

DIXON ENGINEERING DEPARTMENT
171 South 5th St. Dixon, California (707) 678-7030

MEMORANDUM

TO: Austin Forde, Associate Planner

FROM: Christopher Fong, P.E., City Engineer

DATE: February 3, 2026

SUBJECT: PLAPP25-0181 - Valley of the Sacred Heart Education Center PC 02a

The Dixon Engineering Department has reviewed the application for the proposed Valley of the Sacred Heart (VSH) Education Center project. Our comments are based on the re-submitted application package, dated August 1, 2025 and the Project Civil Plans consisting of approximately 8 full-sized sheets dated February 25, 2025. In a memo dated October 13, 2025, we deemed the application complete and provided a few comments regarding the subject application. However, there were three additional comments: 1) a verbal comment that was never memorialized; 2) revisions to the proposed mitigation measure regarding intersection improvements; and 3) incorporation of a Traffic Management Plan. Those three comments are made here regarding two new recommended traffic mitigation measures and revisions to the existing traffic mitigation measure:

Conditions of Approval:

Transportation/Access:

1. Prior to the issuance of grading permits, and to minimize the potential for conflicts with pedestrian safety (i.e., trucks in the vicinity of students arriving/departing from the existing Valley of the Sacred Heart Academy to the south of the project site), the project Applicant, or his/her designee, shall ensure that truck trip delivery hours are specified in all construction plans and specifications. Specifically, construction plans and specifications shall state that construction activities involving truck delivery trips, including material deliveries, equipment drop-offs, and haul truck movements, shall occur only between the hours of 9:30 a.m. and 2:30 p.m., Monday through Friday. The project Applicant, or his/her designee, shall enforce the established truck trip delivery hours and maintain records of delivery times, which shall be provided to the City of Dixon Engineering Department upon request.

2. Prior to the issuance of building permits, the project Applicant shall enter into an agreement with the City of Dixon (City) Engineering Department to construct the conversion of the East A Street/North 2nd Street intersection from a two-way stop-controlled (TWSC) intersection to an all-way stop-controlled (AWSC) intersection. The agreement shall outline the necessary permits for construction activities within the City's right-of-way. The AWSC intersection shall be designed and constructed in accordance with the City's most recent Engineering Design Standards.

Upon completion of the AWSC intersection improvements, and subject to the satisfaction of the City's Engineering Department, the project Applicant shall be reimbursed for the total cost of construction of the AWSC intersection, minus the project's fair-share contribution. Based on the project's anticipated trip generation (i.e., 64 total trips), when compared to that of the total trips generated at the East A Street/North 2nd Street intersection (i.e., 761 total trips), the project Applicant shall be reimbursed for approximately 91.5 percent of the total construction cost.

3. Prior to the initiation of construction, the project Applicant shall prepare a Traffic Management Plan (TMP) for review and approval by the City of Dixon Traffic Engineer or his/her designee. The TMP shall include measures such as construction signage, limitations on timing for lane closures to avoid peak hours, temporary striping plans, and the need for a construction flag person to direct traffic during heavy equipment use. The TMP shall specify that one direction of travel in each direction must always be maintained for the surrounding roadways throughout project construction. The TMP shall be incorporated into project specifications for verification prior to final plan approval.



VALLEY OF THE SACRED ACADEMY TIS PEER REVIEW MEMORANDUM

DATE: June 20, 2025

TO: Christopher Fong | City of Dixon

FROM: Josh Pilachowski, Bincy Koshy | DKS Associates

SUBJECT: Peer Review of Valley of the Sacred Heart Academy TIS, Project #25486-000
City of Dixon, CA - DRAFT

This memorandum summarizes the review of the Local Transportation Study and California Environmental Quality Act (CEQA) Analysis Report for Valley of the Sacred Heart Academy prepared by T.Kear Transportation, Planning & Management Inc (TKTPM). Peer reviews are used to ensure that traffic impact analyses and CEQA studies are prepared in accordance with the standards of care, best practices, and established conventions and procedures typically used in the traffic engineering profession.

SCOPE OF REVIEW

DKS Associates has conducted a peer review of a PDF document titled *Valley of the Sacred Heart Academy Transportation Impact Study and Local Transportation Study* prepared by TKTPM and dated March 6, 2025. This is the first review of this document.

REVIEW SCOPE

The documents were reviewed for content and compliance and significant concerns were identified in the study regarding a lack of detail in the trip generation, distribution and assignment analysis, missing review of access spacing and emergency access. Additionally, we have identified a few items which should be revised or clarified in the next version of the study to avoid any confusion. A more thorough and detailed review will be conducted once these items are clarified. The review team is happy to discuss any items further if needed.

EXECUTIVE SUMMARY

- Under 'LTA Findings', please provide a full summary of the findings and deficiencies instead of referencing the relevant sections. The summary currently lacks a summary of "no project" conditions and incorrectly states that there are no deficiencies. Instead, the summary should state that the project does not "worsen" baseline conditions, per Section 4.3.

CEQA ANALYSIS REVIEW

- Crash history, thresholds, results, and findings – This section currently includes only segment crash data. Please also include crash history and comparison crash rates for the study intersections and specifically highlight any serious injury or fatal crashes to ensure safety concerns are thoroughly addressed.
- The last paragraph includes an orphaned footnote "MVM⁴" which should be removed.

LOCAL TRANSPORTATION ANALYSIS REVIEW

- Provide reference to the City's relevant policies such as Section 15 – Transportation Impact Analysis in the Engineering Design Standards wherever necessary (Standards of Significance) throughout the LTA.
- Consistent with Section 2, language referencing 'Significance', 'Impacts', and 'Mitigations' should not be used to reference operational deficiencies except in reference to potential safety impacts.
- National Cooperative Highway Research Program (NCHRP) 255 Adjustment - NCHRP 765 (2014) superseded NCHRP 255 (1982) - the majority of the methodology was kept consistent for the adjustment procedure, but the NCHRP 765 should be referenced, and the work should be checked against the newer report.
- Intersection turning movement counts – Please add a reference to midday data collection and define the collection time periods for AM, midday, and PM data collection in this section per the traffic counts collected.
- Trip Generation – Include the trip generation table directly in this section instead of only referencing Table 1, to improve clarity and readability. Additional comments regarding trip generation are provided in the 'Figures and Tables' section.
- Trip Distribution and Assignment – The proposed trip assignment varies across the AM (50% to the school, 50% to the church), midday, and PM peak periods, but these distinctions are not clearly stated in the trip assignment section. This lack of clarity makes it difficult for readers to follow the corresponding figures, especially since each figure spans three pages. All trip assignment assumptions should be explicitly stated in the report for ease of interpretation and consistency. As stated in Section 15 – Transportation Impact Analysis in the Engineering Design Standards, the technical analysis, steps, and assumptions used should be clearly stated for trip assignment.

- The statement on Figures 9 and 11 that negative inbound and outbound trips from the current school site are assumed to use side streets is unclear on the impact on the analysis. If significant trips are expected to occur off West A street, then those routes should be included in the list of study intersections.
- Section 6.2 - Provide calculations for the 'deterministic delay calculation' and difference from typical delay calculations, if any.
- There is no mention of review of site conformity and proposed driveways with the City's access standards. Provide a section in the study for review of proposed driveways, access spacing etc. per the city's standards.
- Section 9 (LTA internal circulation/access site plan review) states that a review of emergency vehicle access was conducted, however this is not provided in the study. Provide a review of the emergency vehicle access per City's standards.

FIGURES AND TABLES

- Figure 3 – Explain this figure in more detail. Specifically, explain what the afternoon bell schedules are for each of the schools. In the figure, there are two markings for some of the schools during the afternoon hours which is confusing.
- Figure 4 and 5 – Show project location in the figures.
- Figure 7-16 - The traffic volumes/project trips figure layout currently spans 3 pages for each figure. This affects readability and is hard to digest for the reader – suggest updating figure template to fit the figure in a single page.
- Figure 7 – There is a discrepancy in existing traffic counts between intersection 5 and intersection 6 of around 30 trips (EBT volumes) during the midday period. Although a driveway is present, traffic volumes should be balanced as necessary using professional judgement to not show big discrepancies.
- Table 7 is missing headers.
- Figure 9 – Intersections 5, 6, 7, 8 are not shown. Revise figure to show all intersections.
- Table 1 – Anticipated Trip Generation:
 - o The land use used (532 - Private School K-12) has *very* few data points associated with it, all data points are for schools significantly larger than the existing and proposed school, and the provided data points are for an urban/suburban context which is inconsistent with the City of Dixon. While there aren't many alternatives, the existing school may have local data, or a composite approach based on Elem/Middle/High school based on enrollment might be used – or at least used to confirm that the assumed rates for LU532 are reasonable.

- o The ITE Trip Generation Manual, 11th Edition, Land Use 532 (Private School K-12) does not provide mid-day trip generation estimates. Please clearly state in the study how the mid-day trips were calculated.
- o For 'Existing School' trip generation, the rate based on average rate for the AM peak period (peak hour of generator) was used, however, for 'New School' trip generation, the fitted curve equation was used for the same time period. This represents an inconsistency in methodology for the same land use. Provide justification for the differing approaches or revise the analysis to ensure a consistent and conservative methodology, in line with ITE guidance on selecting between average rates and fitted curve equations. The traffic operations analysis for all scenarios should be revised accordingly.
- Figure 10 – Explain ingress and egress trips at the 2 driveways (intersection 9 and intersection 10) - it appears that some project trips are bypassing the driveways rather than entering the site. Please provide a clear explanation for the driveway trip distribution and justify any assumptions made in the trip assignment. Additionally, it should be explained why inbound trips entering at intersection 9 are not equal to existing trips at intersection 10.
- Figure 11 – Clearly state in the figure caption that these are the project trips.
- Spot checks were conducted to review traffic volumes in the figures. Some inconsistencies were identified. Example:
 - o Figure 11 – Intersection 2 westbound through volume is shown as 3 in the AM peak period and 1 in the midday peak period, however on review, this should be westbound right turn volumes in the respective time periods.
 - o Given that only spot checks were conducted, and inconsistencies were found, TKTPM should recheck and review all analyses and figures for accuracy and consistency to avoid erroneous results.

**Valley of the Sacred Heart Academy
Transportation Impact Study, and
Local Transportation Study**

Dixon, California

Prepared for:
City of Dixon, and
Valley of the Sacred Heart

Prepared By



TRANSPORTATION PLANNING
& MANAGEMENT, INC.

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July 18, 2025

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REVISION HISTORY

Date	Title	Comment
Feb 14, 2025	Draft TIS	
March 6, 2025	Draft TIS	Revised introduction to remove old project reference.
July 18, 2025	Final TIS	Addressed peer review comments

EXECUTIVE SUMMARY

This report is divided into three main sections:

- Introduction in Section 1,
- California Environmental Quality Act (CEQA) analysis in Section 2, and
- Local Transportation Analysis (LTA) which addresses General Plan and local analysis needs in Sections 3-9.

Findings are reported in sections 2.1, 2.2, 2.3, 8.3, 9.1, 9.2, 9.3, 9.4, 9.5, and 9.6. those findings are summarized in this executive summary after a brief project description.

Of note is that the proposed school is only anticipated to add 46 peak hour trips during its busiest period (the AM peak hour). Per the City's Engineering Design Standards (DS-15-03) a project this small would normally only be required to disclose trip generation rather than conducting the detailed analysis presented by this report.

- Projects generating fewer than 50 trips require only a trip generation letter documenting that the project generates fewer than 50 peak-hour trips.
- Projects generating between 50 and 100 peak hour trips require a Focused Local Transportation Analysis, which typically adds safety analysis at adjacent intersections.
- Projects anticipated to generate more than 100 peak hour trips require a Local Transportation Analysis that includes consultation with the City and traffic operations and safety analysis across a larger study area.

With peak hour trip generation below the 50-trip threshold for a Focused Local Transportation Analysis, the Valley of the Sacred Heart Academy would normally only require a trip generation letter. Because of the location of the proposed school on a congested portion of East A Street, the City requested a full transportation analysis, with specific consideration to the safety of pedestrians/students crossing West A between the existing school at Saint Peter's Catholic Church and the proposed school site.

Project Description

The Valley of the Sacred Heart Academy (the School) is currently operating with 88 students at the existing Saint Peter's Catholic Church. Those 88 students are from 57 families, and 10 of those families (17.5%) report that they participate in carpools. 50% of the students attend 8 AM Mass each day prior to school. The existing school site will be closed, and the existing students will move to the new school, located across East A Street from Saint Peter's. Total enrolment is anticipated

to increase from 88 students to 120 students (a 36% increase, i.e., 32 additional students). School drop-off in the morning will be evenly split between the existing church and the School site (as 50% of the students attend 8 AM Mass). Afternoon pick-up will occur primarily at the school site, utilizing the driveway and parking lot.

The new school site consists of three parcels (APN 0115-084-070, 0115-084-080 and 0115-084-090) at 219 East A Street in Dixon, California. Requested entitlements include:

- A conditional use permit for the School,
- Design review, and
- A lot adjustment/merger to consolidate the three existing parcels into a single parcel.

The School is consistent with the adopted General Plan land use designation and zoning, which allows for community institutional uses.

Study Area and Scenarios

The LTA portion of the Transportation Impact Study area generally consists of the A Street corridor from the School near 2nd Street to Almond Street, within the City of Dixon, California. Key roadways within the study area, and study intersections, are shown in **Figure ES-1**.

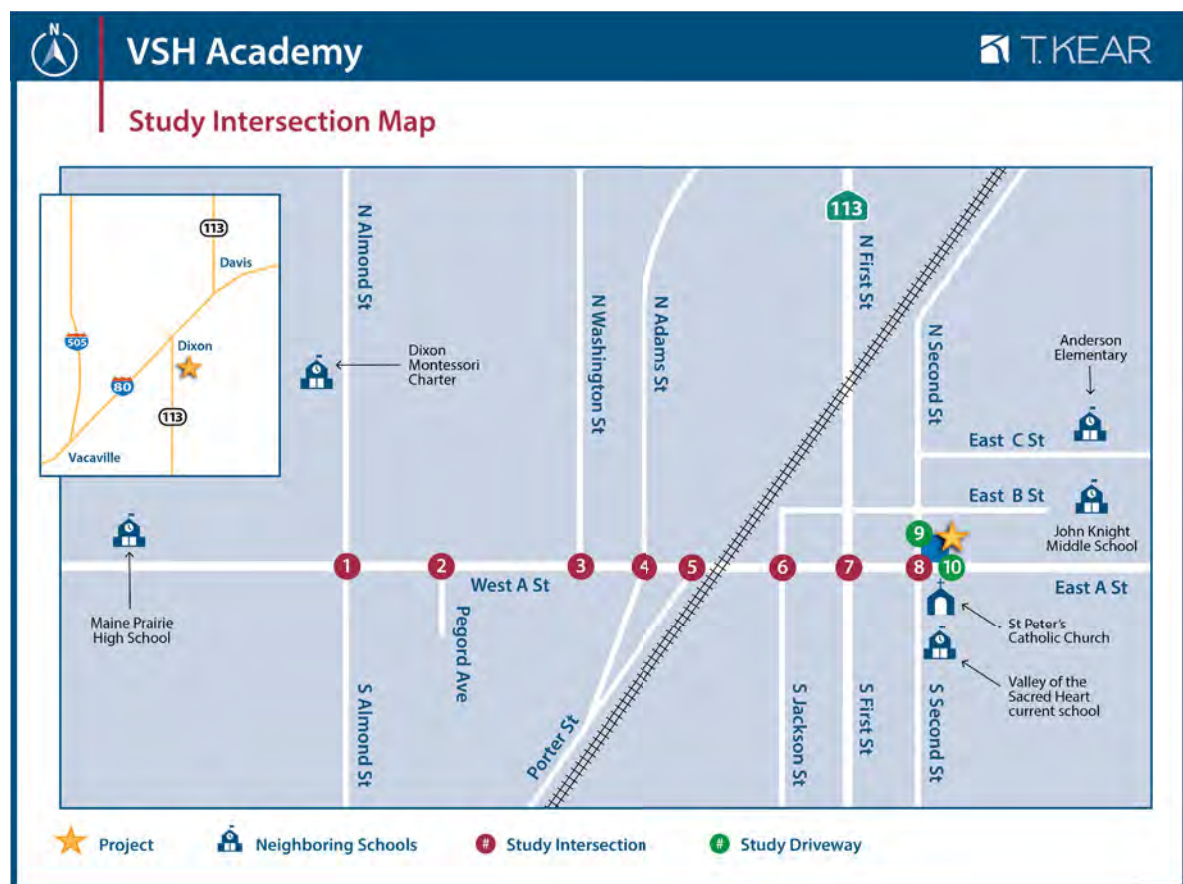


Figure ES-1 School area roadways including study intersections

The LTA portion of this study determines the weekday AM, mid-day, and PM peak-hour level-of-service at study intersections under the following six scenarios:

- Existing 2024 without School condition;
- Existing 2024 with School condition;
- Existing Plus Approved Projects (EPAP) without School condition;
- EPAP with School condition;
- Cumulative without School condition; and
- Cumulative with School condition

CEQA Findings

CEQA analysis and findings focused on three key CEQA areas:

- **CEQA VMT finding:** The School is anticipated to have a less-than-significant impact on VMT. See **Section 2.1** for more information.
- **CEQA bicycle, pedestrian and transit findings:** The School is anticipated to have a less-than-significant impact on bicycle facilities, pedestrian facilities, transit and facilities/service. See **Section 2.2** for more information.
- **CEQA crash history finding:** The School has a less-than-significant history on crash rates. See **Section 2.3** for more information.

LTA Findings

LTA findings focus on the identification of level-of-service and queueing deficiencies and on-site circulation (driveway throat depth, parking, potential need for right turn deceleration lanes and pedestrian access).

Existing without School Condition Deficiencies

Two of the study intersections have calculated 95th percentile queue lengths that exceed available storage prior to the addition of School traffic:

- West A Street/North Adams Street,
- A Street/1st Street.

Additional detail can be found in **Section 5.1** of this report.

Existing with School Condition Deficiencies

The two study intersections where preexisting 95th percentile queues are anticipated to exceed available storage are anticipated to have queues that continue to exceed available storage:

- West A Street/North Adams Street,
- A Street/1st Street.

However, the School is anticipated to add less than one full car length to these queues and thus the School is not considered to worsen these queues. See **Section 5.3** and **Section 8.1** for more detail.

EPAP without School Condition Deficiencies

One study intersection is anticipated to have deficient level-of-service and two of the study intersections have anticipated 95th percentile queue lengths that exceed available storage prior to the addition of School traffic:

- The West A Street/Jackson Street study intersection is anticipated to operate at level-of-service E during the PM peak hour. Specifically, the northbound left turn movement from the minor street (Jackson Street) to the major street (West A Street) is anticipated to have more than 35 seconds of delay based on the deterministic delay calculation used in Highway Capacity Manual analysis. That calculation does not account for the gaps in traffic created by adjacent traffic signals. Those gaps tend to reduce delay on the minor approaches at TWSC intersections, indeed the results from simulation of this intersection for the AM and mid-day peak-hours resulted in acceptable level-of-service and delay under 35 seconds. The deterministic result for the PM peak hour at intersection six is considered reasonable for purposes of identifying deficiencies that are created or worsened by the School but, likely presents worse delay and level-of-service than what vehicles will experience.
- Two of the study intersections have calculated 95th percentile queue lengths that exceed available storage prior to the addition of School traffic (West A Street/North Adams Street, and A Street/1st Street).

Additional detail can be found in **Section 6.2** of this report.

EPAP with School Condition Deficiencies

There is one study intersection where preexisting level-of-service E Conditions are anticipated to exist:

- West A Street/Jackson Street

The shared northbound approach to this interaction is anticipated to experience 35.3 seconds of delay with or without the School. Because School traffic is anticipated to increase delay by less than 2 seconds, this deficiency is not considered to be related to the School.

There are two study intersections where preexisting queues are anticipated to exceed available storage:

- West A Street/North Adams Street,
- A Street/1st Street.

However, the School is anticipated to add less than one full car length to these queues and thus the School is not considered to worsen these queues. See **Section 6.3** and **Section 8.2** for more detail.

Cumulative without School Condition Deficiencies

There are two locations with level-of-service deficiencies before the addition of School traffic:

- **West A Street/Jackson Street** is anticipated to operate at level-of-service E with 44.7 seconds of delay on the northbound approach during the mid-day peak-hour; and level-of-service F with 81.4 seconds of delay on the northbound approach during the PM peak-hour.
- **West A Street/2nd Street** is anticipated to operate at level-of-service F with 114.6 seconds of delay on the northbound approach during the AM peak-hour, and 86.5 seconds of delay on the northbound approach during the mid-day peak-hour.

In addition to those level-of-service deficiencies, 95th percentile left turn queues continue to exceed pocket lengths at West A Street/North Adams Street, and A Street/1st Street. Additional detail can be found in **Section 7.2** of this report.

Cumulative with School Condition Deficiencies

Two deficiencies were identified, and two abatement measures are recommended. More information can be found in **Section 7.3** and **Section 8.3**:

School Traffic Deficiency/Abatement 1 (West A Street/Jackson Street)

Deficiency: The northbound approach at this intersection operates at level-of-service F during the mid-day peak period, and School traffic adds more than 2 seconds to that delay.

Abatement: Convert the West A Street/Jackson Street intersection from TWSC to AWSC, which addresses level-of-service at the intersection. However, AWSC will increase queueing on eastbound A street, with anticipated eastbound queues extending across the UPRR Martinez Subdivision. General Plan “Action” M-2.D calls for installation of a “queue-cutter” signal at the A Street railway crossing to address eastbound queueing and improve safety at this location. That eastbound queue cutter traffic signal should be installed with the AWSC at this location.

The proposed AWSC at this location is needed based on level-of-service and warranted based upon the need to control left turn conflicts at this location.¹

Responsibility: The Applicant is responsible for their fair-share of the cost of Abatement 1. Fair-share is estimated based on the School’s proportion of traffic growth between

¹ Caltrans (2024) California MUTCD 2014 edition, revision 8, Section 2B-07, January 11, 2024, accessed February 13, 2025, <https://dot.ca.gov/programs/safety-programs/camutcd>.

existing and cumulative conditions. Here we estimate fair-share based on the observed and estimated mid-day traffic through the West A Street/Jackson Street intersection:

- Existing condition without School mid-day peak-hour volume: 1102
- Cumulative condition with School mid-day peak-hour volume: 1281
- School only mid-day peak-hour volume: 4
- Fair-share: $4/(1281-1102) = 2.235\%$

TkTPM does not provide cost estimates but, given the relatively limited experience of most communities with queue-cutter signals, we did look for contemporary cost data for queue-cutter signals. A queue cutter signal in Sacramento² (the “Power Inn Queue Cutter” Project) had a total cost of about \$2.3 million for design and installation of the signal, including relocation of utilities. \$1.9 million of that \$2.3 million, was funded by Section 130 Railroad-Highway Crossings Program (RHCP) grants. Assuming similar costs here (though West A street is a much smaller road than Power Inn Road) implies a School Responsibility of \$8,940 toward the queue cutter signal. The Applicant’s civil engineer should develop their own cost estimates for the queue-cutter rather than relying on the above data. Note that 2.235% of an AWSC installation is relatively trivial.

Timing: Payment of fees prior to issuance of building permit.

Abatement Demonstration: Delay, level-of-service, and 95% queueing results for cumulative conditions for Cumulative without School and Cumulative with School and abatements is shown in **Table 26** through **Table 28** in **Section 8.3**. With the recommended abatement, no General Plan level-of-service policy deficiencies exist at this location.

School Traffic Deficiency/Abatement 2 (East A Street/2nd Street)

Deficiency: The northbound approach at this intersection operates at level-of-service F during the AM peak period, and School traffic adds more than 2 seconds to that delay.

Abatement: Convert the East A Street/2nd Street intersection from TWSC to AWSC, which addresses level-of-service at the intersection.

The proposed AWSC at this location is needed based on level-of-service and warranted based upon the lack of sight distance on the southbound approach at this location³.

² Sacramento (2024) Contract Change Order and Budgetary Adjustments: Power Inn Queue Cutter Project (T15186000), City of Sacramento, accessed online on February 13, 2025, https://sacramento.granicus.com/MetaViewer.php?view_id=21&clip_id=5964&meta_id=785274

³ Caltrans (2024) California MUTCD 2014 edition, revision 8, Section 2B-07, January 11, 2024, accessed February 13, 2025, <https://dot.ca.gov/programs/safety-programs/camutcd>.

Responsibility: The Applicant is responsible for their fair-share of the cost of Abatement 2. Fair-share is estimated based on the School's proportion of traffic growth between existing and cumulative conditions. Here we estimate fair-share based on the observed and estimated AM traffic through the East A Street/2nd Street intersection:

- Existing condition without School mid-day peak-hour volume: 697
- Cumulative condition with School mid-day peak-hour volume: 923
- School only mid-day peak-hour volume: 64
- Fair-share: $64/(923-697) = 28.319\%$

Timing: Payment of fees prior to issuance of building permit.

Additional notes: The southbound approach currently has inadequate sight distance and queues extend through the intersection during the AM and mid-day peak-hours.

Abatement Demonstration: Delay, level-of-service, and 95% queueing results for cumulative conditions for Cumulative without School and Cumulative with School and abatements is shown in **Table 26** through **Table 28** in **Section 8.3**. With the recommended abatement, no General Plan level-of-service policy deficiencies exist at this location.

Trip Generation Findings

Trip Generation for the Existing and Proposed School is listed in Table 1 of the report (located in Section 2.1 of this report).

- New Daily Trips: 80
- New AM peak-hour trips: 46
- New mid-day peak-hour trips: 13
- New PM peak-hour trips: 5

Parking Findings

Parking is analyzed in Section 9.1 of this report. Additional detail on these findings can be found there.

- The twelve on-site parking spaces are adequate but could be reduced to ten or fewer while remaining in compliance with zoning requirements. Reducing on-site parking from twelve to ten spaces would accommodate a full 25-foot driveway throat depth on the North 2nd Street entrance driveway.
- A reciprocal parking permit between the School and Saint Peter's Catholic Church shall be agreed upon if required to provide one off-street parking space per three School employees.

Minimum Required Throat Depth Findings

Minimum Required Throat Depth (MRTD) is analyzed in Section 9.2 of this report. Additional detail on these findings can be found there.

- MRTD is 25-feet, but as currently proposed, the throat depth is limited to 10-feet. The applicant shall reduce on-site parking from twelve spaces to ten spaces to accommodate the MRTD of 25-feet.

Right-Turn Deceleration/Acceleration Lanes and Tapers for Driveways Findings

Right-turn deceleration/acceleration lanes and tapers for driveways are analyzed in Section 9.3 of this report. Additional detail on these findings can be found there.

- A right turn deceleration lane or taper is not required at the North 2nd Street driveway.

Pedestrian Access Findings

Pedestrian access is analyzed in Section 9.4 of this report. Additional detail on these findings can be found there.

- The applicant should convert the East A Street/2nd Street intersection from TWSC to AWSC prior to issuance of building permits to ensure pedestrians can safely cross East A Street. Note that the existing “in-street” pedestrian signs on the uncontrolled crossings of West A Street require removal with installation of AWSC. Because there are existing site distance deficiencies at this location, the Project is only responsible for its fair-share of the cost of the conversion from AWSC to TWSC. For an existing deficiency, the fair-share of the improvement would be the Project’s proportion of traffic to total traffic of about 8.5% (i.e., 64 School trips/761 total trips).

Emergency Vehicle Access Findings

The proposed School site complies with emergency vehicle access requirements. The security gate on the North 2nd Street driveway requires approval by the fire marshal and must have an approved means of emergency operation.

Driveway Location Findings

Driveway locations for non-residential infill projects are evaluated on a case-by-case basis. Proposed driveway locations maximize spacing to adjacent streets. Distance to adjacent residential driveways is adequate as identified by the acceptable traffic operations at School Driveways in the level-of-service analysis presented in **Section 5** through **Section 7** of this report. Proposed driveway locations are appropriate for the School and its neighbors.

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1. INTRODUCTION

This report documents anticipated deficiencies and impacts of the proposed Valley of the Sacred Heart Academy (School) on the motorized and unmotorized transportation systems in Dixon, California. This report addresses the Traffic Impact Analysis requirements from the City's Engineering Design Standards. After the executive summary and introduction this report contains two key parts:

- A transportation impact study (TIS) addressing the requirements of the California Environmental Quality Act (CEQA), including vehicle miles traveled (VMT).
- A local transportation analysis (LTA) addressing City of Dixon General Plan policies, including level-of-service. (Level-of-service is defined in more detail later in this report.)

This two-part format is necessary because Senate Bill 743 (Steinberg, 2013) prohibited level-of-service as a criterion for determining transportation impacts under CEQA. Dixon's General Plan includes policies related to level-of-service. Therefore level-of-service is only considered within the context of the General Plan, and not within the context of CEQA.

The analysis considers all potential (CEQA) Vehicle Miles of Travel (VMT) impacts associated with the School, and the School's consistency with General Plan traffic operations (level-of-service) policy at Dixon intersections. This study has been prepared on behalf of the City of Dixon and with input from their consultant (DKS Associates).

Of note is that the proposed School is only anticipated to add 46 peak hour trips during its busiest period (the AM peak hour). Per the City's Engineering Design Standards (DS-15-03) A project this small would normally only be required to disclose trip generation rather than conducting the detailed analysis presented by this report.

- Projects generating fewer than 50 trips require only a trip generation letter documenting that the project generates fewer than 50 peak-hour trips.
- Projects generating between 50 and 100 peak hour trips require a Focused Local Transportation Analysis, which typically adds safety analysis at adjacent intersections.
- Projects anticipated to generate more than 100 peak-hour trips require a Local Transportation Analysis that includes consultation with the City and traffic operations and safety analysis across a larger study area.

With peak hour trip generation below the 50-trip threshold for a Focused Local Transportation Analysis, the Valley of the Sacred Hart Academy would normally only require a trip generation letter. Because of the location of the proposed school on a congested portion of East A street, the City requested a full transportation analysis, with specific consideration to the safety of pedestrians/students crossing West A between the existing school at Saint Peter's Catholic Church and the proposed school site.

1.1 Project Description

The Valley of the Sacred Heart Academy is currently operating with 88 students at the existing Saint Peter's Catholic Church. Those 88 students are from 57 families, and 10 of those families (17.5%)

report that they participate in carpools. 50% of the students attend 8 AM Mass each day prior to school. The existing school site will be closed, and the existing students will move to the new school, located across East A Street from Saint Peter's. Total enrolment is anticipated to increase from 88 students to 120 students (a 36% increase, i.e., 32 additional students). School drop-off in the morning will be evenly split between the existing church and the School site (as 50% of the students attend 8 AM Mass). Afternoon pick-up will occur primarily at the school site, utilizing the driveway and parking lot.

The new school site consists of three parcels (APN 0115-084-070, 0115-084-080 and 0115-084-090) at 219 East A Street in Dixon, California. Requested entitlements include:

- A conditional use permit for the School,
- Design review, and
- A lot adjustment/merger to consolidate the three existing parcels into a single parcel.

The School site has a General Plan land use designation of Downtown Mixed Use (DMU) and is zoned as Planned Mixed Use (PMU-1). Pursuant to the above entitlements, the School is consistent with the adopted General Plan land use designation and zoning which allow for community institutional uses.

A vicinity map is provided as **Figure 1** and a preliminary site plan is provided as **Figure 2**. Twelve parking spaces are provided on-site. The School and Saint Peters Catholic Church may enter into a reciprocal parking agreement for parking spaces that the School currently uses at the Church (approximately 31 parking spaces in the Saint Peter's Catholic Church parking lot are currently used by the School. Proposed School access includes an entrance from North 2nd Street (north of A Street) and an exit to East A Street. A one-way will connect the entrance and exit (as shown in **Figure 2**).



Figure 1 Project location

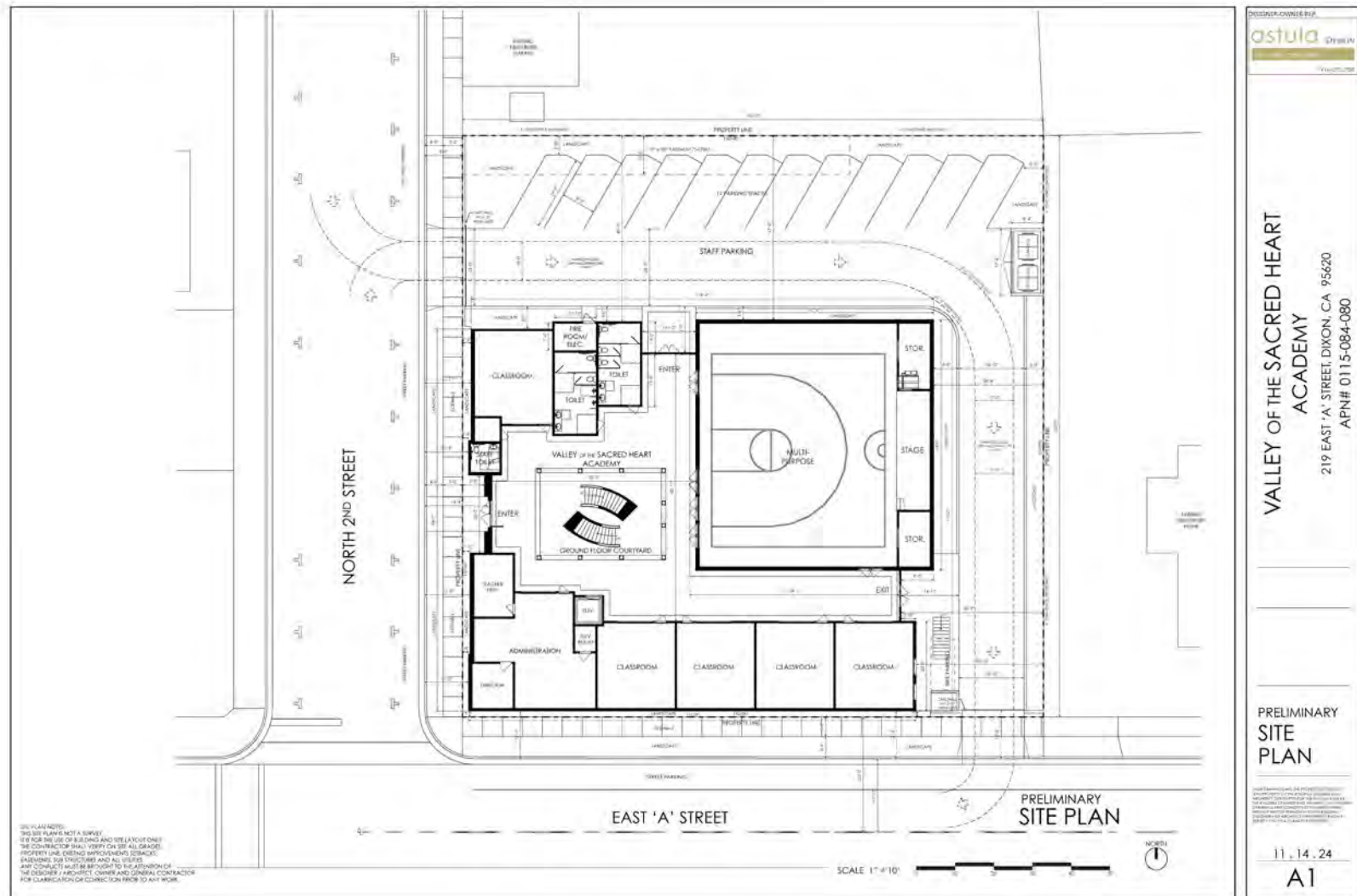


Figure 2 Preliminary site plan.

1.2 Study Area Schools

Traffic along the School site's frontage (A Street) is affected greatly by the schedules for nearby schools. The bell schedules for Valley of the Sacred Heart and five other nearby schools are compared below (**Figure 3**). Where two times are listed at the end of the school day it reflects a staggered end to the day. For example, Anderson Elementary releases grades 1-3 at 2:40 and grades 4-5 at 2:45; Valley of the Sacred Heart releases grades 6-8 at 3PM and grades 9-12 at 3:20 PM⁴. The observed AM peak-hour occurred between 7:30 and 8:30 AM, which corresponds to the beginning of school day at nearby campuses. The observed mid-day peak occurred between 2:45 and 3:45 in the afternoon, which again corresponds well with the end of the school day at nearby campuses.

This report considers three peak-hours (AM, mid-day, and PM). The AM and mid-day peak-hours were assumed to adequately reflect the pick-up and drop-off traffic accessing nearby schools.

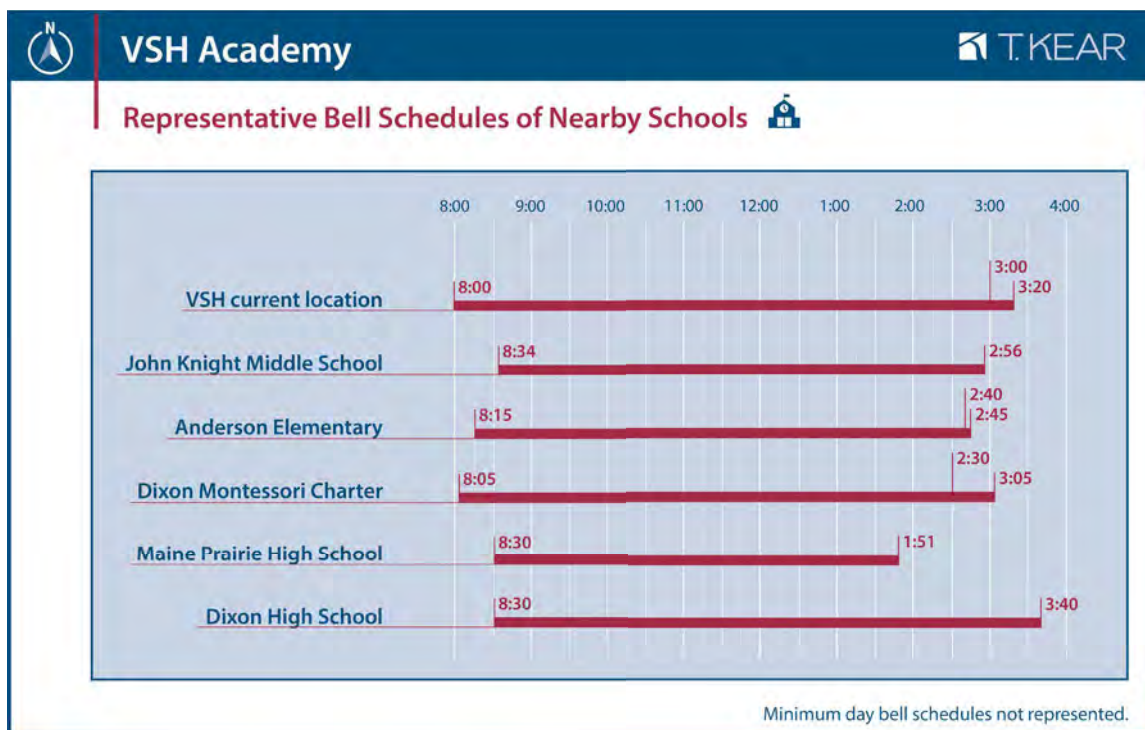


Figure 3. Comparison of bell schedules

1.3 Report Organization

The following sections are discussed after this Introduction:

- Section 2, focused on CEQA transportation analysis for the School, including:
 - Analysis requirements,
 - Methodology,
 - Significance criteria,

⁴ Note that the bell schedules shown are summaries, public elementary schools have a “half day” on Wednesday and Dixon Senior High has a half day on Fridays.

- o Results, and findings.
- Section 3 focused on the LTA, including:
 - o Study locations and scenarios,
 - o Methodology,
 - o Significance criteria,
 - o Results, and findings.

The CEQA analysis is intended to identify any potentially significant impacts under CEQA and appropriate mitigation measures (if needed). The School is then determined to have either a less-than-significant impact or a significant-unavoidable impact (if any) on VMT, bicycle infrastructure, pedestrian infrastructure, and safety.

The LTA analysis identifies what Section 15 of Dixon's Engineering Design Standards refers to as "significant transportation effects" and "improvements to address significant adverse effects" as "deficiencies" (relative to General Plan policies) and "abatementments". The use of the deficiencies and abatementments terminology in the LTA is intended to emphasis that those items are unique from impacts and mitigations under CEQA.

2. CEQA Analysis

Since July 2020, measures of automobile delay are no longer considered transportation impacts for the purposes of the California Environmental Quality Act (CEQA). In place of delay measures, Vehicle Miles Traveled (VMT) is now assessed as the primary measure of transportation impact under CEQA. Other potential CEQA impacts include conflicts with a plan or policy addressing the circulation system, creation of hazardous features, or inadequate emergency access.

Measurement methodology, baseline VMT rates, thresholds of significance, screening criteria, and mitigation measures are presented in more detail in the Dixon Senate Bill 743 Implementation Procedures Report⁵, and City's Transportation Impact Analysis guidance (Section 15 of the City's Engineering Design Standards).

2.1 VMT Methodology, Thresholds, Results, and Findings

VMT Methodology and Thresholds

Projects that cannot be assumed to have a less-than-significant impact on VMT require formal VMT analysis utilizing the Dixon citywide travel demand model (TDM), with appropriate adjustment for the assumed length of trips that cross the edge of the TDM's geographic domain. Adopted VMT thresholds of significance are shown below:

- **Residential projects** – should be compared to a threshold of significance of 18.5 VMT per capita.
- **Employment projects** – should be compared to a threshold of significance of 14.1 VMT per employee.
- **Retail or commercial projects** – any net increase in overall VMT would constitute an impact.
- **Medical uses** – may be analyzed using a similar approach to retail (net VMT impact). Medical facility employee VMT may also be considered for larger projects.
- **Industrial projects** – Determine whether there is significant light-duty vehicle VMT associated with the project, such as significant employee commute VMT. If so, compare the project VMT per employee to the appropriate threshold.
- **Mixed use projects** – Analyze each component land use separate or focus on predominant use (for example, analysis of a largely residential project with a small retail component could focus on the residential use).
- **Redevelopment projects** – consider the VMT of the previously existing use to account for the net impact.

Dixon has adopted screening procedures along with the above thresholds. If a project meets any of the VMT screening criteria listed below, the project can be assumed to have less than significant VMT impacts, and no further VMT analysis is required.

- **Small projects** - Projects generating fewer than 110 trips per day.
- **Affordable housing** - Projects consisting of 100 percent affordable housing units.
- **Local serving retail** - Generally less than 50,000 square feet per individual establishment.
- **Transit proximity** – Projects located within ½ mile of high-quality transit (as defined in Public Resources Code § 21064.3 – not currently applicable in Dixon).

⁵ Dixon City Council Resolution 22-053, adopted March 15, 2022

- **Project location** – Projects located in a low VMT area as shown in Figures 15-3 and 15-4 of the City’s March 2022 Engineering Design Standards.

VMT Results and Findings

The School can be assumed to have a less-than-significant impact on VMT based upon the “Small Projects” screening criterion. Estimated trip generation for the existing school, the proposed school, and the net increase in trips is shown in **Table 1** below.

Table 1. Anticipated Trip Generation

Description	Students	metric	Total	In	Out	Notes
New School	120	Daily Rate	2.48	50%	50%	Rate based on average rate
		Daily Trips	298	149	149	
		AM Rate	0.96	63%	37%	Peak hour of generator, rate based on fitted curve.
		AM Trips	116	73	43	
		Mid-day Rate	1.15	42%	58%	Peak hour of generator, rate based on fitted curve.
		Mid-day Trips	138	58	80	
		PM Rate	0.17	43%	57%	Peak hour of adjacent street, rate based on average rate.
		PM Trips	20	9	11	
Existing School	88	Daily Rate	2.48	50%	50%	Rate based on average rate
		Daily Trips	218	109	109	
		AM Rate	0.79	63%	37%	Peak hour of generator, rate based on average rate.
		AM Trips	70	44	26	
		Mid-day Rate	1.42	42%	58%	Peak hour of generator, rate based on fitted curve.
		Mid-day Trips	125	52	73	
		PM Rate	0.17	43%	57%	Peak hour of adjacent street, rate based on average rate.
		PM Trips	15	6	9	
Net increase (With new school)	32	New Daily Trips	80	40	40	
		New AM Trips	46	29	17	
		New Mid-Day Trips	13	6	7	
		New PM Trips	5	3	2	

Note: Rates are stated in terms of vehicle trips per student.

Source: ITE Trip Generation Manual, 11th edition, Land Use 532 (Private School K-12).

The School is anticipated to result in 80 additional trips per day, less than the 110 trips per day threshold for screening small projects.

CEQA VMT finding: The School is anticipated to have a less-than-significant impact on VMT.

2.2 Bicycle/Pedestrian/Transit Facilities

Thresholds-of-Significance

Per Section 15 of Dixon's Engineering Design Standards, a project is considered to have a significant impact under CEQA if it would:

- Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- Interfere with the implementation of a planned bikeway as shown in the General Plan; or
- Fail to provide adequate access for bicyclists and pedestrians, resulting in unsafe conditions, including unsafe bicycle/pedestrian, bicycle/motor vehicle, or pedestrian/motor vehicle conflicts.

The City has not adopted specific thresholds for transit impacts, however a project is generally considered to have a significant impact on transit if it would:

- Inhibit the use of transit facilities;
- Eliminate existing transit facilities; or
- Prevent the implementation of planned transit facilities.

Bicycle and Pedestrian Facilities Analysis and Results

The School frontage along East A Street and North 2nd Street includes sidewalk, curb, and gutter. Existing and proposed bicycle facilities are discussed in the 2020 Solano County Active Transportation Plan⁶, the 2040 Dixon General Plan, and are shown in **Figure 4** below. There are currently no bike lanes along either street frontage, however there are planned class II bike lanes along East A Street and a planned class III bike route along North 2nd Street.

The School does not eliminate or adversely affect an existing bikeway or pedestrian facility, Interfere with the implementation of a planned bikeway or pedestrian facility, nor does the School fail to provide adequate access for bicyclists and pedestrians.

⁶ 2020 STA, Solano Active Transportation Plan, Solano Transportation Authority, May 15, 2020, accessed online at <https://sta.ca.gov/sta-active-transportation-plan/> on February 6, 2025.

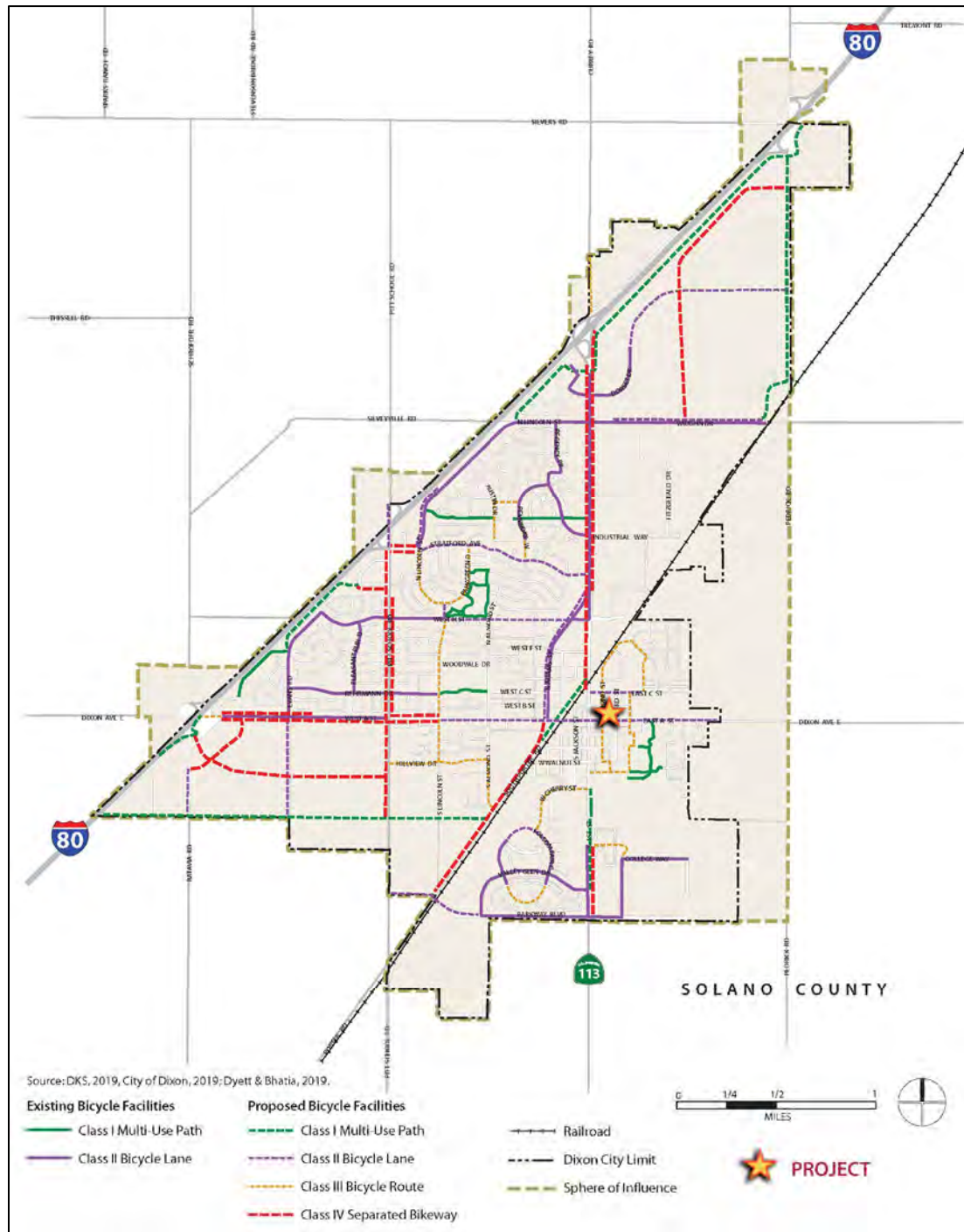


Figure 4. Existing and planned bicycle network (Adapted from: Dixon 2040 General Plan)

Transit Facilities Analysis and Results

Transit service in Dixon is limited to the Fairfield and Suisun Transit (FAST) Blue Line, and a public dial-a-ride transit system (Readi-Ride) that is administered by the City.

The Blue line is an express bus service that stops at the Dixon park and ride lot on Market Lane near Pitt School Road and Interstate 80 (I-80). The Blue line connects from the Walnut Creek Bay Area Rapid Transit (BART) station to the Sacramento Valley Station in downtown Sacramento, with key stops in between. Service is provided on roughly 1-hour headways during the peak commute period and less frequently mid-day. Limited Saturday service is provided with no service on Sundays.

The Dixon Readi-Ride is a public dial-a-ride transit system, which provides curb-to curb transit service within Dixon city limits. Service is available Monday through Friday from seven AM to four PM, exclusive of lunch time and holidays. Ride requests will be honored on a space-available basis. During peak hours, space is limited. It is in the customer's best interest to make a reservation at least one business day in advance for time sensitive rides such as medical appointments and work-related activities.

The School does not eliminate or adversely affect existing transit service or facilities, does not Interfere with the implementation of a planned transit services or facilities, nor does the School Inhibit the use of existing transit services or facilities.

Bicycle/Pedestrian/Transit Facilities Findings

The School is anticipated to have a less-than-significant impact on bicycle facilities.

The School is anticipated to have a less-than-significant impact on pedestrian facilities.

The School is anticipated to have a less-than-significant impact on transit services and facilities.

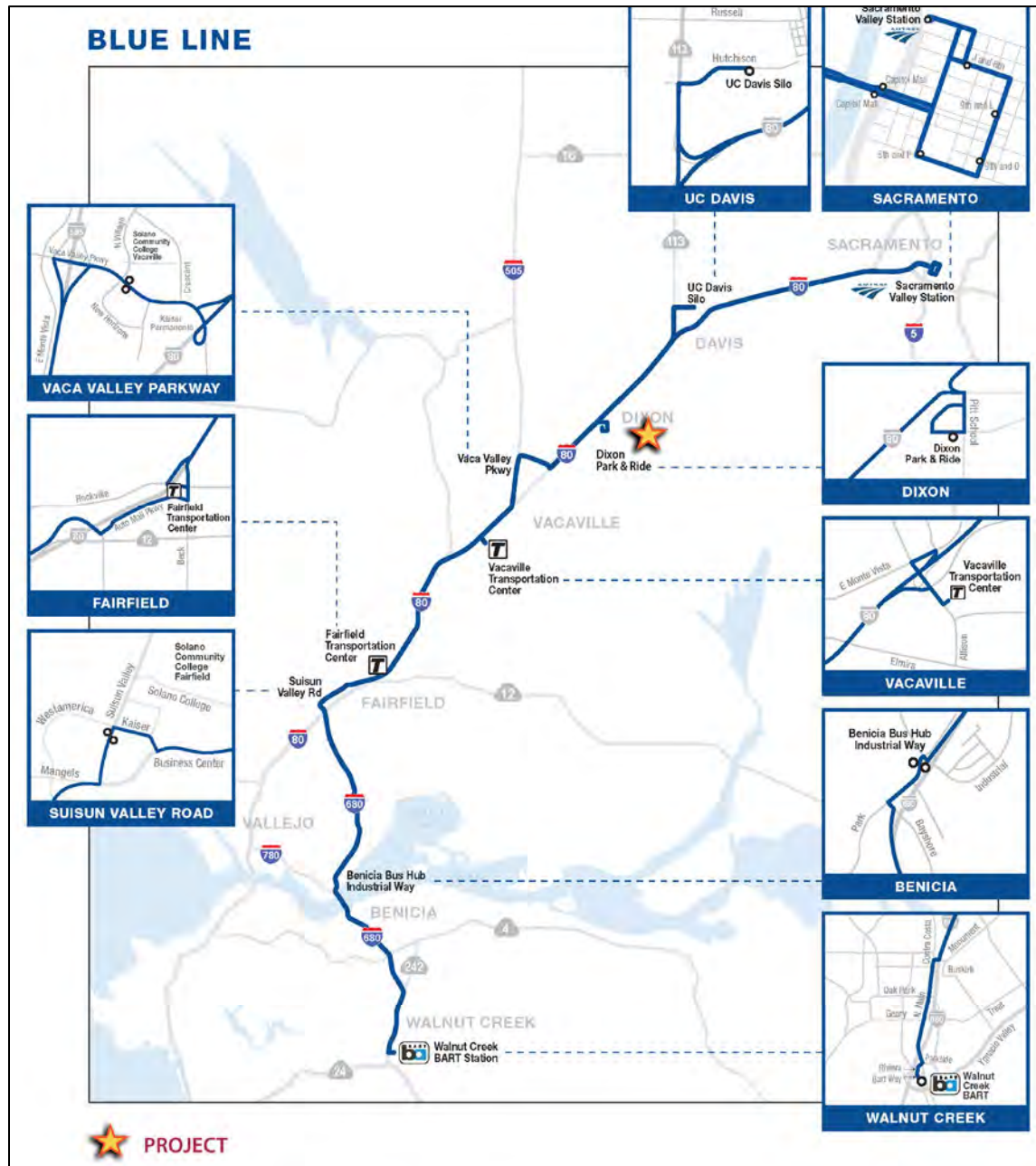


Figure 5. FAST Blue Line transit service (Adapted from: www.soltrans.org/routes/b)

2.3 Crash History Thresholds, Results, and Findings

A crash history review was made using data available from the Statewide Integrated Traffic Records System (SWITRS) database.⁷ Crash history analysis is done by comparing site specific accident rates to multi-year statewide averages for similar roadways published by Caltrans. The most recent data from Caltrans are for 2020-2022⁸. For this accident rate analysis, two segments were analyzed:

- 1st Street between the Union Pacific Railroad (UPRR) Martinez Subdivision and Dixon May Fair. This segment has an annual average daily traffic (AADT) volume of approximately 10,250 vehicles⁹, is 0.45 miles long, and experienced 11 crashes over the five-year lookback period. The computed crash rate is 0.58 crashes per million vehicle miles (MVM).
- West A Street between Almond Street and 1st Street. Based on collected traffic counts¹⁰ this segment has AADT of 6000 vehicles, is 0.75 miles long, and experienced 7 crashes over the five-year lookback period. The computed crash rate is 0.64 crashes per MVM.
- East A Street between 1st Street and the eastern city limit. Based on collected traffic counts⁶ this segment has AADT of 4700 vehicles, is 0.60 miles long, and experienced 2 crashes over the five-year lookback period. The computed crash rate is 0.23 crashes per MVM.

As significance criterion, the statewide 3-year average crash rate on 2-lane and 3-lane road facilities within suburban areas of 1.14 crashes per MVM was used. Results of this comparison are summarized in **Table 2** below. All three road segments have a lower crash rate than the average for similar California roads. There are no aspects of the Project that would be anticipated to effect crash rates.

Table 3 provides a summary of the available data on each crash. There are no locations where the crash history would warrant changes in intersection control. There are two noteworthy observations.

- At 1st Street/B Street, a northbound driver struck an elderly couple crossing 1st Street, killing a 70 year old female and causing serious injury to a 71 year old male. The accident occurred in November 2020, just after 8 PM. This location has “in-street” pedestrians signs on 1st Street. The School is not anticipated to effect crash rates at this location and a single fatality does not warrant a traffic signal. The fatal accident is highlighted in **Table 3**.
- Both crashes on East A Street involved bikes. This segment does not have bike lanes, though they are planned for the future. There is additional review of bicycle and pedestrian safety where this segment fronts the School within the LTA portion of this report.

Finding: The School has a less-than-significant history on crash rates.

⁷ TIMS (2025) Transportation Injury Mapping system, online at <https://tims.berkeley.edu/>, accessed February 7, 2025.

⁸ Caltrans (2024) 2022 Crash Data on California State Highways (road miles, travel, crashes, crash rates), online at <https://dot.ca.gov/programs/research-innovation-system-information/annual-collision-data>, page 8 “Suburban 4+ lane divided road” rates, accessed May 12, 2024.

⁹ Caltrans (2025) traffic Census Program, <https://dot.ca.gov/programs/traffic-operations/census>, accessed February 7, 2025.

¹⁰ Average of AM and PM peak-hour counts in 2024, K factor of 10, and assumed 3% annual growth rate.

Table 2. Road segment crash rates

Road Segment	Crashes per MVM	Significance Threshold (Crashes per MVM)	Potential CEQA Impact
1st Street (between UPRR Martinez Subdivision and Dixon May Fair)	0.58	1.14	Segment has lower crash rate than similar California road segments
West A Street (Between Almond St and 1st St)	0.64	1.14	
East A Street (Between 1st St and Dixon City Limit)	0.23	1.14	

Table 3. Crash summary

Crash Id	Date @ time	Simplified Location	Injury	Bike or Ped	DUI	Notes
1st Street						
9535329	12/20/2022 @ 13:46	28' south of 1st/C	Possible	Yes		SB car hit NB truck, stationary pedestrian injured
9141967	12/20/2019 @ 12:40	60' North of 1st/B	Possible			NB rear end
9132953	04/03/2020 @ 15:05	1st/B	Possible			WB car stopped in front of SB car
9211634	11/08/2020 @ 20:04	1st/B	Severe and Fatal	Yes		NB car hit EB pedestrians
9141983	12/04/2019 @ 08:00	1st/A	Possible			NB rear end
9625873	09/13/2023 @ 12:20	1st/Mayes	Minor			EB car hit NB Car
9149515	05/03/2020 @ 03:25	66' north of 1st/Broadway	Possible			wrong way vehicle
9568524	03/03/2023 @ 12:55	1st/Walnut	Possible			EB left car hit SB truck
9325019	08/23/2021 @ 15:18	14' east of 1st/Walnut	Minor	Yes		WB car hit NB bike
9409653	02/25/2022 @ 22:49	63' south of 1st/Walnut	Possible			NB car hit parked car
9386372	12/05/2021 @ 02:28	440' south of 1st/Cherry	Minor		Yes	SB car hit parked car
East A Street						
9386368	11/29/2021 @ 08:03	3' west of East A/3rd	Possible	Yes		SBR truck hit EB bike
9725275	07/01/2024 @ 09:16	East A/4th	Minor	Yes		SB bike hit WB car
West A Street						
9725274	07/01/2024 @ 14:37	West A/Almond	Minor		Yes	EB car hit SB car
9279490	01/21/2021 @ 03:31	303' east of West A/Pegord	Possible			EB car sideswiped parked car
9503357	09/06/2022 @ 07:10	West A/Washington	Minor	Yes		EB (wrong way) bike hit SBR car
9710312	06/15/2024 @ 09:09	West A/Adams	Possible			EB car hit NB car
9203317	10/30/2020 @ 14:56	West A/Jackson	Possible	Yes		NB bike hit WB car
9710316	05/12/2024 @ 15:48	West A/Jackson	Minor			SBL car hit EB car
9634408	11/16/2023 @ 18:04	45' west of West A/1st	Possible		Yes	EB car rearend EB car

3. LTA SCENARIOS, SETTING, AND STUDY AREA

The LTA study area generally consists of the A Street Corridor from the School near 2nd Street to Almond Street, within the City of Dixon, California. Key roadways within the study area, and study intersections, are shown in **Figure 6**.

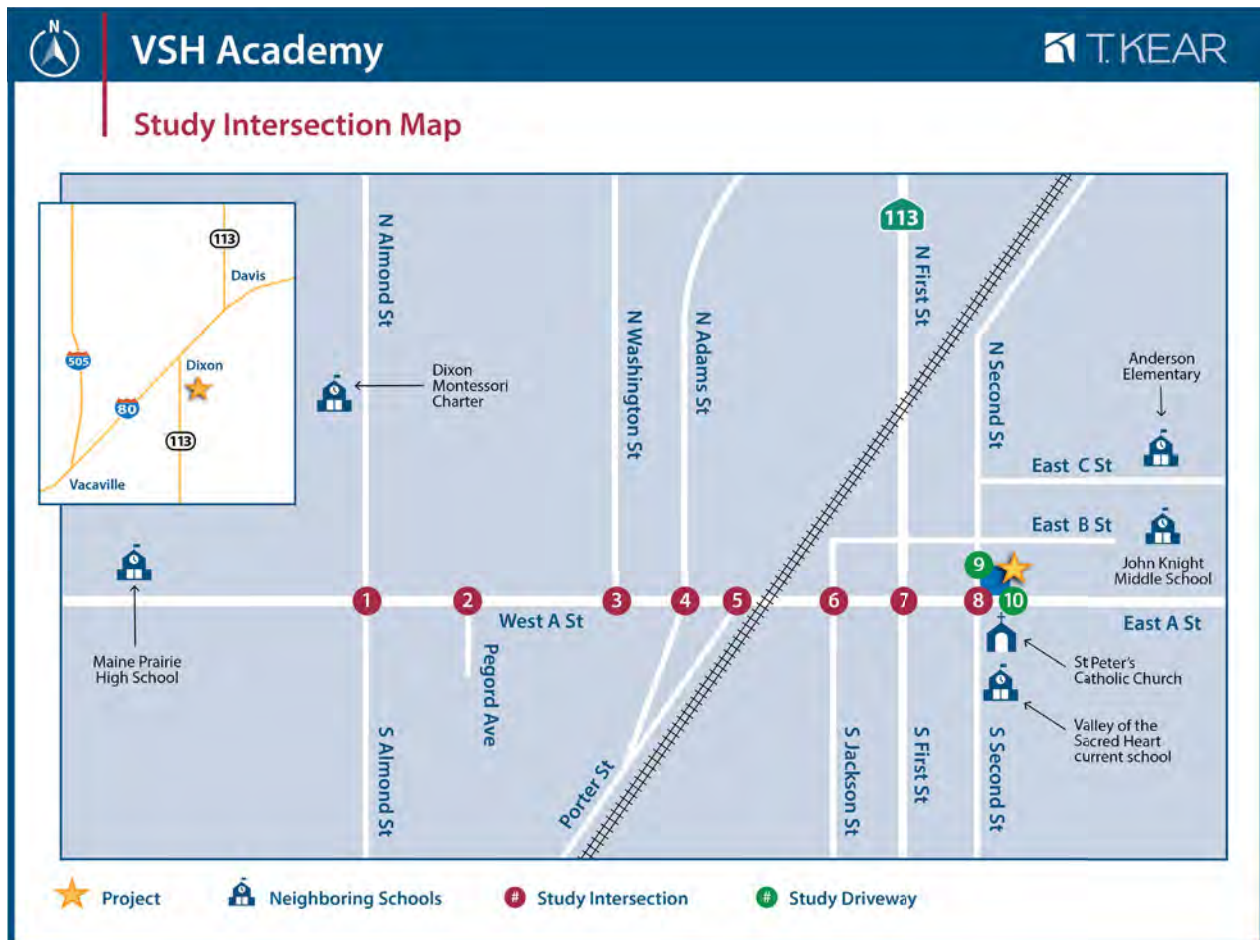


Figure 6. School area roadways including study intersections

3.1 Study Scenarios

The LTA portion of this study determines the weekday AM, mid-day, and PM peak-hour level-of-service at study intersections under the following six scenarios:

- Existing 2024 without School condition;
- Existing 2024 with School condition;
- Existing Plus Approved Projects (EPAP) without School condition;
- EPAP with School condition;
- Cumulative without School condition; and
- Cumulative with School condition

Existing 2024 without School Condition; and Existing 2024 with School Condition

Analysis of the existing condition reflects the traffic volumes and roadway geometry at the time the study began. These two scenarios (with and without the School) serve as a known reference point for those familiar with the study area and identify School related transportation deficiencies anticipated to occur if the School opened in 2024.

EPAP without School Condition; and EPAP with School Condition

EPAP (Existing Plus Approved Projects) scenarios, with and without the School, analyze conditions with the addition of traffic from approved and proposed projects that potentially affect study intersections. These scenarios are intended to reflect anticipated traffic approximately five years into the future, when the School could reasonably be anticipated to be constructed.

Forecasts were based on existing traffic plus incremental growth from the Dixon travel demand model. Specific projects included in this scenario include:

- Gateway Plaza Expansion – 21 thousand square feet (ksf) of retail;
- Homestead Phase 1 – 152 low density dwelling units;
- Homestead Phase 2a – 10 acres commercial + 391 low density dwelling units;
- Homestead Phase 3 – 189 low density and 69 medium density dwelling units;
- Valley Glen Phases 3-1 and 3-2 – 132 lots under construction;
- Valley Glen Phases 4-1 – 84 dwelling units;
- Parkline units 4 and 5 – 121 dwelling units;
- Various Projects – Senior care facility, hotel/drive thru, Popeye's, fueling station expansion;
- Lewis Development – Residential + commercial; and
- Buzz Oats Dixon Innovation Center – Industrial park/warehousing.

These scenarios also included:

- Widening of southbound Pedrick Road to two-lanes along the Dixon Innovation Center frontage; and
- Construction of Professional Drive (two-lanes) along the Dixon Innovation Center frontage.

Cumulative without School Condition; and Cumulative with School Condition

The cumulative scenarios represent market-rate buildout of the Dixon General Plan land uses through 2040. Vaughn Road is assumed to be realigned as described in the Northeast Quadrant Specific Plan and the Vaughn at-grade crossing of the UPRR Martinez Subdivision is assumed to be closed. The Parkway Boulevard overcrossing of the UPRR Martinez Subdivision is assumed to be completed.

3.2 School Area Roadways

This section provides a description of the key roadways serving the School site and its vicinity. Broadly, Dixon's street system is laid out in a grid like pattern with 1st street and A street serving as the north-south and east-west bases for the network. North-south road names typically begin with "North" on the north side of A Street and "South" on the south side of A Street. East-west road names typically begin with "West" to the west of 1st Street, and "East" to the East of 1st Street. A Street and 1st Street are the backbone of the road network in the vicinity of the School.

A Street is a two-lane east-west connection running from I-80 near the western edge of Dixon, through the community to the eastern edge of the City. West of 1st Street (Highway 113) is West A street, and East of 1st Street is East A Street. Within the School vicinity A Street is considered a historic main street providing mobility to historic residential properties and downtown businesses and carries higher vehicular

traffic than adjacent roads. It generally has one lane each direction with on-street parking and street trees, planting strip, and/or distinctive street lighting. West A Street has an AADT of about 6,000¹¹ while East A Street has AADT of about 4,700¹¹. There are no existing bike lanes on A Street in the vicinity of the School (though class 2 bike lanes are included in the General Plan).

Outside of the Dixon city limits, A Street becomes Dixon Avenue, which connects to Meridian Ave to the west and Robben Road to the East.

1st Street (SR 113) is a north-south state highway. In the School vicinity it is a two-lane road that connects northward to I-80 and southward past the Dixon city limits, eventually connecting to SR 12. Within the School vicinity 1st Street is considered a historic main street providing mobility to historic residential properties and downtown businesses and carries higher vehicular traffic than adjacent roads. It generally has one lane each direction with on-street parking and street trees, planting strip, and/or distinctive street lighting. North of A Street is considered North 1st Street, and South of A Street is considered South 1st Street. Left turn pockets are provided from A Street and most intersections from there, northward to I-80. 1st Street has AADT of approximately 10,250¹¹ in the vicinity of the School. 1st Street is a through truck route, and a Surface Transportation Assistance Act (STAA) truck access route. STAA trucks are longer than most California trucks and their movements more restricted to certain roads STAA truck routes and access routes.

North Adams Street/Porter Street is a two-lane road between Highway 113 (1st Street) and Midway Road that runs just to the west of the UPRR Martinez Subdivision. In the School vicinity, North Adams and Porter Street have curb, gutter, sidewalk, and class II bike lanes. North of A Street, North Adams Street has AADT of approximately 3,500¹¹, while south of A Street volume drops to approximately 3,200¹¹.

3.3 Study Intersections

There are ten study intersections (**Figure 6**). These intersections along A Street were selected as A Street serves multiple local schools, provides access to a sizable portion of the housing in Dixon, and serves as the primary school access for downtown Dixon from the West via I-80 and from the east via I-80 and Pedrick Road.

¹¹ AADT based on average of AM and PM peak-hours counts and a “K-Factor” of 10.

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4. LTA METHODOLOGIES

The overall analysis process was structured to identify potential adverse transportation effects related to the proposed School.

- Traffic volumes and turning movements for the Existing 2024 condition were determined from observed traffic counts taken on Tuesday April 9, 2024. Three time periods were collected (AM peak of 6:30-8:30 AM, mid-day peak of 2:30-4:00 PM, and PM peak of 4:30-7:00 PM)
- EPAP volumes without the School were based on growth travel demand model reflecting all identified reasonably foreseeable projects effecting the study intersections:
 - Travel demand model runs were provided by the City's consultant, DKS Associates¹² reflecting existing conditions (at the time of traffic counts) and EPAP conditions.
 - The growth increment (the difference of the two model runs) was added to observed traffic counts, rather than using raw model output.
 - The NCHRP 255 adjustment was applied. As a quality control step, the observed 2024 traffic counts were used as a floor for the anticipated EPAP forecast turning movements.
- Cumulative 2040 volumes without the School were based on a growth travel demand model reflecting market rate buildout of the General Plan land uses.
 - Travel demand model runs were provided by the City's consultant, reflecting existing conditions and cumulative conditions.
 - The growth increment (the difference of the two model runs) was again added to observed traffic counts, rather than using raw model output.
 - The NCHRP 255 adjustment was applied. As a quality control step, the anticipated EPAP traffic turning movements were used as a floor for the cumulative turning movement estimates.
- Traffic operations were analyzed both with and without the proposed School to identify potential violations of General Plan level-of-service policies.

4.2 Level-of-Service Methodology

Level-of-service (LOS) is a qualitative indication of the level of delay and congestion experienced by motorists using an intersection. Levels-of-service are designated by the letters A through F, with A being the best condition and F being the worst (high delay and congestion). Calculation methodologies, measures of performance, and thresholds for each letter grade differ for road segments, signalized intersections, and unsignalized intersections.

The following intersection and segment traffic operations analysis procedures were selected for this study.

Intersection Traffic Operations Analysis

Signalized Intersections

¹² Personal communication (2025) email from Erin Vaca to Tom Kear on January 7, 2025.

The methodology from the Highway Capacity Manual (HCM) 7th Edition is used to analyze signalized intersections. Level-of-service can be characterized by the entire intersection, each approach, or by lane group. Control delay alone (the weighted average delay for all vehicles entering the intersection) is used to characterize level-of-service for the entire intersection or an approach. Control delay and volume to capacity ratio are used to characterize level-of-service for lane groups. The average delay criteria used to determine the level-of-service at signalized intersections is presented in **Table 4**.

Table 4. Level-of-service criteria for signalized intersections

Level -of- Service	Description	Average Control Delay ¹ (Sec. /Vehicle.)
A	Very Low Delay: This level-of-service occurs when progression is extremely favorable, and most vehicles arrive during a green phase. Most vehicles do not stop at all.	≤ 10.0
B	Minimal Delays: This level-of-service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.	10.1-20.0
C	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (<i>service all waiting vehicles</i>) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	20.1-35.0
D	Approaching Unstable/Tolerable Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.1-55.0
E	Unstable Operation/Significant Delays: This is considered by many agencies the upper limit of acceptable delays. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	55.1-80.0
F	Excessive Delays: This level, considered to be unacceptable to most drivers, often occurs with oversaturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delay levels.	> 80.0 or v/c >1.0

Note 1: Weighted average of control delay on all approaches. This is the measure used by the Highway Capacity Manual to determine level-of-service. Any movement with a volume-to-capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Source: Transportation Research Board (2022) Highway Capacity Manual 7th Edition, Washington D.C.

Unsignalized Intersections

The methodology from HCM 7th Edition is used for the analysis of unsignalized intersections. At an unsignalized intersection, most of the main street traffic is un-delayed, and, by definition, have acceptable conditions. The main street left-turn movements and the minor street movements are all susceptible to delay of varying degrees. Generally, the higher the main street traffic volumes, the higher the delay for the minor movements. Separate methods are utilized for Two-Way Stop-Controlled (TWSC) intersections and All-Way Stop-Controlled (AWSC) intersections.

- **TWSC:** The methodology for analysis of two-way stop-controlled intersections calculates an average total delay per vehicle for each minor street movement and for the major street left-turn movements, based on the availability of adequate gaps in the main street through traffic. A level-of-service designation is assigned to individual movements or combinations of movements (in the case of shared lanes) based upon delay, it is not defined for the intersection as a whole. The unsignalized intersection level-of-service reported herein is for each movement (or group of movements) based upon the respective average delay per vehicle. **Table 5** presents the average delay criteria used to determine the level-of-service at TWSC and AWSC intersections.
- **AWSC:** At all-way stop-controlled intersections, the level-of-service is determined by the weighted average delay for all vehicles entering the intersection. The methodologies for these types of intersections calculate a single weighted average delay and level-of-service for the intersection as a whole. The average delay criteria used to determine the level-of-service at all-way stop intersections is the same as that presented in **Table 5**. Level-of-service for specific movements can also be determined based on the TWSC methodology.

It is not unusual for some of the minor street movements at unsignalized intersections to have level-of-service D, E, or F conditions while the major street movements have level-of-service A, B, or C conditions. In such a case, the minor street traffic experiences delay that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Usually in such cases, the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization.

Table 5. Level-of-service criteria for unsignalized intersections

Level of Service (LOS)	Description	TWSC ¹	AWSC ²
		Average Control Delay by Movement (seconds / vehicle)	Intersection Wide Average Control Delay (seconds / vehicle)
A	Little or no delay	< 10	< 10
B	Short traffic delay	> 10 and < 15	> 10 and < 15
C	Average traffic delays	> 15 and < 25	> 15 and < 25
D	Long traffic delays	> 25 and < 35	> 25 and < 35
E	Very long traffic delays	> 35 and < 50	> 35 and < 50
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50 (or v/c > 1.0)	> 50

Note 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns using these criteria. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Note 2: All-Way Stop-Control (AWSC) assessment of level-of-service at the approach and intersection levels is based solely on control delay.

Source: Transportation Research Board (2022) Highway Capacity Manual 7th Edition, Washington D.C.

4.3 Standards of Significance

Level-of-service deficiencies related to the proposed School were determined based on the methods described above and identified as "worsened" or "not-worsened" in the following thresholds per the City's Engineering Design Standards (DS-15-06):

Signalized Intersections: The School is considered to have a significant effect if it would:

- Result in a signalized intersection operating at an acceptable LOS (LOS D or better) to deteriorate to an unacceptable LOS; or
- Increase the average delay by more than 2 seconds at a signalized intersection that is operating at an unacceptable LOS without the School.

Unsignalized Intersections: The School is considered to have a significant effect if it would:

- Result in an unsignalized intersection movement/approach operating at an acceptable LOS to deteriorate to an unacceptable LOS, or
- Result in an increase in average delay of more than 2 seconds, at a movement/approach that is operating at an unacceptable LOS without the School, or
- Result in an unsignalized intersection meeting a traffic signal warrant.

In addition, 95th percentile left turn queue lengths, and 95% through queue lengths approaching the UPRR Martinez Subdivision crossings, are considered along with level-of-service. The computed 95th percentile queue length is the length of queue that is anticipated to be exceeded once out of every twenty signal cycles (i.e., 5% of the time). When queues exceed the available storage length in a turn pocket and spill out to block adjacent travel lanes it invalidates level-of-service calculations. Queues extending over rail crossings are a potential safety issue. An intersection effectively operates at an unacceptable level-of-service when these excessive queues are present. For this analysis, a School related level-of-service deficiency from queueing is assumed to occur when:

- The 95th percentile right-turn and/or left-turn queue exceeds the available storage length, and the School is anticipated to add more than one car length (25 feet) to that 95th percentile queue length.

4.4 Analysis Tools

Control delays and level-of-service for study intersections were calculated using the Synchro/SimTraffic 12¹³ software (Version 12.1, build 2, revision 8). Synchro implements the methodologies of the 7th Edition of the Highway Capacity Manual to model traffic controls and vehicle delays. The software requires data on road characteristics (geometric), traffic counts, and the signal timing data for each analysis intersection. In general, default parameters were used, except in locations where specific field data are available. Heavy vehicle percentages of 1% - 4% were assumed during the peak-hour based on traffic count data.

Synchro results were utilized for study intersections west of the UPRR Martinez Subdivision (intersections 1-5) during the AM and mid-day peak-hours, and at all study intersections for the PM peak-hour. At study intersections east of the UPRR Martinez Subdivision (intersections 6-10) traffic operations were evaluated using SimTraffic microsimulation for the AM and mid-day peak-hours. Micro simulation explicitly captures the effect of queue spillback on adjacent lanes and intersections. In congested simulations vehicles can become “stuck” resulting in unrealistic results. To avoid that, twenty microsimulation model runs were performed for each analysis scenario; then the five worst performing simulation runs were eliminated, and then the five best performing microsimulation runs were eliminated to avoid biasing the results. The remaining 10 runs were then averaged. As an additional quality assurance/quality control check, TKTPM confirmed in the field that simulated 95th percentile and maximum queue lengths from simulations were consistent with field observations along East A Street near the School.

¹³ <https://www.trafficware.com/synchro-studio.html>

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5. LTA EXISTING 2024 CONDITIONS

This section presents the Existing condition. For purposes of this study, Existing conditions represent typical midweek, non-holiday, traffic volumes in spring of 2024.

5.1 Existing Without School Condition

Data Sources

The analysis tools require a variety of data to generate the evaluation criteria. The following sections describe data collection procedures for Existing conditions. There were three primary data elements (roadway characteristics, intersection turning movement counts, and traffic control data); and two supplementary elements (other recent studies, and field data) that comprise the data collection program for this traffic analysis.

Roadway Geometry and Usage Characteristics

The geometry and usage data for the analysis were collected through aerial photographs, field visits, and prior studies. The current intersection geometry was field validated. **Table 6** shows the key items included in the geometric data and the source for each item.

Table 6. Key items and sources for geometry and usage data

Key Item	Source
Lane configurations and width	Aerial photographs and field visits
Lane utilization	Prior studies, aerial photographs, and field visits
Intersection spacing	Aerial photographs and field visits
Length of storage bays	Aerial photographs and field visits
Transit stops and routes	Transit schedules, aerial photographs, and field visits
Turn prohibitions or allowance	Aerial photographs, field visits, and traffic counts

Lane configurations and width – These data specify the number of lanes and the width of the roadway in each direction, and the directional turns that are allowed from each lane.

Lane utilization – These data specify how lanes are used by drivers, such as traffic distribution between lanes on a multi-lane roadway.

Intersection spacing – These data refer to the distance (in feet) between intersections.

Length of storage bays – These data refer to the length (in feet) of available storage for left-turning or right-turning vehicles where exclusive turn lanes are available. It is collected for right-turn lanes when the parking lane is used as a right-turn lane.

Transit stops and routes – A transit stop is an area where passengers await, board, alight, and transfer between transit vehicles. A transit route is the roadway that transit vehicles operate on.

Turn prohibitions or allowance – These data specify if right turns on red (RTOR) are allowed on the roadway.

Intersection Turning Movement Counts

Existing morning (6:30-8:30 AM), mid-day (2:30-4:00 PM), and evening (4:30-7:00PM) peak period vehicle and pedestrian turning movement counts were collected at study intersections on Tuesday April 9, 2024. Traffic count data sheets are provided in **Appendix A** of this report. Peak-hour traffic counts were used to conduct the intersection level-of-service analysis. Where appropriate, turning movement counts at consecutive intersections were balanced by adding traffic. Observed intersection peak-hour factors (PHF) were applied. **Figure 7** provides a summary of the intersection lane geometry and peak period turning movements under Existing conditions.

Existing Condition Intersection Level-of-Service

Table 7 through **Table 9** present a summary of level-of-service results and a comparison of 95th percentile queue lengths at the study intersections under Existing conditions. The tables include color coded and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency, note that the term “deficiency” rather than the CEQA term “impact” in the LTA in order to be clear that these deficiencies are not impacts under CEQA.

Two of the study intersections have calculated 95th percentile queue lengths that exceed available storage prior to the addition of School traffic:

- West A Street/North Adams Street,
- A Street/1st Street.

These locations are highlighted using a bold red font in **Table 7** through **Table 9**. Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

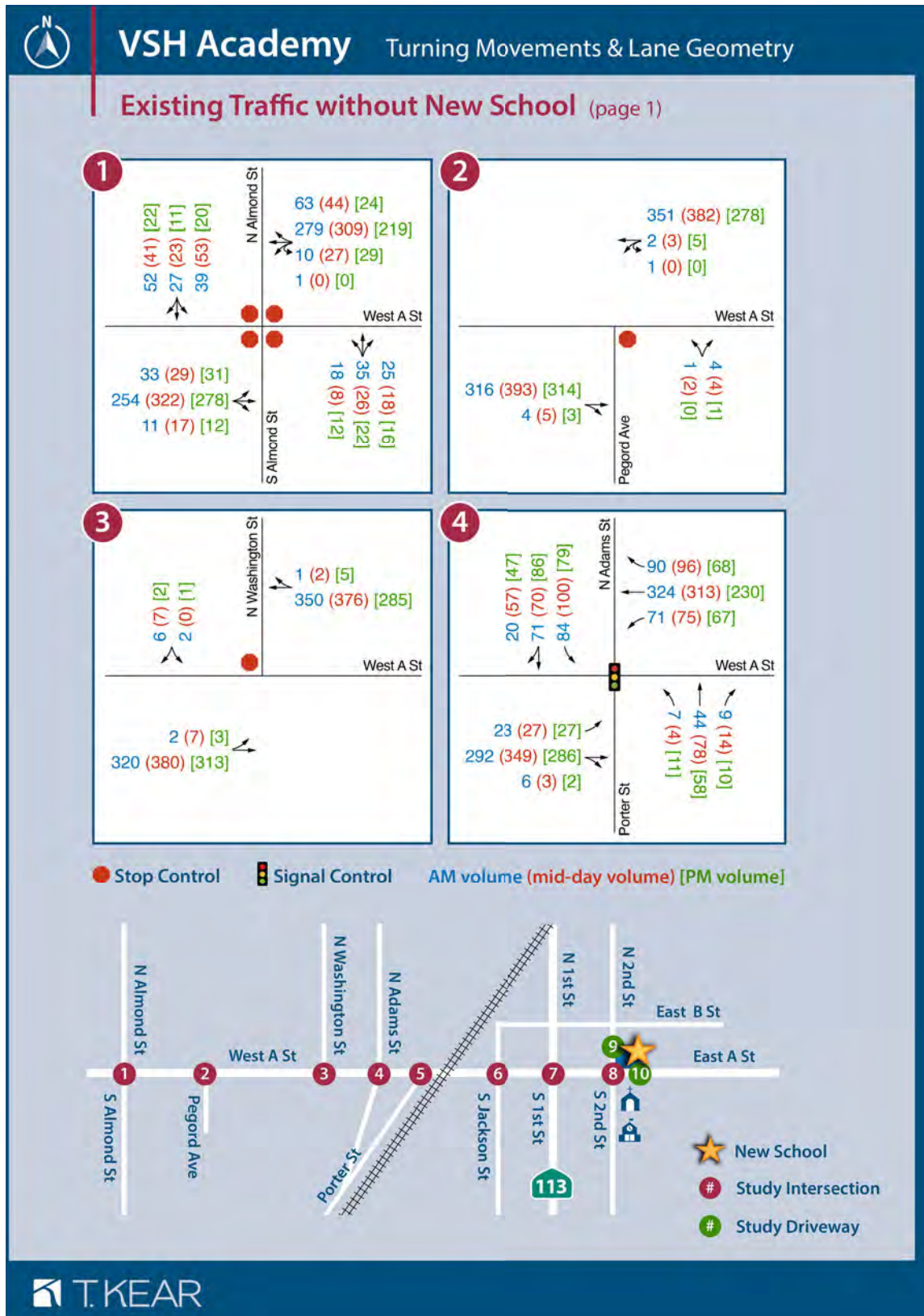


Figure 7. Existing 2024 condition turn movements and geometry

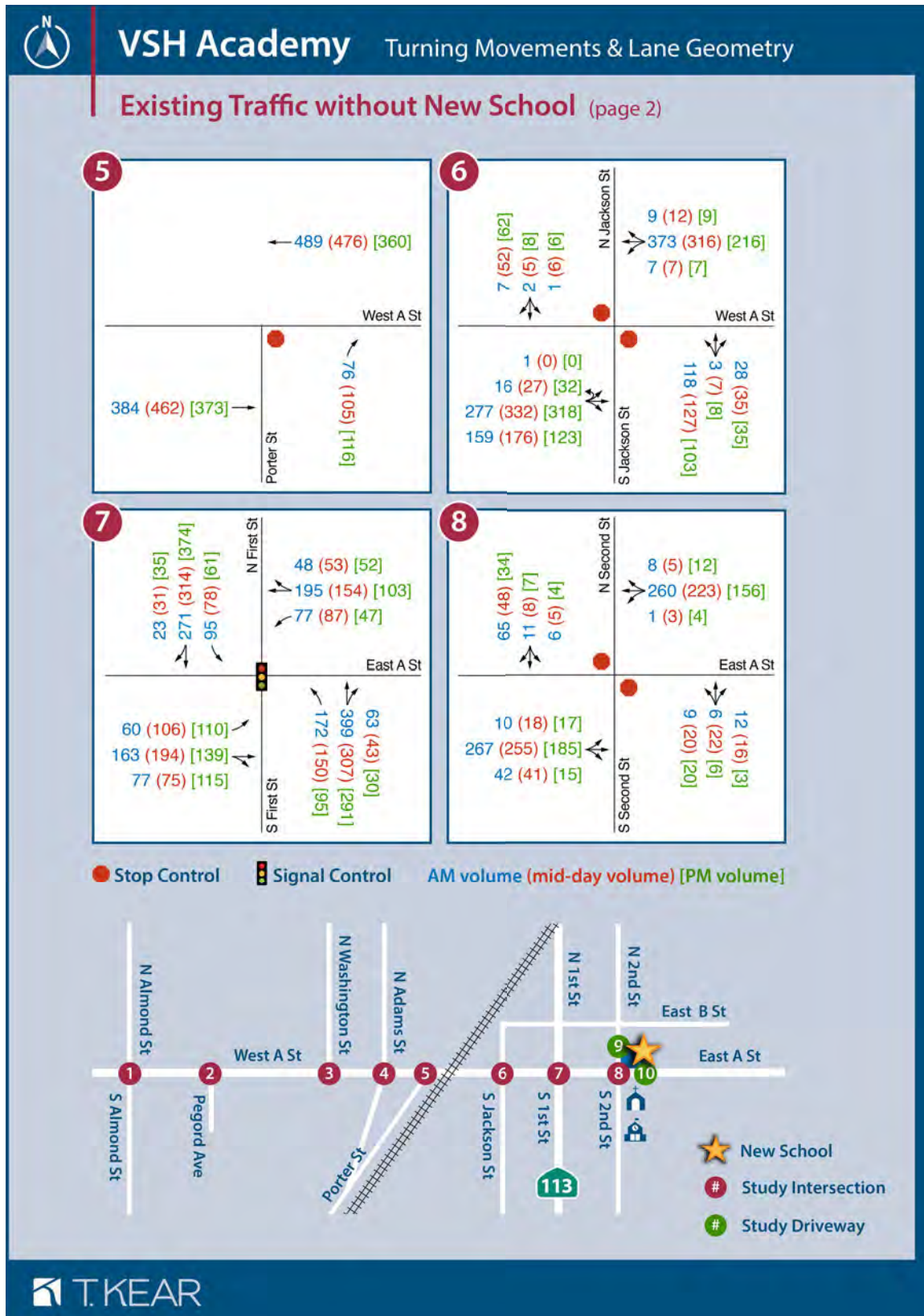


Figure 7. Existing 2024 condition turn movements and geometry (continued)

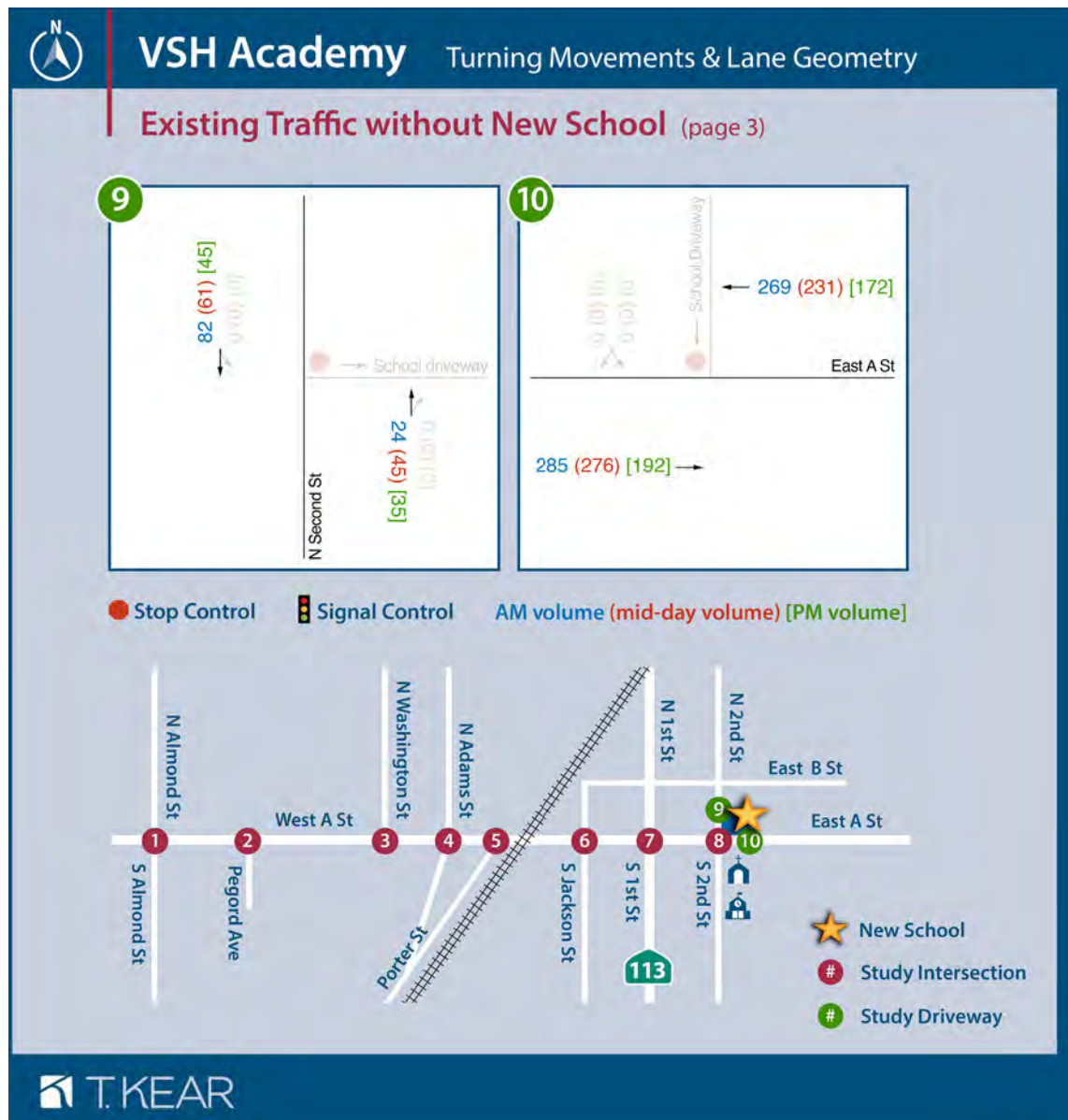


Figure 7. Existing 2024 condition turn movements and geometry (continued)

Table 7. Existing AM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Existing AM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	13.8	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	12.2 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.0	B	31
	WBL	50				68
	WBT	280				197
	NBL	60				15
	SBL	75				76
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.1 (NB)	B	12.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	14.4 (NB)	B	126
	EB	245				69
	WB	n/a				71
	SB	n/a				34
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	26.7	C	119
	WBL	70				110
	NBL	90				134
	SBL	145				146
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	7.7 (NB)	B	46
	EB	n/a				50
	WB	n/a				62
	SB	n/a				70
		Ped	n/a	Synchro 12	29.5% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 8. Existing mid-day peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Existing PM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.9	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	13.2 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.0 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.1	B	38
	WBL	50				78
	WBT	280				210
	NBL	60				13
	SBL	75				96
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	22.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffi c 12	24.0 (NB)	C	170
	EB	245				109
	WB	n/a				81
	SB	n/a				61
7. W. A St / 1st St (Signal)	EBL	85	SimTraffi c 12	27.1	C	128
	WBL	70				109
	NBL	90				136
	SBL	145				135
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffi c 12	11.1 (NB)	C	79
	EB	n/a				52
	WB	n/a				59
	SB	n/a				75
		Ped	n/a	Synchro 12	29.5% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffi c 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffi c 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 9. Existing PM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Existing PM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.1 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.2	B	34
	WBL	50				62
	WBT	280				138
	NBL	60				19
	SBL	75				70
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	11.9 (NB)	B	17.5
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	30.7 (NB)	D	75
	EB	245				2.5
	WB	n/a				0
	SB	n/a				12.5
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	20.6	C	153
	WBL	70				81
	NBL	90				135
	SBL	145				93
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	7.5
	EB	n/a				0
	WB	n/a				0
	SB	n/a				7.5
		Ped	n/a	Synchro 12	28.1% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

5.2 Assessment of Proposed School

Trip Generation

Traffic generated by the proposed School was based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition (2021), is provided in **Table 10** below (replication of **Table 1** on page 8 of this report). Estimated trip generation is provided for the existing Valley of the Sacred Heart Academy (with 88 students), the proposed School (with 120 students), and the growth increment between the two. These trip generation estimates were shared and agreed upon with the City prior to analysis.

Table 10. Anticipated Trip Generation

Description	Students	metric	Total	In	Out	Notes
New School	120	Daily Rate	2.48	50%	50%	Rate based on average rate
		Daily Trips	298	149	149	
		AM Rate	0.96	63%	37%	Peak hour of generator, rate based on fitted curve.
		AM Trips	116	73	43	
		Mid-day Rate	1.15	42%	58%	Peak hour of generator, rate based on fitted curve.
		Mid-day Trips	138	58	80	
		PM Rate	0.17	43%	57%	Peak hour of adjacent street, rate based on average rate.
		PM Trips	20	9	11	
Existing School	88	Daily Rate	2.48	50%	50%	Rate based on average rate
		Daily Trips	218	109	109	
		AM Rate	0.79	63%	37%	Peak hour of generator, rate based on average rate.
		AM Trips	70	44	26	
		Mid-day Rate	1.42	42%	58%	Peak hour of generator, rate based on fitted curve.
		Mid-day Trips	125	52	73	
		PM Rate	0.17	43%	57%	Peak hour of adjacent street, rate based on average rate.
		PM Trips	15	6	9	
Net increase (With new school)	32	New Daily Trips	80	40	40	
		New AM Trips	46	29	17	
		New Mid-Day Trips	13	6	7	
		New PM Trips	5	3	2	

Note: Rates are stated in terms of vehicle trips per student.

Source: ITE Trip Generation Manual, 11th edition, Land Use 532 (Private School K-12).

Trip Distribution and Assignment

Trip distribution was based on observed traffic counts. Anticipated School trip distribution is shown in **Figure 8**. Trip distribution assumptions were shared and agreed upon with the City prior to analysis. The resulting assignment of School trips are provided in three parts, **Figure 9** through **Figure 11**. The first set of figures (**Figure 9**) presents trips from the existing 88-student Valley of the Sacred Heart Academy which will be removed when the School is opened. The second set of figures (**Figure 10**) presents the trips added with the opening of the new school. **Figure 11** then presents the net change in trips with the closing of the existing Valley of the Sacred Heart Academy and opening of the School across the street from the existing Saint Peter's Catholic Church.

Note that 50% of students that attend mass prior to school are assumed to go to the existing church during the AM peak, the remaining 50% of students during the AM peak hour are anticipated to utilize the driveway for the proposed School. All mid-day peak and PM peak traffic associated with the proposed School is assumed to utilize the School driveway.

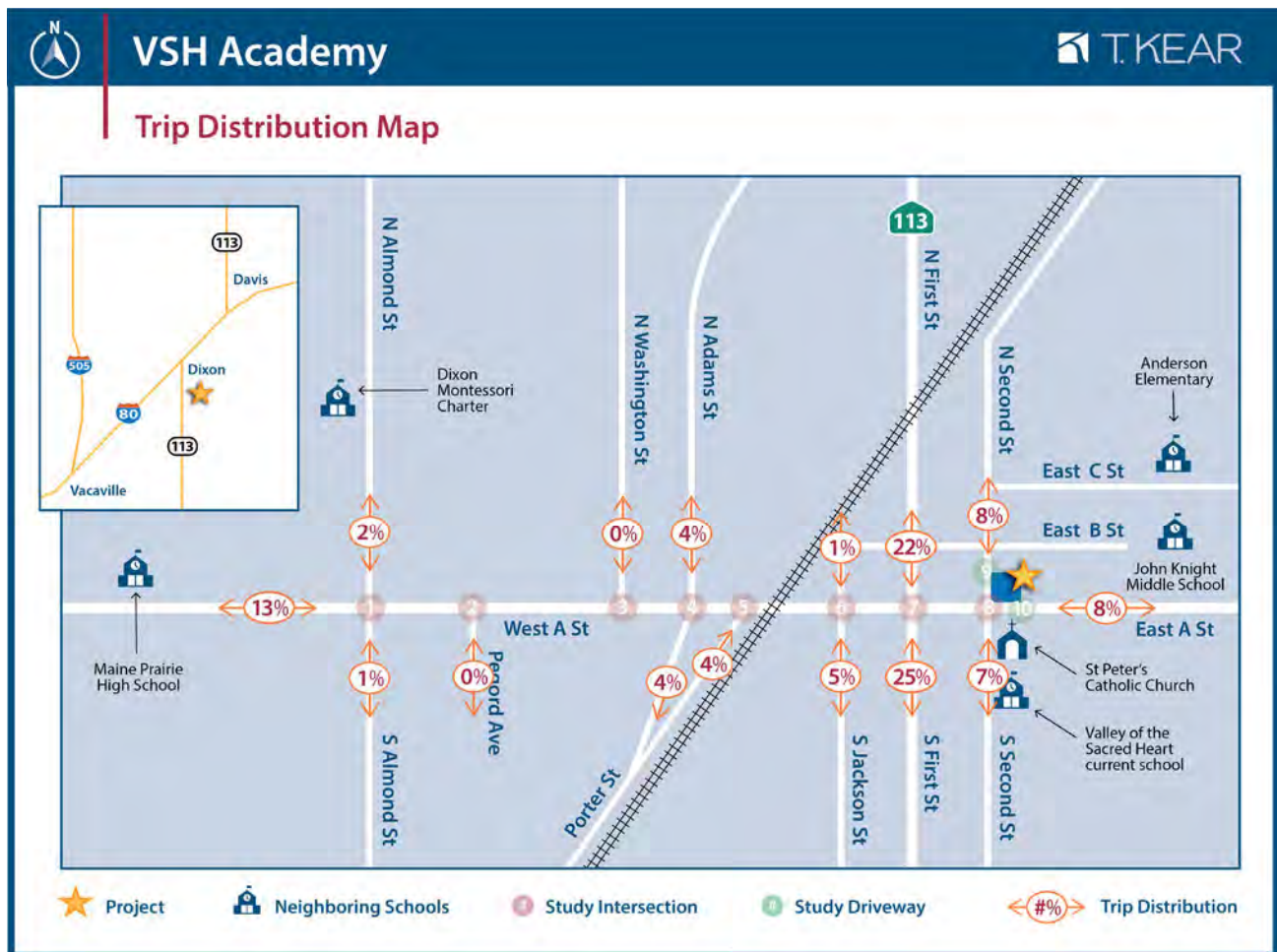


Figure 8. School trip distribution

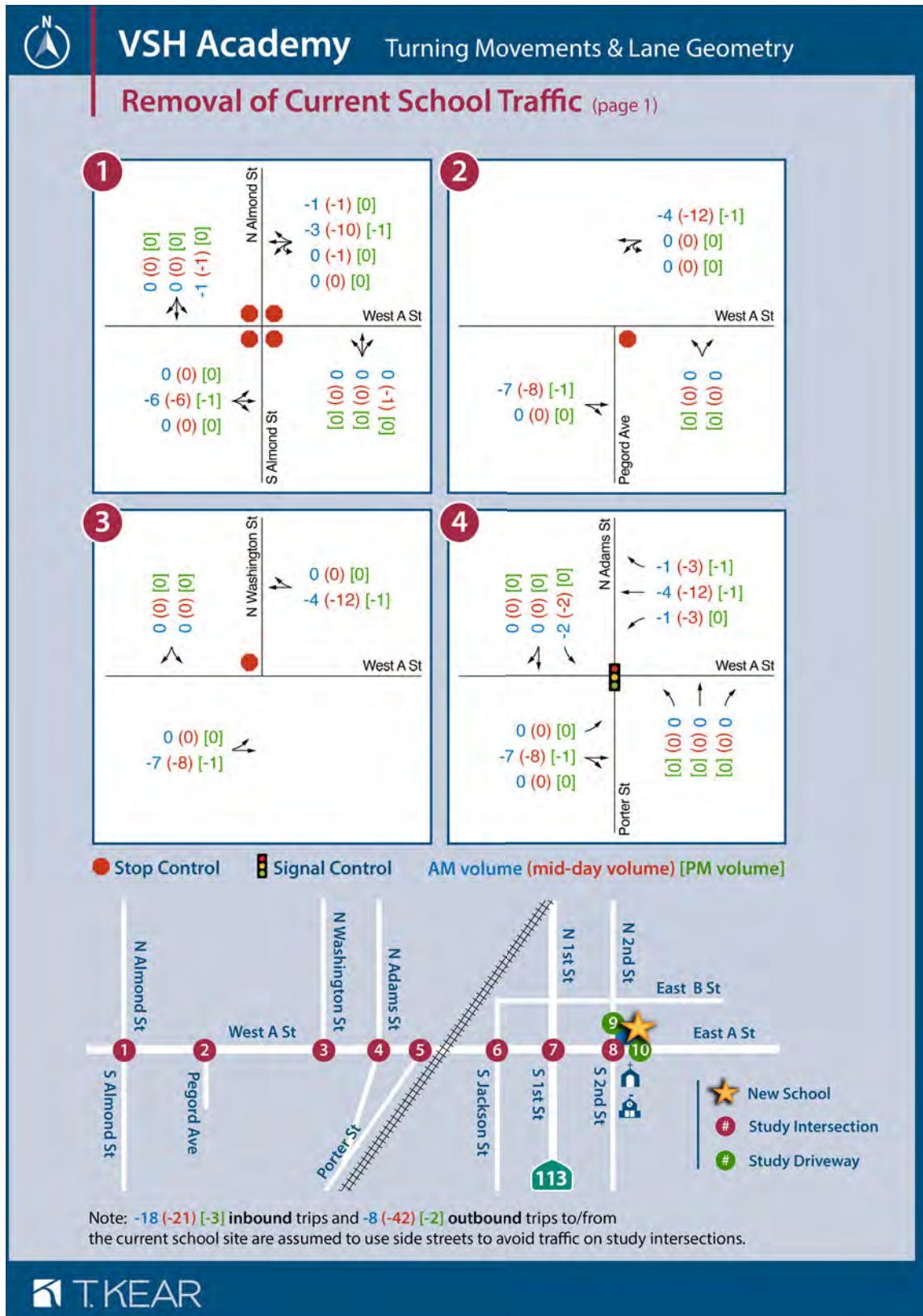


Figure 9. School trip assignment, existing Valley of the Sacred Heart Academy trips to be removed

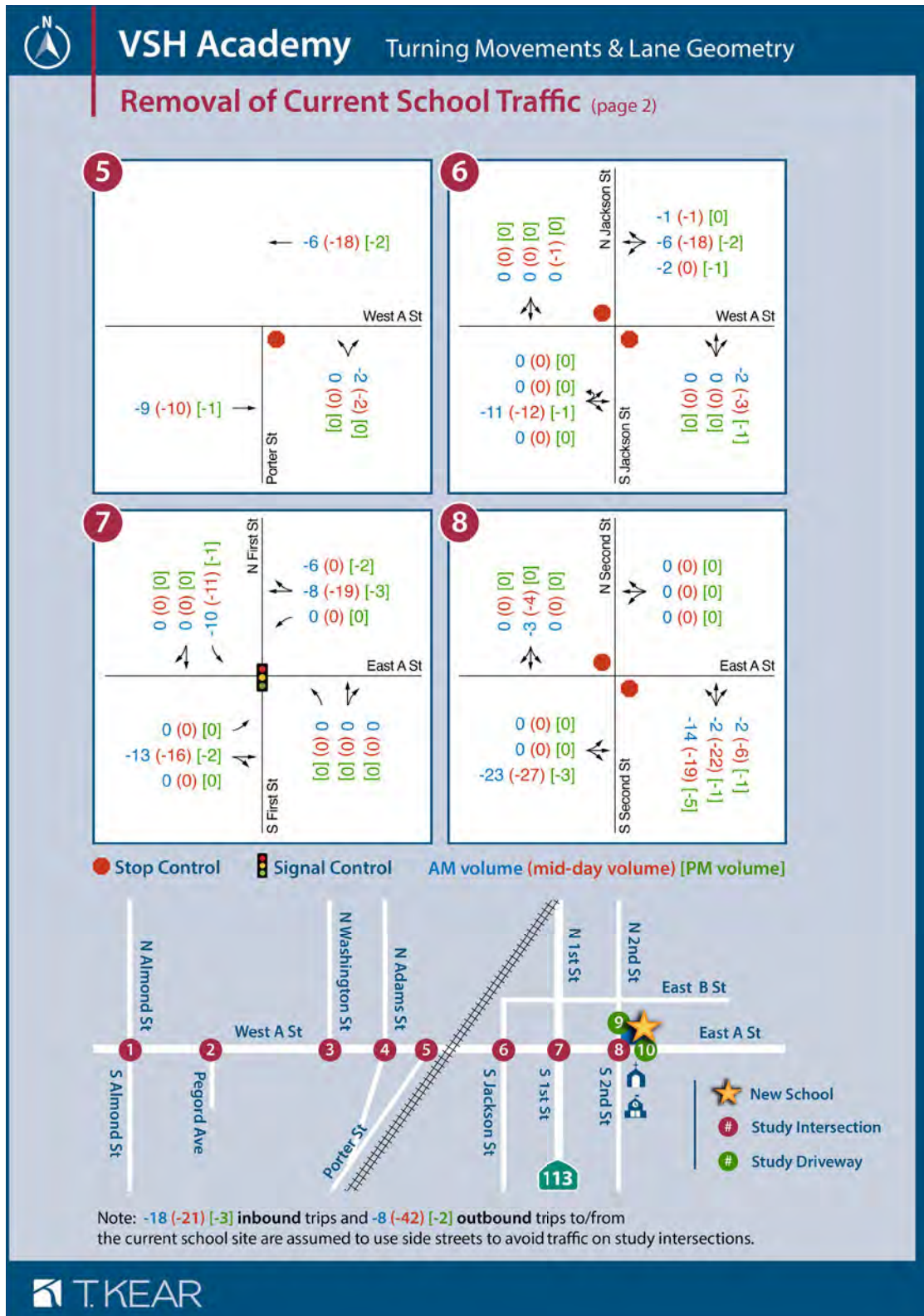


Figure 9. School trip assignment, existing Valley of the Sacred Heart Academy trips to be removed (continued)

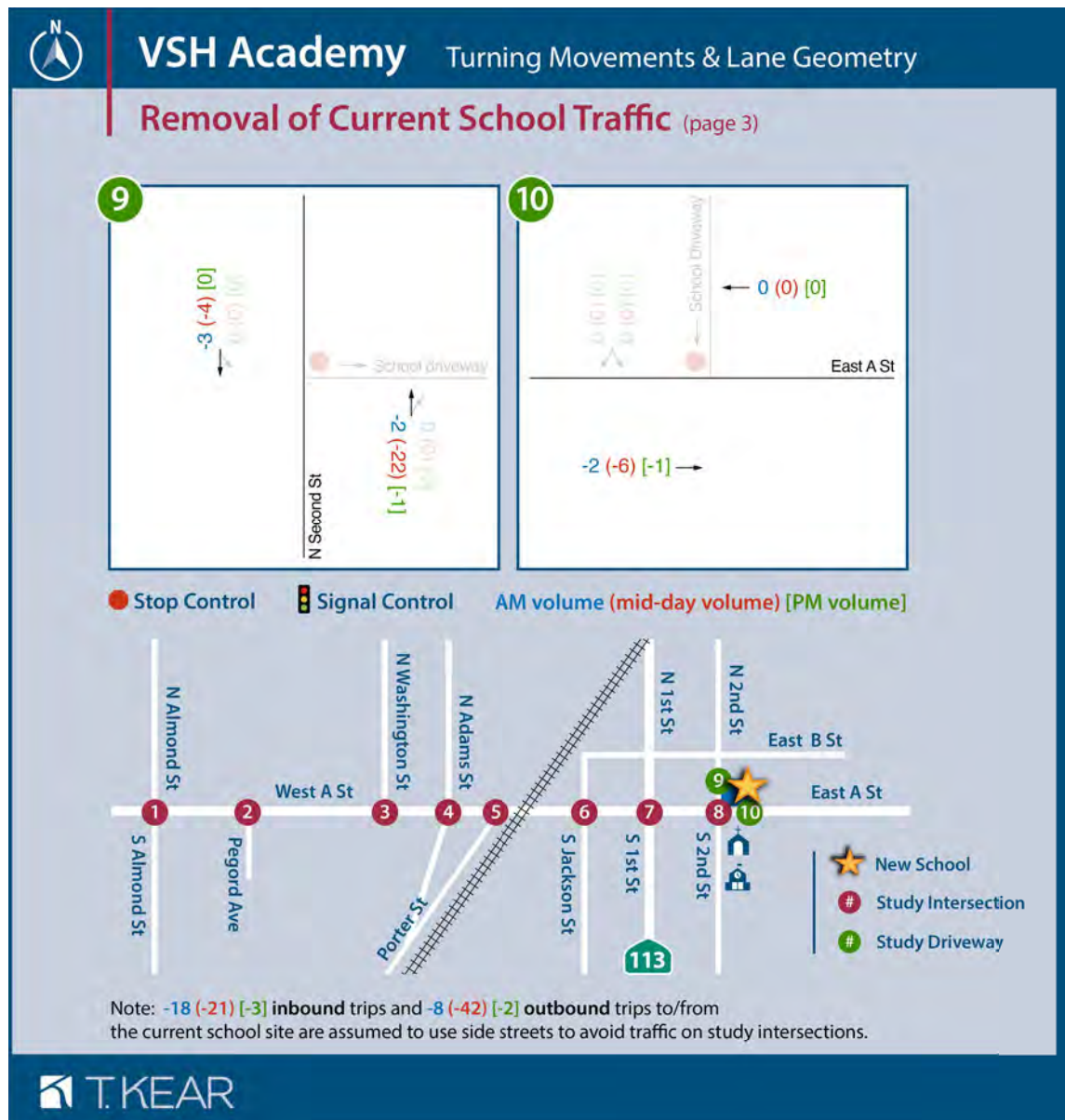


Figure 9. School trip assignment, existing Valley of the Sacred Heart Academy trips to be removed (continued)

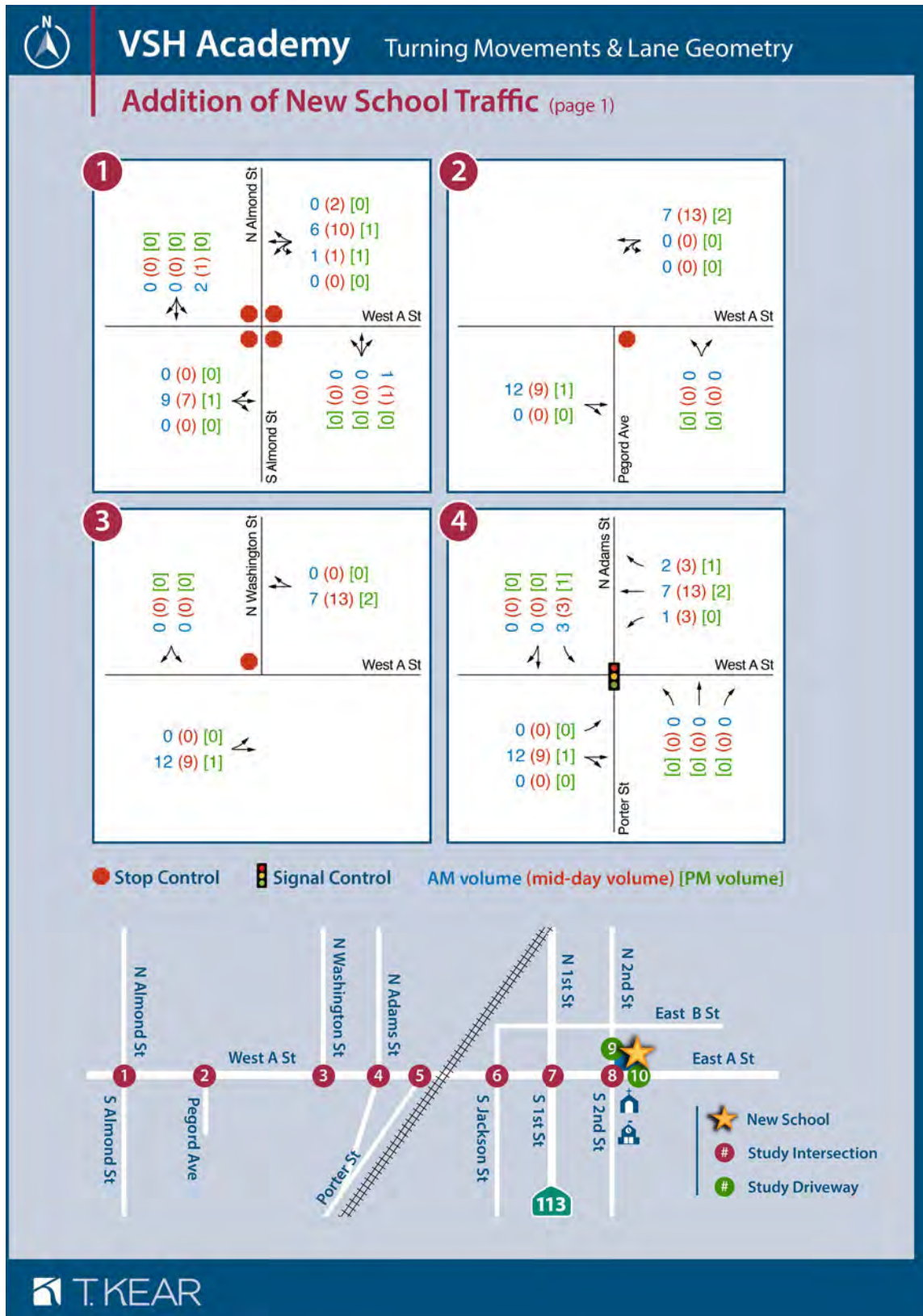


Figure 10. School trip assignment, anticipated School trips for new School

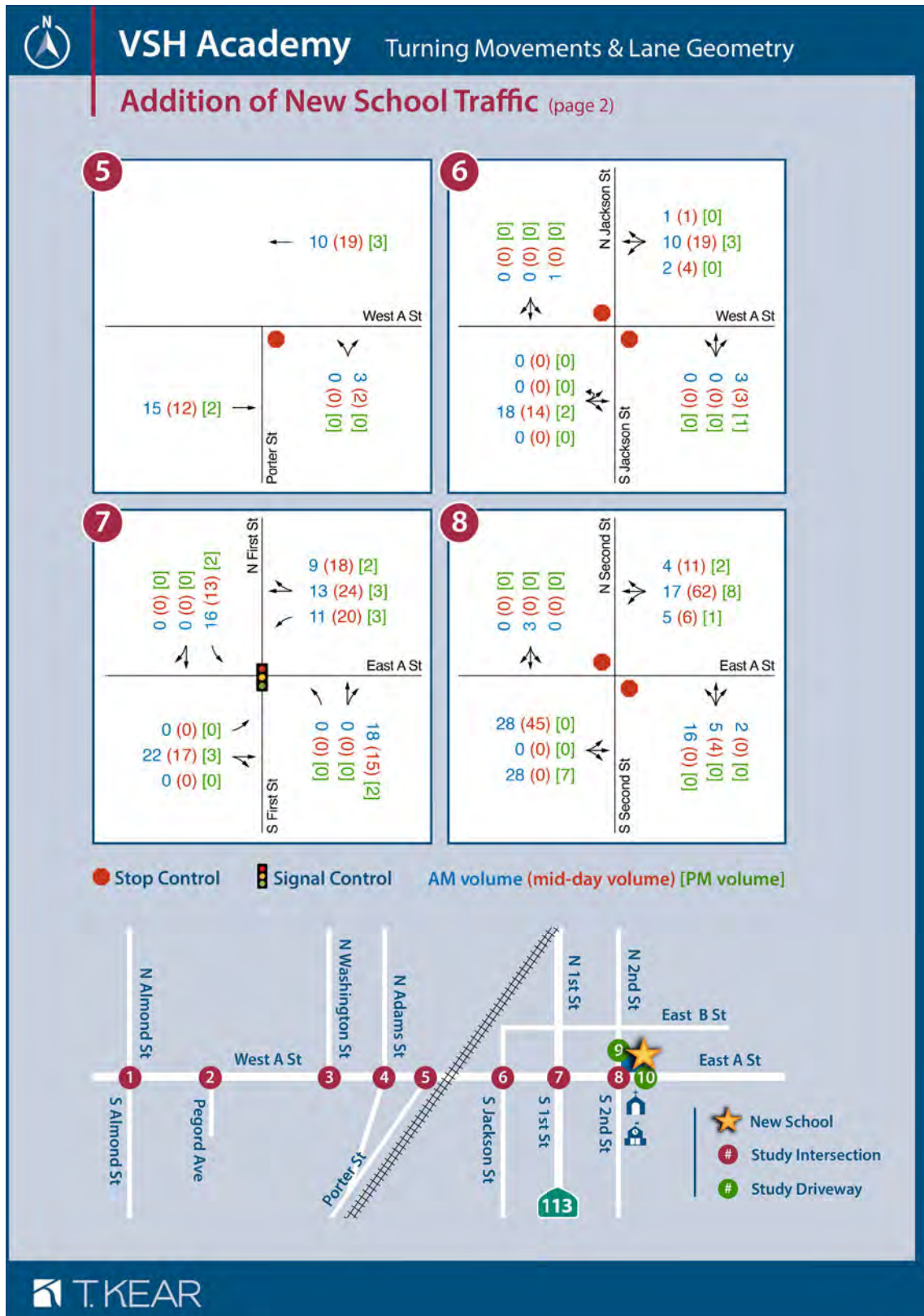


Figure 10. School trip assignment, anticipated School trips for new School (continued)

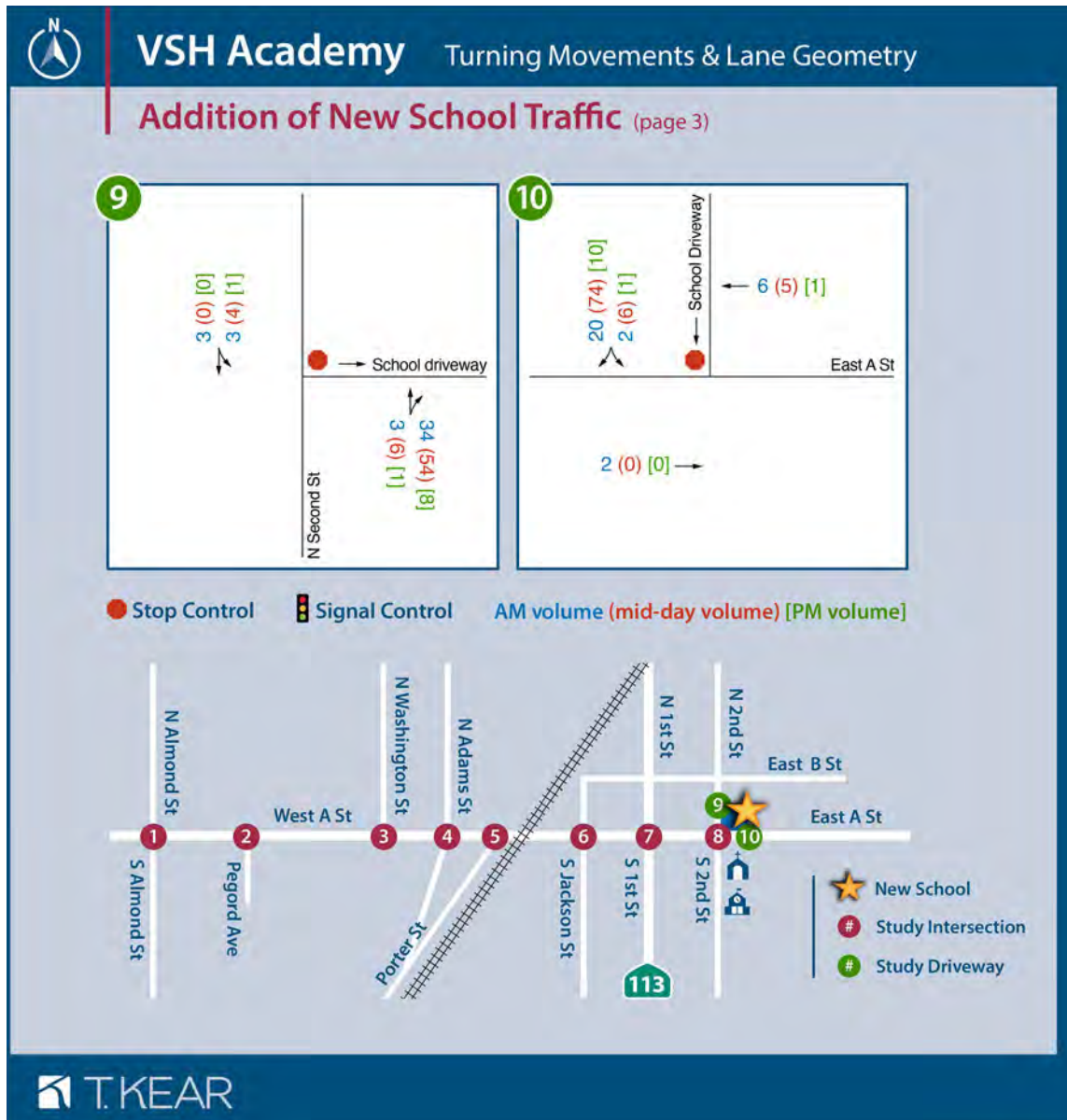


Figure 10. School trip assignment, anticipated School trips for new School (continued)

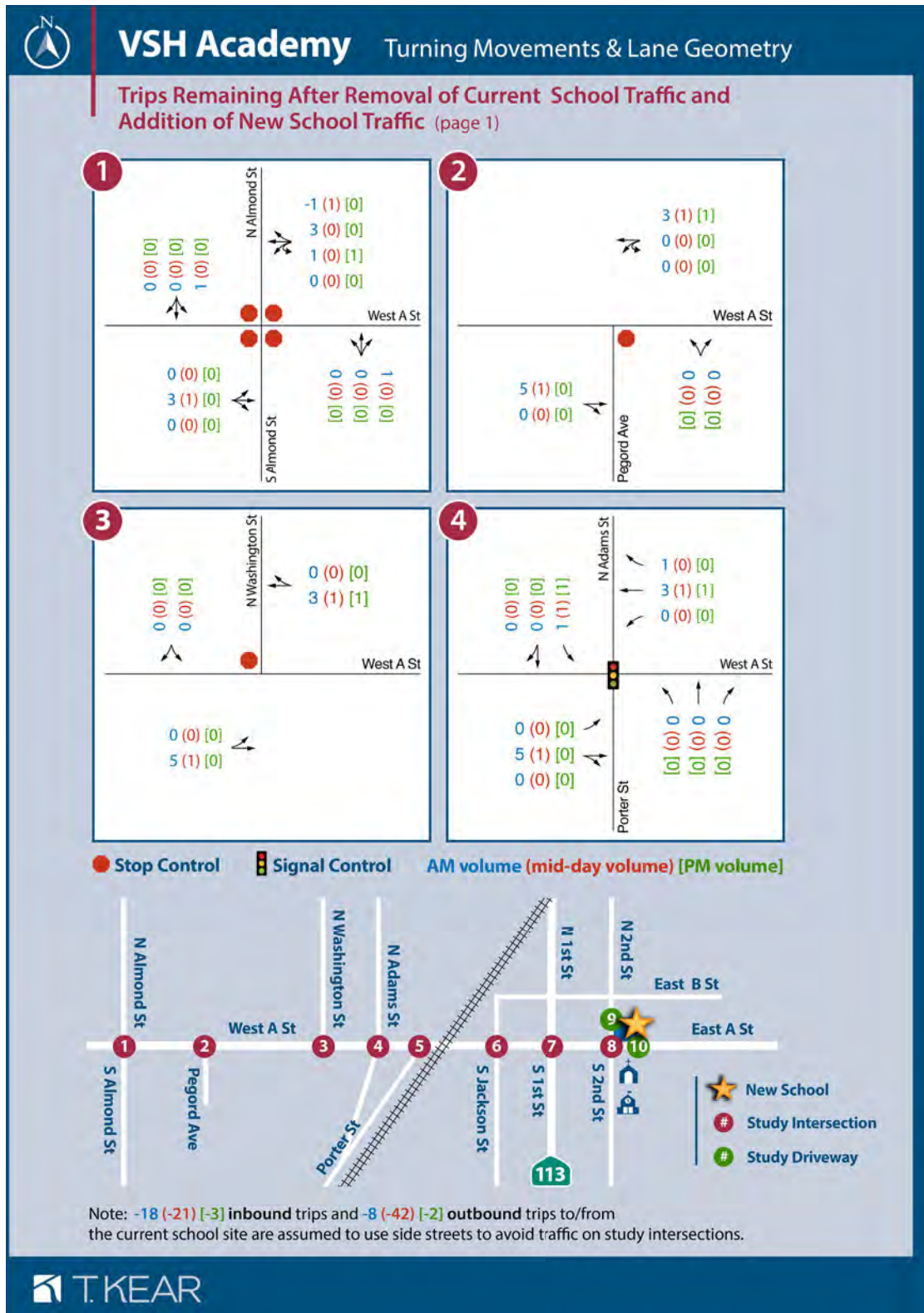


Figure 11. School trip assignment, net change in trips with anticipated with new School (these are the new trips associated with the School)

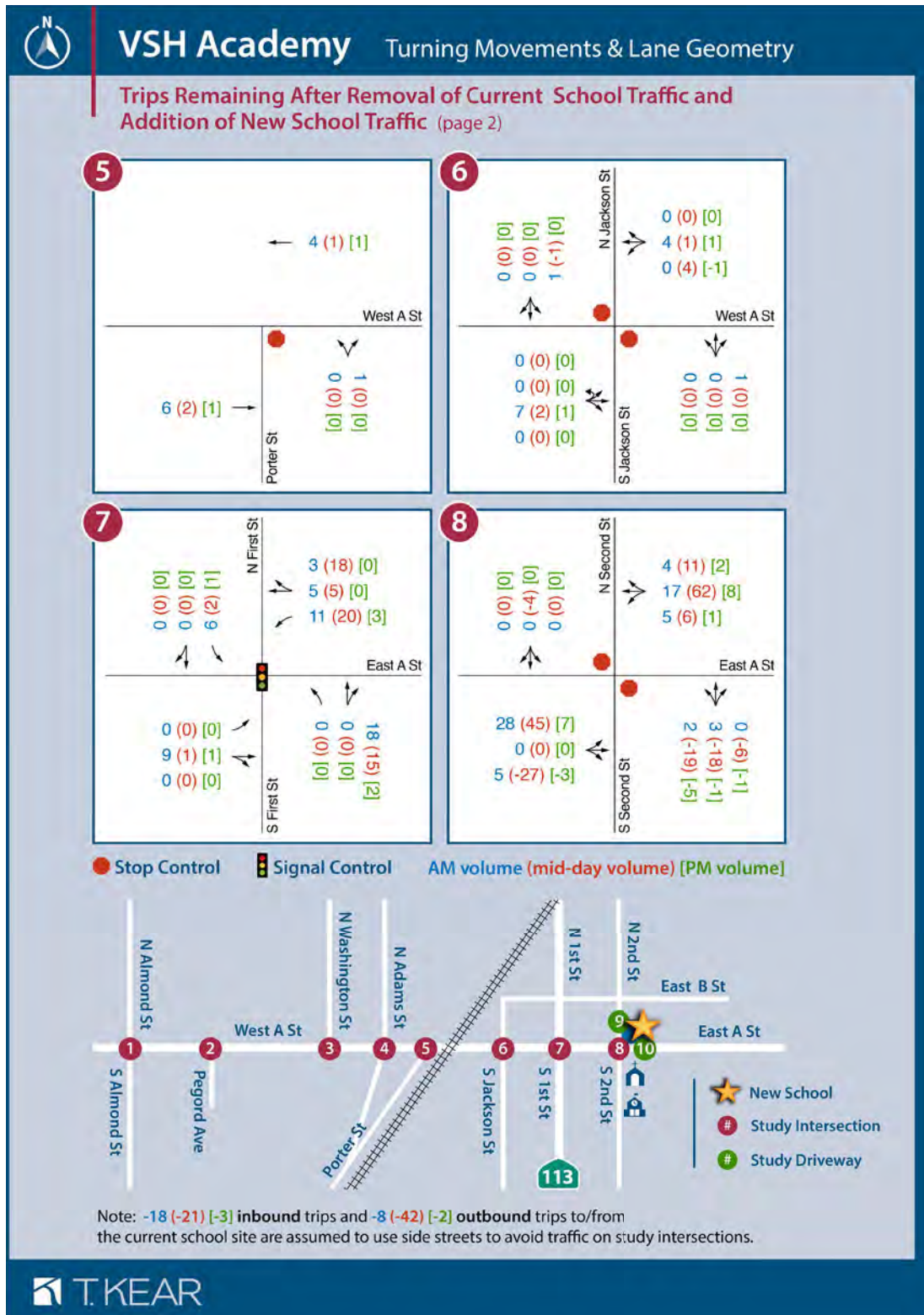


Figure 11. School trip assignment, net change in trips with anticipated with new School (these are the new trips associated with the School) (continued)

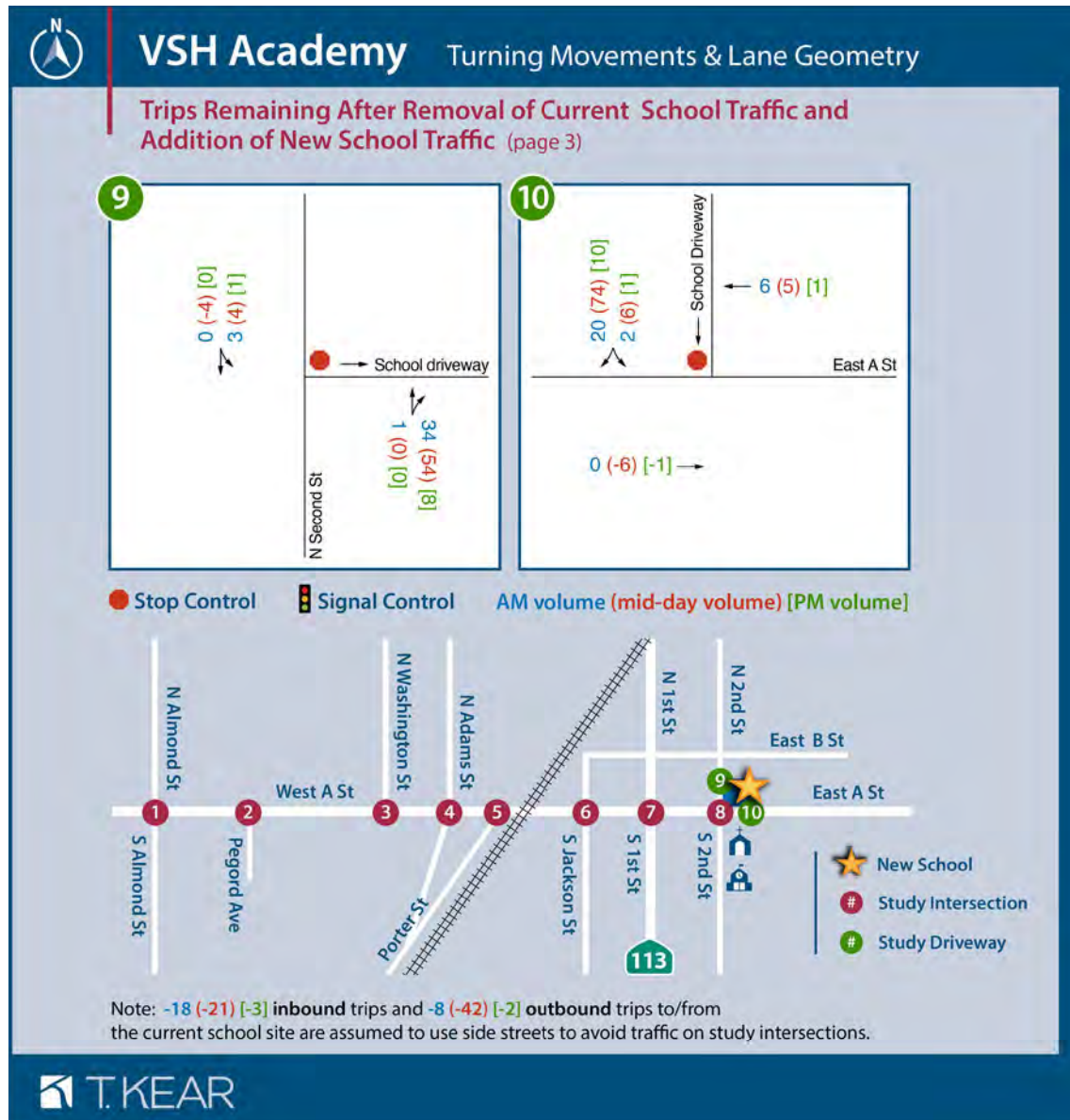


Figure 11. School trip assignment, net change in trips with anticipated with new School (these are the new trips associated with the School) (continued)

5.3 Existing with School Conditions

Peak-hour traffic associated with the School was added to the Existing turning volumes at each intersection. Delay and level-of-service were determined at the study intersections. **Figure 12** summarizes the turning movements and lane configurations for the Existing with School condition. **Table 11** through **Table 13** presents a summary of the level-of-service and queuing calculations at the study intersections. The tables include color coding and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency. There are two study intersections where preexisting queues are anticipated to exceed available storage:

- West A Street/North Adams Street,
- A Street/1st Street.

However, the School is anticipated to add less than one full car length to these queues and thus the School is not considered to worsen these queues. Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

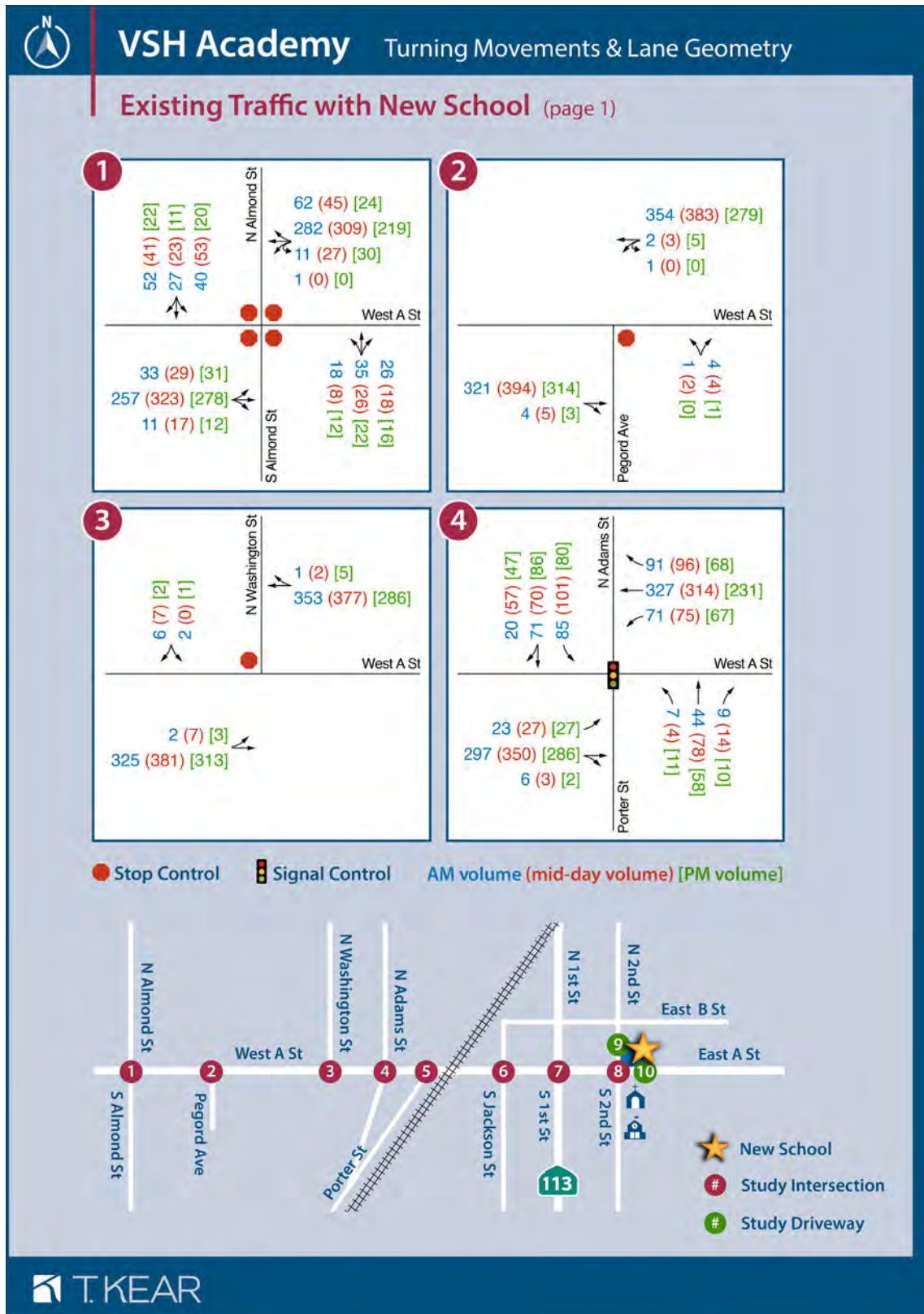


Figure 12. Existing 2024 with School condition turning movements and lane geometry

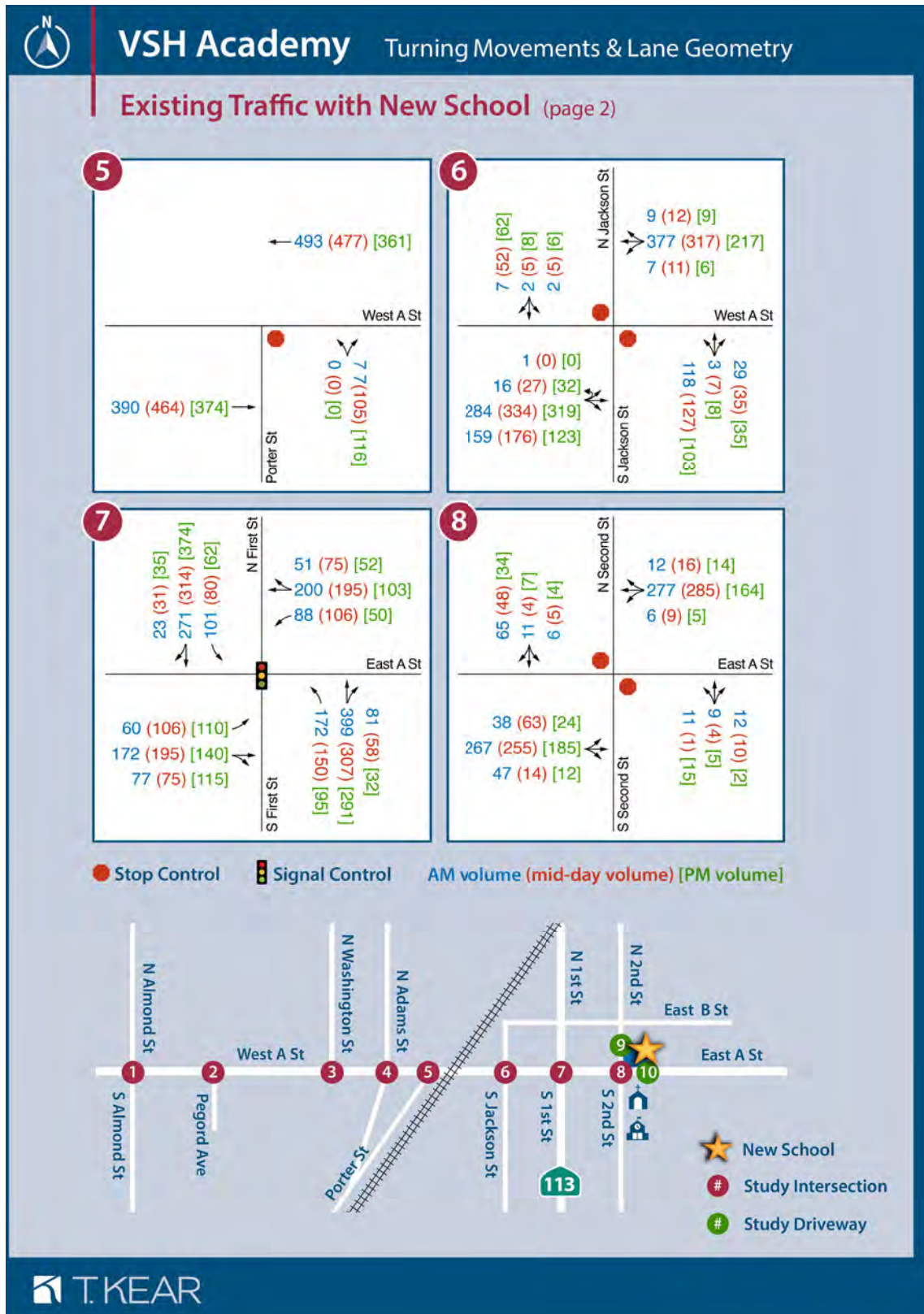


Figure 12. Existing 2024 with School condition turning movements and lane geometry (continued)

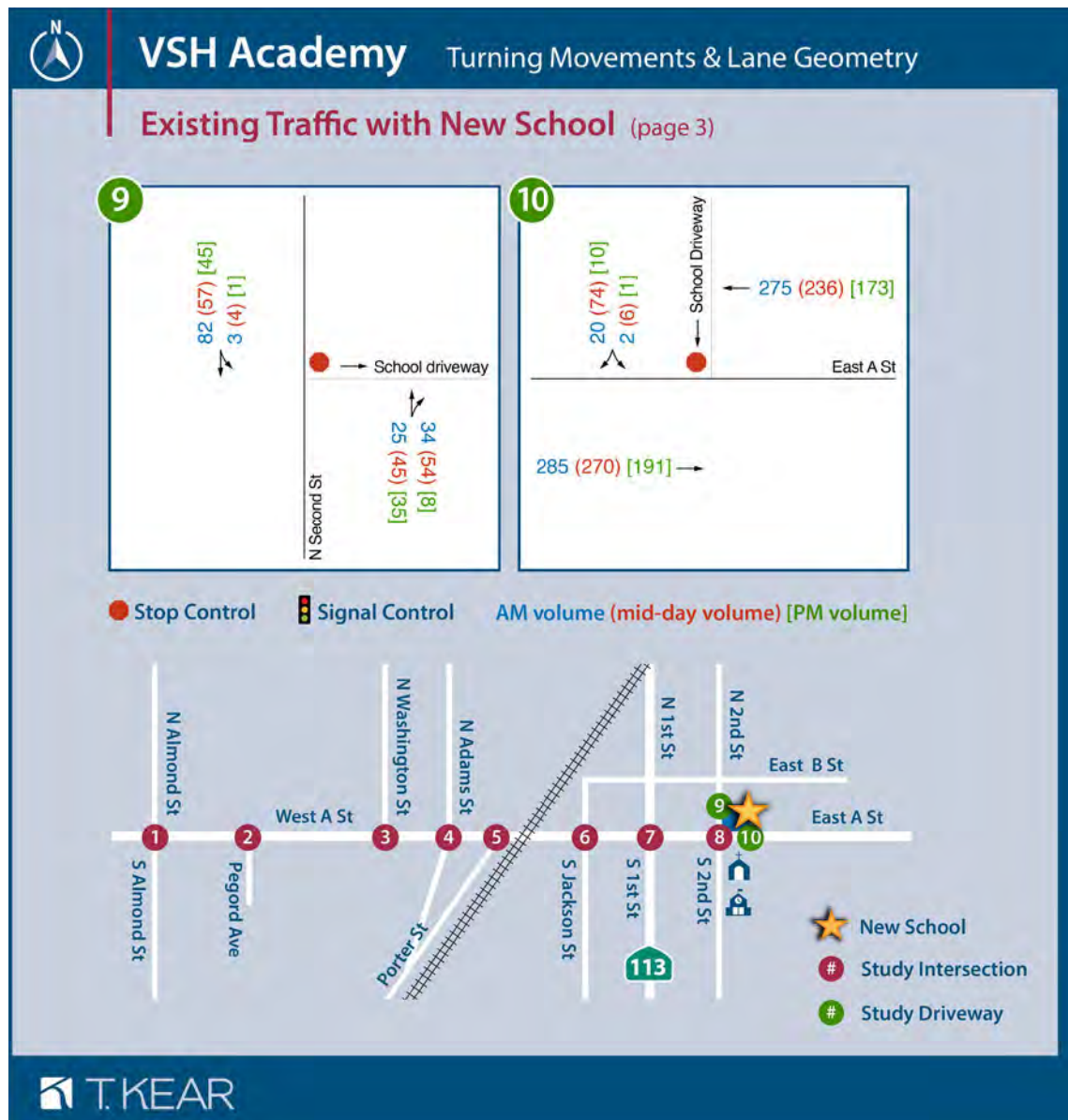


Figure 12. Existing 2024 with School condition turning movements and lane geometry (continued)

Table 11. Existing AM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Existing AM w/o School			Existing AM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	13.8	B	n/a	14.1	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a	11.9 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	12.2 (SB)	B	n/a	12.3 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.0	B	31	12.0	B	32
	WBL	50				68			68
	WBT	280				197			199
	NBL	60				15			15
	SBL	75				76			77
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.1 (NB)	B	12.5	12.2 (NB)	B	15
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	14.4 (NB)	B	126	14.7 (NB)	B	115
	EB	245				69			80
	WB	n/a				71			61
	SB	n/a				34			34
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	26.7	C	119	30.0	C	117
	WBL	70				110			112
	NBL	90				134			134
	SBL	145				146			163
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	7.7 (NB)	B	46	14.3 (NB)	C	55
	EB	n/a				50			119
	WB	n/a				62			95
	SB	n/a				70			79
		Ped	n/a	Synchro 12	29.5% dissatisfied (Ped. LOS = D)			30.2% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist			0.1 (SB)	A	8
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			13.3 (SB)	B	46

TWSC level-of-service based on worst approach which is designated in parentheses

Table 12. Existing mid-day peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Existing Mid-day w/o School			Existing Mid-day with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.9	B	n/a	15.0	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	13.2 (NB)	B	n/a	13.2 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.0 (SB)	B	n/a	11.0 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.1	B	38	13.1	B	38
	WBL	50				78			78
	WBT	280				210			211
	NBL	60				13			13
	SBL	75				96			96
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	22.5	13.6 (NB)	B	22.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	24.0 (NB)	C	170	25.7 (NB)	D	173
	EB	245				109			145
	WB	n/a				81			74
	SB	n/a				61			70
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	27.1	C	128	28.4	C	125
	WBL	70				109			112
	NBL	90				136			135
	SBL	145				135			138
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	11.1 (NB)	C	79	11.3 (SB)	B	39
	EB	n/a				52			134
	WB	n/a				59			80
	SB	n/a				75			70
	Ped	n/a	Synchro 12	29.5% dissatisfied (Ped. LOS = D)			30.1% dissatisfied (Ped. LOS = D)		
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffic 12	Does not exist			0.3 (SB)	A	13
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			6.5 (SB)	A	90

TWSC level-of-service based on worst approach which is designated in parentheses

Table 13. Existing PM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Existing PM w/o School			Existing PM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11	B	n/a	11.0	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.1 (SB)	B	n/a	11.1 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.2	B	34	12.2	B	34
	WBL	50				62			62
	WBT	280				138			140
	NBL	60				19			20
	SBL	75				70			70
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	11.9 (NB)	B	17.5	11.9 (NB)	B	17.5
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	30.7 (NB)	D	75	30.6 (NB)	D	75
	EB	245				2.5			2.5
	WB	n/a				0			0
	SB	n/a				12.5			12.5
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	20.6	C	153	20.7	C	154
	WBL	70				81			85
	NBL	90				135			137
	SBL	145				93			95
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	7.5	13.8 (NB)	B	7.5
	EB	n/a				0			2.5
	WB	n/a				0			0
	SB	n/a				7.5			7.5
	Ped	n/a	Synchro 12	28.1% dissatisfied (Ped. LOS = D)			28.2% dissatisfied (Ped. LOS = D)		
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist			0.1 (SB)	A	0
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist			9.5 (SB)	A	0

TWSC level-of-service based on worst approach which is designated in parentheses

6. LTA EXISTING PLUS APPROVED PROJECTS (EPAP) CONDITIONS

This section presents Existing condition traffic plus traffic from planned and approved projects that are reasonably expected to be constructed by the time the School is constructed. This reflects opening year conditions.

6.1 EPAP Growth Increment

EPAP traffic forecasts were developed by adding incremental growth from the travel demand model to existing traffic counts and applying the NCHRP 255 adjustment. Travel demand model outputs provided by the City through the City's consultant were used for preparation of the EPAP forecast. Additional detail on land use and road network assumptions was provided in **Section 3.1** of this report.

6.2 EPAP Without School Conditions

The EPAP conditions analysis utilizes lane configurations and signal timing plans from the Existing conditions.

Figure 13 summarizes the turning movements and lane configurations for the EPAP conditions scenario. **Table 14** and **Table 16** present a summary of level-of-service results for the study intersections under EPAP conditions. As with the existing condition, the tables include color coded and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency.

- One study intersection is anticipated to operate at level-of-service E during the PM peak hour (the TWSC #6 West A Street/Jackson Street). The PM peak hour analysis was based on the deterministic HCM 7th Edition calculation. Specifically, the northbound left turn movement from the minor street (Jackson Street) to the major street (West A Street) is anticipated to have more than 35 seconds of delay based on the deterministic delay calculation. That calculation does not account for the gaps in traffic created by adjacent traffic signals. Those gaps tend to reduce delay on the minor approaches at TWSC intersections, indeed the results from simulation of this intersection for the AM and mid-day peak-hours resulted in acceptable level-of-service and delay under 35 seconds. The deterministic result for the PM peak hour at intersection six is considered reasonable for purposes of estimating deficiencies but likely presents worse delay and level-of-service than what vehicles will experience.
- Two of the study intersections have calculated 95th percentile queue lengths that exceed available storage prior to the addition of School traffic (West A Street/North Adams Street, and A Street/1st Street).

Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

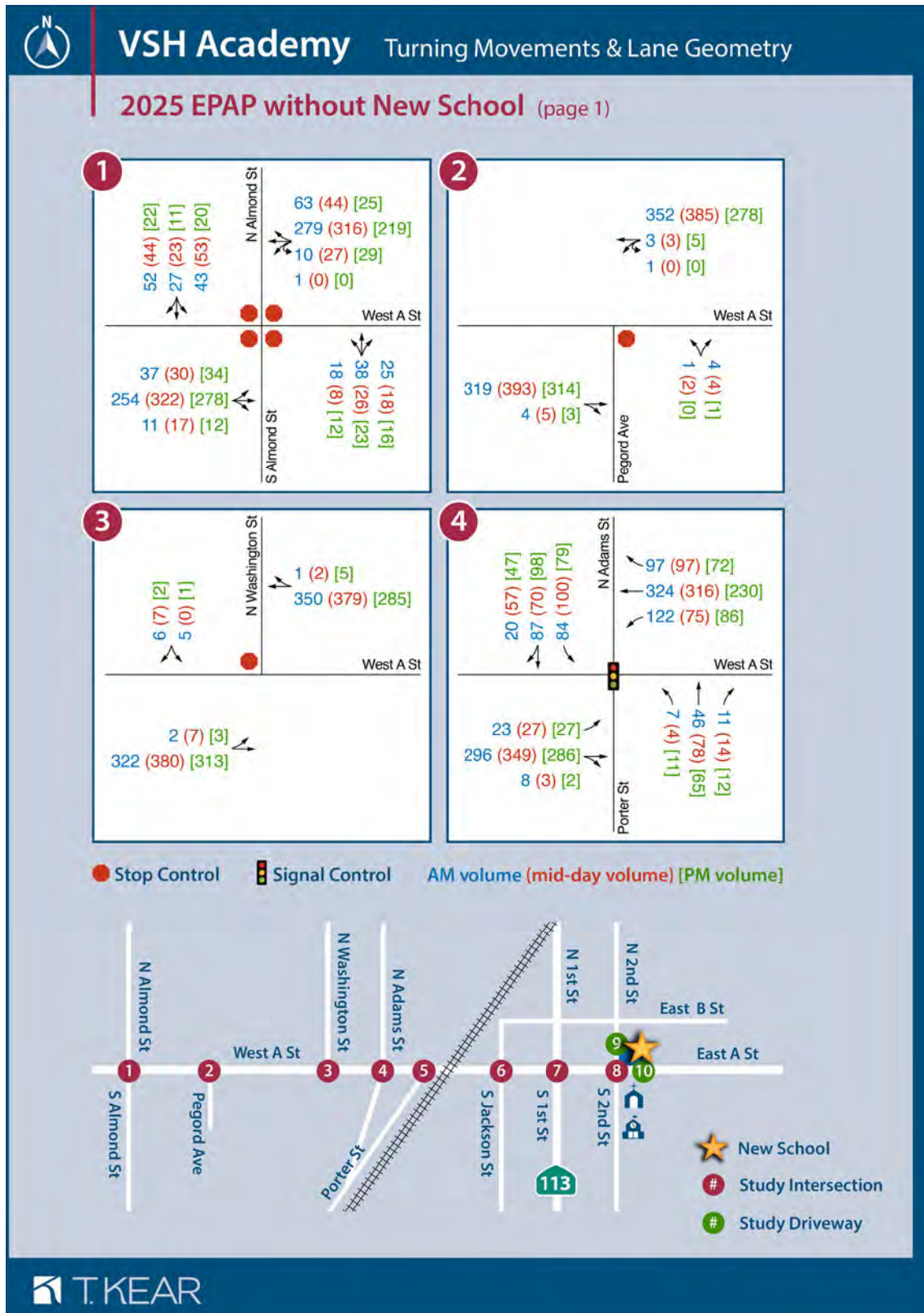


Figure 13. EPAP condition turning movements and geometry

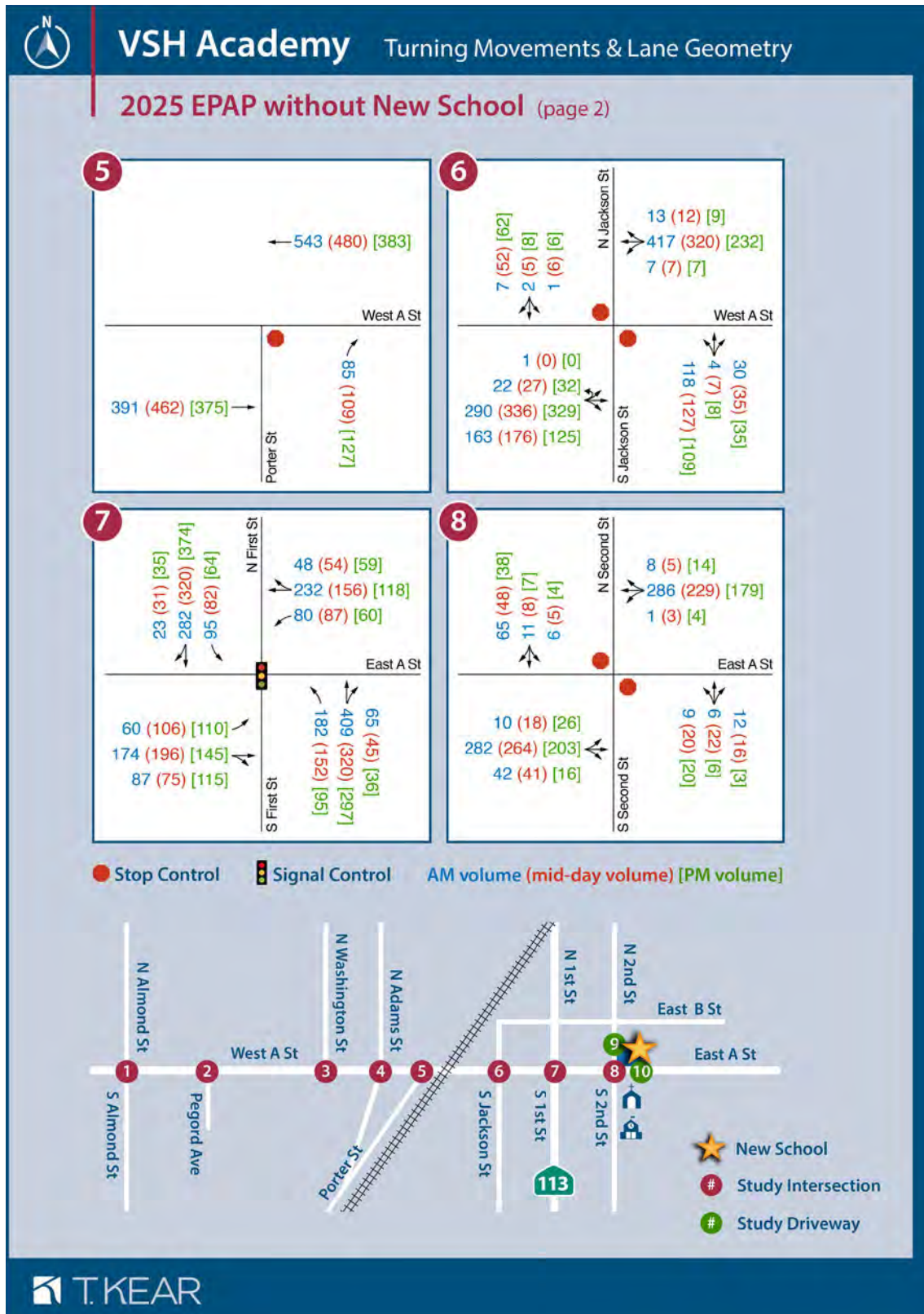


Figure 13. EPAP condition turning movements and geometry (continued)

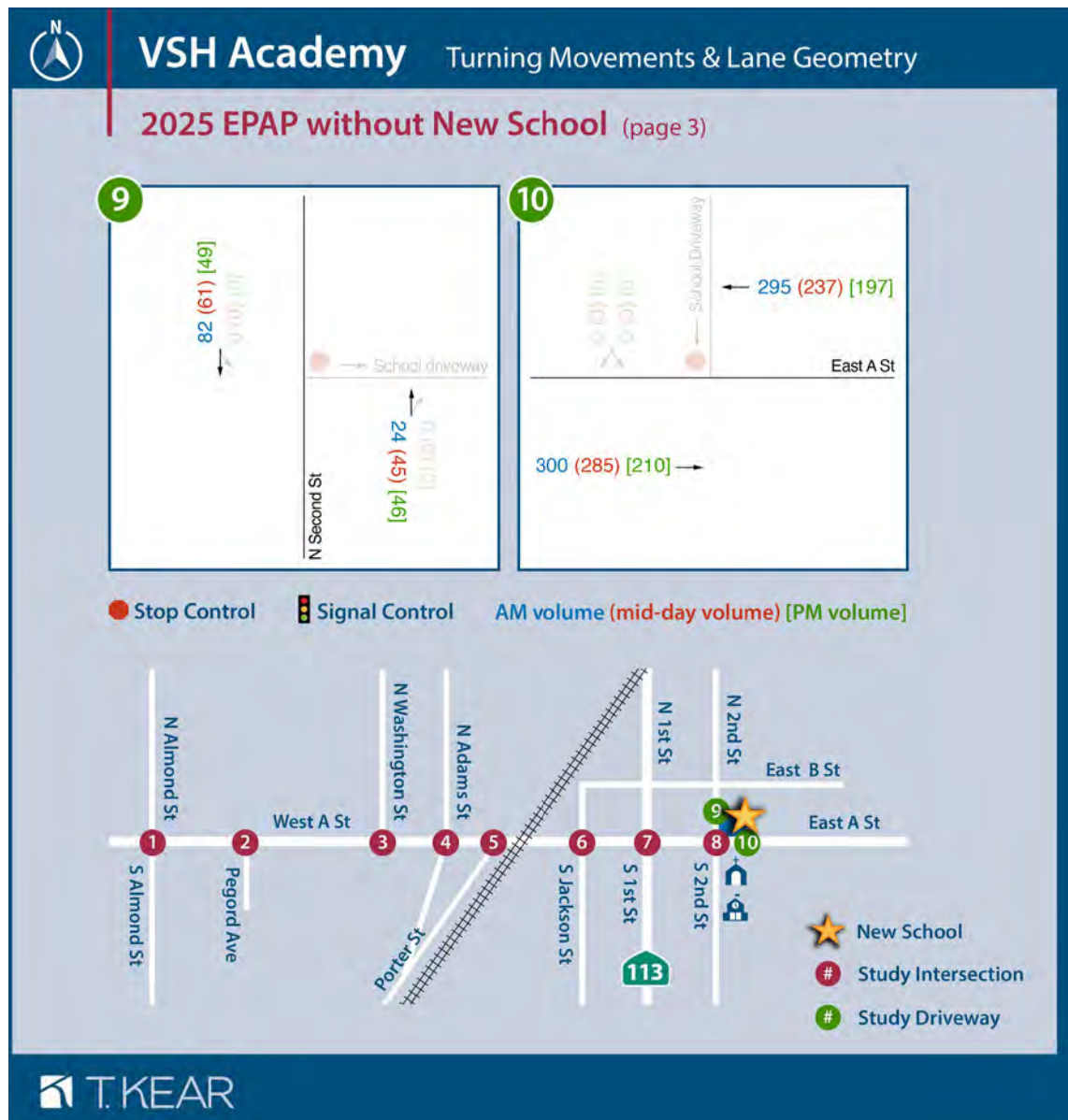


Figure 13. EPAP condition turning movements and geometry (continued)

Table 14. EPAP AM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	EPAP AM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.1	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	13.4 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.7	B	33
	WBL	50				104
	WBT	280				196
	NBL	60				16
	SBL	75				80
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.4 (NB)	B	15
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	24.5 (NB)	C	164
	EB	245				106
	WB	n/a				80
	SB	n/a				32
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	30.1	C	116
	WBL	70				111
	NBL	90				135
	SBL	145				150
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	13.9 (SB)	B	47
	EB	n/a				51
	WB	n/a				88
	SB	n/a				80
		Ped	n/a	Synchro 12	30.4% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 15. EPAP mid-day peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	EPAP Mid-day w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	15.2	C	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	13.7 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.0 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.1	B	38
	WBL	50				78
	WBT	280				212
	NBL	60				13
	SBL	75				96
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	22.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	17.0 (NB)	C	132
	EB	245				121
	WB	n/a				61
	SB	n/a				60
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	27.0	C	126
	WBL	70				106
	NBL	90				136
	SBL	145				149
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	9.6 (NB)	A	67
	EB	n/a				46
	WB	n/a				50
	SB	n/a				61
		Ped	n/a	Synchro 12	29.6% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffic 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 16. EPAP PM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	EPAP PM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11.1	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.1 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.6	B	35
	WBL	50				77
	WBT	280				140
	NBL	60				20
	SBL	75				73
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.1 (NB)	B	20
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	35.3 (NB)	E	90
	EB	245				2.5
	WB	n/a				0
	SB	n/a				12.5
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	21.2	C	158
	WBL	70				100
	NBL	90				140
	SBL	145				100
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	14.8 (NB)	B	10
	EB	n/a				2.5
	WB	n/a				0
	SB	n/a				7.5
		Ped	n/a	Synchro 12	28.5% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

6.3 EPAP with School Conditions

Peak-hour traffic associated with the School was added to anticipated EPAP turning volumes at each intersection. Delay and level-of-service were then determined at the study intersections. **Figure 14** summarizes the turning movements and lane configurations for the EPAP with School conditions.

Table 17 through **Table 19** present a summary of the level-of-service and queueing results for the study intersections.

The tables include color coding and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency. There are two study intersections where preexisting queues are anticipated to exceed available storage:

- West A Street/North Adams Street,
- A Street/1st Street.

However, the School is anticipated to add less than one full car length to these queues and thus the School is not considered to worsen these queues. There is one study intersection where preexisting level-of-service E Conditions are anticipated to exist:

- West A Street/Jackson Street

The shared northbound approach to this interaction is anticipated to experience 35.3 seconds of delay with or without the School. Because School traffic is anticipated to increase delay by less than 2 seconds, this deficiency is not considered to be related to the School. Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

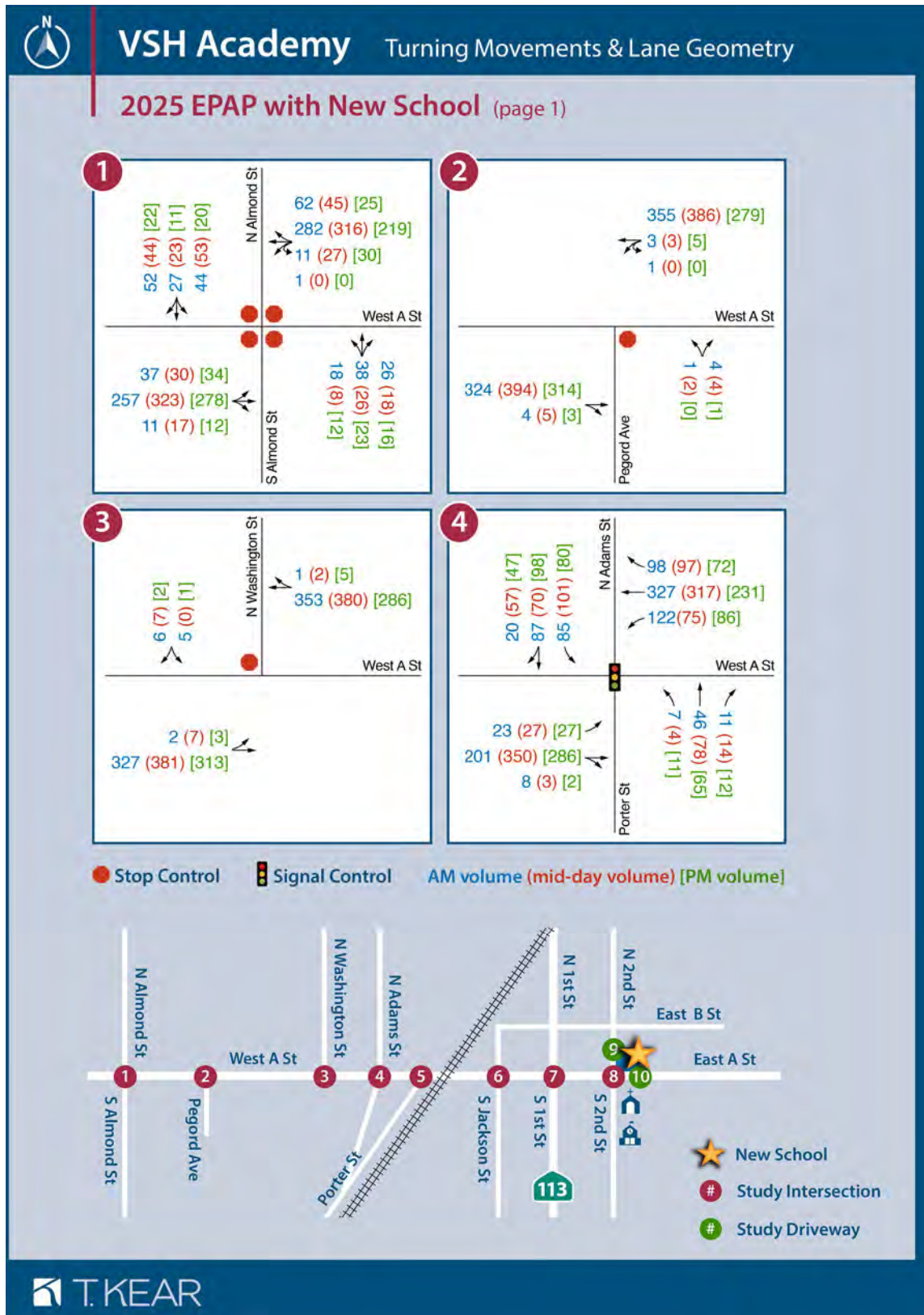


Figure 14. EPAP with School turning movements and lane geometry

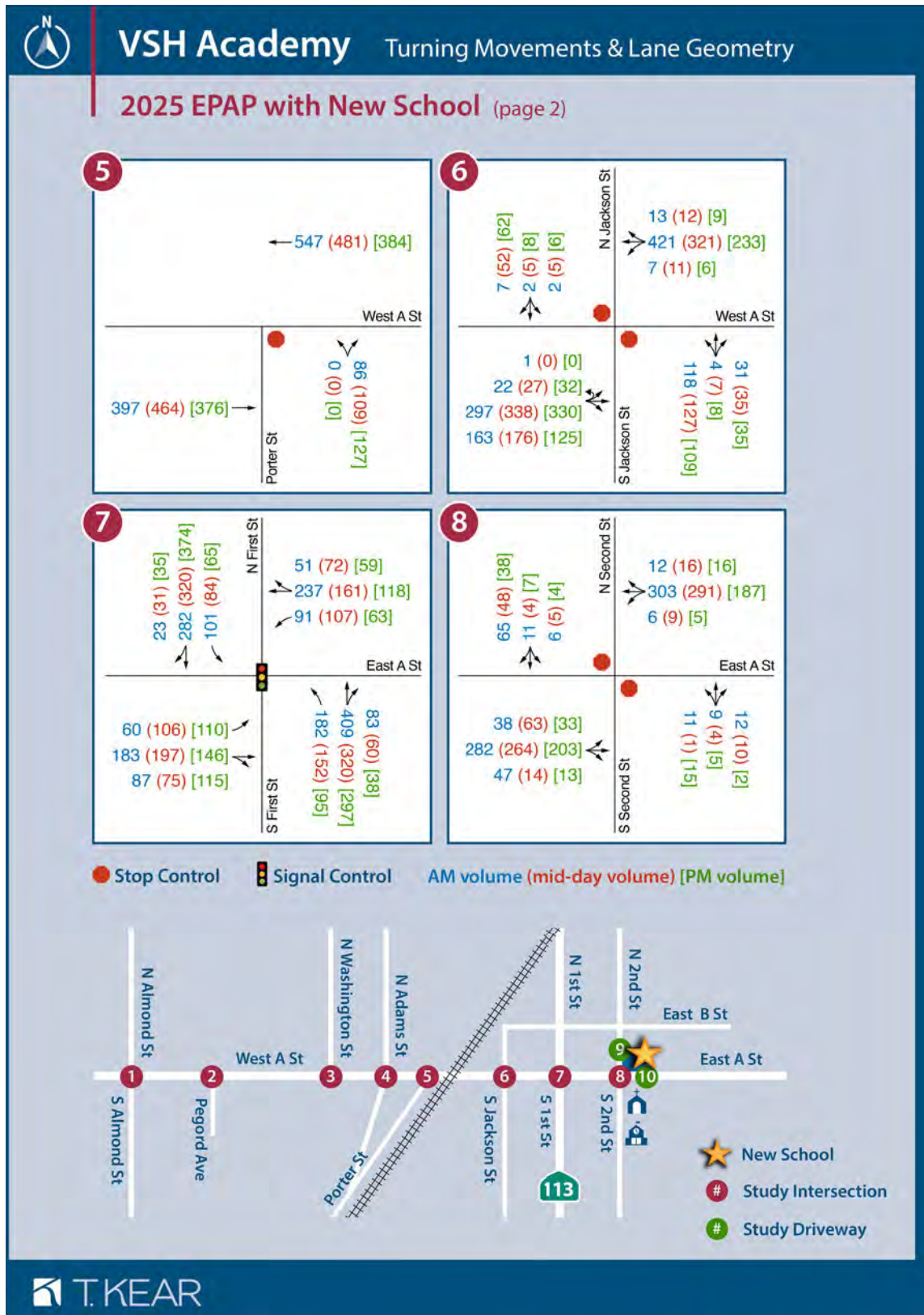


Figure 14. EPAP with School turning movements and lane geometry (continued)

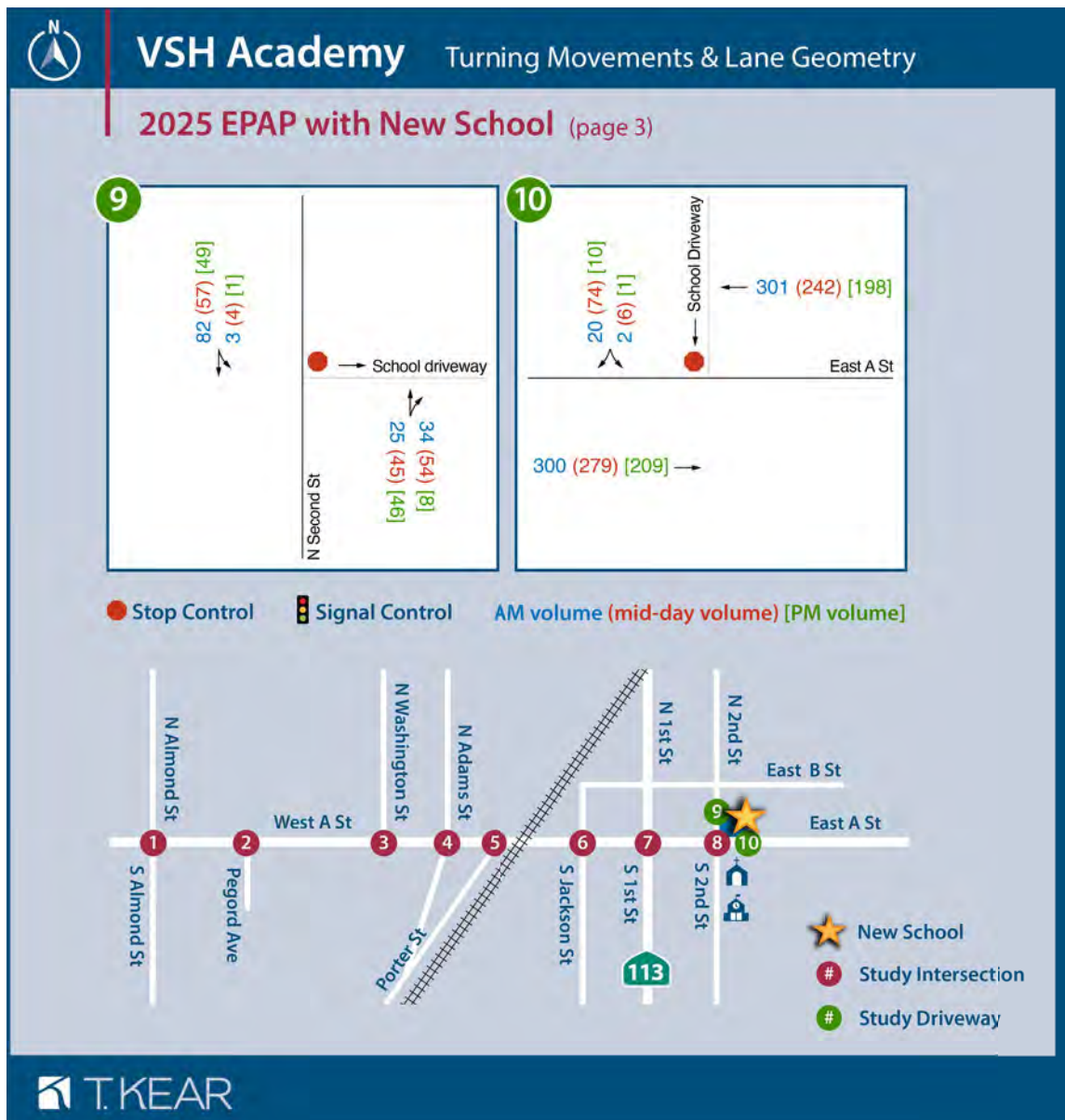


Figure 14. EPAP with School turning movements and lane geometry (continued)

Table 17. EPAP AM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	EPAP AM w/o School			EPAP AM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.1	B	n/a	14.3	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a	11.9 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	13.4 (SB)	B	n/a	13.4 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.7	B	33	12.8	B	33
	WBL	50				104			105
	WBT	280				196			198
	NBL	60				16			16
	SBL	75				80			81
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.4 (NB)	B	15	12.5 (NB)	B	15
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	24.5 (NB)	C	164	19.3 (NB)	C	141
	EB	245				106			124
	WB	n/a				80			83
	SB	n/a				32			35
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	30.1	C	116	33.4	C	120
	WBL	70				111			114
	NBL	90				135			134
	SBL	145				150			160
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	13.9 (SB)	B	47	27.5 (NB)	D	71
	EB	n/a				51			126
	WB	n/a				88			110
	SB	n/a				80			86
	Ped	n/a	Synchro 12	30.4% dissatisfied (Ped. LOS = D)			30.6% dissatisfied (Ped. LOS = D)		
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist			2.8 (SB)	A	35
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			4.5 (SB)	A	42

TWSC level-of-service based on worst approach which is designated in parentheses

Table 18. EPAP mid-day peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	EPAP Mid-day w/o School			EPAP Mid-day with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	15.2	C	n/a	15.3	C	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	13.7 (NB)	B	n/a	13.2 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.0 (SB)	B	n/a	11.0 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.1	B	38	13.1	B	38
	WBL	50				78			78
	WBT	280				212			212
	NBL	60				13			13
	SBL	75				96			96
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.6 (NB)	B	22.5	13.7 (NB)	B	22.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	17.0 (NB)	C	132	19.3 (NB)	C	140
	EB	245				121			138
	WB	n/a				61			93
	SB	n/a				60			69
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	27.0	C	126	30.7	C	127
	WBL	70				106			111
	NBL	90				136			139
	SBL	145				149			160
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	9.6 (NB)	A	67	17.0 (SB)	D	40
	EB	n/a				46			149
	WB	n/a				50			116
	SB	n/a				61			76
		Ped	n/a	Synchro 12	29.6% dissatisfied (Ped. LOS = D)			30.3% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffic 12	Does not exist			1.6 (SB)	A	27
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			6.6 (SB)	A	65

TWSC level-of-service based on worst approach which is designated in parentheses

Table 19. EPAP PM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	EPAP PM w/o School			EPAP PM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11.1	B	n/a	11.1	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.1 (SB)	B	n/a	11.1 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	12.6	B	35	12.6	B	35
	WBL	50				77			77
	WBT	280				140			142
	NBL	60				20			20
	SBL	75				73			74
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	12.1 (NB)	B	20	12.1(NB)	B	20
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	35.3 (NB)	E	90	35.3 (NB)	E	87.5
	EB	245				2.5			2.5
	WB	n/a				0			0
	SB	n/a				12.5			12.5
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	21.2	C	158	21.4	C	159
	WBL	70				100			105
	NBL	90				140			141
	SBL	145				100			101
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	14.8 (NB)	B	10	15.1 (NB)	C	7.5
	EB	n/a				2.5			2.5
	WB	n/a				0			0
	SB	n/a				7.5			7.5
		Ped	n/a	Synchro 12	28.5% dissatisfied (Ped. LOS = D)			28.2% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist			0.1 (SB)	A	0
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist			9.7 (SB)	A	2.5

TWSC level-of-service based on worst approach which is designated in parentheses

7. LTA CUMULATIVE CONDITIONS

This section presents Cumulative condition traffic.

7.1 Cumulative Growth Increment

Cumulative traffic forecasts were developed by adding incremental growth from the travel demand model to existing traffic counts and applying the NCHRP 255 adjustment. Travel demand model outputs provided by the City through the City's consultant were used for preparation of the cumulative forecast. Additional detail on land use and road network assumptions was provided in **Section 3.1** of this report.

7.2 Cumulative without School Conditions

The Cumulative conditions analysis utilizes lane configurations and signal timing plans from the Existing conditions.

Figure 15 summarizes the turning movements and lane configurations for the Cumulative condition scenario. **Table 20** through **Table 22** present a summary of level-of-service results for the study intersections under Cumulative conditions. As with the prior results, the tables include color coding and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency.

There are two locations with level-of-service deficiencies before the addition of School traffic:

- **West A Street/Jackson Street** is anticipated to operate at level-of-service E with 44.7 seconds of delay on the northbound approach during the mid-day peak-hour; and level-of-service F with 81.4 seconds of delay on the northbound approach during the PM peak-hour.
- **West A Street/2nd Street** is anticipated to operate at level-of-service F with 114.6 seconds of delay on the northbound approach during the AM peak-hour, and 86.5 seconds of delay on the northbound approach during the mid-day peak-hour.

In addition to those level-of-service deficiencies, 95th percentile left turn queues exceed pocket lengths at West A Street/North Adams Street, and A Street/1st Street. Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

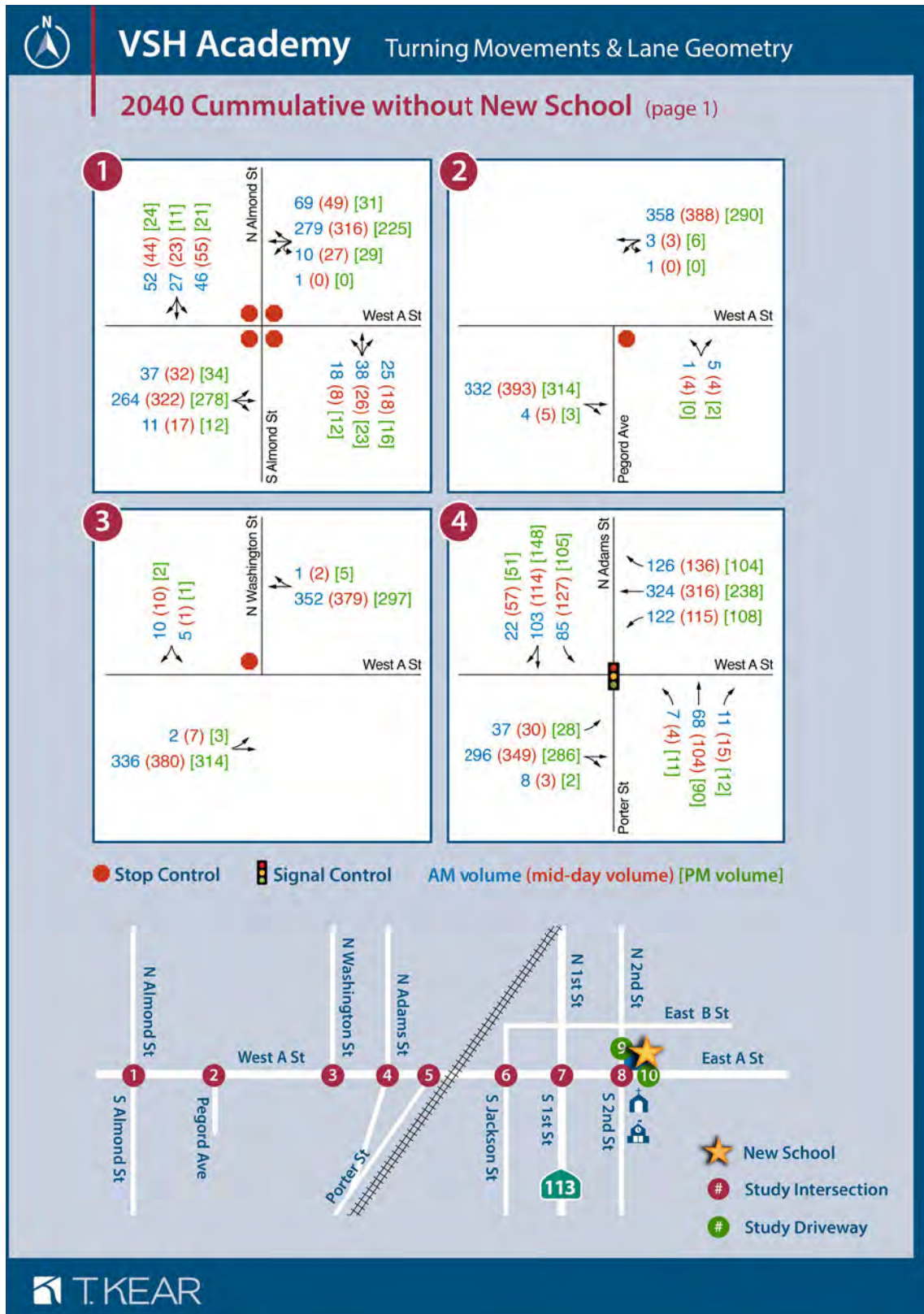


Figure 15. Cumulative condition turning movements and geometry

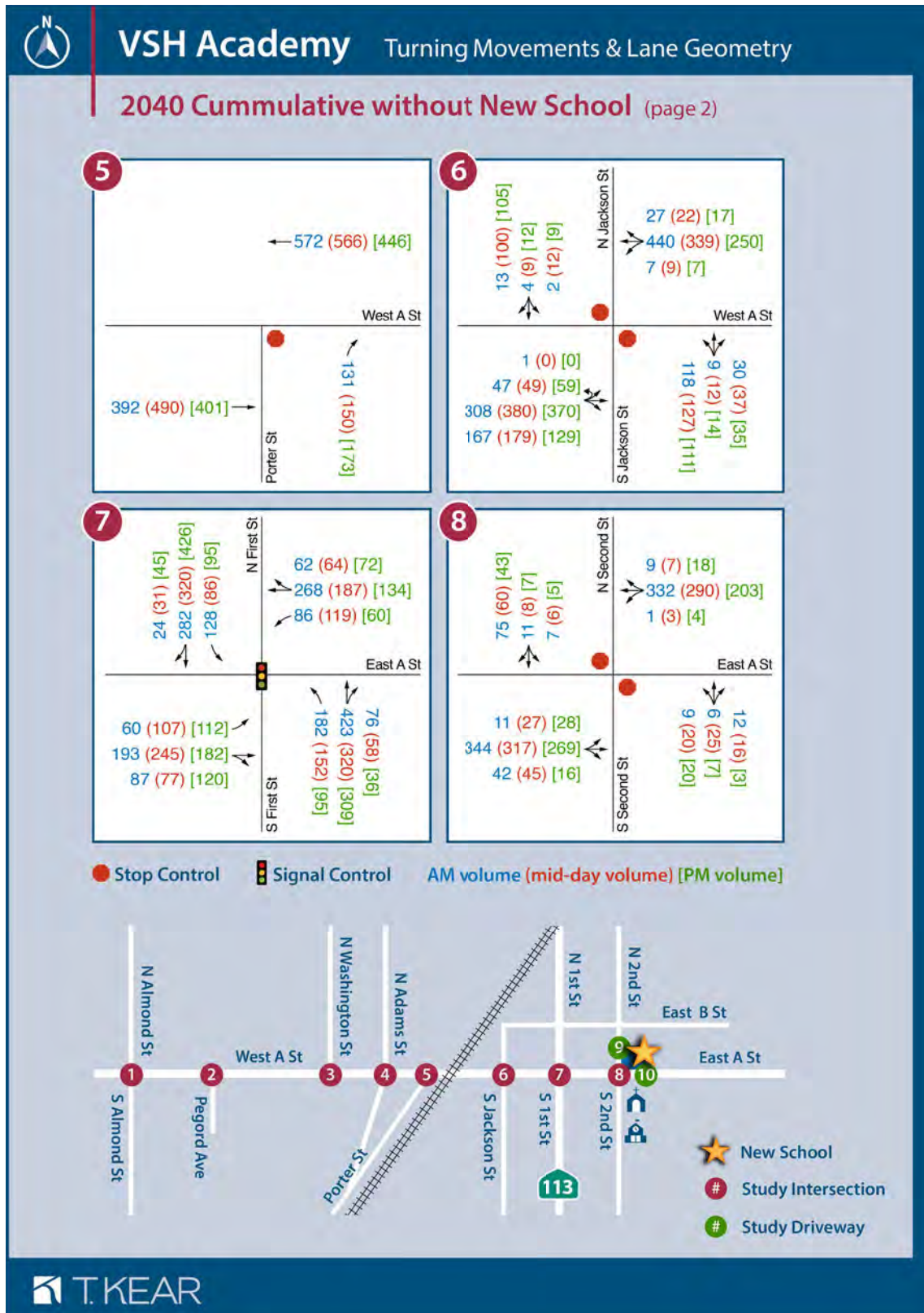


Figure 15. Cumulative condition turning movements and geometry (continued)

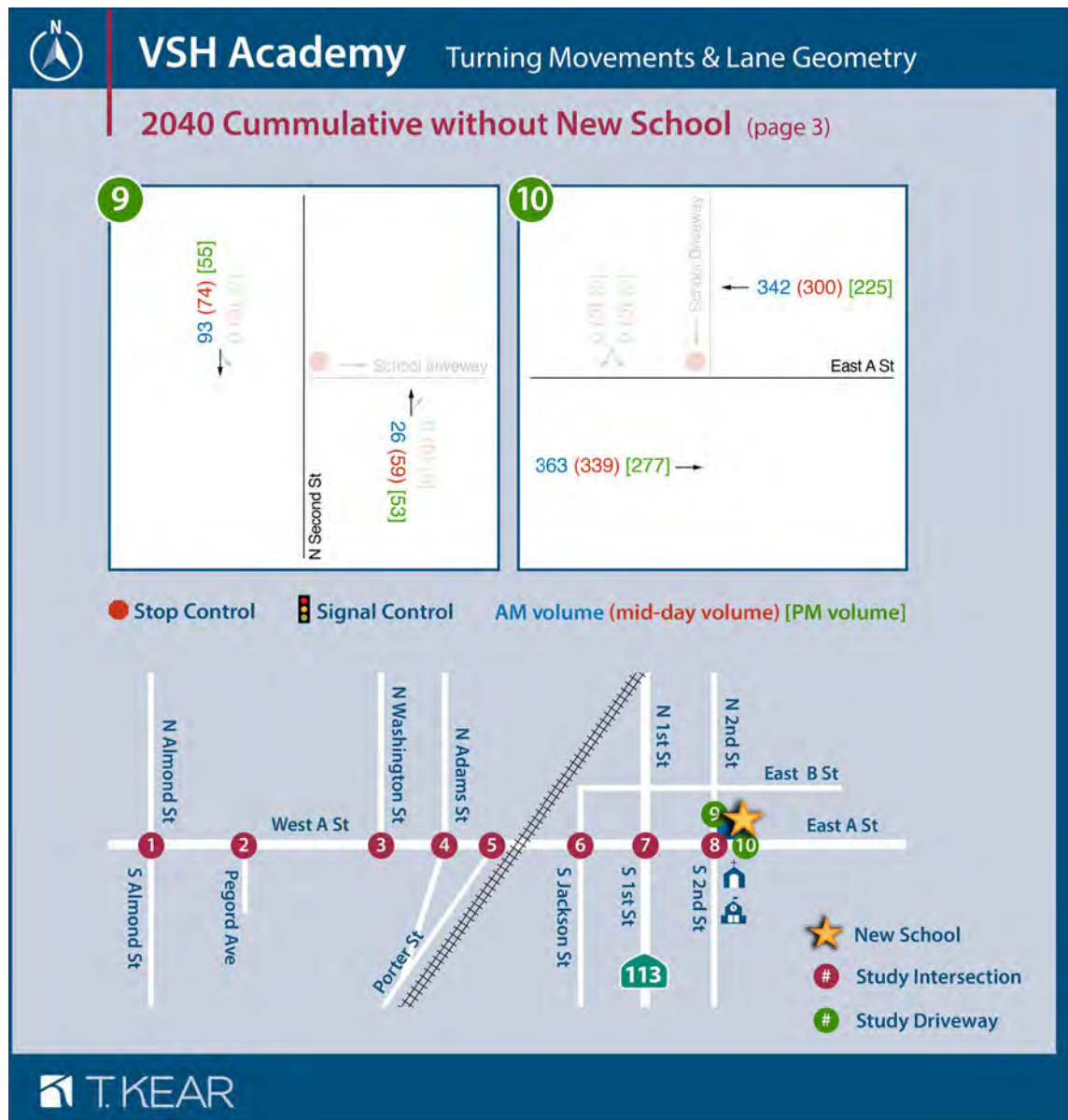


Figure 15. Cumulative condition turning movements and geometry (continued)

Table 20. Cumulative AM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Cumulative AM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.5	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	12.9 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.3	B	47
	WBL	50				108
	WBT	280				213
	NBL	60				16
	SBL	75				83
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.3 (NB)	B	27.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	28.0 (NB)	D	174
	EB	245				142
	WB	n/a				75
	SB	n/a				40
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	35.3	C	120
	WBL	70				114
	NBL	90				131
	SBL	145				181
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	114.6 (NB)	F	128
	EB	n/a				82
	WB	n/a				121
	SB	n/a				106
	Ped	n/a	Synchro 12	40.6% dissatisfied (Ped. LOS =E)		
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 21. Cumulative mid-day peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Cumulative Mid-day w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	15.5	C	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	14.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.6 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	14.5	B	45
	WBL	50				117
	WBT	280				228
	NBL	60				13
	SBL	75				128
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	15.4 (NB)	C	37.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	44.7 (NB)	E	241
	EB	245				218
	WB	n/a				109
	SB	n/a				119
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	33.4	C	130
	WBL	70				113
	NBL	90				139
	SBL	145				162
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	86.5 (NB)	F	162
	EB	n/a				107
	WB	n/a				113
	SB	n/a				86
		Ped	n/a	Synchro 12	42.0% dissatisfied (Ped. LOS =E)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffic 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

Table 22. Cumulative PM peak-hour intersection delay and level-of-service (LOS) without the proposed School

Location and control	Queue Storage		Tool	Cumulative PM w/o School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11.2	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.2 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.6	B	39
	WBL	50				100
	WBT	280				157
	NBL	60				22
	SBL	75				98
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.2 (NB)	B	30
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	81.4 (NB)	F	165
	EB	245				5
	WB	n/a				0
	SB	n/a				30
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	24.6	C	170
	WBL	70				105
	NBL	90				148
	SBL	145				142
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	17.0 (NB)	C	12.5
	EB	n/a				2.5
	WB	n/a				0
	SB	n/a				10
		Ped	n/a	Synchro 12	39.5% dissatisfied (Ped. LOS =E)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist		
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist		

TWSC level-of-service based on worst approach which is designated in parentheses

7.3 Cumulative with School Conditions

Peak-hour traffic associated with the School was added to anticipated Cumulative turning volumes at each intersection. Delay and level-of-service were then determined at the study intersections. **Figure 16** summarizes the turning movements and lane configurations for the Cumulative with School conditions.

Table 23 through **Table 25** present a summary of the level-of-service and queueing results for the study intersections. The tables include color coding and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency.

There are two study intersections where preexisting level-of-service deficiencies are anticipated to be worsened by the School:

- **West A Street/Jackson Street (Deficiency 1)** is anticipated to operate at level-of-service E with 44.7 seconds of delay on the northbound approach during the mid-day peak-hour without the School. School traffic is expected to add 13.1 seconds of delay to the northbound approach during the mid-day peak-hour, resulting in level-of-service F conditions. For the mid-day peak-hour, this is potentially a significant School-related deficiency and abatement strategies are discussed in Section 8 of this report.

During the PM peak-hour, the intersection operates at level-of-service F, with 81.4 seconds of delay on the northbound approach; The School adds less than 2 seconds of additional delay and thus this deficiency is not considered to be a potentially significant School-related deficiency during the PM peak-hour.

- **West A Street/2nd Street (Deficiency 2)** is anticipated to operate at level-of-service F with 114.6 seconds of delay on the northbound approach during the AM peak-hour without the School. School traffic worsens the northbound approach delay by more than two seconds, which is a potentially significant project-related deficiency.

During the mid-day peak, this intersection also is anticipated to operate at level-of service F prior to the addition of School traffic, however delay is not increased by two seconds or more under the mid-day peak and there is no School related deficiency during the mid-day peak.

95th percentile left turn queues at the A Street/1st Street intersection continue to exceed the available storage length both with and without the School. However, School traffic adds less than one car length to those queues, and they are not considered to be a School related deficiency.

Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**. Section 8 of this report presents abatement measures to reduce deficiencies such that School traffic does not create new or worsen existing deficiencies relative to General Plan policies.

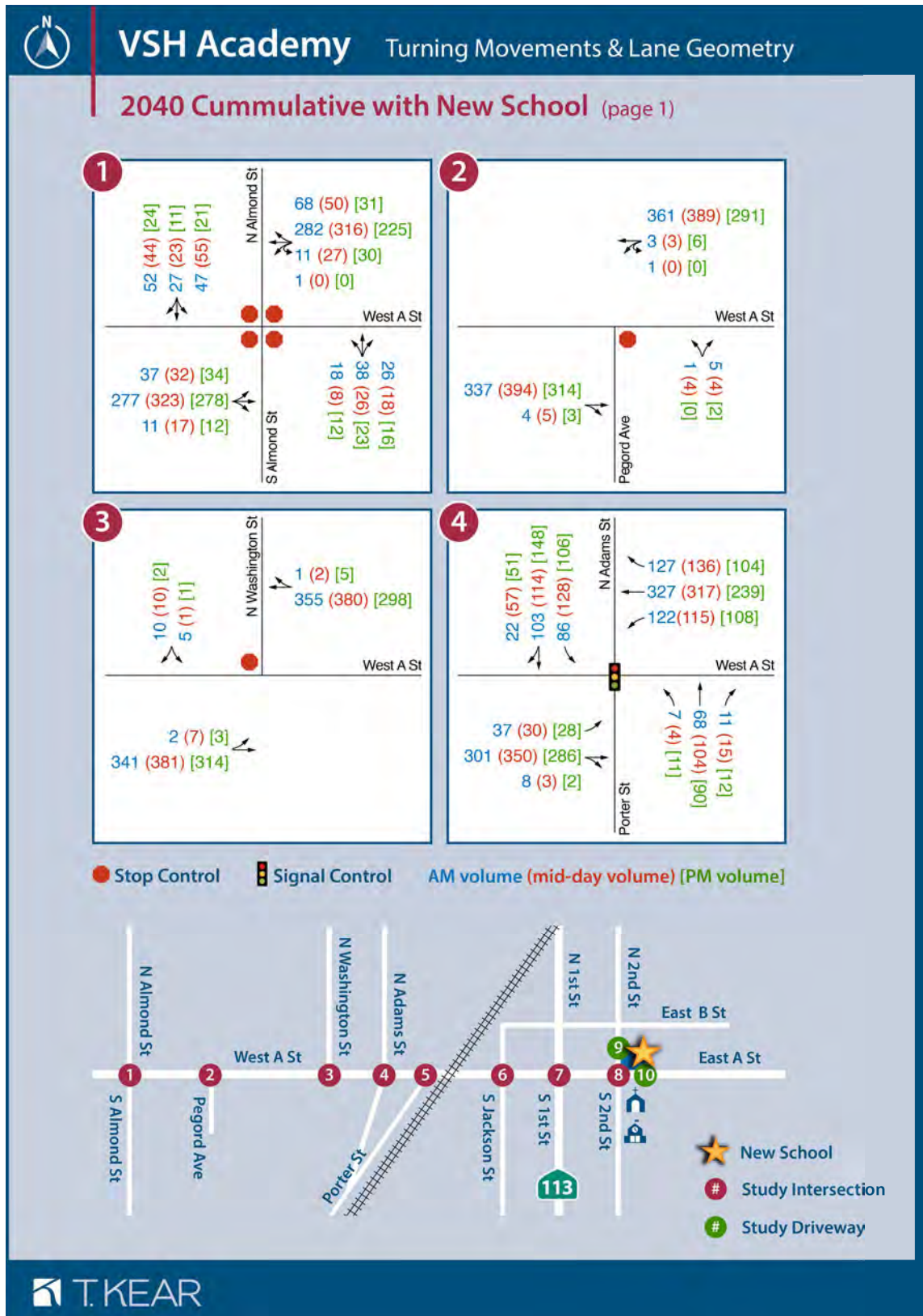


Figure 16. Cumulative with School turning movements and lane geometry

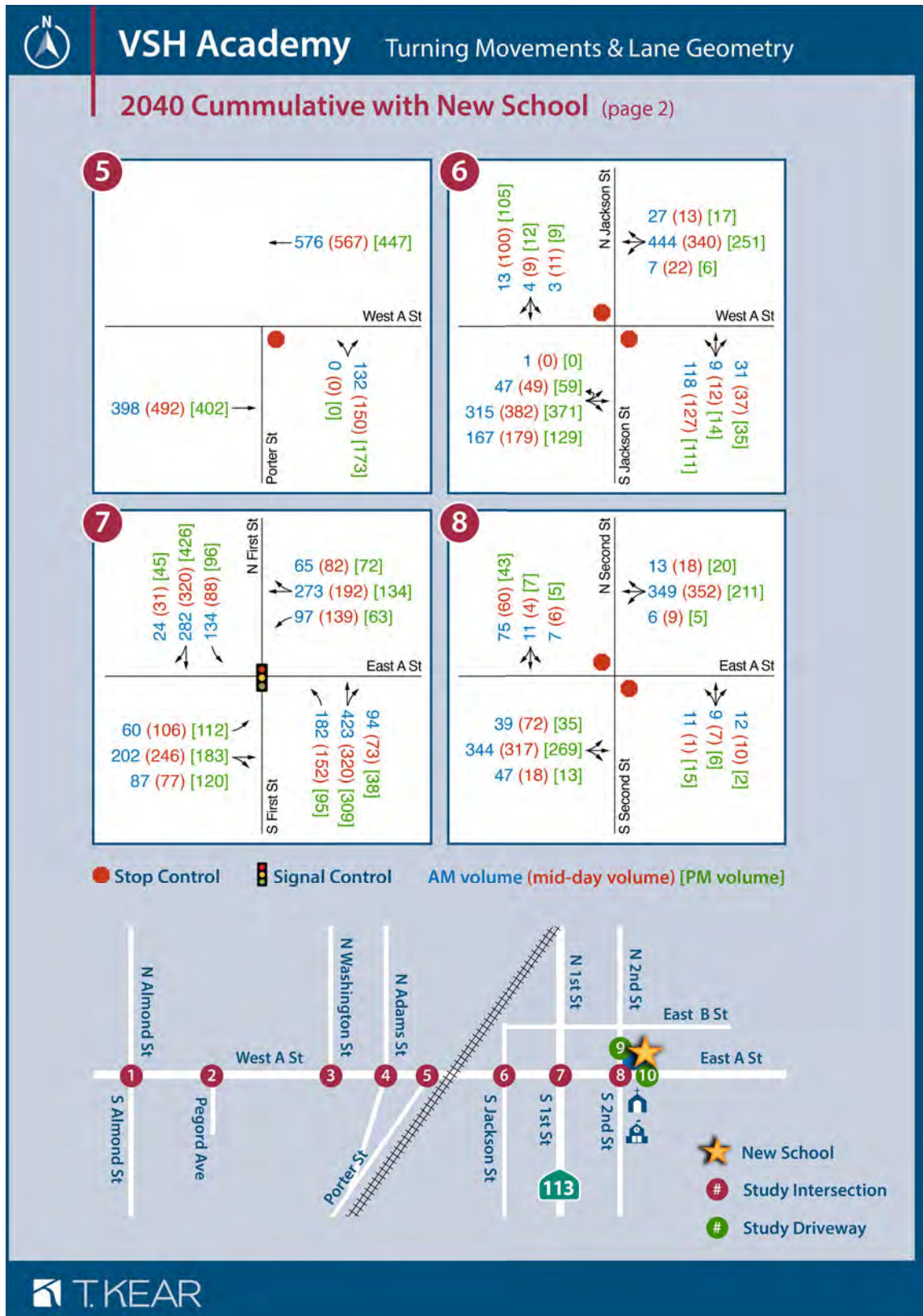


Figure 16. Cumulative with School turning movements and lane geometry (continued)

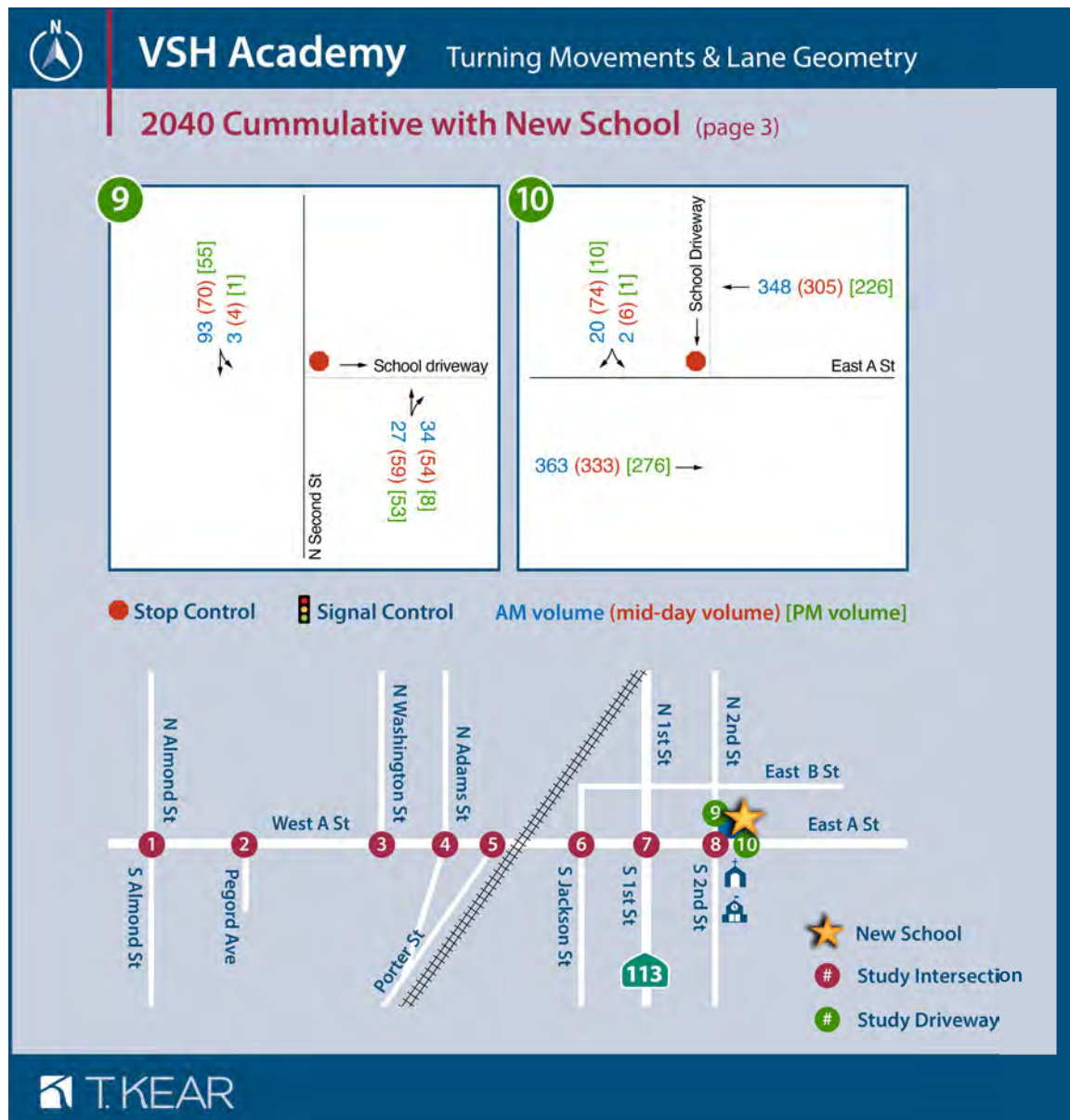


Figure 16. Cumulative with School turning movements and lane geometry (continued)

Table 23. Cumulative AM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Cumulative AM w/o School			Cumulative AM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	14.5	B	n/a	14.8	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	11.8 (NB)	B	n/a	11.9 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	12.9 (SB)	B	n/a	13.0(SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.3	B	47	13.4	B	46
	WBL	50				108			109
	WBT	280				213			215
	NBL	60				16			16
	SBL	75				83			84
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.3 (NB)	B	27.5	13.4 (NB)	B	27.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	28.0 (NB)	D	174	29.7 (NB)	D	176
	EB	245				142			192
	WB	n/a				75			92
	SB	n/a				40			45
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	35.3	C	120	41.4	D	123
	WBL	70				114			114
	NBL	90				131			128
	SBL	145				181			175
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	114.6 (NB)	F	128	145.5 (NB)	F	143
	EB	n/a				82			175
	WB	n/a				121			146
	SB	n/a				106			117
		Ped	n/a	Synchro 12	40.6% dissatisfied (Ped. LOS =E)			32.0% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SB	n/a	SimTraffic 12	Does not exist			22.5 (SB)	C	113
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			9.4 (SB)	A	44

TWSC level-of-service based on worst approach which is designated in parentheses

Table 24. Cumulative mid-day peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Cumulative Mid-day w/o School			Cumulative Mid-day with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	15.5	C	n/a	15.5	C	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	14.3 (NB)	B	n/a	14.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.6 (SB)	B	n/a	11.6 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	14.5	B	45	14.5	B	45
	WBL	50				117			117
	WBT	280				228			228
	NBL	60				13			13
	SBL	75				128			128
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	15.4 (NB)	C	37.5	15.4 (NB)	C	37.5
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	44.7 (NB)	E	241	57.8 (NB)	F	279
	EB	245				218			285
	WB	n/a				109			104
	SB	n/a				119			115
7. W. A St / 1st St (Signal)	EBL	85	SimTraffic 12	33.4	C	130	37.3	D	133
	WBL	70				113			115
	NBL	90				139			138
	SBL	145				162			158
8. E. A St / 2nd St (TWSC)	NB	n/a	SimTraffic 12	86.5 (NB)	F	162	37.9 (SB)	E	54
	EB	n/a				107			212
	WB	n/a				113			165
	SB	n/a				86			102
		Ped	n/a	Synchro 12	42.0% dissatisfied (Ped. LOS =E)			31.7% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	SimTraffic 12	Does not exist			7.9 (SB)	A	53
10. E. A St / School Exit (TWSC)	SB	n/a	SimTraffic 12	Does not exist			22.0 (SB)	C	90

TWSC level-of-service based on worst approach which is designated in parentheses

Table 25. Cumulative PM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School

Location and control	Queue Storage		Tool	Cumulative PM w/o School			Cumulative PM with School		
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)
1. W. A St / Almond St (AWSC)	n/a	n/a	Synchro 12	11.2	B	n/a	11.2	B	n/a
2. W. A St / Pegord Ave (TWSC)	n/a	n/a	Synchro 12	10.3 (NB)	B	n/a	10.3 (NB)	B	n/a
3. W. A St / N. Washington St (TWSC)	n/a	n/a	Synchro 12	11.2 (SB)	B	n/a	11.2 (SB)	B	n/a
4. W. A St / N. Adams St (Signal)	EBL	65	Synchro 12	13.6	B	39	13.6	B	39
	WBL	50				100			100
	WBT	280				157			158
	NBL	60				22			22
	SBL	75				98			99
5. W. A St / Porter St (TWSC)	NB	n/a	Synchro 12	13.2 (NB)	B	30	13.2 (NB)	B	32.5
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	81.4 (NB)	F	165	81.2	F	165
	EB	245				5			5
	WB	n/a				0			0
	SB	n/a				30			30
7. W. A St / 1st St (Signal)	EBL	85	Synchro 12	24.6	C	170	24.8	C	171
	WBL	70				105			110
	NBL	90				148			149
	SBL	145				142			143
8. E. A St / 2nd St (TWSC)	NB	n/a	Synchro 12	17.0 (NB)	C	12.5	17.3 (NB)	C	10
	EB	n/a				2.5			2.5
	WB	n/a				0			0
	SB	n/a				10			10
		Ped	n/a	Synchro 12	39.5% dissatisfied (Ped. LOS =E)			29.5% dissatisfied (Ped. LOS = D)	
9. 2nd St / School Entrance (TWSC)	SBL	n/a	Synchro 12	Does not exist			0.1 (SB)	A	0
10. E. A St / School Exit (TWSC)	SB	n/a	Synchro 12	Does not exist			10.0 (SB)	B	2.5

TWSC level-of-service based on worst approach which is designated in parentheses

8.0 LTA ABATEMENT STRATEGY/FINDINGS

8.1 Existing Plus Project Conditions Deficiencies

No Abatement measures are required.

8.2 EPAP Plus Project Conditions Deficiencies

No Abatement measures are required.

8.3 Cumulative Plus Project Conditions Deficiencies and Abatements

Two deficiencies were identified, and two abatement measures are recommended:

School Traffic Deficiency/Abatement 1 (West A Street/Jackson Street)

Deficiency: The northbound approach at this intersection operates at level-of-service F during the mid-day peak period, and School traffic adds more than 2 seconds to that delay.

Abatement: Convert the West A Street/Jackson Street intersection from TWSC to AWSC, which addresses level-of-service at the intersection. However, AWSC will increase queueing on eastbound A street, with anticipated eastbound queues extending across the UPRR Martinez Subdivision. General Plan “Action” M-2.D calls for installation of a “queue-cutter” signal at the A Street railway crossing to address eastbound queueing and improve safety at this location. That eastbound queue cutter traffic signal should be installed with the AWSC at this location.

The proposed AWSC at this location is needed based on level-of-service and warranted based upon the need to control left turn conflicts at this location.¹⁴.

Responsibility: The Applicant is responsible for their fair-share of the cost of Abatement 1. Fair-share is estimated based on the School’s proportion of traffic growth between existing and cumulative conditions. Here we estimate fair-share based on the observed and estimated mid-day traffic through the West A Street/Jackson Street intersection:

- Existing condition without School mid-day peak-hour volume: 1102
- Cumulative condition with School mid-day peak-hour volume: 1281
- School only mid-day peak-hour volume: 4
- Fair-share: $4/(1281-1102) = 2.235\%$

TKTPM does not provide cost estimates but, given the relatively limited experience of most communities with queue-cutter signals, we did look for contemporary cost data for queue-cutter signals. A queue cutter signal in Sacramento¹⁵ (the “Power Inn Queue Cutter” Project) had a total cost of about \$2.3 million for design and installation of the signal, including relocation of utilities. \$1.9 million of that \$2.3 million, was funded by Section 130 Railroad-Highway Crossings Program (RHCP) grants. Assuming similar costs here

¹⁴ Caltrans (2024) California MUTCD 2014 edition, revision 8, Section 2B-07, January 11, 2024, accessed February 13, 2025, <https://dot.ca.gov/programs/safety-programs/camutcd>.

¹⁵ Sacramento (2024) Contract Change Order and Budgetary Adjustments: Power Inn Queue Cutter Project (T15186000), City of Sacramento, accessed online on February 13, 2025, https://sacramento.granicus.com/MetaViewer.php?view_id=21&clip_id=5964&meta_id=785274

(though West A street is a much smaller road than Power Inn Road) implies a School Responsibility of \$8,940 toward the queue cutter signal. The Applicant's civil engineer should develop their own cost estimates for the queue-cutter rather than relying on the above data. Note that 2.235% of an AWSC installation is relatively trivial.

Timing: Payment of fees prior to issuance of building permit.

Abatement Demonstration: Delay, level-of-service, and 95% queueing results for cumulative conditions for Cumulative without school and Cumulative with School and abatements is shown in the abatement discussion below. With the recommended abatement, no General Plan level-of-service policy deficiencies exist at this location.

School Traffic Deficiency/Abatement 2 (East A Street/2nd Street)

Deficiency: The northbound approach at this intersection operates at level-of-service F during the AM peak period, and School traffic adds more than 2 seconds to that delay.

Abatement: Convert the East A Street/2nd Street intersection from TWSC to AWSC, which addresses level-of-service at the intersection.

The proposed AWSC at this location is needed based on level-of-service and warranted based upon the lack of sight distance on the southbound approach at this location.¹⁶

Responsibility: The Applicant is responsible for their fair-share of the cost of Abatement 2. Fair-share is estimated based on the School's proportion of traffic growth between existing and cumulative conditions. Here we estimate fair-share based on the observed and estimated AM traffic through the West A Street/2nd Street intersection:

- Existing condition without School mid-day peak-hour volume: 697
- Cumulative condition with School mid-day peak-hour volume: 923
- School only mid-day peak-hour volume: 64
- Fair-share: $64/(923-697) = 28.319\%$

Timing: Payment of fees prior to issuance of building permit.

Additional notes: The southbound approach currently has inadequate sight distance and queues extend through the intersection during the AM and mid-day peak-hours.

Abatement Demonstration: Delay, level-of-service, and 95% queueing results for cumulative conditions for Cumulative without School and Cumulative with School and abatements is shown in the Abatement Discussion below. With recommended abatement, no General Plan level-of-service policy deficiencies exist at this location.

¹⁶ Caltrans (2024) California MUTCD 2014 edition, revision 8, Section 2B-07, January 11, 2024, accessed February 13, 2025, <https://dot.ca.gov/programs/safety-programs/camutcd>.

Abatement Demonstration:

Table 26 through **Table 28** below provide delay, level-of-service, and queueing results under cumulative conditions for study intersections 6 through 10 (study intersections on the east side of the UPRR Martinez Subdivision). SimTraffic micro-simulation was again utilized for the congested AM and mid-day peak-hours, while the PM peak-hour was again modeled using the HCM 7th edition methodology in Synchro.

The tables include color coding and highlighting of some data. Entries in bold red font denote level-of-service or queueing that is inconsistent with adopted General Plan policies, but that are not created or worsened by School traffic. Any entries highlighted in orange reflect a potentially significant School related deficiency prior to abatement. The 95th percentile eastbound approach queue at West A Street/Jackson Street has also been highlighted in green where it would cross the UPRR Martinez Subdivision.

With implementation of Abatement 1 and Abatement 2, all study intersections are anticipated to operate at level-of-service D or better and 95% left turn queues will not be worsened by the School. As stated in Abatement 1, a “queue cutter” signal is needed to address potential eastbound queueing on West A street at the UPRR Martinez subdivision. Calculation sheets for intersection delay, level-of-service, and queueing are provided in **Appendix B**.

Table 26. Cumulative AM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School and abatement

Location and control	Queue Storage		Tool	Cumulative AM w/o School			Cumulative AM with School			Cumulative AM with Abated School			Abatement Notes
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)	
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	28.0 (NB)	D	174	29.7 (NB)	D	176	15	C	80	Convert TWSC to AWSC. Eastbound queue cutter signal for UPRR Martinez Subdivision
	EB	245				142			192			346	
	WB	n/a				75			92			259	
	SB	n/a				40			45			43	
7. W. A St / 1st St (Signal)	EBL	85		35.3	C	120	41.4	D	123	41.4	D	123	no changes
	WBL	70				114			114			114	
	NBL	90				131			128			130	
	SBL	145				181			175			185	
8. E. A St / 2nd St (TWSC)	NB	n/a		114.6 (NB)	F	128	145.5 (NB)	F	143	13.1	B	51	Convert TWSC to AWSC
	EB	n/a				82			175			211	
	WB	n/a				121			146			157	
	SB	n/a				106			117			82	
		Ped		na	40.6% dissatisfied (Ped. LOS =E)			32.0% dissatisfied (Ped. LOS = D)			n/a		
9. 2nd St / School Entrance (TWSC)	SB	n/a		Does not exist			22.5 (SB)	C	113	0.1 (SB)	A	10	no changes
10. E. A St / School Exit (TWSC)	SB	n/a		Does not exist			9.4 (SB)	A	44	5.8 (SB)	A	45	no changes

TWSC level-of-service based on worst approach which is designated in parentheses

Table 27. Cumulative mid-day peak-hour intersection delay and level-of-service (LOS) with and without the proposed School and abatement

Location and control	Queue Storage		Tool	Cumulative Mid-day w/o School			Cumulative Mid-day with School			Cumulative Mid-day with Abated School			Abatement Notes
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)	
6. W. A St / Jackson St (TWSC)	NB	n/a	SimTraffic 12	44.7 (NB)	E	241	57.8 (NB)	F	279	19.8	C	94	Convert TWSC to AWSC. Eastbound queue cutter signal for UPRR Martinez Subdivision
	EB	245				218			285			429	
	WB	n/a				109			104			223	
	SB	n/a				119			115			76	
7. W. A St / 1st St (Signal)	EBL	85		33.4	C	130	37.3	D	133	35.6	D	133	no changes
	WBL	70				113			115			114	
	NBL	90				139			138			137	
	SBL	145				162			158			168	
8. E. A St / 2nd St (TWSC)	NB	n/a		86.5 (NB)	F	162	37.9 (SB)	E	54	11.6	B	41	Convert TWSC to AWSC
	EB	n/a				107			212			195	
	WB	n/a				113			165			162	
	SB	n/a				86			102			73	
		Ped		na	42.0% dissatisfied (Ped. LOS =E)			31.7% dissatisfied (Ped. LOS = D)			n/a		
9. 2nd St / School Entrance (TWSC)	SBL	n/a		Does not exist			7.9 (SB)	A	53	0.1 (SB)	A	9	no changes
10. E. A St / School Exit (TWSC)	SB	n/a		Does not exist			22.0 (SB)	C	90	6.1 (SB)	C	66	no changes

TWSC level-of-service based on worst approach which is designated in parentheses

Table 28. Cumulative PM peak-hour intersection delay and level-of-service (LOS) with and without the proposed School and abatement

Location and control	Queue Storage		Tool	Cumulative PM w/o School			Cumulative PM with School			EPAP PM with Abated School			Abatement Notes
	Mvmt	Length (ft.)		Delay (Sec)	LOS	95% Queue (ft)	Delay (Sec)	LOS	95% Queue (ft)	Cumulative (Sec)	LOS	95% Queue (ft)	
6. W. A St / Jackson St (TWSC)	NB	n/a	Synchro 12	81.4 (NB)	F	165	81.2	F	165	31.9	D	37.5	Convert TWSC to AWSC. Eastbound queue cutter signal for UPRR Martinez Subdivision
	EB	245				5			5			345	
	WB	n/a				0			0			82.5	
	SB	n/a				30			30			25	
7. W. A St / 1st St (Signal)	EBL	85		24.6	C	170	24.8	C	171				no changes
	WBL	70				105			110				
	NBL	90				148			149				
	SBL	145				142			143				
8. E. A St / 2nd St (TWSC)	NB	n/a		17.0 (NB)	C	12.5	17.3 (NB)	C	10	10.5	B	5	Convert TWSC to AWSC
	EB	n/a				2.5			2.5			60	
	WB	n/a				0			0			40	
	SB	n/a				10			10			7.5	
		Ped		na	39.5% dissatisfied (Ped. LOS =E)			29.5% dissatisfied (Ped. LOS = D)			n/a		
9. 2nd St / School Entrance (TWSC)	SBL	n/a		Does not exist			0.1 (SB)	A	0				
10. E. A St / School Exit (TWSC)	SB	n/a		Does not exist			10.0 (SB)	B	2.5				

9. LTA INTERNAL CIRCULATION/ACCESS SITE PLAN REVIEW

A preliminary site plan was provided as **Figure 2**. This section reviews parking, driveway throat-depth, on-site emergency vehicle access, and pedestrian access.

9.1 Parking Requirements

Parking requirements are Dixon's zoning code¹⁷ as 1 space for every 3 employees. The School site plan includes 12 spaces. As discussed in the Minimum Required Throat Depth section below, TKTPM recommends eliminating two parking spaces to increase driveway throat depth. The remaining 10 parking spaces would accommodate up to thirty School staff. Thirty staff members is more than adequate for a 120 student school; the United States Conference of Catholic Bishops estimates that the average student-to-teacher ratio at catholic schools is 13 to 1¹⁸. Should total staff exceed 30, a reciprocal parking permit between the School and Saint Peter's Catholic Church would be required.

Parking Findings:

- The twelve on-site parking spaces are adequate but could be reduced to ten or fewer while remaining in compliance with zoning requirements. Reducing on-site parking from twelve to ten spaces would accommodate a full 25-foot driveway throat depth on the North 2nd Street entrance driveway.
- A reciprocal parking permit between the School and Saint Peter's Catholic Church shall be agreed upon if required to provide one off-street parking space per three employees.

9.2 Minimum Required Throat-Depth

Minimum Required Throat Depth (MRTD): The MRTD¹⁹ is to provide enough stacking distance for egressing vehicles, so the first drive aisle is not blocked and is measured from the back of the sidewalk to the edge of the first drive aisle. The MRTD shall be measured in car length increments of 25 feet and should be a minimum of 25-feet. The School entrance driveway has no egress traffic, therefore the minimum throat depth should be 25-feet measured from the back of sidewalk to the edge of the first parking space. As currently proposed the available throat depth is 10-feet. Eliminating one parking space would increase the throat depth to 20-feet, and eliminating two parking spaces would allow for a throat depth of more than 25-feet.

¹⁷ Dixon (2025) Dixon Municipal Code Title 18 Zoning Chapter 18.16 Parking and Loading Table 18.16.040 Required Number of Parking Spaces. Accessed February 13, 2025,

<https://www.codepublishing.com/CA/Dixon/#!/Dixon18/Dixon1816.html#18.16>.

¹⁸ (2016) Catholic School FACT Sheet, United States Conference of Catholic bishops, accessed February 13, 2025, <https://www.usccb.org/resources/Catholic-Schools-FACT-Sheet-2016.pdf>.

¹⁹ 2Dixon (2022) Engineering Design Standards, Section 15 – Transportation Impact analysis. Accessed February 13, 2025,

<https://www.cityofdixonca.gov/media/Engineering/2022%20StandardsSpecs/Section%201%20-%20Engineering%20Design%20Standards%202023.pdf>.

MRTD Finding

- MRTD is 25-feet, and as currently proposed the throat depth is limited to 10-feet. The applicant shall reduce on-site parking from twelve spaces to ten spaces to accommodate the MRTD of 25-feet.

9.3 Right-Turn Deceleration/Acceleration Lanes and Tapers for Driveways

Right-Turn Deceleration Lane Requirements: A right-turn deceleration lane shall be provided for a driveway if all of the following conditions are met:

- A. The driveway is located on an arterial.
- B. Right-turn ingress volume is expected to exceed 50 peak hour vehicles on the arterial.
- C. There is ample right-of-way and frontage to provide a deceleration lane as determined by the City Engineer. Right-of-way dedication may be required.
- D. The 85th percentile travel speed of the roadway, as determined by the City Engineer, equals or exceeds 40 mph.

There may be cases where some of the above criteria are not met, but City Engineer may require a deceleration lane in the interest of safety.

There may be cases where it is desirable to provide room for right-turn deceleration, but an entirely separate deceleration lane is either too difficult to install, due to design constraints, or is not reasonable. In these cases, a right-turn curb taper shall be provided in accordance with Figure 14- 2. Right-turn acceleration lanes for driveways shall not be provided.

Right-Turn Deceleration Lane Analysis: All conditions A-D above are not satisfied.

Right-Turn Deceleration Lane Finding: A right turn deceleration lane or taper is not required at the North 2nd Street driveway.

9.4 Pedestrian Access

About 50% of the 120 students are anticipated to attend Mass at Saint Peter's Catholic Church prior to school and cross East A Street to reach the School prior to morning classes. Currently there are only about ten pedestrian crossings of East A Street at North 2nd Street during the AM peak-hour. The increased pedestrian flow motivates a practical review of pedestrian and vehicle safety at this location:

- The maximum westbound queue from the A Street/1st Street intersection occasionally spills back and blocks the East A Street/North 2nd Street intersection where increased student crossings are anticipated. That queue spill back leads to conflicts between pedestrians and vehicles as both can be observed entering the blocked intersection at the same time.

- The corner sight distance for Southbound North 2nd Street approaching East A Street is blocked by the building at 1165 East A Street. AWSC at this location is warranted based upon the lack of sight distance on the southbound approach.²⁰.
- Anderson elementary and John Knight Middle School are both less than a quarter mile away and increase pedestrian, bike, and vehicle traffic through the East A Street/2nd Street intersection. While there are no Project related unsafe pedestrian walking conditions such as sidewalk gaps along the Project frontage, the School would increase pedestrian-vehicle interactions at the intersection.
- Cumulative level-of-service findings show that this intersection should be converted to AWSC to accommodate cumulative condition traffic flow.

Pedestrian Access Finding: The Applicant should convert the East A Street/2nd Street intersection from TWSC to AWSC prior to issuance of building permits to ensure pedestrians can safely cross East A Street. Note that the existing “in-street” pedestrian signs on the uncontrolled crossings of West A Street require removal with installation of AWSC. Because there are existing site distance deficiencies at this location, the Project is only responsible for its fair-share of the cost of the conversion from AWSC to TWSC.

For an existing deficiency, the fair-share of the improvement would be the Project’s proportion of traffic to total traffic of about 8.5% (i.e., 64 School trips/761 total trips).

9.5 Emergency Vehicle Access

Emergency vehicle access requirements are based on Section 503 of the California State Fire Code (Title 24, Part 9).

- Approved fire apparatus access roads are required to extend to within 150 feet of all portions of the facility (Title 24, Part 9, Section 503.1.1).
- Where fire apparatus access roads are required, the minimum required width is 20’ (Title 24, Part 9, Section 503.2.1).
- Dead end access roads in excess of 150-feet in length require an approved area for turning around fire apparatus (Title 24, Part 9, Section 503.2.5).
- Required turning radii established by the City of Dixon for fire apparatus access roads are a 30-foot inner diameter and 52-foot outer diameter (Dixon Municipal Code, chapter 16.02.200.C)

The entirety of the proposed School building is within 150-feet of both East A Street and North 2nd Street. However, there are portions of the proposed School’s parcel that are more than 150-feet from public roads. The northeast corner of the proposed School site requires a fire access roadway. The North 2nd Street driveway is therefore designed to a 20-foot width where it runs

²⁰ Caltrans (2024) California MUTCD 2014 edition, revision 8, Section 2B-07, January 11, 2024, accessed February 13, 2025, <https://dot.ca.gov/programs/safety-programs/camutcd>.

along the northern edge of the School structure (approximately 130 feet in length) to provide fire apparatus access to the northeast corner of the proposed School parcel.

The North 2nd Street driveway includes an iron security gate. The installation of security gates across a fire apparatus access road requires approval by the fire marshal and must have an approved means of emergency operation (Title 24, Part 9, Section 503.6).

Emergency Vehicle Access Finding: The proposed School site complies with emergency vehicle access requirements. The security gate on the North 2nd Street driveway requires approval by the fire marshal and must have an approved means of emergency operation.

9.6 Driveway Location

Driveway location must comply with Section DS14-02 of the Engineering Design Standards. The City recognizes that infill projects (projects within older, previously developed areas) may have certain constraints such as lot size, existing driveways near the property line on adjacent parcels, etc., which may deem it impractical to achieve the requirements contained in these design standards for site access. Infill projects such as these will be evaluated on a case-by-case basis by the City. However, the goal will be to achieve the requirements herein to the extent practical. Local streets and minor collectors have one set of requirements and driveways located on major collectors and arterials have another related standard.

For uses other than single family homes/duplexes on local streets and minor collectors:

Driveways shall be a minimum of 100 feet apart, measured between driveway centerlines, except on cul-de-sacs and knuckles where driveways shall be shared or otherwise designed to minimize the number of driveways to the extent possible. For corner parcels, driveways shall be located at least 100 feet from the face of curb of the intersecting street, measured from the centerline of the driveway. Where the local street or minor collector street intersects a minor collector street, driveways shall be located at least 150 feet from the face of curb of the intersecting street, measured from the driveway centerline, and shall front the local street at local street corner lots.

For uses other than single family homes/duplexes on major collectors and arterials:

Driveways on the same side of the street shall be at least 200 feet apart, measured between driveway centerlines, on major collector streets and at least 250 feet apart, measured between driveway centerlines, on arterial streets. For major collector streets, driveways shall be at least 150 feet from the face of curb of the intersecting street.

East A street and north 2nd Street are classified as a “collector” and a “historic main street” by the general plan, neither of which is addressed by the City’s Engineering Design Standards. However, as stated above, since the proposed School is an infill project its driveway locations are evaluated on a case-by-case basis.

- The proposed School’s North 2nd Street driveway is located near the northern edge of the property as far from East A Street and as far from East B Street as practical

(approximately 117' from East A street, 180' from East B Street). The North 2nd Street driveway will be approximately 36-feet from the closest residential driveway to the north.

- The proposed School's East A Street driveway is located near the eastern edge of the property as far from North 2nd Street and North 3rd street as possible (approximately 126' from North 2nd Street, 170' from North 3rd Street). The East A Street driveway will be approximately 5-feet from the closest residential driveway to the east. The East A Street driveway will be an exit-only to minimize disruption to conflicting mid-block turning movements on East A Street.

Driveway Location Finding: Driveway locations for non-residential infill projects are evaluated on a case-by-case basis. Proposed driveway locations maximize spacing to adjacent streets. Distance to adjacent residential driveways is adequate as identified by the acceptable traffic operations at school driveways in the level-of-service analysis presented in **Section 5** through **Section 7** of this report. Proposed driveway locations are appropriate for the School and its neighbors.

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Appendix A:
Traffic counts and
Signal Timing

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Pegord Ave & W A St

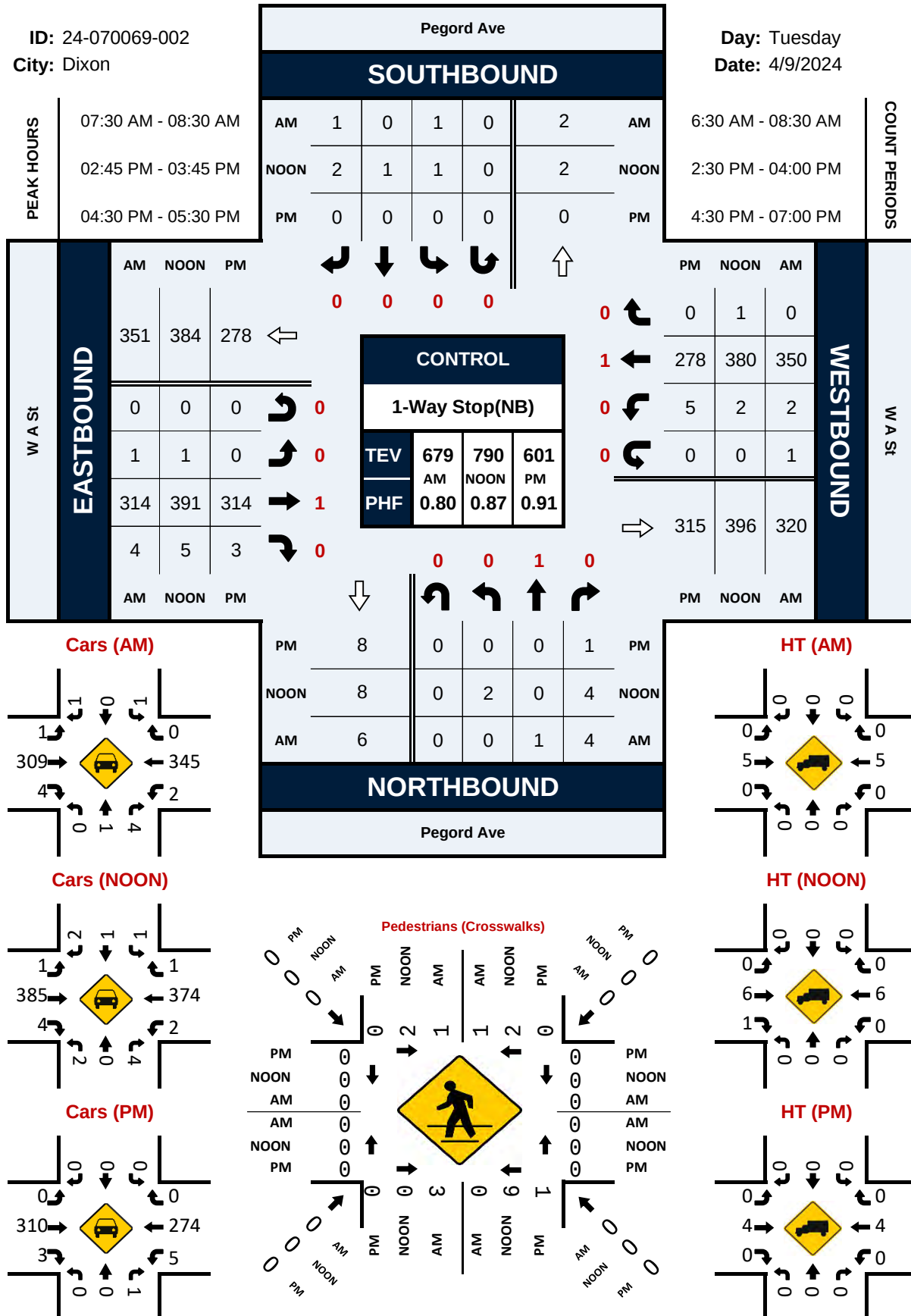
Peak Hour Turning Movement Count

ID: 24-070069-002

City: Dixon

Day: Tuesday

Date: 4/9/2024



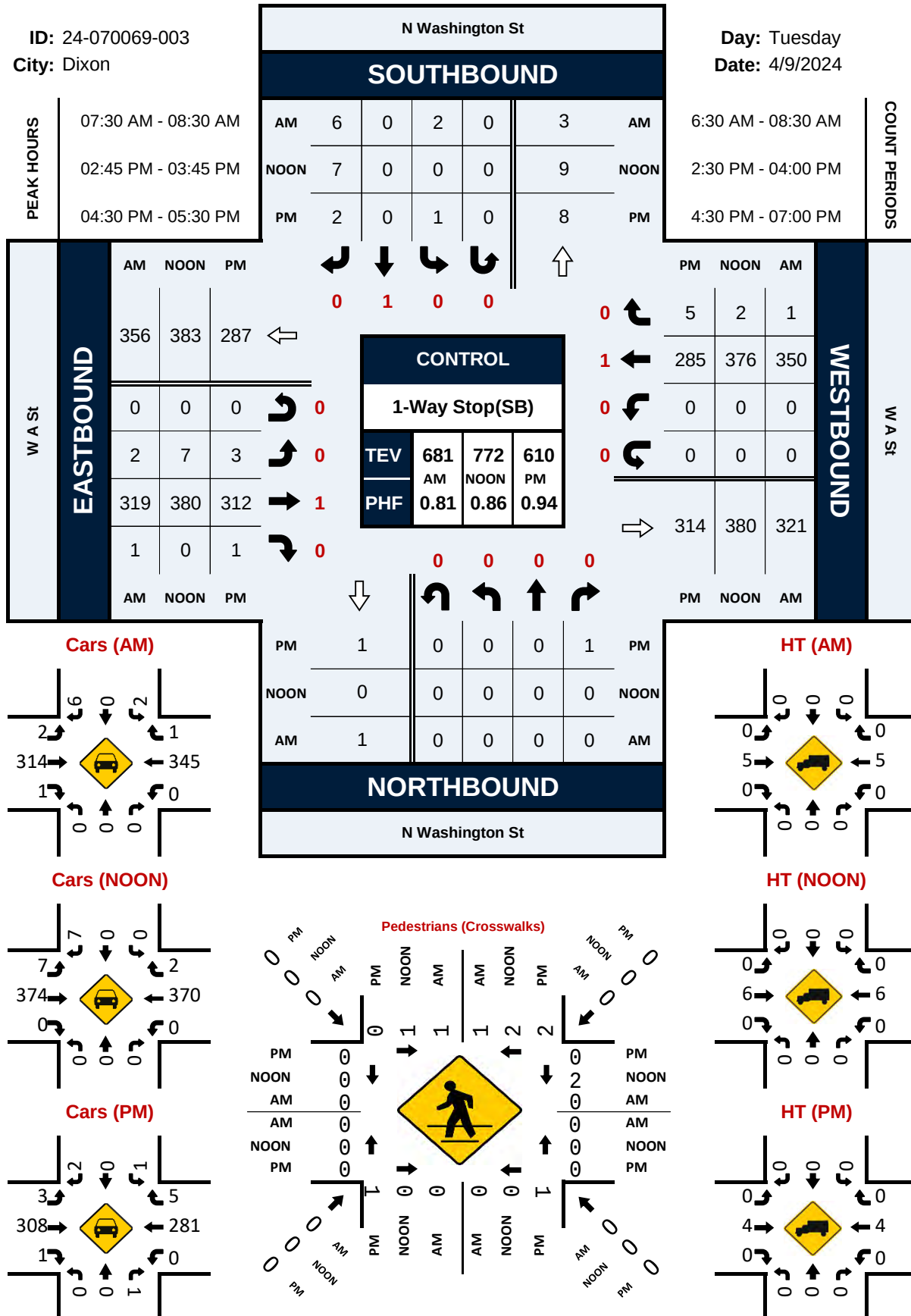
N Washington St & W A St**Peak Hour Turning Movement Count**

ID: 24-070069-003

City: Dixon

Day: Tuesday

Date: 4/9/2024

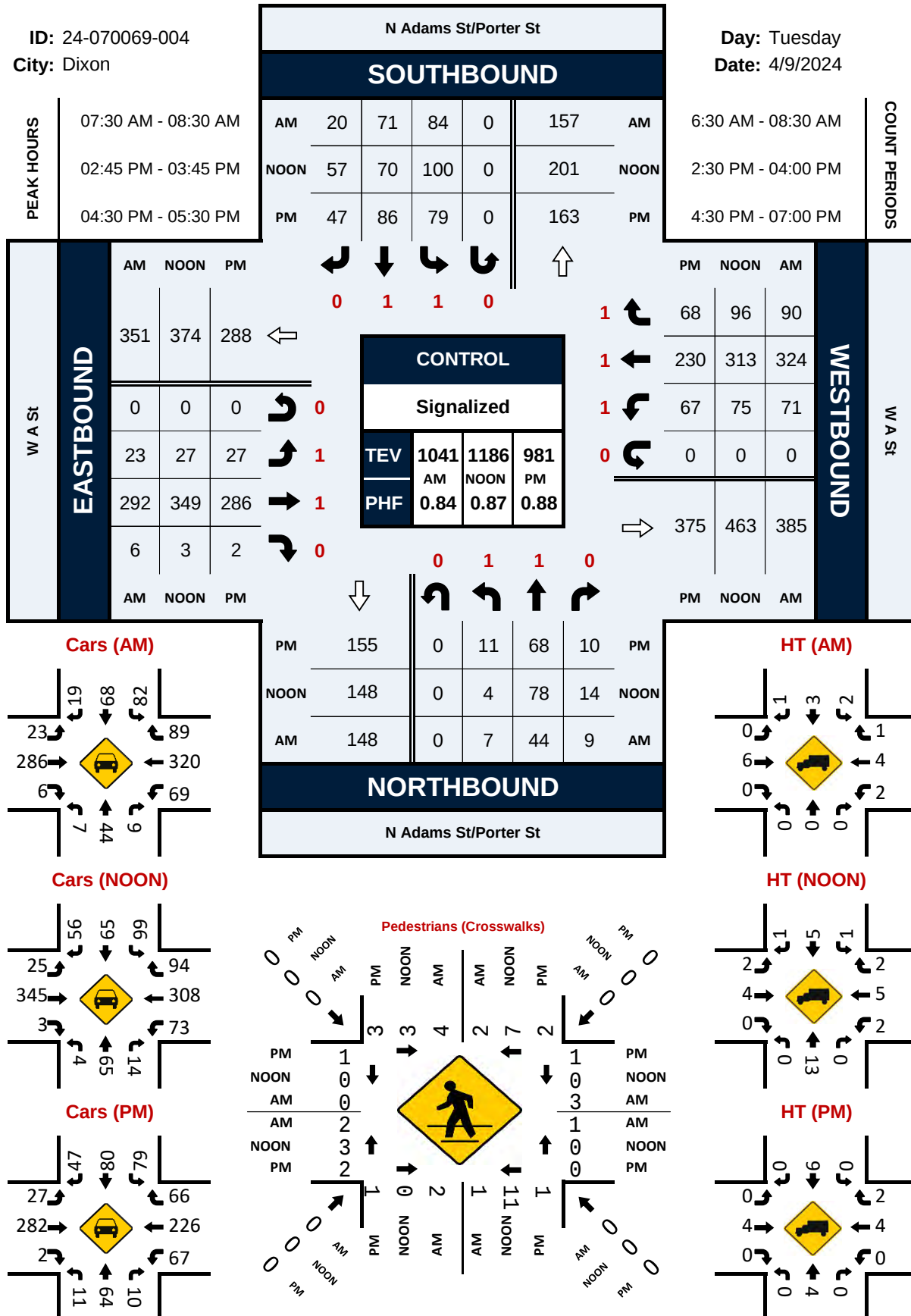


N Adams St/Porter St & W A St

Peak Hour Turning Movement Count

ID: 24-070069-004
City: Dixon

Day: Tuesday
Date: 4/9/2024



Date: 4/9/2024



Date: 4/9/2024



N/S 1st St & E A St

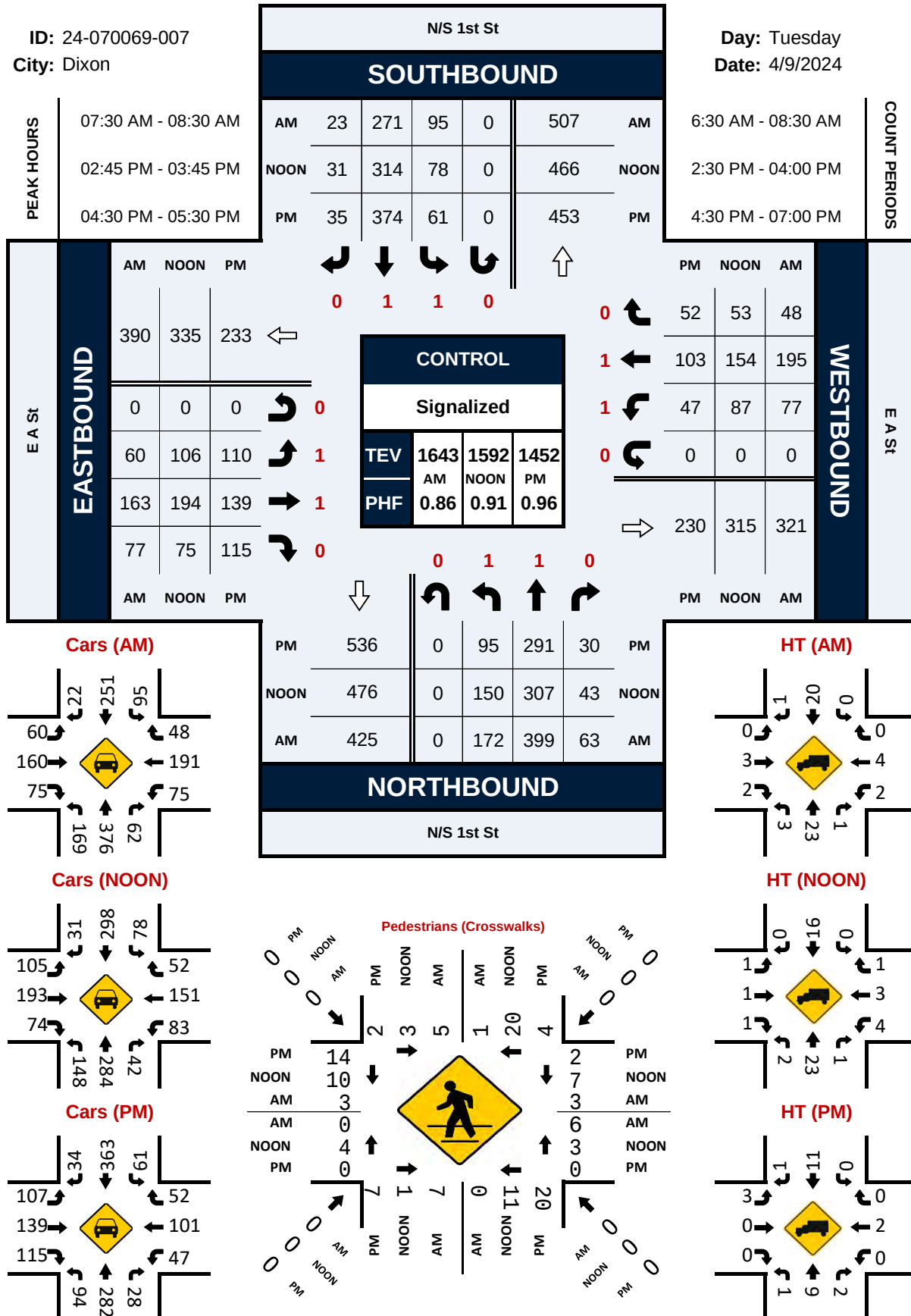
Peak Hour Turning Movement Count

ID: 24-070069-007

City: Dixon

Day: Tuesday

Date: 4/9/2024



N/S 2nd St & E A St

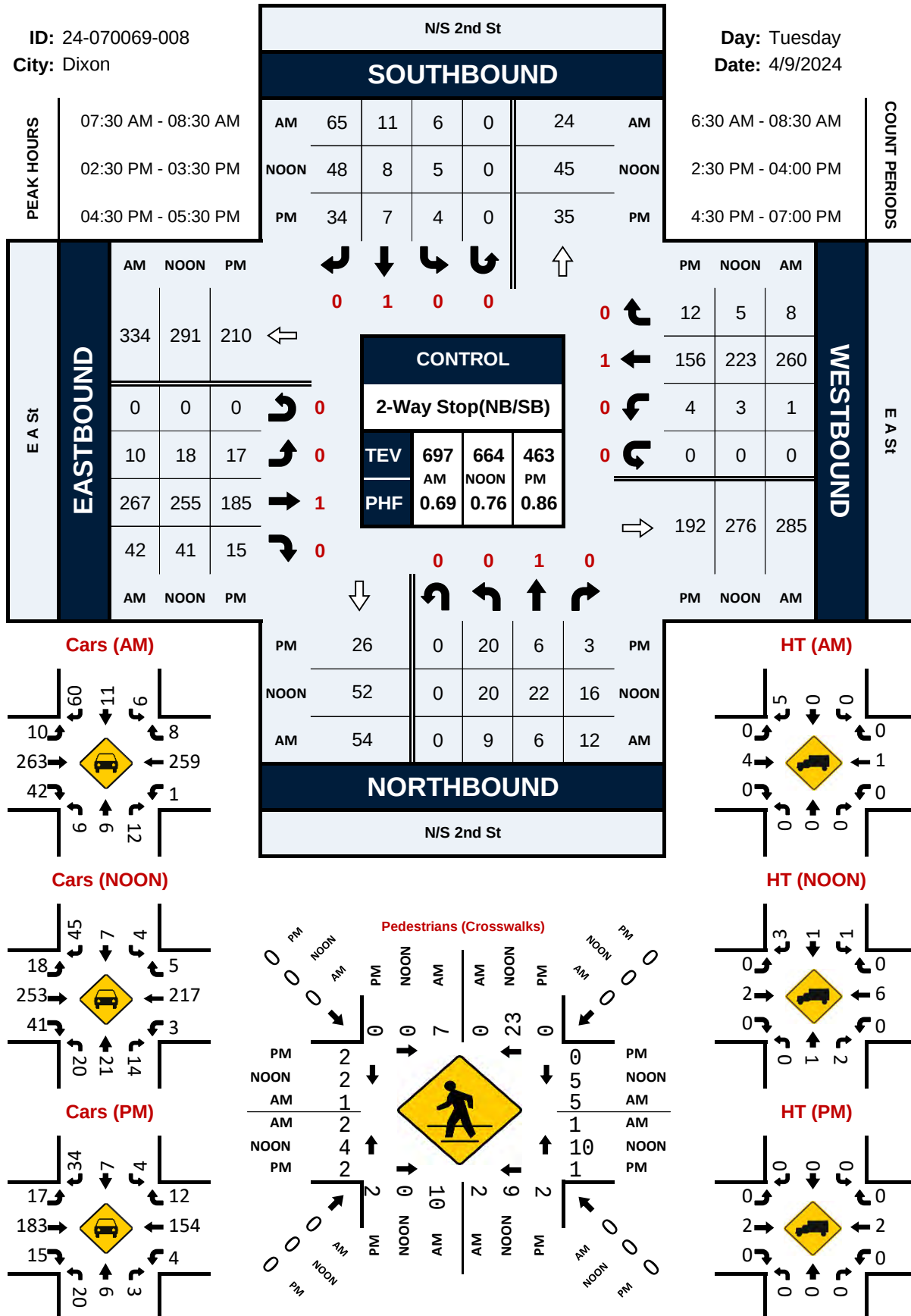
Peak Hour Turning Movement Count

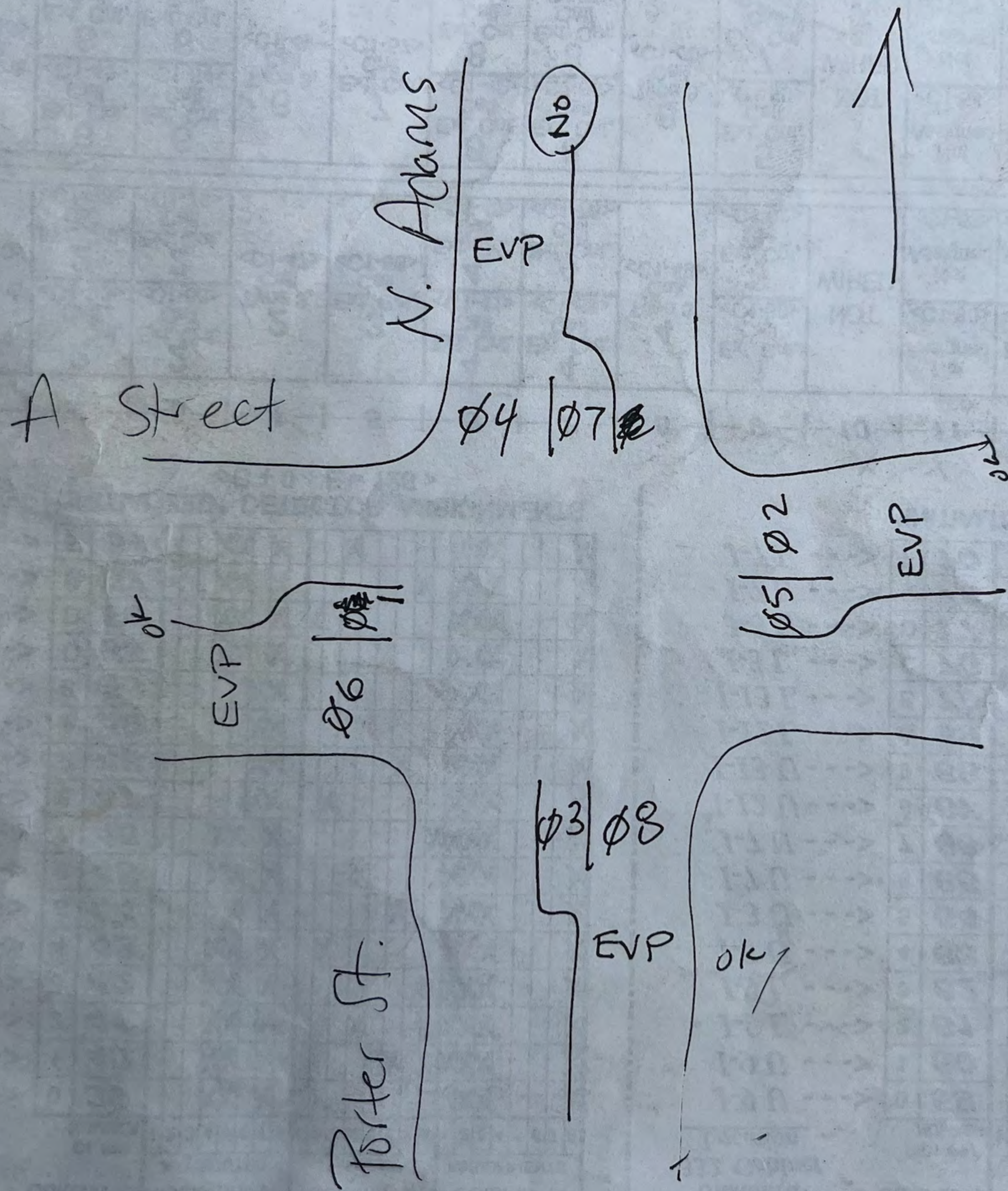
ID: 24-070069-008

City: Dixon

Day: Tuesday

Date: 4/9/2024





	Column A	Column B	Column C	Column D	Column E	Column F	
0	NOT 3		MAX 2		PRE TIM		0
1	NOT 4		SY DET 1		PLAN 1		1
2	OR 4		SY DET 2		PLAN 2		2
3	OR 4		SY DET 3		PLAN 3		3
4	OR 5		SY DET 4		PLAN 4		4
5	OR 5		SY DET 5		PLAN 5		5
6	OR 6		SY DET 6		PLAN 6		6
7	OR 6		SY DET 7		PLAN 7		7
8			SY DET 8		PLAN 8		8
9			MX INBT		PLAN 9		9
A	AND 4		FORCE A		DELAY A		A
B	AND 4		FORCE B		DELAY B		B
C	NAND 1		CNA		DELAY C		C
D	NAND 1		HOLD		DELAY D		D
E	NAND 2		VE CALL		DELAY E		E
F	NAND 2		RECALL		DELAY F		F

ASSIGNABLE INPUTS

< C + 0 + E = 126 >

	Column A	Column B	Column C	Column D	Column E	Column F	
0		FLHR 0	FREE		NOT 1		0
1	SPEV 1	FLHR 1	PLAN 1		OR 1		1
2	SPEV 2	FLHR	PLAN 2		OR 2		2
3	SPEV 3		PLAN 3		OR 3		3
4	SPEV 4		PLAN 4		AND 1		4
5	SPEV 5		PLAN 5		AND 2		5
6	SPEV 6		PLAN 6		AND 3		6
7	SPEV 7		PLAN 7		NOT 2		7
8	SPEV 8	NOT 3	PLAN 8		EVA		8
9		NOT 4	PLAN 9		EVB		9
A	DET FAIL	OR 4			EVC		A
B		OR 5			EVD		B
C		OR 6			RR 1		C
D	CNT CTL	AND 4			RR 2		D
E	XDWALK	NAND 1			SP 1		E
F	XWALK	NAND 2			SP 2		F

ASSIGNABLE OUTPUTS

< C + 0 + E = 127 >

PLAN # →	1	2	3	4	5	6	7	8	9	
0	PED ADJ									0
1	ST PERM 2									1
2	EN PERM 2									2
3	ST PERM 3									3
4	EN PERM 3									4
5	RSRV TIME									5
6	RSERVE PH									6
7										7
8	PRETIMED									8
9	MAX RECALL									9
A	PERM 1 VEH									A
B	PERM 1 PED									B
C	PERM 2 VEH									C
D	PERM 2 PED									D
E	PERM 3 VEH									E
F	PERM 3 PED									F

COORDINATION PAGE 2

< C + 0 + C = 2 >

Logic DELAY Times

Column B

A	DELAY A	
B	DELAY B	
C	DELAY C	
D	DELAY D	
E	DELAY E	
F	DELAY F	

< C + 0 + D = 0 >

DIAL-UP ("stand alone")
Modem Interface :

(C/5 + D + 0) =

NOTE : If "Non-Zero", PARITY will be DISABLED
for "Smart Modem" operation.

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814

916 / 441-0260

Traffic Signal Program 233

Timing Sheet # 2 (of 6)

(Revised 10/93)

SPECIAL EVENT SCHEDULE -- TABLE # 1 **< C + O + E = 27 >**

**LIMITED SERVICE
INTERVAL:**
(E/27 + 5 + F) = _____

SPECIAL EVENT SCHEDULE -- TABLE # 2 < C + O + E = 28 >

**LIMITED SERVICE
INTERVAL:**
(E/28 + 5 + F) = _____

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Timing Sheet # 6 (of 6)
(Revised 12/93)

		PHASE													
		1	2	3	4	5	6	7	8	9	A	B	C	D	
0	WALK									0					
1	DONT WALK									1	PHASE 1				
2	MIN INITIAL									2	PHASE 2				
3	TYPE 3 LIMIT									3	PHASE 3				
4	ADD PER VEH									4	PHASE 4				
5	VEH EXT									5	PHASE 5				
6	MAX GAP									6	PHASE 6				
7	MIN GAP									7	PHASE 7				
8	MAX LIMIT									8	PHASE 8				
9	MAXIMUM 2														
A	ADV/DLY WALK														
B	MIN PED CLEAR														
C	COND SRV MIN														
D	REDUCE EVERY														
E	YELLOW														
F	RED CLEAR														

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #2
< C + 0 + F = 2 >

		PHASE													
		1	2	3	4	5	6	7	8	9	A	B	C	D	
0	WALK									0					
1	DONT WALK									1	PHASE 1				
2	MIN INITIAL									2	PHASE 2				
3	TYPE 3 LIMIT									3	PHASE 3				
4	ADD PER VEH									4	PHASE 4				
5	VEH EXT									5	PHASE 5				
6	MAX GAP									6	PHASE 6				
7	MIN GAP									7	PHASE 7				
8	MAX LIMIT									8	PHASE 8				
9	MAXIMUM 2														
A	ADV/DLY WALK														
B	MIN PED CLEAR														
C	COND SRV MIN														
D	REDUCE EVERY														
E	YELLOW														
F	RED CLEAR														

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #3
< C + 0 + F = 3 >

		Column D							
OUT BIT NO. ->		1	2	3	4	5	6	7	8
0									
1	OUT PORT 1								
2	OUT PORT 2								
3	OUT PORT 3								
4	OUT PORT 4								
5	OUT PORT 5								
6	OUT PORT 6								
7	OUT PORT 7								
8									
9									
A									
B									
C									
D									
E									
F									

		Column F							
		1	2	3	4	5	6	7	8
0	FAST GRN FLH								
1	GREEN FLASH								
2	FLASH WALK								
3	GUAR PASS								
4	SIMUL GAP								
5	SEQ TIMING								
6	ADV WALK								
7	DELAY WALK								
8	EXT RECALL								
9									
A	MAX EXTEN								
B	INH PED RSRV								
C	SEMI ACTUATED								
D									
E	START VEH CALL								
F	START PED CALL								

		PED / PHASE / OVERLAP							
		1	2	3	4	5	6	7	8
0	WALK								
1	DONT WALK								
2	PHASE GREEN								
3	PHASE YELLOW								
4	PHASE RED								
5	OVERLAP GREEN								
6	OVERLAP YELLOW								
7	OVERLAP RED								
8									
9									
A									
B									
C									
D									
E									
F									

Advance Warning Beacons
Sign #1: Sign #2:
 PHASE NUMBER:
 (F/1 + C + F) = _____ (F/1 + D + F) = _____
 TIME BEFORE YELLOW:
 (F/1 + C + E) = _____ (F/1 + D + E) = _____
 OUTPUT PIN NUMBER:
 (E/127 + E + 8) = _____ (E/127 + E + 9) = _____

Enable / Disable
Phase Redirection
 CABINET TYPE:
 (E/125 + D + 0) = _____

CABINET TYPE
 30 = Type 303 / 330 Cabinet
 (Enable Redirection)
 0 = All Other Types
 (Disable Redirection)

Exclusive Pedestrian Operation
 WALK:
 (F/1 + 0 + 0) = _____
 DONT WALK:
 (F/1 + 0 + 1) = _____
 RED CLEAR:
 (F/1 + 0 + 2) = _____

DIMMING < C + 0 + E = 125 > SPECIALS < C + 0 + F = 2 > REDIRECT PHASE OUTPUTS < C + 0 + E = 127 >

BI Tran Systems, Inc.
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 916 / 441-0260
Traffic Signal Program 233
 Timing Sheet # 3 (of 6)
 (Revised 08/93)

Column → 1	DELAY	CARRY-OVER
0		1.0
1		1.0
2		1.0
3		1.0
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

< C + 0 + D = 0 >

Column 0	Column 1	Column 2	Column 3
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0	39		
1	40		
2	41		
3	42		
4	43		
5	44		
6	45		
7	46		
8	47		
9	48		
A	49		
B	50		
C	55		
D	56		
E	57		
F	58		

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Column → 2	DELAY	CARRY-OVER
0	1.0	
1	1.0	
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

< C + 0 + D = 0 >

Column 4	Column 5	Column 6	Column 7
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0	59		
1	60		
2	61		
3	62		
4	63		
5	64		
6	65		
7	66		
8	67		
9	68		
A	69		
B	70		
C	76		
D	77		
E	78		
F	79		

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1 = Full Time Delay
- 2 = Pedestrian Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set # 1
- 2 = Det. Set # 2
- 3 = Det. Set # 3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

	1	2	3	4	5	6	7	8	
0 LOAD SW #									0
1 VEH SET #1									1
2 VEH SET #2									2
3 VEH SET #3									3
4 NEG VEH									4
5 NEG PED									5
6 GREEN OMIT									6
7 GRN CLR OMT									7
8									8
D GRN CLEAR									D
E YELLOW									E
F RED CLEAR									F

OVERLAP ASSIGNMENTS

< C + 0 + E = 29 >

Detector Monitor

MAX OFF:
(D/0 + 0 + 1) = _____
MAX ON:
(D/0 + 0 + 2) = _____

Power Cycle Correction Factors

LONG FAILURE:
(F/1 + 0 + 6) = _____
SHORT FAILURE:
(F/1 + 0 + 7) = _____

NOTE: Do Not Set To Zero. Default Value = 0.5 sec.

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916/441-0260

Traffic Signal Program 233

Timing Sheet # 4 (of 6)
(Revised 12/93)

Controller Intervals

0 = Walk	8 = Red Rest
1 = FDW	9 = Preemption
2 = Min. Green	A = Stop Time
3 =	B = Red Revert
4 = Var. Initial	C = Yellow - Gap Termination
5 = Extension	D = Yellow - Max. Termination
6 =	E = Yellow - Forceoff Termination
7 = Reduce Gap	F = Red Clearance

Continuous Memory Error Monitoring

The controller's RAM and EPROM memories are continuously checked for errors. If an error is found, the intersection will go into FLASH (via Watch Dog Timer), and one of the following will be shown on the controller's display :

- bAd A** = An error was detected in the CPU's RAM, or a new program has been installed on the memory module.
Often caused by a bad controller "gel-cell" battery.
- bAd b** = An error was detected in the memory module's RAM.
Often caused by a bad "lithium" battery on the memory module.
- bAd E** = An error was detected in the 233 Program EPROM.
- bAd F** = An error was detected in the Z-RAM (Dallas chip) on the memory module.

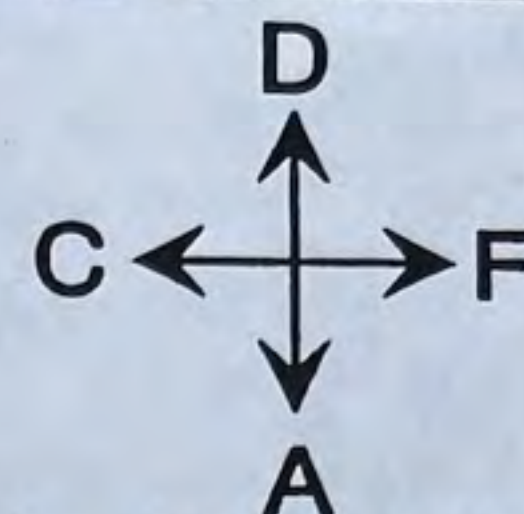
412/C Memory Module Lithium Battery Condition

To check the condition of the 3.6 volt Lithium Battery on the 412/C Memory Module :

- If $E/112 + 0 + A = 84$ - the battery is BAD
If $E/112 + 0 + A = 85$ - the battery is O.K.

E Page Enable : $F/1 + 9 + E = \text{Not Zero}$

Display Movement Codes



A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN

Special Event Schedules

Special Event #1 : $C + 0 + E = 27$

Special Event #2 : $C + 0 + E = 28$

Current Interval = $E + 5 + 0$
Current Interval Timer = $E + 5 + B$
Current Interval Clearance Phases = $E + 5 + C$

Time of Day Function (7 Key)

Current T.O.D. "E Function"
Control Bits = $C/0 + E + E$
Current T.O.D. "F Function"
Output Bits = $C/0 + E + F$

Logic DELAY Gate Delay Timer Display

DELAY A Timer = $C/0 + 9 + A$
DELAY B Timer = $C/0 + 9 + B$
thru thru
DELAY F Timer = $C/0 + 9 + F$

Interval Timer Display

Ring A = $F/0 + A + \text{Interval Row}$
Ring B = $F/0 + B + \text{Interval Row}$
(Interval Row From PHASE BANK Data)

Display Locations

Master Plan = $C/0 + A + 2$
Current Plan = $C/0 + A + 3$
TOD Plan = $C/0 + A + 5$
Master Cycle = $C/0 + A + 0$
Ring A Cycle = $C/0 + B + 0$
Ring B Cycle = $C/0 + D + 0$
MIN Cycle = $C/0 + A + E$
MAX Cycle = $C/0 + B + E$
Phase Hold = $C/0 + F + D$
Phase Next = $C/0 + F + E$
Force Off = $C/0 + F + F$
(With Ring A Cycle Timer)
Current Calculated Cycle Length = $C/0 + B + F$
Current Permitted Phases = $E/0 + 7 + 8$
Current Phase Bank = $F/0 + C + E$

Last Power Failure :
(HR-MIN-DOW) = $8 + 4$
(DOM-YR-MONTH) = $8 + 5$
Last Cabinet Flash :
(HR-MIN-DOW) = $8 + 6$
(DOM-YR-MONTH) = $8 + 7$
Power Fail Counts :
(Long Failures) = $F/1 + 0 + C$
(Short Failures) = $F/1 + 0 + D$
Current Time :
(HR-MIN-DOW) = $8 + 0$
(DOM-YR-MONTH) = $8 + 1$
(MIN-SEC-1/10 SEC) = $8 + F$

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Traffic Signal Program 233

"View" Locations
(Revised 09/93)

COORD (9 Key)			DAY OF WEEK						
TIME HHMM	PLAN	OFFSET	S	M	T	W	T	F	S
0			1	2	3	4	5	6	7
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=0.1>

COORD (9 Key)			DAY OF WEEK						
TIME HHMM	PLAN	OFFSET	S	M	T	W	T	F	S
0			1	2	3	4	5	6	7
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=0.2>

TOD FUNCT. (7 Key)		DAY OF WEEK							Column 4 PHASES / BITS						
TIME HHMM	FUNCT.	S	M	T	W	T	F	S	1	2	3	4	5	6	7
0	0730 B														
1	0830 B														
2	1430 B														
3	1530 B														
4															
5															
6															
7															
8															
9															
A															
B															
C															
D															
E															
F															

<C+0+7=1> <C+0+E=27>

HOLIDAY TOD FUNCT. (7 Key)		HOLIDAY TYPE							Column 4 PHASES / BITS						
TIME HHMM	FUNCT.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
0															
1															
2															
3															
4															
5															
6															
7															
8															
9															
A															
B															
C															
D															
E															
F															

<C+0+7=2> <C+0+E=28>

HOLIDAY EVENTS			HOLIDAY TYPE						
TIME HHMM	PLAN	OFFSET	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=1.1>

HOLIDAY EVENTS			HOLIDAY TYPE						
TIME HHMM	PLAN	OFFSET	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=1.2>

HOLIDAY DATES			HOLIDAY TYPE						
DAY	YEAR	MONTH	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+8=1.1>

HOLIDAY DATES			HOLIDAY TYPE						
DAY	YEAR	MONTH	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+8=1.2>

T.O.D. FUNCTIONS

- 0 = Permit Phases
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Veh. MIN Recall
- 4 = Ped. Recall
- 5 =
- 6 = Rest in Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Veh. MAX Recall
- A = Veh. SOFT Recall
- B = Maximum 2
- C = Conditional Service
- D = Lag Phases
- E = Bk 1 - Local Override
- BR 4 - Disable Det. OFF Monitor
- BR 7 - Det. Count Monitor
- BR 8 - Real Time Split Monitor
- F = Output Bits 1 Thru 8

PLAN SELECT

- 1 = Coordination Plan 1 thru
- 9 = Coordination Plan 9
- E = Free
- F = Flash

OFFSET SELECT

- A = Offset A
- B = Offset B
- C = Offset C

MONTH SELECT

- 1 = January
- 2 = February
- 3 = March
- 4 = April
- 5 = May
- 6 = June
- 7 = July
- 8 = August
- 9 = September
- A = October
- B = November
- C = December

BI Tran Systems, Inc.

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916/441-0260

Traffic Signal Program 233

Timing Sheet #5 (of 6)

(Revised 12/93)

Standard 332 Cabinet Location

	C1 PIN NUMBER	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
• I-2 U --->	0 39				XX	X				X								XXX							X
• J-2 U --->	1 40				XX	X							X					XXX							X
• I-6 U --->	2 41				XX	X						X						XXX							X
J-6 U --->	3 42				XX	X												XXX							X
• I-2 L --->	4 43				XX	X				X								XXX							X
• J-2 L --->	5 44				XX	X							X					XXX							X
• I-6 L --->	6 45				XX	X						X						XXX							X
• J-6 L --->	7 46				XX	X												XXX							X
I-4 --->	8 47					XX				X								XXX							X
J-4 --->	9 48					XX							X					XXX							X
I-8 --->	A 49					XX						X						XXX							X
J-8 --->	B 50					XX												XXX							X
J-1 --->	C 55				XX	X						X						XXX							X
I-1 --->	D 56				XX	X	X											XXX							X
J-5 --->	E 57				XX	X							X					XXX							X
I-5 --->	F 58				XX	X				X								XXX							X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

Standard 332 Cabinet Location

	C1 PIN NUMBER	Column 4 ATTRIBUTES								Column 5 PHASE(S)								Column 6 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
J-9 U --->	0 59				XX	X							X					XXX							X
I-9 U --->	1 60				XX	X						X						XXX							X
• J-9 L --->	2 61				XX	X										X		XXX							X
I-9 L --->	3 62				XX	X						X						XXX							X
I-3 U --->	4 63				XX	X					X							XXX							X
J-3 U --->	5 64				XX	X									X			XXX							X
I-7 U --->	6 65				XX	X							X					XXX							X
J-7 U --->	7 66				XX	X												XXX							X
I-12 U --->	8 67	X									X							XXX							X
I-13 U --->	9 68	X											X					XXX							X
I-12 L --->	A 69	X											X					XXX							X
I-13 L --->	B 70	X																XXX							X
I-3 L --->	C 76				XX	X					X							XXX							X
J-3 L --->	D 77				XX	X										X		XXX							X
I-7 L --->	E 78				XX	X							X					XXX							X
J-7 L --->	F 79				XX	X												XXX							X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1 = Full Time Delay
- 2 = Pedestrian Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set # 1
- 2 = Det. Set # 2
- 3 = Det. Set # 3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

DETECTOR TYPES

- Ext = Extension Detector
Detector is only active during the Phase's GREEN intervals (ie, will NOT Call the Phase)
- Cnt = Count Detector
Used in computing "Added Initial"
- Call = Calling Detector
Detector is only active during the Phase's NON-GREEN intervals (ie, will NOT Extend the Phase)
- Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

Input File
Slot No. -->

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14

"I"
FILE

1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39>	2 Ext, Cnt, Call <C1-63>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41>	4 Ext, Cnt, Call <C1-65>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60>	NOT WIRED	Not Assigned <C1-80>	2 Ped Call <C1-67>	6 Ped Call <C1-68>	Flash Sense <C1-81>
	2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-76>			4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-78>		3 Ext, Cnt, Call <C1-62>		Not Assigned <C1-53>	4 Ped Call <C1-69>	8 Ped Call <C1-70>	Stop Time <C1-82>

"J"
FILE

5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40>	6 Ext, Cnt, Call <C1-64>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42>	8 Ext, Cnt, Call <C1-66>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59>	NOT WIRED	Not Assigned <C1-54>	EV ^A Preempt <C1-71>	EV ^B Preempt <C1-72>	Railroad 1 <C1-51>
	6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-77>			8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-79>		7 Ext, Cnt, Call <C1-61>		Not Assigned <C1-75>	EV ^C Preempt <C1-73>	EV ^D Preempt <C1-74>	Railroad 2 <C1-52>

"INITIALIZED" INPUT FILE ASSIGNMENTS --- STANDARD 332 CABINET
< "C-1" Harness Type # 1 >

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916 / 441-0260
Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet

NORTH ADAMS ST / WEST A STREET

	PHASE							
	1	2	3	4	5	6	7	8
0 WALK	0	7	0	7	0	7	0	7
1 DONT WALK	0	18	0	15	0	18	0	15
2 MIN INITIAL	5	5	5	5	5	5	5	5
3 TYPE 3 LIMIT	0	0	0	0	0	0	0	0
4 ADD PER VEH	0	0	0	0	0	0	0	0
5 VEH EXT	2	2	2	2	2	2	2	2
6 MAX GAP	2	2	2	2	2	2	2	2
7 MIN GAP	2	2	2	2	2	2	2	2
8 MAX LIMIT	20	20	20	30	20	20	20	30
9 MAXIMUM 2	0	40	0	0	0	40	0	0
A ADV/DLY WALK	0	0	0	0	0	0	0	0
B MIN PED CLEAR	0	0	0	0	0	0	0	0
C COND SRV MIN	0	0	0	0	0	0	0	0
D REDUCE EVERY	0	0	0	0	0	0	0	0
E YELLOW	3	3	3	3	3	3	3	3
F RED CLEAR	1	1	1	1	1	1	1	1

	9	A	B	C	D
1 PHASE 1	20				
2 PHASE 2	40				
3 PHASE 3	20				
4 PHASE 4	30				
5 PHASE 5	20				
6 PHASE 6	40				
7 PHASE 7	20				
8 PHASE 8	30				

MAX INITIAL -
ALT WALK -
ALT FLH D/W -
ALT INITIAL -
ALT EXTEN -

ALL RED START: 9
(F/1 + C + 0) = 3.0
RED REVERT: (F/1 + 0 + F) = 2.0

PHASE BANK #1 <C + 0 + F = 1>

Column F
PHASES

	1	2	3	4	5	6	7	8
0 PERMIT								
1 RED LOCK								
2 YELLOW LOCK								
3 VEH MIN CALL								
4 PED RECALL								
5 PEDESTRIANS								
6 REST IN WALK								
7 RED REST								
8 DOUBLE ENTRY								
9 VEH MAX CALL								
A SOFT RECALL								
B MAXIMUM 2								
C COND SERVICE								
D MAN CONT CALL								
E YELLOW START								
F FIRST PHASES								

FLASH
TO
PREEMPT

1 = EVA 5 = RR1
2 = EVB 6 = RR2
3 = EVC 7 = SE1
4 = EVD 8 = SE2

EXTRA 1

1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Daylight Savings
4 = EV Advance
5 = Expanded Status
6 = International Ped
7 = Clear Outputs
8 = Split Ring

EXTRA 2

1 = AWB On During
Phase Initial
2 = LNU Installed

IC SELECT

2 = 2 Way Modern
3 = 7 Wire Slave
4 = Flash / Free
5 = Simplex Master
6 = 7 Wire Master
7 = Offset Interrupter

Column E
PHASES / BITS

	1	2	3	4	5	6	7	8
0 EXCLUSIVE								
1 RR1 CLEAR								
2 RR2 CLEAR								
3 RR2 LTD SRV								
4 PROT / PERM								
5 FLH TO PREMT								
6 FLASH ENTRY								
7 DSABL MIN YEL								
8 DSABL OVP YEL								
9 OVP FLH YEL								
A EM VEH A								
B EM VEH B								
C EM VEH C								
D EM VEH D								
E EXTRA 1								
F IC SELECT								

Column F
PHASES / BITS

	1	2	3	4	5	6	7	8
0 EXT PERMIT 1								
1 EXT PERMIT 2								
2 EXCLU PED								
3 PED 2P OUT								
4 PED 6P OUT								
5 PED 4P OUT								
6 PED 8P OUT								
7 FLH YELLOW								
A								
B								
C								
D								
E RESTRICTED								
F EXTRA 2								

<C + 0 + F = 1>

<C + 0 + E = 125>

PLAN NUMBER

	1	2	3	4	5	6	7	8	9
0 CYCLE									
1 FORCE 1									
2 FORCE 2									
3 FORCE 3									
4 FORCE 4									
5 FORCE 5									
6 FORCE 6									
7 FORCE 7									
8 FORCE 8									
9 RING OFFSET									
A OFFSET 1									
B OFFSET 2									
C OFFSET 3									
D END PERM 1									
E HOLD RELEASE									
F ZONE OFFSET									

COORDINATION <C + 0 + C = 1>

Column E

	1	2	3	4	5	6	7	8
0 SYNC 1								
1 SYNC 2								
2 SYNC 3								
3 SYNC 4								
4 SYNC 5								
5 SYNC 6								
6 SYNC 7								
7 SYNC 8								
8 SYNC 9								
A NEMA SYNC								
B NEMA HOLD								
C								
D								
E COOR XTRA								
F								

<C + 0 + C = 1>

Column F

	1	2	3	4	5	6	7	8
0 LAG FREE								
1 LAG PLAN 1								
2 LAG PLAN 2								
3 LAG PLAN 3								
4 LAG PLAN 4								
5 LAG PLAN 5								
6 LAG PLAN 6								
7 LAG PLAN 7								
8 LAG PLAN 8								
9 LAG PLAN 9								
A EXT. LAG								
B								
C								
D								

COOR XTRA

1 = Programmed Walk Time
For Sync Phases

Column 2
COORD
MINIMUM

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

<C + 0 + C = 5>

TRANSITION
TYPE

0.X = Shortway
1.X = Dwell
X.1 thru X.4 =
Number of cycles
when Lengthing

COMM ADDRESS:
(C/0 + 0 + 0) = _____
ZONE NUMBER:
(C/0 + 0 + 1) = _____
AREA NUMBER:
(C/0 + 0 + 2) = _____
AREA ADDRESS:
(C/0 + 0 + 3) = _____
TRANSITION TYPE:
(C/5 + 1 + 9) = _____
LAG HOLD PHASES:
(C/5 + 1 + A) = _____
7-WIRE SYNC TIME:
(C/5 + 1 + C) = _____

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Timing Sheet #1 (of 6)
(Revised 09/93)

1st/A 3.24.05

QAR

PHASE								
0	1	2	3	4	5	6	7	8
WALK		7		7		7		7
DOGT WALK		13		17		12		15
MIN INTAL	5	5	5	5	5	5	5	5
TYPE 3 LIMIT								
ADD PER VEH								
VEH EXT		2	2	2	2	2	2	2
MAX GAP		2	2	2	2	2	2	2
MIN GAP		2	2	2	2	2	2	2
MAX LIMIT		20	20	20	20	20	20	20
MAXIMUM 2	30	30	30	30	30	30	30	30
ADV/DLY WALK		50						
MIN PED CLEAR								
COND SRV MIN								
REDUCE EVERY								
YELLOW	3	3	3	3	3	3	3	3
RED CLEAR	1	1	1	1	1	1	1	1

ALL RED START: (F/1 + C + 0) = **3.0**
 RED REVERT: (F/1 + 0 + F) = **3.0**

Column F PHASES								
0	1	2	3	4	5	6	7	8
PERMIT								
RED LOCK								
YELLOW LOCK								
VEH MIN CALL								
PED RECALL								
PEDESTRIANS								
FEET IN WALK								
RED REST								
DOUBLE ENTRY								
VEH MAX CALL								
SOFT RECALL								
MAXIMUM 2								
COND SERVICE								
MAN CONT CALL								
YELLOW START								
FIRST PHASES								

Column E PHASES / BITS								
0	1	2	3	4	5	6	7	8
EXCLUSIVE								
RR1 CLEAR								
RR2 CLEAR								
RR2 LTD SRV								
PROT/PERM								
FLH TO PERM								
FLASH ENTRY								
DSABL MIN YEL								
DSABL OVP YEL								
OVP FLH YEL								
BA VEH A								
BA VEH B								
BA VEH C								
BA VEH D								
EXTRA 1								
IC SELECT								

Column F PHASES / BITS								
0	1	2	3	4	5	6	7	8
EXT PERMIT 1								
EXT PERMIT 2								
EXCU PED								
PED 2P OUT								
PED 6P OUT								
PED 4P OUT								
PED 8P OUT								
FLH YELLOW								
EXTRA 2								

PHASE BANK # 1 < C + 0 + F = 1 >

< C + 0 + F = 1 >

< C + 0 + E = 125 >

PLAN NUMBER								
0	1	2	3	4	5	6	7	8
CYCLE								
FORCE 1								
FORCE 2								
FORCE 3								
FORCE 4								
FORCE 5								
FORCE 6								
FORCE 7								
FORCE 8								
RING OFFSET								
OFFSET 1								
OFFSET 2								
OFFSET 3								
END PERM 1								
HOLD RELEASE								
ZONE OFFSET								

Column E								
0	1	2	3	4	5	6	7	8
SYNC 1								
SYNC 2								
SYNC 3								
SYNC 4								
SYNC 5								
SYNC 6								
SYNC 7								
SYNC 8								
SYNC 9								
NEMA SYNC								
NEMA HOLD								
COOR XTRA								

Column F								
0	1	2	3	4	5	6	7	8
LAG FREE								
LAG PLAN 1								
LAG PLAN 2								
LAG PLAN 3								
LAG PLAN 4								
LAG PLAN 5								
LAG PLAN 6								
LAG PLAN 7								
LAG PLAN 8								
LAG PLAN 9								
EXT. LAG								

Column 2 COORD MINIMUM								
0	1	2	3	4	5	6	7	8

COMM ADDRESS: (C/0 + 0 + 0) = _____
 ZONE NUMBER: (C/0 + 0 + 1) = _____
 AREA NUMBER: (C/0 + 0 + 2) = _____
 AREA ADDRESS: (C/0 + 0 + 3) = _____
 TRANSITION TYPE: (C/5 + 1 + 9) = _____
 LAG HOLD PHASES: (C/5 + 1 + A) = _____
 7-WIRE SYNC TIME: (C/5 + 1 + C) = _____

COORDINATION < C + 0 + C = 1 >

< C + 0 + C = 1 >

BI Tran Systems, Inc.
 510 Bercut Dr., Sacramento, Calif. 95814
 916 / 441-0260
Traffic Signal Program 233
 Tuning Sheet # 1 (of 6)
 (Revised 09/93)

Standard 332 Cabinet Location	Column 4	Column 5	Column 6	Column 7
		ATTRIBUTES	PHASE(S)	ASSIGNMENTS
C1 PIN NUMBER	1	1	1	1
	2	2	2	2
	3	3	3	3
	4	4	4	4
	5	5	5	5
	6	6	6	6
	7	7	7	7
	8	8	8	8

[illegible]

INITIALIZED DETECTOR ASSIGNMENTS

< C + 0 + E = 126 >

ASSIGNMENTS

8 - Report On Failure

DETECTOR TYPES

Ext - Extension Detector

(1e, will NOT call the Phase)

Cnt1 - Count Detector

Call - Calling Detector

(10. will NOT Extend the Phase)

Type 3 - Type 3 Disconnect

is reached

RI Tran Systems, Inc.

510 Bercaw Dr., Sacramento, Calif. 95814

916 / 441-0260
Traffic Signal Program 233

(Revised 8/92) 332 Cabinet

332 Cabinet

"INITIALIZED" INPUT FILE ASSIGNMENTS --- STANDARD 332 CABINET

< "C-1" Harness Type # 1 >

"I" FILE

~~1~~ Ext. Cnt, Call <C1-56>	~~2~~ Ext. Cnt, Call <C1-39>	~~2~~ Ext. Cnt, Call <C1-63>	~~2~~ Type 3, Call <C1-47>	~~3~~ Ext. Cnt, Call <C1-58>	~~4~~ Ext. Cnt, Call <C1-41>	~~4~~ Ext. Cnt, Call <C1-65>	~~4~~ Type 3, Call <C1-49>	~~1~~ Ext. Cnt, Call <C1-60>	~~3~~ Ext. Cnt, Call <C1-62>	WIRED	Not Assigned <C1-53>	2 Ped Call <C1-69>	6 Ped Call <C1-70>	Flash Sense <C1-82>
~~2~~ Ext. Cnt, Call <C1-43>	~~2~~ Ext. Cnt, Call <C1-76>							~~4~~ Ext. Cnt, Call <C1-45>	~~4~~ Ext. Cnt, Call <C1-78>	NOT	Not Assigned <C1-80>	2 Ped Call <C1-67>	6 Ped Call <C1-68>	Flash Sense <C1-81>
											Not Assigned <C1-53>	4 Ped Call <C1-69>	8 Ped Call <C1-70>	Stop Time <C1-82>

"J" FILE

~~5~~ Ext. Cnt, Call <C1-55>	~~6~~ Ext. Cnt, Call <C1-40>	~~6~~ Ext. Cnt, Call <C1-64>	~~6~~ Type 3, Call <C1-48>	~~7~~ Ext. Cnt, Call <C1-57>	~~8~~ Ext. Cnt, Call <C1-42>	~~8~~ Ext. Cnt, Call <C1-66>	~~8~~ Type 3, Call <C1-50>	~~5~~ Ext. Cnt, Call <C1-59>	WIRED	Not Assigned	EV ^A Preempt	EV ^B Preempt	Rollroad 1
~~6~~ Ext. Cnt, Call <C1-44>	~~6~~ Ext. Cnt, Call <C1-77>				~~8~~ Ext. Cnt, Call <C1-46>	~~8~~ Ext. Cnt, Call <C1-79>	~~7~~ Ext. Cnt, Call <C1-61>	NOT		Not Assigned	EV ^C Preempt	EV ^D Preempt	Rollroad 2

A-21

PHASE								
0	1	2	3	4	5	6	7	8
WALK								
DONT WALK								
MIN INITIAL								
TYPE 3 LIMIT								
ADD PER VEH								
VEH EXT								
MAX GAP								
MIN GAP								
MAX LIMIT								
MAXIMUM 2								
ADV/DLY WALK								
MIN PED CLEAR								
COND SRV MIN								
REDUCE EVERY								
YELLOW								
RED CLEAR								

0	9	A	B	C	D
1 PHASE 1					
2 PHASE 2					
3 PHASE 3					
4 PHASE 4					
5 PHASE 5					
6 PHASE 6					
7 PHASE 7					
8 PHASE 8					

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #2
< C + 0 + F = 2 >

PHASE								
0	1	2	3	4	5	6	7	8
WALK								
DONT WALK								
MIN INITIAL								
TYPE 3 LIMIT								
ADD PER VEH								
VEH EXT								
MAX GAP								
MIN GAP								
MAX LIMIT								
MAXIMUM 2								
ADV/DLY WALK								
MIN PED CLEAR								
COND SRV MIN								
REDUCE EVERY								
YELLOW								
RED CLEAR								

0	9	A	B	C	D
1 PHASE 1					
2 PHASE 2					
3 PHASE 3					
4 PHASE 4					
5 PHASE 5					
6 PHASE 6					
7 PHASE 7					
8 PHASE 8					

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #3
< C + 0 + F = 3 >

Column D

OUT BIT NO.->	1	2	3	4	5	6	7	8

0								
1	OUT PORT 1							
2	OUT PORT 2							
3	OUT PORT 3							
4	OUT PORT 4							
5	OUT PORT 5							
6	OUT PORT 6							
7	OUT PORT 7							
8								
9								
A								
B								
C								
D								
E								
F								

Column F

	1	2	3	4	5	6	7	8

0	FAST GRN FLH							
1	GREEN FLASH							
2	FLASH WALK							
3	GLWR PASS							
4	SMUL GAP							
5	SEO TIMING							
6	ADV WALK							
7	DELAY WALK							
8	EXT RECALL							
9								
A	MAX EXTEN							
B	INH PED RSRV							
C	SEMI ACTUATED							
D								
E	START VEH CALL							
F	START PED CALL							

PED / PHASE / OVERLAP

	1	2	3	4	5	6	7	8

0	WALK							
1	DONT WALK							
2	PHASE GREEN							
3	PHASE YELLOW							
4	PHASE RED							
5	OVERLAP GREEN							
6	OVERLAP YELLOW							
7	OVERLAP RED							
8								
9								
A								
B								
C								
D								
E								
F								

Advance Warning Beacons

Sign # 1: _____ Sign # 2: _____

PHASE NUMBER: (F/1 + C + F) = _____ (F/1 + D + F) = _____
TIME BEFORE YELLOW: (F/1 + C + E) = _____ (F/1 + D + E) = _____
OUTPUT PIN NUMBER: (E/127 + E + 8) = _____ (E/127 + E + 9) = _____

Exclusive Pedestrian Operation

WALK: (F/1 + 0 + 0) = _____
DONT WALK: (F/1 + 0 + 1) = _____
RED CLEAR: (F/1 + 0 + 2) = _____

CABINET TYPE
30 - Type 303/330 Cabinet (Enable Redirection)
0 - All Other Types (Disable Redirection)

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Timing Sheet # 3 (of 6)
(Revised 08/93)

DIMMING < C + 0 + E = 125 >
SPECIALS < C + 0 + F = 2 >
REDIRECT PHASE OUTPUTS < C + 0 + E = 127 >

DAY OF WEEK						
S	M	T	W	T	F	S
1	2	3	4	5	6	7

[illegible]TIME
PLAY
OFF

HOLIDAY TYPE						
1	2	3	4	5	6	7

[illegible]
$$\sqrt{C+0+9}=1.1\lambda$$

DAY OF WEEK						
S	M	T	W	T	F	S
1	2	3	4	5	6	7

[illegible]TIME
PLAY
OFF

HOLIDAY TYPE							
1	2	3	4	5	6	7	

[illegible]
$$\sqrt{C+0+9}=1.2\lambda$$
TIME
FUN

DAY OF WEEK							
8	M	T	W	T	F	S	S
1	2	3	4	5	6	7	

Column 4

Column 4	PHASES / BITS
1	
2	
3	
4	
5	
6	
7	
8	

0	0800	B
6	1000	B
2	1400	B
Z	1600	B
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

DAY
YEA
MON

HOLIDAY TYPE							
1	2	3	4	5	6	7	

[illegible]
$$\sqrt{C+0+8}=1.1\lambda$$
TIME
FUN

HOLIDAY TYPE
1
2
3
4
5
6
7

Column 4

Column 4
PHASES / BITS

[illegible]

1	2	3	4	5	6

77[illegible]
$$C + 0 + 8 = 12$$

0 = Permit Phases
1 = Red Lock

- 2 - Yellow Lock
- 3 - Veh. MIN Recall
- 4 - Ped. Recall
- 5 -
- 6 - Reset in Work
- 7 - Red Recall
- 8 - Double Entry
- 9 - Veh. MAX Recall
- A - Veh. 80FT Recall
- B - Maximum 2
- C - Conditional Service
- D - Log Phases
- E - Bk 1 - Local Override
- BR 4 - Disable Dgt.
- OFF Monitor
- BR 7 - Dgt. Count
- Monitor
- BR 8 - Read Time
- Sppl. Monitor
- F - Output Bats 1 Thru 8

MONTH SELECT

- 1 - Coordination Plan 1 thru
9 - Coordination Plan 9
E - Free
F - Feast
- OFFSET SELECT
- A - Offset A
B - Offset B
C - Offset C
- 1 - January
2 - February
3 - March
4 - April
5 - May
6 - June
7 - July
8 - August
9 - September
A - October
B - November
C - December

510 Bercut Dr., Sacramento, Calif. 95814

916 / 441-0260

Traffic Signal Program 233

Timing Sheet # 5 (of 6)

(Revised 12/93)

6		7		8		9		A		B		C		D		E		F					
CLEAR		TIME		PED CALL		HOLD		ADVANCE		FORCEOFF		CALL		PERMIT		PED OMIT		OUTPUT					
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
A																							
B																							
C																							
D																							
E																							
F																							

SPECIAL EVENT SCHEDULE - TABLE #1 < C + 0 + E = 27 >

INPUT C1 PIN
 ASSIGNMENT:
 (E/126 + F + 7) = _____
 LIMITED SERVICE
 INTERVAL:
 (E/27 + 6 + F) = _____

6		7		8		9		A		B		C		D		E		F					
CLEAR		TIME		PED CALL		HOLD		ADVANCE		FORCEOFF		CALL		PERMIT		PED OMIT		OUTPUT					
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8				
6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8					
7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8						
8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8							
9	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8								
A	3	4	5	6	7	8	1	2	3	4	5	6	7	8									
B	4	5	6	7	8	1	2	3	4	5	6	7	8										
C	5	6	7	8	1	2	3	4	5	6	7	8											
D	6	7	8	1	2	3	4	5	6	7	8												
E	7	8	1	2	3	4	5	6	7	8													
F	8	1	2	3	4	5	6	7	8														

INPUT C1 PIN
 ASSIGNMENT:
 (E/126 + F + 6) = _____
 LIMITED SERVICE
 INTERVAL:
 (E/26 + 6 + F) = _____

SPECIAL EVENT SCHEDULE -- TABLE #2

< C + 0 + E = 28 >

BI Tran Systems, Inc.
 510 Bercut Dr., Sacramento, Calif. 95814
 916/441-0260
 Traffic Signal Program 233
 Turning Sheet # 6 (of 6)
 (Revised 12/93)

Column A	Column B	Column C	Column D	Column E	Column F
0 NOT 3	MAX 2	PRE TIM	WKL DAY	DWL 2	0
1 NOT 4	SYDET 1	PLAN 1	X PERM 1	DWL 3	1
2 OR 4	SYDET 2	PLAN 2	X PERM 2	OFF 1	2
3 OR 4	SYDET 3	PLAN 3	DWL	OFF 2	3
4 OR 5	SYDET 4	PLAN 4	X CLOCK	OFF 3	4
5 OR 5	SYDET 5	PLAN 5	ST TIME	FREE	5
6 OR 6	SYDET 6	PLAN 6	FL SEBS	FLASH	6
7 OR 6	SYDET 7	PLAN 7	ENABLE	XPD ONT	7
8	SYDET 8	PLAN 8	ADVANC	NOT 1	8
9	MAX MBT	PLAN 9	ALARM	NOT 2	9
A AND 4	FORCE A	DELAY A	PH BKT 2	OR 1	A
B AND 4	FORCE B	DELAY B	PH BKT 3	OR 1	B
C AND 1	CMA	DELAY C	CL SET 2	OR 2	C
D AND 1	HOLD	DELAY D	CL SET 3	OR 2	D
E AND 2	VE CALL	DELAY E	DET ST 2	OR 3	E
F AND 2	RECALL	DELAY F	DET ST 3	OR 3	F

ASSIGNABLE INPUTS < C + 0 + E = 126 >

Column A	Column B	Column C	Column D	Column E	Column F
0	FLR 0	FREE	NOT 1	TOD 1	0
1 SP EV 1	FLR 1	PLAN 1	OR 1	TOD 2	1
2 SP EV 2	FLR 2	PLAN 2	OR 2	TOD 3	2
3 SP EV 3		PLAN 3	OR 3	TOD 4	3
4 SP EV 4		PLAN 4	AND 1	TOD 5	4
5 SP EV 5		PLAN 5	AND 2	TOD 6	5
6 SP EV 6		PLAN 6	AND 3	TOD 7	6
7 SP EV 7		PLAN 7	NOT 2	TOD 8	7
8 SP EV 8	NOT 3	PLAN 8	EVA	WARN 1	8
9	NOT 4	PLAN 9	EV B	WARN 2	9
A DET FAL	OR 4		EVC	DELAY A	A
B	OR 5		EVD	DELAY B	B
C	OR 6		RR 1	DELAY C	C
D CNT CTL	AND 4		RR 2	DELAY D	D
E X DWALK	AND 1		SP 1	DELAY E	E
F X WALK	AND 2		SP 2	DELAY F	F

ASSIGNABLE OUTPUTS < C + 0 + E = 127 >

PLAN # ->	1	2	3	4	5	6	7	8	9
0 PED ADJ									
1 ST PERM 2									
2 EN PERM 2									
3 ST PERM 3									
4 EN PERM 3									
5 RSRV TIME									

PLAN # ->	1	2	3	4	5	6	7	8	9
6 RESERVE PH									
7									
8 PRETIMED									
9 MAX RECALL									
A PERM 1 VEH									
B PERM 1 PED									
C PERM 2 VEH									
D PERM 2 PED									
E PERM 3 VEH									
F PERM 3 PED									

Column A	Column B
A DELAY A	
B DELAY B	
C DELAY C	
D DELAY D	
E DELAY E	
F DELAY F	

Logic DELAY Times

< C + 0 + D = 0 >

DIAL-UP ("stand alone")
Modem Interface:

(C/5 + D + 0) =
NOTE: If "Non-Zero", PARTY will be DISABLED
for "Smart Modem" operation.

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Timing Sheet # 2 (of 6)
(Revised 10/93)

Column -> 1	DELAY	CARRY-OVER
0		3
1		
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

Column 0	Column 1	Column 2	Column 3
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0 39			
1 40			
2 41			
3 42			
4 43			
5 44			
6 45			
7 46			
8 47			
9 48			
A 49			
B 50			
C 55			
D 56			
E 57			
F 58			

< C + 0 + D = 0 >

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Column -> 2	DELAY	CARRY-OVER
0		4
1		
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

Column 4	Column 5	Column 6	Column 7
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0 59			
1 60			
2 61			
3 62			
4 63			
5 64			
6 65			
7 66			
8 67			
9 68			
A 69			
B 70			
C 74			
D 77			
E 78			
F 79			

< C + 0 + D = 0 >

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Detector Monitor

MAX OFF: (D/0 + 0 + 1) = _____
 MAX ON: (D/0 + 0 + 2) = _____

Power Cycle Correction Factors

LONG FAILURE: (F/1 + 0 + 6) = _____
 SHORT FAILURE: (F/1 + 0 + 7) = _____
 NOTE: Do Not Set To Zero. Default Value = 0.5 sec.

0 LOAD SW #	1	2	3	4	5	6	7	8
1 VEH SET #1								
2 VEH SET #2								
3 VEH SET #3								
4 NEG VEH								
5 NEG PED								
6 GREEN OMIT								
7 GRN CLR OMIT								
8								

OVERLAP ASSIGNMENTS

< C + 0 + E = 29 >

BI Tran Systems, Inc.
 510 Bercut Dr., Sacramento, Calif. 95814
 916/441-0260
 Traffic Signal Program 233
 Tuning Sheet # 4 (of 6)
 (Revised 12/93)

- DETECTOR ASSIGNMENTS**
- 1 - Det. Set #1
 - 2 - Det. Set #2
 - 3 - Det. Set #3
 - 4 -
 - 5 -
 - 6 - MIN Recall On Failure
 - 7 - MAX Recall On Failure
 - 8 - Report On Failure
- DETECTOR ATTRIBUTES**
- 1 - Full Time Delay
 - 2 - Pedestrian Call
 - 3 -
 - 4 - Count
 - 5 - Extension
 - 6 - Type 3
 - 7 - Calling
 - 8 - Alternate

Appendix B
Level of Service Calculations

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Intersection

Intersection Delay, s/veh 13.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↗			↕			↕
Traffic Vol, veh/h	33	254	11	1	10	279	63	18	35	25	39	27
Future Vol, veh/h	33	254	11	1	10	279	63	18	35	25	39	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	306	13	1	12	336	76	22	42	30	47	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14	15.5	10.3	10.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	11%	3%	33%
Vol Thru, %	45%	85%	79%	23%
Vol Right, %	32%	4%	18%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	298	353	118
LT Vol	18	33	10	39
Through Vol	35	254	280	27
RT Vol	25	11	63	52
Lane Flow Rate	94	359	425	142
Geometry Grp	1	1	1	1
Degree of Util (X)	0.159	0.524	0.6	0.234
Departure Headway (Hd)	6.085	5.258	5.078	5.917
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	586	686	710	604
Service Time	4.152	3.303	3.121	3.977
HCM Lane V/C Ratio	0.16	0.523	0.599	0.235
HCM Control Delay, s/veh	10.3	14	15.5	10.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.1	4	0.9

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement SBR

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	316	4	1	2	351	1	4
Future Vol, veh/h	316	4	1	2	351	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	395	5	1	3	439	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	409
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1150
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -3
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.78
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	537	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	320	350	1	2	6
Future Vol, veh/h	2	320	350	1	2	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	395	432	1	2	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	436	0	836
Stage 1	-	-	436
Stage 2	-	-	400
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1123	-	337
Stage 1	-	-	652
Stage 2	-	-	677
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1120	-	334
Mov Cap-2 Maneuver	-	-	334
Stage 1	-	-	648
Stage 2	-	-	675

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.05	0	12.22
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	11	-	-	-	509
HCM Lane V/C Ratio	0.002	-	-	-	0.019
HCM Ctrl Dly (s/v)	8.2	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	355	85	386	107	8	52	11	100	109
v/c Ratio	0.13	0.39	0.31	0.40	0.13	0.04	0.18	0.04	0.33	0.21
Control Delay (s/veh)	28.0	17.6	26.5	14.1	4.1	28.6	26.8	0.2	26.2	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.0	17.6	26.5	14.1	4.1	28.6	26.8	0.2	26.2	17.1
Queue Length 50th (ft)	8	94	23	69	0	2	15	0	28	19
Queue Length 95th (ft)	31	186	68	197	24	15	48	0	76	71
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	606	1579	606	1306	1089	649	1259	951	649	1215
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.22	0.14	0.30	0.10	0.01	0.04	0.01	0.15	0.09
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	23	292	6	71	324	90	7	44	9	84	71	20	
Future Volume (veh/h)	23	292	6	71	324	90	7	44	9	84	71	20	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	27	348	7	85	386	107	8	52	11	100	85	24	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	58	539	11	143	619	517	19	148	119	158	225	64	
Arrive On Green	0.03	0.29	0.29	0.08	0.33	0.33	0.01	0.08	0.08	0.09	0.16	0.16	
Sat Flow, veh/h	1767	1884	38	1767	1856	1549	1767	1930	1551	1767	1444	408	
Grp Volume(v), veh/h	27	0	355	85	386	107	8	52	11	100	0	109	
Grp Sat Flow(s),veh/h/ln	1767	0	1922	1767	1856	1549	1767	1930	1551	1767	0	1852	
Q Serve(g_s), s	0.5	0.0	5.5	1.6	6.0	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Cycle Q Clear(g_c), s	0.5	0.0	5.5	1.6	6.0	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22	
Lane Grp Cap(c), veh/h	58	0	550	143	619	517	19	148	119	158	0	288	
V/C Ratio(X)	0.46	0.00	0.65	0.59	0.62	0.21	0.42	0.35	0.09	0.63	0.00	0.38	
Avail Cap(c_a), veh/h	825	0	2018	825	1948	1626	825	1463	1176	825	0	1404	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	16.3	0.0	10.7	15.2	9.6	8.2	16.9	15.0	14.7	15.1	0.0	13.0	
Incr Delay (d2), s/veh	2.1	0.0	0.5	1.5	0.4	0.1	5.5	0.5	0.1	1.6	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.6	1.7	0.4	0.1	0.3	0.1	0.7	0.0	0.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	18.4	0.0	11.2	16.7	10.0	8.2	22.3	15.5	14.8	16.6	0.0	13.3	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	382				578				71				209
Approach Delay, s/veh	11.7				10.7				16.2				14.9
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.1	15.4	4.4	9.3	6.8	13.8	7.1	6.6					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.5	8.0	2.2	3.8	3.6	7.5	3.9	2.9					
Green Ext Time (p_c), s	0.0	1.7	0.0	0.3	0.1	1.4	0.1	0.1					
Intersection Summary													
HCM 7th Control Delay, s/veh			12.0										
HCM 7th LOS			B										

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	384	0	0	489	0	76
Future Vol, veh/h	384	0	0	489	0	76
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	463	0	0	589	0	92
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	464
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	598
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	598
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		12.11		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	598	-	-			
HCM Lane V/C Ratio	0.153	-	-			
HCM Ctrl Dly (s/v)	12.1	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.5	-	-			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.86
Level of Service	A
Average Dissatisfaction Prob	0.300
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	527
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.91
Delay for adq Gap (s)	60.61
Avg Ped Delay (s)	4.86

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.86
Level of Service	A
Average Dissatisfaction Prob	0.300
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	527
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.91
Delay for adq Gap (s)	60.61
Avg Ped Delay (s)	4.86

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.3	0.5	14.4	8.2	2.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.1	31.2	26.3	22.0	26.7

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	1.1	7.7	6.2	1.6

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.0	0.1

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.2	0.1

Total Zone Performance

Stop Del/Veh (s)	433.7

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	122	108	175	34
Average Queue (ft)	17	17	60	10
95th Queue (ft)	69	71	126	34
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	296	95	328	114	390	169	288
Average Queue (ft)	58	130	61	149	99	249	73	130
95th Queue (ft)	119	249	110	294	134	418	146	242
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		0		3		9		0
Queuing Penalty (veh)		2		15		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	4	20	13	26	24	22	1	7
Queuing Penalty (veh)	12	13	38	21	114	38	4	7

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	87	96	50	93
Average Queue (ft)	9	12	19	38
95th Queue (ft)	50	62	46	70
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	3		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	3	38
Average Queue (ft)	0	2
95th Queue (ft)	0	26
Link Distance (ft)	116	280
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 268

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↕			↕			↕
Traffic Vol, veh/h	33	257	11	1	11	282	62	18	35	26	40	27
Future Vol, veh/h	33	257	11	1	11	282	62	18	35	26	40	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	310	13	1	13	340	75	22	42	31	48	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.2	15.8	10.4	10.9
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	11%	3%	34%
Vol Thru, %	44%	85%	79%	23%
Vol Right, %	33%	4%	17%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	301	356	119
LT Vol	18	33	11	40
Through Vol	35	257	283	27
RT Vol	26	11	62	52
Lane Flow Rate	95	363	429	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.162	0.532	0.608	0.237
Departure Headway (Hd)	6.111	5.277	5.1	5.949
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	584	682	708	601
Service Time	4.179	3.324	3.145	4.012
HCM Lane V/C Ratio	0.163	0.532	0.606	0.238
HCM Control Delay, s/veh	10.4	14.2	15.8	10.9
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.2	4.2	0.9

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement **SBR**

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	321	4	1	2	354	1	4
Future Vol, veh/h	321	4	1	2	354	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	401	5	1	3	443	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	415
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1144
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -3
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.85
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	532	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	325	353	1	2	6
Future Vol, veh/h	2	325	353	1	2	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	401	436	1	2	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	440	0	0 846 441
Stage 1	-	-	- - 439 -
Stage 2	-	-	- - 406 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1120	-	- - 333 616
Stage 1	-	-	- - 650 -
Stage 2	-	-	- - 673 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1117	-	- - 330 613
Mov Cap-2 Maneuver	-	-	- - 330 -
Stage 1	-	-	- - 646 -
Stage 2	-	-	- - 671 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.05	0	12.28
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	11	-	-	-	505
HCM Lane V/C Ratio	0.002	-	-	-	0.02
HCM Ctrl Dly (s/v)	8.2	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	361	85	389	108	8	52	11	101	109
v/c Ratio	0.13	0.39	0.31	0.40	0.13	0.04	0.18	0.04	0.34	0.21
Control Delay (s/veh)	28.2	17.7	26.6	14.1	4.0	28.7	27.0	0.2	26.3	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	17.7	26.6	14.1	4.0	28.7	27.0	0.2	26.3	17.2
Queue Length 50th (ft)	8	96	24	70	0	2	15	0	28	20
Queue Length 95th (ft)	32	190	68	199	24	15	49	0	77	72
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	604	1574	604	1301	1086	646	1254	948	646	1209
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.23	0.14	0.30	0.10	0.01	0.04	0.01	0.16	0.09
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	23	297	6	71	327	91	7	44	9	85	71	20	
Future Volume (veh/h)	23	297	6	71	327	91	7	44	9	85	71	20	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	27	354	7	85	389	108	8	52	11	101	85	24	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	58	544	11	143	624	521	19	148	119	159	225	64	
Arrive On Green	0.03	0.29	0.29	0.08	0.34	0.34	0.01	0.08	0.08	0.09	0.16	0.16	
Sat Flow, veh/h	1767	1885	37	1767	1856	1549	1767	1930	1551	1767	1444	408	
Grp Volume(v), veh/h	27	0	361	85	389	108	8	52	11	101	0	109	
Grp Sat Flow(s),veh/h/ln	1767	0	1922	1767	1856	1549	1767	1930	1551	1767	0	1852	
Q Serve(g_s), s	0.5	0.0	5.7	1.6	6.1	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Cycle Q Clear(g_c), s	0.5	0.0	5.7	1.6	6.1	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22	
Lane Grp Cap(c), veh/h	58	0	555	143	624	521	19	148	119	159	0	289	
V/C Ratio(X)	0.46	0.00	0.65	0.60	0.62	0.21	0.42	0.35	0.09	0.64	0.00	0.38	
Avail Cap(c_a), veh/h	820	0	2006	820	1937	1617	820	1455	1169	820	0	1396	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	16.4	0.0	10.7	15.3	9.6	8.2	17.0	15.1	14.8	15.1	0.0	13.1	
Incr Delay (d2), s/veh	2.1	0.0	0.5	1.5	0.4	0.1	5.5	0.5	0.1	1.6	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.6	1.8	0.4	0.1	0.3	0.1	0.7	0.0	0.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	18.5	0.0	11.2	16.8	10.0	8.2	22.4	15.6	14.9	16.7	0.0	13.4	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	388				582				71				210
Approach Delay, s/veh	11.7				10.7				16.3				15.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.1	15.6	4.4	9.4	6.8	14.0	7.1	6.6					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.5	8.1	2.2	3.8	3.6	7.7	3.9	2.9					
Green Ext Time (p_c), s	0.0	1.8	0.0	0.3	0.1	1.5	0.1	0.1					
Intersection Summary													
HCM 7th Control Delay, s/veh			12.0										
HCM 7th LOS			B										

AM Existing with Project 12:00 pm 01/15/2025 AM Existing No Project
TKTPM

Synchro 12 Report
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Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↗
Traffic Vol, veh/h	390	0	0	493	0	77
Future Vol, veh/h	390	0	0	493	0	77
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	0	0	594	0	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	471
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	593
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	592
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		12.21		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	592	-	-			
HCM Lane V/C Ratio	0.157	-	-			
HCM Ctrl Dly (s/v)	12.2	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.6	-	-			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.302
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	544
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	64.55
Avg Ped Delay (s)	4.85

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.302
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	544
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	64.55
Avg Ped Delay (s)	4.85

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.5	0.5	14.7	8.0	2.6

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.7	38.0	29.6	24.7	30.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.3	3.8	14.3	11.2	3.9

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.1	0.1

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.6	13.3	2.2

Total Zone Performance

Stop Del/Veh (s)	480.1

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	143	99	154	42
Average Queue (ft)	20	15	59	9
95th Queue (ft)	80	61	115	34
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	302	95	342	115	396	170	337
Average Queue (ft)	60	137	67	170	100	272	84	147
95th Queue (ft)	117	259	112	335	134	430	163	282
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		8		14		1
Queuing Penalty (veh)		4		39		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	3	22	22	26	28	24	2	8
Queuing Penalty (veh)	8	14	63	25	136	41	8	10

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	190	120	70	101
Average Queue (ft)	29	26	22	41
95th Queue (ft)	119	95	55	79
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	5		1
Queuing Penalty (veh)	0	19		1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	15
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	10	170	53
Average Queue (ft)	0	20	17
95th Queue (ft)	7	125	46
Link Distance (ft)	116	280	90
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 368

Intersection

Intersection Delay, s/veh 14.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	322	17	27	309	44	8	26	18	53	23	41
Future Vol, veh/h	29	322	17	27	309	44	8	26	18	53	23	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	370	20	31	355	51	9	30	21	64	26	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.8	16	10	11
HCM LOS	C	C	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	45%
Vol Thru, %	50%	88%	81%	20%
Vol Right, %	35%	5%	12%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	368	380	117
LT Vol	8	29	27	53
Through Vol	26	322	309	23
RT Vol	18	17	44	41
Lane Flow Rate	60	423	437	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.604	0.617	0.232
Departure Headway (Hd)	6.226	5.143	5.088	6.073
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	702	708	590
Service Time	4.289	3.18	3.124	4.126
HCM Lane V/C Ratio	0.105	0.603	0.617	0.232
HCM Control Delay, s/veh	10	15.8	16	11
HCM Lane LOS	A	C	C	B
HCM 95th-tile Q	0.3	4.1	4.3	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	382	2	4
Future Vol, veh/h	393	5	3	382	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	439	2	5

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	466	0	910
Stage 1	-	-	-	-	464
Stage 2	-	-	-	-	446
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1095	-	305
Stage 1	-	-	-	-	633
Stage 2	-	-	-	-	645
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1086	-	301
Mov Cap-2 Maneuver	-	-	-	-	301
Stage 1	-	-	-	-	628
Stage 2	-	-	-	-	642

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.15
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	1086	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 380 376 2 0 7

Future Vol, veh/h 7 380 376 2 0 7

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 442 437 2 0 8

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 443 0 - 0 900 443

Stage 1 - - - - 441 -

Stage 2 - - - - 458 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1118 - - - 309 614

Stage 1 - - - - 648 -

Stage 2 - - - - 637 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1114 - - - 305 611

Mov Cap-2 Maneuver - - - - 305 -

Stage 1 - - - - 640 -

Stage 2 - - - - 635 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 10.97

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 33 - - - 611

HCM Lane V/C Ratio 0.007 - - - 0.013

HCM Ctrl Dly (s/v) 8.3 0 - - 11

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	404	86	360	110	5	90	16	115	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.6	20.2	29.8	15.5	4.3	31.5	29.1	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	20.2	29.8	15.5	4.3	31.5	29.1	0.4	29.2	15.2
Queue Length 50th (ft)	10	117	26	69	0	2	28	0	35	24
Queue Length 95th (ft)	38	245	78	210	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1419	572	1171	989	613	1143	871	613	1067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	349	3	75	313	96	4	78	14	100	70	57
Future Volume (veh/h)	27	349	3	75	313	96	4	78	14	100	70	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	401	3	86	360	110	5	90	16	115	80	66
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	65	581	4	139	641	536	12	192	154	164	181	149
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803
Grp Volume(v), veh/h	31	0	404	86	360	110	5	90	16	115	0	146
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777
Q Serve(g_s), s	0.6	0.0	7.0	1.8	5.9	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	5.9	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	65	0	585	139	641	536	12	192	154	164	0	330
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.56	0.21	0.42	0.47	0.10	0.70	0.00	0.44
Avail Cap(c_a), veh/h	752	0	1844	752	1775	1483	752	1334	1070	752	0	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	11.5	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6
Incr Delay (d2), s/veh	2.0	0.0	0.5	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.3	0.7	1.8	0.4	0.1	0.6	0.1	0.9	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.4	10.3	8.7	27.0	16.7	15.5	18.6	0.0	13.9
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	435				556				111		261	
Approach Delay, s/veh	12.6				11.2				17.0		16.0	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.4	7.5	7.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	7.9	2.1	4.7	3.8	9.0	4.4	3.7				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.6	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.1											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	462	0	0	476	0	105
Future Vol, veh/h	462	0	0	476	0	105
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	537	0	0	553	0	122

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 538
Stage 1	-	-	- -
Stage 2	-	-	- -
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	- -
Critical Hdwy Stg 2	-	-	- -
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 543
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 542
Mov Cap-2 Maneuver	-	-	- -
Stage 1	-	-	- -
Stage 2	-	-	- -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.56
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	542	-	-
HCM Lane V/C Ratio	0.225	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	478
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.54
Avg Ped Delay (s)	4.88

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	478
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.54
Avg Ped Delay (s)	4.88

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.6	24.0	9.1	4.8

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.0	31.3	27.5	22.9	27.1

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	1.6	11.1	8.6	2.5

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	0.1	0.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.5	0.3

Total Zone Performance

Stop Del/Veh (s)	446.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	192	124	215	77
Average Queue (ft)	33	18	78	33
95th Queue (ft)	123	76	164	62
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	314	94	315	114	380	169	334
Average Queue (ft)	77	151	63	134	91	197	69	166
95th Queue (ft)	128	285	109	281	135	384	147	295
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		4		7		1
Queuing Penalty (veh)		8		16		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	10	19	17	19	20	15	0	11
Queuing Penalty (veh)	30	21	44	18	83	23	2	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	97	89	83
Average Queue (ft)	11	12	30	32
95th Queue (ft)	61	62	67	66
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	1	0	0
Queuing Penalty (veh)	0	4	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB
Directions Served	T
Maximum Queue (ft)	58
Average Queue (ft)	4
95th Queue (ft)	35
Link Distance (ft)	280
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 259

Intersection

Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	323	17	27	309	45	8	26	18	53	23	41
Future Vol, veh/h	29	323	17	27	309	45	8	26	18	53	23	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	371	20	31	355	52	9	30	21	64	26	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.8	16.1	10	11
HCM LOS	C	C	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	45%
Vol Thru, %	50%	88%	81%	20%
Vol Right, %	35%	5%	12%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	369	381	117
LT Vol	8	29	27	53
Through Vol	26	323	309	23
RT Vol	18	17	45	41
Lane Flow Rate	60	424	438	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.606	0.619	0.232
Departure Headway (Hd)	6.231	5.145	5.087	6.078
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	700	709	590
Service Time	4.296	3.183	3.124	4.132
HCM Lane V/C Ratio	0.105	0.606	0.618	0.232
HCM Control Delay, s/veh	10	15.8	16.1	11
HCM Lane LOS	A	C	C	B
HCM 95th-tile Q	0.3	4.1	4.3	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱↲	
Traffic Vol, veh/h	394	5	3	383	2	4
Future Vol, veh/h	394	5	3	383	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	6	3	440	2	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	468	0	912	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1094	-	304	598
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1085	-	300	592
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	642	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0.06		13.17	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	447	-	-	1085	-	
HCM Lane V/C Ratio	0.015	-	-	0.003	-	
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	381	377	2	0	7
Future Vol, veh/h	7	381	377	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	443	438	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	444	0	902
Stage 1	-	-	443
Stage 2	-	-	459
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1116	-	308
Stage 1	-	-	647
Stage 2	-	-	636
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1113	-	304
Mov Cap-2 Maneuver	-	-	304
Stage 1	-	-	639
Stage 2	-	-	634

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	10.98
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	32	-	-	-	610
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	405	86	361	110	5	90	16	116	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Length 50th (ft)	10	118	27	70	0	2	28	0	36	24
Queue Length 95th (ft)	38	245	78	211	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1417	572	1168	987	613	1141	870	613	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	350	3	75	314	96	4	78	14	101	70	57	
Future Volume (veh/h)	27	350	3	75	314	96	4	78	14	101	70	57	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	402	3	86	361	110	5	90	16	116	80	66	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	65	581	4	139	642	536	12	192	154	165	181	149	
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19	
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803	
Grp Volume(v), veh/h	31	0	405	86	361	110	5	90	16	116	0	146	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777	
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45	
Lane Grp Cap(c), veh/h	65	0	586	139	642	536	12	192	154	165	0	330	
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.56	0.21	0.42	0.47	0.10	0.70	0.00	0.44	
Avail Cap(c_a), veh/h	750	0	1841	750	1773	1481	750	1332	1069	750	0	1226	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.8	0.0	11.6	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6	
Incr Delay (d2), s/veh	2.0	0.0	0.6	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.5	10.3	8.7	27.1	16.7	15.5	18.6	0.0	13.9	
LnGrp LOS	B		B	B	B	A	C	B	B	B		B	
Approach Vol, veh/h	436				557				111				262
Approach Delay, s/veh	12.7				11.3				17.0				16.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.5	7.5	7.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7					
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.7	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh	13.1												
HCM 7th LOS	B												

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	464	0	0	477	1	105
Future Vol, veh/h	464	0	0	477	1	105
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	540	0	0	555	1	122

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	1094	541
Stage 1	-	-	-	540	-
Stage 2	-	-	-	555	-
Critical Hdwy	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	237	541
Stage 1	-	0	0	584	-
Stage 2	-	0	0	575	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	237	541
Mov Cap-2 Maneuver	-	-	-	373	-
Stage 1	-	-	-	584	-
Stage 2	-	-	-	575	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.59
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	541	-	-
HCM Lane V/C Ratio	0.226	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.301
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	540
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	63.60
Avg Ped Delay (s)	4.85

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.301
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	540
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	63.60
Avg Ped Delay (s)	4.85

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.4	0.7	25.7	10.6	5.2

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	30.2	33.2	27.5	23.9	28.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.9	2.3	10.4	11.3	2.9

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.3	0.2

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.0	1.2	6.5	1.4

Total Zone Performance

Stop Del/Veh (s)	448.3

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	214	133	198	85
Average Queue (ft)	38	18	78	35
95th Queue (ft)	145	74	173	70
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	1		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	317	95	339	114	380	164	331
Average Queue (ft)	77	161	68	149	90	203	68	167
95th Queue (ft)	125	299	112	310	135	380	138	293
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		5		8		1
Queuing Penalty (veh)		9		24		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	11	25	22	20	21	17	1	11
Queuing Penalty (veh)	32	27	60	24	85	27	2	10

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	198	108	48	93
Average Queue (ft)	40	20	12	32
95th Queue (ft)	134	80	39	70
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		3		1
Queuing Penalty (veh)		11		1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB	SB
Directions Served	T	LR
Maximum Queue (ft)	98	91
Average Queue (ft)	8	36
95th Queue (ft)	60	69
Link Distance (ft)	280	90
Upstream Blk Time (%)	0	1
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 312

Intersection

Intersection Delay, s/veh 11

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	278	12	29	219	24	12	22	16	20	11	22
Future Vol, veh/h	31	278	12	29	219	24	12	22	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	323	14	34	255	28	14	26	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.8	10.9	9	9
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	44%	87%	81%	21%
Vol Right, %	32%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	321	272	53
LT Vol	12	31	29	20
Through Vol	22	278	219	11
RT Vol	16	12	24	22
Lane Flow Rate	58	373	316	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.477	0.407	0.092
Departure Headway (Hd)	5.433	4.604	4.638	5.398
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	780	772	658
Service Time	3.516	2.652	2.688	3.48
HCM Lane V/C Ratio	0.089	0.478	0.409	0.094
HCM Control Delay, s/veh	9	11.8	10.9	9
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.6	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	278	0	1
Future Vol, veh/h	314	3	5	278	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	305	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	672	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	421	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	415	682
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 313 285 5 1 2

Future Vol, veh/h 3 313 285 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 333 303 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 312 0 - 0 648 311

Stage 1 - - - - 309 -

Stage 2 - - - - 339 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1249 - - - 435 729

Stage 1 - - - - 745 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1245 - - - 431 725

Mov Cap-2 Maneuver - - - - 431 -

Stage 1 - - - - 740 -

Stage 2 - - - - 719 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.07 0 11.13

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 591

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	76	261	77	13	66	11	90	151
v/c Ratio	0.13	0.35	0.26	0.30	0.10	0.05	0.19	0.03	0.28	0.27
Control Delay (s/veh)	25.4	16.6	24.0	13.7	3.9	26.0	23.9	0.2	23.5	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.4	16.6	24.0	13.7	3.9	26.0	23.9	0.2	23.5	15.2
Queue Length 50th (ft)	8	83	20	42	0	4	18	0	24	25
Queue Length 95th (ft)	34	178	62	138	20	19	56	0	70	90
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	695	1630	695	1344	1114	745	1411	1055	745	1331
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.11	0.19	0.07	0.02	0.05	0.01	0.12	0.11

Intersection Summary

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	67	230	68	11	58	10	79	86	47
Future Volume (veh/h)	27	286	2	67	230	68	11	58	10	79	86	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	76	261	77	12	66	11	90	98	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	522	3	134	577	481	28	169	136	150	183	99
Arrive On Green	0.04	0.27	0.27	0.08	0.31	0.31	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1547	1767	1930	1551	1767	1174	635
Grp Volume(v), veh/h	31	0	327	76	261	77	12	66	11	90	0	151
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1547	1767	1930	1551	1767	0	1808
Q Serve(g_s), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.6	0.0	2.6
Cycle Q Clear(g_c), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.6	0.0	2.6
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	66	0	526	134	577	481	28	169	136	150	0	283
V/C Ratio(X)	0.47	0.00	0.62	0.57	0.45	0.16	0.43	0.39	0.08	0.60	0.00	0.53
Avail Cap(c_a), veh/h	847	0	2079	847	2002	1669	847	1503	1209	847	0	1409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	10.6	14.9	9.2	8.3	16.3	14.4	14.0	14.7	0.0	13.0
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.4	0.2	0.1	3.9	0.6	0.1	1.4	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	0.2	0.0	1.6	0.5	1.1	0.3	0.1	0.4	0.1	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	0.0	11.1	16.3	9.4	8.4	20.1	14.9	14.1	16.2	0.0	13.5
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358			414			89			241		
Approach Delay, s/veh	11.7			10.5			15.5			14.5		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	14.4	4.5	9.2	6.5	13.1	6.8	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.6	3.4	7.0	3.6	3.1				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.2											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	373	0	0	360	0	116
Future Vol, veh/h	373	0	0	360	0	116
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	401	0	0	387	0	125
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	402
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	648
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	647
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		11.88		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	647	-	-			
HCM Lane V/C Ratio	0.193	-	-			
HCM Ctrl Dly (s/v)	11.9	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.7	-	-			

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	32	318	123	7	216	9	103	8	35	6	8	62
Future Vol, veh/h	32	318	123	7	216	9	103	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	353	137	8	257	11	113	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	287	0	0	504	0	0	788	810	459	750	873	285
Stage 1	-	-	-	-	-	-	507	507	-	298	298	-
Stage 2	-	-	-	-	-	-	281	304	-	452	575	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1275	-	-	1061	-	-	309	314	602	328	288	754
Stage 1	-	-	-	-	-	-	548	539	-	711	667	-
Stage 2	-	-	-	-	-	-	726	663	-	587	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1252	-	-	1046	-	-	254	289	581	271	266	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	289	-	271	266	-
Stage 1	-	-	-	-	-	-	519	511	-	691	649	-
Stage 2	-	-	-	-	-	-	642	645	-	506	476	-

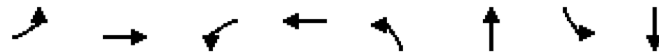
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	0.26	30.67	12.58
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	1252	-	-	54	-	-	558
HCM Lane V/C Ratio	0.542	0.028	-	-	0.008	-	-	0.15
HCM Ctrl Dly (s/v)	30.7	8	-	-	8.5	0	-	12.6
HCM Lane LOS	D	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	302	53	174	106	356	64	431
v/c Ratio	0.52	0.61	0.33	0.51	0.44	0.55	0.34	0.71
Control Delay (s/veh)	46.9	33.2	48.3	35.7	44.7	25.6	46.1	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	33.2	48.3	35.7	44.7	25.6	46.1	32.8
Queue Length 50th (ft)	59	119	25	68	48	133	29	180
Queue Length 95th (ft)	153	263	81	173	135	295	93	392
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	412	1045	412	1077	669	1150	669	1143
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.29	0.13	0.16	0.16	0.31	0.10	0.38
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	139	115	47	103	52	95	291	30	61	374	35
Future Volume (veh/h)	110	139	115	47	103	52	95	291	30	61	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	165	137	53	116	58	106	323	33	64	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	231	192	88	238	119	138	514	53	98	466	44
Arrive On Green	0.10	0.26	0.26	0.05	0.21	0.21	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	905	751	1753	1133	567	1753	1451	148	1753	1406	132
Grp Volume(v), veh/h	131	0	302	53	0	174	106	0	356	64	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1656	1753	0	1700	1753	0	1600	1753	0	1537
Q Serve(g_s), s	4.1	0.0	9.3	1.7	0.0	5.1	3.3	0.0	10.4	2.0	0.0	14.6
Cycle Q Clear(g_c), s	4.1	0.0	9.3	1.7	0.0	5.1	3.3	0.0	10.4	2.0	0.0	14.6
Prop In Lane	1.00		0.45	1.00		0.33	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	423	88	0	357	138	0	566	98	0	510
V/C Ratio(X)	0.78	0.00	0.71	0.60	0.00	0.49	0.77	0.00	0.63	0.65	0.00	0.85
Avail Cap(c_a), veh/h	499	0	1354	499	0	1390	810	0	1308	810	0	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	19.1	26.2	0.0	19.6	25.4	0.0	15.1	26.0	0.0	17.5
Incr Delay (d2), s/veh	3.1	0.0	0.8	2.5	0.0	0.4	3.4	0.0	0.4	2.7	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.4	0.7	0.0	1.9	1.5	0.0	3.5	0.9	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.9	0.0	19.9	28.6	0.0	19.9	28.8	0.0	15.5	28.7	0.0	19.0
LnGrp LOS	C		B	C		B	C		B	C		B
Approach Vol, veh/h	433			227			462			495		
Approach Delay, s/veh	22.4			22.0			18.6			20.2		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.9	6.8	18.4	8.4	22.7	9.4	15.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.0	12.4	3.7	11.3	5.3	16.6	6.1	7.1				
Green Ext Time (p_c), s	0.1	1.6	0.0	0.8	0.1	2.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.6											
HCM 7th LOS	C											

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	185	15	4	156	12	20	6	3	4	7	34
Future Vol, veh/h	17	185	15	4	156	12	20	6	3	4	7	34
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	210	17	5	181	14	33	10	5	5	9	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	218	0	0	239	0	0	471	497	246	490	499	217
Stage 1	-	-	-	-	-	-	269	269	-	221	221	-
Stage 2	-	-	-	-	-	-	201	228	-	269	278	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1345	-	-	1322	-	-	502	473	791	487	472	820
Stage 1	-	-	-	-	-	-	734	685	-	779	719	-
Stage 2	-	-	-	-	-	-	798	714	-	735	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1307	-	-	446	448	770	447	447	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	448	-	447	447	-
Stage 1	-	-	-	-	-	-	713	665	-	759	700	-
Stage 2	-	-	-	-	-	-	736	695	-	697	660	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.61			0.18			13.6			10.91		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	467	139	-	-	41	-	-	669				
HCM Lane V/C Ratio	0.104	0.015	-	-	0.004	-	-	0.09				
HCM Ctrl Dly (s/v)	13.6	7.8	0	-	7.8	0	-	10.9				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	192	172	0	0	0
Future Vol, veh/h	0	192	172	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	223	200	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 423 200
Stage 1	-	-	- 200 -
Stage 2	-	-	- 223 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 587 841
Stage 1	0	-	0 834 -
Stage 2	0	-	0 814 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 587 841
Mov Cap-2 Maneuver	-	-	- 587 -
Stage 1	-	-	- 834 -
Stage 2	-	-	- 814 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Ctrl Dly (s/v)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/29/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	35	0	0	45
Future Volume (Veh/h)	0	0	35	0	0	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	47	0	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	107	47			47	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107	47			47	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	891	1022			1560	
Direction, Lane #	NB 1	SB 1				
Volume Total	47	60				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1560				
Volume to Capacity	0.03	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.68
Level of Service	A
Average Dissatisfaction Prob	0.281
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	341
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.55
Prob of Delayed Crossing	0.79
Delay for adq Gap (s)	30.39
Avg Ped Delay (s)	4.68

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.68
Level of Service	A
Average Dissatisfaction Prob	0.281
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	341
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.55
Prob of Delayed Crossing	0.79
Delay for adq Gap (s)	30.39
Avg Ped Delay (s)	4.68

Intersection

Intersection Delay, s/veh 11

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	278	12	30	219	24	12	22	16	20	11	22
Future Vol, veh/h	31	278	12	30	219	24	12	22	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	323	14	35	255	28	14	26	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.8	10.9	9.1	9
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	44%	87%	80%	21%
Vol Right, %	32%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	321	273	53
LT Vol	12	31	30	20
Through Vol	22	278	219	11
RT Vol	16	12	24	22
Lane Flow Rate	58	373	317	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.477	0.409	0.092
Departure Headway (Hd)	5.435	4.605	4.639	5.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	780	771	658
Service Time	3.52	2.654	2.689	3.484
HCM Lane V/C Ratio	0.089	0.478	0.411	0.094
HCM Control Delay, s/veh	9.1	11.8	10.9	9
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.6	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	279	0	1
Future Vol, veh/h	314	3	5	279	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	307	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	673	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	420	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	414	682
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	313	286	5	1	2
Future Vol, veh/h	3	313	286	5	1	2
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	333	304	5	1	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	313	0	0 649 312
Stage 1	-	-	- 310 -
Stage 2	-	-	- 339 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1248	-	- 434 728
Stage 1	-	-	- 744 -
Stage 2	-	-	- 721 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1244	-	- 430 724
Mov Cap-2 Maneuver	-	-	- 430 -
Stage 1	-	-	- 739 -
Stage 2	-	-	- 719 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.08	0	11.13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	17	-	-	-	590
HCM Lane V/C Ratio	0.003	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.9	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	76	263	77	13	66	11	91	151
v/c Ratio	0.13	0.35	0.26	0.30	0.10	0.05	0.19	0.03	0.28	0.27
Control Delay (s/veh)	25.5	16.6	24.0	13.8	3.9	26.1	23.9	0.2	23.6	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	16.6	24.0	13.8	3.9	26.1	23.9	0.2	23.6	15.2
Queue Length 50th (ft)	8	83	20	42	0	4	18	0	24	25
Queue Length 95th (ft)	34	178	62	140	20	19	56	0	70	90
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	695	1629	695	1344	1114	744	1411	1055	744	1330
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.11	0.20	0.07	0.02	0.05	0.01	0.12	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	286	2	67	231	68	11	58	10	80	86	47	
Future Volume (veh/h)	27	286	2	67	231	68	11	58	10	80	86	47	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	325	2	76	262	77	12	66	11	91	98	53	
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	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	66	522	3	134	577	481	28	169	136	151	184	100	
Arrive On Green	0.04	0.27	0.27	0.08	0.31	0.31	0.02	0.09	0.09	0.09	0.16	0.16	
Sat Flow, veh/h	1767	1916	12	1767	1856	1547	1767	1930	1551	1767	1174	635	
Grp Volume(v), veh/h	31	0	327	76	262	77	12	66	11	91	0	151	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1547	1767	1930	1551	1767	0	1808	
Q Serve(g_s), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.7	0.0	2.6	
Cycle Q Clear(g_c), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.7	0.0	2.6	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.35	
Lane Grp Cap(c), veh/h	66	0	525	134	577	481	28	169	136	151	0	284	
V/C Ratio(X)	0.47	0.00	0.62	0.57	0.45	0.16	0.43	0.39	0.08	0.60	0.00	0.53	
Avail Cap(c_a), veh/h	846	0	2077	846	2000	1667	846	1502	1208	846	0	1407	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	15.8	0.0	10.6	14.9	9.2	8.3	16.3	14.4	14.0	14.7	0.0	13.0	
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.4	0.2	0.1	3.9	0.6	0.1	1.4	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	0.2	0.0	1.6	0.5	1.1	0.3	0.1	0.4	0.1	0.6	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	17.7	0.0	11.1	16.3	9.4	8.4	20.2	15.0	14.1	16.2	0.0	13.5	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	358				415				89				242
Approach Delay, s/veh	11.7				10.5				15.6				14.5
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.2	14.4	4.5	9.2	6.5	13.1	6.9	6.9					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.6	3.4	7.0	3.7	3.1					
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.1	1.3	0.1	0.2					
Intersection Summary													
HCM 7th Control Delay, s/veh	12.2												
HCM 7th LOS	B												

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	374	0	0	361	0	116
Future Vol, veh/h	374	0	0	361	0	116
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	402	0	0	388	0	125
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	403
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	647
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	646
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		11.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	646	-	-			
HCM Lane V/C Ratio	0.193	-	-			
HCM Ctrl Dly (s/v)	11.9	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.7	-	-			

Intersection

Int Delay, s/veh 6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	319	123	6	217	9	103	8	35	6	8	62
Future Vol, veh/h	32	319	123	6	217	9	103	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	354	137	7	258	11	113	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	288	0	0	505	0	0	788	810	460	750	873	286
Stage 1	-	-	-	-	-	-	508	508	-	297	297	-
Stage 2	-	-	-	-	-	-	280	302	-	453	576	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1274	-	-	1060	-	-	309	314	601	328	288	753
Stage 1	-	-	-	-	-	-	547	539	-	712	668	-
Stage 2	-	-	-	-	-	-	727	664	-	586	502	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1251	-	-	1045	-	-	254	290	580	272	266	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	290	-	272	266	-
Stage 1	-	-	-	-	-	-	519	510	-	693	650	-
Stage 2	-	-	-	-	-	-	644	647	-	505	476	-

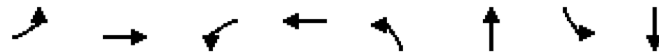
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	0.22	30.63	12.58
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	1251	-	-	46	-	-	558
HCM Lane V/C Ratio	0.542	0.028	-	-	0.007	-	-	0.15
HCM Ctrl Dly (s/v)	30.6	8	-	-	8.5	0	-	12.6
HCM Lane LOS	D	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	304	56	174	106	359	65	431
v/c Ratio	0.53	0.61	0.34	0.51	0.44	0.55	0.34	0.71
Control Delay (s/veh)	47.3	33.6	48.7	35.5	45.2	26.1	46.5	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.3	33.6	48.7	35.5	45.2	26.1	46.5	33.1
Queue Length 50th (ft)	60	121	26	68	48	136	30	182
Queue Length 95th (ft)	154	268	85	174	137	301	95	397
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	409	1040	409	1072	666	1143	666	1137
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.29	0.14	0.16	0.16	0.31	0.10	0.38
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	140	115	50	103	52	95	291	32	62	374	35
Future Volume (veh/h)	110	140	115	50	103	52	95	291	32	62	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	167	137	56	116	58	106	323	36	65	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	233	191	91	241	120	138	508	57	99	466	44
Arrive On Green	0.10	0.26	0.26	0.05	0.21	0.21	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	910	747	1753	1134	567	1753	1437	160	1753	1406	132
Grp Volume(v), veh/h	131	0	304	56	0	174	106	0	359	65	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1657	1753	0	1700	1753	0	1597	1753	0	1537
Q Serve(g_s), s	4.1	0.0	9.5	1.8	0.0	5.1	3.4	0.0	10.6	2.1	0.0	14.7
Cycle Q Clear(g_c), s	4.1	0.0	9.5	1.8	0.0	5.1	3.4	0.0	10.6	2.1	0.0	14.7
Prop In Lane	1.00		0.45	1.00		0.33	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	424	91	0	361	138	0	564	99	0	509
V/C Ratio(X)	0.78	0.00	0.72	0.62	0.00	0.48	0.77	0.00	0.64	0.66	0.00	0.85
Avail Cap(c_a), veh/h	495	0	1347	495	0	1382	805	0	1298	805	0	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	19.2	26.3	0.0	19.6	25.6	0.0	15.3	26.2	0.0	17.6
Incr Delay (d2), s/veh	3.1	0.0	0.9	2.5	0.0	0.4	3.4	0.0	0.4	2.7	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.5	0.8	0.0	1.9	1.5	0.0	3.6	0.9	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.1	0.0	20.1	28.8	0.0	19.9	29.0	0.0	15.7	28.9	0.0	19.1
LnGrp LOS	C		C	C		B	C		B	C		B
Approach Vol, veh/h	435			230			465			496		
Approach Delay, s/veh	22.5			22.1			18.7			20.4		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	24.0	6.9	18.5	8.4	22.8	9.4	16.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.1	12.6	3.8	11.5	5.4	16.7	6.1	7.1				
Green Ext Time (p_c), s	0.1	1.6	0.0	0.8	0.1	2.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.7											
HCM 7th LOS	C											

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	24	185	12	5	164	14	15	5	2	4	7	34
Future Vol, veh/h	24	185	12	5	164	14	15	5	2	4	7	34
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	210	14	6	191	16	25	8	3	5	9	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	236	0	0	497	525	244	517	524	228
Stage 1	-	-	-	-	-	-	284	284	-	233	233	-
Stage 2	-	-	-	-	-	-	213	242	-	284	290	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1332	-	-	1325	-	-	482	456	792	467	457	809
Stage 1	-	-	-	-	-	-	721	675	-	767	710	-
Stage 2	-	-	-	-	-	-	787	704	-	721	670	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1303	-	-	1310	-	-	425	428	772	427	429	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	425	428	-	427	429	-
Stage 1	-	-	-	-	-	-	696	651	-	747	691	-
Stage 2	-	-	-	-	-	-	724	685	-	682	647	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.85	0.21	13.85	11.07
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	193	-	-	48	-	-	653
HCM Lane V/C Ratio	0.083	0.021	-	-	0.004	-	-	0.092
HCM Ctrl Dly (s/v)	13.8	7.8	0	-	7.8	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 191 173 0 1 10

Future Vol, veh/h 0 191 173 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 222 201 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 423 201

Stage 1 - - - - 201 -

Stage 2 - - - - 222 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 587 840

Stage 1 0 - - 0 833 -

Stage 2 0 - - 0 815 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 587 840

Mov Cap-2 Maneuver - - - - 587 -

Stage 1 - - - - 833 -

Stage 2 - - - - 815 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 9.53

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 808

HCM Lane V/C Ratio - - 0.016

HCM Ctrl Dly (s/v) - - 9.5

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/29/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	35	8	1	45
Future Volume (Veh/h)	0	0	35	8	1	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	47	11	1	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	115	53			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115	53			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	881	1015			1546	
Direction, Lane #	NB 1	SB 1				
Volume Total	58	61				
Volume Left	0	1				
Volume Right	11	0				
cSH	1700	1546				
Volume to Capacity	0.03	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.1				
Lane LOS		A				
Approach Delay (s/veh)	0.0	0.1				
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.70
Level of Service	A
Average Dissatisfaction Prob	0.282
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	349
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.56
Prob of Delayed Crossing	0.80
Delay for adq Gap (s)	31.31
Avg Ped Delay (s)	4.70

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.70
Level of Service	A
Average Dissatisfaction Prob	0.282
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	349
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.56
Prob of Delayed Crossing	0.80
Delay for adq Gap (s)	31.31
Avg Ped Delay (s)	4.70

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↗			↕			↕
Traffic Vol, veh/h	37	254	11	1	10	279	63	18	38	25	43	27
Future Vol, veh/h	37	254	11	1	10	279	63	18	38	25	43	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	306	13	1	12	336	76	22	46	30	52	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.4	15.8	10.4	11
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	35%
Vol Thru, %	47%	84%	79%	22%
Vol Right, %	31%	4%	18%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	302	353	122
LT Vol	18	37	10	43
Through Vol	38	254	280	27
RT Vol	25	11	63	52
Lane Flow Rate	98	364	425	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.166	0.536	0.606	0.244
Departure Headway (Hd)	6.135	5.303	5.126	5.969
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	677	702	600
Service Time	4.206	3.349	3.17	4.032
HCM Lane V/C Ratio	0.168	0.538	0.605	0.245
HCM Control Delay, s/veh	10.4	14.4	15.8	11
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.2	4.1	1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement **SBR**

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	319	4	1	3	352	1	4
Future Vol, veh/h	319	4	1	3	352	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	399	5	1	4	440	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	413
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1146
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.83
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	534	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	322	350	1	5	6
Future Vol, veh/h	2	322	350	1	5	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	398	432	1	6	7
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	436	0	-	0	838	438
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1123	-	-	-	336	619
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1120	-	-	-	333	616
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	673	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.05	0		13.35		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	11	-	-	-	445	
HCM Lane V/C Ratio	0.002	-	-	-	0.031	
HCM Ctrl Dly (s/v)	8.2	0	-	-	13.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	362	145	386	115	8	55	13	100	128
v/c Ratio	0.13	0.40	0.43	0.38	0.13	0.04	0.19	0.05	0.34	0.25
Control Delay (s/veh)	29.8	19.4	27.2	13.4	3.8	30.3	28.5	0.3	28.0	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.8	19.4	27.2	13.4	3.8	30.3	28.5	0.3	28.0	19.2
Queue Length 50th (ft)	8	104	43	70	0	3	17	0	30	27
Queue Length 95th (ft)	33	207	104	196	24	16	53	0	80	87
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	593	1508	593	1248	1049	635	1211	918	635	1175
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.24	0.24	0.31	0.11	0.01	0.05	0.01	0.16	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	296	8	122	324	97	7	46	11	84	87	20
Future Volume (veh/h)	23	296	8	122	324	97	7	46	11	84	87	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	27	352	10	145	386	115	8	55	13	100	104	24
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	532	15	188	666	556	19	153	123	155	236	55
Arrive On Green	0.03	0.29	0.29	0.11	0.36	0.36	0.01	0.08	0.08	0.09	0.16	0.16
Sat Flow, veh/h	1767	1866	53	1767	1856	1551	1767	1930	1550	1767	1514	349
Grp Volume(v), veh/h	27	0	362	145	386	115	8	55	13	100	0	128
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1551	1767	1930	1550	1767	0	1863
Q Serve(g_s), s	0.5	0.0	6.0	2.9	6.1	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Cycle Q Clear(g_c), s	0.5	0.0	6.0	2.9	6.1	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	58	0	547	188	666	556	19	153	123	155	0	291
V/C Ratio(X)	0.47	0.00	0.66	0.77	0.58	0.21	0.42	0.36	0.11	0.65	0.00	0.44
Avail Cap(c_a), veh/h	780	0	1906	780	1843	1540	780	1384	1112	780	0	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	11.4	15.8	9.4	8.0	17.8	15.8	15.5	16.0	0.0	13.9
Incr Delay (d2), s/veh	2.1	0.0	0.5	2.5	0.3	0.1	5.5	0.5	0.1	1.7	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	1.1	1.8	0.4	0.1	0.4	0.1	0.7	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	0.0	11.9	18.3	9.7	8.1	23.3	16.3	15.6	17.7	0.0	14.2
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	389				646				76			
Approach Delay, s/veh	12.4				11.3				17.0			
Approach LOS	B				B				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	17.0	4.4	9.7	7.9	14.3	7.2	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.5	8.1	2.2	4.3	4.9	8.0	4.0	3.0				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.4	0.1	1.5	0.1	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.7											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	391	0	0	543	0	85
Future Vol, veh/h	391	0	0	543	0	85
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	471	0	0	654	0	102

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	472
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	592
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	591
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.36
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	591	-	-
HCM Lane V/C Ratio	0.173	-	-
HCM Ctrl Dly (s/v)	12.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.82
Level of Service	A
Average Dissatisfaction Prob	0.304
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	568
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.73
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	70.56
Avg Ped Delay (s)	4.82

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.82
Level of Service	A
Average Dissatisfaction Prob	0.304
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	568
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.73
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	70.56
Avg Ped Delay (s)	4.82

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.8	0.5	24.5	12.1	3.9

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	27.6	35.7	31.3	24.7	30.1

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	3.4	9.6	13.9	3.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	2.8	2.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	3.2	1.6

Total Zone Performance

Stop Del/Veh (s)	636.0

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	193	137	230	35
Average Queue (ft)	29	20	72	9
95th Queue (ft)	106	80	164	32
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	303	95	333	115	400	169	343
Average Queue (ft)	56	144	60	177	103	279	74	150
95th Queue (ft)	116	259	111	330	135	438	150	280
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		8		17		1
Queuing Penalty (veh)		2		36		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	4	22	15	31	34	23	1	9
Queuing Penalty (veh)	13	14	50	26	163	42	4	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	88	115	50	95
Average Queue (ft)	11	21	19	41
95th Queue (ft)	51	88	47	80
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		4		2
Queuing Penalty (veh)		14		2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	29
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	142
Average Queue (ft)	0	18
95th Queue (ft)	5	116
Link Distance (ft)	116	280
Upstream Blk Time (%)		1
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 377

Intersection

Intersection Delay, s/veh 14.3

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	37	257	11	1	11	282	62	18	38	26	44	27
Future Vol, veh/h	37	257	11	1	11	282	62	18	38	26	44	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	310	13	1	13	340	75	22	46	31	53	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.6	16.1	10.5	11
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	36%
Vol Thru, %	46%	84%	79%	22%
Vol Right, %	32%	4%	17%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	305	356	123
LT Vol	18	37	11	44
Through Vol	38	257	283	27
RT Vol	26	11	62	52
Lane Flow Rate	99	367	429	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0.543	0.613	0.247
Departure Headway (Hd)	6.159	5.321	5.148	5.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	579	676	699	596
Service Time	4.23	3.37	3.194	4.065
HCM Lane V/C Ratio	0.171	0.543	0.614	0.248
HCM Control Delay, s/veh	10.5	14.6	16.1	11
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.3	4.2	1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement SBR

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	324	4	1	3	355	1	4
Future Vol, veh/h	324	4	1	3	355	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	405	5	1	4	444	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	419
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1140
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	528	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 327 353 1 5 6

Future Vol, veh/h 2 327 353 1 5 6

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 404 436 1 6 7

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 440 0 - 0 848 441

Stage 1 - - - - 439 -

Stage 2 - - - - 409 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1120 - - - 332 616

Stage 1 - - - - 650 -

Stage 2 - - - - 671 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1117 - - - 329 613

Mov Cap-2 Maneuver - - - - 329 -

Stage 1 - - - - 646 -

Stage 2 - - - - 669 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 13.44

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 11 - - - 440

HCM Lane V/C Ratio 0.002 - - - 0.031

HCM Ctrl Dly (s/v) 8.2 0 - - 13.4

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	368	145	389	117	8	55	13	101	128
v/c Ratio	0.13	0.41	0.44	0.38	0.13	0.04	0.19	0.05	0.34	0.25
Control Delay (s/veh)	30.0	19.4	27.4	13.4	3.7	30.4	28.7	0.3	28.2	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.0	19.4	27.4	13.4	3.7	30.4	28.7	0.3	28.2	19.3
Queue Length 50th (ft)	8	106	44	71	0	3	17	0	31	27
Queue Length 95th (ft)	33	211	105	198	24	16	53	0	81	87
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	590	1502	590	1243	1045	632	1206	915	632	1171
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.25	0.25	0.31	0.11	0.01	0.05	0.01	0.16	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	301	8	122	327	98	7	46	11	85	87	20
Future Volume (veh/h)	23	301	8	122	327	98	7	46	11	85	87	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	27	358	10	145	389	117	8	55	13	101	104	24
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	537	15	188	671	561	19	153	123	155	237	55
Arrive On Green	0.03	0.29	0.29	0.11	0.36	0.36	0.01	0.08	0.08	0.09	0.16	0.16
Sat Flow, veh/h	1767	1867	52	1767	1856	1551	1767	1930	1550	1767	1514	349
Grp Volume(v), veh/h	27	0	368	145	389	117	8	55	13	101	0	128
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1551	1767	1930	1550	1767	0	1863
Q Serve(g_s), s	0.5	0.0	6.2	2.9	6.2	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Cycle Q Clear(g_c), s	0.5	0.0	6.2	2.9	6.2	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	58	0	552	188	671	561	19	153	123	155	0	291
V/C Ratio(X)	0.47	0.00	0.67	0.77	0.58	0.21	0.42	0.36	0.11	0.65	0.00	0.44
Avail Cap(c_a), veh/h	775	0	1894	775	1831	1531	775	1376	1105	775	0	1328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.4	15.9	9.4	8.0	17.9	15.9	15.6	16.1	0.0	13.9
Incr Delay (d2), s/veh	2.2	0.0	0.5	2.5	0.3	0.1	5.5	0.5	0.1	1.7	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	1.1	1.8	0.4	0.1	0.4	0.1	0.8	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.5	0.0	12.0	18.4	9.7	8.1	23.5	16.4	15.7	17.8	0.0	14.3
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	395				651				76			
Approach Delay, s/veh	12.5				11.3				17.1			
Approach LOS	B				B				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	17.2	4.4	9.7	7.9	14.5	7.2	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.5	8.2	2.2	4.3	4.9	8.2	4.0	3.0				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.4	0.1	1.5	0.1	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.8											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	397	0	0	547	0	86
Future Vol, veh/h	397	0	0	547	0	86
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	478	0	0	659	0	104

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	479
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	586
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	586
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.46
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	586	-	-
HCM Lane V/C Ratio	0.177	-	-
HCM Ctrl Dly (s/v)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.80
Level of Service	A
Average Dissatisfaction Prob	0.306
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	585
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.74
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	75.15
Avg Ped Delay (s)	4.80

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.80
Level of Service	A
Average Dissatisfaction Prob	0.306
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	585
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.74
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	75.15
Avg Ped Delay (s)	4.80

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.4	19.3	11.2	3.4

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	31.8	38.9	35.7	25.1	33.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.8	4.0	27.5	16.6	5.2

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	2.8	1.8

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.4	4.5	1.9

Total Zone Performance

Stop Del/Veh (s)	689.2

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	196	124	183	40
Average Queue (ft)	34	21	68	10
95th Queue (ft)	124	83	141	35
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	321	94	346	115	396	168	332
Average Queue (ft)	59	158	74	202	104	305	83	148
95th Queue (ft)	120	284	114	354	134	450	160	271
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		9		24		1
Queuing Penalty (veh)		5		44		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	3	26	27	34	38	24	1	9
Queuing Penalty (veh)	10	17	85	33	186	44	4	11

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	202	134	82	106
Average Queue (ft)	32	32	25	43
95th Queue (ft)	126	110	71	86
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	6	1	3
Queuing Penalty (veh)	0	24	0	3
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	43
Average Queue (ft)	3
95th Queue (ft)	35
Link Distance (ft)	207
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	27	211	45
Average Queue (ft)	1	26	15
95th Queue (ft)	20	139	42
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 467

Intersection

Intersection Delay, s/veh 15.2

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	322	17	27	316	44	8	26	18	53	23	44
Future Vol, veh/h	30	322	17	27	316	44	8	26	18	53	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	370	20	31	363	51	9	30	21	64	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16	16.5	10.1	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	44%
Vol Thru, %	50%	87%	82%	19%
Vol Right, %	35%	5%	11%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	369	387	120
LT Vol	8	30	27	53
Through Vol	26	322	316	23
RT Vol	18	17	44	44
Lane Flow Rate	60	424	445	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.609	0.631	0.238
Departure Headway (Hd)	6.266	5.17	5.106	6.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	696	707	587
Service Time	4.333	3.211	3.145	4.147
HCM Lane V/C Ratio	0.105	0.609	0.629	0.24
HCM Control Delay, s/veh	10.1	16	16.5	11.1
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.3	4.2	4.5	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	385	2	4
Future Vol, veh/h	393	5	3	385	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	443	2	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	466
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1095
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1086
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.17
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	447	-	-	1086	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	380	379	2	0	7
Future Vol, veh/h	7	380	379	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	442	441	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	446	0	0 903 447
Stage 1	-	-	- 445 -
Stage 2	-	-	- 458 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1114	-	- 308 612
Stage 1	-	-	- 646 -
Stage 2	-	-	- 637 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1111	-	- 303 608
Mov Cap-2 Maneuver	-	-	- 303 -
Stage 1	-	-	- 638 -
Stage 2	-	-	- 635 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	33	-	-	-	608
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	404	86	363	111	5	90	16	115	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.6	20.2	29.8	15.6	4.3	31.5	29.1	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	20.2	29.8	15.6	4.3	31.5	29.1	0.4	29.2	15.2
Queue Length 50th (ft)	10	117	26	70	0	2	28	0	35	24
Queue Length 95th (ft)	38	245	78	212	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1419	572	1171	989	613	1143	871	613	1067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	349	3	75	316	97	4	78	14	100	70	57	
Future Volume (veh/h)	27	349	3	75	316	97	4	78	14	100	70	57	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	401	3	86	363	111	5	90	16	115	80	66	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	65	581	4	139	641	536	12	192	154	164	181	149	
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19	
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803	
Grp Volume(v), veh/h	31	0	404	86	363	111	5	90	16	115	0	146	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777	
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45	
Lane Grp Cap(c), veh/h	65	0	585	139	641	536	12	192	154	164	0	330	
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.57	0.21	0.42	0.47	0.10	0.70	0.00	0.44	
Avail Cap(c_a), veh/h	752	0	1844	752	1775	1483	752	1334	1070	752	0	1228	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.8	0.0	11.5	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6	
Incr Delay (d2), s/veh	2.0	0.0	0.5	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.3	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.4	10.3	8.7	27.0	16.7	15.5	18.6	0.0	13.9	
LnGrp LOS	B		B	B	B	A	C	B	B	B		B	
Approach Vol, veh/h	435				560				111				261
Approach Delay, s/veh	12.6				11.2				17.0				16.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.4	7.5	7.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7					
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.6	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh			13.1										
HCM 7th LOS			B										

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	462	0	0	480	0	109
Future Vol, veh/h	462	0	0	480	0	109
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	537	0	0	558	0	127

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	538
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.318
Pot Cap-1 Maneuver	-	0	543
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	542
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.65
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	542	-	-
HCM Lane V/C Ratio	0.234	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.296
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	493
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.68
Prob of Delayed Crossing	0.90
Delay for adq Gap (s)	53.43
Avg Ped Delay (s)	4.88

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.296
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	493
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.68
Prob of Delayed Crossing	0.90
Delay for adq Gap (s)	53.43
Avg Ped Delay (s)	4.88

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.6	17.0	7.8	3.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.8	30.4	28.0	22.0	27.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.3	0.8	9.6	6.4	1.8

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.0	0.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.3	0.1

Total Zone Performance

Stop Del/Veh (s)	398.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	189	116	160	70
Average Queue (ft)	32	13	66	32
95th Queue (ft)	121	61	132	60
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	314	94	324	114	387	166	327
Average Queue (ft)	77	149	64	130	92	201	71	164
95th Queue (ft)	126	277	106	264	136	387	149	289
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		2		10		1
Queuing Penalty (veh)		7		9		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	10	21	16	21	20	15	0	11
Queuing Penalty (veh)	28	23	41	20	85	24	2	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	80	96	86	80
Average Queue (ft)	9	9	31	31
95th Queue (ft)	46	50	67	61
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		1		0
Queuing Penalty (veh)		2		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	10
Average Queue (ft)	0
95th Queue (ft)	8
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	47
Average Queue (ft)	0	3
95th Queue (ft)	5	32
Link Distance (ft)	116	280
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 251

Intersection

Intersection Delay, s/veh 15.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	323	17	27	316	45	8	26	18	53	23	44
Future Vol, veh/h	30	323	17	27	316	45	8	26	18	53	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	371	20	31	363	52	9	30	21	64	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.1	16.6	10.1	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	44%
Vol Thru, %	50%	87%	81%	19%
Vol Right, %	35%	5%	12%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	370	388	120
LT Vol	8	30	27	53
Through Vol	26	323	316	23
RT Vol	18	17	45	44
Lane Flow Rate	60	425	446	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.611	0.633	0.239
Departure Headway (Hd)	6.273	5.174	5.109	6.097
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	697	705	587
Service Time	4.342	3.215	3.148	4.153
HCM Lane V/C Ratio	0.106	0.61	0.633	0.24
HCM Control Delay, s/veh	10.1	16.1	16.6	11.1
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.3	4.2	4.5	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	394	5	3	386	2	4
Future Vol, veh/h	394	5	3	386	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	6	3	444	2	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	468
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1094
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1085
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.19
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	-	-	1085	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	381	380	2	0	7
Future Vol, veh/h	7	381	380	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	443	442	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	447	0	0 905 448
Stage 1	-	-	- 446 -
Stage 2	-	-	- 459 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1113	-	- 307 611
Stage 1	-	-	- 645 -
Stage 2	-	-	- 636 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1110	-	- 302 607
Mov Cap-2 Maneuver	-	-	- 302 -
Stage 1	-	-	- 637 -
Stage 2	-	-	- 634 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	11.01
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	32	-	-	-	607
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	405	86	364	111	5	90	16	116	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Length 50th (ft)	10	118	27	71	0	2	28	0	36	24
Queue Length 95th (ft)	38	245	78	212	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1417	572	1168	988	613	1141	870	613	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	350	3	75	317	97	4	78	14	101	70	57	
Future Volume (veh/h)	27	350	3	75	317	97	4	78	14	101	70	57	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	402	3	86	364	111	5	90	16	116	80	66	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	65	581	4	139	642	536	12	192	154	165	181	149	
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19	
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803	
Grp Volume(v), veh/h	31	0	405	86	364	111	5	90	16	116	0	146	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777	
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45	
Lane Grp Cap(c), veh/h	65	0	586	139	642	536	12	192	154	165	0	330	
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.57	0.21	0.42	0.47	0.10	0.70	0.00	0.44	
Avail Cap(c_a), veh/h	750	0	1841	750	1773	1481	750	1332	1069	750	0	1226	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.8	0.0	11.6	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6	
Incr Delay (d2), s/veh	2.0	0.0	0.6	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.5	10.3	8.8	27.1	16.7	15.5	18.6	0.0	13.9	
LnGrp LOS	B		B	B	B	A	C	B	B	B		B	
Approach Vol, veh/h	436				561				111				262
Approach Delay, s/veh	12.7				11.3				17.0				16.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.5	7.5	7.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7					
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.7	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh	13.1												
HCM 7th LOS	B												

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	464	0	0	481	0	109
Future Vol, veh/h	464	0	0	481	0	109
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	540	0	0	559	0	127

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 541
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 541
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 541
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	541	-	-
HCM Lane V/C Ratio	0.234	-	-
HCM Ctrl Dly (s/v)	13.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.83
Level of Service	A
Average Dissatisfaction Prob	0.303
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	555
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	67.24
Avg Ped Delay (s)	4.83

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.83
Level of Service	A
Average Dissatisfaction Prob	0.303
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	555
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	67.24
Avg Ped Delay (s)	4.83

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.1	0.8	19.3	9.6	4.1

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	29.7	38.5	31.7	23.7	30.7

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	3.2	5.2	9.5	17.0	5.3

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	1.6	0.8

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.2	6.6	2.2

Total Zone Performance

Stop Del/Veh (s)	466.8

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	190	4	143	170	85
Average Queue (ft)	33	0	22	71	33
95th Queue (ft)	138	5	93	140	69
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	0	0	0		
Queuing Penalty (veh)	2	0	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	325	94	337	114	392	170	344
Average Queue (ft)	79	160	72	165	94	221	77	170
95th Queue (ft)	127	292	111	337	139	405	160	307
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		10		14		1
Queuing Penalty (veh)		8		44		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	12	22	26	22	23	20	0	12
Queuing Penalty (veh)	35	23	72	27	98	32	1	11

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	232	144	49	103
Average Queue (ft)	43	31	12	35
95th Queue (ft)	149	116	40	76
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	7		2
Queuing Penalty (veh)	1	28		2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	32
Average Queue (ft)	3
95th Queue (ft)	27
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	17	189	82
Average Queue (ft)	1	18	35
95th Queue (ft)	14	104	65
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 384

Intersection

Intersection Delay, s/veh 11.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	278	12	29	219	25	12	23	16	20	11	22
Future Vol, veh/h	34	278	12	29	219	25	12	23	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	34	255	29	14	27	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	10.9	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	45%	86%	80%	21%
Vol Right, %	31%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	273	53
LT Vol	12	34	29	20
Through Vol	23	278	219	11
RT Vol	16	12	25	22
Lane Flow Rate	59	377	317	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.482	0.409	0.093
Departure Headway (Hd)	5.449	4.61	4.642	5.412
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	652	776	771	656
Service Time	3.533	2.662	2.697	3.495
HCM Lane V/C Ratio	0.09	0.486	0.411	0.095
HCM Control Delay, s/veh	9.1	11.9	10.9	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	278	0	1
Future Vol, veh/h	314	3	5	278	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	305	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	672	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	421	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	415	682
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 313 285 5 1 2

Future Vol, veh/h 3 313 285 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 333 303 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 312 0 - 0 648 311

Stage 1 - - - - 309 -

Stage 2 - - - - 339 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1249 - - - 435 729

Stage 1 - - - - 745 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1245 - - - 431 725

Mov Cap-2 Maneuver - - - - 431 -

Stage 1 - - - - 740 -

Stage 2 - - - - 719 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.07 0 11.13

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 591

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	98	261	82	13	74	14	90	164
v/c Ratio	0.14	0.38	0.35	0.29	0.10	0.06	0.24	0.05	0.31	0.27
Control Delay (s/veh)	27.1	19.1	26.4	13.9	4.1	27.5	26.0	0.3	26.2	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	19.1	26.4	13.9	4.1	27.5	26.0	0.3	26.2	16.3
Queue Length 50th (ft)	9	86	27	43	0	4	21	0	25	29
Queue Length 95th (ft)	35	187	77	140	22	20	64	0	73	102
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	607	1514	607	1249	1042	650	1211	918	650	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.16	0.21	0.08	0.02	0.06	0.02	0.14	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	86	230	72	11	65	12	79	98	47
Future Volume (veh/h)	27	286	2	86	230	72	11	65	12	79	98	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	98	261	82	12	74	14	90	111	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	517	3	156	596	497	28	180	145	148	199	95
Arrive On Green	0.04	0.27	0.27	0.09	0.32	0.32	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1551	1767	1230	587
Grp Volume(v), veh/h	31	0	327	98	261	82	12	74	14	90	0	164
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1551	1767	0	1818
Q Serve(g_s), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Cycle Q Clear(g_c), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	66	0	520	156	596	497	28	180	145	148	0	293
V/C Ratio(X)	0.47	0.00	0.63	0.63	0.44	0.17	0.43	0.41	0.10	0.61	0.00	0.56
Avail Cap(c_a), veh/h	821	0	2015	821	1940	1618	821	1457	1171	821	0	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	11.1	15.2	9.2	8.4	16.8	14.7	14.3	15.2	0.0	13.3
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.5	0.2	0.1	3.9	0.6	0.1	1.5	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	0.2	0.0	1.7	0.7	1.1	0.3	0.1	0.5	0.1	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	0.0	11.5	16.7	9.4	8.4	20.7	15.3	14.4	16.7	0.0	13.9
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358				441		100				254	
Approach Delay, s/veh	12.1				10.9		15.8				14.9	
Approach LOS	B				B		B				B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	15.1	4.5	9.6	7.0	13.3	6.9	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.9	3.8	7.1	3.7	3.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.6	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	375	0	0	383	0	127
Future Vol, veh/h	375	0	0	383	0	127
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	403	0	0	412	0	137

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 404
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 646
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 646
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.07
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	646	-	-
HCM Lane V/C Ratio	0.212	-	-
HCM Ctrl Dly (s/v)	12.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-

Intersection

Int Delay, s/veh 6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	329	125	7	232	9	109	8	35	6	8	62
Future Vol, veh/h	32	329	125	7	232	9	109	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	366	139	8	276	11	120	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	306	0	0	518	0	0	820	843	472	781	907	304
Stage 1	-	-	-	-	-	-	520	520	-	317	317	-
Stage 2	-	-	-	-	-	-	300	323	-	464	590	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1255	-	-	1048	-	-	294	300	592	312	276	736
Stage 1	-	-	-	-	-	-	539	532	-	694	654	-
Stage 2	-	-	-	-	-	-	709	651	-	578	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1232	-	-	1034	-	-	240	277	571	257	254	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	277	-	257	254	-
Stage 1	-	-	-	-	-	-	510	503	-	675	636	-
Stage 2	-	-	-	-	-	-	625	633	-	497	469	-

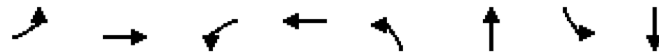
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.53	0.24	35.32	12.89
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1232	-	-	50	-	-	540
HCM Lane V/C Ratio	0.598	0.029	-	-	0.008	-	-	0.155
HCM Ctrl Dly (s/v)	35.3	8	-	-	8.5	0	-	12.9
HCM Lane LOS	E	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3.6	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/30/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	310	67	199	106	370	67	431
v/c Ratio	0.56	0.66	0.41	0.57	0.47	0.54	0.37	0.75
Control Delay (s/veh)	50.1	35.8	51.1	37.1	47.5	26.3	48.5	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.1	35.8	51.1	37.1	47.5	26.3	48.5	35.8
Queue Length 50th (ft)	61	128	32	81	49	147	32	187
Queue Length 95th (ft)	158	281	100	200	140	323	100	410
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	370	1009	370	1037	602	1106	602	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.31	0.18	0.19	0.18	0.33	0.11	0.39
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	145	115	60	118	59	95	297	36	64	374	35
Future Volume (veh/h)	110	145	115	60	118	59	95	297	36	64	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	173	137	67	133	66	106	330	40	67	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	238	189	100	249	124	138	500	61	100	464	44
Arrive On Green	0.10	0.26	0.26	0.06	0.22	0.22	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	927	734	1753	1138	565	1753	1422	172	1753	1405	132
Grp Volume(v), veh/h	131	0	310	67	0	199	106	0	370	67	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1661	1753	0	1702	1753	0	1595	1753	0	1537
Q Serve(g_s), s	4.2	0.0	9.8	2.2	0.0	6.0	3.4	0.0	11.3	2.2	0.0	15.1
Cycle Q Clear(g_c), s	4.2	0.0	9.8	2.2	0.0	6.0	3.4	0.0	11.3	2.2	0.0	15.1
Prop In Lane	1.00		0.44	1.00		0.33	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	427	100	0	373	138	0	560	100	0	507
V/C Ratio(X)	0.79	0.00	0.73	0.67	0.00	0.53	0.77	0.00	0.66	0.67	0.00	0.85
Avail Cap(c_a), veh/h	486	0	1324	486	0	1357	790	0	1271	790	0	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	19.6	26.7	0.0	19.9	26.1	0.0	15.8	26.7	0.0	18.0
Incr Delay (d2), s/veh	3.1	0.0	0.9	2.9	0.0	0.4	3.4	0.0	0.5	2.9	0.0	1.6
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	1.8	0.0	3.6	0.9	0.0	2.3	1.5	0.0	3.8	0.9	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	0.0	20.5	29.5	0.0	20.4	29.5	0.0	16.3	29.6	0.0	19.6
LnGrp LOS	C		C	C		C	C		B	C		B
Approach Vol, veh/h	441			266			476			498		
Approach Delay, s/veh	22.9			22.7			19.2			20.9		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	24.3	7.3	18.8	8.5	23.0	9.5	16.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.2	13.3	4.2	11.8	5.4	17.1	6.2	8.0				
Green Ext Time (p_c), s	0.1	1.7	0.0	0.8	0.1	2.0	0.0	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.2											
HCM 7th LOS	C											

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	26	203	16	4	179	14	20	6	3	4	7	38
Future Vol, veh/h	26	203	16	4	179	14	20	6	3	4	7	38
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	30	231	18	5	208	16	33	10	5	5	9	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	261	0	0	539	568	267	558	569	245
Stage 1	-	-	-	-	-	-	311	311	-	249	249	-
Stage 2	-	-	-	-	-	-	228	257	-	310	320	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1313	-	-	1298	-	-	452	431	769	439	431	791
Stage 1	-	-	-	-	-	-	697	657	-	753	699	-
Stage 2	-	-	-	-	-	-	772	693	-	698	651	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1284	-	-	1283	-	-	393	404	750	397	404	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	393	404	-	397	404	-
Stage 1	-	-	-	-	-	-	671	632	-	734	681	-
Stage 2	-	-	-	-	-	-	705	675	-	655	626	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.84			0.16			14.79			11.29		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	416	188	-	-	36	-	-	638				
HCM Lane V/C Ratio	0.116	0.023	-	-	0.004	-	-	0.102				
HCM Ctrl Dly (s/v)	14.8	7.9	0	-	7.8	0	-	11.3				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.3				

Intersection

Int Delay, s/veh 0

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 0 210 197 0 0 0

Future Vol, veh/h 0 210 197 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 244 229 0 0 0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 473 229

Stage 1 - - - - 229 -

Stage 2 - - - - 244 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 550 810

Stage 1 0 - - 0 809 -

Stage 2 0 - - 0 796 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 550 810

Mov Cap-2 Maneuver - - - - 550 -

Stage 1 - - - - 809 -

Stage 2 - - - - 796 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - -

HCM Lane V/C Ratio - - -

HCM Ctrl Dly (s/v) - - 0

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - -

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/30/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	46	0	0	49
Future Volume (Veh/h)	0	0	46	0	0	49
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	61	0	0	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	61			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	61			61	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	869	1004			1542	
Direction, Lane #	NB 1	SB 1				
Volume Total	61	65				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1542				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.79
Level of Service	A
Average Dissatisfaction Prob	0.285
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	382
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.59
Prob of Delayed Crossing	0.83
Delay for adq Gap (s)	35.39
Avg Ped Delay (s)	4.79

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.79
Level of Service	A
Average Dissatisfaction Prob	0.285
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	382
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.59
Prob of Delayed Crossing	0.83
Delay for adq Gap (s)	35.39
Avg Ped Delay (s)	4.79

Intersection

Intersection Delay, s/veh 11.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	278	12	30	219	25	12	23	16	20	11	22
Future Vol, veh/h	34	278	12	30	219	25	12	23	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	35	255	29	14	27	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	10.9	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	45%	86%	80%	21%
Vol Right, %	31%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	274	53
LT Vol	12	34	30	20
Through Vol	23	278	219	11
RT Vol	16	12	25	22
Lane Flow Rate	59	377	319	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.483	0.411	0.093
Departure Headway (Hd)	5.45	4.611	4.643	5.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	776	771	655
Service Time	3.538	2.664	2.699	3.501
HCM Lane V/C Ratio	0.091	0.486	0.414	0.095
HCM Control Delay, s/veh	9.1	11.9	10.9	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	279	0	1
Future Vol, veh/h	314	3	5	279	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	307	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	673	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	420	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	414	682
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 313 286 5 1 2

Future Vol, veh/h 3 313 286 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 333 304 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 313 0 - 0 649 312

Stage 1 - - - - 310 -

Stage 2 - - - - 339 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1248 - - - 434 728

Stage 1 - - - - 744 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1244 - - - 430 724

Mov Cap-2 Maneuver - - - - 430 -

Stage 1 - - - - 739 -

Stage 2 - - - - 719 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.13

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 590

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	98	263	82	13	74	14	91	164
v/c Ratio	0.14	0.38	0.35	0.29	0.10	0.06	0.24	0.05	0.32	0.27
Control Delay (s/veh)	27.1	19.1	26.4	14.0	4.1	27.5	26.0	0.3	26.3	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	19.1	26.4	14.0	4.1	27.5	26.0	0.3	26.3	16.3
Queue Length 50th (ft)	9	86	27	43	0	4	21	0	25	29
Queue Length 95th (ft)	35	187	77	142	22	20	64	0	74	102
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	608	1514	608	1248	1041	651	1211	918	651	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.16	0.21	0.08	0.02	0.06	0.02	0.14	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	86	231	72	11	65	12	80	98	47
Future Volume (veh/h)	27	286	2	86	231	72	11	65	12	80	98	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	98	262	82	12	74	14	91	111	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	517	3	156	595	497	28	180	145	149	199	95
Arrive On Green	0.04	0.27	0.27	0.09	0.32	0.32	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1551	1767	1230	587
Grp Volume(v), veh/h	31	0	327	98	262	82	12	74	14	91	0	164
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1551	1767	0	1818
Q Serve(g_s), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Cycle Q Clear(g_c), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	66	0	520	156	595	497	28	180	145	149	0	294
V/C Ratio(X)	0.47	0.00	0.63	0.63	0.44	0.17	0.43	0.41	0.10	0.61	0.00	0.56
Avail Cap(c_a), veh/h	820	0	2013	820	1938	1617	820	1456	1170	820	0	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	11.1	15.2	9.3	8.4	16.8	14.7	14.3	15.2	0.0	13.3
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.5	0.2	0.1	3.9	0.6	0.1	1.5	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	0.2	0.0	1.7	0.7	1.1	0.3	0.1	0.5	0.1	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	0.0	11.5	16.7	9.4	8.5	20.7	15.3	14.4	16.7	0.0	13.9
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358			442			100			255		
Approach Delay, s/veh	12.1			10.9			15.8			14.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	15.1	4.5	9.6	7.0	13.3	6.9	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.9	3.8	7.1	3.7	3.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.6	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	376	0	0	384	0	127
Future Vol, veh/h	376	0	0	384	0	127
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	0	0	413	0	137

Major/Minor	Major1	Major2	Minor1	
Conflicting Flow All	0	-	-	405
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	646
Stage 1	-	0	0	-
Stage 2	-	0	0	-
Platoon blocked, %	-		-	
Mov Cap-1 Maneuver	-	-	-	645
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.08
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	645	-	-
HCM Lane V/C Ratio	0.212	-	-
HCM Ctrl Dly (s/v)	12.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	330	125	6	233	9	109	8	35	6	8	62
Future Vol, veh/h	32	330	125	6	233	9	109	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	367	139	7	277	11	120	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	520	0	0	820	843	473	781	907	305
Stage 1	-	-	-	-	-	-	521	521	-	316	316	-
Stage 2	-	-	-	-	-	-	299	321	-	465	591	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1254	-	-	1047	-	-	294	301	591	312	276	735
Stage 1	-	-	-	-	-	-	538	531	-	695	655	-
Stage 2	-	-	-	-	-	-	710	651	-	577	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	1033	-	-	241	277	570	258	254	720
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	277	-	258	254	-
Stage 1	-	-	-	-	-	-	509	503	-	677	638	-
Stage 2	-	-	-	-	-	-	627	634	-	496	468	-

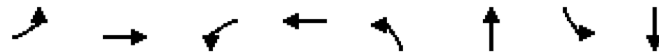
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.53	0.21	35.26	12.89
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1231	-	-	43	-	-	539
HCM Lane V/C Ratio	0.597	0.029	-	-	0.007	-	-	0.155
HCM Ctrl Dly (s/v)	35.3	8	-	-	8.5	0	-	12.9
HCM Lane LOS	E	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3.5	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/30/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	311	71	199	106	372	68	431
v/c Ratio	0.56	0.66	0.42	0.56	0.47	0.54	0.38	0.75
Control Delay (s/veh)	50.7	36.1	51.6	36.8	47.8	26.7	49.0	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.7	36.1	51.6	36.8	47.8	26.7	49.0	36.2
Queue Length 50th (ft)	62	130	34	82	50	149	32	189
Queue Length 95th (ft)	159	284	105	201	141	330	101	414
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	368	1003	368	1031	598	1099	598	1094
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.31	0.19	0.19	0.18	0.34	0.11	0.39
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	146	115	63	118	59	95	297	38	65	374	35
Future Volume (veh/h)	110	146	115	63	118	59	95	297	38	65	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	174	137	71	133	66	106	330	42	68	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	239	188	103	251	125	138	496	63	101	463	44
Arrive On Green	0.10	0.26	0.26	0.06	0.22	0.22	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	929	732	1753	1138	565	1753	1413	180	1753	1405	132
Grp Volume(v), veh/h	131	0	311	71	0	199	106	0	372	68	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1661	1753	0	1703	1753	0	1593	1753	0	1537
Q Serve(g_s), s	4.2	0.0	9.9	2.3	0.0	6.0	3.4	0.0	11.5	2.2	0.0	15.2
Cycle Q Clear(g_c), s	4.2	0.0	9.9	2.3	0.0	6.0	3.4	0.0	11.5	2.2	0.0	15.2
Prop In Lane	1.00		0.44	1.00		0.33	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	427	103	0	376	138	0	559	101	0	507
V/C Ratio(X)	0.79	0.00	0.73	0.69	0.00	0.53	0.77	0.00	0.67	0.68	0.00	0.85
Avail Cap(c_a), veh/h	483	0	1317	483	0	1350	786	0	1263	786	0	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	19.7	26.8	0.0	19.9	26.2	0.0	16.0	26.8	0.0	18.1
Incr Delay (d2), s/veh	3.1	0.0	0.9	3.0	0.0	0.4	3.4	0.0	0.5	2.9	0.0	1.6
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	1.8	0.0	3.7	1.0	0.0	2.3	1.5	0.0	3.9	1.0	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.7	0.0	20.6	29.8	0.0	20.4	29.6	0.0	16.5	29.8	0.0	19.7
LnGrp LOS	C		C	C		C	C		B	C		B
Approach Vol, veh/h	442			270			478			499		
Approach Delay, s/veh	23.0			22.9			19.4			21.1		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	24.4	7.4	18.9	8.6	23.1	9.5	16.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.2	13.5	4.3	11.9	5.4	17.2	6.2	8.0				
Green Ext Time (p_c), s	0.1	1.7	0.0	0.8	0.1	2.0	0.0	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.4											
HCM 7th LOS	C											

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	33	203	13	5	187	16	15	5	2	4	7	38
Future Vol, veh/h	33	203	13	5	187	16	15	5	2	4	7	38
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	38	231	15	6	217	19	25	8	3	5	9	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	257	0	0	565	596	265	586	594	256
Stage 1	-	-	-	-	-	-	325	325	-	261	261	-
Stage 2	-	-	-	-	-	-	240	271	-	325	332	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1300	-	-	1301	-	-	434	416	771	420	417	780
Stage 1	-	-	-	-	-	-	685	647	-	741	690	-
Stage 2	-	-	-	-	-	-	761	684	-	685	642	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1271	-	-	1287	-	-	374	386	751	379	387	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	386	-	379	387	-
Stage 1	-	-	-	-	-	-	654	618	-	721	671	-
Stage 2	-	-	-	-	-	-	693	665	-	641	613	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.05	0.19	15.05	11.46
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	395	236	-	-	43	-	-	623
HCM Lane V/C Ratio	0.093	0.029	-	-	0.005	-	-	0.105
HCM Ctrl Dly (s/v)	15.1	7.9	0	-	7.8	0	-	11.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 209 198 0 1 10

Future Vol, veh/h 0 209 198 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 243 230 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 473 230

Stage 1 - - - - 230 -

Stage 2 - - - - 243 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 550 809

Stage 1 0 - - 0 808 -

Stage 2 0 - - 0 797 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 550 809

Mov Cap-2 Maneuver - - - - 550 -

Stage 1 - - - - 808 -

Stage 2 - - - - 797 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 9.72

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 776

HCM Lane V/C Ratio - - 0.016

HCM Ctrl Dly (s/v) - - 9.7

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/30/2025

	     					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	46	8	1	49
Future Volume (Veh/h)	0	0	46	8	1	49
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	61	11	1	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	134	67			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	134	67			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	860	997			1528	
Direction, Lane #	NB 1	SB 1				
Volume Total	72	66				
Volume Left	0	1				
Volume Right	11	0				
cSH	1700	1528				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.1				
Lane LOS		A				
Approach Delay (s/veh)	0.0	0.1				
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.81
Level of Service	A
Average Dissatisfaction Prob	0.286
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	390
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.60
Prob of Delayed Crossing	0.84
Delay for adq Gap (s)	36.46
Avg Ped Delay (s)	4.81

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.81
Level of Service	A
Average Dissatisfaction Prob	0.286
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	390
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.60
Prob of Delayed Crossing	0.84
Delay for adq Gap (s)	36.46
Avg Ped Delay (s)	4.81

Intersection

Intersection Delay, s/veh 14.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↗			↕			↕
Traffic Vol, veh/h	37	264	11	1	10	279	69	18	38	25	46	27
Future Vol, veh/h	37	264	11	1	10	279	69	18	38	25	46	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	318	13	1	12	336	83	22	46	30	55	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.9	16.3	10.5	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	37%
Vol Thru, %	47%	85%	78%	22%
Vol Right, %	31%	4%	19%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	312	359	125
LT Vol	18	37	10	46
Through Vol	38	264	280	27
RT Vol	25	11	69	52
Lane Flow Rate	98	376	433	151
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.557	0.62	0.253
Departure Headway (Hd)	6.207	5.336	5.158	6.037
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	673	696	592
Service Time	4.284	3.388	3.208	4.105
HCM Lane V/C Ratio	0.17	0.559	0.622	0.255
HCM Control Delay, s/veh	10.5	14.9	16.3	11.2
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.5	4.3	1

Intersection LOS

Number of Lanes	0

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	332	4	1	3	358	1	5
Future Vol, veh/h	332	4	1	3	358	1	5
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	415	5	1	4	448	1	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	429
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1130
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.82
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	535	-	-	+	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 336 352 1 5 10

Future Vol, veh/h 2 336 352 1 5 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 415 435 1 6 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 439 0 - 0 858 440

Stage 1 - - - - 438 -

Stage 2 - - - - 420 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1121 - - - 327 617

Stage 1 - - - - 650 -

Stage 2 - - - - 663 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1118 - - - 325 614

Mov Cap-2 Maneuver - - - - 325 -

Stage 1 - - - - 647 -

Stage 2 - - - - 661 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 12.92

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 11 - - - 473

HCM Lane V/C Ratio 0.002 - - - 0.039

HCM Ctrl Dly (s/v) 8.2 0 - - 12.9

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	44	362	145	386	150	8	81	13	101	149
v/c Ratio	0.20	0.41	0.44	0.43	0.19	0.04	0.26	0.04	0.35	0.24
Control Delay (s/veh)	30.2	21.0	28.9	17.3	4.0	31.3	29.2	0.3	29.3	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	21.0	28.9	17.3	4.0	31.3	29.2	0.3	29.3	18.8
Queue Length 50th (ft)	14	107	45	109	0	3	25	0	31	33
Queue Length 95th (ft)	47	214	108	213	29	16	71	0	83	100
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	591	1407	591	1164	997	634	1137	868	634	1106
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.26	0.25	0.33	0.15	0.01	0.07	0.01	0.16	0.13
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	296	8	122	324	126	7	68	11	85	103	22
Future Volume (veh/h)	37	296	8	122	324	126	7	68	11	85	103	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	44	352	10	145	386	150	8	81	13	101	123	26
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	528	15	188	631	527	19	182	146	154	263	56
Arrive On Green	0.05	0.28	0.28	0.11	0.34	0.34	0.01	0.09	0.09	0.09	0.17	0.17
Sat Flow, veh/h	1767	1866	53	1767	1856	1549	1767	1930	1549	1767	1542	326
Grp Volume(v), veh/h	44	0	362	145	386	150	8	81	13	101	0	149
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1549	1767	1930	1549	1767	0	1868
Q Serve(g_s), s	0.9	0.0	6.2	3.0	6.5	2.6	0.2	1.5	0.3	2.1	0.0	2.7
Cycle Q Clear(g_c), s	0.9	0.0	6.2	3.0	6.5	2.6	0.2	1.5	0.3	2.1	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	87	0	543	188	631	527	19	182	146	154	0	318
V/C Ratio(X)	0.51	0.00	0.67	0.77	0.61	0.28	0.42	0.45	0.09	0.66	0.00	0.47
Avail Cap(c_a), veh/h	759	0	1855	759	1793	1498	759	1347	1081	759	0	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.8	16.2	10.2	9.0	18.3	16.0	15.4	16.5	0.0	13.9
Incr Delay (d2), s/veh	1.7	0.0	0.5	2.5	0.4	0.1	5.5	0.6	0.1	1.8	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.1	2.0	0.6	0.1	0.6	0.1	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.0	0.0	12.3	18.7	10.6	9.1	23.8	16.6	15.5	18.2	0.0	14.3
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	406				681				102		250	
Approach Delay, s/veh	13.1				12.0				17.0		15.9	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	16.7	4.4	10.3	8.0	14.5	7.2	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.9	8.5	2.2	4.7	5.0	8.2	4.1	3.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.1	1.5	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.3									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	392	0	0	572	0	131
Future Vol, veh/h	392	0	0	572	0	131
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	472	0	0	689	0	158

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	473
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	591
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	590
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.31
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	590	-	-
HCM Lane V/C Ratio	0.267	-	-
HCM Ctrl Dly (s/v)	13.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.80
Level of Service	A
Average Dissatisfaction Prob	0.406
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	119
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.15
Prob of Delayed Crossing	0.28
Delay for adq Gap (s)	6.46
Avg Ped Delay (s)	1.80

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.80
Level of Service	A
Average Dissatisfaction Prob	0.406
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	119
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.15
Prob of Delayed Crossing	0.28
Delay for adq Gap (s)	6.46
Avg Ped Delay (s)	1.80

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.3	0.5	28.0	11.3	4.6

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	31.7	42.7	38.0	26.7	35.3

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.7	6.3	114.6	33.1	10.3

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	24.8	19.0

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.1	9.2	4.4

Total Zone Performance

Stop Del/Veh (s)	820.2

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	226	121	220	42
Average Queue (ft)	45	19	79	14
95th Queue (ft)	142	75	174	40
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	321	95	339	115	395	170	339
Average Queue (ft)	61	164	70	215	106	308	101	162
95th Queue (ft)	120	294	114	365	131	458	181	298
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		14		30		2
Queuing Penalty (veh)		6		75		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	5	27	24	40	37	27	3	9
Queuing Penalty (veh)	17	17	86	36	185	48	12	14

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	145	122	142	114
Average Queue (ft)	17	37	41	50
95th Queue (ft)	82	121	128	106
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	10	6	11
Queuing Penalty (veh)	0	44	2	12
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	120
Average Queue (ft)	21
95th Queue (ft)	115
Link Distance (ft)	207
Upstream Blk Time (%)	3
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	237
Average Queue (ft)	0	46
95th Queue (ft)	5	208
Link Distance (ft)	116	280
Upstream Blk Time (%)		5
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 555

Intersection

Intersection Delay, s/veh 14.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	37	267	11	1	11	282	68	18	38	26	47	27
Future Vol, veh/h	37	267	11	1	11	282	68	18	38	26	47	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	322	13	1	13	340	82	22	46	31	57	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.2	16.6	10.6	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	37%
Vol Thru, %	46%	85%	78%	21%
Vol Right, %	32%	3%	19%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	315	362	126
LT Vol	18	37	11	47
Through Vol	38	267	283	27
RT Vol	26	11	68	52
Lane Flow Rate	99	380	436	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.171	0.565	0.628	0.256
Departure Headway (Hd)	6.232	5.357	5.182	6.069
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	572	672	693	589
Service Time	4.312	3.41	3.232	4.141
HCM Lane V/C Ratio	0.173	0.565	0.629	0.258
HCM Control Delay, s/veh	10.6	15.2	16.6	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.6	3.5	4.4	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	
Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	52
Future Vol, veh/h	52
Peak Hour Factor	0.83
Heavy Vehicles, %	2
Mvmt Flow	63
Number of Lanes	0
Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	337	4	1	3	361	1	5
Future Vol, veh/h	337	4	1	3	361	1	5
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	421	5	1	4	451	1	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	435
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1124
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.89
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	+	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 341 355 1 5 10

Future Vol, veh/h 2 341 355 1 5 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 421 438 1 6 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 443 0 - 0 868 444

Stage 1 - - - - 442 -

Stage 2 - - - - 426 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1118 - - - 323 614

Stage 1 - - - - 648 -

Stage 2 - - - - 659 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1114 - - - 320 611

Mov Cap-2 Maneuver - - - - 320 -

Stage 1 - - - - 644 -

Stage 2 - - - - 657 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 12.99

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 10 - - - 469

HCM Lane V/C Ratio 0.002 - - - 0.039

HCM Ctrl Dly (s/v) 8.2 0 - - 13

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	44	368	145	389	151	8	81	13	102	149
v/c Ratio	0.20	0.42	0.44	0.44	0.19	0.04	0.26	0.04	0.35	0.24
Control Delay (s/veh)	30.4	21.0	29.1	17.3	3.9	31.4	29.4	0.3	29.5	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.4	21.0	29.1	17.3	3.9	31.4	29.4	0.3	29.5	18.9
Queue Length 50th (ft)	14	109	45	110	0	3	26	0	32	33
Queue Length 95th (ft)	46	218	109	215	29	16	72	0	84	101
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	590	1402	590	1161	995	632	1134	865	632	1103
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.26	0.25	0.34	0.15	0.01	0.07	0.02	0.16	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	301	8	122	327	127	7	68	11	86	103	22
Future Volume (veh/h)	37	301	8	122	327	127	7	68	11	86	103	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	44	358	10	145	389	151	8	81	13	102	123	26
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	533	15	188	636	531	19	181	145	154	263	56
Arrive On Green	0.05	0.29	0.29	0.11	0.34	0.34	0.01	0.09	0.09	0.09	0.17	0.17
Sat Flow, veh/h	1767	1867	52	1767	1856	1550	1767	1930	1549	1767	1542	326
Grp Volume(v), veh/h	44	0	368	145	389	151	8	81	13	102	0	149
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1550	1767	1930	1549	1767	0	1868
Q Serve(g_s), s	0.9	0.0	6.4	3.0	6.5	2.7	0.2	1.5	0.3	2.1	0.0	2.7
Cycle Q Clear(g_c), s	0.9	0.0	6.4	3.0	6.5	2.7	0.2	1.5	0.3	2.1	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	87	0	548	188	636	531	19	181	145	154	0	318
V/C Ratio(X)	0.51	0.00	0.67	0.77	0.61	0.28	0.42	0.45	0.09	0.66	0.00	0.47
Avail Cap(c_a), veh/h	754	0	1843	754	1782	1488	754	1339	1074	754	0	1296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	11.8	16.3	10.2	9.0	18.4	16.1	15.5	16.6	0.0	14.0
Incr Delay (d2), s/veh	1.7	0.0	0.5	2.5	0.4	0.1	5.5	0.6	0.1	1.8	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.1	2.0	0.6	0.1	0.6	0.1	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.1	0.0	12.4	18.8	10.6	9.1	24.0	16.7	15.6	18.4	0.0	14.4
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	412				685				102		251	
Approach Delay, s/veh	13.1				12.0				17.1		16.0	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	16.9	4.4	10.4	8.0	14.7	7.3	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.9	8.5	2.2	4.7	5.0	8.4	4.1	3.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.1	1.5	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.4									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	398	0	0	576	0	132
Future Vol, veh/h	398	0	0	576	0	132
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	0	0	694	0	159

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	481
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	585
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	585
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.44
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	585	-	-
HCM Lane V/C Ratio	0.272	-	-
HCM Ctrl Dly (s/v)	13.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.9	0.5	29.7	12.5	5.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	36.1	51.4	45.3	29.2	41.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.3	9.5	145.5	41.0	14.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	22.5	14.3

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	14.5	9.4	7.0

Total Zone Performance

Stop Del/Veh (s)	957.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	ULTR	T	LTR	LTR	LTR
Maximum Queue (ft)	292	17	154	233	46
Average Queue (ft)	63	0	23	80	17
95th Queue (ft)	192	5	92	176	45
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	0	0	0	0	
Queuing Penalty (veh)	3	1	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	332	95	342	115	401	170	344
Average Queue (ft)	64	179	77	246	110	349	102	166
95th Queue (ft)	123	320	114	388	128	443	175	301
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		3		21		46		2
Queuing Penalty (veh)		14		106		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	7	31	31	45	45	27	3	10
Queuing Penalty (veh)	25	20	112	44	235	49	13	15

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	246	145	149	117
Average Queue (ft)	48	52	50	59
95th Queue (ft)	175	146	143	117
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	16	8	15
Queuing Penalty (veh)	2	73	3	16
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	6	119
Average Queue (ft)	0	23
95th Queue (ft)	6	113
Link Distance (ft)	111	207
Upstream Blk Time (%)		2
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	7	292	54
Average Queue (ft)	0	67	16
95th Queue (ft)	6	250	44
Link Distance (ft)	116	280	90
Upstream Blk Time (%)		7	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 728

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	19.8	12.9	5.7	4.9	15.0

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	37.1	51.2	43.8	29.1	41.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	8.7	19.2	8.9	11.5	13.1

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.1	0.2

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.4	43.8	5.8	20.7

Total Zone Performance

Stop Del/Veh (s)	1081.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	ULTR	T	LTR	LTR	LTR
Maximum Queue (ft)	405	34	285	104	45
Average Queue (ft)	160	2	159	48	16
95th Queue (ft)	346	18	259	80	43
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	6	0	0		
Queuing Penalty (veh)	33	3	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	312	95	314	115	399	170	348
Average Queue (ft)	66	185	76	252	108	343	107	165
95th Queue (ft)	123	319	114	376	130	446	185	304
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		19		42		2
Queuing Penalty (veh)		9		93		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	8	34	34	43	44	27	5	10
Queuing Penalty (veh)	24	21	120	43	229	49	18	15

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	261	153	58	98
Average Queue (ft)	114	96	21	43
95th Queue (ft)	211	157	51	82
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	25		0
Queuing Penalty (veh)	0	104		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	14
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB	SB
Directions Served	T	LR
Maximum Queue (ft)	312	51
Average Queue (ft)	128	17
95th Queue (ft)	357	45
Link Distance (ft)	280	90
Upstream Blk Time (%)	31	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 763

Intersection

Intersection Delay, s/veh 15.5

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	32	322	17	27	316	49	8	26	18	55	23	44
Future Vol, veh/h	32	322	17	27	316	49	8	26	18	55	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	370	20	31	363	56	9	30	21	66	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.2	16.9	10.1	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	9%	7%	45%
Vol Thru, %	50%	87%	81%	19%
Vol Right, %	35%	5%	13%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	371	392	122
LT Vol	8	32	27	55
Through Vol	26	322	316	23
RT Vol	18	17	49	44
Lane Flow Rate	60	426	451	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.615	0.64	0.244
Departure Headway (Hd)	6.3	5.194	5.117	6.119
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	566	695	703	585
Service Time	4.371	3.237	3.16	4.178
HCM Lane V/C Ratio	0.106	0.613	0.642	0.244
HCM Control Delay, s/veh	10.1	16.2	16.9	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.4	4.2	4.6	1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	388	4	4
Future Vol, veh/h	393	5	3	388	4	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	446	5	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	466	0	916	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	453	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1095	-	302	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1086	-	298	593
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	14.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	-	-	1086	-
HCM Lane V/C Ratio	0.023	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.3	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 380 379 2 1 10

Future Vol, veh/h 7 380 379 2 1 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 442 441 2 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 446 0 - 0 903 447

Stage 1 - - - - 445 -

Stage 2 - - - - 458 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1114 - - - 308 612

Stage 1 - - - - 646 -

Stage 2 - - - - 637 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1111 - - - 303 608

Mov Cap-2 Maneuver - - - - 303 -

Stage 1 - - - - 638 -

Stage 2 - - - - 635 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 11.61

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 33 - - - 557

HCM Lane V/C Ratio 0.007 - - - 0.023

HCM Ctrl Dly (s/v) 8.3 0 - - 11.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	404	132	363	156	5	120	17	146	197
v/c Ratio	0.18	0.61	0.45	0.48	0.22	0.03	0.37	0.05	0.46	0.31
Control Delay (s/veh)	34.8	25.8	33.5	17.8	4.2	35.8	32.8	0.3	33.1	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	25.8	33.5	17.8	4.2	35.8	32.8	0.3	33.1	18.2
Queue Length 50th (ft)	12	136	46	80	0	2	42	0	51	45
Queue Length 95th (ft)	45	276	117	228	34	13	109	0	128	132
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	518	1315	518	1084	941	555	1067	820	555	1021
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.31	0.25	0.33	0.17	0.01	0.11	0.02	0.26	0.19
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	349	3	115	316	136	4	104	15	127	114	57
Future Volume (veh/h)	30	349	3	115	316	136	4	104	15	127	114	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	34	401	3	132	363	156	5	120	17	146	131	66
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	567	4	171	657	549	12	206	165	190	250	126
Arrive On Green	0.04	0.30	0.30	0.10	0.35	0.35	0.01	0.11	0.11	0.11	0.21	0.21
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1547	1767	1207	608
Grp Volume(v), veh/h	34	0	404	132	363	156	5	120	17	146	0	197
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1547	1767	0	1815
Q Serve(g_s), s	0.8	0.0	7.6	3.0	6.4	2.9	0.1	2.4	0.4	3.3	0.0	3.9
Cycle Q Clear(g_c), s	0.8	0.0	7.6	3.0	6.4	2.9	0.1	2.4	0.4	3.3	0.0	3.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	69	0	572	171	657	549	12	206	165	190	0	376
V/C Ratio(X)	0.49	0.00	0.71	0.77	0.55	0.28	0.42	0.58	0.10	0.77	0.00	0.52
Avail Cap(c_a), veh/h	693	0	1701	693	1638	1369	693	1230	986	693	0	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	12.8	18.0	10.6	9.5	20.2	17.3	16.4	17.7	0.0	14.4
Incr Delay (d2), s/veh	2.0	0.0	0.6	2.8	0.3	0.1	8.5	1.0	0.1	2.5	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.7	1.2	2.0	0.7	0.1	1.0	0.1	1.3	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.2	0.0	13.4	20.7	10.8	9.6	28.6	18.3	16.5	20.2	0.0	14.8
LnGrp LOS	C		B	C	B	A	C	B	B	C		B
Approach Vol, veh/h	438				651				142		343	
Approach Delay, s/veh	14.0				12.5				18.5		17.1	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	18.4	4.3	12.5	7.9	16.1	8.4	8.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+l1), s	2.8	8.4	2.1	5.9	5.0	9.6	5.3	4.4				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.7	0.1	1.6	0.1	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	490	0	0	566	0	150
Future Vol, veh/h	490	0	0	566	0	150
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	570	0	0	658	0	174

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 571
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 520
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 520
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	15.38
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	520	-	-
HCM Lane V/C Ratio	0.336	-	-
HCM Ctrl Dly (s/v)	15.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.5	-	-

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	2.03
Level of Service	A
Average Dissatisfaction Prob	0.420
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	133
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.17
Prob of Delayed Crossing	0.31
Delay for adq Gap (s)	6.66
Avg Ped Delay (s)	2.03

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	2.03
Level of Service	A
Average Dissatisfaction Prob	0.420
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	133
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.17
Prob of Delayed Crossing	0.31
Delay for adq Gap (s)	6.66
Avg Ped Delay (s)	2.03

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.9	1.2	44.7	18.2	9.4

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	33.9	40.3	34.3	25.5	33.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.1	6.0	86.5	22.6	10.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	5.5	3.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.1	4.8	2.2

Total Zone Performance

Stop Del/Veh (s)	604.9

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	271	16	171	276	161
Average Queue (ft)	68	1	25	104	55
95th Queue (ft)	218	11	109	241	119
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	1	0	0	2	
Queuing Penalty (veh)	5	1	1	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	334	95	335	114	391	170	331
Average Queue (ft)	81	197	79	185	94	235	80	171
95th Queue (ft)	130	341	113	355	139	423	162	296
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		5		12		15		1
Queuing Penalty (veh)		21		65		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	14	30	31	22	27	19	1	13
Queuing Penalty (veh)	46	33	90	28	114	30	3	12

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	185	128	182	98
Average Queue (ft)	27	32	60	41
95th Queue (ft)	107	113	162	86
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	8	12	3
Queuing Penalty (veh)	0	32	11	3
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	38
Average Queue (ft)	4
95th Queue (ft)	44
Link Distance (ft)	207
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	241
Average Queue (ft)	0	29
95th Queue (ft)	5	149
Link Distance (ft)	116	280
Upstream Blk Time (%)		1
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 495

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	9%	7%	45%
Vol Thru, %	50%	87%	80%	19%
Vol Right, %	35%	5%	13%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	372	393	122
LT Vol	8	32	27	55
Through Vol	26	323	316	23
RT Vol	18	17	50	44
Lane Flow Rate	60	428	452	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.617	0.642	0.244
Departure Headway (Hd)	6.307	5.196	5.118	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	565	693	705	585
Service Time	4.378	3.239	3.16	4.185
HCM Lane V/C Ratio	0.106	0.618	0.641	0.244
HCM Control Delay, s/veh	10.1	16.3	16.9	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-ile Q	0.4	4.3	4.7	1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	394	5	3	389	4	4
Future Vol, veh/h	394	5	3	389	4	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	6	3	447	5	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	468
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1094
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1085
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	14.31
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	396	-	-	1085	-
HCM Lane V/C Ratio	0.023	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.3	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 381 380 2 1 10

Future Vol, veh/h 7 381 380 2 1 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 443 442 2 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 447 0 - 0 905 448

Stage 1 - - - - 446 -

Stage 2 - - - - 459 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1113 - - - 307 611

Stage 1 - - - - 645 -

Stage 2 - - - - 636 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1110 - - - 302 607

Mov Cap-2 Maneuver - - - - 302 -

Stage 1 - - - - 637 -

Stage 2 - - - - 634 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 11.62

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 32 - - - 556

HCM Lane V/C Ratio 0.007 - - - 0.023

HCM Ctrl Dly (s/v) 8.3 0 - - 11.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

4: W. A St. & N. Adams St

4: W. A St. & N. Adams St

MD Cumulative with Project 12:00 pm 01/10/2025 MD Cumulative with Project Synchro 12 Report
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Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	518	-	-
HCM Lane V/C Ratio	0.337	-	-
HCM Ctrl Dly (s/v)	15.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.5	-	-

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	5.3	1.2	57.8	18.3	12.2

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	36.8	49.7	36.3	27.0	37.3

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	5.0	11.6	30.6	37.9	10.8

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	7.9	3.4

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.2	20.7	22.0	11.3

Total Zone Performance

Stop Del/Veh (s)	692.1

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	395	35	151	297	158
Average Queue (ft)	87	2	28	120	56
95th Queue (ft)	285	21	104	279	115
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	3	1		5	
Queuing Penalty (veh)	18	7		0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	338	95	340	114	393	166	336
Average Queue (ft)	87	212	82	226	96	248	78	180
95th Queue (ft)	133	354	115	401	138	435	158	312
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		7		22		18		2
Queuing Penalty (veh)		31		113		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	15	34	40	26	30	22	2	14
Queuing Penalty (veh)	49	37	121	39	128	34	6	13

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	299	151	71	115
Average Queue (ft)	71	61	18	46
95th Queue (ft)	212	165	54	102
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	1	20		8
Queuing Penalty (veh)	3	93		9
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	86
Average Queue (ft)	8
95th Queue (ft)	53
Link Distance (ft)	207
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	22	292	100
Average Queue (ft)	1	75	44
95th Queue (ft)	19	263	87
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	9	7
Queuing Penalty (veh)	1	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 702

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	29.9	13.0	7.3	6.0	19.8

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	35.7	45.0	34.1	28.0	35.6

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	7.6	16.5	3.8	11.4	11.6

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.1	0.3

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.5	32.3	6.1	14.5

Total Zone Performance

Stop Del/Veh (s)	764.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	418	67	271	123	96
Average Queue (ft)	224	8	120	53	42
95th Queue (ft)	429	43	223	94	76
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	14	3	0		
Queuing Penalty (veh)	98	20	1		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	311	95	313	114	390	170	346
Average Queue (ft)	91	203	83	226	97	239	83	189
95th Queue (ft)	133	333	114	381	137	426	168	324
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		4		15		14		3
Queuing Penalty (veh)		16		72		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	18	32	41	28	29	20	2	16
Queuing Penalty (veh)	59	34	120	41	127	31	6	14

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	241	149	39	93
Average Queue (ft)	104	97	15	36
95th Queue (ft)	195	162	41	73
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	21		0
Queuing Penalty (veh)	0	91		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	12
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	12	302	88
Average Queue (ft)	0	93	36
95th Queue (ft)	12	296	66
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	17	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 731

Intersection

Intersection Delay, s/veh 11.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	278	12	29	225	31	12	23	16	21	11	24
Future Vol, veh/h	34	278	12	29	225	31	12	23	16	21	11	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	34	262	36	14	27	19	24	13	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	11.2	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	10%	38%
Vol Thru, %	45%	86%	79%	20%
Vol Right, %	31%	4%	11%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	285	56
LT Vol	12	34	29	21
Through Vol	23	278	225	11
RT Vol	16	12	31	24
Lane Flow Rate	59	377	331	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.485	0.428	0.098
Departure Headway (Hd)	5.485	4.638	4.645	5.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	772	772	652
Service Time	3.577	2.69	2.699	3.524
HCM Lane V/C Ratio	0.091	0.488	0.429	0.1
HCM Control Delay, s/veh	9.1	12	11.2	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2.2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	6	290	0	2
Future Vol, veh/h	314	3	6	290	0	2
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	7	319	0	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	688	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	412	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	406	682
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.16	10.29
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.003	-	-	0.006	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 314 297 5 1 2

Future Vol, veh/h 3 314 297 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 334 316 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 324 0 - 0 662 324

Stage 1 - - - - 322 -

Stage 2 - - - - 340 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1235 - - - 427 717

Stage 1 - - - - 735 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1232 - - - 423 714

Mov Cap-2 Maneuver - - - - 423 -

Stage 1 - - - - 730 -

Stage 2 - - - - 718 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.23

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 581

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.2

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	327	123	270	118	13	102	14	119	226
v/c Ratio	0.15	0.56	0.41	0.39	0.19	0.06	0.31	0.04	0.39	0.34
Control Delay (s/veh)	30.1	24.1	28.8	16.0	4.6	30.6	28.6	0.3	28.8	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.1	24.1	28.8	16.0	4.6	30.6	28.6	0.3	28.8	17.8
Queue Length 50th (ft)	10	95	37	50	0	4	31	0	36	48
Queue Length 95th (ft)	39	209	100	157	30	22	88	0	98	148
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	591	1427	591	1177	996	632	1148	875	632	1104
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.23	0.21	0.23	0.12	0.02	0.09	0.02	0.19	0.20
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	286	2	108	238	104	11	90	12	105	148	51
Future Volume (veh/h)	28	286	2	108	238	104	11	90	12	105	148	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	32	325	2	123	270	118	12	102	14	119	168	58
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	507	3	172	602	502	28	203	163	169	253	87
Arrive On Green	0.04	0.26	0.26	0.10	0.32	0.32	0.02	0.10	0.10	0.10	0.19	0.19
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1549	1767	1368	472
Grp Volume(v), veh/h	32	0	327	123	270	118	12	102	14	119	0	226
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1549	1767	0	1840
Q Serve(g_s), s	0.6	0.0	5.5	2.5	4.2	2.0	0.2	1.8	0.3	2.4	0.0	4.2
Cycle Q Clear(g_c), s	0.6	0.0	5.5	2.5	4.2	2.0	0.2	1.8	0.3	2.4	0.0	4.2
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	67	0	510	172	602	502	28	203	163	169	0	341
V/C Ratio(X)	0.48	0.00	0.64	0.71	0.45	0.24	0.43	0.50	0.09	0.70	0.00	0.66
Avail Cap(c_a), veh/h	772	0	1895	772	1825	1522	772	1370	1100	772	0	1307
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.9	16.0	9.8	9.1	17.9	15.5	14.8	16.0	0.0	13.9
Incr Delay (d2), s/veh	2.0	0.0	0.5	2.1	0.2	0.1	3.9	0.7	0.1	2.0	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.9	1.3	0.5	0.1	0.7	0.1	0.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	0.0	12.4	18.1	10.0	9.1	21.8	16.2	14.9	18.0	0.0	14.7
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	359				511		128				345	
Approach Delay, s/veh	13.0				11.7		16.6				15.8	
Approach LOS	B				B		B				B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	15.9	4.6	10.8	7.6	13.7	7.5	7.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+l1), s	2.6	6.2	2.2	6.2	4.5	7.5	4.4	3.8				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.8	0.1	1.3	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.6									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	401	0	0	446	0	173
Future Vol, veh/h	401	0	0	446	0	173
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	431	0	0	480	0	186

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 432
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 623
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 623
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	623	-	-
HCM Lane V/C Ratio	0.299	-	-
HCM Ctrl Dly (s/v)	13.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.2	-	-

Intersection

Int Delay, s/veh 13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	370	129	7	250	17	111	14	35	9	12	105
Future Vol, veh/h	59	370	129	7	250	17	111	14	35	9	12	105
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	411	143	8	298	20	122	15	38	10	13	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	337	0	0	568	0	0	952	981	520	916	1043	330
Stage 1	-	-	-	-	-	-	628	628	-	343	343	-
Stage 2	-	-	-	-	-	-	324	354	-	573	700	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1222	-	-	1004	-	-	239	249	556	253	229	712
Stage 1	-	-	-	-	-	-	471	476	-	672	637	-
Stage 2	-	-	-	-	-	-	688	631	-	505	442	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1200	-	-	990	-	-	168	220	537	192	202	697
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	220	-	192	202	-
Stage 1	-	-	-	-	-	-	427	432	-	653	619	-
Stage 2	-	-	-	-	-	-	555	613	-	406	400	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0.22	81.39	15.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	1200	-	-	45	-	-	490
HCM Lane V/C Ratio	0.867	0.055	-	-	0.008	-	-	0.282
HCM Ctrl Dly (s/v)	81.4	8.2	-	-	8.7	0	-	15.2
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	6.6	0.2	-	-	0	-	-	1.2

Queues

7: W. A St./E. A St. & N. 1st St

01/31/2025

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	360	67	232	106	383	100	495
v/c Ratio	0.62	0.73	0.45	0.61	0.51	0.60	0.50	0.78
Control Delay (s/veh)	59.3	41.8	59.7	40.3	55.6	31.6	55.9	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.3	41.8	59.7	40.3	55.6	31.6	55.9	39.3
Queue Length 50th (ft)	78	190	40	117	62	183	58	259
Queue Length 95th (ft)	170	339	105	233	148	382	142	531
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	317	875	317	887	515	941	515	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.21	0.26	0.21	0.41	0.19	0.53
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	182	120	60	134	72	95	309	36	95	426	45
Future Volume (veh/h)	112	182	120	60	134	72	95	309	36	95	426	45
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		0.95	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	133	217	143	67	151	81	106	343	40	100	448	47
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	272	179	93	249	133	137	528	62	130	507	53
Arrive On Green	0.10	0.27	0.27	0.05	0.23	0.23	0.08	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	1753	1012	667	1753	1104	592	1753	1429	167	1753	1389	146
Grp Volume(v), veh/h	133	0	360	67	0	232	106	0	383	100	0	495
Grp Sat Flow(s),veh/h/ln	1753	0	1679	1753	0	1697	1753	0	1596	1753	0	1535
Q Serve(g_s), s	5.0	0.0	13.6	2.6	0.0	8.3	4.0	0.0	13.5	3.8	0.0	20.5
Cycle Q Clear(g_c), s	5.0	0.0	13.6	2.6	0.0	8.3	4.0	0.0	13.5	3.8	0.0	20.5
Prop In Lane	1.00		0.40	1.00		0.35	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	168	0	450	93	0	382	137	0	590	130	0	560
V/C Ratio(X)	0.79	0.00	0.80	0.72	0.00	0.61	0.77	0.00	0.65	0.77	0.00	0.88
Avail Cap(c_a), veh/h	413	0	1137	413	0	1148	671	0	1080	671	0	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	23.2	31.7	0.0	23.6	30.7	0.0	17.8	30.9	0.0	20.2
Incr Delay (d2), s/veh	3.2	0.0	1.3	3.9	0.0	0.6	3.4	0.0	0.5	3.6	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.2	0.0	3.3	1.8	0.0	4.7	1.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.2	0.0	24.4	35.6	0.0	24.2	34.2	0.0	18.2	34.5	0.0	22.1
LnGrp LOS	C		C	D		C	C		B	C		C
Approach Vol, veh/h	493				299				489		595	
Approach Delay, s/veh	26.8				26.8				21.7		24.2	
Approach LOS	C				C				C		C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	29.1	7.6	22.2	9.3	28.8	10.5	19.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	5.8	15.5	4.6	15.6	6.0	22.5	7.0	10.3				
Green Ext Time (p_c), s	0.1	1.7	0.0	1.0	0.1	2.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			24.6									
HCM 7th LOS			C									

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	269	16	4	203	18	20	7	3	5	7	43
Future Vol, veh/h	28	269	16	4	203	18	20	7	3	5	7	43
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	306	18	5	236	21	33	12	5	7	9	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	336	0	0	646	680	342	669	678	276
Stage 1	-	-	-	-	-	-	390	390	-	279	279	-
Stage 2	-	-	-	-	-	-	256	289	-	390	400	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1277	-	-	1218	-	-	383	372	699	370	373	761
Stage 1	-	-	-	-	-	-	632	606	-	726	678	-
Stage 2	-	-	-	-	-	-	746	671	-	632	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1249	-	-	1204	-	-	326	347	681	330	348	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	347	-	330	348	-
Stage 1	-	-	-	-	-	-	605	580	-	706	660	-
Stage 2	-	-	-	-	-	-	672	653	-	587	575	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.71	0.14	17.02	11.98
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	159	-	-	31	-	-	589
HCM Lane V/C Ratio	0.143	0.025	-	-	0.004	-	-	0.125
HCM Ctrl Dly (s/v)	17	8	0	-	8	0	-	12
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 0

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 277 225 0 0 0

Future Vol, veh/h 0 277 225 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 322 262 0 0 0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 262

Stage 1 - - - - 262 -

Stage 2 - - - - 322 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 777

Stage 1 0 - - 0 782 -

Stage 2 0 - - 0 734 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 777

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 782 -

Stage 2 - - - - 734 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - -

HCM Lane V/C Ratio - - -

HCM Ctrl Dly (s/v) - - 0

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - -

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/31/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	53	0	0	55
Future Volume (Veh/h)	0	0	53	0	0	55
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	71	0	0	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	144	71			71	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	71			71	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	849	991			1529	
Direction, Lane #	NB 1	SB 1				
Volume Total	71	73				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1529				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A
Analysis Period (min)			15			

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.61
Level of Service	A
Average Dissatisfaction Prob	0.395
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	108
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.14
Prob of Delayed Crossing	0.26
Delay for adq Gap (s)	6.30
Avg Ped Delay (s)	1.61

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.61
Level of Service	A
Average Dissatisfaction Prob	0.395
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	108
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.14
Prob of Delayed Crossing	0.26
Delay for adq Gap (s)	6.30
Avg Ped Delay (s)	1.61

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

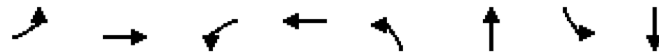
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	49.7	16.4	13.7	12
HCM LOS	E	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	11%	2%	7%
Vol Thru, %	9%	66%	92%	10%
Vol Right, %	22%	23%	6%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	559	274	126
LT Vol	111	59	6	9
Through Vol	14	371	251	12
RT Vol	35	129	17	105
Lane Flow Rate	176	621	326	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.341	0.961	0.551	0.255
Departure Headway (Hd)	6.979	5.571	6.081	6.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	658	590	539
Service Time	5.051	3.571	4.14	4.714
HCM Lane V/C Ratio	0.343	0.944	0.553	0.256
HCM Control Delay, s/veh	13.7	49.7	16.4	12
HCM Lane LOS	B	E	C	B
HCM 95th-tile Q	1.5	13.8	3.3	1

Queues

7: W. A St./E. A St. & N. 1st St

02/04/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	361	71	232	106	385	101	495
v/c Ratio	0.62	0.73	0.47	0.60	0.51	0.60	0.51	0.78
Control Delay (s/veh)	59.7	42.1	60.2	40.0	56.1	32.1	56.3	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.7	42.1	60.2	40.0	56.1	32.1	56.3	39.7
Queue Length 50th (ft)	78	192	42	117	62	186	59	261
Queue Length 95th (ft)	171	343	110	234	149	389	143	#538
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	315	873	315	883	513	937	513	937
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.23	0.26	0.21	0.41	0.20	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

02/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
Future Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
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		0.95	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	133	218	143	71	151	81	106	343	42	101	448	47
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	272	179	95	250	134	137	524	64	131	507	53
Arrive On Green	0.10	0.27	0.27	0.05	0.23	0.23	0.08	0.37	0.37	0.07	0.36	0.36
Sat Flow, veh/h	1753	1014	665	1753	1104	592	1753	1421	174	1753	1389	146
Grp Volume(v), veh/h	133	0	361	71	0	232	106	0	385	101	0	495
Grp Sat Flow(s),veh/h/ln	1753	0	1679	1753	0	1697	1753	0	1595	1753	0	1535
Q Serve(g_s), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Cycle Q Clear(g_c), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Prop In Lane	1.00		0.40	1.00		0.35	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	168	0	451	95	0	385	137	0	588	131	0	560
V/C Ratio(X)	0.79	0.00	0.80	0.75	0.00	0.60	0.77	0.00	0.66	0.77	0.00	0.88
Avail Cap(c_a), veh/h	411	0	1131	411	0	1143	667	0	1074	667	0	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	23.3	31.8	0.0	23.6	30.9	0.0	18.0	31.0	0.0	20.3
Incr Delay (d2), s/veh	3.2	0.0	1.3	4.3	0.0	0.6	3.4	0.0	0.5	3.6	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.2	0.0	3.3	1.8	0.0	4.8	1.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.4	0.0	24.6	36.2	0.0	24.2	34.3	0.0	18.4	34.6	0.0	22.2
LnGrp LOS	C		C	D		C	C		B	C		C
Approach Vol, veh/h	494			303			491			596		
Approach Delay, s/veh	26.9			27.0			21.9			24.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	29.2	7.7	22.3	9.3	28.9	10.5	19.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	5.9	15.7	4.7	15.7	6.1	22.6	7.1	10.4				
Green Ext Time (p_c), s	0.1	1.7	0.0	1.0	0.1	2.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	24.8											
HCM 7th LOS	C											

Intersection

Intersection Delay, s/veh 10.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.60	0.60	0.60	0.75	0.75	0.75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	1.3	10.1	9	8.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	11%	2%	9%
Vol Thru, %	26%	85%	89%	13%
Vol Right, %	9%	4%	8%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	317	236	55
LT Vol	15	35	5	5
Through Vol	6	269	211	7
RT Vol	2	13	20	43
Lane Flow Rate	38	360	274	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.059	0.454	0.349	0.101
Departure Headway (Hd)	5.561	4.537	4.584	4.975
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	793	782	716
Service Time	3.631	2.575	2.626	3.038
HCM Lane V/C Ratio	0.059	0.454	0.35	0.102
HCM Control Delay, s/veh	9	11.3	10.1	8.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.2	2.4	1.6	0.3

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 276 226 0 1 10

Future Vol, veh/h 0 276 226 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 321 263 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 263

Stage 1 - - - - 263 -

Stage 2 - - - - 321 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 776

Stage 1 0 - - 0 781 -

Stage 2 0 - - 0 735 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 776

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 781 -

Stage 2 - - - - 735 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 10

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 733

HCM Lane V/C Ratio - - 0.017

HCM Ctrl Dly (s/v) - - 10

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

Intersection

Intersection Delay, s/veh 11.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	278	12	30	225	31	12	23	16	21	11	24
Future Vol, veh/h	34	278	12	30	225	31	12	23	16	21	11	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	35	262	36	14	27	19	24	13	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	11.2	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	10%	38%
Vol Thru, %	45%	86%	79%	20%
Vol Right, %	31%	4%	11%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	286	56
LT Vol	12	34	30	21
Through Vol	23	278	225	11
RT Vol	16	12	31	24
Lane Flow Rate	59	377	333	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.485	0.429	0.098
Departure Headway (Hd)	5.49	4.639	4.647	5.439
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	772	772	652
Service Time	3.579	2.691	2.7	3.526
HCM Lane V/C Ratio	0.091	0.488	0.431	0.1
HCM Control Delay, s/veh	9.1	12	11.2	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2.2	0.3

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.003	-	-	0.006	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 314 298 5 1 2

Future Vol, veh/h 3 314 298 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 334 317 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 325 0 - 0 663 325

Stage 1 - - - - 323 -

Stage 2 - - - - 340 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1234 - - - 426 716

Stage 1 - - - - 734 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1231 - - - 422 713

Mov Cap-2 Maneuver - - - - 422 -

Stage 1 - - - - 730 -

Stage 2 - - - - 718 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.24

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 580

HCM Lane V/C Ratio 0.003 - - - 0.006

HCM Ctrl Dly (s/v) 7.9 0 - - 11.2

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

4: W. A St. & N. Adams St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	286	2	108	239	104	11	90	12	106	148	51
Future Volume (veh/h)	28	286	2	108	239	104	11	90	12	106	148	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	32	325	2	123	272	118	12	102	14	120	168	58
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	507	3	172	601	502	28	203	163	170	254	88
Arrive On Green	0.04	0.26	0.26	0.10	0.32	0.32	0.02	0.10	0.10	0.10	0.19	0.19
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1549	1767	1368	472
Grp Volume(v), veh/h	32	0	327	123	272	118	12	102	14	120	0	226
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1549	1767	0	1840
Q Serve(g_s), s	0.6	0.0	5.5	2.5	4.3	2.0	0.2	1.8	0.3	2.4	0.0	4.2
Cycle Q Clear(g_c), s	0.6	0.0	5.5	2.5	4.3	2.0	0.2	1.8	0.3	2.4	0.0	4.2
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	67	0	510	172	601	502	28	203	163	170	0	341
V/C Ratio(X)	0.48	0.00	0.64	0.71	0.45	0.24	0.43	0.50	0.09	0.71	0.00	0.66
Avail Cap(c_a), veh/h	772	0	1894	772	1823	1521	772	1370	1100	772	0	1306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.9	16.0	9.8	9.1	17.9	15.5	14.8	16.1	0.0	13.9
Incr Delay (d2), s/veh	2.0	0.0	0.5	2.1	0.2	0.1	3.9	0.7	0.1	2.0	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.9	1.3	0.5	0.1	0.7	0.1	0.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.2	0.0	12.4	18.1	10.0	9.1	21.8	16.2	14.9	18.1	0.0	14.7
LnGrp LOS	B		B	B	B	A	C	B	B	B		

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	402	0	0	447	0	173
Future Vol, veh/h	402	0	0	447	0	173
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	432	0	0	481	0	186

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 433
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 623
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 622
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.24
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	622	-	-
HCM Lane V/C Ratio	0.299	-	-
HCM Ctrl Dly (s/v)	13.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.3	-	-

Intersection												
Int Delay, s/veh	13.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	338	0	0	570	0	0	952	981	521	916	1043	331
Stage 1	-	-	-	-	-	-	629	629	-	342	342	-
Stage 2	-	-	-	-	-	-	323	352	-	574	701	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1221	-	-	1003	-	-	239	249	555	253	229	711
Stage 1	-	-	-	-	-	-	470	475	-	673	638	-
Stage 2	-	-	-	-	-	-	689	631	-	504	441	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1199	-	-	989	-	-	168	220	536	192	202	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	220	-	192	202	-
Stage 1	-	-	-	-	-	-	426	431	-	655	621	-
Stage 2	-	-	-	-	-	-	556	614	-	405	400	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0.19	81.18	15.21
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	1199	-	-	39	-	-	490
HCM Lane V/C Ratio	0.867	0.055	-	-	0.007	-	-	0.282
HCM Ctrl Dly (s/v)	81.2	8.2	-	-	8.7	0	-	15.2
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	6.6	0.2	-	-	0	-	-	1.2

7: W. A St./E. A St. & N. 1st St

Intersection Summary

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
Future Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
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		0.95	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	133	218	143	71	151	81	106	343	42	101	448	47
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	272	179	95	250	134	137	524	64	131	507	53
Arrive On Green	0.10	0.27	0.27	0.05	0.23	0.23	0.08	0.37	0.37	0.07	0.36	0.36
Sat Flow, veh/h	1753	1014	665	1753	1104	592	1753	1421	174	1753	1389	146
Grp Volume(v), veh/h	133	0	361	71	0	232	106	0	385	101	0	495
Grp Sat Flow(s),veh/h/ln	1753	0	1679	1753	0	1697	1753	0	1595	1753	0	1535
Q Serve(g_s), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Cycle Q Clear(g_c), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Prop In Lane	1.00		0.40	1.00		0.35	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	168	0	451	95	0	385	137	0	588	131	0	560
V/C Ratio(X)	0.79	0.00	0.80	0.75	0.00	0.60	0.77	0.00	0.66	0.77	0.00	0.88
Avail Cap(c_a), veh/h	411	0	1131	411	0	1143	667	0	1074	667	0	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	23.3	31.8	0.0	23.6	30.9	0.0	18.0	31.0	0.0	20.3
Incr Delay (d2), s/veh	3.2	0.0	1.3	4.3	0.0	0.6	3.4	0.0	0.5	3.6	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.2	0.0	3.3	1.8	0.0	4.8	1.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.4	0.0	24.6	36.2	0.0	24.2	34.3	0.0	18.4	34.6	0.0	22.2
LnGrp LOS	C		C	D		C	C		B	C		C
Approach Vol, veh/h	494			303			491			596		
Approach Delay, s/veh	26.9			27.0			21.9			24.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	29.2	7.7	22.3	9.3	28.9	10.5	19.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	5.9	15.7	4.7	15.7	6.1	22.6	7.1	10.4				
Green Ext Time (p_c), s	0.1	1.7	0.0	1.0	0.1	2.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	24.8											
HCM 7th LOS	C											

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	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	332	0	0	672	708	340	697	704	286
Stage 1	-	-	-	-	-	-	405	405	-	292	292	-
Stage 2	-	-	-	-	-	-	268	303	-	405	412	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1264	-	-	1221	-	-	368	358	700	354	360	751
Stage 1	-	-	-	-	-	-	621	597	-	714	669	-
Stage 2	-	-	-	-	-	-	736	662	-	620	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1237	-	-	1207	-	-	310	331	682	315	333	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	331	-	315	333	-
Stage 1	-	-	-	-	-	-	590	567	-	695	651	-
Stage 2	-	-	-	-	-	-	661	643	-	574	563	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.88	0.17	17.29	12.19
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	197	-	-	37	-	-	574
HCM Lane V/C Ratio	0.116	0.032	-	-	0.005	-	-	0.128
HCM Ctrl Dly (s/v)	17.3	8	0	-	8	0	-	12.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 276 226 0 1 10

Future Vol, veh/h 0 276 226 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 321 263 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 263

Stage 1 - - - - 263 -

Stage 2 - - - - 321 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 776

Stage 1 0 - - 0 781 -

Stage 2 0 - - 0 735 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 776

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 781 -

Stage 2 - - - - 735 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 10

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 733

HCM Lane V/C Ratio - - 0.017

HCM Ctrl Dly (s/v) - - 10

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

9: N. 2nd St

PM Cumulative with Project 12:00 pm 01/10/2025 PM Cumulative with Project Synchro 12 Report
TKTPM Page 1

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	480
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.92
Avg Ped Delay (s)	4.88

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	480
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.92
Avg Ped Delay (s)	4.88

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶			↷			↷			↶	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	49.7	16.4	13.7	12
HCM LOS	E	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	11%	2%	7%
Vol Thru, %	9%	66%	92%	10%
Vol Right, %	22%	23%	6%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	559	274	126
LT Vol	111	59	6	9
Through Vol	14	371	251	12
RT Vol	35	129	17	105
Lane Flow Rate	176	621	326	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.341	0.961	0.551	0.255
Departure Headway (Hd)	6.979	5.571	6.081	6.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	658	590	539
Service Time	5.051	3.571	4.14	4.714
HCM Lane V/C Ratio	0.343	0.944	0.553	0.256
HCM Control Delay, s/veh	13.7	49.7	16.4	12
HCM Lane LOS	B	E	C	B
HCM 95th-tile Q	1.5	13.8	3.3	1

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.60	0.60	0.60	0.75	0.75	0.75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	10.1	9	8.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	11%	2%	9%
Vol Thru, %	26%	85%	89%	13%
Vol Right, %	9%	4%	8%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	317	236	55
LT Vol	15	35	5	5
Through Vol	6	269	211	7
RT Vol	2	13	20	43
Lane Flow Rate	38	360	274	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.059	0.454	0.349	0.101
Departure Headway (Hd)	5.561	4.537	4.584	4.975
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	793	782	716
Service Time	3.631	2.575	2.626	3.038
HCM Lane V/C Ratio	0.059	0.454	0.35	0.102
HCM Control Delay, s/veh	9	11.3	10.1	8.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.2	2.4	1.6	0.3

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Appendix A:
Traffic counts and
Signal Timing

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ID: 24-070069-001

Day: Tuesday

Date: 4/9/2024



Pegord Ave & W A St

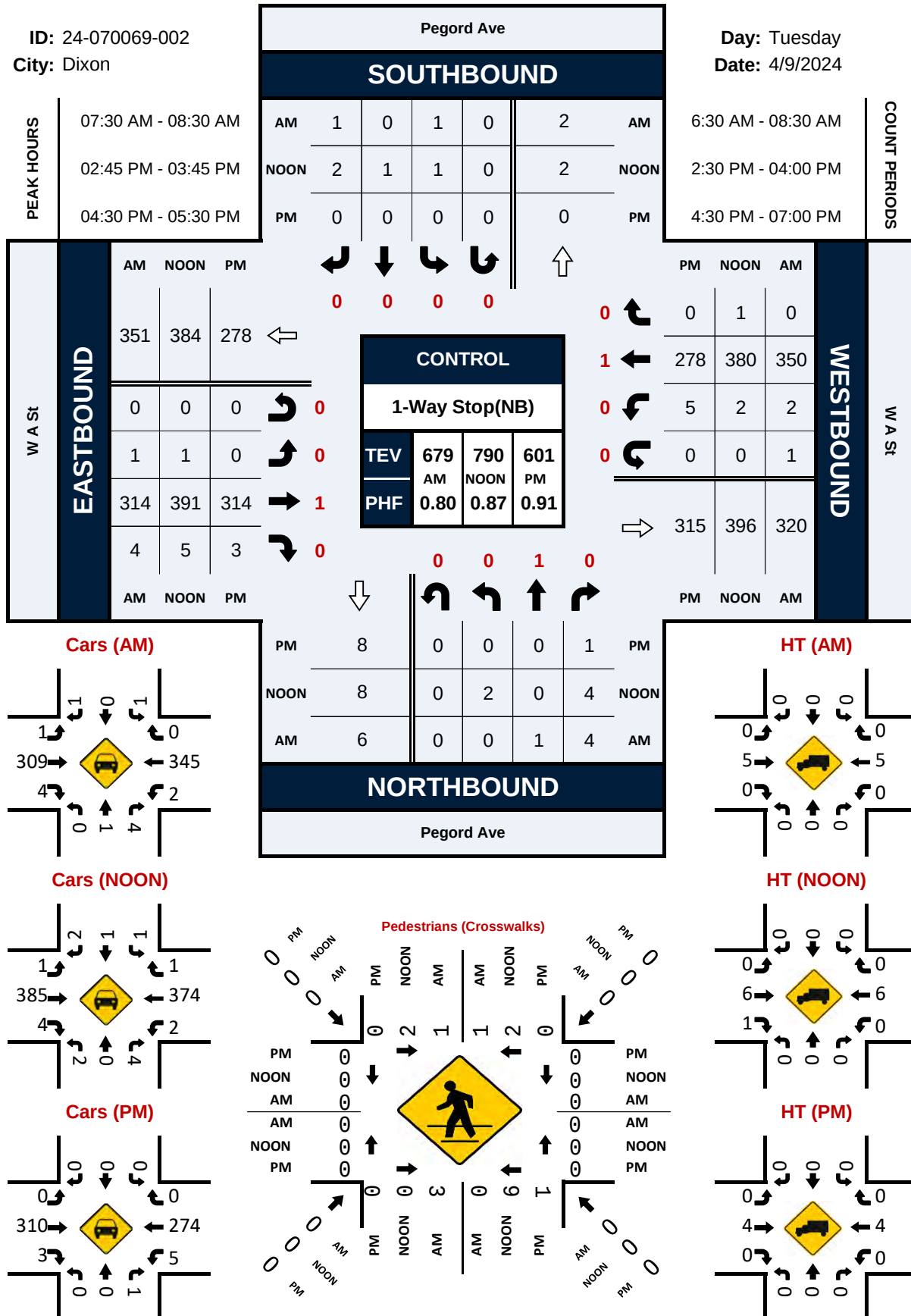
Peak Hour Turning Movement Count

ID: 24-070069-002

City: Dixon

Day: Tuesday

Date: 4/9/2024



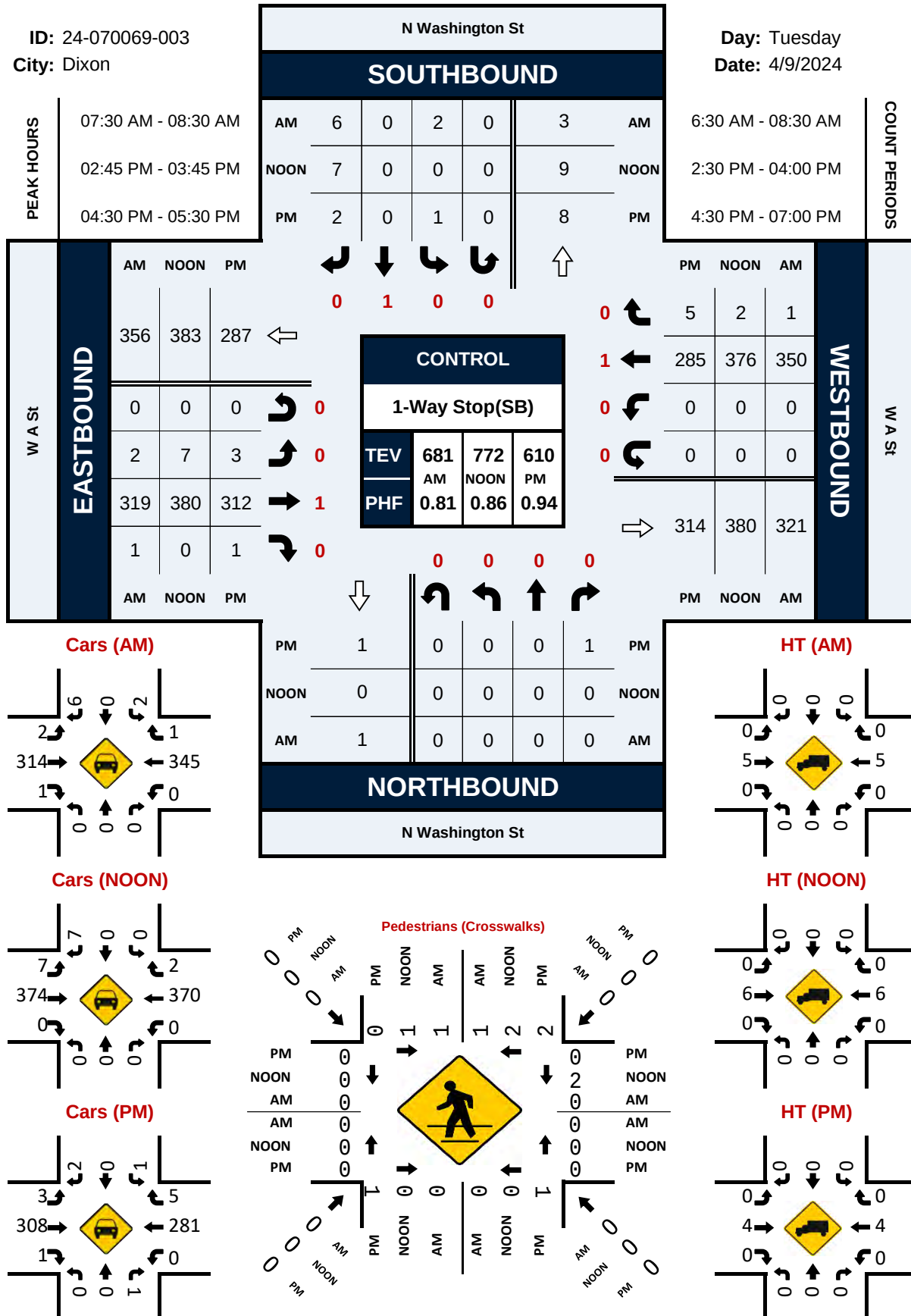
N Washington St & W A St**Peak Hour Turning Movement Count**

ID: 24-070069-003

City: Dixon

Day: Tuesday

Date: 4/9/2024



N Adams St/Porter St & W A St

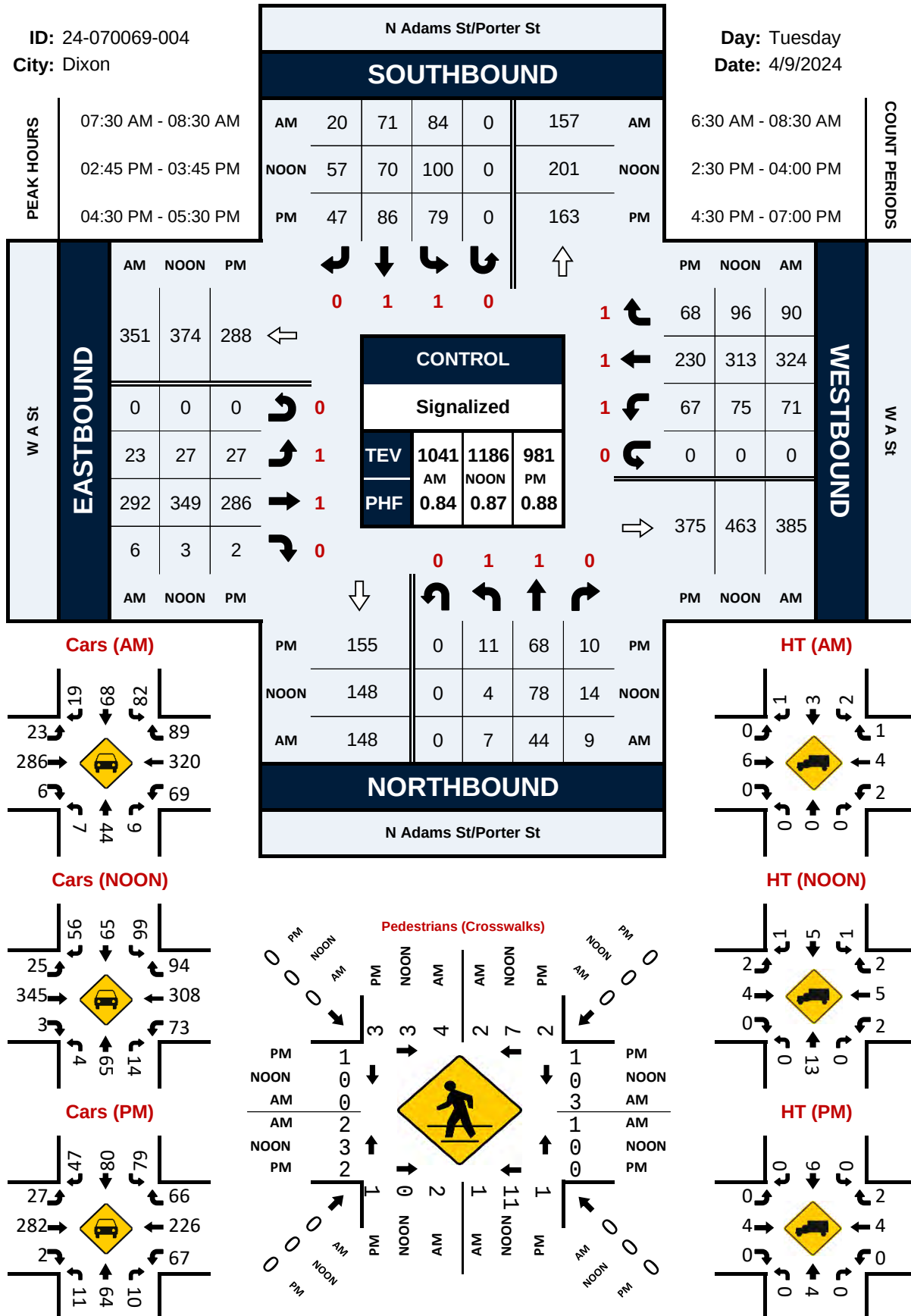
Peak Hour Turning Movement Count

ID: 24-070069-004

City: Dixon

Day: Tuesday

Date: 4/9/2024



Date: 4/9/2024



Peak Hour Turning Movement Count

City: Dixon

Date: 4/9/2024



N/S 1st St & E A St

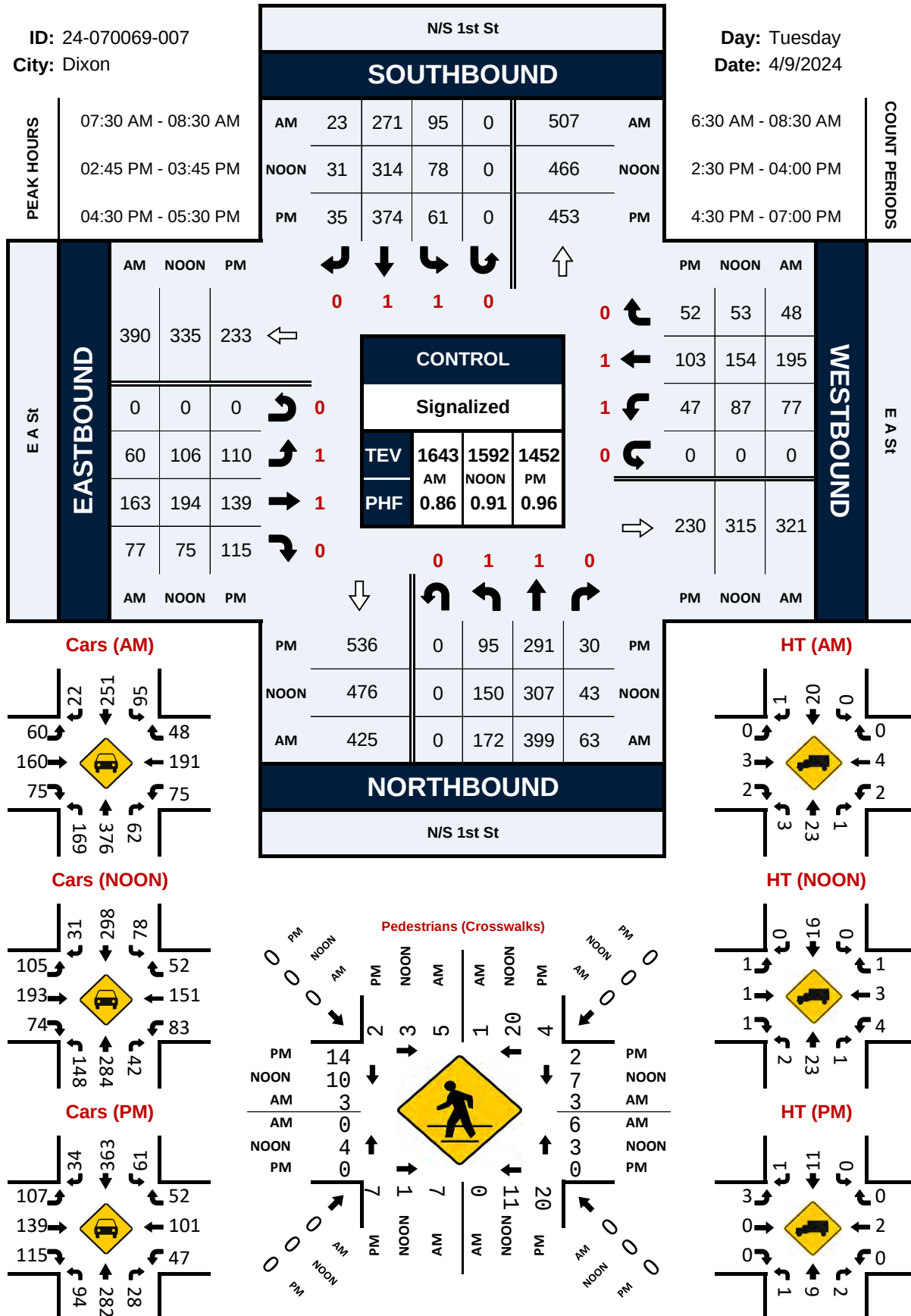
Peak Hour Turning Movement Count

ID: 24-070069-007

City: Dixon

Day: Tuesday

Date: 4/9/2024



N/S 2nd St & E A St

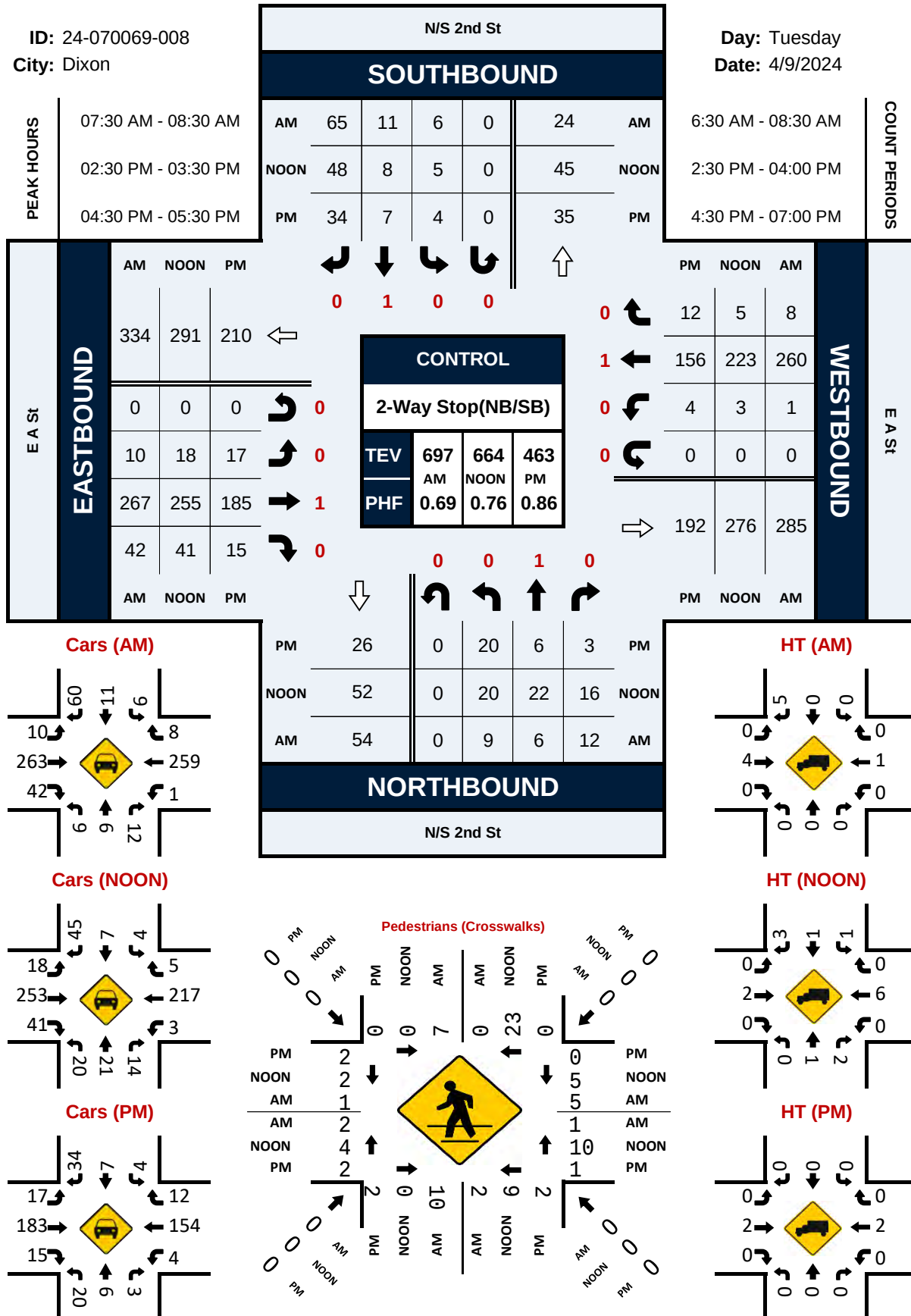
Peak Hour Turning Movement Count

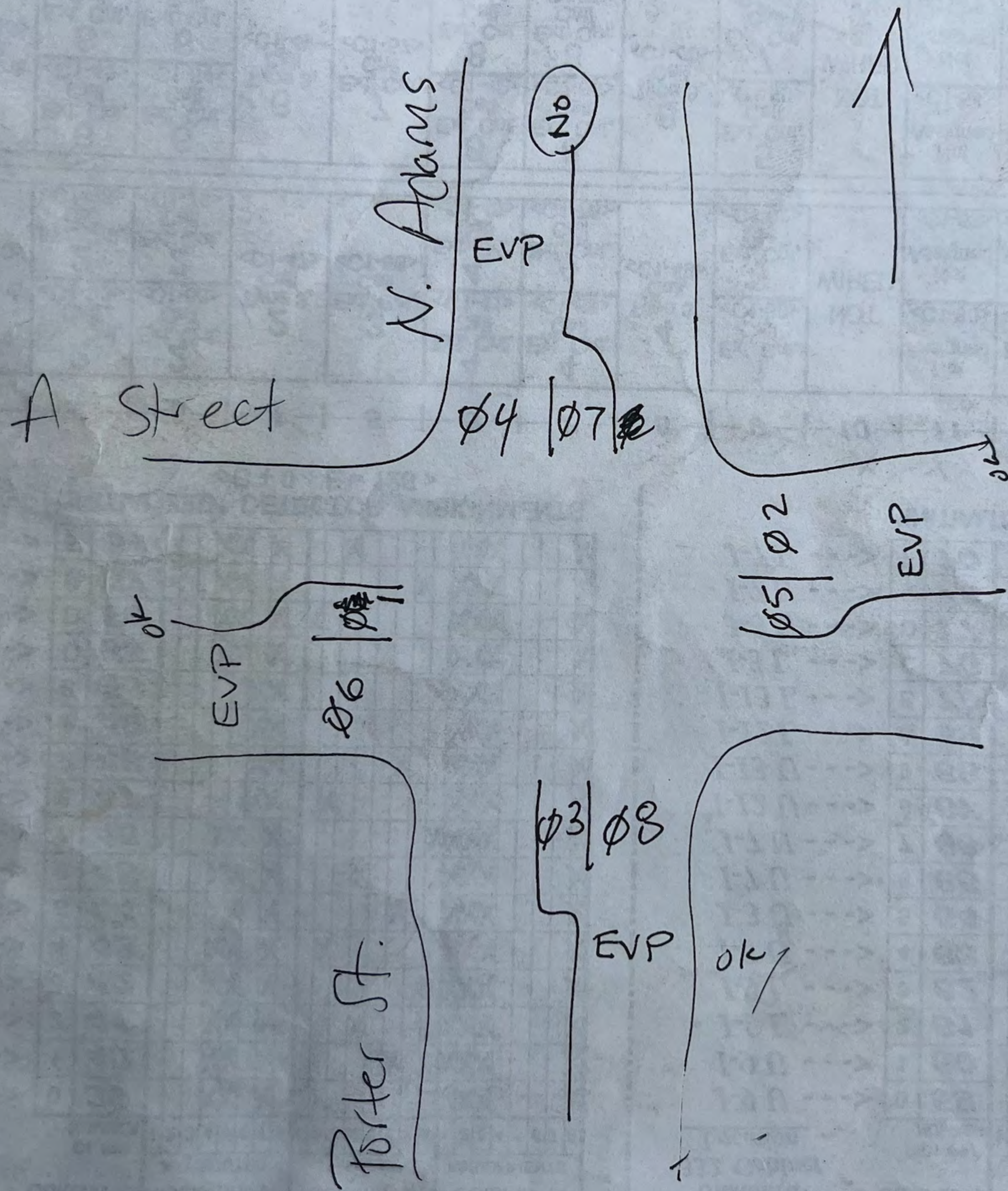
ID: 24-070069-008

City: Dixon

Day: Tuesday

Date: 4/9/2024





	Column A	Column B	Column C	Column D	Column E	Column F	
0	NOT 3		MAX 2		PRE TIM		0
1	NOT 4		SY DET 1		PLAN 1		1
2	OR 4		SY DET 2		PLAN 2		2
3	OR 4		SY DET 3		PLAN 3		3
4	OR 5		SY DET 4		PLAN 4		4
5	OR 5		SY DET 5		PLAN 5		5
6	OR 6		SY DET 6		PLAN 6		6
7	OR 6		SY DET 7		PLAN 7		7
8			SY DET 8		PLAN 8		8
9			MX INBT		PLAN 9		9
A	AND 4		FORCE A		DELAY A		A
B	AND 4		FORCE B		DELAY B		B
C	NAND 1		CNA		DELAY C		C
D	NAND 1		HOLD		DELAY D		D
E	NAND 2		VE CALL		DELAY E		E
F	NAND 2		RECALL		DELAY F		F

ASSIGNABLE INPUTS

< C + 0 + E = 126 >

	Column A	Column B	Column C	Column D	Column E	Column F	
0		FLHR 0	FREE		NOT 1		0
1	SPEV 1	FLHR 1	PLAN 1		OR 1		1
2	SPEV 2	FLHR	PLAN 2		OR 2		2
3	SPEV 3		PLAN 3		OR 3		3
4	SPEV 4		PLAN 4		AND 1		4
5	SPEV 5		PLAN 5		AND 2		5
6	SPEV 6		PLAN 6		AND 3		6
7	SPEV 7		PLAN 7		NOT 2		7
8	SPEV 8	NOT 3	PLAN 8		EVA		8
9		NOT 4	PLAN 9		EVB		9
A	DET FAIL	OR 4			EVC		A
B		OR 5			EVD		B
C		OR 6			RR 1		C
D	CNT CTL	AND 4			RR 2		D
E	XDWALK	NAND 1			SP 1		E
F	XWALK	NAND 2			SP 2		F

ASSIGNABLE OUTPUTS

< C + 0 + E = 127 >

PLAN # →	1	2	3	4	5	6	7	8	9	
0	PED ADJ									0
1	ST PERM 2									1
2	EN PERM 2									2
3	ST PERM 3									3
4	EN PERM 3									4
5	RSRV TIME									5
6	RSERVE PH									6
7										7
8	PRETIMED									8
9	MAX RECALL									9
A	PERM 1 VEH									A
B	PERM 1 PED									B
C	PERM 2 VEH									C
D	PERM 2 PED									D
E	PERM 3 VEH									E
F	PERM 3 PED									F

COORDINATION PAGE 2

< C + 0 + C = 2 >

Logic DELAY Times

Column B

A	DELAY A	
B	DELAY B	
C	DELAY C	
D	DELAY D	
E	DELAY E	
F	DELAY F	

< C + 0 + D = 0 >

DIAL-UP ("stand alone")

Modem Interface :

(C/5 + D + 0) =

NOTE : If "Non-Zero", PARITY will be DISABLED for "Smart Modem" operation.

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814

916 / 441-0260

Traffic Signal Program 233

Timing Sheet # 2 (of 6)

(Revised 10/93)

SPECIAL EVENT SCHEDULE -- TABLE # 1 **< C + O + E = 27 >**

**LIMITED SERVICE
INTERVAL:**
(E/27 + 5 + F) = _____

SPECIAL EVENT SCHEDULE -- TABLE # 2 < C + O + E = 28 >

**LIMITED SERVICE
INTERVAL:**
(E/28 + 5 + F) = _____

BI Tran Systems, Inc.
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916 / 441-0260
Traffic Signal Program 233
Timing Sheet # 6 (of 6)
(Revised 12/93)

		PHASE													
		1	2	3	4	5	6	7	8	9	A	B	C	D	
0	WALK									0					
1	DONT WALK									1	PHASE 1				
2	MIN INITIAL									2	PHASE 2				
3	TYPE 3 LIMIT									3	PHASE 3				
4	ADD PER VEH									4	PHASE 4				
5	VEH EXT									5	PHASE 5				
6	MAX GAP									6	PHASE 6				
7	MIN GAP									7	PHASE 7				
8	MAX LIMIT									8	PHASE 8				
9	MAXIMUM 2														
A	ADV/DLY WALK														
B	MIN PED CLEAR														
C	COND SRV MIN														
D	REDUCE EVERY														
E	YELLOW														
F	RED CLEAR														

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #2
< C + 0 + F = 2 >

		PHASE													
		1	2	3	4	5	6	7	8	9	A	B	C	D	
0	WALK									0					
1	DONT WALK									1	PHASE 1				
2	MIN INITIAL									2	PHASE 2				
3	TYPE 3 LIMIT									3	PHASE 3				
4	ADD PER VEH									4	PHASE 4				
5	VEH EXT									5	PHASE 5				
6	MAX GAP									6	PHASE 6				
7	MIN GAP									7	PHASE 7				
8	MAX LIMIT									8	PHASE 8				
9	MAXIMUM 2														
A	ADV/DLY WALK														
B	MIN PED CLEAR														
C	COND SRV MIN														
D	REDUCE EVERY														
E	YELLOW														
F	RED CLEAR														

MAX INITIAL -
ALT WALK -
ALT FLH DW -
ALT INITIAL -
ALT EXTEN -

PHASE BANK #3
< C + 0 + F = 3 >

		Column D							
OUT BIT NO. ->		1	2	3	4	5	6	7	8
0									
1	OUT PORT 1								
2	OUT PORT 2								
3	OUT PORT 3								
4	OUT PORT 4								
5	OUT PORT 5								
6	OUT PORT 6								
7	OUT PORT 7								
8									
9									
A									
B									
C									
D									
E									
F									

		Column F							
		1	2	3	4	5	6	7	8
0	FAST GRN FLH								
1	GREEN FLASH								
2	FLASH WALK								
3	GUAR PASS								
4	SIMUL GAP								
5	SEQ TIMING								
6	ADV WALK								
7	DELAY WALK								
8	EXT RECALL								
9									
A	MAX EXTEN								
B	INH PED RSRV								
C	SEMI ACTUATED								
D									
E	START VEH CALL								
F	START PED CALL								

		PED / PHASE / OVERLAP							
		1	2	3	4	5	6	7	8
0	WALK								
1	DONT WALK								
2	PHASE GREEN								
3	PHASE YELLOW								
4	PHASE RED								
5	OVERLAP GREEN								
6	OVERLAP YELLOW								
7	OVERLAP RED								
8									
9									
A									
B									
C									
D									
E									
F									

Advance Warning Beacons
Sign #1: Sign #2:
 PHASE NUMBER:
 (F/1 + C + F) = _____ (F/1 + D + F) = _____
 TIME BEFORE YELLOW:
 (F/1 + C + E) = _____ (F/1 + D + E) = _____
 OUTPUT PIN NUMBER:
 (E/127 + E + 8) = _____ (E/127 + E + 9) = _____

Enable / Disable Phase Redirection
 CABINET TYPE:
 (E/125 + D + 0) = _____

CABINET TYPE
 30 = Type 303 / 330 Cabinet
 (Enable Redirection)
 0 = All Other Types
 (Disable Redirection)

Exclusive Pedestrian Operation WALK:
 (F/1 + 0 + 0) = _____
 DONT WALK:
 (F/1 + 0 + 1) = _____
 RED CLEAR:
 (F/1 + 0 + 2) = _____

DIMMING < C + 0 + E = 125 > SPECIALS < C + 0 + F = 2 > REDIRECT PHASE OUTPUTS < C + 0 + E = 127 >

BI Tran Systems, Inc.
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 916 / 441-0260
Traffic Signal Program 233
 Timing Sheet # 3 (of 6)
 (Revised 08/93)

Column → 1	DELAY	CARRY-OVER
0		1.0
1		1.0
2		1.0
3		1.0
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

< C + 0 + D = 0 >

Column 0	Column 1	Column 2	Column 3
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0	39		
1	40		
2	41		
3	42		
4	43		
5	44		
6	45		
7	46		
8	47		
9	48		
A	49		
B	50		
C	55		
D	56		
E	57		
F	58		

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Column → 2	DELAY	CARRY-OVER
0	1.0	
1	1.0	
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

< C + 0 + D = 0 >

Column 4	Column 5	Column 6	Column 7
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0	59		
1	60		
2	61		
3	62		
4	63		
5	64		
6	65		
7	66		
8	67		
9	68		
A	69		
B	70		
C	76		
D	77		
E	78		
F	79		

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1 = Full Time Delay
- 2 = Pedestrian Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set # 1
- 2 = Det. Set # 2
- 3 = Det. Set # 3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

	1	2	3	4	5	6	7	8	
0 LOAD SW #									0
1 VEH SET #1									1
2 VEH SET #2									2
3 VEH SET #3									3
4 NEG VEH									4
5 NEG PED									5
6 GREEN OMIT									6
7 GRN CLR OMT									7
8									8
D GRN CLEAR									D
E YELLOW									E
F RED CLEAR									F

OVERLAP ASSIGNMENTS

< C + 0 + E = 29 >

Detector Monitor

MAX OFF:
(D/0 + 0 + 1) = _____
MAX ON:
(D/0 + 0 + 2) = _____

Power Cycle Correction Factors

LONG FAILURE:
(F/1 + 0 + 6) = _____
SHORT FAILURE:
(F/1 + 0 + 7) = _____

NOTE: Do Not Set To Zero. Default Value = 0.5 sec.

BI Tran Systems, Inc.

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916/441-0260

Traffic Signal Program 233

Timing Sheet # 4 (of 6)
(Revised 12/93)

Controller Intervals

0 = Walk	8 = Red Rest
1 = FDW	9 = Preemption
2 = Min. Green	A = Stop Time
3 =	B = Red Revert
4 = Var. Initial	C = Yellow - Gap Termination
5 = Extension	D = Yellow - Max. Termination
6 =	E = Yellow - Forceoff Termination
7 = Reduce Gap	F = Red Clearance

Continuous Memory Error Monitoring

The controller's RAM and EPROM memories are continuously checked for errors. If an error is found, the intersection will go into FLASH (via Watch Dog Timer), and one of the following will be shown on the controller's display :

- bAd A** = An error was detected in the CPU's RAM, or a new program has been installed on the memory module.
Often caused by a bad controller "gel-cell" battery.
- bAd b** = An error was detected in the memory module's RAM.
Often caused by a bad "lithium" battery on the memory module.
- bAd E** = An error was detected in the 233 Program EPROM.
- bAd F** = An error was detected in the Z-RAM (Dallas chip) on the memory module.

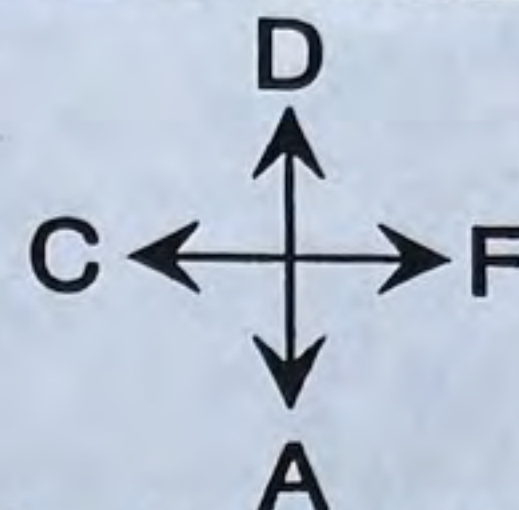
412/C Memory Module Lithium Battery Condition

To check the condition of the 3.6 volt Lithium Battery on the 412/C Memory Module :

- If $E/112 + 0 + A = 84$ - the battery is BAD
If $E/112 + 0 + A = 85$ - the battery is O.K.

E Page Enable : $F/1 + 9 + E = \text{Not Zero}$

Display Movement Codes



A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN

Special Event Schedules

Special Event #1 : $C + 0 + E = 27$

Special Event #2 : $C + 0 + E = 28$

Current Interval = $E + 5 + 0$
Current Interval Timer = $E + 5 + B$
Current Interval Clearance Phases = $E + 5 + C$

Time of Day Function (7 Key)

Current T.O.D. "E Function"
Control Bits = $C/0 + E + E$
Current T.O.D. "F Function"
Output Bits = $C/0 + E + F$

Logic DELAY Gate Delay Timer Display

DELAY A Timer = $C/0 + 9 + A$
DELAY B Timer = $C/0 + 9 + B$
thru thru
DELAY F Timer = $C/0 + 9 + F$

Interval Timer Display

Ring A = $F/0 + A + \text{Interval Row}$
Ring B = $F/0 + B + \text{Interval Row}$
(Interval Row From PHASE BANK Data)

Display Locations

Master Plan = $C/0 + A + 2$
Current Plan = $C/0 + A + 3$
TOD Plan = $C/0 + A + 5$
Master Cycle = $C/0 + A + 0$
Ring A Cycle = $C/0 + B + 0$
Ring B Cycle = $C/0 + D + 0$
MIN Cycle = $C/0 + A + E$
MAX Cycle = $C/0 + B + E$
Phase Hold = $C/0 + F + D$
Phase Next = $C/0 + F + E$
Force Off = $C/0 + F + F$
(With Ring A Cycle Timer)
Current Calculated Cycle Length = $C/0 + B + F$
Current Permitted Phases = $E/0 + 7 + 8$
Current Phase Bank = $F/0 + C + E$

Last Power Failure :
(HR-MIN-DOW) = $8 + 4$
(DOM-YR-MONTH) = $8 + 5$
Last Cabinet Flash :
(HR-MIN-DOW) = $8 + 6$
(DOM-YR-MONTH) = $8 + 7$
Power Fail Counts :
(Long Failures) = $F/1 + 0 + C$
(Short Failures) = $F/1 + 0 + D$
Current Time :
(HR-MIN-DOW) = $8 + 0$
(DOM-YR-MONTH) = $8 + 1$
(MIN-SEC-1/10 SEC) = $8 + F$

BI Tran Systems, Inc.

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Traffic Signal Program 233

"View" Locations
(Revised 09/93)

COORD (9 Key)			DAY OF WEEK						
TIME HHMM	PLAN	OFFSET	S	M	T	W	T	F	S
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=0.1>

COORD (9 Key)			DAY OF WEEK						
TIME HHMM	PLAN	OFFSET	S	M	T	W	T	F	S
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=0.2>

TOD FUNCT. (7 Key)			DAY OF WEEK							Column 4 PHASES / BITS						
TIME HHMM	FUNCT.		S	M	T	W	T	F	S	1	2	3	4	5	6	7
0	0730	B														
1	0830	B														
2	1430	B														
3	1530	B														
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

<C+0+7=1> <C+0+E=27>

HOLIDAY TOD FUNCT. (7 Key)			HOLIDAY TYPE							Column 4 PHASES / BITS						
TIME HHMM	FUNCT.		1	2	3	4	5	6	7	1	2	3	4	5	6	7
0																
1																
2																
3																
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

<C+0+7=2> <C+0+E=28>

HOLIDAY EVENTS			HOLIDAY TYPE						
TIME HHMM	PLAN	OFFSET	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=1.1>

HOLIDAY EVENTS			HOLIDAY TYPE						
TIME HHMM	PLAN	OFFSET	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+9=1.2>

HOLIDAY DATES			HOLIDAY TYPE						
DAY	YEAR	MONTH	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+8=1.1>

HOLIDAY DATES			HOLIDAY TYPE						
DAY	YEAR	MONTH	1	2	3	4	5	6	7
0									
1									
2									
3									
4									
5									
6									
7									
8									
9									
A									
B									
C									
D									
E									
F									

<C+0+8=1.2>

T.O.D. FUNCTIONS

- 0 = Permit Phases
- 1 = Red Lock
- 2 = Yellow Lock
- 3 = Veh. MIN Recall
- 4 = Ped. Recall
- 5 =
- 6 = Rest in Walk
- 7 = Red Rest
- 8 = Double Entry
- 9 = Veh. MAX Recall
- A = Veh. SOFT Recall
- B = Maximum 2
- C = Conditional Service
- D = Lag Phases
- E = Bk 1 - Local Override
- BR 4 - Disable Det. OFF Monitor
- BR 7 - Det. Count Monitor
- BR 8 - Real Time Split Monitor
- F = Output Bits 1 Thru 8

PLAN SELECT

- 1 = Coordination Plan 1 thru
- 9 = Coordination Plan 9
- E = Free
- F = Flash

OFFSET SELECT

- A = Offset A
- B = Offset B
- C = Offset C

MONTH SELECT

- 1 = January
- 2 = February
- 3 = March
- 4 = April
- 5 = May
- 6 = June
- 7 = July
- 8 = August
- 9 = September
- A = October
- B = November
- C = December

BI Tran Systems, Inc.

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916/441-0260

Traffic Signal Program 233

Timing Sheet #5 (of 6)

(Revised 12/93)

Standard 332 Cabinet Location

	C1 PIN NUMBER	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
• I-2 U --->	0 39				XX	X				X								XXX							X
• J-2 U --->	1 40				XX	X							X					XXX							X
• I-6 U --->	2 41				XX	X						X						XXX							X
J-6 U --->	3 42				XX	X												XXX							X
• I-2 L --->	4 43				XX	X				X								XXX							X
• J-2 L --->	5 44				XX	X							X					XXX							X
• I-6 L --->	6 45				XX	X						X						XXX							X
• J-6 L --->	7 46				XX	X												XXX							X
I-4 --->	8 47					XX				X								XXX							X
J-4 --->	9 48					XX							X					XXX							X
I-8 --->	A 49					XX						X						XXX							X
J-8 --->	B 50					XX												XXX							X
J-1 --->	C 55				XX	X						X						XXX							X
I-1 --->	D 56				XX	X	X											XXX							X
J-5 --->	E 57				XX	X							X					XXX							X
I-5 --->	F 58				XX	X				X								XXX							X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

Standard 332 Cabinet Location

	C1 PIN NUMBER	Column 4 ATTRIBUTES								Column 5 PHASE(S)								Column 6 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
J-9 U --->	0 59				XX	X								X				XXX							X
I-9 U --->	1 60				XX	X							X					XXX							X
• J-9 L --->	2 61				XX	X										X		XXX							X
I-9 L --->	3 62				XX	X							X					XXX							X
I-3 U --->	4 63				XX	X							X					XXX							X
J-3 U --->	5 64				XX	X									X			XXX							X
I-7 U --->	6 65				XX	X									X			XXX							X
J-7 U --->	7 66				XX	X												XXX							X
I-12 U --->	8 67	X										X						XXX							X
I-13 U --->	9 68	X												X				XXX							X
I-12 L --->	A 69	X												X				XXX							X
I-13 L --->	B 70	X																XXX							X
I-3 L --->	C 76				XX	X						X						XXX							X
J-3 L --->	D 77				XX	X										X		XXX							X
I-7 L --->	E 78				XX	X							X					XXX							X
J-7 L --->	F 79				XX	X												XXX							X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1 = Full Time Delay
- 2 = Pedestrian Call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set # 1
- 2 = Det. Set # 2
- 3 = Det. Set # 3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

DETECTOR TYPES

- Ext = Extension Detector
Detector is only active during the Phase's GREEN intervals (ie, will NOT Call the Phase)
- Cnt = Count Detector
Used in computing "Added Initial"
- Call = Calling Detector
Detector is only active during the Phase's NON-GREEN intervals (ie, will NOT Extend the Phase)
- Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

Input File
Slot No. -->

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14

"I"
FILE

1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39>	2 Ext, Cnt, Call <C1-63>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41>	4 Ext, Cnt, Call <C1-65>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60>	NOT WIRED	Not Assigned <C1-80>	2 Ped Call <C1-67>	6 Ped Call <C1-68>	Flash Sense <C1-81>
	2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-76>			4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-78>		3 Ext, Cnt, Call <C1-62>		Not Assigned <C1-53>	4 Ped Call <C1-69>	8 Ped Call <C1-70>	Stop Time <C1-82>

"J"
FILE

5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40>	6 Ext, Cnt, Call <C1-64>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42>	8 Ext, Cnt, Call <C1-66>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59>	NOT WIRED	Not Assigned <C1-54>	EV ^A Preempt <C1-71>	EV ^B Preempt <C1-72>	Railroad 1 <C1-51>
	6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-77>			8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-79>		7 Ext, Cnt, Call <C1-61>		Not Assigned <C1-75>	EV ^C Preempt <C1-73>	EV ^D Preempt <C1-74>	Railroad 2 <C1-52>

"INITIALIZED" INPUT FILE ASSIGNMENTS --- STANDARD 332 CABINET
< "C-1" Harness Type # 1 >

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916 / 441-0260
Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet

NORTH ADAMS ST / WEST A STREET

	PHASE							
	1	2	3	4	5	6	7	8
0 WALK	0	7	0	7	0	7	0	7
1 DONT WALK	0	18	0	15	0	18	0	15
2 MIN INITIAL	5	5	5	5	5	5	5	5
3 TYPE 3 LIMIT	0	0	0	0	0	0	0	0
4 ADD PER VEH	0	0	0	0	0	0	0	0
5 VEH EXT	2	2	2	2	2	2	2	2
6 MAX GAP	2	2	2	2	2	2	2	2
7 MIN GAP	2	2	2	2	2	2	2	2
8 MAX LIMIT	20	20	20	30	20	20	20	30
9 MAXIMUM 2	0	40	0	0	0	40	0	0
A ADV/DLY WALK	0	0	0	0	0	0	0	0
B MIN PED CLEAR	0	0	0	0	0	0	0	0
C COND SRV MIN	0	0	0	0	0	0	0	0
D REDUCE EVERY	0	0	0	0	0	0	0	0
E YELLOW	3	3	3	3	3	3	3	3
F RED CLEAR	1	1	1	1	1	1	1	1

	9	A	B	C	D
1 PHASE 1	20				
2 PHASE 2	40				
3 PHASE 3	20				
4 PHASE 4	30				
5 PHASE 5	20				
6 PHASE 6	40				
7 PHASE 7	20				
8 PHASE 8	30				

MAX INITIAL -
ALT WALK -
ALT FLH D/W -
ALT INITIAL -
ALT EXTEN -

ALL RED START: 9
(F/1 + C + 0) = 3.0
RED REVERT: (F/1 + 0 + F) = 2.0

PHASE BANK #1 <C + 0 + F = 1>

Column F
PHASES

	1	2	3	4	5	6	7	8
0 PERMIT								
1 RED LOCK								
2 YELLOW LOCK								
3 VEH MIN CALL								
4 PED RECALL								
5 PEDESTRIANS								
6 REST IN WALK								
7 RED REST								
8 DOUBLE ENTRY								
9 VEH MAX CALL								
A SOFT RECALL								
B MAXIMUM 2								
C COND SERVICE								
D MAN CONT CALL								
E YELLOW START								
F FIRST PHASES								

FLASH
TO
PREEMPT

1 = EVA 5 = RR1
2 = EVB 6 = RR2
3 = EVC 7 = SE1
4 = EVD 8 = SE2

EXTRA 1

1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Daylight Savings
4 = EV Advance
5 = Expanded Status
6 = International Ped
7 = Clear Outputs
8 = Split Ring

EXTRA 2

1 = AWB On During
Phase Initial
2 = LNU Installed

IC SELECT

2 = 2 Way Modern
3 = 7 Wire Slave
4 = Flash / Free
5 = Simplex Master
6 = 7 Wire Master
7 = Offset Interrupter

Column E
PHASES / BITS

	1	2	3	4	5	6	7	8
0 EXCLUSIVE								
1 RR1 CLEAR								
2 RR2 CLEAR								
3 RR2 LTD SRV								
4 PROT / PERM								
5 FLH TO PREMT								
6 FLASH ENTRY								
7 DSABL MIN YEL								
8 DSABL OVP YEL								
9 OVP FLH YEL								
A EM VEH A								
B EM VEH B								
C EM VEH C								
D EM VEH D								
E EXTRA 1								
F IC SELECT								

Column F
PHASES / BITS

	1	2	3	4	5	6	7	8
0 EXT PERMIT 1								
1 EXT PERMIT 2								
2 EXCLU PED								
3 PED 2P OUT								
4 PED 6P OUT								
5 PED 4P OUT								
6 PED 8P OUT								
7 FLH YELLOW								
A								
B								
C								
D								
E RESTRICTED								
F EXTRA 2								

<C + 0 + F = 1>

<C + 0 + E = 125>

PLAN NUMBER

	1	2	3	4	5	6	7	8	9
0 CYCLE									
1 FORCE 1									
2 FORCE 2									
3 FORCE 3									
4 FORCE 4									
5 FORCE 5									
6 FORCE 6									
7 FORCE 7									
8 FORCE 8									
9 RING OFFSET									
A OFFSET 1									
B OFFSET 2									
C OFFSET 3									
D END PERM 1									
E HOLD RELEASE									
F ZONE OFFSET									

COORDINATION <C + 0 + C = 1>

Column E

	1	2	3	4	5	6	7	8
0 SYNC 1								
1 SYNC 2								
2 SYNC 3								
3 SYNC 4								
4 SYNC 5								
5 SYNC 6								
6 SYNC 7								
7 SYNC 8								
8 SYNC 9								
A NEMA SYNC								
B NEMA HOLD								
C								
D								
E COOR XTRA								
F								

<C + 0 + C = 1>

Column F

	1	2	3	4	5	6	7	8
0 LAG FREE								
1 LAG PLAN 1								
2 LAG PLAN 2								
3 LAG PLAN 3								
4 LAG PLAN 4								
5 LAG PLAN 5								
6 LAG PLAN 6								
7 LAG PLAN 7								
8 LAG PLAN 8								
9 LAG PLAN 9								
A EXT. LAG								
B								
C								
D								

COOR XTRA

1 = Programmed Walk Time
For Sync Phases

Column 2
COORD
MINIMUM

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

<C + 0 + C = 5>

TRANSITION
TYPE

0.X = Shortway
1.X = Dwell
X.1 thru X.4 =
Number of cycles
when Lengthing

COMM ADDRESS:
(C/0 + 0 + 0) = _____
ZONE NUMBER:
(C/0 + 0 + 1) = _____
AREA NUMBER:
(C/0 + 0 + 2) = _____
AREA ADDRESS:
(C/0 + 0 + 3) = _____
TRANSITION TYPE:
(C/5 + 1 + 9) = _____
LAG HOLD PHASES:
(C/5 + 1 + A) = _____
7-WIRE SYNC TIME:
(C/5 + 1 + C) = _____

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Timing Sheet #1 (of 6)
(Revised 09/93)

1st/A 3.24.05

QAR

PHASE								
0	1	2	3	4	5	6	7	8
WALK		7		7		7		7
DOGT WALK		13		17		12		15
MIN INTAL	5	5	5	5	5	5	5	5
TYPE 3 LIMIT								
ADD PER VEH								
VEH EXT		2	2	2	2	2	2	2
MAX GAP		2	2	2	2	2	2	2
MIN GAP		2	2	2	2	2	2	2
MAX LIMIT		20	20	20	20	20	20	20
MAXIMUM 2		30	30	30	30	30	30	30
ADV/DLY WALK		50						
MIN PED CLEAR								
COND SRV MIN								
REDUCE EVERY								
YELLOW	3	3	3	3	3	3	3	3
RED CLEAR	1	1	1	1	1	1	1	1

ALL RED START: (F/1 + C + 0) = **3.0**
 RED REVERT: (F/1 + 0 + F) = **3.0**

Column F PHASES								
0	1	2	3	4	5	6	7	8
PERMIT								
RED LOCK								
YELLOW LOCK								
VEH MIN CALL								
PED RECALL								
PEDESTRIANS								
FEET IN WALK								
RED REST								
DOUBLE ENTRY								
VEH MAX CALL								
SOFT RECALL								
MAXIMUM 2								
COND SERVICE								
MAN CONT CALL								
YELLOW START								
FIRST PHASES								

Column E PHASES / BITS								
0	1	2	3	4	5	6	7	8
EXCLUSIVE								
RR1 CLEAR								
RR2 CLEAR								
RR2 LTD SRV								
PROT/PERM								
FLH TO PERM								
FLASH ENTRY								
DSABL MIN YEL								
DSABL OVP YEL								
OVP FLH YEL								
BM VEH A								
BM VEH B								
BM VEH C								
BM VEH D								
EXTRA 1								
IC SELECT								

Column F PHASES / BITS								
0	1	2	3	4	5	6	7	8
EXT PERMIT 1								
EXT PERMIT 2								
EXCU PED								
PED 2P OUT								
PED 6P OUT								
PED 4P OUT								
PED 8P OUT								
FLH YELLOW								
EXTRA 2								

PHASE BANK # 1 < C + 0 + F = 1 >

< C + 0 + F = 1 >

< C + 0 + E = 125 >

PLAN NUMBER								
0	1	2	3	4	5	6	7	8
CYCLE								
FORCE 1								
FORCE 2								
FORCE 3								
FORCE 4								
FORCE 5								
FORCE 6								
FORCE 7								
FORCE 8								
RING OFFSET								
OFFSET 1								
OFFSET 2								
OFFSET 3								
END PERM 1								
HOLD RELEASE								
ZONE OFFSET								

Column E								
0	1	2	3	4	5	6	7	8
SYNC 1								
SYNC 2								
SYNC 3								
SYNC 4								
SYNC 5								
SYNC 6								
SYNC 7								
SYNC 8								
SYNC 9								
NEMA SYNC								
NEMA HOLD								
COOR XTRA								

Column F								
0	1	2	3	4	5	6	7	8
LAG FREE								
LAG PLAN 1								
LAG PLAN 2								
LAG PLAN 3								
LAG PLAN 4								
LAG PLAN 5								
LAG PLAN 6								
LAG PLAN 7								
LAG PLAN 8								
LAG PLAN 9								
EXT. LAG								

Column 2								
COORD MINIMUM	1	2	3	4	5	6	7	8

COMM ADDRESS: (C/0 + 0 + 0) = _____
 ZONE NUMBER: (C/0 + 0 + 1) = _____
 AREA NUMBER: (C/0 + 0 + 2) = _____
 AREA ADDRESS: (C/0 + 0 + 3) = _____
 TRANSITION TYPE: (C/5 + 1 + 9) = _____
 LAG HOLD PHASES: (C/5 + 1 + A) = _____
 7-WIRE SYNC TIME: (C/5 + 1 + C) = _____

COORDINATION < C + 0 + C = 1 >

< C + 0 + C = 1 >

BI Tran Systems, Inc.
 510 Bercut Dr., Sacramento, Calif. 95814
 916 / 441-0260
Traffic Signal Program 233
 Tuning Sheet # 1 (of 6)
 (Revised 09/93)

Standard 332 Cabinet Location	Column 4	Column 5	Column 6	Column 7
		ATTRIBUTES	PHASE(S)	ASSIGNMENTS
C1 PIN NUMBER	1	1	1	1
	2	2	2	2
	3	3	3	3
	4	4	4	4
	5	5	5	5
	6	6	6	6
	7	7	7	7
	8	8	8	8

[illegible]

INITIALIZED DETECTOR ASSIGNMENTS

< C + 0 + E = 126 >

DETECTOR ASSIGNMENTS

DETECTOR ATTRIBUTES.

1 - Full Time Delay
2 - Pedestrian Call

3 =
4 = Count

5 - Extension
6 - Type 3

7 - Calling
8 - Alternates

DETECTOR ASSIGNMENTS.

1 - Det. Bat # 1
2 - Det. Bat # 2

3 - Det. Bat # 3

5 - MIN Recall On Fa

7 - MAX Recall On Failure
8 - Report On Failure

1000

SECTION TYPES

actor is only active during
the GREEN intervals

will NOT Call the Phase Detector

Detector

...NON-GREEN Intern...

Will Not Exceed 100
Disconnected

band its Phase until the C
drome or the Type 3 H

attached

n Systems,

916 / 441-0260

Signal Program & Detector Assignment

92) 332 Cal

332 Cab

A-2-

PHASE									
	1	2	3	4	5	6	7	8	
0 WALK									0
1 DON'T WALK									1 PHASE 1
2 MIN INITIAL									2 PHASE 2
3 TYPE 3 LIMIT									3 PHASE 3
4 ADD PER VEH									4 PHASE 4
5 VEH EXT									5 PHASE 5
6 MAX GAP									6 PHASE 6
7 MIN GAP									7 PHASE 7
8 MAX LIMIT									8 PHASE 8
9 MAXIMUM 2									
A ADV/DLY WALK									
B MIN PED CLEAR									
C COND SRV MIN									
D REDUCE EVERY									
E YELLOW									
F RED CLEAR									

PHASE BANK # 3

< C + 0 + F = 3 >

MAX INITIAL

ALT WALK

ALT FLH D/W

ALT INITIAL

ALT EXTEN

PHASE BANK #3
<C+0+F=3>

	PED / PHASE / OVERLAP							
	1	2	3	4	5	6	7	8
0 WALK								
1 DON'T WALK								
2 PHASE GREEN								
3 PHASE YELLOW								
4 PHASE RED								
5 OVERLAP GREEN								
6 OVERLAP YELLOW								
7 OVERLAP RED								
8								
9								
A								
B								
C								
D								
E								
F								

REDIRECT PHASE OUTPUTS < C + 0 + E = 127 >

Sign #2:

$$(FM + D + F) =$$
$$(FM + D + E) =$$
$$(EM27 + E + 9) =$$

WALK:

 $(F/1 + 0 + 0)$

DON'T WALK:

RED CLEAR:

 $(F/1 + 0 + 2)$

CABINET TYPE

30 - Type 303 / 330 Cabinet
(Eosble Pedestal)

0 - All Other Types

(Disable Redirection)

BI Tran Systems, Inc.

510 Bercaw Dr., Sacramento, Calif. 95814

916 / 441-0260

Traffic Signal Program 233

Tuning Sheet # 3 (of 6)

(Revised 08/93)

DAY OF WEEK						
S	M	T	W	T	F	S
1	2	3	4	5	6	7

[illegible]

HOLIDAY TYPE							
1	2	3	4	5	6	7	

[illegible]

DAY OF WEEK						
S	M	T	W	T	F	S
1	2	3	4	5	6	7

[illegible]

HOLIDAY TYPE	
1	2
3	4
5	6
7	

[illegible]

DAY OF WEEK		BM	T	W	T	F	S
1	2	3	4	5	6	7	8

0	0800	B	
1	1000	B	
2	1400	B	
3	1600	B	
4			
5			
6			
7			
8			
9			
A			
B			
C			
D			
E			
F			

Column 4

PHASES / BITT	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

HOLIDAY TYPE							
1	2	3	4	5	6	7	

[illegible]

HOLIDAY TYPE	
1	2
3	4
5	6
7	8
9	10
11	12
13	14
15	16
17	18
19	20
21	22
23	24
25	26
27	28
29	30
31	32
33	34
35	36
37	38
39	40
41	42
43	44
45	46
47	48
49	50
51	52
53	54
55	56
57	58
59	60
61	62
63	64
65	66
67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

[illegible]

HOLIDAY TYPE									
1	2	3	4	5	6	7	8	9	10

[illegible]

T.O.D. FUNCTIONS

- 0 - Perm. Phrases
- 1 - Red Lock
- 2 - Yellow Lock
- 3 - Veh. MIN Recall
- 4 - Ped. Recall
- 5 -
- 6 - Reset in Walk
- 7 - Red Pedal
- 8 - Double Entry
- 9 - Veh. MAX Recall
- A - Veh. SOFT Recall
- B - Maximum 2
- C - Conditional Service
- D - Lag Phrases
- E - Bit 1 - Local Override
- BR 4 - Disable Det.
- OFF Monitor
- BR 7 - Det. Count
- Monitor
- BR 8 - Red Time
- SPIN Monitor
- F - Output Bit 1 Thru 8

MONTH SELECT

- 1 - Coordination Plan 1
 thru
9 - Coordination Plan 9
E - Free
F - Flash
- OFFSET SELECT
- A - Offset A
B - Offset B
C - Offset C
- 1 - January
2 - February
3 - March
4 - April
5 - May
6 - June
7 - July
8 - August
9 - September
A - October
B - November
C - December

(Revised 12/93)

6										7										8										9										A										B										C										D										E										F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
CLEAR										TIME										PED CALL										HOLD										ADVANCE										FORCEOFF										CALL										PERMIT										PED OMIT										OUTPUT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6

SPECIAL EVENT SCHEDULE -- TABLE #1 < C + 0 + E = 27 >

INPUT C1 PIN
 ASSIGNMENT:
 (E/126 + F + 7) = _____
 LIMITED SERVICE
 INTERVAL:
 (E/27 + 6 + F) = _____

6		7		8		9		A		B		C		D		E		F					
CLEAR		TIME		PED CALL		HOLD		ADVANCE		FORCEOFF		CALL		PERMIT		PED OMIT		OUTPUT					
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8			
5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8				
6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8					
7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8						
8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8							
9	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8								
A	3	4	5	6	7	8	1	2	3	4	5	6	7	8									
B	4	5	6	7	8	1	2	3	4	5	6	7	8										
C	5	6	7	8	1	2	3	4	5	6	7	8											
D	6	7	8	1	2	3	4	5	6	7	8												
E	7	8	1	2	3	4	5	6	7	8													
F	8	1	2	3	4	5	6	7	8														

INPUT C1 PIN
 ASSIGNMENT:
 (E/126 + F + 6) = _____
 LIMITED SERVICE
 INTERVAL:
 (E/26 + 6 + F) = _____

SPECIAL EVENT SCHEDULE -- TABLE #2 < C + 0 + E = 28 >

BI Tran Systems, Inc.
 510 Bercut Dr., Sacramento, Calif. 95814
 916/441-0260
 Traffic Signal Program 233
 Turning Sheet # 6 (of 6)
 (Revised 12/93)

Column A	Column B	Column C	Column D	Column E	Column F
0 NOT 3	MAX 2	PRE TIM	WKL DAY	DWL 2	0
1 NOT 4	SYDET 1	PLAN 1	X PERM 1	DWL 3	1
2 OR 4	SYDET 2	PLAN 2	X PERM 2	OFF 1	2
3 OR 4	SYDET 3	PLAN 3	DWL	OFF 2	3
4 OR 5	SYDET 4	PLAN 4	X CLOCK	OFF 3	4
5 OR 5	SYDET 5	PLAN 5	ST TIME	FREE	5
6 OR 6	SYDET 6	PLAN 6	FL SEBS	FLASH	6
7 OR 6	SYDET 7	PLAN 7	ENABLE	XPD ONT	7
8	SYDET 8	PLAN 8	ADVANC	NOT 1	8
9	MAX MBT	PLAN 9	ALARM	NOT 2	9
A AND 4	FORCE A	DELAY A	PH BKT 2	OR 1	A
B AND 4	FORCE B	DELAY B	PH BKT 3	OR 1	B
C AND 1	CMA	DELAY C	CL SET 2	OR 2	C
D AND 1	HOLD	DELAY D	CL SET 3	OR 2	D
E AND 2	VE CALL	DELAY E	DET ST 2	OR 3	E
F AND 2	RECALL	DELAY F	DET ST 3	OR 3	F

ASSIGNABLE INPUTS

< C + 0 + E = 126 >

Column A	Column B	Column C	Column D	Column E	Column F
0	FLHR 0	FREE	NOT 1	TOD 1	0
1 SP EV 1	FLHR 1	PLAN 1	OR 1	TOD 2	1
2 SP EV 2	FLHR	PLAN 2	OR 2	TOD 3	2
3 SP EV 3		PLAN 3	OR 3	TOD 4	3
4 SP EV 4		PLAN 4	AND 1	TOD 5	4
5 SP EV 5		PLAN 5	AND 2	TOD 6	5
6 SP EV 6		PLAN 6	AND 3	TOD 7	6
7 SP EV 7		PLAN 7	NOT 2	TOD 8	7
8 SP EV 8	NOT 3	PLAN 8	EVA	WARN 1	8
9	NOT 4	PLAN 9	EV B	WARN 2	9
A DET FAL	OR 4		EV C	DELAY A	A
B	OR 5		EV D	DELAY B	B
C	OR 6		RR 1	DELAY C	C
D CNT CTL	AND 4		RR 2	DELAY D	D
E X DWALK	AND 1		SP 1	DELAY E	E
F X WALK	AND 2		SP 2	DELAY F	F

ASSIGNABLE OUTPUTS

< C + 0 + E = 127 >

PLAN # ->	1	2	3	4	5	6	7	8	9
0 PED ADJ									
1 ST PERM 2									
2 EN PERM 2									
3 ST PERM 3									
4 EN PERM 3									
5 RSRV TIME									

PLAN # ->	1	2	3	4	5	6	7	8	9
6 RESERVE PH									
7									
8 PRETIMED									
9 MAX RECALL									
A PERM 1 VEH									
B PERM 1 PED									
C PERM 2 VEH									
D PERM 2 PED									
E PERM 3 VEH									
F PERM 3 PED									

Logic DELAY Times

Column A	Column B
A DELAY A	
B DELAY B	
C DELAY C	
D DELAY D	
E DELAY E	
F DELAY F	

< C + 0 + D = 0 >

DIAL-UP ("stand alone")
Modem Interface:

(C/5 + D + 0) =
NOTE: If "Non-Zero", PARTY will be DISABLED
for "Smart Modem" operation.

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814

916/441-0260

Traffic Signal Program 233

Timing Sheet # 2 (of 6)

(Revised 10/93)

Column -> 1	DELAY	CARRY-OVER
0		3
1		
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

Column 0	Column 1	Column 2	Column 3
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0 39			
1 40			
2 41			
3 42			
4 43			
5 44			
6 45			
7 46			
8 47			
9 48			
A 49			
B 50			
C 55			
D 56			
E 57			
F 58			

< C + 0 + D = 0 >

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Column -> 2	DELAY	CARRY-OVER
0		4
1		
2		
3		
4		
5		
6		
7		
8		
9		
A		
B		
C		
D		
E		
F		

Column 4	Column 5	Column 6	Column 7
C1 PIN NUMBER	ATTRIBUTES	PHASE(S)	ASSIGNMENTS
0 59			
1 60			
2 61			
3 62			
4 63			
5 64			
6 65			
7 66			
8 67			
9 68			
A 69			
B 70			
C 74			
D 77			
E 78			
F 79			

< C + 0 + D = 0 >

DETECTOR ASSIGNMENTS < C + 0 + E = 126 >

Detector Monitor

MAX OFF:
(D/0 + 0 + 1) = _____
MAX ON:
(D/0 + 0 + 2) = _____

Power Cycle Correction Factors

LONG FAILURE:
(F/1 + 0 + 6) = _____
SHORT FAILURE:
(F/1 + 0 + 7) = _____
NOTE: Do Not Set To Zero. Default Value = 0.5 sec.

0 LOAD SW #	1	2	3	4	5	6	7	8
1 VEH SET #1								
2 VEH SET #2								
3 VEH SET #3								
4 NEG VEH								
5 NEG PED								
6 GREEN OMIT								
7 GRN CLR OMIT								
8								

OVERLAP ASSIGNMENTS

< C + 0 + E = 29 >

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Tuning Sheet # 4 (of 6)
(Revised 12/93)

- DETECTOR ASSIGNMENTS**
- 1 - Det. Set #1
 - 2 - Det. Set #2
 - 3 - Det. Set #3
 - 4 -
 - 5 -
 - 6 - MIN Recall On Failure
 - 7 - MAX Recall On Failure
 - 8 - Report On Failure
- DETECTOR ATTRIBUTES**
- 1 - Full Time Delay
 - 2 - Pedestrian Call
 - 3 -
 - 4 - Count
 - 5 - Extension
 - 6 - Type 3
 - 7 - Calling
 - 8 - Alternate

Appendix B
Level of Service Calculations

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Intersection

Intersection Delay, s/veh 13.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↕			↕			↕
Traffic Vol, veh/h	33	254	11	1	10	279	63	18	35	25	39	27
Future Vol, veh/h	33	254	11	1	10	279	63	18	35	25	39	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	306	13	1	12	336	76	22	42	30	47	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14	15.5	10.3	10.8
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	11%	3%	33%
Vol Thru, %	45%	85%	79%	23%
Vol Right, %	32%	4%	18%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	298	353	118
LT Vol	18	33	10	39
Through Vol	35	254	280	27
RT Vol	25	11	63	52
Lane Flow Rate	94	359	425	142
Geometry Grp	1	1	1	1
Degree of Util (X)	0.159	0.524	0.6	0.234
Departure Headway (Hd)	6.085	5.258	5.078	5.917
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	586	686	710	604
Service Time	4.152	3.303	3.121	3.977
HCM Lane V/C Ratio	0.16	0.523	0.599	0.235
HCM Control Delay, s/veh	10.3	14	15.5	10.8
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.1	4	0.9

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement SBR

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	316	4	1	2	351	1	4
Future Vol, veh/h	316	4	1	2	351	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	395	5	1	3	439	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	409
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1150
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -3
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.78
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	537	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	320	350	1	2	6
Future Vol, veh/h	2	320	350	1	2	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	395	432	1	2	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	436	0	836
Stage 1	-	-	436
Stage 2	-	-	400
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1123	-	337
Stage 1	-	-	652
Stage 2	-	-	677
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1120	-	334
Mov Cap-2 Maneuver	-	-	334
Stage 1	-	-	648
Stage 2	-	-	675

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.05	0	12.22
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	11	-	-	-	509
HCM Lane V/C Ratio	0.002	-	-	-	0.019
HCM Ctrl Dly (s/v)	8.2	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	355	85	386	107	8	52	11	100	109
v/c Ratio	0.13	0.39	0.31	0.40	0.13	0.04	0.18	0.04	0.33	0.21
Control Delay (s/veh)	28.0	17.6	26.5	14.1	4.1	28.6	26.8	0.2	26.2	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.0	17.6	26.5	14.1	4.1	28.6	26.8	0.2	26.2	17.1
Queue Length 50th (ft)	8	94	23	69	0	2	15	0	28	19
Queue Length 95th (ft)	31	186	68	197	24	15	48	0	76	71
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	606	1579	606	1306	1089	649	1259	951	649	1215
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.22	0.14	0.30	0.10	0.01	0.04	0.01	0.15	0.09
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	292	6	71	324	90	7	44	9	84	71	20
Future Volume (veh/h)	23	292	6	71	324	90	7	44	9	84	71	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	27	348	7	85	386	107	8	52	11	100	85	24
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	539	11	143	619	517	19	148	119	158	225	64
Arrive On Green	0.03	0.29	0.29	0.08	0.33	0.33	0.01	0.08	0.08	0.09	0.16	0.16
Sat Flow, veh/h	1767	1884	38	1767	1856	1549	1767	1930	1551	1767	1444	408
Grp Volume(v), veh/h	27	0	355	85	386	107	8	52	11	100	0	109
Grp Sat Flow(s),veh/h/ln	1767	0	1922	1767	1856	1549	1767	1930	1551	1767	0	1852
Q Serve(g_s), s	0.5	0.0	5.5	1.6	6.0	1.7	0.2	0.9	0.2	1.9	0.0	1.8
Cycle Q Clear(g_c), s	0.5	0.0	5.5	1.6	6.0	1.7	0.2	0.9	0.2	1.9	0.0	1.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	58	0	550	143	619	517	19	148	119	158	0	288
V/C Ratio(X)	0.46	0.00	0.65	0.59	0.62	0.21	0.42	0.35	0.09	0.63	0.00	0.38
Avail Cap(c_a), veh/h	825	0	2018	825	1948	1626	825	1463	1176	825	0	1404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	10.7	15.2	9.6	8.2	16.9	15.0	14.7	15.1	0.0	13.0
Incr Delay (d2), s/veh	2.1	0.0	0.5	1.5	0.4	0.1	5.5	0.5	0.1	1.6	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.6	1.7	0.4	0.1	0.3	0.1	0.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.4	0.0	11.2	16.7	10.0	8.2	22.3	15.5	14.8	16.6	0.0	13.3
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	382			578			71			209		
Approach Delay, s/veh	11.7			10.7			16.2			14.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	15.4	4.4	9.3	6.8	13.8	7.1	6.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.5	8.0	2.2	3.8	3.6	7.5	3.9	2.9				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.3	0.1	1.4	0.1	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.0											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	384	0	0	489	0	76
Future Vol, veh/h	384	0	0	489	0	76
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	463	0	0	589	0	92

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 464
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 598
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 598
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	598	-	-
HCM Lane V/C Ratio	0.153	-	-
HCM Ctrl Dly (s/v)	12.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.86
Level of Service	A
Average Dissatisfaction Prob	0.300
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	527
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.91
Delay for adq Gap (s)	60.61
Avg Ped Delay (s)	4.86

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.86
Level of Service	A
Average Dissatisfaction Prob	0.300
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	527
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.91
Delay for adq Gap (s)	60.61
Avg Ped Delay (s)	4.86

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.3	0.5	14.4	8.2	2.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.1	31.2	26.3	22.0	26.7

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	1.1	7.7	6.2	1.6

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.0	0.1

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.2	0.1

Total Zone Performance

Stop Del/Veh (s)	433.7

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	122	108	175	34
Average Queue (ft)	17	17	60	10
95th Queue (ft)	69	71	126	34
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	296	95	328	114	390	169	288
Average Queue (ft)	58	130	61	149	99	249	73	130
95th Queue (ft)	119	249	110	294	134	418	146	242
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		0		3		9		0
Queuing Penalty (veh)		2		15		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	4	20	13	26	24	22	1	7
Queuing Penalty (veh)	12	13	38	21	114	38	4	7

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	87	96	50	93
Average Queue (ft)	9	12	19	38
95th Queue (ft)	50	62	46	70
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	1		0
Queuing Penalty (veh)	0	3		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	3	38
Average Queue (ft)	0	2
95th Queue (ft)	0	26
Link Distance (ft)	116	280
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 268

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↕			↕			↕
Traffic Vol, veh/h	33	257	11	1	11	282	62	18	35	26	40	27
Future Vol, veh/h	33	257	11	1	11	282	62	18	35	26	40	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	310	13	1	13	340	75	22	42	31	48	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.2	15.8	10.4	10.9
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	11%	3%	34%
Vol Thru, %	44%	85%	79%	23%
Vol Right, %	33%	4%	17%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	301	356	119
LT Vol	18	33	11	40
Through Vol	35	257	283	27
RT Vol	26	11	62	52
Lane Flow Rate	95	363	429	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.162	0.532	0.608	0.237
Departure Headway (Hd)	6.111	5.277	5.1	5.949
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	584	682	708	601
Service Time	4.179	3.324	3.145	4.012
HCM Lane V/C Ratio	0.163	0.532	0.606	0.238
HCM Control Delay, s/veh	10.4	14.2	15.8	10.9
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.2	4.2	0.9

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement **SBR**

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	321	4	1	2	354	1	4
Future Vol, veh/h	321	4	1	2	354	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	401	5	1	3	443	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	415
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1144
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -3
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.85
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	532	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	325	353	1	2	6
Future Vol, veh/h	2	325	353	1	2	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	401	436	1	2	7

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	440	0	0 846 441
Stage 1	-	-	- 439 -
Stage 2	-	-	- 406 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1120	-	- 333 616
Stage 1	-	-	- 650 -
Stage 2	-	-	- 673 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1117	-	- 330 613
Mov Cap-2 Maneuver	-	-	- 330 -
Stage 1	-	-	- 646 -
Stage 2	-	-	- 671 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.05	0	12.28
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	11	-	-	-	505
HCM Lane V/C Ratio	0.002	-	-	-	0.02
HCM Ctrl Dly (s/v)	8.2	0	-	-	12.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Queues

4: W. A St. & N. Adams St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	361	85	389	108	8	52	11	101	109
v/c Ratio	0.13	0.39	0.31	0.40	0.13	0.04	0.18	0.04	0.34	0.21
Control Delay (s/veh)	28.2	17.7	26.6	14.1	4.0	28.7	27.0	0.2	26.3	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.2	17.7	26.6	14.1	4.0	28.7	27.0	0.2	26.3	17.2
Queue Length 50th (ft)	8	96	24	70	0	2	15	0	28	20
Queue Length 95th (ft)	32	190	68	199	24	15	49	0	77	72
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	604	1574	604	1301	1086	646	1254	948	646	1209
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.23	0.14	0.30	0.10	0.01	0.04	0.01	0.16	0.09

Intersection Summary

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	23	297	6	71	327	91	7	44	9	85	71	20	
Future Volume (veh/h)	23	297	6	71	327	91	7	44	9	85	71	20	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	27	354	7	85	389	108	8	52	11	101	85	24	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	58	544	11	143	624	521	19	148	119	159	225	64	
Arrive On Green	0.03	0.29	0.29	0.08	0.34	0.34	0.01	0.08	0.08	0.09	0.16	0.16	
Sat Flow, veh/h	1767	1885	37	1767	1856	1549	1767	1930	1551	1767	1444	408	
Grp Volume(v), veh/h	27	0	361	85	389	108	8	52	11	101	0	109	
Grp Sat Flow(s),veh/h/ln	1767	0	1922	1767	1856	1549	1767	1930	1551	1767	0	1852	
Q Serve(g_s), s	0.5	0.0	5.7	1.6	6.1	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Cycle Q Clear(g_c), s	0.5	0.0	5.7	1.6	6.1	1.7	0.2	0.9	0.2	1.9	0.0	1.8	
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22	
Lane Grp Cap(c), veh/h	58	0	555	143	624	521	19	148	119	159	0	289	
V/C Ratio(X)	0.46	0.00	0.65	0.60	0.62	0.21	0.42	0.35	0.09	0.64	0.00	0.38	
Avail Cap(c_a), veh/h	820	0	2006	820	1937	1617	820	1455	1169	820	0	1396	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	16.4	0.0	10.7	15.3	9.6	8.2	17.0	15.1	14.8	15.1	0.0	13.1	
Incr Delay (d2), s/veh	2.1	0.0	0.5	1.5	0.4	0.1	5.5	0.5	0.1	1.6	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	0.6	1.8	0.4	0.1	0.3	0.1	0.7	0.0	0.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	18.5	0.0	11.2	16.8	10.0	8.2	22.4	15.6	14.9	16.7	0.0	13.4	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	388				582				71				210
Approach Delay, s/veh	11.7				10.7				16.3				15.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.1	15.6	4.4	9.4	6.8	14.0	7.1	6.6					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.5	8.1	2.2	3.8	3.6	7.7	3.9	2.9					
Green Ext Time (p_c), s	0.0	1.8	0.0	0.3	0.1	1.5	0.1	0.1					
Intersection Summary													
HCM 7th Control Delay, s/veh			12.0										
HCM 7th LOS			B										

AM Existing with Project 12:00 pm 01/15/2025 AM Existing No Project
TKTPM

Synchro 12 Report
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Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↗
Traffic Vol, veh/h	390	0	0	493	0	77
Future Vol, veh/h	390	0	0	493	0	77
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	0	0	594	0	93
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	471
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	593
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	592
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		12.21		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	592	-	-			
HCM Lane V/C Ratio	0.157	-	-			
HCM Ctrl Dly (s/v)	12.2	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.6	-	-			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.302
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	544
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	64.55
Avg Ped Delay (s)	4.85

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.302
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	544
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	64.55
Avg Ped Delay (s)	4.85

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.5	0.5	14.7	8.0	2.6

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.7	38.0	29.6	24.7	30.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.3	3.8	14.3	11.2	3.9

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.1	0.1

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.6	13.3	2.2

Total Zone Performance

Stop Del/Veh (s)	480.1

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	143	99	154	42
Average Queue (ft)	20	15	59	9
95th Queue (ft)	80	61	115	34
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	302	95	342	115	396	170	337
Average Queue (ft)	60	137	67	170	100	272	84	147
95th Queue (ft)	117	259	112	335	134	430	163	282
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		8		14		1
Queuing Penalty (veh)		4		39		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	3	22	22	26	28	24	2	8
Queuing Penalty (veh)	8	14	63	25	136	41	8	10

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	190	120	70	101
Average Queue (ft)	29	26	22	41
95th Queue (ft)	119	95	55	79
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	5		1
Queuing Penalty (veh)	0	19		1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	15
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	10	170	53
Average Queue (ft)	0	20	17
95th Queue (ft)	7	125	46
Link Distance (ft)	116	280	90
Upstream Blk Time (%)		1	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 368

Intersection

Intersection Delay, s/veh 14.9

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	322	17	27	309	44	8	26	18	53	23	41
Future Vol, veh/h	29	322	17	27	309	44	8	26	18	53	23	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	370	20	31	355	51	9	30	21	64	26	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.8	16	10	11
HCM LOS	C	C	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	45%
Vol Thru, %	50%	88%	81%	20%
Vol Right, %	35%	5%	12%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	368	380	117
LT Vol	8	29	27	53
Through Vol	26	322	309	23
RT Vol	18	17	44	41
Lane Flow Rate	60	423	437	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.604	0.617	0.232
Departure Headway (Hd)	6.226	5.143	5.088	6.073
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	702	708	590
Service Time	4.289	3.18	3.124	4.126
HCM Lane V/C Ratio	0.105	0.603	0.617	0.232
HCM Control Delay, s/veh	10	15.8	16	11
HCM Lane LOS	A	C	C	B
HCM 95th-tile Q	0.3	4.1	4.3	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	382	2	4
Future Vol, veh/h	393	5	3	382	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	439	2	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	466
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1095
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1086
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.15
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	1086	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 380 376 2 0 7

Future Vol, veh/h 7 380 376 2 0 7

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 442 437 2 0 8

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 443 0 - 0 900 443

Stage 1 - - - - 441 -

Stage 2 - - - - 458 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1118 - - - 309 614

Stage 1 - - - - 648 -

Stage 2 - - - - 637 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1114 - - - 305 611

Mov Cap-2 Maneuver - - - - 305 -

Stage 1 - - - - 640 -

Stage 2 - - - - 635 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 10.97

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 33 - - - 611

HCM Lane V/C Ratio 0.007 - - - 0.013

HCM Ctrl Dly (s/v) 8.3 0 - - 11

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	404	86	360	110	5	90	16	115	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.6	20.2	29.8	15.5	4.3	31.5	29.1	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	20.2	29.8	15.5	4.3	31.5	29.1	0.4	29.2	15.2
Queue Length 50th (ft)	10	117	26	69	0	2	28	0	35	24
Queue Length 95th (ft)	38	245	78	210	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1419	572	1171	989	613	1143	871	613	1067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	349	3	75	313	96	4	78	14	100	70	57
Future Volume (veh/h)	27	349	3	75	313	96	4	78	14	100	70	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	401	3	86	360	110	5	90	16	115	80	66
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	65	581	4	139	641	536	12	192	154	164	181	149
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803
Grp Volume(v), veh/h	31	0	404	86	360	110	5	90	16	115	0	146
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777
Q Serve(g_s), s	0.6	0.0	7.0	1.8	5.9	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	5.9	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	65	0	585	139	641	536	12	192	154	164	0	330
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.56	0.21	0.42	0.47	0.10	0.70	0.00	0.44
Avail Cap(c_a), veh/h	752	0	1844	752	1775	1483	752	1334	1070	752	0	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	11.5	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6
Incr Delay (d2), s/veh	2.0	0.0	0.5	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.3	0.7	1.8	0.4	0.1	0.6	0.1	0.9	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.4	10.3	8.7	27.0	16.7	15.5	18.6	0.0	13.9
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	435				556				111		261	
Approach Delay, s/veh	12.6				11.2				17.0		16.0	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.4	7.5	7.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	7.9	2.1	4.7	3.8	9.0	4.4	3.7				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.6	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	13.1											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	462	0	0	476	0	105
Future Vol, veh/h	462	0	0	476	0	105
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	537	0	0	553	0	122

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 538
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 543
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 542
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.56
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	542	-	-
HCM Lane V/C Ratio	0.225	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	478
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.54
Avg Ped Delay (s)	4.88

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	478
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.54
Avg Ped Delay (s)	4.88

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.6	24.0	9.1	4.8

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.0	31.3	27.5	22.9	27.1

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	1.6	11.1	8.6	2.5

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	0.1	0.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.5	0.3

Total Zone Performance

Stop Del/Veh (s)	446.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	192	124	215	77
Average Queue (ft)	33	18	78	33
95th Queue (ft)	123	76	164	62
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	314	94	315	114	380	169	334
Average Queue (ft)	77	151	63	134	91	197	69	166
95th Queue (ft)	128	285	109	281	135	384	147	295
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		4		7		1
Queuing Penalty (veh)		8		16		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	10	19	17	19	20	15	0	11
Queuing Penalty (veh)	30	21	44	18	83	23	2	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	119	97	89	83
Average Queue (ft)	11	12	30	32
95th Queue (ft)	61	62	67	66
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	1	0	0
Queuing Penalty (veh)	0	4	0	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB
Directions Served	T
Maximum Queue (ft)	58
Average Queue (ft)	4
95th Queue (ft)	35
Link Distance (ft)	280
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 259

Intersection

Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↔			↕			↕	
Traffic Vol, veh/h	29	323	17	27	309	45	8	26	18	53	23	41
Future Vol, veh/h	29	323	17	27	309	45	8	26	18	53	23	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	371	20	31	355	52	9	30	21	64	26	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.8	16.1	10	11
HCM LOS	C	C	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	45%
Vol Thru, %	50%	88%	81%	20%
Vol Right, %	35%	5%	12%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	369	381	117
LT Vol	8	29	27	53
Through Vol	26	323	309	23
RT Vol	18	17	45	41
Lane Flow Rate	60	424	438	137
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.606	0.619	0.232
Departure Headway (Hd)	6.231	5.145	5.087	6.078
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	700	709	590
Service Time	4.296	3.183	3.124	4.132
HCM Lane V/C Ratio	0.105	0.606	0.618	0.232
HCM Control Delay, s/veh	10	15.8	16.1	11
HCM Lane LOS	A	C	C	B
HCM 95th-tile Q	0.3	4.1	4.3	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	394	5	3	383	2	4
Future Vol, veh/h	394	5	3	383	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	6	3	440	2	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	468	0	912	465
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1094	-	304	598
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1085	-	300	592
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.17
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	447	-	-	1085	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	381	377	2	0	7
Future Vol, veh/h	7	381	377	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	443	438	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	444	0	0 902 445
Stage 1	-	-	- 443 -
Stage 2	-	-	- 459 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1116	-	- 308 613
Stage 1	-	-	- 647 -
Stage 2	-	-	- 636 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1113	-	- 304 610
Mov Cap-2 Maneuver	-	-	- 304 -
Stage 1	-	-	- 639 -
Stage 2	-	-	- 634 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	10.98
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	32	-	-	-	610
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	405	86	361	110	5	90	16	116	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Length 50th (ft)	10	118	27	70	0	2	28	0	36	24
Queue Length 95th (ft)	38	245	78	211	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1417	572	1168	987	613	1141	870	613	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14

Intersection Summary

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	350	3	75	314	96	4	78	14	101	70	57
Future Volume (veh/h)	27	350	3	75	314	96	4	78	14	101	70	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	402	3	86	361	110	5	90	16	116	80	66
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	65	581	4	139	642	536	12	192	154	165	181	149
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803
Grp Volume(v), veh/h	31	0	405	86	361	110	5	90	16	116	0	146
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45
Lane Grp Cap(c), veh/h	65	0	586	139	642	536	12	192	154	165	0	330
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.56	0.21	0.42	0.47	0.10	0.70	0.00	0.44
Avail Cap(c_a), veh/h	750	0	1841	750	1773	1481	750	1332	1069	750	0	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	11.6	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6
Incr Delay (d2), s/veh	2.0	0.0	0.6	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.5	10.3	8.7	27.1	16.7	15.5	18.6	0.0	13.9
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	436				557				111		262	
Approach Delay, s/veh	12.7				11.3				17.0		16.0	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.5	7.5	7.7				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.7	0.1	0.3				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.1									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	464	0	0	477	1	105
Future Vol, veh/h	464	0	0	477	1	105
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	540	0	0	555	1	122

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	1094	541
Stage 1	-	-	-	540	-
Stage 2	-	-	-	555	-
Critical Hdwy	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	237	541
Stage 1	-	0	0	584	-
Stage 2	-	0	0	575	-
Platoon blocked, %	-		-		
Mov Cap-1 Maneuver	-	-	-	237	541
Mov Cap-2 Maneuver	-	-	-	373	-
Stage 1	-	-	-	584	-
Stage 2	-	-	-	575	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.59
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	541	-	-
HCM Lane V/C Ratio	0.226	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.301
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	540
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	63.60
Avg Ped Delay (s)	4.85

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.85
Level of Service	A
Average Dissatisfaction Prob	0.301
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	540
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.71
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	63.60
Avg Ped Delay (s)	4.85

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.4	0.7	25.7	10.6	5.2

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	30.2	33.2	27.5	23.9	28.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.9	2.3	10.4	11.3	2.9

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	0.3	0.2

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.0	1.2	6.5	1.4

Total Zone Performance

Stop Del/Veh (s)	448.3

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	214	133	198	85
Average Queue (ft)	38	18	78	35
95th Queue (ft)	145	74	173	70
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	1		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	317	95	339	114	380	164	331
Average Queue (ft)	77	161	68	149	90	203	68	167
95th Queue (ft)	125	299	112	310	135	380	138	293
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		5		8		1
Queuing Penalty (veh)		9		24		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	11	25	22	20	21	17	1	11
Queuing Penalty (veh)	32	27	60	24	85	27	2	10

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	198	108	48	93
Average Queue (ft)	40	20	12	32
95th Queue (ft)	134	80	39	70
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		3		1
Queuing Penalty (veh)		11		1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	13
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB	SB
Directions Served	T	LR
Maximum Queue (ft)	98	91
Average Queue (ft)	8	36
95th Queue (ft)	60	69
Link Distance (ft)	280	90
Upstream Blk Time (%)	0	1
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 312

Intersection

Intersection Delay, s/veh 11

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	278	12	29	219	24	12	22	16	20	11	22
Future Vol, veh/h	31	278	12	29	219	24	12	22	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	323	14	34	255	28	14	26	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.8	10.9	9	9
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	44%	87%	81%	21%
Vol Right, %	32%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	321	272	53
LT Vol	12	31	29	20
Through Vol	22	278	219	11
RT Vol	16	12	24	22
Lane Flow Rate	58	373	316	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.477	0.407	0.092
Departure Headway (Hd)	5.433	4.604	4.638	5.398
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	780	772	658
Service Time	3.516	2.652	2.688	3.48
HCM Lane V/C Ratio	0.089	0.478	0.409	0.094
HCM Control Delay, s/veh	9	11.8	10.9	9
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.6	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	278	0	1
Future Vol, veh/h	314	3	5	278	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	305	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	672	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	421	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	415	682
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	313	285	5	1	2
Future Vol, veh/h	3	313	285	5	1	2
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	333	303	5	1	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	312	0	0 648 311
Stage 1	-	-	- - 309 -
Stage 2	-	-	- - 339 -
Critical Hdwy	4.12	-	- - 6.42 6.22
Critical Hdwy Stg 1	-	-	- - 5.42 -
Critical Hdwy Stg 2	-	-	- - 5.42 -
Follow-up Hdwy	2.218	-	- - 3.518 3.318
Pot Cap-1 Maneuver	1249	-	- - 435 729
Stage 1	-	-	- - 745 -
Stage 2	-	-	- - 721 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1245	-	- - 431 725
Mov Cap-2 Maneuver	-	-	- - 431 -
Stage 1	-	-	- - 740 -
Stage 2	-	-	- - 719 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.07	0	11.13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	17	-	-	-	591
HCM Lane V/C Ratio	0.003	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.9	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	76	261	77	13	66	11	90	151
v/c Ratio	0.13	0.35	0.26	0.30	0.10	0.05	0.19	0.03	0.28	0.27
Control Delay (s/veh)	25.4	16.6	24.0	13.7	3.9	26.0	23.9	0.2	23.5	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.4	16.6	24.0	13.7	3.9	26.0	23.9	0.2	23.5	15.2
Queue Length 50th (ft)	8	83	20	42	0	4	18	0	24	25
Queue Length 95th (ft)	34	178	62	138	20	19	56	0	70	90
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	695	1630	695	1344	1114	745	1411	1055	745	1331
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.11	0.19	0.07	0.02	0.05	0.01	0.12	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	67	230	68	11	58	10	79	86	47
Future Volume (veh/h)	27	286	2	67	230	68	11	58	10	79	86	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	76	261	77	12	66	11	90	98	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	522	3	134	577	481	28	169	136	150	183	99
Arrive On Green	0.04	0.27	0.27	0.08	0.31	0.31	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1547	1767	1930	1551	1767	1174	635
Grp Volume(v), veh/h	31	0	327	76	261	77	12	66	11	90	0	151
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1547	1767	1930	1551	1767	0	1808
Q Serve(g_s), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.6	0.0	2.6
Cycle Q Clear(g_c), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.6	0.0	2.6
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	66	0	526	134	577	481	28	169	136	150	0	283
V/C Ratio(X)	0.47	0.00	0.62	0.57	0.45	0.16	0.43	0.39	0.08	0.60	0.00	0.53
Avail Cap(c_a), veh/h	847	0	2079	847	2002	1669	847	1503	1209	847	0	1409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	10.6	14.9	9.2	8.3	16.3	14.4	14.0	14.7	0.0	13.0
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.4	0.2	0.1	3.9	0.6	0.1	1.4	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	0.2	0.0	1.6	0.5	1.1	0.3	0.1	0.4	0.1	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	0.0	11.1	16.3	9.4	8.4	20.1	14.9	14.1	16.2	0.0	13.5
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358			414			89			241		
Approach Delay, s/veh	11.7			10.5			15.5			14.5		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	14.4	4.5	9.2	6.5	13.1	6.8	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.6	3.4	7.0	3.6	3.1				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.2											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	373	0	0	360	0	116
Future Vol, veh/h	373	0	0	360	0	116
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	401	0	0	387	0	125
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	-	402
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	648
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	647
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Ctrl Dly, s/v	0		0		11.88	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1		EBT	WBT		
Capacity (veh/h)	647		-	-		
HCM Lane V/C Ratio	0.193		-	-		
HCM Ctrl Dly (s/v)	11.9		-	-		
HCM Lane LOS	B		-	-		
HCM 95th %tile Q(veh)	0.7		-	-		

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	32	318	123	7	216	9	103	8	35	6	8	62
Future Vol, veh/h	32	318	123	7	216	9	103	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	353	137	8	257	11	113	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	287	0	0	504	0	0	788	810	459	750	873	285
Stage 1	-	-	-	-	-	-	507	507	-	298	298	-
Stage 2	-	-	-	-	-	-	281	304	-	452	575	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1275	-	-	1061	-	-	309	314	602	328	288	754
Stage 1	-	-	-	-	-	-	548	539	-	711	667	-
Stage 2	-	-	-	-	-	-	726	663	-	587	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1252	-	-	1046	-	-	254	289	581	271	266	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	289	-	271	266	-
Stage 1	-	-	-	-	-	-	519	511	-	691	649	-
Stage 2	-	-	-	-	-	-	642	645	-	506	476	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	0.26	30.67	12.58
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	1252	-	-	54	-	-	558
HCM Lane V/C Ratio	0.542	0.028	-	-	0.008	-	-	0.15
HCM Ctrl Dly (s/v)	30.7	8	-	-	8.5	0	-	12.6
HCM Lane LOS	D	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/29/2025

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	302	53	174	106	356	64	431
v/c Ratio	0.52	0.61	0.33	0.51	0.44	0.55	0.34	0.71
Control Delay (s/veh)	46.9	33.2	48.3	35.7	44.7	25.6	46.1	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	33.2	48.3	35.7	44.7	25.6	46.1	32.8
Queue Length 50th (ft)	59	119	25	68	48	133	29	180
Queue Length 95th (ft)	153	263	81	173	135	295	93	392
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	412	1045	412	1077	669	1150	669	1143
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.29	0.13	0.16	0.16	0.31	0.10	0.38
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	139	115	47	103	52	95	291	30	61	374	35
Future Volume (veh/h)	110	139	115	47	103	52	95	291	30	61	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	165	137	53	116	58	106	323	33	64	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	231	192	88	238	119	138	514	53	98	466	44
Arrive On Green	0.10	0.26	0.26	0.05	0.21	0.21	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	905	751	1753	1133	567	1753	1451	148	1753	1406	132
Grp Volume(v), veh/h	131	0	302	53	0	174	106	0	356	64	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1656	1753	0	1700	1753	0	1600	1753	0	1537
Q Serve(g_s), s	4.1	0.0	9.3	1.7	0.0	5.1	3.3	0.0	10.4	2.0	0.0	14.6
Cycle Q Clear(g_c), s	4.1	0.0	9.3	1.7	0.0	5.1	3.3	0.0	10.4	2.0	0.0	14.6
Prop In Lane	1.00		0.45	1.00		0.33	1.00		0.09	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	423	88	0	357	138	0	566	98	0	510
V/C Ratio(X)	0.78	0.00	0.71	0.60	0.00	0.49	0.77	0.00	0.63	0.65	0.00	0.85
Avail Cap(c_a), veh/h	499	0	1354	499	0	1390	810	0	1308	810	0	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	19.1	26.2	0.0	19.6	25.4	0.0	15.1	26.0	0.0	17.5
Incr Delay (d2), s/veh	3.1	0.0	0.8	2.5	0.0	0.4	3.4	0.0	0.4	2.7	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.4	0.7	0.0	1.9	1.5	0.0	3.5	0.9	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.9	0.0	19.9	28.6	0.0	19.9	28.8	0.0	15.5	28.7	0.0	19.0
LnGrp LOS	C		B	C		B	C		B	C		B
Approach Vol, veh/h	433				227				462			
Approach Delay, s/veh	22.4				22.0				18.6			
Approach LOS	C				C				B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.9	6.8	18.4	8.4	22.7	9.4	15.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	4.0	12.4	3.7	11.3	5.3	16.6	6.1	7.1				
Green Ext Time (p_c), s	0.1	1.6	0.0	0.8	0.1	2.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh			20.6									
HCM 7th LOS			C									

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	185	15	4	156	12	20	6	3	4	7	34
Future Vol, veh/h	17	185	15	4	156	12	20	6	3	4	7	34
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	210	17	5	181	14	33	10	5	5	9	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	218	0	0	239	0	0	471	497	246	490	499	217
Stage 1	-	-	-	-	-	-	269	269	-	221	221	-
Stage 2	-	-	-	-	-	-	201	228	-	269	278	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1345	-	-	1322	-	-	502	473	791	487	472	820
Stage 1	-	-	-	-	-	-	734	685	-	779	719	-
Stage 2	-	-	-	-	-	-	798	714	-	735	679	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1316	-	-	1307	-	-	446	448	770	447	447	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	448	-	447	447	-
Stage 1	-	-	-	-	-	-	713	665	-	759	700	-
Stage 2	-	-	-	-	-	-	736	695	-	697	660	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.61			0.18			13.6			10.91		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	467	139	-	-	41	-	-	669				
HCM Lane V/C Ratio	0.104	0.015	-	-	0.004	-	-	0.09				
HCM Ctrl Dly (s/v)	13.6	7.8	0	-	7.8	0	-	10.9				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.3				

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Vol, veh/h	0	192	172	0	0	0
Future Vol, veh/h	0	192	172	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	223	200	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 423 200
Stage 1	-	-	- 200 -
Stage 2	-	-	- 223 -
Critical Hdwy	-	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	-	- 3.518 3.318
Pot Cap-1 Maneuver	0	-	0 587 841
Stage 1	0	-	0 834 -
Stage 2	0	-	0 814 -
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 587 841
Mov Cap-2 Maneuver	-	-	- 587 -
Stage 1	-	-	- 834 -
Stage 2	-	-	- 814 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Ctrl Dly (s/v)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/29/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	35	0	0	45
Future Volume (Veh/h)	0	0	35	0	0	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	47	0	0	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	107	47			47	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107	47			47	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	891	1022			1560	
Direction, Lane #	NB 1	SB 1				
Volume Total	47	60				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1560				
Volume to Capacity	0.03	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.68
Level of Service	A
Average Dissatisfaction Prob	0.281
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	341
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.55
Prob of Delayed Crossing	0.79
Delay for adq Gap (s)	30.39
Avg Ped Delay (s)	4.68

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.68
Level of Service	A
Average Dissatisfaction Prob	0.281
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	341
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.55
Prob of Delayed Crossing	0.79
Delay for adq Gap (s)	30.39
Avg Ped Delay (s)	4.68

Intersection

Intersection Delay, s/veh 11

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	278	12	30	219	24	12	22	16	20	11	22
Future Vol, veh/h	31	278	12	30	219	24	12	22	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	323	14	35	255	28	14	26	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.8	10.9	9.1	9
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	44%	87%	80%	21%
Vol Right, %	32%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	321	273	53
LT Vol	12	31	30	20
Through Vol	22	278	219	11
RT Vol	16	12	24	22
Lane Flow Rate	58	373	317	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.477	0.409	0.092
Departure Headway (Hd)	5.435	4.605	4.639	5.4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	780	771	658
Service Time	3.52	2.654	2.689	3.484
HCM Lane V/C Ratio	0.089	0.478	0.411	0.094
HCM Control Delay, s/veh	9.1	11.8	10.9	9
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.6	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	279	0	1
Future Vol, veh/h	314	3	5	279	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	307	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	673	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	420	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	414	682
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	313	286	5	1	2
Future Vol, veh/h	3	313	286	5	1	2
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	333	304	5	1	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	313	0	0 649 312
Stage 1	-	-	- 310 -
Stage 2	-	-	- 339 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1248	-	- 434 728
Stage 1	-	-	- 744 -
Stage 2	-	-	- 721 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1244	-	- 430 724
Mov Cap-2 Maneuver	-	-	- 430 -
Stage 1	-	-	- 739 -
Stage 2	-	-	- 719 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.08	0	11.13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	17	-	-	-	590
HCM Lane V/C Ratio	0.003	-	-	-	0.005
HCM Ctrl Dly (s/v)	7.9	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/29/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	76	263	77	13	66	11	91	151
v/c Ratio	0.13	0.35	0.26	0.30	0.10	0.05	0.19	0.03	0.28	0.27
Control Delay (s/veh)	25.5	16.6	24.0	13.8	3.9	26.1	23.9	0.2	23.6	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	25.5	16.6	24.0	13.8	3.9	26.1	23.9	0.2	23.6	15.2
Queue Length 50th (ft)	8	83	20	42	0	4	18	0	24	25
Queue Length 95th (ft)	34	178	62	140	20	19	56	0	70	90
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	695	1629	695	1344	1114	744	1411	1055	744	1330
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.20	0.11	0.20	0.07	0.02	0.05	0.01	0.12	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/29/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	286	2	67	231	68	11	58	10	80	86	47	
Future Volume (veh/h)	27	286	2	67	231	68	11	58	10	80	86	47	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	325	2	76	262	77	12	66	11	91	98	53	
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	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	66	522	3	134	577	481	28	169	136	151	184	100	
Arrive On Green	0.04	0.27	0.27	0.08	0.31	0.31	0.02	0.09	0.09	0.09	0.16	0.16	
Sat Flow, veh/h	1767	1916	12	1767	1856	1547	1767	1930	1551	1767	1174	635	
Grp Volume(v), veh/h	31	0	327	76	262	77	12	66	11	91	0	151	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1547	1767	1930	1551	1767	0	1808	
Q Serve(g_s), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.7	0.0	2.6	
Cycle Q Clear(g_c), s	0.6	0.0	5.0	1.4	3.8	1.2	0.2	1.1	0.2	1.7	0.0	2.6	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.35	
Lane Grp Cap(c), veh/h	66	0	525	134	577	481	28	169	136	151	0	284	
V/C Ratio(X)	0.47	0.00	0.62	0.57	0.45	0.16	0.43	0.39	0.08	0.60	0.00	0.53	
Avail Cap(c_a), veh/h	846	0	2077	846	2000	1667	846	1502	1208	846	0	1407	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	15.8	0.0	10.6	14.9	9.2	8.3	16.3	14.4	14.0	14.7	0.0	13.0	
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.4	0.2	0.1	3.9	0.6	0.1	1.4	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	0.2	0.0	1.6	0.5	1.1	0.3	0.1	0.4	0.1	0.6	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	17.7	0.0	11.1	16.3	9.4	8.4	20.2	15.0	14.1	16.2	0.0	13.5	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	358				415				89				242
Approach Delay, s/veh	11.7				10.5				15.6				14.5
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.2	14.4	4.5	9.2	6.5	13.1	6.9	6.9					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.6	3.4	7.0	3.7	3.1					
Green Ext Time (p_c), s	0.0	1.1	0.0	0.5	0.1	1.3	0.1	0.2					
Intersection Summary													
HCM 7th Control Delay, s/veh			12.2										
HCM 7th LOS			B										

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	374	0	0	361	0	116
Future Vol, veh/h	374	0	0	361	0	116
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	402	0	0	388	0	125
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	403
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	647
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	646
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		11.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	646	-	-			
HCM Lane V/C Ratio	0.193	-	-			
HCM Ctrl Dly (s/v)	11.9	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.7	-	-			

Intersection

Int Delay, s/veh 6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	319	123	6	217	9	103	8	35	6	8	62
Future Vol, veh/h	32	319	123	6	217	9	103	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	354	137	7	258	11	113	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	288	0	0	505	0	0	788	810	460	750	873	286
Stage 1	-	-	-	-	-	-	508	508	-	297	297	-
Stage 2	-	-	-	-	-	-	280	302	-	453	576	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1274	-	-	1060	-	-	309	314	601	328	288	753
Stage 1	-	-	-	-	-	-	547	539	-	712	668	-
Stage 2	-	-	-	-	-	-	727	664	-	586	502	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1251	-	-	1045	-	-	254	290	580	272	266	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	254	290	-	272	266	-
Stage 1	-	-	-	-	-	-	519	510	-	693	650	-
Stage 2	-	-	-	-	-	-	644	647	-	505	476	-

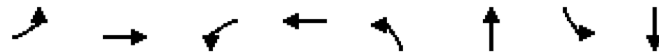
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.54	0.22	30.63	12.58
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	296	1251	-	-	46	-	-	558
HCM Lane V/C Ratio	0.542	0.028	-	-	0.007	-	-	0.15
HCM Ctrl Dly (s/v)	30.6	8	-	-	8.5	0	-	12.6
HCM Lane LOS	D	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/29/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	304	56	174	106	359	65	431
v/c Ratio	0.53	0.61	0.34	0.51	0.44	0.55	0.34	0.71
Control Delay (s/veh)	47.3	33.6	48.7	35.5	45.2	26.1	46.5	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.3	33.6	48.7	35.5	45.2	26.1	46.5	33.1
Queue Length 50th (ft)	60	121	26	68	48	136	30	182
Queue Length 95th (ft)	154	268	85	174	137	301	95	397
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	409	1040	409	1072	666	1143	666	1137
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.29	0.14	0.16	0.16	0.31	0.10	0.38
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/29/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	140	115	50	103	52	95	291	32	62	374	35
Future Volume (veh/h)	110	140	115	50	103	52	95	291	32	62	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	167	137	56	116	58	106	323	36	65	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	233	191	91	241	120	138	508	57	99	466	44
Arrive On Green	0.10	0.26	0.26	0.05	0.21	0.21	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	910	747	1753	1134	567	1753	1437	160	1753	1406	132
Grp Volume(v), veh/h	131	0	304	56	0	174	106	0	359	65	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1657	1753	0	1700	1753	0	1597	1753	0	1537
Q Serve(g_s), s	4.1	0.0	9.5	1.8	0.0	5.1	3.4	0.0	10.6	2.1	0.0	14.7
Cycle Q Clear(g_c), s	4.1	0.0	9.5	1.8	0.0	5.1	3.4	0.0	10.6	2.1	0.0	14.7
Prop In Lane	1.00		0.45	1.00		0.33	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	424	91	0	361	138	0	564	99	0	509
V/C Ratio(X)	0.78	0.00	0.72	0.62	0.00	0.48	0.77	0.00	0.64	0.66	0.00	0.85
Avail Cap(c_a), veh/h	495	0	1347	495	0	1382	805	0	1298	805	0	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	19.2	26.3	0.0	19.6	25.6	0.0	15.3	26.2	0.0	17.6
Incr Delay (d2), s/veh	3.1	0.0	0.9	2.5	0.0	0.4	3.4	0.0	0.4	2.7	0.0	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.5	0.8	0.0	1.9	1.5	0.0	3.6	0.9	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.1	0.0	20.1	28.8	0.0	19.9	29.0	0.0	15.7	28.9	0.0	19.1
LnGrp LOS	C		C	C		B	C		B	C		B
Approach Vol, veh/h	435			230			465			496		
Approach Delay, s/veh	22.5			22.1			18.7			20.4		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	24.0	6.9	18.5	8.4	22.8	9.4	16.0				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	4.1	12.6	3.8	11.5	5.4	16.7	6.1	7.1				
Green Ext Time (p_c), s	0.1	1.6	0.0	0.8	0.1	2.0	0.0	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.7											
HCM 7th LOS	C											

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	24	185	12	5	164	14	15	5	2	4	7	34
Future Vol, veh/h	24	185	12	5	164	14	15	5	2	4	7	34
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	210	14	6	191	16	25	8	3	5	9	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	236	0	0	497	525	244	517	524	228
Stage 1	-	-	-	-	-	-	284	284	-	233	233	-
Stage 2	-	-	-	-	-	-	213	242	-	284	290	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1332	-	-	1325	-	-	482	456	792	467	457	809
Stage 1	-	-	-	-	-	-	721	675	-	767	710	-
Stage 2	-	-	-	-	-	-	787	704	-	721	670	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1303	-	-	1310	-	-	425	428	772	427	429	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	425	428	-	427	429	-
Stage 1	-	-	-	-	-	-	696	651	-	747	691	-
Stage 2	-	-	-	-	-	-	724	685	-	682	647	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.85	0.21	13.85	11.07
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	193	-	-	48	-	-	653
HCM Lane V/C Ratio	0.083	0.021	-	-	0.004	-	-	0.092
HCM Ctrl Dly (s/v)	13.8	7.8	0	-	7.8	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 0 191 173 0 1 10

Future Vol, veh/h 0 191 173 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 222 201 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 423 201

Stage 1 - - - - 201 -

Stage 2 - - - - 222 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 587 840

Stage 1 0 - - 0 833 -

Stage 2 0 - - 0 815 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 587 840

Mov Cap-2 Maneuver - - - - 587 -

Stage 1 - - - - 833 -

Stage 2 - - - - 815 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 9.53

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 808

HCM Lane V/C Ratio - - 0.016

HCM Ctrl Dly (s/v) - - 9.5

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/29/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↔			↔
Traffic Volume (veh/h)	0	0	35	8	1	45
Future Volume (Veh/h)	0	0	35	8	1	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	47	11	1	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	115	53			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115	53			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	881	1015			1546	
Direction, Lane #	NB 1	SB 1				
Volume Total	58	61				
Volume Left	0	1				
Volume Right	11	0				
cSH	1700	1546				
Volume to Capacity	0.03	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.1				
Lane LOS		A				
Approach Delay (s/veh)	0.0	0.1				
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.70
Level of Service	A
Average Dissatisfaction Prob	0.282
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	349
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.56
Prob of Delayed Crossing	0.80
Delay for adq Gap (s)	31.31
Avg Ped Delay (s)	4.70

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.70
Level of Service	A
Average Dissatisfaction Prob	0.282
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	349
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.56
Prob of Delayed Crossing	0.80
Delay for adq Gap (s)	31.31
Avg Ped Delay (s)	4.70

Intersection

Intersection Delay, s/veh 14.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↗			↕			↕
Traffic Vol, veh/h	37	254	11	1	10	279	63	18	38	25	43	27
Future Vol, veh/h	37	254	11	1	10	279	63	18	38	25	43	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	306	13	1	12	336	76	22	46	30	52	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.4	15.8	10.4	11
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	35%
Vol Thru, %	47%	84%	79%	22%
Vol Right, %	31%	4%	18%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	302	353	122
LT Vol	18	37	10	43
Through Vol	38	254	280	27
RT Vol	25	11	63	52
Lane Flow Rate	98	364	425	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.166	0.536	0.606	0.244
Departure Headway (Hd)	6.135	5.303	5.126	5.969
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	677	702	600
Service Time	4.206	3.349	3.17	4.032
HCM Lane V/C Ratio	0.168	0.538	0.605	0.245
HCM Control Delay, s/veh	10.4	14.4	15.8	11
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.2	4.1	1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement **SBR**

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	319	4	1	3	352	1	4
Future Vol, veh/h	319	4	1	3	352	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	399	5	1	4	440	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	413
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1146
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.83
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	534	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	322	350	1	5	6
Future Vol, veh/h	2	322	350	1	5	6
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	398	432	1	6	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	436	0	-	0	838	438
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1123	-	-	-	336	619
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1120	-	-	-	333	616
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	673	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.05	0		13.35		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	11	-	-	-	445	
HCM Lane V/C Ratio	0.002	-	-	-	0.031	
HCM Ctrl Dly (s/v)	8.2	0	-	-	13.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	362	145	386	115	8	55	13	100	128
v/c Ratio	0.13	0.40	0.43	0.38	0.13	0.04	0.19	0.05	0.34	0.25
Control Delay (s/veh)	29.8	19.4	27.2	13.4	3.8	30.3	28.5	0.3	28.0	19.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	29.8	19.4	27.2	13.4	3.8	30.3	28.5	0.3	28.0	19.2
Queue Length 50th (ft)	8	104	43	70	0	3	17	0	30	27
Queue Length 95th (ft)	33	207	104	196	24	16	53	0	80	87
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	593	1508	593	1248	1049	635	1211	918	635	1175
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.24	0.24	0.31	0.11	0.01	0.05	0.01	0.16	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	296	8	122	324	97	7	46	11	84	87	20
Future Volume (veh/h)	23	296	8	122	324	97	7	46	11	84	87	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	27	352	10	145	386	115	8	55	13	100	104	24
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	532	15	188	666	556	19	153	123	155	236	55
Arrive On Green	0.03	0.29	0.29	0.11	0.36	0.36	0.01	0.08	0.08	0.09	0.16	0.16
Sat Flow, veh/h	1767	1866	53	1767	1856	1551	1767	1930	1550	1767	1514	349
Grp Volume(v), veh/h	27	0	362	145	386	115	8	55	13	100	0	128
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1551	1767	1930	1550	1767	0	1863
Q Serve(g_s), s	0.5	0.0	6.0	2.9	6.1	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Cycle Q Clear(g_c), s	0.5	0.0	6.0	2.9	6.1	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	58	0	547	188	666	556	19	153	123	155	0	291
V/C Ratio(X)	0.47	0.00	0.66	0.77	0.58	0.21	0.42	0.36	0.11	0.65	0.00	0.44
Avail Cap(c_a), veh/h	780	0	1906	780	1843	1540	780	1384	1112	780	0	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	11.4	15.8	9.4	8.0	17.8	15.8	15.5	16.0	0.0	13.9
Incr Delay (d2), s/veh	2.1	0.0	0.5	2.5	0.3	0.1	5.5	0.5	0.1	1.7	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	1.1	1.8	0.4	0.1	0.4	0.1	0.7	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.4	0.0	11.9	18.3	9.7	8.1	23.3	16.3	15.6	17.7	0.0	14.2
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	389			646			76			228		
Approach Delay, s/veh	12.4			11.3			17.0			15.8		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	17.0	4.4	9.7	7.9	14.3	7.2	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.5	8.1	2.2	4.3	4.9	8.0	4.0	3.0				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.4	0.1	1.5	0.1	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.7											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	391	0	0	543	0	85
Future Vol, veh/h	391	0	0	543	0	85
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	471	0	0	654	0	102

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 472
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 592
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 591
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.36
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	591	-	-
HCM Lane V/C Ratio	0.173	-	-
HCM Ctrl Dly (s/v)	12.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.82
Level of Service	A
Average Dissatisfaction Prob	0.304
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	568
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.73
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	70.56
Avg Ped Delay (s)	4.82

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.82
Level of Service	A
Average Dissatisfaction Prob	0.304
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	568
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.73
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	70.56
Avg Ped Delay (s)	4.82

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.8	0.5	24.5	12.1	3.9

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	27.6	35.7	31.3	24.7	30.1

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.4	3.4	9.6	13.9	3.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	2.8	2.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	3.2	1.6

Total Zone Performance

Stop Del/Veh (s)	636.0

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	193	137	230	35
Average Queue (ft)	29	20	72	9
95th Queue (ft)	106	80	164	32
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	303	95	333	115	400	169	343
Average Queue (ft)	56	144	60	177	103	279	74	150
95th Queue (ft)	116	259	111	330	135	438	150	280
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		8		17		1
Queuing Penalty (veh)		2		36		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	4	22	15	31	34	23	1	9
Queuing Penalty (veh)	13	14	50	26	163	42	4	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	88	115	50	95
Average Queue (ft)	11	21	19	41
95th Queue (ft)	51	88	47	80
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		4		2
Queuing Penalty (veh)		14		2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	30
Average Queue (ft)	3
95th Queue (ft)	29
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	142
Average Queue (ft)	0	18
95th Queue (ft)	5	116
Link Distance (ft)	116	280
Upstream Blk Time (%)		1
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 377

Intersection

Intersection Delay, s/veh 14.3

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	37	257	11	1	11	282	62	18	38	26	44	27
Future Vol, veh/h	37	257	11	1	11	282	62	18	38	26	44	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	310	13	1	13	340	75	22	46	31	53	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.6	16.1	10.5	11
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	36%
Vol Thru, %	46%	84%	79%	22%
Vol Right, %	32%	4%	17%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	305	356	123
LT Vol	18	37	11	44
Through Vol	38	257	283	27
RT Vol	26	11	62	52
Lane Flow Rate	99	367	429	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.169	0.543	0.613	0.247
Departure Headway (Hd)	6.159	5.321	5.148	5.999
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	579	676	699	596
Service Time	4.23	3.37	3.194	4.065
HCM Lane V/C Ratio	0.171	0.543	0.614	0.248
HCM Control Delay, s/veh	10.5	14.6	16.1	11
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.3	4.2	1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement SBR

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	324	4	1	3	355	1	4
Future Vol, veh/h	324	4	1	3	355	1	4
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	405	5	1	4	444	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	419
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1140
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	528	-	-	+	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 327 353 1 5 6

Future Vol, veh/h 2 327 353 1 5 6

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 404 436 1 6 7

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 440 0 - 0 848 441

Stage 1 - - - - 439 -

Stage 2 - - - - 409 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1120 - - - 332 616

Stage 1 - - - - 650 -

Stage 2 - - - - 671 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1117 - - - 329 613

Mov Cap-2 Maneuver - - - - 329 -

Stage 1 - - - - 646 -

Stage 2 - - - - 669 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 13.44

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 11 - - - 440

HCM Lane V/C Ratio 0.002 - - - 0.031

HCM Ctrl Dly (s/v) 8.2 0 - - 13.4

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	368	145	389	117	8	55	13	101	128
v/c Ratio	0.13	0.41	0.44	0.38	0.13	0.04	0.19	0.05	0.34	0.25
Control Delay (s/veh)	30.0	19.4	27.4	13.4	3.7	30.4	28.7	0.3	28.2	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.0	19.4	27.4	13.4	3.7	30.4	28.7	0.3	28.2	19.3
Queue Length 50th (ft)	8	106	44	71	0	3	17	0	31	27
Queue Length 95th (ft)	33	211	105	198	24	16	53	0	81	87
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	590	1502	590	1243	1045	632	1206	915	632	1171
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.25	0.25	0.31	0.11	0.01	0.05	0.01	0.16	0.11
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	301	8	122	327	98	7	46	11	85	87	20
Future Volume (veh/h)	23	301	8	122	327	98	7	46	11	85	87	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	27	358	10	145	389	117	8	55	13	101	104	24
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	58	537	15	188	671	561	19	153	123	155	237	55
Arrive On Green	0.03	0.29	0.29	0.11	0.36	0.36	0.01	0.08	0.08	0.09	0.16	0.16
Sat Flow, veh/h	1767	1867	52	1767	1856	1551	1767	1930	1550	1767	1514	349
Grp Volume(v), veh/h	27	0	368	145	389	117	8	55	13	101	0	128
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1551	1767	1930	1550	1767	0	1863
Q Serve(g_s), s	0.5	0.0	6.2	2.9	6.2	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Cycle Q Clear(g_c), s	0.5	0.0	6.2	2.9	6.2	1.9	0.2	1.0	0.3	2.0	0.0	2.3
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	58	0	552	188	671	561	19	153	123	155	0	291
V/C Ratio(X)	0.47	0.00	0.67	0.77	0.58	0.21	0.42	0.36	0.11	0.65	0.00	0.44
Avail Cap(c_a), veh/h	775	0	1894	775	1831	1531	775	1376	1105	775	0	1328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.4	15.9	9.4	8.0	17.9	15.9	15.6	16.1	0.0	13.9
Incr Delay (d2), s/veh	2.2	0.0	0.5	2.5	0.3	0.1	5.5	0.5	0.1	1.7	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	1.1	1.8	0.4	0.1	0.4	0.1	0.8	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.5	0.0	12.0	18.4	9.7	8.1	23.5	16.4	15.7	17.8	0.0	14.3
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	395			651			76			229		
Approach Delay, s/veh	12.5			11.3			17.1			15.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	17.2	4.4	9.7	7.9	14.5	7.2	6.9				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.5	8.2	2.2	4.3	4.9	8.2	4.0	3.0				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.4	0.1	1.5	0.1	0.1				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.8											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	397	0	0	547	0	86
Future Vol, veh/h	397	0	0	547	0	86
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	478	0	0	659	0	104

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 479
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 586
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 586
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.46
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	586	-	-
HCM Lane V/C Ratio	0.177	-	-
HCM Ctrl Dly (s/v)	12.5	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.80
Level of Service	A
Average Dissatisfaction Prob	0.306
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	585
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.74
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	75.15
Avg Ped Delay (s)	4.80

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.80
Level of Service	A
Average Dissatisfaction Prob	0.306
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	585
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.74
Prob of Delayed Crossing	0.93
Delay for adq Gap (s)	75.15
Avg Ped Delay (s)	4.80

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.4	19.3	11.2	3.4

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	31.8	38.9	35.7	25.1	33.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.8	4.0	27.5	16.6	5.2

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	2.8	1.8

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.4	4.5	1.9

Total Zone Performance

Stop Del/Veh (s)	689.2

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	196	124	183	40
Average Queue (ft)	34	21	68	10
95th Queue (ft)	124	83	141	35
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	321	94	346	115	396	168	332
Average Queue (ft)	59	158	74	202	104	305	83	148
95th Queue (ft)	120	284	114	354	134	450	160	271
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		9		24		1
Queuing Penalty (veh)		5		44		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	3	26	27	34	38	24	1	9
Queuing Penalty (veh)	10	17	85	33	186	44	4	11

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	202	134	82	106
Average Queue (ft)	32	32	25	43
95th Queue (ft)	126	110	71	86
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	6	1	3
Queuing Penalty (veh)	0	24	0	3
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	43
Average Queue (ft)	3
95th Queue (ft)	35
Link Distance (ft)	207
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	27	211	45
Average Queue (ft)	1	26	15
95th Queue (ft)	20	139	42
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 467

Intersection

Intersection Delay, s/veh 15.2

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↔			↕			↕	
Traffic Vol, veh/h	30	322	17	27	316	44	8	26	18	53	23	44
Future Vol, veh/h	30	322	17	27	316	44	8	26	18	53	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	370	20	31	363	51	9	30	21	64	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16	16.5	10.1	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	44%
Vol Thru, %	50%	87%	82%	19%
Vol Right, %	35%	5%	11%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	369	387	120
LT Vol	8	30	27	53
Through Vol	26	322	316	23
RT Vol	18	17	44	44
Lane Flow Rate	60	424	445	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.609	0.631	0.238
Departure Headway (Hd)	6.266	5.17	5.106	6.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	696	707	587
Service Time	4.333	3.211	3.145	4.147
HCM Lane V/C Ratio	0.105	0.609	0.629	0.24
HCM Control Delay, s/veh	10.1	16	16.5	11.1
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.3	4.2	4.5	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	385	2	4
Future Vol, veh/h	393	5	3	385	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	443	2	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	466
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1095
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1086
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.17
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	447	-	-	1086	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	380	379	2	0	7
Future Vol, veh/h	7	380	379	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	442	441	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	446	0	0 903 447
Stage 1	-	-	- 445 -
Stage 2	-	-	- 458 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1114	-	- 308 612
Stage 1	-	-	- 646 -
Stage 2	-	-	- 637 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1111	-	- 303 608
Mov Cap-2 Maneuver	-	-	- 303 -
Stage 1	-	-	- 638 -
Stage 2	-	-	- 635 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	33	-	-	-	608
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	404	86	363	111	5	90	16	115	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.6	20.2	29.8	15.6	4.3	31.5	29.1	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	20.2	29.8	15.6	4.3	31.5	29.1	0.4	29.2	15.2
Queue Length 50th (ft)	10	117	26	70	0	2	28	0	35	24
Queue Length 95th (ft)	38	245	78	212	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1419	572	1171	989	613	1143	871	613	1067
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.28	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	349	3	75	316	97	4	78	14	100	70	57	
Future Volume (veh/h)	27	349	3	75	316	97	4	78	14	100	70	57	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	401	3	86	363	111	5	90	16	115	80	66	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	65	581	4	139	641	536	12	192	154	164	181	149	
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19	
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803	
Grp Volume(v), veh/h	31	0	404	86	363	111	5	90	16	115	0	146	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777	
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45	
Lane Grp Cap(c), veh/h	65	0	585	139	641	536	12	192	154	164	0	330	
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.57	0.21	0.42	0.47	0.10	0.70	0.00	0.44	
Avail Cap(c_a), veh/h	752	0	1844	752	1775	1483	752	1334	1070	752	0	1228	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.8	0.0	11.5	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6	
Incr Delay (d2), s/veh	2.0	0.0	0.5	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.3	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.4	10.3	8.7	27.0	16.7	15.5	18.6	0.0	13.9	
LnGrp LOS	B		B	B	B	A	C	B	B	B		B	
Approach Vol, veh/h	435				560				111				261
Approach Delay, s/veh	12.6				11.2				17.0				16.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.4	7.5	7.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7					
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.6	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh			13.1										
HCM 7th LOS			B										

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	462	0	0	480	0	109
Future Vol, veh/h	462	0	0	480	0	109
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	537	0	0	558	0	127

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 538
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 543
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 542
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.65
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	542	-	-
HCM Lane V/C Ratio	0.234	-	-
HCM Ctrl Dly (s/v)	13.6	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.296
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	493
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.68
Prob of Delayed Crossing	0.90
Delay for adq Gap (s)	53.43
Avg Ped Delay (s)	4.88

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.296
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	493
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.68
Prob of Delayed Crossing	0.90
Delay for adq Gap (s)	53.43
Avg Ped Delay (s)	4.88

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.0	0.6	17.0	7.8	3.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	28.8	30.4	28.0	22.0	27.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.3	0.8	9.6	6.4	1.8

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.0	0.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.0	0.3	0.1

Total Zone Performance

Stop Del/Veh (s)	398.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	189	116	160	70
Average Queue (ft)	32	13	66	32
95th Queue (ft)	121	61	132	60
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	314	94	324	114	387	166	327
Average Queue (ft)	77	149	64	130	92	201	71	164
95th Queue (ft)	126	277	106	264	136	387	149	289
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		2		10		1
Queuing Penalty (veh)		7		9		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	10	21	16	21	20	15	0	11
Queuing Penalty (veh)	28	23	41	20	85	24	2	9

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	80	96	86	80
Average Queue (ft)	9	9	31	31
95th Queue (ft)	46	50	67	61
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)		1		0
Queuing Penalty (veh)		2		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	10
Average Queue (ft)	0
95th Queue (ft)	8
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	47
Average Queue (ft)	0	3
95th Queue (ft)	5	32
Link Distance (ft)	116	280
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 251

Intersection

Intersection Delay, s/veh 15.3

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	323	17	27	316	45	8	26	18	53	23	44
Future Vol, veh/h	30	323	17	27	316	45	8	26	18	53	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	371	20	31	363	52	9	30	21	64	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.1	16.6	10.1	11.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	8%	7%	44%
Vol Thru, %	50%	87%	81%	19%
Vol Right, %	35%	5%	12%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	370	388	120
LT Vol	8	30	27	53
Through Vol	26	323	316	23
RT Vol	18	17	45	44
Lane Flow Rate	60	425	446	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.104	0.611	0.633	0.239
Departure Headway (Hd)	6.273	5.174	5.109	6.097
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	568	697	705	587
Service Time	4.342	3.215	3.148	4.153
HCM Lane V/C Ratio	0.106	0.61	0.633	0.24
HCM Control Delay, s/veh	10.1	16.1	16.6	11.1
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.3	4.2	4.5	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	394	5	3	386	2	4
Future Vol, veh/h	394	5	3	386	2	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	6	3	444	2	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	468
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1094
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1085
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	13.19
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	446	-	-	1085	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Ctrl Dly (s/v)	13.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	381	380	2	0	7
Future Vol, veh/h	7	381	380	2	0	7
Conflicting Peds, #/hr	3	0	0	3	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	443	442	2	0	8

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	447	0	0 905 448
Stage 1	-	-	- 446 -
Stage 2	-	-	- 459 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1113	-	- 307 611
Stage 1	-	-	- 645 -
Stage 2	-	-	- 636 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1110	-	- 302 607
Mov Cap-2 Maneuver	-	-	- 302 -
Stage 1	-	-	- 637 -
Stage 2	-	-	- 634 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.15	0	11.01
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	32	-	-	-	607
HCM Lane V/C Ratio	0.007	-	-	-	0.013
HCM Ctrl Dly (s/v)	8.3	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	405	86	364	111	5	90	16	116	146
v/c Ratio	0.15	0.44	0.33	0.39	0.14	0.03	0.29	0.05	0.38	0.24
Control Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.7	20.2	29.8	15.6	4.3	31.5	29.2	0.4	29.2	15.2
Queue Length 50th (ft)	10	118	27	71	0	2	28	0	36	24
Queue Length 95th (ft)	38	245	78	212	28	13	81	0	96	88
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	572	1417	572	1168	988	613	1141	870	613	1066
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.29	0.15	0.31	0.11	0.01	0.08	0.02	0.19	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	27	350	3	75	317	97	4	78	14	101	70	57	
Future Volume (veh/h)	27	350	3	75	317	97	4	78	14	101	70	57	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	31	402	3	86	364	111	5	90	16	116	80	66	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	65	581	4	139	642	536	12	192	154	165	181	149	
Arrive On Green	0.04	0.30	0.30	0.08	0.35	0.35	0.01	0.10	0.10	0.09	0.19	0.19	
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1549	1767	974	803	
Grp Volume(v), veh/h	31	0	405	86	364	111	5	90	16	116	0	146	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1549	1767	0	1777	
Q Serve(g_s), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Cycle Q Clear(g_c), s	0.6	0.0	7.0	1.8	6.0	1.9	0.1	1.7	0.4	2.4	0.0	2.7	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.45	
Lane Grp Cap(c), veh/h	65	0	586	139	642	536	12	192	154	165	0	330	
V/C Ratio(X)	0.48	0.00	0.69	0.62	0.57	0.21	0.42	0.47	0.10	0.70	0.00	0.44	
Avail Cap(c_a), veh/h	750	0	1841	750	1773	1481	750	1332	1069	750	0	1226	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.8	0.0	11.6	16.8	10.0	8.7	18.6	16.0	15.4	16.6	0.0	13.6	
Incr Delay (d2), s/veh	2.0	0.0	0.6	1.7	0.3	0.1	8.4	0.7	0.1	2.0	0.0	0.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	0.7	1.8	0.5	0.1	0.6	0.1	0.9	0.0	0.9	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.8	0.0	12.1	18.5	10.3	8.8	27.1	16.7	15.5	18.6	0.0	13.9	
LnGrp LOS	B		B	B	B	A	C	B	B	B		B	
Approach Vol, veh/h	436				561				111				262
Approach Delay, s/veh	12.7				11.3				17.0				16.0
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	17.0	4.3	11.0	7.0	15.5	7.5	7.7					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	8.0	2.1	4.7	3.8	9.0	4.4	3.7					
Green Ext Time (p_c), s	0.0	1.6	0.0	0.5	0.1	1.7	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh	13.1												
HCM 7th LOS	B												

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	464	0	0	481	0	109
Future Vol, veh/h	464	0	0	481	0	109
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	540	0	0	559	0	127

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 541
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 541
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 541
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	541	-	-
HCM Lane V/C Ratio	0.234	-	-
HCM Ctrl Dly (s/v)	13.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.9	-	-

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.83
Level of Service	A
Average Dissatisfaction Prob	0.303
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	555
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	67.24
Avg Ped Delay (s)	4.83

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.83
Level of Service	A
Average Dissatisfaction Prob	0.303
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	555
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.72
Prob of Delayed Crossing	0.92
Delay for adq Gap (s)	67.24
Avg Ped Delay (s)	4.83

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.1	0.8	19.3	9.6	4.1

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	29.7	38.5	31.7	23.7	30.7

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	3.2	5.2	9.5	17.0	5.3

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	1.6	0.8

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	3.2	6.6	2.2

Total Zone Performance

Stop Del/Veh (s)	466.8

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	190	4	143	170	85
Average Queue (ft)	33	0	22	71	33
95th Queue (ft)	138	5	93	140	69
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	0	0	0		
Queuing Penalty (veh)	2	0	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	325	94	337	114	392	170	344
Average Queue (ft)	79	160	72	165	94	221	77	170
95th Queue (ft)	127	292	111	337	139	405	160	307
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		10		14		1
Queuing Penalty (veh)		8		44		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	12	22	26	22	23	20	0	12
Queuing Penalty (veh)	35	23	72	27	98	32	1	11

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	232	144	49	103
Average Queue (ft)	43	31	12	35
95th Queue (ft)	149	116	40	76
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	7		2
Queuing Penalty (veh)	1	28		2
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	32
Average Queue (ft)	3
95th Queue (ft)	27
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	17	189	82
Average Queue (ft)	1	18	35
95th Queue (ft)	14	104	65
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 384

Intersection

Intersection Delay, s/veh 11.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	278	12	29	219	25	12	23	16	20	11	22
Future Vol, veh/h	34	278	12	29	219	25	12	23	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	34	255	29	14	27	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	10.9	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	45%	86%	80%	21%
Vol Right, %	31%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	273	53
LT Vol	12	34	29	20
Through Vol	23	278	219	11
RT Vol	16	12	25	22
Lane Flow Rate	59	377	317	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.482	0.409	0.093
Departure Headway (Hd)	5.449	4.61	4.642	5.412
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	652	776	771	656
Service Time	3.533	2.662	2.697	3.495
HCM Lane V/C Ratio	0.09	0.486	0.411	0.095
HCM Control Delay, s/veh	9.1	11.9	10.9	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	278	0	1
Future Vol, veh/h	314	3	5	278	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	305	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	672	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	421	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	415	682
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 313 285 5 1 2

Future Vol, veh/h 3 313 285 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 333 303 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 312 0 - 0 648 311

Stage 1 - - - - 309 -

Stage 2 - - - - 339 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1249 - - - 435 729

Stage 1 - - - - 745 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1245 - - - 431 725

Mov Cap-2 Maneuver - - - - 431 -

Stage 1 - - - - 740 -

Stage 2 - - - - 719 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.07 0 11.13

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 591

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	98	261	82	13	74	14	90	164
v/c Ratio	0.14	0.38	0.35	0.29	0.10	0.06	0.24	0.05	0.31	0.27
Control Delay (s/veh)	27.1	19.1	26.4	13.9	4.1	27.5	26.0	0.3	26.2	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	19.1	26.4	13.9	4.1	27.5	26.0	0.3	26.2	16.3
Queue Length 50th (ft)	9	86	27	43	0	4	21	0	25	29
Queue Length 95th (ft)	35	187	77	140	22	20	64	0	73	102
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	607	1514	607	1249	1042	650	1211	918	650	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.16	0.21	0.08	0.02	0.06	0.02	0.14	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	86	230	72	11	65	12	79	98	47
Future Volume (veh/h)	27	286	2	86	230	72	11	65	12	79	98	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	98	261	82	12	74	14	90	111	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	517	3	156	596	497	28	180	145	148	199	95
Arrive On Green	0.04	0.27	0.27	0.09	0.32	0.32	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1551	1767	1230	587
Grp Volume(v), veh/h	31	0	327	98	261	82	12	74	14	90	0	164
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1551	1767	0	1818
Q Serve(g_s), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Cycle Q Clear(g_c), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	66	0	520	156	596	497	28	180	145	148	0	293
V/C Ratio(X)	0.47	0.00	0.63	0.63	0.44	0.17	0.43	0.41	0.10	0.61	0.00	0.56
Avail Cap(c_a), veh/h	821	0	2015	821	1940	1618	821	1457	1171	821	0	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	0.0	11.1	15.2	9.2	8.4	16.8	14.7	14.3	15.2	0.0	13.3
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.5	0.2	0.1	3.9	0.6	0.1	1.5	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	0.2	0.0	1.7	0.7	1.1	0.3	0.1	0.5	0.1	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	0.0	11.5	16.7	9.4	8.4	20.7	15.3	14.4	16.7	0.0	13.9
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358				441				100		254	
Approach Delay, s/veh	12.1				10.9				15.8		14.9	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	15.1	4.5	9.6	7.0	13.3	6.9	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.9	3.8	7.1	3.7	3.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.6	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	375	0	0	383	0	127
Future Vol, veh/h	375	0	0	383	0	127
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	403	0	0	412	0	137
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	-	-	-	-	404
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	646
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	646
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		NB		
HCM Ctrl Dly, s/v	0	0		12.07		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	WBT			
Capacity (veh/h)	646	-	-			
HCM Lane V/C Ratio	0.212	-	-			
HCM Ctrl Dly (s/v)	12.1	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.8	-	-			

Intersection

Int Delay, s/veh 6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	329	125	7	232	9	109	8	35	6	8	62
Future Vol, veh/h	32	329	125	7	232	9	109	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	366	139	8	276	11	120	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	306	0	0	518	0	0	820	843	472	781	907	304
Stage 1	-	-	-	-	-	-	520	520	-	317	317	-
Stage 2	-	-	-	-	-	-	300	323	-	464	590	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1255	-	-	1048	-	-	294	300	592	312	276	736
Stage 1	-	-	-	-	-	-	539	532	-	694	654	-
Stage 2	-	-	-	-	-	-	709	651	-	578	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1232	-	-	1034	-	-	240	277	571	257	254	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	277	-	257	254	-
Stage 1	-	-	-	-	-	-	510	503	-	675	636	-
Stage 2	-	-	-	-	-	-	625	633	-	497	469	-

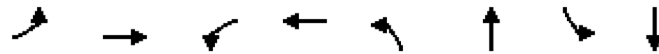
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.53	0.24	35.32	12.89
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1232	-	-	50	-	-	540
HCM Lane V/C Ratio	0.598	0.029	-	-	0.008	-	-	0.155
HCM Ctrl Dly (s/v)	35.3	8	-	-	8.5	0	-	12.9
HCM Lane LOS	E	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3.6	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/30/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	310	67	199	106	370	67	431
v/c Ratio	0.56	0.66	0.41	0.57	0.47	0.54	0.37	0.75
Control Delay (s/veh)	50.1	35.8	51.1	37.1	47.5	26.3	48.5	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.1	35.8	51.1	37.1	47.5	26.3	48.5	35.8
Queue Length 50th (ft)	61	128	32	81	49	147	32	187
Queue Length 95th (ft)	158	281	100	200	140	323	100	410
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	370	1009	370	1037	602	1106	602	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.31	0.18	0.19	0.18	0.33	0.11	0.39

Intersection Summary

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	145	115	60	118	59	95	297	36	64	374	35
Future Volume (veh/h)	110	145	115	60	118	59	95	297	36	64	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	173	137	67	133	66	106	330	40	67	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	238	189	100	249	124	138	500	61	100	464	44
Arrive On Green	0.10	0.26	0.26	0.06	0.22	0.22	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	927	734	1753	1138	565	1753	1422	172	1753	1405	132
Grp Volume(v), veh/h	131	0	310	67	0	199	106	0	370	67	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1661	1753	0	1702	1753	0	1595	1753	0	1537
Q Serve(g_s), s	4.2	0.0	9.8	2.2	0.0	6.0	3.4	0.0	11.3	2.2	0.0	15.1
Cycle Q Clear(g_c), s	4.2	0.0	9.8	2.2	0.0	6.0	3.4	0.0	11.3	2.2	0.0	15.1
Prop In Lane	1.00		0.44	1.00		0.33	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	427	100	0	373	138	0	560	100	0	507
V/C Ratio(X)	0.79	0.00	0.73	0.67	0.00	0.53	0.77	0.00	0.66	0.67	0.00	0.85
Avail Cap(c_a), veh/h	486	0	1324	486	0	1357	790	0	1271	790	0	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	0.0	19.6	26.7	0.0	19.9	26.1	0.0	15.8	26.7	0.0	18.0
Incr Delay (d2), s/veh	3.1	0.0	0.9	2.9	0.0	0.4	3.4	0.0	0.5	2.9	0.0	1.6
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	1.8	0.0	3.6	0.9	0.0	2.3	1.5	0.0	3.8	0.9	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.6	0.0	20.5	29.5	0.0	20.4	29.5	0.0	16.3	29.6	0.0	19.6
LnGrp LOS	C		C	C		C	C		B	C		B
Approach Vol, veh/h	441			266			476			498		
Approach Delay, s/veh	22.9			22.7			19.2			20.9		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	24.3	7.3	18.8	8.5	23.0	9.5	16.6				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.2	13.3	4.2	11.8	5.4	17.1	6.2	8.0				
Green Ext Time (p_c), s	0.1	1.7	0.0	0.8	0.1	2.0	0.0	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.2											
HCM 7th LOS	C											

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	26	203	16	4	179	14	20	6	3	4	7	38
Future Vol, veh/h	26	203	16	4	179	14	20	6	3	4	7	38
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	30	231	18	5	208	16	33	10	5	5	9	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	261	0	0	539	568	267	558	569	245
Stage 1	-	-	-	-	-	-	311	311	-	249	249	-
Stage 2	-	-	-	-	-	-	228	257	-	310	320	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1313	-	-	1298	-	-	452	431	769	439	431	791
Stage 1	-	-	-	-	-	-	697	657	-	753	699	-
Stage 2	-	-	-	-	-	-	772	693	-	698	651	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1284	-	-	1283	-	-	393	404	750	397	404	769
Mov Cap-2 Maneuver	-	-	-	-	-	-	393	404	-	397	404	-
Stage 1	-	-	-	-	-	-	671	632	-	734	681	-
Stage 2	-	-	-	-	-	-	705	675	-	655	626	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.84	0.16	14.79	11.29
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	188	-	-	36	-	-	638
HCM Lane V/C Ratio	0.116	0.023	-	-	0.004	-	-	0.102
HCM Ctrl Dly (s/v)	14.8	7.9	0	-	7.8	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.3

Intersection

Int Delay, s/veh 0

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations

Traffic Vol, veh/h 0 210 197 0 0 0

Future Vol, veh/h 0 210 197 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 244 229 0 0 0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 473 229

Stage 1 - - - - 229 -

Stage 2 - - - - 244 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 550 810

Stage 1 0 - - 0 809 -

Stage 2 0 - - 0 796 -

Platoon blocked, % - -

Mov Cap-1 Maneuver - - - - 550 810

Mov Cap-2 Maneuver - - - - 550 -

Stage 1 - - - - 809 -

Stage 2 - - - - 796 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - -

HCM Lane V/C Ratio - - -

HCM Ctrl Dly (s/v) - - 0

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - -

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/30/2025

	     					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	46	0	0	49
Future Volume (Veh/h)	0	0	46	0	0	49
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	61	0	0	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	61			61	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	61			61	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	869	1004			1542	
Direction, Lane #	NB 1	SB 1				
Volume Total	61	65				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1542				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service	A	
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.79
Level of Service	A
Average Dissatisfaction Prob	0.285
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	382
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.59
Prob of Delayed Crossing	0.83
Delay for adq Gap (s)	35.39
Avg Ped Delay (s)	4.79

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.79
Level of Service	A
Average Dissatisfaction Prob	0.285
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	382
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.59
Prob of Delayed Crossing	0.83
Delay for adq Gap (s)	35.39
Avg Ped Delay (s)	4.79

Intersection

Intersection Delay, s/veh 11.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	278	12	30	219	25	12	23	16	20	11	22
Future Vol, veh/h	34	278	12	30	219	25	12	23	16	20	11	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	35	255	29	14	27	19	23	13	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.9	10.9	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	11%	38%
Vol Thru, %	45%	86%	80%	21%
Vol Right, %	31%	4%	9%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	274	53
LT Vol	12	34	30	20
Through Vol	23	278	219	11
RT Vol	16	12	25	22
Lane Flow Rate	59	377	319	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.483	0.411	0.093
Departure Headway (Hd)	5.45	4.611	4.643	5.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	776	771	655
Service Time	3.538	2.664	2.699	3.501
HCM Lane V/C Ratio	0.091	0.486	0.414	0.095
HCM Control Delay, s/veh	9.1	11.9	10.9	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	5	279	0	1
Future Vol, veh/h	314	3	5	279	0	1
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	5	307	0	1

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	673	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	420	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	738	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	414	682
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.14	10.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 313 286 5 1 2

Future Vol, veh/h 3 313 286 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 333 304 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 313 0 - 0 649 312

Stage 1 - - - - 310 -

Stage 2 - - - - 339 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1248 - - - 434 728

Stage 1 - - - - 744 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1244 - - - 430 724

Mov Cap-2 Maneuver - - - - 430 -

Stage 1 - - - - 739 -

Stage 2 - - - - 719 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.13

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 590

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.1

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/30/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	31	327	98	263	82	13	74	14	91	164
v/c Ratio	0.14	0.38	0.35	0.29	0.10	0.06	0.24	0.05	0.32	0.27
Control Delay (s/veh)	27.1	19.1	26.4	14.0	4.1	27.5	26.0	0.3	26.3	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	19.1	26.4	14.0	4.1	27.5	26.0	0.3	26.3	16.3
Queue Length 50th (ft)	9	86	27	43	0	4	21	0	25	29
Queue Length 95th (ft)	35	187	77	142	22	20	64	0	74	102
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	608	1514	608	1248	1041	651	1211	918	651	1151
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.16	0.21	0.08	0.02	0.06	0.02	0.14	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	286	2	86	231	72	11	65	12	80	98	47
Future Volume (veh/h)	27	286	2	86	231	72	11	65	12	80	98	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	31	325	2	98	262	82	12	74	14	91	111	53
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
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	66	517	3	156	595	497	28	180	145	149	199	95
Arrive On Green	0.04	0.27	0.27	0.09	0.32	0.32	0.02	0.09	0.09	0.08	0.16	0.16
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1551	1767	1230	587
Grp Volume(v), veh/h	31	0	327	98	262	82	12	74	14	91	0	164
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1551	1767	0	1818
Q Serve(g_s), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Cycle Q Clear(g_c), s	0.6	0.0	5.1	1.8	3.8	1.3	0.2	1.2	0.3	1.7	0.0	2.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	66	0	520	156	595	497	28	180	145	149	0	294
V/C Ratio(X)	0.47	0.00	0.63	0.63	0.44	0.17	0.43	0.41	0.10	0.61	0.00	0.56
Avail Cap(c_a), veh/h	820	0	2013	820	1938	1617	820	1456	1170	820	0	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	11.1	15.2	9.3	8.4	16.8	14.7	14.3	15.2	0.0	13.3
Incr Delay (d2), s/veh	1.9	0.0	0.5	1.5	0.2	0.1	3.9	0.6	0.1	1.5	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	0.2	0.0	1.7	0.7	1.1	0.3	0.1	0.5	0.1	0.6	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.2	0.0	11.5	16.7	9.4	8.5	20.7	15.3	14.4	16.7	0.0	13.9
LnGrp LOS	B		B	B	A	A	C	B	B	B		B
Approach Vol, veh/h	358			442			100			255		
Approach Delay, s/veh	12.1			10.9			15.8			14.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	15.1	4.5	9.6	7.0	13.3	6.9	7.2				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.6	5.8	2.2	4.9	3.8	7.1	3.7	3.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.6	0.1	1.3	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	12.6											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	376	0	0	384	0	127
Future Vol, veh/h	376	0	0	384	0	127
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	0	0	413	0	137

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	-	405
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	0	646
Stage 1	-	0	0	-	0	-
Stage 2	-	0	0	-	0	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	645
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	12.08
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	645	-	-
HCM Lane V/C Ratio	0.212	-	-
HCM Ctrl Dly (s/v)	12.1	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.8	-	-

Intersection

Int Delay, s/veh 6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	330	125	6	233	9	109	8	35	6	8	62
Future Vol, veh/h	32	330	125	6	233	9	109	8	35	6	8	62
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	367	139	7	277	11	120	9	38	7	9	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	520	0	0	820	843	473	781	907	305
Stage 1	-	-	-	-	-	-	521	521	-	316	316	-
Stage 2	-	-	-	-	-	-	299	321	-	465	591	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1254	-	-	1047	-	-	294	301	591	312	276	735
Stage 1	-	-	-	-	-	-	538	531	-	695	655	-
Stage 2	-	-	-	-	-	-	710	651	-	577	495	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	1033	-	-	241	277	570	258	254	720
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	277	-	258	254	-
Stage 1	-	-	-	-	-	-	509	503	-	677	638	-
Stage 2	-	-	-	-	-	-	627	634	-	496	468	-

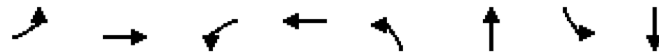
Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.53	0.21	35.26	12.89
HCM LOS			E	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1231	-	-	43	-	-	539
HCM Lane V/C Ratio	0.597	0.029	-	-	0.007	-	-	0.155
HCM Ctrl Dly (s/v)	35.3	8	-	-	8.5	0	-	12.9
HCM Lane LOS	E	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	3.5	0.1	-	-	0	-	-	0.5

Queues

7: W. A St./E. A St. & N. 1st St

01/30/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	311	71	199	106	372	68	431
v/c Ratio	0.56	0.66	0.42	0.56	0.47	0.54	0.38	0.75
Control Delay (s/veh)	50.7	36.1	51.6	36.8	47.8	26.7	49.0	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.7	36.1	51.6	36.8	47.8	26.7	49.0	36.2
Queue Length 50th (ft)	62	130	34	82	50	149	32	189
Queue Length 95th (ft)	159	284	105	201	141	330	101	414
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	368	1003	368	1031	598	1099	598	1094
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.31	0.19	0.19	0.18	0.34	0.11	0.39
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/30/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	146	115	63	118	59	95	297	38	65	374	35
Future Volume (veh/h)	110	146	115	63	118	59	95	297	38	65	374	35
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		0.95	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	131	174	137	71	133	66	106	330	42	68	394	37
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	167	239	188	103	251	125	138	496	63	101	463	44
Arrive On Green	0.10	0.26	0.26	0.06	0.22	0.22	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1753	929	732	1753	1138	565	1753	1413	180	1753	1405	132
Grp Volume(v), veh/h	131	0	311	71	0	199	106	0	372	68	0	431
Grp Sat Flow(s),veh/h/ln	1753	0	1661	1753	0	1703	1753	0	1593	1753	0	1537
Q Serve(g_s), s	4.2	0.0	9.9	2.3	0.0	6.0	3.4	0.0	11.5	2.2	0.0	15.2
Cycle Q Clear(g_c), s	4.2	0.0	9.9	2.3	0.0	6.0	3.4	0.0	11.5	2.2	0.0	15.2
Prop In Lane	1.00		0.44	1.00		0.33	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	167	0	427	103	0	376	138	0	559	101	0	507
V/C Ratio(X)	0.79	0.00	0.73	0.69	0.00	0.53	0.77	0.00	0.67	0.68	0.00	0.85
Avail Cap(c_a), veh/h	483	0	1317	483	0	1350	786	0	1263	786	0	1219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	19.7	26.8	0.0	19.9	26.2	0.0	16.0	26.8	0.0	18.1
Incr Delay (d2), s/veh	3.1	0.0	0.9	3.0	0.0	0.4	3.4	0.0	0.5	2.9	0.0	1.6
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	1.8	0.0	3.7	1.0	0.0	2.3	1.5	0.0	3.9	1.0	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	28.7	0.0	20.6	29.8	0.0	20.4	29.6	0.0	16.5	29.8	0.0	19.7
LnGrp LOS	C		C	C		C	C		B	C		B
Approach Vol, veh/h	442			270			478			499		
Approach Delay, s/veh	23.0			22.9			19.4			21.1		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	24.4	7.4	18.9	8.6	23.1	9.5	16.8				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+I1), s	4.2	13.5	4.3	11.9	5.4	17.2	6.2	8.0				
Green Ext Time (p_c), s	0.1	1.7	0.0	0.8	0.1	2.0	0.0	0.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	21.4											
HCM 7th LOS	C											

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	33	203	13	5	187	16	15	5	2	4	7	38
Future Vol, veh/h	33	203	13	5	187	16	15	5	2	4	7	38
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	38	231	15	6	217	19	25	8	3	5	9	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	259	0	0	257	0	0	565	596	265	586	594	256
Stage 1	-	-	-	-	-	-	325	325	-	261	261	-
Stage 2	-	-	-	-	-	-	240	271	-	325	332	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1300	-	-	1301	-	-	434	416	771	420	417	780
Stage 1	-	-	-	-	-	-	685	647	-	741	690	-
Stage 2	-	-	-	-	-	-	761	684	-	685	642	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1271	-	-	1287	-	-	374	386	751	379	387	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	386	-	379	387	-
Stage 1	-	-	-	-	-	-	654	618	-	721	671	-
Stage 2	-	-	-	-	-	-	693	665	-	641	613	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.05			0.19			15.05			11.46		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	395	236	-	-	43	-	-	623				
HCM Lane V/C Ratio	0.093	0.029	-	-	0.005	-	-	0.105				
HCM Ctrl Dly (s/v)	15.1	7.9	0	-	7.8	0	-	11.5				
HCM Lane LOS	C	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.3				

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 209 198 0 1 10

Future Vol, veh/h 0 209 198 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 243 230 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 473 230

Stage 1 - - - - 230 -

Stage 2 - - - - 243 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 550 809

Stage 1 0 - - 0 808 -

Stage 2 0 - - 0 797 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 550 809

Mov Cap-2 Maneuver - - - - 550 -

Stage 1 - - - - 808 -

Stage 2 - - - - 797 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 9.72

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 776

HCM Lane V/C Ratio - - 0.016

HCM Ctrl Dly (s/v) - - 9.7

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/30/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	46	8	1	49
Future Volume (Veh/h)	0	0	46	8	1	49
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	61	11	1	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	134	67			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	134	67			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	860	997			1528	
Direction, Lane #	NB 1	SB 1				
Volume Total	72	66				
Volume Left	0	1				
Volume Right	11	0				
cSH	1700	1528				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.1				
Lane LOS		A				
Approach Delay (s/veh)	0.0	0.1				
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Approach

Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.81
Level of Service	A
Average Dissatisfaction Prob	0.286
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	390
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.60
Prob of Delayed Crossing	0.84
Delay for adq Gap (s)	36.46
Avg Ped Delay (s)	4.81

Approach

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.81
Level of Service	A
Average Dissatisfaction Prob	0.286
Crossing Level of Service	D

Crosswalk

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	390
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.60
Prob of Delayed Crossing	0.84
Delay for adq Gap (s)	36.46
Avg Ped Delay (s)	4.81

Intersection

Intersection Delay, s/veh 14.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↕				↗			↕			↕
Traffic Vol, veh/h	37	264	11	1	10	279	69	18	38	25	46	27
Future Vol, veh/h	37	264	11	1	10	279	69	18	38	25	46	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	318	13	1	12	336	83	22	46	30	55	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14.9	16.3	10.5	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	37%
Vol Thru, %	47%	85%	78%	22%
Vol Right, %	31%	4%	19%	42%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	312	359	125
LT Vol	18	37	10	46
Through Vol	38	264	280	27
RT Vol	25	11	69	52
Lane Flow Rate	98	376	433	151
Geometry Grp	1	1	1	1
Degree of Util (X)	0.168	0.557	0.62	0.253
Departure Headway (Hd)	6.207	5.336	5.158	6.037
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	673	696	592
Service Time	4.284	3.388	3.208	4.105
HCM Lane V/C Ratio	0.17	0.559	0.622	0.255
HCM Control Delay, s/veh	10.5	14.9	16.3	11.2
HCM Lane LOS	B	B	C	B
HCM 95th-tile Q	0.6	3.5	4.3	1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement SBR

Lane Configurations

Traffic Vol, veh/h 52

Future Vol, veh/h 52

Peak Hour Factor 0.83

Heavy Vehicles, % 2

Mvmt Flow 63

Number of Lanes 0

Approach

Opposing Approach

Opposing Lanes

Conflicting Approach Left

Conflicting Lanes Left

Conflicting Approach Right

Conflicting Lanes Right

HCM Control Delay, s/veh

HCM LOS

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	332	4	1	3	358	1	5
Future Vol, veh/h	332	4	1	3	358	1	5
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	415	5	1	4	448	1	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	429
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1130
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.82
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	535	-	-	+	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Ctrl Dly (s/v)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 336 352 1 5 10

Future Vol, veh/h 2 336 352 1 5 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 415 435 1 6 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 439 0 - 0 858 440

Stage 1 - - - - 438 -

Stage 2 - - - - 420 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1121 - - - 327 617

Stage 1 - - - - 650 -

Stage 2 - - - - 663 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1118 - - - 325 614

Mov Cap-2 Maneuver - - - - 325 -

Stage 1 - - - - 647 -

Stage 2 - - - - 661 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 12.92

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 11 - - - 473

HCM Lane V/C Ratio 0.002 - - - 0.039

HCM Ctrl Dly (s/v) 8.2 0 - - 12.9

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	44	362	145	386	150	8	81	13	101	149
v/c Ratio	0.20	0.41	0.44	0.43	0.19	0.04	0.26	0.04	0.35	0.24
Control Delay (s/veh)	30.2	21.0	28.9	17.3	4.0	31.3	29.2	0.3	29.3	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	21.0	28.9	17.3	4.0	31.3	29.2	0.3	29.3	18.8
Queue Length 50th (ft)	14	107	45	109	0	3	25	0	31	33
Queue Length 95th (ft)	47	214	108	213	29	16	71	0	83	100
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	591	1407	591	1164	997	634	1137	868	634	1106
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.26	0.25	0.33	0.15	0.01	0.07	0.01	0.16	0.13
Intersection Summary										

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	296	8	122	324	126	7	68	11	85	103	22
Future Volume (veh/h)	37	296	8	122	324	126	7	68	11	85	103	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	44	352	10	145	386	150	8	81	13	101	123	26
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	528	15	188	631	527	19	182	146	154	263	56
Arrive On Green	0.05	0.28	0.28	0.11	0.34	0.34	0.01	0.09	0.09	0.09	0.17	0.17
Sat Flow, veh/h	1767	1866	53	1767	1856	1549	1767	1930	1549	1767	1542	326
Grp Volume(v), veh/h	44	0	362	145	386	150	8	81	13	101	0	149
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1549	1767	1930	1549	1767	0	1868
Q Serve(g_s), s	0.9	0.0	6.2	3.0	6.5	2.6	0.2	1.5	0.3	2.1	0.0	2.7
Cycle Q Clear(g_c), s	0.9	0.0	6.2	3.0	6.5	2.6	0.2	1.5	0.3	2.1	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	87	0	543	188	631	527	19	182	146	154	0	318
V/C Ratio(X)	0.51	0.00	0.67	0.77	0.61	0.28	0.42	0.45	0.09	0.66	0.00	0.47
Avail Cap(c_a), veh/h	759	0	1855	759	1793	1498	759	1347	1081	759	0	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	11.8	16.2	10.2	9.0	18.3	16.0	15.4	16.5	0.0	13.9
Incr Delay (d2), s/veh	1.7	0.0	0.5	2.5	0.4	0.1	5.5	0.6	0.1	1.8	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.1	2.0	0.6	0.1	0.6	0.1	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.0	0.0	12.3	18.7	10.6	9.1	23.8	16.6	15.5	18.2	0.0	14.3
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	406				681				102		250	
Approach Delay, s/veh	13.1				12.0				17.0		15.9	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	16.7	4.4	10.3	8.0	14.5	7.2	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.9	8.5	2.2	4.7	5.0	8.2	4.1	3.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.1	1.5	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.3									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	392	0	0	572	0	131
Future Vol, veh/h	392	0	0	572	0	131
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	472	0	0	689	0	158

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	473
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	591
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	590
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.31
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	590	-	-
HCM Lane V/C Ratio	0.267	-	-
HCM Ctrl Dly (s/v)	13.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.80
Level of Service	A
Average Dissatisfaction Prob	0.406
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	119
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.15
Prob of Delayed Crossing	0.28
Delay for adq Gap (s)	6.46
Avg Ped Delay (s)	1.80

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.80
Level of Service	A
Average Dissatisfaction Prob	0.406
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	119
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.15
Prob of Delayed Crossing	0.28
Delay for adq Gap (s)	6.46
Avg Ped Delay (s)	1.80

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.3	0.5	28.0	11.3	4.6

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	31.7	42.7	38.0	26.7	35.3

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	0.7	6.3	114.6	33.1	10.3

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	24.8	19.0

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.1	9.2	4.4

Total Zone Performance

Stop Del/Veh (s)	820.2

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	WB	NB	SB
Directions Served	ULTR	LTR	LTR	LTR
Maximum Queue (ft)	226	121	220	42
Average Queue (ft)	45	19	79	14
95th Queue (ft)	142	75	174	40
Link Distance (ft)	355	302	348	320
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	321	95	339	115	395	170	339
Average Queue (ft)	61	164	70	215	106	308	101	162
95th Queue (ft)	120	294	114	365	131	458	181	298
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		1		14		30		2
Queuing Penalty (veh)		6		75		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	5	27	24	40	37	27	3	9
Queuing Penalty (veh)	17	17	86	36	185	48	12	14

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	145	122	142	114
Average Queue (ft)	17	37	41	50
95th Queue (ft)	82	121	128	106
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	10	6	11
Queuing Penalty (veh)	0	44	2	12
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	120
Average Queue (ft)	21
95th Queue (ft)	115
Link Distance (ft)	207
Upstream Blk Time (%)	3
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	237
Average Queue (ft)	0	46
95th Queue (ft)	5	208
Link Distance (ft)	116	280
Upstream Blk Time (%)		5
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 555

Intersection

Intersection Delay, s/veh 14.8

Intersection LOS B

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	37	267	11	1	11	282	68	18	38	26	47	27
Future Vol, veh/h	37	267	11	1	11	282	68	18	38	26	47	27
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	322	13	1	13	340	82	22	46	31	57	33
Number of Lanes	0	1	0	0	0	1	0	0	1	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	15.2	16.6	10.6	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	12%	3%	37%
Vol Thru, %	46%	85%	78%	21%
Vol Right, %	32%	3%	19%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	315	362	126
LT Vol	18	37	11	47
Through Vol	38	267	283	27
RT Vol	26	11	68	52
Lane Flow Rate	99	380	436	152
Geometry Grp	1	1	1	1
Degree of Util (X)	0.171	0.565	0.628	0.256
Departure Headway (Hd)	6.232	5.357	5.182	6.069
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	572	672	693	589
Service Time	4.312	3.41	3.232	4.141
HCM Lane V/C Ratio	0.173	0.565	0.629	0.258
HCM Control Delay, s/veh	10.6	15.2	16.6	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.6	3.5	4.4	1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	
Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	52
Future Vol, veh/h	52
Peak Hour Factor	0.83
Heavy Vehicles, %	2
Mvmt Flow	63
Number of Lanes	0
Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑				↑	↑	
Traffic Vol, veh/h	337	4	1	3	361	1	5
Future Vol, veh/h	337	4	1	3	361	1	5
Conflicting Peds, #/hr	0	9	0	9	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	421	5	1	4	451	1	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	435
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1124
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	~ -4
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0		11.89
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	+	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Ctrl Dly (s/v)	11.9	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

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

Intersection

Int Delay, s/veh 0.3

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 2 341 355 1 5 10

Future Vol, veh/h 2 341 355 1 5 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 81 81 81 81 81 81

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 2 421 438 1 6 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 443 0 - 0 868 444

Stage 1 - - - - 442 -

Stage 2 - - - - 426 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1118 - - - 323 614

Stage 1 - - - - 648 -

Stage 2 - - - - 659 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1114 - - - 320 611

Mov Cap-2 Maneuver - - - - 320 -

Stage 1 - - - - 644 -

Stage 2 - - - - 657 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.05 0 12.99

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 10 - - - 469

HCM Lane V/C Ratio 0.002 - - - 0.039

HCM Ctrl Dly (s/v) 8.2 0 - - 13

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	44	368	145	389	151	8	81	13	102	149
v/c Ratio	0.20	0.42	0.44	0.44	0.19	0.04	0.26	0.04	0.35	0.24
Control Delay (s/veh)	30.4	21.0	29.1	17.3	3.9	31.4	29.4	0.3	29.5	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.4	21.0	29.1	17.3	3.9	31.4	29.4	0.3	29.5	18.9
Queue Length 50th (ft)	14	109	45	110	0	3	26	0	32	33
Queue Length 95th (ft)	46	218	109	215	29	16	72	0	84	101
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	590	1402	590	1161	995	632	1134	865	632	1103
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.26	0.25	0.34	0.15	0.01	0.07	0.02	0.16	0.14
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	301	8	122	327	127	7	68	11	86	103	22
Future Volume (veh/h)	37	301	8	122	327	127	7	68	11	86	103	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	44	358	10	145	389	151	8	81	13	102	123	26
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	87	533	15	188	636	531	19	181	145	154	263	56
Arrive On Green	0.05	0.29	0.29	0.11	0.34	0.34	0.01	0.09	0.09	0.09	0.17	0.17
Sat Flow, veh/h	1767	1867	52	1767	1856	1550	1767	1930	1549	1767	1542	326
Grp Volume(v), veh/h	44	0	368	145	389	151	8	81	13	102	0	149
Grp Sat Flow(s),veh/h/ln	1767	0	1919	1767	1856	1550	1767	1930	1549	1767	0	1868
Q Serve(g_s), s	0.9	0.0	6.4	3.0	6.5	2.7	0.2	1.5	0.3	2.1	0.0	2.7
Cycle Q Clear(g_c), s	0.9	0.0	6.4	3.0	6.5	2.7	0.2	1.5	0.3	2.1	0.0	2.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	87	0	548	188	636	531	19	181	145	154	0	318
V/C Ratio(X)	0.51	0.00	0.67	0.77	0.61	0.28	0.42	0.45	0.09	0.66	0.00	0.47
Avail Cap(c_a), veh/h	754	0	1843	754	1782	1488	754	1339	1074	754	0	1296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	11.8	16.3	10.2	9.0	18.4	16.1	15.5	16.6	0.0	14.0
Incr Delay (d2), s/veh	1.7	0.0	0.5	2.5	0.4	0.1	5.5	0.6	0.1	1.8	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.1	1.1	2.0	0.6	0.1	0.6	0.1	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.1	0.0	12.4	18.8	10.6	9.1	24.0	16.7	15.6	18.4	0.0	14.4
LnGrp LOS	B		B	B	B	A	C	B	B	B		B
Approach Vol, veh/h	412				685				102		251	
Approach Delay, s/veh	13.1				12.0				17.1		16.0	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.8	16.9	4.4	10.4	8.0	14.7	7.3	7.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.9	8.5	2.2	4.7	5.0	8.4	4.1	3.5				
Green Ext Time (p_c), s	0.0	1.8	0.0	0.5	0.1	1.5	0.1	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh			13.4									
HCM 7th LOS			B									

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	398	0	0	576	0	132
Future Vol, veh/h	398	0	0	576	0	132
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	0	0	694	0	159

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	481
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	0	0	-	585
Stage 1	-	0	0	-	-
Stage 2	-	0	0	-	-
Platoon blocked, %	-			-	
Mov Cap-1 Maneuver	-	-	-	-	585
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.44
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	585	-	-
HCM Lane V/C Ratio	0.272	-	-
HCM Ctrl Dly (s/v)	13.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	693
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.80
Prob of Delayed Crossing	0.96
Delay for adq Gap (s)	112.28
Avg Ped Delay (s)	4.61

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.61
Level of Service	A
Average Dissatisfaction Prob	0.320
Crossing Level of Service	D

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	693
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.80
Prob of Delayed Crossing	0.96
Delay for adq Gap (s)	112.28
Avg Ped Delay (s)	4.61

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.9	0.5	29.7	12.5	5.5

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	36.1	51.4	45.3	29.2	41.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.3	9.5	145.5	41.0	14.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	22.5	14.3

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.1	14.5	9.4	7.0

Total Zone Performance

Stop Del/Veh (s)	957.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	ULTR	T	LTR	LTR	LTR
Maximum Queue (ft)	292	17	154	233	46
Average Queue (ft)	63	0	23	80	17
95th Queue (ft)	192	5	92	176	45
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	0	0	0	0	
Queuing Penalty (veh)	3	1	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	332	95	342	115	401	170	344
Average Queue (ft)	64	179	77	246	110	349	102	166
95th Queue (ft)	123	320	114	388	128	443	175	301
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		3		21		46		2
Queuing Penalty (veh)		14		106		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	7	31	31	45	45	27	3	10
Queuing Penalty (veh)	25	20	112	44	235	49	13	15

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	246	145	149	117
Average Queue (ft)	48	52	50	59
95th Queue (ft)	175	146	143	117
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	16	8	15
Queuing Penalty (veh)	2	73	3	16
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	6	119
Average Queue (ft)	0	23
95th Queue (ft)	6	113
Link Distance (ft)	111	207
Upstream Blk Time (%)		2
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	7	292	54
Average Queue (ft)	0	67	16
95th Queue (ft)	6	250	44
Link Distance (ft)	116	280	90
Upstream Blk Time (%)		7	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 728

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	19.8	12.9	5.7	4.9	15.0

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	37.1	51.2	43.8	29.1	41.0

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	8.7	19.2	8.9	11.5	13.1

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.1	0.2

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.4	43.8	5.8	20.7

Total Zone Performance

Stop Del/Veh (s)	1081.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	ULTR	T	LTR	LTR	LTR
Maximum Queue (ft)	405	34	285	104	45
Average Queue (ft)	160	2	159	48	16
95th Queue (ft)	346	18	259	80	43
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	6	0	0		
Queuing Penalty (veh)	33	3	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	312	95	314	115	399	170	348
Average Queue (ft)	66	185	76	252	108	343	107	165
95th Queue (ft)	123	319	114	376	130	446	185	304
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		2		19		42		2
Queuing Penalty (veh)		9		93		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	8	34	34	43	44	27	5	10
Queuing Penalty (veh)	24	21	120	43	229	49	18	15

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	261	153	58	98
Average Queue (ft)	114	96	21	43
95th Queue (ft)	211	157	51	82
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	25		0
Queuing Penalty (veh)	0	104		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	14
Average Queue (ft)	1
95th Queue (ft)	10
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	WB	SB
Directions Served	T	LR
Maximum Queue (ft)	312	51
Average Queue (ft)	128	17
95th Queue (ft)	357	45
Link Distance (ft)	280	90
Upstream Blk Time (%)	31	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 763

Intersection

Intersection Delay, s/veh 15.5

Intersection LOS C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	322	17	27	316	49	8	26	18	55	23	44
Future Vol, veh/h	32	322	17	27	316	49	8	26	18	55	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	370	20	31	363	56	9	30	21	66	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.2	16.9	10.1	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	9%	7%	45%
Vol Thru, %	50%	87%	81%	19%
Vol Right, %	35%	5%	13%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	371	392	122
LT Vol	8	32	27	55
Through Vol	26	322	316	23
RT Vol	18	17	49	44
Lane Flow Rate	60	426	451	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.615	0.64	0.244
Departure Headway (Hd)	6.3	5.194	5.117	6.119
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	566	695	703	585
Service Time	4.371	3.237	3.16	4.178
HCM Lane V/C Ratio	0.106	0.613	0.642	0.244
HCM Control Delay, s/veh	10.1	16.2	16.9	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.4	4.2	4.6	1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	393	5	3	388	4	4
Future Vol, veh/h	393	5	3	388	4	4
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	6	3	446	5	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	466	0	916	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	453	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1095	-	302	598
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1086	-	298	593
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.06	14.28
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	-	-	1086	-
HCM Lane V/C Ratio	0.023	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.3	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 380 379 2 1 10

Future Vol, veh/h 7 380 379 2 1 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 442 441 2 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 446 0 - 0 903 447

Stage 1 - - - - 445 -

Stage 2 - - - - 458 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1114 - - - 308 612

Stage 1 - - - - 646 -

Stage 2 - - - - 637 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1111 - - - 303 608

Mov Cap-2 Maneuver - - - - 303 -

Stage 1 - - - - 638 -

Stage 2 - - - - 635 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 11.61

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 33 - - - 557

HCM Lane V/C Ratio 0.007 - - - 0.023

HCM Ctrl Dly (s/v) 8.3 0 - - 11.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	404	132	363	156	5	120	17	146	197
v/c Ratio	0.18	0.61	0.45	0.48	0.22	0.03	0.37	0.05	0.46	0.31
Control Delay (s/veh)	34.8	25.8	33.5	17.8	4.2	35.8	32.8	0.3	33.1	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.8	25.8	33.5	17.8	4.2	35.8	32.8	0.3	33.1	18.2
Queue Length 50th (ft)	12	136	46	80	0	2	42	0	51	45
Queue Length 95th (ft)	45	276	117	228	34	13	109	0	128	132
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	518	1315	518	1084	941	555	1067	820	555	1021
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.31	0.25	0.33	0.17	0.01	0.11	0.02	0.26	0.19
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	349	3	115	316	136	4	104	15	127	114	57
Future Volume (veh/h)	30	349	3	115	316	136	4	104	15	127	114	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856
Adj Flow Rate, veh/h	34	401	3	132	363	156	5	120	17	146	131	66
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	69	567	4	171	657	549	12	206	165	190	250	126
Arrive On Green	0.04	0.30	0.30	0.10	0.35	0.35	0.01	0.11	0.11	0.11	0.21	0.21
Sat Flow, veh/h	1767	1913	14	1767	1856	1550	1767	1930	1547	1767	1207	608
Grp Volume(v), veh/h	34	0	404	132	363	156	5	120	17	146	0	197
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1550	1767	1930	1547	1767	0	1815
Q Serve(g_s), s	0.8	0.0	7.6	3.0	6.4	2.9	0.1	2.4	0.4	3.3	0.0	3.9
Cycle Q Clear(g_c), s	0.8	0.0	7.6	3.0	6.4	2.9	0.1	2.4	0.4	3.3	0.0	3.9
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	69	0	572	171	657	549	12	206	165	190	0	376
V/C Ratio(X)	0.49	0.00	0.71	0.77	0.55	0.28	0.42	0.58	0.10	0.77	0.00	0.52
Avail Cap(c_a), veh/h	693	0	1701	693	1638	1369	693	1230	986	693	0	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	12.8	18.0	10.6	9.5	20.2	17.3	16.4	17.7	0.0	14.4
Incr Delay (d2), s/veh	2.0	0.0	0.6	2.8	0.3	0.1	8.5	1.0	0.1	2.5	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.7	1.2	2.0	0.7	0.1	1.0	0.1	1.3	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.2	0.0	13.4	20.7	10.8	9.6	28.6	18.3	16.5	20.2	0.0	14.8
LnGrp LOS	C		B	C	B	A	C	B	B	C		B
Approach Vol, veh/h	438				651				142		343	
Approach Delay, s/veh	14.0				12.5				18.5		17.1	
Approach LOS	B				B				B		B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	18.4	4.3	12.5	7.9	16.1	8.4	8.4				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0				
Max Q Clear Time (g_c+I1), s	2.8	8.4	2.1	5.9	5.0	9.6	5.3	4.4				
Green Ext Time (p_c), s	0.0	1.7	0.0	0.7	0.1	1.6	0.1	0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	14.5											
HCM 7th LOS	B											

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	490	0	0	566	0	150
Future Vol, veh/h	490	0	0	566	0	150
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	570	0	0	658	0	174

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 571
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 520
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 520
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	15.38
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	520	-	-
HCM Lane V/C Ratio	0.336	-	-
HCM Ctrl Dly (s/v)	15.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.5	-	-

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	2.03
Level of Service	A
Average Dissatisfaction Prob	0.420
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	133
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.17
Prob of Delayed Crossing	0.31
Delay for adq Gap (s)	6.66
Avg Ped Delay (s)	2.03

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	2.03
Level of Service	A
Average Dissatisfaction Prob	0.420
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	133
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.17
Prob of Delayed Crossing	0.31
Delay for adq Gap (s)	6.66
Avg Ped Delay (s)	2.03

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	2.9	1.2	44.7	18.2	9.4

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	33.9	40.3	34.3	25.5	33.4

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	1.1	6.0	86.5	22.6	10.4

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.3	5.5	3.2

10: E. A St. Performance by approach

Approach	EB	WB	All
Stop Del/Veh (s)	0.1	4.8	2.2

Total Zone Performance

Stop Del/Veh (s)	604.9

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	271	16	171	276	161
Average Queue (ft)	68	1	25	104	55
95th Queue (ft)	218	11	109	241	119
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	1	0	0	2	
Queuing Penalty (veh)	5	1	1	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	334	95	335	114	391	170	331
Average Queue (ft)	81	197	79	185	94	235	80	171
95th Queue (ft)	130	341	113	355	139	423	162	296
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		5		12		15		1
Queuing Penalty (veh)		21		65		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	14	30	31	22	27	19	1	13
Queuing Penalty (veh)	46	33	90	28	114	30	3	12

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	185	128	182	98
Average Queue (ft)	27	32	60	41
95th Queue (ft)	107	113	162	86
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	8	12	3
Queuing Penalty (veh)	0	32	11	3
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	38
Average Queue (ft)	4
95th Queue (ft)	44
Link Distance (ft)	207
Upstream Blk Time (%)	1
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	5	241
Average Queue (ft)	0	29
95th Queue (ft)	5	149
Link Distance (ft)	116	280
Upstream Blk Time (%)		1
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 495

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	323	17	27	316	50	8	26	18	55	23	44
Future Vol, veh/h	32	323	17	27	316	50	8	26	18	55	23	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.83	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	371	20	31	363	57	9	30	21	66	26	51
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.3	16.9	10.1	11.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	9%	7%	45%
Vol Thru, %	50%	87%	80%	19%
Vol Right, %	35%	5%	13%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	52	372	393	122
LT Vol	8	32	27	55
Through Vol	26	323	316	23
RT Vol	18	17	50	44
Lane Flow Rate	60	428	452	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.617	0.642	0.244
Departure Headway (Hd)	6.307	5.196	5.118	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	565	693	705	585
Service Time	4.378	3.239	3.16	4.185
HCM Lane V/C Ratio	0.106	0.618	0.641	0.244
HCM Control Delay, s/veh	10.1	16.3	16.9	11.2
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	0.4	4.3	4.7	1

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	396	-	-	1085	-
HCM Lane V/C Ratio	0.023	-	-	0.003	-
HCM Ctrl Dly (s/v)	14.3	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 7 381 380 2 1 10

Future Vol, veh/h 7 381 380 2 1 10

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 8 443 442 2 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 447 0 - 0 905 448

Stage 1 - - - - 446 -

Stage 2 - - - - 459 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1113 - - - 307 611

Stage 1 - - - - 645 -

Stage 2 - - - - 636 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1110 - - - 302 607

Mov Cap-2 Maneuver - - - - 302 -

Stage 1 - - - - 637 -

Stage 2 - - - - 634 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.15 0 11.62

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 32 - - - 556

HCM Lane V/C Ratio 0.007 - - - 0.023

HCM Ctrl Dly (s/v) 8.3 0 - - 11.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

4: W. A St. & N. Adams St

[illegible]

4: W. A St. & N. Adams St

MD Cumulative with Project 12:00 pm 01/10/2025 MD Cumulative with Project Synchro 12 Report
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Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	518	-	-
HCM Lane V/C Ratio	0.337	-	-
HCM Ctrl Dly (s/v)	15.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.5	-	-

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	669
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.79
Prob of Delayed Crossing	0.96
Delay for adq Gap (s)	102.68
Avg Ped Delay (s)	4.66

Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.66
Level of Service	A
Average Dissatisfaction Prob	0.317
Crossing Level of Service	D

Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	669
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.79
Prob of Delayed Crossing	0.96
Delay for adq Gap (s)	102.68
Avg Ped Delay (s)	4.66

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	5.3	1.2	57.8	18.3	12.2

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	36.8	49.7	36.3	27.0	37.3

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	5.0	11.6	30.6	37.9	10.8

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.2	7.9	3.4

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.2	20.7	22.0	11.3

Total Zone Performance

Stop Del/Veh (s)	692.1

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	395	35	151	297	158
Average Queue (ft)	87	2	28	120	56
95th Queue (ft)	285	21	104	279	115
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	3	1		5	
Queuing Penalty (veh)	18	7		0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	338	95	340	114	393	166	336
Average Queue (ft)	87	212	82	226	96	248	78	180
95th Queue (ft)	133	354	115	401	138	435	158	312
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		7		22		18		2
Queuing Penalty (veh)		31		113		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	15	34	40	26	30	22	2	14
Queuing Penalty (veh)	49	37	121	39	128	34	6	13

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	299	151	71	115
Average Queue (ft)	71	61	18	46
95th Queue (ft)	212	165	54	102
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	1	20		8
Queuing Penalty (veh)	3	93		9
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	86
Average Queue (ft)	8
95th Queue (ft)	53
Link Distance (ft)	207
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	22	292	100
Average Queue (ft)	1	75	44
95th Queue (ft)	19	263	87
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	9	7
Queuing Penalty (veh)	1	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 702

6: W. A St. & N. Jackson St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	29.9	13.0	7.3	6.0	19.8

7: W. A St./E. A St. & N. 1st St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	35.7	45.0	34.1	28.0	35.6

8: E. A St. & N. 2nd St Performance by approach

Approach	EB	WB	NB	SB	All
Stop Del/Veh (s)	7.6	16.5	3.8	11.4	11.6

9: N. 2nd St Performance by approach

Approach	NB	SB	All
Stop Del/Veh (s)	0.4	0.1	0.3

10: E. A St. Performance by approach

Approach	EB	WB	SB	All
Stop Del/Veh (s)	0.5	32.3	6.1	14.5

Total Zone Performance

Stop Del/Veh (s)	764.6

Intersection: 6: W. A St. & N. Jackson St

Movement	EB	B109	WB	NB	SB
Directions Served	LTR	T	LTR	LTR	LTR
Maximum Queue (ft)	418	67	271	123	96
Average Queue (ft)	224	8	120	53	42
95th Queue (ft)	429	43	223	94	76
Link Distance (ft)	355	11	302	348	320
Upstream Blk Time (%)	14	3	0		
Queuing Penalty (veh)	98	20	1		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: W. A St./E. A St. & N. 1st St

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	109	311	95	313	114	390	170	346
Average Queue (ft)	91	203	83	226	97	239	83	189
95th Queue (ft)	133	333	114	381	137	426	168	324
Link Distance (ft)		302		298		350		323
Upstream Blk Time (%)		4		15		14		3
Queuing Penalty (veh)		16		72		0		0
Storage Bay Dist (ft)	85		70		90		145	
Storage Blk Time (%)	18	32	41	28	29	20	2	16
Queuing Penalty (veh)	59	34	120	41	127	31	6	14

Intersection: 8: E. A St. & N. 2nd St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	241	149	39	93
Average Queue (ft)	104	97	15	36
95th Queue (ft)	195	162	41	73
Link Distance (ft)	298	116	174	111
Upstream Blk Time (%)	0	21		0
Queuing Penalty (veh)	0	91		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: N. 2nd St

Movement	SB
Directions Served	LT
Maximum Queue (ft)	12
Average Queue (ft)	1
95th Queue (ft)	9
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: E. A St.

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	12	302	88
Average Queue (ft)	0	93	36
95th Queue (ft)	12	296	66
Link Distance (ft)	116	280	90
Upstream Blk Time (%)	0	17	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 731

Intersection

Intersection Delay, s/veh 11.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	34	278	12	29	225	31	12	23	16	21	11	24
Future Vol, veh/h	34	278	12	29	225	31	12	23	16	21	11	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	34	262	36	14	27	19	24	13	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	11.2	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	10%	38%
Vol Thru, %	45%	86%	79%	20%
Vol Right, %	31%	4%	11%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	285	56
LT Vol	12	34	29	21
Through Vol	23	278	225	11
RT Vol	16	12	31	24
Lane Flow Rate	59	377	331	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.485	0.428	0.098
Departure Headway (Hd)	5.485	4.638	4.645	5.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	772	772	652
Service Time	3.577	2.69	2.699	3.524
HCM Lane V/C Ratio	0.091	0.488	0.429	0.1
HCM Control Delay, s/veh	9.1	12	11.2	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2.2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	6	290	0	2
Future Vol, veh/h	314	3	6	290	0	2
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	7	319	0	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	688	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	412	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	406	682
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.16	10.29
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.003	-	-	0.006	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 314 297 5 1 2

Future Vol, veh/h 3 314 297 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 334 316 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 324 0 - 0 662 324

Stage 1 - - - - 322 -

Stage 2 - - - - 340 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1235 - - - 427 717

Stage 1 - - - - 735 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1232 - - - 423 714

Mov Cap-2 Maneuver - - - - 423 -

Stage 1 - - - - 730 -

Stage 2 - - - - 718 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.23

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 581

HCM Lane V/C Ratio 0.003 - - - 0.005

HCM Ctrl Dly (s/v) 7.9 0 - - 11.2

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

Queues

4: W. A St. & N. Adams St

01/31/2025

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	327	123	270	118	13	102	14	119	226
v/c Ratio	0.15	0.56	0.41	0.39	0.19	0.06	0.31	0.04	0.39	0.34
Control Delay (s/veh)	30.1	24.1	28.8	16.0	4.6	30.6	28.6	0.3	28.8	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.1	24.1	28.8	16.0	4.6	30.6	28.6	0.3	28.8	17.8
Queue Length 50th (ft)	10	95	37	50	0	4	31	0	36	48
Queue Length 95th (ft)	39	209	100	157	30	22	88	0	98	148
Internal Link Dist (ft)		108		169			507			278
Turn Bay Length (ft)	65		50		190	60		60	75	
Base Capacity (vph)	591	1427	591	1177	996	632	1148	875	632	1104
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.23	0.21	0.23	0.12	0.02	0.09	0.02	0.19	0.20
Intersection Summary										

HCM 7th Signalized Intersection Summary

4: W. A St. & N. Adams St

01/31/2025

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	28	286	2	108	238	104	11	90	12	105	148	51	
Future Volume (veh/h)	28	286	2	108	238	104	11	90	12	105	148	51	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width Adj.	1.00	1.04	0.96	1.00	1.00	1.00	1.00	1.04	1.00	1.00	1.04	1.00	
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1856	1930	1781	1856	1856	1856	1856	1930	1856	1856	1930	1856	
Adj Flow Rate, veh/h	32	325	2	123	270	118	12	102	14	119	168	58	
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	
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3	
Cap, veh/h	67	507	3	172	602	502	28	203	163	169	253	87	
Arrive On Green	0.04	0.26	0.26	0.10	0.32	0.32	0.02	0.10	0.10	0.10	0.19	0.19	
Sat Flow, veh/h	1767	1916	12	1767	1856	1548	1767	1930	1549	1767	1368	472	
Grp Volume(v), veh/h	32	0	327	123	270	118	12	102	14	119	0	226	
Grp Sat Flow(s),veh/h/ln	1767	0	1927	1767	1856	1548	1767	1930	1549	1767	0	1840	
Q Serve(g_s), s	0.6	0.0	5.5	2.5	4.2	2.0	0.2	1.8	0.3	2.4	0.0	4.2	
Cycle Q Clear(g_c), s	0.6	0.0	5.5	2.5	4.2	2.0	0.2	1.8	0.3	2.4	0.0	4.2	
Prop In Lane	1.00		0.01	1.00		1.00	1.00		1.00	1.00		0.26	
Lane Grp Cap(c), veh/h	67	0	510	172	602	502	28	203	163	169	0	341	
V/C Ratio(X)	0.48	0.00	0.64	0.71	0.45	0.24	0.43	0.50	0.09	0.70	0.00	0.66	
Avail Cap(c_a), veh/h	772	0	1895	772	1825	1522	772	1370	1100	772	0	1307	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	17.3	0.0	11.9	16.0	9.8	9.1	17.9	15.5	14.8	16.0	0.0	13.9	
Incr Delay (d2), s/veh	2.0	0.0	0.5	2.1	0.2	0.1	3.9	0.7	0.1	2.0	0.0	0.8	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.9	0.9	1.3	0.5	0.1	0.7	0.1	0.9	0.0	1.5	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	19.2	0.0	12.4	18.1	10.0	9.1	21.8	16.2	14.9	18.0	0.0	14.7	
LnGrp LOS	B		B	B	A	A	C	B	B	B		B	
Approach Vol, veh/h	359				511				128				345
Approach Delay, s/veh	13.0				11.7				16.6				15.8
Approach LOS	B				B				B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	5.4	15.9	4.6	10.8	7.6	13.7	7.5	7.8					
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Max Green Setting (Gmax), s	16.0	36.0	16.0	26.0	16.0	36.0	16.0	26.0					
Max Q Clear Time (g_c+I1), s	2.6	6.2	2.2	6.2	4.5	7.5	4.4	3.8					
Green Ext Time (p_c), s	0.0	1.2	0.0	0.8	0.1	1.3	0.1	0.3					
Intersection Summary													
HCM 7th Control Delay, s/veh			13.6										
HCM 7th LOS			B										

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	401	0	0	446	0	173
Future Vol, veh/h	401	0	0	446	0	173
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	431	0	0	480	0	186

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 432
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 623
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 623
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.23
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	623	-	-
HCM Lane V/C Ratio	0.299	-	-
HCM Ctrl Dly (s/v)	13.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.2	-	-

Intersection

Int Delay, s/veh 13.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	370	129	7	250	17	111	14	35	9	12	105
Future Vol, veh/h	59	370	129	7	250	17	111	14	35	9	12	105
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	411	143	8	298	20	122	15	38	10	13	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	337	0	0	568	0	0	952	981	520	916	1043	330
Stage 1	-	-	-	-	-	-	628	628	-	343	343	-
Stage 2	-	-	-	-	-	-	324	354	-	573	700	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1222	-	-	1004	-	-	239	249	556	253	229	712
Stage 1	-	-	-	-	-	-	471	476	-	672	637	-
Stage 2	-	-	-	-	-	-	688	631	-	505	442	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1200	-	-	990	-	-	168	220	537	192	202	697
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	220	-	192	202	-
Stage 1	-	-	-	-	-	-	427	432	-	653	619	-
Stage 2	-	-	-	-	-	-	555	613	-	406	400	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0.22	81.39	15.2
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	1200	-	-	45	-	-	490
HCM Lane V/C Ratio	0.867	0.055	-	-	0.008	-	-	0.282
HCM Ctrl Dly (s/v)	81.4	8.2	-	-	8.7	0	-	15.2
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	6.6	0.2	-	-	0	-	-	1.2

Queues

7: W. A St./E. A St. & N. 1st St

01/31/2025

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	360	67	232	106	383	100	495
v/c Ratio	0.62	0.73	0.45	0.61	0.51	0.60	0.50	0.78
Control Delay (s/veh)	59.3	41.8	59.7	40.3	55.6	31.6	55.9	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.3	41.8	59.7	40.3	55.6	31.6	55.9	39.3
Queue Length 50th (ft)	78	190	40	117	62	183	58	259
Queue Length 95th (ft)	170	339	105	233	148	382	142	531
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	317	875	317	887	515	941	515	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.21	0.26	0.21	0.41	0.19	0.53
Intersection Summary								

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

01/31/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	182	120	60	134	72	95	309	36	95	426	45
Future Volume (veh/h)	112	182	120	60	134	72	95	309	36	95	426	45
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		0.95	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	133	217	143	67	151	81	106	343	40	100	448	47
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	272	179	93	249	133	137	528	62	130	507	53
Arrive On Green	0.10	0.27	0.27	0.05	0.23	0.23	0.08	0.37	0.37	0.07	0.37	0.37
Sat Flow, veh/h	1753	1012	667	1753	1104	592	1753	1429	167	1753	1389	146
Grp Volume(v), veh/h	133	0	360	67	0	232	106	0	383	100	0	495
Grp Sat Flow(s),veh/h/ln	1753	0	1679	1753	0	1697	1753	0	1596	1753	0	1535
Q Serve(g_s), s	5.0	0.0	13.6	2.6	0.0	8.3	4.0	0.0	13.5	3.8	0.0	20.5
Cycle Q Clear(g_c), s	5.0	0.0	13.6	2.6	0.0	8.3	4.0	0.0	13.5	3.8	0.0	20.5
Prop In Lane	1.00		0.40	1.00		0.35	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	168	0	450	93	0	382	137	0	590	130	0	560
V/C Ratio(X)	0.79	0.00	0.80	0.72	0.00	0.61	0.77	0.00	0.65	0.77	0.00	0.88
Avail Cap(c_a), veh/h	413	0	1137	413	0	1148	671	0	1080	671	0	1039
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	23.2	31.7	0.0	23.6	30.7	0.0	17.8	30.9	0.0	20.2
Incr Delay (d2), s/veh	3.2	0.0	1.3	3.9	0.0	0.6	3.4	0.0	0.5	3.6	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.2	0.0	3.3	1.8	0.0	4.7	1.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.2	0.0	24.4	35.6	0.0	24.2	34.2	0.0	18.2	34.5	0.0	22.1
LnGrp LOS	C		C	D		C	C		B	C		C
Approach Vol, veh/h	493				299				489		595	
Approach Delay, s/veh	26.8				26.8				21.7		24.2	
Approach LOS	C				C				C		C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	29.1	7.6	22.2	9.3	28.8	10.5	19.3				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	5.8	15.5	4.6	15.6	6.0	22.5	7.0	10.3				
Green Ext Time (p_c), s	0.1	1.7	0.0	1.0	0.1	2.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			24.6									
HCM 7th LOS			C									

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	269	16	4	203	18	20	7	3	5	7	43
Future Vol, veh/h	28	269	16	4	203	18	20	7	3	5	7	43
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	306	18	5	236	21	33	12	5	7	9	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	336	0	0	646	680	342	669	678	276
Stage 1	-	-	-	-	-	-	390	390	-	279	279	-
Stage 2	-	-	-	-	-	-	256	289	-	390	400	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1277	-	-	1218	-	-	383	372	699	370	373	761
Stage 1	-	-	-	-	-	-	632	606	-	726	678	-
Stage 2	-	-	-	-	-	-	746	671	-	632	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1249	-	-	1204	-	-	326	347	681	330	348	740
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	347	-	330	348	-
Stage 1	-	-	-	-	-	-	605	580	-	706	660	-
Stage 2	-	-	-	-	-	-	672	653	-	587	575	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.71	0.14	17.02	11.98
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	159	-	-	31	-	-	589
HCM Lane V/C Ratio	0.143	0.025	-	-	0.004	-	-	0.125
HCM Ctrl Dly (s/v)	17	8	0	-	8	0	-	12
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 0

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 277 225 0 0 0

Future Vol, veh/h 0 277 225 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 322 262 0 0 0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 262

Stage 1 - - - - 262 -

Stage 2 - - - - 322 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 777

Stage 1 0 - - 0 782 -

Stage 2 0 - - 0 734 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 777

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 782 -

Stage 2 - - - - 734 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 0

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - -

HCM Lane V/C Ratio - - -

HCM Ctrl Dly (s/v) - - 0

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - -

HCM Unsignalized Intersection Capacity Analysis

9: N. 2nd St

01/31/2025

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	53	0	0	55
Future Volume (Veh/h)	0	0	53	0	0	55
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	71	0	0	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	144	71			71	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144	71			71	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	849	991			1529	
Direction, Lane #	NB 1	SB 1				
Volume Total	71	73				
Volume Left	0	0				
Volume Right	0	0				
cSH	1700	1529				
Volume to Capacity	0.04	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s/veh)	0.0	0.0				
Lane LOS						
Approach Delay (s/veh)	0.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%		ICU Level of Service	A
Analysis Period (min)			15			

Approach

Approach Direction	NB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.61
Level of Service	A
Average Dissatisfaction Prob	0.395
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	108
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.14
Prob of Delayed Crossing	0.26
Delay for adq Gap (s)	6.30
Avg Ped Delay (s)	1.61

Approach

Approach Direction	SB
Median Present?	No
Marked Crosswalk?	No
RRFB?	No
K-Factor	0.08
Approach Delay(s)	1.61
Level of Service	A
Average Dissatisfaction Prob	0.395
Crossing Level of Service	E

Crosswalk

Length (ft)	24
Lanes Crossed	2
Veh Vol Crossed (veh/h)	108
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	9.86
Prob of Blocked Lane	0.14
Prob of Delayed Crossing	0.26
Delay for adq Gap (s)	6.30
Avg Ped Delay (s)	1.61

Intersection												
Intersection Delay, s/veh	31.9											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶			↷			↷			↶	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

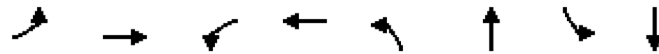
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	49.7	16.4	13.7	12
HCM LOS	E	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	11%	2%	7%
Vol Thru, %	9%	66%	92%	10%
Vol Right, %	22%	23%	6%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	559	274	126
LT Vol	111	59	6	9
Through Vol	14	371	251	12
RT Vol	35	129	17	105
Lane Flow Rate	176	621	326	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.341	0.961	0.551	0.255
Departure Headway (Hd)	6.979	5.571	6.081	6.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	658	590	539
Service Time	5.051	3.571	4.14	4.714
HCM Lane V/C Ratio	0.343	0.944	0.553	0.256
HCM Control Delay, s/veh	13.7	49.7	16.4	12
HCM Lane LOS	B	E	C	B
HCM 95th-tile Q	1.5	13.8	3.3	1

Queues

7: W. A St./E. A St. & N. 1st St

02/04/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	133	361	71	232	106	385	101	495
v/c Ratio	0.62	0.73	0.47	0.60	0.51	0.60	0.51	0.78
Control Delay (s/veh)	59.7	42.1	60.2	40.0	56.1	32.1	56.3	39.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.7	42.1	60.2	40.0	56.1	32.1	56.3	39.7
Queue Length 50th (ft)	78	192	42	117	62	186	59	261
Queue Length 95th (ft)	171	343	110	234	149	389	143	#538
Internal Link Dist (ft)		286		282		306		279
Turn Bay Length (ft)	85		70		90		145	
Base Capacity (vph)	315	873	315	883	513	937	513	937
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.23	0.26	0.21	0.41	0.20	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

7: W. A St./E. A St. & N. 1st St

02/04/2025

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
Future Volume (veh/h)	112	183	120	63	134	72	95	309	38	96	426	45
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		0.95	1.00		0.95	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	0.85
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	133	218	143	71	151	81	106	343	42	101	448	47
Peak Hour Factor	0.84	0.84	0.84	0.89	0.89	0.89	0.90	0.90	0.90	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	272	179	95	250	134	137	524	64	131	507	53
Arrive On Green	0.10	0.27	0.27	0.05	0.23	0.23	0.08	0.37	0.37	0.07	0.36	0.36
Sat Flow, veh/h	1753	1014	665	1753	1104	592	1753	1421	174	1753	1389	146
Grp Volume(v), veh/h	133	0	361	71	0	232	106	0	385	101	0	495
Grp Sat Flow(s),veh/h/ln	1753	0	1679	1753	0	1697	1753	0	1595	1753	0	1535
Q Serve(g_s), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Cycle Q Clear(g_c), s	5.1	0.0	13.7	2.7	0.0	8.4	4.1	0.0	13.7	3.9	0.0	20.6
Prop In Lane	1.00		0.40	1.00		0.35	1.00		0.11	1.00		0.09
Lane Grp Cap(c), veh/h	168	0	451	95	0	385	137	0	588	131	0	560
V/C Ratio(X)	0.79	0.00	0.80	0.75	0.00	0.60	0.77	0.00	0.66	0.77	0.00	0.88
Avail Cap(c_a), veh/h	411	0	1131	411	0	1143	667	0	1074	667	0	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	23.3	31.8	0.0	23.6	30.9	0.0	18.0	31.0	0.0	20.3
Incr Delay (d2), s/veh	3.2	0.0	1.3	4.3	0.0	0.6	3.4	0.0	0.5	3.6	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	5.3	1.2	0.0	3.3	1.8	0.0	4.8	1.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.4	0.0	24.6	36.2	0.0	24.2	34.3	0.0	18.4	34.6	0.0	22.2
LnGrp LOS	C		C	D		C	C		B	C		C
Approach Vol, veh/h	494			303			491			596		
Approach Delay, s/veh	26.9			27.0			21.9			24.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	29.2	7.7	22.3	9.3	28.9	10.5	19.5				
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Max Green Setting (Gmax), s	26.0	46.0	16.0	46.0	26.0	46.0	16.0	46.0				
Max Q Clear Time (g_c+l1), s	5.9	15.7	4.7	15.7	6.1	22.6	7.1	10.4				
Green Ext Time (p_c), s	0.1	1.7	0.0	1.0	0.1	2.3	0.0	0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	24.8											
HCM 7th LOS	C											

Intersection

Intersection Delay, s/veh 10.5

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.60	0.60	0.60	0.75	0.75	0.75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	1.3	10.1	9	8.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	11%	2%	9%
Vol Thru, %	26%	85%	89%	13%
Vol Right, %	9%	4%	8%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	317	236	55
LT Vol	15	35	5	5
Through Vol	6	269	211	7
RT Vol	2	13	20	43
Lane Flow Rate	38	360	274	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.059	0.454	0.349	0.101
Departure Headway (Hd)	5.561	4.537	4.584	4.975
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	793	782	716
Service Time	3.631	2.575	2.626	3.038
HCM Lane V/C Ratio	0.059	0.454	0.35	0.102
HCM Control Delay, s/veh	9	11.3	10.1	8.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.2	2.4	1.6	0.3

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 276 226 0 1 10

Future Vol, veh/h 0 276 226 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 321 263 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 263

Stage 1 - - - - 263 -

Stage 2 - - - - 321 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 776

Stage 1 0 - - 0 781 -

Stage 2 0 - - 0 735 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 776

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 781 -

Stage 2 - - - - 735 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 10

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 733

HCM Lane V/C Ratio - - 0.017

HCM Ctrl Dly (s/v) - - 10

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

Intersection

Intersection Delay, s/veh 11.2

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	278	12	30	225	31	12	23	16	21	11	24
Future Vol, veh/h	34	278	12	30	225	31	12	23	16	21	11	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	323	14	35	262	36	14	27	19	24	13	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	11.2	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	10%	10%	38%
Vol Thru, %	45%	86%	79%	20%
Vol Right, %	31%	4%	11%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	324	286	56
LT Vol	12	34	30	21
Through Vol	23	278	225	11
RT Vol	16	12	31	24
Lane Flow Rate	59	377	333	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.485	0.429	0.098
Departure Headway (Hd)	5.49	4.639	4.647	5.439
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	772	772	652
Service Time	3.579	2.691	2.7	3.526
HCM Lane V/C Ratio	0.091	0.488	0.431	0.1
HCM Control Delay, s/veh	9.1	12	11.2	9.1
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.3	2.7	2.2	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	314	3	6	291	0	2
Future Vol, veh/h	314	3	6	291	0	2
Conflicting Peds, #/hr	0	9	9	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	3	7	320	0	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	357	0	689	356
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	333	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1201	-	412	688
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1191	-	405	682
Mov Cap-2 Maneuver	-	-	-	-	405	-
Stage 1	-	-	-	-	703	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.16	10.29
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	682	-	-	1191	-
HCM Lane V/C Ratio	0.003	-	-	0.006	-
HCM Ctrl Dly (s/v)	10.3	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 3 314 298 5 1 2

Future Vol, veh/h 3 314 298 5 1 2

Conflicting Peds, #/hr 3 0 0 3 0 2

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 94 94 94 94 94 94

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 3 334 317 5 1 2

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 325 0 - 0 663 325

Stage 1 - - - - 323 -

Stage 2 - - - - 340 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1234 - - - 426 716

Stage 1 - - - - 734 -

Stage 2 - - - - 721 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1231 - - - 422 713

Mov Cap-2 Maneuver - - - - 422 -

Stage 1 - - - - 730 -

Stage 2 - - - - 718 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0.08 0 11.24

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 17 - - - 580

HCM Lane V/C Ratio 0.003 - - - 0.006

HCM Ctrl Dly (s/v) 7.9 0 - - 11.2

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0

4: W. A St. & N. Adams St

[illegible]

4: W. A St. & N. Adams St

PM Cumulative with Project 12:00 pm 01/10/2025 PM Cumulative with Project Synchro 12 Report
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Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Traffic Vol, veh/h	402	0	0	447	0	173
Future Vol, veh/h	402	0	0	447	0	173
Conflicting Peds, #/hr	0	17	17	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	432	0	0	481	0	186

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 433
Stage 1	-	-	- -
Stage 2	-	-	- -
Critical Hdwy	-	-	- 6.22
Critical Hdwy Stg 1	-	-	- -
Critical Hdwy Stg 2	-	-	- -
Follow-up Hdwy	-	-	- 3.318
Pot Cap-1 Maneuver	-	0	0 - 623
Stage 1	-	0	0 -
Stage 2	-	0	0 -
Platoon blocked, %	-		-
Mov Cap-1 Maneuver	-	-	- 622
Mov Cap-2 Maneuver	-	-	- -
Stage 1	-	-	- -
Stage 2	-	-	- -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	13.24
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	622	-	-
HCM Lane V/C Ratio	0.299	-	-
HCM Ctrl Dly (s/v)	13.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.3	-	-

Intersection												
Int Delay, s/veh	13.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Conflicting Peds, #/hr	19	0	14	14	0	19	3	0	23	23	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	84	84	84	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	338	0	0	570	0	0	952	981	521	916	1043	331
Stage 1	-	-	-	-	-	-	629	629	-	342	342	-
Stage 2	-	-	-	-	-	-	323	352	-	574	701	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1221	-	-	1003	-	-	239	249	555	253	229	711
Stage 1	-	-	-	-	-	-	470	475	-	673	638	-
Stage 2	-	-	-	-	-	-	689	631	-	504	441	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1199	-	-	989	-	-	168	220	536	192	202	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	220	-	192	202	-
Stage 1	-	-	-	-	-	-	426	431	-	655	621	-
Stage 2	-	-	-	-	-	-	556	614	-	405	400	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.86	0.19	81.18	15.21
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	203	1199	-	-	39	-	-	490
HCM Lane V/C Ratio	0.867	0.055	-	-	0.007	-	-	0.282
HCM Ctrl Dly (s/v)	81.2	8.2	-	-	8.7	0	-	15.2
HCM Lane LOS	F	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	6.6	0.2	-	-	0	-	-	1.2

7: W. A St./E. A St. & N. 1st St

Intersection Summary

Queue shown is maximum after two cycles.

7: W. A St./E. A St. & N. 1st St

PM Cumulative with Project 12:00 pm 01/10/2025 PM Cumulative with Project Synchro 12 Report
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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	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Conflicting Peds, #/hr	23	0	12	12	0	23	6	0	15	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	86	86	86	60	60	60	75	75	75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	292	0	0	332	0	0	672	708	340	697	704	286
Stage 1	-	-	-	-	-	-	405	405	-	292	292	-
Stage 2	-	-	-	-	-	-	268	303	-	405	412	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1264	-	-	1221	-	-	368	358	700	354	360	751
Stage 1	-	-	-	-	-	-	621	597	-	714	669	-
Stage 2	-	-	-	-	-	-	736	662	-	620	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1237	-	-	1207	-	-	310	331	682	315	333	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	331	-	315	333	-
Stage 1	-	-	-	-	-	-	590	567	-	695	651	-
Stage 2	-	-	-	-	-	-	661	643	-	574	563	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.88	0.17	17.29	12.19
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	331	197	-	-	37	-	-	574
HCM Lane V/C Ratio	0.116	0.032	-	-	0.005	-	-	0.128
HCM Ctrl Dly (s/v)	17.3	8	0	-	8	0	-	12.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.4

Intersection

Int Delay, s/veh 0.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 276 226 0 1 10

Future Vol, veh/h 0 276 226 0 1 10

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 321 263 0 1 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All - 0 - 0 584 263

Stage 1 - - - - 263 -

Stage 2 - - - - 321 -

Critical Hdwy - - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - - - 3.518 3.318

Pot Cap-1 Maneuver 0 - - 0 474 776

Stage 1 0 - - 0 781 -

Stage 2 0 - - 0 735 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - - 474 776

Mov Cap-2 Maneuver - - - - 474 -

Stage 1 - - - - 781 -

Stage 2 - - - - 735 -

Approach EB WB SB

HCM Ctrl Dly, s/v 0 0 10

HCM LOS A

Minor Lane/Major Mvmt EBT WBT SBLn1

Capacity (veh/h) - - 733

HCM Lane V/C Ratio - - 0.017

HCM Ctrl Dly (s/v) - - 10

HCM Lane LOS - - A

HCM 95th %tile Q(veh) - - 0.1

9: N. 2nd St

PM Cumulative with Project 12:00 pm 01/10/2025 PM Cumulative with Project Synchro 12 Report
TKTPM Page 1

Approach	
Approach Direction	EB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk	
Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	480
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.92
Avg Ped Delay (s)	4.88

Approach	
Approach Direction	WB
Median Present?	No
Marked Crosswalk?	Yes
RRFB?	No
K-Factor	0.08
Approach Delay(s)	4.88
Level of Service	A
Average Dissatisfaction Prob	0.295
Crossing Level of Service	D

Crosswalk	
Length (ft)	48
Lanes Crossed	2
Veh Vol Crossed (veh/h)	480
Yield Rate(%)	76
Ped Platooning	No
Critical Headway (s)	16.71
Prob of Blocked Lane	0.67
Prob of Delayed Crossing	0.89
Delay for adq Gap (s)	50.92
Avg Ped Delay (s)	4.88

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↱			↰			↰			↱	
Traffic Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Future Vol, veh/h	59	371	129	6	251	17	111	14	35	9	12	105
Peak Hour Factor	0.90	0.90	0.90	0.84	0.84	0.84	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	412	143	7	299	20	122	15	38	10	13	115
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	49.7	16.4	13.7	12
HCM LOS	E	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	69%	11%	2%	7%
Vol Thru, %	9%	66%	92%	10%
Vol Right, %	22%	23%	6%	83%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	160	559	274	126
LT Vol	111	59	6	9
Through Vol	14	371	251	12
RT Vol	35	129	17	105
Lane Flow Rate	176	621	326	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.341	0.961	0.551	0.255
Departure Headway (Hd)	6.979	5.571	6.081	6.638
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	658	590	539
Service Time	5.051	3.571	4.14	4.714
HCM Lane V/C Ratio	0.343	0.944	0.553	0.256
HCM Control Delay, s/veh	13.7	49.7	16.4	12
HCM Lane LOS	B	E	C	B
HCM 95th-tile Q	1.5	13.8	3.3	1

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Future Vol, veh/h	35	269	13	5	211	20	15	6	2	5	7	43
Peak Hour Factor	0.88	0.88	0.88	0.86	0.86	0.86	0.60	0.60	0.60	0.75	0.75	0.75
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	40	306	15	6	245	23	25	10	3	7	9	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	10.1	9	8.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	65%	11%	2%	9%
Vol Thru, %	26%	85%	89%	13%
Vol Right, %	9%	4%	8%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	23	317	236	55
LT Vol	15	35	5	5
Through Vol	6	269	211	7
RT Vol	2	13	20	43
Lane Flow Rate	38	360	274	73
Geometry Grp	1	1	1	1
Degree of Util (X)	0.059	0.454	0.349	0.101
Departure Headway (Hd)	5.561	4.537	4.584	4.975
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	793	782	716
Service Time	3.631	2.575	2.626	3.038
HCM Lane V/C Ratio	0.059	0.454	0.35	0.102
HCM Control Delay, s/veh	9	11.3	10.1	8.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.2	2.4	1.6	0.3

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