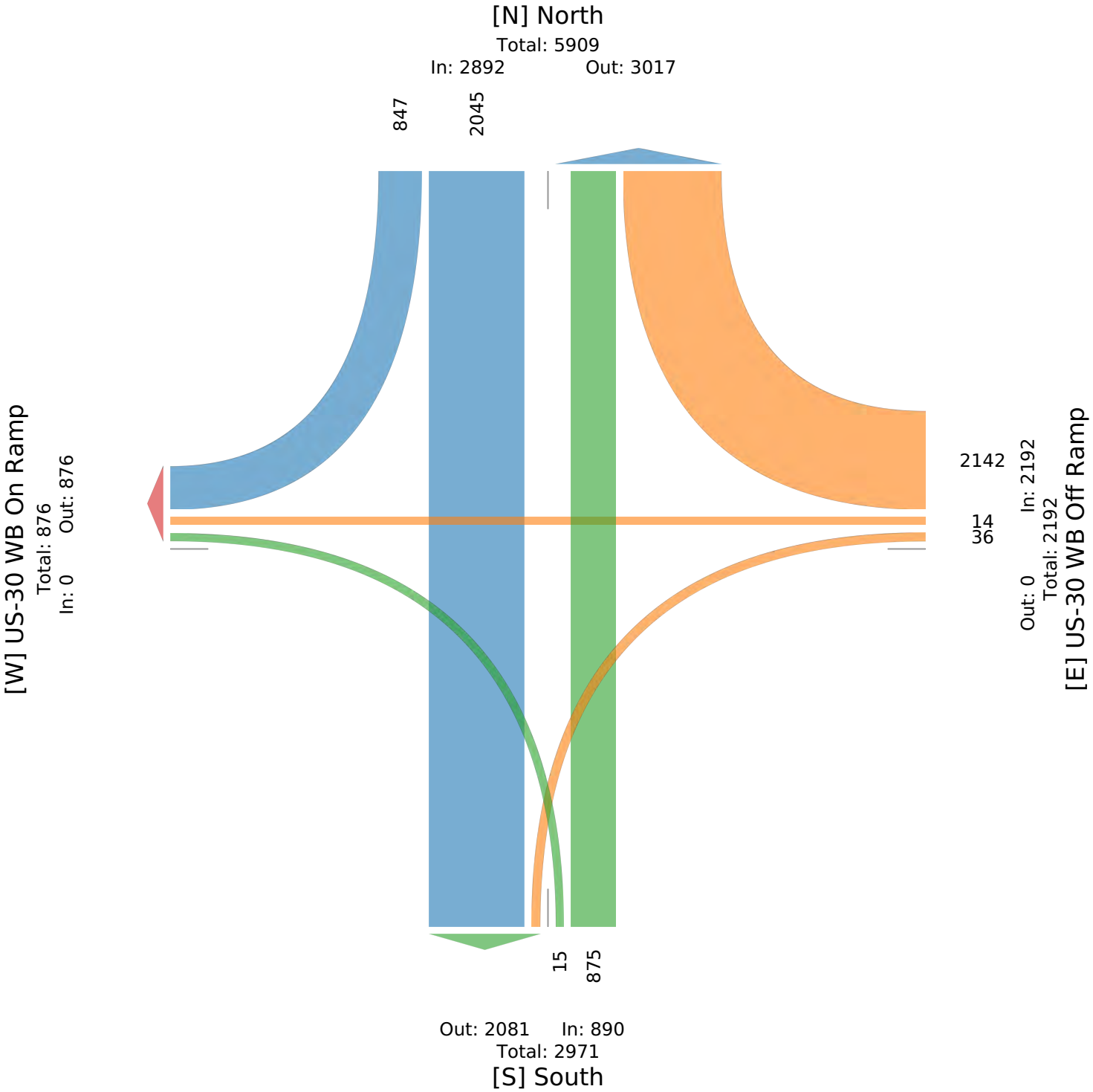
Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	47	0	0	**47**	0	83	46	0	**129**	0	0	0	0	**0**	0	1	105	0	**106**	**282**
11:00AM	0	7	0	0	**7**	0	31	22	0	**53**	0	0	0	0	**0**	0	0	22	0	**22**	**82**
11:15AM	0	12	0	0	**12**	0	21	10	0	**31**	0	0	0	0	**0**	0	0	31	0	**31**	**74**
11:30AM	0	11	0	0	**11**	0	13	11	0	**24**	0	0	0	0	**0**	0	0	28	0	**28**	**63**
11:45AM	0	14	0	0	**14**	0	23	8	0	**31**	0	0	0	0	**0**	3	1	38	0	**42**	**87**
Hourly Total	0	44	0	0	**44**	0	88	51	0	**139**	0	0	0	0	**0**	3	1	119	0	**123**	**306**
12:00PM	0	11	0	0	**11**	0	28	5	0	**33**	0	0	0	0	**0**	0	0	25	0	**25**	**69**
12:15PM	0	16	0	0	**16**	0	28	20	0	**48**	0	0	0	0	**0**	0	0	24	0	**24**	**88**
12:30PM	0	13	0	0	**13**	0	24	8	0	**32**	0	0	0	0	**0**	0	0	21	0	**21**	**66**
12:45PM	0	6	0	0	**6**	0	20	15	0	**35**	0	0	0	0	**0**	0	0	24	0	**24**	**65**
Hourly Total	0	46	0	0	**46**	0	100	48	0	**148**	0	0	0	0	**0**	0	0	94	0	**94**	**288**
1:00PM	0	16	0	0	**16**	0	15	14	0	**29**	0	0	0	0	**0**	1	2	32	0	**35**	**80**
1:15PM	0	6	0	0	**6**	0	24	9	0	**33**	0	0	0	0	**0**	1	0	28	0	**29**	**68**
1:30PM	0	5	0	0	**5**	0	25	14	0	**39**	0	0	0	0	**0**	0	0	24	0	**24**	**68**
1:45PM	1	14	0	0	**15**	0	32	8	0	**40**	0	0	0	0	**0**	1	0	22	0	**23**	**78**
Hourly Total	1	41	0	0	**42**	0	96	45	0	**141**	0	0	0	0	**0**	3	2	106	0	**111**	**294**
2:00PM	0	11	0	0	**11**	0	29	12	0	**41**	0	0	0	0	**0**	0	0	17	0	**17**	**69**
2:15PM	0	18	0	0	**18**	0	26	11	0	**37**	0	0	0	0	**0**	1	1	40	0	**42**	**97**
2:30PM	1	10	0	0	**11**	0	31	8	0	**39**	0	0	0	0	**0**	0	0	47	0	**47**	**97**
2:45PM	0	18	0	0	**18**	0	32	13	0	**45**	0	0	0	0	**0**	1	0	52	0	**53**	**116**
Hourly Total	1	57	0	0	**58**	0	118	44	0	**162**	0	0	0	0	**0**	2	1	156	0	**159**	**379**
3:00PM	1	9	0	0	**10**	0	45	12	0	**57**	0	0	0	0	**0**	1	0	37	0	**38**	**105**
3:15PM	0	14	0	0	**14**	0	41	28	0	**69**	0	0	0	0	**0**	2	0	36	0	**38**	**121**
3:30PM	0	21	0	0	**21**	0	74	24	0	**98**	0	0	0	0	**0**	2	0	49	0	**51**	**170**
3:45PM	1	16	0	0	**17**	0	58	22	0	**80**	0	0	0	0	**0**	1	1	50	0	**52**	**149**
Hourly Total	2	60	0	0	**62**	0	218	86	0	**304**	0	0	0	0	**0**	6	1	172	0	**179**	**545**
4:00PM	1	11	0	0	**12**	0	67	35	0	**102**	0	0	0	0	**0**	0	0	32	0	**32**	**146**
4:15PM	0	17	0	0	**17**	0	75	20	0	**95**	0	0	0	0	**0**	1	0	34	0	**35**	**147**
4:30PM	0	18	0	0	**18**	0	78	16	0	**94**	0	0	0	0	**0**	2	0	50	0	**52**	**164**
4:45PM	2	13	0	0	**15**	0	52	22	0	**74**	0	0	0	0	**0**	1	1	56	0	**58**	**147**
Hourly Total	3	59	0	0	**62**	0	272	93	0	**365**	0	0	0	0	**0**	4	1	172	0	**177**	**604**
5:00PM	0	7	0	0	**7**	0	52	17	0	**69**	0	0	0	0	**0**	2	1	38	0	**41**	**117**
5:15PM	0	9	0	0	**9**	0	48	11	0	**59**	0	0	0	0	**0**	1	0	34	0	**35**	**103**
5:30PM	0	13	0	0	**13**	0	34	13	0	**47**	0	0	0	0	**0**	1	0	37	0	**38**	**98**
5:45PM	0	16	0	0	**16**	0	38	6	0	**44**	0	0	0	0	**0**	0	0	41	0	**41**	**101**
Hourly Total	0	45	0	0	**45**	0	172	47	0	**219**	0	0	0	0	**0**	4	1	150	0	**155**	**419**
6:00PM	0	11	0	0	**11**	0	33	8	0	**41**	0	0	0	0	**0**	1	0	34	0	**35**	**87**
6:15PM	0	7	0	0	**7**	0	16	5	0	**21**	0	0	0	0	**0**	0	0	27	0	**27**	**55**
6:30PM	0	8	0	0	**8**	0	16	4	0	**20**	0	0	0	0	**0**	0	0	19	0	**19**	**47**
6:45PM	1	8	0	0	**9**	0	21	4	0	**25**	0	0	0	0	**0**	0	0	22	0	**22**	**56**
Hourly Total	1	34	0	0	**35**	0	86	21	0	**107**	0	0	0	0	**0**	1	0	102	0	**103**	**245**
7:00PM	0	7	0	0	**7**	0	18	5	0	**23**	0	0	0	0	**0**	0	0	18	0	**18**	**48**
7:15PM	0	9	0	0	**9**	0	17	4	0	**21**	0	0	0	0	**0**	1	0	14	0	**15**	**45**
7:30PM	0	7	0	0	**7**	0	20	8	0	**28**	0	0	0	0	**0**	0	0	16	0	**16**	**51**
7:45PM	0	6	0	0	**6**	0	13	9	0	**22**	0	0	0	0	**0**	0	0	19	0	**19**	**47**
Hourly Total	0	29	0	0	**29**	0	68	26	0	**94**	0	0	0	0	**0**	1	0	67	0	**68**	**191**
8:00PM	0	4	0	0	**4**	0	13	2	0	**15**	0	0	0	0	**0**	0	0	9	0	**9**	**28**
8:15PM	1	4	0	0	**5**	0	17	3	0	**20**	0	0	0	0	**0**	0	0	11	0	**11**	**36**
8:30PM	0	3	0	0	**3**	0	13	7	0	**20**	0	0	0	0	**0**	0	0	7	0	**7**	**30**
8:45PM	0	7	0	0	**7**	0	13	5	0	**18**	0	0	0	0	**0**	1	0	15	0	**16**	**41**
Hourly Total	1	18	0	0	**19**	0	56	17	0	**73**	0	0	0	0	**0**	1	0	42	0	**43**	**135**
9:00PM	0	5	0	0	**5**	0	8	2	0	**10**	0	0	0	0	**0**	0	0	7	0	**7**	**22**
9:15PM	0	3	0	0	**3**	0	13	3	0	**16**	0	0	0	0	**0**	1	0	5	0	**6**	**25**
9:30PM	0	8	0	0	**8**	0	13	2	0	**15**	0	0	0	0	**0**	1	0	15	0	**16**	**39**
9:45PM	0	8	0	0	**8**	0	5	7	0	**12**	0	0	0	0	**0**	0	0	5	0	**5**	**25**
Hourly Total	0	24	0	0	**24**	0	39	14	0	**53**	0	0	0	0	**0**	2	0	32	0	**34**	**111**
10:00PM	0	2	0	0	**2**	0	9	4	0	**13**	0	0	0	0	**0**	0	1	2	0	**3**	**18**
10:15PM	0	1	0	0	**1**	0	9	8	0	**17**	0	0	0	0	**0**	0	0	9	0	**9**	**27**
10:30PM	0	2	0	0	**2**	0	6	1	0	**7**	0	0	0	0	**0**	0	0	12	0	**12**	**21**
10:45PM	0	3	0	0	**3**	0	2	3	0	**5**	0	0	0	0	**0**	0	0	9	0	**9**	**17**

Leg Direction	South Northbound					North Southbound					US-30 WB On Ramp Eastbound					US-30 WB Off Ramp Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	8	0	0	**8**	0	26	16	0	**42**	0	0	0	0	**0**	0	1	32	0	**33**	**83**
11:00PM	0	3	0	0	**3**	0	9	5	0	**14**	0	0	0	0	**0**	0	0	3	0	**3**	**20**
11:15PM	0	0	0	0	**0**	0	8	2	0	**10**	0	0	0	0	**0**	1	0	5	0	**6**	**16**
11:30PM	0	6	0	0	**6**	0	5	4	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**23**
11:45PM	0	2	0	0	**2**	0	3	2	0	**5**	0	0	0	0	**0**	0	0	4	0	**4**	**11**
Hourly Total	0	11	0	0	**11**	0	25	13	0	**38**	0	0	0	0	**0**	1	0	20	0	**21**	**70**
Total	15	875	0	0	**890**	0	2045	847	0	**2892**	0	0	0	0	**0**	36	14	2142	0	**2192**	**5974**
% Approach	1.7%	98.3%	0%	0%	**-**	0%	70.7%	29.3%	0%	**-**	0%	0%	0%	0%	**-**	1.6%	0.6%	97.7%	0%	**-**	**-**
% Total	0.3%	14.6%	0%	0%	**14.9%**	0%	34.2%	14.2%	0%	**48.4%**	0%	0%	0%	0%	**0%**	0.6%	0.2%	35.9%	0%	**36.7%**	**-**
Lights	14	551	0	0	**565**	0	1852	541	0	**2393**	0	0	0	0	**0**	31	6	1980	0	**2017**	4975
% Lights	93.3%	63.0%	0%	0%	**63.5%**	0%	90.6%	63.9%	0%	**82.7%**	0%	0%	0%	0%	**-**	86.1%	42.9%	92.4%	0%	**92.0%**	83.3%
Articulated Trucks	0	219	0	0	**219**	0	118	233	0	**351**	0	0	0	0	**0**	2	7	99	0	**108**	678
% Articulated Trucks	0%	25.0%	0%	0%	**24.6%**	0%	5.8%	27.5%	0%	**12.1%**	0%	0%	0%	0%	**-**	5.6%	50.0%	4.6%	0%	**4.9%**	11.3%
Buses and Single-Unit Trucks	1	105	0	0	**106**	0	75	73	0	**148**	0	0	0	0	**0**	3	1	63	0	**67**	321
% Buses and Single-Unit Trucks	6.7%	12.0%	0%	0%	**11.9%**	0%	3.7%	8.6%	0%	**5.1%**	0%	0%	0%	0%	**-**	8.3%	7.1%	2.9%	0%	**3.1%**	5.4%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

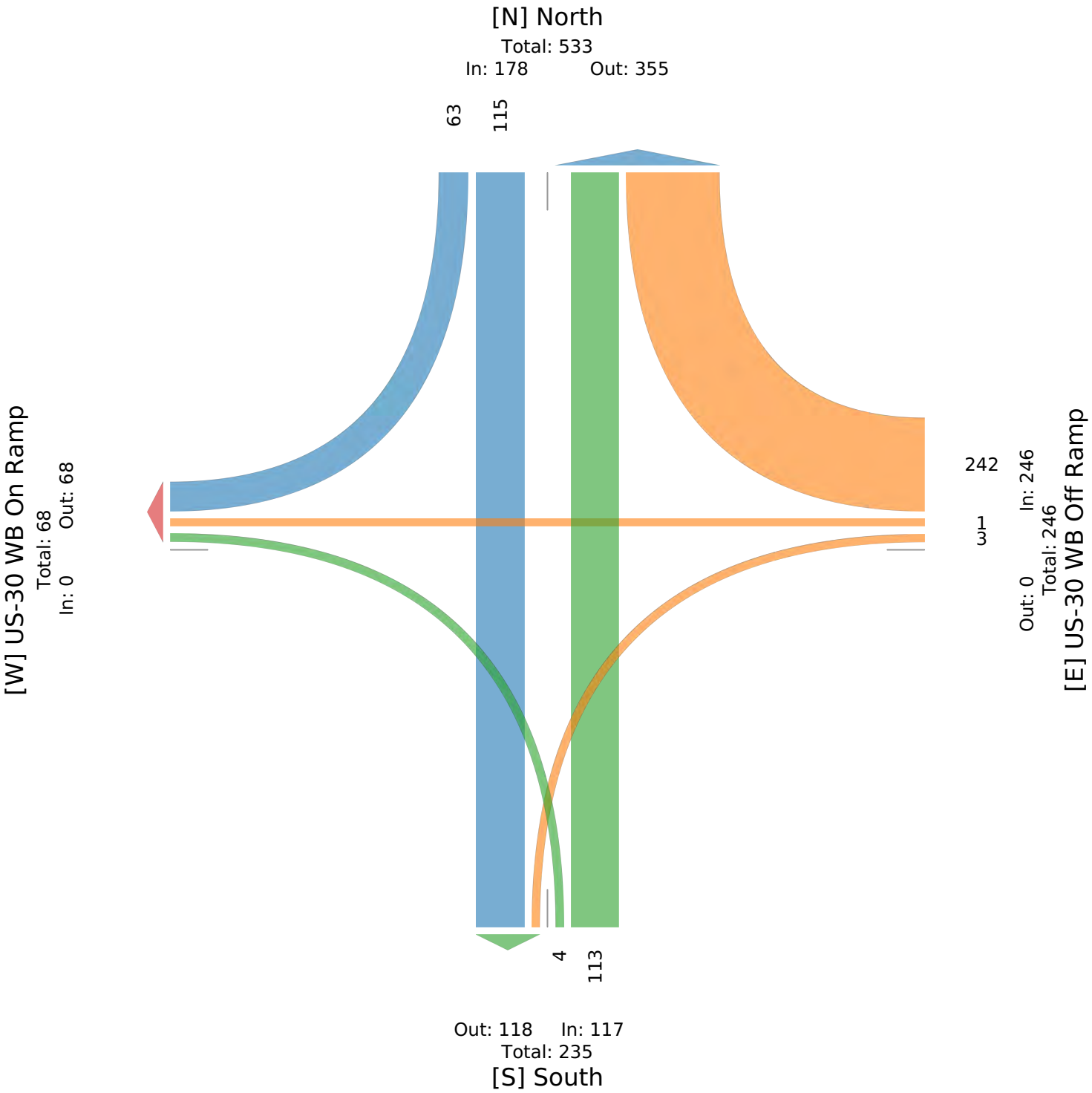
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	1	48	0	0	**49**	0	14	14	0	**28**	0	0	0	0	**0**	0	0	63	0	**63**	**140**
7:00AM	2	17	0	0	**19**	0	22	15	0	**37**	0	0	0	0	**0**	0	0	53	0	**53**	**109**
7:15AM	0	20	0	0	**20**	0	39	19	0	**58**	0	0	0	0	**0**	1	0	68	0	**69**	**147**
7:30AM	1	28	0	0	**29**	0	40	15	0	**55**	0	0	0	0	**0**	2	1	58	0	**61**	**145**
Total	4	113	0	0	**117**	0	115	63	0	**178**	0	0	0	0	**0**	3	1	242	0	**246**	**541**
% Approach	3.4%	96.6%	0%	0%	**-**	0%	64.6%	35.4%	0%	**-**	0%	0%	0%	0%	**-**	1.2%	0.4%	98.4%	0%	**-**	**-**
% Total	0.7%	20.9%	0%	0%	**21.6%**	0%	21.3%	11.6%	0%	**32.9%**	0%	0%	0%	0%	**0%**	0.6%	0.2%	44.7%	0%	**45.5%**	**-**
PHF	0.500	0.589	-	-	**0.597**	-	0.719	0.829	-	**0.767**	-	-	-	-	**-**	0.375	0.250	0.890	-	**0.891**	0.920
Lights	4	93	0	0	**97**	0	102	44	0	**146**	0	0	0	0	**0**	3	1	227	0	**231**	474
% Lights	100%	82.3%	0%	0%	**82.9%**	0%	88.7%	69.8%	0%	**82.0%**	0%	0%	0%	0%	**-**	100%	100%	93.8%	0%	**93.9%**	87.6%
Articulated Trucks	0	16	0	0	**16**	0	11	14	0	**25**	0	0	0	0	**0**	0	0	9	0	**9**	50
% Articulated Trucks	0%	14.2%	0%	0%	**13.7%**	0%	9.6%	22.2%	0%	**14.0%**	0%	0%	0%	0%	**-**	0%	0%	3.7%	0%	**3.7%**	9.2%
Buses and Single-Unit Trucks	0	4	0	0	**4**	0	2	5	0	**7**	0	0	0	0	**0**	0	0	6	0	**6**	17
% Buses and Single-Unit Trucks	0%	3.5%	0%	0%	**3.4%**	0%	1.7%	7.9%	0%	**3.9%**	0%	0%	0%	0%	**-**	0%	0%	2.5%	0%	**2.4%**	3.1%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

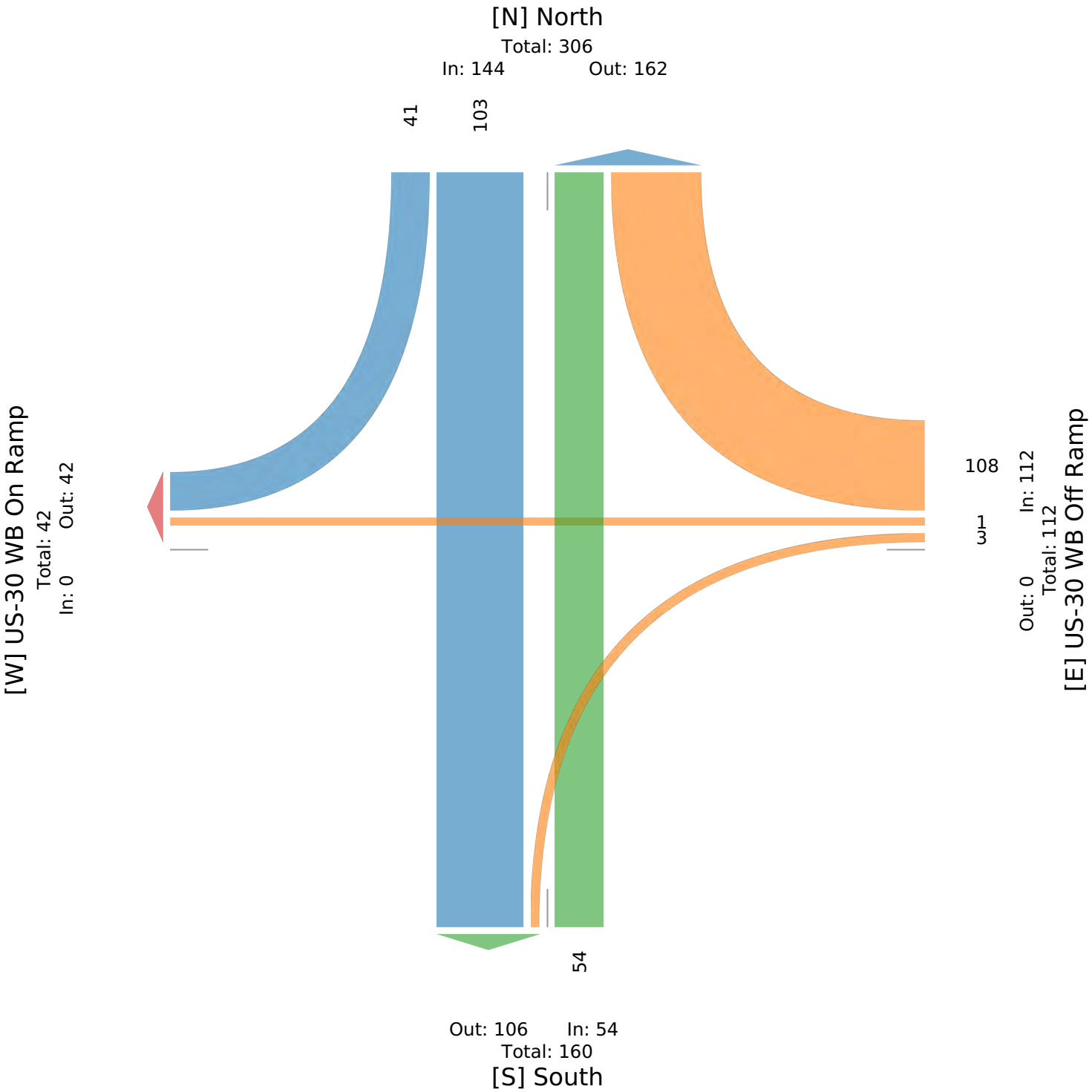
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:45AM	0	14	0	0	**14**	0	23	8	0	**31**	0	0	0	0	**0**	3	1	38	0	**42**	**87**
12:00PM	0	11	0	0	**11**	0	28	5	0	**33**	0	0	0	0	**0**	0	0	25	0	**25**	**69**
12:15PM	0	16	0	0	**16**	0	28	20	0	**48**	0	0	0	0	**0**	0	0	24	0	**24**	**88**
12:30PM	0	13	0	0	**13**	0	24	8	0	**32**	0	0	0	0	**0**	0	0	21	0	**21**	**66**
Total	0	54	0	0	**54**	0	103	41	0	**144**	0	0	0	0	**0**	3	1	108	0	**112**	**310**
% Approach	0%	100%	0%	0%	**-**	0%	71.5%	28.5%	0%	**-**	0%	0%	0%	0%	**-**	2.7%	0.9%	96.4%	0%	**-**	-
% Total	0%	17.4%	0%	0%	**17.4%**	0%	33.2%	13.2%	0%	**46.5%**	0%	0%	0%	0%	**0%**	1.0%	0.3%	34.8%	0%	**36.1%**	-
PHF	-	0.844	-	-	**0.844**	-	0.920	0.513	-	**0.750**	-	-	-	-	**-**	0.250	0.250	0.711	-	**0.667**	0.881
Lights	0	15	0	0	**15**	0	85	19	0	**104**	0	0	0	0	**0**	3	1	98	0	**102**	221
% Lights	0%	27.8%	0%	0%	**27.8%**	0%	82.5%	46.3%	0%	**72.2%**	0%	0%	0%	0%	**-**	100%	100%	90.7%	0%	**91.1%**	71.3%
Articulated Trucks	0	30	0	0	**30**	0	8	17	0	**25**	0	0	0	0	**0**	0	0	6	0	**6**	61
% Articulated Trucks	0%	55.6%	0%	0%	**55.6%**	0%	7.8%	41.5%	0%	**17.4%**	0%	0%	0%	0%	**-**	0%	0%	5.6%	0%	**5.4%**	19.7%
Buses and Single-Unit Trucks	0	9	0	0	**9**	0	10	5	0	**15**	0	0	0	0	**0**	0	0	4	0	**4**	28
% Buses and Single-Unit Trucks	0%	16.7%	0%	0%	**16.7%**	0%	9.7%	12.2%	0%	**10.4%**	0%	0%	0%	0%	**-**	0%	0%	3.7%	0%	**3.6%**	9.0%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:30PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

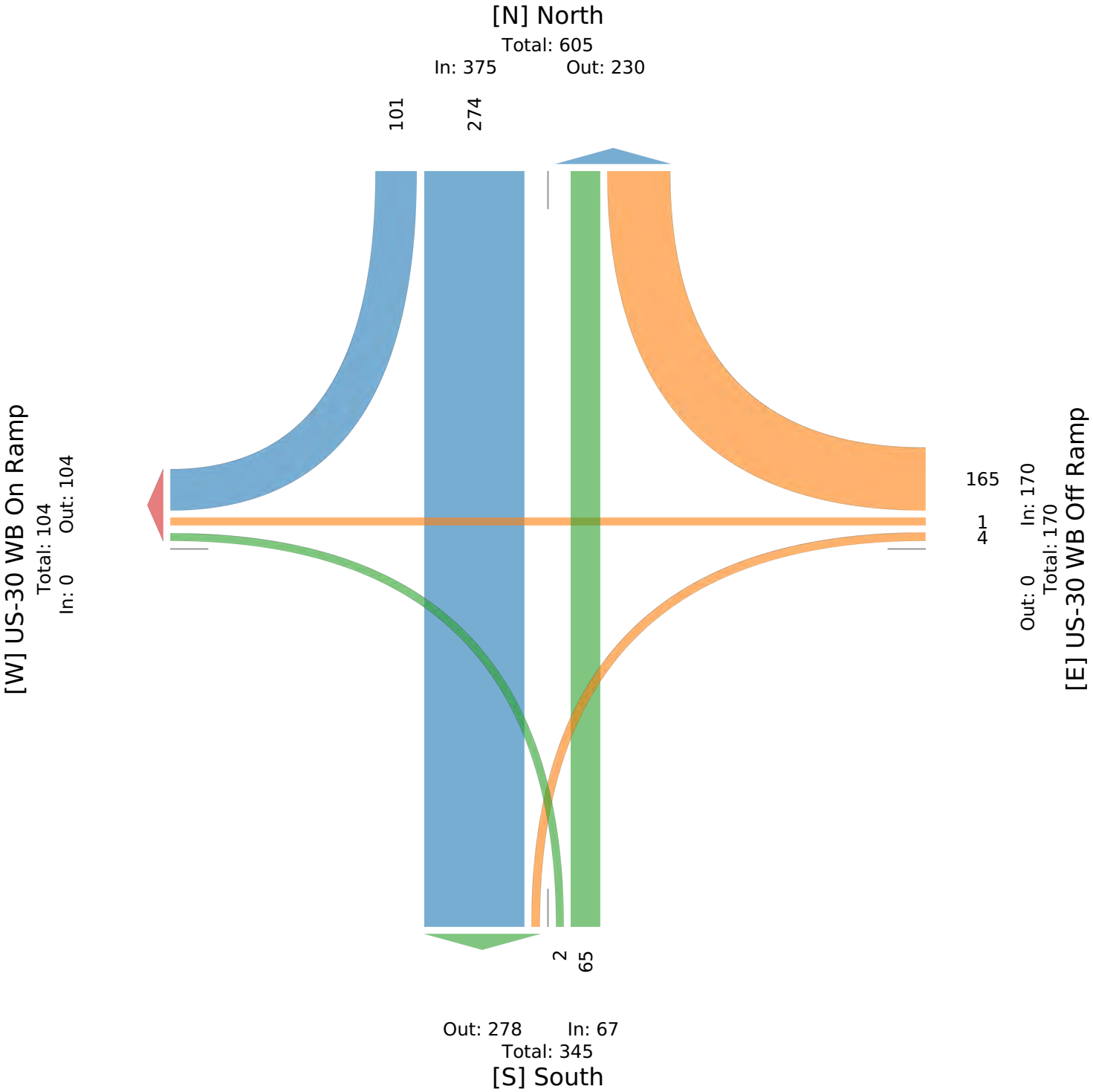
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 3:30PM	0	21	0	0	**21**	0	74	24	0	**98**	0	0	0	0	**0**	2	0	49	0	**51**	**170**
3:45PM	1	16	0	0	**17**	0	58	22	0	**80**	0	0	0	0	**0**	1	1	50	0	**52**	**149**
4:00PM	1	11	0	0	**12**	0	67	35	0	**102**	0	0	0	0	**0**	0	0	32	0	**32**	**146**
4:15PM	0	17	0	0	**17**	0	75	20	0	**95**	0	0	0	0	**0**	1	0	34	0	**35**	**147**
Total	2	65	0	0	**67**	0	274	101	0	**375**	0	0	0	0	**0**	4	1	165	0	**170**	**612**
% Approach	3.0%	97.0%	0%	0%	**-**	0%	73.1%	26.9%	0%	**-**	0%	0%	0%	0%	**-**	2.4%	0.6%	97.1%	0%	**-**	-
% Total	0.3%	10.6%	0%	0%	**10.9%**	0%	44.8%	16.5%	0%	**61.3%**	0%	0%	0%	0%	**0%**	0.7%	0.2%	27.0%	0%	**27.8%**	-
PHF	0.500	0.774	-	-	**0.798**	-	0.913	0.721	-	**0.919**	-	-	-	-	**-**	0.500	0.250	0.825	-	**0.817**	0.900
Lights	2	45	0	0	**47**	0	263	83	0	**346**	0	0	0	0	**0**	2	0	161	0	**163**	556
% Lights	100%	69.2%	0%	0%	**70.1%**	0%	96.0%	82.2%	0%	**92.3%**	0%	0%	0%	0%	**-**	50.0%	0%	97.6%	0%	**95.9%**	90.8%
Articulated Trucks	0	14	0	0	**14**	0	7	15	0	**22**	0	0	0	0	**0**	0	1	1	0	**2**	38
% Articulated Trucks	0%	21.5%	0%	0%	**20.9%**	0%	2.6%	14.9%	0%	**5.9%**	0%	0%	0%	0%	**-**	0%	100%	0.6%	0%	**1.2%**	6.2%
Buses and Single-Unit Trucks	0	6	0	0	**6**	0	4	3	0	**7**	0	0	0	0	**0**	2	0	3	0	**5**	18
% Buses and Single-Unit Trucks	0%	9.2%	0%	0%	**9.0%**	0%	1.5%	3.0%	0%	**1.9%**	0%	0%	0%	0%	**-**	50.0%	0%	1.8%	0%	**2.9%**	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:30PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Appendix B – Traffic Analysis Output

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	10	7	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	10	7	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	11	8	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	555	665	132	528	666	105	264	0	0	210	0	0
Stage 1	272	272	-	387	387	-	-	-	-	-	-	-
Stage 2	283	392	-	141	279	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	415	379	893	396	344	875	1275	-	-	1322	-	-
Stage 1	710	683	-	562	565	-	-	-	-	-	-	-
Stage 2	701	605	-	798	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	378	348	893	331	316	875	1275	-	-	1322	-	-
Mov Cap-2 Maneuver	378	348	-	331	316	-	-	-	-	-	-	-
Stage 1	706	679	-	519	522	-	-	-	-	-	-	-
Stage 2	643	559	-	723	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.99	13.89	2.65	0.26
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1018	-	-	805	415	94	-	-
HCM Lane V/C Ratio	0.072	-	-	0.104	0.024	0.006	-	-
HCM Ctrl Dly (s/v)	8	0.3	-	10	13.9	7.7	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	83	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	83	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	94	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	8.7	10.1	9.5	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	5%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	95%	75%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	44	56
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	42	42
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	49	63
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.156	0.098	0.019	0.025	0.067	0.246	0.088	0.012	0.08	0.099
Departure Headway (Hd)	6.133	5.287	6.517	6.012	5.307	5.988	5.484	4.779	5.845	5.645
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	581	672	545	590	667	595	648	741	608	629
Service Time	3.912	3.066	4.314	3.809	3.103	3.766	3.262	2.557	3.631	3.431
HCM Lane V/C Ratio	0.157	0.098	0.018	0.025	0.067	0.249	0.09	0.012	0.081	0.1
HCM Control Delay, s/veh	10.1	8.6	9.4	9	8.5	10.7	8.8	7.6	9.1	9.1
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.1	0.1	0.2	1	0.3	0	0.3	0.3

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	242	4	113	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	242	4	113	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	263	4	123	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	194	325	61	193	0	-	-	-	0
Stage 1	-	-	-	132	132	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	742	587	984	1294	-	0	0	-	-
Stage 1	0	0	0	852	782	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	740	585	984	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	740	585	-	-	-	-	-	-	-
Stage 1	-	-	-	850	779	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		10.06	0.27	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	978	-	-
HCM Lane V/C Ratio	0.003	-	0.273	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	109	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	125	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.73		0	7.39
HCM LOS	B	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.212	0.082	-
HCM Ctrl Dly (s/v)	-	-	12.7	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.3	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	6	4	8	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	6	4	8	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	9	6	12	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	790	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	233	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	264	236	714	198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	264	236	-	198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	720	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.81	18.26	0.26	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	597	299	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.388	0.091	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	14.8	18.3	8.3	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	98	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	98	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	124	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	10.8	11.3	12.2	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	32%	28%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	72%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	153	173	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	49	49	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	194	219	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.354	0.349	0.021	0.181	0.224	0.187	0.069	0.018	0.154	0.146
Departure Headway (Hd)	6.588	5.745	7.296	6.787	6.075	7.491	6.981	6.268	6.948	6.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	544	624	489	527	589	477	511	568	514	524
Service Time	4.344	3.501	5.061	4.552	3.84	5.264	4.754	4.04	4.717	4.584
HCM Lane V/C Ratio	0.357	0.351	0.02	0.182	0.226	0.189	0.068	0.018	0.156	0.147
HCM Control Delay, s/veh	12.9	11.6	10.2	11.1	10.6	12	10.3	9.2	11	10.8
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	1.6	1.6	0.1	0.7	0.9	0.7	0.2	0.1	0.5	0.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	274	101
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	274	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	301	111

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	226	488	36	412	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	151	412	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	710	479	1029	1019	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	837	593	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	708	478	1029	1019	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	708	478	-	-	-	-	-	-	-
Stage 1	-	-	-	923	829	-	-	-	-	-	-	-
Stage 2	-	-	-	837	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.36	0.25	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1019	-	1011	-	-
HCM Lane V/C Ratio	0.002	-	0.185	-	-
HCM Ctrl Dly (s/v)	8.5	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	272	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	272	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	313	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	641	645	7	-	-	-	-	0	0	6	0	0
Stage 1	639	639	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	326	354	1018	0	0	0	0	-	-	1614	-	0
Stage 1	390	427	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	262	286	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	262	286	-	-	-	-	-	-	-	-	-	-
Stage 1	314	344	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.64		0	7.44
HCM LOS	C	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	266	1614	-
HCM Lane V/C Ratio	-	-	0.277	0.194	-
HCM Ctrl Dly (s/v)	-	-	23.6	7.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.7	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	91	22	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	91	22	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	99	24	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	588	785	132	604	743	149	264	0	0	298	0	0
Stage 1	305	305	-	431	431	-	-	-	-	-	-	-
Stage 2	283	480	-	173	312	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	393	323	893	347	309	817	1275	-	-	1225	-	-
Stage 1	680	661	-	527	538	-	-	-	-	-	-	-
Stage 2	701	552	-	762	613	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	352	291	893	285	278	817	1275	-	-	1225	-	-
Mov Cap-2 Maneuver	352	291	-	285	278	-	-	-	-	-	-	-
Stage 1	665	647	-	486	496	-	-	-	-	-	-	-
Stage 2	642	509	-	680	600	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.08	15.2	2.05	0.79
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	577	-	-	792	363	278	-	-
HCM Lane V/C Ratio	0.072	-	-	0.106	0.027	0.02	-	-
HCM Ctrl Dly (s/v)	8	0.3	-	10.1	15.2	8	0.1	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	98	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	98	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	111	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	8.8	10.2	9.5	9.2
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	4%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	96%	78%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	51	63
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	49	49
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	58	72
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.157	0.098	0.019	0.025	0.068	0.248	0.089	0.012	0.094	0.113
Departure Headway (Hd)	6.176	5.33	6.576	6.071	5.365	6.042	5.538	4.833	5.85	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	576	666	539	584	660	589	642	733	607	626
Service Time	3.96	3.114	4.375	3.87	3.163	3.823	3.319	2.613	3.636	3.461
HCM Lane V/C Ratio	0.158	0.099	0.019	0.026	0.068	0.251	0.09	0.012	0.096	0.115
HCM Control Delay, s/veh	10.1	8.7	9.5	9	8.6	10.8	8.9	7.7	9.3	9.2
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.1	0.2	1	0.3	0	0.3	0.4

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	280	4	156	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	280	4	156	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	304	4	170	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	241	372	85	193	0	-	-	-	0
Stage 1	-	-	-	178	178	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	688	552	951	1294	-	0	0	-	-
Stage 1	0	0	0	800	746	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	686	551	951	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	686	551	-	-	-	-	-	-	-
Stage 1	-	-	-	798	743	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		10.65	0.19	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	945	-	-
HCM Lane V/C Ratio	0.003	-	0.327	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	152	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	175	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.64		0	7.39
HCM LOS	B	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.296	0.082	-
HCM Ctrl Dly (s/v)	-	-	13.6	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	101	4	22	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	101	4	22	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	153	6	33	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	790	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	233	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	256	236	714	198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	256	236	-	198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	700	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.91	71.46	0.26	0.1
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	593	227	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.391	0.847	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	14.9	71.5	8.3	0	-
HCM Lane LOS	A	A	-	B	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	6.6	0	-	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	112	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	112	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	142	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	10.9	11.4	12.5	11
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	35%	31%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	69%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	180	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	56	56	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	203	228	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.371	0.366	0.021	0.183	0.226	0.188	0.069	0.018	0.155	0.147
Departure Headway (Hd)	6.586	5.778	7.35	6.841	6.128	7.548	7.038	6.325	6.996	6.863
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	545	620	485	522	583	474	506	562	510	520
Service Time	4.341	3.532	5.12	4.61	3.897	5.327	4.817	4.102	4.769	4.636
HCM Lane V/C Ratio	0.372	0.368	0.021	0.184	0.228	0.19	0.069	0.018	0.157	0.148
HCM Control Delay, s/veh	13.2	11.9	10.3	11.2	10.7	12.1	10.3	9.2	11.1	10.8
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	1.7	1.7	0.1	0.7	0.9	0.7	0.2	0.1	0.5	0.5

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	312	144
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	312	144
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	343	158

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	247	577	36	501	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	171	501	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	686	426	1029	937	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	814	541	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	684	425	1029	937	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	684	425	-	-	-	-	-	-	-
Stage 1	-	-	-	922	829	-	-	-	-	-	-	-
Stage 2	-	-	-	814	541	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.38	0.26	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	937	-	1009	-	-
HCM Lane V/C Ratio	0.002	-	0.185	-	-
HCM Ctrl Dly (s/v)	8.9	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	310	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	310	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	356	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	728	732	7	-	-	-	-	0	0	6	0	0
Stage 1	726	726	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	280	313	1018	0	0	0	0	-	-	1614	-	0
Stage 1	343	386	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	218	244	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	218	244	-	-	-	-	-	-	-	-	-	-
Stage 1	267	301	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	29.21		0	7.57
HCM LOS	D	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	221	1614	-
HCM Lane V/C Ratio	-	-	0.333	0.221	-
HCM Ctrl Dly (s/v)	-	-	29.2	7.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.8	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	328	65	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	328	65	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	357	71	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	1136	132	827	965	278	264	0	0	555	0	0
Stage 1	398	398	-	560	560	-	-	-	-	-	-	-
Stage 2	283	738	-	267	405	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	336	201	893	235	225	668	1275	-	-	977	-	-
Stage 1	599	601	-	438	466	-	-	-	-	-	-	-
Stage 2	701	422	-	667	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	281	169	893	180	189	668	1275	-	-	977	-	-
Mov Cap-2 Maneuver	281	169	-	180	189	-	-	-	-	-	-	-
Stage 1	552	554	-	400	426	-	-	-	-	-	-	-
Stage 2	635	386	-	561	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.44	20.65	1.25	2.23
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	268	-	-	746	240	707	-	-
HCM Lane V/C Ratio	0.072	-	-	0.112	0.041	0.072	-	-
HCM Ctrl Dly (s/v)	8	0.4	-	10.4	20.7	9	0.4	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	141	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	141	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	160	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	9	10.5	9.8	9.6
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	3%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	97%	83%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	73	85
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	71	71
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	82	96
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.163	0.102	0.019	0.026	0.071	0.258	0.093	0.013	0.136	0.156
Departure Headway (Hd)	6.396	5.55	6.852	6.346	5.638	6.289	5.784	5.077	5.96	5.831
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	563	647	524	565	636	573	621	707	603	616
Service Time	4.116	3.269	4.578	4.072	3.364	4.007	3.502	2.795	3.679	3.549
HCM Lane V/C Ratio	0.162	0.102	0.019	0.027	0.071	0.258	0.093	0.013	0.136	0.156
HCM Control Delay, s/veh	10.4	8.9	9.7	9.2	8.8	11.2	9.1	7.9	9.6	9.6
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.1	0.2	1	0.3	0	0.5	0.5

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	396	4	287	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	396	4	287	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	430	4	312	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	383	514	156	193	0	-	-	-	0
Stage 1	-	-	-	321	321	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	545	458	856	1294	-	0	0	-	-
Stage 1	0	0	0	660	645	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	543	457	856	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	543	457	-	-	-	-	-	-	-
Stage 1	-	-	-	658	643	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		13.58	0.11	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	850	-	-
HCM Lane V/C Ratio	0.003	-	0.511	-	-
HCM Ctrl Dly (s/v)	7.8	-	13.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	3	-	-

Intersection	
Int Delay, s/veh	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	283	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	283	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	325	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	18.32		0	7.39
HCM LOS	C	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.551	0.082	-
HCM Ctrl Dly (s/v)	-	-	18.3	7.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	3.3	0.3	-

Intersection	
Int Delay, s/veh	126.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	333	4	66	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	333	4	66	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	92	92	92	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	362	4	72	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	789	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	232	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	~ 288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	245	236	714	~ 198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	245	236	-	~ 198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	665	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	15.07	$ 477.53	0.26	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	587	225	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.395	1.946	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	15.1	$ 477.5	8.3	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	31.8	0	-	-

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

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	156	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	156	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	197	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	11.1	11.7	13.4	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	57%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	43%	39%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	61%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	202	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	78	78	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	230	256	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.421	0.416	0.021	0.187	0.232	0.193	0.071	0.018	0.158	0.15
Departure Headway (Hd)	6.576	5.859	7.514	7.004	6.29	7.718	7.207	6.492	7.139	7.006
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	611	474	510	568	463	494	547	499	509
Service Time	4.339	3.622	5.292	4.782	4.068	5.505	4.994	4.279	4.923	4.789
HCM Lane V/C Ratio	0.421	0.419	0.021	0.188	0.234	0.194	0.071	0.018	0.16	0.151
HCM Control Delay, s/veh	14.1	12.8	10.5	11.4	11	12.4	10.6	9.4	11.3	11
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	2.1	2	0.1	0.7	0.9	0.7	0.2	0.1	0.6	0.5

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	428	276
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	428	276
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	470	303

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	311	849	36	774	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	235	774	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	618	296	1029	725	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	747	407	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	616	295	1029	725	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	616	295	-	-	-	-	-	-	-
Stage 1	-	-	-	922	829	-	-	-	-	-	-	-
Stage 2	-	-	-	747	407	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.43	0.3	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	725	-	999	-	-
HCM Lane V/C Ratio	0.003	-	0.187	-	-
HCM Ctrl Dly (s/v)	10	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

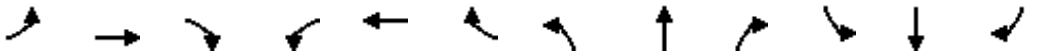
Intersection	
Int Delay, s/veh	15.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	426	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	426	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	490	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	995	999	7	-	-	-	-	0	0	6	0	0
Stage 1	993	993	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	175	214	1018	0	0	0	0	-	-	1614	-	0
Stage 1	231	284	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	122	149	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	122	149	-	-	-	-	-	-	-	-	-	-
Stage 1	161	198	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	69.48		0	7.97
HCM LOS	F	-		

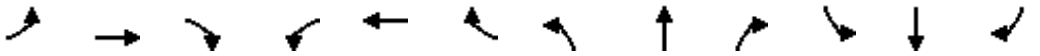
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	124	1614	-
HCM Lane V/C Ratio	-	-	0.593	0.303	-
HCM Ctrl Dly (s/v)	-	-	69.5	8.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	3	1.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	136	101	4	22	6	280	4	3	349	25
Future Volume (veh/h)	14	3	136	101	4	22	6	280	4	3	349	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1648	1648	1648	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	21	5	206	153	6	33	9	424	6	5	529	38
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	17	17	17	5	5	5	6	6	6
Cap, veh/h	196	24	349	532	34	57	176	1182	17	167	1110	79
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	81	96	1409	979	136	231	25	3377	47	10	3173	227
Grp Volume(v), veh/h	232	0	0	192	0	0	230	0	209	302	0	270
Grp Sat Flow(s),veh/h/ln	1587	0	0	1347	0	0	1796	0	1653	1802	0	1607
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.9
Cycle Q Clear(g_c), s	2.8	0.0	0.0	2.3	0.0	0.0	2.1	0.0	2.1	2.9	0.0	2.9
Prop In Lane	0.09		0.89	0.80		0.17	0.04		0.03	0.02		0.14
Lane Grp Cap(c), veh/h	569	0	0	623	0	0	796	0	578	794	0	562
V/C Ratio(X)	0.41	0.00	0.00	0.31	0.00	0.00	0.29	0.00	0.36	0.38	0.00	0.48
Avail Cap(c_a), veh/h	1442	0	0	1232	0	0	1588	0	1330	1605	0	1293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	7.2	0.0	0.0	5.4	0.0	5.4	5.7	0.0	5.7
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.4	0.3	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.3	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	0.0	0.0	7.5	0.0	0.0	5.6	0.0	5.8	6.0	0.0	6.3
LnGrp LOS	A			A			A		A	A		A
Approach Vol, veh/h		232			192			439			572	
Approach Delay, s/veh		7.9			7.5			5.7			6.1	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.3		10.0		12.3		10.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.1		4.8		4.9		4.3				
Green Ext Time (p_c), s		2.2		1.1		2.9		1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			6.5									
HCM 7th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	136	333	4	66	6	280	4	3	349	25
Future Volume (veh/h)	14	3	136	333	4	66	6	280	4	3	349	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1648	1648	1648	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	21	5	206	362	4	72	9	424	6	5	529	38
Peak Hour Factor	0.66	0.66	0.66	0.92	0.92	0.92	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	17	17	17	5	5	5	6	6	6
Cap, veh/h	143	56	654	627	21	89	118	925	13	111	869	62
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	57	123	1426	941	47	194	24	3378	47	9	3174	227
Grp Volume(v), veh/h	232	0	0	438	0	0	230	0	209	302	0	270
Grp Sat Flow(s),veh/h/ln	1606	0	0	1182	0	0	1796	0	1653	1802	0	1607
Q Serve(g_s), s	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	3.5	0.0	0.0	4.9
Cycle Q Clear(g_c), s	3.1	0.0	0.0	10.0	0.0	0.0	3.5	0.0	3.5	4.9	0.0	4.9
Prop In Lane	0.09		0.89	0.83		0.16	0.04		0.03	0.02		0.14
Lane Grp Cap(c), veh/h	853	0	0	737	0	0	603	0	453	602	0	440
V/C Ratio(X)	0.27	0.00	0.00	0.59	0.00	0.00	0.38	0.00	0.46	0.50	0.00	0.61
Avail Cap(c_a), veh/h	1787	0	0	1384	0	0	930	0	763	937	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	7.3	0.0	0.0	10.1	0.0	10.1	10.6	0.0	10.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	0.0	0.4	0.0	0.7	0.6	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.5	0.0	0.0	1.1	0.0	1.0	1.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.9	0.0	0.0	8.0	0.0	0.0	10.5	0.0	10.9	11.3	0.0	12.0
LnGrp LOS	A			A			B		B	B		B
Approach Vol, veh/h		232			438			439			572	
Approach Delay, s/veh		5.9			8.0			10.7			11.6	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		19.9		13.7		19.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5				
Max Q Clear Time (g_c+I1), s		5.5		5.1		6.9		12.0				
Green Ext Time (p_c), s		1.8		1.6		2.3		3.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			9.7									
HCM 7th LOS			A									

Notes

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


BURNS
McDONNELL

Attachment 5 – Sound Study

ALLIANT ENERGY

Preliminary Sound Study Report

Marshalltown Simple Cycle Project

PROJECT NO. 185117
REVISION 1
NOVEMBER 12, 2025

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List of Abbreviations

Abbreviation	Term/Phrase/Name
Alliant	Alliant Energy
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
BOP	balance-of-plant
CadnaA	Computer Aided Noise Abatement
CTG	combustion turbine generator
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
Hz	hertz
ISO	International Organization for Standardization
L_{dn}	day-night average sound level
L_{eq}	equivalent-continuous sound level
L_{10}	10-percentile exceedance sound level
L_{50}	50-percentile exceedance sound level
L_{90}	90-percentile exceedance sound level
MGS	Marshalltown Generating Station
MP	measurement point
mph	miles per hour
Project	Marshalltown Simple Cycle Project
PWL	sound power level
SPL	sound pressure level
USEPA	United States Environmental Protection Agency

Executive Summary

Burns & McDonnell conducted a sound study for the proposed Alliant Energy (Alliant) Marshalltown Simple Cycle Project (Project), located in Marshalltown, Iowa. The Project is a new development of a simple-cycle combustion turbine power generating facility to be built at the existing Marshalltown Generating Station (MGS). The Project is expected to include three (3) simple cycle Siemens 5000F combustion turbines, housed inside a turbine building, and associated balance-of-plant (BOP) equipment.

The objectives of the sound study were to identify the applicable noise regulations, measure baseline sound levels near adjacent noise sensitive areas, and create an acoustic model to evaluate potential future sound level impacts from the Project.

The State of Iowa does not have numerical noise limits that are applicable to the Project. However, the City of Marshalltown has a noise control ordinance which limits sound levels based on receiving property zoning. The Project is located on industrial-zoned land and is surrounded by industrial, residential, and park-zoned properties. The following table summarizes the Marshalltown noise limits based on receiving land zoning type.

Marshalltown Maximum Sound Level Limits

Neighborhood Zoning	Time Period	Maximum Permitted Sound Level (dBA)
Residential	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	50
Commercial or Agricultural	24 hours	65
Industrial	24 hours	80
Park	24 hours	65

Ambient sound level measurements were also conducted for the existing MGS and surrounding area. Continuous noise monitors collected sound levels at two measurement locations representative of the existing MGS and the surrounding receptors. Sound levels captured at the on-site sound level meter (MP1) were used to approximate sound levels from the existing MGS out to the nearest receptors. These sound levels were used to estimate future total sound levels due to the Project and existing MGS combined.

Base package equipment for the Project was expected to exceed the Marshalltown noise limits at the surrounding receptors. Low-noise upgrades on the exhaust diffuser and expansion joint, the exhaust stack, and the exhaust stack exit have been included in the Project acoustic design, to reduce predicted sound levels to meet the noise limits. These low-noise options have been confirmed by the supplier and include an enclosure around the exhaust diffuser and expansion joint, an enclosure on the lower portion of the exhaust stack, and an upgraded exhaust stack silencer. This report details the sound level offerings from Siemens, including the base package sound levels (“Base” Option) and the new mitigated option (“Mitigated” Option) sound levels. The Mitigated Option has been included on the overall Project acoustic design to meet the City of Marshalltown noise limits.

1.0 Acoustic Terminology

The term “sound level” is often used to describe two different sound characteristics: sound power and sound pressure. Every source that produces sound has a sound power level (PWL). The PWL is the acoustical energy emitted by a sound source and is an absolute number that is not affected by the surrounding environment. The acoustical energy produced by a source propagates through media as pressure fluctuations. These pressure fluctuations, also called sound pressure levels (SPL), are what human ears hear and microphones measure.

Sound is physically characterized by amplitude and frequency. The amplitude of sound is measured in decibels (dB) as the logarithmic ratio of a sound pressure to a reference sound pressure (20 micropascals). The reference sound pressure corresponds to the typical threshold of human hearing. To the average listener, a 3-dB change in a continuous broadband sound is generally considered “just barely perceptible”; a 5-dB change is generally considered “clearly noticeable”; and a 10-dB change is generally considered a doubling (or halving, if the sound is decreasing) of the apparent loudness.

Sound waves can occur at many different wavelengths, also known as the frequency. Frequency is measured in hertz (Hz) and is the number of wave cycles per second that occur. The typical human ear can hear frequencies ranging from approximately 20 to 20,000 Hz. Normally, the human ear is most sensitive to sounds in the middle frequencies (1,000 to 8,000 Hz) and is less sensitive to sounds in the lower and higher frequencies. As such, the A-weighting scale (dBA) was developed to simulate the frequency response of the human ear to sounds at typical environmental levels. The A-weighting scale emphasizes sounds in the middle frequencies and de-emphasizes sounds in the low and high frequencies. Any sound level to which the A-weighting scale has been applied is expressed in A-weighted decibels, or dBA. For reference, the A-weighted sound pressure level and subjective loudness associated with some common sound sources are listed in Table 1-1. The C-weighting scale (dBC) has more of an emphasis on low frequency content than the A-weighting scale and is generally used to describe the low frequency characteristics of sound levels (e.g., “rattling” or “rumbling” associated with sound levels).

Sound in the environment is constantly fluctuating, as when a car drives by, a dog barks, or a plane passes overhead. Therefore, sound metrics have been developed to quantify fluctuating environmental sound levels. These metrics include the exceedance sound level. The exceedance sound level is the sound level exceeded during “x” percent of the sampling period and is also referred to as a statistical sound level. Common exceedance sound level values are the 10-, 50-, 90-percentile exceedance sound levels, denoted by L_{10}, L_{50}, and L_{90}. The equivalent-continuous sound level (L_{eq}) is the arithmetic average of the varying sound over a given time period and is the most common metric used to describe sound. The United States Environmental Protection Agency (USEPA) uses a noise metric called the day-night average sound level (L_{dn}) is a 24-hour average sound level, with a 10-dBA penalty applied to sound measured during nighttime hours (10:00 PM to 7:00 AM).

Table 1-1: Typical Sound Pressure Levels Associated with Common Sound Sources

Sound Pressure Level (dBA)	Subjective Evaluation	Environment
140	Deafening	Jet aircraft at 75 feet
130	Threshold of pain	Jet aircraft during takeoff at a distance of 300 feet
120	Threshold of feeling	Elevated train
110	Very loud	Jet flyover at 1,000 feet
100		Motorcycle at 25 feet
90	Moderately loud	Propeller plane flyover at 1,000 feet
80		Diesel truck (40 mph) at 50 feet
70	Loud	B-757 cabin during flight
60	Moderate	Air-conditioner condenser at 15 feet
50	Quiet	Private Office
40		Farm field with light breeze, birdcalls
30	Very quiet	Quiet residential neighborhood
20		Rustling leaves
10	Just audible	--
0	Threshold of hearing	--

Sources:
(1) Adapted from *Architectural Acoustics*, M. David Egan, 1988
(2) *Architectural Graphic Standards*, Ramsey and Sleeper, 1994

2.0 Applicable Regulations & Criteria

The Project is located in Marshalltown, Iowa, within Marshalltown City limits. The State of Iowa does not have applicable noise statutes which limit noise from the Project. However, the City of Marshalltown does have a *Noise Control* ordinance in Chapter 134 of *The Code of Ordinances, City of Marshalltown, Iowa*[1]. The following section details the requirements from the ordinance.

2.1 Code of Ordinances City of Marshalltown

Chapter 134 - Noise Control of *The Code of Ordinances, City of Marshalltown, Iowa*, has limits for preventing excessive sound generated to the public. Section 134.005 details the *Maximum Permissible Sound Levels by Zoned Land Use* which include A-weighted sound level limits based on zoning type. The following language has been reproduced from the ordinance for convenience:

> *"1. The sound shall be measured at the edge of the City street of alley right-of-way reasonable appearing to be nearest to the source of the sound, or if in a park zoned area, approximately fifty feet (50') from the source of the sound. When a complaint is received, a measurement may also be taken at the location on the property where the complaining party was disturbed.*
> *2. The sound shall be measured on a sound level meter of standard design and quality operated in the "A" slow response weighing scale.*
> *3. A sound measured or registered in excess of the maximum permitted levels according to the following table, is declared to be excessive and unusually louse and is unlawful"*

The "maximum permitted levels" table from the Code of Ordinances has been reproduced as Table 2-1 below.

Table 2-1: Marshalltown Maximum Permitted Levels

Neighborhood Zoned Characteristics	Time Period	Maximum Permitted Sound Level (dBA)[1]
Residential	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	50
Commercial or Agricultural	24 hours	65
Industrial	24 hours	80
Park	24 hours	65

1) Sound levels in the table have been set to "dBA" based on the requirement for measured sound levels to be "A" slow response weighting scale, per the ordinance.

The Code of Ordinances does not state whether the limits are based on receiving zoning or source zoning. However, the ordinance specifies that compliance measurements should be conducted on receiving property, which indicates the limits should be set by the receiving zone.

[1] https://codelibrary.amlegal.com/codes/marshalltown/latest/marshalltown_ia/0-0-0-20288 (last accessed June 26, 2025)

3.0 Ambient Measurements

Burns & McDonnell personnel took sound level measurements to establish the existing ambient sound levels in the areas surrounding the existing MGS and Project site. Sound level measurements were made using sound level meters that met the American National Standards Institute (ANSI) S1.4 requirements for a Type 1 Precision Sound Level Meter. A one-half inch random-incidence microphone was used on each meter. A microphone windscreen was used for all measurements. The sound level meters were calibrated before and after each set of measurements using a sound level calibrator. Calibration level changes did not exceed ± 0.5 dB during the measurements. The meters and calibrator were checked within a year prior of the measurements to verify compliance with the U.S. National Institute of Standards and Technology specifications.

Continuous, long-term sound level measurements were collected at two (2) measurement locations near the existing MGS and future Project site. The long-term measurement points (MP) were selected to be representative of the existing MGS and future Project site, and the nearest residential receptors. The MPs and surrounding receptors of interest are shown in Figure A-1 of Appendix A. The microphones were placed at a height of approximately five feet above the ground and mounted on tripods.

The long-term monitors measured sound levels continuously over a period from approximately 11:30 AM on June 11, 2025, to 11:30 AM on June 12, 2025, to capture representative daytime and nighttime ambient sound levels in the area. Sound levels are provided in graphical and tabular form in Appendix B. Weather data was also captured from a nearby meteorological station[2] and is provided in graphical form in Appendix B. Temperatures ranged from 62-97°F, relative humidity ranged from 45-94%, and wind speeds ranged from 0-7 miles per hour (mph). Wind speeds are taken at standard met station height of 33 feet, average wind speeds at microphone height would be lower and are generally acceptable for noise measurements.

Ambient sound levels in the area were primarily comprised of the existing MGS facility, birds, insects, local traffic, and occasional train activity (e.g., train whistle and rail noise). A summary of the data is shown in Table 3-1. The data is broken down by time of day (e.g., daytime/nighttime).

Table 3-1: Ambient Measurement Summary

Measurement Location	Coordinates (UTM Zone 15)		Time of Day	L_{eq} (dBA)	L_{90} (dBA)
	Easting (m)	Northing (m)			
MP1	510,123	4,654,512	Daytime	56	45
			Nighttime	52	47
MP2	512,159	4,653,667	Daytime	50	39
			Nighttime	49	39

3.1 Existing Facility Sound Levels

The total future sound levels from the MGS plus the new Project will be subject to the Marshalltown noise limits, so it is useful to approximate the sound level contribution only from the existing MGS facility. MP1 was placed on-site at MGS and collected sound measurements while MGS was operational. The operational load

[2] Personal Weather Station Dashboard | Weather Underground

for MGS during the measurement period is shown in graphical form in Appendix B, which shows the MGS units were operating at full load from approximately 3:00 AM to 8:00 AM on June 12, 2025. Since the facility, when operational, is a relatively steady sound source, L_{90} sound levels can be used as a representation of the MGS sound levels, which excludes a majority of the intermittent sources not applicable to the MGS (e.g., cars passing, birds, etc.). The L_{90} over this period ranges from approximately 46 to 48 dBA. To be conservative, it is assumed that the existing MGS sound level should be 48 dBA at MP1. This measured sound level can be used to estimate the sound level contribution from MGS at the nearby receptors through a distance-correction using the distance from MGS to MP1 and the distances from MGS to the neighboring receptors.

The distances from the measurement location and the nearest surrounding receptors from each zone to the MGS turbine building are provided in Table 3-2 below, along with the distance corrected sound levels, which is a spherical propagation adjustment based on relative distances from source to receivers. The distance correction calculations are outlined in detail in the American Society of Mechanical Engineers (ASME) PTC 36 standard.

Table 3-2: Existing MGS Sound Levels

Receptor Name	Measured Sound Level	Distance to MGS Building Center	Distance Corrected MGS Sound Level
MP1	48 dBA	1,784 feet	48 dBA
RES1	--	3,553 feet	42 dBA
I1	--	2,682 feet	45 dBA
PARK1	--	2,865 feet	44 dBA

The distance-corrected MGS sound levels should be used as the sound level for the existing MGS, which will be combined with future Project sound levels to estimate compliance.

4.0 Sound Modeling

Operational sound levels for the proposed Project were predicted using the Computer Aided Noise Abatement (CadnaA) modeling software. Combustion turbine equipment sound levels used for modeling were based on Siemens-provided data for the combustion turbine equipment and in-house data for the proposed mitigation options. A combination of in-house and estimated data was used for the remaining auxiliary equipment. This model was used for estimating expected sound levels due to the Project and predicting Project compliance with the Marshalltown noise limits.

4.1 Sound Modeling Methodology and Input Parameters

Predictive sound modeling was performed using the industry-accepted sound modeling software CadnaA, version 2025. The software is a scaled, three-dimensional program, which considers air absorption, terrain, ground absorption, and reflections and shielding for each piece of noise-emitting equipment. It predicts sound pressure levels at discrete locations and over a gridded area based on input source sound levels. The model calculates sound propagation based on International Organization for Standardization (ISO) 9613-2:2024, General Method of Calculation. ISO 9613-2 assesses the sound level propagation based on the octave band center-frequency range from 31.5 to 8,000 Hz.

The ISO standard considers sound propagation and directivity. The sound-modeling software calculates omnidirectional, downwind sound propagation, in tandem with user-specified directivities and propagation properties. Empirical studies accepted within the industry have demonstrated that modeling may over-predict sound levels in certain directions, and as a result, modeling results generally are considered a conservative measure of the Project's actual sound level.

The modeled atmospheric conditions were assumed to be calm, and the temperature and relative humidity were left at the program's default values. Reflections and shielding were considered for sound waves encountering physical structures. The area surrounding the Project has mild elevation changes, which scatter and absorb the sound waves. Thus, terrain was included to account for surface effects such as ground absorption. Average ground absorption for the Project site was set to a value of 0.0 to account for the hard pavements. Average ground absorption for the surrounding land area was set to a value of 0.5 to account for mix of generally soft vegetative ground and hard pavement surrounding the Project site. Foliage was not included in the model and instead was captured by the 0.5 average ground absorption, as to not overestimate attenuation during the fall/winter months when the trees aren't as dense with foliage.

The modeling assumptions are outlined in Table 4-1. This model is exclusive of noise sources not associated with the Project (e.g., existing facility, traffic/train noise, and local fauna). Only Project sound levels have been evaluated.

Table 4-1: Sound Modeling Parameters

Model Input	Parameter Value
Project Site Ground Absorption	0.0
Surrounding Land Ground Absorption	0.5
Number of Reflections	2
Receptor Height	5 feet above grade
Terrain	USGS topographic land data
Temperature	50 °F
Humidity	70%

4.2 Base Option Acoustical Design & Results

The Project general arrangement is included as Figure A-2 of Appendix A. The Project is expected to include three (3) Siemens 5000F simple-cycle combustion turbine units along with associated BOP equipment. The combustion turbines are expected to be housed inside a building. Siemens has provided base package sound level data and low-noise options for the proposed combustion turbine equipment. The "Base Option" includes a standard exhaust silencer. The remaining BOP equipment was based on expected base package equipment. The 'Base' Option design for the Project is summarized in Table 4-2 below. The detailed sound power levels used for each piece of equipment in the noise model are provided in Appendix C.

Table 4-2: Project Base Option Acoustical Design

Equipment	QTY	Sound Level Rating	Notes
Combustion Turbine Equipment			
Siemens 5000F Package	3	85 dBA SPL at 3 feet	Standard package equipment housed inside generating building
Exhaust Stack Exit	1	129 dBA PWL	Standard Silencer
BOP Equipment			
GSU Transformers	1	85 dBA at 3 feet	Standard offering
Auxiliary Transformers	1	75 dBA at 3 feet	Standard offering
Dew Point Heaters	3	85 dBA at 3 feet	Standard offering
Building Air Handling Units	8	85 dBA at 3 feet	Standard offering
Pumps, valves, piping, skids, etc.	--	85 dBA at 3 feet	Standard offering

The Project will operate at fairly constant sound levels when operational and has potential to operate day and/or night. Therefore, steady-state sound level predictions were completed for normal operation using the 'Base' option specified sound levels previously discussed. The predicted overall steady-state operational A-weighted sound levels, which do not include contributions from ambient sound sources, are shown with 5-dB contours in Figure A-3 of Appendix A for the 'Base' option design. Sound levels are also provided for the specific nearest receptors in Table 4-3 below. The table also includes expected future sound levels for the total facility (MGS sound levels plus new Project) compared to the Marshalltown noise limits.

Table 4-3: Project Base Acoustic Design Modeled Sound Level Results

Receptor Name	Marshalltown Noise Limits	Existing MGS Sound Level[1]	Project Only Sound Levels	Future Total Sound Levels
	(dBA)	L_{90} (dBA)	(dBA)	(dBA)
RES1	50	42	59	59
I1	80	44	70	70
PARK1	65	44	68	68

1) Based on distance corrected results in Table 3-2
2) RED = sound levels are above Marshalltown limits
3) GREEN = sound levels are below Marshalltown limits

As shown in the table, Project sound levels using the 'Base' option equipment are expected to cause an exceedance to the Marshalltown noise limits. The following section describes the 'Mitigation' option provided by Siemens for the Project, which has been included in the Project overall design.

4.3 Mitigation Option Acoustical Design & Results

The dominant noise sources at the surrounding receptors are the exhaust stack (including the exit) and the exhaust diffuser and expansion joint. Siemens has provided low-noise options for these pieces of equipment, including an enclosure along the exhaust diffuser and base of the stack, and an upgraded stack silencer. The 'Mitigated' options included in the Project design are summarized in Table 4-4 below. The detailed sound power levels used for each piece of equipment in the noise model are provided in Appendix C.

Table 4-4: Project Mitigated Option Acoustical Design

Equipment	Base Option Sound Power Level (dBA)	Mitigated Option Sound Power Level (dBA)	Mitigation Notes
Exhaust Diffuser and Expansion Joint	114	101	Enclosure
Exhaust Stack Exit	129	105	Silencer Upgrade
Exhaust Stack Walls – Horizontal Section	117	98	Enclosure
Exhaust Stack Walls – Silencer Section	110	90	Silencer Upgrade
Exhaust Stack Walls – Upper Section	99	80	Silencer Upgrade

The predicted overall steady-state operational A-weighted sound levels for the Project only, which do not include contributions from ambient sound sources, are shown with 5-dB contours in Figure A-4 of Appendix A for the 'Mitigated' option design. Sound levels are also provided for the specific nearest receptors in Table 4-5 below. The table also includes expected future sound levels for the total facility (MGS sound levels plus new Project) compared to the Marshalltown noise limits.

Table 4-5: Project Mitigated Acoustic Design Modeled Sound Level Results

Receptor Name	Marshalltown Noise Limits	Existing MGS Sound Level[1]	Project Only Sound Levels	Future Total Sound Levels
	(dBA)	L_{90} (dBA)	(dBA)	(dBA)
RES1	50	42	47	48
I1	80	44	61	61
PARK1	65	44	59	59

1) Based on distance corrected results in Table 3-2

2) GREEN = sound levels are below Marshalltown limits

As shown in the previous table, with mitigation options included, the Project is expected to meet the Marshalltown sound limits at the nearest receptors. This mitigation option has been confirmed by Siemens and will be added to the Project acoustic design.

5.0 Conclusion

Burns & McDonnell conducted a sound study for the proposed Alliant Marshalltown Simple Cycle Project, located in Marshalltown, Iowa. The Project is a new development of a simple-cycle combustion turbine power generating facility to be built at the existing Marshalltown Generating Station. The Project is expected to include three (3) simple cycle Siemens 5000F combustion turbines and associated BOP equipment.

The State of Iowa does not have numerical noise limits that are applicable to the Project. However, the City of Marshalltown has a noise control ordinance which limits sound levels based on receiving property zoning. The Project is located on industrial zoning and is surrounded by industrial, residential, and park-zoned land.

Ambient sound level measurements were conducted for the existing MGS and surrounding area to determine the existing ambient and the sound level contribution from the MGS only to be used in future compliance prediction. Sound levels captured from the on-site meter were distance-corrected to the nearest surrounding receptors to approximate the sound level from the existing MGS facility.

The 'Base' Option equipment for the Project was expected to cause the MGS facility to exceed the Marshalltown noise limits at the nearest surrounding receptors. Low-noise upgrades on the exhaust diffuser and expansion join, the exhaust stack, and exhaust stack exit have been provided by Siemens to include in the overall acoustic design for the Project. These low-noise options include an enclosure around the exhaust diffuser/expansion joint, an enclosure on the lower portion of the exhaust stack (horizontal), and an upgraded exhaust stack silencer. With this mitigation option included as part of the Project's acoustic design, sound levels for the future total facility (i.e., existing MGS plus new Project) are expected to meet the Marshalltown noise limits.

Appendix A – Figures



LEGEND

- Property Boundary (approx.)
- Receptors
- Measurement Points

REFERENCE

0 0.1 0.2
MILES

0 0.1 0.2
KILOMETERS

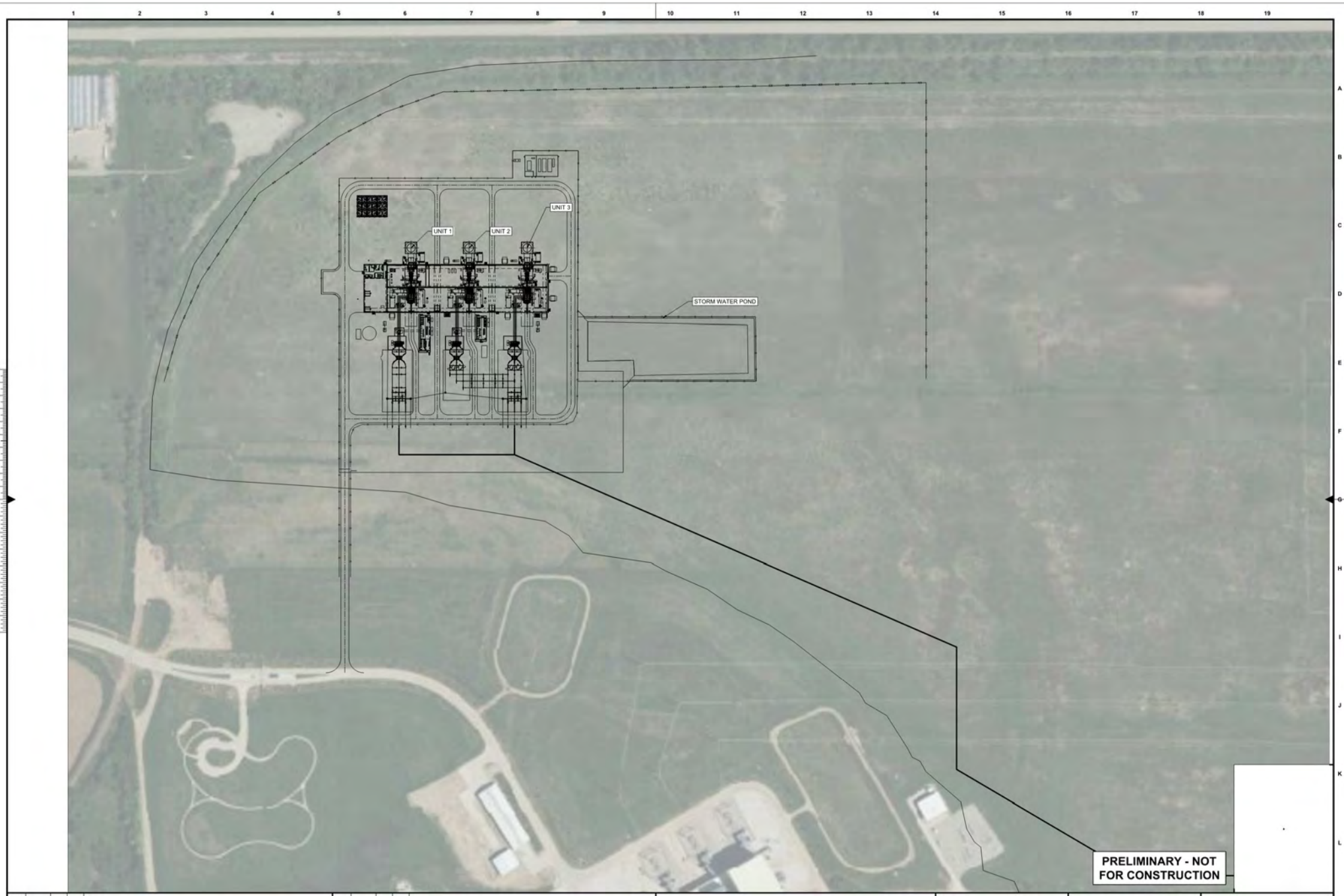
N

Figure A-1
Ambient Measurement Locations

LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	06/27/2025

BURNS McDONNELL
www.burnsmcd.com

Path: Z:\Clients\ENR\AlliantEnr\185117_JPL.SCGTDev\7_Studies\PermittingModeling\Noise\Model\GIS Model\AlliantMarshalltownSC.aprx • Coordinate System: • Units:



no.	date	by	ckd	description
D	10/08/25	BGL	WKG	ISSUED FOR REVIEW
C	08/06/25	CMB	WKG	ISSUED FOR REVIEW
B	05/13/25	JRO	WKG	ISSUED FOR CLIENT REVIEW
A	04/28/25	BEM	-	ISSUED FOR REVIEW

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
Burns & McDonnell Engineering Co, Inc.

designed D.HOFRICHTER | detailed C.BOYD

ALLIANT ENERGY.

MARSHALL COUNTY, IOWA

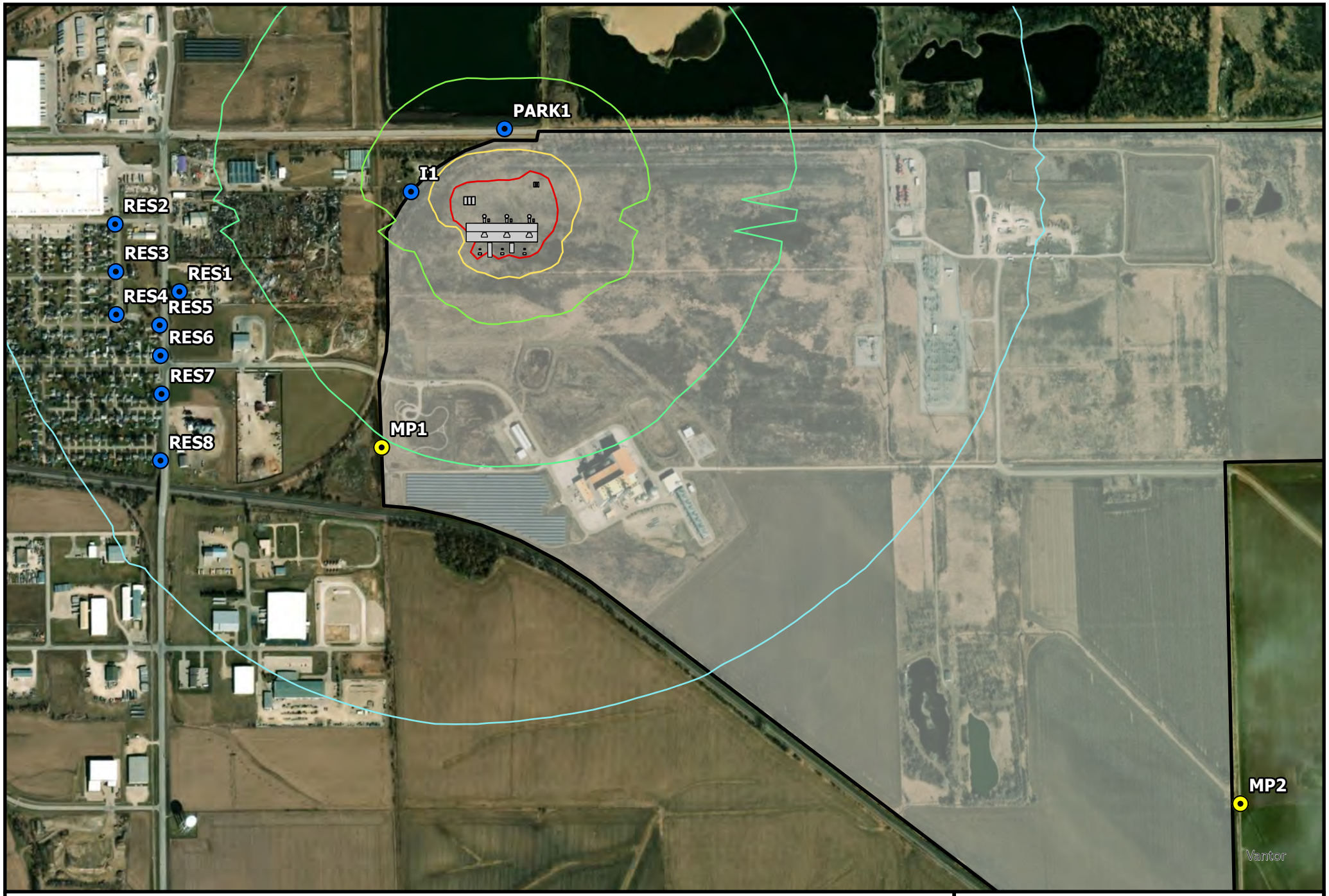
ALLIANT BOBCAT
SIMPLE CYCLE PROJECT
SITE LAYOUT

project 185117 | contract

drawing GA0002 – rev. D

sheet 1 of 1 sheets

file 183375_GA0001



LEGEND

- Property Boundary (approx.)
- Project Structures
- Receptors
- Measurement Points
- 45 dBA
- 50 dBA
- 55 dBA
- 60 dBA
- 65 dBA
- 70 dBA
- 75 dBA

REFERENCE

0 0.1 0.2
MILES

0 0.1 0.2
KILOMETERS

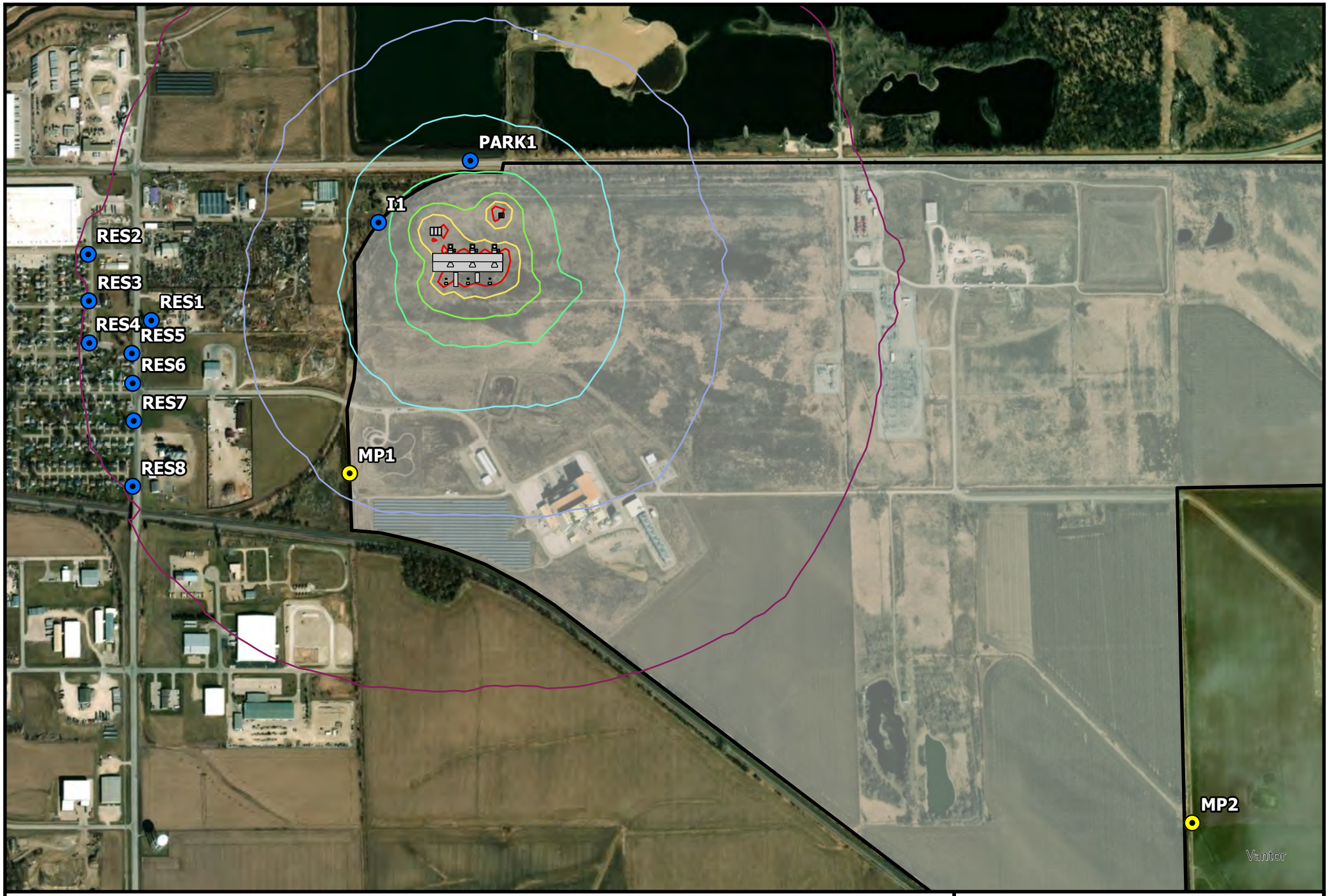
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Figure A-3
Base Sound Level Contours (dBA)

LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	11/12/2025

BURNS McDONNELL
www.burnsmcd.com

Path: Z:\Clients\ENR\AlliantEnr\185117_JPL.SCGTDev\7_Studies\PermittingModeling\NoiseModel\GIS Model\AlliantMarshalltownSC.aprx • Coordinate System: • Units:



LEGEND

- Property Boundary (approx.)
- Project Structures
- Receptors
- Measurement Points
- 45 dBA
- 50 dBA
- 55 dBA
- 60 dBA
- 65 dBA
- 70 dBA
- 75 dBA

REFERENCE

0 0.1 0.2
MILES

0 0.15 0.3
KILOMETERS

N

Figure A-4
Mitigated Sound Level Contours (dBA)

LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	11/12/2025

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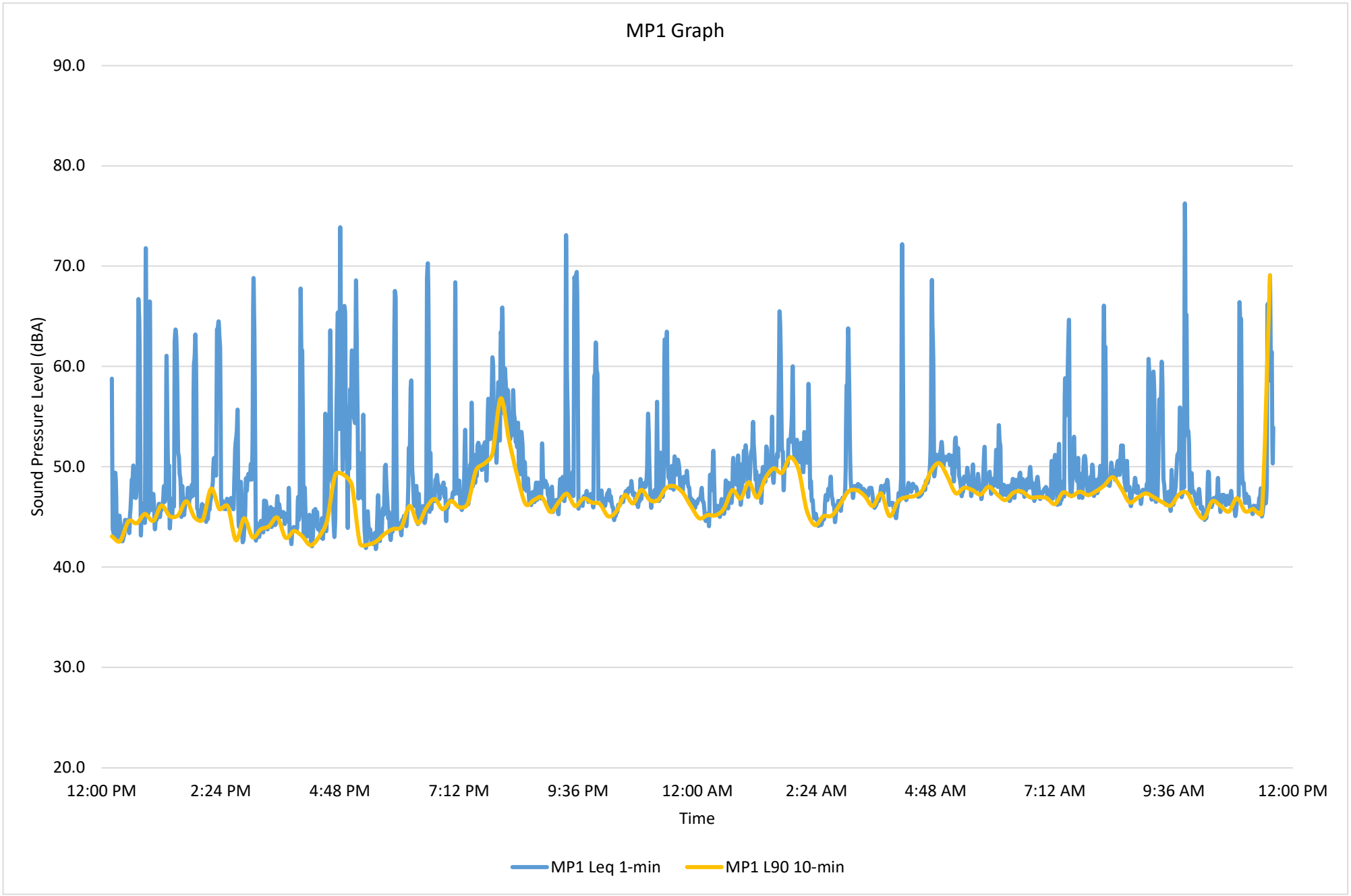
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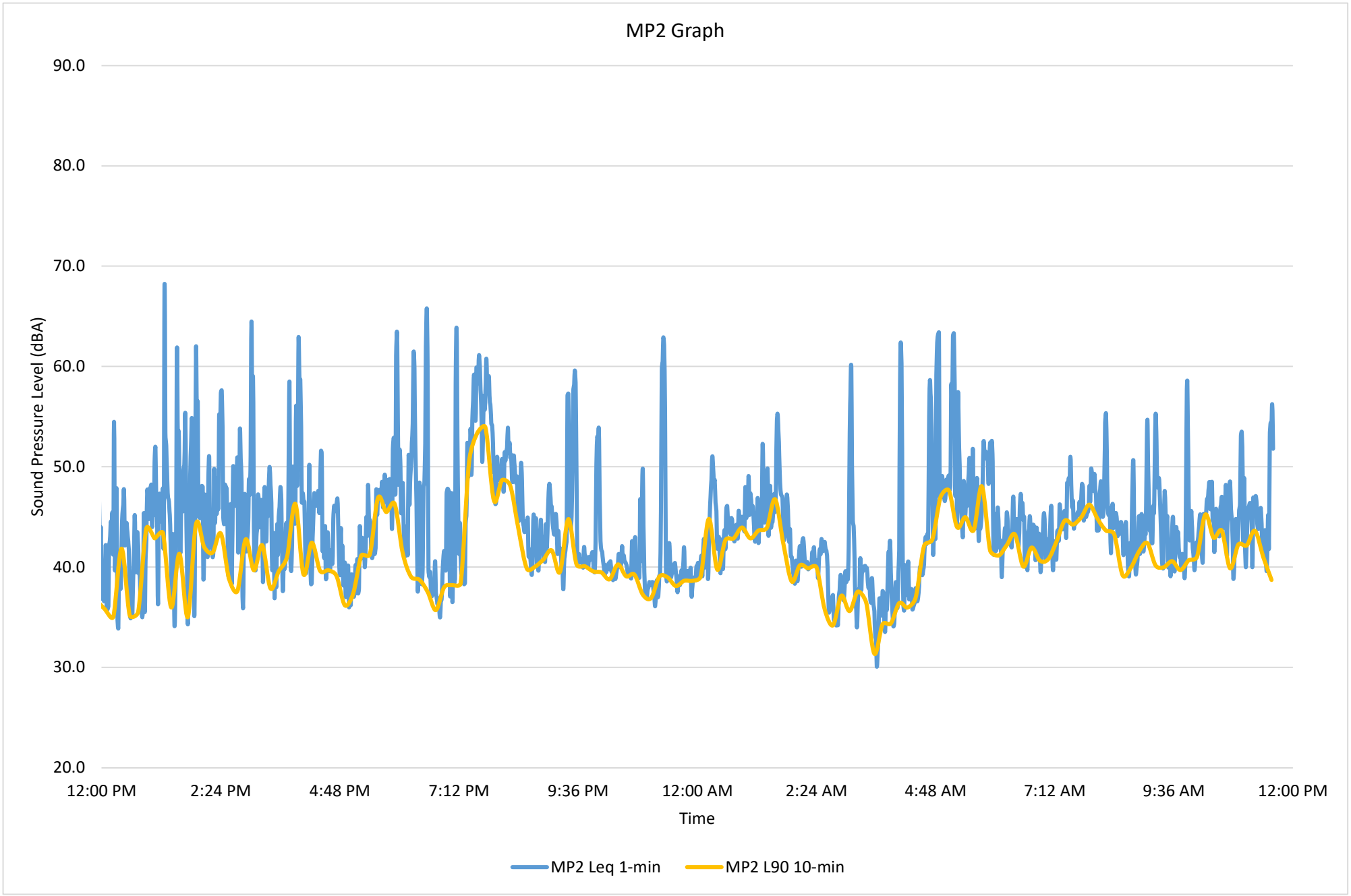
Appendix B – Measurement Data

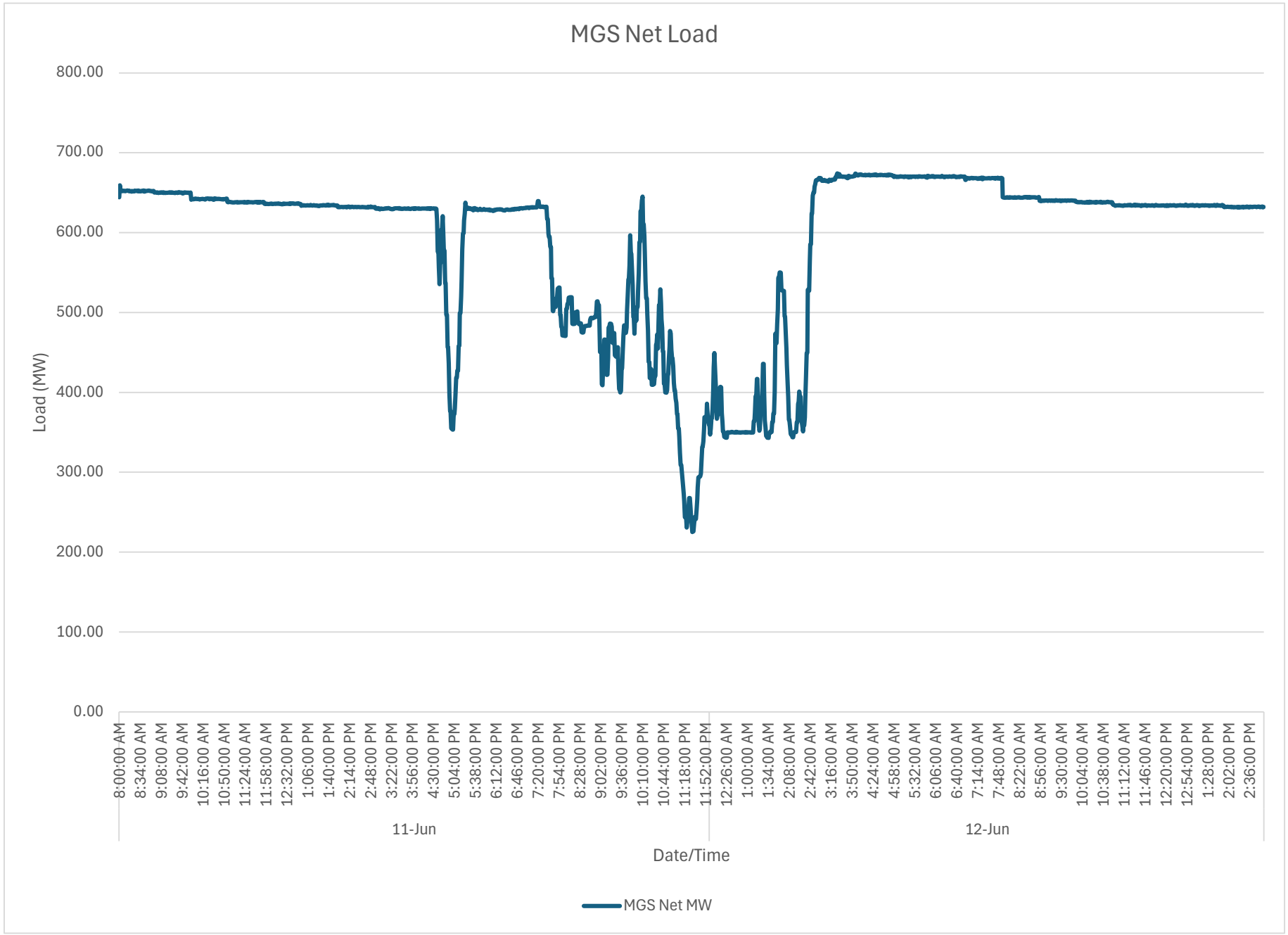
Time	MP01		MP02	
	L_{eq} (dBA)	L_{90} (dBA)	L_{eq} (dBA)	L_{90} (dBA)
6/11/25 12:12 PM	58	43	44	35
6/11/25 1:00 PM	54	45	54	38
6/11/25 2:00 PM	54	45	49	41
6/11/25 3:00 PM	53	43	52	40
6/11/25 4:00 PM	59	43	47	39
6/11/25 5:00 PM	56	43	50	38
6/11/25 6:00 PM	56	44	53	37
6/11/25 7:00 PM	55	46	55	39
6/11/25 8:00 PM	55	47	48	41
6/11/25 9:00 PM	60	46	49	40
6/11/25 10:00 PM	47	46	43	39
6/11/25 11:00 PM	53	47	50	37
6/12/25 12:00 AM	48	45	44	40
6/12/25 1:00 AM	54	48	47	41
6/12/25 2:00 AM	49	45	40	36
6/12/25 3:00 AM	51	46	46	34
6/12/25 4:00 AM	57	47	53	37
6/12/25 5:00 AM	49	48	52	44
6/12/25 6:00 AM	49	47	44	41
6/12/25 7:00 AM	52	47	46	41
6/12/25 8:00 AM	52	47	46	41
6/12/25 9:00 AM	60	47	48	40
6/12/25 10:00 AM	53	46	46	41
6/12/25 11:00 AM	57	46	49	40
Daytime Average	**56**	**45**	**50**	**39**
Nighttime Average	**52**	**47**	**49**	**39**

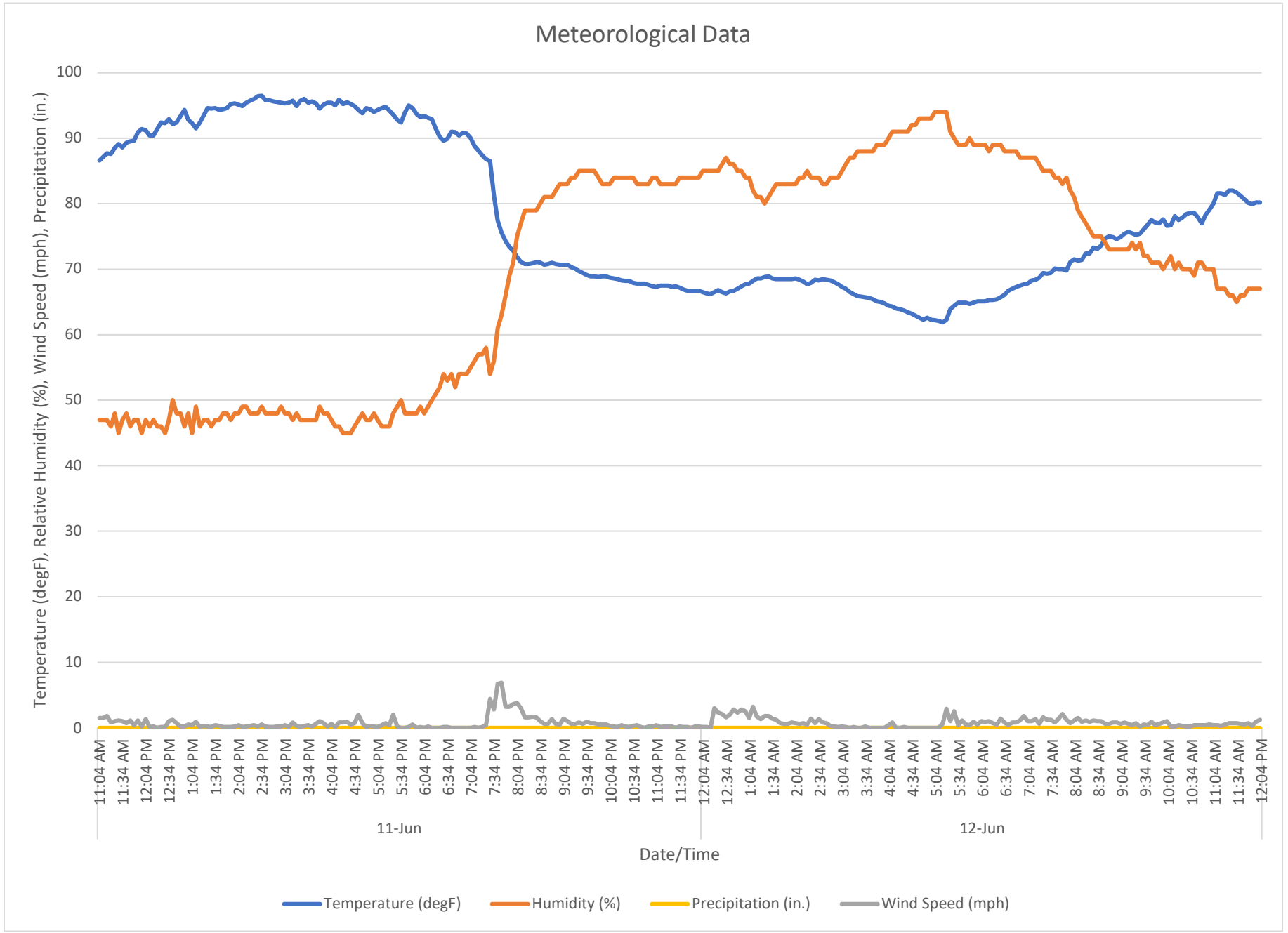
**Daytime is from 7 AM to 10 PM, and nighttime is from 10 PM to 7 AM*

***Leq daytime/nighttime averages are log-averaged using hourly Leq; L90 daytime/nighttime averages are arithmetic averaged using hourly L90*


MP1 Graph
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
Sound Pressure Level (dBA)
12:00 PM
2:24 PM
4:48 PM
7:12 PM
9:36 PM
12:00 AM
2:24 AM
4:48 AM
7:12 AM
9:36 AM
12:00 PM
Time
MP1 Leq 1-min
MP1 L90 10-min


MP2 Graph
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
Sound Pressure Level (dBA)
12:00 PM
2:24 PM
4:48 PM
7:12 PM
9:36 PM
12:00 AM
2:24 AM
4:48 AM
7:12 AM
9:36 AM
12:00 PM
Time
MP2 Leq 1-min
MP2 L90 10-min


MGS Net Load
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
Load (MW)
8:00:00 AM
8:34:00 AM
9:08:00 AM
9:42:00 AM
10:16:00 AM
10:50:00 AM
11:24:00 AM
11:58:00 AM
12:32:00 PM
1:06:00 PM
1:40:00 PM
2:14:00 PM
2:48:00 PM
3:22:00 PM
3:56:00 PM
4:30:00 PM
5:04:00 PM
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6:12:00 PM
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7:48:00 AM
8:22:00 AM
8:56:00 AM
9:30:00 AM
10:04:00 AM
10:38:00 AM
11:12:00 AM
11:46:00 AM
12:20:00 PM
12:54:00 PM
1:28:00 PM
2:02:00 PM
2:36:00 PM
11-Jun
12-Jun
Date/Time
MGS Net MW


Meteorological Data
Temperature (degF), Relative Humidity (%), Wind Speed (mph), Precipitation (in.)
100
90
80
70
60
50
40
30
20
10
0
11:04 AM
11:34 AM
12:04 PM
12:34 PM
1:04 PM
1:34 PM
2:04 PM
2:34 PM
3:04 PM
3:34 PM
4:04 PM
4:34 PM
5:04 PM
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4:04 AM
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5:04 AM
5:34 AM
6:04 AM
6:34 AM
7:04 AM
7:34 AM
8:04 AM
8:34 AM
9:04 AM
9:34 AM
10:04 AM
10:34 AM
11:04 AM
11:34 AM
12:04 PM
11-Jun
12-Jun
Date/Time
Temperature (degF)
Humidity (%)
Precipitation (in.)
Wind Speed (mph)

Appendix C – Modeled Sound Levels

Appendix C - Mitigated Option Modeled Sound Power Levels

Alliant Energy
Marshalltown Simple Cycle Project

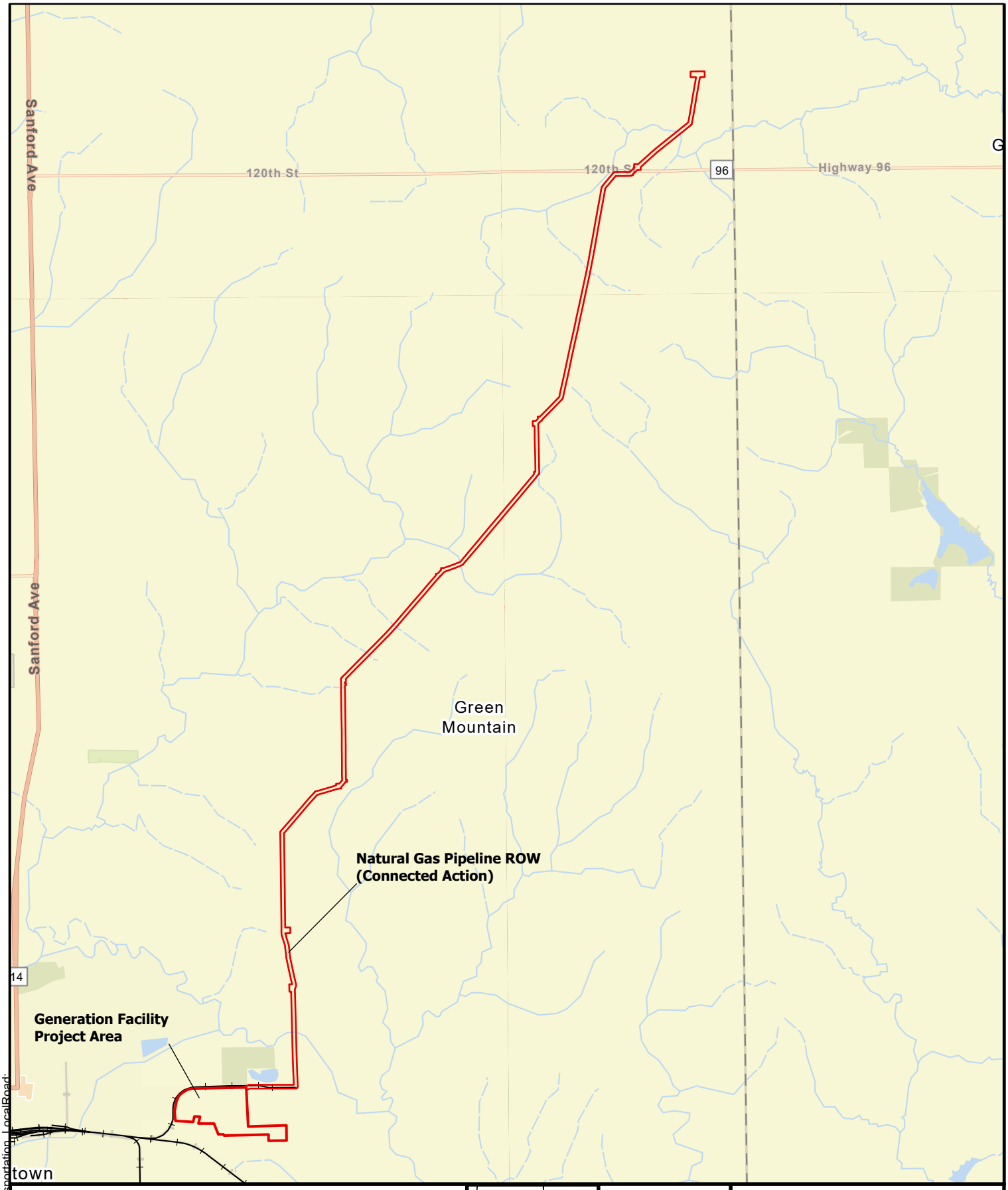
Name	Number of Sources	Sound Power Level (dB)[1] Octave Band Frequency (Hz) 31.5	63.0	125	250	500	1000	2000	4000	8000	Overall (dBA)	Notes[2]
CTG Equipment (Outdoors)												
Exhaust Stack Exit	3	134	128	115	97	94	92	89	88	89	**105**	Siemens provided (Mitigated Option)
CCW Cooler	3	110	112	110	105	102	99	91	87	93	**104**	Siemens provided
GT Exhaust Diffuser & Expansion Joint Enclo	3	131	121	108	104	97	86	85	82	62	**101**	Siemens provided (Mitigated Option)
GT Intake Duct	3	109	105	101	92	85	100	84	86	93	**101**	Siemens provided
Roto Air Cooler	3	107	105	100	96	94	89	85	83	79	**96**	Siemens provided
GT Exhaust Stack Enclosure	3	125	121	103	97	90	85	77	64	55	**97**	Siemens provided (Mitigated Option)
Exhaust Stack Silencer Radiated (Middle)	3	113	111	103	91	78	72	70	74	63	**90**	Siemens provided (Mitigated Option)
Exhaust Stack Wall Upper	3	106	104	90	71	64	58	52	52	49	**80**	Siemens provided (Mitigated Option)
GT Filter House	3	121	115	108	102	90	92	81	97	104	**105**	Siemens provided
CTG Equipment (Indoors)												
GT Enclosure	3	94	99	91	87	82	86	90	84	75	**94**	Siemens provided
GT Enclosure Air Inlet Vents	6	89	98	93	93	90	93	98	91	87	**101**	Siemens provided
GT Enclosure Discharge Vetns	6	89	98	93	92	89	94	99	91	86	**102**	Siemens provided
Generator	3	111	118	110	93	88	86	88	85	77	**98**	Siemens provided
Lube Oil Package	3	99	102	100	100	100	100	101	98	91	**106**	Siemens provided
Control Oil Skid	3	110	103	95	100	99	98	94	93	89	**103**	Siemens provided
BOP Equipment												
AHU	6	109	99	103	103	100	98	93	90	87	**103**	Estimated 85 dBA @ 3-ft (B&H spectrum)
CCW Pump	6	90	89	91	91	91	91	91	88	81	**97**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Dew Point Heater Stack	3	94	89	89	88	91	94	94	92	89	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Fuel Gas Valve	4	93	85	78	73	82	87	93	95	95	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Fuel Gas Piping	2	94	90	79	71	70	76	78	81	79	**85**	Estimated 75 dBA @ 3-ft (B&H spectrum)
Aux Transformer	3	85	93	94	91	92	82	76	66	57	**91**	Estimated 75 dBA @ 3-ft (B&H spectrum)
Dew Point Heater	3	94	89	89	88	91	94	94	92	89	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
GSU Transformer	1	99	107	108	105	106	96	90	80	71	**105**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Turbine Building Walls/Roof	1	123	123	110	100	90	84	83	69	76	**100**	Calculated based on Siemens and BOP interior equipment
Turbine Building Louver	17	97	100	92	85	84	84	86	82	78	**91**	Calculated based on Siemens and BOP interior equipment

Notes:

1. All sound levels are based on Siemens provided Mitigated Option equipment (i.e., includes low-noise upgrades to the exhaust duct and stack)

2. B&H - Bies & Hansen Engineering Noise Control (4th and 5th Ed.) - used for estimated frequency spectral data


BURNS
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Sanford Ave
120th St
120th St
96
Highway 96
Sanford Ave
Green
Mountain
Natural Gas Pipeline ROW
(Connected Action)
14
Generation Facility
Project Area
town
Project Area
NORTH
0
500
1,000
US Feet
Iowa
BURNS McDONNELL
Figure 2-1
Project Location
Service Layer Credits: Transportation, LocalRoad;
Source: ESRI, Interstate Power and Light Company, and Burns & McDonnell

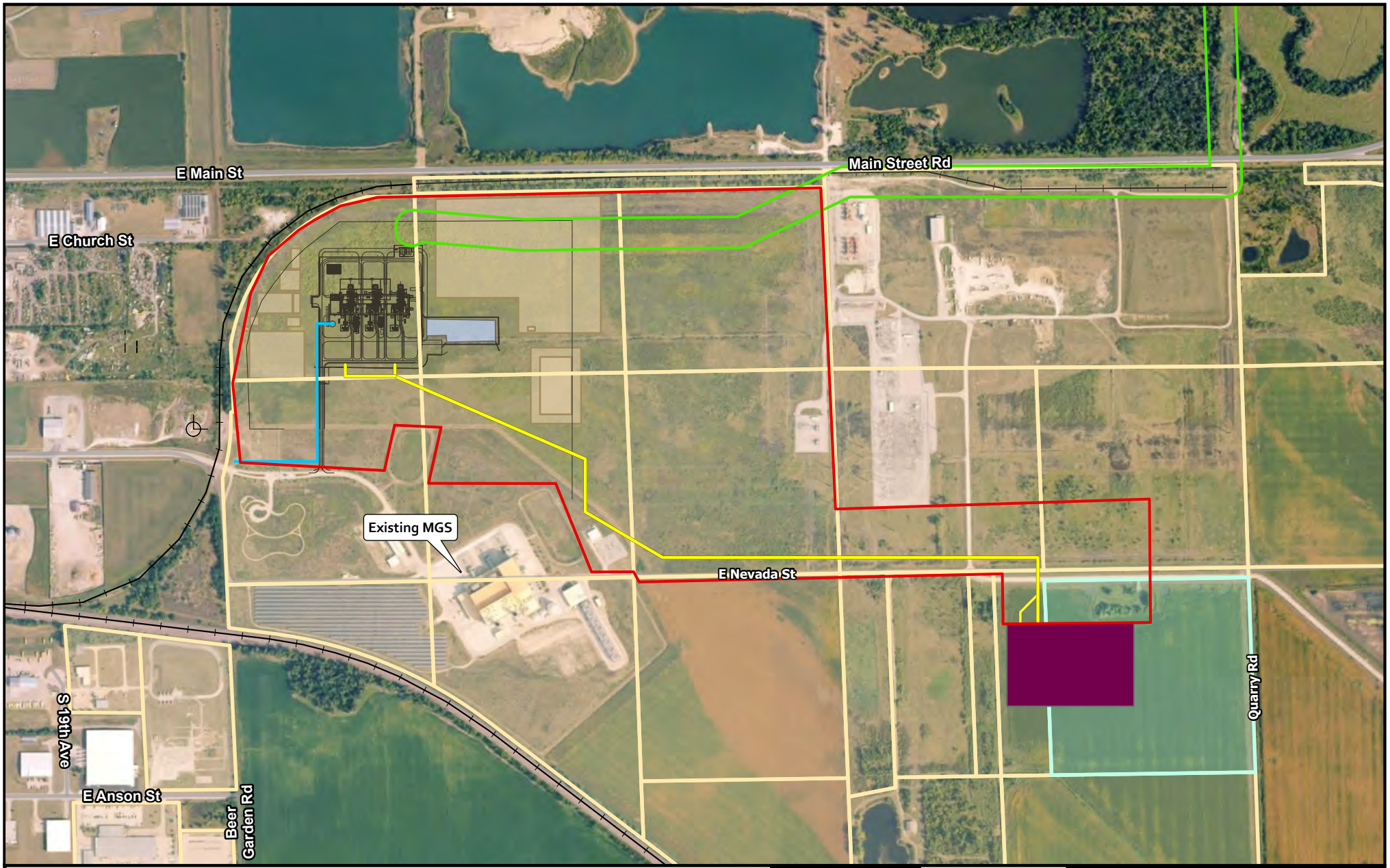
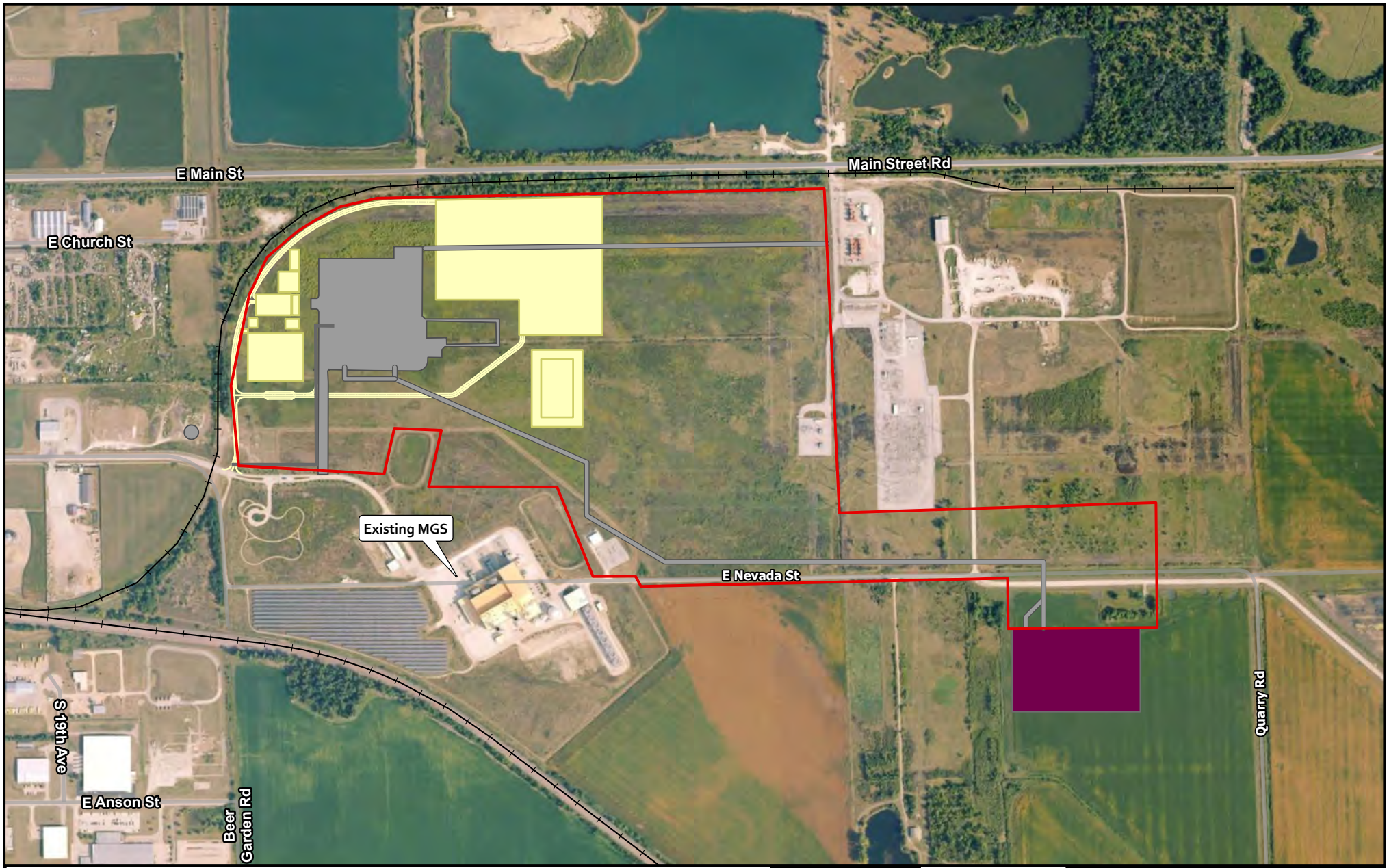


Figure 2-2
Bobcat Energy Center Generation Site

Source: ESRI, Interstate Power and Light, and Burns & McDonnell



BURNS McDONNELL

Figure 2-3
Project Temporary and Permanent Disturbances

Source: ESRI, Interstate Power and Light, and Burns & McDonnell

Issued: 4/1/2026



Figure 2-4
Bobcat Energy Center
General Arrangement

Source: ESRI, Interstate Power and Light, and Burns & McDonnell



FOR BID - NOT FOR CONSTRUCTION

no.	date	by	ckd	description
0	03/23/26	AJM	RNO	INITIAL ISSUE

Figure 2-5
Bobcat Energy Center
Site Plan

BURNS McDONNELL
9400 WARD PARKWAY
KANSAS CITY, MO 64114
816-333-9400
Burns & McDonnell Engineering Co, Inc.

designed A. MUCKENTHALER | detailed B. COUFAL

ALLIANT ENERGY.

Bobcat Energy Center

MARSHALL COUNTY, IOWA

SITE PREPARATION
SITE PLAN

project	contract
194268	5.8110

drawing **CS102** rev. **0**

sheet of sheets

file 194268CS102.dwg

ALLIANT ENERGY

Preliminary Sound Study Report

Marshalltown Simple Cycle Project

PROJECT NO. 185117
REVISION 1
NOVEMBER 12, 2025

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2.1 Code of Ordinances City of Marshalltown 2-1

3.0 Ambient Measurements 3-2

3.1 Existing Facility Sound Levels 3-2

4.0 Sound Modeling 4-1

4.1 Sound Modeling Methodology and Input Parameters 4-1

4.2 Base Option Acoustical Design & Results 4-2

4.3 Mitigation Option Acoustical Design & Results 4-3

5.0 Conclusion 5-1

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APPENDIX B – MEASUREMENT DATA

APPENDIX C – MODELED SOUND LEVELS

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List of Abbreviations

Abbreviation	Term/Phrase/Name
Alliant	Alliant Energy
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
BOP	balance-of-plant
CadnaA	Computer Aided Noise Abatement
CTG	combustion turbine generator
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
Hz	hertz
ISO	International Organization for Standardization
L_{dn}	day-night average sound level
L_{eq}	equivalent-continuous sound level
L_{10}	10-percentile exceedance sound level
L_{50}	50-percentile exceedance sound level
L_{90}	90-percentile exceedance sound level
MGS	Marshalltown Generating Station
MP	measurement point
mph	miles per hour
Project	Marshalltown Simple Cycle Project
PWL	sound power level
SPL	sound pressure level
USEPA	United States Environmental Protection Agency

Executive Summary

Burns & McDonnell conducted a sound study for the proposed Alliant Energy (Alliant) Marshalltown Simple Cycle Project (Project), located in Marshalltown, Iowa. The Project is a new development of a simple-cycle combustion turbine power generating facility to be built at the existing Marshalltown Generating Station (MGS). The Project is expected to include three (3) simple cycle Siemens 5000F combustion turbines, housed inside a turbine building, and associated balance-of-plant (BOP) equipment.

The objectives of the sound study were to identify the applicable noise regulations, measure baseline sound levels near adjacent noise sensitive areas, and create an acoustic model to evaluate potential future sound level impacts from the Project.

The State of Iowa does not have numerical noise limits that are applicable to the Project. However, the City of Marshalltown has a noise control ordinance which limits sound levels based on receiving property zoning. The Project is located on industrial-zoned land and is surrounded by industrial, residential, and park-zoned properties. The following table summarizes the Marshalltown noise limits based on receiving land zoning type.

Marshalltown Maximum Sound Level Limits

Neighborhood Zoning	Time Period	Maximum Permitted Sound Level (dBA)
Residential	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	50
Commercial or Agricultural	24 hours	65
Industrial	24 hours	80
Park	24 hours	65

Ambient sound level measurements were also conducted for the existing MGS and surrounding area. Continuous noise monitors collected sound levels at two measurement locations representative of the existing MGS and the surrounding receptors. Sound levels captured at the on-site sound level meter (MP1) were used to approximate sound levels from the existing MGS out to the nearest receptors. These sound levels were used to estimate future total sound levels due to the Project and existing MGS combined.

Base package equipment for the Project was expected to exceed the Marshalltown noise limits at the surrounding receptors. Low-noise upgrades on the exhaust diffuser and expansion joint, the exhaust stack, and the exhaust stack exit have been included in the Project acoustic design, to reduce predicted sound levels to meet the noise limits. These low-noise options have been confirmed by the supplier and include an enclosure around the exhaust diffuser and expansion joint, an enclosure on the lower portion of the exhaust stack, and an upgraded exhaust stack silencer. This report details the sound level offerings from Siemens, including the base package sound levels (“Base” Option) and the new mitigated option (“Mitigated” Option) sound levels. The Mitigated Option has been included on the overall Project acoustic design to meet the City of Marshalltown noise limits.

1.0 Acoustic Terminology

The term “sound level” is often used to describe two different sound characteristics: sound power and sound pressure. Every source that produces sound has a sound power level (PWL). The PWL is the acoustical energy emitted by a sound source and is an absolute number that is not affected by the surrounding environment. The acoustical energy produced by a source propagates through media as pressure fluctuations. These pressure fluctuations, also called sound pressure levels (SPL), are what human ears hear and microphones measure.

Sound is physically characterized by amplitude and frequency. The amplitude of sound is measured in decibels (dB) as the logarithmic ratio of a sound pressure to a reference sound pressure (20 micropascals). The reference sound pressure corresponds to the typical threshold of human hearing. To the average listener, a 3-dB change in a continuous broadband sound is generally considered “just barely perceptible”; a 5-dB change is generally considered “clearly noticeable”; and a 10-dB change is generally considered a doubling (or halving, if the sound is decreasing) of the apparent loudness.

Sound waves can occur at many different wavelengths, also known as the frequency. Frequency is measured in hertz (Hz) and is the number of wave cycles per second that occur. The typical human ear can hear frequencies ranging from approximately 20 to 20,000 Hz. Normally, the human ear is most sensitive to sounds in the middle frequencies (1,000 to 8,000 Hz) and is less sensitive to sounds in the lower and higher frequencies. As such, the A-weighting scale (dBA) was developed to simulate the frequency response of the human ear to sounds at typical environmental levels. The A-weighting scale emphasizes sounds in the middle frequencies and de-emphasizes sounds in the low and high frequencies. Any sound level to which the A-weighting scale has been applied is expressed in A-weighted decibels, or dBA. For reference, the A-weighted sound pressure level and subjective loudness associated with some common sound sources are listed in Table 1-1. The C-weighting scale (dBC) has more of an emphasis on low frequency content than the A-weighting scale and is generally used to describe the low frequency characteristics of sound levels (e.g., “rattling” or “rumbling” associated with sound levels).

Sound in the environment is constantly fluctuating, as when a car drives by, a dog barks, or a plane passes overhead. Therefore, sound metrics have been developed to quantify fluctuating environmental sound levels. These metrics include the exceedance sound level. The exceedance sound level is the sound level exceeded during “x” percent of the sampling period and is also referred to as a statistical sound level. Common exceedance sound level values are the 10-, 50-, 90-percentile exceedance sound levels, denoted by L_{10}, L_{50}, and L_{90}. The equivalent-continuous sound level (L_{eq}) is the arithmetic average of the varying sound over a given time period and is the most common metric used to describe sound. The United States Environmental Protection Agency (USEPA) uses a noise metric called the day-night average sound level (L_{dn}) is a 24-hour average sound level, with a 10-dBA penalty applied to sound measured during nighttime hours (10:00 PM to 7:00 AM).

Table 1-1: Typical Sound Pressure Levels Associated with Common Sound Sources

Sound Pressure Level (dBA)	Subjective Evaluation	Environment
140	Deafening	Jet aircraft at 75 feet
130	Threshold of pain	Jet aircraft during takeoff at a distance of 300 feet
120	Threshold of feeling	Elevated train
110	Very loud	Jet flyover at 1,000 feet
100		Motorcycle at 25 feet
90	Moderately loud	Propeller plane flyover at 1,000 feet
80		Diesel truck (40 mph) at 50 feet
70	Loud	B-757 cabin during flight
60	Moderate	Air-conditioner condenser at 15 feet
50	Quiet	Private Office
40		Farm field with light breeze, birdcalls
30	Very quiet	Quiet residential neighborhood
20		Rustling leaves
10	Just audible	--
0	Threshold of hearing	--

Sources:
(1) Adapted from *Architectural Acoustics*, M. David Egan, 1988
(2) *Architectural Graphic Standards*, Ramsey and Sleeper, 1994

2.0 Applicable Regulations & Criteria

The Project is located in Marshalltown, Iowa, within Marshalltown City limits. The State of Iowa does not have applicable noise statutes which limit noise from the Project. However, the City of Marshalltown does have a *Noise Control* ordinance in Chapter 134 of *The Code of Ordinances, City of Marshalltown, Iowa*[1]. The following section details the requirements from the ordinance.

2.1 Code of Ordinances City of Marshalltown

Chapter 134 - Noise Control of *The Code of Ordinances, City of Marshalltown, Iowa*, has limits for preventing excessive sound generated to the public. Section 134.005 details the *Maximum Permissible Sound Levels by Zoned Land Use* which include A-weighted sound level limits based on zoning type. The following language has been reproduced from the ordinance for convenience:

> *"1. The sound shall be measured at the edge of the City street of alley right-of-way reasonable appearing to be nearest to the source of the sound, or if in a park zoned area, approximately fifty feet (50') from the source of the sound. When a complaint is received, a measurement may also be taken at the location on the property where the complaining party was disturbed.*
> *2. The sound shall be measured on a sound level meter of standard design and quality operated in the "A" slow response weighing scale.*
> *3. A sound measured or registered in excess of the maximum permitted levels according to the following table, is declared to be excessive and unusually louse and is unlawful"*

The "maximum permitted levels" table from the Code of Ordinances has been reproduced as Table 2-1 below.

Table 2-1: Marshalltown Maximum Permitted Levels

Neighborhood Zoned Characteristics	Time Period	Maximum Permitted Sound Level (dBA)[1]
Residential	7:00 AM to 10:00 PM	60
	10:00 PM to 7:00 AM	50
Commercial or Agricultural	24 hours	65
Industrial	24 hours	80
Park	24 hours	65

1) Sound levels in the table have been set to "dBA" based on the requirement for measured sound levels to be "A" slow response weighting scale, per the ordinance.

The Code of Ordinances does not state whether the limits are based on receiving zoning or source zoning. However, the ordinance specifies that compliance measurements should be conducted on receiving property, which indicates the limits should be set by the receiving zone.

[1] https://codelibrary.amlegal.com/codes/marshalltown/latest/marshalltown_ia/0-0-0-20288 (last accessed June 26, 2025)

3.0 Ambient Measurements

Burns & McDonnell personnel took sound level measurements to establish the existing ambient sound levels in the areas surrounding the existing MGS and Project site. Sound level measurements were made using sound level meters that met the American National Standards Institute (ANSI) S1.4 requirements for a Type 1 Precision Sound Level Meter. A one-half inch random-incidence microphone was used on each meter. A microphone windscreen was used for all measurements. The sound level meters were calibrated before and after each set of measurements using a sound level calibrator. Calibration level changes did not exceed ± 0.5 dB during the measurements. The meters and calibrator were checked within a year prior of the measurements to verify compliance with the U.S. National Institute of Standards and Technology specifications.

Continuous, long-term sound level measurements were collected at two (2) measurement locations near the existing MGS and future Project site. The long-term measurement points (MP) were selected to be representative of the existing MGS and future Project site, and the nearest residential receptors. The MPs and surrounding receptors of interest are shown in Figure A-1 of Appendix A. The microphones were placed at a height of approximately five feet above the ground and mounted on tripods.

The long-term monitors measured sound levels continuously over a period from approximately 11:30 AM on June 11, 2025, to 11:30 AM on June 12, 2025, to capture representative daytime and nighttime ambient sound levels in the area. Sound levels are provided in graphical and tabular form in Appendix B. Weather data was also captured from a nearby meteorological station[2] and is provided in graphical form in Appendix B. Temperatures ranged from 62-97°F, relative humidity ranged from 45-94%, and wind speeds ranged from 0-7 miles per hour (mph). Wind speeds are taken at standard met station height of 33 feet, average wind speeds at microphone height would be lower and are generally acceptable for noise measurements.

Ambient sound levels in the area were primarily comprised of the existing MGS facility, birds, insects, local traffic, and occasional train activity (e.g., train whistle and rail noise). A summary of the data is shown in Table 3-1. The data is broken down by time of day (e.g., daytime/nighttime).

Table 3-1: Ambient Measurement Summary

Measurement Location	Coordinates (UTM Zone 15)		Time of Day	L_{eq} (dBA)	L_{90} (dBA)
	Easting (m)	Northing (m)			
MP1	510,123	4,654,512	Daytime	56	45
			Nighttime	52	47
MP2	512,159	4,653,667	Daytime	50	39
			Nighttime	49	39

3.1 Existing Facility Sound Levels

The total future sound levels from the MGS plus the new Project will be subject to the Marshalltown noise limits, so it is useful to approximate the sound level contribution only from the existing MGS facility. MP1 was placed on-site at MGS and collected sound measurements while MGS was operational. The operational load

[2] Personal Weather Station Dashboard | Weather Underground

for MGS during the measurement period is shown in graphical form in Appendix B, which shows the MGS units were operating at full load from approximately 3:00 AM to 8:00 AM on June 12, 2025. Since the facility, when operational, is a relatively steady sound source, L_{90} sound levels can be used as a representation of the MGS sound levels, which excludes a majority of the intermittent sources not applicable to the MGS (e.g., cars passing, birds, etc.). The L_{90} over this period ranges from approximately 46 to 48 dBA. To be conservative, it is assumed that the existing MGS sound level should be 48 dBA at MP1. This measured sound level can be used to estimate the sound level contribution from MGS at the nearby receptors through a distance-correction using the distance from MGS to MP1 and the distances from MGS to the neighboring receptors.

The distances from the measurement location and the nearest surrounding receptors from each zone to the MGS turbine building are provided in Table 3-2 below, along with the distance corrected sound levels, which is a spherical propagation adjustment based on relative distances from source to receivers. The distance correction calculations are outlined in detail in the American Society of Mechanical Engineers (ASME) PTC 36 standard.

Table 3-2: Existing MGS Sound Levels

Receptor Name	Measured Sound Level	Distance to MGS Building Center	Distance Corrected MGS Sound Level
MP1	48 dBA	1,784 feet	48 dBA
RES1	--	3,553 feet	42 dBA
I1	--	2,682 feet	45 dBA
PARK1	--	2,865 feet	44 dBA

The distance-corrected MGS sound levels should be used as the sound level for the existing MGS, which will be combined with future Project sound levels to estimate compliance.

4.0 Sound Modeling

Operational sound levels for the proposed Project were predicted using the Computer Aided Noise Abatement (CadnaA) modeling software. Combustion turbine equipment sound levels used for modeling were based on Siemens-provided data for the combustion turbine equipment and in-house data for the proposed mitigation options. A combination of in-house and estimated data was used for the remaining auxiliary equipment. This model was used for estimating expected sound levels due to the Project and predicting Project compliance with the Marshalltown noise limits.

4.1 Sound Modeling Methodology and Input Parameters

Predictive sound modeling was performed using the industry-accepted sound modeling software CadnaA, version 2025. The software is a scaled, three-dimensional program, which considers air absorption, terrain, ground absorption, and reflections and shielding for each piece of noise-emitting equipment. It predicts sound pressure levels at discrete locations and over a gridded area based on input source sound levels. The model calculates sound propagation based on International Organization for Standardization (ISO) 9613-2:2024, General Method of Calculation. ISO 9613-2 assesses the sound level propagation based on the octave band center-frequency range from 31.5 to 8,000 Hz.

The ISO standard considers sound propagation and directivity. The sound-modeling software calculates omnidirectional, downwind sound propagation, in tandem with user-specified directivities and propagation properties. Empirical studies accepted within the industry have demonstrated that modeling may over-predict sound levels in certain directions, and as a result, modeling results generally are considered a conservative measure of the Project's actual sound level.

The modeled atmospheric conditions were assumed to be calm, and the temperature and relative humidity were left at the program's default values. Reflections and shielding were considered for sound waves encountering physical structures. The area surrounding the Project has mild elevation changes, which scatter and absorb the sound waves. Thus, terrain was included to account for surface effects such as ground absorption. Average ground absorption for the Project site was set to a value of 0.0 to account for the hard pavements. Average ground absorption for the surrounding land area was set to a value of 0.5 to account for mix of generally soft vegetative ground and hard pavement surrounding the Project site. Foliage was not included in the model and instead was captured by the 0.5 average ground absorption, as to not overestimate attenuation during the fall/winter months when the trees aren't as dense with foliage.

The modeling assumptions are outlined in Table 4-1. This model is exclusive of noise sources not associated with the Project (e.g., existing facility, traffic/train noise, and local fauna). Only Project sound levels have been evaluated.

Table 4-1: Sound Modeling Parameters

Model Input	Parameter Value
Project Site Ground Absorption	0.0
Surrounding Land Ground Absorption	0.5
Number of Reflections	2
Receptor Height	5 feet above grade
Terrain	USGS topographic land data
Temperature	50 °F
Humidity	70%

4.2 Base Option Acoustical Design & Results

The Project general arrangement is included as Figure A-2 of Appendix A. The Project is expected to include three (3) Siemens 5000F simple-cycle combustion turbine units along with associated BOP equipment. The combustion turbines are expected to be housed inside a building. Siemens has provided base package sound level data and low-noise options for the proposed combustion turbine equipment. The "Base Option" includes a standard exhaust silencer. The remaining BOP equipment was based on expected base package equipment. The 'Base' Option design for the Project is summarized in Table 4-2 below. The detailed sound power levels used for each piece of equipment in the noise model are provided in Appendix C.

Table 4-2: Project Base Option Acoustical Design

Equipment	QTY	Sound Level Rating	Notes
Combustion Turbine Equipment			
Siemens 5000F Package	3	85 dBA SPL at 3 feet	Standard package equipment housed inside generating building
Exhaust Stack Exit	1	129 dBA PWL	Standard Silencer
BOP Equipment			
GSU Transformers	1	85 dBA at 3 feet	Standard offering
Auxiliary Transformers	1	75 dBA at 3 feet	Standard offering
Dew Point Heaters	3	85 dBA at 3 feet	Standard offering
Building Air Handling Units	8	85 dBA at 3 feet	Standard offering
Pumps, valves, piping, skids, etc.	--	85 dBA at 3 feet	Standard offering

The Project will operate at fairly constant sound levels when operational and has potential to operate day and/or night. Therefore, steady-state sound level predictions were completed for normal operation using the 'Base' option specified sound levels previously discussed. The predicted overall steady-state operational A-weighted sound levels, which do not include contributions from ambient sound sources, are shown with 5-dB contours in Figure A-3 of Appendix A for the 'Base' option design. Sound levels are also provided for the specific nearest receptors in Table 4-3 below. The table also includes expected future sound levels for the total facility (MGS sound levels plus new Project) compared to the Marshalltown noise limits.

Table 4-3: Project Base Acoustic Design Modeled Sound Level Results

Receptor Name	Marshalltown Noise Limits	Existing MGS Sound Level[1]	Project Only Sound Levels	Future Total Sound Levels
	(dBA)	L_{90} (dBA)	(dBA)	(dBA)
RES1	50	42	59	59
I1	80	44	70	70
PARK1	65	44	68	68

1) Based on distance corrected results in Table 3-2
2) RED = sound levels are above Marshalltown limits
3) GREEN = sound levels are below Marshalltown limits

As shown in the table, Project sound levels using the 'Base' option equipment are expected to cause an exceedance to the Marshalltown noise limits. The following section describes the 'Mitigation' option provided by Siemens for the Project, which has been included in the Project overall design.

4.3 Mitigation Option Acoustical Design & Results

The dominant noise sources at the surrounding receptors are the exhaust stack (including the exit) and the exhaust diffuser and expansion joint. Siemens has provided low-noise options for these pieces of equipment, including an enclosure along the exhaust diffuser and base of the stack, and an upgraded stack silencer. The 'Mitigated' options included in the Project design are summarized in Table 4-4 below. The detailed sound power levels used for each piece of equipment in the noise model are provided in Appendix C.

Table 4-4: Project Mitigated Option Acoustical Design

Equipment	Base Option Sound Power Level (dBA)	Mitigated Option Sound Power Level (dBA)	Mitigation Notes
Exhaust Diffuser and Expansion Joint	114	101	Enclosure
Exhaust Stack Exit	129	105	Silencer Upgrade
Exhaust Stack Walls – Horizontal Section	117	98	Enclosure
Exhaust Stack Walls – Silencer Section	110	90	Silencer Upgrade
Exhaust Stack Walls – Upper Section	99	80	Silencer Upgrade

The predicted overall steady-state operational A-weighted sound levels for the Project only, which do not include contributions from ambient sound sources, are shown with 5-dB contours in Figure A-4 of Appendix A for the 'Mitigated' option design. Sound levels are also provided for the specific nearest receptors in Table 4-5 below. The table also includes expected future sound levels for the total facility (MGS sound levels plus new Project) compared to the Marshalltown noise limits.

Table 4-5: Project Mitigated Acoustic Design Modeled Sound Level Results

Receptor Name	Marshalltown Noise Limits	Existing MGS Sound Level[1]	Project Only Sound Levels	Future Total Sound Levels
	(dBA)	L_{90} (dBA)	(dBA)	(dBA)
RES1	50	42	47	48
I1	80	44	61	61
PARK1	65	44	59	59

1) Based on distance corrected results in Table 3-2

2) GREEN = sound levels are below Marshalltown limits

As shown in the previous table, with mitigation options included, the Project is expected to meet the Marshalltown sound limits at the nearest receptors. This mitigation option has been confirmed by Siemens and will be added to the Project acoustic design.

5.0 Conclusion

Burns & McDonnell conducted a sound study for the proposed Alliant Marshalltown Simple Cycle Project, located in Marshalltown, Iowa. The Project is a new development of a simple-cycle combustion turbine power generating facility to be built at the existing Marshalltown Generating Station. The Project is expected to include three (3) simple cycle Siemens 5000F combustion turbines and associated BOP equipment.

The State of Iowa does not have numerical noise limits that are applicable to the Project. However, the City of Marshalltown has a noise control ordinance which limits sound levels based on receiving property zoning. The Project is located on industrial zoning and is surrounded by industrial, residential, and park-zoned land.

Ambient sound level measurements were conducted for the existing MGS and surrounding area to determine the existing ambient and the sound level contribution from the MGS only to be used in future compliance prediction. Sound levels captured from the on-site meter were distance-corrected to the nearest surrounding receptors to approximate the sound level from the existing MGS facility.

The 'Base' Option equipment for the Project was expected to cause the MGS facility to exceed the Marshalltown noise limits at the nearest surrounding receptors. Low-noise upgrades on the exhaust diffuser and expansion join, the exhaust stack, and exhaust stack exit have been provided by Siemens to include in the overall acoustic design for the Project. These low-noise options include an enclosure around the exhaust diffuser/expansion joint, an enclosure on the lower portion of the exhaust stack (horizontal), and an upgraded exhaust stack silencer. With this mitigation option included as part of the Project's acoustic design, sound levels for the future total facility (i.e., existing MGS plus new Project) are expected to meet the Marshalltown noise limits.

Appendix A – Figures



LEGEND

- Property Boundary (approx.)
- Receptors
- Measurement Points

REFERENCE

0 0.1 0.2
MILES

0 0.1 0.2
KILOMETERS

N

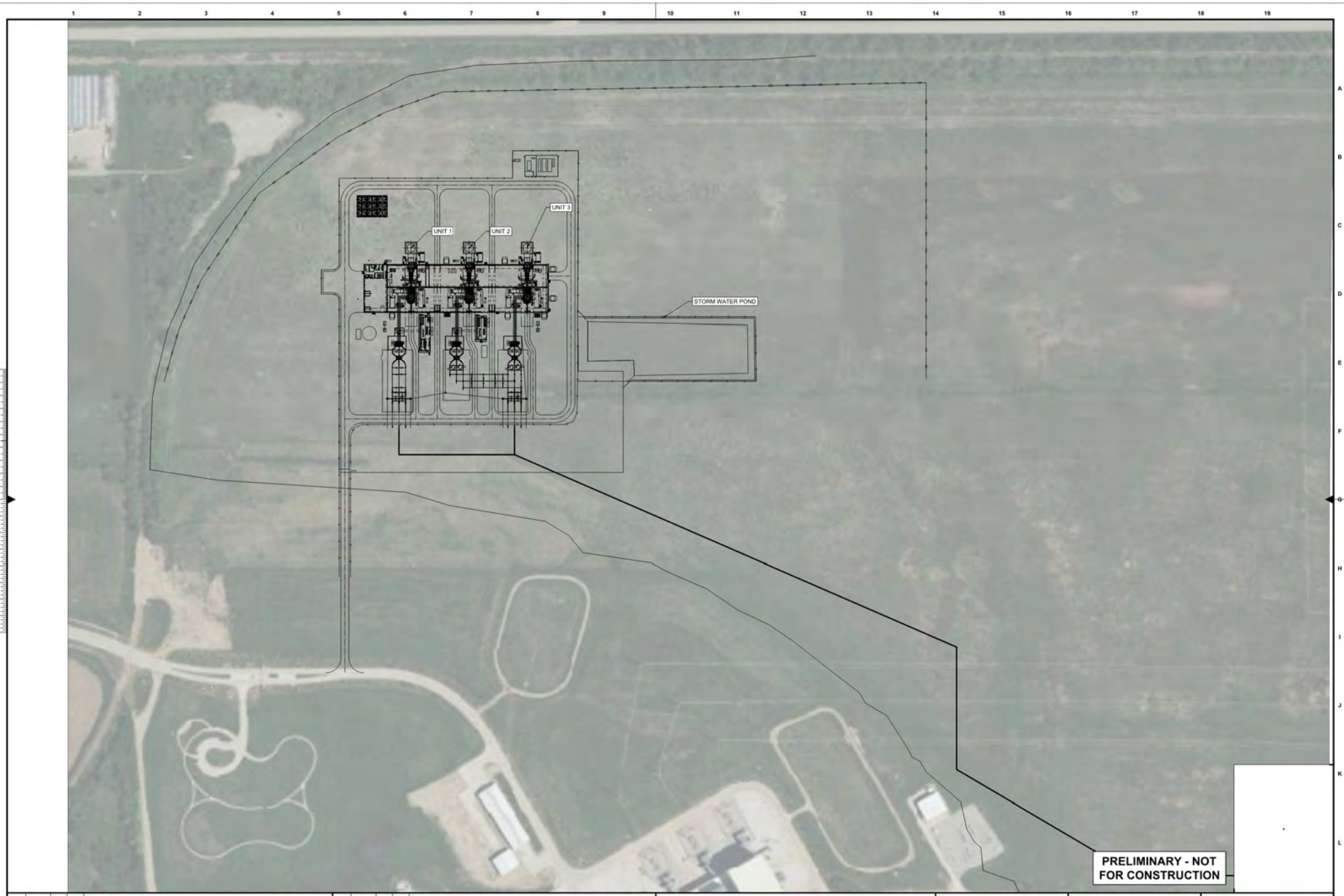
Figure A-1
Ambient Measurement Locations

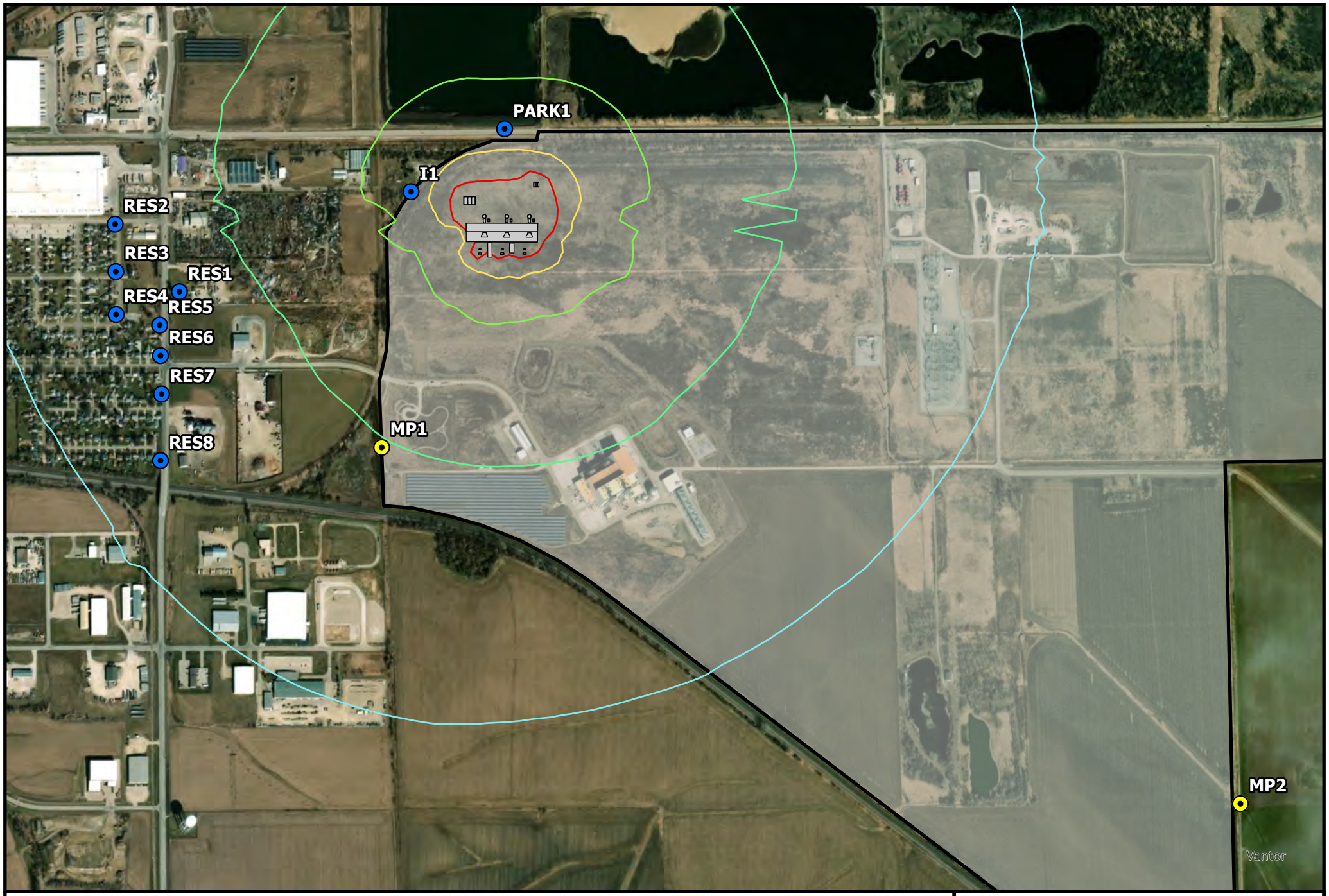
LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	06/27/2025

BURNS McDONNELL
www.burnsmcd.com

Path: Z:\Clients\ENR\AllientEnr\185117_JPL.SCGTDev\7_Studies\PermittingModeling\Noise\Model\GIS Model\AllientMarshalltownSC.aprx • Coordinate System: • Units:

Figure A-2 - General Arrangement





LEGEND

- Property Boundary (approx.)
- Project Structures
- Receptors
- Measurement Points
- 45 dBA
- 50 dBA
- 55 dBA
- 60 dBA
- 65 dBA
- 70 dBA
- 75 dBA

REFERENCE

0 0.1 0.2
MILES

0 0.1 0.2
KILOMETERS

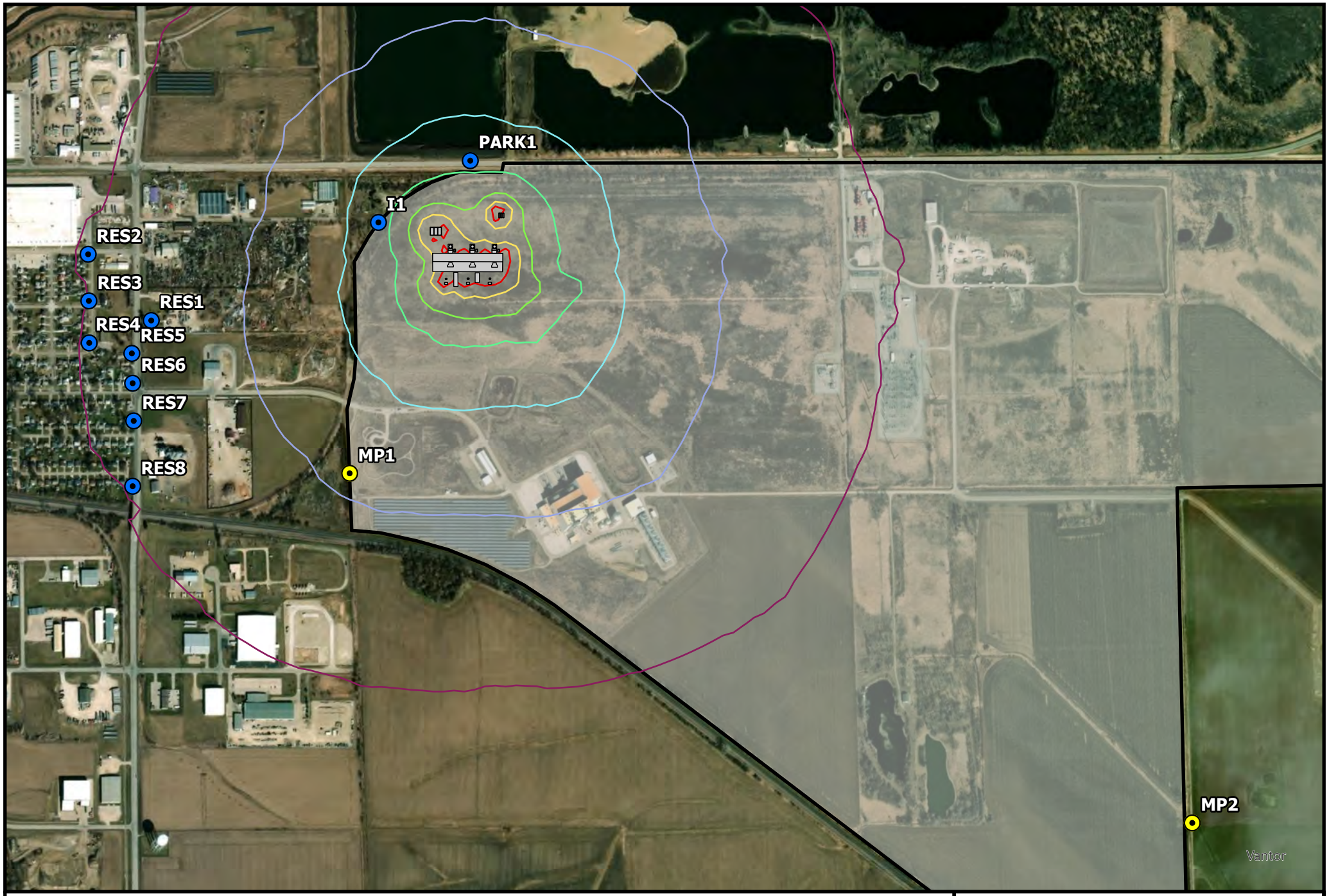
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Figure A-3
Base Sound Level Contours (dBA)

LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	11/12/2025

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Path: Z:\Clients\ENR\AlliantEnr\185117_JPL.SCGTDev\7_Studies\PermittingModeling\NoiseModel\GIS Model\AlliantMarshalltownSC.aprx • Coordinate System: • Units:



LEGEND

- Property Boundary (approx.)
- Project Structures
- Receptors
- Measurement Points
- 45 dBA
- 50 dBA
- 55 dBA
- 60 dBA
- 65 dBA
- 70 dBA
- 75 dBA

REFERENCE

0 0.1 0.2
MILES

0 0.15 0.3
KILOMETERS

N

Figure A-4
Mitigated Sound Level Contours (dBA)

LOCATION:	Marshalltown, IA
PROJECT:	Marshalltown Simple Cycle Project
PROJ. NO.:	185117
CREATED:	11/12/2025

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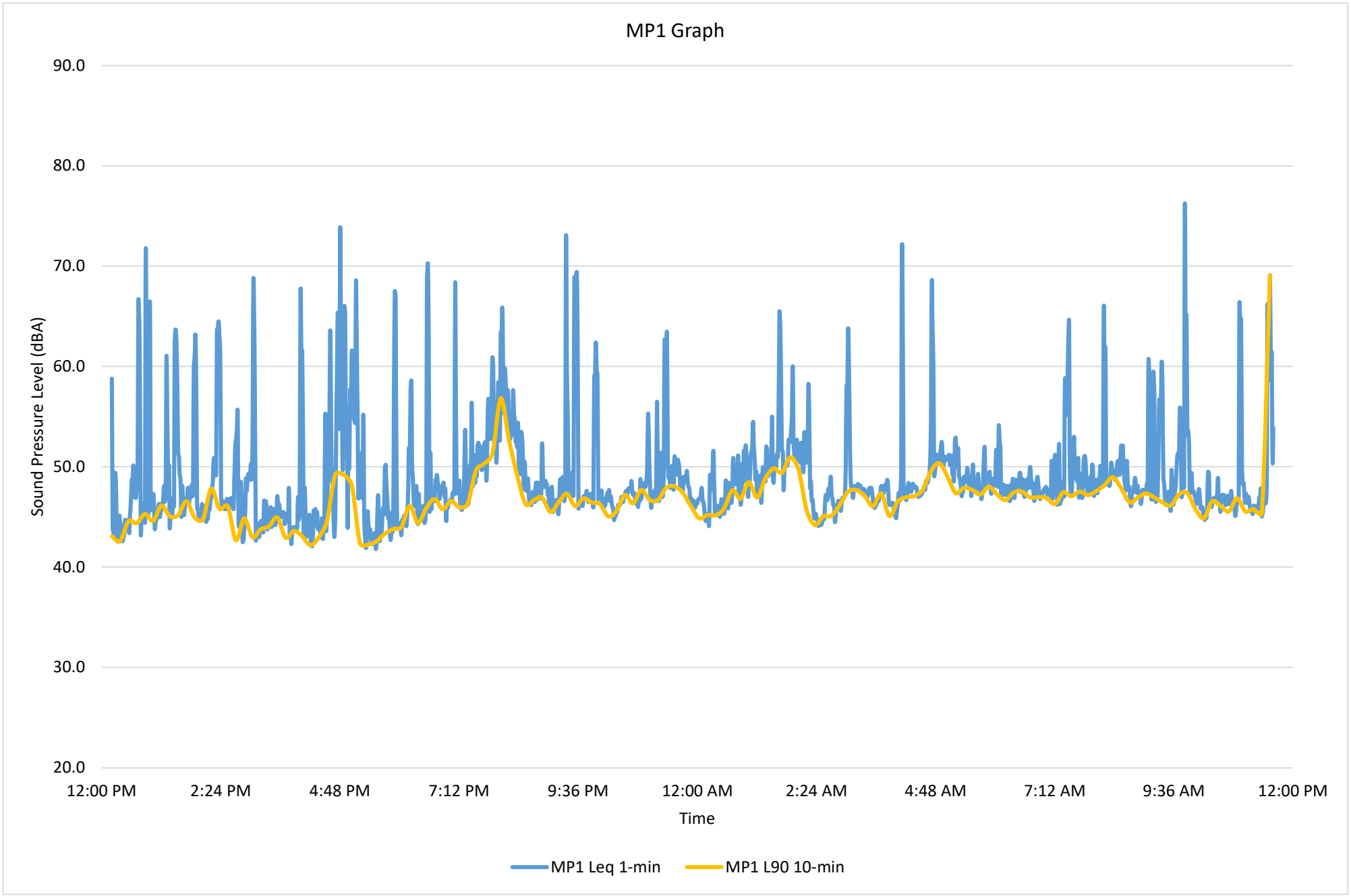
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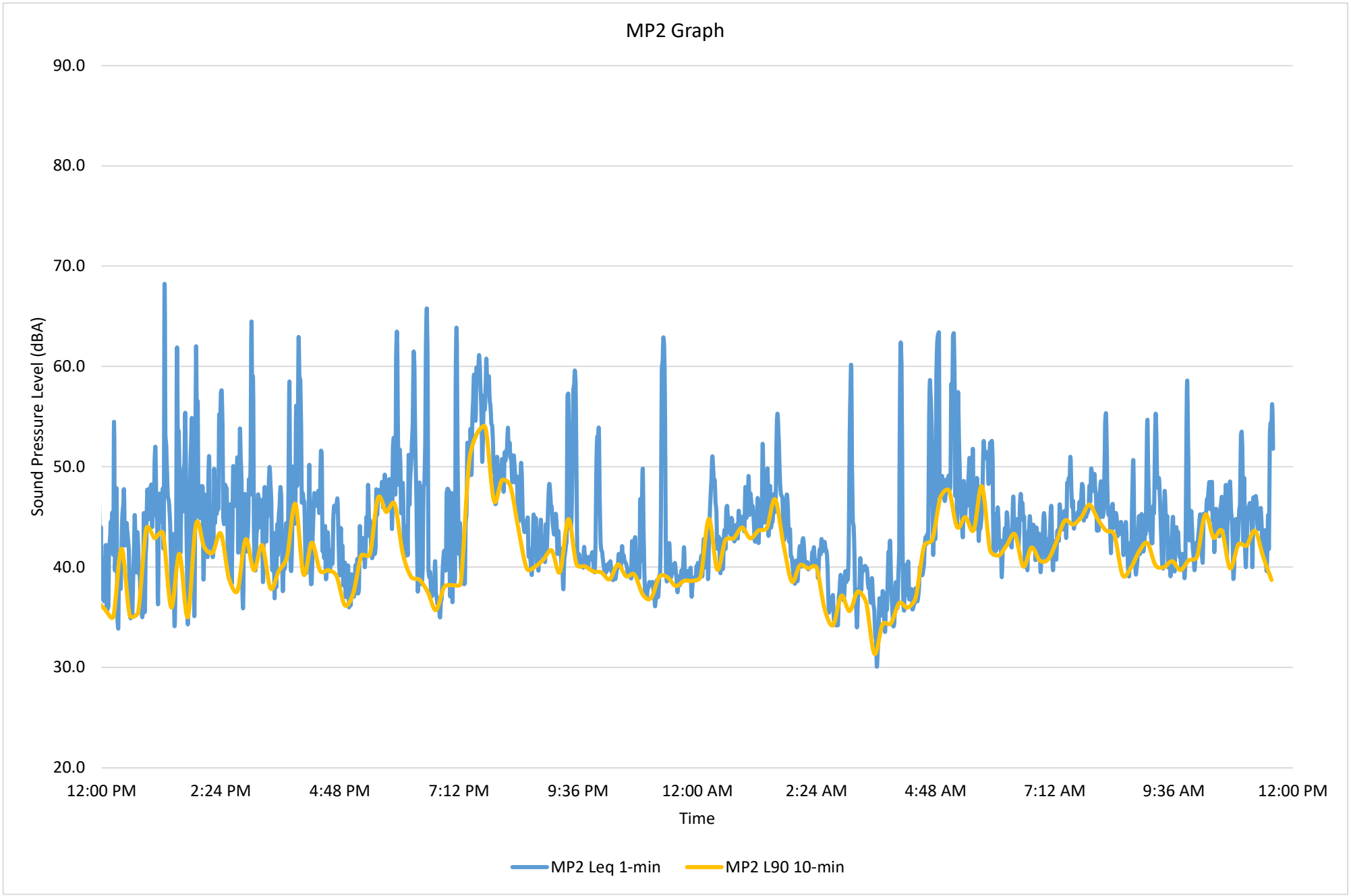
Appendix B – Measurement Data

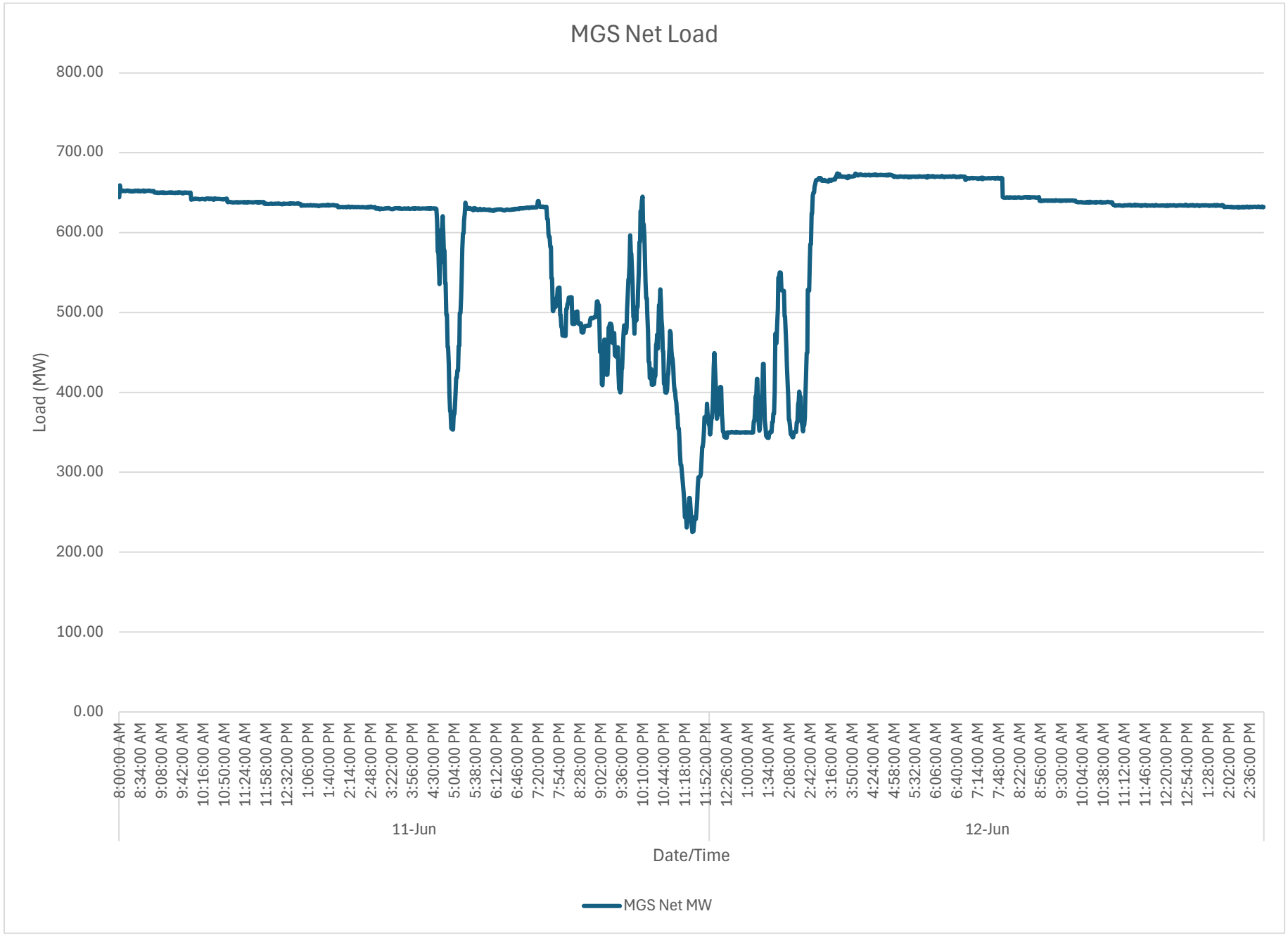
Time	MP01		MP02	
	L_{eq} (dBA)	L_{90} (dBA)	L_{eq} (dBA)	L_{90} (dBA)
6/11/25 12:12 PM	58	43	44	35
6/11/25 1:00 PM	54	45	54	38
6/11/25 2:00 PM	54	45	49	41
6/11/25 3:00 PM	53	43	52	40
6/11/25 4:00 PM	59	43	47	39
6/11/25 5:00 PM	56	43	50	38
6/11/25 6:00 PM	56	44	53	37
6/11/25 7:00 PM	55	46	55	39
6/11/25 8:00 PM	55	47	48	41
6/11/25 9:00 PM	60	46	49	40
6/11/25 10:00 PM	47	46	43	39
6/11/25 11:00 PM	53	47	50	37
6/12/25 12:00 AM	48	45	44	40
6/12/25 1:00 AM	54	48	47	41
6/12/25 2:00 AM	49	45	40	36
6/12/25 3:00 AM	51	46	46	34
6/12/25 4:00 AM	57	47	53	37
6/12/25 5:00 AM	49	48	52	44
6/12/25 6:00 AM	49	47	44	41
6/12/25 7:00 AM	52	47	46	41
6/12/25 8:00 AM	52	47	46	41
6/12/25 9:00 AM	60	47	48	40
6/12/25 10:00 AM	53	46	46	41
6/12/25 11:00 AM	57	46	49	40
Daytime Average	**56**	**45**	**50**	**39**
Nighttime Average	**52**	**47**	**49**	**39**

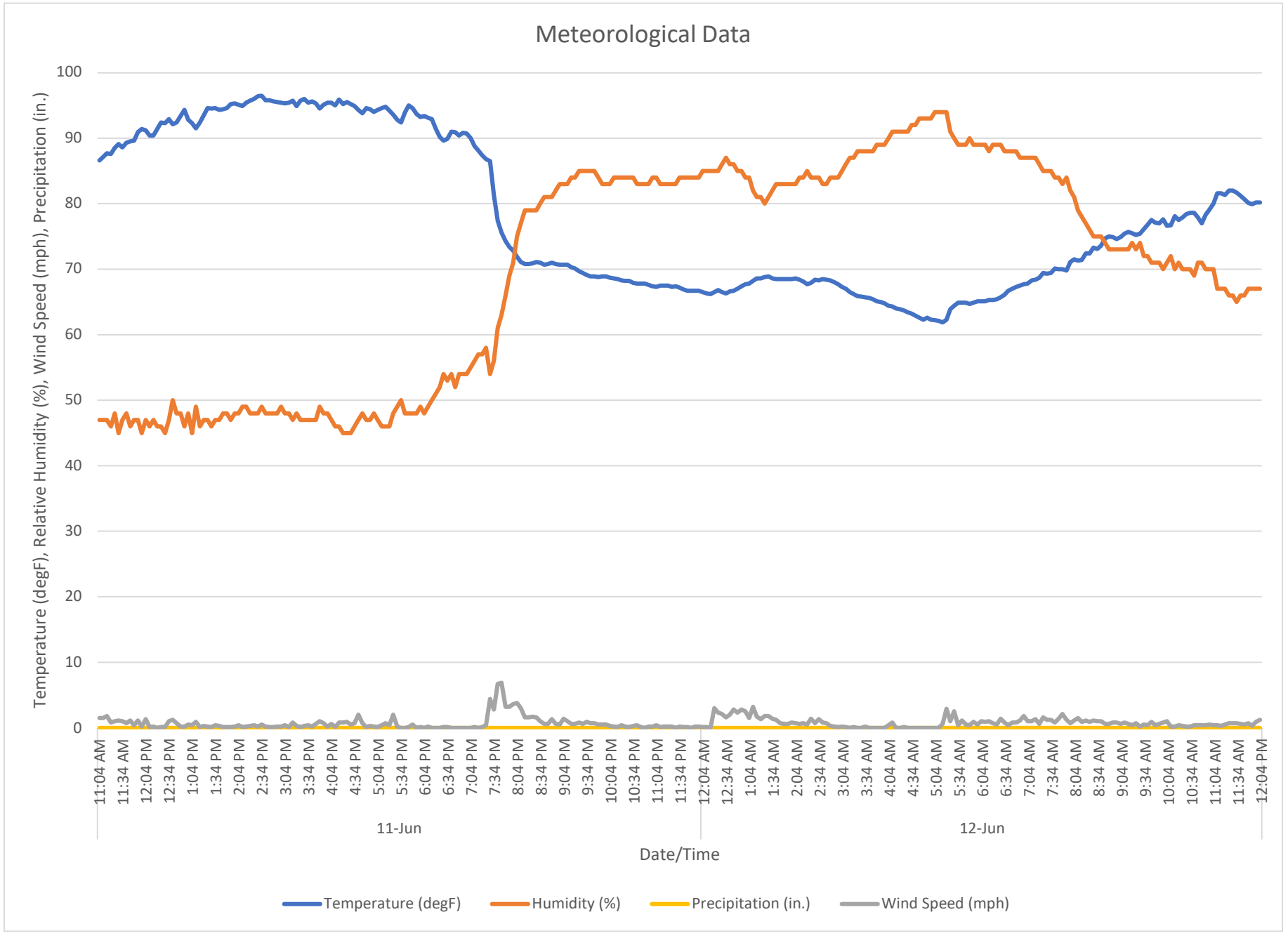
**Daytime is from 7 AM to 10 PM, and nighttime is from 10 PM to 7 AM*

***Leq daytime/nighttime averages are log-averaged using hourly Leq; L90 daytime/nighttime averages are arithmetic averaged using hourly L90*


MP1 Graph
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
Sound Pressure Level (dBA)
12:00 PM
2:24 PM
4:48 PM
7:12 PM
9:36 PM
12:00 AM
2:24 AM
4:48 AM
7:12 AM
9:36 AM
12:00 PM
Time
MP1 Leq 1-min
MP1 L90 10-min


MP2 Graph
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
Sound Pressure Level (dBA)
12:00 PM
2:24 PM
4:48 PM
7:12 PM
9:36 PM
12:00 AM
2:24 AM
4:48 AM
7:12 AM
9:36 AM
12:00 PM
Time
MP2 Leq 1-min
MP2 L90 10-min


MGS Net Load
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
Load (MW)
8:00:00 AM
8:34:00 AM
9:08:00 AM
9:42:00 AM
10:16:00 AM
10:50:00 AM
11:24:00 AM
11:58:00 AM
12:32:00 PM
1:06:00 PM
1:40:00 PM
2:14:00 PM
2:48:00 PM
3:22:00 PM
3:56:00 PM
4:30:00 PM
5:04:00 PM
5:38:00 PM
6:12:00 PM
6:46:00 PM
7:20:00 PM
7:54:00 PM
8:28:00 PM
9:02:00 PM
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6:40:00 AM
7:14:00 AM
7:48:00 AM
8:22:00 AM
8:56:00 AM
9:30:00 AM
10:04:00 AM
10:38:00 AM
11:12:00 AM
11:46:00 AM
12:20:00 PM
12:54:00 PM
1:28:00 PM
2:02:00 PM
2:36:00 PM
11-Jun
12-Jun
Date/Time
MGS Net MW


Meteorological Data
Temperature (degF), Relative Humidity (%), Wind Speed (mph), Precipitation (in.)
100
90
80
70
60
50
40
30
20
10
0
11:04 AM
11:34 AM
12:04 PM
12:34 PM
1:04 PM
1:34 PM
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11-Jun
12-Jun
Date/Time
Temperature (degF)
Humidity (%)
Precipitation (in.)
Wind Speed (mph)

Appendix C – Modeled Sound Levels

Appendix C - Mitigated Option Modeled Sound Power Levels

Alliant Energy
Marshalltown Simple Cycle Project

Name	Number of Sources	Sound Power Level (dB)[1] Octave Band Frequency (Hz) 31.5	63.0	125	250	500	1000	2000	4000	8000	Overall (dBA)	Notes[2]
CTG Equipment (Outdoors)												
Exhaust Stack Exit	3	134	128	115	97	94	92	89	88	89	**105**	Siemens provided (Mitigated Option)
CCW Cooler	3	110	112	110	105	102	99	91	87	93	**104**	Siemens provided
GT Exhaust Diffuser & Expansion Joint Enclo	3	131	121	108	104	97	86	85	82	62	**101**	Siemens provided (Mitigated Option)
GT Intake Duct	3	109	105	101	92	85	100	84	86	93	**101**	Siemens provided
Roto Air Cooler	3	107	105	100	96	94	89	85	83	79	**96**	Siemens provided
GT Exhaust Stack Enclosure	3	125	121	103	97	90	85	77	64	55	**97**	Siemens provided (Mitigated Option)
Exhaust Stack Silencer Radiated (Middle)	3	113	111	103	91	78	72	70	74	63	**90**	Siemens provided (Mitigated Option)
Exhaust Stack Wall Upper	3	106	104	90	71	64	58	52	52	49	**80**	Siemens provided (Mitigated Option)
GT Filter House	3	121	115	108	102	90	92	81	97	104	**105**	Siemens provided
CTG Equipment (Indoors)												
GT Enclosure	3	94	99	91	87	82	86	90	84	75	**94**	Siemens provided
GT Enclosure Air Inlet Vents	6	89	98	93	93	90	93	98	91	87	**101**	Siemens provided
GT Enclosure Discharge Vetns	6	89	98	93	92	89	94	99	91	86	**102**	Siemens provided
Generator	3	111	118	110	93	88	86	88	85	77	**98**	Siemens provided
Lube Oil Package	3	99	102	100	100	100	100	101	98	91	**106**	Siemens provided
Control Oil Skid	3	110	103	95	100	99	98	94	93	89	**103**	Siemens provided
BOP Equipment												
AHU	6	109	99	103	103	100	98	93	90	87	**103**	Estimated 85 dBA @ 3-ft (B&H spectrum)
CCW Pump	6	90	89	91	91	91	91	91	88	81	**97**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Dew Point Heater Stack	3	94	89	89	88	91	94	94	92	89	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Fuel Gas Valve	4	93	85	78	73	82	87	93	95	95	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Fuel Gas Piping	2	94	90	79	71	70	76	78	81	79	**85**	Estimated 75 dBA @ 3-ft (B&H spectrum)
Aux Transformer	3	85	93	94	91	92	82	76	66	57	**91**	Estimated 75 dBA @ 3-ft (B&H spectrum)
Dew Point Heater	3	94	89	89	88	91	94	94	92	89	**100**	Estimated 85 dBA @ 3-ft (B&H spectrum)
GSU Transformer	1	99	107	108	105	106	96	90	80	71	**105**	Estimated 85 dBA @ 3-ft (B&H spectrum)
Turbine Building Walls/Roof	1	123	123	110	100	90	84	83	69	76	**100**	Calculated based on Siemens and BOP interior equipment
Turbine Building Louver	17	97	100	92	85	84	84	86	82	78	**91**	Calculated based on Siemens and BOP interior equipment

Notes:

1. All sound levels are based on Siemens provided Mitigated Option equipment (i.e., includes low-noise upgrades to the exhaust duct and stack)

2. B&H - Bies & Hansen Engineering Noise Control (4th and 5th Ed.) - used for estimated frequency spectral data


BURNS
McDONNELL

INTERSTATE POWER AND LIGHT COMPANY

Traffic Impact Study

Bobcat Energy Center

Alliant Energy

Draft Study

April 27, 2026

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1.0 Introduction

1.1 Purpose and Study Objectives

Interstate Power and Light Company (IPL), an electric and gas utility subsidiary of Alliant Energy located in Iowa, is planning to construct a new 720-megawatt (MW) simple-cycle natural gas-fired electric generation facility, to be co-located with IPL's existing Marshalltown Generating Station (MGS) in Marshalltown, Iowa.

At the request of the City of Marshalltown, a Traffic Impact Study (TIS) was conducted for the Project to evaluate potential traffic effects associated primarily with construction activities and the temporary increase in on-site workforce. The purpose of the study was to assess existing traffic conditions, forecast construction-related traffic volumes, and identify potential impacts to the local roadway network during peak construction periods. The analysis focused on anticipated worker and construction vehicle trips and their influence on key intersections in the study area.

1.2 Project Description

The Project will assist IPL in transitioning its fleet to cleaner sources of generation while maintaining reliability and bringing economic benefits to the City of Marshalltown. The Project will be constructed in the City of Marshalltown, Iowa, adjacent to the existing Marshalltown Generating Station (MGS). Interstate Power & Light Company (IPL) owns approximately 278 acres in the City of Marshalltown, Iowa, and operates the MGS on a portion of that property. The Project will be constructed in an open field within this property, just north of the existing MGS.

The Project includes three (3) simple-cycle Siemens SGT6-5000F, F-class combustion turbines, housed inside a turbine building, and associated balance-of-plant (BOP) equipment. There will also be site civil work, foundations, a new switchyard, interconnection to the electrical grid via new transmission lines connected to an adjacent substation, a new natural gas lateral, and an onsite water supply pipeline. The Project is part of IPL's commitment to use a diverse portfolio of resources to provide safe, reliable, and affordable service to its customers. The installation of the Project is anticipated to be mobilized in the third quarter of 2026 and begin operation in the third quarter of 2029. The expected lifespan of the Project is 30 years or more.

The Project construction will take place on approximately 65 acres of the existing MGS property. Construction of the Project involves civil preparation of the site, installation of equipment foundations, and installation of the three (3) SCGT and related equipment, wiring, and conduit to support their function. An equipment building with an integral bridge crane will enclose the turbines, generators, and ancillary equipment. The building may include additional maintenance and storage space as well as minor administrative areas which will be determined as part of detailed design.

2.0 Existing Conditions

The existing traffic conditions within the study area were analyzed to establish a baseline for operational comparison. This analysis documents current traffic volumes and intersection performance throughout the study network. The existing conditions reflects pre-development operating conditions and provide a baseline to identify potential project-related traffic impacts and to assess the need for mitigation measures. **Figure 2-1** illustrates the site location and the study intersections included in the analysis.

2.1 Roadway Network

U.S. 30 is a four-lane divided highway that provides access to 18th Avenue via an interchange. In the vicinity of the U.S. 30 interchange, 18th Avenue is a four-lane divided facility with a posted speed limit of 55 mph. North of the interchange, 18th Avenue transitions to a four-lane undivided section with a posted speed limit of 35 mph near the project site. 18th Avenue is designated as a truck route by the City of Marshalltown.

Both U.S. 30 interchange ramps are stop-controlled at their intersections with 18th Avenue. The intersection of 18th Avenue and Nevada Street is a two-way stop-controlled intersection, with stop control provided on Nevada Street. The intersection of 18th Avenue and Main Street operates under all-way stop control.

2.2 Daily and Peak Hour Traffic Volumes

24-hour turning movement traffic counts were collected on Tuesday, March 24, 2026 at the following intersections. The raw traffic count data is provided in **Appendix A**.

- 18th Avenue & U.S. 30 Westbound Ramp
- 18th Avenue & U.S. 30 Eastbound Ramp
- 18th Avenue & Nevada Street
- 18th Avenue & Main Street

The AM peak hour was from 6:45 – 7:45 AM, while the PM peak hour was from 3:30 – 4:30 PM. The daily traffic volumes at each intersection are shown in **Table 2-1**.

Table 2-1: Daily Traffic Volumes

Intersection at 18th Avenue	North leg (veh/day)	South Leg (veh/day)	East Leg (veh/day)	West Leg (veh/day)
U.S 30 Eastbound Ramp	2,926	141	2,028	853
U.S 30 Westbound Ramp	5,909	2,971	2,192	876
Nevada Street	5,650	6,948	1,997	393
Main Street	2,206	5,408	3,174	2,684

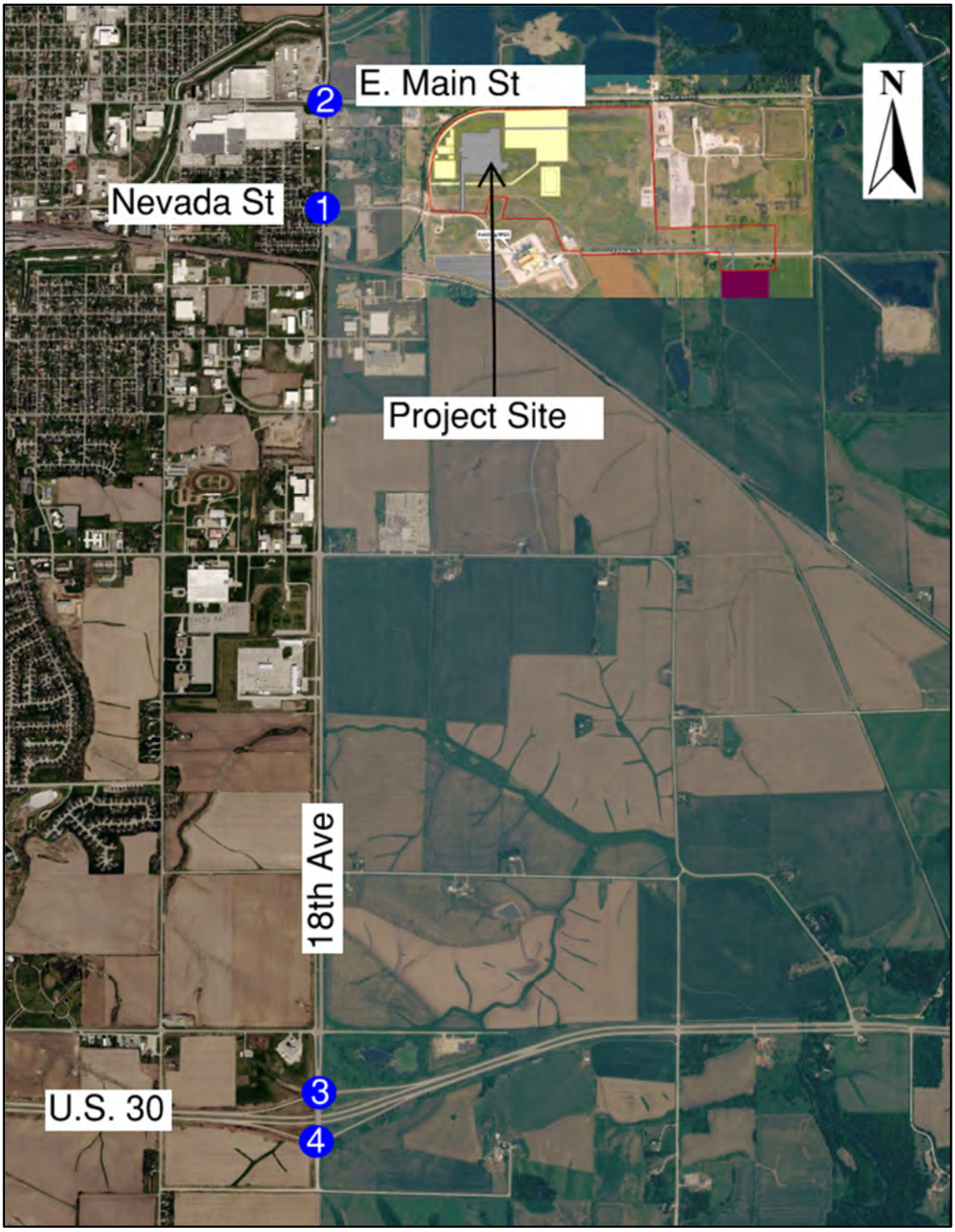


Figure 2-1: Project Site Location and Study Intersections

3.0 Trip Generation & Distribution

The trip generation is used to determine whether the Project would result in a measurable increase in traffic on the surrounding transportation network and whether additional mitigation is necessary. Trip generation is the process of estimating the number of vehicle trips that are expected to be generated by a development during a given time period.

Once construction begins, there will be an influx of vehicular and truck traffic bringing construction workers and materials to the site. The number of on-site construction personnel will vary depending on the overall stage and sequence of work. Construction work is planned for five (5) days per week and 10 hours per day. Site working days and hours will vary by craft/subcontractor, productivity, and conditions outside the control of the project (i.e. weather, equipment deliveries, resource availability).

The site will have one primary access point at the intersection of 18th Avenue & Nevada Street. All parking will be contained on-site. Several large deliveries are expected via rail (turbines, generators, and transformers). Rail deliveries during construction are anticipated to be offloaded from the Union Pacific line to a nearby site and transported to the Project site via East Nevada Street.

3.1 Estimated Construction Traffic Volumes

The installation of the Project is anticipated to be mobilized in the third quarter of 2026 and begin operation in the third quarter of 2029. Construction traffic was estimated during two main phases of work as part of this analysis. Based on workforce estimates and anticipated construction sequencing, two scenarios were analyzed to evaluate the construction impacts as described below.

- Construction Scenario #1 (July 2026 – December 2026)
  - Site preparation - anticipated haul trucks will fill and transport material at a volume of up to 100 loads per day. Trucks are anticipated to be distributed evenly throughout the day and generally do not coincide with the AM and PM peak hours.
  - 100 total personnel anticipated to be on site along with 5-15 deliveries per day.

- Construction Scenario #2 (March 2028)
  - 450 personnel on site daily during peak construction
  - 5-15 truck deliveries per day.

A 15 percent reduction in the total workforce was applied to account for ridesharing (carpooling) and normal absenteeism. For a conservative analysis, all employee arrivals and departures were assumed to occur during the existing peak-hour traffic period. The total number of trips during the AM and PM peak hour are shown in **Table 3-1** for each construction scenario.

Table 3-1: Construction Trip Generation Summary

Scenario	Estimated Daily Trucks	Estimated Workforce	Total AM Trips	Total PM trips
Construction Scenario #1	100 trucks	100 employees	95 trips (10 trucks + 85 employee)	95 trips (10 trucks + 85 employee)
Construction Scenario #2	5-15 trucks	450 employees	385 trips (2 trucks +383 employee)	385 trips (2 trucks +383 employee)

3.2 Permanent Operations Traffic

Upon completion of construction, the Project will transition to its permanent operational phase. The facility is anticipated to employ approximately four to ten full-time employees on site during normal operations and is expected to generate an estimated one to three delivery trips per day. Given the low level of employment and limited delivery activity, traffic associated with permanent operations is expected to be minimal and would constitute a negligible increase relative to existing daily traffic volumes on the surrounding roadway network. No operational traffic impacts are anticipated, and a detailed traffic analysis of permanent operations was not conducted for this scenario.

3.3 Trip Distribution

Truck deliveries for construction and operation are anticipated to be delivered to the site coming north on 18th Ave from U.S. Highway 30 and turning east on to East Nevada St to enter the site. Truck deliveries departing the site and anticipated to turn south on 18th Avenue and head to U.S. Highway 30.

Workforce travel to the project site is assumed to primarily occur via the U.S. Highway 30 interchange at 18th Avenue. The distribution of site-bound traffic was developed based on relative travel distances to the nearest population centers—Des Moines, Cedar Rapids, and Waterloo/Cedar Falls—supplemented by engineering judgment and existing traffic data. Based on this assessment, approximately 15 percent of workforce traffic is expected to approach the site from the north, while the remaining 85 percent is anticipated to approach from the south, consisting of approximately 45 percent to/from the west and 40 percent to/from the east.

4.0 Operations Analysis

Operational performance for the intersections was evaluated using Synchro 12 Software, which follows the procedures outlined in the Highway Capacity Manual, 7th Edition (HCM 7). Level of Service (LOS) is a performance measure used to describe the operational quality of an intersection based on control delay per vehicle. The HCM 7 defines distinct LOS thresholds, as shown in **Table 4-1**, based on the type of traffic control to reflect how drivers experience delay as well as the geometric and operational characteristics unique to each intersection type. The results of the analysis are shown in **Appendix B**.

Table 4-1: Level of Service Criteria for Unsignalized Intersections

Level of Service	Two-Way Stop Control and All-way Stop Control (sec/veh)
LOS A	≤ 10
LOS B	>10- 15
LOS C	>15 -25
LOS D	>25-35
LOS E	>35-50
LOS F	>50

4.1 Summary of Operations

Table 4-1, Table 4-2, and Table 4-3 summarizes the operations of the between the different scenarios with key findings described below:

- Under the Existing Conditions, all study intersections operate at LOS C or better during the AM and PM peak periods.
- Under Construction Scenario #1, the westbound approach at the intersection of 18th Avenue and Nevada Street operates at LOS F during the PM peak hour, primarily attributable to elevated outbound traffic volumes associated with construction worker departure. In addition, the eastbound approach of the U.S. 30 eastbound off-ramp operates at LOS D during the PM peak hour, with delays resulting from increased southbound turning movements.
- Under Construction Scenario #2, both the westbound approach at 18th Avenue and Nevada Street and the eastbound approach of the U.S. 30 eastbound off-ramp operate at LOS F during the PM peak hour.
- All remaining approaches at the study intersections operate at LOS C or better during the PM peak hour under both construction scenarios.

Table 4-2: Existing Conditions Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	A (B)	B (C)	-	-
	Delay (sec/veh)	-	9.9 (14.8)	13.9 (18.3)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.5 (11.5)	8.7 (10.8)	10.1 (11.3)	9.5 (12.2)	9.1 (10.9)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		10.1 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	B (C)	-	-	-
	Delay	-	12.7 (23.6)	-	-	-

Table 4-3: Construction Scenario #1 Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	B (B)	C (F)	-	-
	Delay (sec/veh)	-	10.1 (14.9)	15.2 (71.5)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.6 (11.7)	8.8 (10.9)	10.2 (11.4)	9.5 (12.5)	9.2 (11.0)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		10.7 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	B (D)	-	-	-
	Delay	-	13.6 (29.2)	-	-	-

Table 4-4: Construction Scenario #2 Operations Summary

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg AM (PM)			
			EB	WB	NB	SB
Nevada Street	LOS	-	B (C)	C (F)	-	-
	Delay (sec/veh)	-	10.4 (15.1)	20.7 (>100)	-	-
Main Street	LOS	A (B)	A (B)	B (B)	A (B)	A (B)
	Delay (sec/veh)	9.9 (12.3)	9.0 (11.1)	10.5 (11.7)	9.8 (13.4)	9.6 (11.2)
U.S 30 Westbound Ramp	LOS	-	-	B (A)	-	-
	Delay(sec/veh)	-		13.6 (9.4)		
U.S 30 Eastbound Ramp	LOS	-	C (F)	-	-	-
	Delay	-	18.3 (69.5)	-	-	-

5.0 Summary of Findings and Mitigation

The capacity analysis identified two locations that would experience LOS degradation to LOS D or worse due to the additional construction traffic.

5.1 18th Avenue & Nevada Street Mitigation

The intersection of 18th Avenue and Nevada Street is the primary access location to the site. During the departure of construction workers, the westbound approach operates at LOS F during the PM peak period during Construction Scenario #1 and Construction Scenario #2.

A capacity analysis was conducted to determine the intersection performance with a temporary traffic signal impacts during the PM peak hour. The results are summarized in **Table 5-1.** A temporary traffic signal would allow all approaches to operate at LOS B or better during construction and would improve the westbound approach from LOS F to LOS A.

Table 5-1: Construction Scenario – Signalized Intersection Operations

Intersection at 18th Avenue	Metric	Overall Intersection	Approach Leg (PM)			
			EB	WB	NB	SB
Construction Scenario #1						
Nevada Street	LOS	(A)	(A)	(A)	(A)	(A)
	Delay (sec/veh)	(6.5)	(7.9)	(7.5)	(5.7)	(6.1)
Construction Scenario #2						
Nevada Street	LOS	(A)	(A)	(A)	(B)	(B)
	Delay (sec/veh)	(9.7)	(5.9)	(8.0)	(10.7)	(11.6)

Values in table shown for PM peak periods only

5.2 US-30 Eastbound Ramp Mitigation

The eastbound approach on the US-30 Eastbound Ramp operates at LOS D during the PM peak hour in Construction Scenario #1, and LOS F during the PM peak hour in Construction Scenario #2. The increased construction traffic on 18th Avenue causes increased delay on the eastbound ramp because traffic on the ramp has less of an opportunity to select a gap in the major street traffic.

The 95th percentile queue length on the eastbound ramp was compared in each scenario and is shown in **Table 5-2**. There is a small increase in queue lengths during the construction scenario when compared to the existing conditions. The existing US-30 eastbound ramp is sufficiently long enough to store these vehicles without impacting traffic flow on US-30.

Table 5-2: Summary of PM Peak Hour Queuing at U.S. 30 Eastbound Ramp

Scenario	95th Percentile Queue Length (feet)
Existing Conditions	25 feet
Construction Scenario #1	32 feet
Construction Scenario #2	66 feet

Given the relatively low traffic volume, the temporary nature of peak construction activity, and the ability of the existing roadway geometry to accommodate the anticipated queue lengths, no specific mitigation measures are identified at this time. Traffic operations should be monitored throughout the construction period, and additional mitigation measures should be implemented if observed field conditions exceed projected queue lengths or result in unanticipated operational or safety issues.

As an optional measure to further minimize PM peak-hour delays on the eastbound U.S. 30 ramp during construction, construction-related trip departures may be staggered or shifted outside of the PM peak period in order to reduce concurrent traffic demand on 18th Avenue.

Appendix A –Traffic Count Data

18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	2	8	0	0	**10**	1	3	0	0	**4**	1	0	1	0	**2**	1	0	0	0	**1**	**17**
12:15AM	1	3	1	0	**5**	0	2	0	0	**2**	1	0	1	0	**2**	0	0	0	0	**0**	**9**
12:30AM	1	7	0	0	**8**	1	5	0	0	**6**	0	0	0	0	**0**	0	0	0	0	**0**	**14**
12:45AM	0	6	1	0	**7**	1	8	0	0	**9**	0	0	3	0	**3**	0	1	0	0	**1**	**20**
Hourly Total	4	24	2	0	**30**	3	18	0	0	**21**	2	0	5	0	**7**	1	1	0	0	**2**	**60**
1:00AM	0	5	0	0	**5**	2	16	0	0	**18**	0	0	4	0	**4**	2	0	0	0	**2**	**29**
1:15AM	0	4	0	0	**4**	0	2	0	0	**2**	0	0	10	0	**10**	0	0	1	0	**1**	**17**
1:30AM	2	8	0	0	**10**	0	10	0	0	**10**	1	0	3	0	**4**	0	0	0	0	**0**	**24**
1:45AM	2	3	0	0	**5**	0	10	0	0	**10**	1	0	6	0	**7**	1	0	1	0	**2**	**24**
Hourly Total	4	20	0	0	**24**	2	38	0	0	**40**	2	0	23	0	**25**	3	0	2	0	**5**	**94**
2:00AM	0	3	0	0	**3**	3	4	0	0	**7**	0	0	0	0	**0**	0	1	0	0	**1**	**11**
2:15AM	0	6	0	0	**6**	1	4	0	0	**5**	0	0	3	0	**3**	1	0	0	0	**1**	**15**
2:30AM	0	4	0	0	**4**	1	1	0	0	**2**	0	0	1	0	**1**	0	0	1	0	**1**	**8**
2:45AM	1	4	0	0	**5**	1	4	0	0	**5**	0	0	0	0	**0**	0	0	0	0	**0**	**10**
Hourly Total	1	17	0	0	**18**	6	13	0	0	**19**	0	0	4	0	**4**	1	1	1	0	**3**	**44**
3:00AM	0	2	0	0	**2**	1	9	0	0	**10**	0	0	0	0	**0**	1	0	0	0	**1**	**13**
3:15AM	1	2	0	0	**3**	0	11	0	0	**11**	0	0	4	0	**4**	1	0	0	0	**1**	**19**
3:30AM	1	3	0	0	**4**	1	3	0	0	**4**	0	0	0	0	**0**	0	0	1	0	**1**	**9**
3:45AM	1	2	0	0	**3**	2	2	0	0	**4**	0	0	1	0	**1**	0	0	0	0	**0**	**8**
Hourly Total	3	9	0	0	**12**	4	25	0	0	**29**	0	0	5	0	**5**	2	0	1	0	**3**	**49**
4:00AM	0	2	0	0	**2**	1	6	0	0	**7**	0	2	1	0	**3**	1	1	1	0	**3**	**15**
4:15AM	0	8	0	0	**8**	1	5	0	0	**6**	0	0	3	0	**3**	1	1	1	0	**3**	**20**
4:30AM	1	12	3	0	**16**	1	4	0	0	**5**	0	1	4	0	**5**	1	0	2	0	**3**	**29**
4:45AM	1	15	0	0	**16**	1	7	0	0	**8**	0	0	6	0	**6**	0	0	0	0	**0**	**30**
Hourly Total	2	37	3	0	**42**	4	22	0	0	**26**	0	3	14	0	**17**	3	2	4	0	**9**	**94**
5:00AM	0	15	0	0	**15**	1	9	0	0	**10**	0	1	2	0	**3**	0	0	2	0	**2**	**30**
5:15AM	4	25	1	0	**30**	0	18	1	0	**19**	1	0	6	0	**7**	1	0	0	0	**1**	**57**
5:30AM	4	24	1	0	**29**	0	17	0	0	**17**	1	0	11	0	**12**	0	0	1	0	**1**	**59**
5:45AM	6	43	4	0	**53**	1	33	0	0	**34**	2	2	13	0	**17**	0	0	1	0	**1**	**105**
Hourly Total	14	107	6	0	**127**	2	77	1	0	**80**	4	3	32	0	**39**	1	0	4	0	**5**	**251**
6:00AM	6	30	0	0	**36**	1	27	0	0	**28**	0	0	4	0	**4**	0	0	0	0	**0**	**68**
6:15AM	14	25	0	0	**39**	2	18	2	0	**22**	0	0	5	0	**5**	0	0	0	0	**0**	**66**
6:30AM	25	39	0	0	**64**	1	29	1	0	**31**	1	1	9	0	**11**	0	0	1	0	**1**	**107**
6:45AM	37	87	2	0	**126**	3	52	2	0	**57**	2	1	26	0	**29**	0	0	1	0	**1**	**213**
Hourly Total	82	181	2	0	**265**	7	126	5	0	**138**	3	2	44	0	**49**	0	0	2	0	**2**	**454**
7:00AM	10	31	1	0	**42**	0	56	2	0	**58**	2	0	16	0	**18**	2	1	2	0	**5**	**123**
7:15AM	20	30	4	0	**54**	2	64	5	0	**71**	0	0	13	0	**13**	0	0	0	0	**0**	**138**
7:30AM	17	35	3	0	**55**	2	58	4	0	**64**	1	0	16	0	**17**	3	0	0	0	**3**	**139**
7:45AM	22	42	1	0	**65**	2	57	4	0	**63**	5	0	5	0	**10**	3	0	1	0	**4**	**142**
Hourly Total	69	138	9	0	**216**	6	235	15	0	**256**	8	0	50	0	**58**	8	1	3	0	**12**	**542**
8:00AM	19	42	1	0	**62**	1	44	1	0	**46**	1	0	27	0	**28**	0	1	0	0	**1**	**137**
8:15AM	13	25	0	0	**38**	1	40	2	0	**43**	2	1	12	0	**15**	1	0	1	0	**2**	**98**
8:30AM	10	31	2	0	**43**	2	41	0	0	**43**	3	0	12	0	**15**	1	1	1	0	**3**	**104**
8:45AM	6	31	0	0	**37**	3	38	4	0	**45**	4	0	4	0	**8**	1	0	1	0	**2**	**92**
Hourly Total	48	129	3	0	**180**	7	163	7	0	**177**	10	1	55	0	**66**	3	2	3	0	**8**	**431**
9:00AM	4	24	1	0	**29**	1	30	2	0	**33**	2	0	10	0	**12**	0	0	0	0	**0**	**74**
9:15AM	5	25	2	0	**32**	0	29	4	0	**33**	0	0	6	0	**6**	1	0	1	0	**2**	**73**
9:30AM	8	39	0	0	**47**	2	35	2	0	**39**	2	2	6	0	**10**	1	0	2	0	**3**	**99**
9:45AM	8	32	0	0	**40**	1	46	6	0	**53**	2	0	7	0	**9**	0	1	2	0	**3**	**105**
Hourly Total	25	120	3	0	**148**	4	140	14	0	**158**	6	2	29	0	**37**	2	1	5	0	**8**	**351**
10:00AM	5	21	2	0	**28**	3	40	4	0	**47**	3	1	4	0	**8**	1	0	0	0	**1**	**84**
10:15AM	6	23	0	0	**29**	1	39	4	0	**44**	4	0	8	0	**12**	3	0	0	0	**3**	**88**
10:30AM	5	39	1	0	**45**	1	42	2	0	**45**	1	0	7	0	**8**	1	0	2	0	**3**	**101**
10:45AM	6	29	0	0	**35**	0	32	3	0	**35**	5	0	5	0	**10**	1	0	0	0	**1**	**81**

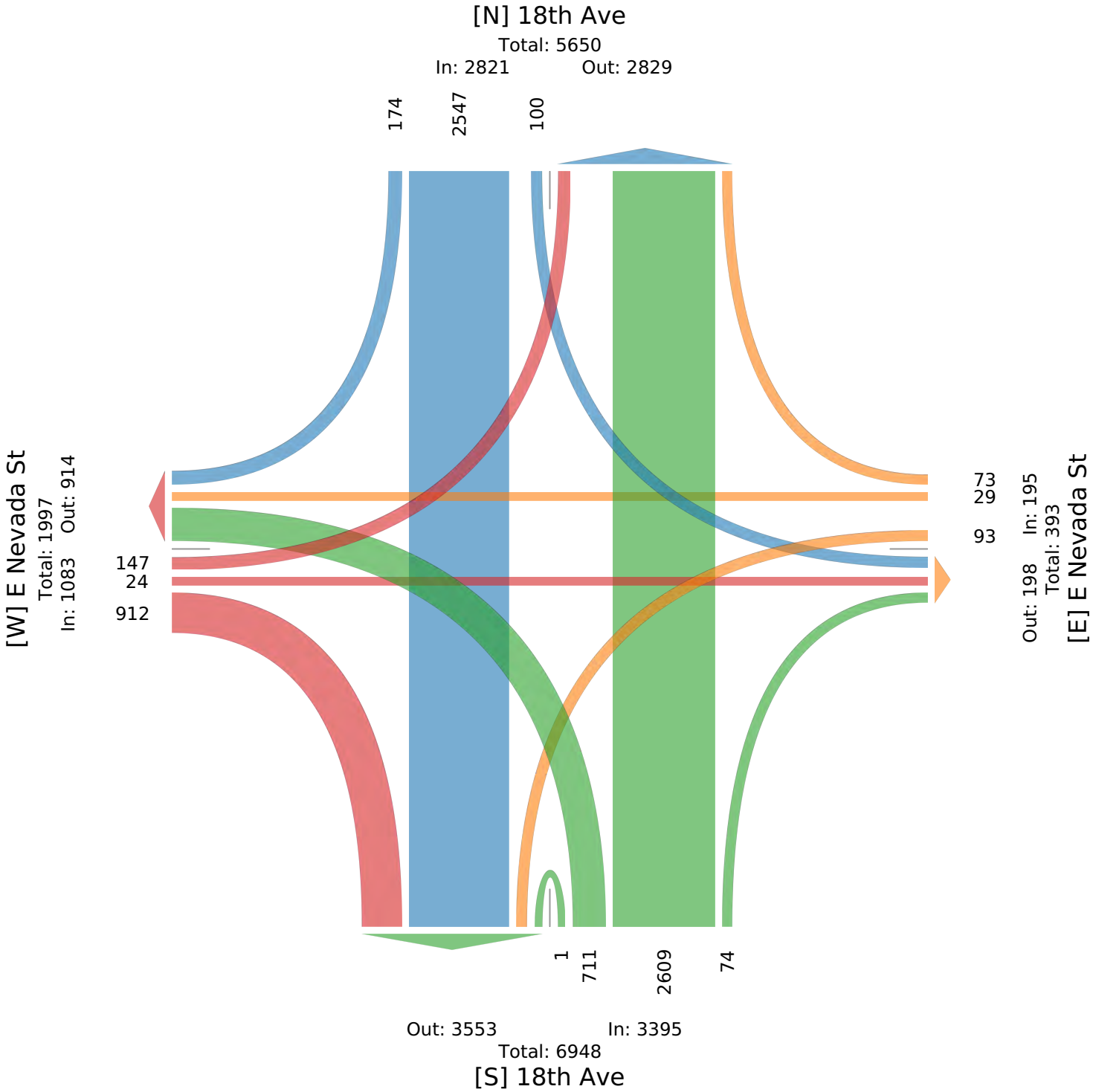
Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
Hourly Total	22	112	3	0	**137**	5	153	13	0	**171**	13	1	24	0	**38**	6	0	2	0	**8**	**354**
11:00AM	13	33	1	0	**47**	2	36	1	0	**39**	3	0	8	0	**11**	0	0	0	0	**0**	**97**
11:15AM	4	37	2	0	**43**	1	27	0	0	**28**	2	2	5	0	**9**	1	0	1	0	**2**	**82**
11:30AM	11	31	2	0	**44**	0	34	4	0	**38**	0	0	7	0	**7**	1	0	1	0	**2**	**91**
11:45AM	11	34	2	0	**47**	1	49	3	0	**53**	0	0	21	0	**21**	2	1	1	0	**4**	**125**
Hourly Total	39	135	7	0	**181**	4	146	8	0	**158**	5	2	41	0	**48**	4	1	3	0	**8**	**395**
12:00PM	10	28	2	0	**40**	0	37	2	0	**39**	2	0	22	0	**24**	6	0	1	0	**7**	**110**
12:15PM	6	43	0	0	**49**	1	38	2	0	**41**	2	0	5	0	**7**	4	0	1	0	**5**	**102**
12:30PM	6	35	2	0	**43**	0	32	1	0	**33**	0	1	7	0	**8**	1	0	1	0	**2**	**86**
12:45PM	9	30	1	0	**40**	0	35	3	0	**38**	3	0	10	0	**13**	2	0	0	0	**2**	**93**
Hourly Total	31	136	5	0	**172**	1	142	8	0	**151**	7	1	44	0	**52**	13	0	3	0	**16**	**391**
1:00PM	9	46	3	0	**58**	0	19	4	0	**23**	1	0	10	0	**11**	0	0	2	0	**2**	**94**
1:15PM	5	32	1	0	**38**	1	25	3	0	**29**	3	0	12	0	**15**	1	0	1	0	**2**	**84**
1:30PM	6	28	0	0	**34**	0	41	2	0	**43**	2	0	14	0	**16**	3	1	2	0	**6**	**99**
1:45PM	9	34	0	0	**43**	1	35	0	0	**36**	5	0	10	0	**15**	0	1	0	0	**1**	**95**
Hourly Total	29	140	4	0	**173**	2	120	9	0	**131**	11	0	46	0	**57**	4	2	5	0	**11**	**372**
2:00PM	8	26	0	1	**35**	2	20	4	0	**26**	4	0	7	0	**11**	2	1	3	0	**6**	**78**
2:15PM	12	48	0	0	**60**	2	32	1	0	**35**	1	0	6	0	**7**	0	0	0	0	**0**	**102**
2:30PM	13	57	1	0	**71**	0	24	3	0	**27**	3	0	9	0	**12**	6	0	2	0	**8**	**118**
2:45PM	10	58	3	0	**71**	3	50	2	0	**55**	3	1	10	0	**14**	1	2	1	0	**4**	**144**
Hourly Total	43	189	4	1	**237**	7	126	10	0	**143**	11	1	32	0	**44**	9	3	6	0	**18**	**442**
3:00PM	11	69	2	0	**82**	1	42	3	0	**46**	1	2	22	0	**25**	4	1	2	0	**7**	**160**
3:15PM	15	67	1	0	**83**	1	57	7	0	**65**	3	0	31	0	**34**	2	0	2	0	**4**	**186**
3:30PM	17	70	0	0	**87**	0	174	10	0	**184**	2	0	68	0	**70**	2	0	1	0	**3**	**344**
3:45PM	19	70	2	0	**91**	1	60	5	0	**66**	3	3	30	0	**36**	1	1	0	0	**2**	**195**
Hourly Total	62	276	5	0	**343**	3	333	25	0	**361**	9	5	151	0	**165**	9	2	5	0	**16**	**885**
4:00PM	15	73	1	0	**89**	1	58	3	0	**62**	6	0	13	0	**19**	1	3	5	0	**9**	**179**
4:15PM	19	49	1	0	**69**	2	55	8	0	**65**	4	0	21	0	**25**	0	0	1	0	**1**	**160**
4:30PM	8	47	2	0	**57**	3	46	2	0	**51**	6	0	18	0	**24**	4	0	1	0	**5**	**137**
4:45PM	19	46	1	0	**66**	2	63	5	0	**70**	7	0	19	0	**26**	0	0	2	0	**2**	**164**
Hourly Total	61	215	5	0	**281**	8	222	18	0	**248**	23	0	71	0	**94**	5	3	9	0	**17**	**640**
5:00PM	9	60	1	0	**70**	1	40	1	0	**42**	1	0	34	0	**35**	1	2	1	0	**4**	**151**
5:15PM	13	54	0	0	**67**	1	38	2	0	**41**	2	0	32	0	**34**	1	0	0	0	**1**	**143**
5:30PM	17	33	1	0	**51**	0	30	6	0	**36**	5	1	11	0	**17**	0	0	1	0	**1**	**105**
5:45PM	20	42	1	0	**63**	1	42	1	0	**44**	4	0	14	0	**18**	1	0	0	0	**1**	**126**
Hourly Total	59	189	3	0	**251**	3	150	10	0	**163**	12	1	91	0	**104**	3	2	2	0	**7**	**525**
6:00PM	9	29	1	0	**39**	0	22	4	0	**26**	4	1	11	0	**16**	1	1	1	0	**3**	**84**
6:15PM	8	28	0	0	**36**	1	26	2	0	**29**	2	0	5	0	**7**	2	1	1	0	**4**	**76**
6:30PM	5	25	0	0	**30**	0	16	1	0	**17**	1	0	2	0	**3**	1	0	0	0	**1**	**51**
6:45PM	5	33	1	0	**39**	1	20	4	0	**25**	2	0	3	0	**5**	1	0	0	0	**1**	**70**
Hourly Total	27	115	2	0	**144**	2	84	11	0	**97**	9	1	21	0	**31**	5	2	2	0	**9**	**281**
7:00PM	12	24	3	0	**39**	2	14	4	0	**20**	1	0	12	0	**13**	2	0	1	0	**3**	**75**
7:15PM	6	22	1	0	**29**	1	17	5	0	**23**	2	0	8	0	**10**	0	2	0	0	**2**	**64**
7:30PM	5	22	1	0	**28**	2	13	0	0	**15**	0	0	8	0	**8**	1	1	0	0	**2**	**53**
7:45PM	6	23	0	0	**29**	0	14	1	0	**15**	1	0	12	0	**13**	1	0	2	0	**3**	**60**
Hourly Total	29	91	5	0	**125**	5	58	10	0	**73**	4	0	40	0	**44**	4	3	3	0	**10**	**252**
8:00PM	5	12	0	0	**17**	1	10	2	0	**13**	1	0	1	0	**2**	0	0	0	0	**0**	**32**
8:15PM	3	19	0	0	**22**	2	12	1	0	**15**	0	1	4	0	**5**	0	0	2	0	**2**	**44**
8:30PM	7	14	0	0	**21**	2	12	0	0	**14**	0	0	9	0	**9**	0	1	1	0	**2**	**46**
8:45PM	5	29	0	0	**34**	2	11	2	0	**15**	0	0	8	0	**8**	0	0	0	0	**0**	**57**
Hourly Total	20	74	0	0	**94**	7	45	5	0	**57**	1	1	22	0	**24**	0	1	3	0	**4**	**179**
9:00PM	6	18	0	0	**24**	0	14	2	0	**16**	0	0	7	0	**7**	0	0	1	0	**1**	**48**
9:15PM	5	20	1	0	**26**	0	10	0	0	**10**	1	0	9	0	**10**	1	0	0	0	**1**	**47**
9:30PM	1	8	0	0	**9**	1	10	2	0	**13**	0	0	5	0	**5**	0	0	0	0	**0**	**27**
9:45PM	8	14	0	0	**22**	1	10	1	0	**12**	1	0	7	0	**8**	0	0	0	0	**0**	**42**
Hourly Total	20	60	1	0	**81**	2	44	5	0	**51**	2	0	28	0	**30**	1	0	1	0	**2**	**164**
10:00PM	1	13	0	0	**14**	1	12	0	0	**13**	0	0	3	0	**3**	2	0	0	0	**2**	**32**
10:15PM	3	11	0	0	**14**	1	12	0	0	**13**	2	0	3	0	**5**	0	0	1	0	**1**	**33**
10:30PM	0	11	1	0	**12**	0	5	0	0	**5**	2	0	2	0	**4**	1	0	0	0	**1**	**22**
10:45PM	6	15	1	0	**22**	2	7	0	0	**9**	0	0	5	0	**5**	0	0	1	0	**1**	**37**

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	10	50	2	0	**62**	4	36	0	0	**40**	4	0	13	0	**17**	3	0	2	0	**5**	**124**
11:00PM	3	15	0	0	**18**	0	7	0	0	**7**	0	0	5	0	**5**	1	2	1	0	**4**	**34**
11:15PM	3	10	0	0	**13**	2	11	0	0	**13**	0	0	7	0	**7**	0	0	1	0	**1**	**34**
11:30PM	1	17	0	0	**18**	0	6	0	0	**6**	0	0	9	0	**9**	2	0	0	0	**2**	**35**
11:45PM	0	3	0	0	**3**	0	7	0	0	**7**	1	0	6	0	**7**	0	0	0	0	**0**	**17**
Hourly Total	7	45	0	0	**52**	2	31	0	0	**33**	1	0	27	0	**28**	3	2	2	0	**7**	**120**
Total	711	2609	74	1	**3395**	100	2547	174	0	**2821**	147	24	912	0	**1083**	93	29	73	0	**195**	**7494**
% Approach	20.9%	76.8%	2.2%	0%	**-**	3.5%	90.3%	6.2%	0%	**-**	13.6%	2.2%	84.2%	0%	**-**	47.7%	14.9%	37.4%	0%	**-**	-
% Total	9.5%	34.8%	1.0%	0%	**45.3%**	1.3%	34.0%	2.3%	0%	**37.6%**	2.0%	0.3%	12.2%	0%	**14.5%**	1.2%	0.4%	1.0%	0%	**2.6%**	-
Lights	695	2214	51	1	**2961**	32	2172	168	0	**2372**	141	24	886	0	**1051**	43	26	30	0	**99**	6483
% Lights	97.7%	84.9%	68.9%	100%	**87.2%**	32.0%	85.3%	96.6%	0%	**84.1%**	95.9%	100%	97.1%	0%	**97.0%**	46.2%	89.7%	41.1%	0%	**50.8%**	86.5%
Articulated Trucks	2	246	11	0	**259**	63	236	0	0	**299**	0	0	1	0	**1**	33	0	39	0	**72**	631
% Articulated Trucks	0.3%	9.4%	14.9%	0%	**7.6%**	63.0%	9.3%	0%	0%	**10.6%**	0%	0%	0.1%	0%	**0.1%**	35.5%	0%	53.4%	0%	**36.9%**	8.4%
Buses and Single-Unit Trucks	14	149	12	0	**175**	5	139	6	0	**150**	6	0	25	0	**31**	17	3	4	0	**24**	380
% Buses and Single-Unit Trucks	2.0%	5.7%	16.2%	0%	**5.2%**	5.0%	5.5%	3.4%	0%	**5.3%**	4.1%	0%	2.7%	0%	**2.9%**	18.3%	10.3%	5.5%	0%	**12.3%**	5.1%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

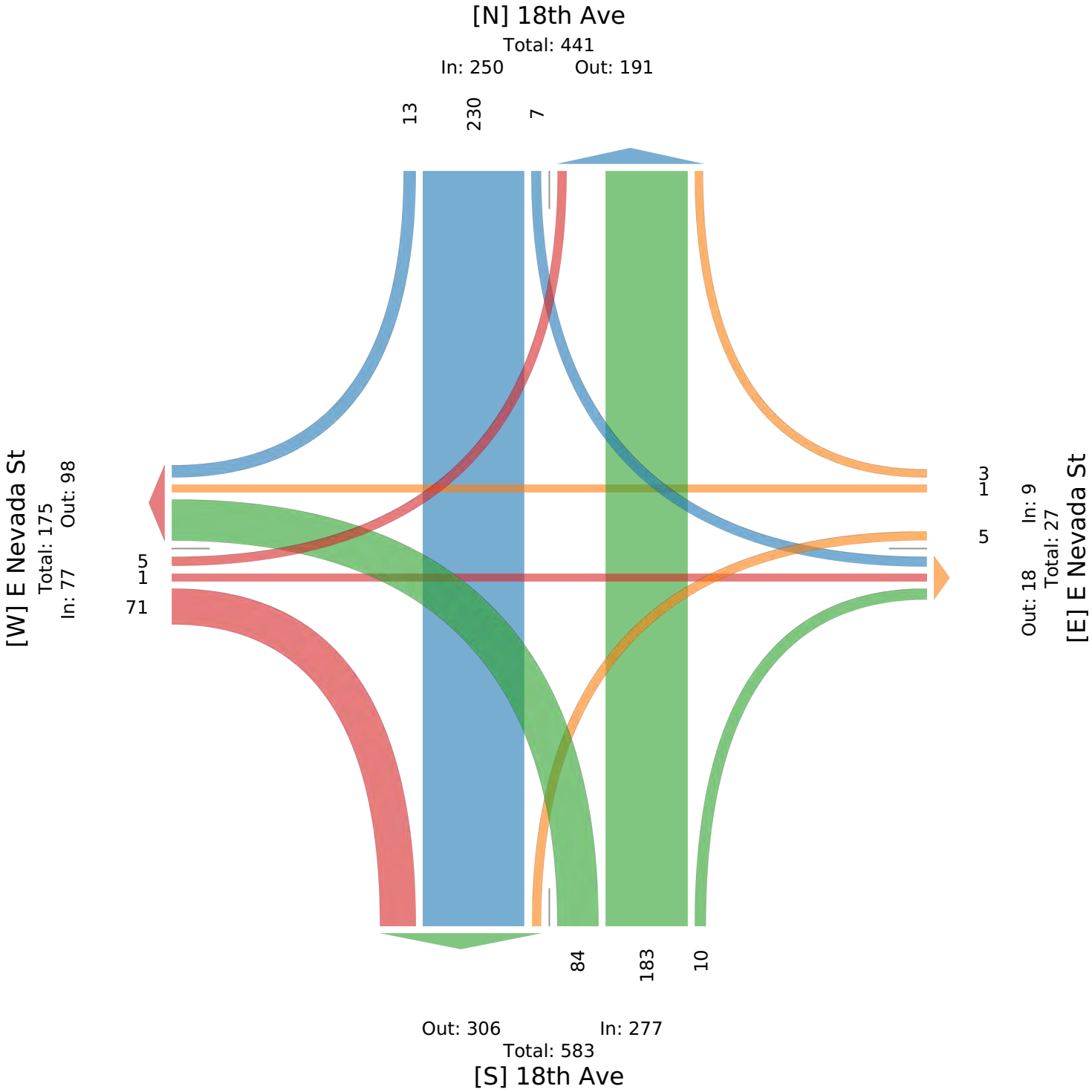
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	37	87	2	0	**126**	3	52	2	0	**57**	2	1	26	0	**29**	0	0	1	0	**1**	**213**
7:00AM	10	31	1	0	**42**	0	56	2	0	**58**	2	0	16	0	**18**	2	1	2	0	**5**	**123**
7:15AM	20	30	4	0	**54**	2	64	5	0	**71**	0	0	13	0	**13**	0	0	0	0	**0**	**138**
7:30AM	17	35	3	0	**55**	2	58	4	0	**64**	1	0	16	0	**17**	3	0	0	0	**3**	**139**
Total	84	183	10	0	**277**	7	230	13	0	**250**	5	1	71	0	**77**	5	1	3	0	**9**	**613**
% Approach	30.3%	66.1%	3.6%	0%	**-**	2.8%	92.0%	5.2%	0%	**-**	6.5%	1.3%	92.2%	0%	**-**	55.6%	11.1%	33.3%	0%	**-**	-
% Total	13.7%	29.9%	1.6%	0%	**45.2%**	1.1%	37.5%	2.1%	0%	**40.8%**	0.8%	0.2%	11.6%	0%	**12.6%**	0.8%	0.2%	0.5%	0%	**1.5%**	-
PHF	0.568	0.526	0.625	-	**0.550**	0.583	0.898	0.650	-	**0.880**	0.625	0.250	0.683	-	**0.664**	0.417	0.250	0.375	-	**0.450**	0.719
Lights	84	154	8	0	**246**	6	195	11	0	**212**	3	1	69	0	**73**	4	0	2	0	**6**	537
% Lights	100%	84.2%	80.0%	0%	**88.8%**	85.7%	84.8%	84.6%	0%	**84.8%**	60.0%	100%	97.2%	0%	**94.8%**	80.0%	0%	66.7%	0%	**66.7%**	87.6%
Articulated Trucks	0	15	0	0	**15**	1	16	0	0	**17**	0	0	0	0	**0**	1	0	1	0	**2**	34
% Articulated Trucks	0%	8.2%	0%	0%	**5.4%**	14.3%	7.0%	0%	0%	**6.8%**	0%	0%	0%	0%	**0%**	20.0%	0%	33.3%	0%	**22.2%**	5.5%
Buses and Single-Unit Trucks	0	14	2	0	**16**	0	19	2	0	**21**	2	0	2	0	**4**	0	1	0	0	**1**	42
% Buses and Single-Unit Trucks	0%	7.7%	20.0%	0%	**5.8%**	0%	8.3%	15.4%	0%	**8.4%**	40.0%	0%	2.8%	0%	**5.2%**	0%	100%	0%	0%	**11.1%**	6.9%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

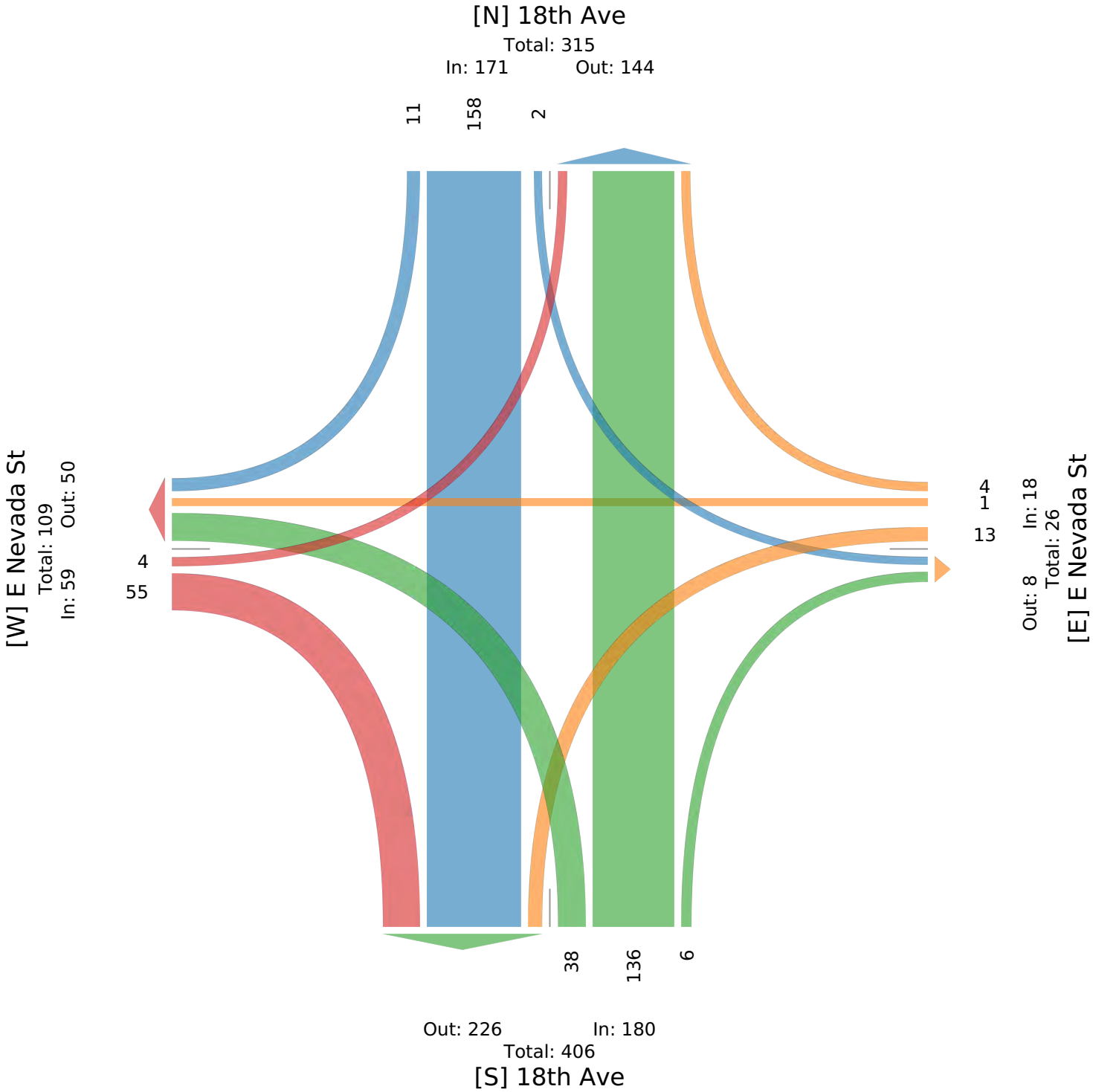
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:30AM	11	31	2	0	**44**	0	34	4	0	**38**	0	0	7	0	**7**	1	0	1	0	**2**	**91**
11:45AM	11	34	2	0	**47**	1	49	3	0	**53**	0	0	21	0	**21**	2	1	1	0	**4**	**125**
12:00PM	10	28	2	0	**40**	0	37	2	0	**39**	2	0	22	0	**24**	6	0	1	0	**7**	**110**
12:15PM	6	43	0	0	**49**	1	38	2	0	**41**	2	0	5	0	**7**	4	0	1	0	**5**	**102**
Total	38	136	6	0	**180**	2	158	11	0	**171**	4	0	55	0	**59**	13	1	4	0	**18**	**428**
% Approach	21.1%	75.6%	3.3%	0%	**-**	1.2%	92.4%	6.4%	0%	**-**	6.8%	0%	93.2%	0%	**-**	72.2%	5.6%	22.2%	0%	**-**	-
% Total	8.9%	31.8%	1.4%	0%	**42.1%**	0.5%	36.9%	2.6%	0%	**40.0%**	0.9%	0%	12.9%	0%	**13.8%**	3.0%	0.2%	0.9%	0%	**4.2%**	-
PHF	0.864	0.791	0.750	-	**0.918**	0.500	0.806	0.688	-	**0.807**	0.500	-	0.625	-	**0.615**	0.542	0.250	1.000	-	**0.643**	0.856
Lights	33	100	3	0	**136**	0	127	11	0	**138**	4	0	53	0	**57**	4	1	0	0	**5**	336
% Lights	86.8%	73.5%	50.0%	0%	**75.6%**	0%	80.4%	100%	0%	**80.7%**	100%	0%	96.4%	0%	**96.6%**	30.8%	100%	0%	0%	**27.8%**	78.5%
Articulated Trucks	0	18	2	0	**20**	2	18	0	0	**20**	0	0	0	0	**0**	3	0	4	0	**7**	47
% Articulated Trucks	0%	13.2%	33.3%	0%	**11.1%**	100%	11.4%	0%	0%	**11.7%**	0%	0%	0%	0%	**0%**	23.1%	0%	100%	0%	**38.9%**	11.0%
Buses and Single-Unit Trucks	5	18	1	0	**24**	0	13	0	0	**13**	0	0	2	0	**2**	6	0	0	0	**6**	45
% Buses and Single-Unit Trucks	13.2%	13.2%	16.7%	0%	**13.3%**	0%	8.2%	0%	0%	**7.6%**	0%	0%	3.6%	0%	**3.4%**	46.2%	0%	0%	0%	**33.3%**	10.5%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Nevada St - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

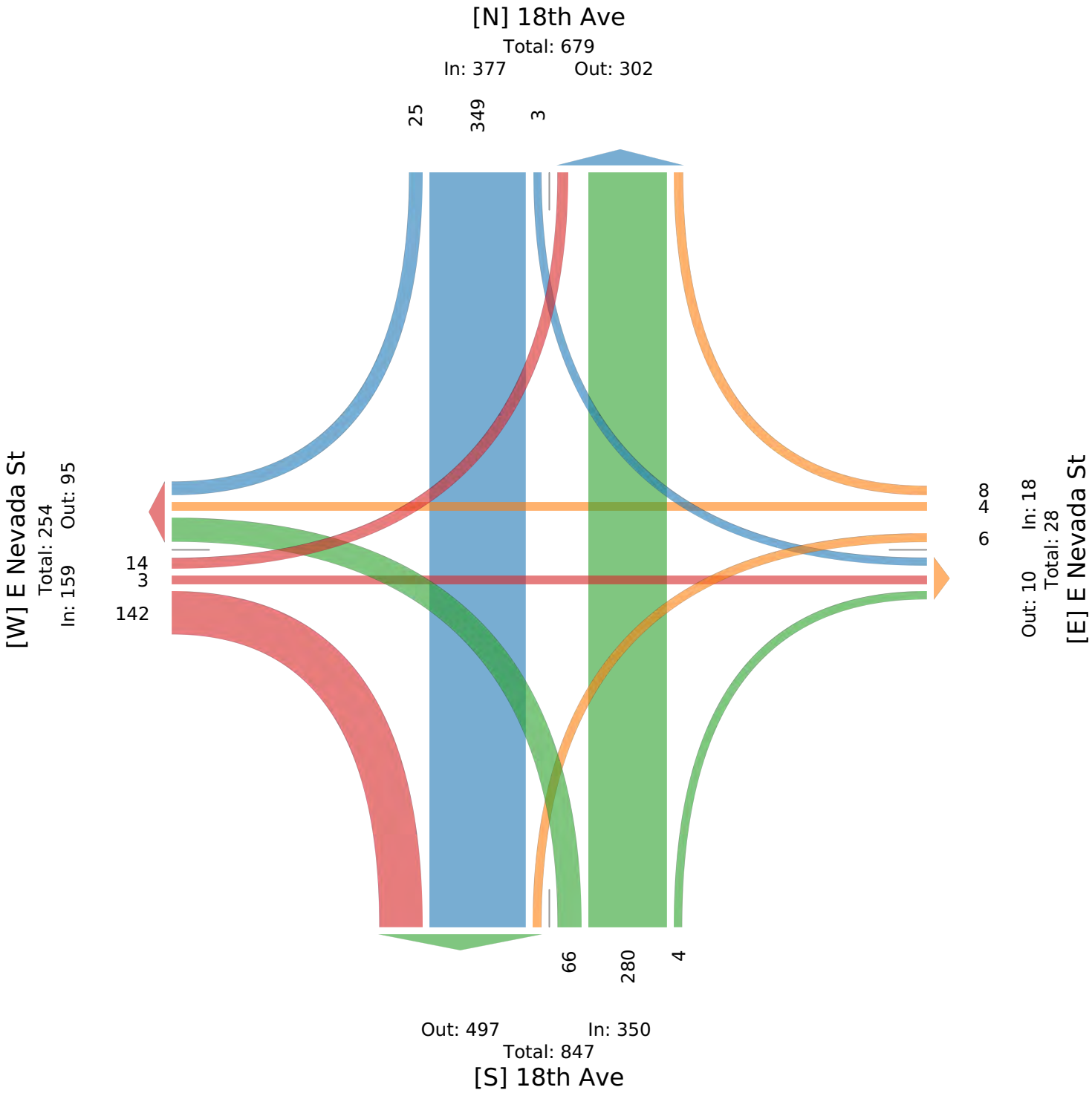
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Nevada St					E Nevada St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 3:15PM	15	67	1	0	**83**	1	57	7	0	**65**	3	0	31	0	**34**	2	0	2	0	**4**	**186**
3:30PM	17	70	0	0	**87**	0	174	10	0	**184**	2	0	68	0	**70**	2	0	1	0	**3**	**344**
3:45PM	19	70	2	0	**91**	1	60	5	0	**66**	3	3	30	0	**36**	1	1	0	0	**2**	**195**
4:00PM	15	73	1	0	**89**	1	58	3	0	**62**	6	0	13	0	**19**	1	3	5	0	**9**	**179**
Total	66	280	4	0	**350**	3	349	25	0	**377**	14	3	142	0	**159**	6	4	8	0	**18**	**904**
% Approach	18.9%	80.0%	1.1%	0%	**-**	0.8%	92.6%	6.6%	0%	**-**	8.8%	1.9%	89.3%	0%	**-**	33.3%	22.2%	44.4%	0%	**-**	-
% Total	7.3%	31.0%	0.4%	0%	**38.7%**	0.3%	38.6%	2.8%	0%	**41.7%**	1.5%	0.3%	15.7%	0%	**17.6%**	0.7%	0.4%	0.9%	0%	**2.0%**	-
PHF	0.868	0.959	0.500	-	**0.962**	0.750	0.501	0.625	-	**0.512**	0.583	0.250	0.522	-	**0.568**	0.750	0.333	0.400	-	**0.500**	0.657
Lights	64	257	2	0	**323**	1	316	24	0	**341**	14	3	136	0	**153**	3	3	4	0	**10**	827
% Lights	97.0%	91.8%	50.0%	0%	**92.3%**	33.3%	90.5%	96.0%	0%	**90.5%**	100%	100%	95.8%	0%	**96.2%**	50.0%	75.0%	50.0%	0%	**55.6%**	91.5%
Articulated Trucks	0	16	0	0	**16**	0	22	0	0	**22**	0	0	0	0	**0**	1	0	2	0	**3**	41
% Articulated Trucks	0%	5.7%	0%	0%	**4.6%**	0%	6.3%	0%	0%	**5.8%**	0%	0%	0%	0%	**0%**	16.7%	0%	25.0%	0%	**16.7%**	4.5%
Buses and Single-Unit Trucks	2	7	2	0	**11**	2	11	1	0	**14**	0	0	6	0	**6**	2	1	2	0	**5**	36
% Buses and Single-Unit Trucks	3.0%	2.5%	50.0%	0%	**3.1%**	66.7%	3.2%	4.0%	0%	**3.7%**	0%	0%	4.2%	0%	**3.8%**	33.3%	25.0%	25.0%	0%	**27.8%**	4.0%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Nevada St - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385967, Location: 42.044321, -92.883847

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	4	4	3	0	**11**	0	3	0	0	**3**	0	0	0	0	**0**	1	1	0	0	**2**	**16**
12:15AM	1	2	1	0	**4**	0	0	0	0	**0**	0	1	1	0	**2**	0	0	0	0	**0**	**6**
12:30AM	4	1	2	0	**7**	0	3	0	0	**3**	0	1	5	0	**6**	0	2	0	0	**2**	**18**
12:45AM	4	2	1	0	**7**	0	4	0	0	**4**	0	0	3	0	**3**	0	1	0	0	**1**	**15**
Hourly Total	13	9	7	0	**29**	0	10	0	0	**10**	0	2	9	0	**11**	1	4	0	0	**5**	**55**
1:00AM	1	3	0	0	**4**	0	1	0	0	**1**	0	0	10	0	**10**	0	0	0	0	**0**	**15**
1:15AM	5	2	1	0	**8**	0	1	0	0	**1**	1	0	1	0	**2**	0	0	0	0	**0**	**11**
1:30AM	2	6	1	0	**9**	0	5	0	0	**5**	0	0	3	0	**3**	2	0	0	0	**2**	**19**
1:45AM	1	2	2	0	**5**	0	3	0	0	**3**	0	0	5	0	**5**	1	1	0	0	**2**	**15**
Hourly Total	9	13	4	0	**26**	0	10	0	0	**10**	1	0	19	0	**20**	3	1	0	0	**4**	**60**
2:00AM	1	2	0	0	**3**	0	6	0	0	**6**	0	0	1	0	**1**	0	1	0	0	**1**	**11**
2:15AM	2	3	1	0	**6**	0	2	0	0	**2**	0	0	2	0	**2**	0	1	0	0	**1**	**11**
2:30AM	0	4	1	0	**5**	0	2	1	0	**3**	0	1	0	0	**1**	0	1	0	0	**1**	**10**
2:45AM	2	1	0	0	**3**	0	5	0	0	**5**	0	0	1	0	**1**	0	0	0	0	**0**	**9**
Hourly Total	5	10	2	0	**17**	0	15	1	0	**16**	0	1	4	0	**5**	0	3	0	0	**3**	**41**
3:00AM	0	2	0	0	**2**	0	8	0	0	**8**	0	1	1	0	**2**	2	0	0	0	**2**	**14**
3:15AM	0	1	0	0	**1**	0	4	0	0	**4**	0	0	5	0	**5**	1	0	1	0	**2**	**12**
3:30AM	1	3	0	0	**4**	0	2	0	0	**2**	0	0	1	0	**1**	0	2	0	0	**2**	**9**
3:45AM	1	2	0	0	**3**	0	3	0	0	**3**	0	0	1	0	**1**	1	0	1	0	**2**	**9**
Hourly Total	2	8	0	0	**10**	0	17	0	0	**17**	0	1	8	0	**9**	4	2	2	0	**8**	**44**
4:00AM	1	2	0	0	**3**	0	3	0	0	**3**	0	0	1	0	**1**	2	2	0	0	**4**	**11**
4:15AM	3	5	0	0	**8**	0	2	0	0	**2**	0	0	1	0	**1**	2	0	0	0	**2**	**13**
4:30AM	2	6	1	0	**9**	0	3	0	0	**3**	0	1	1	0	**2**	4	1	1	0	**6**	**20**
4:45AM	1	11	0	0	**12**	0	1	0	0	**1**	0	0	4	0	**4**	2	2	1	0	**5**	**22**
Hourly Total	7	24	1	0	**32**	0	9	0	0	**9**	0	1	7	0	**8**	10	5	2	0	**17**	**66**
5:00AM	5	10	0	0	**15**	0	4	0	0	**4**	1	3	3	0	**7**	3	0	1	0	**4**	**30**
5:15AM	6	16	1	0	**23**	0	2	0	0	**2**	1	0	9	0	**10**	5	1	0	0	**6**	**41**
5:30AM	11	7	2	0	**20**	2	5	0	0	**7**	0	1	4	0	**5**	4	8	0	0	**12**	**44**
5:45AM	18	18	5	0	**41**	0	11	0	0	**11**	1	1	10	0	**12**	11	3	3	0	**17**	**81**
Hourly Total	40	51	8	0	**99**	2	22	0	0	**24**	3	5	26	0	**34**	23	12	4	0	**39**	**196**
6:00AM	9	16	5	0	**30**	0	12	0	0	**12**	0	0	7	0	**7**	10	6	1	0	**17**	**66**
6:15AM	9	10	6	0	**25**	0	5	0	0	**5**	2	2	5	0	**9**	14	11	4	0	**29**	**68**
6:30AM	8	12	6	0	**26**	0	9	3	0	**12**	1	3	7	0	**11**	19	11	0	0	**30**	**79**
6:45AM	30	11	10	0	**51**	0	23	2	0	**25**	3	2	8	0	**13**	29	20	1	0	**50**	**139**
Hourly Total	56	49	27	0	**132**	0	49	5	0	**54**	6	7	27	0	**40**	72	48	6	0	**126**	**352**
7:00AM	15	12	4	0	**31**	0	20	6	0	**26**	2	2	14	0	**18**	28	9	2	0	**39**	**114**
7:15AM	10	7	9	0	**26**	1	23	2	0	**26**	3	4	7	0	**14**	39	11	4	0	**54**	**120**
7:30AM	6	9	16	0	**31**	1	17	4	0	**22**	1	5	11	0	**17**	34	11	1	0	**46**	**116**
7:45AM	18	13	13	0	**44**	1	20	1	0	**22**	1	2	13	0	**16**	33	20	1	0	**54**	**136**
Hourly Total	49	41	42	0	**132**	3	80	13	0	**96**	7	13	45	0	**65**	134	51	8	0	**193**	**486**
8:00AM	27	2	9	0	**38**	1	18	0	0	**19**	1	4	16	0	**21**	19	8	2	0	**29**	**107**
8:15AM	10	9	11	0	**30**	2	18	0	0	**20**	0	8	10	0	**18**	20	7	0	0	**27**	**95**
8:30AM	9	10	13	0	**32**	0	9	1	0	**10**	0	9	11	0	**20**	24	8	0	0	**32**	**94**
8:45AM	15	8	15	0	**38**	1	17	1	0	**19**	2	7	10	0	**19**	20	16	1	0	**37**	**113**
Hourly Total	61	29	48	0	**138**	4	62	2	0	**68**	3	28	47	0	**78**	83	39	3	0	**125**	**409**
9:00AM	5	8	15	0	**28**	1	13	3	0	**17**	1	9	8	0	**18**	16	4	1	0	**21**	**84**
9:15AM	4	14	12	0	**30**	0	12	0	0	**12**	2	5	4	0	**11**	20	12	1	0	**33**	**86**
9:30AM	4	15	24	0	**43**	2	8	0	0	**10**	0	9	9	0	**18**	21	3	0	0	**24**	**95**
9:45AM	9	14	11	0	**34**	1	8	0	0	**9**	0	7	12	0	**19**	27	8	0	0	**35**	**97**
Hourly Total	22	51	62	0	**135**	4	41	3	0	**48**	3	30	33	0	**66**	84	27	2	0	**113**	**362**
10:00AM	9	7	8	0	**24**	0	15	1	0	**16**	0	8	5	0	**13**	22	10	2	0	**34**	**87**
10:15AM	6	6	10	0	**22**	1	9	1	0	**11**	3	7	5	0	**15**	28	10	0	0	**38**	**86**
10:30AM	14	12	13	0	**39**	0	16	0	0	**16**	0	5	13	0	**18**	18	9	0	0	**27**	**100**
10:45AM	14	11	9	0	**34**	2	12	1	0	**15**	2	7	10	0	**19**	13	9	0	0	**22**	**90**

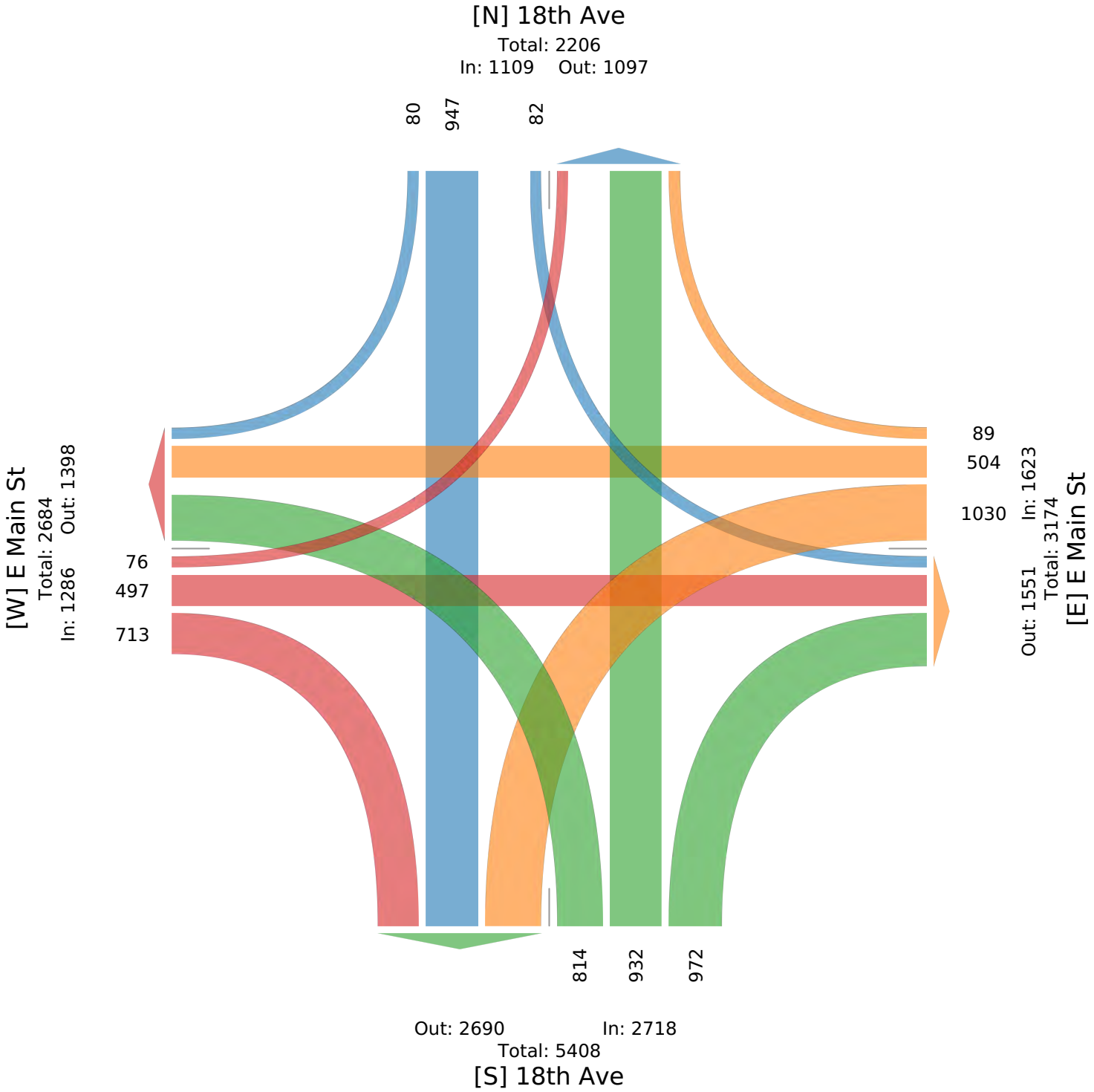
Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	43	36	40	0	**119**	3	52	3	0	**58**	5	27	33	0	**65**	81	38	2	0	**121**	**363**
11:00AM	9	13	16	0	**38**	1	10	2	0	**13**	0	8	12	0	**20**	16	6	1	0	**23**	**94**
11:15AM	6	12	21	0	**39**	1	8	2	0	**11**	1	5	7	0	**13**	16	7	2	0	**25**	**88**
11:30AM	10	15	11	0	**36**	2	14	1	0	**17**	1	8	9	0	**18**	17	5	1	0	**23**	**94**
11:45AM	13	16	9	0	**38**	2	21	1	0	**24**	1	5	10	0	**16**	15	4	1	0	**20**	**98**
Hourly Total	38	56	57	0	**151**	6	53	6	0	**65**	3	26	38	0	**67**	64	22	5	0	**91**	**374**
12:00PM	11	13	9	0	**33**	0	10	1	0	**11**	1	9	12	0	**22**	10	5	6	0	**21**	**87**
12:15PM	12	10	20	0	**42**	2	17	3	0	**22**	2	6	13	0	**21**	13	8	1	0	**22**	**107**
12:30PM	9	11	16	0	**36**	1	12	2	0	**15**	0	9	8	0	**17**	14	7	3	0	**24**	**92**
12:45PM	11	8	12	0	**31**	1	11	2	0	**14**	1	4	7	0	**12**	11	12	1	0	**24**	**81**
Hourly Total	43	42	57	0	**142**	4	50	8	0	**62**	4	28	40	0	**72**	48	32	11	0	**91**	**367**
1:00PM	11	13	18	0	**42**	4	10	3	0	**17**	1	8	6	0	**15**	9	2	1	0	**12**	**86**
1:15PM	15	12	9	0	**36**	0	11	1	0	**12**	3	8	8	0	**19**	7	5	1	0	**13**	**80**
1:30PM	9	9	15	0	**33**	2	17	3	0	**22**	3	4	6	0	**13**	18	6	1	0	**25**	**93**
1:45PM	8	14	17	0	**39**	0	11	2	0	**13**	0	4	8	0	**12**	19	9	2	0	**30**	**94**
Hourly Total	43	48	59	0	**150**	6	49	9	0	**64**	7	24	28	0	**59**	53	22	5	0	**80**	**353**
2:00PM	4	16	14	0	**34**	0	11	1	0	**12**	1	13	12	0	**26**	3	5	1	0	**9**	**81**
2:15PM	15	19	15	0	**49**	2	10	0	0	**12**	3	6	11	0	**20**	18	7	1	0	**26**	**107**
2:30PM	12	33	15	0	**60**	4	10	0	0	**14**	2	9	6	0	**17**	15	9	1	0	**25**	**116**
2:45PM	16	28	13	0	**57**	3	18	3	0	**24**	0	10	18	0	**28**	14	14	3	0	**31**	**140**
Hourly Total	47	96	57	0	**200**	9	49	4	0	**62**	6	38	47	0	**91**	50	35	6	0	**91**	**444**
3:00PM	23	21	18	0	**62**	3	18	2	0	**23**	1	13	14	0	**28**	13	5	0	0	**18**	**131**
3:15PM	28	16	24	0	**68**	4	23	3	0	**30**	0	15	19	0	**34**	17	6	4	0	**27**	**159**
3:30PM	37	38	23	0	**98**	1	35	1	0	**37**	4	30	47	0	**81**	12	7	1	0	**20**	**236**
3:45PM	26	24	29	0	**79**	1	22	1	0	**24**	2	15	21	0	**38**	26	9	2	0	**37**	**178**
Hourly Total	114	99	94	0	**307**	9	98	7	0	**114**	7	73	101	0	**181**	68	27	7	0	**102**	**704**
4:00PM	13	20	48	0	**81**	2	30	1	0	**33**	2	16	18	0	**36**	16	6	1	0	**23**	**173**
4:15PM	10	14	31	0	**55**	3	17	0	0	**20**	0	19	14	0	**33**	26	12	1	0	**39**	**147**
4:30PM	11	9	33	0	**53**	2	15	2	0	**19**	2	19	14	0	**35**	16	10	2	0	**28**	**135**
4:45PM	12	15	28	0	**55**	1	20	4	0	**25**	2	12	25	0	**39**	23	10	2	0	**35**	**154**
Hourly Total	46	58	140	0	**244**	8	82	7	0	**97**	6	66	71	0	**143**	81	38	6	0	**125**	**609**
5:00PM	11	20	28	0	**59**	5	15	3	0	**23**	1	21	12	0	**34**	13	12	2	0	**27**	**143**
5:15PM	9	14	27	0	**50**	4	14	1	0	**19**	1	15	11	0	**27**	14	11	3	0	**28**	**124**
5:30PM	8	11	21	0	**40**	1	15	2	0	**18**	2	7	9	0	**18**	13	7	1	0	**21**	**97**
5:45PM	9	16	22	0	**47**	4	15	0	0	**19**	1	6	7	0	**14**	17	7	0	0	**24**	**104**
Hourly Total	37	61	98	0	**196**	14	59	6	0	**79**	5	49	39	0	**93**	57	37	6	0	**100**	**468**
6:00PM	7	10	17	0	**34**	3	7	0	0	**10**	0	8	9	0	**17**	14	4	1	0	**19**	**80**
6:15PM	13	7	12	0	**32**	1	9	0	0	**10**	1	9	4	0	**14**	13	9	2	0	**24**	**80**
6:30PM	2	10	14	0	**26**	1	6	0	0	**7**	0	7	5	0	**12**	7	0	0	0	**7**	**52**
6:45PM	8	9	17	0	**34**	1	8	0	0	**9**	1	7	8	0	**16**	10	8	0	0	**18**	**77**
Hourly Total	30	36	60	0	**126**	6	30	0	0	**36**	2	31	26	0	**59**	44	21	3	0	**68**	**289**
7:00PM	6	7	12	0	**25**	0	4	1	0	**5**	1	9	5	0	**15**	8	4	2	0	**14**	**59**
7:15PM	6	8	11	0	**25**	0	10	0	0	**10**	0	7	5	0	**12**	8	4	1	0	**13**	**60**
7:30PM	6	7	10	0	**23**	0	5	1	0	**6**	1	5	4	0	**10**	5	4	1	0	**10**	**49**
7:45PM	8	5	10	0	**23**	0	7	1	0	**8**	3	3	2	0	**8**	2	4	1	0	**7**	**46**
Hourly Total	26	27	43	0	**96**	0	26	3	0	**29**	5	24	16	0	**45**	23	16	5	0	**44**	**214**
8:00PM	2	1	11	0	**14**	0	3	0	0	**3**	2	7	3	0	**12**	6	3	0	0	**9**	**38**
8:15PM	4	11	8	0	**23**	0	9	2	0	**11**	0	1	6	0	**7**	1	5	0	0	**6**	**47**
8:30PM	4	7	5	0	**16**	0	6	0	0	**6**	1	1	4	0	**6**	4	4	2	0	**10**	**38**
8:45PM	13	10	6	0	**29**	0	5	0	0	**5**	0	2	6	0	**8**	2	1	1	0	**4**	**46**
Hourly Total	23	29	30	0	**82**	0	23	2	0	**25**	3	11	19	0	**33**	13	13	3	0	**29**	**169**
9:00PM	4	7	7	0	**18**	1	2	0	0	**3**	0	1	4	0	**5**	6	0	0	0	**6**	**32**
9:15PM	4	6	5	0	**15**	0	4	1	0	**5**	0	0	4	0	**4**	2	0	0	0	**2**	**26**
9:30PM	1	5	1	0	**7**	0	7	0	0	**7**	0	1	2	0	**3**	4	1	0	0	**5**	**22**
9:45PM	6	2	8	0	**16**	0	7	0	0	**7**	0	3	2	0	**5**	2	3	0	0	**5**	**33**
Hourly Total	15	20	21	0	**56**	1	20	1	0	**22**	0	5	12	0	**17**	14	4	0	0	**18**	**113**
10:00PM	0	8	5	0	**13**	0	11	0	0	**11**	0	0	2	0	**2**	4	2	0	0	**6**	**32**
10:15PM	4	6	2	0	**12**	0	7	0	0	**7**	0	1	1	0	**2**	5	0	2	0	**7**	**28**
10:30PM	6	4	1	0	**11**	1	7	0	0	**8**	0	2	0	0	**2**	3	1	0	0	**4**	**25**
10:45PM	9	4	3	0	**16**	0	4	0	0	**4**	0	0	1	0	**1**	1	0	0	0	**1**	**22**

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	19	22	11	0	**52**	1	29	0	0	**30**	0	3	4	0	**7**	13	3	2	0	**18**	**107**
11:00PM	9	4	2	0	**15**	1	3	0	0	**4**	0	1	5	0	**6**	0	0	0	0	**0**	**25**
11:15PM	5	6	0	0	**11**	0	4	0	0	**4**	0	2	4	0	**6**	4	2	1	0	**7**	**28**
11:30PM	10	6	2	0	**18**	0	2	0	0	**2**	0	1	1	0	**2**	3	1	0	0	**4**	**26**
11:45PM	2	1	0	0	**3**	1	3	0	0	**4**	0	0	4	0	**4**	0	1	0	0	**1**	**12**
Hourly Total	26	17	4	0	**47**	2	12	0	0	**14**	0	4	14	0	**18**	7	4	1	0	**12**	**91**
Total	814	932	972	0	**2718**	82	947	80	0	**1109**	76	497	713	0	**1286**	1030	504	89	0	**1623**	**6736**
% Approach	29.9%	34.3%	35.8%	0%	**-**	7.4%	85.4%	7.2%	0%	**-**	5.9%	38.6%	55.4%	0%	**-**	63.5%	31.1%	5.5%	0%	**-**	**-**
% Total	12.1%	13.8%	14.4%	0%	**40.4%**	1.2%	14.1%	1.2%	0%	**16.5%**	1.1%	7.4%	10.6%	0%	**19.1%**	15.3%	7.5%	1.3%	0%	**24.1%**	**-**
Lights	729	679	881	0	**2289**	68	646	59	0	**773**	54	486	622	0	**1162**	957	487	82	0	**1526**	5750
% Lights	89.6%	72.9%	90.6%	0%	**84.2%**	82.9%	68.2%	73.8%	0%	**69.7%**	71.1%	97.8%	87.2%	0%	**90.4%**	92.9%	96.6%	92.1%	0%	**94.0%**	85.4%
Articulated Trucks	57	163	50	0	**270**	6	209	9	0	**224**	10	4	68	0	**82**	38	12	2	0	**52**	628
% Articulated Trucks	7.0%	17.5%	5.1%	0%	**9.9%**	7.3%	22.1%	11.3%	0%	**20.2%**	13.2%	0.8%	9.5%	0%	**6.4%**	3.7%	2.4%	2.2%	0%	**3.2%**	9.3%
Buses and Single-Unit Trucks	28	90	41	0	**159**	8	92	12	0	**112**	12	7	23	0	**42**	35	5	5	0	**45**	358
% Buses and Single-Unit Trucks	3.4%	9.7%	4.2%	0%	**5.8%**	9.8%	9.7%	15.0%	0%	**10.1%**	15.8%	1.4%	3.2%	0%	**3.3%**	3.4%	1.0%	5.6%	0%	**2.8%**	5.3%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

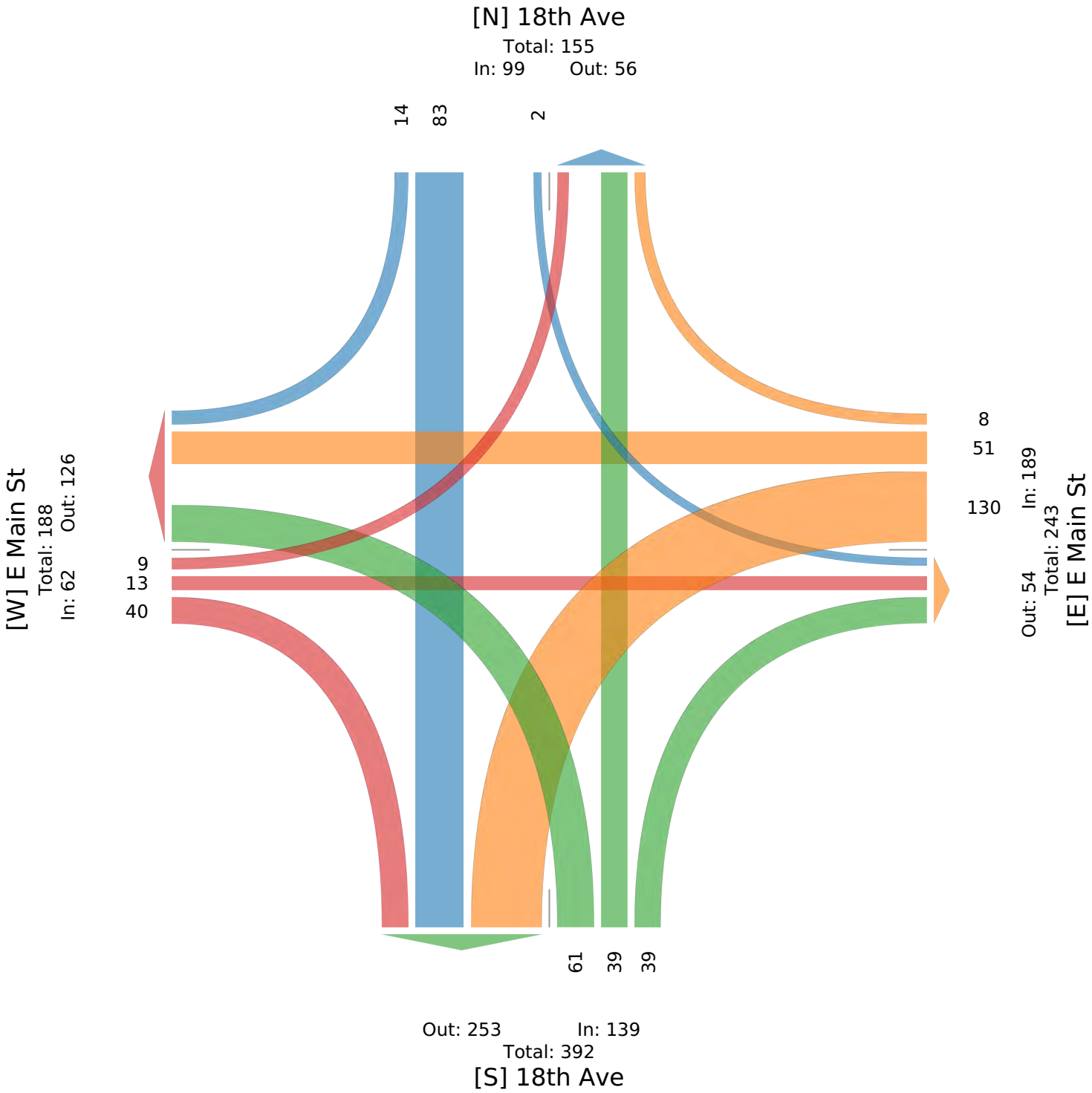
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 6:45AM	30	11	10	0	**51**	0	23	2	0	**25**	3	2	8	0	**13**	29	20	1	0	**50**	**139**
7:00AM	15	12	4	0	**31**	0	20	6	0	**26**	2	2	14	0	**18**	28	9	2	0	**39**	**114**
7:15AM	10	7	9	0	**26**	1	23	2	0	**26**	3	4	7	0	**14**	39	11	4	0	**54**	**120**
7:30AM	6	9	16	0	**31**	1	17	4	0	**22**	1	5	11	0	**17**	34	11	1	0	**46**	**116**
Total	61	39	39	0	**139**	2	83	14	0	**99**	9	13	40	0	**62**	130	51	8	0	**189**	**489**
% Approach	43.9%	28.1%	28.1%	0%	**-**	2.0%	83.8%	14.1%	0%	**-**	14.5%	21.0%	64.5%	0%	**-**	68.8%	27.0%	4.2%	0%	**-**	-
% Total	12.5%	8.0%	8.0%	0%	**28.4%**	0.4%	17.0%	2.9%	0%	**20.2%**	1.8%	2.7%	8.2%	0%	**12.7%**	26.6%	10.4%	1.6%	0%	**38.7%**	-
PHF	0.508	0.813	0.609	-	**0.681**	0.500	0.902	0.583	-	**0.952**	0.750	0.650	0.714	-	**0.861**	0.833	0.638	0.500	-	**0.875**	0.879
Lights	52	29	29	0	**110**	2	61	10	0	**73**	6	13	31	0	**50**	125	51	7	0	**183**	416
% Lights	85.2%	74.4%	74.4%	0%	**79.1%**	100%	73.5%	71.4%	0%	**73.7%**	66.7%	100%	77.5%	0%	**80.6%**	96.2%	100%	87.5%	0%	**96.8%**	85.1%
Articulated Trucks	4	6	6	0	**16**	0	7	3	0	**10**	0	0	8	0	**8**	1	0	0	0	**1**	35
% Articulated Trucks	6.6%	15.4%	15.4%	0%	**11.5%**	0%	8.4%	21.4%	0%	**10.1%**	0%	0%	20.0%	0%	**12.9%**	0.8%	0%	0%	0%	**0.5%**	7.2%
Buses and Single-Unit Trucks	5	4	4	0	**13**	0	15	1	0	**16**	3	0	1	0	**4**	4	0	1	0	**5**	38
% Buses and Single-Unit Trucks	8.2%	10.3%	10.3%	0%	**9.4%**	0%	18.1%	7.1%	0%	**16.2%**	33.3%	0%	2.5%	0%	**6.5%**	3.1%	0%	12.5%	0%	**2.6%**	7.8%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

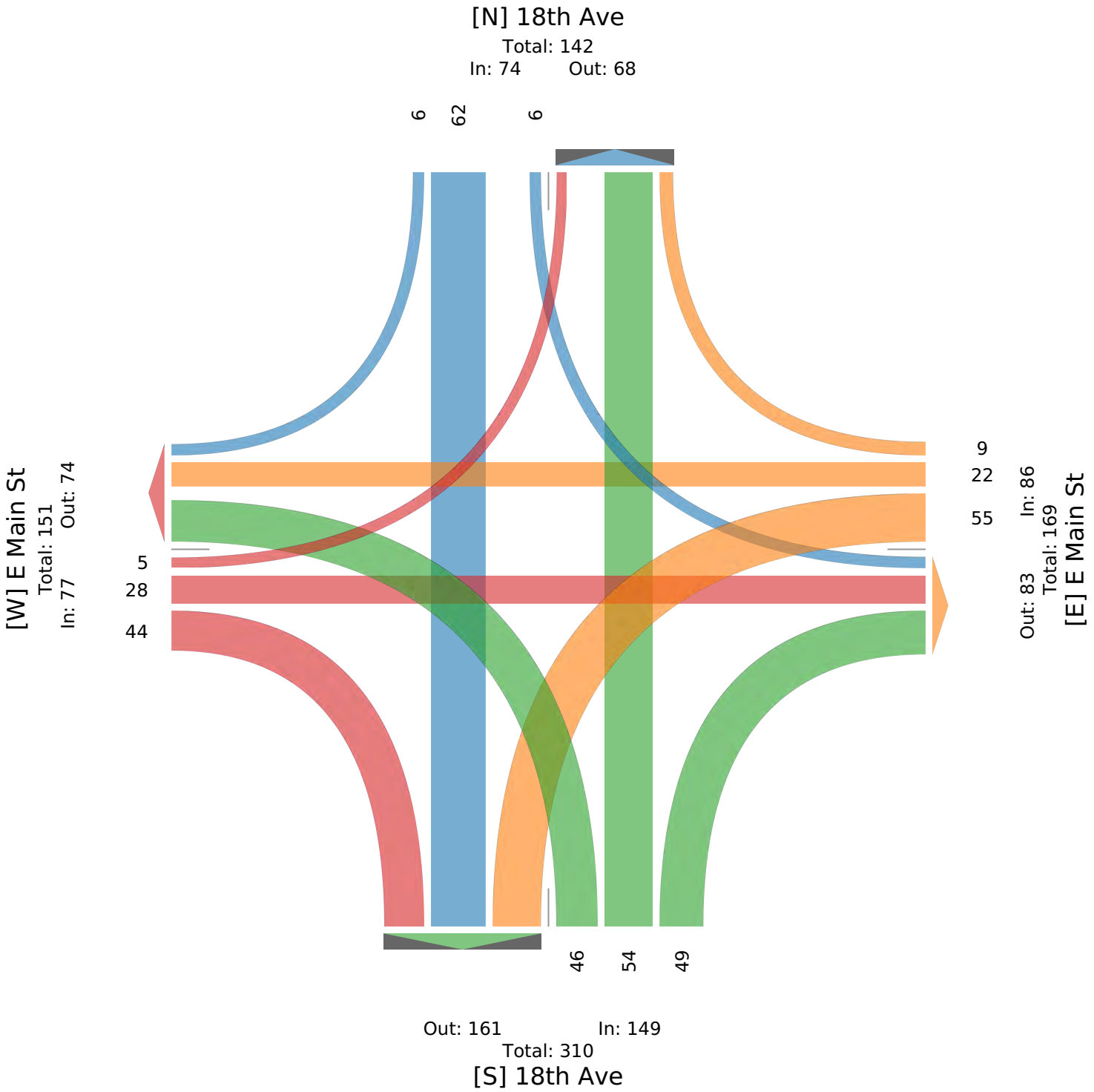
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 11:30AM	10	15	11	0	**36**	2	14	1	0	**17**	1	8	9	0	**18**	17	5	1	0	**23**	**94**
11:45AM	13	16	9	0	**38**	2	21	1	0	**24**	1	5	10	0	**16**	15	4	1	0	**20**	**98**
12:00PM	11	13	9	0	**33**	0	10	1	0	**11**	1	9	12	0	**22**	10	5	6	0	**21**	**87**
12:15PM	12	10	20	0	**42**	2	17	3	0	**22**	2	6	13	0	**21**	13	8	1	0	**22**	**107**
Total	46	54	49	0	**149**	6	62	6	0	**74**	5	28	44	0	**77**	55	22	9	0	**86**	**386**
% Approach	30.9%	36.2%	32.9%	0%	**-**	8.1%	83.8%	8.1%	0%	**-**	6.5%	36.4%	57.1%	0%	**-**	64.0%	25.6%	10.5%	0%	**-**	-
% Total	11.9%	14.0%	12.7%	0%	**38.6%**	1.6%	16.1%	1.6%	0%	**19.2%**	1.3%	7.3%	11.4%	0%	**19.9%**	14.2%	5.7%	2.3%	0%	**22.3%**	-
PHF	0.885	0.844	0.613	-	**0.887**	0.750	0.738	0.500	-	**0.771**	0.625	0.778	0.846	-	**0.875**	0.809	0.688	0.375	-	**0.935**	0.902
Lights	42	26	41	0	**109**	5	35	6	0	**46**	5	27	39	0	**71**	51	21	8	0	**80**	306
% Lights	91.3%	48.1%	83.7%	0%	**73.2%**	83.3%	56.5%	100%	0%	**62.2%**	100%	96.4%	88.6%	0%	**92.2%**	92.7%	95.5%	88.9%	0%	**93.0%**	79.3%
Articulated Trucks	2	17	6	0	**25**	0	15	0	0	**15**	0	0	4	0	**4**	3	0	0	0	**3**	47
% Articulated Trucks	4.3%	31.5%	12.2%	0%	**16.8%**	0%	24.2%	0%	0%	**20.3%**	0%	0%	9.1%	0%	**5.2%**	5.5%	0%	0%	0%	**3.5%**	12.2%
Buses and Single-Unit Trucks	2	11	2	0	**15**	1	12	0	0	**13**	0	1	1	0	**2**	1	1	1	0	**3**	33
% Buses and Single-Unit Trucks	4.3%	20.4%	4.1%	0%	**10.1%**	16.7%	19.4%	0%	0%	**17.6%**	0%	3.6%	2.3%	0%	**2.6%**	1.8%	4.5%	11.1%	0%	**3.5%**	8.5%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:30AM - 12:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



18th Ave & E Main St - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

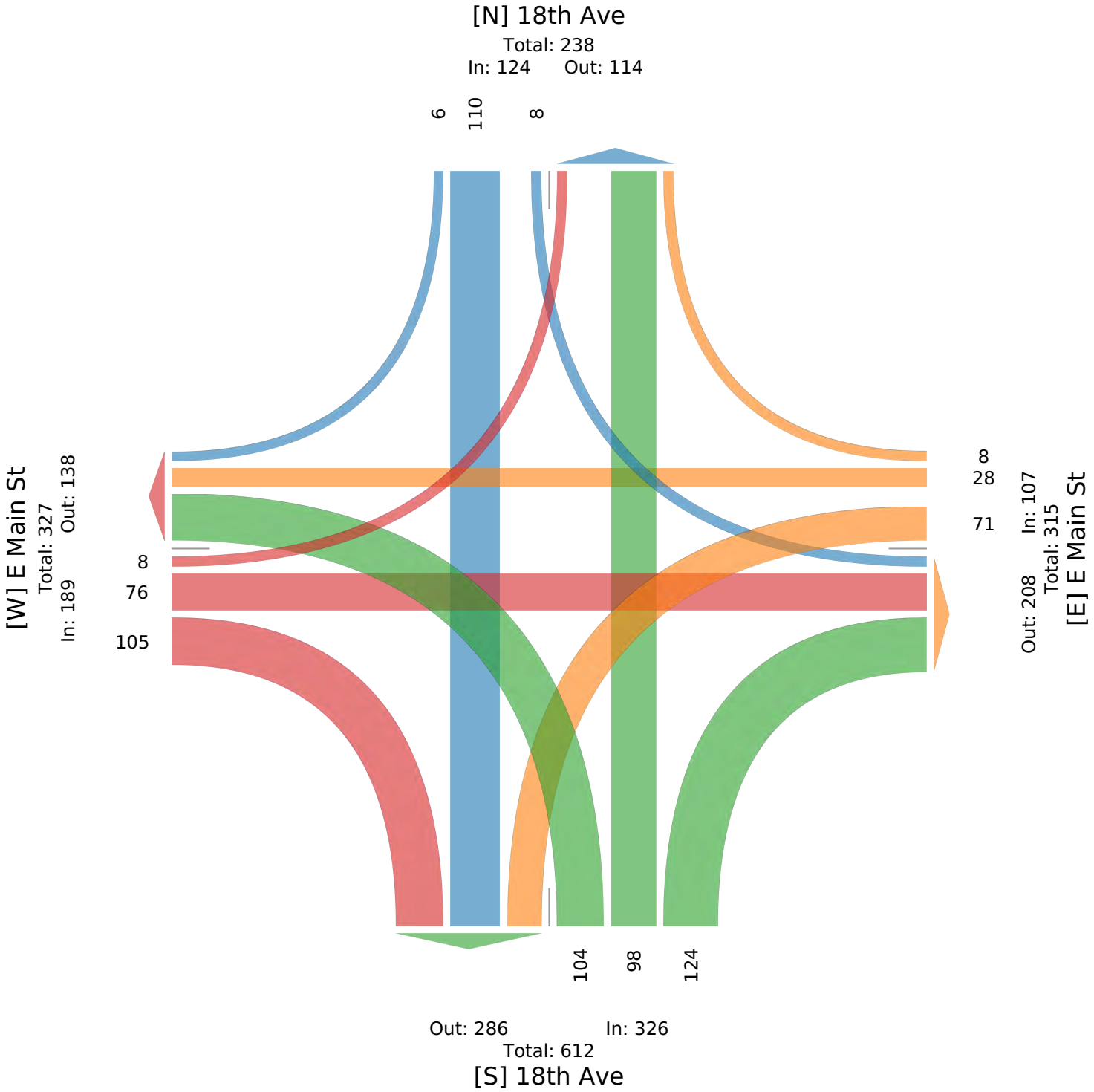
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	18th Ave					18th Ave					E Main St					E Main St					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 3:15PM	28	16	24	0	**68**	4	23	3	0	**30**	0	15	19	0	**34**	17	6	4	0	**27**	**159**
3:30PM	37	38	23	0	**98**	1	35	1	0	**37**	4	30	47	0	**81**	12	7	1	0	**20**	**236**
3:45PM	26	24	29	0	**79**	1	22	1	0	**24**	2	15	21	0	**38**	26	9	2	0	**37**	**178**
4:00PM	13	20	48	0	**81**	2	30	1	0	**33**	2	16	18	0	**36**	16	6	1	0	**23**	**173**
Total	104	98	124	0	**326**	8	110	6	0	**124**	8	76	105	0	**189**	71	28	8	0	**107**	**746**
% Approach	31.9%	30.1%	38.0%	0%	**-**	6.5%	88.7%	4.8%	0%	**-**	4.2%	40.2%	55.6%	0%	**-**	66.4%	26.2%	7.5%	0%	**-**	-
% Total	13.9%	13.1%	16.6%	0%	**43.7%**	1.1%	14.7%	0.8%	0%	**16.6%**	1.1%	10.2%	14.1%	0%	**25.3%**	9.5%	3.8%	1.1%	0%	**14.3%**	-
PHF	0.703	0.645	0.646	-	**0.832**	0.500	0.786	0.500	-	**0.838**	0.500	0.633	0.559	-	**0.583**	0.683	0.778	0.500	-	**0.723**	0.790
Lights	100	83	119	0	**302**	7	88	2	0	**97**	6	76	95	0	**177**	66	27	8	0	**101**	677
% Lights	96.2%	84.7%	96.0%	0%	**92.6%**	87.5%	80.0%	33.3%	0%	**78.2%**	75.0%	100%	90.5%	0%	**93.7%**	93.0%	96.4%	100%	0%	**94.4%**	90.8%
Articulated Trucks	3	11	2	0	**16**	0	12	2	0	**14**	0	0	7	0	**7**	3	0	0	0	**3**	40
% Articulated Trucks	2.9%	11.2%	1.6%	0%	**4.9%**	0%	10.9%	33.3%	0%	**11.3%**	0%	0%	6.7%	0%	**3.7%**	4.2%	0%	0%	0%	**2.8%**	5.4%
Buses and Single-Unit Trucks	1	4	3	0	**8**	1	10	2	0	**13**	2	0	3	0	**5**	2	1	0	0	**3**	29
% Buses and Single-Unit Trucks	1.0%	4.1%	2.4%	0%	**2.5%**	12.5%	9.1%	33.3%	0%	**10.5%**	25.0%	0%	2.9%	0%	**2.6%**	2.8%	3.6%	0%	0%	**2.8%**	3.9%

*L: Left, R: Right, T: Thru, U: U-Turn

18th Ave & E Main St - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:15PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385968, Location: 42.049211, -92.883863

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	0	0	0	0	**0**	5	0	0	0	**5**	1	0	1	0	**2**	0	0	0	0	**0**	**7**
12:15AM	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**	0	0	0	0	**0**	**4**
12:30AM	0	0	0	0	**0**	7	0	0	0	**7**	2	0	0	0	**2**	0	0	0	0	**0**	**9**
12:45AM	0	0	0	0	**0**	3	1	0	0	**4**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
Hourly Total	0	0	0	0	**0**	17	1	0	0	**18**	6	0	1	0	**7**	0	0	0	0	**0**	**25**
1:00AM	0	0	0	0	**0**	20	0	0	0	**20**	3	0	0	0	**3**	0	0	0	0	**0**	**23**
1:15AM	0	0	0	0	**0**	3	0	0	0	**3**	1	0	0	0	**1**	0	0	0	0	**0**	**4**
1:30AM	0	0	0	0	**0**	3	0	0	0	**3**	3	0	0	0	**3**	0	0	0	0	**0**	**6**
1:45AM	0	0	0	0	**0**	8	0	0	0	**8**	1	0	0	0	**1**	0	0	0	0	**0**	**9**
Hourly Total	0	0	0	0	**0**	34	0	0	0	**34**	8	0	0	0	**8**	0	0	0	0	**0**	**42**
2:00AM	0	0	0	0	**0**	3	0	0	0	**3**	2	0	0	0	**2**	0	0	0	0	**0**	**5**
2:15AM	0	0	0	0	**0**	4	0	0	0	**4**	1	0	0	0	**1**	0	0	0	0	**0**	**5**
2:30AM	0	0	0	0	**0**	2	0	0	0	**2**	1	0	0	0	**1**	0	0	0	0	**0**	**3**
2:45AM	0	0	0	0	**0**	1	0	0	0	**1**	3	0	0	0	**3**	0	0	0	0	**0**	**4**
Hourly Total	0	0	0	0	**0**	10	0	0	0	**10**	7	0	0	0	**7**	0	0	0	0	**0**	**17**
3:00AM	0	0	0	0	**0**	2	0	0	0	**2**	1	0	0	0	**1**	0	0	0	0	**0**	**3**
3:15AM	0	0	0	0	**0**	3	0	0	0	**3**	0	0	0	0	**0**	0	0	0	0	**0**	**3**
3:30AM	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	**1**
3:45AM	0	0	0	0	**0**	0	0	0	0	**0**	1	0	0	0	**1**	0	0	0	0	**0**	**1**
Hourly Total	0	0	0	0	**0**	5	0	0	0	**5**	3	0	0	0	**3**	0	0	0	0	**0**	**8**
4:00AM	0	0	0	0	**0**	2	0	0	0	**2**	2	0	0	0	**2**	0	0	0	0	**0**	**4**
4:15AM	0	0	1	0	**1**	8	0	0	0	**8**	1	0	0	0	**1**	0	0	0	0	**0**	**10**
4:30AM	0	0	0	0	**0**	8	0	0	0	**8**	10	0	0	0	**10**	0	0	0	0	**0**	**18**
4:45AM	0	0	0	0	**0**	8	0	0	0	**8**	3	0	0	0	**3**	0	0	0	0	**0**	**11**
Hourly Total	0	0	1	0	**1**	26	0	0	0	**26**	16	0	0	0	**16**	0	0	0	0	**0**	**43**
5:00AM	0	0	0	0	**0**	17	0	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**25**
5:15AM	0	0	0	0	**0**	29	0	0	0	**29**	5	0	0	0	**5**	0	0	0	0	**0**	**34**
5:30AM	0	1	1	0	**2**	25	1	0	0	**26**	10	0	0	0	**10**	0	0	0	0	**0**	**38**
5:45AM	0	1	1	0	**2**	27	1	0	0	**28**	10	0	0	0	**10**	0	0	0	0	**0**	**40**
Hourly Total	0	2	2	0	**4**	98	2	0	0	**100**	33	0	0	0	**33**	0	0	0	0	**0**	**137**
6:00AM	0	0	0	0	**0**	17	0	0	0	**17**	9	0	0	0	**9**	0	0	0	0	**0**	**26**
6:15AM	0	1	0	0	**1**	22	0	0	0	**22**	10	0	1	0	**11**	0	0	0	0	**0**	**34**
6:30AM	0	2	0	0	**2**	24	0	0	0	**24**	24	0	0	0	**24**	0	0	0	0	**0**	**50**
6:45AM	0	2	1	0	**3**	14	0	0	0	**14**	47	0	0	0	**47**	0	0	0	0	**0**	**64**
Hourly Total	0	5	1	0	**6**	77	0	0	0	**77**	90	0	1	0	**91**	0	0	0	0	**0**	**174**
7:00AM	0	2	0	0	**2**	20	1	0	0	**21**	16	0	0	0	**16**	0	0	0	0	**0**	**39**
7:15AM	0	0	1	0	**1**	39	1	0	0	**40**	20	0	0	0	**20**	0	0	0	0	**0**	**61**
7:30AM	0	1	1	0	**2**	38	0	0	0	**38**	26	0	0	0	**26**	0	0	0	0	**0**	**66**
7:45AM	0	3	4	0	**7**	25	1	0	0	**26**	13	0	0	0	**13**	0	0	0	0	**0**	**46**
Hourly Total	0	6	6	0	**12**	122	3	0	0	**125**	75	0	0	0	**75**	0	0	0	0	**0**	**212**
8:00AM	0	1	0	0	**1**	32	1	0	0	**33**	9	0	0	0	**9**	0	0	0	0	**0**	**43**
8:15AM	0	0	1	0	**1**	25	1	0	0	**26**	15	0	1	0	**16**	0	0	0	0	**0**	**43**
8:30AM	0	1	0	0	**1**	19	1	0	0	**20**	14	0	0	0	**14**	0	0	0	0	**0**	**35**
8:45AM	0	0	0	0	**0**	13	0	0	0	**13**	12	0	0	0	**12**	0	0	0	0	**0**	**25**
Hourly Total	0	2	1	0	**3**	89	3	0	0	**92**	50	0	1	0	**51**	0	0	0	0	**0**	**146**
9:00AM	0	0	0	0	**0**	24	1	0	0	**25**	7	0	0	0	**7**	0	0	0	0	**0**	**32**
9:15AM	0	0	0	0	**0**	21	1	0	0	**22**	12	0	0	0	**12**	0	0	0	0	**0**	**34**
9:30AM	0	0	0	0	**0**	24	0	0	0	**24**	13	0	0	0	**13**	0	0	0	0	**0**	**37**
9:45AM	0	0	0	0	**0**	24	0	0	1	**25**	16	1	0	0	**17**	0	0	0	0	**0**	**42**
Hourly Total	0	0	0	0	**0**	93	2	0	1	**96**	48	1	0	0	**49**	0	0	0	0	**0**	**145**
10:00AM	0	0	1	0	**1**	19	0	0	0	**19**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
10:15AM	0	1	0	0	**1**	16	1	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**26**
10:30AM	0	0	0	0	**0**	29	0	0	0	**29**	17	0	0	0	**17**	0	0	0	0	**0**	**46**
10:45AM	0	0	0	0	**0**	18	0	0	0	**18**	8	0	0	0	**8**	0	0	0	0	**0**	**26**

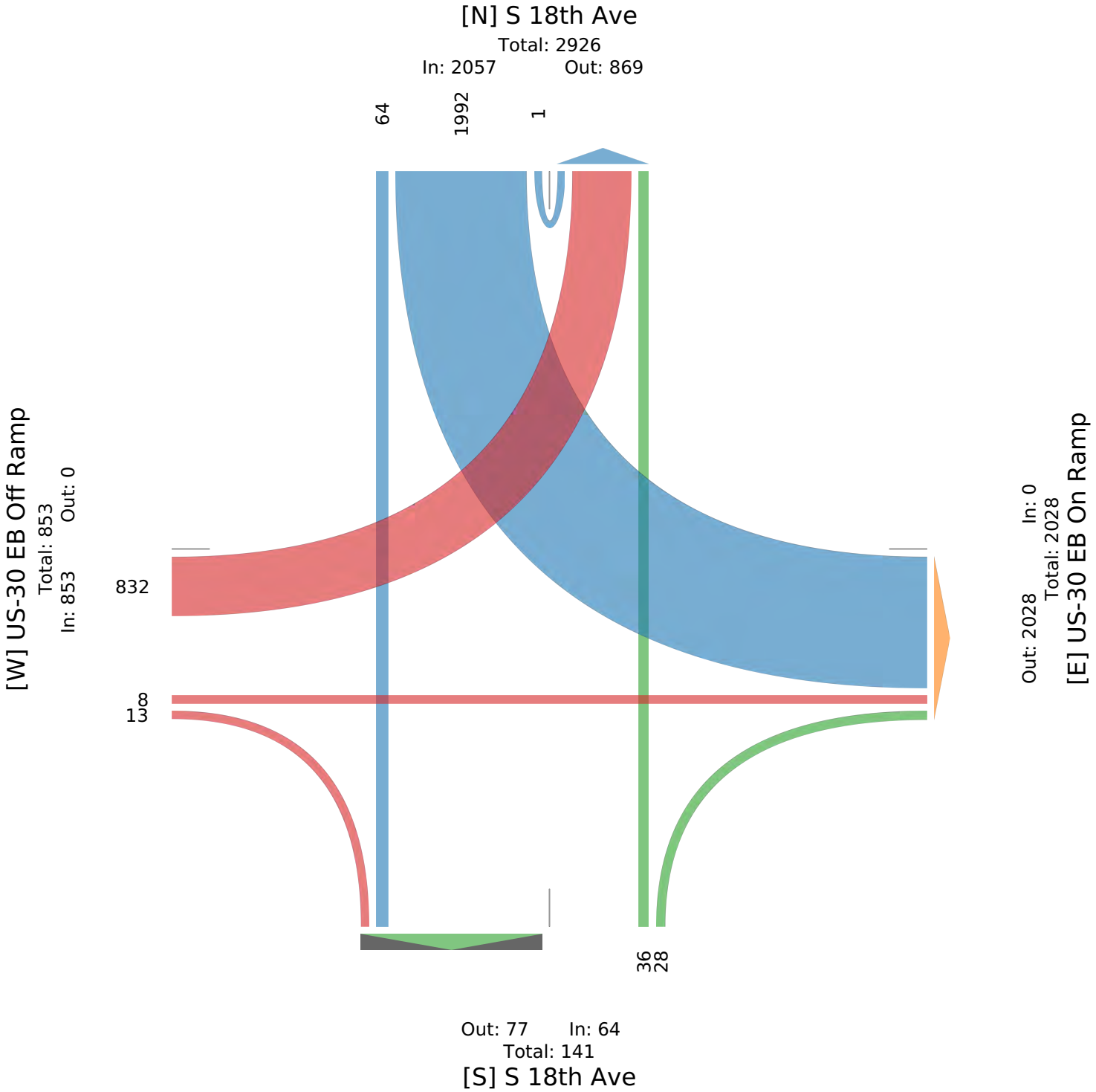
Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
Hourly Total	0	1	1	0	**2**	82	1	0	0	**83**	41	0	0	0	**41**	0	0	0	0	**0**	**126**
11:00AM	0	0	0	0	**0**	31	2	0	0	**33**	7	0	0	0	**7**	0	0	0	0	**0**	**40**
11:15AM	0	0	0	0	**0**	21	0	0	0	**21**	10	0	0	0	**10**	0	0	0	0	**0**	**31**
11:30AM	0	1	0	0	**1**	12	0	0	0	**12**	11	0	0	0	**11**	0	0	0	0	**0**	**24**
11:45AM	0	0	0	0	**0**	24	3	0	0	**27**	13	0	0	0	**13**	0	0	0	0	**0**	**40**
Hourly Total	0	1	0	0	**1**	88	5	0	0	**93**	41	0	0	0	**41**	0	0	0	0	**0**	**135**
12:00PM	0	0	2	0	**2**	24	3	0	0	**27**	10	0	1	0	**11**	0	0	0	0	**0**	**40**
12:15PM	0	0	0	0	**0**	28	1	0	0	**29**	16	0	1	0	**17**	0	0	0	0	**0**	**46**
12:30PM	0	1	0	0	**1**	25	0	0	0	**25**	13	0	0	0	**13**	0	0	0	0	**0**	**39**
12:45PM	0	1	0	0	**1**	19	0	0	0	**19**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
Hourly Total	0	2	2	0	**4**	96	4	0	0	**100**	47	0	2	0	**49**	0	0	0	0	**0**	**153**
1:00PM	0	0	1	0	**1**	15	2	0	0	**17**	15	0	0	0	**15**	0	0	0	0	**0**	**33**
1:15PM	0	0	0	0	**0**	23	1	0	0	**24**	6	0	0	0	**6**	0	0	0	0	**0**	**30**
1:30PM	0	2	0	0	**2**	25	0	0	0	**25**	3	0	0	0	**3**	0	0	0	0	**0**	**30**
1:45PM	0	0	0	0	**0**	31	0	0	0	**31**	12	0	0	0	**12**	0	0	0	0	**0**	**43**
Hourly Total	0	2	1	0	**3**	94	3	0	0	**97**	36	0	0	0	**36**	0	0	0	0	**0**	**136**
2:00PM	0	0	0	0	**0**	30	0	0	0	**30**	11	0	1	0	**12**	0	0	0	0	**0**	**42**
2:15PM	0	0	0	0	**0**	25	2	0	0	**27**	17	1	0	0	**18**	0	0	0	0	**0**	**45**
2:30PM	0	2	2	0	**4**	30	0	0	0	**30**	12	0	0	0	**12**	0	0	0	0	**0**	**46**
2:45PM	0	0	0	0	**0**	32	3	0	0	**35**	13	0	1	0	**14**	0	0	0	0	**0**	**49**
Hourly Total	0	2	2	0	**4**	117	5	0	0	**122**	53	1	2	0	**56**	0	0	0	0	**0**	**182**
3:00PM	0	2	1	0	**3**	43	1	0	0	**44**	6	0	0	0	**6**	0	0	0	0	**0**	**53**
3:15PM	0	0	1	0	**1**	42	3	0	0	**45**	13	0	0	0	**13**	0	0	0	0	**0**	**59**
3:30PM	0	0	0	0	**0**	71	5	0	0	**76**	19	0	0	0	**19**	0	0	0	0	**0**	**95**
3:45PM	0	1	1	0	**2**	54	4	0	0	**58**	16	1	0	0	**17**	0	0	0	0	**0**	**77**
Hourly Total	0	3	3	0	**6**	210	13	0	0	**223**	54	1	0	0	**55**	0	0	0	0	**0**	**284**
4:00PM	0	1	1	0	**2**	62	3	0	0	**65**	11	0	1	0	**12**	0	0	0	0	**0**	**79**
4:15PM	0	1	0	0	**1**	76	2	0	0	**78**	17	0	0	0	**17**	0	0	0	0	**0**	**96**
4:30PM	0	0	0	0	**0**	80	3	0	0	**83**	18	0	0	0	**18**	0	0	0	0	**0**	**101**
4:45PM	0	3	0	0	**3**	54	1	0	0	**55**	12	0	0	0	**12**	0	0	0	0	**0**	**70**
Hourly Total	0	5	1	0	**6**	272	9	0	0	**281**	58	0	1	0	**59**	0	0	0	0	**0**	**346**
5:00PM	0	0	1	0	**1**	50	2	0	0	**52**	7	1	0	0	**8**	0	0	0	0	**0**	**61**
5:15PM	0	0	0	0	**0**	49	2	0	0	**51**	8	0	1	0	**9**	0	0	0	0	**0**	**60**
5:30PM	0	0	1	0	**1**	33	1	0	0	**34**	13	0	1	0	**14**	0	0	0	0	**0**	**49**
5:45PM	0	1	0	0	**1**	36	2	0	0	**38**	15	1	1	0	**17**	0	0	0	0	**0**	**56**
Hourly Total	0	1	2	0	**3**	168	7	0	0	**175**	43	2	3	0	**48**	0	0	0	0	**0**	**226**
6:00PM	0	1	0	0	**1**	33	0	0	0	**33**	10	0	0	0	**10**	0	0	0	0	**0**	**44**
6:15PM	0	0	0	0	**0**	16	1	0	0	**17**	8	0	0	0	**8**	0	0	0	0	**0**	**25**
6:30PM	0	1	0	0	**1**	16	0	0	0	**16**	7	2	0	0	**9**	0	0	0	0	**0**	**26**
6:45PM	0	0	0	0	**0**	18	0	0	0	**18**	8	0	0	0	**8**	0	0	0	0	**0**	**26**
Hourly Total	0	2	0	0	**2**	83	1	0	0	**84**	33	2	0	0	**35**	0	0	0	0	**0**	**121**
7:00PM	0	0	0	0	**0**	18	0	0	0	**18**	9	0	0	0	**9**	0	0	0	0	**0**	**27**
7:15PM	0	0	0	0	**0**	16	0	0	0	**16**	8	0	0	0	**8**	0	0	0	0	**0**	**24**
7:30PM	0	0	0	0	**0**	18	2	0	0	**20**	8	0	0	0	**8**	0	0	0	0	**0**	**28**
7:45PM	0	0	0	0	**0**	13	0	0	0	**13**	5	0	1	0	**6**	0	0	0	0	**0**	**19**
Hourly Total	0	0	0	0	**0**	65	2	0	0	**67**	30	0	1	0	**31**	0	0	0	0	**0**	**98**
8:00PM	0	0	0	0	**0**	12	1	0	0	**13**	4	1	0	0	**5**	0	0	0	0	**0**	**18**
8:15PM	0	1	0	0	**1**	16	1	0	0	**17**	4	0	0	0	**4**	0	0	0	0	**0**	**22**
8:30PM	0	0	0	0	**0**	13	0	0	0	**13**	3	0	1	0	**4**	0	0	0	0	**0**	**17**
8:45PM	0	0	0	0	**0**	14	0	0	0	**14**	5	0	0	0	**5**	0	0	0	0	**0**	**19**
Hourly Total	0	1	0	0	**1**	55	2	0	0	**57**	16	1	1	0	**18**	0	0	0	0	**0**	**76**
9:00PM	0	0	0	0	**0**	8	0	0	0	**8**	5	0	0	0	**5**	0	0	0	0	**0**	**13**
9:15PM	0	0	3	0	**3**	14	0	0	0	**14**	4	0	0	0	**4**	0	0	0	0	**0**	**21**
9:30PM	0	0	1	0	**1**	13	0	0	0	**13**	8	0	0	0	**8**	0	0	0	0	**0**	**22**
9:45PM	0	1	0	0	**1**	5	0	0	0	**5**	9	0	0	0	**9**	0	0	0	0	**0**	**15**
Hourly Total	0	1	4	0	**5**	40	0	0	0	**40**	26	0	0	0	**26**	0	0	0	0	**0**	**71**
10:00PM	0	0	1	0	**1**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**12**
10:15PM	0	0	0	0	**0**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**11**
10:30PM	0	0	0	0	**0**	6	0	0	0	**6**	1	0	0	0	**1**	0	0	0	0	**0**	**7**
10:45PM	0	0	0	0	**0**	2	0	0	0	**2**	3	0	0	0	**3**	0	0	0	0	**0**	**5**

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	0	1	0	**1**	26	0	0	0	**26**	8	0	0	0	**8**	0	0	0	0	**0**	**35**
11:00PM	0	0	0	0	**0**	9	0	0	0	**9**	2	0	0	0	**2**	0	0	0	0	**0**	**11**
11:15PM	0	0	0	0	**0**	8	1	0	0	**9**	0	0	0	0	**0**	0	0	0	0	**0**	**9**
11:30PM	0	0	0	0	**0**	5	0	0	0	**5**	6	0	0	0	**6**	0	0	0	0	**0**	**11**
11:45PM	0	0	0	0	**0**	3	0	0	0	**3**	2	0	0	0	**2**	0	0	0	0	**0**	**5**
Hourly Total	0	0	0	0	**0**	25	1	0	0	**26**	10	0	0	0	**10**	0	0	0	0	**0**	**36**
Total	0	36	28	0	**64**	1992	64	0	1	**2057**	832	8	13	0	**853**	0	0	0	0	**0**	**2974**
% Approach	0%	56.3%	43.8%	0%	**-**	96.8%	3.1%	0%	0%	**-**	97.5%	0.9%	1.5%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	1.2%	0.9%	0%	**2.2%**	67.0%	2.2%	0%	0%	**69.2%**	28.0%	0.3%	0.4%	0%	**28.7%**	0%	0%	0%	0%	**0%**	-
Lights	0	33	27	0	**60**	1807	60	0	1	**1868**	535	6	11	0	**552**	0	0	0	0	**0**	2480
% Lights	0%	91.7%	96.4%	0%	**93.8%**	90.7%	93.8%	0%	100%	**90.8%**	64.3%	75.0%	84.6%	0%	**64.7%**	0%	0%	0%	0%	**-**	83.4%
Articulated Trucks	0	0	1	0	**1**	123	1	0	0	**124**	198	1	1	0	**200**	0	0	0	0	**0**	325
% Articulated Trucks	0%	0%	3.6%	0%	**1.6%**	6.2%	1.6%	0%	0%	**6.0%**	23.8%	12.5%	7.7%	0%	**23.4%**	0%	0%	0%	0%	**-**	10.9%
Buses and Single-Unit Trucks	0	3	0	0	**3**	62	3	0	0	**65**	99	1	1	0	**101**	0	0	0	0	**0**	169
% Buses and Single-Unit Trucks	0%	8.3%	0%	0%	**4.7%**	3.1%	4.7%	0%	0%	**3.2%**	11.9%	12.5%	7.7%	0%	**11.8%**	0%	0%	0%	0%	**-**	5.7%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

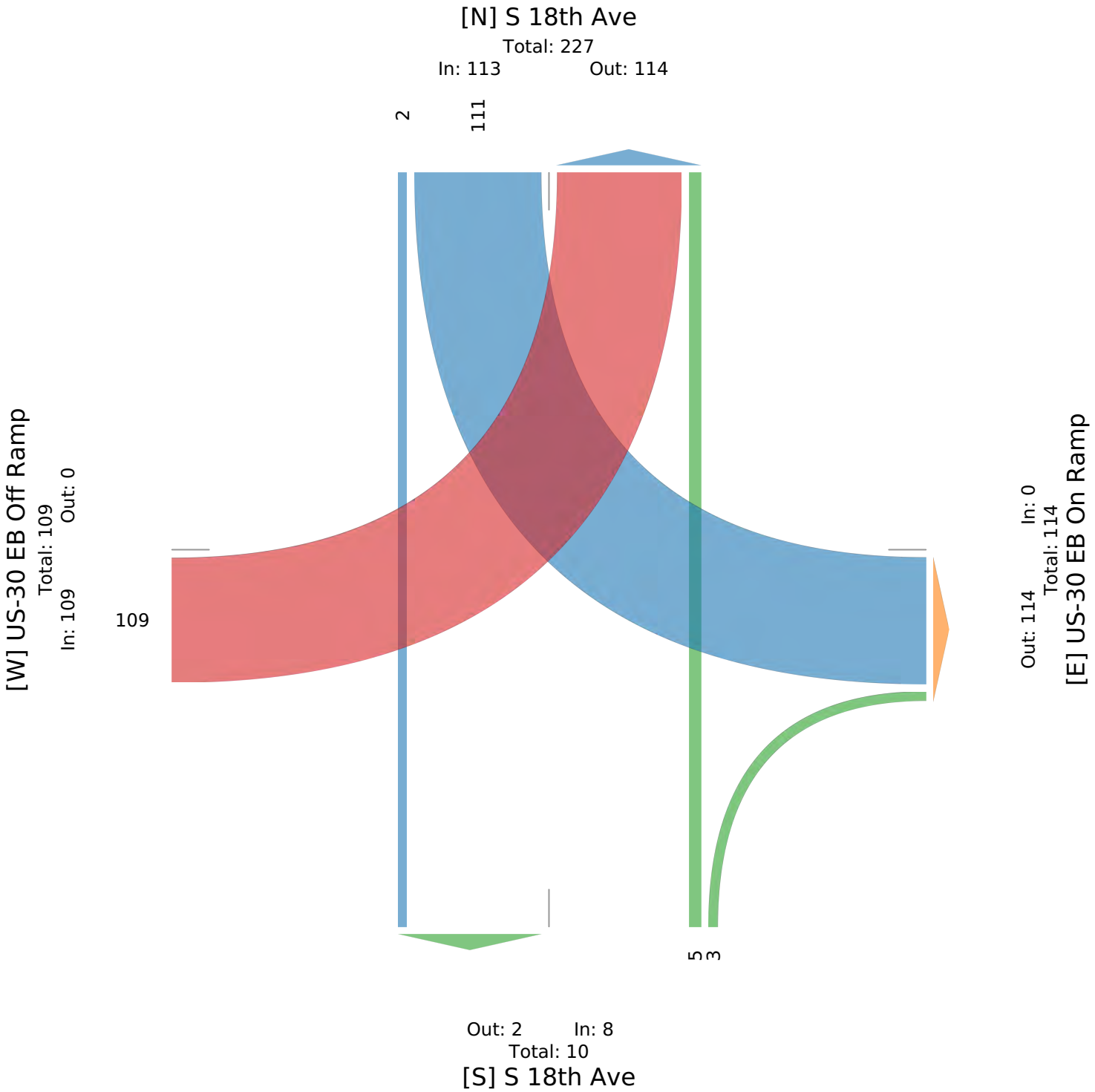
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	0	2	1	0	**3**	14	0	0	0	**14**	47	0	0	0	**47**	0	0	0	0	**0**	**64**
7:00AM	0	2	0	0	**2**	20	1	0	0	**21**	16	0	0	0	**16**	0	0	0	0	**0**	**39**
7:15AM	0	0	1	0	**1**	39	1	0	0	**40**	20	0	0	0	**20**	0	0	0	0	**0**	**61**
7:30AM	0	1	1	0	**2**	38	0	0	0	**38**	26	0	0	0	**26**	0	0	0	0	**0**	**66**
Total	0	5	3	0	**8**	111	2	0	0	**113**	109	0	0	0	**109**	0	0	0	0	**0**	**230**
% Approach	0%	62.5%	37.5%	0%	**-**	98.2%	1.8%	0%	0%	**-**	100%	0%	0%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	2.2%	1.3%	0%	**3.5%**	48.3%	0.9%	0%	0%	**49.1%**	47.4%	0%	0%	0%	**47.4%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.625	0.750	-	**0.667**	0.712	0.500	-	-	**0.706**	0.580	-	-	-	**0.580**	-	-	-	-	**-**	0.871
Lights	0	5	3	0	**8**	99	1	0	0	**100**	91	0	0	0	**91**	0	0	0	0	**0**	199
% Lights	0%	100%	100%	0%	**100%**	89.2%	50.0%	0%	0%	**88.5%**	83.5%	0%	0%	0%	**83.5%**	0%	0%	0%	0%	**-**	86.5%
Articulated Trucks	0	0	0	0	**0**	11	0	0	0	**11**	14	0	0	0	**14**	0	0	0	0	**0**	25
% Articulated Trucks	0%	0%	0%	0%	**0%**	9.9%	0%	0%	0%	**9.7%**	12.8%	0%	0%	0%	**12.8%**	0%	0%	0%	0%	**-**	10.9%
Buses and Single-Unit Trucks	0	0	0	0	**0**	1	1	0	0	**2**	4	0	0	0	**4**	0	0	0	0	**0**	6
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0.9%	50.0%	0%	0%	**1.8%**	3.7%	0%	0%	0%	**3.7%**	0%	0%	0%	0%	**-**	2.6%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

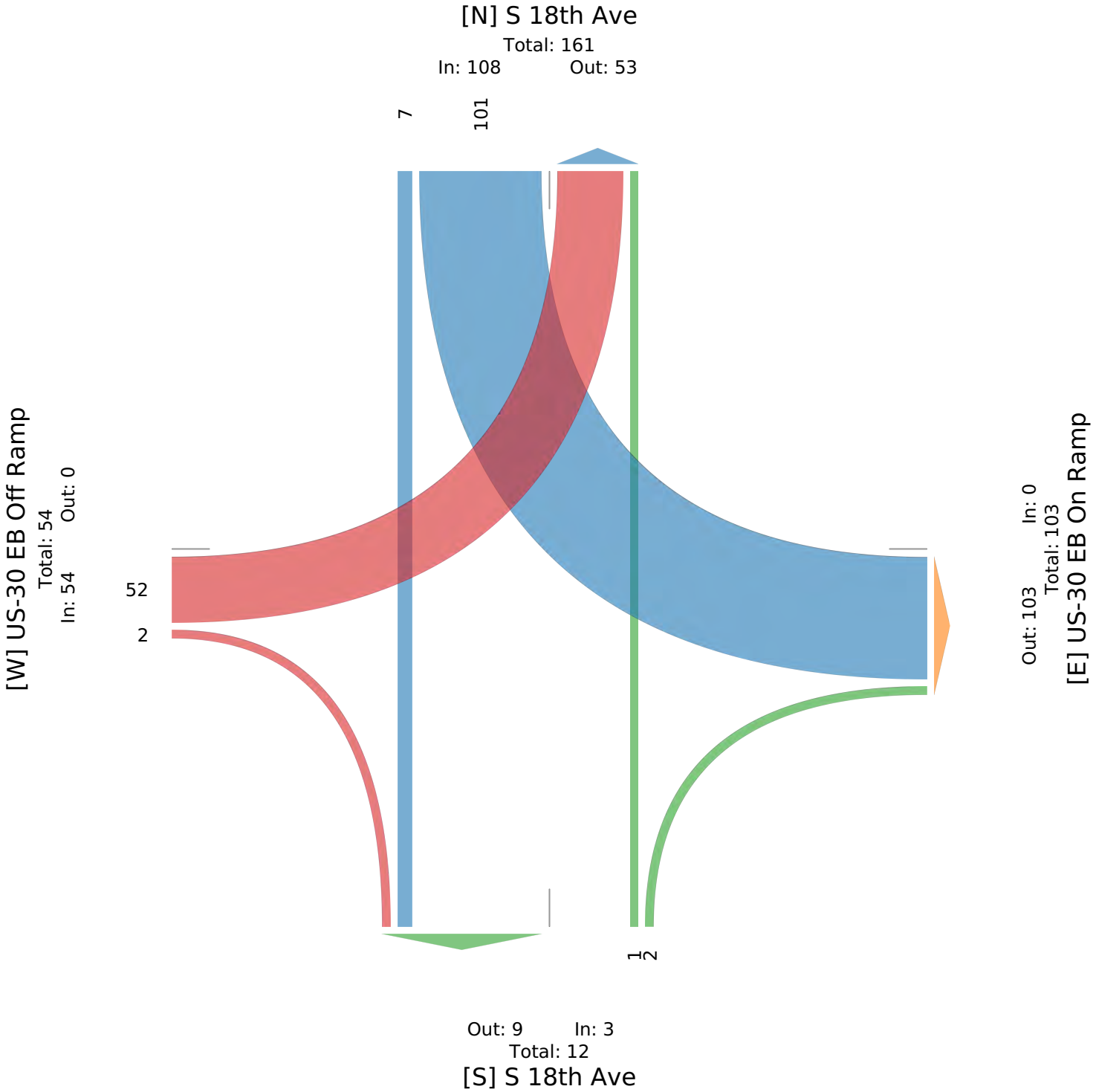
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:45AM	0	0	0	0	**0**	24	3	0	0	**27**	13	0	0	0	**13**	0	0	0	0	**0**	**40**
12:00PM	0	0	2	0	**2**	24	3	0	0	**27**	10	0	1	0	**11**	0	0	0	0	**0**	**40**
12:15PM	0	0	0	0	**0**	28	1	0	0	**29**	16	0	1	0	**17**	0	0	0	0	**0**	**46**
12:30PM	0	1	0	0	**1**	25	0	0	0	**25**	13	0	0	0	**13**	0	0	0	0	**0**	**39**
Total	0	1	2	0	**3**	101	7	0	0	**108**	52	0	2	0	**54**	0	0	0	0	**0**	**165**
% Approach	0%	33.3%	66.7%	0%	**-**	93.5%	6.5%	0%	0%	**-**	96.3%	0%	3.7%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	0.6%	1.2%	0%	**1.8%**	61.2%	4.2%	0%	0%	**65.5%**	31.5%	0%	1.2%	0%	**32.7%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.250	0.250	-	**0.375**	0.902	0.583	-	-	**0.931**	0.813	-	0.500	-	**0.794**	-	-	-	-	**-**	0.897
Lights	0	1	1	0	**2**	85	7	0	0	**92**	15	0	1	0	**16**	0	0	0	0	**0**	110
% Lights	0%	100%	50.0%	0%	**66.7%**	84.2%	100%	0%	0%	**85.2%**	28.8%	0%	50.0%	0%	**29.6%**	0%	0%	0%	0%	**-**	66.7%
Articulated Trucks	0	0	1	0	**1**	9	0	0	0	**9**	29	0	1	0	**30**	0	0	0	0	**0**	40
% Articulated Trucks	0%	0%	50.0%	0%	**33.3%**	8.9%	0%	0%	0%	**8.3%**	55.8%	0%	50.0%	0%	**55.6%**	0%	0%	0%	0%	**-**	24.2%
Buses and Single-Unit Trucks	0	0	0	0	**0**	7	0	0	0	**7**	8	0	0	0	**8**	0	0	0	0	**0**	15
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	6.9%	0%	0%	0%	**6.5%**	15.4%	0%	0%	0%	**14.8%**	0%	0%	0%	0%	**-**	9.1%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:45PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

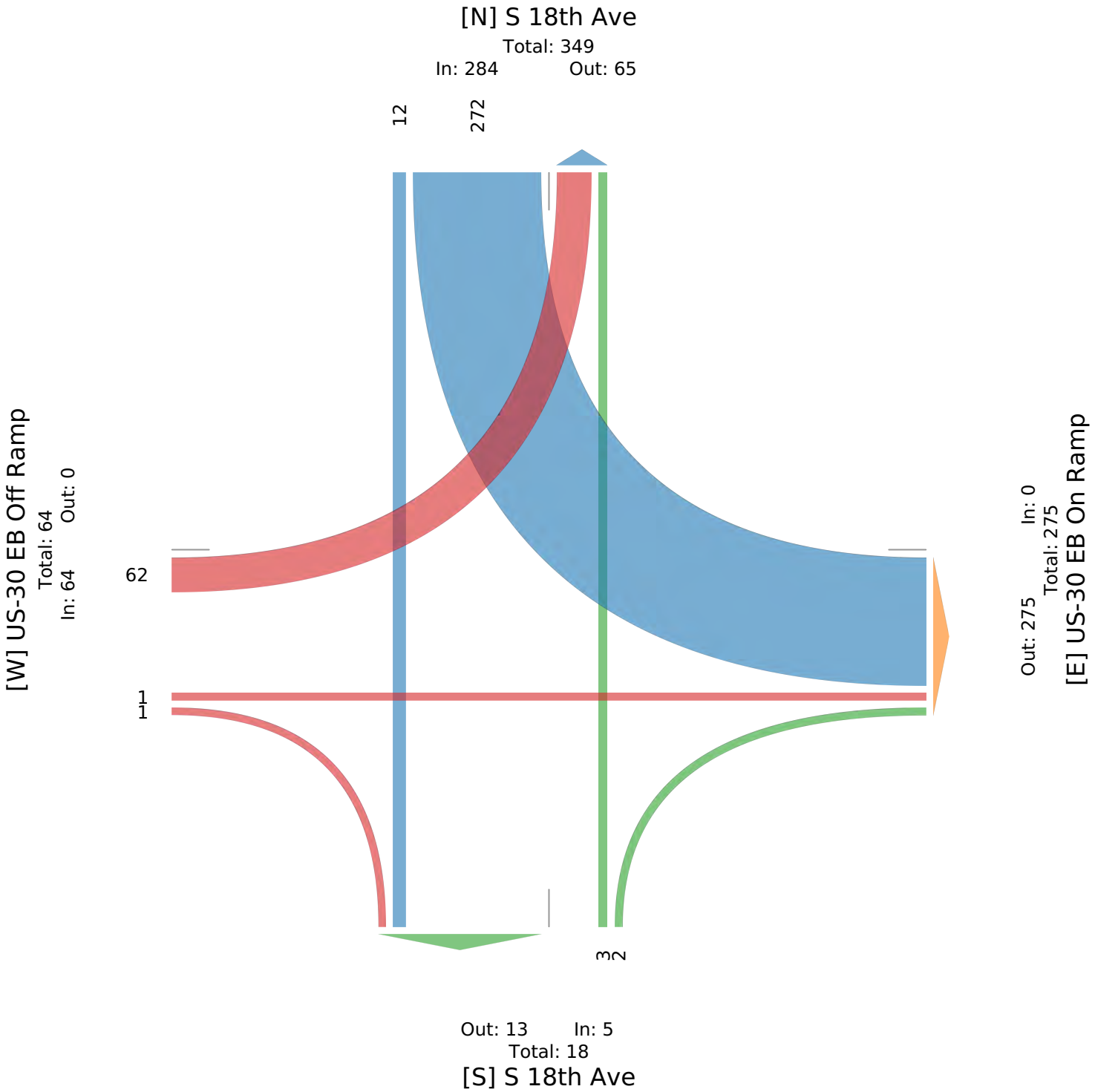
Leg	S 18th Ave					S 18th Ave					US-30 EB Off Ramp					US-30 EB On Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 3:45PM	0	1	1	0	**2**	54	4	0	0	**58**	16	1	0	0	**17**	0	0	0	0	**0**	**77**
4:00PM	0	1	1	0	**2**	62	3	0	0	**65**	11	0	1	0	**12**	0	0	0	0	**0**	**79**
4:15PM	0	1	0	0	**1**	76	2	0	0	**78**	17	0	0	0	**17**	0	0	0	0	**0**	**96**
4:30PM	0	0	0	0	**0**	80	3	0	0	**83**	18	0	0	0	**18**	0	0	0	0	**0**	**101**
Total	0	3	2	0	**5**	272	12	0	0	**284**	62	1	1	0	**64**	0	0	0	0	**0**	**353**
% Approach	0%	60.0%	40.0%	0%	**-**	95.8%	4.2%	0%	0%	**-**	96.9%	1.6%	1.6%	0%	**-**	0%	0%	0%	0%	**-**	-
% Total	0%	0.8%	0.6%	0%	**1.4%**	77.1%	3.4%	0%	0%	**80.5%**	17.6%	0.3%	0.3%	0%	**18.1%**	0%	0%	0%	0%	**0%**	-
PHF	-	0.750	0.500	-	**0.625**	0.850	0.750	-	-	**0.855**	0.861	0.250	0.250	-	**0.889**	-	-	-	-	**-**	0.874
Lights	0	3	2	0	**5**	261	11	0	0	**272**	42	0	1	0	**43**	0	0	0	0	**0**	320
% Lights	0%	100%	100%	0%	**100%**	96.0%	91.7%	0%	0%	**95.8%**	67.7%	0%	100%	0%	**67.2%**	0%	0%	0%	0%	**-**	90.7%
Articulated Trucks	0	0	0	0	**0**	6	0	0	0	**6**	13	0	0	0	**13**	0	0	0	0	**0**	19
% Articulated Trucks	0%	0%	0%	0%	**0%**	2.2%	0%	0%	0%	**2.1%**	21.0%	0%	0%	0%	**20.3%**	0%	0%	0%	0%	**-**	5.4%
Buses and Single-Unit Trucks	0	0	0	0	**0**	5	1	0	0	**6**	7	1	0	0	**8**	0	0	0	0	**0**	14
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	1.8%	8.3%	0%	0%	**2.1%**	11.3%	100%	0%	0%	**12.5%**	0%	0%	0%	0%	**-**	4.0%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 EB Ramp - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:45PM - 4:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385965, Location: 42.001883, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2026-03-24 12:00AM	0	1	0	0	**1**	0	5	3	0	**8**	0	0	0	0	**0**	0	0	5	0	**5**	**14**
12:15AM	0	2	0	0	**2**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	4	0	**4**	**10**
12:30AM	0	2	0	0	**2**	0	7	0	0	**7**	0	0	0	0	**0**	0	0	3	0	**3**	**12**
12:45AM	0	1	0	0	**1**	0	4	1	0	**5**	0	0	0	0	**0**	0	0	4	0	**4**	**10**
Hourly Total	0	6	0	0	**6**	0	18	6	0	**24**	0	0	0	0	**0**	0	0	16	0	**16**	**46**
1:00AM	0	3	0	0	**3**	0	20	2	0	**22**	0	0	0	0	**0**	0	0	5	0	**5**	**30**
1:15AM	0	1	0	0	**1**	0	3	3	0	**6**	0	0	0	0	**0**	0	0	0	0	**0**	**7**
1:30AM	0	3	0	0	**3**	0	3	1	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**10**
1:45AM	0	1	0	0	**1**	0	8	4	0	**12**	0	0	0	0	**0**	0	1	2	0	**3**	**16**
Hourly Total	0	8	0	0	**8**	0	34	10	0	**44**	0	0	0	0	**0**	0	1	10	0	**11**	**63**
2:00AM	0	2	0	0	**2**	0	3	2	0	**5**	0	0	0	0	**0**	0	0	1	0	**1**	**8**
2:15AM	0	1	0	0	**1**	0	5	1	0	**6**	0	0	0	0	**0**	0	0	4	0	**4**	**11**
2:30AM	0	1	0	0	**1**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	4	0	**4**	**9**
2:45AM	0	3	0	0	**3**	0	1	3	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**10**
Hourly Total	0	7	0	0	**7**	0	11	8	0	**19**	0	0	0	0	**0**	0	0	12	0	**12**	**38**
3:00AM	0	1	0	0	**1**	0	3	5	0	**8**	0	0	0	0	**0**	0	1	2	0	**3**	**12**
3:15AM	0	0	0	0	**0**	0	9	4	0	**13**	0	0	0	0	**0**	0	0	1	0	**1**	**14**
3:30AM	0	2	0	0	**2**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	2	0	**2**	**8**
3:45AM	0	1	0	0	**1**	0	2	3	0	**5**	0	0	0	0	**0**	0	0	2	0	**2**	**8**
Hourly Total	0	4	0	0	**4**	0	16	14	0	**30**	0	0	0	0	**0**	0	1	7	0	**8**	**42**
4:00AM	0	1	0	0	**1**	0	2	2	0	**4**	0	0	0	0	**0**	0	0	3	0	**3**	**8**
4:15AM	0	2	0	0	**2**	0	8	1	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**19**
4:30AM	0	9	0	0	**9**	0	8	1	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**26**
4:45AM	0	3	0	0	**3**	0	8	4	0	**12**	0	0	0	0	**0**	0	0	9	0	**9**	**24**
Hourly Total	0	15	0	0	**15**	0	26	8	0	**34**	0	0	0	0	**0**	0	0	28	0	**28**	**77**
5:00AM	0	8	0	0	**8**	0	17	4	0	**21**	0	0	0	0	**0**	0	0	13	0	**13**	**42**
5:15AM	0	5	0	0	**5**	0	30	6	0	**36**	0	0	0	0	**0**	0	0	18	0	**18**	**59**
5:30AM	0	10	0	0	**10**	0	28	10	0	**38**	0	0	0	0	**0**	0	0	23	0	**23**	**71**
5:45AM	0	11	0	0	**11**	0	26	12	0	**38**	0	0	0	0	**0**	0	1	29	0	**30**	**79**
Hourly Total	0	34	0	0	**34**	0	101	32	0	**133**	0	0	0	0	**0**	0	1	83	0	**84**	**251**
6:00AM	0	9	0	0	**9**	0	19	13	0	**32**	0	0	0	0	**0**	0	1	19	0	**20**	**61**
6:15AM	0	10	0	0	**10**	0	20	12	0	**32**	0	0	0	0	**0**	0	0	38	0	**38**	**80**
6:30AM	0	27	0	0	**27**	0	24	9	0	**33**	0	0	0	0	**0**	0	0	56	0	**56**	**116**
6:45AM	1	48	0	0	**49**	0	14	14	0	**28**	0	0	0	0	**0**	0	0	63	0	**63**	**140**
Hourly Total	1	94	0	0	**95**	0	77	48	0	**125**	0	0	0	0	**0**	0	1	176	0	**177**	**397**
7:00AM	2	17	0	0	**19**	0	22	15	0	**37**	0	0	0	0	**0**	0	0	53	0	**53**	**109**
7:15AM	0	20	0	0	**20**	0	39	19	0	**58**	0	0	0	0	**0**	1	0	68	0	**69**	**147**
7:30AM	1	28	0	0	**29**	0	40	15	0	**55**	0	0	0	0	**0**	2	1	58	0	**61**	**145**
7:45AM	1	15	0	0	**16**	0	23	20	0	**43**	0	0	0	0	**0**	1	0	54	0	**55**	**114**
Hourly Total	4	80	0	0	**84**	0	124	69	0	**193**	0	0	0	0	**0**	4	1	233	0	**238**	**515**
8:00AM	0	12	0	0	**12**	0	35	15	0	**50**	0	0	0	0	**0**	1	0	42	0	**43**	**105**
8:15AM	0	16	0	0	**16**	0	29	9	0	**38**	0	0	0	0	**0**	2	0	34	0	**36**	**90**
8:30AM	0	14	0	0	**14**	0	19	17	0	**36**	0	0	0	0	**0**	0	0	26	0	**26**	**76**
8:45AM	0	14	0	0	**14**	0	13	7	0	**20**	0	0	0	0	**0**	0	0	21	0	**21**	**55**
Hourly Total	0	56	0	0	**56**	0	96	48	0	**144**	0	0	0	0	**0**	3	0	123	0	**126**	**326**
9:00AM	0	8	0	0	**8**	0	26	9	0	**35**	0	0	0	0	**0**	1	0	16	0	**17**	**60**
9:15AM	1	12	0	0	**13**	0	22	10	0	**32**	0	0	0	0	**0**	0	0	25	0	**25**	**70**
9:30AM	0	13	0	0	**13**	0	23	9	0	**32**	0	0	0	0	**0**	0	0	18	0	**18**	**63**
9:45AM	0	15	0	0	**15**	0	24	9	0	**33**	0	0	0	0	**0**	0	0	26	0	**26**	**74**
Hourly Total	1	48	0	0	**49**	0	95	37	0	**132**	0	0	0	0	**0**	1	0	85	0	**86**	**267**
10:00AM	0	11	0	0	**11**	0	20	14	0	**34**	0	0	0	0	**0**	0	1	22	0	**23**	**68**
10:15AM	0	9	0	0	**9**	0	18	14	0	**32**	0	0	0	0	**0**	0	0	28	0	**28**	**69**
10:30AM	0	17	0	0	**17**	0	27	7	0	**34**	0	0	0	0	**0**	0	0	26	0	**26**	**77**
10:45AM	0	10	0	0	**10**	0	18	11	0	**29**	0	0	0	0	**0**	0	0	29	0	**29**	**68**

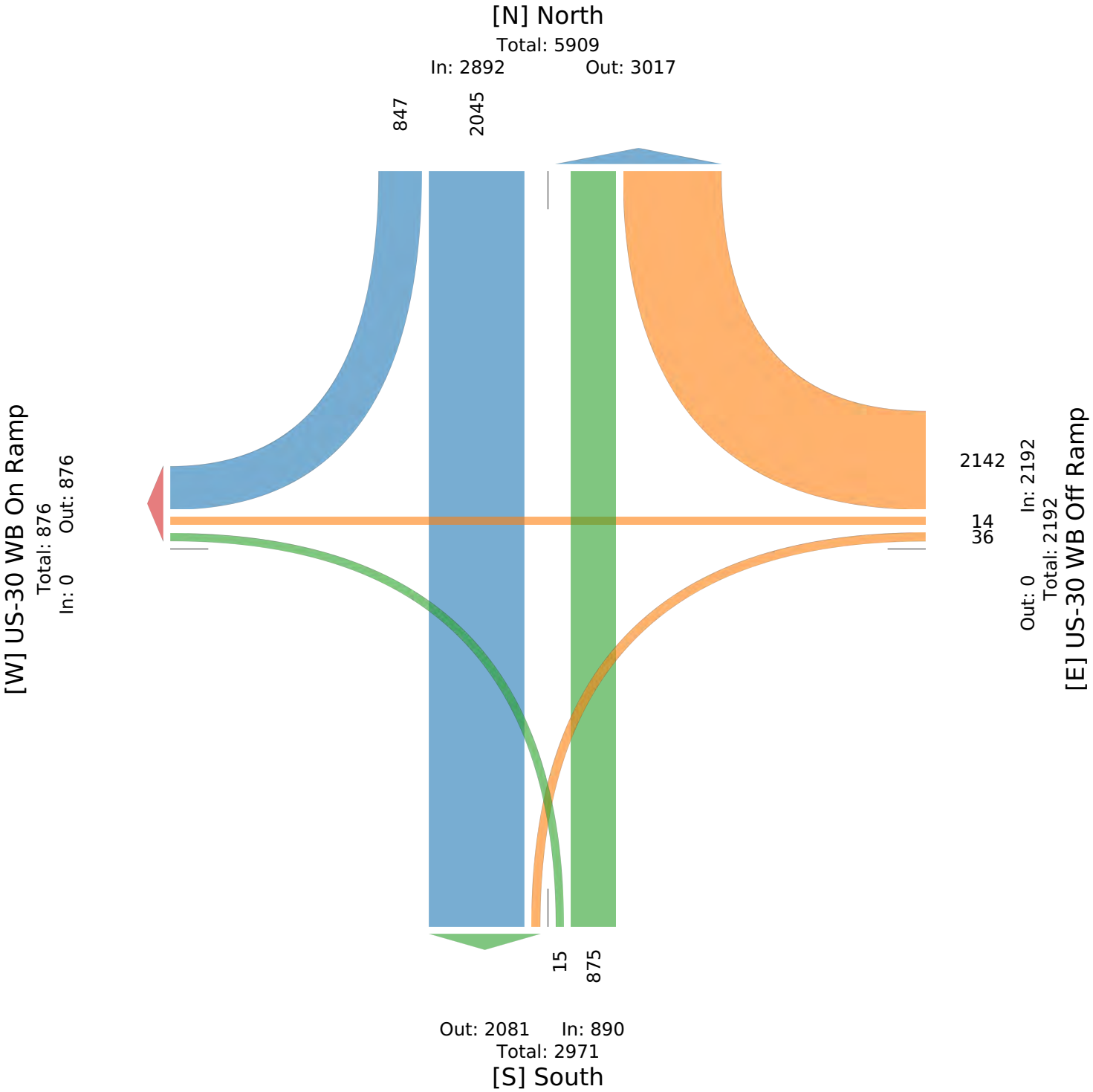
Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	47	0	0	**47**	0	83	46	0	**129**	0	0	0	0	**0**	0	1	105	0	**106**	**282**
11:00AM	0	7	0	0	**7**	0	31	22	0	**53**	0	0	0	0	**0**	0	0	22	0	**22**	**82**
11:15AM	0	12	0	0	**12**	0	21	10	0	**31**	0	0	0	0	**0**	0	0	31	0	**31**	**74**
11:30AM	0	11	0	0	**11**	0	13	11	0	**24**	0	0	0	0	**0**	0	0	28	0	**28**	**63**
11:45AM	0	14	0	0	**14**	0	23	8	0	**31**	0	0	0	0	**0**	3	1	38	0	**42**	**87**
Hourly Total	0	44	0	0	**44**	0	88	51	0	**139**	0	0	0	0	**0**	3	1	119	0	**123**	**306**
12:00PM	0	11	0	0	**11**	0	28	5	0	**33**	0	0	0	0	**0**	0	0	25	0	**25**	**69**
12:15PM	0	16	0	0	**16**	0	28	20	0	**48**	0	0	0	0	**0**	0	0	24	0	**24**	**88**
12:30PM	0	13	0	0	**13**	0	24	8	0	**32**	0	0	0	0	**0**	0	0	21	0	**21**	**66**
12:45PM	0	6	0	0	**6**	0	20	15	0	**35**	0	0	0	0	**0**	0	0	24	0	**24**	**65**
Hourly Total	0	46	0	0	**46**	0	100	48	0	**148**	0	0	0	0	**0**	0	0	94	0	**94**	**288**
1:00PM	0	16	0	0	**16**	0	15	14	0	**29**	0	0	0	0	**0**	1	2	32	0	**35**	**80**
1:15PM	0	6	0	0	**6**	0	24	9	0	**33**	0	0	0	0	**0**	1	0	28	0	**29**	**68**
1:30PM	0	5	0	0	**5**	0	25	14	0	**39**	0	0	0	0	**0**	0	0	24	0	**24**	**68**
1:45PM	1	14	0	0	**15**	0	32	8	0	**40**	0	0	0	0	**0**	1	0	22	0	**23**	**78**
Hourly Total	1	41	0	0	**42**	0	96	45	0	**141**	0	0	0	0	**0**	3	2	106	0	**111**	**294**
2:00PM	0	11	0	0	**11**	0	29	12	0	**41**	0	0	0	0	**0**	0	0	17	0	**17**	**69**
2:15PM	0	18	0	0	**18**	0	26	11	0	**37**	0	0	0	0	**0**	1	1	40	0	**42**	**97**
2:30PM	1	10	0	0	**11**	0	31	8	0	**39**	0	0	0	0	**0**	0	0	47	0	**47**	**97**
2:45PM	0	18	0	0	**18**	0	32	13	0	**45**	0	0	0	0	**0**	1	0	52	0	**53**	**116**
Hourly Total	1	57	0	0	**58**	0	118	44	0	**162**	0	0	0	0	**0**	2	1	156	0	**159**	**379**
3:00PM	1	9	0	0	**10**	0	45	12	0	**57**	0	0	0	0	**0**	1	0	37	0	**38**	**105**
3:15PM	0	14	0	0	**14**	0	41	28	0	**69**	0	0	0	0	**0**	2	0	36	0	**38**	**121**
3:30PM	0	21	0	0	**21**	0	74	24	0	**98**	0	0	0	0	**0**	2	0	49	0	**51**	**170**
3:45PM	1	16	0	0	**17**	0	58	22	0	**80**	0	0	0	0	**0**	1	1	50	0	**52**	**149**
Hourly Total	2	60	0	0	**62**	0	218	86	0	**304**	0	0	0	0	**0**	6	1	172	0	**179**	**545**
4:00PM	1	11	0	0	**12**	0	67	35	0	**102**	0	0	0	0	**0**	0	0	32	0	**32**	**146**
4:15PM	0	17	0	0	**17**	0	75	20	0	**95**	0	0	0	0	**0**	1	0	34	0	**35**	**147**
4:30PM	0	18	0	0	**18**	0	78	16	0	**94**	0	0	0	0	**0**	2	0	50	0	**52**	**164**
4:45PM	2	13	0	0	**15**	0	52	22	0	**74**	0	0	0	0	**0**	1	1	56	0	**58**	**147**
Hourly Total	3	59	0	0	**62**	0	272	93	0	**365**	0	0	0	0	**0**	4	1	172	0	**177**	**604**
5:00PM	0	7	0	0	**7**	0	52	17	0	**69**	0	0	0	0	**0**	2	1	38	0	**41**	**117**
5:15PM	0	9	0	0	**9**	0	48	11	0	**59**	0	0	0	0	**0**	1	0	34	0	**35**	**103**
5:30PM	0	13	0	0	**13**	0	34	13	0	**47**	0	0	0	0	**0**	1	0	37	0	**38**	**98**
5:45PM	0	16	0	0	**16**	0	38	6	0	**44**	0	0	0	0	**0**	0	0	41	0	**41**	**101**
Hourly Total	0	45	0	0	**45**	0	172	47	0	**219**	0	0	0	0	**0**	4	1	150	0	**155**	**419**
6:00PM	0	11	0	0	**11**	0	33	8	0	**41**	0	0	0	0	**0**	1	0	34	0	**35**	**87**
6:15PM	0	7	0	0	**7**	0	16	5	0	**21**	0	0	0	0	**0**	0	0	27	0	**27**	**55**
6:30PM	0	8	0	0	**8**	0	16	4	0	**20**	0	0	0	0	**0**	0	0	19	0	**19**	**47**
6:45PM	1	8	0	0	**9**	0	21	4	0	**25**	0	0	0	0	**0**	0	0	22	0	**22**	**56**
Hourly Total	1	34	0	0	**35**	0	86	21	0	**107**	0	0	0	0	**0**	1	0	102	0	**103**	**245**
7:00PM	0	7	0	0	**7**	0	18	5	0	**23**	0	0	0	0	**0**	0	0	18	0	**18**	**48**
7:15PM	0	9	0	0	**9**	0	17	4	0	**21**	0	0	0	0	**0**	1	0	14	0	**15**	**45**
7:30PM	0	7	0	0	**7**	0	20	8	0	**28**	0	0	0	0	**0**	0	0	16	0	**16**	**51**
7:45PM	0	6	0	0	**6**	0	13	9	0	**22**	0	0	0	0	**0**	0	0	19	0	**19**	**47**
Hourly Total	0	29	0	0	**29**	0	68	26	0	**94**	0	0	0	0	**0**	1	0	67	0	**68**	**191**
8:00PM	0	4	0	0	**4**	0	13	2	0	**15**	0	0	0	0	**0**	0	0	9	0	**9**	**28**
8:15PM	1	4	0	0	**5**	0	17	3	0	**20**	0	0	0	0	**0**	0	0	11	0	**11**	**36**
8:30PM	0	3	0	0	**3**	0	13	7	0	**20**	0	0	0	0	**0**	0	0	7	0	**7**	**30**
8:45PM	0	7	0	0	**7**	0	13	5	0	**18**	0	0	0	0	**0**	1	0	15	0	**16**	**41**
Hourly Total	1	18	0	0	**19**	0	56	17	0	**73**	0	0	0	0	**0**	1	0	42	0	**43**	**135**
9:00PM	0	5	0	0	**5**	0	8	2	0	**10**	0	0	0	0	**0**	0	0	7	0	**7**	**22**
9:15PM	0	3	0	0	**3**	0	13	3	0	**16**	0	0	0	0	**0**	1	0	5	0	**6**	**25**
9:30PM	0	8	0	0	**8**	0	13	2	0	**15**	0	0	0	0	**0**	1	0	15	0	**16**	**39**
9:45PM	0	8	0	0	**8**	0	5	7	0	**12**	0	0	0	0	**0**	0	0	5	0	**5**	**25**
Hourly Total	0	24	0	0	**24**	0	39	14	0	**53**	0	0	0	0	**0**	2	0	32	0	**34**	**111**
10:00PM	0	2	0	0	**2**	0	9	4	0	**13**	0	0	0	0	**0**	0	1	2	0	**3**	**18**
10:15PM	0	1	0	0	**1**	0	9	8	0	**17**	0	0	0	0	**0**	0	0	9	0	**9**	**27**
10:30PM	0	2	0	0	**2**	0	6	1	0	**7**	0	0	0	0	**0**	0	0	12	0	**12**	**21**
10:45PM	0	3	0	0	**3**	0	2	3	0	**5**	0	0	0	0	**0**	0	0	9	0	**9**	**17**

Leg Direction	South Northbound					North Southbound					US-30 WB On Ramp Eastbound					US-30 WB Off Ramp Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	8	0	0	**8**	0	26	16	0	**42**	0	0	0	0	**0**	0	1	32	0	**33**	**83**
11:00PM	0	3	0	0	**3**	0	9	5	0	**14**	0	0	0	0	**0**	0	0	3	0	**3**	**20**
11:15PM	0	0	0	0	**0**	0	8	2	0	**10**	0	0	0	0	**0**	1	0	5	0	**6**	**16**
11:30PM	0	6	0	0	**6**	0	5	4	0	**9**	0	0	0	0	**0**	0	0	8	0	**8**	**23**
11:45PM	0	2	0	0	**2**	0	3	2	0	**5**	0	0	0	0	**0**	0	0	4	0	**4**	**11**
Hourly Total	0	11	0	0	**11**	0	25	13	0	**38**	0	0	0	0	**0**	1	0	20	0	**21**	**70**
Total	15	875	0	0	**890**	0	2045	847	0	**2892**	0	0	0	0	**0**	36	14	2142	0	**2192**	**5974**
% Approach	1.7%	98.3%	0%	0%	**-**	0%	70.7%	29.3%	0%	**-**	0%	0%	0%	0%	**-**	1.6%	0.6%	97.7%	0%	**-**	**-**
% Total	0.3%	14.6%	0%	0%	**14.9%**	0%	34.2%	14.2%	0%	**48.4%**	0%	0%	0%	0%	**0%**	0.6%	0.2%	35.9%	0%	**36.7%**	**-**
Lights	14	551	0	0	**565**	0	1852	541	0	**2393**	0	0	0	0	**0**	31	6	1980	0	**2017**	4975
% Lights	93.3%	63.0%	0%	0%	**63.5%**	0%	90.6%	63.9%	0%	**82.7%**	0%	0%	0%	0%	**-**	86.1%	42.9%	92.4%	0%	**92.0%**	83.3%
Articulated Trucks	0	219	0	0	**219**	0	118	233	0	**351**	0	0	0	0	**0**	2	7	99	0	**108**	678
% Articulated Trucks	0%	25.0%	0%	0%	**24.6%**	0%	5.8%	27.5%	0%	**12.1%**	0%	0%	0%	0%	**-**	5.6%	50.0%	4.6%	0%	**4.9%**	11.3%
Buses and Single-Unit Trucks	1	105	0	0	**106**	0	75	73	0	**148**	0	0	0	0	**0**	3	1	63	0	**67**	321
% Buses and Single-Unit Trucks	6.7%	12.0%	0%	0%	**11.9%**	0%	3.7%	8.6%	0%	**5.1%**	0%	0%	0%	0%	**-**	8.3%	7.1%	2.9%	0%	**3.1%**	5.4%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

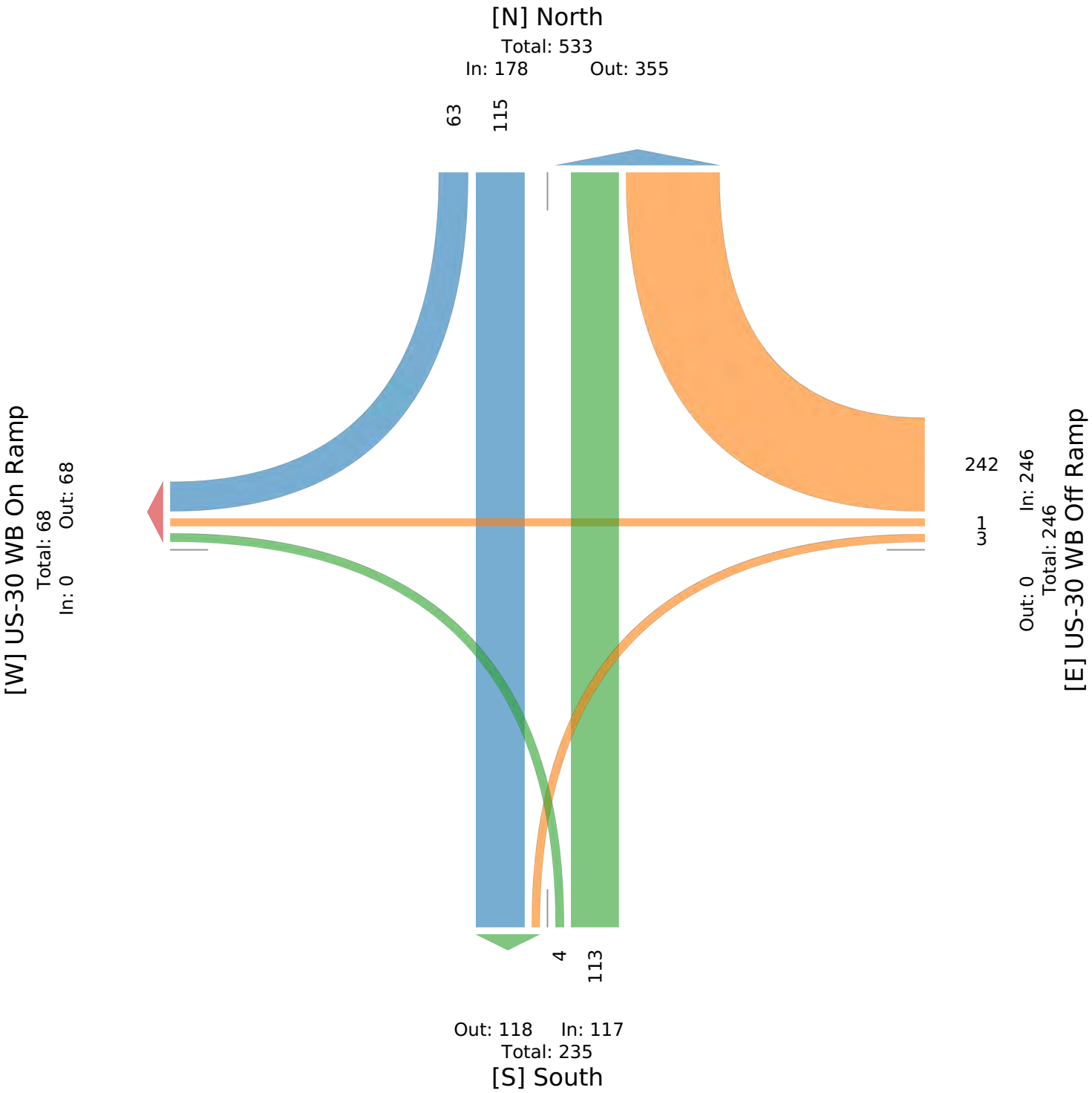
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 6:45AM	1	48	0	0	**49**	0	14	14	0	**28**	0	0	0	0	**0**	0	0	63	0	**63**	**140**
7:00AM	2	17	0	0	**19**	0	22	15	0	**37**	0	0	0	0	**0**	0	0	53	0	**53**	**109**
7:15AM	0	20	0	0	**20**	0	39	19	0	**58**	0	0	0	0	**0**	1	0	68	0	**69**	**147**
7:30AM	1	28	0	0	**29**	0	40	15	0	**55**	0	0	0	0	**0**	2	1	58	0	**61**	**145**
Total	4	113	0	0	**117**	0	115	63	0	**178**	0	0	0	0	**0**	3	1	242	0	**246**	**541**
% Approach	3.4%	96.6%	0%	0%	**-**	0%	64.6%	35.4%	0%	**-**	0%	0%	0%	0%	**-**	1.2%	0.4%	98.4%	0%	**-**	**-**
% Total	0.7%	20.9%	0%	0%	**21.6%**	0%	21.3%	11.6%	0%	**32.9%**	0%	0%	0%	0%	**0%**	0.6%	0.2%	44.7%	0%	**45.5%**	**-**
PHF	0.500	0.589	-	-	**0.597**	-	0.719	0.829	-	**0.767**	-	-	-	-	**-**	0.375	0.250	0.890	-	**0.891**	0.920
Lights	4	93	0	0	**97**	0	102	44	0	**146**	0	0	0	0	**0**	3	1	227	0	**231**	474
% Lights	100%	82.3%	0%	0%	**82.9%**	0%	88.7%	69.8%	0%	**82.0%**	0%	0%	0%	0%	**-**	100%	100%	93.8%	0%	**93.9%**	87.6%
Articulated Trucks	0	16	0	0	**16**	0	11	14	0	**25**	0	0	0	0	**0**	0	0	9	0	**9**	50
% Articulated Trucks	0%	14.2%	0%	0%	**13.7%**	0%	9.6%	22.2%	0%	**14.0%**	0%	0%	0%	0%	**-**	0%	0%	3.7%	0%	**3.7%**	9.2%
Buses and Single-Unit Trucks	0	4	0	0	**4**	0	2	5	0	**7**	0	0	0	0	**0**	0	0	6	0	**6**	17
% Buses and Single-Unit Trucks	0%	3.5%	0%	0%	**3.4%**	0%	1.7%	7.9%	0%	**3.9%**	0%	0%	0%	0%	**-**	0%	0%	2.5%	0%	**2.4%**	3.1%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
AM Peak (Mar 24 2026 6:45AM - 7:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

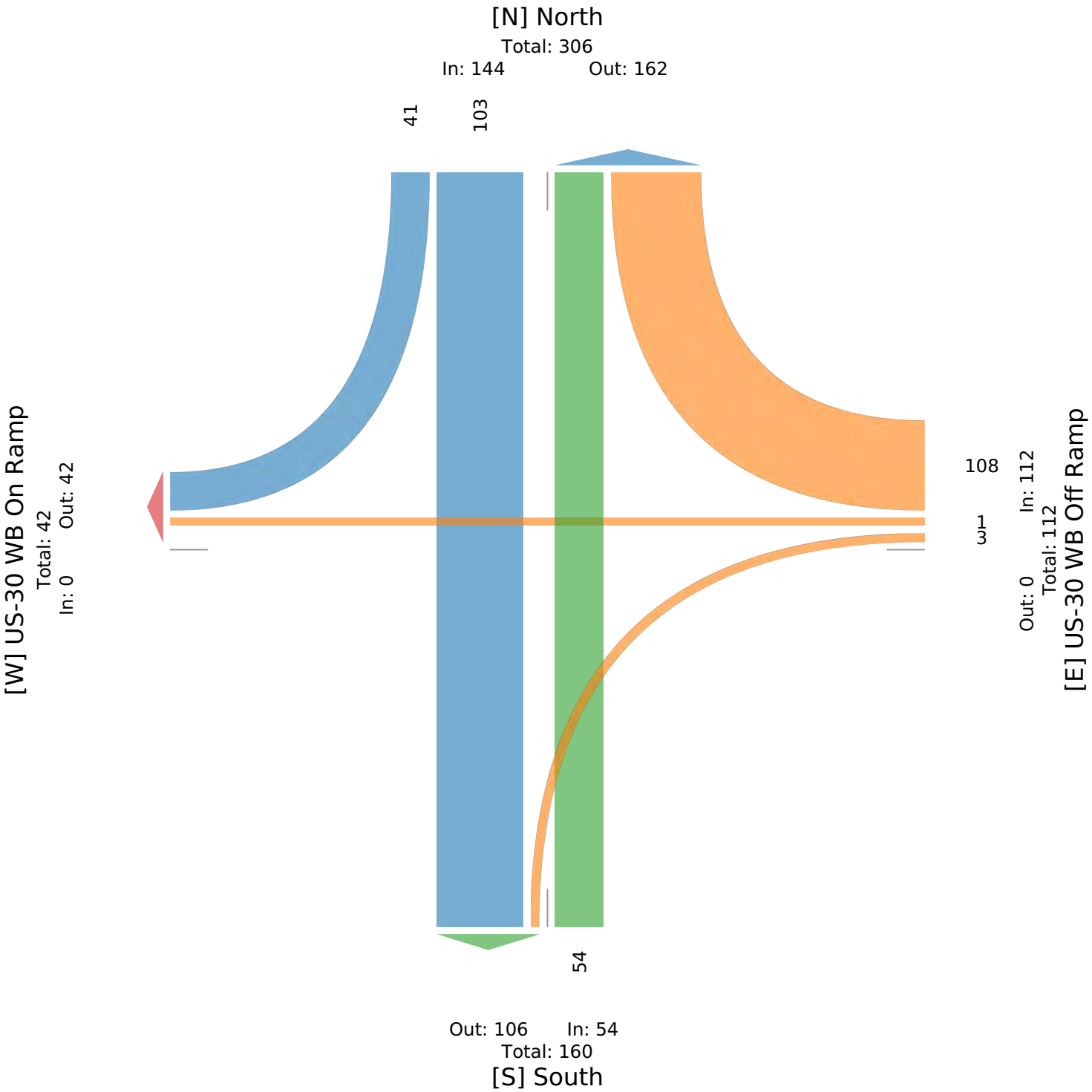
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 11:45AM	0	14	0	0	**14**	0	23	8	0	**31**	0	0	0	0	**0**	3	1	38	0	**42**	**87**
12:00PM	0	11	0	0	**11**	0	28	5	0	**33**	0	0	0	0	**0**	0	0	25	0	**25**	**69**
12:15PM	0	16	0	0	**16**	0	28	20	0	**48**	0	0	0	0	**0**	0	0	24	0	**24**	**88**
12:30PM	0	13	0	0	**13**	0	24	8	0	**32**	0	0	0	0	**0**	0	0	21	0	**21**	**66**
Total	0	54	0	0	**54**	0	103	41	0	**144**	0	0	0	0	**0**	3	1	108	0	**112**	**310**
% Approach	0%	100%	0%	0%	**-**	0%	71.5%	28.5%	0%	**-**	0%	0%	0%	0%	**-**	2.7%	0.9%	96.4%	0%	**-**	-
% Total	0%	17.4%	0%	0%	**17.4%**	0%	33.2%	13.2%	0%	**46.5%**	0%	0%	0%	0%	**0%**	1.0%	0.3%	34.8%	0%	**36.1%**	-
PHF	-	0.844	-	-	**0.844**	-	0.920	0.513	-	**0.750**	-	-	-	-	**-**	0.250	0.250	0.711	-	**0.667**	0.881
Lights	0	15	0	0	**15**	0	85	19	0	**104**	0	0	0	0	**0**	3	1	98	0	**102**	221
% Lights	0%	27.8%	0%	0%	**27.8%**	0%	82.5%	46.3%	0%	**72.2%**	0%	0%	0%	0%	**-**	100%	100%	90.7%	0%	**91.1%**	71.3%
Articulated Trucks	0	30	0	0	**30**	0	8	17	0	**25**	0	0	0	0	**0**	0	0	6	0	**6**	61
% Articulated Trucks	0%	55.6%	0%	0%	**55.6%**	0%	7.8%	41.5%	0%	**17.4%**	0%	0%	0%	0%	**-**	0%	0%	5.6%	0%	**5.4%**	19.7%
Buses and Single-Unit Trucks	0	9	0	0	**9**	0	10	5	0	**15**	0	0	0	0	**0**	0	0	4	0	**4**	28
% Buses and Single-Unit Trucks	0%	16.7%	0%	0%	**16.7%**	0%	9.7%	12.2%	0%	**10.4%**	0%	0%	0%	0%	**-**	0%	0%	3.7%	0%	**3.6%**	9.0%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
Midday Peak (Mar 24 2026 11:45AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



S 18th Ave & US 30 WB Ramp - TMC

Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:30PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

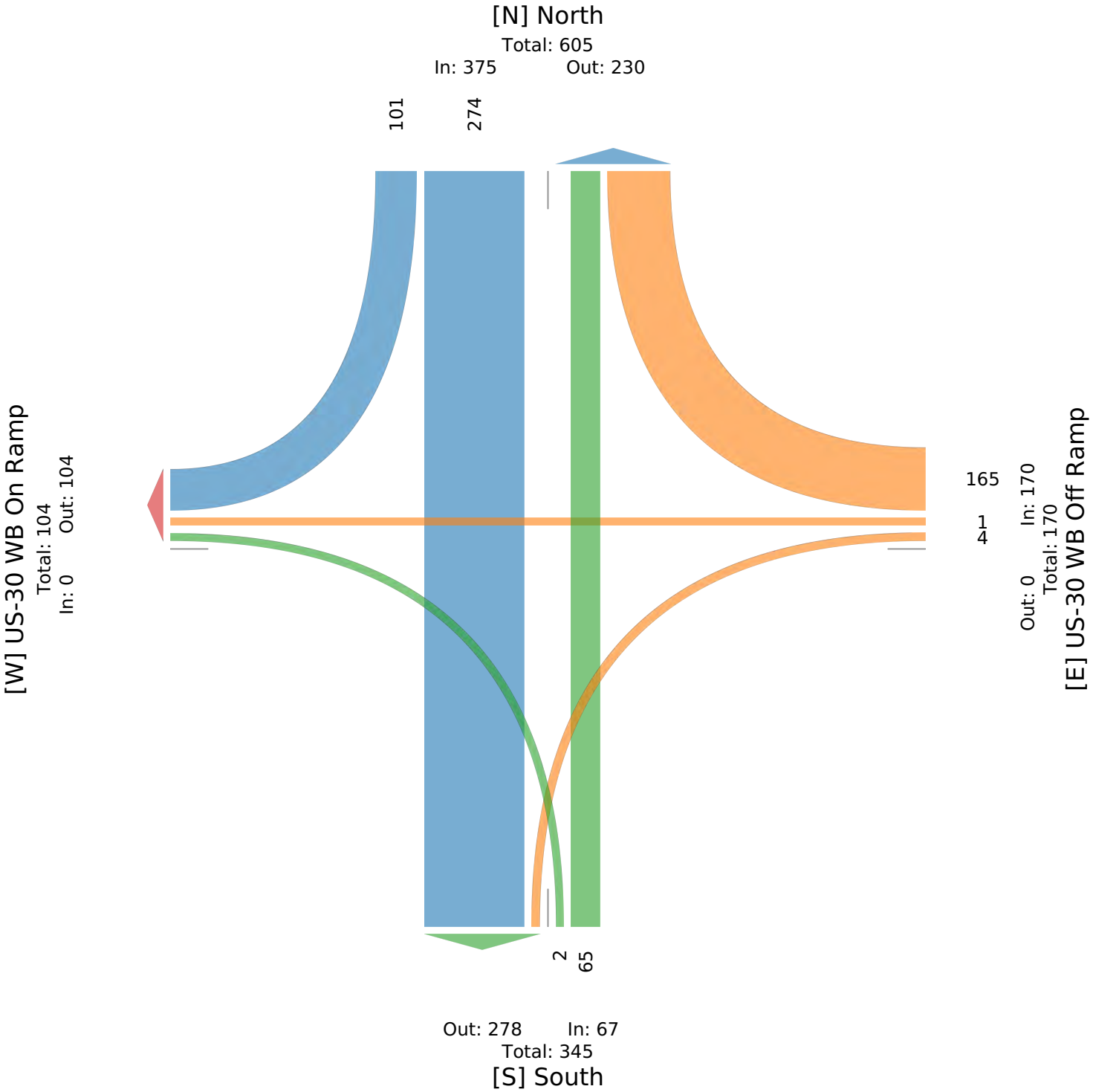
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Leg	South					North					US-30 WB On Ramp					US-30 WB Off Ramp					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2026-03-24 3:30PM	0	21	0	0	**21**	0	74	24	0	**98**	0	0	0	0	**0**	2	0	49	0	**51**	**170**
3:45PM	1	16	0	0	**17**	0	58	22	0	**80**	0	0	0	0	**0**	1	1	50	0	**52**	**149**
4:00PM	1	11	0	0	**12**	0	67	35	0	**102**	0	0	0	0	**0**	0	0	32	0	**32**	**146**
4:15PM	0	17	0	0	**17**	0	75	20	0	**95**	0	0	0	0	**0**	1	0	34	0	**35**	**147**
Total	2	65	0	0	**67**	0	274	101	0	**375**	0	0	0	0	**0**	4	1	165	0	**170**	**612**
% Approach	3.0%	97.0%	0%	0%	**-**	0%	73.1%	26.9%	0%	**-**	0%	0%	0%	0%	**-**	2.4%	0.6%	97.1%	0%	**-**	-
% Total	0.3%	10.6%	0%	0%	**10.9%**	0%	44.8%	16.5%	0%	**61.3%**	0%	0%	0%	0%	**0%**	0.7%	0.2%	27.0%	0%	**27.8%**	-
PHF	0.500	0.774	-	-	**0.798**	-	0.913	0.721	-	**0.919**	-	-	-	-	**-**	0.500	0.250	0.825	-	**0.817**	0.900
Lights	2	45	0	0	**47**	0	263	83	0	**346**	0	0	0	0	**0**	2	0	161	0	**163**	556
% Lights	100%	69.2%	0%	0%	**70.1%**	0%	96.0%	82.2%	0%	**92.3%**	0%	0%	0%	0%	**-**	50.0%	0%	97.6%	0%	**95.9%**	90.8%
Articulated Trucks	0	14	0	0	**14**	0	7	15	0	**22**	0	0	0	0	**0**	0	1	1	0	**2**	38
% Articulated Trucks	0%	21.5%	0%	0%	**20.9%**	0%	2.6%	14.9%	0%	**5.9%**	0%	0%	0%	0%	**-**	0%	100%	0.6%	0%	**1.2%**	6.2%
Buses and Single-Unit Trucks	0	6	0	0	**6**	0	4	3	0	**7**	0	0	0	0	**0**	2	0	3	0	**5**	18
% Buses and Single-Unit Trucks	0%	9.2%	0%	0%	**9.0%**	0%	1.5%	3.0%	0%	**1.9%**	0%	0%	0%	0%	**-**	50.0%	0%	1.8%	0%	**2.9%**	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

S 18th Ave & US 30 WB Ramp - TMC
Tue Mar 24, 2026
PM Peak (Mar 24 2026 3:30PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1385966, Location: 42.004083, -92.883683

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625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Appendix B – Traffic Analysis Output

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	10	7	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	10	7	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	11	8	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	555	665	132	528	666	105	264	0	0	210	0	0
Stage 1	272	272	-	387	387	-	-	-	-	-	-	-
Stage 2	283	392	-	141	279	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	415	379	893	396	344	875	1275	-	-	1322	-	-
Stage 1	710	683	-	562	565	-	-	-	-	-	-	-
Stage 2	701	605	-	798	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	378	348	893	331	316	875	1275	-	-	1322	-	-
Mov Cap-2 Maneuver	378	348	-	331	316	-	-	-	-	-	-	-
Stage 1	706	679	-	519	522	-	-	-	-	-	-	-
Stage 2	643	559	-	723	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	9.99	13.89	2.65	0.26
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1018	-	-	805	415	94	-	-
HCM Lane V/C Ratio	0.072	-	-	0.104	0.024	0.006	-	-
HCM Ctrl Dly (s/v)	8	0.3	-	10	13.9	7.7	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	83	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	83	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	94	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	8.7	10.1	9.5	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	5%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	95%	75%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	44	56
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	42	42
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	49	63
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.156	0.098	0.019	0.025	0.067	0.246	0.088	0.012	0.08	0.099
Departure Headway (Hd)	6.133	5.287	6.517	6.012	5.307	5.988	5.484	4.779	5.845	5.645
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	581	672	545	590	667	595	648	741	608	629
Service Time	3.912	3.066	4.314	3.809	3.103	3.766	3.262	2.557	3.631	3.431
HCM Lane V/C Ratio	0.157	0.098	0.018	0.025	0.067	0.249	0.09	0.012	0.081	0.1
HCM Control Delay, s/veh	10.1	8.6	9.4	9	8.5	10.7	8.8	7.6	9.1	9.1
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.1	0.1	0.2	1	0.3	0	0.3	0.3

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	242	4	113	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	242	4	113	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	263	4	123	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	194	325	61	193	0	-	-	-	0
Stage 1	-	-	-	132	132	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	742	587	984	1294	-	0	0	-	-
Stage 1	0	0	0	852	782	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	740	585	984	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	740	585	-	-	-	-	-	-	-
Stage 1	-	-	-	850	779	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		10.06	0.27	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	978	-	-
HCM Lane V/C Ratio	0.003	-	0.273	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	109	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	109	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	125	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	12.73		0	7.39
HCM LOS	B	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.212	0.082	-
HCM Ctrl Dly (s/v)	-	-	12.7	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.3	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	6	4	8	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	6	4	8	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	9	6	12	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	790	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	233	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	264	236	714	198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	264	236	-	198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	720	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.81	18.26	0.26	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	597	299	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.388	0.091	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	14.8	18.3	8.3	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	0.3	0	-	-

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	98	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	98	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	124	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	10.8	11.3	12.2	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	68%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	32%	28%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	72%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	153	173	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	49	49	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	194	219	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.354	0.349	0.021	0.181	0.224	0.187	0.069	0.018	0.154	0.146
Departure Headway (Hd)	6.588	5.745	7.296	6.787	6.075	7.491	6.981	6.268	6.948	6.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	544	624	489	527	589	477	511	568	514	524
Service Time	4.344	3.501	5.061	4.552	3.84	5.264	4.754	4.04	4.717	4.584
HCM Lane V/C Ratio	0.357	0.351	0.02	0.182	0.226	0.189	0.068	0.018	0.156	0.147
HCM Control Delay, s/veh	12.9	11.6	10.2	11.1	10.6	12	10.3	9.2	11	10.8
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	1.6	1.6	0.1	0.7	0.9	0.7	0.2	0.1	0.5	0.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	274	101
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	274	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	301	111

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	226	488	36	412	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	151	412	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	710	479	1029	1019	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	837	593	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	708	478	1029	1019	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	708	478	-	-	-	-	-	-	-
Stage 1	-	-	-	923	829	-	-	-	-	-	-	-
Stage 2	-	-	-	837	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.36	0.25	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1019	-	1011	-	-
HCM Lane V/C Ratio	0.002	-	0.185	-	-
HCM Ctrl Dly (s/v)	8.5	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	10.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	272	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	272	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	313	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	641	645	7	-	-	-	-	0	0	6	0	0
Stage 1	639	639	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	326	354	1018	0	0	0	0	-	-	1614	-	0
Stage 1	390	427	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	262	286	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	262	286	-	-	-	-	-	-	-	-	-	-
Stage 1	314	344	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.64		0	7.44
HCM LOS	C	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	266	1614	-
HCM Lane V/C Ratio	-	-	0.277	0.194	-
HCM Ctrl Dly (s/v)	-	-	23.6	7.8	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.7	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	91	22	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	91	22	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	99	24	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	588	785	132	604	743	149	264	0	0	298	0	0
Stage 1	305	305	-	431	431	-	-	-	-	-	-	-
Stage 2	283	480	-	173	312	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	393	323	893	347	309	817	1275	-	-	1225	-	-
Stage 1	680	661	-	527	538	-	-	-	-	-	-	-
Stage 2	701	552	-	762	613	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	352	291	893	285	278	817	1275	-	-	1225	-	-
Mov Cap-2 Maneuver	352	291	-	285	278	-	-	-	-	-	-	-
Stage 1	665	647	-	486	496	-	-	-	-	-	-	-
Stage 2	642	509	-	680	600	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.08	15.2	2.05	0.79
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	577	-	-	792	363	278	-	-
HCM Lane V/C Ratio	0.072	-	-	0.106	0.027	0.02	-	-
HCM Ctrl Dly (s/v)	8	0.3	-	10.1	15.2	8	0.1	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	98	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	98	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	111	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	8.8	10.2	9.5	9.2
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	4%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	96%	78%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	51	63
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	49	49
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	58	72
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.157	0.098	0.019	0.025	0.068	0.248	0.089	0.012	0.094	0.113
Departure Headway (Hd)	6.176	5.33	6.576	6.071	5.365	6.042	5.538	4.833	5.85	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	576	666	539	584	660	589	642	733	607	626
Service Time	3.96	3.114	4.375	3.87	3.163	3.823	3.319	2.613	3.636	3.461
HCM Lane V/C Ratio	0.158	0.099	0.019	0.026	0.068	0.251	0.09	0.012	0.096	0.115
HCM Control Delay, s/veh	10.1	8.7	9.5	9	8.6	10.8	8.9	7.7	9.3	9.2
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.1	0.2	1	0.3	0	0.3	0.4

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	280	4	156	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	280	4	156	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	304	4	170	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	241	372	85	193	0	-	-	-	0
Stage 1	-	-	-	178	178	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	688	552	951	1294	-	0	0	-	-
Stage 1	0	0	0	800	746	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	686	551	951	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	686	551	-	-	-	-	-	-	-
Stage 1	-	-	-	798	743	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		10.65	0.19	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	945	-	-
HCM Lane V/C Ratio	0.003	-	0.327	-	-
HCM Ctrl Dly (s/v)	7.8	-	10.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	152	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	152	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	175	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	13.64		0	7.39
HCM LOS	B	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.296	0.082	-
HCM Ctrl Dly (s/v)	-	-	13.6	7.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	101	4	22	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	101	4	22	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	153	6	33	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	790	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	233	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	256	236	714	198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	256	236	-	198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	700	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	14.91	71.46	0.26	0.1
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	593	227	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.391	0.847	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	14.9	71.5	8.3	0	-
HCM Lane LOS	A	A	-	B	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	6.6	0	-	-

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	112	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	112	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	142	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	10.9	11.4	12.5	11
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	35%	31%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	69%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	180	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	56	56	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	203	228	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.371	0.366	0.021	0.183	0.226	0.188	0.069	0.018	0.155	0.147
Departure Headway (Hd)	6.586	5.778	7.35	6.841	6.128	7.548	7.038	6.325	6.996	6.863
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	545	620	485	522	583	474	506	562	510	520
Service Time	4.341	3.532	5.12	4.61	3.897	5.327	4.817	4.102	4.769	4.636
HCM Lane V/C Ratio	0.372	0.368	0.021	0.184	0.228	0.19	0.069	0.018	0.157	0.148
HCM Control Delay, s/veh	13.2	11.9	10.3	11.2	10.7	12.1	10.3	9.2	11.1	10.8
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	1.7	1.7	0.1	0.7	0.9	0.7	0.2	0.1	0.5	0.5

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	312	144
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	312	144
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	343	158

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	247	577	36	501	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	171	501	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	686	426	1029	937	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	814	541	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	684	425	1029	937	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	684	425	-	-	-	-	-	-	-
Stage 1	-	-	-	922	829	-	-	-	-	-	-	-
Stage 2	-	-	-	814	541	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.38	0.26	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	937	-	1009	-	-
HCM Lane V/C Ratio	0.002	-	0.185	-	-
HCM Ctrl Dly (s/v)	8.9	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	310	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	310	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	356	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	728	732	7	-	-	-	-	0	0	6	0	0
Stage 1	726	726	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	280	313	1018	0	0	0	0	-	-	1614	-	0
Stage 1	343	386	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	218	244	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	218	244	-	-	-	-	-	-	-	-	-	-
Stage 1	267	301	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	29.21		0	7.57
HCM LOS	D	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	221	1614	-
HCM Lane V/C Ratio	-	-	0.333	0.221	-
HCM Ctrl Dly (s/v)	-	-	29.2	7.9	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.8	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	71	5	1	3	84	183	328	65	230	13
Future Vol, veh/h	5	1	71	5	1	3	84	183	328	65	230	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	20	20	20	5	5	5	7	7	7
Mvmt Flow	5	1	77	5	1	3	91	199	357	71	250	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	1136	132	827	965	278	264	0	0	555	0	0
Stage 1	398	398	-	560	560	-	-	-	-	-	-	-
Stage 2	283	738	-	267	405	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.9	6.9	7.3	4.2	-	-	4.24	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.9	5.9	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.7	4.2	3.5	2.25	-	-	2.27	-	-
Pot Cap-1 Maneuver	336	201	893	235	225	668	1275	-	-	977	-	-
Stage 1	599	601	-	438	466	-	-	-	-	-	-	-
Stage 2	701	422	-	667	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	281	169	893	180	189	668	1275	-	-	977	-	-
Mov Cap-2 Maneuver	281	169	-	180	189	-	-	-	-	-	-	-
Stage 1	552	554	-	400	426	-	-	-	-	-	-	-
Stage 2	635	386	-	561	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.44	20.65	1.25	2.23
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	268	-	-	746	240	707	-	-
HCM Lane V/C Ratio	0.072	-	-	0.112	0.041	0.072	-	-
HCM Ctrl Dly (s/v)	8	0.4	-	10.4	20.7	9	0.4	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	13	40	130	51	8	61	39	39	2	141	14
Future Vol, veh/h	9	13	40	130	51	8	61	39	39	2	141	14
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	13	13	13	1	1	1	12	12	12	10	10	10
Mvmt Flow	10	15	45	148	58	9	69	44	44	2	160	16
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	9	10.5	9.8	9.6
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	76%	0%	100%	0%	0%	100%	0%	0%	3%	0%
Vol Thru, %	24%	33%	0%	100%	0%	0%	100%	0%	97%	83%
Vol Right, %	0%	67%	0%	0%	100%	0%	0%	100%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	59	9	13	40	130	51	8	73	85
LT Vol	61	0	9	0	0	130	0	0	2	0
Through Vol	20	20	0	13	0	0	51	0	71	71
RT Vol	0	39	0	0	40	0	0	8	0	14
Lane Flow Rate	91	66	10	15	45	148	58	9	82	96
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.163	0.102	0.019	0.026	0.071	0.258	0.093	0.013	0.136	0.156
Departure Headway (Hd)	6.396	5.55	6.852	6.346	5.638	6.289	5.784	5.077	5.96	5.831
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	563	647	524	565	636	573	621	707	603	616
Service Time	4.116	3.269	4.578	4.072	3.364	4.007	3.502	2.795	3.679	3.549
HCM Lane V/C Ratio	0.162	0.102	0.019	0.027	0.071	0.258	0.093	0.013	0.136	0.156
HCM Control Delay, s/veh	10.4	8.9	9.7	9.2	8.8	11.2	9.1	7.9	9.6	9.6
HCM Lane LOS	B	A	A	A	A	B	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.1	0.2	1	0.3	0	0.5	0.5

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	3	1	396	4	287	0	0	115	63
Future Vol, veh/h	0	0	0	3	1	396	4	287	0	0	115	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	4	4	4	14	14	14	14	14	14
Mvmt Flow	0	0	0	3	1	430	4	312	0	0	125	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	383	514	156	193	0	-	-	-	0
Stage 1	-	-	-	321	321	-	-	-	-	-	-	-
Stage 2	-	-	-	63	193	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.58	6.58	6.98	4.38	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.54	4.04	3.34	2.34	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	545	458	856	1294	-	0	0	-	-
Stage 1	0	0	0	660	645	-	-	-	0	0	-	-
Stage 2	0	0	0	935	734	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	543	457	856	1294	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	543	457	-	-	-	-	-	-	-
Stage 1	-	-	-	658	643	-	-	-	-	-	-	-
Stage 2	-	-	-	935	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		13.58	0.11	0
HCM LOS	-	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1294	-	850	-	-
HCM Lane V/C Ratio	0.003	-	0.511	-	-
HCM Ctrl Dly (s/v)	7.8	-	13.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	3	-	-

Intersection	
Int Delay, s/veh	14.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	283	0	0	0	0	0	0	5	3	111	2	0
Future Vol, veh/h	283	0	0	0	0	0	0	5	3	111	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	13	13	13	2	2	2	2	2	2	10	10	10
Mvmt Flow	325	0	0	0	0	0	0	6	3	128	2	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	267	1	-	-	-	-	0	0	9	0	0
Stage 1	257	257	-	-	-	-	-	-	-	-	-	-
Stage 2	3	9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.76	6.76	7.16	-	-	-	-	-	-	4.3	-	-
Critical Hdwy Stg 1	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.76	5.76	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	4.13	3.43	-	-	-	-	-	-	2.3	-	-
Pot Cap-1 Maneuver	643	613	1048	0	0	0	0	-	-	1553	-	0
Stage 1	694	667	-	0	0	0	0	-	-	-	-	0
Stage 2	988	863	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	590	563	1048	-	-	-	-	-	-	1553	-	-
Mov Cap-2 Maneuver	590	563	-	-	-	-	-	-	-	-	-	-
Stage 1	637	612	-	-	-	-	-	-	-	-	-	-
Stage 2	988	863	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	18.32		0	7.39
HCM LOS	C	-		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	590	1553	-
HCM Lane V/C Ratio	-	-	0.551	0.082	-
HCM Ctrl Dly (s/v)	-	-	18.3	7.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	3.3	0.3	-

Intersection	
Int Delay, s/veh	126.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	3	136	333	4	66	6	280	4	3	349	25
Future Vol, veh/h	14	3	136	333	4	66	6	280	4	3	349	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	92	92	92	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	17	17	17	5	5	5	6	6	6
Mvmt Flow	21	5	206	362	4	72	9	424	6	5	529	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	789	1005	283	721	1021	215	567	0	0	430	0	0
Stage 1	557	557	-	445	445	-	-	-	-	-	-	-
Stage 2	232	448	-	276	576	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.84	6.84	7.24	4.2	-	-	4.22	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.84	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.67	4.17	3.47	2.25	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	240	714	~ 288	212	745	981	-	-	1098	-	-
Stage 1	482	510	-	524	537	-	-	-	-	-	-	-
Stage 2	749	571	-	666	465	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	245	236	714	~ 198	208	745	981	-	-	1098	-	-
Mov Cap-2 Maneuver	245	236	-	~ 198	208	-	-	-	-	-	-	-
Stage 1	480	508	-	518	531	-	-	-	-	-	-	-
Stage 2	665	565	-	467	463	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	15.07	$ 477.53	0.26	0.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	73	-	-	587	225	26	-	-
HCM Lane V/C Ratio	0.009	-	-	0.395	1.946	0.004	-	-
HCM Ctrl Dly (s/v)	8.7	0.1	-	15.1	$ 477.5	8.3	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.9	31.8	0	-	-

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

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	76	105	71	28	8	104	156	124	8	110	6
Future Vol, veh/h	8	76	105	71	28	8	104	156	124	8	110	6
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles, %	4	4	4	3	3	3	5	5	5	11	11	11
Mvmt Flow	10	96	133	90	35	10	132	197	157	10	139	8
Number of Lanes	1	1	1	1	1	1	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	3
HCM Control Delay, s/veh	11.1	11.7	13.4	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	57%	0%	100%	0%	0%	100%	0%	0%	13%	0%
Vol Thru, %	43%	39%	0%	100%	0%	0%	100%	0%	87%	90%
Vol Right, %	0%	61%	0%	0%	100%	0%	0%	100%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	202	8	76	105	71	28	8	63	61
LT Vol	104	0	8	0	0	71	0	0	8	0
Through Vol	78	78	0	76	0	0	28	0	55	55
RT Vol	0	124	0	0	105	0	0	8	0	6
Lane Flow Rate	230	256	10	96	133	90	35	10	80	77
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.421	0.416	0.021	0.187	0.232	0.193	0.071	0.018	0.158	0.15
Departure Headway (Hd)	6.576	5.859	7.514	7.004	6.29	7.718	7.207	6.492	7.139	7.006
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	611	474	510	568	463	494	547	499	509
Service Time	4.339	3.622	5.292	4.782	4.068	5.505	4.994	4.279	4.923	4.789
HCM Lane V/C Ratio	0.421	0.419	0.021	0.188	0.234	0.194	0.071	0.018	0.16	0.151
HCM Control Delay, s/veh	14.1	12.8	10.5	11.4	11	12.4	10.6	9.4	11.3	11
HCM Lane LOS	B	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	2.1	2	0.1	0.7	0.9	0.7	0.2	0.1	0.6	0.5

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	4	1	165	2	65	0	0	428	276
Future Vol, veh/h	0	0	0	4	1	165	2	65	0	0	428	276
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	21	21	21	6	6	6
Mvmt Flow	0	0	0	4	1	181	2	71	0	0	470	303

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	-	311	849	36	774	0	-	-	-	0
Stage 1	-	-	-	76	76	-	-	-	-	-	-	-
Stage 2	-	-	-	235	774	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	7.54	6.54	6.94	4.52	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	3.52	4.02	3.32	2.41	-	-	-	-	-
Pot Cap-1 Maneuver	0	0	0	618	296	1029	725	-	0	0	-	-
Stage 1	0	0	0	925	831	-	-	-	0	0	-	-
Stage 2	0	0	0	747	407	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	-	-	-	616	295	1029	725	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	616	295	-	-	-	-	-	-	-
Stage 1	-	-	-	922	829	-	-	-	-	-	-	-
Stage 2	-	-	-	747	407	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v		9.43	0.3	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	725	-	999	-	-
HCM Lane V/C Ratio	0.003	-	0.187	-	-
HCM Ctrl Dly (s/v)	10	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

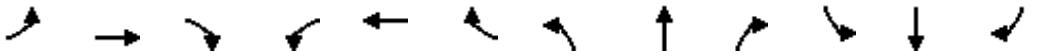
Intersection	
Int Delay, s/veh	15.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1	1	0	0	0	0	3	2	426	12	0
Future Vol, veh/h	62	1	1	0	0	0	0	3	2	426	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	20	20	20	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1	1	0	0	0	0	3	2	490	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	995	999	7	-	-	-	-	0	0	6	0	0
Stage 1	993	993	-	-	-	-	-	-	-	-	-	-
Stage 2	2	6	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.9	6.9	7.3	-	-	-	-	-	-	4.14	-	-
Critical Hdwy Stg 1	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.9	5.9	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.7	4.2	3.5	-	-	-	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	175	214	1018	0	0	0	0	-	-	1614	-	0
Stage 1	231	284	-	0	0	0	0	-	-	-	-	0
Stage 2	971	852	-	0	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	122	149	1018	-	-	-	-	-	-	1614	-	-
Mov Cap-2 Maneuver	122	149	-	-	-	-	-	-	-	-	-	-
Stage 1	161	198	-	-	-	-	-	-	-	-	-	-
Stage 2	971	852	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	69.48		0	7.97
HCM LOS	F	-		

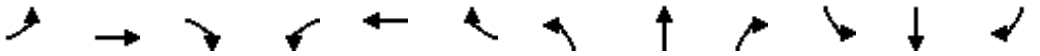
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	124	1614	-
HCM Lane V/C Ratio	-	-	0.593	0.303	-
HCM Ctrl Dly (s/v)	-	-	69.5	8.2	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	3	1.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	136	101	4	22	6	280	4	3	349	25
Future Volume (veh/h)	14	3	136	101	4	22	6	280	4	3	349	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1648	1648	1648	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	21	5	206	153	6	33	9	424	6	5	529	38
Peak Hour Factor	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	17	17	17	5	5	5	6	6	6
Cap, veh/h	196	24	349	532	34	57	176	1182	17	167	1110	79
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	81	96	1409	979	136	231	25	3377	47	10	3173	227
Grp Volume(v), veh/h	232	0	0	192	0	0	230	0	209	302	0	270
Grp Sat Flow(s),veh/h/ln	1587	0	0	1347	0	0	1796	0	1653	1802	0	1607
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	2.9
Cycle Q Clear(g_c), s	2.8	0.0	0.0	2.3	0.0	0.0	2.1	0.0	2.1	2.9	0.0	2.9
Prop In Lane	0.09		0.89	0.80		0.17	0.04		0.03	0.02		0.14
Lane Grp Cap(c), veh/h	569	0	0	623	0	0	796	0	578	794	0	562
V/C Ratio(X)	0.41	0.00	0.00	0.31	0.00	0.00	0.29	0.00	0.36	0.38	0.00	0.48
Avail Cap(c_a), veh/h	1442	0	0	1232	0	0	1588	0	1330	1605	0	1293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	7.2	0.0	0.0	5.4	0.0	5.4	5.7	0.0	5.7
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.4	0.3	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.3	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	0.0	0.0	7.5	0.0	0.0	5.6	0.0	5.8	6.0	0.0	6.3
LnGrp LOS	A			A			A		A	A		A
Approach Vol, veh/h		232			192			439			572	
Approach Delay, s/veh		7.9			7.5			5.7			6.1	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		12.3		10.0		12.3		10.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.1		4.8		4.9		4.3				
Green Ext Time (p_c), s		2.2		1.1		2.9		1.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			6.5									
HCM 7th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	3	136	333	4	66	6	280	4	3	349	25
Future Volume (veh/h)	14	3	136	333	4	66	6	280	4	3	349	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1648	1648	1648	1826	1826	1826	1811	1811	1811
Adj Flow Rate, veh/h	21	5	206	362	4	72	9	424	6	5	529	38
Peak Hour Factor	0.66	0.66	0.66	0.92	0.92	0.92	0.66	0.66	0.66	0.66	0.66	0.66
Percent Heavy Veh, %	2	2	2	17	17	17	5	5	5	6	6	6
Cap, veh/h	143	56	654	627	21	89	118	925	13	111	869	62
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	57	123	1426	941	47	194	24	3378	47	9	3174	227
Grp Volume(v), veh/h	232	0	0	438	0	0	230	0	209	302	0	270
Grp Sat Flow(s),veh/h/ln	1606	0	0	1182	0	0	1796	0	1653	1802	0	1607
Q Serve(g_s), s	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	3.5	0.0	0.0	4.9
Cycle Q Clear(g_c), s	3.1	0.0	0.0	10.0	0.0	0.0	3.5	0.0	3.5	4.9	0.0	4.9
Prop In Lane	0.09		0.89	0.83		0.16	0.04		0.03	0.02		0.14
Lane Grp Cap(c), veh/h	853	0	0	737	0	0	603	0	453	602	0	440
V/C Ratio(X)	0.27	0.00	0.00	0.59	0.00	0.00	0.38	0.00	0.46	0.50	0.00	0.61
Avail Cap(c_a), veh/h	1787	0	0	1384	0	0	930	0	763	937	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.8	0.0	0.0	7.3	0.0	0.0	10.1	0.0	10.1	10.6	0.0	10.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.8	0.0	0.0	0.4	0.0	0.7	0.6	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	1.5	0.0	0.0	1.1	0.0	1.0	1.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.9	0.0	0.0	8.0	0.0	0.0	10.5	0.0	10.9	11.3	0.0	12.0
LnGrp LOS	A			A			B		B	B		B
Approach Vol, veh/h		232			438			439			572	
Approach Delay, s/veh		5.9			8.0			10.7			11.6	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		19.9		13.7		19.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		15.5		35.5		15.5		35.5				
Max Q Clear Time (g_c+I1), s		5.5		5.1		6.9		12.0				
Green Ext Time (p_c), s		1.8		1.6		2.3		3.4				

Intersection Summary	
HCM 7th Control Delay, s/veh	9.7
HCM 7th LOS	A

Notes

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


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