

COMMITTEE OF THE WHOLE MEETING AGENDA

Tuesday, June 11, 2024

Immediately following the Village Board Meeting,

but not before 6:15 PM

Caledonia Village Hall - 5043 Chester Lane

1. **Meeting called to order**
2. **Roll Call**
3. **Approval of Minutes** – Committee of the Whole: May 28, 2024
4. **Public Comment** - Provides a two-minute opportunity for citizens to voice opinions to the Committee of the Whole. The Committee of the Whole cannot respond as this may conflict with open meeting requirements.
5. **New Business**
 - A. Operator License Application Review – Tony Muniz
 - B. Review and Approve South Hills Development Waiver to Titles 18-1-4(c)(5)(h),
 - C. Review and Approve South Hills Development Waiver to Title 18-1-4(c)(5)(f)(1)
 - D. Review and Approve South Hills Development exemption to Public Sidewalk Requirement per Ordinance 6-3-(4)(f)(2).
 - E. Review and Approve South Hills Development Utility Installation Outside of Road Pavement.
 - F. Review and Approve a Speed Limit Reduction on Golf Road.
 - G. Review and Approve a Speed Limit Reduction on 5 Mile Rd Charles street to Terminus
 - H. Discussion on proposed text amendment Title 18, Ch. 12 Off-Street Parking
 - I. Review and Approve TIA for Olympia Brown Expansion
 - J. Suggested items to be placed on the next meeting agenda (With No Action)
6. **Continuing Business**
 - A. Discussion on Title 7, Chapter 1, Section 13(e): Licensing of Dogs; Regulation of Animals (*CoW 5/14/24, directed staff to draft ordinance changes*)
7. **Adjournment**

1 - Order

President Weatherston called the Committee of the Whole meeting to order at 6:32 p.m. at the Caledonia Village Hall.

2 – Roll Call

PRESENT: 6 – President Weatherston, Trustee Lambrecht, Trustee McManus, Trustee Pierce, Trustee Stillman, and Trustee Wishau.

EXCUSED: 1 – Trustee Martin

STAFF: Administrator Kathryn Kasper, Development Director Peter Wagner, Public Services Director Tony Bunkelman, Village Engineer Ryan Schmidt, Police Chief Christopher Botsch, Fire Chief Jeff Henningfeld, Village Attorney Elaine Ekes, and Clerk Jennifer Olsen.

3 – Approval of Minutes

A **motion** was made by Trustee Stillman to approve the Committee of the Whole minutes of 05/14/24, seconded by Trustee Lambrecht. **The motion carried 5-1.**

Prior to approval, Trustee Pierce expressed concern about the level of detail regarding residents' statements as part of the public comment agenda item.

4 – Public Comment

The following people appeared to speak before the Committee:
None

5 – New Business

A. RUSD President presentation (CoW 3/26/2024)

RUSD President Jane Barbian addressed the Committee to provide more information regarding the addition to Olympia Brown, and to answer questions. In response to community concerns, additional parking spots have been added, a drainage pond is being expanded and additional flood control added. There will be three sessions per grade level instead of two.

Additional discussion on high school Academies (Health, Tech, Education, etc.) President Barbian stated RUSD has strong partnerships with many local business including Uline, Amazon, Foxconn, and Harboro. Middle schools are beginning Academy implementation as well.

B. Discussion on Highway/DPW name transition

Staff stated that traditionally, the majority of the municipalities in the area use the Department of Public Works (DPW) to identify their highway department. Village staff have been making a slow transition in renaming job positions using the DPW

title. However, the Village does not officially recognize our Highway Department as DPW.

A motion was made by Trustee Pierce to recommend that the Village Board rename the Highway Department as the Department of Public Works (DPW), seconded by Trustee Wishau. **Motion carried 6-0.**

C. Request for Approval to Purchase an Evidence Response Vehicle

Staff presented on the item, summarizing the material provided in the packet and answering questions. Staff conducted preliminary research on vehicle purchase and is seeking Committee approval before providing a more in-depth proposal.

A motion was made by Trustee Stillman to allow staff to move forward with their vehicle search, seconded by Trustee McManus. **Motion carried 6-0.**

6 – Continuing Business

A. Discussion on removing the sign at Highways 31 and 32 (*CC 3/12/24 recommend removal, 2-0, CoW 3/26/24 postponed, CoW 4/9/24 directed staff to get quote, CoW 5/14/24 postponed until quote is received*)

Staff presented on the item, summarizing the material provided in the packet and answering questions. The cost estimate provided by the vendor to update the sign would be \$5,580.00. Discussion followed on the pros and cons of paying to upgrade an outdated welcome sign which the Village does not own and has no rights to.

A motion was made by Trustee Stillman to leave the sign as is, seconded by Trustee McManus **Motion carried 5-1.**

8. Adjournment

President Weatherston adjourned the meeting at 6:57 p.m.

Respectfully submitted:

Jennifer Olsen

Village Clerk

MEMORANDUM

Date: June 6, 2024
To: Committee of the Whole
From: Jennifer Olsen
Village Clerk/Treasurer
Re: Operator License Application - Troy Muniz



Pursuant to Section 7-2-35(c)(3) of the Village Code of Ordinances, an application may be denied based upon the applicant's arrest and conviction record if the applicant has been convicted of a felony (unless duly pardoned) or if the applicant has habitually been a law offender.

The Village Board approved **Parameters for Denial of Operator Licenses** (Exhibit A), based on the above ordinance, states that the license may be denied if:

The applicant has been convicted within the 5-year period preceding the date of application of disorderly conduct or battery where alcohol has been involved, and any other alcohol related criminal or ordinance offense.

The applicant was charged with the following offenses within the 5 year period preceding the date of application:

1. 08/2019 – Operating while intoxicated
2. 08/2020 – Operating while revoked; ignition interlock device tampering/failure to install
3. 04/2021 – Disorderly Conduct (reduced to non-criminal citation)

The applicant has completed the required Wisconsin Responsible Beverage Server Training Course. They also disclosed all of the above offenses on their application.

The applicant was mailed the attached letter (Exhibit B) and notified by phone call on June 6, 2024

VILLAGE OF CALEDONIA

TO: Applicants for Operator Licenses

The application for a new, renewal, provisional, or temporary Operator License asks questions regarding past convictions or arrests under Local, State or Federal Laws, either as adult or juvenile. These questions must be answered truthfully. **Please read these questions carefully.**

A background check will be performed on all applicants. Should we find your information is not correct, this could be grounds to deny your license. The Village Board has adopted the "Parameters for Denial of Operator Licenses" as a guideline for license denials. If you have been convicted of any of the offenses listed, your application may be denied. If you have any questions about this, please ask before completing the application.

PARAMETERS FOR DENIAL OF OPERATOR LICENSES

1. Applicant fails to provide complete, accurate & truthful information. You cannot re-apply until a period of 60 days has elapsed from the date of application.
2. Two or more convictions within the 2-year period preceding the date of application of:
 - Possession of false identification.
 - Underage consumption/possession of alcohol.
 - Furnishing or sale of alcohol to minors.
 - Any other offense related to the illegal sale of alcohol beverages.
 - Conviction of any substance abuse violation. Conviction of a first-time operating under the influence of a controlled substance.
 - Sale of alcohol beverages to an intoxicated person.
 - Sale of alcohol beverages or keeping a licensed premises open after closing hours.
 - Sale of alcohol beverages without a license.
 - Conviction of any crime or ordinance involving Local, State or Federal laws.
3. The applicant has been convicted within the 5-year period preceding the date of application of:
 - The applicant has been convicted within the 5-year period preceding the date of the application of a non-alcohol related misdemeanor offense which is substantially related to the licensed activity with respect to which a license is requested. Examples of such substantially similar activity include the following: gambling, drug offenses under Wis. Stat. §961.41, disorderly conduct upon a licensed premises, or battery upon a licensed premises.
 - Disorderly conduct or battery where alcohol has been involved.
 - Any other alcohol related criminal or ordinance offense.

Any person denied a license may appeal the decision. The request will be made through the Village Clerk's Office and will be forwarded for review to the Committee of the Whole. **IF YOUR APPLICATION SHOULD BE DENIED, FEES ARE NON-REFUNDABLE.**

June 6, 2024

Troy Muniz
4244 Woodbury Lane
Mt. Pleasant, WI 53403

This letter is to advise you that based upon the results of your background check, your application for an Operator's License in the Village of Caledonia has been referred to the **Committee of the Whole** for review. You may attend this meeting to present evidence and testimony as to why the license should be granted.

Applicable parameters for denial of operator licenses:

The applicant has been convicted within the 5-year period preceding the date of application of:

- Disorderly conduct or battery where alcohol has been involved.
- Any other alcohol related criminal or ordinance offense.

Committee of the Whole Meeting:

Tuesday, June 11 at 6:30 p.m. or immediately following the Village Board meeting.

Thank you,

Jennifer Olsen
Village Clerk/Treasurer
5043 Chester Lane
Caledonia, WI 53402

MEMORANDUM

Date: June 5, 2024

To: Committee of the Whole
Village Board

From: Ryan Schmidt, P.E.
Village Engineer



Re: **South Hills Commerce Center – Waiver Requests to Title 6 and Title 18.**

Recommended Motions:

1. Move to recommend approval of a waiver to Ordinance 18-1-4-(c)-(5)-(h) and authorize a modified industrial cross section with 66' of Right-of-Way for the proposed South Hills Development.
2. Move to recommend approval of a waiver to Ordinance 18-1-4-(c)-(5)-(f)-(1) and authorize a Public Road to be installed with a cul-de-sac length greater than 800'.
3. Move to recommend approval of an exemption to public sidewalks being required on the proposed Village of Caledonia owned Rights-of-Way in the proposed South Hills Development and along Golf Road per Ordinance 6-3-4(f)(2).

BACKGROUND INFORMATION

Ashley Ventures LLC is proposing to develop the former South Hills Golf Course at the Southeast corner of USH 41 Frontage Road East and Golf Road. As currently proposed, the development includes nearly 3.8 million square feet of commercial/industrial development and a public road network to provide access. As part of the design phase, Ashley Ventures has requested waivers for items related to the road construction and public infrastructure requirements of the development, like that of other nearby developments in TID 4. The request is to apply to all newly constructed Village Roads and Golf Road as it abuts to proposed development. The request has been included as **Attachment 1** and overall concept development site plan included as **Exhibit A**.

The requests are summarized as follows:

1. Waiver from Ordinance 18-1-4-(c)-(5)-(h): Industrial Road Standard Cross Section
2. Waiver from Ordinance 18-1-4-(c)-(5)-(f)-(1): Urban Cul-De-Sac Length
3. Waiver from sidewalk improvements being required and acceptance of Title 6-3-4(f)(2).
4. Speed Limit Modification on Golf Road from 45mph to 35mph. (A separate memo will be provided on this topic).

MODIFIED CROSS SECTION AND RIGHT-OF-WAY

Ashley Ventures, LLC has included a modified industrial park road cross section for the future public roadways to be installed within the development. The road cross section proposes to waive the standard 90' ROW and rural open-ditch style and provide a more urbanized version with less overall ROW. Exhibit B is included and shows a 66' ROW width and a 37' asphalt road with mountable 30" concrete curb and gutter on each side. This cross section has been utilized at DeBack Farms and the more recent Zilber Development off Northwestern Avenue. The asphalt pavement thickness and stone depth is not modified (6" asphalt on 15" stone) which allows the road to retain its ability to carry truck traffic. For the Village of Caledonia roadways, trees are kept on the private property side of the ROW. A future modified cross section for 2 Mile Road which abuts and shares jurisdiction with Mount Pleasant will need to accommodate any additional requirements they may have (i.e. sidewalk, trees, etc.). Typically, the water and sewer utility are located under the road pavement. This proposal leaves open the concept of these utilities being under the terrace area which is acceptable upon Utility Commission Approval. This cross section does not apply to Golf Road.

The Village Engineering Department has reviewed the proposed cross section and approves of its design. It is recommended to authorize a waiver to Title 18-1-4-(c)-(5)-(h) in favor of the proposed cross section as attached in Exhibit B.

URBAN CUL-DE-SAC LENGTH

Ashley Ventures, LLC has also included **Exhibit C** which includes two layouts for the proposed first 2 phases of the project development. Phase 1 includes building Concept Buildings 1 and 3 and the proposed East-West Village Road to the limits needed to accommodate just those buildings. Rather than a Turnaround Tee which is required by Ordinance, it has been requested to allow a Cul-De-Sac of a length exceeding the ordinance required 800'. With Phase 1, the overall length of the road would be 1421'. With Phase 2, which includes Concept Buildings 2 and 4 and possibly 7, the road would be a total 2,417'.

Based on the included **Exhibit C**, there would be multiple turnaround locations for large vehicles and emergency services along the roadway. The Caledonia Fire Department does not have any objections to the proposed layout if the Cul-De-Sac is sized appropriately for their apparatuses to turn around. Caledonia Public Works does not object to the length if the road is built to our standards which will allow it to be plowed/maintained upon acceptance.

The Engineering Department has reviewed the proposed waiver request and recommends approval as well. It is recommended that no curb island be installed on these cul-de-sacs and the Civil Engineering Plans for the construction of the roads include turning templates showing the design vehicles making the turnaround.

SIDEWALK IMPROVEMENTS

Ashley Ventures, LLC has requested that sidewalks are not installed on this project on any Village Roads in this development and on Golf Road per Title 6 of the Village Code of Ordinances 6-3-4. Specifically, there is a section in Title 6-3-4(f) that authorizes the board to waive the need for public sidewalks for industrial parks over 20 acres. The Engineering Department has reviewed this request and recommends the Village Board waives the need for sidewalks per Title 6-3-4-(f). This does not preclude Ashley Ventures, LLC from any requirements in Mount Pleasant.

SPEED LIMIT

A separate memo will be included for a speed limit reduction request on Golf Road.

GENERAL

For all public roadways and infrastructure related to the proposed development, Civil Engineering Infrastructure, Utility, and Mass Grading plans will need to be reviewed and approved by Village Staff and the Utility Commission before the issuance of building permits.

May 31, 2024

Ryan Schmidt, PE
Village Engineer
Village of Caledonia
5043 Chester Lane
Racine, WI 53402

RE: South Hills Commerce Center
Committee of the Whole approvals

Dear Mr. Schmidt,

I'm writing you to summarize our requests for your review and subsequent Committee of the Whole approvals during their June 11th 2024 meeting. I've outlined the items we're requesting approval for below. Please let me know if you have any questions or if a meeting to review would be helpful.

1. Approval of 66' right-of-way for the roadways within the park. The 66' right-of-way is depicted on the site plan (Exhibit A) and the proposed roadway section (Exhibit B). The intention is for Ashley Ventures to construct these roadways and dedicate to the Village after completion.
2. Approval of the proposed road section (Exhibit B).
3. Exemption from any requirements to install public sidewalks within the development or along both Frontage Road and Golf Road. Section 6-3-4 (f) of Caledonia's Municipal Code of Ordinances does not require sidewalks for industrial parks over 20 acres with board approval.
4. Approval of a maximum cul-de-sac length of 2,800'. Exhibit C illustrates concepts for phasing and cul-de-sacs.
5. Approval and confirmation that the Village of Caledonia will reduce both the posted and design speed limits to 35mph on Golf Road from Frontage Road to a to-be-determined location east of the easternmost limits of our property. The speed limit reduction shall be implemented prior to construction of our proposed Accesses D, E, F & G as defined in the South Hills Commerce Center Traffic Impact Analysis dated 3/4/2024 and labeled on the site plan included as Exhibit A.
6. Alignment on and approval of the proposed offsite road improvements for the Golf Road access driveways. The recommended improvements below are taken directly from Art Baumann's TIA Review Letter dated 4/30/2024 (Exhibit D). In short, no turn

or bypass lanes will need to be constructed for the Golf Road accesses when the speed limit is reduced to 35mph. Per your request, Pinnacle Engineering Group is developing intersection sight distance exhibits for Accesses D, E, F & G; I've reserved Exhibit E for these and we will provide as soon as possible.

a. Golf Road & Proposed Access Driveway "D"

- A Type C or D intersection should be installed, with the south approach having stop control.
- The south approach should have one northbound egress lane and one southbound ingress lane.
- The east approach should have one westbound shared left-turn/through lane.
- The west approach should have one eastbound shared through/right-turn lane.

b. Golf Road & Proposed Access Driveway "E"

- A Type C or D intersection should be installed, with the south approach having stop control.
- The south approach should have one northbound egress lane and one southbound ingress lane.
- The east approach should have one westbound shared left-turn/through lane.
- The west approach should have one eastbound shared through/right-turn lane.

c. Golf Road & Proposed Access Driveway "F"

- A Type C or D intersection should be installed, with the south approach having stop control.
- The south approach should have one northbound egress lane and one southbound ingress lane.
- The east approach should have one westbound shared left-turn/through lane and one westbound bypass lane.
- The west approach should have one eastbound shared through/right-turn lane.

d. Golf Road & Proposed Access Driveway "G"

- A Type C or D intersection should be installed, with the south approach having stop control.
- The south approach should have one northbound egress lane and one southbound ingress lane.

- The east approach should have one westbound shared left-turn/through lane.
- The west approach should have one eastbound shared through/right-turn lane.

Thank you again for your assistance and support.

Sincerely,

A handwritten signature in black ink, appearing to read 'Joe Podge', with a long horizontal line extending to the right.

Joe Podge

Ashley Ventures, LLC.

Exhibits:

Exhibit A: South Hills Commerce Center Site Plan, revision V10.4 dated 05/07/2024.

Exhibit B: South Hills Commerce Center, Proposed Roadway Typical Section, dated 05/07/2024.

Exhibit C: South Hills Commerce Center, Cul-de-sac concepts, dated 05/07/2024.

Exhibit D: Art Baumann's (WisDOT) TIA Review Letter dated 4/30/2024.

Exhibit E: Intersection Sight Distance Exhibits for Accesses D, E, F & G

Exhibit A: South Hills Commerce Center Site Plan, revision V10.4 dated 05/07/2024.

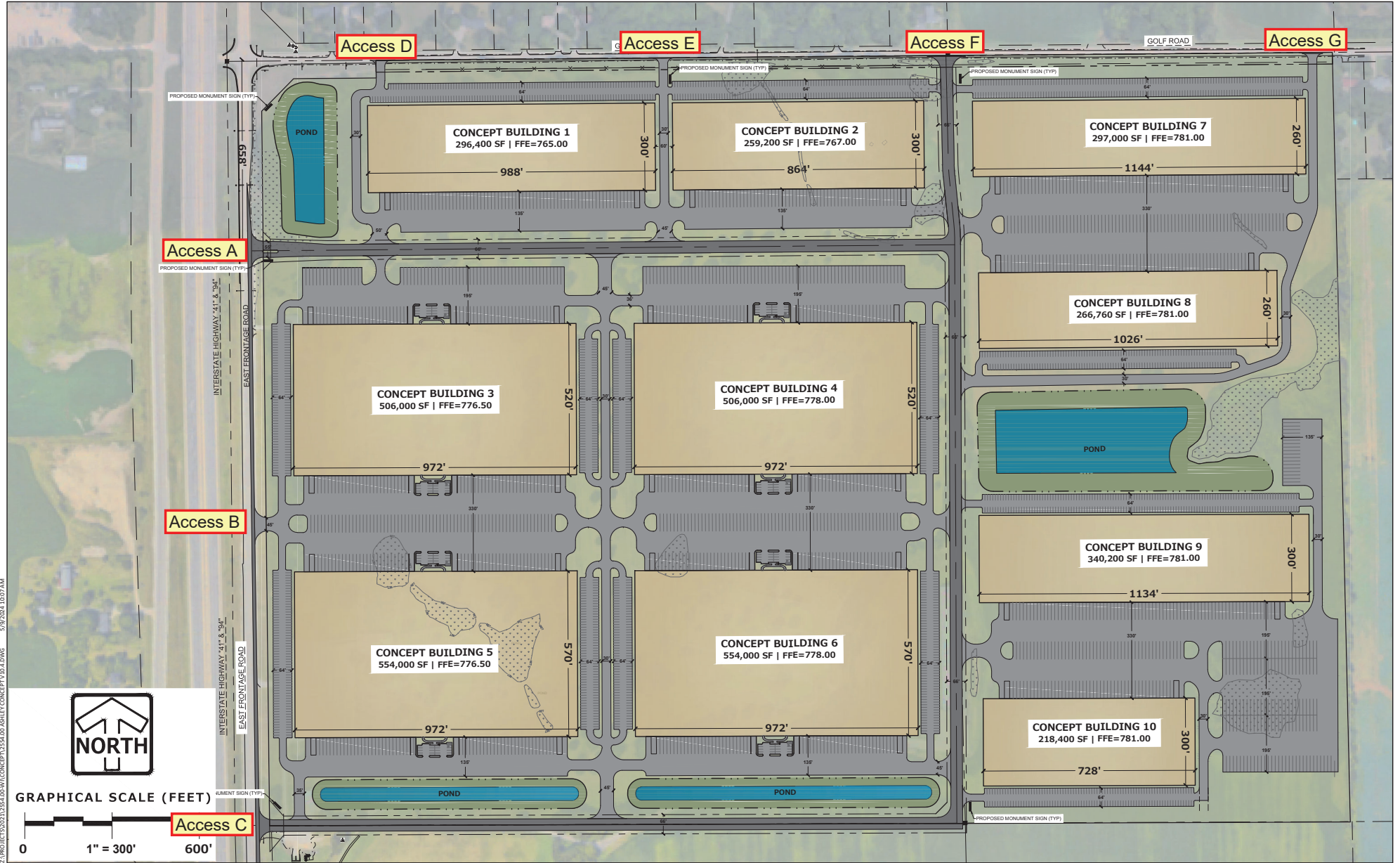
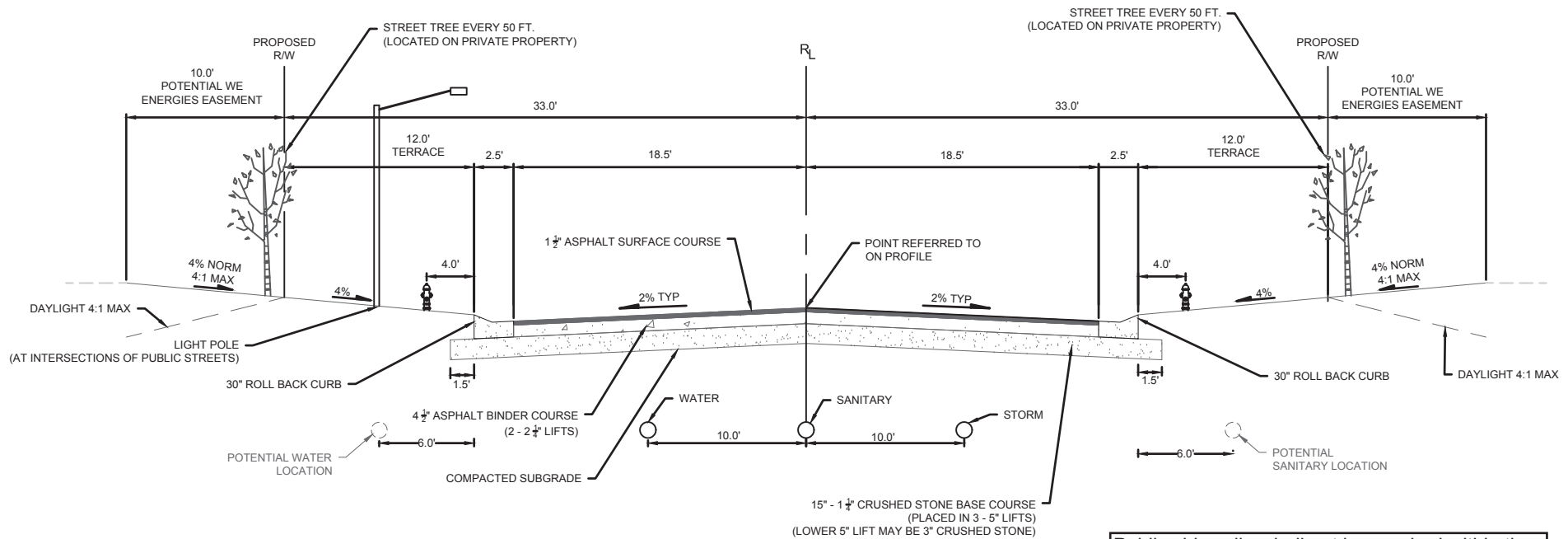


Exhibit B: South Hills Commerce Center, Proposed Roadway Typical Section, dated
05/07/2024.

Z:\PROJECTS\2021\2554.00-W\DESIGN\ESTIMATES\2554.00 TYPICAL SECTIONS 24.04.23.DWG 5/9/2024 10:30 AM



TYPICAL FINISHED SECTION A

FOR PROPOSED ROADS IN THE VILLAGE OF CALEDONIA

Public sidewalks shall not be required within the SHCC development or along Frontage Road or Golf Road.



SHCC | ROADWAY TYPICAL SECTION A

PINNACLE ENGINEERING GROUP

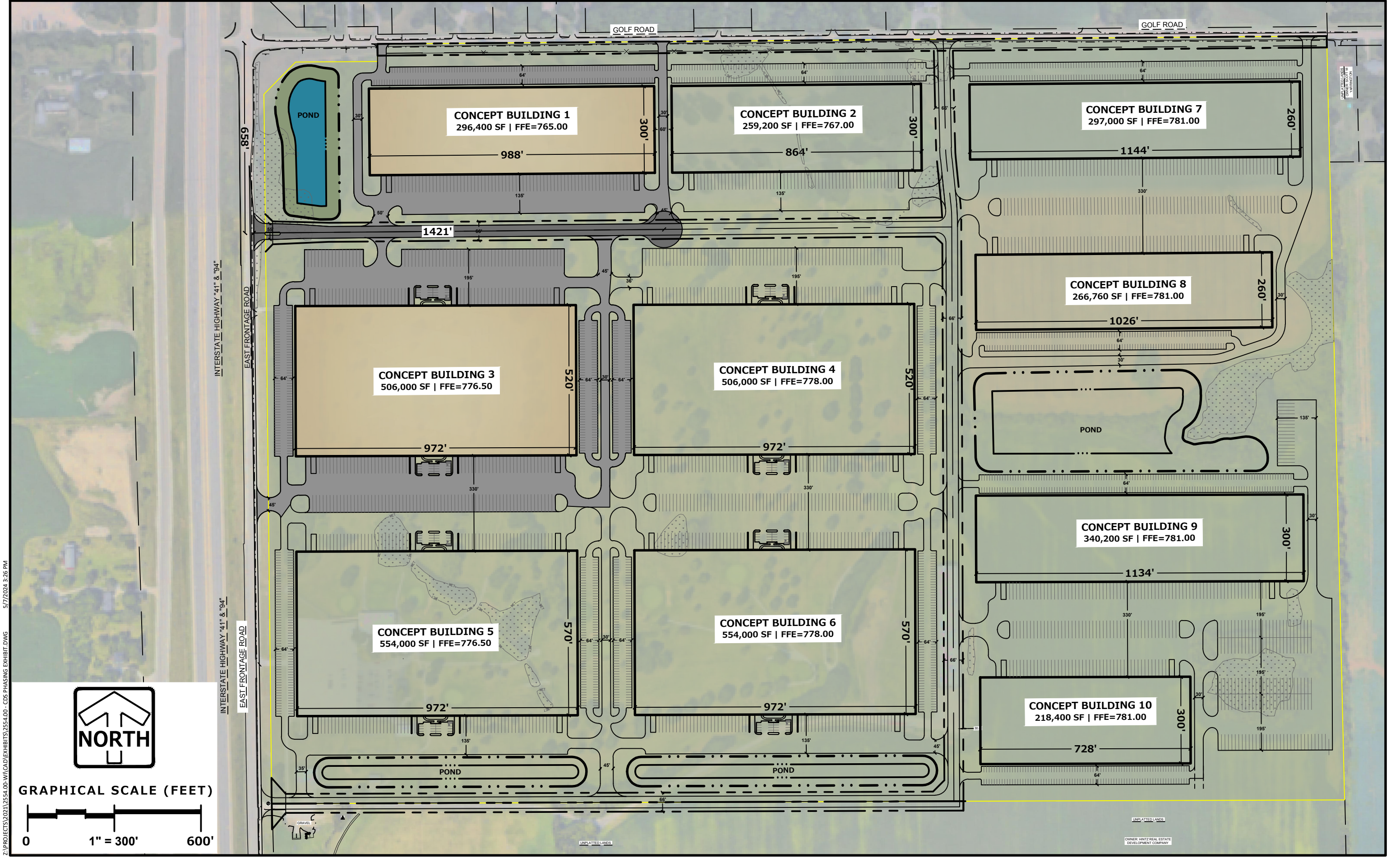
20725 WATERTOWN ROAD | SUITE 100 | BROOKFIELD, WI 53186 | WWW.PINNACLE-ENGR.COM | 262-754-8888

05/07/24

PLAN | DESIGN | DELIVER

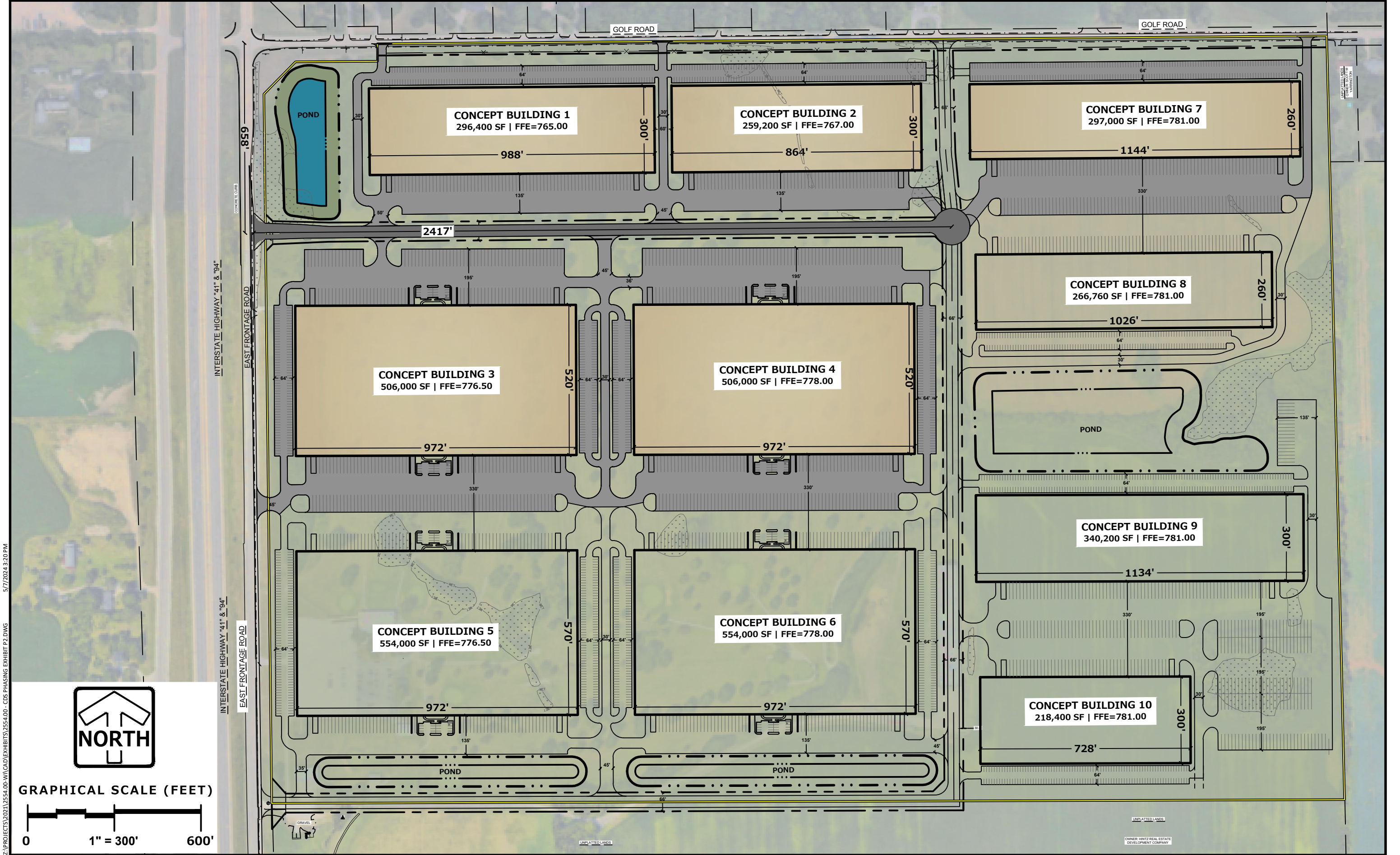
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Exhibit C: South Hills Commerce Center, Cul-de-sac concepts, dated 05/07/2024.



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GRAPHICAL SCALE (FEET)

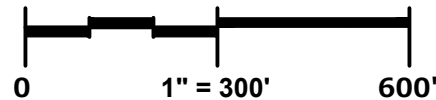


Exhibit D: Art Baumann's (WisDOT) TIA Review Letter dated 4/30/2024.



April 30, 2024

ANTHONY BUNKELMAN
VILLAGE OF CALEDONIA
5043 CHESTER LANE
RACINE, WI 53402

Subject: Log #331145 – Development Submittal
South Hills Commerce Center Development
I-41/94 East Frontage Road & Golf Road
Racine County

Dear Mr. Bunkelman:

The traffic impact analysis (TIA) performed by Traffic Analysis & Design, Inc. (TADI) covering the South Hills Commerce Center Development in the Village of Caledonia has allowed the Department to understand the impacts of the subject development and identify the necessary improvements. The attached lists the improvements that are to be constructed as a result of the subject development.

The development can now proceed to the Department's Permit Process. The permit plans will require design preparation (please see attached plan requirements). **All permits will be issued to the maintaining authority and the design consultant will need to forward permit plans for review and submittal.**

If you have any questions regarding traffic issues, please contact the undersigned at (262) 548-6707. Please direct any questions regarding the Trans 233 process to Jorge Salazar-Oyarce at (262) 548-5695. Kevin Koehnke, Permit Coordinator (262) 548-5891, will process any necessary permits. Also, please reference the identification log number (#331145) when forwarding all correspondence.

Sincerely,

A handwritten signature in cursive script, appearing to read "Art Baumann".

Art Baumann, P.E.
Traffic Operations Engineer

Cc: Tony Barth / Brian Roper / Robert Elkin / Don Berghammer, DOT
Kevin Koehnke / Jorge Salazar-Oyarce / Sue King, DOT
Amber Yan / Karen Martens, DOT
Tammi Czewski, TADI

Project: Log #331145—South Hills Commerce Center Development
I-41/94 East Frontage Road & Golf Road, Racine County
Review Unit: Traffic Operations
Reviewer: Art Baumann, Dan Ashenfelter – SE Region
Date: April 30, 2024

Improvement Measures

General Notes

Design

- 1) Contact the WisDOT permit coordinator (Kevin Koehnke at 262-548-5891) prior to plan submittal to identify the plans that are required and obtain any supplemental design guidelines. Incomplete submittals will be returned without review.
- 2) The design for the improvements at all WisDOT intersections shall be prepared in accordance with the FDM requirements for design and plan preparation. The design shall accommodate the appropriate design and check vehicles per the FDM. All lanes are to be a minimum of 12 feet in width, unless otherwise specified (final width to be determined during design). All left turn lanes *should* be opposing. All necessary drainage, utility, signage and pavement marking improvements shall be provided. The signing plan (separate plan sheets from other roadway improvement plan sheets) shall include sign details and signs that require moving.
- 3) For questions regarding signing or pavement marking, please contact Karen Martens at Karen.Martens@dot.wi.gov or (262-548-6892).
- 4) For questions regarding work zone traffic control plans please contact the permit coordinator.

Multimodal Accommodations

- 1) Bike and pedestrian accommodations shall be provided in accordance with the FDM and ADA requirements as listed below. Please contact Amber Yan, WisDOT Pedestrian/Bicycle Facilities Coordinator, at (262) 521-4411 or Amber.Yan@dot.wi.gov with questions regarding pedestrian/bicycle accommodations.
- 2) Install bicycle accommodations between the travel lane and all new exclusive right turn lanes. Install bicycle accommodations along all new bypass lanes. Bicycle accommodations shall also be installed along all travel lanes that are being reconstructed and have shoulders 6 feet in width or greater.
- 3) All impacted multimodal accommodations (bike, pedestrian, transit, etc.) shall be restored with the reconstruction of any intersection radii.

Right of Way

- 1) A party other than the WisDOT shall acquire any required right-of-way for the permit plans.

Utilities

- 1) Utility coordination is the responsibility of the municipality/developer (or their consultant representative) constructing the work.
- 2) Utility relocations that occur as a result of this work may not be covered under Wisconsin Administrative Rule TRANS 220. The municipality/developer (or their consultant representative) requesting the work shall be responsible for all costs associated with the needed relocation of any utility facility as a result of the work.

Access

- 1) The Department will allow two access driveways to the I-41/94 East Frontage Road located approximately 660 feet and 1560 feet south of the Golf Road & I-41/94 East Frontage Road intersection. WisDOT will also allow one public street connection to the I-41/94 East Frontage Road located approximately 2590 feet south of the Golf Road & I-41/94 East Frontage Road intersection. No other direct access to the I-41/94 East Frontage Road will be allowed. Golf Road

falls under the jurisdiction of the Village of Caledonia. The Village will determine the location and number of access points to the development along Golf Road.

- 2) **The municipality/developer (or their consultant representative) shall be responsible for notifying any offsite property or business owners whose access or operations will be impacted as a result of the proposed development. The municipality/developer shall provide the Department with written documentation verifying that all impacted property or business owners have been contacted prior to permit submittal.**

Build Improvements

The following improvements shall be designed, constructed and paid for by the Village of Caledonia/developer prior to the opening of the development.

I-41/94 East Frontage Road & Golf Road

- 1) The north approach shall have three southbound lanes (one southbound exclusive left-turn lane, one southbound through lane and one southbound exclusive right-turn lane). The southbound left-turn lane shall have a minimum storage length of 350 feet with proper taper. The southbound right-turn lane shall maintain its existing storage length and taper.
- 2) The south approach shall have three northbound lanes (one northbound exclusive left-turn lane, one northbound through lane and one northbound exclusive right-turn lane). The northbound left-turn lane shall maximize its storage using a 100-foot taper that overlaps the taper for the southbound left-turn lane at the Access "A" driveway. The northbound right-turn lane shall have a minimum storage length of 300 feet with proper taper.
- 3) No changes are required for the east and west approaches.
- 4) The intersection shall remain two-way stop controlled with the signs placed on the east and west approaches.

I-41/94 East Frontage Road & Proposed Access Driveway "A"

- 1) Install stop control on the east approach.
- 2) The east approach shall have one westbound egress lane and one eastbound ingress lane.
- 3) The north approach shall have two southbound lanes (one southbound exclusive left-turn lane and one southbound through lane). The southbound left-turn lane shall have a minimum storage length of 350 feet with 100-foot taper.
- 4) The south approach shall have two northbound lanes (one northbound through lane and one northbound exclusive right-turn lane). The northbound right-turn lane shall have a minimum storage length of 300 feet with proper taper.

I-41/94 East Frontage Road & Proposed Access Driveway "B"

- 1) Install stop control on the east approach.
- 2) The east approach shall have one westbound egress lane and one eastbound ingress lane.
- 3) The north approach shall have one southbound shared left-turn/through lane.
- 4) The south approach shall have one northbound shared through/right-turn lane.

I-41/94 East Frontage Road & Proposed Public Roadway "C"

- 1) Install stop control on the east approach.
- 2) The east approach shall have one westbound egress lane and one eastbound ingress lane.
- 3) The north approach shall have two southbound lanes (one southbound exclusive left-turn lane and one southbound through lane). The southbound left-turn lane shall have a minimum storage length of 350 feet with proper taper.
- 4) The south approach shall have two northbound lanes (one northbound through lane and one northbound exclusive right-turn lane). The northbound right-turn lane shall have a minimum storage length of 300 feet with proper taper.

Golf Road & Proposed Access Driveway “D”

The following improvements are recommendations only. Golf Road is under the jurisdiction of the Village of Caledonia, and the Village will determine the design of the improvements.

These improvements are based on the 45-mph speed limit currently posted.

- 1) The south approach should have one northbound egress lane and one southbound ingress lane.
- 2) The east approach should have one westbound shared left-turn/through lane.
- 3) The west approach should have two eastbound lanes (one eastbound through lane and one eastbound exclusive right-turn lane). The eastbound right-turn lane should have a minimum storage length of 175 feet with proper taper.
- 4) Stop control should be installed on the south approach.

These improvements are based on a speed zone reduction to 35-mph.

- 1) A Type C or D intersection should be installed, with the south approach having stop control.
- 2) The south approach should have one northbound egress lane and one southbound ingress lane.
- 3) The east approach should have one westbound shared left-turn/through lane.
- 4) The west approach should have one eastbound shared through/right-turn lane.

Golf Road & Proposed Access Driveway “E”

The following improvements are recommendations only. Golf Road is under the jurisdiction of the Village of Caledonia, and the Village will determine the design of the improvements.

These improvements are based on the 45-mph speed limit currently posted.

- 1) The south approach should have one northbound egress lane and one southbound ingress lane.
- 2) The east approach should have one westbound shared left-turn/through lane.
- 3) The west approach should have two eastbound lanes (one eastbound through lane and one eastbound exclusive right-turn lane). The eastbound right-turn lane should have a minimum storage length of 175 feet with proper taper.
- 4) Stop control should be installed on the south approach.

These improvements are based on a speed zone reduction to 35-mph.

- 1) A Type C or D intersection should be installed, with the south approach having stop control.
- 2) The south approach should have one northbound egress lane and one southbound ingress lane.
- 3) The east approach should have one westbound shared left-turn/through lane.
- 4) The west approach should have one eastbound shared through/right-turn lane.

Golf Road & Proposed Access Driveway “F”

The following improvements are recommendations only. Golf Road is under the jurisdiction of the Village of Caledonia, and the Village will determine the design of the improvements.

These improvements are based on the 45-mph speed limit currently posted.

- 1) The south approach should have one northbound egress lane and one southbound ingress lane.
- 2) The east approach should have one westbound shared left-turn/through lane and one westbound bypass lane.
- 3) The west approach should have two eastbound lanes (one eastbound through lane and one eastbound exclusive right-turn lane). The eastbound right-turn lane should have a minimum storage length of 175 feet with proper taper.
- 4) Stop control should be installed on the south approach.
- 5) The crest curve on Golf Road to the west of the intersection should be lowered to provide adequate sight distance.

These improvements are based on a speed zone reduction to 35-mph.

- 1) A Type C or D intersection should be installed, with the south approach having stop control.

- 2) The south approach should have one northbound egress lane and one southbound ingress lane.
- 3) The east approach should have one westbound shared left-turn/through lane and one westbound bypass lane.
- 4) The west approach should have one eastbound shared through/right-turn lane.

Golf Road & Proposed Access Driveway “G”

The following improvements are recommendations only. Golf Road is under the jurisdiction of the Village of Caledonia, and the Village will determine the design of the improvements.

These improvements are based on the 45-mph speed limit currently posted.

- 1) The south approach should have one northbound egress lane and one southbound ingress lane.
- 2) The east approach should have one westbound shared left-turn/through lane and one westbound bypass lane.
- 3) The west approach should have one eastbound shared through/right-turn lane.
- 4) Stop control should be installed on the south approach.

These improvements are based on a speed zone reduction to 35-mph.

- 1) A Type C or D intersection should be installed, with the south approach having stop control.
- 2) The south approach should have one northbound egress lane and one southbound ingress lane.
- 3) The east approach should have one westbound shared left-turn/through lane.
- 4) The west approach should have one eastbound shared through/right-turn lane.

Exhibit E: Intersection Sight Distance Exhibits for Accesses D, E, F & G

MEMORANDUM

DATE: Wednesday, June 5, 2024

TO: Committee of the Whole

FROM: Anthony A. Bunkelman P.E.
Public Services Director



RE: Sanitary Sewer Request – South Hills Commerce Center

BACKGROUND INFORMATION

The Village has been negotiating with Ashley Capital on the development of the South Hills Golf Course into the South Hills Commerce Center. The South Hills Commerce Center is proposed with 10 buildings totaling approximately 3,737,400 square feet.

The Village is extending sanitary sewer and water mains (from their current locations) to the Northeast corner of the golf course property through the TID #4 Phase 4 Sanitary Sewer and Water Main Extensions Project. Ashley Capital will be required to extend sanitary sewer and water main internally on the development.

Ashley Capital has provided a conceptual layout of Sanitary Sewer and Water mains for the site. They have requested, due to the depth of the Sanitary Sewer, to install the Sanitary Sewer in the terrace area of the Right of Way instead of the middle of the road. Installing Sanitary Sewer in the middle of the road has been the standard practice. Installing the Sanitary Sewer in the terrace area will allow for a change of backfill material from granular to spoil material. The depth of the Sanitary Sewer proposed in the development ranges from 13.34' to 35.15' with an average depth of 24.91'. At these depths the amount of granular material would be significant.

Essentially this is a request to save on the cost of the project. There may be some benefit to this for the Utility District as well. If there happens to be a break or repair on the main there would be somewhat less cost for the Utility to excavate and backfill as well. Any return on savings for these types of repairs would hopefully not be for a very long time. The issues that can be seen with having the manholes in the terrace area are that there is a higher potential for additional I & I to get into the sanitary sewer from runoff through the lid and the location of other utilities nearby when maintenance or repair would occur could create issues.

So the Committee is aware, the Utility District installed the Sanitary Sewer along 4 Mile Road in the terrace area of DeBack Farms to reduce costs for the TID. To this point we have not had any issues with this sanitary sewer. I am not opposed to recommending this request for approval to the Utility District and Village Board as long as there are no other utilities within the terrace area on the same side of the street and the manholes are raised enough that they will not take in any runoff (and low enough to not be hit by grass mowing operations).

The Caledonia Utility District recommended approval of this request and forwarded recommendation below to the Committee of the Whole and Village Board at their June 5, 2024 meeting.

It is recommended that the Committee of the Whole recommend approval and forward it to the Village Board as well.

RECOMMENDATION

Move to recommend approval and forward to the Village Board the request from Ashley Capital to allow the Sanitary Sewer to be installed in the terrace area of the Right of Way subject to the following.

- **No other utilities are within the terrace area of the Right of Way on the same side of the road as the sanitary sewer.**
- **The manholes are raised high enough that they will not take in any runoff but also low enough to not be hit by grass mowing operations.**
- **There shall be an easement along the Right of Way for the Sanitary Sewer and that easement shall prohibit major landscaping and the installation of any permanent structures (e.g. Retaining Walls, Monument Signs, etc.)**

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF PINNACLE ENGINEERING GROUP, LLC

DESIGNED: ###
DRAFTED: ###
REVIEWED: ###
DATE: 03/05/24

INTERSTATE HIGHWAY "41" & "94"
NE FRONTAGE ROAD
EAST FRONTAGE ROAD

TID 4 PHASE 5 PUBLIC SANITARY SEWER
EXTENSION. (GOLF ROAD). PER VILLAGE
OF CALEDONIA FUTURE SANITARY SEWER
MAIN PHASES EXHIBIT DATED NOV. 2018

GOLF ROAD

SANITARY SEWER EXTENSION BY
VILLAGE OF CALEDONIA. PER TID 4
PHASE 4 SANITARY SEWER AND WATER
EXTENSIONS PLANS.

EX SANITARY STUB & MH1.0
RIM=767.27
INV=732.12 (15" N)
INV=745.57 (15" S)

WATERMAIN EXTENSION BY VILLAGE
OF CALEDONIA. PER TID 4 PHASE 4
SANITARY SEWER AND WATER
EXTENSIONS PLANS.

GOLF ROAD

POND

CONCEPT BUILDING 1
275,400 SF | FFE=765.00

CONCEPT BUILDING 2
258,000 SF | FFE=767.00

CONCEPT BUILDING 7
297,000 SF | FFE=781.00

BLDG 1 CONNECT
RIM=770.36
INV=753.14 (10" E/W)
INV=753.22 (8" N)

Depth - 17.22'
Existing Grade - 774.00

BLDG 2 CONNECT
RIM=774.08
INV=750.29 (10" E/W)
INV=750.37 (8" N)

Depth - 23.79'
Existing Elevation - 765.00

RIM=775.71
INV=746.79 (15" N)
INV=746.89 (15" S)
INV=748.68 (10" W)

Depth - 29.87'
Existing Grade - 790.00

BLDG 3 CONNECT
RIM=767.02
INV=754.09 (10" E/W)
INV=754.17 (8" S)

Depth - 12.93'
Existing Grade - 762.00

BLDG 4 CONNECT
RIM=773.77
INV=750.51 (10" E/W)
INV=750.59 (8" S)

Depth - 23.26'
Existing Grade - 764.00

BLDG 8 CONNECT
RIM=776.93
INV=747.23 (15" N/S)
INV=747.52 (8" E)

Depth - 29.70'
Existing Grade - 787.00

CONCEPT BUILDING 3
506,000 SF | FFE=776.50

CONCEPT BUILDING 4
506,000 SF | FFE=778.00

CONCEPT BUILDING 8
266,000 SF | FFE=781.00

BLDG 4 CONNECT
RIM=777.75
INV=747.88 (15" N/S)
INV=748.17 (8" W)

Depth - 28.92'
Existing Grade - 774.50 POND

BLDG 9 CONNECT
RIM=776.79
INV=748.84 (15" N/S)
INV=749.13 (8" E)

Depth - 27.95'
Existing Grade - 787.00

CONCEPT BUILDING 5
554,000 SF | FFE=776.50

CONCEPT BUILDING 6
554,000 SF | FFE=778.00

CONCEPT BUILDING 9
323,000 SF | FFE=781.00

BLDG 6 CONNECT
RIM=778.58
INV=749.39 (15" N/S)
INV=749.68 (8" W)

Depth - 29.19'
Existing Grade - 785.00
CONCEPT BUILDING 10
198,000 SF | FFE=781.00

BLDG 10 CONNECT
RIM=779.55
INV=749.96 (15" N/S)
INV=750.25 (8" E)

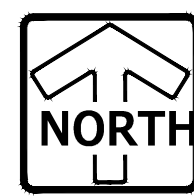
BLDG 5 CONNECT
RIM=767.52
INV=754.18 (10" E)
INV=754.43 (8" N)
(MIN INVERT TO
SERVE ENTIRTY OF
BLDG. 5)

Depth - 13.34'
Existing Grade - 760.00

RIM=777.05
INV=750.37 (15" N)
INV=750.62 (10" W)

Depth - 26.68'
Existing Grade - 782.50

10" @ S = 0.28% (MIN SLOPE)



GRAPHICAL SCALE (FEET)
0 1" = 120' 240'

LEGEND

- PUBLIC WATERMAIN (ON-SITE)
- PRIVATE WATER SERVICES (ON-SITE)
- PUBLIC WATERMAIN
TID 4: PHASE 4 - PER VILLAGE OF CALEDONIA TID 4
PHASE 4 SANITARY SEWER AND WATER MAIN
EXTENSIONS PLANS
- PUBLIC SANITARY SEWER (ON-SITE)
- PRIVATE SANITARY SERVICE (ON-SITE) (ASSUMED 1.04% SLOPE)
- PUBLIC SANITARY SEWER
TID 4: PHASE 4 - PER VILLAGE OF CALEDONIA TID 4
PHASE 4 SANITARY SEWER AND WATER MAIN
EXTENSIONS PLANS

REVISIONS

MEMORANDUM

Date: June 5, 2024

To: Committee of the Whole
Village Board

From: Ryan Schmidt, P.E.
Village Engineer

Re: Speed Limit Reduction – Golf Road



Recommended Motion:

Move to recommend approval of a speed limit reduction to 35mph on Golf Road for its entire length subject to the following:

- **Ordinance Section 10-1-9 (d) and (f) be amended.**
- **Site Distance exhibits are submitted and approved for the proposed South Hills Development access points along Golf Road prior to the Village Board meeting on June 11th, 2024.**
- **The Posted Speed and Design Speed are authorized to be 35mph along Golf Road for the existing condition until the road is reconstructed at which point the Village will require a design speed of 40mph. Any access from the South Hills Development shall be modified to meet these requirements.**
- **New speed limit signs are posted before any new access is allowed onto Golf Road.**

Ashley Ventures LLC is proposing to develop the former South Hills Golf Course at the Southeast corner of USH 41 Frontage Road East and Golf Road. As currently proposed, the development includes nearly 3.8 million square feet of commercial/industrial development and a public road network to provide access. As part of the design phase, Ashley Ventures was required to submit a Traffic Impact Analysis. It was recommended that a speed limit reduction from 45mph to 35mph is provided to allow for safe access along Golf Road for the proposed development. Golf Road will be reviewed for its speed limit as an entire corridor and not just the portion abutting the proposed development.

As additional background, Golf Road between the East Frontage Road and CTH V has large grade changes and vertical curves. The proposed development has 4 access points along the stretch of Golf Road that require minor modifications to meet sight distance standards and allow for safe movement of vehicles to and from the site. Per the TIA, the reduction of the speed limit allows for simple turning movements to and from the site. The major modification that will be required is when the primary N-S road as proposed on the development connects with Golf Road. It will include the addition of a west-bound left-turn

lane for traffic entering the proposed development. Any modifications to the Village Right-of-Way will require Village Staff to review and approve a set of Civil Engineering Plans. To ensure the safety and welfare of the traveling public, the Village is in favor of allowing a speed limit reduction. However, in the interim development phase, the posted and design speed is allowed to be equal to 35mph per the TIA. For a Golf Road reconstruction project, the design speed will need to be 40mph for the road and any access connected to Golf Road.

An additional note: during public meetings discussing the proposed development, multiple residents have expressed their concerns with the speed limit of Golf Road as it stands today. Village Staff believes a speed limit reduction will provide some relief to neighboring property owners as it coincides with a large-scale development.

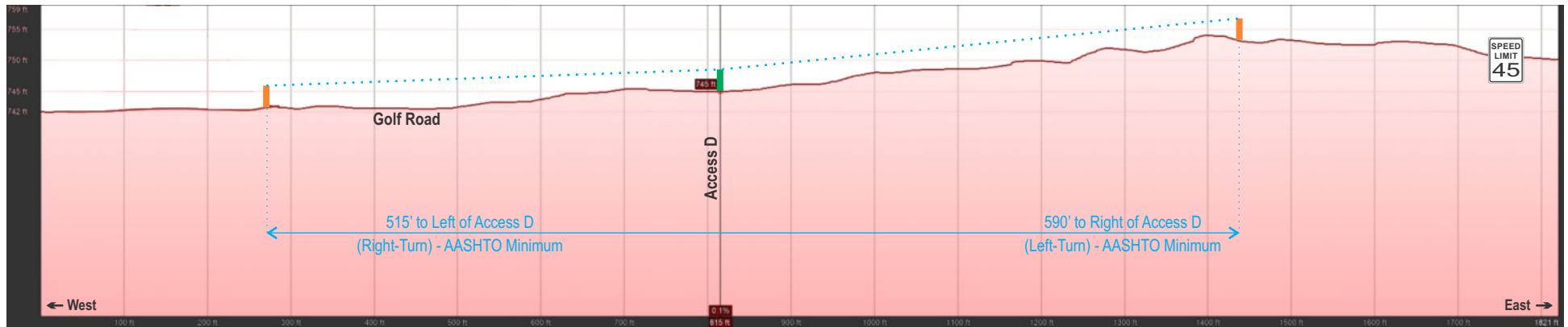
To make this change, SEC. 10-1-19 (d) and (f) shall be amended and signs are required to be purchased and installed. Signs are recommended to be installed with orange flags behind the newly posted speed signs to assist with the general public's view of the newly posted speed.

If the Committee of the Whole is in support of the speed limit reduction, the recommended motion is listed at the top of the Memo.



Road profiles from Google Earth

SU Truck Intersection Sight Distance



Passenger Car Intersection Sight Distance

ISD Parameters:

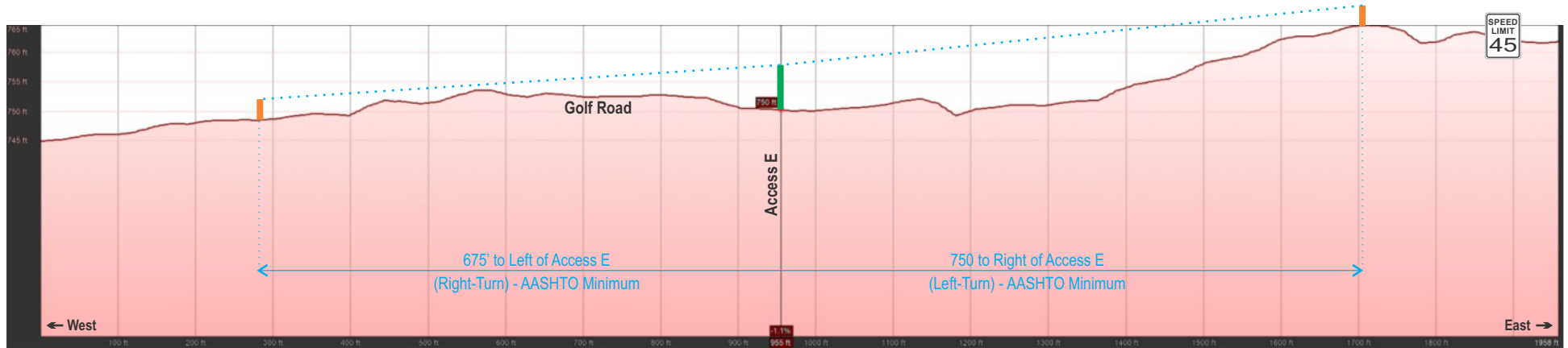
Design Speed: 50 mph
Through Lanes: 1 EB/1 WB
Right Turn Lanes: EB RT
Left Turn Lane: None

ISD CONTROLLING DISTANCES:

	AASHTO MINIMUM ISD		
	P	SU	
To Left of Access:	515'	675'	825'
To Right of Access:	590'	750'	895'
Left-Turn from Mainline:	445'	530'	605'

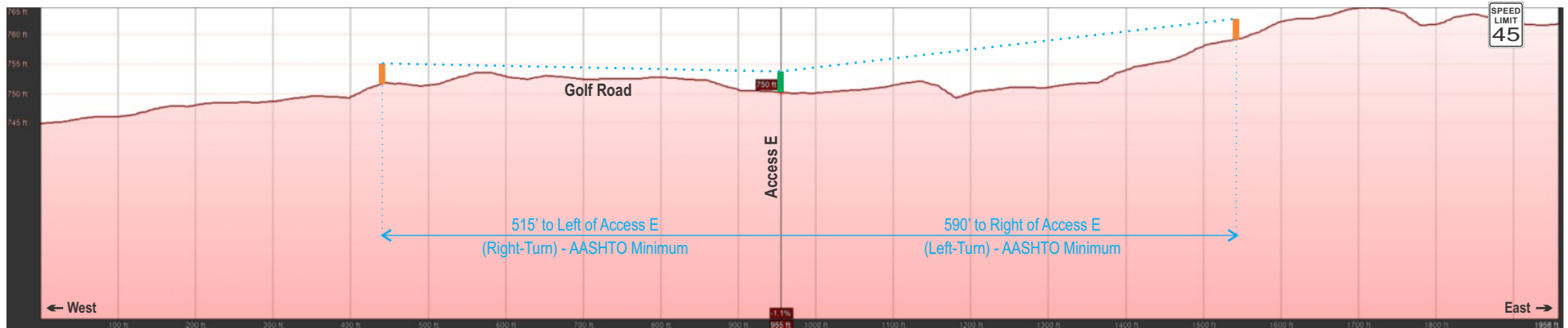
LEGEND

- Turning Vehicle - SU Truck (7.6' Eye Height)
- Turning Vehicle - Passenger Car (3.6' Eye Height)
- Object - 3.5' Height
- ... Sight Line (Vehicle to Object) - AASHTO Minimum
- Obstructed View



Road profiles from Google Earth

SU Truck Intersection Sight Distance



Passenger Car Intersection Sight Distance

ISD Parameters:

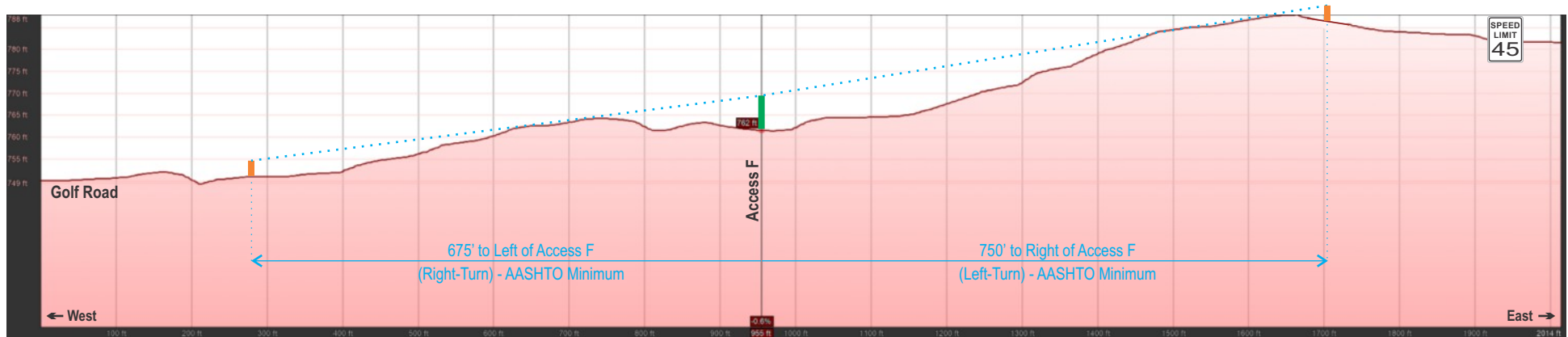
Design Speed: 50 mph
Through Lanes: 1 EB/1 WB
Right Turn Lanes: EB RT
Left Turn Lane: None

ISD CONTROLLING DISTANCES:

	P	SU	AASHTO MINIMUM ISD
To Left of Access:	515'	675'	825'
To Right of Access:	590'	750'	895'
Left-Turn from Mainline:	445'	530'	605'

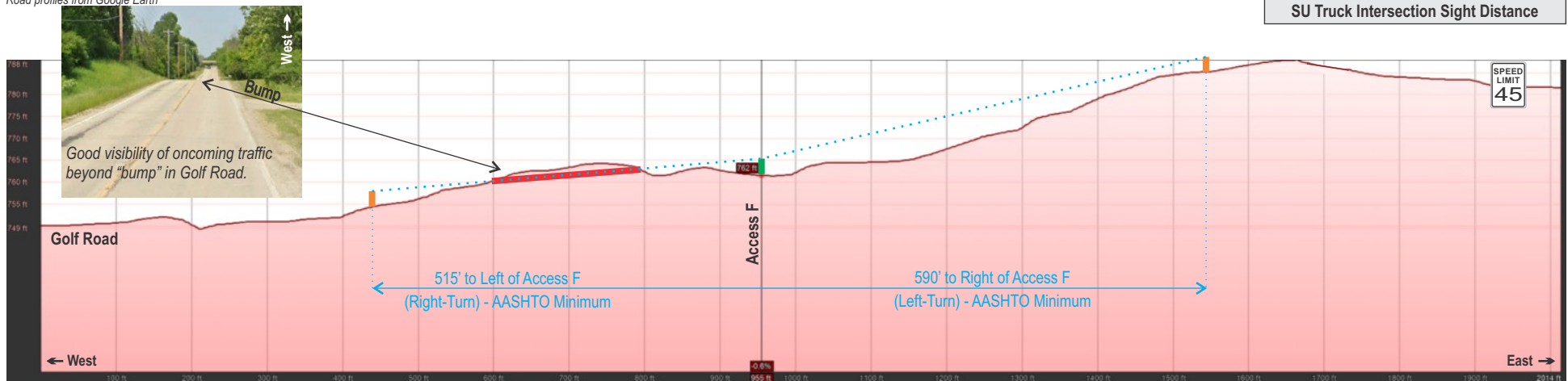
LEGEND

- Turning Vehicle - SU Truck (7.6' Eye Height)
- Turning Vehicle - Passenger Car (3.6' Eye Height)
- Object - 3.5' Height
- Sight Line (Vehicle to Object) - AASHTO Minimum
- Obstructed View



Road profiles from Google Earth

SU Truck Intersection Sight Distance



Passenger Car Intersection Sight Distance

ISD Parameters:

Design Speed: 50 mph

Through Lanes: 1 EB/1 WB

Right Turn Lanes: EB RT

Left Turn Lane: WB Bypass Lane

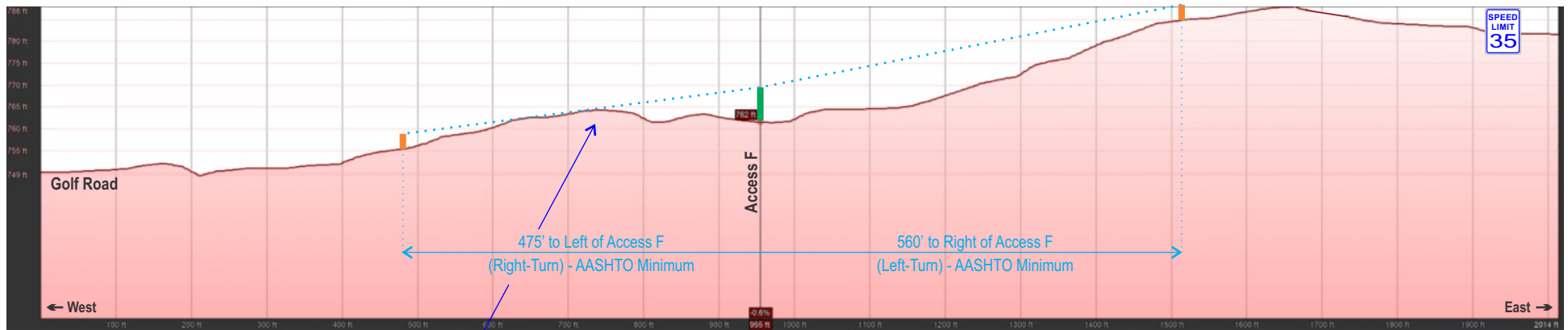
ISD CONTROLLING DISTANCES:

AASHTO MINIMUM ISD

	P	SU	
To Left of Access:	515'	675'	825'
To Right of Access:	590'	750'	895'
Left-Turn from Mainline:	445'	530'	605'

LEGEND

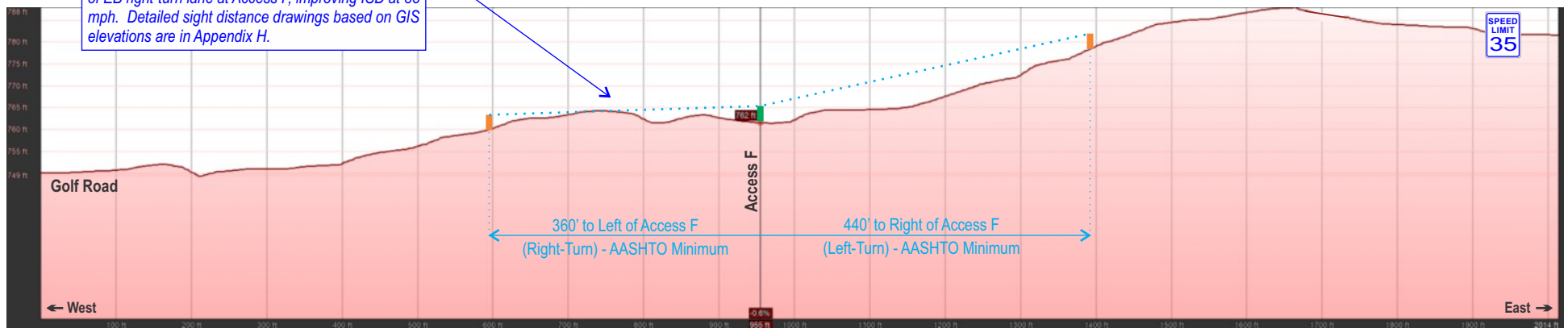
- Turning Vehicle - SU Truck (7.6' Eye Height)
- Turning Vehicle - Passenger Car (3.6' Eye Height)
- Object - 3.5' Height
- Sight Line (Vehicle to Object) - AASHTO Minimum
- Obstructed View



Road profiles from Google Earth

SU Truck Intersection Sight Distance

Golf Road will be regraded slightly with construction of EB right-turn lane at Access F, improving ISD at 35 mph. Detailed sight distance drawings based on GIS elevations are in Appendix H.



Passenger Car Intersection Sight Distance

ISD Parameters (Alternative):

Design Speed: 35 mph

Through Lanes: 1 EB/1 WB

Right Turn Lanes: EB RT

Left Turn Lane: WB LT Lane

ISD CONTROLLING DISTANCES:

	AASHTO MINIMUM ISD		
	P	SU	
To Left of Access:	360'	475'	575'
To Right of Access:	440'	560'	665'
Left-Turn from Mainline:	310'	370'	425'

LEGEND

- Turning Vehicle - SU Truck (7.6' Eye Height)
- Turning Vehicle - Passenger Car (3.6' Eye Height)
- Object - 3.5' Height
- Sight Line (Vehicle to Object) - AASHTO Minimum
- Obstructed View



Road profiles from Google Earth

SU Truck Intersection Sight Distance



Passenger Car Intersection Sight Distance

ISD Parameters:

Design Speed: 50 mph
Through Lanes: 1 EB/1 WB
Right Turn Lanes: None
Left Turn Lane: WB LT

ISD CONTROLLING DISTANCES:

	P	SU	AASHTO MINIMUM ISD
To Left of Access:	480'	625'	775'
To Right of Access:	590'	750'	895'
Left-Turn from Mainline:	405'	480'	555'

LEGEND

- Turning Vehicle - SU Truck (7.6' Eye Height)
- Turning Vehicle - Passenger Car (3.6' Eye Height)
- Object - 3.5' Height
- Sight Line (Vehicle to Object) - AASHTO Minimum
- Obstructed View





MEMORANDUM

Date: June 5, 2024

To: Committee of the Whole
Village Board

From: Ryan Schmidt, P.E.
Village Engineer



Re: Speed Limit Reduction – 5 Mile Road from Charles to its terminus.

Recommended Motion:

Move to recommend approval of a speed limit reduction to 25mph on Five Mile Road from Charles Street to its terminus east of Klema Ditch subject to the following:

- **Ordinance Section 10-1-9 (d) and (f) be amended.**
- **New speed limit signs are posted.**

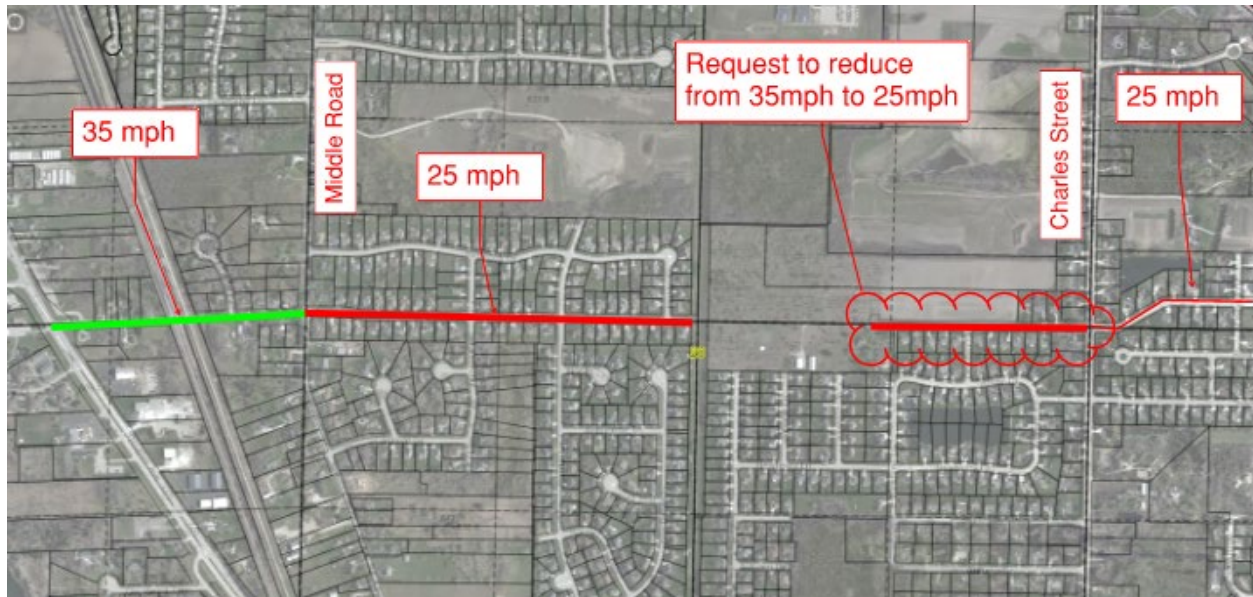
Village Public Works staff have noticed that 5 Mile Road was posted 35mph between Charles Street and its terminus east of the Klema Ditch during routine fieldwork investigations. Upon further investigation, it was found that this is the only portion of 5 Mile Road that is listed at 35mph in the ordinance for all segments east of Middle Road. The road jumps from 25mph to 35mph on a dead-end portion of the road. Once east of the Klema Ditch, it is posted 25mph again until Middle Road where it officially jumps to 35mph. A simple visual has been included on the next sheet as Exhibit A highlighting the different speeds at each location.

Village Staff has reviewed the speed at this location and determined that it is best to maintain the speed limit of 25mph throughout the local subdivision areas. Therefore, it is recommended that a speed limit reduction is proposed to ensure the safety and welfare of the traveling public and provide consistency in this area of Caledonia.

To make this change, SEC. 10-1-19 (d) and (f) shall be amended and signs are required to be purchased and installed. Signs are recommended to be installed with orange flags behind the newly posted speed signs to assist with the general public's view of the newly posted speed.

If the Committee of the Whole is in support of the speed limit reduction, the recommended motion is listed at the top of the Memo.

Exhibit A



MEMORANDUM

TO: Village of Caledonia Committee of the Whole
FROM: Todd Roehl, Planner/Zoning Administrator
DATE: June 6, 2024
SUBJECT: Proposed Amendments to Title 16 Chapter 12 Off-Street Parking

This memorandum outlines the proposed amendments to Title 16 Chapter 12 of the Village of Caledonia Municipal Code regarding off-street parking. These amendments are intended to provide clearer guidelines for calculating minimum parking space requirements, allow for flexibility in the number of parking spaces required with Plan Commission approval, and clarify parking restrictions to improve code enforcement and align with the overall intent of the regulations.

Proposed Amendments

1. **Calculation of Minimum Parking Space Requirements**
 - **Guidelines Addition:** The proposed amendments introduce specific guidelines for calculating the minimum number of parking spaces required for various types of developments. These guidelines aim to standardize the calculation process and ensure consistency in application.
2. **Reduction in Minimum Parking Spaces**
 - **Plan Commission Approval:** The amendments provide a mechanism for developers to request a reduction in the minimum number of required parking spaces. Such reductions are subject to the $\frac{3}{4}$ majority approval of the Plan Commission, which will evaluate the requests based on criteria such as the nature of the development, anticipated parking demand, and availability of alternative transportation options.
3. **Clarification of Parking Restrictions and Requirements**
 - **Enhanced Clarity for Enforcement:** The amendments include revisions to existing language to clarify parking restrictions and requirements. These clarifications are designed to ensure that the regulations are aligned with their intended purpose and to make enforcement more straightforward.

Justification

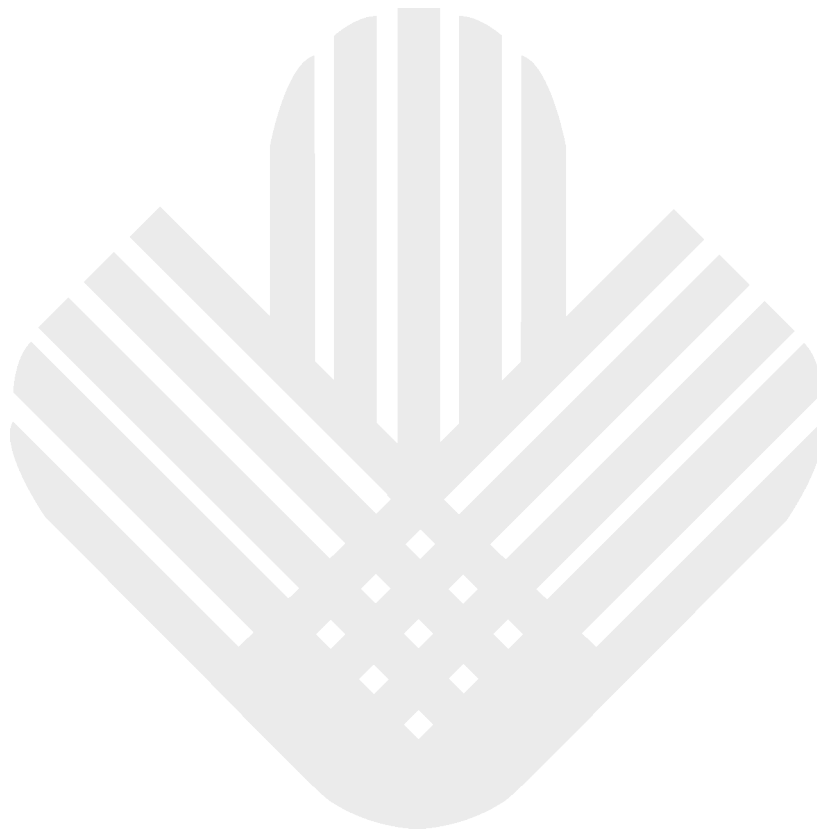
- **Consistency and Standardization:** The addition of clear guidelines for calculating parking requirements will help achieve uniformity across different projects and reduce ambiguity for developers and property owners.
- **Flexibility and Responsiveness:** Allowing for reductions in parking requirements with Plan Commission approval introduces a flexible approach that can better respond to the specific needs and contexts of individual developments, promoting efficient land use and reducing unnecessary impervious surfaces.
- **Improved Code Enforcement:** Clarifying parking restrictions and requirements enhances the ability of code enforcement officers to effectively uphold the regulations, thereby improving compliance and addressing potential issues more efficiently.

Conclusion

The proposed amendments to Title 16 Chapter 12 of the Village of Caledonia Municipal Code represent a thoughtful update to our off-street parking regulations. By providing clearer guidelines, introducing flexibility, and enhancing enforceability, these changes aim to better serve the needs of our community.

while ensuring orderly and sustainable development. We recommend that the Committee of the Whole review and consider these amendments.

If you need further information or have any questions regarding these proposed amendments, please do not hesitate to contact me.



CHAPTER 12

[Back to Table of Contents](#)**Off-Off-Street Parking**

Section Number	Title	Ordinance Number	Date of Ordinance
16-12-1	Off-Off-Street Parking		
16-12-2	Parking Standards, Dimensions, and Location		
16-12-3	Parking Restrictions		

SEC. 16-12-1 OFF-OFF-STREET PARKING REQUIREMENTS

- (a) OFF STREET PARKING REQUIRED: Off-street vehicle parking space (“parking space”) shall be provided for buildings and uses as hereinafter specified. Such parking shall be reasonably adjacent to the use or building served; be intended specifically to serve the residents, patrons, or employees of said use or building; and the required number of spaces must be demonstrably usable and accessible for such purpose.
- (b) APPLICATION TO EXISTING USES: The provision of parking space shall not be required for legally existing uses as of the date of this ordinance but shall be required for any expansion for such use by the addition of new primary floor area or other spatial expansion of building or use generating new parking demand.
- (c) DETERMINATION OF NEED: The number of parking ~~areas-spaces~~ required shall be based upon the anticipated parking demand of individual uses and shall be as follows or as may be designated hereinafter for specific uses or situations as per Plan Commission approval. In any case of structures or uses not mentioned, the provision for a use which is similar shall apply:

Use <u>Category</u>	<u>Minimum</u> Parking <u>Space</u> Requirements
Single-Family(“Family”)- Dwelling and Mobile Homes	2 spaces -per dwelling unit
Two-Family (“Family”)-and Multi-Family Dwellings	2 spaces -per dwelling unit
Hotels and Motels (“Family”)	1 space-for-each <u>per</u> guest room, plus 1 stall <u>per-for-each</u> 3 employees
Colleges, Secondary, and Elementary Schools	1 stall <u>-for</u> each 2 employees plus a reasonable number of stalls for student and other parking
Hospitals, Clubs, Lodges, Sororities, Dormitories, Lodginghouses, and Boardinghouses (“Hospitals”)	1 stall-per-for-each 2 beds , plus 1 stall-for <u>per</u> 3 employees
Rest Homes, Nursing Homes, Sanitariums, and Institutions	1 stall-for-each <u>per</u> 5 beds plus 1 stall-for-per <u>per</u> 3 employees
Medical and Dental Clinics (“Clinies”)	3 stall-for-per <u>per</u> doctor plus 1 stall-for-per <u>per</u> each <u>-employee</u>

Churches, Theatres, Auditoriums, Community Centers, Vocational and Night Schools, and Other Places of Public Assembly	1 stall-perfor each 5 seats
Restaurants, Bars, Places of Entertainment, Repair Shops, Retail and Service Stores	+1 stall-for each per 150 square feet of floor area
Manufacturing and Processing Plants, Laboratories and Warehouses	1 stall-perforper each 2 employees during any 12-hour period
Financial Institutions, Business, Governmental and Professional Offices	1 per 300 square feet of floor area
Funeral Homes	1 stall-forper each 4 seats
Bowling Alleys	5 stalls for each alley

(d) CALCULATION OF PARKING REQUIREMENTS:

- (1) Parking requirements based on floor area must be calculated based on gross floor area, minus parking and loading areas and areas of a building occupied exclusively by mechanical equipment, utilities, or service areas that are not intended for human occupancy.
- (2) Lots containing more than one use or tenant must provide parking in an amount equal to the total aggregate number of spaces required for each use or tenant on the lot.
- (3) For the purpose of computing parking requirements based on seating, calculations must be based on the building-code-rated capacity.
- (4) Requirements based on employees must be based on the average number of persons working on and single shift.

(e) PARKING DECREASES: The minimum vehicle parking requirements are not intended to negatively impact the viability of businesses. To allow for flexibility in addressing the actual expected parking demand of specific uses, the Plan Commission, by a $\frac{3}{4}$ majority approval, is authorized to approve alternatives to minimum parking regulations through the site plan review process if the Plan Commission determines that the following criteria is met:

- (1) A parking demand study indicates that provision of less than the minimum number of spaces is warranted by the anticipated parking demand.

SEC. 16-12-2 PARKING STANDARDS, DIMENSIONS, AND LOCATION:

(a) STANDARD DIMENSIONS

- (1) Parking stalls shall be no less than ~~nine~~(9) feet in width and not less than ~~180~~162 square feet in area exclusive of the space required for ingress and egress.
 - (2) Drive aisles shall be a minimum of 24 feet in width for two-way traffic and 12-feet in width for one-way traffic on sites. Fire Code requirements may apply above these stated drive aisle requirements in some cases.
- (b) AMERICAN DISABILITIES ACT: Adequate parking stalls shall be made available for disabled persons per federal and state requirements.
- (c) LOCATION: Location of parking areas shall be on the same lot as the principal use and

not over four hundred (400) feet from the principal use.

- (d) SURFACING: Any driveway or off-street parking area ~~(other than that provided for a residence)~~ shall be ~~hard surfaced asphalt or concrete, or maintained in a reasonably dustless condition by dust proofing applications~~ except for driveways or off-street parking areas located on parcels located in the A-2 Agricultural District. In residential districts, driveways on parcels smaller than 3 acres must be paved with asphalt or concrete for the first 50 feet from the right-of-way. The Plan Commission, by a $\frac{3}{4}$ majority approval, is authorized to approve alternatives to surfacing requirements through the site plan review process. ~~The method of surfacing shall be approved by the Plan Commission ("Plan Commission").~~
- ~~(d)(1) Improved surfaces, such as asphalt, concrete, or compact gravel (including driveways), that cover more than 50% of a residential street yard are prohibited.~~
- (e) CURBS: ~~In districts that are not residential or agricultural, Curbs curbs~~ or barriers shall be installed ~~so as to~~ prevent parked vehicles from extending over any lot lines. The extent of curbing need on a given parking lot shall be approved by the Plan Commission.
- (f) SCREENING: Any off-street parking area, other than that provided for a residence, which abuts or faces a residential ~~district~~ shall provide a planting screen, landscaped fence, or wall, at least ~~four (4)~~ feet in height along the side abutting or fronting on a residential ~~district~~ (Subject to Planning Commission discretion for unique situations). A landscape Plans plan for such screening shall be submitted to the Plan Commission for approval prior to installation.
- (g) PARKING SETBACKS:
- (1) In any residential district no vehicle shall be allowed to park closer nor shall any drive be permitted closer than ~~five (5)~~ feet to the abutting residential lot line ~~and the parking of a vehicle must be on a hard surface of compacted gravel or concrete/asphalt.~~

Off-Street Parking Setbacks by District:

District	Setback from Right-of-Way	Setback from Side & Rear Property Lines
Residential	0 ft	5 ft
Multi Family -Residential	15 ft	15 ft
Commercial	15 ft	0 ft
Manufacturing	15 ft	0 ft
Park/Institutional	15 ft	15 ft

- (2) In any off-street parking area for a commercial use, no vehicle shall be allowed to park closer nor shall any drive be permitted closer than ~~fifteen (15)~~ feet to an abutting residential district (Subject to Planning Commission discretion for unique situations and approved screening methods).
- (h) DRIVEWAY ACCESS:
- (1) Adequate access to a public street shall be provided for each parking area, and driveways shall meet requirements of section 18-1-5. ~~be at least ten (10) feet wide for one and two family dwellings and a minimum of twenty four (24) feet for all~~

~~other uses.~~

- (2) No direct access shall be permitted to the existing or proposed rights-of-way of expressways, freeways or interstate highways, nor to any other road, street or highway, without permission of the authority maintaining the facility.
- (3) Vehicle entrances and exits to drive-in theaters, banks, and restaurants; motels; funeral homes; vehicular sales, service, washing and repair stations; garages; or public parking lots shall be not less than ~~two hundred (200)~~ feet from any pedestrian entrance or exit to a school, college, university, church, hospital, park, playground, library, public emergency shelter or place of public assembly.
- (4) Adjacent residential uses may agree to establish a common driveway. In such cases, the driveway midpoint should be the property line between the two ~~(2)~~ parcels; however, the precise location of such driveway will be determined by the jurisdictional authority. The driveway must meet standard specifications and the landowner(s) shall record cross access agreements to ensure continued use, upkeep and maintenance of the combined access points.
- (5) Cross access to and between neighboring properties shall be implemented wherever possible. The goal in this requirement is to remove as much incidental, site-to-site traffic from adjacent roads as practical thus reducing the possibility of traffic conflicts and accidents. Cross access may be achieved by the interconnection of parking lots or the construction of a separate drive. Sharing of access to state and county trunk highways by commercial or industrial land uses may also be permitted. Such shared access shall have the approval of the county highway department or state department of transportation, depending upon jurisdiction. A cross access agreement shall be recorded by all landowners utilizing such shared access. Such shared access must meet standard specifications.
- (6) Access drives to principal structures which traverse wooded, steep, or open fields shall be constructed and maintained to a width and base material depth sufficient to support access by emergency vehicles. All driveways shall have a minimum width of twelve (12) feet with road strength capable of supporting emergency and fire vehicles, in compliance with any Village standards.

SEC 16-12-3 RESIDENTIAL & COMMERCIAL PARKING RESTRICTIONS:

(+)

(+)(a) RESIDENTIAL PARKING RESTRICTIONS: Parking of vehicles accessory to a residential use on private property shall be limited to those actually used by the residents or for temporary parking for guests. Vans or pickup trucks used for private and recreational use, or a motor home (recreational vehicle), or a van or pickup truck used in a business or trade and commercial vehicle used for transportation to and from a place of employment or workplace of the occupant may be parked on a residential property subject to the requirements of this Section.

- (1) Vehicles (personal, commercial, or recreational) must be parked either within an enclosed attached garage or detached accessory structure, or on an improved surface such as asphalt, concrete, or compacted gravel and must maintain a minimum of a 5-foot setback from the rear and side lot lines. There is no minimum setback to the principal structure.

- (2) Commercial ~~Vehicles-vehicles~~ of not over 10,000 lbs may be parked on private property, providing all of the following conditions are met: vehicle is registered and licensed; used by a resident of the premises; gross weight does not exceed ten thousand ~~10,000 lbs(10,000) pounds~~, including any load; height does not exceed ~~nine-(9)10~~ feet as measured from ground level, excluding antennas, air vents, and roof-mounted air conditioning units, but including any load, bed, or box; and total vehicle length does not exceed ~~twenty-six (26)~~ feet, including attachments thereto (such as plows, trailers, etc.) unless approved through a conditional use permit.
- ~~(3) —Recreational vehicles parked on private property in residentially zoned districts (all R-designations) must maintain a minimum of a five-foot setback from the rear and side lot lines but are not restricted to a minimum setback to the principal structure. If parked in the street yard, the recreational vehicle must be parked on the driveway or on an improved surface such as asphalt, concrete, or compacted gravel. For the purpose of this section, recreational vehicles shall include boats and trailers, snowmobiles and their trailers, minibikes or trailbikes and their trailers, and unoccupied tent campers and travel trailers, all-terrain vehicles and personal watercraft and their trailers.~~
- ~~a. —Utility trailers and recreational vehicles parked on residential parcels less than five acres cannot exceed 32 feet in length (not including trailer tongue and hitch) and 13 feet in height. For residential parcels five acres or greater, trailers and recreational vehicles shall not exceed 37 feet in length (not including tongue and hitch) and 13 feet in height.~~
- ~~(3) Trailers, utility or recreational (including boats on their trailers, snowmobiles on their trailers, minibikes or trailbikes on their trailers, unoccupied tent campers and travel trailers, and all-terrain vehicles and personal watercraft on their trailers) parked outdoor on private property in residentially zoned districts must maintain a minimum 5-foot setback from the rear and side lot lines but are not restricted to a minimum setback to the principal structure. If parked in the street yard, the trailer must be parked on the driveway or on an improved surface such as asphalt, concrete, or compacted gravel. Vehicles, trailers, and recreational vehicles shall be parked either within an enclosed attached garage or detached accessory structure or on an improved surface such as: asphalt; concrete; or compacted gravel. Improved surfaces, including driveways, that cover more than fifty percent (50%) of a residential street yard is prohibited.~~
- (4) Trailers and recreational vehicles parked on residential parcels less than 5 acres cannot exceed 32 feet in length (not including trailer tongue and hitch) and 10 feet in height. For residential parcels 5 acres or greater, trailers and recreational vehicles shall not exceed 37 feet in length (not including tongue and hitch) and 10 feet in height.
- (5) No other vehicular equipment of a commercial or industrial nature, except as stated above, shall be parked or stored for more than ~~two-(2)~~ consecutive hours and ~~four (4)~~ 4 accumulated hours during any ~~twenty-four-24~~-hour period on any lot in any zoning district except business and industrial districts or as permitted by an approved conditional use or in the A-~~1-2~~ Agricultural D district.

- (6) Outdoor parking of one semi-tractor or dump truck is permitted in Residential Districts if the parcel is greater than ~~one~~(1) acre and has direct access to a Class A Highway (e.g. STH 31, STH 32). Outdoor parking of semi-tractor trailers in residential districts is prohibited.
- (7) A gathering, ~~not to exceed 24 hours at any one time~~, which results in the parking of vehicles or trailers not on an approved surface may be exempt from these parking limits for a 24-hour period.

~~(b)~~(b) NON-RESIDENTIAL PARKING RESTRICTIONS:

- (1) Vehicles and recreational vehicles shall be parked either within an enclosed attached garage or detached accessory structure, or on an improved surface such as asphalt, concrete, or compacted gravel, except as permitted by an approved conditional use or in the A-2 Agricultural District.
- ~~(1)(2)~~(2) Outdoor parking of semi-tractors/trailers and/or dump trucks on commercial property (B-districts), that is not a principal use (e.g., truck sales), an accessory use (e.g., delivery vehicles), or which has not been approved through the conditional use or site plan review process is prohibited.
- ~~(e) OCCUPATION OF PARKED VEHICLES PROHIBITED: No Camping Trailer or Recreational Vehicle shall be used for the purpose of habitation in the Village.~~
- (c) OCCUPATION OF PARKED VEHICLES PROHIBITED: No camping trailer or recreational vehicle shall be used for the purpose of habitation in the Village.
- (d) USES NOT ENUMERATED: In any case where there is question as to the parking requirements for a use or where such requirements are not specifically enumerated, such case shall be brought before the Plan Commission, which shall have the authority to determine the appropriate application of the parking requirements to the specific situation.

MEMORANDUM

Date: June 5, 2024

To: Committee of the Whole
Village Board

From: Ryan Schmidt, P.E.
Village Engineer



Re: Olympia Brown School Expansion – Traffic Impact Analysis

Recommended Motion:

Move to recommend approval of Traffic Impact Analysis (TIA) performed by TADI for the Olympia Brown School Expansion on the condition that any future school expansions must also have an updated TIA performed.

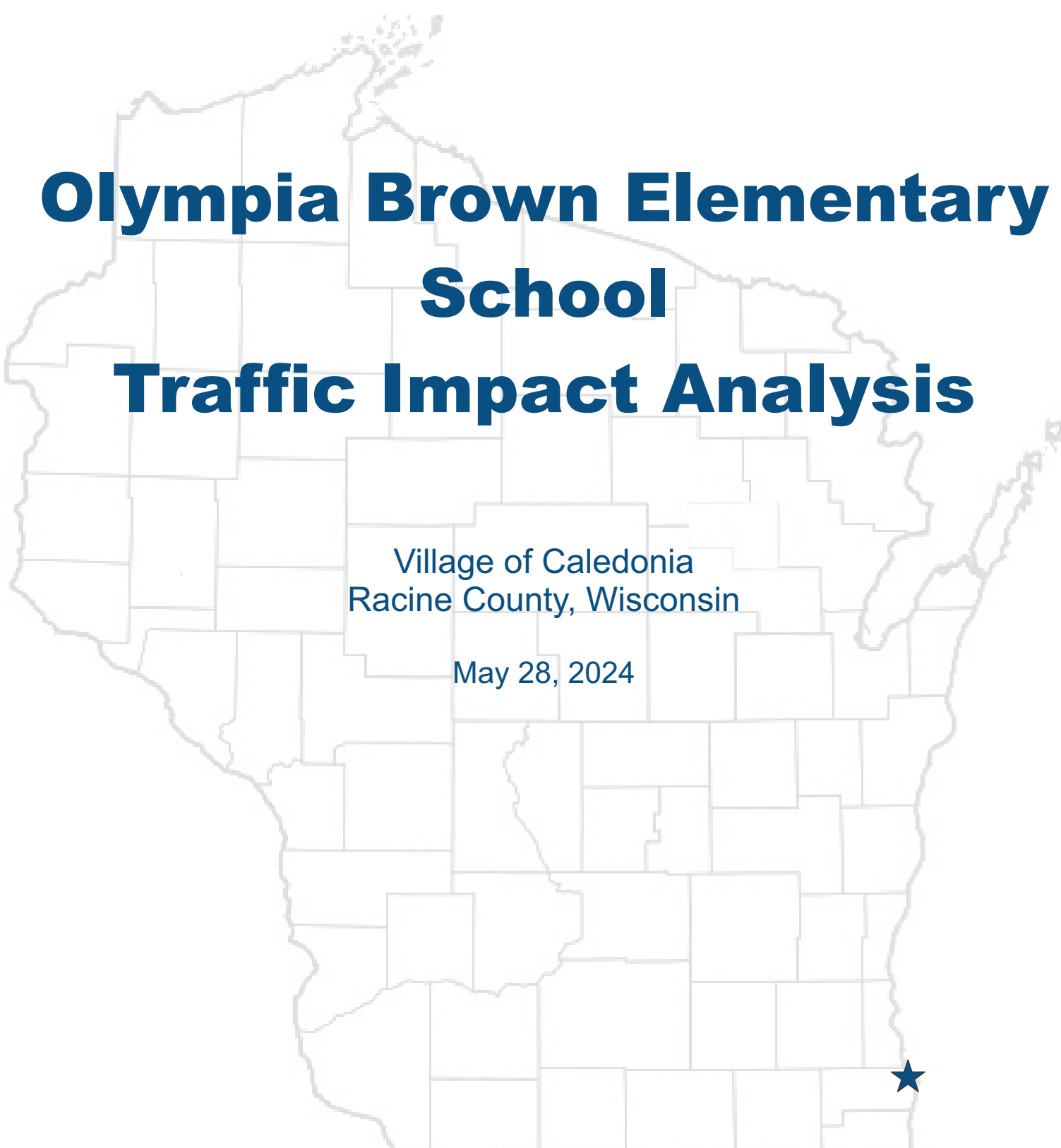
As part of the review and approval of the Building, Site, and Operation Plan for an expansion of the existing Olympia Brown School at 5-1/2 Mile Road, there was significant concern from the residents about the pick-up and drop off operations. An existing Traffic Impact Analysis was performed back in 2015 when the school was first built to determine the impact it would have on the Village Road Network. The BSO review happened to coincide with the preliminary plat review of a nearby 120 home subdivision. This further created frustration amongst community members that traffic would be of concern. The Village requested an update to the existing TIA to determine the peak hour traffic impacts expected around the school while also considering future development.

Traffic Analysis and Design, Inc (TADI) performed and submitted to the Village for review an update to the TIA from 2015 and is included as **Exhibit A**. The study area included 5-1/2 Mile Road for its entire stretch between Middle Road, Novak Road, Dustir Drive, Charles Street, and the two existing driveways to Olympia Brown. The focus is on the Morning and Afternoon peak hour (pick-up and drop off) operating conditions and any recommendations based on that data. A separate condition also included the proposed volume that would increase from a 120-home subdivision at Dustir Drive. Consider that this would assume all 120 homes existing at the time of the study in 2034.

The Village requires a minimum Level of Service C (LOS C) on its public roads. The TIA shows that the study area does not drop below a LOS C in any area other than left turns coming out of the east school driveway. It is mentioned frequently that this is a temporary condition that only occurs for a period of 5-10 minutes and is only a result of the school generated traffic. The school is expected to create a total of 490 trips during a typical weekday – of which 145 new trips would be during the morning peak hour and 90 new trips during the evening peak hour.

As a result, 31 new parking spaces were requested to be added onto the school property. This has been updated to the most recently reviewed and approved plan set by Village Staff. Permits will be issued based on these updated plans. Projecting out into 2034 with the added trips and school expansion, all the Village Roads and intersections in the study area operate at an acceptable LOS of C or better. Even with the addition of the 120 homes, all intersections remain at an acceptable LOS.

Village Staff recommend approval of the Traffic Impact Analysis after thorough review and if the Committee is willing to approve, the recommended motion is included at the beginning of this memo. It is recommended that if another school expansion is considered, an update to this TIA is carried out.



Olympia Brown Elementary School Traffic Impact Analysis

Village of Caledonia
Racine County, Wisconsin

May 28, 2024



TRAFFIC IMPACT STUDY FOR

OLYMPIA BROWN ELEMENTARY SCHOOL
VILLAGE OF CALEDONIA, RACINE COUNTY, WISCONSIN

SUBMITTAL DATE: May 28, 2024

PREPARED FOR:

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PREPARED BY:

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**Olympia Brown Elementary School
Traffic Impact Analysis
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LIST OF EXHIBITS

Exhibit 1	Project Overview Map
Exhibit 2A	Olympia Brown Elementary School Conceptual Site Plan
Exhibit 2B	Audubon Arboretum Neighborhood Conceptual Site Plan
Exhibit 3	Existing Transportation Detail
Exhibit 4	Existing Traffic Volumes
Exhibit 5	Background Traffic Volumes
Exhibit 6A	On-Site (Olympia Brown Elementary School) Trip Generation & Distribution Table
Exhibit 6B	Off-Site (Audubon Arboretum Neighborhood) Trip Generation Table
Exhibit 6C	Trip Distribution Diagram
Exhibit 7A	On-Site (Olympia Brown Elementary School) New Trips
Exhibit 7B	Off-Site (Audubon Arboretum Neighborhood) New Trips
Exhibit 8	Full Build Traffic Volumes
Exhibit 9	Total (with off-site) Traffic Volumes
Exhibit 10	Recommended Modifications – Full Build Conditions

1.0 INTRODUCTION

The Racine Unified School District is planning for the expansion of the Olympia Brown Elementary School located on the south side of 5-1/2 Mile Road at its intersection with Novak Road in the Village of Caledonia, Racine County, Wisconsin. The proposed school expansion includes modernizations of the existing school within the current school site located at 2115 5-1/2 Mile Road. A traffic impact analysis was conducted by Traffic Analysis & Design, Inc. to determine the expected weekday morning arrival and weekday afternoon dismissal peak hour operating conditions and recommendations at the study area intersections for the Full Build (with Olympia Brown Elementary School) traffic and Total (with identified off-site development) traffic operating conditions.

This report documents the procedures, findings, and conclusions of the traffic impact analysis. The analysis identifies recommended modifications based on existing intersection geometrics, traffic volumes and additional traffic expected to be generated by the Elementary School expansion and the identified off-site development.

2.0 EXISTING TRAFFIC CONDITIONS

The study area roadways, existing peak hour traffic volumes, and existing peak hour operating conditions are described below.

2.1 Study Area Description

To properly address future traffic operations at the study area intersections, it is necessary to first quantify and analyze the existing traffic conditions. The study area is shown on [Exhibit 1](#). [Exhibit 2A](#) shows the Elementary School conceptual site plan. [Exhibit 3](#) illustrates the existing transportation detail for the study area intersections. As directed by the Village of Caledonia, the study area for the Elementary School expansion study includes the following intersections (node number correlates to traffic modeling software outputs referenced in this report):

- Node 100: 5-1/2 Mile Road intersection with Middle Road (one-way stop control)
- Node 200: 5-1/2 Mile Road intersection with Novak Road/West Driveway (two-way stop control)
- Node 300: 5-1/2 Mile Road intersection with East Driveway (one-way stop control)
- Node 400: 5-1/2 Mile Road intersection with Dustir Drive (one-way stop control)
- Node 500: 5-1/2 Mile Road intersection with Charles Street (two-way stop control)

The study area roadways include:

Middle Road is a north/south two-lane undivided Major Collector with a posted speed limit of 35-mph within the limits of the study area. The Year 2021 WisDOT annual average daily traffic (AADT) volumes on Middle Road were approximately 2,100 vehicles per day (vpd) immediately south of 6 Mile Road

and 3,100-vpd immediately north of Rebecca Drive. Sidewalks are not currently provided along either side of the road within the limits of the study area.

5-1/2 Mile Road is an east/west two-lane undivided Minor Arterial with a posted speed limit of 30-mph. An additional wide paved shoulder/parking lane is provided on the north and south sides of the road from Novak Road to the east, through Charles Street. Year 2021 WisDOT AADT volumes on 5-1/2 Mile Road were approximately 1,300-vpd immediately west of Dustir Drive. Sidewalks are not currently provided along either side of the road within the limits of the study area.

Novak Road is a north/south two-lane local collector street with a posted speed limit of 25-mph. There are no known AADT volumes available on Novak Road. An additional wide paved shoulder/parking lane is provided on the east and west sides of the road except within the limits of the 5-1/2 Mile Road intersection. Sidewalks are not currently provided along either side of the road within the limits of the study area.

Dustir Drive is a north/south two-lane local residential street with a posted speed limit of 25-mph. There are no known AADT volumes available on Dustir Drive. Sidewalks are not currently provided along either side of the road within the limits of the study area.

Charles Street is a north/south two-lane undivided Minor Arterial with a posted speed limit of 35-mph. Year 2021 WisDOT AADT volumes on Charles Street were approximately 1,300-vpd immediately south of Robin Lane. Sidewalks are not currently provided along either side of the road within the limits of the study area.

Weekday morning (7:00 to 8:15 am) and weekday afternoon (2:30 to 4:00 pm) traffic turning movement counts were conducted in early-May of 2024 at the aforementioned 5-1/2 Mile Road intersections adjacent to the proposed school expansion. The weekday morning arrival (7:15 to 8:15 am) and afternoon dismissal (2:30 to 3:30 pm) peak hours for the study were chosen to coincide with the elementary school's morning arrival and afternoon dismissal bell schedule, 8:00am and 3:06pm, respectively. The existing traffic peak hour volumes are shown in [Exhibit 4](#). The traffic counts used to determine the peak hour traffic volumes, peak hour factors, and truck percents for each study area intersection have been included in the appendix of this report.

2.2 Existing Peak Hour Traffic Operations

The weekday morning arrival and weekday afternoon dismissal peak hour volumes, shown in [Exhibit 4](#), were analyzed to determine the existing level of service operating conditions at the study area intersections.

Level of Service Definitions

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual (HCM) 6th Edition*. Intersection operation is defined by "level of service." Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A,' to very poor, represented by LOS 'F.' WisDOT and most communities have set design

standards and have set LOS C as the acceptable LOS for peak hour operating conditions for corridors similar to the study area corridors. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At unsignalized intersections, average delays are 35 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At unsignalized intersections, average delays exceed 50 seconds.

Table 1 shows the existing traffic peak hour LOS at the study area intersections. The capacity analysis table shows the peak hour LOS, delays (in seconds per vehicle), and queues (in feet) for the existing traffic condition at each of the study area intersections. The existing intersection geometrics shown on the transportation detail, Exhibit 3, along with the existing weekday morning arrival and weekday afternoon dismissal peak hour traffic volumes, Exhibit 4, were used for the analysis. The Synchro capacity analysis worksheets are located in the appendix of this report.

Table 1
Year 2024 Existing Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Node 100: 5-1/2 Mile Road & Middle Road <i>One-Way Stop Control</i>	AM	Lanes →	-			1			-	1		1		-
		LOS	-			B			-	*		A		-
		Delay	-			11.3			-	*		7.7		-
	PM	Queue	-			25'			-	*		25'		-
		LOS	-			B			-	*		A		-
		Delay	-			11.2			-	*		7.7		-
Node 200: 5-1/2 Mile Road & Novak Road/West Driveway <i>One-Way Stop Control</i>	AM	Lanes →	1			1		1	1			1		1
		LOS	A			A		*	B			B		A
		Delay	7.7			7.7		*	12.4			13.1		9.0
	PM	Queue	25'			25'		*	25'			25'		25'
		LOS	A			A		*	B			B		A
		Delay	7.8			7.5		*	12.3			11.7		9.1
Node 300: 5-1/2 Mile Road & East Driveway <i>One-Way Stop Control</i>	AM	Lanes →	-	1		1		-	1	-	1	-		-
		LOS	-	*		A		-	C	-	B	-		-
		Delay	-	*		8.5		-	20.3	-	10.3	-		-
	PM	Queue	-	*		25'		-	30'	-	25'	-		-
		LOS	-	*		A		-	B	-	A	-		-
		Delay	-	*		7.8		-	13.2	-	9.7	-		-
Node 400: 5-1/2 Mile Road & Dustir Drive <i>One-Way Stop Control</i>	AM	Lanes →	1	-	-	1			-			1		-
		LOS	A	-	-	*			-			B		-
		Delay	7.9	-	-	*			-			11.7		-
	PM	Queue	25'	-	-	*			-			25'		-
		LOS	A	-	-	*			-			B		-
		Delay	7.7	-	-	*			-			11.3		-
Node 500: 5-1/2 Mile Road & Charles Street <i>One-Way Stop Control</i>	AM	Lanes →	1	1		-			1	-		1	1	-
		LOS	A	A		-			B	-		A	A	-
		Delay	8.7	9.9		-			12.4	-		8.2	7.6	-
	PM	Queue	25'	40'		-			60'	-		25'	25'	-
		LOS	A	A		-			B	-		A	A	-
		Delay	8.4	8.7		-			10.0	-		8.4	7.7	-
		Queue	25'	25'		-			25'	-		25'	25'	-

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

As shown in [Table 1](#), all movements at the study area intersections are currently operating at LOS C or better conditions during the weekday morning arrival and weekday afternoon dismissal peak hours under the existing traffic conditions. It is noted that the LOS values shown in [Table 1](#) (as reported by the Synchro model) are based on the average delay over the morning or afternoon peak hours.

3.0 PROJECTED TRAFFIC CONDITIONS

To determine the background growth rate for calculating the future design year traffic volumes, historic WisDOT AADT volumes from the year 1990 through year 2021 were collected along Middle Road, 5-1/2 Mile Road, and Charles Street at the WisDOT count stations located along those corridors in close proximity to the study area. Using this data, historical AADT trend lines were developed to determine the expected annual growth of traffic that may occur on the corridor between the present and design year 2034. Based on the traffic projections (1990 – 2021) and assuming the historic trends will continue at a linear rate, traffic volumes at the along the study area roadways would be expected to be flat; however, to provide for a conservative (highest traffic volume scenario) analysis, a

small increase using a rate of 0.5-percent per year, was applied to the existing traffic volumes collected as part of this study. The year 2034 projected traffic volumes at the study area intersections, which account for this yearly growth rate, are shown in [Exhibit 5](#). The growth rate calculations have been included in the [Appendix](#) of this study.

4.0 DEVELOPMENT TRAFFIC

The following section describes the development of site generated traffic, development traffic distribution, and new trip assignment.

4.1 Development Description

The expansion of the Olympia Brown Elementary School is located within the same overall school site on the south side of 5-1/2 Mile Road at its intersection with Novak Road in the Village of Caledonia. The building expansion is expected immediately adjacent to and directly to the west of the existing building. Access to the school is proposed to remain under its current condition utilizing the two existing access driveways. The west driveway is proposed to be enhanced with marked parking spaces (for special event parking) in front of the school and is expected to continue to provide access for bus drop-off/pick-up only during typical weekday school times. The east driveway is proposed to remain to provide access for parent drop-off/pick-up as well as access to the teacher/staff parking lot located on the southeast side of the school. Additional parking spaces are proposed within the drop-off/pick-up loop as well as a new lot attached to and on the south side of the teacher parking lot. Specifically, 12 additional parking spaces are proposed within the parent parking area on the northeast side of the school and 40 additional spaces are proposed for teacher/staff parking in the southeast side of the school, adjacent to the existing teacher/staff parking lot. It is our understanding that in addition to the 52 new spaces as shown on the site plan and as described above, 31 additional spaces (11 to the northeast and 20 to the southeast) are being added to the site plan to maximize parking within the overall site. With these additional spaces, a total of 83 new spaces are being planned for the parent and teacher/staff parking areas for the typical school day. The site plan for the proposed expansion of the Olympia Brown Elementary School, showing the existing access points as well as the proposed new parking spaces, is shown on [Exhibit 2A](#).

4.2 Trip Generation

To address any potential future traffic impacts to study area intersections, it is necessary to identify the hourly volume of traffic generated by the proposed school expansion. The trip generation for the proposed expansion was calculated using the existing driveway count data conducted as part of this study along with the existing and expected future student populations. The daily traffic volumes were calculated based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition. The trip generation was estimated using the following assumptions:

Elementary School Students:

535 – Existing Student Population

750 – Expected Maximum Student Population

Based on the school driveway counts taken as part of this study and using the current student population, a morning peak hour trip generation rate per student of 0.67 and an afternoon peak hour trip generation rate per student of 0.41 were calculated. The afternoon rate calculations took into account the parents that are currently parking along the adjacent roadways (5-1/2 Mile Road and Novak Road) corridors when picking up their children. It was assumed that the number of parents parking along these adjacent corridors to the school would remain the same and that all new parent pick-up vehicles would utilize the east driveway loop to pick up their children.

To validate that the trip rates calculated as part of this study were consistent with the national standard ITE rates, a comparison of the two rates was completed and it was determined that the calculated rates were similar to the ITE rates; specifically, the calculated rates were about 11% lower during the morning peak hour and about 8% lower during the afternoon peak hour when compared to the national standard ITE rates. Since the rates are similar and the calculated local rates are based on actual school driveway counts conducted at the local school site, the calculated local rates were utilized for this study when determining future new trips generated by the future student population. The trip generation comparison table is included in the appendix of this study.

As shown in [Exhibit 6A](#), under Full Build conditions, the proposed school expansion is expected to generate approximately 145 new trips (90 entering and 55 exiting) during the weekday morning arrival peak hour and 90 new trips (40 entering and 50 exiting) during the weekday evening peak hour. On a typical weekday, the proposed school expansion is expected to generate approximately 490 new trips (245 entering/245 exiting) under Full Build traffic conditions.

4.3 Trip Distribution and Assignment

The traffic assignment for the new school is based upon the location of households within the school district in relation to the Elementary School site as well as the existing traffic patterns. The percent traffic distribution for the proposed school expansion is listed below, is shown in table format in [Exhibit 6A](#) and is shown graphically in [Exhibit 6C](#):

- 15-percent to/from the north on Middle Road
- 35-percent to/from the south on Middle Road
- 20-percent to/from the north on Novak Road
- 30-percent to/from the south on Charles Street

The new trips for the proposed school expansion were assigned to the study area intersections based on the above percent distribution and are shown in [Exhibit 7A](#).

The expected school expansion new trips, [Exhibit 7A](#), were added to the Existing traffic volumes, [Exhibit 4](#), to determine the Full Build traffic volumes as shown in [Exhibit 8](#).

5.0 FULL BUILD TRAFFIC OPERATION

Full Build traffic operations were analyzed for the study area intersections following the procedures set forth in the *Highway Capacity Manual (HCM) 6th Edition*.

5.1 Full Build Traffic

The expected levels of service for each traffic movement at the study area intersections during the weekday morning arrival and weekday afternoon dismissal peak time periods under the Full Build traffic volumes are shown in Table 2. The existing geometrics, as shown in Exhibit 3, were used in the analysis. It is noted that all bus traffic is expected to continue to utilize the west driveway with all other traffic expected to continue to use the east driveway. According to the school district, no increase in the number of buses is expected with the proposed school expansion. The Full Build traffic volumes, Exhibit 8, were used in the analysis.

Table 2
Year 2034 Full Build Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach																	
			Eastbound			Westbound			Northbound			Southbound								
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙						
Node 100: 5-1/2 Mile Road & Middle Road <i>One-Way Stop Control</i>	AM	Lanes →	-			1			-			1			-					
		LOS	-			B			-			A			-					
		Delay	-			12.8			-			7.9			-					
		Queue	-			25'			-			25'			-					
	PM	LOS	-			B			-			A			-					
		Delay	-			11.9			-			7.8			-					
		Queue	-			25'			-			25'			-					
Node 200: 5-1/2 Mile Road & Novak Road/West Driveway <i>Two-Way Stop Control</i>	AM	Lanes →	1			1			1			1			1					
		LOS	A			A			*			B			C			A		
		Delay	7.9			7.8			*			14.0			17.0			9.3		
		Queue	25'			25'			*			25'			45'			25'		
	PM	LOS	A			A			*			B			B			A		
		Delay	8.0			7.6			*			13.4			13.2			9.4		
		Queue	25'			25'			*			25'			25'			25'		
Node 300: 5-1/2 Mile Road & East Driveway <i>One-Way Stop Control</i>	AM	Lanes →	-	1		1			-	1		-	1		-					
		LOS	-	*		A			-	E		-	B		-					
		Delay	-	*		9.2			-	45.1		-	11.2		-					
		Queue	-	*		25'			-	115'		-	25'		-					
	PM	LOS	-	*		A			-	C		-	B		-					
		Delay	-	*		8.0			-	16.1		-	10.1		-					
		Queue	-	*		25'			-	45'		-	25'		-					
Node 400: 5-1/2 Mile Road & Dustir Drive <i>One-Way Stop Control</i>	AM	Lanes →	1		-	-	1		-			1			-					
		LOS	A		-	-	*		-			B			-					
		Delay	8.0		-	-	*		-			12.4			-					
		Queue	25'		-	-	*		-			25'			-					
	PM	LOS	A		-	-	*		-			B			-					
		Delay	7.7		-	-	*		-			11.8			-					
		Queue	25'		-	-	*		-			25'			-					
Node 500: 5-1/2 Mile Road & Charles Street <i>Two-Way Stop Control</i>	AM	Lanes →	1		1		-			1		-	1		1	-				
		LOS	A		B		-			B		-	A		A	-				
		Delay	8.9		10.7		-			13.9		-	8.4		7.8	-				
		Queue	25'		45'		-			75'		-	25'		25'	-				
	PM	LOS	A		A		-			B		-	A		A	-				
		Delay	8.5		9.0		-			10.4		-	8.5		7.8	-				
		Queue	25'		30'		-			30'		-	25'		25'	-				

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

As shown in Table 2, higher delays (LOS E) are expected for the northbound left-turn exiting movement at the 5-1/2 Mile Road intersection with the east driveway during the typical weekday morning arrival peak hour. However, these higher delays are only expected during about a 5- to 10-minute surge during the weekday morning arrival peak period and with minimal non-school related east/west traffic along 5-1/2 Mile Road, the intersection is expected to operate acceptably for the typical school discharge condition.

Except as noted, all other traffic turning movements at the study area intersections are expected to continue to operate at LOS C or better conditions during the weekday morning arrival and weekday afternoon dismissal peak hours under the Full Build traffic conditions.

6.0 TOTAL TRAFFIC CONDITIONS

The following section describes the Total (with identified off-site development) traffic peak hour operating conditions assuming no school build out.

6.1 Off-Site Development

One off-site development has been identified within the limits of the study area by the Village of Caledonia. The off-site development site is located immediately east of the school site and in the southwest quadrant of the Charles Street intersection with 5-1/2 Mile Road as shown on [Exhibit 1](#). [Exhibit 2B](#) shows the conceptual site plan. Per direction from the Village, the traffic expected from the off-site development was included in the Total (with off-site development) traffic volume conditions. The following off-site development was included in the study area:

Audubon Arboretum Neighborhood Development

- *Single Family Detached Housing – 120 units*

Access to the identified off-site development is proposed via three new roadway connections, one along 5-1/2 Mile Road and two along Charles Street. The access road along 5-1/2 Mile Road is proposed as a new south leg at the Dustir Drive intersection. The other two access points were not part of this study. The trip generation table for the identified off-site development is shown in [Exhibit 6B](#).

The new trips for the identified off-site development, ([Exhibit 7B](#)) were added to the Full Build traffic volumes ([Exhibit 8](#)) to determine the Total (with identified off-site development) traffic volumes, as shown in [Exhibit 9](#).

6.2 Total Traffic

[Table 3](#) shows the Total (with identified off-site development) traffic peak hour operating conditions at the study area intersections. The existing intersection geometrics shown on the transportation detail, [Exhibit 3](#), as well as the Total (with identified off-site development) traffic volumes, [Exhibit 9](#), were used in the analysis. A new southern approach to the identified off-site development at Dustir Drive was also included in the analysis. The capacity analysis table shows the peak hour LOS, delays (in seconds per vehicle), and queues (in feet) for the Total traffic condition. The Synchro capacity analysis worksheets are located in the appendix of this report.

Table 3
Year 2034 Total Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Node 100: 5-1/2 Mile Road & Middle Road <i>One-Way Stop Control</i>	AM	Lanes →	-			1			-	1		1		-
		LOS	-			B			-	*		A		-
		Delay	-			13.8			-	*		8.0		-
	PM	Queue	-			35'			-	*		25'		-
		LOS	-			B			-	*		A		-
		Delay	-			12.8			-	*		7.9		-
Node 200: 5-1/2 Mile Road & Novak Road/West Driveway <i>Two-Way Stop Control</i>	AM	Lanes →	1			1		1	1			1		1
		LOS	A			A		*	C			C		A
		Delay	8.1			7.9		*	15.2			20.0		9.6
	PM	Queue	25'			25'		*	25'			55'		25'
		LOS	A			A		*	B			C		A
		Delay	8.1			7.7		*	14.8			15.4		9.5
Node 300: 5-1/2 Mile Road & East Driveway <i>One-Way Stop Control</i>	AM	Lanes →	-	1		1		-	1	-	1	-		-
		LOS	-	*		A		-	F	-	B	-		-
		Delay	-	*		9.3		-	71.3	-	11.6	-		-
	PM	Queue	-	*		25'		-	150'	-	25'	-		-
		LOS	-	*		A		-	C	-	B	-		-
		Delay	-	*		8.3		-	21.1	-	11.0	-		-
Node 400: 5-1/2 Mile Road & Dustir Drive <i>Two-Way Stop Control</i>	AM	Lanes →	1	-		1		-	1			1		-
		LOS	A	-		A		-	C			B		-
		Delay	8.1	-		7.9		-	15.4			14.0		-
	PM	Queue	25'	-		25'		-	25'			25'		-
		LOS	A	-		A		-	B			B		-
		Delay	7.8	-		8.1		-	14.2			13.8		-
Node 500: 5-1/2 Mile Road & Charles Street <i>Two-Way Stop Control</i>	AM	Lanes →	1	1		-			1	-		1	1	-
		LOS	A	B		-			B	-		A	A	-
		Delay	8.9	11.2		-			14.8	-		8.5	7.8	-
	PM	Queue	25'	50'		-			85'	-		25'	25'	-
		LOS	A	A		-			B	-		A	A	-
		Delay	8.6	9.5		-			11.0	-		8.6	7.9	-
Node 500: 5-1/2 Mile Road & Charles Street <i>Two-Way Stop Control</i>	AM	Lanes →	1	1		-			1	-		1	1	-
		LOS	A	B		-			B	-		A	A	-
		Delay	8.9	11.2		-			14.8	-		8.5	7.8	-
	PM	Queue	25'	50'		-			85'	-		25'	25'	-
		LOS	A	A		-			B	-		A	A	-
		Delay	8.6	9.5		-			11.0	-		8.6	7.9	-

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

As shown in Table 3, higher delays (LOS F) are expected for the northbound left-turn exiting movement at the 5-1/2 Mile Road intersection with the east driveway during the typical weekday morning arrival peak hour under the Total (with identified off-site development) traffic conditions. However, these higher delays are only expected during about a 5- to 10-minute surge during the weekday morning arrival peak period and with minimal non-school related east/west traffic along 5-1/2 Mile Road, the intersection is expected to operate acceptably for the typical school discharge condition.

Except as noted, all other traffic turning movements at the study area intersections are expected to continue to operate at LOS C or better conditions during the weekday morning arrival and weekday afternoon dismissal peak hours under the Total traffic conditions.

7.0 SITE OPERATIONS

7.1 Site Observations

Based on field observations, the access driveways to the school operate relatively well during both the morning arrival peak period and the afternoon discharge peak period due to the minimal non-school related east/west traffic along 5-1/2 Mile Road which allows for minimal conflicts between mainline vehicles and exiting school traffic. However, a shortage of parking and therefore queueing areas within the site is causing congestion within the site during the typical weekday afternoon discharge peak period. Even though there's also a high volume of vehicles during the weekday morning arrival peak period, internal traffic flow during the morning operates relatively well. During the afternoon discharge peak period, parents arrive up to 30 minutes prior to the end of day bell to try to find a location to park to wait for their child. However, with the current site layout, there is a shortage of parent parking spaces. Parents are currently parking in any available parking spaces in addition to parking along all drive aisles within the site, including the entrance and exit lanes at the east driveway. Parents are also parking along the north and south sides of 5-1/2 Mile Road, both east and west of the school site; and along the east and west sides of Novak Road, up to and past Dustir Drive to the north.

It is our understanding that due to the shortage of teacher/staff parking spaces; the teachers are currently parking in the parent parking area located in the northeast area of the school site as well as along the east side of the drive aisle to the back teacher parking lot. Since there is a shortage of teacher/staff parking spaces currently provided within the site, this has added to the shortage of parent parking spaces within the overall site.

Providing additional parking within the site to allow parents to park safely, that is, minimizing the parking along the drive aisles, should allow parents to navigate the internal drive aisles within the site in a safer manner during the surge peak periods at the start and end of the school day.

7.2 Parking

Based on discussions with the design team, in addition to the 52 additional parking spaces proposed to be added to the site as shown on the site plan, an additional 31 spaces (11 in the northeast area and 20 to the southeast area of the site) are being added to the site plan to maximize parking within the overall site. Specifically, an additional 23 new spaces are proposed within the parent pick-up area and an additional 60 new spaces are proposed adjacent to the teacher/staff parking area. With these additional spaces, a total of 83 new spaces are being planned for the parent and teacher/staff parking areas for the typical school day. As stated above, with teachers currently parking in the parent parking area and with the new teacher lot accommodating all teachers/staff, the parent area will now allow for a total of 48 designated spaces. With the need for about 40 new inbound vehicles expected during the afternoon discharge peak period under Full Build (with school expansion), some parents will still need to park along the adjacent roads (5-1/2 Mile Road and Novak Road) during the afternoon pick-up peak period; however, the overall site should operate better than the current situation.

8.0 RECOMMENDATIONS AND CONCLUSION

8.1 Recommendations

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual (HCM) 6th Edition*. Based on the results of the analysis performed, the following modifications are recommended. Note that LOS C or better conditions were used to define acceptable peak hour operating conditions at the study area intersections.

Recommended Modifications

The following modifications, as shown on [Exhibits 10A&B](#), are recommended at the study area intersections and within the site for the Full Build (with Elementary School expansion) and Total (with identified off-site development) traffic conditions. To better accommodate the school expansion traffic volume conditions, the following modifications are recommended at the study area intersections.

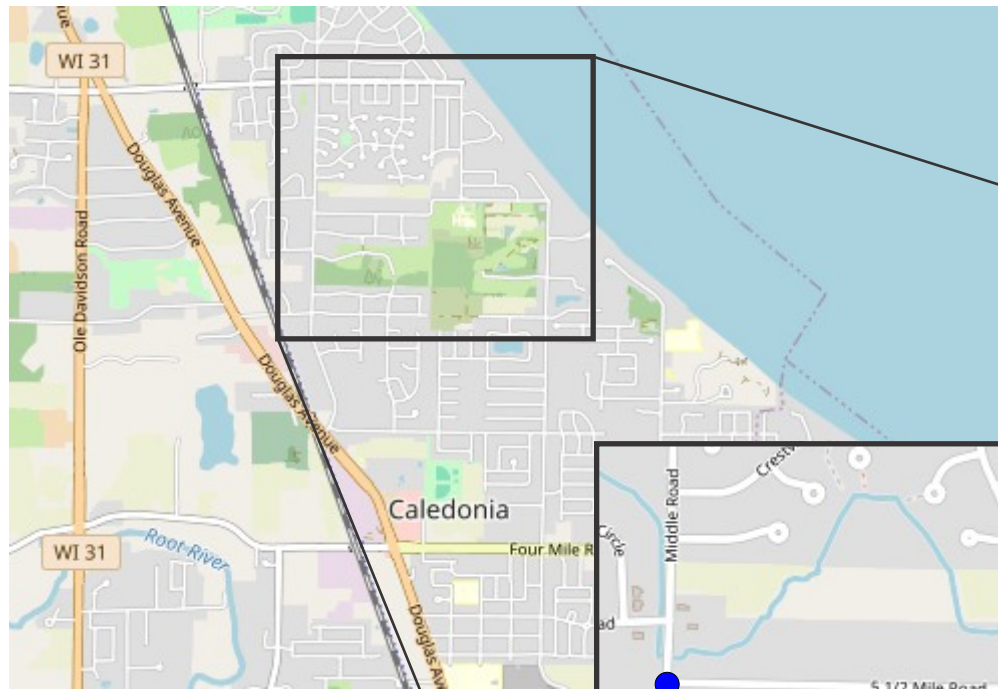
Internal School Site Drop-Off/Pick-Up Area

- Provide additional parking spaces (31 spaces as described above) beyond those shown on the current site plan provided in this report.
- Consider providing a wider paved shoulder/parking lane on the south side of 5-1/2 Mile Road, immediately west of Novak Road for a distance of about 350 feet to accommodate vehicles parking during the end of the school day pick-up period, especially during inclement weather.

Higher delays (LOS E and LOS F) are still expected for the northbound left-turn exiting movements at the 5-1/2 Mile Road intersection with the east driveway during the typical weekday morning arrival peak hour under Full Build (with Elementary School expansion) and Total (with identified off-site development) traffic conditions, respectively. However, these higher delays are only expected during about a 5- to 10-minute surge during the weekday morning arrival peak period and with minimal non-school related east/west traffic along 5-1/2 Mile Road, the intersection is expected to operate acceptably for the typical school arrival and discharge conditions.

8.2 Conclusions

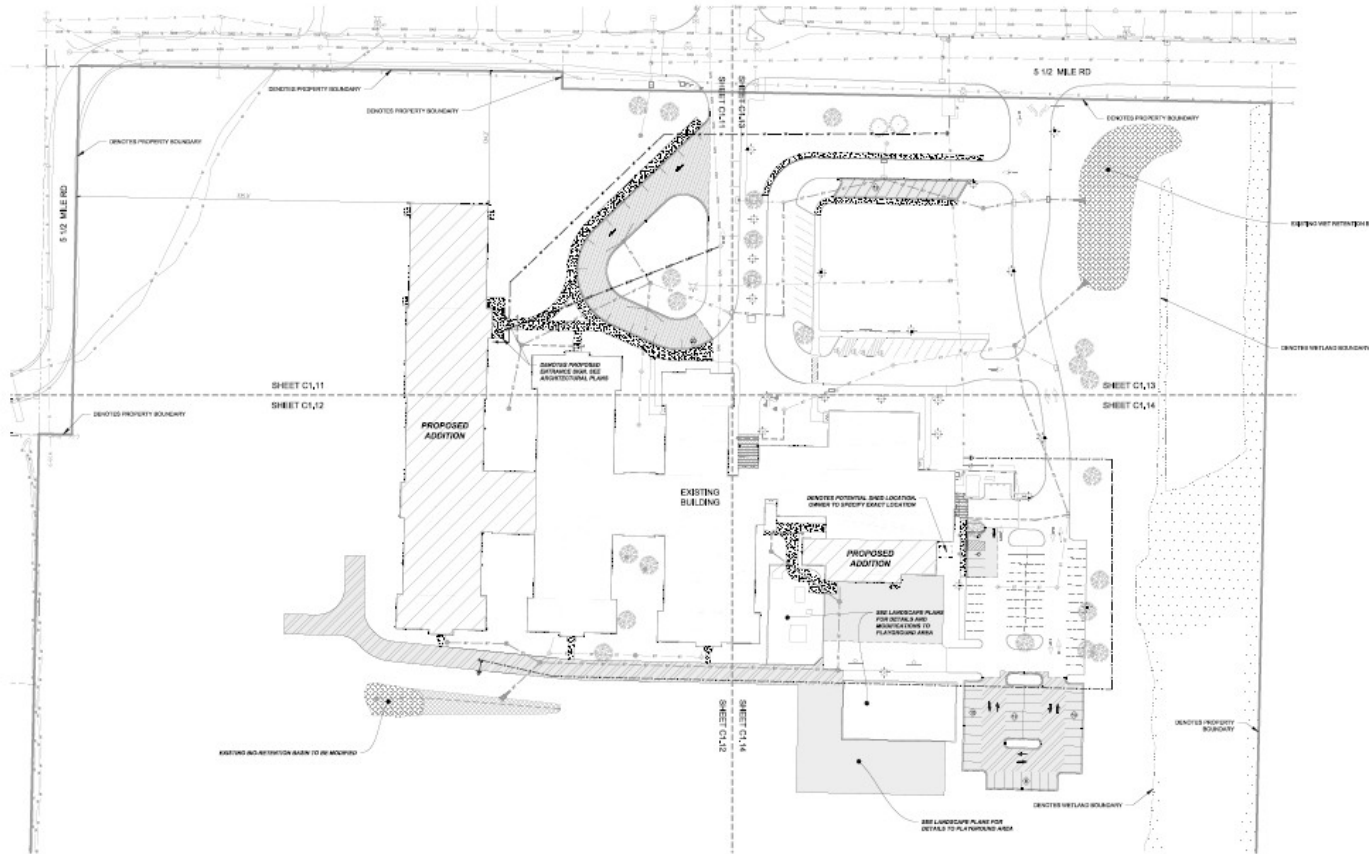
Except as noted, all study area intersections are expected to operate at acceptable levels of service through the opening year with the full build out of the school, full build out of the identified off-site development and the above recommended modifications.



LEGEND

- Study Area Intersection
- On Site Development
- Off-Site Development





SITE CHARACTERISTICS

TOTAL SITE AREA	263.0 AC
TOTAL IMPROVED AREA	63.0 AC
EXISTING IMPROVED AREA	63.0 AC
PROPOSED IMPROVED AREA	0.0 AC
PROPOSED GREENSPACE	0.0 AC
(TOTAL OF 0.0 AC)	
EXISTING REGULAR PARKING SPACES	35
EXISTING HANDICAP PARKING	0
EXISTING TOTAL PARKING	35
PROPOSED REGULAR PARKING SPACES	136
PROPOSED HANDICAP PARKING	0
PROPOSED TOTAL PARKING	136

MATERIAL LEGEND

[Pattern]	PROPOSED CONCRETE SIDEWALK
[Pattern]	PROPOSED REGULAR DUTY ASPHALT PAVEMENT
[Pattern]	PROPOSED VALLEY STYLE CURB AND GUTTER
[Pattern]	PROPOSED HEAVY DUTY ASPHALT PAVEMENT
[Pattern]	PROPOSED REGULAR DUTY ASPHALT PAVEMENT
[Pattern]	PROPOSED ROYAL CURB

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Project:
Olympia Brown Elementary
Addition & Renovation

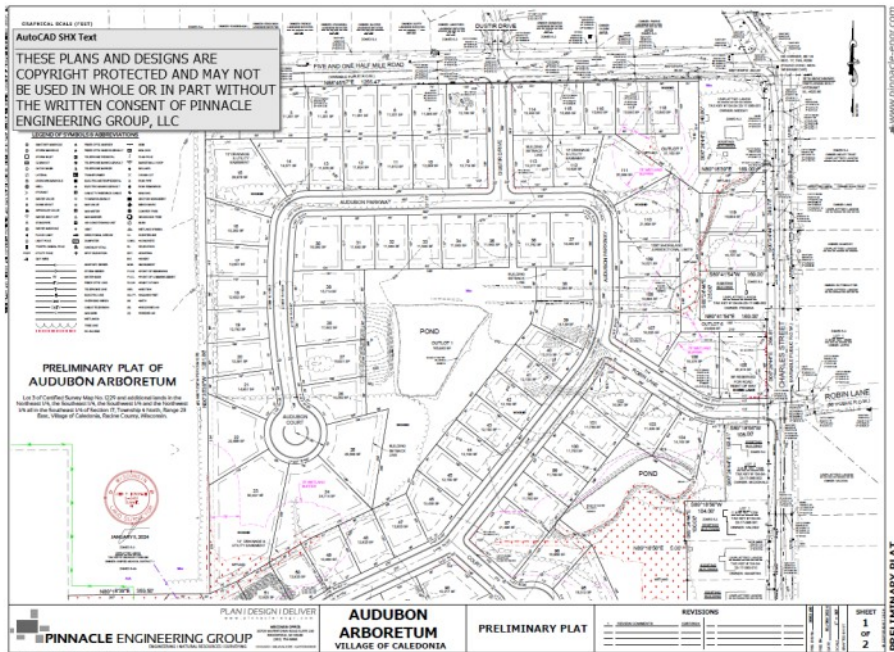
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Caledonia, WI 53606
Key Plan

100% CD Set
Sheet

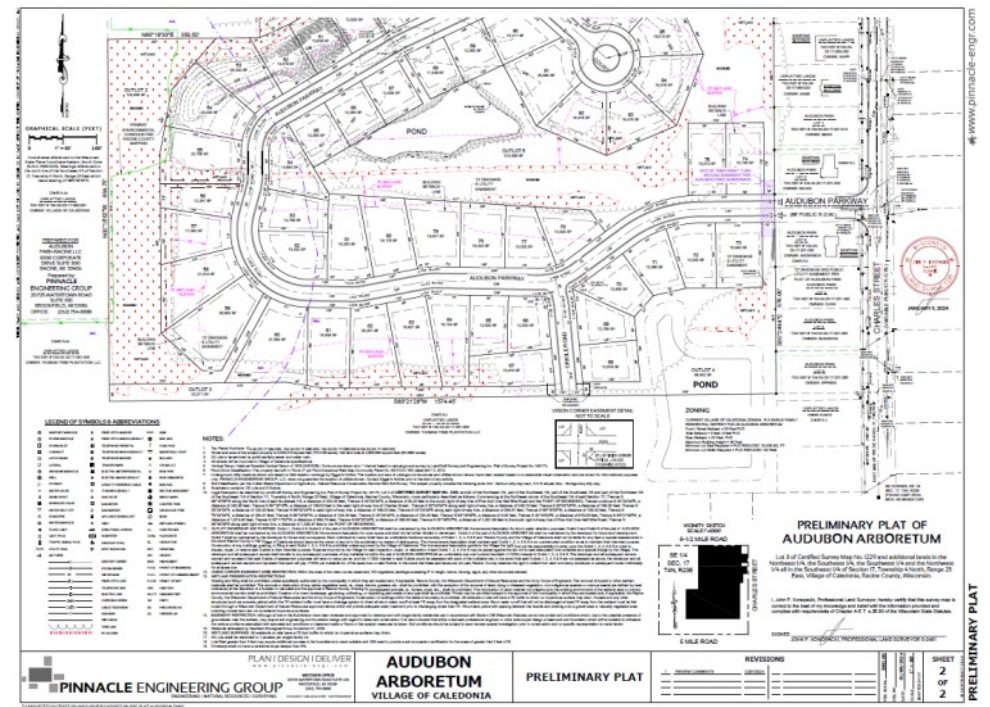
SITE PLAN - OVERALL

Scale:	1" = 40'
Revision:	
No.	Date
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2	01.18.23
3	01.18.23
4	01.18.23
5	01.18.23
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


NORTH SECTION

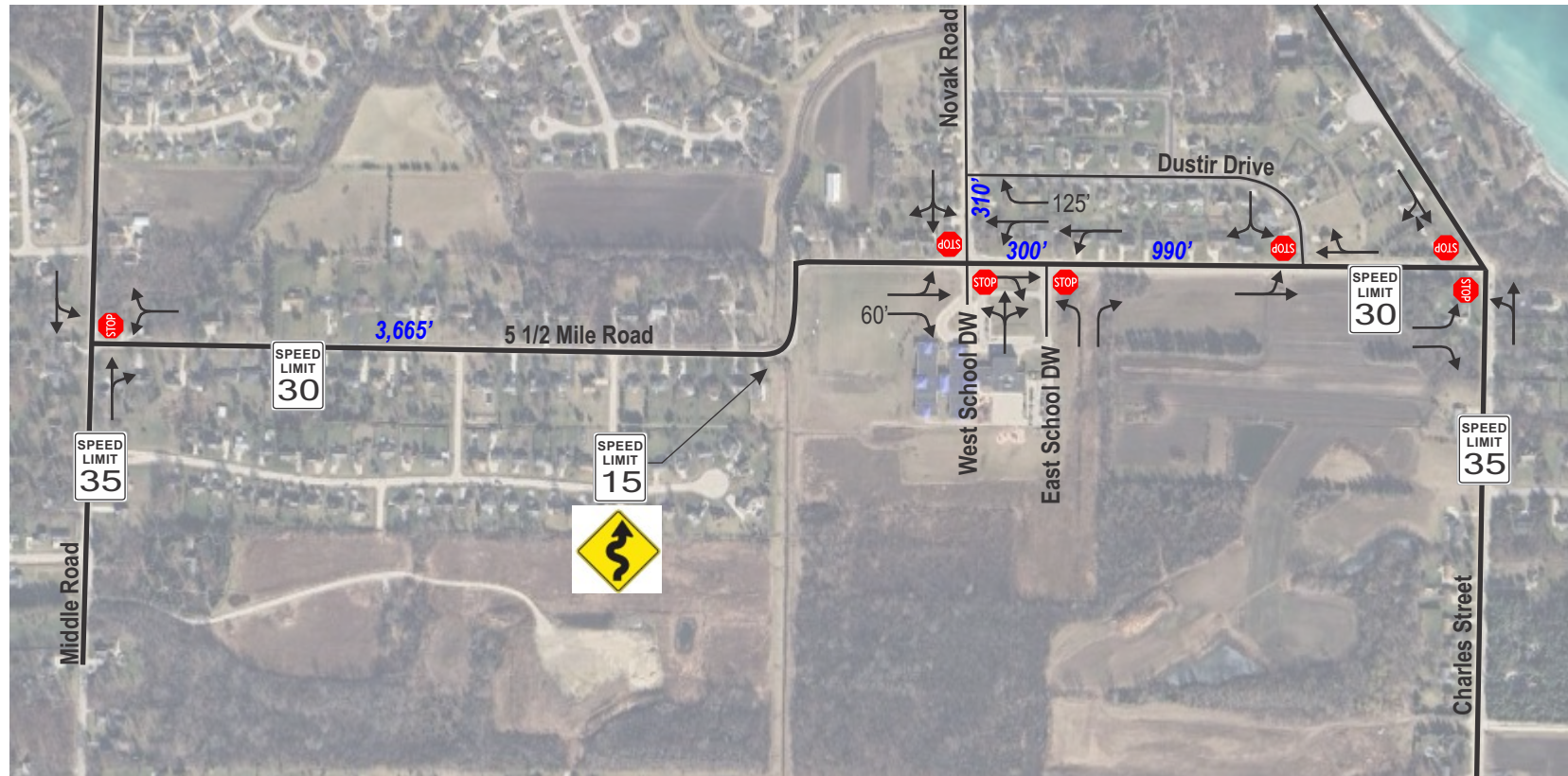


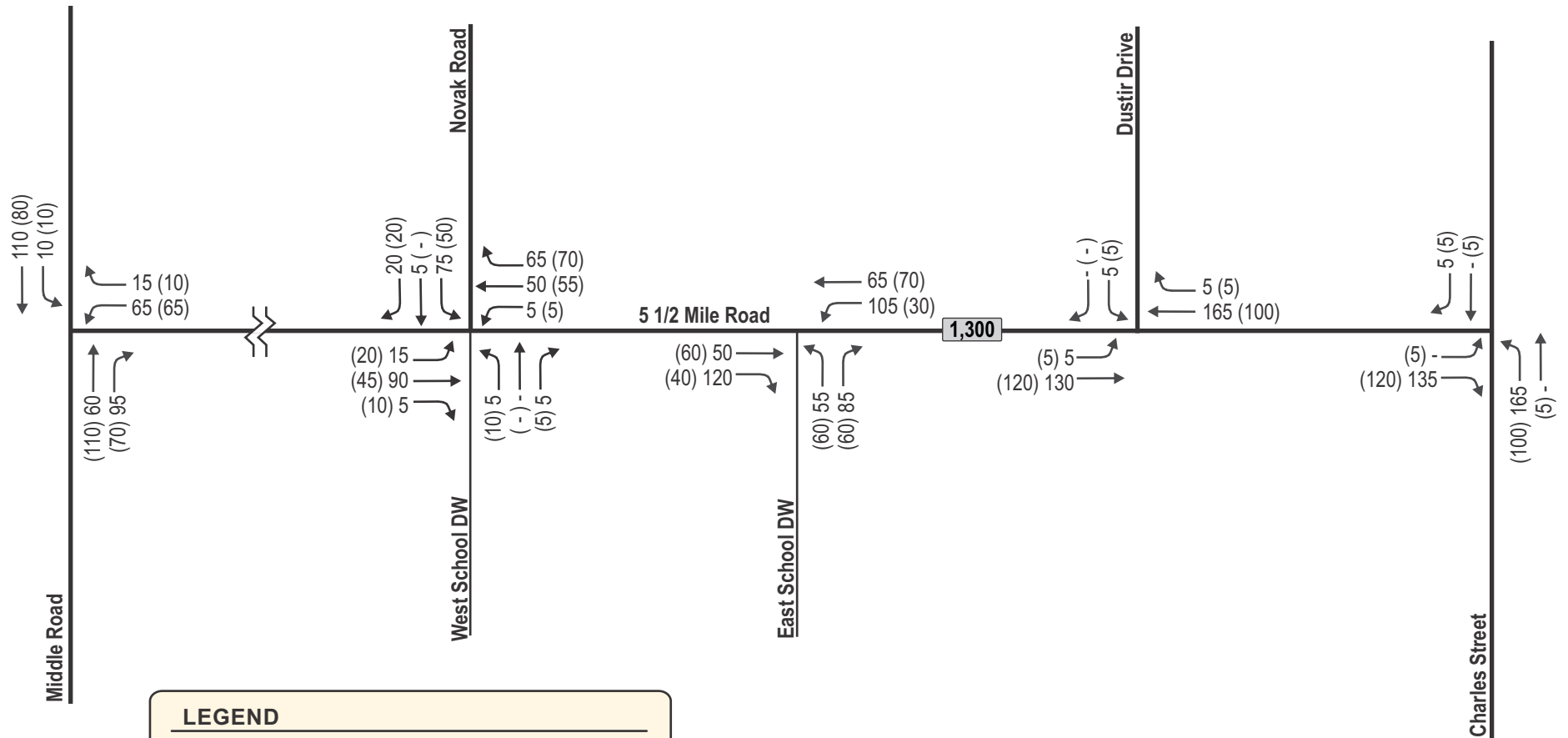
SOUTH SECTION



LEGEND

-  Stop Sign Control
-  Existing Lane Configuration
-  Existing Storage Length (in Feet)
-  Distance Between Roadways

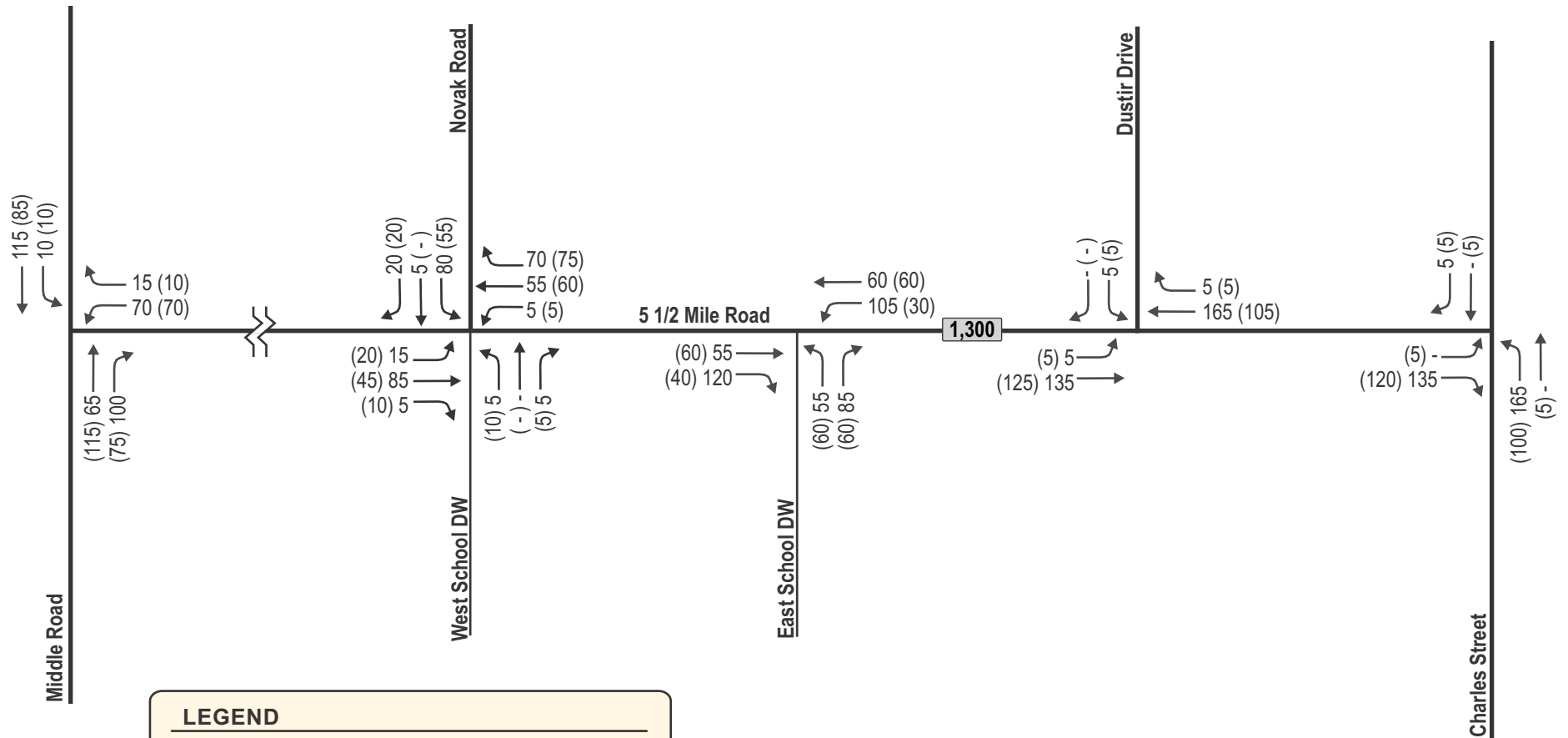




LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)
- X,XXX** 2021 Annual Average Daily Traffic (AADT)





LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)
- X,XXX** 2021 Annual Average Daily Traffic (AADT)



3259: 05-28-24



NOT TO SCALE

EXHIBIT 5 YEAR 2034 PROJECTED TRAFFIC VOLUMES

CALEDONIA, WISCONSIN

Exhibit 6A
On-Site (Olympia Brown School Expansion) Trip Generation Table

Land Use	ITE Code	Proposed Size	Weekday Daily ²	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Elementary School ¹	TADI	215 Students	490 (2.27)	90 (61%)	55 (39%)	145 (0.67)	40 (47%)	50 (53%)	90 (0.41)
Total New Trips			490	90	55	145	40	50	90

¹ Trip Rates calculated based on traffic counts taken at school in April of 2024 with an existing student population of 535 students.

² Daily rate are from the ITE Trip Generation Manual, 11th Edition.

TRIP DISTRIBUTION (New Trips)

North on Middle Road	15%	70	15	10	5	10
South on Middle Road	35%	170	30	20	15	15
North on Novak Road	20%	100	20	10	10	10
South on Charles Street	30%	150	25	15	10	15
	100%	490	90	55	40	50



3259: 05-28-24

EXHIBIT 6A
ON-SITE DEVELOPMENT TRIP GENERATION & DISTRIBUTION TABLES
OLYMPIA BROWN SCHOOL

CALEDONIA, WISCONSIN

Exhibit 6B

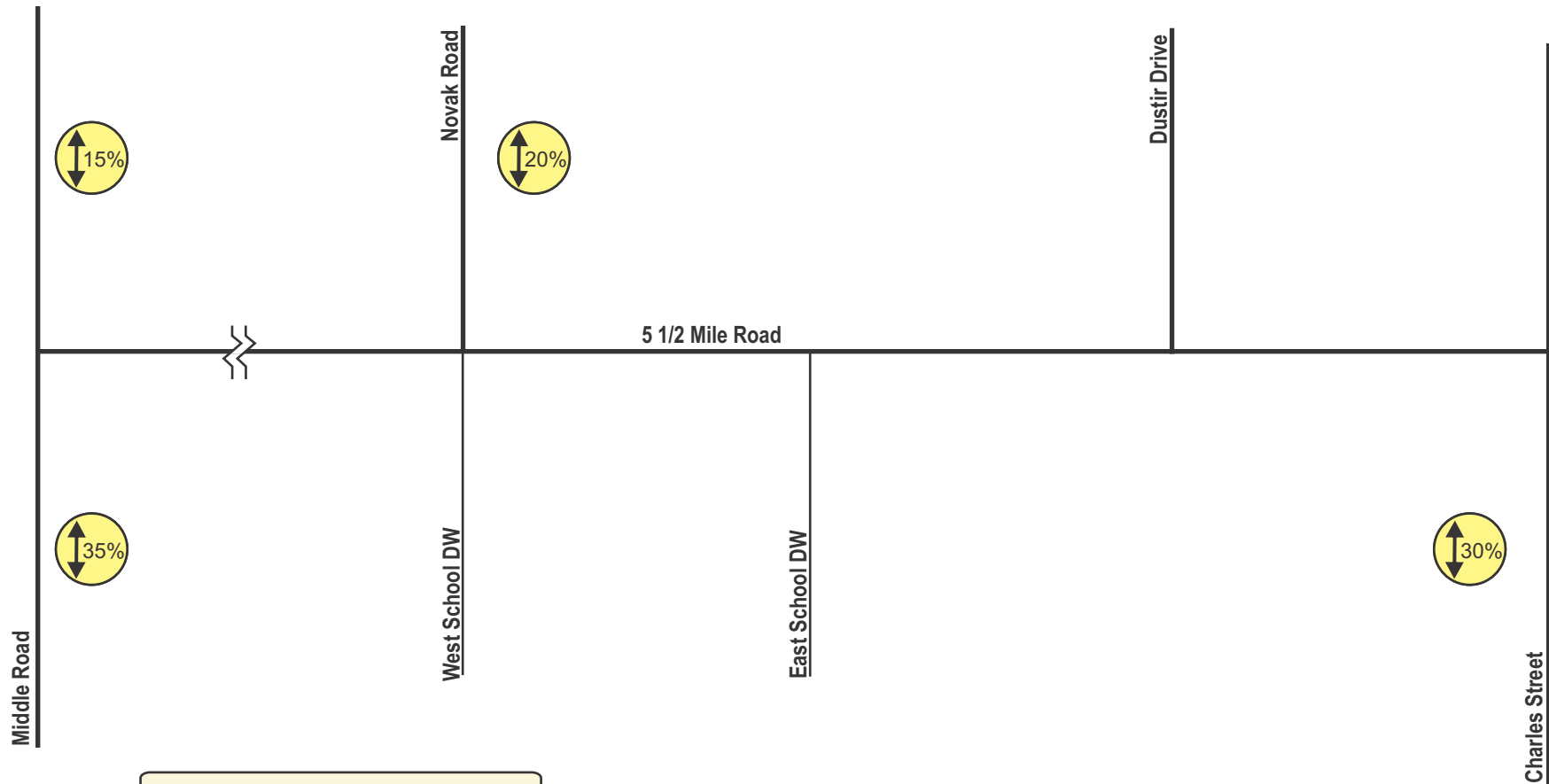
Off-Site (Audubon Arboretum Subdivision) Trip Generation Table¹

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	120 Units	1,190 FCE	25 (26%)	65 (74%)	90 FCE	75 (63%)	45 (37%)	120 FCE
Total New Trips			1,190	25	65	90	75	45	120


¹ ITE Trip Rates (X.XX) and/or Fitted Curve Equations (FCE) are from the ITE Trip Generation Manual, 11th Edition.

TRIP DISTRIBUTION (New Trips)

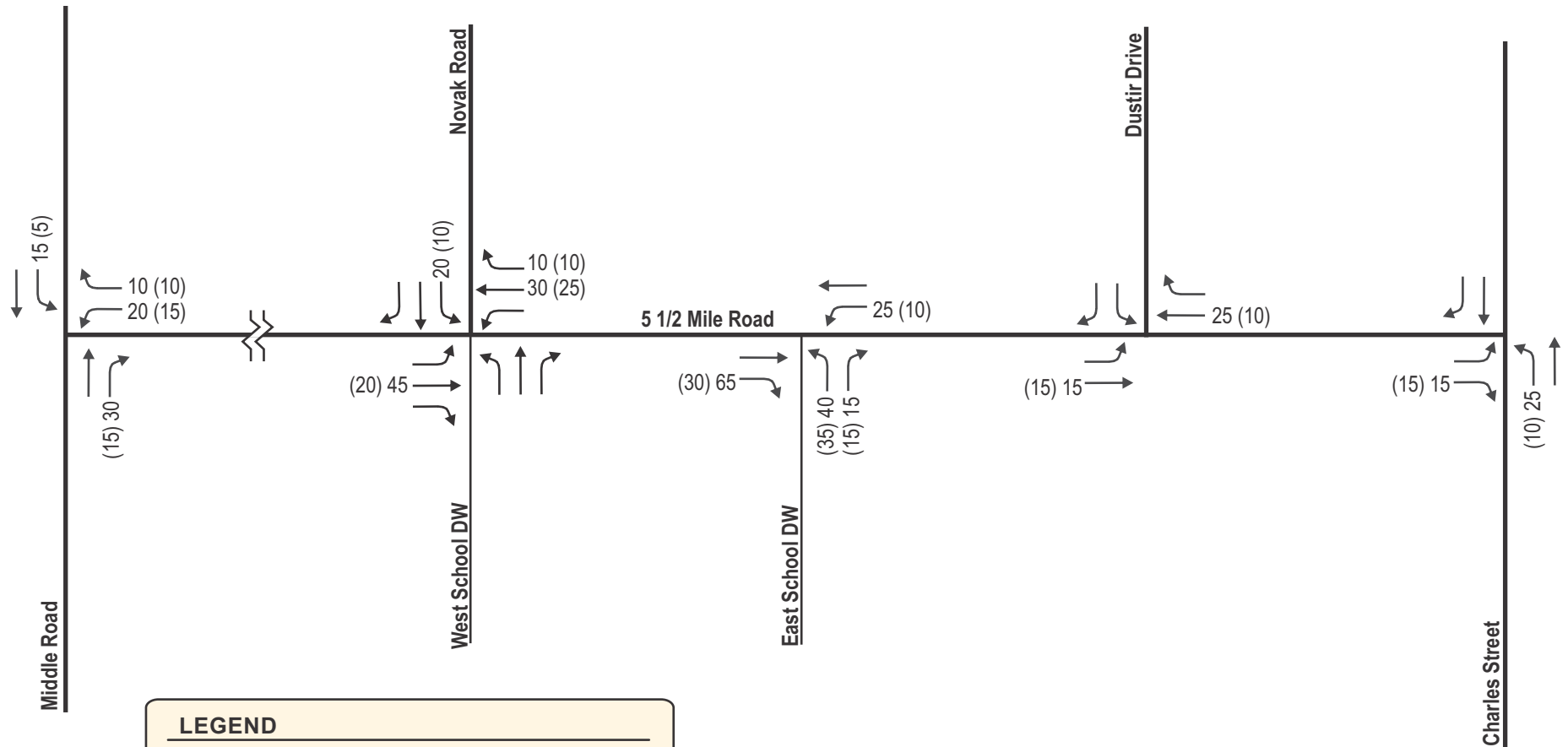
North on Middle Road	15%	180	5	10	10	5
South on Middle Road	35%	415	10	20	25	15
North on Novak Road	20%	240	5	15	15	10
South on Charles Street	30%	355	5	20	25	15
	100%	1190	25	65	75	45

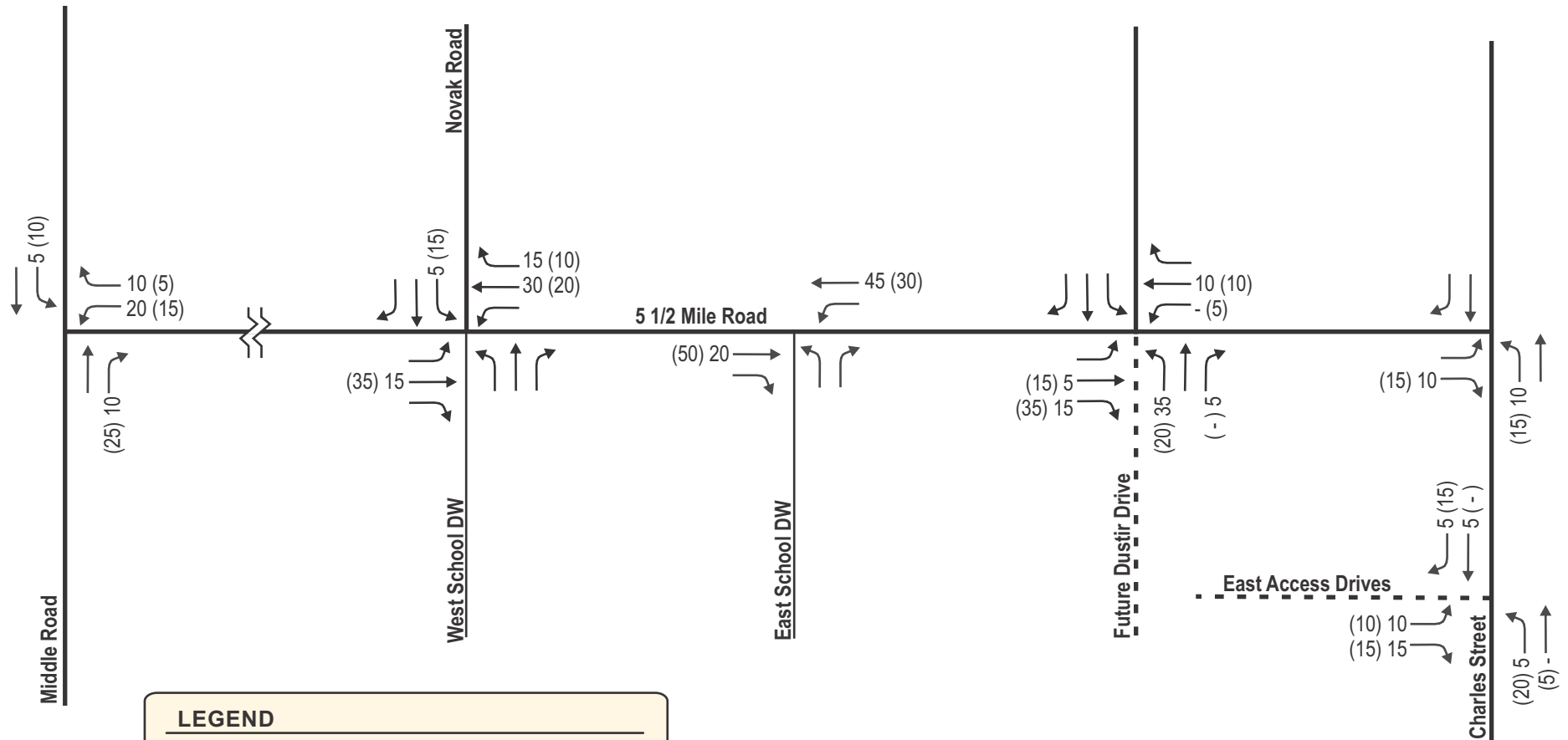


LEGEND

 Proposed Trip Distribution



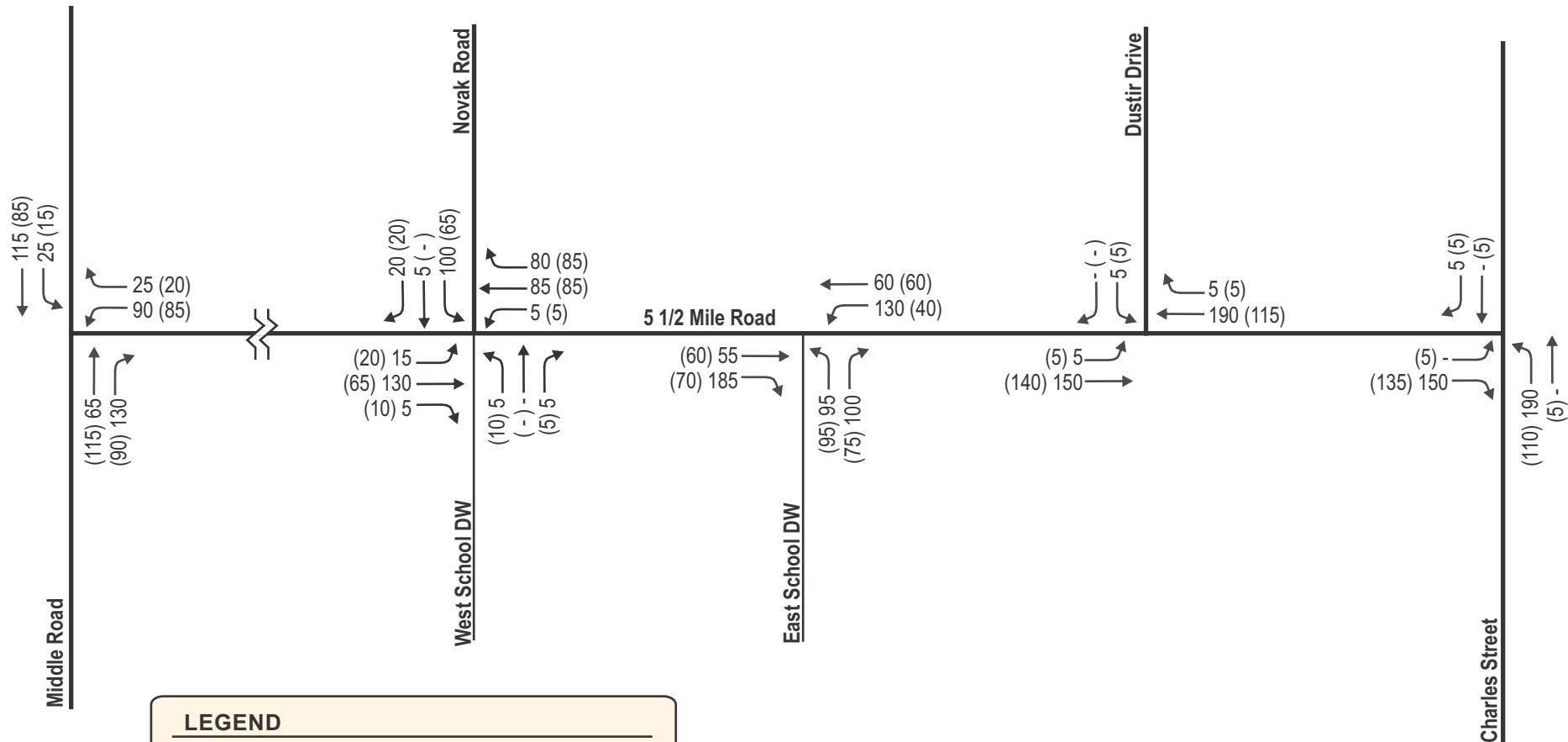




LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)

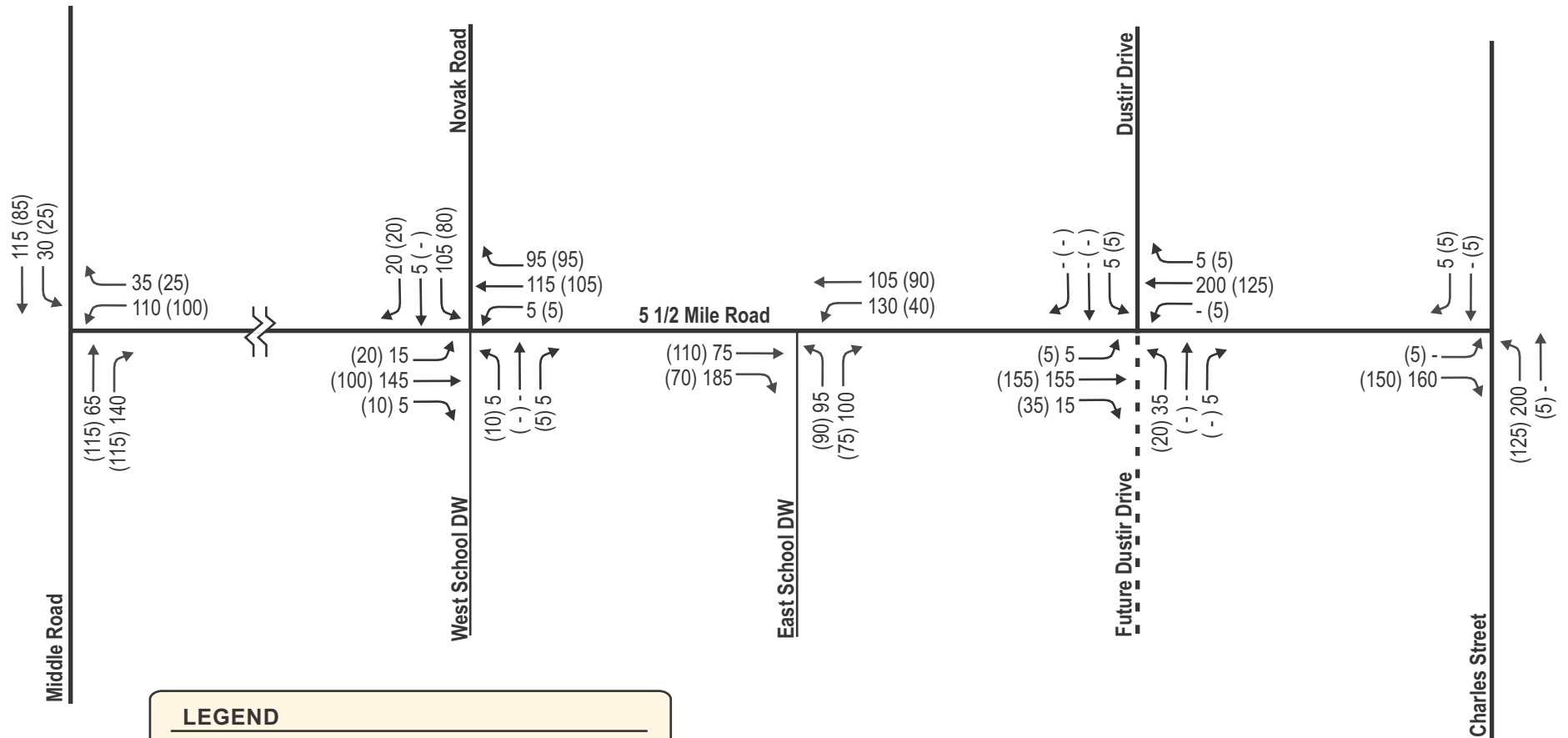




LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)





LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



LEGEND



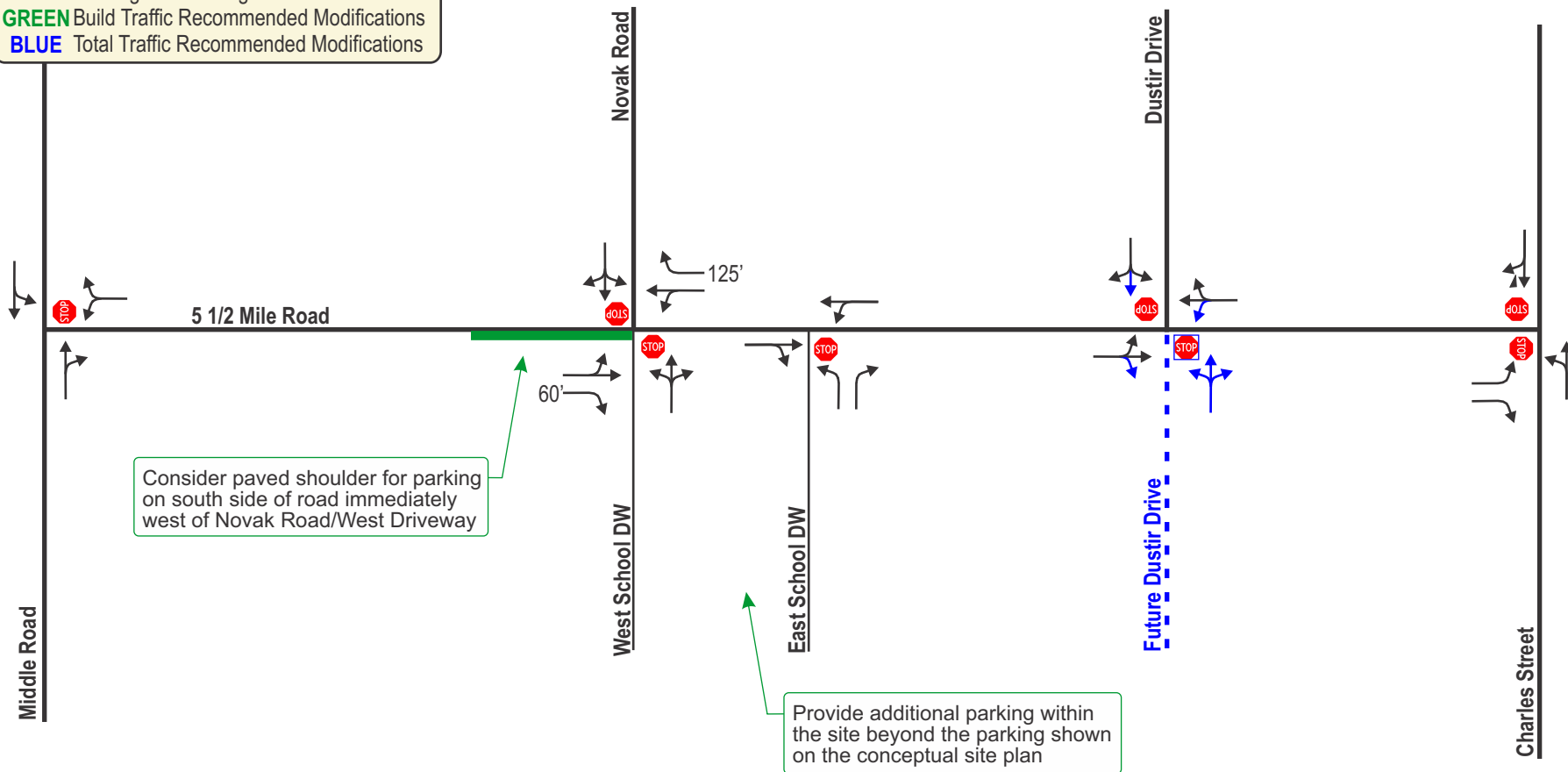
Stop Sign Control

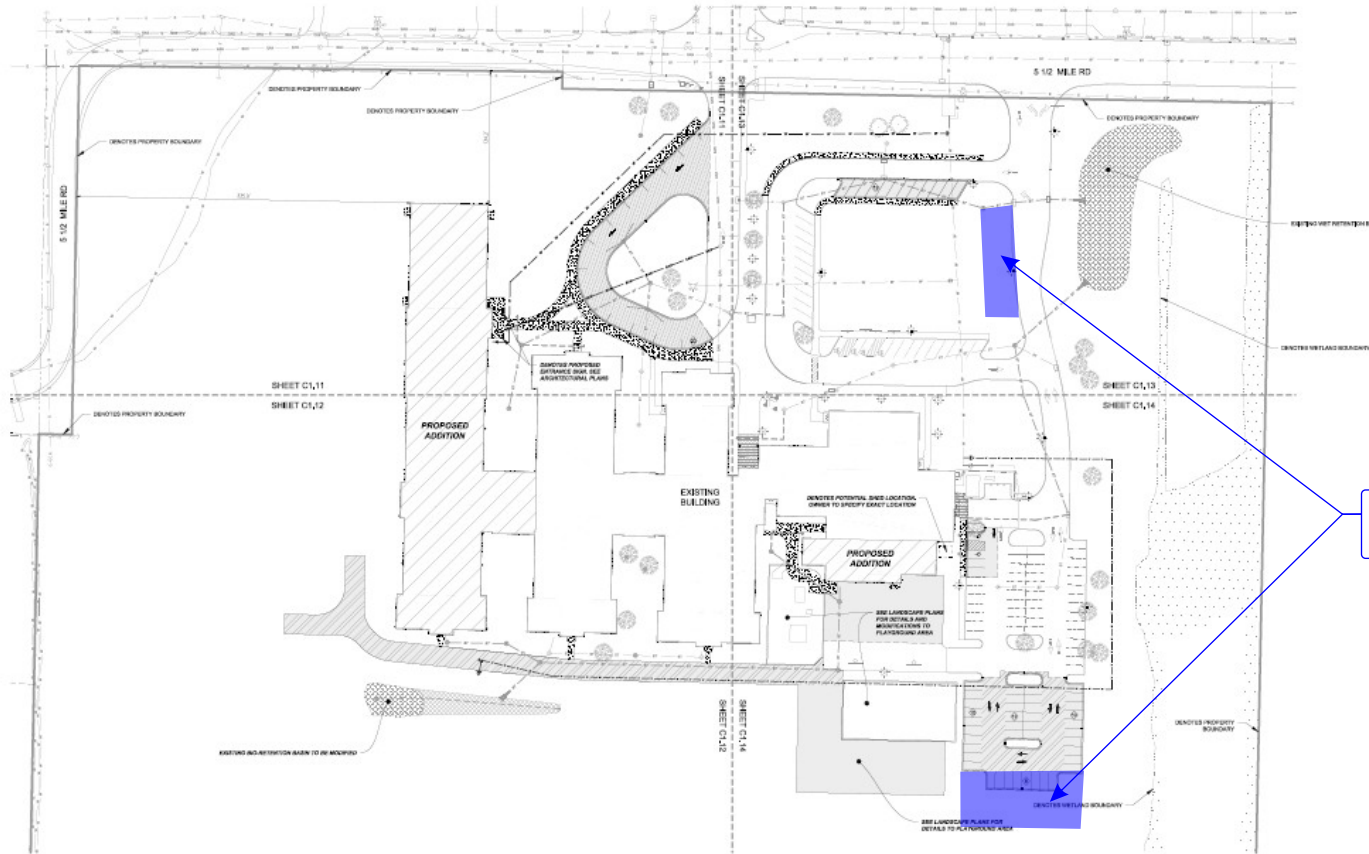
XX' Storage Length (In Feet)

→ Existing Lane Configuration

GREEN Build Traffic Recommended Modifications

BLUE Total Traffic Recommended Modifications





Provide additional parking within the site

zimmerman
ARCHITECTURAL STUDIOS, INC.
2010 N. Main Street, Suite 100, Madison, WI 53705
TEL: 608.261.1111
FAX: 608.261.1112
WWW.ZIMMERMAN-ARCH.COM

Consult:
HARWOOD
2010 N. Main Street, Suite 100, Madison, WI 53705
TEL: 608.261.1111
FAX: 608.261.1112
WWW.HARWOOD-ARCH.COM

Project:
Clyde Brown Elementary
Addition & Renovation

100% CD Set
Sheet

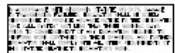
SITE PLAN - OVERALL

NO.	DATE	DESCRIPTION
1	01.18.23	Initial Design
2	02.03.24	Final Design

Sheet No.
C1.10

SITE CHARACTERISTICS	
TOTAL SITE AREA	20.0 AC
TOTAL IMPAVED AREA	1.0 AC
TOTAL PAVED AREA	0.5 AC
TOTAL GREENSPACE	19.5 AC
EXISTING REGULAR PARKING SPACES	50
EXISTING HANDICAP SPACES	5
PROPOSED TOTAL PARKING	60
PROPOSED REGULAR PARKING SPACES	55
PROPOSED HANDICAP SPACES	5
PROPOSED TOTAL PARKING	60

MATERIALS	
PROPOSED CONCRETE SIDEWALK	CONCRETE
PROPOSED REGULAR DUTY ASPHALT PAVEMENT	ASPHALT
PROPOSED HEAVY DUTY ASPHALT PAVEMENT	ASPHALT
PROPOSED HEAVY DUTY ASPHALT PAVEMENT	ASPHALT
PROPOSED HEAVY DUTY ASPHALT PAVEMENT	ASPHALT
PROPOSED HEAVY DUTY ASPHALT PAVEMENT	ASPHALT
PROPOSED HEAVY DUTY ASPHALT PAVEMENT	ASPHALT



3259: 05-28-24



NOT TO SCALE

EXHIBIT 10B RECOMMENDED MODIFICATIONS

CALEDONIA, WISCONSIN

Appendix A

Traffic

Existing Turning Movement Counts

Future Year Background Growth Rate Calculations

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

Base Information, Observed (2.75) Hour and Estimated (24) Hour Volume Summaries

Major St: 5 1/2 Mile Road

Minor St: Middle Road

Intersection of: 5 1/2 Mile Road & Middle Road

IX_ID:

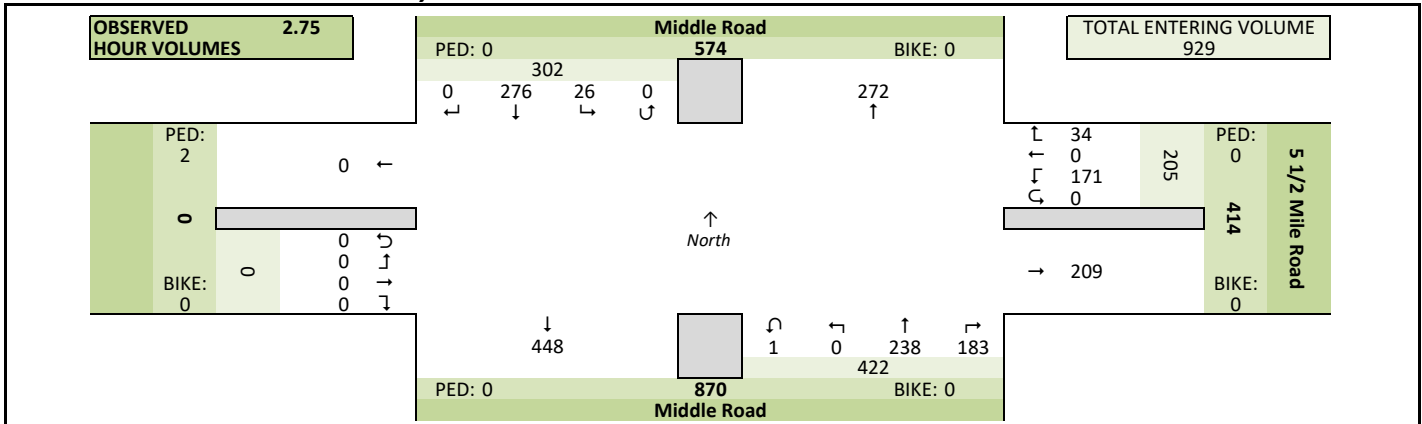
Site Information

Municipality	Village of Caledonia		
County	51 - Racine	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg	Middle Road		
East Leg	5 1/2 Mile Road		
South Leg	Middle Road		
West Leg			
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	None

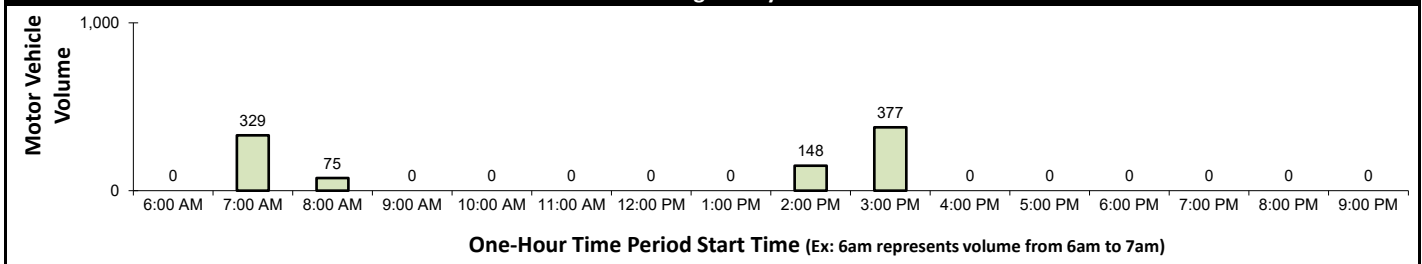
Count Information

Hrs Counted:					07:00 AM-08:15 AM and 02:30 PM-04:00 PM				
1st Day of Count		Tuesday, May 7, 2024				Weather			
AM Peak Period		Tuesday, May 7, 2024				Clear & Dry			
Midday Peak Period		Tuesday, May 7, 2024				Clear & Dry			
PM Peak Period		Wednesday, May 8, 2024				Clear & Dry			
Calculated Peak Hours									
	AM	7:15-8:15am	MD			PM	3:00-4:00pm		
Peak Hours Selected for Analysis									
	AM	7:15-8:15am	MD			PM	2:30-3:30pm		
Daily/Seasonal Adjustment Group				(2) Urban Arterials & Collectors					
Count Expansion Group				(2) Urban Arterials & Collectors					
Daily/Seasonal Adjustment Factor				0.895		Count Expansion Factor		5.386	
Company Name						TADI, Inc.		Manual Adj.	1.000
Observers	AM Peak Period		Lee Oestreich						
	Midday Peak Period		None						
	PM Peak Period		Jane Fait						
Comments									
2021 DOT Daily & Seasonal Factors									

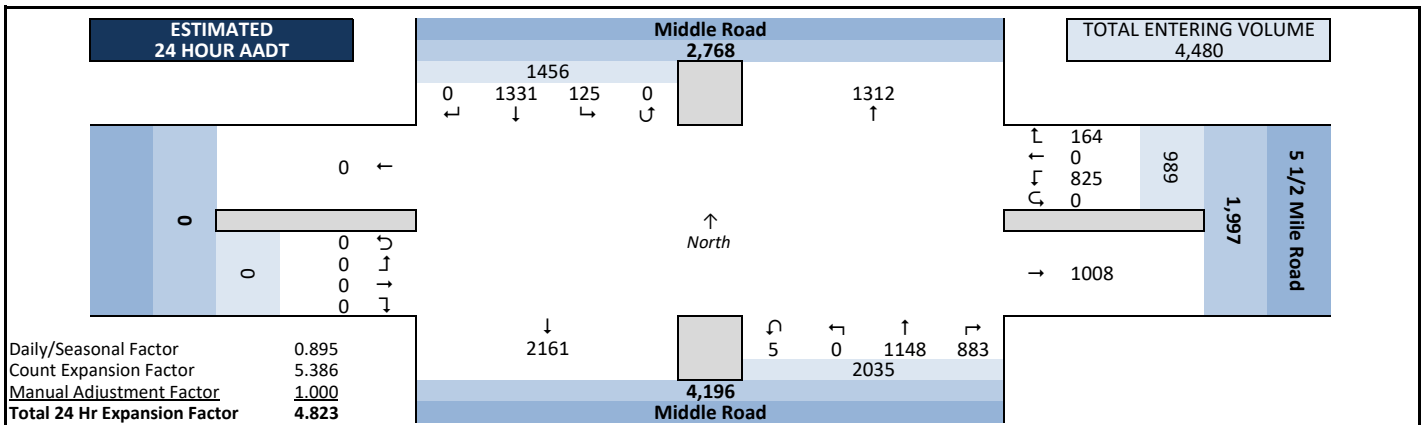
Observed 2.75 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



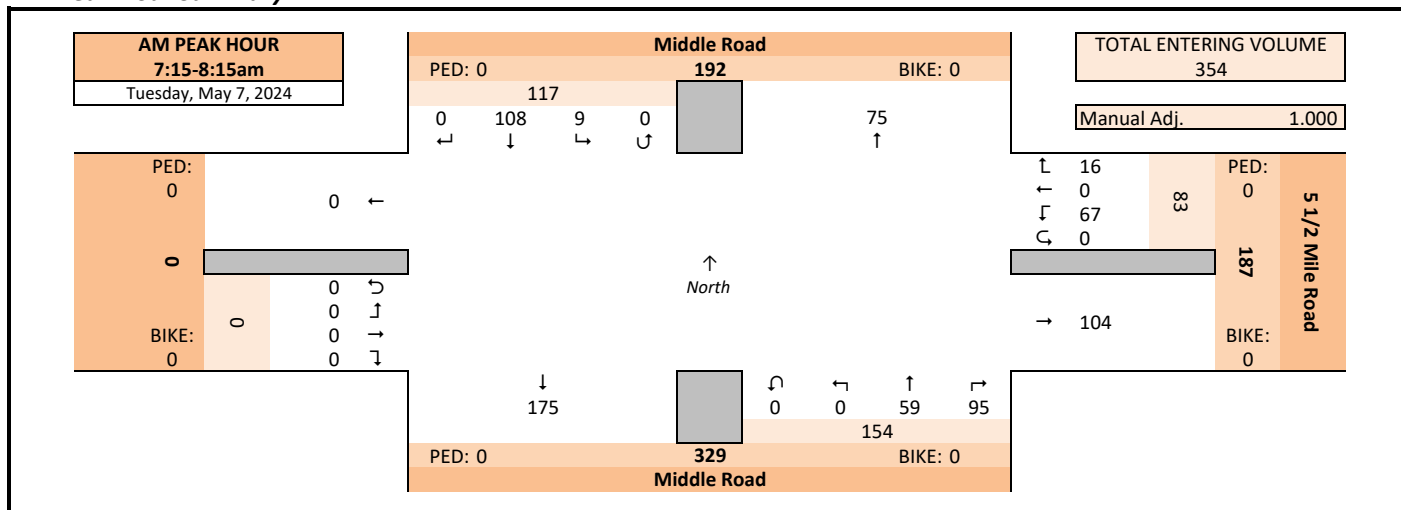
Peak Hour Volume Graphical Summary

AM Peak Hour Summary

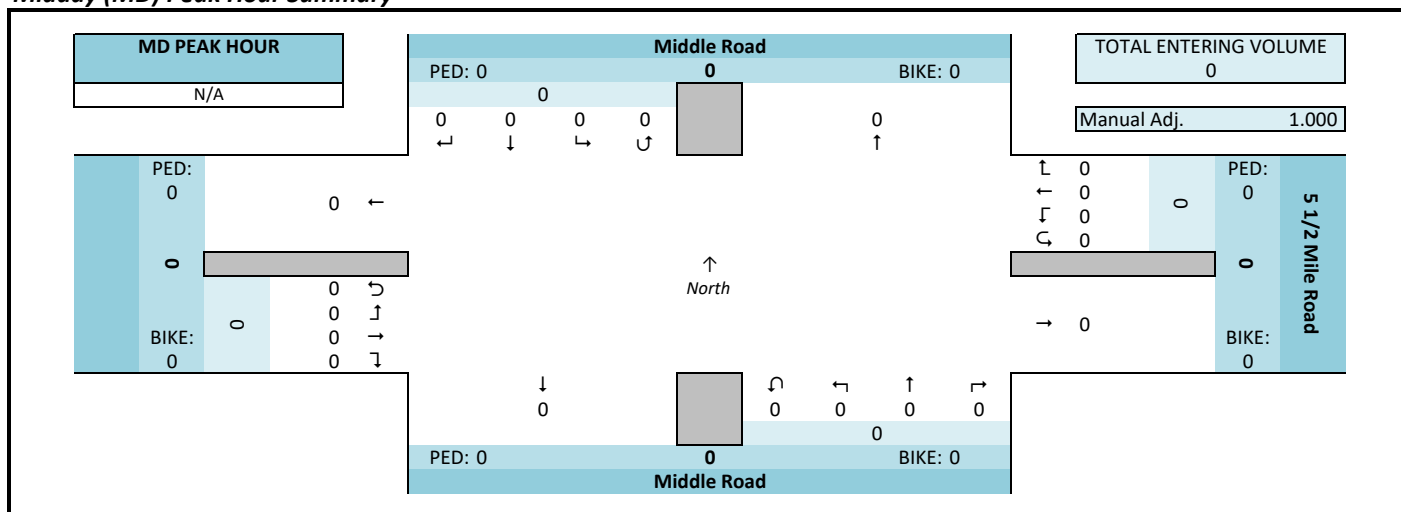
All Motor Vehicles



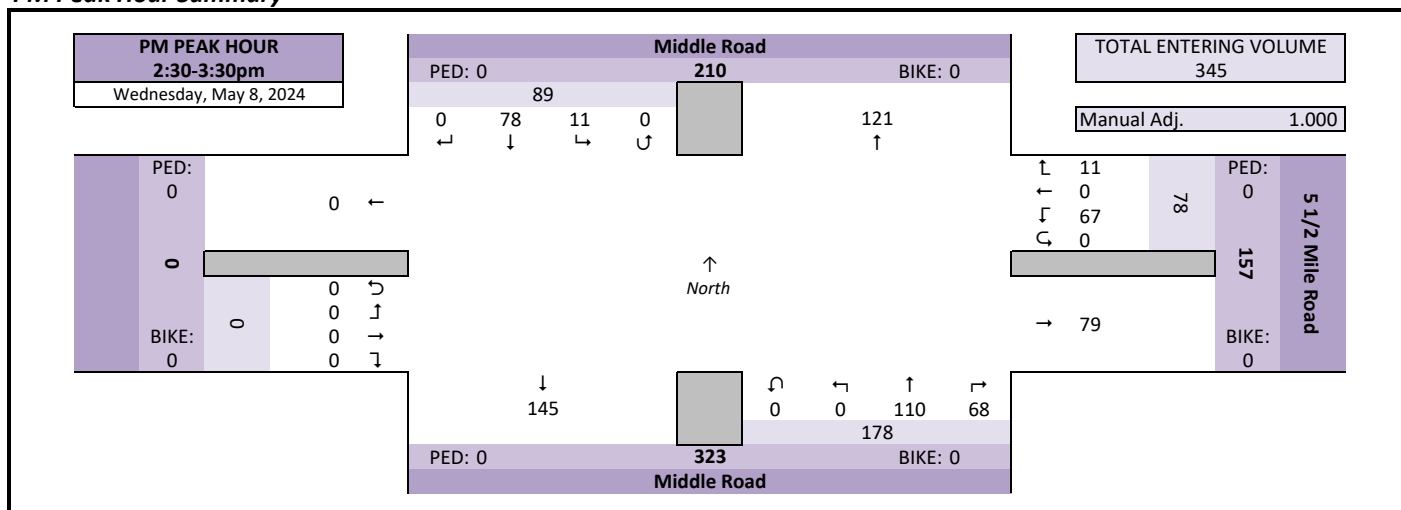
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



Peak Hour Volume Summary

Count Basics			Page 3 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



Tuesday, May 7, 2024		↓					←					↑					→					Totals
		From North					From East					From South					From West					
AM Peak Hour		Middle Road					5 1/2 Mile Road					Middle Road										
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
7:15 AM		0	21	3	0	24	2	0	2	0	4	22	17	0	0	39	0	0	0	0	0	67
7:30 AM		0	34	3	0	37	4	0	13	0	17	24	12	0	0	36	0	0	0	0	0	90
7:45 AM		0	31	3	0	34	3	0	31	0	34	42	12	0	0	54	0	0	0	0	0	122
8:00 AM		0	22	0	0	22	7	0	21	0	28	7	18	0	0	25	0	0	0	0	0	75
Peak Hour Volume		0	108	9	0	117	16	0	67	0	83	95	59	0	0	154	0	0	0	0	0	354
Rounded Hourly Volume		0	110	10	0	120	15	0	65	0	80	95	60	0	0	155	0	0	0	0	0	355
% Single Unit Trucks		0.0	6.5	11.1	0.0	6.8	6.2	0.0	4.5	0.0	4.8	4.2	3.4	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	5.1
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	6.5	11.1	0.0	6.8	6.2	0.0	4.5	0.0	4.8	4.2	3.4	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	5.1
Peak Hour Factor (PHF)		0.00	0.79	0.75	0.00	0.79	0.57	0.00	0.54	0.00	0.61	0.57	0.82	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.73

[illegible]

Wednesday, May 8, 2024		↓					←					↑					→					Totals
		From North					From East					From South					From West					
PM Peak Hour		Middle Road					5 1/2 Mile Road					Middle Road										
PM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	2:30 PM	0	24	1	0	25	1	0	5	0	6	16	25	0	0	41	0	0	0	0	0	72
	2:45 PM	0	14	3	0	17	2	0	2	0	4	29	26	0	0	55	0	0	0	0	0	76
	3:00 PM	0	18	3	0	21	3	0	41	0	44	16	27	0	0	43	0	0	0	0	0	108
	3:15 PM	0	22	4	0	26	5	0	19	0	24	7	32	0	0	39	0	0	0	0	0	89
	Peak Hour Volume	0	78	11	0	89	11	0	67	0	78	68	110	0	0	178	0	0	0	0	0	345
	Rounded Hourly Volume	0	80	10	0	90	10	0	65	0	75	70	110	0	0	180	0	0	0	0	0	345
	% Single Unit Trucks	0.0	1.3	0.0	0.0	1.1	27.3	0.0	7.5	0.0	10.3	10.3	3.6	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	5.8
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	1.3	0.0	0.0	1.1	27.3	0.0	7.5	0.0	10.3	10.3	3.6	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	5.8	
Peak Hour Factor (PHF)		0.00	0.81	0.69	0.00	0.86	0.55	0.00	0.41	0.00	0.44	0.59	0.86	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.80

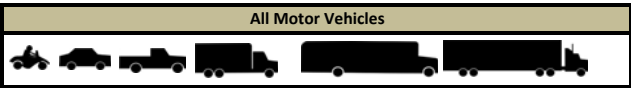
[illegible]

Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

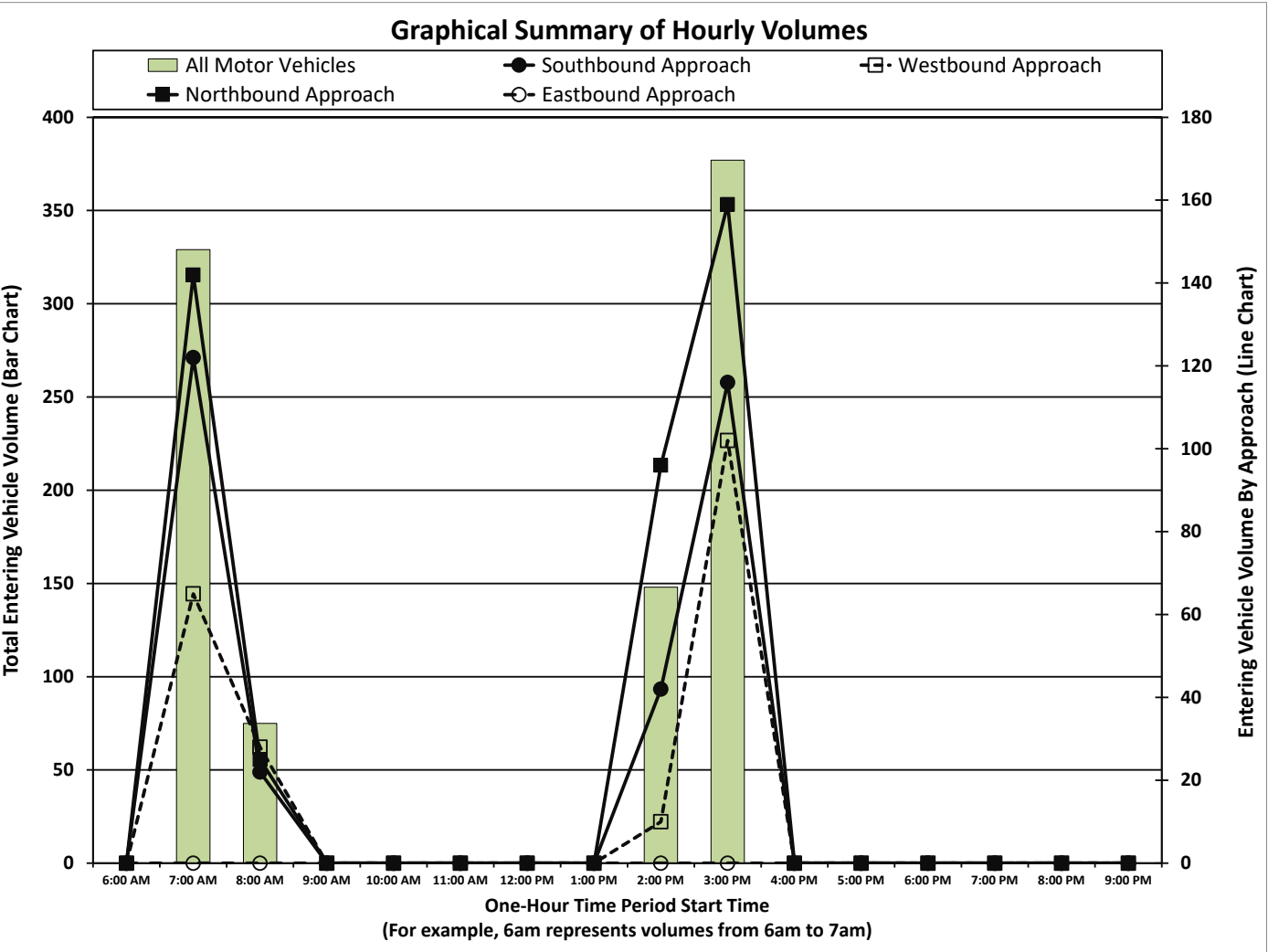
5 1/2 Mile Road & Middle Road

Count Basics			Page 4 of 13	
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events	



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time		From North					From East					From South					From West					Total Vehicle Volume	Directional Volume Totals	
		Middle Road					5 1/2 Mile Road					Middle Road												
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	113	9	0	122	11	0	54	0	65	92	50	0	0	142	0	0	0	0	0	329	65	264
	8:00 AM	0	22	0	0	22	7	0	21	0	28	7	18	0	0	25	0	0	0	0	0	75	28	47
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	0	38	4	0	42	3	0	7	0	10	45	51	0	0	96	0	0	0	0	0	148	10	138
	3:00 PM	0	103	13	0	116	13	0	89	0	102	39	119	0	1	159	0	0	0	0	0	377	102	275
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		0	276	26	0	302	34	0	171	0	205	183	238	0	1	422	0	0	0	0	0	929	205	724



Intersection Traffic Volume Report

15-Minute Single Unit (SU) Truck & Bus Data

5 1/2 Mile Road & Middle Road

Count Basics			Page 7 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Single Unit (SU) Truck & Bus Data

15-Minute Time Period	Start Time	From North Middle Road					From East 5 1/2 Mile Road					From South Middle Road					From West					15-Min Totals	Hourly Sum	
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
	7:15 AM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	4	18
	7:30 AM	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	4	
	7:45 AM	0	0	1	0	1	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	0	5	
	8:00 AM	0	3	0	0	3	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	5	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
	2:45 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	6	21
	3:00 PM	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	0	3	17
	3:15 PM	0	1	0	0	1	3	0	3	0	6	0	4	0	0	4	0	0	0	0	0	0	11	
	3:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
	3:45 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	
PM Peak Period	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Totals	0	8	1	0	9	5	0	9	0	14	11	7	0	0	18	0	0	0	0	0	0	41	

Peak Hour Single Unit (SU) Truck & Buses Volume Summary

Hourly Time Period	Start Time	From North Middle Road					From East 5 1/2 Mile Road					From South Middle Road					From West					Total Hourly Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	7:15 AM	0	7	1	0	8	1	0	3	0	4	4	2	0	0	6	0	0	0	0	0	18
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:30 PM	0	1	0	0	1	3	0	5	0	8	7	4	0	0	11	0	0	0	0	0	20

15-Minute Semi-Truck Data

5 1/2 Mile Road & Middle Road

[illegible][illegible]

Intersection Traffic Volume Report

15-Minute Heavy Vehicle Data

5 1/2 Mile Road & Middle Road

Count Basics			Page 9 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Heavy Vehicle Data

15-Minute Time Period	From North Middle Road					From East 5 1/2 Mile Road					From South Middle Road					From West					15-Min Totals	Hourly Sum	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
	Start Time																						
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	
	7:15 AM	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	4	18
	7:30 AM	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	4	
	7:45 AM	0	0	1	0	1	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	5	
	8:00 AM	0	3	0	0	3	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	5	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
	2:45 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	6	21
	3:00 PM	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	3	17
	3:15 PM	0	1	0	0	1	3	0	3	0	6	0	4	0	0	4	0	0	0	0	0	11	
	3:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	
	3:45 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2	
PM Peak Period	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Totals	0	8	1	0	9	5	0	9	0	14	11	7	0	0	18	0	0	0	0	0	41	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time	From North					From East					From South					From West					Total Hourly Volume
	Middle Road					5 1/2 Mile Road					Middle Road										
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 7:15 AM	0	7	1	0	8	1	0	3	0	4	4	2	0	0	6	0	0	0	0	0	18
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2:30 PM	0	1	0	0	1	3	0	5	0	8	7	4	0	0	11	0	0	0	0	0	20

Intersection Traffic Volume Report





15-Minute Pedestrian and Bicyclist Data

5 1/2 Mile Road & Middle Road

Count Basics			Page 11 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum
	North Approach			East Approach			South Approach			West Approach				
	Middle Road			5 1/2 Mile Road			Middle Road							
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	0	0	2	0	2	2	2
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	0	0	0	0	0	0	0	0	0	2	0	2	2	

Special Pedestrians

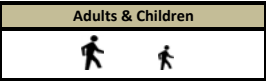
Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report





15-Minute Adult & Children Count (Manual Entry)

Count Basics			Page 12 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools In Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events

5 1/2 Mile Road & Middle Road



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum
	North Approach			East Approach			South Approach			West Approach				
	Middle Road			5 1/2 Mile Road			Middle Road							
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total		
AM Peak Period	6:00 AM	0		0	0	0	0		0	0		0	0	0
	6:15 AM	0		0	0	0	0		0	0		0	0	2
	6:30 AM	0		0	0	0	0		0	0		0	0	2
	6:45 AM	0		0	0	0	0		0	0		0	0	2
	7:00 AM	0		0	0	0	0		0	2		2	2	2
	7:15 AM	0		0	0	0	0		0	0		0	0	0
	7:30 AM	0		0	0	0	0		0	0		0	0	0
	7:45 AM	0		0	0	0	0		0	0		0	0	0
	8:00 AM	0		0	0	0	0		0	0		0	0	0
	8:15 AM	0		0	0	0	0		0	0		0	0	0
	8:30 AM	0		0	0	0	0		0	0		0	0	0
	8:45 AM	0		0	0	0	0		0	0		0	0	0
	9:00 AM	0		0	0	0	0		0	0		0	0	0
	9:15 AM	0		0	0	0	0		0	0		0	0	0
Midday Peak Period	9:30 AM	0		0	0	0		0	0	0		0	0	0
	9:45 AM	0		0	0	0		0	0	0		0	0	0
	10:00 AM	0		0	0	0		0	0	0		0	0	0
	10:15 AM	0		0	0	0		0	0	0		0	0	0
	10:30 AM	0		0	0	0		0	0	0		0	0	0
	10:45 AM	0		0	0	0		0	0	0		0	0	0
	11:00 AM	0		0	0	0		0	0	0		0	0	0
	11:15 AM	0		0	0	0		0	0	0		0	0	0
	11:30 AM	0		0	0	0		0	0	0		0	0	0
	11:45 AM	0		0	0	0		0	0	0		0	0	0
	12:00 PM	0		0	0	0		0	0	0		0	0	0
	12:15 PM	0		0	0	0		0	0	0		0	0	0
	12:30 PM	0		0	0	0		0	0	0		0	0	0
	12:45 PM	0		0	0	0		0	0	0		0	0	0
PM Peak Period	1:00 PM	0		0	0	0		0	0	0		0	0	0
	1:15 PM	0		0	0	0		0	0	0		0	0	0
	1:30 PM	0		0	0	0		0	0	0		0	0	0
	1:45 PM	0		0	0	0		0	0	0		0	0	0
	2:00 PM	0		0	0	0		0	0	0		0	0	0
	2:15 PM	0		0	0	0		0	0	0		0	0	0
	2:30 PM	0		0	0	0		0	0	0		0	0	0
	2:45 PM	0		0	0	0		0	0	0		0	0	0
	3:00 PM	0		0	0	0		0	0	0		0	0	0
	3:15 PM	0		0	0	0		0	0	0		0	0	0
	3:30 PM	0		0	0	0		0	0	0		0	0	0
	3:45 PM	0		0	0	0		0	0	0		0	0	0
	4:00 PM	0		0	0	0		0	0	0		0	0	0
	4:15 PM	0		0	0	0		0	0	0		0	0	0
4:30 PM	0		0	0	0		0	0	0		0	0	0	
4:45 PM	0		0	0	0		0	0	0		0	0	0	
5:00 PM	0		0	0	0		0	0	0		0	0	0	
5:15 PM	0		0	0	0		0	0	0		0	0	0	
5:30 PM	0		0	0	0		0	0	0		0	0	0	
5:45 PM	0		0	0	0		0	0	0		0	0	0	
6:00 PM	0		0	0	0		0	0	0		0	0	0	
6:15 PM	0		0	0	0		0	0	0		0	0	0	
6:30 PM	0		0	0	0		0	0	0		0	0	0	
6:45 PM	0		0	0	0		0	0	0		0	0	0	
7:00 PM	0		0	0	0		0	0	0		0	0	0	
7:15 PM	0		0	0	0		0	0	0		0	0	0	
7:30 PM	0		0	0	0		0	0	0		0	0	0	
7:45 PM	0		0	0	0		0	0	0		0	0	0	
8:00 PM	0		0	0	0		0	0	0		0	0	0	
8:15 PM	0		0	0	0		0	0	0		0	0	0	
8:30 PM	0		0	0	0		0	0	0		0	0	0	
8:45 PM	0		0	0	0		0	0	0		0	0	0	
9:00 PM	0		0	0	0		0	0	0		0	0	0	
9:15 PM	0		0	0	0		0	0	0		0	0	0	
9:30 PM	0		0	0	0		0	0	0		0	0	0	
9:45 PM	0		0	0	0		0	0	0		0	0	0	
Totals	0	0	0	0	0	0	0	0	0	2	0	2	2	

15-Minute Bicycle Turning Movement Count (Manual Entry)

Bicyclists



15-Minute Time Period Start Time	From North					From East					From South					From West					15-Min Totals	Hourly Sum
	Middle Road					5 1/2 Mile Road					Middle Road					Middle Road						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM				0					0					0					0	0	0
	6:15 AM				0					0					0					0	0	0
	6:30 AM				0					0					0					0	0	0
	6:45 AM				0					0					0					0	0	0
	7:00 AM				0					0					0					0	0	0
	7:15 AM				0					0					0					0	0	0
	7:30 AM				0					0					0					0	0	0
	7:45 AM				0					0					0					0	0	0
	8:00 AM				0					0					0					0	0	0
	8:15 AM				0					0					0					0	0	0
	8:30 AM				0					0					0					0	0	0
	8:45 AM				0					0					0					0	0	0
	9:00 AM				0					0					0					0	0	0
	9:15 AM				0					0					0					0	0	0
	9:30 AM				0					0					0					0	0	0
	9:45 AM				0					0					0					0	0	0
Midday Peak Period	10:00 AM				0					0					0					0	0	0
	10:15 AM				0					0					0					0	0	0
	10:30 AM				0					0					0					0	0	0
	10:45 AM				0					0					0					0	0	0
	11:00 AM				0					0					0					0	0	0
	11:15 AM				0					0					0					0	0	0
	11:30 AM				0					0					0					0	0	0
	11:45 AM				0					0					0					0	0	0
	12:00 PM				0					0					0					0	0	0
	12:15 PM				0					0					0					0	0	0
	12:30 PM				0					0					0					0	0	0
	12:45 PM				0					0					0					0	0	0
	1:00 PM				0					0					0					0	0	0
	1:15 PM				0					0					0					0	0	0
	1:30 PM				0					0					0					0	0	0
	1:45 PM				0					0					0					0	0	0
PM Peak Period	2:00 PM				0					0					0					0	0	0
	2:15 PM				0					0					0					0	0	0
	2:30 PM				0																	

Hourly Volume Varying Movement Volume Summary																				
Hourly Time Period Start Time	From North				From East				From South				From West				Total Hourly Volume			
	Middle Road				S 1/2 Mile Road				Middle Road											
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right		Thru	Left	U-Tn
AM 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

Base Information, Observed (2.75) Hour and Estimated (24) Hour Volume Summaries

Major St: 5 1/2 Mile Road

Minor St: Novak Road

Intersection of: 5 1/2 Mile Road & Novak Road

IX_ID:

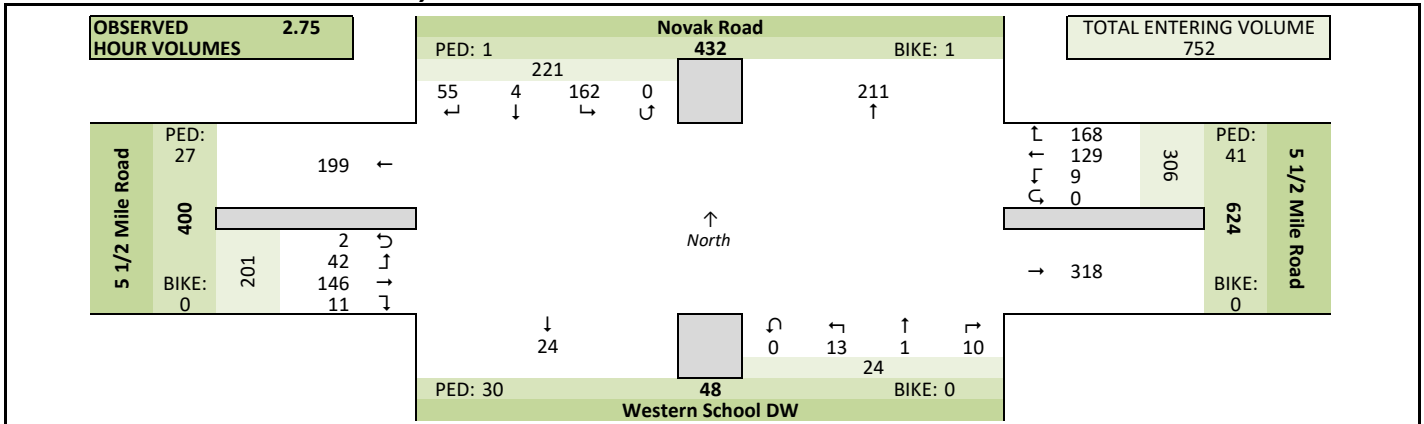
Site Information

Municipality	Village of Caledonia
County	51 - Racine
WisDOT Region	SE
Traffic Control	Partial Stop Control
Roadway Names	North Direction ↑
North Leg	Novak Road
East Leg	5 1/2 Mile Road
South Leg	Western School DW
West Leg	5 1/2 Mile Road
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None

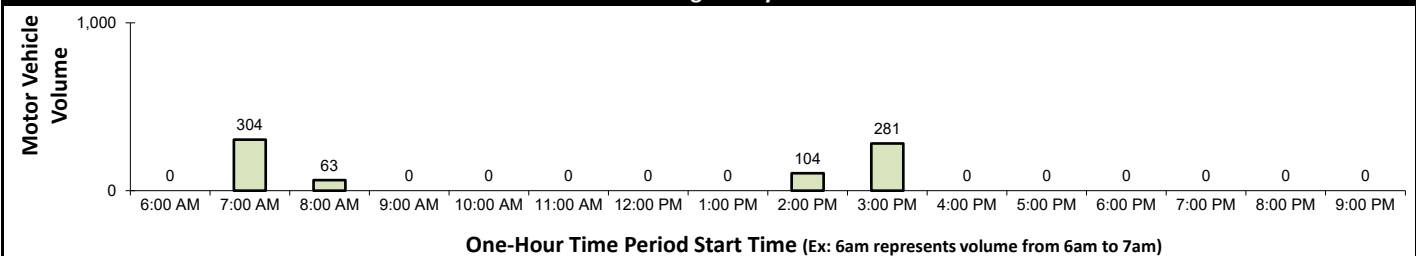
Count Information

Hrs Counted:	07:00 AM-08:15 AM and 02:30 PM-04:00 PM
1st Day of Count	Wednesday, May 8, 2024
Weather	Clear & Dry
AM Peak Period	Wednesday, May 8, 2024
Midday Peak Period	Wednesday, May 8, 2024
PM Peak Period	Thursday, May 9, 2024
Calculated Peak Hours	
AM	7:15-8:15am
MD	
PM	2:45-3:45pm
Peak Hours Selected for Analysis	
AM	7:15-8:15am
MD	
PM	2:30-3:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors
Count Expansion Group	(2) Urban Arterials & Collectors
Daily/Seasonal Adjustment Factor	0.882
Count Expansion Factor	5.386
Company Name	TADI, Inc.
Manual Adj.	1.000
Observers	AM Peak Period Amy Scheuerlein
	Midday Peak Period None
	PM Peak Period Amy Scheuerlein
Comments	2021 DOT Daily & Seasonal Factors

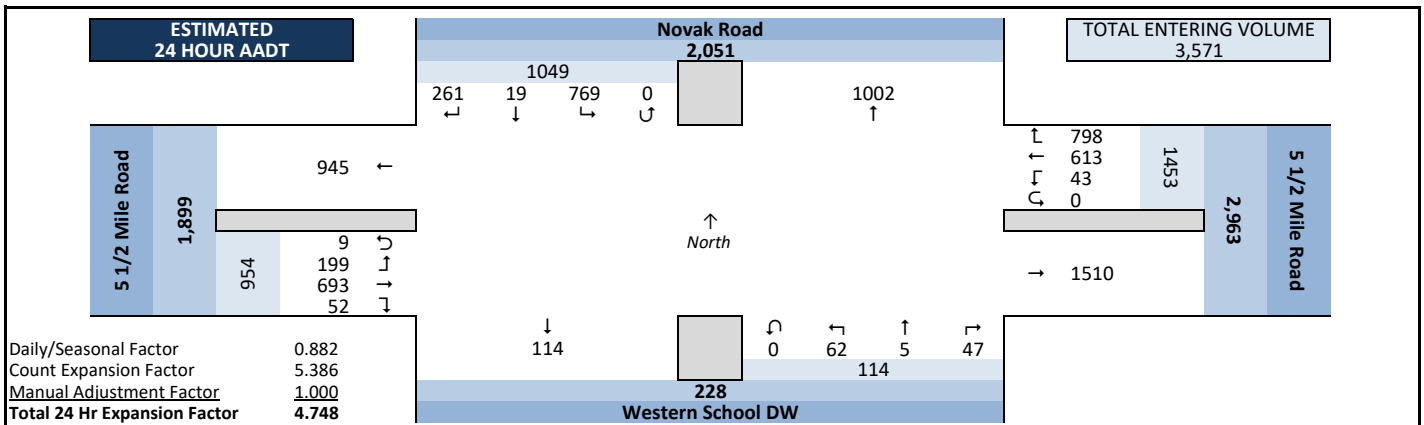
Observed 2.75 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT



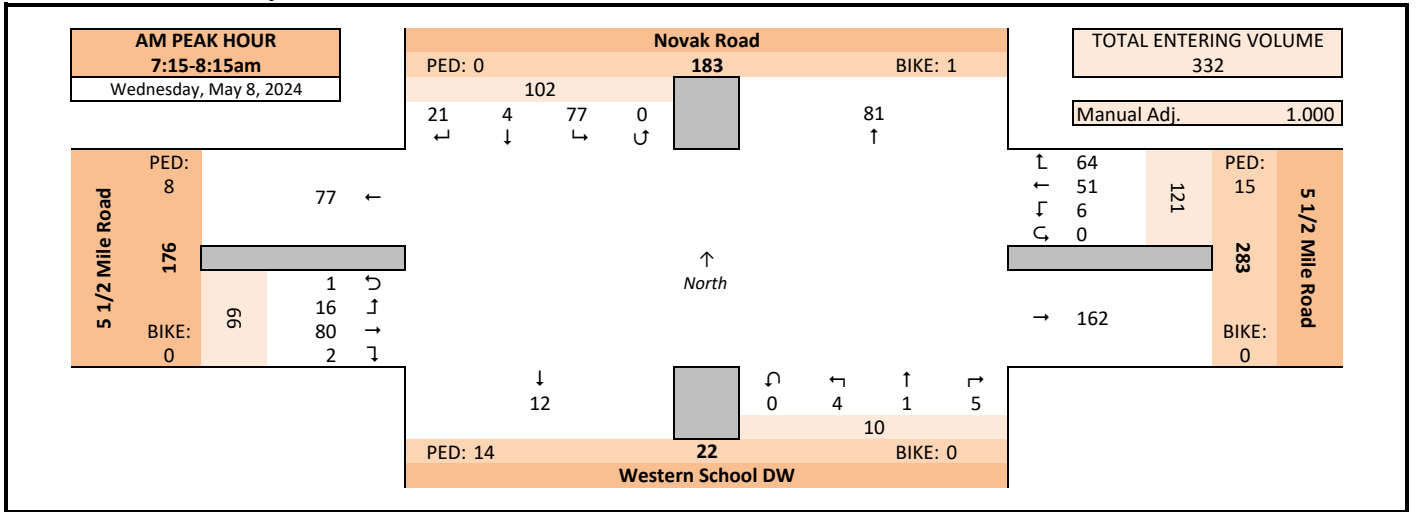
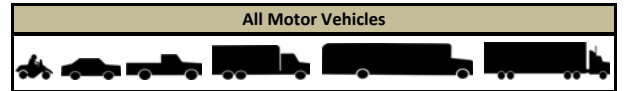
Intersection Traffic Volume Report

Peak Hour Volume Graphical Summary

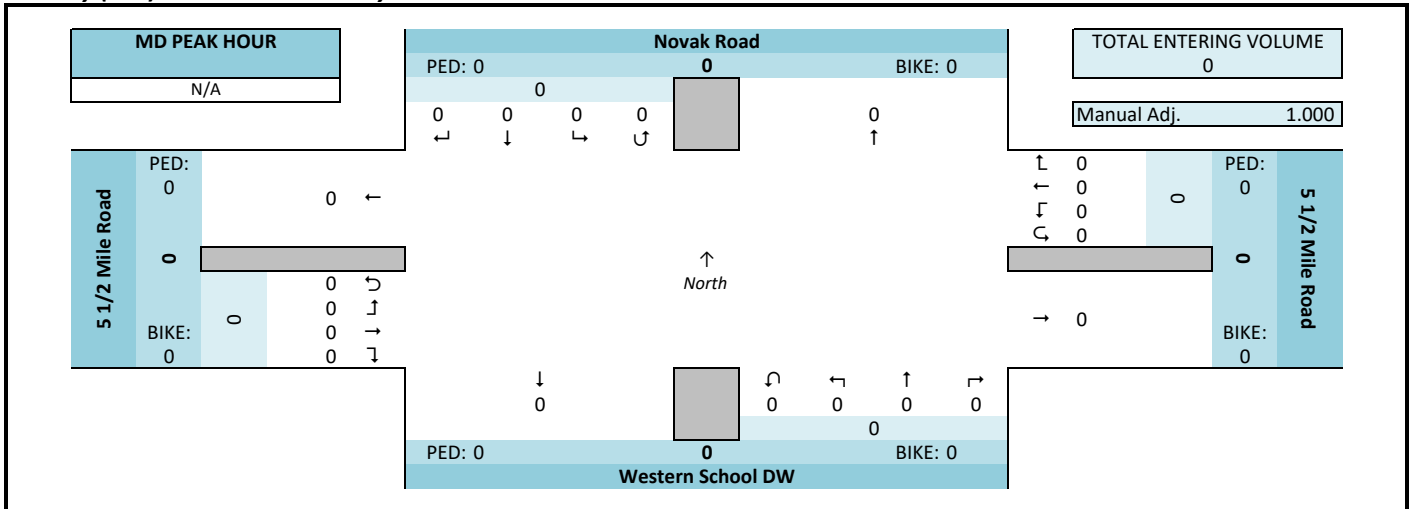
5 1/2 Mile Road & Novak Road

AM Peak Hour Summary

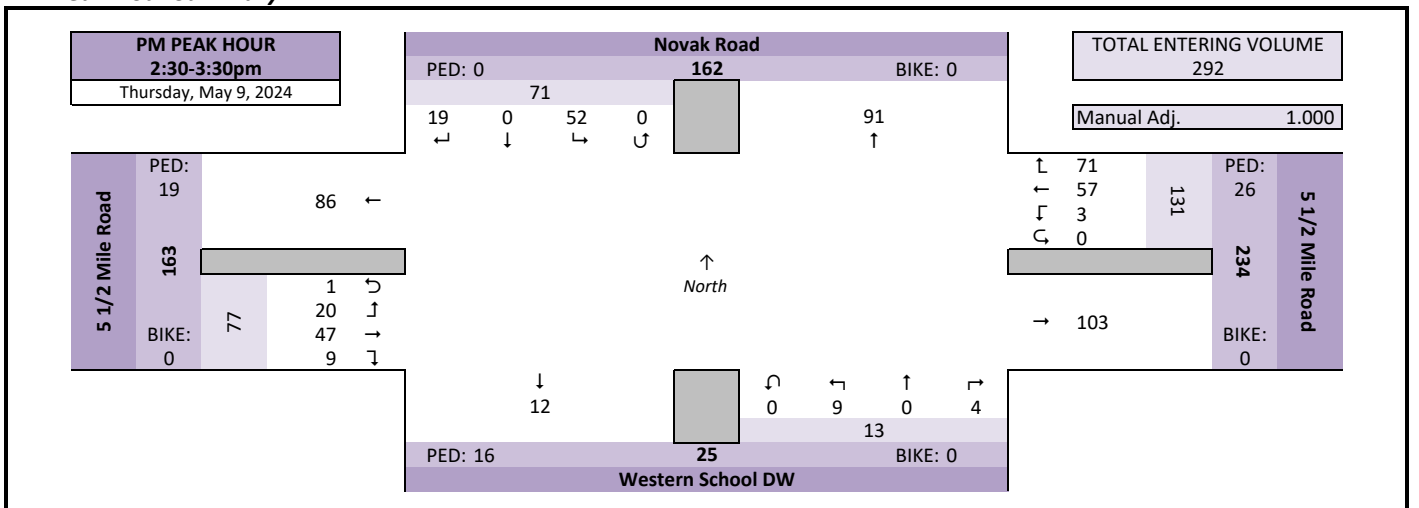
Count Basics		Page 2 of 13	
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

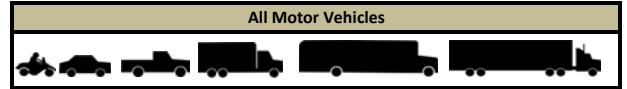


Intersection Traffic Volume Report

Peak Hour Volume Summary

5 1/2 Mile Road & Novak Road

Count Basics			Page 3 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events








Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, May 8, 2024		↓					←					↑					→						
		From North					From East					From South					From West						
		Novak Road					5 1/2 Mile Road					Western School DW					5 1/2 Mile Road						
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	
	7:15 AM	4	0	10	0	14	12	4	1	0	17	0	0	0	0	0	0	0	7	2	0	9	40
	7:30 AM	7	2	24	0	33	16	4	1	0	21	0	1	1	0	2	1	27	4	0	0	32	88
	7:45 AM	6	2	32	0	40	19	25	3	0	47	4	0	2	0	6	1	38	8	1	0	48	141
	8:00 AM	4	0	11	0	15	17	18	1	0	36	1	0	1	0	2	0	8	2	0	10	63	
	Peak Hour Volume	21	4	77	0	102	64	51	6	0	121	5	1	4	0	10	2	80	16	1	0	99	332
	Rounded Hourly Volume	20	5	75	0	100	65	50	5	0	120	5	0	5	0	10	0	80	15	0	0	95	325
	% Single Unit Trucks	4.8	50.0	6.5	0.0	7.8	4.7	0.0	66.7	0.0	5.8	80.0	0.0	75.0	0.0	70.0	50.0	2.5	12.5	0.0	5.1	8.1	
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	4.8	50.0	6.5	0.0	7.8	4.7	0.0	66.7	0.0	5.8	80.0	0.0	75.0	0.0	70.0	50.0	2.5	12.5	0.0	5.1	8.1	
Peak Hour Factor (PHF)	0.75	0.50	0.60	0.00	0.64	0.84	0.51	0.50	0.00	0.64	0.31	0.25	0.50	0.00	0.42	0.50	0.53	0.50	0.25	0.52	0.59		

N/A		From North					From East					From South					From West					Totals
MD Peak Hour		Novak Road					5 1/2 Mile Road					Western School DW					5 1/2 Mile Road					
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Thursday, May 9, 2024		↓ From North					← From East					↑ From South					→ From West					
PM Peak Hour	PM Peak Hour	Novak Road					5 1/2 Mile Road					Western School DW					5 1/2 Mile Road					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	2:30 PM	2	0	8	0	10	8	6	1	0	15	2	0	0	0	2	1	6	2	1	10	37
	2:45 PM	4	0	14	0	18	9	9	1	0	19	0	0	0	0	0	5	17	8	0	30	67
	3:00 PM	6	0	15	0	21	28	33	1	0	62	0	0	7	0	7	2	19	7	0	28	118
	3:15 PM	7	0	15	0	22	26	9	0	0	35	2	0	2	0	4	1	5	3	0	9	70
	Peak Hour Volume	19	0	52	0	71	71	57	3	0	131	4	0	9	0	13	9	47	20	1	77	292
	Rounded Hourly Volume	20	0	50	0	70	70	55	5	0	130	5	0	10	0	15	10	45	20	0	75	290
	% Single Unit Trucks	10.5	0.0	5.8	0.0	7.0	5.6	0.0	33.3	0.0	3.8	0.0	0.0	88.9	0.0	61.5	77.8	0.0	0.0	0.0	9.1	8.6
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	10.5	0.0	5.8	0.0	7.0	5.6	0.0	33.3	0.0	3.8	0.0	0.0	88.9	0.0	61.5	77.8	0.0	0.0	0.0	9.1	8.6	
Peak Hour Factor (PHF)	0.68	0.00	0.87	0.00	0.81	0.63	0.43	0.75	0.00	0.53	0.50	0.00	0.32	0.00	0.46	0.45	0.62	0.62	0.25	0.64	0.62	

Peak Hour Pedestrian and Bicyclist Volumes

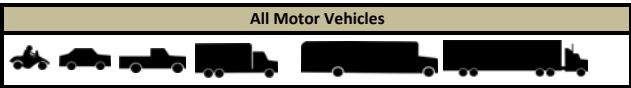
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
		North Approach			East Approach			South Approach			West Approach			
15-Minute Start Time		Novak Road			5 1/2 Mile Road			Western School DW			5 1/2 Mile Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	0	0	0	1	0	1	1	0	1	2	0	2	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	1	1	14	0	14	11	0	11	6	0	6	
	8:00 AM	0	0	0	0	0	0	2	0	2	0	0	0	
	Total	0	1	1	15	0	15	14	0	14	8	0	8	
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
PM	2:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	
	2:45 PM	0	0	0	7	0	7	5	0	5	1	0	1	
	3:00 PM	0	0	0	19	0	19	11	0	11	17	0	17	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	26	0	26	16	0	16	19	0	19	

Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

5 1/2 Mile Road & Novak Road

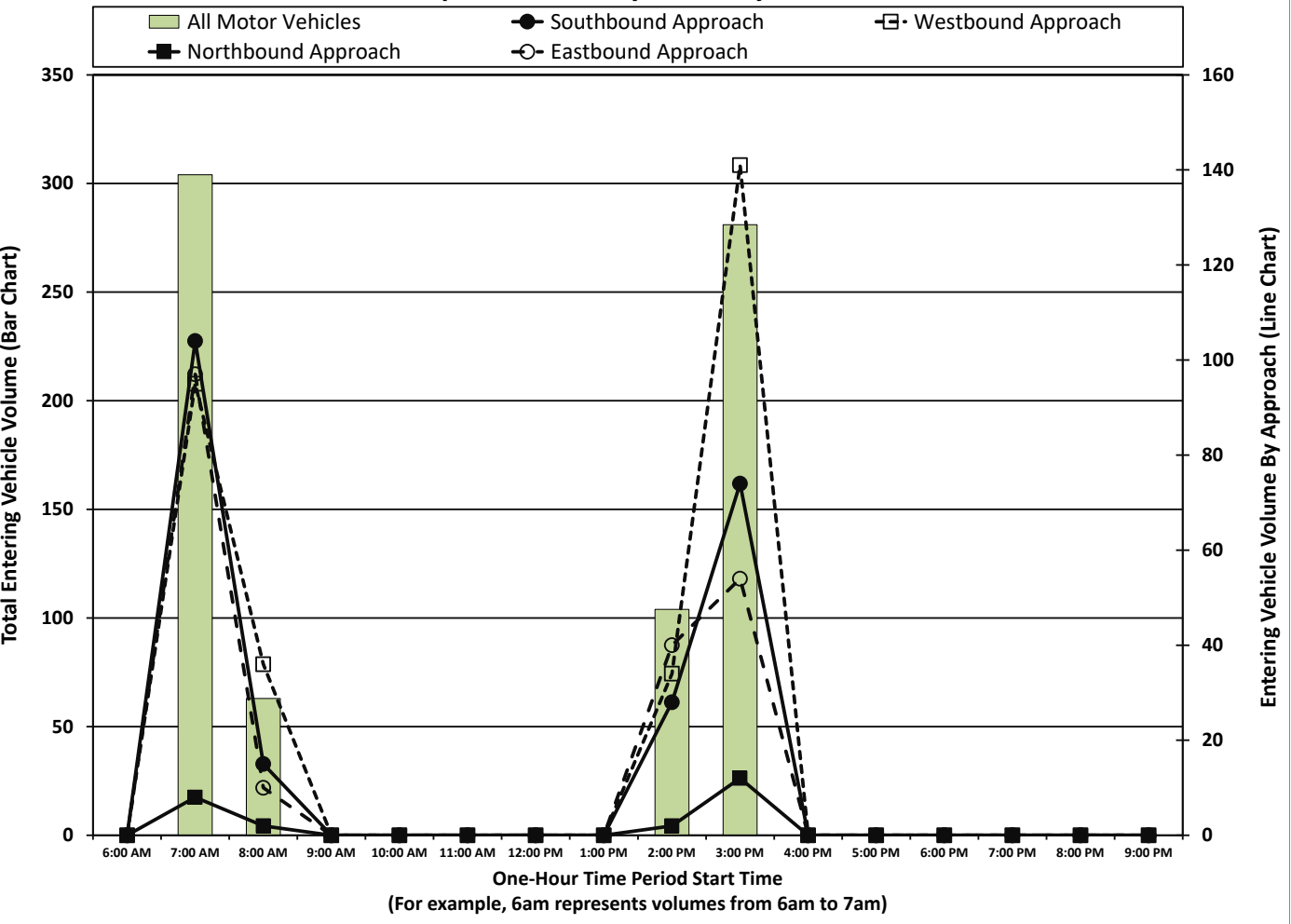
Count Basics			Page 4 of 13	
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events	



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time		From North					From East					From South					From West					Total Vehicle Volume	Directional Volume Totals	
		Novak Road					5 1/2 Mile Road					Western School DW					5 1/2 Mile Road							
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	25	4	75	0	104	56	34	5	0	95	4	1	3	0	8	2	79	15	1	97	304	192	112
	8:00 AM	4	0	11	0	15	17	18	1	0	36	1	0	1	0	2	0	8	2	0	10	63	46	17
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	6	0	22	0	28	17	15	2	0	34	2	0	0	0	2	6	23	10	1	40	104	74	30
	3:00 PM	20	0	54	0	74	78	62	1	0	141	3	0	9	0	12	3	36	15	0	54	281	195	86
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		55	4	162	0	221	168	129	9	0	306	10	1	13	0	24	11	146	42	2	201	752	507	245

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report





15-Minute Pedestrian and Bicyclist Data

5 1/2 Mile Road & Novak Road

Count Basics			Page 11 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Novak Road			5 1/2 Mile Road			Western School DW			5 1/2 Mile Road					
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	37	
	7:15 AM	0	0	0	1	0	1	1	0	1	2	0	2	4	38
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 AM	0	1	1	14	0	14	11	0	11	6	0	6	32	
	8:00 AM	0	0	0	0	0	0	2	0	2	0	0	0	2	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	1	0	1	1	61	
	2:45 PM	0	0	0	7	0	7	5	0	5	1	0	1	13	60
	3:00 PM	0	0	0	19	0	19	11	0	11	17	0	17	47	47
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	1	1	2	41	0	41	30	0	30	27	0	27	100		

Special Pedestrians

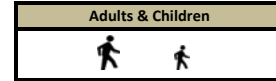
Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report





15-Minute Adult & Children Count (Manual Entry)

Count Basics			Page 12 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools In Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events

5 1/2 Mile Road & Novak Road



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Novak Road			5 1/2 Mile Road			Western School DW			5 1/2 Mile Road					
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total			
AM Peak Period	6:00 AM	0		0	0		0	0		0	0		0	0	0
	6:15 AM	0		0	0		0	0		0	0		0	0	1
	6:30 AM	0		0	0		0	0		0	0		0	0	5
	6:45 AM	0		0	0		0	0		0	0		0	0	5
	7:00 AM	1		1	0		0	0		0	0		0	1	36
	7:15 AM	0		0	1		1	1		1	2		2	4	37
	7:30 AM	0		0	0		0	0		0	0		0	0	33
	7:45 AM	0		0	14		14	11		11	6		6	31	33
	8:00 AM	0		0	0		0	2		2	0		0	2	2
	8:15 AM	0		0	0		0	0		0	0		0	0	0
	8:30 AM	0		0	0		0	0		0	0		0	0	0
	8:45 AM	0		0	0		0	0		0	0		0	0	0
	9:00 AM	0		0	0		0	0		0	0		0	0	0
	9:15 AM	0		0	0		0	0		0	0		0	0	0
	9:30 AM	0		0	0		0	0		0	0		0	0	0
	9:45 AM	0		0	0		0	0		0	0		0	0	0
Midday Peak Period	10:00 AM	0		0	0		0	0		0	0		0	0	0
	10:15 AM	0		0	0		0	0		0	0		0	0	0
	10:30 AM	0		0	0		0	0		0	0		0	0	0
	10:45 AM	0		0	0		0	0		0	0		0	0	0
	11:00 AM	0		0	0		0	0		0	0		0	0	0
	11:15 AM	0		0	0		0	0		0	0		0	0	0
	11:30 AM	0		0	0		0	0		0	0		0	0	0
	11:45 AM	0		0	0		0	0		0	0		0	0	0
	12:00 PM	0		0	0		0	0		0	0		0	0	0
	12:15 PM	0		0	0		0	0		0	0		0	0	0
	12:30 PM	0		0	0		0	0		0	0		0	0	0
	12:45 PM	0		0	0		0	0		0	0		0	0	0
	1:00 PM	0		0	0		0	0		0	0		0	0	0
	1:15 PM	0		0	0		0	0		0	0		0	0	0
	1:30 PM	0		0	0		0	0		0	0		0	0	0
	1:45 PM	0		0	0		0	0		0	0		0	0	1
PM Peak Period	2:00 PM	0		0	0		0	0		0	0		0	0	14
	2:15 PM	0		0	0		0	0		0	0		0	0	61
	2:30 PM	0		0	0		0	0		0	1		1	1	61
	2:45 PM	0		0	7		7	5		5	1		1	13	60
	3:00 PM	0		0	19		19	11		11	17		17	47	47
	3:15 PM	0		0	0		0	0		0	0		0	0	0
	3:30 PM	0		0	0		0	0		0	0		0	0	0
	3:45 PM	0		0	0		0	0		0	0		0	0	0
	4:00 PM	0		0	0		0	0		0	0		0	0	0
	4:15 PM	0		0	0		0	0		0	0		0	0	0
	4:30 PM	0		0	0		0	0		0	0		0	0	0
	4:45 PM	0		0	0		0	0		0	0		0	0	0
	5:00 PM	0		0	0		0	0		0	0		0	0	0
	5:15 PM	0		0	0		0	0		0	0		0	0	0
	5:30 PM	0		0	0		0	0		0	0		0	0	0
	5:45 PM	0		0	0		0	0		0	0		0	0	0
	6:00 PM	0		0	0		0	0		0	0		0	0	0
	6:15 PM	0		0	0		0	0		0	0		0	0	0
	6:30 PM	0		0	0		0	0		0	0		0	0	0
	6:45 PM	0		0	0		0	0		0	0		0	0	0
	7:00 PM	0		0	0		0	0		0	0		0	0	0
	7:15 PM	0		0	0		0	0		0	0		0	0	0
	7:30 PM	0		0	0		0	0		0	0		0	0	0
	7:45 PM	0		0	0		0	0		0	0		0	0	0
8:00 PM	0		0	0		0	0		0	0		0	0	0	
8:15 PM	0		0	0		0	0		0	0		0	0	0	
8:30 PM	0		0	0		0	0		0	0		0	0	0	
8:45 PM	0		0	0		0	0		0	0		0	0	0	
9:00 PM	0		0	0		0	0		0	0		0	0	0	
9:15 PM	0		0	0		0	0		0	0		0	0	0	
9:30 PM	0		0	0		0	0		0	0		0	0	0	
9:45 PM	0		0	0		0	0		0	0		0	0	0	
Totals	1	0	1	41	0	41	30	0	30	27	0	27	99		

15-Minute Bicycle Turning Movement Count (Manual Entry)

Bicyclists



15-Minute Time Period Start Time		From North					From East					From South					From West					15-Min Totals	Hourly Sum
		Novak Road					5 1/2 Mile Road					Western School DW					5 1/2 Mile Road						
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM					0					0					0					0	0	0
	6:15 AM					0					0					0					0	0	
	6:30 AM					0					0					0					0	0	
	6:45 AM					0					0					0					0	0	
	7:00 AM					0					0					0					0	0	
	7:15 AM					0					0					0					0	0	
	7:30 AM					0					0					0					0	0	
	7:45 AM					0					0					0					0	0	
	8:00 AM					0					0					0					0	0	
	8:15 AM					0					0					0					0	0	
	8:30 AM					0					0					0					0	0	
	8:45 AM					0					0					0					0	0	
	9:00 AM					0					0					0					0	0	
	9:15 AM					0					0					0					0	0	
	9:30 AM					0					0					0					0	0	
9:45 AM					0					0					0					0	0		
Midday Peak Period	10:00 AM					0					0					0					0	0	
	10:15 AM					0					0					0					0	0	
	10:30 AM					0					0					0					0	0	
	10:45 AM					0					0					0					0	0	
	11:00 AM					0					0					0					0	0	
	11:15 AM					0					0					0					0	0	
	11:30 AM					0					0					0					0	0	
	11:45 AM					0					0					0					0	0	
	12:00 PM					0					0					0					0	0	
	12:15 PM					0					0					0					0	0	
	12:30 PM					0					0					0					0	0	
	12:45 PM					0					0					0					0	0	
	1:00 PM					0					0					0					0	0	
	1:15 PM					0					0					0					0	0	
	1:30 PM					0					0					0					0	0	
1:45 PM					0					0					0					0	0		
PM Peak Period	2:00 PM					0					0					0					0	0	
	2:15 PM					0					0					0							

[illegible]

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

Base Information, Observed (2.75) Hour and Estimated (24) Hour Volume Summaries

Major St: 5 1/2 Mile Road

Minor St: Eastern School DW

Intersection of: 5 1/2 Mile Road & Eastern School DW

IX_ID:

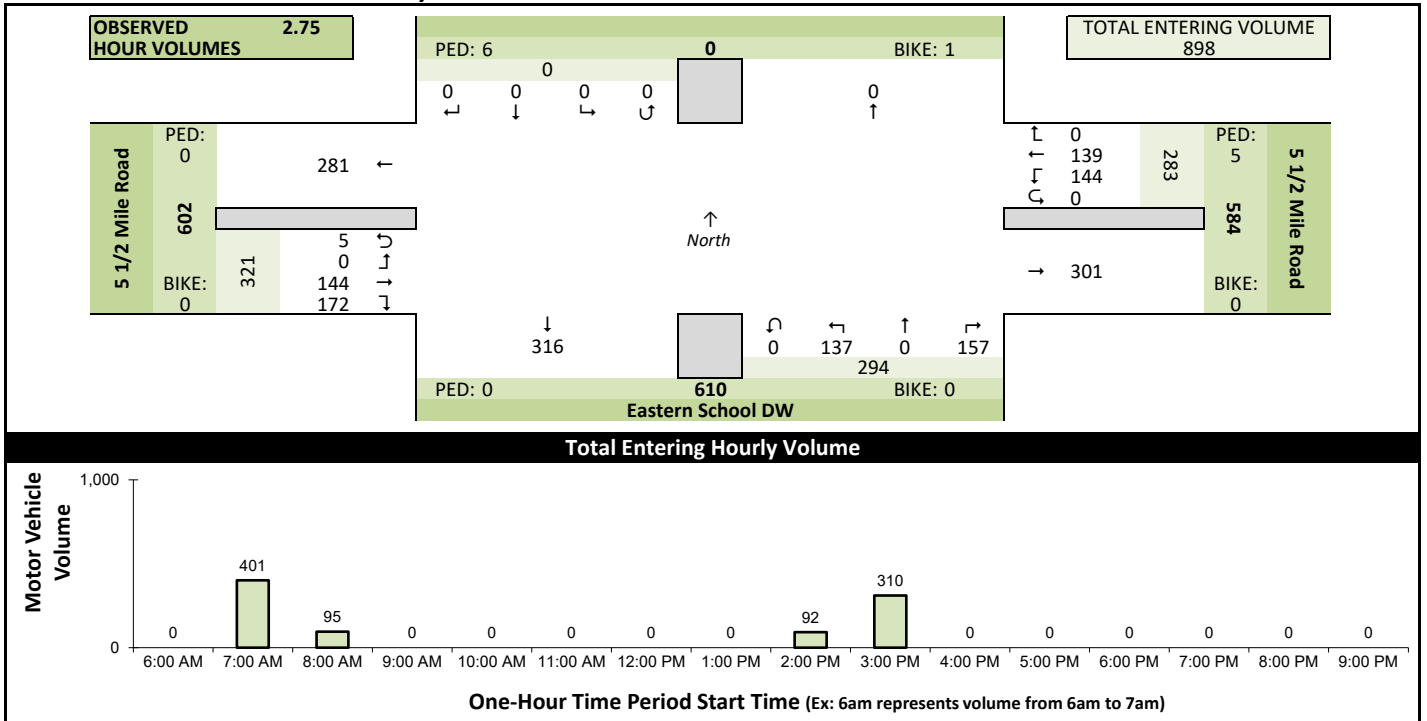
Site Information

Municipality	Village of Caledonia		
County	51 - Racine	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg			
East Leg	5 1/2 Mile Road		
South Leg	Eastern School DW		
West Leg	5 1/2 Mile Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)		None	None

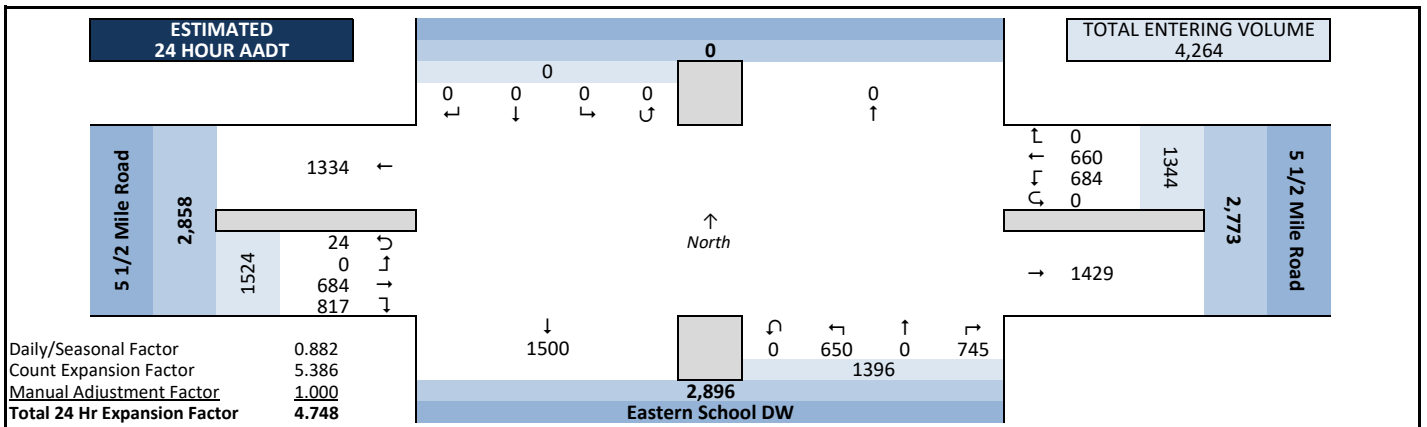
Count Information

Hrs Counted: 07:00 AM-08:15 AM and 02:30 PM-04:00 PM				
1st Day of Count		Wednesday, May 8, 2024		Weather
AM Peak Period		Wednesday, May 8, 2024		Clear & Dry
Midday Peak Period		Wednesday, May 8, 2024		Clear & Dry
PM Peak Period		Thursday, May 9, 2024		Clear & Dry
Calculated Peak Hours				
	AM	7:15-8:15am	MD	PM 2:45-3:45pm
Peak Hours Selected for Analysis				
	AM	7:15-8:15am	MD	PM 2:30-3:30pm
Daily/Seasonal Adjustment Group		(2) Urban Arterials & Collectors		
Count Expansion Group		(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor		0.882	Count Expansion Factor 5.386	
Company Name TADI, Inc.			Manual Adj. 1.000	
Observers	AM Peak Period		Lu Ann Gaertner	
	Midday Peak Period		None	
	PM Peak Period		Jane Fait	
Comments	2021 DOT Daily & Seasonal Factors			

Observed 2.75 Hour Volume Summary



Estimated 24 Hour AADT

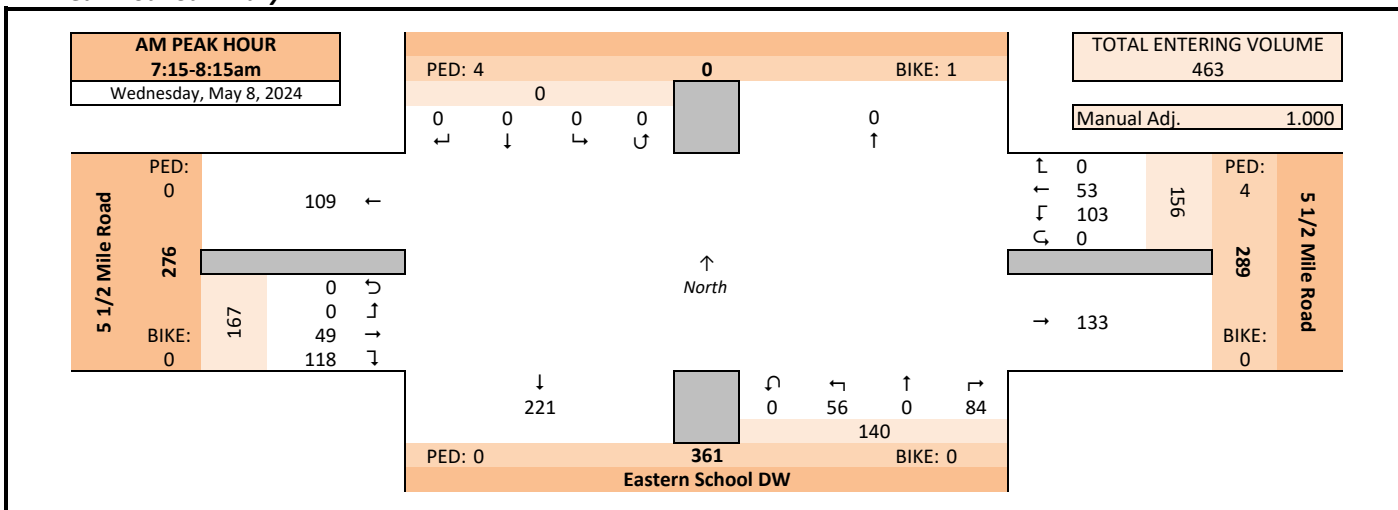


Peak Hour Volume Graphical Summary

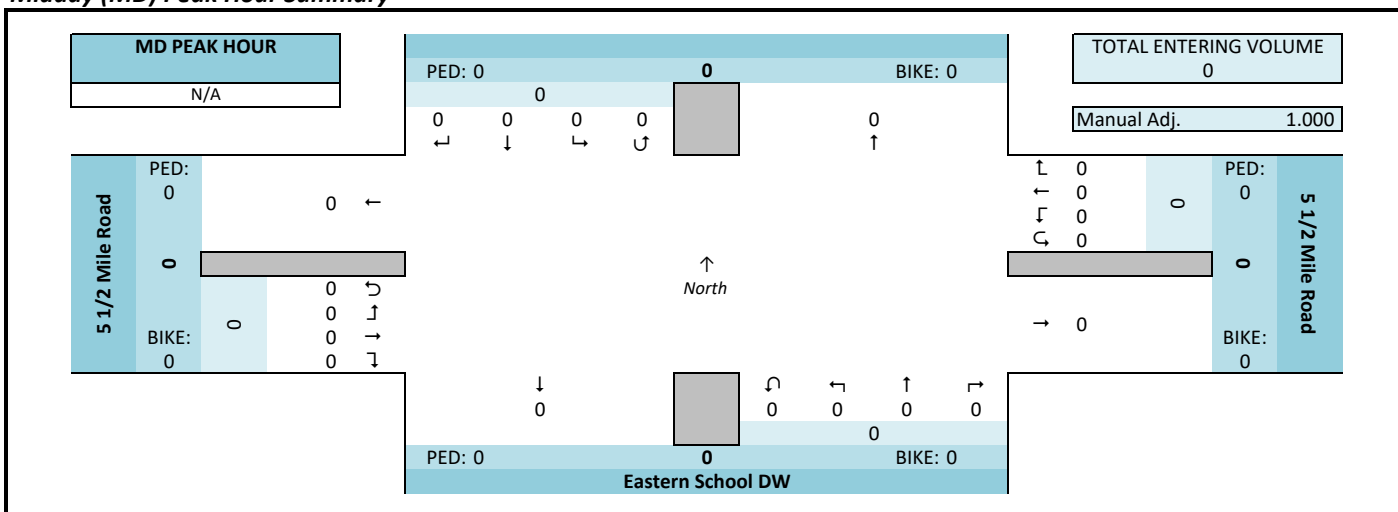
5 1/2 Mile Road & Eastern School DW

Count Basics		Page 2 of 13	
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

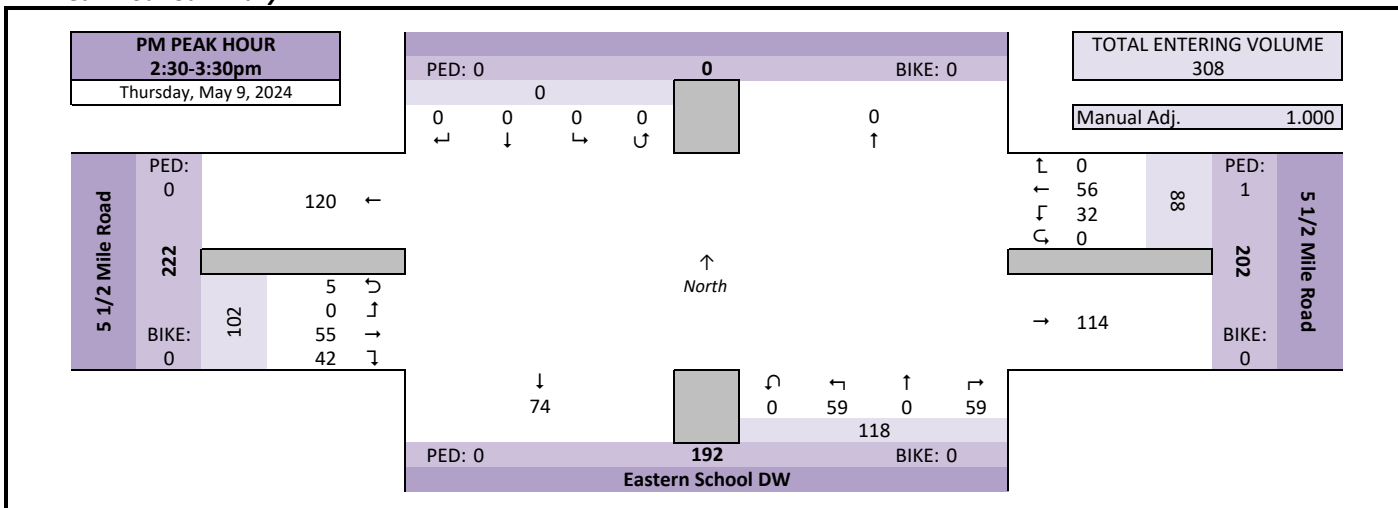
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

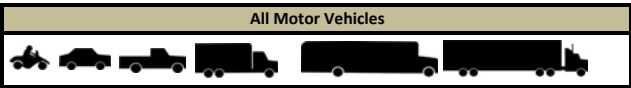


Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

5 1/2 Mile Road & Eastern School DW

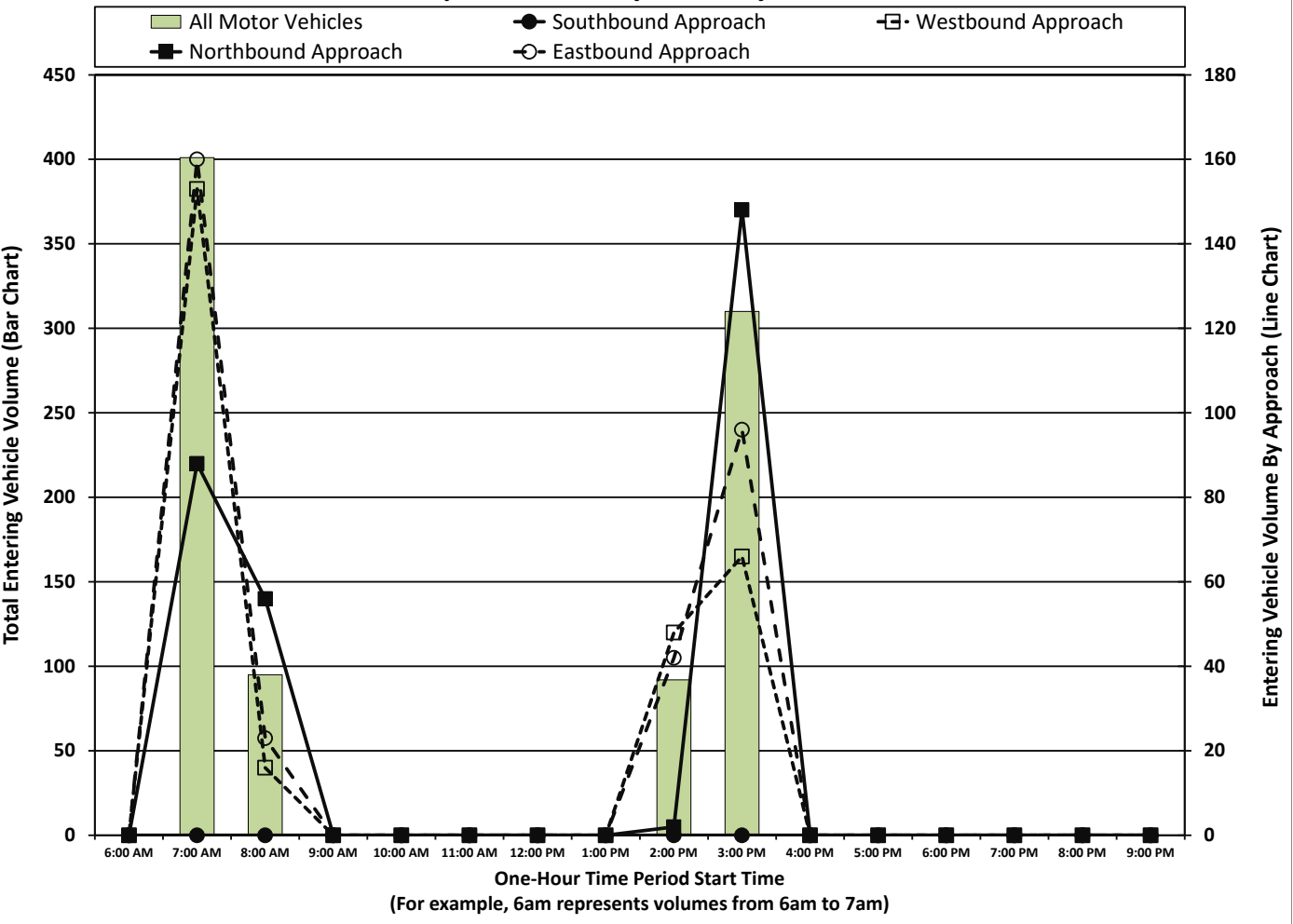
Count Basics			Page 4 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time		From North					From East					From South					From West					Total Vehicle Volume	Directional Volume Totals		
		5 1/2 Mile Road					Eastern School DW					5 1/2 Mile Road													
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	0	0	0	0	0	0	54	99	0	153	53	0	35	0	88	111	49	0	0	160	401	313	88	
	8:00 AM	0	0	0	0	0	0	6	10	0	16	32	0	24	0	56	13	10	0	0	23	95	39	56	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	0	0	0	0	0	0	28	20	0	48	1	0	1	0	2	28	10	0	4	42	92	90	2	
	3:00 PM	0	0	0	0	0	0	51	15	0	66	71	0	77	0	148	20	75	0	1	96	310	162	148	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		0	0	0	0	0	0	139	144	0	283	157	0	137	0	294	172	144	0	5	321	898	604	294	

Graphical Summary of Hourly Volumes



15-Minute Semi-Truck Data

15-Minute Semi-Truck Data

Semi-Trucks

[illegible]

Peak Hour Semi-Truck Volume Summary

[illegible]

Intersection Traffic Volume Report





15-Minute Pedestrian and Bicyclist Data

5 1/2 Mile Road & Eastern School DW

Count Basics			Page 11 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools in Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total			
5 1/2 Mile Road															
Eastern School DW															
5 1/2 Mile Road															
															Totals
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	11
	7:15 AM	4	0	4	0	0	0	0	0	0	0	0	0	4	9
	7:30 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	
	7:45 AM	0	1	1	3	0	3	0	0	0	0	0	0	4	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	3:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	1
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	6	1	7	5	0	5	0	0	0	0	0	0	12		

Special Pedestrians

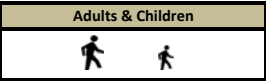
Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

15-Minute Adult & Children Count (Manual Entry)

Count Basics			Page 12 of 13
Start Date:	Wednesday, May 8, 2024	Weekday	Schools In Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events

5 1/2 Mile Road & Eastern School DW



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total		
AM Peak Period	6:00 AM	0		0	0	0	0		0	0		0	0	0
	6:15 AM	0		0		0	0		0	0		0	0	2
	6:30 AM	0		0		0	0		0	0		0	0	6
	6:45 AM	0		0		0	0		0	0		0	0	7
	7:00 AM	2		2	0	0	0		0	0		0	2	10
	7:15 AM	4		4	0	0	0		0	0		0	4	8
	7:30 AM	0		0	1	1	0		0	0		0	1	4
	7:45 AM	0		0	3	3	0		0	0		0	3	3
	8:00 AM	0		0	0	0	0		0	0		0	0	0
	8:15 AM	0		0	0	0	0		0	0		0	0	0
	8:30 AM	0		0	0	0	0		0	0		0	0	0
	8:45 AM	0		0	0	0	0		0	0		0	0	0
	9:00 AM	0		0	0	0	0		0	0		0	0	0
	9:15 AM	0		0	0	0	0		0	0		0	0	0
Midday Peak Period	9:30 AM	0		0	0	0	0		0	0		0	0	0
	9:45 AM	0		0	0	0	0		0	0		0	0	0
	10:00 AM	0		0	0	0	0		0	0		0	0	0
	10:15 AM	0		0	0	0	0		0	0		0	0	0
	10:30 AM	0		0	0	0	0		0	0		0	0	0
	10:45 AM	0		0	0	0	0		0	0		0	0	0
	11:00 AM	0		0	0	0	0		0	0		0	0	0
	11:15 AM	0		0	0	0	0		0	0		0	0	0
	11:30 AM	0		0	0	0	0		0	0		0	0	0
	11:45 AM	0		0	0	0	0		0	0		0	0	0
	12:00 PM	0		0	0	0	0		0	0		0	0	0
	12:15 PM	0		0	0	0	0		0	0		0	0	0
	12:30 PM	0		0	0	0	0		0	0		0	0	0
	12:45 PM	0		0	0	0	0		0	0		0	0	0
	1:00 PM	0		0	0	0	0		0	0		0	0	0
PM Peak Period	1:15 PM	0		0	0	0	0		0	0		0	0	0
	1:30 PM	0		0	0	0	0		0	0		0	0	0
	1:45 PM	0		0	0	0	0		0	0		0	0	0
	2:00 PM	0		0	0	0	0		0	0		0	0	0
	2:15 PM	0		0	0	0	0		0	0		0	0	1
	2:30 PM	0		0	0	0	0		0	0		0	0	1
	2:45 PM	0		0	0	0	0		0	0		0	0	1
	3:00 PM	0		0	1	1	0		0	0		0	1	1
	3:15 PM	0		0	0	0	0		0	0		0	0	0
	3:30 PM	0		0	0	0	0		0	0		0	0	0
	3:45 PM	0		0	0	0	0		0	0		0	0	0
	4:00 PM	0		0	0	0	0		0	0		0	0	0
	4:15 PM	0		0	0	0	0		0	0		0	0	0
	4:30 PM	0		0	0	0	0		0	0		0	0	0
	4:45 PM	0		0	0	0	0		0	0		0	0	0
	5:00 PM	0		0	0	0	0		0	0		0	0	0
	5:15 PM	0		0	0	0	0		0	0		0	0	0
	5:30 PM	0		0	0	0	0		0	0		0	0	0
	5:45 PM	0		0	0	0	0		0	0		0	0	0
	6:00 PM	0		0	0	0	0		0	0		0	0	0
	6:15 PM	0		0	0	0	0		0	0		0	0	0
	6:30 PM	0		0	0	0	0		0	0		0	0	0
	6:45 PM	0		0	0	0	0		0	0		0	0	0
	7:00 PM	0		0	0	0	0		0	0		0	0	0
	7:15 PM	0		0	0	0	0		0	0		0	0	0
	7:30 PM	0		0	0	0	0		0	0		0	0	0
	7:45 PM	0		0	0	0	0		0	0		0	0	0
	8:00 PM	0		0	0	0	0		0	0		0	0	0
	8:15 PM	0		0	0	0	0		0	0		0	0	0
	8:30 PM	0		0	0	0	0		0	0		0	0	0
	8:45 PM	0		0	0	0	0		0	0		0	0	0
	9:00 PM	0		0	0	0	0		0	0		0	0	0
	9:15 PM	0		0	0	0	0		0	0		0	0	0
	9:30 PM	0		0	0	0	0		0	0		0	0	0
	9:45 PM	0		0	0	0	0		0	0		0	0	0
Totals		6	0	6	5	0	5	0	0	0	0	0	11	

15-Minute Bicycle Turning Movement Count (Manual Entry)

Bicyclists



5 1/2 Mile Road & Eastern School DW

Peak Hour Bicycle Turning Movement Volume Summary

[illegible]

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

Base Information, Observed (2.75) Hour and Estimated (24) Hour Volume Summaries

Major St: 5 1/2 Mile Road

Minor St: Dustir Drive

Intersection of: 5 1/2 Mile Road & Dustir Drive

IX_ID:

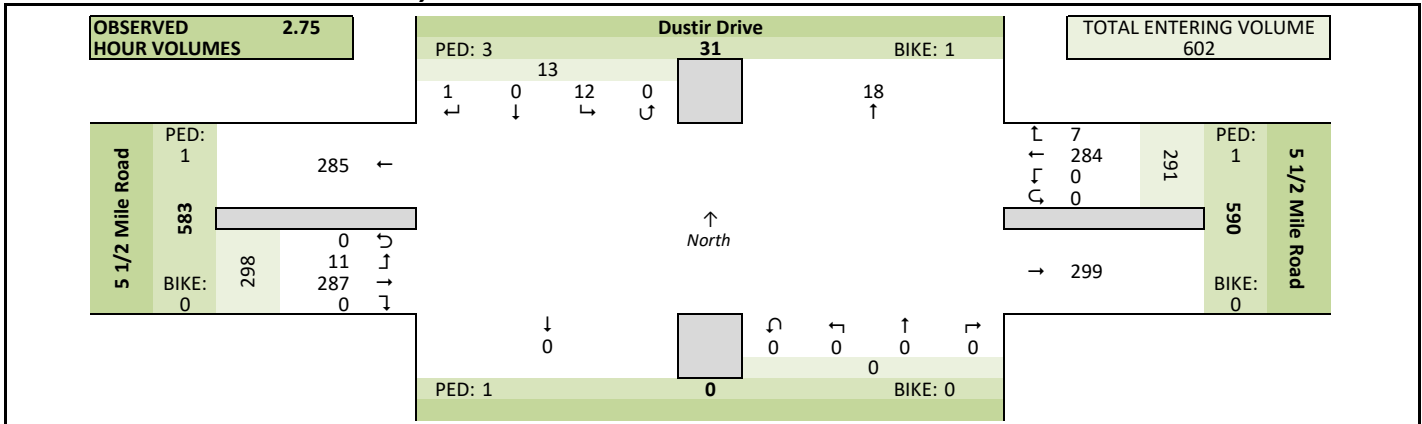
Site Information

Municipality	Village of Caledonia		
County	51 - Racine	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction		↑
North Leg	Dustir Drive		
East Leg	5 1/2 Mile Road		
South Leg			
West Leg	5 1/2 Mile Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	None

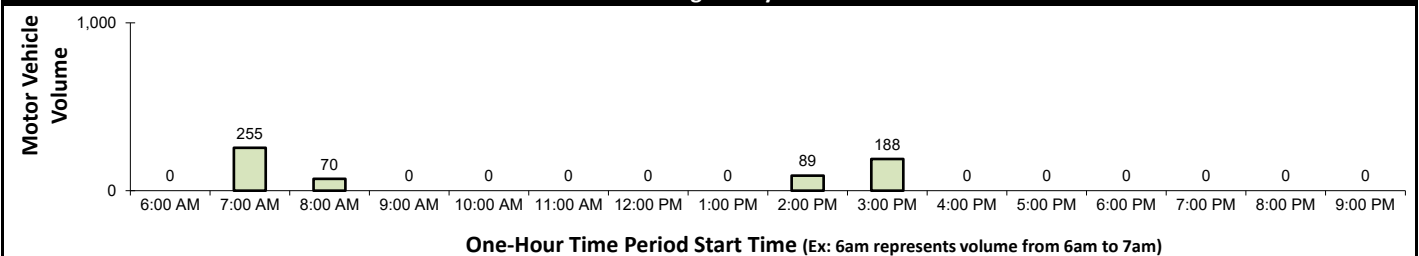
Count Information

Hrs Counted: 07:00 AM-08:15 AM and 02:30 PM-04:00 PM				
1st Day of Count		Tuesday, May 7, 2024		Weather
AM Peak Period		Tuesday, May 7, 2024		Clear & Dry
Midday Peak Period		Tuesday, May 7, 2024		Clear & Dry
PM Peak Period		Tuesday, May 7, 2024		Clear & Dry
Calculated Peak Hours				
	AM	7:15-8:15am	MD	PM 2:30-3:30pm
Peak Hours Selected for Analysis				
	AM	7:15-8:15am	MD	PM 2:30-3:30pm
Daily/Seasonal Adjustment Group		(2) Urban Arterials & Collectors		
Count Expansion Group		(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor		0.906	Count Expansion Factor	5.386
Company Name			TADI, Inc.	Manual Adj. 1.000
Observers	AM Peak Period	LuAnn Gaertner		
	Midday Peak Period	None		
	PM Peak Period	Lori Atwell		
Comments	2021 DOT Daily & Seasonal Factors			

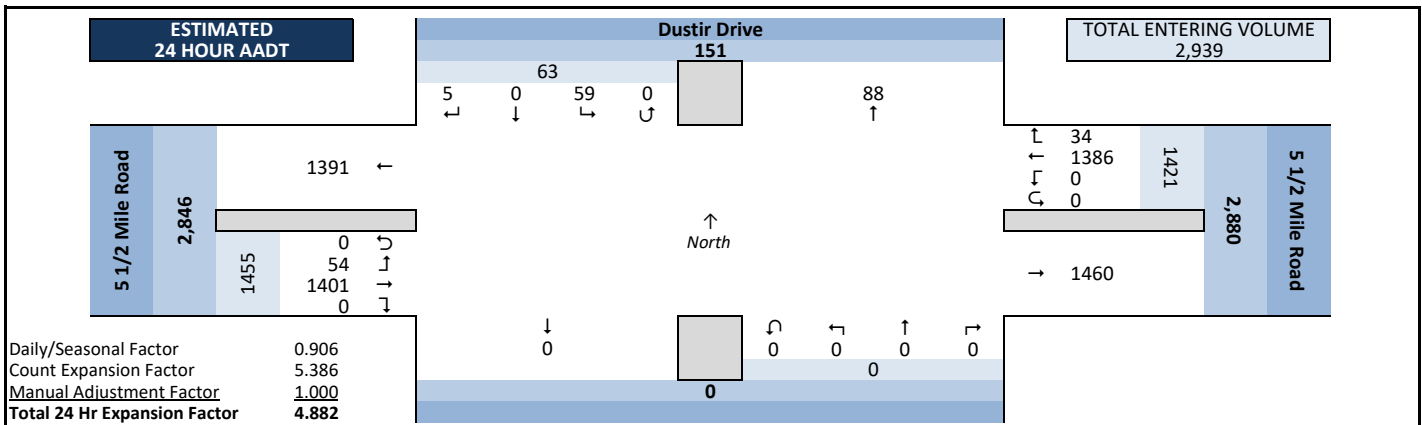
Observed 2.75 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

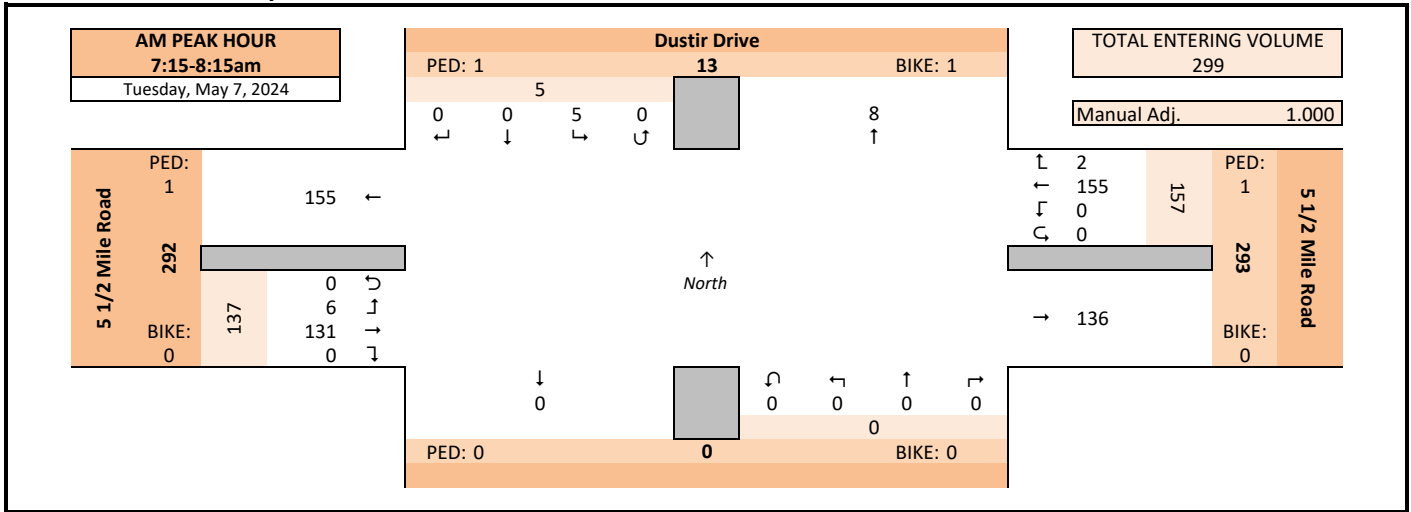


Intersection Traffic Volume Report

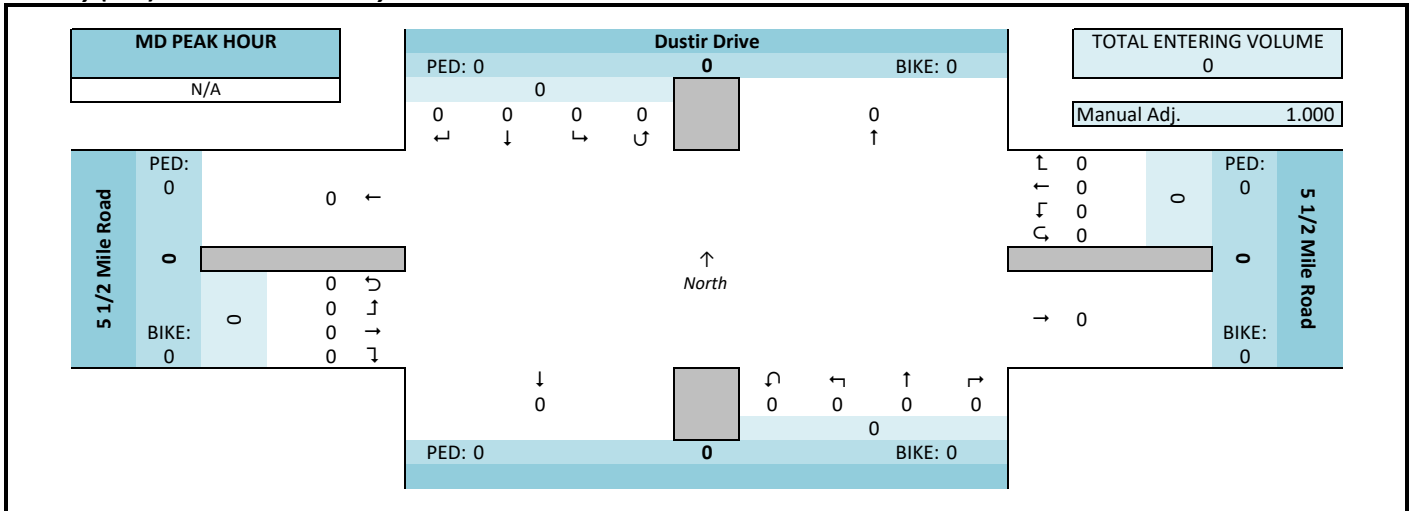
Peak Hour Volume Graphical Summary

5 1/2 Mile Road & Dustir Drive

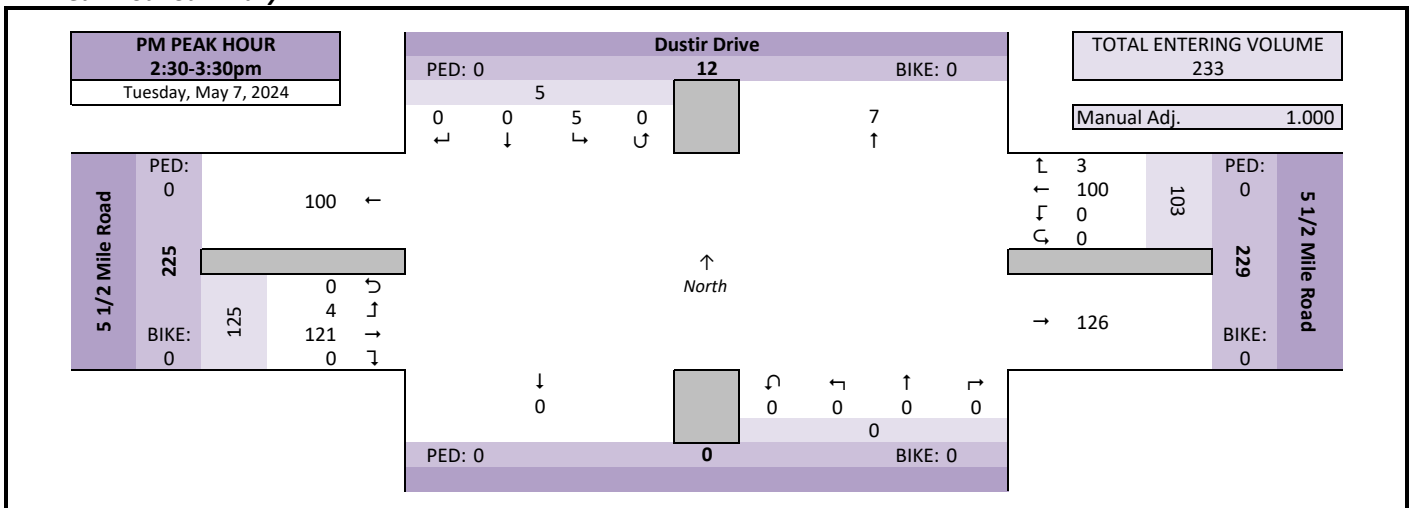
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



Peak Hour Volume Summary

Count Basics		Page 3 of 13	
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



Tuesday, May 7, 2024		↓					←					↑					→					Totals
		From North					From East					From South					From West					
AM Peak Hour		Dustir Drive					5 1/2 Mile Road					5 1/2 Mile Road										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	
7:15 AM	0	0	1	0	1	2	24	0	0	26	0	0	0	0	0	0	7	0	0	0	7	34
7:30 AM	0	0	2	0	2	0	52	0	0	52	0	0	0	0	0	0	17	0	0	0	17	71
7:45 AM	0	0	1	0	1	0	53	0	0	53	0	0	0	0	0	0	64	6	0	0	70	124
8:00 AM	0	0	1	0	1	0	26	0	0	26	0	0	0	0	0	0	43	0	0	0	43	70
Peak Hour Volume	0	0	5	0	5	2	155	0	0	157	0	0	0	0	0	0	131	6	0	0	137	299
Rounded Hourly Volume	0	0	5	0	5	0	155	0	0	155	0	0	0	0	0	0	130	5	0	0	135	295
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	8.8	6.7
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	8.8	6.7
Peak Hour Factor (PHF)	0.00	0.00	0.62	0.00	0.62	0.25	0.73	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.25	0.00	0.49	0.60	0.60

[illegible]

Tuesday, May 7, 2024		↓					←					↑					→					Totals	
		From North					From East					From South					From West						
PM Peak Hour		Dustir Drive					5 1/2 Mile Road					5 1/2 Mile Road					5 1/2 Mile Road						
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
PM Peak Hour	2:30 PM	0	0	1	0	1	2	40	0	0	42	0	0	0	0	0	0	0	9	0	0	9	52
	2:45 PM	0	0	0	0	0	1	25	0	0	26	0	0	0	0	0	0	0	11	0	0	11	37
	3:00 PM	0	0	3	0	3	0	21	0	0	21	0	0	0	0	0	0	0	76	4	0	80	104
	3:15 PM	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	0	0	25	0	0	25	40
	Peak Hour Volume	0	0	5	0	5	3	100	0	0	103	0	0	0	0	0	0	0	121	4	0	125	233
	Rounded Hourly Volume	0	0	5	0	5	5	100	0	0	105	0	0	0	0	0	0	0	120	5	0	125	235
	% Single Unit Trucks	0.0	0.0	20.0	0.0	20.0	0.0	11.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	6.4	8.6
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	20.0	0.0	20.0	0.0	11.0	0.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	6.4	8.6
Peak Hour Factor (PHF)	0.00	0.00	0.42	0.00	0.42	0.37	0.62	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.25	0.00	0.39	0.56	

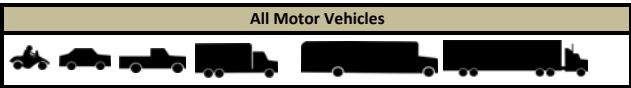
[illegible]

Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

5 1/2 Mile Road & Dustir Drive

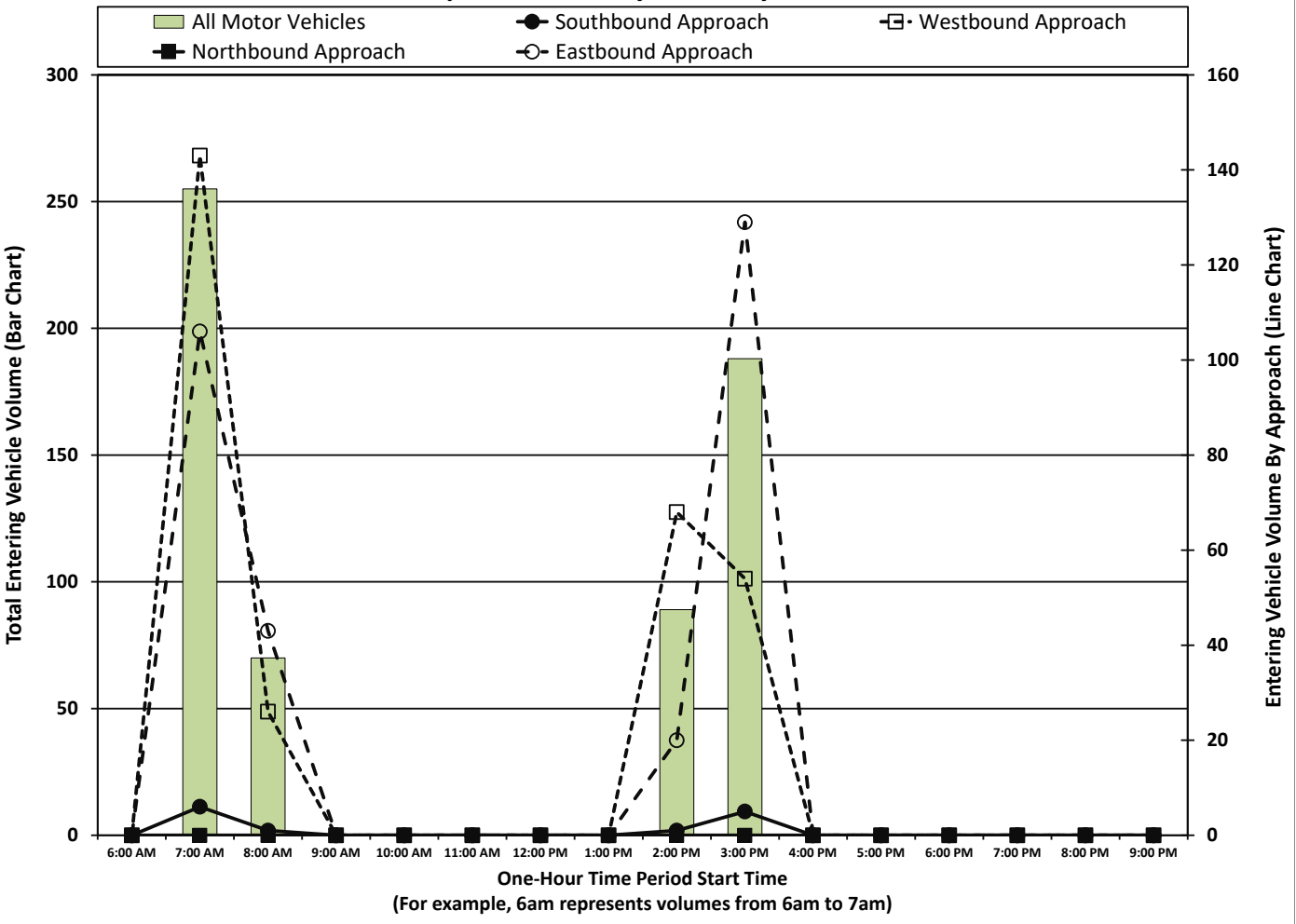
Count Basics			Page 4 of 13	
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events	



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	↓ From North					← From East					↑ From South					→ From West					Total Vehicle Volume	Directional Volume Totals		
	Dustir Drive					5 1/2 Mile Road										5 1/2 Mile Road								
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total				
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	1	0	5	0	6	3	140	0	0	143	0	0	0	0	0	0	100	6	0	106	255	249	6
	8:00 AM	0	0	1	0	1	0	26	0	0	26	0	0	0	0	0	0	43	0	0	43	70	69	1
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	0	0	1	0	1	3	65	0	0	68	0	0	0	0	0	0	20	0	0	20	89	88	1
	3:00 PM	0	0	5	0	5	1	53	0	0	54	0	0	0	0	0	0	124	5	0	129	188	183	5
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		1	0	12	0	13	7	284	0	0	291	0	0	0	0	0	0	287	11	0	298	602	589	13

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report





15-Minute Pedestrian and Bicyclist Data

5 1/2 Mile Road & Dustir Drive

Count Basics			Page 11 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Dustir Drive			5 1/2 Mile Road			5 1/2 Mile Road			5 1/2 Mile Road					
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	2	0	2	0	0	0	1	0	1	0	0	0	3	7
	7:15 AM	0	0	0	1	0	1	0	0	0	1	0	1	2	4
	7:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	
	7:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	1	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	3	1	4	1	0	1	1	0	1	1	0	1	7		

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report





Count Basics			Page 12 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools In Session
Total Number of Hours Counted: 2.75		Non-Holiday	No Special Events

15-Minute Adult & Children Count (Manual Entry)

5 1/2 Mile Road & Dustir Drive



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Dustir Drive			5 1/2 Mile Road						5 1/2 Mile Road					
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total			
AM Peak Period	6:00 AM	0		0	0		0	0		0	0		0	0	0
	6:15 AM	0		0	0		0	0		0	0		0	0	3
	6:30 AM	0		0	0		0	0		0	0		0	0	5
	6:45 AM	0		0	0		0	0		0	0		0	0	6
	7:00 AM	2		2	0		0	1		1	0		0	3	6
	7:15 AM	0		0	1		1	0		0	1		1	2	3
	7:30 AM	1		1	0		0	0		0	0		0	1	1
	7:45 AM	0		0	0		0	0		0	0		0	0	0
	8:00 AM	0		0	0		0	0		0	0		0	0	0
	8:15 AM	0		0	0		0	0		0	0		0	0	0
	8:30 AM	0		0	0		0	0		0	0		0	0	0
	8:45 AM	0		0	0		0	0		0	0		0	0	0
	9:00 AM	0		0	0		0	0		0	0		0	0	0
	9:15 AM	0		0	0		0	0		0	0		0	0	0
	9:30 AM	0		0	0		0	0		0	0		0	0	0
	9:45 AM	0		0	0		0	0		0	0		0	0	0
Midday Peak Period	10:00 AM	0		0	0		0	0		0	0		0	0	0
	10:15 AM	0		0	0		0	0		0	0		0	0	0
	10:30 AM	0		0	0		0	0		0	0		0	0	0
	10:45 AM	0		0	0		0	0		0	0		0	0	0
	11:00 AM	0		0	0		0	0		0	0		0	0	0
	11:15 AM	0		0	0		0	0		0	0		0	0	0
	11:30 AM	0		0	0		0	0		0	0		0	0	0
	11:45 AM	0		0	0		0	0		0	0		0	0	0
	12:00 PM	0		0	0		0	0		0	0		0	0	0
	12:15 PM	0		0	0		0	0		0	0		0	0	0
	12:30 PM	0		0	0		0	0		0	0		0	0	0
	12:45 PM	0		0	0		0	0		0	0		0	0	0
	1:00 PM	0		0	0		0	0		0	0		0	0	0
	1:15 PM	0		0	0		0	0		0	0		0	0	0
	1:30 PM	0		0	0		0	0		0	0		0	0	0
	1:45 PM	0		0	0		0	0		0	0		0	0	0
PM Peak Period	2:00 PM	0		0	0		0	0		0	0		0	0	0
	2:15 PM	0		0	0		0	0		0	0		0	0	0
	2:30 PM	0		0	0		0	0		0	0		0	0	0
	2:45 PM	0		0	0		0	0		0	0		0	0	0
	3:00 PM	0		0	0		0	0		0	0		0	0	0
	3:15 PM	0		0	0		0	0		0	0		0	0	0
	3:30 PM	0		0	0		0	0		0	0		0	0	0
	3:45 PM	0		0	0		0	0		0	0		0	0	0
	4:00 PM	0		0	0		0	0		0	0		0	0	0
	4:15 PM	0		0	0		0	0		0	0		0	0	0
	4:30 PM	0		0	0		0	0		0	0		0	0	0
	4:45 PM	0		0	0		0	0		0	0		0	0	0
	5:00 PM	0		0	0		0	0		0	0		0	0	0
	5:15 PM	0		0	0		0	0		0	0		0	0	0
	5:30 PM	0		0	0		0	0		0	0		0	0	0
	5:45 PM	0		0	0		0	0		0	0		0	0	0
	6:00 PM	0		0	0		0	0		0	0		0	0	0
	6:15 PM	0		0	0		0	0		0	0		0	0	0
	6:30 PM	0		0	0		0	0		0	0		0	0	0
	6:45 PM	0		0	0		0	0		0	0		0	0	0
	7:00 PM	0		0	0		0	0		0	0		0	0	0
	7:15 PM	0		0	0		0	0		0	0		0	0	0
	7:30 PM	0		0	0		0	0		0	0		0	0	0
	7:45 PM	0		0	0		0	0		0	0		0	0	0
	8:00 PM	0		0	0		0	0		0	0		0	0	0
	8:15 PM	0		0	0		0	0		0	0		0	0	0
	8:30 PM	0		0	0		0	0		0	0		0	0	0
	8:45 PM	0		0	0		0	0		0	0		0	0	0
	9:00 PM	0		0	0		0	0		0	0		0	0	0
	9:15 PM	0		0	0		0	0		0	0		0	0	0
	9:30 PM	0		0	0		0	0		0	0		0	0	0
	9:45 PM	0		0	0		0	0		0	0		0	0	0
Totals	3	0	3	1	0	1	1	0	1	1	0	1	6		

15-Minute Bicycle Turning Movement Count (Manual Entry)

Bicyclists



5 1/2 Mile Road & Dustir Drive

15-Minute Bicycle Data

15-Minute Time Period Start Time		From North					From East					From South					From West					15-Min Totals	Hourly Sum
		Dustir Drive					5 1/2 Mile Road					5 1/2 Mile Road											
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM					0					0					0					0	0	
	6:15 AM					0					0					0					0	0	
	6:30 AM					0					0					0					0	0	
	6:45 AM					0					0					0					0	0	
	7:00 AM					0					0					0					0	0	
	7:15 AM					0					0					0					0	0	
	7:30 AM					0					0					0					0	0	
	7:45 AM					0					0					0					0	0	
	8:00 AM					0					0					0					0	0	
	8:15 AM					0					0					0					0	0	
	8:30 AM					0					0					0					0	0	
	8:45 AM					0					0					0					0	0	
	9:00 AM					0					0					0					0	0	
	9:15 AM					0					0					0					0	0	
	9:30 AM					0					0					0					0	0	
9:45 AM					0					0					0					0	0		
Midday Peak Period	10:00 AM					0					0					0					0	0	
	10:15 AM					0					0					0					0	0	
	10:30 AM					0					0					0					0	0	
	10:45 AM					0					0					0					0	0	
	11:00 AM					0					0					0					0	0	
	11:15 AM					0					0					0					0	0	
	11:30 AM					0					0					0					0	0	
	11:45 AM					0					0					0					0	0	
	12:00 PM					0					0					0					0	0	
	12:15 PM					0					0					0					0	0	
	12:30 PM					0					0					0					0	0	
	12:45 PM					0					0					0					0	0	
	1:00 PM					0					0					0					0	0	
	1:15 PM					0					0					0					0	0	
	1:30 PM					0					0					0					0	0	
1:45 PM					0					0					0					0	0		
PM Peak Period	2:00 PM					0					0					0					0	0	
	2:15 PM					0					0					0					0	0	
	2:30 PM					0					0					0					0	0	
	2:45 PM					0					0					0					0	0	
	3:00 PM					0					0					0					0	0	
	3:15 PM					0					0					0					0	0	
	3:30 PM					0					0					0					0	0	
	3:45 PM					0					0					0					0	0	
	4:00 PM					0					0					0					0	0	
	4:15 PM					0					0					0					0	0	
	4:30 PM					0					0					0					0	0	
	4:45 PM					0					0					0					0	0	
	5:00 PM					0					0					0					0	0	
	5:15 PM					0					0					0					0	0	
	5:30 PM					0					0					0					0	0	
	5:45 PM					0					0					0					0	0	
	6:00 PM					0					0					0					0	0	
	6:15 PM					0					0					0					0	0	
	6:30 PM					0					0					0					0	0	
	6:45 PM					0					0					0					0	0	
	7:00 PM					0					0					0					0	0	
	7:15 PM					0					0					0					0	0	
	7:30 PM					0					0					0					0	0	
	7:45 PM					0					0					0					0	0	
8:00 PM					0					0					0					0	0		
8:15 PM					0					0					0					0	0		
8:30 PM					0					0					0					0	0		
8:45 PM					0					0					0					0	0		
9:00 PM					0					0					0					0	0		
9:15 PM					0					0					0					0	0		
9:30 PM					0					0					0					0	0		
9:45 PM					0					0					0					0	0		
Totals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Bicycle Turning Movement Volume Summary

[illegible]

Intersection Traffic Volume Report

Count Basics		Version 2024.04	Page 1 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events

Base Information, Observed (2.75) Hour and Estimated (24) Hour Volume Summaries

Major St: 5 1/2 Mile Road

Minor St: Charles Street

Intersection of: 5 1/2 Mile Road & Charles Street

IX_ID:

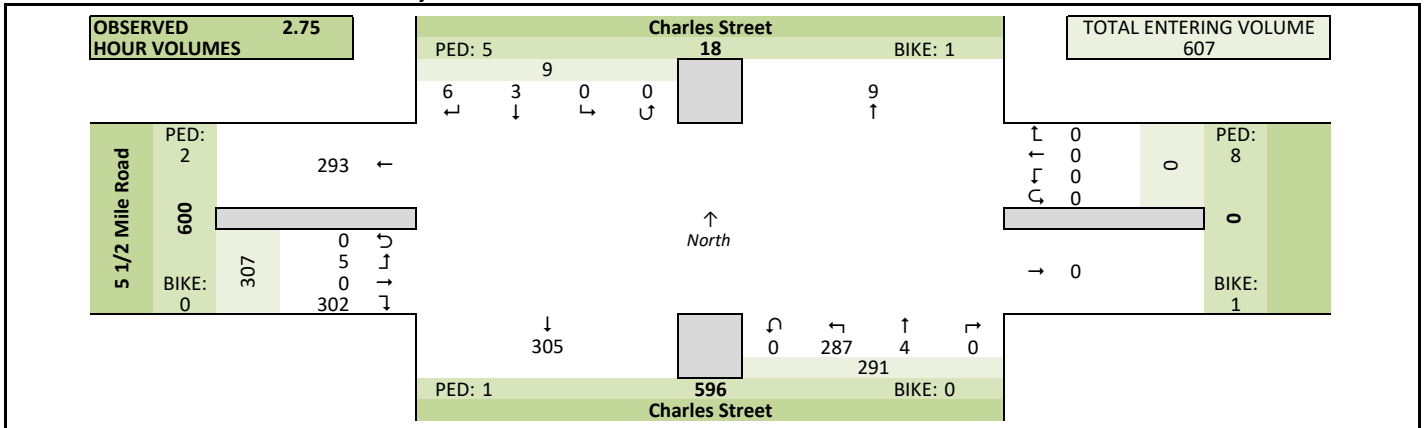
Site Information

Municipality	Village of Caledonia		
County	51 - Racine	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names	North Direction	↑	
North Leg	Charles Street		
East Leg			
South Leg	Charles Street		
West Leg	5 1/2 Mile Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementry school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
	Other (describe)	None	None

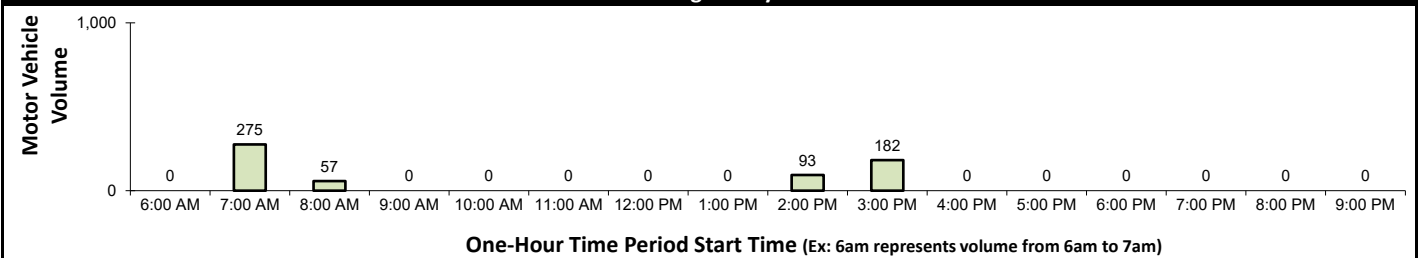
Count Information

Hrs Counted: 07:00 AM-08:15 AM and 02:30 PM-04:00 PM				
1st Day of Count		Tuesday, May 7, 2024		Weather
AM Peak Period		Wednesday, May 8, 2024		Clear & Dry
Midday Peak Period		Tuesday, May 7, 2024		Clear & Dry
PM Peak Period		Tuesday, May 7, 2024		Clear & Dry
Calculated Peak Hours				
	AM	7:15-8:15am	MD	PM 2:30-3:30pm
Peak Hours Selected for Analysis				
	AM	7:15-8:15am	MD	PM 2:30-3:30pm
Daily/Seasonal Adjustment Group			(2) Urban Arterials & Collectors	
Count Expansion Group			(2) Urban Arterials & Collectors	
Daily/Seasonal Adjustment Factor			0.895	Count Expansion Factor 5.386
Company Name			TADI, Inc.	Manual Adj. 1.000
Observers	AM Peak Period		Wendy Picard	
	Midday Peak Period		None	
	PM Peak Period		Wendy Picard	
Comments	2021 DOT Daily & Seasonal Factors			

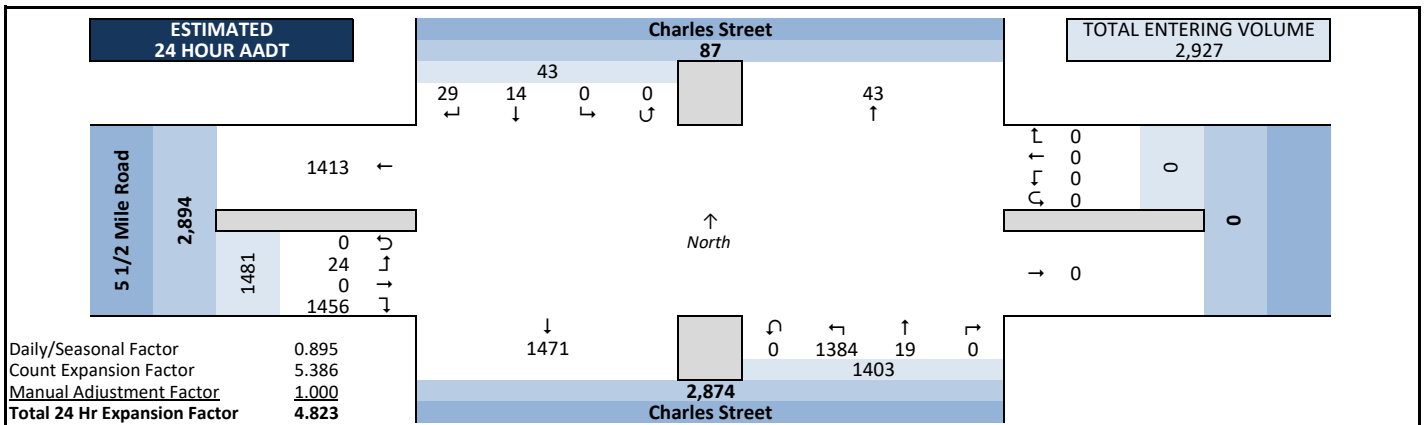
Observed 2.75 Hour Volume Summary



Total Entering Hourly Volume



Estimated 24 Hour AADT

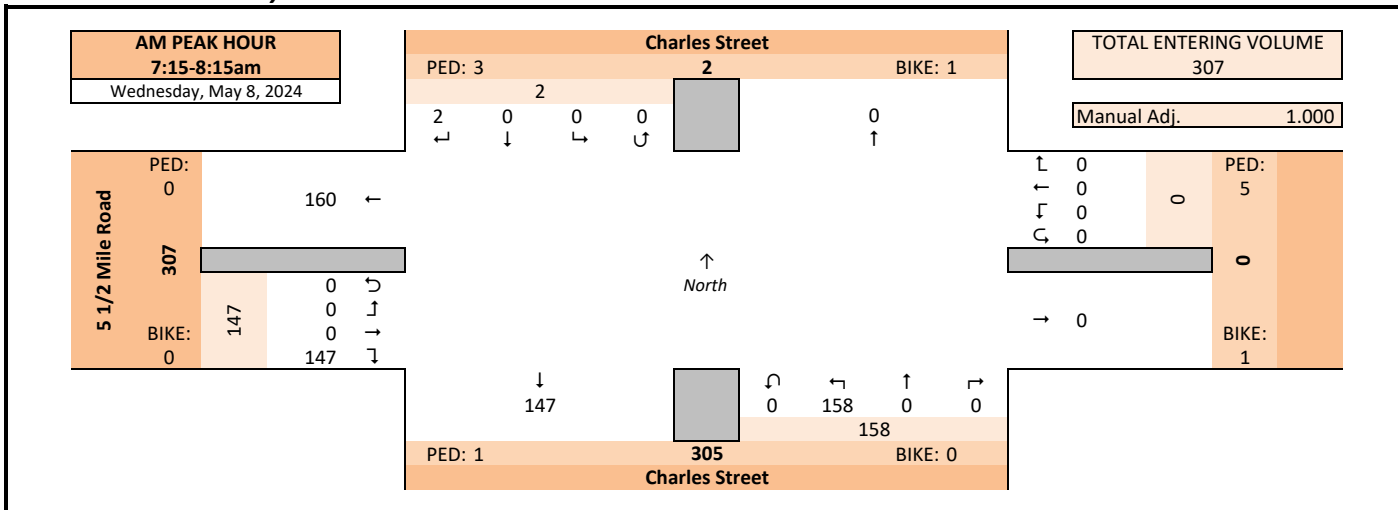


Peak Hour Volume Graphical Summary

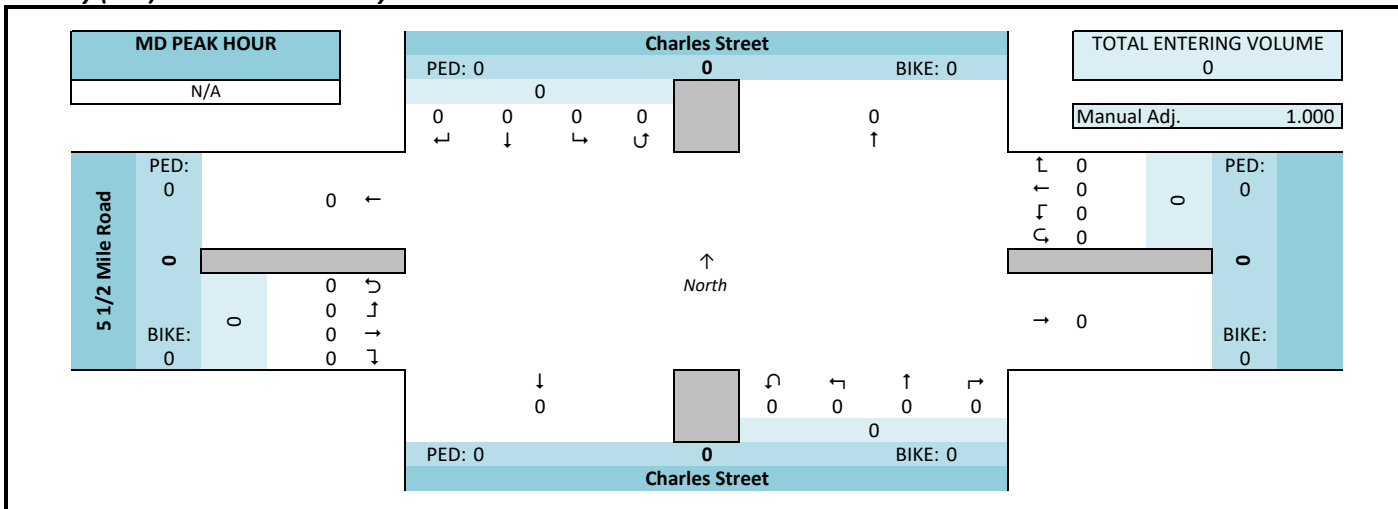
AM Peak Hour Summary

All Motor Vehicles

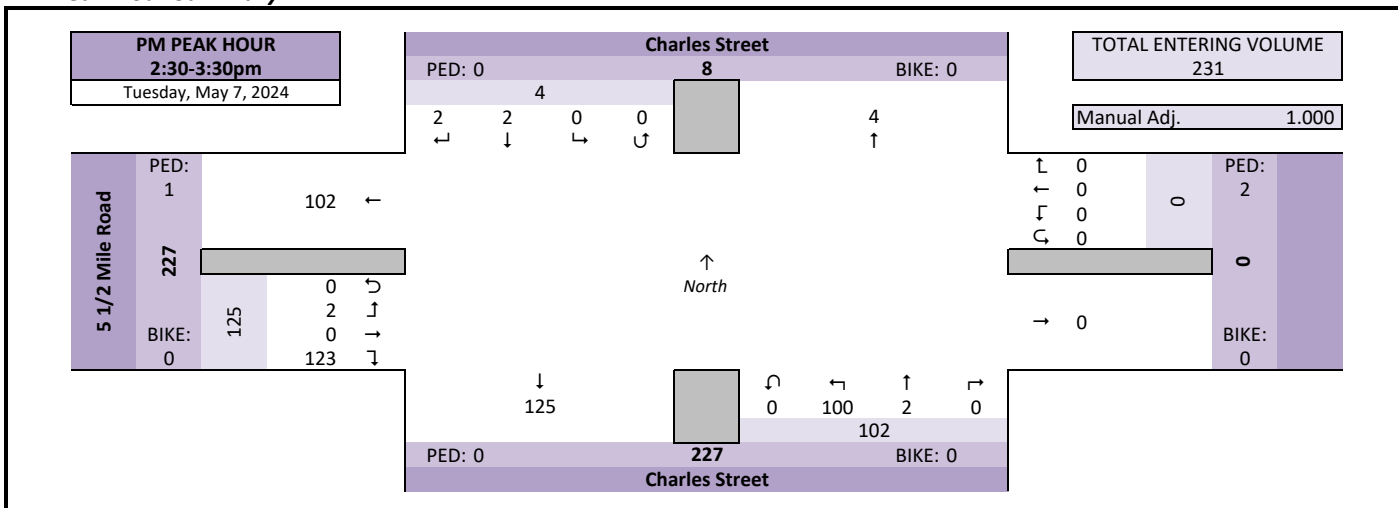
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

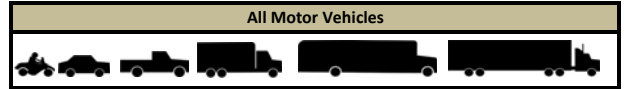


Intersection Traffic Volume Report

Peak Hour Volume Summary

5 1/2 Mile Road & Charles Street

Count Basics			Page 3 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events













Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, May 8, 2024		↓					←					↑					→						
		From North					From East					From South					From West						
		Charles Street										Charles Street					5 1/2 Mile Road						
AM Peak Hour	AM Peak Hour	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	
	Start Time																						
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	31	9	0	0	0	9	40
	7:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	51	0	51	15	0	0	0	15	67
	7:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	62	0	62	80	0	0	0	80	143
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	43	0	0	0	43	57
	Peak Hour Volume	2	0	0	0	2	0	0	0	0	0	0	0	0	158	0	158	147	0	0	0	147	307
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	160	0	160	145	0	0	0	145	305
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	4.4	7.5	0.0	0.0	0.0	7.5	5.9
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	4.4	7.5	0.0	0.0	0.0	7.5	5.9	
Peak Hour Factor (PHF)	0.50	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.64	0.46	0.00	0.00	0.00	0.46	0.54	

N/A		↴					↶					↴					↷					Totals
MD Peak Hour		From North					From East					From South					From West					
		Charles Street										Charles Street					5 1/2 Mile Road					
Midday (MD) Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tuesday, May 7, 2024		↓					←					↑					→					
		From North					From East					From South					From West					
PM Peak Hour		Charles Street										Charles Street					5 1/2 Mile Road					
Start Time		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
2:30 PM		1	2	0	0	3	0	0	0	0	0	0	2	40	0	42	9	0	1	0	10	55
2:45 PM		1	0	0	0	1	0	0	0	0	0	0	0	27	0	27	10	0	0	0	10	38
3:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	19	0	19	80	0	0	0	80	99
3:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	24	0	1	0	25	39
Peak Hour Volume		2	2	0	0	4	0	0	0	0	0	0	2	100	0	102	123	0	2	0	125	231
Rounded Hourly Volume		0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	125	0	0	0	125	225
% Single Unit Trucks		0.0	50.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	9.8	4.9	0.0	50.0	0.0	5.6	7.8
% Heavy Trucks		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)		0.0	50.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	9.8	4.9	0.0	50.0	0.0	5.6	7.8
Peak Hour Factor (PHF)		0.50	0.25	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.62	0.00	0.61	0.38	0.00	0.50	0.00	0.39	0.58

Peak Hour Pedestrian and Bicyclist Volumes

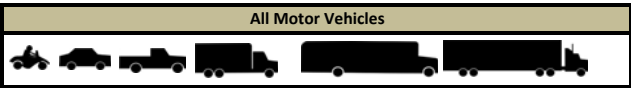
Pedestrians and Bicyclists		Crossing 			Crossing 			Crossing 			Crossing 			Total Ped & Bike Volume
 		North Approach 			East Approach 			South Approach 			West Approach 			
15-Minute Start Time		Charles Street			Charles Street			Charles Street			5 1/2 Mile Road			
		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:15 AM	1	0	1	2	0	2	0	0	0	0	0	0	3
	7:30 AM	2	0	2	3	0	3	1	0	1	0	0	0	6
	7:45 AM	0	1	1	0	1	1	0	0	0	0	0	0	2
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	1	4	5	1	6	1	0	1	0	0	0	11
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:30 PM	0	0	0	1	0	1	0	0	0	1	0	1	2
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
	Total	0	0	0	2	0	2	0	0	0	1	0	1	3

Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

5 1/2 Mile Road & Charles Street

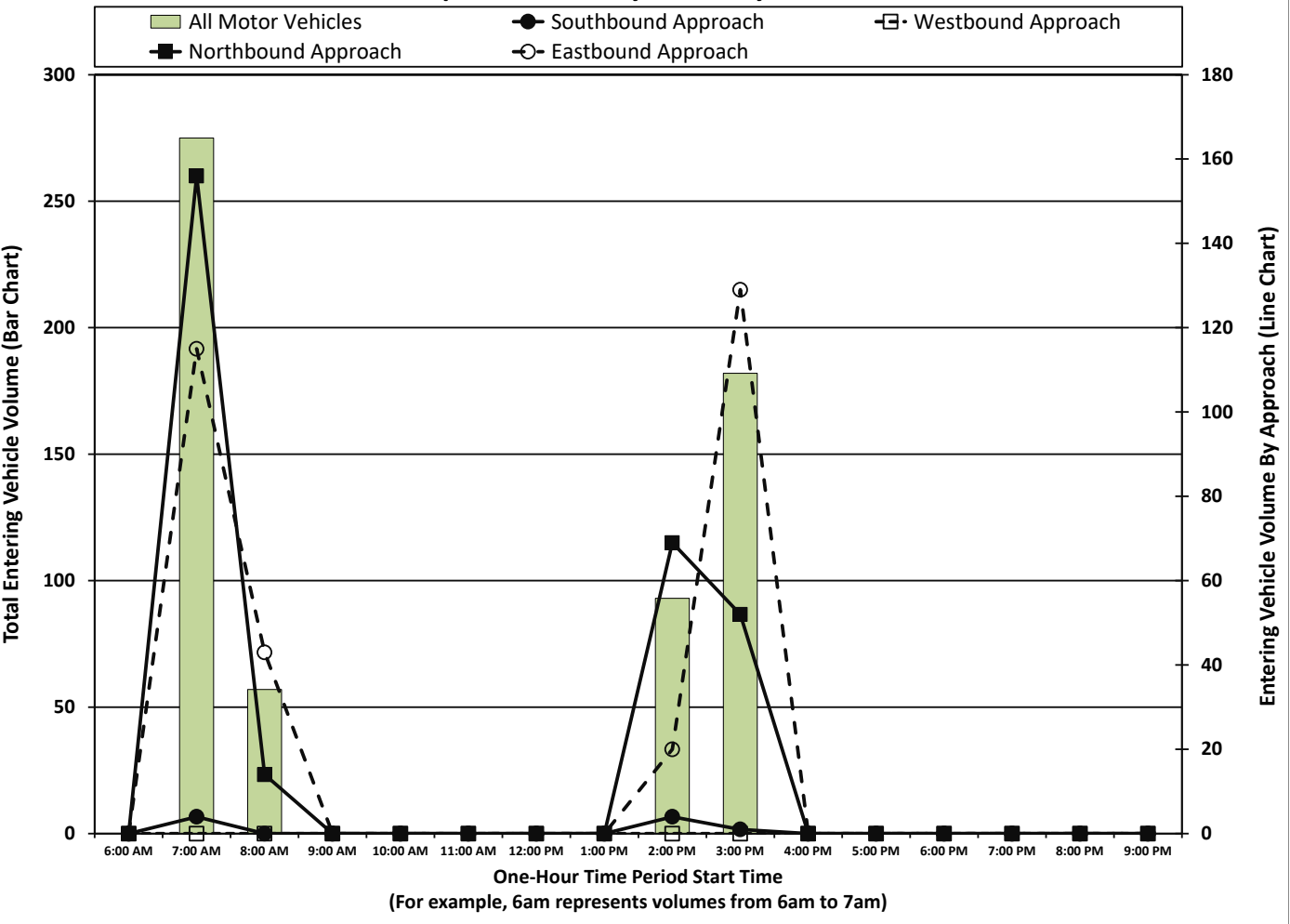
Count Basics			Page 4 of 13	
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session	
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events	



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time		↙ From North					← From East					↗ From South					→ From West					Total Vehicle Volume	Directional Volume Totals	
		Charles Street										Charles Street					5 1/2 Mile Road							
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	3	1	0	0	4	0	0	0	0	0	0	1	155	0	156	115	0	0	0	115	275	115	160
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	43	0	0	0	43	57	43	14
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	2	2	0	0	4	0	0	0	0	0	0	2	67	0	69	19	0	1	0	20	93	20	73
	3:00 PM	1	0	0	0	1	0	0	0	0	0	0	1	51	0	52	125	0	4	0	129	182	129	53
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		6	3	0	0	9	0	0	0	0	0	0	4	287	0	291	302	0	5	0	307	607	307	300

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report





15-Minute Pedestrian and Bicyclist Data

5 1/2 Mile Road & Charles Street

Count Basics			Page 11 of 13
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum	
	North Approach			East Approach			South Approach			West Approach					
	Charles Street						Charles Street			5 1/2 Mile Road					
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	2	0	2	1	0	1	0	0	0	1	0	1	4	15
	7:15 AM	1	0	1	2	0	2	0	0	0	0	0	0	3	11
	7:30 AM	2	0	2	3	0	3	1	0	1	0	0	0	6	
	7:45 AM	0	1	1	0	1	1	0	0	0	0	0	0	2	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	1	0	1	0	0	0	1	0	1	2	3
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	
	3:15 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0			
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	5	1	6	8	1	9	1	0	1	2	0	2	18		

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchairs)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report





15-Minute Adult & Children Count (Manual Entry)

Count Basics				Page 12 of 13	
Start Date:	Tuesday, May 7, 2024	Weekday	Schools in Session		
Total Number of Hours Counted:	2.75	Non-Holiday	No Special Events		

5 1/2 Mile Road & Charles Street



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period Start Time	Crossing 			Crossing 			Crossing 			Crossing 			15-Min Totals	Hourly Sum
	North Approach			East Approach			South Approach			West Approach				
	Charles Street						Charles Street			5 1/2 Mile Road				
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total		
AM Peak Period	6:00 AM	0		0	0		0		0	0		0	0	0
	6:15 AM	0		0	0		0		0	0		0	0	4
	6:30 AM	0		0	0		0		0	0		0	0	7
	6:45 AM	0		0	0		0		0	0		0	0	13
	7:00 AM	2		2	1	1	0		0	1		1	4	13
	7:15 AM	1		1	2	2	0		0	0		0	3	9
	7:30 AM	2		2	3	3	1		1	0		0	6	6
	7:45 AM	0		0	0	0	0		0	0		0	0	0
	8:00 AM	0		0	0	0	0		0	0		0	0	0
	8:15 AM	0		0	0		0		0	0		0	0	0
	8:30 AM	0		0	0		0		0	0		0	0	0
	8:45 AM	0		0	0		0		0	0		0	0	0
	9:00 AM	0		0	0		0		0	0		0	0	0
	9:15 AM	0		0	0		0		0	0		0	0	0
	9:30 AM	0		0	0		0		0	0		0	0	0
	9:45 AM	0		0	0		0		0	0		0	0	0
Midday Peak Period	10:00 AM	0		0	0		0		0	0		0	0	0
	10:15 AM	0		0	0		0		0	0		0	0	0
	10:30 AM	0		0	0		0		0	0		0	0	0
	10:45 AM	0		0	0		0		0	0		0	0	0
	11:00 AM	0		0	0		0		0	0		0	0	0
	11:15 AM	0		0	0		0		0	0		0	0	0
	11:30 AM	0		0	0		0		0	0		0	0	0
	11:45 AM	0		0	0		0		0	0		0	0	0
	12:00 PM	0		0	0		0		0	0		0	0	0
	12:15 PM	0		0	0		0		0	0		0	0	0
	12:30 PM	0		0	0		0		0	0		0	0	0
	12:45 PM	0		0	0		0		0	0		0	0	0
	1:00 PM	0		0	0		0		0	0		0	0	0
	1:15 PM	0		0	0		0		0	0		0	0	0
	1:30 PM	0		0	0		0		0	0		0	0	0
	1:45 PM	0		0	0		0		0	0		0	0	2
PM Peak Period	2:00 PM	0		0	0		0		0	0		0	0	2
	2:15 PM	0		0	0		0		0	0		0	0	2
	2:30 PM	0		0	1	1	0		0	1		1	2	3
	2:45 PM	0		0	0		0		0	0		0	0	1
	3:00 PM	0		0	0		0		0	0		0	0	1
	3:15 PM	0		0	1	1	0		0	0		0	1	1
	3:30 PM	0		0	0		0		0	0		0	0	0
	3:45 PM	0		0	0		0		0	0		0	0	0
	4:00 PM	0		0	0		0		0	0		0	0	0
	4:15 PM	0		0	0		0		0	0		0	0	0
	4:30 PM	0		0	0		0		0	0		0	0	0
	4:45 PM	0		0	0		0		0	0		0	0	0
	5:00 PM	0		0	0		0		0	0		0	0	0
	5:15 PM	0		0	0		0		0	0		0	0	0
	5:30 PM	0		0	0		0		0	0		0	0	0
	5:45 PM	0		0	0		0		0	0		0	0	0
	6:00 PM	0		0	0		0		0	0		0	0	0
	6:15 PM	0		0	0		0		0	0		0	0	0
	6:30 PM	0		0	0		0		0	0		0	0	0
	6:45 PM	0		0	0		0		0	0		0	0	0
	7:00 PM	0		0	0		0		0	0		0	0	0
	7:15 PM	0		0	0		0		0	0		0	0	0
	7:30 PM	0		0	0		0		0	0		0	0	0
	7:45 PM	0		0	0		0		0	0		0	0	0
	8:00 PM	0		0	0		0		0	0		0	0	0
	8:15 PM	0		0	0		0		0	0		0	0	0
	8:30 PM	0		0	0		0		0	0		0	0	0
	8:45 PM	0		0	0		0		0	0		0	0	0
	9:00 PM	0		0	0		0		0	0		0	0	0
	9:15 PM	0		0	0		0		0	0		0	0	0
	9:30 PM	0		0	0		0		0	0		0	0	0
	9:45 PM	0		0	0		0		0	0		0	0	0
Totals	5	0	5	8	0	8	1	0	1	2	0	2	16	

15-Minute Bicycle Turning Movement Count (Manual Entry)

Bicyclists



5 1/2 Mile Road & Charles Street

15-Minute Bicycle Data

Peak Hour Bicycle Turning Movement Volume Summary

[illegible]

Caledonia Historical ADTs

	Data for Graph		
	S on Middle Rd	E on 5-1/2 mile	S on Charles Rd
1990	3,220		
1993	3,830	1,120	1,200
1996	4,200	880	1,000
1999	4,700	1,200	1,400
2002	3,700	1,200	1,300
2005		1,200	1,500
2008		1,100	1,400
2011	3,700	1,000	1,100
2014	3,000	980	1,100
2017	3,300		1,600
2021	3,100	1,300	1,300

m =	-25.39	3.57	5.66
b =	54,538	-6,060	-10,066
R ² =	0.264	0.058	0.075

2024	3,200	1,200	1,400
2034	2,900	1,200	1,400

i	-0.94%	0.00%	0.00%
---	--------	-------	-------

USE 0.50% GROWTH RATE IN ANALYSIS

Site Code	Raw Data		
	511032	511197	511193
	S on Middle Rd	E on 5-1/2 mile	S on Charles Rd
1990	3,220		
1993	3,830	1,120	1,200
1996	4,200	880	1,000
1999	4,700	1,200	1,400
2002	3,700	1,200	1,300
2005		1,200	1,500
2008		1,100	1,400
2011	3,700	1,000	1,100
2014	3,000	980	1,100
2017	3,300		1,600
2021	3,100	1,300	1,300

Appendix B

Trip Generation Comparison

Trip Generation Comparison

Existing Driveway Trips

APPENDIX

Olympia Brown School Expansion Trip Generation Rate Calculations & Comparison

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Elementary School ¹	TADI	535 Students	N/A	221 (61%)	140 (39%)	361 (0.67)	104 (47%)	118 (53%)	222 (0.41)
Elementary School ²	520	535 Students	1,210 (2.27)	215 (54%)	185 (46%)	400 (0.75)	110 (46%)	130 (54%)	240 (0.45)

¹ Trip Rates calculated based on traffic counts taken at school in April of 2024 with an existing student population of 535 students.

² Trip rates are from the ITE Trip Generation Manual, 11th Edition.



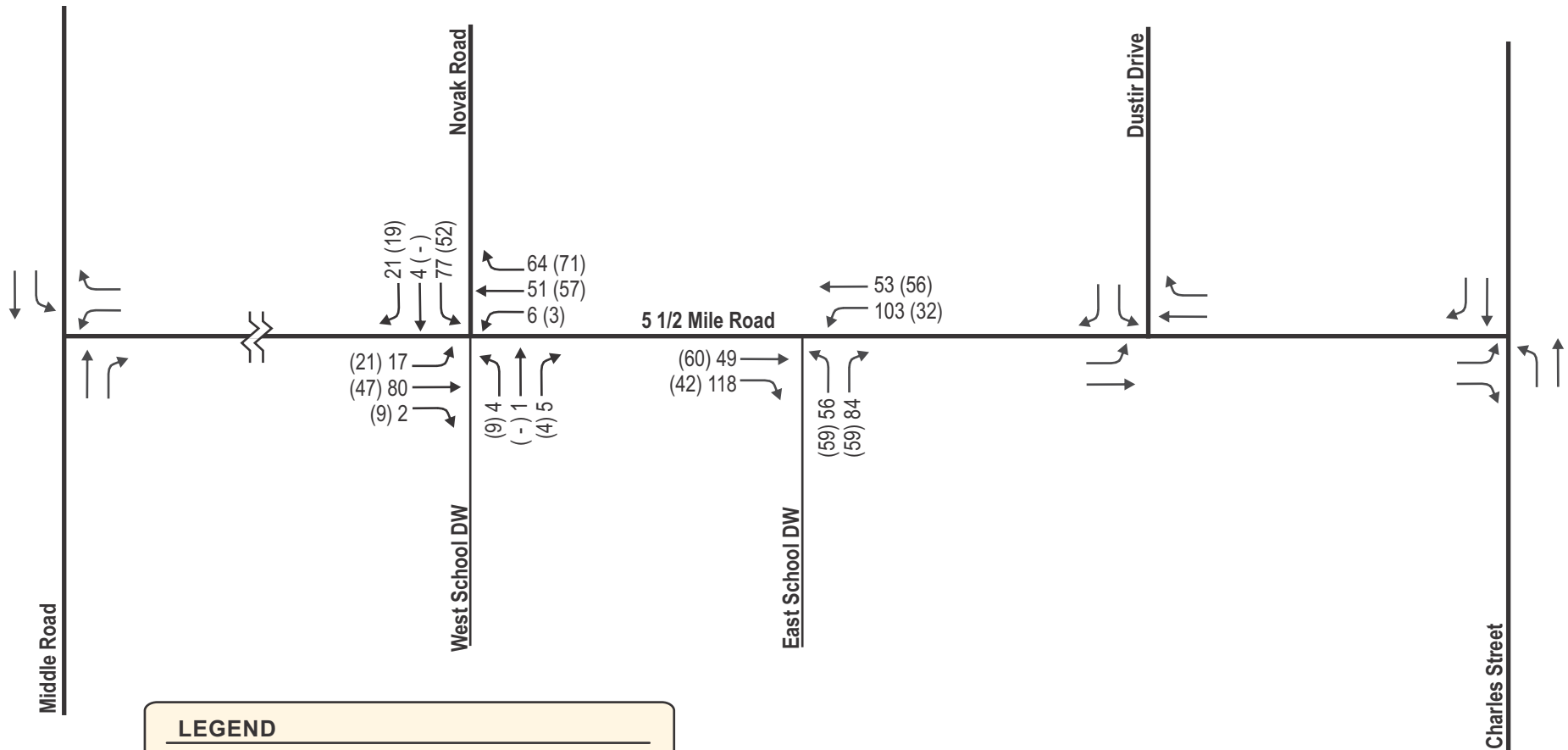
3259: 05-28-24



NOT TO SCALE

APPENDIX TRIP GENERATION COMPARISON COUNT DATA COMPARED TO ITE NATIONAL RATES

CALEDONIA, WISCONSIN



LEGEND

- XX Weekday AM Peak Hour Volumes (7:15-8:15 AM)
- (XX) Weekday PM Peak Hour Volumes (2:30-3:30 PM)
- Negligible Traffic Volumes (Fewer than 3 vph)

Note: 30 additional cars parked along 5-1/2 Mile Road and Novak Road during afternoon discharge peak hour



3259: 05-28-24



NOT TO SCALE

APPENDIX EXISTING DRIVEWAY TRIPS

CALEDONIA, WISCONSIN

Appendix C

Peak Hour Analysis Outputs










Existing Traffic

Full Build Traffic

Total Traffic




Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	15	60	95	10	110
Future Volume (vph)	65	15	60	95	10	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.974	0.917				
Flt Protected	0.961				0.996	
Satd. Flow (prot)	1694	0	1675	0	0	1769
Flt Permitted	0.961				0.996	
Satd. Flow (perm)	1694	0	1675	0	0	1769
Link Speed (mph)	25	35		35		
Link Distance (ft)	3390	951		1122		
Travel Time (s)	92.5	18.5		21.9		
Confl. Peds. (#/hr)	1	1	1		1	
Confl. Bikes (#/hr)	1		1			
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	5%	5%	4%	4%	7%	7%
Adj. Flow (vph)	89	21	82	130	14	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	0	212	0	0	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12	0		0		
Link Offset(ft)	0	0		0		
Crosswalk Width(ft)	16	16		16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		15	
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.6%		ICU Level of Service A			
Analysis Period (min)	15					

HCM 6th TWSC
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	15	60	95	10	110
Future Vol, veh/h	65	15	60	95	10	110
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	5	5	4	4	7	7
Mvmt Flow	89	21	82	130	14	151



















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	328	149	0
Stage 1	148	-	-
Stage 2	180	-	-
Critical Hdwy	6.45	6.25	-
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.345	-
Pot Cap-1 Maneuver	660	890	-
Stage 1	872	-	-
Stage 2	844	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	651	888	-
Mov Cap-2 Maneuver	651	-	-
Stage 1	871	-	-
Stage 2	833	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	685	1327
HCM Lane V/C Ratio	-	-	0.16	0.01
HCM Control Delay (s)	-	-	11.3	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

AM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	90	5	5	50	65	5	1	5	75	5	20
Future Volume (vph)	15	90	5	5	50	65	5	1	5	75	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994				0.850		0.940				0.850
Flt Protected		0.993			0.996			0.978			0.955	
Satd. Flow (prot)	0	1786	0	0	1785	1524	0	1027	0	0	1680	1495
Flt Permitted		0.993			0.996			0.978			0.955	
Satd. Flow (perm)	0	1786	0	0	1785	1524	0	1027	0	0	1680	1495
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		92.5			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		14	14		1	8		15	15		8
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	70%	70%	70%	8%	8%	8%
Adj. Flow (vph)	25	153	8	8	85	110	8	2	8	127	8	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	0	0	93	110	0	18	0	0	135	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	30.4%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	15	90	5	5	50	65	5	1	5	75	5	20
Future Vol, veh/h	15	90	5	5	50	65	5	1	5	75	5	20
Conflicting Peds, #/hr	1	0	14	14	0	1	8	0	15	15	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	5	5	5	6	6	6	70	70	70	8	8	8
Mvmt Flow	25	153	8	8	85	110	8	2	8	127	8	34











Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	175	0	0	406	433	186	329	327	94
Stage 1	-	-	-	-	-	-	221	221	-	102	102	-
Stage 2	-	-	-	-	-	-	185	212	-	227	225	-
Critical Hdwy	4.15	-	-	4.16	-	-	7.8	7.2	6.9	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Follow-up Hdwy	2.245	-	-	2.254	-	-	4.13	4.63	3.93	3.572	4.072	3.372
Pot Cap-1 Maneuver	1359	-	-	1378	-	-	452	427	709	613	582	947
Stage 1	-	-	-	-	-	-	650	610	-	889	799	-
Stage 2	-	-	-	-	-	-	682	617	-	762	707	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1358	-	-	1360	-	-	413	410	690	582	559	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	410	-	582	559	-
Stage 1	-	-	-	-	-	-	629	590	-	870	793	-
Stage 2	-	-	-	-	-	-	641	612	-	725	684	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.3			12.4			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	505	1358	-	-	1360	-	-	581	939
HCM Lane V/C Ratio	0.037	0.019	-	-	0.006	-	-	0.233	0.036
HCM Control Delay (s)	12.4	7.7	0	-	7.7	0	-	13.1	9
HCM Lane LOS	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.9	0.1

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

AM Peak
05/26/2024





						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	50	120	105	65	55	85
Future Volume (vph)	50	120	105	65	55	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.905					0.850
Flt Protected				0.970	0.950	
Satd. Flow (prot)	1607	0	0	1755	1787	1599
Flt Permitted				0.970	0.950	
Satd. Flow (perm)	1607	0	0	1755	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)		4	1		1	4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles (%)	7%	7%	5%	5%	1%	1%
Adj. Flow (vph)	91	218	191	118	100	155
Shared Lane Traffic (%)						
Lane Group Flow (vph)	309	0	0	309	100	155
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
300: East D/W & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection

Int Delay, s/veh 6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	50	120	105	65	55	85
Future Vol, veh/h	50	120	105	65	55	85
Conflicting Peds, #/hr	0	4	1	0	1	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	55	55	55	55
Heavy Vehicles, %	7	7	5	5	1	1
Mvmt Flow	91	218	191	118	100	155

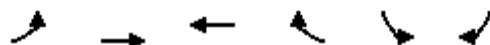
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	313
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.15
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.245
Pot Cap-1 Maneuver	-	-	1230
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1225
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	14.2
HCM LOS			B




Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	335	829	-	-	1225	-
HCM Lane V/C Ratio	0.299	0.186	-	-	0.156	-
HCM Control Delay (s)	20.3	10.3	-	-	8.5	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	0.7	-	-	0.6	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive

AM Peak
05/26/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	130	165	5	5	1
Future Volume (vph)	5	130	165	5	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.973	
Flt Protected		0.998			0.962	
Satd. Flow (prot)	0	1740	1802	0	1761	0
Flt Permitted		0.998			0.962	
Satd. Flow (perm)	0	1740	1802	0	1761	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		980	720		569	
Travel Time (s)		22.3	16.4		15.5	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60
Heavy Vehicles (%)	9%	9%	5%	5%	1%	1%
Adj. Flow (vph)	8	217	275	8	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	225	283	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	130	165	5	5	1
Future Vol, veh/h	5	130	165	5	5	1
Conflicting Peds, #/hr	1	0	0	1	1	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	60	60	60	60	60	60
Heavy Vehicles, %	9	9	5	5	1	1
Mvmt Flow	8	217	275	8	8	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	284	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.19	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.281	-	-
Pot Cap-1 Maneuver	1239	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1238	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1238	-	-	-	546
HCM Lane V/C Ratio	0.007	-	-	-	0.018
HCM Control Delay (s)	7.9	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road

AM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	135	165	1	1	5
Future Volume (vph)	1	135	165	1	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.953		
Satd. Flow (prot)	1671	1495	0	1741	1881	1599
Flt Permitted	0.950			0.953		
Satd. Flow (perm)	1671	1495	0	1741	1881	1599
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	8%	8%	4%	4%	1%	1%
Adj. Flow (vph)	2	250	306	2	2	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	250	0	308	2	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other






Control Type: Unsignalized

Intersection Capacity Utilization 26.2%

ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	135	165	1	1	5
Future Vol, veh/h	1	135	165	1	1	5
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles, %	8	8	4	4	1	1
Mvmt Flow	2	250	306	2	2	9
Number of Lanes	1	1	0	1	1	1




Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.9	12.4	7.7
HCM LOS	A	B	A




Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	99%	100%	0%	0%	0%
Vol Thru, %	1%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	166	1	135	1	5
LT Vol	165	1	0	0	0
Through Vol	1	0	0	1	0
RT Vol	0	0	135	0	5
Lane Flow Rate	307	2	250	2	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.444	0.003	0.332	0.003	0.012
Departure Headway (Hd)	5.198	5.99	4.784	5.462	4.755
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	692	598	752	652	748
Service Time	3.24	3.723	2.516	3.222	2.515
HCM Lane V/C Ratio	0.444	0.003	0.332	0.003	0.012
HCM Control Delay	12.4	8.7	9.9	8.2	7.6
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	2.3	0	1.5	0	0

Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

PM Peak
05/26/2024





















Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	65	10	110	70	10	80
Future Volume (vph)	65	10	110	70	10	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.981		0.947			
Flt Protected	0.959					0.994
Satd. Flow (prot)	1625	0	1697	0	0	1870
Flt Permitted	0.959					0.994
Satd. Flow (perm)	1625	0	1697	0	0	1870
Link Speed (mph)	30		35			35
Link Distance (ft)	3390		951			1122
Travel Time (s)	77.0		18.5			21.9
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	10%	6%	6%	1%	1%
Adj. Flow (vph)	81	13	138	88	13	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	226	0	0	113
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	10	110	70	10	80
Future Vol, veh/h	65	10	110	70	10	80
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	10	10	6	6	1	1
Mvmt Flow	81	13	138	88	13	100
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	310	184	0	0	227	0
Stage 1	183	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.11	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.209	-
Pot Cap-1 Maneuver	666	838	-	-	1347	-
Stage 1	829	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	658	836	-	-	1346	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	869	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.2	0		0.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	677	1346	-	
HCM Lane V/C Ratio	-	-	0.138	0.009	-	
HCM Control Delay (s)	-	-	11.2	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.5	0	-	

Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

PM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	45	10	5	55	70	10	1	5	50	1	20
Future Volume (vph)	20	45	10	5	55	70	10	1	5	50	1	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.982				0.850		0.958				0.850
Flt Protected		0.987			0.996			0.970			0.953	
Satd. Flow (prot)	0	1689	0	0	1820	1553	0	1090	0	0	1692	1509
Flt Permitted		0.987			0.996			0.970			0.953	
Satd. Flow (perm)	0	1689	0	0	1820	1553	0	1090	0	0	1692	1509
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		77.0			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		16	16		1	19		26	26		19
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	9%	9%	9%	4%	4%	4%	62%	62%	62%	7%	7%	7%
Adj. Flow (vph)	32	73	16	8	89	113	16	2	8	81	2	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	97	113	0	26	0	0	83	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.9%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road





PM Peak
05/26/2024

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	20	45	10	5	55	70	10	1	5	50	1	20
Future Vol, veh/h	20	45	10	5	55	70	10	1	5	50	1	20
Conflicting Peds, #/hr	1	0	16	16	0	1	19	0	26	26	0	19
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	9	9	9	4	4	4	62	62	62	7	7	7
Mvmt Flow	32	73	16	8	89	113	16	2	8	81	2	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	105	0	0	359	380	123	282	275	109
Stage 1	-	-	-	-	-	-	161	161	-	106	106	-
Stage 2	-	-	-	-	-	-	198	219	-	176	169	-
Critical Hdwy	4.19	-	-	4.14	-	-	7.72	7.12	6.82	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Follow-up Hdwy	2.281	-	-	2.236	-	-	4.058	4.558	3.858	3.563	4.063	3.363
Pot Cap-1 Maneuver	1328	-	-	1474	-	-	500	469	789	660	624	931
Stage 1	-	-	-	-	-	-	718	664	-	888	798	-
Stage 2	-	-	-	-	-	-	684	623	-	814	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1327	-	-	1452	-	-	455	447	758	620	595	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	455	447	-	620	595	-
Stage 1	-	-	-	-	-	-	689	637	-	865	792	-
Stage 2	-	-	-	-	-	-	643	619	-	764	719	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.1			0.3			12.3			11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	519	1327	-	-	1452	-	-	619	913			
HCM Lane V/C Ratio	0.05	0.024	-	-	0.006	-	-	0.133	0.035			
HCM Control Delay (s)	12.3	7.8	0	-	7.5	0	-	11.7	9.1			
HCM Lane LOS	B	A	A	-	A	A	-	B	A			
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.5	0.1			

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

PM Peak
05/26/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↱	↱
Traffic Volume (vph)	60	40	30	70	60	60
Future Volume (vph)	60	40	30	70	60	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.946					0.850
Flt Protected				0.985	0.950	
Satd. Flow (prot)	1728	0	0	1749	1787	1599
Flt Permitted				0.985	0.950	
Satd. Flow (perm)	1728	0	0	1749	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)		1	1		1	1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Adj. Flow (vph)	120	80	60	140	120	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	0	0	200	120	120
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	40	30	70	60	60
Future Vol, veh/h	60	40	30	70	60	60
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	4	4	7	7	1	1
Mvmt Flow	120	80	60	140	120	120

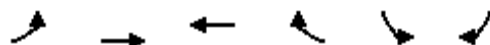
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	201
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1342
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1341
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	560	883	-	-	1341	-
HCM Lane V/C Ratio	0.214	0.136	-	-	0.045	-
HCM Control Delay (s)	13.2	9.7	-	-	7.8	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.8	0.5	-	-	0.1	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive




PM Peak
05/26/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	120	100	5	5	1
Future Volume (vph)	5	120	100	5	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994		0.975	
Flt Protected		0.998			0.961	
Satd. Flow (prot)	0	1789	1701	0	1484	0
Flt Permitted		0.998			0.961	
Satd. Flow (perm)	0	1789	1701	0	1484	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		980	720		569	
Travel Time (s)		22.3	16.4		15.5	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Heavy Vehicles (%)	6%	6%	11%	11%	20%	20%
Adj. Flow (vph)	9	214	179	9	9	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	223	188	0	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 20.7%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	120	100	5	5	1
Future Vol, veh/h	5	120	100	5	5	1
Conflicting Peds, #/hr	1	0	0	1	1	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	56	56	56	56	56	56
Heavy Vehicles, %	6	6	11	11	20	20
Mvmt Flow	9	214	179	9	9	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	189	0	0 418 186
Stage 1	-	-	- - 185 -
Stage 2	-	-	- - 233 -
Critical Hdwy	4.16	-	- - 6.6 6.4
Critical Hdwy Stg 1	-	-	- - 5.6 -
Critical Hdwy Stg 2	-	-	- - 5.6 -
Follow-up Hdwy	2.254	-	- - 3.68 3.48
Pot Cap-1 Maneuver	1361	-	- - 559 812
Stage 1	-	-	- - 805 -
Stage 2	-	-	- - 765 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1360	-	- - 553 810
Mov Cap-2 Maneuver	-	-	- - 553 -
Stage 1	-	-	- - 798 -
Stage 2	-	-	- - 764 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1360	-	-	-	584
HCM Lane V/C Ratio	0.007	-	-	-	0.018
HCM Control Delay (s)	7.7	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road

PM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	120	100	5	5	5
Future Volume (vph)	5	120	100	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.955		
Satd. Flow (prot)	1703	1524	0	1650	1520	1292
Flt Permitted	0.950			0.955		
Satd. Flow (perm)	1703	1524	0	1650	1520	1292
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles (%)	6%	6%	10%	10%	25%	25%
Adj. Flow (vph)	9	207	172	9	9	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	207	0	181	9	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary






Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.8% ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A










Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	120	100	5	5	5
Future Vol, veh/h	5	120	100	5	5	5
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles, %	6	6	10	10	25	25
Mvmt Flow	9	207	172	9	9	9
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	8.7	10	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	95%	100%	0%	0%	0%
Vol Thru, %	5%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	5	120	5	5
LT Vol	100	5	0	0	0
Through Vol	5	0	0	5	0
RT Vol	0	0	120	0	5
Lane Flow Rate	181	9	207	9	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.261	0.013	0.255	0.013	0.012
Departure Headway (Hd)	5.184	5.637	4.434	5.612	4.907
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	693	637	813	638	729
Service Time	3.207	3.353	2.149	3.34	2.636
HCM Lane V/C Ratio	0.261	0.014	0.255	0.014	0.012
HCM Control Delay	10	8.4	8.7	8.4	7.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	1	0	1	0	0




Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	90	25	65	130	25	115
Future Volume (vph)	90	25	65	130	25	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971	0.910				
Flt Protected	0.962					0.991
Satd. Flow (prot)	1690	0	1662	0	0	1760
Flt Permitted	0.962					0.991
Satd. Flow (perm)	1690	0	1662	0	0	1760
Link Speed (mph)	25	35		35		
Link Distance (ft)	3390	951		1122		
Travel Time (s)	92.5	18.5		21.9		
Confl. Peds. (#/hr)	1	1	1		1	
Confl. Bikes (#/hr)	1		1			
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	5%	5%	4%	4%	7%	7%
Adj. Flow (vph)	123	34	89	178	34	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	0	267	0	0	192
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12	0		0		
Link Offset(ft)	0	0		0		
Crosswalk Width(ft)	16	16		16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		15	
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.7%			ICU Level of Service A		
Analysis Period (min)	15					



















HCM 6th TWSC
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	25	65	130	25	115
Future Vol, veh/h	90	25	65	130	25	115
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	5	5	4	4	7	7
Mvmt Flow	123	34	89	178	34	158
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	406	180	0	0	268	0
Stage 1	179	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.17	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.263	-
Pot Cap-1 Maneuver	595	855	-	-	1267	-
Stage 1	845	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	853	-	-	1266	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.8	0		1.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		621	1266	
HCM Lane V/C Ratio	-	-		0.254	0.027	
HCM Control Delay (s)	-	-		12.8	7.9	
HCM Lane LOS	-	-		B	A	
HCM 95th %tile Q(veh)	-	-		1	0.1	

Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

AM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	130	5	5	85	80	5	1	5	100	5	20
Future Volume (vph)	15	130	5	5	85	80	5	1	5	100	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850		0.940				0.850
Flt Protected		0.995			0.997			0.978			0.954	
Satd. Flow (prot)	0	1793	0	0	1787	1524	0	1027	0	0	1678	1495
Flt Permitted		0.995			0.997			0.978			0.954	
Satd. Flow (perm)	0	1793	0	0	1787	1524	0	1027	0	0	1678	1495
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		92.5			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		14	14		1	8		15	15		8
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	70%	70%	70%	8%	8%	8%
Adj. Flow (vph)	25	220	8	8	144	136	8	2	8	169	8	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	253	0	0	152	136	0	18	0	0	177	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	32.7%											
Analysis Period (min)	15											
ICU Level of Service A												











HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road





AM Peak
05/26/2024

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	15	130	5	5	85	80	5	1	5	100	5	20
Future Vol, veh/h	15	130	5	5	85	80	5	1	5	100	5	20
Conflicting Peds, #/hr	1	0	14	14	0	1	8	0	15	15	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	5	5	5	6	6	6	70	70	70	8	8	8
Mvmt Flow	25	220	8	8	144	136	8	2	8	169	8	34
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	281	0	0	242	0	0	545	585	253	455	453	153
Stage 1	-	-	-	-	-	-	288	288	-	161	161	-
Stage 2	-	-	-	-	-	-	257	297	-	294	292	-
Critical Hdwy	4.15	-	-	4.16	-	-	7.8	7.2	6.9	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Follow-up Hdwy	2.245	-	-	2.254	-	-	4.13	4.63	3.93	3.572	4.072	3.372
Pot Cap-1 Maneuver	1264	-	-	1301	-	-	360	343	646	505	494	878
Stage 1	-	-	-	-	-	-	594	567	-	827	753	-
Stage 2	-	-	-	-	-	-	619	561	-	701	660	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1263	-	-	1284	-	-	326	328	628	477	472	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	328	-	477	472	-
Stage 1	-	-	-	-	-	-	573	547	-	807	746	-
Stage 2	-	-	-	-	-	-	579	556	-	664	636	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.2			14			15.8		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	417	1263	-	-	1284	-	-	477	870			
HCM Lane V/C Ratio	0.045	0.02	-	-	0.007	-	-	0.373	0.039			
HCM Control Delay (s)	14	7.9	0	-	7.8	0	-	17	9.3			
HCM Lane LOS	B	A	A	-	A	A	-	C	A			
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.7	0.1			

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

AM Peak
05/26/2024




						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	55	185	130	60	95	100
Future Volume (vph)	55	185	130	60	95	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.896					0.850
Flt Protected				0.967	0.950	
Satd. Flow (prot)	1591	0	0	1750	1787	1599
Flt Permitted				0.967	0.950	
Satd. Flow (perm)	1591	0	0	1750	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)		4	1		1	4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles (%)	7%	7%	5%	5%	1%	1%
Adj. Flow (vph)	100	336	236	109	173	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	436	0	0	345	173	182
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.2%			ICU Level of Service A		
Analysis Period (min)	15					




Intersection						
Int Delay, s/veh	10.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	185	130	60	95	100
Future Vol, veh/h	55	185	130	60	95	100
Conflicting Peds, #/hr	0	4	1	0	1	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	55	55	55	55	55	55
Heavy Vehicles, %	7	7	5	5	1	1
Mvmt Flow	100	336	236	109	173	182
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	440	0	854	276
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	582	-
Critical Hdwy	-	-	4.15	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.245	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1104	-	330	765
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1100	-	253	759
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	433	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		6.3		27.7	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	253	759	-	-	1100	-
HCM Lane V/C Ratio	0.683	0.24	-	-	0.215	-
HCM Control Delay (s)	45.1	11.2	-	-	9.2	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	4.5	0.9	-	-	0.8	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive

AM Peak
05/26/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	150	190	5	5	1
Future Volume (vph)	5	150	190	5	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.997		0.973	
Flt Protected		0.998			0.962	
Satd. Flow (prot)	0	1740	1804	0	1761	0
Flt Permitted		0.998			0.962	
Satd. Flow (perm)	0	1740	1804	0	1761	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		980	720		569	
Travel Time (s)		22.3	16.4		15.5	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60
Heavy Vehicles (%)	9%	9%	5%	5%	1%	1%
Adj. Flow (vph)	8	250	317	8	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	258	325	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	150	190	5	5	1
Future Vol, veh/h	5	150	190	5	5	1
Conflicting Peds, #/hr	1	0	0	1	1	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	60	60	60	60	60	60
Heavy Vehicles, %	9	9	5	5	1	1
Mvmt Flow	8	250	317	8	8	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	326	0	0 589 323
Stage 1	-	-	- 322 -
Stage 2	-	-	- 267 -
Critical Hdwy	4.19	-	- 6.41 6.21
Critical Hdwy Stg 1	-	-	- 5.41 -
Critical Hdwy Stg 2	-	-	- 5.41 -
Follow-up Hdwy	2.281	-	- 3.509 3.309
Pot Cap-1 Maneuver	1195	-	- 472 720
Stage 1	-	-	- 737 -
Stage 2	-	-	- 780 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1194	-	- 467 719
Mov Cap-2 Maneuver	-	-	- 467 -
Stage 1	-	-	- 730 -
Stage 2	-	-	- 779 -






Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1194	-	-	-	496
HCM Lane V/C Ratio	0.007	-	-	-	0.02
HCM Control Delay (s)	8	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1






Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road

AM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	150	190	1	1	5
Future Volume (vph)	1	150	190	1	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.953		
Satd. Flow (prot)	1671	1495	0	1741	1881	1599
Flt Permitted	0.950			0.953		
Satd. Flow (perm)	1671	1495	0	1741	1881	1599
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	8%	8%	4%	4%	1%	1%
Adj. Flow (vph)	2	278	352	2	2	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	278	0	354	2	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B










Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	150	190	1	1	5
Future Vol, veh/h	1	150	190	1	1	5
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles, %	8	8	4	4	1	1
Mvmt Flow	2	278	352	2	2	9
Number of Lanes	1	1	0	1	1	1




Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.7	13.9	7.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	99%	100%	0%	0%	0%
Vol Thru, %	1%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	191	1	150	1	5
LT Vol	190	1	0	0	0
Through Vol	1	0	0	1	0
RT Vol	0	0	150	0	5
Lane Flow Rate	354	2	278	2	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.519	0.003	0.38	0.003	0.013
Departure Headway (Hd)	5.28	6.127	4.92	5.612	4.904
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	679	584	731	632	722
Service Time	3.336	3.869	2.662	3.394	2.686
HCM Lane V/C Ratio	0.521	0.003	0.38	0.003	0.012
HCM Control Delay	13.9	8.9	10.7	8.4	7.8
HCM Lane LOS	B	A	B	A	A
HCM 95th-tile Q	3	0	1.8	0	0

Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

PM Peak
05/26/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	85	20	115	90	15	85
Future Volume (vph)	85	20	115	90	15	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.974	0.941				
Flt Protected	0.961				0.992	
Satd. Flow (prot)	1617	0	1687	0	0	1866
Flt Permitted	0.961				0.992	
Satd. Flow (perm)	1617	0	1687	0	0	1866
Link Speed (mph)	30	35		35		
Link Distance (ft)	3390	951		1122		
Travel Time (s)	77.0	18.5		21.9		
Confl. Peds. (#/hr)	1	1	1		1	
Confl. Bikes (#/hr)	1		1			
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	10%	6%	6%	1%	1%
Adj. Flow (vph)	106	25	144	113	19	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	257	0	0	125
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12	0		0		
Link Offset(ft)	0	0		0		
Crosswalk Width(ft)	16	16		16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	9		15	
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	20	115	90	15	85
Future Vol, veh/h	85	20	115	90	15	85
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	10	10	6	6	1	1
Mvmt Flow	106	25	144	113	19	106



















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	347	203	0
Stage 1	202	-	-
Stage 2	145	-	-
Critical Hdwy	6.5	6.3	-
Critical Hdwy Stg 1	5.5	-	-
Critical Hdwy Stg 2	5.5	-	-
Follow-up Hdwy	3.59	3.39	-
Pot Cap-1 Maneuver	634	818	-
Stage 1	813	-	-
Stage 2	863	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	623	816	-
Mov Cap-2 Maneuver	623	-	-
Stage 1	812	-	-
Stage 2	849	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	652	1312
HCM Lane V/C Ratio	-	-	0.201	0.014
HCM Control Delay (s)	-	-	11.9	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

PM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	65	10	5	85	85	10	1	5	65	1	20
Future Volume (vph)	20	65	10	5	85	85	10	1	5	65	1	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986				0.850		0.958				0.850
Flt Protected		0.990			0.997			0.970			0.953	
Satd. Flow (prot)	0	1702	0	0	1821	1553	0	1090	0	0	1692	1509
Flt Permitted		0.990			0.997			0.970			0.953	
Satd. Flow (perm)	0	1702	0	0	1821	1553	0	1090	0	0	1692	1509
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		77.0			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		16	16		1	19		26	26		19
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	9%	9%	9%	4%	4%	4%	62%	62%	62%	7%	7%	7%
Adj. Flow (vph)	32	105	16	8	137	137	16	2	8	105	2	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	153	0	0	145	137	0	26	0	0	107	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	33.4%											
Analysis Period (min)	15											
ICU Level of Service A												











HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road





PM Peak
05/26/2024

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	20	65	10	5	85	85	10	1	5	65	1	20
Future Vol, veh/h	20	65	10	5	85	85	10	1	5	65	1	20
Conflicting Peds, #/hr	1	0	16	16	0	1	19	0	26	26	0	19
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	9	9	9	4	4	4	62	62	62	7	7	7
Mvmt Flow	32	105	16	8	137	137	16	2	8	105	2	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	275	0	0	137	0	0	451	484	155	362	355	157
Stage 1	-	-	-	-	-	-	193	193	-	154	154	-
Stage 2	-	-	-	-	-	-	258	291	-	208	201	-
Critical Hdwy	4.19	-	-	4.14	-	-	7.72	7.12	6.82	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Follow-up Hdwy	2.281	-	-	2.236	-	-	4.058	4.558	3.858	3.563	4.063	3.363
Pot Cap-1 Maneuver	1249	-	-	1435	-	-	430	406	755	585	563	876
Stage 1	-	-	-	-	-	-	689	641	-	837	761	-
Stage 2	-	-	-	-	-	-	632	576	-	783	726	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1248	-	-	1413	-	-	389	386	725	547	535	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	386	-	547	535	-
Stage 1	-	-	-	-	-	-	659	613	-	813	755	-
Stage 2	-	-	-	-	-	-	592	571	-	732	695	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			0.2			13.4			12.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2			
Capacity (veh/h)	455	1248	-	-	1413	-	-	547	859			
HCM Lane V/C Ratio	0.057	0.026	-	-	0.006	-	-	0.195	0.038			
HCM Control Delay (s)	13.4	8	0	-	7.6	0	-	13.2	9.4			
HCM Lane LOS	B	A	A	-	A	A	-	B	A			
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.7	0.1			

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

PM Peak
05/26/2024

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	60	70	40	60	95	75
Future Volume (vph)	60	70	40	60	95	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.927					0.850
Flt Protected				0.980	0.950	
Satd. Flow (prot)	1694	0	0	1740	1787	1599
Flt Permitted				0.980	0.950	
Satd. Flow (perm)	1694	0	0	1740	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)		1	1		1	1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Adj. Flow (vph)	120	140	80	120	190	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	260	0	0	200	190	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	70	40	60	95	75
Future Vol, veh/h	60	70	40	60	95	75
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	4	4	7	7	1	1
Mvmt Flow	120	140	80	120	190	150

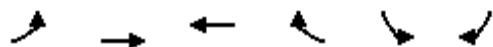
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	261
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1275
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1274
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	514	850	-	-	1274	-
HCM Lane V/C Ratio	0.37	0.176	-	-	0.063	-
HCM Control Delay (s)	16.1	10.1	-	-	8	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	1.7	0.6	-	-	0.2	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive




PM Peak
05/26/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Volume (vph)	5	140	115	5	5	1
Future Volume (vph)	5	140	115	5	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.994		0.975	
Flt Protected		0.998			0.961	
Satd. Flow (prot)	0	1789	1701	0	1484	0
Flt Permitted		0.998			0.961	
Satd. Flow (perm)	0	1789	1701	0	1484	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		980	720		569	
Travel Time (s)		22.3	16.4		15.5	
Confl. Peds. (#/hr)	1			1	1	1
Confl. Bikes (#/hr)				1		1
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56
Heavy Vehicles (%)	6%	6%	11%	11%	20%	20%
Adj. Flow (vph)	9	250	205	9	9	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	259	214	0	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	140	115	5	5	1
Future Vol, veh/h	5	140	115	5	5	1
Conflicting Peds, #/hr	1	0	0	1	1	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	56	56	56	56	56	56
Heavy Vehicles, %	6	6	11	11	20	20
Mvmt Flow	9	250	205	9	9	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	215	0	0 480 212
Stage 1	-	-	- 211 -
Stage 2	-	-	- 269 -
Critical Hdwy	4.16	-	- 6.6 6.4
Critical Hdwy Stg 1	-	-	- 5.6 -
Critical Hdwy Stg 2	-	-	- 5.6 -
Follow-up Hdwy	2.254	-	- 3.68 3.48
Pot Cap-1 Maneuver	1332	-	- 513 785
Stage 1	-	-	- 783 -
Stage 2	-	-	- 736 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1331	-	- 508 784
Mov Cap-2 Maneuver	-	-	- 508 -
Stage 1	-	-	- 776 -
Stage 2	-	-	- 735 -






Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1331	-	-	-	540
HCM Lane V/C Ratio	0.007	-	-	-	0.02
HCM Control Delay (s)	7.7	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1






Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road

PM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	135	110	5	5	5
Future Volume (vph)	5	135	110	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.954		
Satd. Flow (prot)	1703	1524	0	1648	1520	1292
Flt Permitted	0.950			0.954		
Satd. Flow (perm)	1703	1524	0	1648	1520	1292
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles (%)	6%	6%	10%	10%	25%	25%
Adj. Flow (vph)	9	233	190	9	9	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	233	0	199	9	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A










Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	135	110	5	5	5
Future Vol, veh/h	5	135	110	5	5	5
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles, %	6	6	10	10	25	25
Mvmt Flow	9	233	190	9	9	9
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9	10.4	8.2
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	96%	100%	0%	0%	0%
Vol Thru, %	4%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	5	135	5	5
LT Vol	110	5	0	0	0
Through Vol	5	0	0	5	0
RT Vol	0	0	135	0	5
Lane Flow Rate	198	9	233	9	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.289	0.014	0.29	0.014	0.012
Departure Headway (Hd)	5.248	5.689	4.485	5.7	4.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	686	631	803	627	715
Service Time	3.278	3.408	2.204	3.439	2.733
HCM Lane V/C Ratio	0.289	0.014	0.29	0.014	0.013
HCM Control Delay	10.4	8.5	9	8.5	7.8
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.2	0	1.2	0	0




Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	35	65	140	30	115
Future Volume (vph)	110	35	65	140	30	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.967		0.908			
Flt Protected	0.963					0.990
Satd. Flow (prot)	1685	0	1659	0	0	1758
Flt Permitted	0.963					0.990
Satd. Flow (perm)	1685	0	1659	0	0	1758
Link Speed (mph)	25		35			35
Link Distance (ft)	3390		951			1122
Travel Time (s)	92.5		18.5			21.9
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles (%)	5%	5%	4%	4%	7%	7%
Adj. Flow (vph)	151	48	89	192	41	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	199	0	281	0	0	199
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	38.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
100: Middle Road & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection						
Int Delay, s/veh	4.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	110	35	65	140	30	115
Future Vol, veh/h	110	35	65	140	30	115
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	5	5	4	4	7	7
Mvmt Flow	151	48	89	192	41	158



















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	427	187	0
Stage 1	186	-	-
Stage 2	241	-	-
Critical Hdwy	6.45	6.25	-
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.345	-
Pot Cap-1 Maneuver	579	847	-
Stage 1	839	-	-
Stage 2	792	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	557	845	-
Mov Cap-2 Maneuver	557	-	-
Stage 1	838	-	-
Stage 2	763	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	607	1251
HCM Lane V/C Ratio	-	-	0.327	0.033
HCM Control Delay (s)	-	-	13.8	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1.4	0.1

Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

AM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	145	5	5	115	95	5	1	5	105	5	20
Future Volume (vph)	15	145	5	5	115	95	5	1	5	105	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996				0.850		0.940				0.850
Flt Protected		0.996			0.998			0.978			0.954	
Satd. Flow (prot)	0	1795	0	0	1789	1524	0	1027	0	0	1678	1495
Flt Permitted		0.996			0.998			0.978			0.954	
Satd. Flow (perm)	0	1795	0	0	1789	1524	0	1027	0	0	1678	1495
Link Speed (mph)		25			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		92.5			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		14	14		1	8		15	15		8
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	70%	70%	70%	8%	8%	8%
Adj. Flow (vph)	25	246	8	8	195	161	8	2	8	178	8	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	279	0	0	203	161	0	18	0	0	186	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.0%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road

AM Peak
05/26/2024

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	↕
Traffic Vol, veh/h	15	145	5	5	115	95	5	1	5	105	5	20
Future Vol, veh/h	15	145	5	5	115	95	5	1	5	105	5	20
Conflicting Peds, #/hr	1	0	14	14	0	1	8	0	15	15	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	59	59	59	59	59	59	59	59	59	59	59	59
Heavy Vehicles, %	5	5	5	6	6	6	70	70	70	8	8	8
Mvmt Flow	25	246	8	8	195	161	8	2	8	178	8	34











Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	357	0	0	268	0	0	635	687	279	532	530	204
Stage 1	-	-	-	-	-	-	314	314	-	212	212	-
Stage 2	-	-	-	-	-	-	321	373	-	320	318	-
Critical Hdwy	4.15	-	-	4.16	-	-	7.8	7.2	6.9	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.8	6.2	-	6.18	5.58	-
Follow-up Hdwy	2.245	-	-	2.254	-	-	4.13	4.63	3.93	3.572	4.072	3.372
Pot Cap-1 Maneuver	1185	-	-	1273	-	-	310	296	622	449	446	822
Stage 1	-	-	-	-	-	-	574	550	-	777	716	-
Stage 2	-	-	-	-	-	-	568	515	-	679	643	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1184	-	-	1256	-	-	279	282	605	423	425	815
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	282	-	423	425	-
Stage 1	-	-	-	-	-	-	552	529	-	757	710	-
Stage 2	-	-	-	-	-	-	530	510	-	641	619	-





Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.2			15.2			18.4		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	370	1184	-	-	1256	-	-	423	815
HCM Lane V/C Ratio	0.05	0.021	-	-	0.007	-	-	0.441	0.042
HCM Control Delay (s)	15.2	8.1	0	-	7.9	0	-	20	9.6
HCM Lane LOS	C	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	2.2	0.1

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

















AM Peak
05/26/2024





						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	75	185	130	105	95	100
Future Volume (vph)	75	185	130	105	95	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.904					0.850
Flt Protected				0.973	0.950	
Satd. Flow (prot)	1605	0	0	1761	1787	1599
Flt Permitted				0.973	0.950	
Satd. Flow (perm)	1605	0	0	1761	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)		4	1		1	4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55
Heavy Vehicles (%)	7%	7%	5%	5%	1%	1%
Adj. Flow (vph)	136	336	236	191	173	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	0	0	427	173	182
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection								
Int Delay, s/veh	13.3							
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Vol, veh/h	75	185	130	105	95	100		
Future Vol, veh/h	75	185	130	105	95	100		
Conflicting Peds, #/hr	0	4	1	0	1	4		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	None		
Storage Length	-	-	-	-	0	0		
Veh in Median Storage, #	0	-	-	0	0	-		
Grade, %	0	-	-	0	0	-		
Peak Hour Factor	55	55	55	55	55	55		
Heavy Vehicles, %	7	7	5	5	1	1		
Mvmt Flow	136	336	236	191	173	182		
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	0	0	476	0	972	312		
Stage 1	-	-	-	-	308	-		
Stage 2	-	-	-	-	664	-		
Critical Hdwy	-	-	4.15	-	6.41	6.21		
Critical Hdwy Stg 1	-	-	-	-	5.41	-		
Critical Hdwy Stg 2	-	-	-	-	5.41	-		
Follow-up Hdwy	-	-	2.245	-	3.509	3.309		
Pot Cap-1 Maneuver	-	-	1071	-	281	731		
Stage 1	-	-	-	-	748	-		
Stage 2	-	-	-	-	514	-		
Platoon blocked, %	-	-		-				
Mov Cap-1 Maneuver	-	-	1067	-	210	725		
Mov Cap-2 Maneuver	-	-	-	-	210	-		
Stage 1	-	-	-	-	745	-		
Stage 2	-	-	-	-	387	-		
Approach	EB		WB		NB			
HCM Control Delay, s	0		5.2		40.7			
HCM LOS	E							
Minor Lane/Major Mvmt	NBLn1		NBLn2		EBT	EBR	WBL	WBT
Capacity (veh/h)	210		725		-	-	1067	-
HCM Lane V/C Ratio	0.823		0.251		-	-	0.222	-
HCM Control Delay (s)	71.3		11.6		-	-	9.3	0
HCM Lane LOS	F		B		-	-	A	A
HCM 95th %tile Q(veh)	6		1		-	-	0.8	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive

AM Peak
05/26/2024






												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	155	15	1	200	5	35	1	5	5	1	1
Future Volume (vph)	5	155	15	1	200	5	35	1	5	5	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.997			0.984			0.977	
Flt Protected		0.999						0.959			0.968	
Satd. Flow (prot)	0	1720	0	0	1804	0	0	1775	0	0	1779	0
Flt Permitted		0.999						0.959			0.968	
Satd. Flow (perm)	0	1720	0	0	1804	0	0	1775	0	0	1779	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		980			720			375			569	
Travel Time (s)		22.3			16.4			8.5			15.5	
Confl. Peds. (#/hr)	1					1				1		1
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Heavy Vehicles (%)	9%	9%	9%	5%	5%	5%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	8	258	25	2	333	8	58	2	8	8	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	343	0	0	68	0	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	23.0%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	155	15	1	200	5	35	1	5	5	1	1
Future Vol, veh/h	5	155	15	1	200	5	35	1	5	5	1	1
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	1	0	1
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	60	60	60	60	60	60	60	60	60	60	60	60
Heavy Vehicles, %	9	9	9	5	5	5	1	1	1	1	1	1
Mvmt Flow	8	258	25	2	333	8	58	2	8	8	2	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	342	0	0	283	0	0	631	633	272	635	641	339
Stage 1	-	-	-	-	-	-	287	287	-	342	342	-
Stage 2	-	-	-	-	-	-	344	346	-	293	299	-
Critical Hdwy	4.19	-	-	4.15	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.281	-	-	2.245	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1179	-	-	1262	-	-	395	398	769	393	394	706
Stage 1	-	-	-	-	-	-	723	676	-	675	640	-
Stage 2	-	-	-	-	-	-	673	637	-	717	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1178	-	-	1262	-	-	389	394	768	384	390	705
Mov Cap-2 Maneuver	-	-	-	-	-	-	389	394	-	384	390	-
Stage 1	-	-	-	-	-	-	717	671	-	669	638	-
Stage 2	-	-	-	-	-	-	668	635	-	701	663	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			15.4			14		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	414	1178	-	-	1262	-	-	412				
HCM Lane V/C Ratio	0.165	0.007	-	-	0.001	-	-	0.028				
HCM Control Delay (s)	15.4	8.1	0	-	7.9	0	-	14				
HCM Lane LOS	C	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1				

Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road






AM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	160	200	1	1	5
Future Volume (vph)	1	160	200	1	1	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.953		
Satd. Flow (prot)	1671	1495	0	1741	1881	1599
Flt Permitted	0.950			0.953		
Satd. Flow (perm)	1671	1495	0	1741	1881	1599
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles (%)	8%	8%	4%	4%	1%	1%
Adj. Flow (vph)	2	296	370	2	2	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	296	0	372	2	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Intersection Delay, s/veh	13.1
Intersection LOS	B










Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	160	200	1	1	5
Future Vol, veh/h	1	160	200	1	1	5
Peak Hour Factor	0.54	0.54	0.54	0.54	0.54	0.54
Heavy Vehicles, %	8	8	4	4	1	1
Mvmt Flow	2	296	370	2	2	9
Number of Lanes	1	1	0	1	1	1




Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.2	14.8	7.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	100%	0%	0%	0%
Vol Thru, %	0%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	1	160	1	5
LT Vol	200	1	0	0	0
Through Vol	1	0	0	1	0
RT Vol	0	0	160	0	5
Lane Flow Rate	372	2	296	2	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.551	0.003	0.409	0.003	0.013
Departure Headway (Hd)	5.331	6.183	4.975	5.696	4.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	674	578	720	622	709
Service Time	3.394	3.931	2.723	3.489	2.78
HCM Lane V/C Ratio	0.552	0.003	0.411	0.003	0.013
HCM Control Delay	14.8	8.9	11.2	8.5	7.8
HCM Lane LOS	B	A	B	A	A
HCM 95th-tile Q	3.4	0	2	0	0

Lanes, Volumes, Timings
100: Middle Road & 5-1/2 Mile Road

PM Peak
05/26/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	25	115	115	25	85
Future Volume (vph)	100	25	115	115	25	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973		0.932			
Flt Protected	0.961					0.989
Satd. Flow (prot)	1615	0	1671	0	0	1860
Flt Permitted	0.961					0.989
Satd. Flow (perm)	1615	0	1671	0	0	1860
Link Speed (mph)	30		35			35
Link Distance (ft)	3390		951			1122
Travel Time (s)	77.0		18.5			21.9
Confl. Peds. (#/hr)	1	1		1	1	
Confl. Bikes (#/hr)		1		1		
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	10%	10%	6%	6%	1%	1%
Adj. Flow (vph)	125	31	144	144	31	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	156	0	288	0	0	137
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	100	25	115	115	25	85
Future Vol, veh/h	100	25	115	115	25	85
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	10	10	6	6	1	1
Mvmt Flow	125	31	144	144	31	106



















Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	386	218	0
Stage 1	217	-	-
Stage 2	169	-	-
Critical Hdwy	6.5	6.3	-
Critical Hdwy Stg 1	5.5	-	-
Critical Hdwy Stg 2	5.5	-	-
Follow-up Hdwy	3.59	3.39	-
Pot Cap-1 Maneuver	602	802	-
Stage 1	801	-	-
Stage 2	842	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	585	800	-
Mov Cap-2 Maneuver	585	-	-
Stage 1	800	-	-
Stage 2	819	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	618	1278
HCM Lane V/C Ratio	-	-	0.253	0.024
HCM Control Delay (s)	-	-	12.8	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0.1







Lanes, Volumes, Timings
200: West D/W/Novak Road & 5-1/2 Mile Road

PM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	100	10	5	105	95	10	1	5	80	1	20
Future Volume (vph)	20	100	10	5	105	95	10	1	5	80	1	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	0		0	0		100
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990				0.850		0.958				0.850
Flt Protected		0.992			0.998			0.970			0.953	
Satd. Flow (prot)	0	1712	0	0	1823	1553	0	1090	0	0	1692	1509
Flt Permitted		0.992			0.998			0.970			0.953	
Satd. Flow (perm)	0	1712	0	0	1823	1553	0	1090	0	0	1692	1509
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		3390			290			505			1173	
Travel Time (s)		77.0			6.6			13.8			32.0	
Confl. Peds. (#/hr)	1		16	16		1	19		26	26		19
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Heavy Vehicles (%)	9%	9%	9%	4%	4%	4%	62%	62%	62%	7%	7%	7%
Adj. Flow (vph)	32	161	16	8	169	153	16	2	8	129	2	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	209	0	0	177	153	0	26	0	0	131	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	35.0%											
Analysis Period (min)	15											
ICU Level of Service A												

HCM 6th TWSC
200: West D/W/Novak Road & 5-1/2 Mile Road

PM Peak
05/26/2024

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	100	10	5	105	95	10	1	5	80	1	20
Future Vol, veh/h	20	100	10	5	105	95	10	1	5	80	1	20
Conflicting Peds, #/hr	1	0	16	16	0	1	19	0	26	26	0	19
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	-	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	62	62	62	62	62	62	62	62	62	62	62	62
Heavy Vehicles, %	9	9	9	4	4	4	62	62	62	7	7	7
Mvmt Flow	32	161	16	8	169	153	16	2	8	129	2	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	193	0	0	547	588	211	450	443	189
Stage 1	-	-	-	-	-	-	249	249	-	186	186	-
Stage 2	-	-	-	-	-	-	298	339	-	264	257	-
Critical Hdwy	4.19	-	-	4.14	-	-	7.72	7.12	6.82	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	6.12	-	6.17	5.57	-
Follow-up Hdwy	2.281	-	-	2.236	-	-	4.058	4.558	3.858	3.563	4.063	3.363
Pot Cap-1 Maneuver	1198	-	-	1368	-	-	368	350	699	511	502	840
Stage 1	-	-	-	-	-	-	639	603	-	804	737	-
Stage 2	-	-	-	-	-	-	599	546	-	730	686	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1197	-	-	1347	-	-	332	332	671	476	476	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	332	-	476	476	-
Stage 1	-	-	-	-	-	-	610	576	-	779	731	-
Stage 2	-	-	-	-	-	-	560	542	-	680	655	-





Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.2			0.2			14.8			14.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	394	1197	-	-	1347	-	-	476	824
HCM Lane V/C Ratio	0.065	0.027	-	-	0.006	-	-	0.274	0.039
HCM Control Delay (s)	14.8	8.1	0	-	7.7	0	-	15.4	9.5
HCM Lane LOS	B	A	A	-	A	A	-	C	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.1	0.1

Lanes, Volumes, Timings
300: East D/W & 5-1/2 Mile Road

PM Peak
05/26/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↰	↰	↰
Traffic Volume (vph)	110	70	40	90	95	75
Future Volume (vph)	110	70	40	90	95	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.947				0.850	
Flt Protected				0.985	0.950	
Satd. Flow (prot)	1730	0	0	1749	1787	1599
Flt Permitted				0.985	0.950	
Satd. Flow (perm)	1730	0	0	1749	1787	1599
Link Speed (mph)	30			30	25	
Link Distance (ft)	290			980	385	
Travel Time (s)	6.6			22.3	10.5	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1		1			
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Adj. Flow (vph)	220	140	80	180	190	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	360	0	0	260	190	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	70	40	90	95	75
Future Vol, veh/h	110	70	40	90	95	75
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	4	4	7	7	1	1
Mvmt Flow	220	140	80	180	190	150

















Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	361
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.17
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.263
Pot Cap-1 Maneuver	-	-	1170
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1169
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-





Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	411	749	-	-	1169	-
HCM Lane V/C Ratio	0.462	0.2	-	-	0.068	-
HCM Control Delay (s)	21.1	11	-	-	8.3	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2.4	0.7	-	-	0.2	-

Lanes, Volumes, Timings
400: 5-1/2 Mile Road & Dustir Drive

PM Peak
05/26/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	155	35	5	125	5	20	1	1	5	1	1
Future Volume (vph)	5	155	35	5	125	5	20	1	1	5	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.976			0.995			0.993			0.979	
Flt Protected		0.999			0.998			0.957			0.967	
Satd. Flow (prot)	0	1748	0	0	1700	0	0	1788	0	0	1499	0
Flt Permitted		0.999			0.998			0.957			0.967	
Satd. Flow (perm)	0	1748	0	0	1700	0	0	1788	0	0	1499	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		980			720			375			569	
Travel Time (s)		22.3			16.4			8.5			15.5	
Confl. Peds. (#/hr)	1						1			1		1
Confl. Bikes (#/hr)							1					1
Peak Hour Factor	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Heavy Vehicles (%)	6%	6%	6%	11%	11%	11%	1%	1%	1%	20%	20%	20%
Adj. Flow (vph)	9	277	63	9	223	9	36	2	2	9	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	0	241	0	0	40	0	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		60	60		9	60		60	15		9
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.6%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	155	35	5	125	5	20	1	1	5	1	1
Future Vol, veh/h	5	155	35	5	125	5	20	1	1	5	1	1
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	1	0	1
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	56	56	56	56	56	56	56	56	56	56	56	56
Heavy Vehicles, %	6	6	6	11	11	11	1	1	1	20	20	20
Mvmt Flow	9	277	63	9	223	9	36	2	2	9	2	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	233	0	0	339	0	0	575	577	309	576	604	230
Stage 1	-	-	-	-	-	-	326	326	-	247	247	-
Stage 2	-	-	-	-	-	-	249	251	-	329	357	-
Critical Hdwy	4.16	-	-	4.21	-	-	7.11	6.51	6.21	7.3	6.7	6.4
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.3	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.3	5.7	-
Follow-up Hdwy	2.254	-	-	2.299	-	-	3.509	4.009	3.309	3.68	4.18	3.48
Pot Cap-1 Maneuver	1311	-	-	1172	-	-	430	429	733	403	389	767
Stage 1	-	-	-	-	-	-	689	650	-	718	670	-
Stage 2	-	-	-	-	-	-	757	701	-	648	598	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1310	-	-	1172	-	-	421	421	732	395	382	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	421	421	-	395	382	-
Stage 1	-	-	-	-	-	-	683	644	-	711	663	-
Stage 2	-	-	-	-	-	-	746	694	-	638	593	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			14.2			13.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	429	1310	-	-	1172	-	-	422				
HCM Lane V/C Ratio	0.092	0.007	-	-	0.008	-	-	0.03				
HCM Control Delay (s)	14.2	7.8	0	-	8.1	0	-	13.8				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1				

Lanes, Volumes, Timings
500: Charles Street & 5-1/2 Mile Road

PM Peak
05/26/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	150	125	5	5	5
Future Volume (vph)	5	150	125	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			25
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected	0.950			0.954		
Satd. Flow (prot)	1703	1524	0	1648	1520	1292
Flt Permitted	0.950			0.954		
Satd. Flow (perm)	1703	1524	0	1648	1520	1292
Link Speed (mph)	30			35	25	
Link Distance (ft)	720			979	710	
Travel Time (s)	16.4			19.1	19.4	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles (%)	6%	6%	10%	10%	25%	25%
Adj. Flow (vph)	9	259	216	9	9	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	259	0	225	9	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary






Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.2% ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	150	125	5	5	5
Future Vol, veh/h	5	150	125	5	5	5
Peak Hour Factor	0.58	0.58	0.58	0.58	0.58	0.58
Heavy Vehicles, %	6	6	10	10	25	25
Mvmt Flow	9	259	216	9	9	9
Number of Lanes	1	1	0	1	1	1

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.5	11	8.3
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	96%	100%	0%	0%	0%
Vol Thru, %	4%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	5	150	5	5
LT Vol	125	5	0	0	0
Through Vol	5	0	0	5	0
RT Vol	0	0	150	0	5
Lane Flow Rate	224	9	259	9	9
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.331	0.014	0.328	0.014	0.012
Departure Headway (Hd)	5.316	5.766	4.561	5.804	5.098
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	675	622	789	615	699
Service Time	3.354	3.489	2.284	3.554	2.848
HCM Lane V/C Ratio	0.332	0.014	0.328	0.015	0.013
HCM Control Delay	11	8.6	9.5	8.6	7.9
HCM Lane LOS	B	A	A	A	A
HCM 95th-tile Q	1.4	0	1.4	0	0

University of Nebraska

The Animal Unit (AU) system was originally created for the beef industry, so the fundamental unit of the system is based on the estimated average daily forage intake per lb. for grazing beef cattle. One 1,000-lb. beef animal is considered 1.0 animal unit equivalent (AUE), and each additional 100 lb.

Table 1. Animal unit equivalents (AUE) guide¹.

Kinds/Classes of Animals	Animal Unit Equivalent (AUE)	Forage Consumed in Pounds (air-dried ²)	
		Day	Month
1,000-lb. cow, dry	0.92	28	851
1,000-lb. cow, with calf	1.00	30	913
1,100-lb. cow, with calf	1.07	32.5	988
1,200-lb. cow, with calf	1.15	35	1,064
1,300-lb. cow, with calf	1.22	37	1,125
1,400-lb. cow, with calf	1.29	39	1,186
1,500-lb. cow, with calf	1.35	41	1,247
Cattle bull, mature	1.40	42.5	1,295
Weaned calves to yearling	0.60	18	547
Yearling cattle (600-800 lb.)	0.70	21	638
Two-year-old cattle (800-1,000 lb.)	0.90	27	832
Bison cow, mature	1.00	30	913
Bison bull, mature	1.50	45	1,368
Horse, mature	1.25	38	1,155
Sheep, dry	0.15	4.5	135
Sheep, mature with lamb	0.20	6	182
Sheep ram	0.25	7.5	228
Goat, mature	0.15	5	152
Deer, white-tailed, mature	0.15	5	152
Deer, mule, mature	0.20	6	182
Elk, mature	0.60	18	547
Antelope, mature	0.20	6	182
Sheep, bighorn, mature	0.20	6	182
Jackrabbit, white-tailed	0.02	0.6	18
Prairie dog	0.004	0.1	3

¹ Adapted from Natural Resources Conservation Service National Range and Pasture Handbook (1997) and Montana State University Range and Pasture Records (1993).

² Air-dry weight refers to forage that is allowed to dry under natural environmental conditions during an extended period of time, such as plants harvested for hay production. This value is approximately 87 percent dry matter versus oven-dry weight, which depicts 100 percent dry matter.

Regional Municipal Regulations

Village of Eagle (pop 2,071)

- Residential Districts prohibit Ag animals and livestock.
- Ag Districts not more than 1 head of livestock or 20 head of poultry for each 2.5 acres.
- "AGRICULTURAL ANIMALS AND LIVESTOCK". Farming animals that includes cattle, equine, sheep, goats, chickens, ducks, geese, pigeons, and other poultry, pigs and hogs.

Town of Eagle (pop 2,126)

- Ag District (<35-acre parcel) one grazing animal for each full acre plus 10 fowl for each acre
- Ag District (>35-acre parcel) livestock shall not exceed 499
- Minimum lot size for a commercial stable is 5 acres.
- Livestock building minimum setback is 50' to any lot line.
- (102) Livestock When used in the context of livestock facility siting, "livestock" only includes cattle, swine, poultry, sheep, and goats. When not used in the context of livestock facility siting, "livestock" includes bovine animals, equine animals, goats, poultry, sheep, swine, farm-raised deer, farm-raised game birds, camelids (alpacas, llamas, camels), ratites (emus, ostriches), and farm-raised fish.
- Commercial stable Description: A place where horses, donkeys, and other similar domesticated animals are kept for boarding, instructional purposes, or hire on trail rides. Vehicle Parking: 1 space for every 4 stable stalls Supplemental Standards: (a) Minimum lot area. The minimum lot size for a commercial stable is 5 acres.
- Household livestock Description: A place where livestock are kept primarily for the use and enjoyment of those living on the premises and occasional commercial purposes. Note: Also see backyard chickens in this Series, which are allowed on parcels that are 3 acres or smaller. Vehicle Parking: On-site parking not required Supplemental Standards: (a) Minimum lot size. The minimum lot size for household livestock is 3 acres. (b) Number of animals. The number of animals shall not exceed one grazing animal for each full acre plus 10 fowl for each full acre.

City of Oconomowoc (pop 18,203)

- No Ag Districts
- Urban Reserve District – Minimum lot size is 10 acres
- Unable to find any district permitting horses within the City.

Town of Oconomowoc (pop 8,836)

- Ag Districts 3-acre minimum allowing 1 head of livestock & 10 fowl. Then 1 acre per head of livestock is allowed additionally. Same Regulation for Residential Districts.

Village of Wadsworth, IL (pop 3,472)

- Village Code indicates that a lot for which a private stable is used shall contain at least two (2) acres for the first equine (horse, etc.) and at least one (1) additional acre for each additional equine.

Village of Raymond (pop 3,715)

SECTION 15 A-3 AGRICULTURAL/RESIDENTIAL ESTATE DISTRICT

(a) Purpose and Intent

This District is intended to be a transition between rural, agricultural uses and low-density single-family suburban residential development. These lands provide for limited agricultural use and single family residential estate type dwellings.

(b) Permitted Uses

1. Single-family dwellings with a minimum 440 square foot attached garage.
2. Gardening, apiculture as defined in this ordinance [also refer to Section 3(i)(5)(AA)], but not on lots less than one (1) acre in size, and livestock and non-commercial poultry/fowl raising, and livestock grazing as regulated in Section 15(b)3, Section 15 (b)4, and Section 15(b)5C below.
3. The keeping of poultry/fowl is permitted on any lot, except no poultry/fowl are allowed in a recorded subdivision on lots less than three (3) acres. The keeping of poultry/fowl and livestock shall be regulated so that there shall be no more than one (1) livestock equivalent and twenty (20) poultry/fowl for the first three (3) acres of land, and one (1) livestock equivalent and twenty (20) poultry/fowl per one (1) acre of land thereafter. The keeping of poultry/fowl or livestock shall be done under maximum practical conditions of neatness and sanitation so as not to be detrimental to the surrounding uses. All poultry/fowl shall be kept confined or enclosed and not permitted to run at large in recorded subdivisions. All lands to be utilized for the keeping of livestock or poultry/fowl must be under the same ownership. As of the date of adoption of this ordinance, livestock in recorded subdivisions is allowed on lots of three acres or more excluding lands zoned C-1 Conservancy District, or EFD or UC zoned lands.
4. The keeping of hogs, male goats, or fur bearing animals shall not be permitted on less than twenty (20) acres.
5. The following accessory buildings and uses, subject to the conditions specified:
 - A. Private garages, when located on the same lot, and not involving the conduct of a business; provided, however, that no private garage shall be erected unless that principal building to which such garage is an accessory use has been erected or is to be erected simultaneously with said garage.
 - B. Private boathouses, provided no living quarters are included in said boathouse. Only one (1) boathouse per lot is permitted. New boathouses are prohibited.
 - C. Stables, barns, or poultry houses on lots at least three (3) acres in size, and provided that no building housing livestock or poultry shall be closer than fifty (50) feet to any lot line.

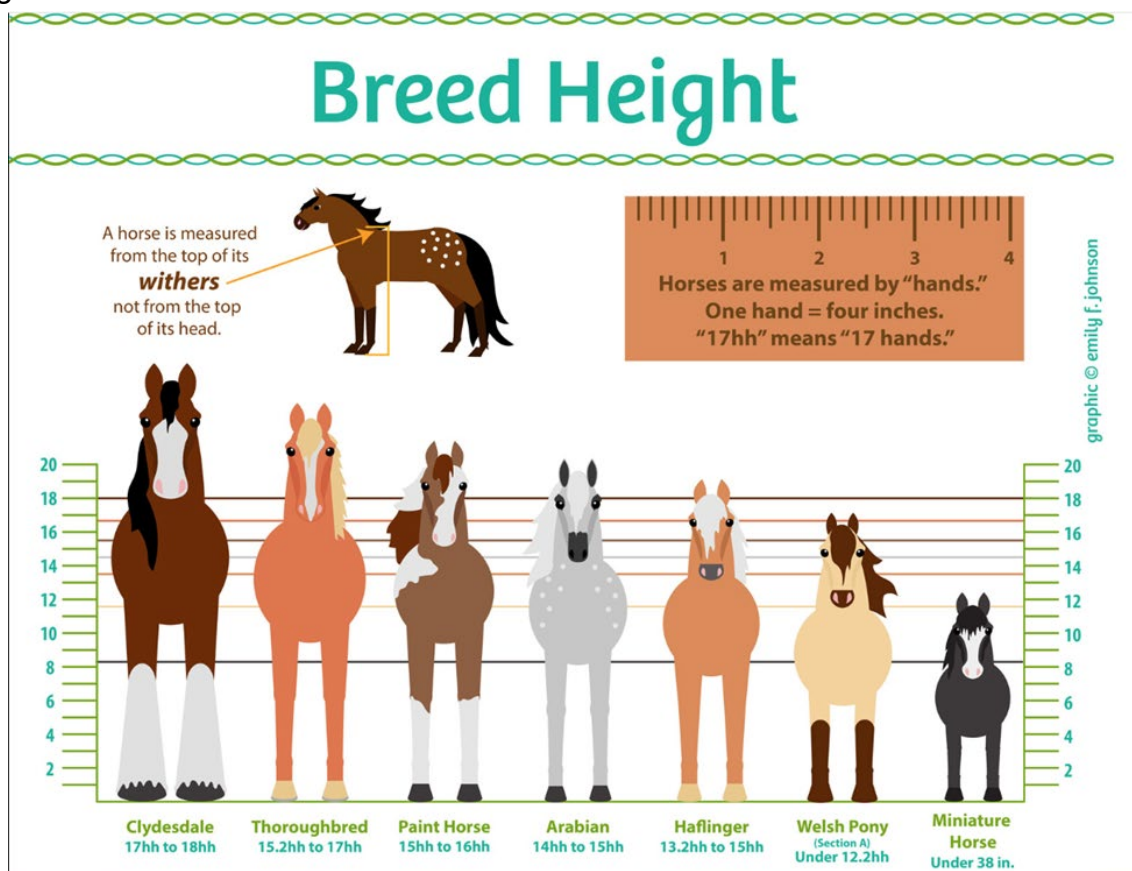
Racine County-

Article XIII under Chapter 20 Zoning. Staff stated it's not so much the number of animals as it is the number of acres needed for manure management. For example, one horse needs approximately one acre for manure management. If the property is small in size we do allow the boarders/operators to lease land for manure spreading. So let's say the property in which the boarding activity is taking place is only 4 acres and they are boarding 20 horses, we would allow them to lease another 16+ acres for manure management. With every conditional use permit we require a manure management nutrient management plan with the application that gets reviewed by Land Conservation.

horse.extension.org (Cooperative Extension)

There has been little research done on the space requirements of horses. If you are attempting to figure the carrying capacity of land for a horse, then a good rule of thumb is 1-1/2 to 2 acres of open intensely managed land per horse. Two acres, if managed properly, should provide adequate forage in the form of pasture and/or hay ground. But this is highly variable depending on location.

If you are depending on the land for exercise rather than nutritional needs (i.e., your horse gets hay each day), a smaller area may be adequate. In the Midwest region of the country on properly managed and in some locations irrigated pasture, 2-10 acres will support the forage needs of a horse.



Source: Horse Illustrated, *A Look at Different Horse Heights* by Daniel

(e) Keeping of Livestock Restricted.

(1) Definition. "Livestock" means cattle, equine as that term is defined in Sec. 895.481 (1) (a), swine, sheep, goats, farm-raised deer as that term is defined under Sec. 95.001(l)(ag), Wis. Stat., and other such animals susceptible to use for commercial purposes, including domesticated fowl, such as chickens (includes hens and roosters)(as defined in, and except as may be permitted under Sec. 7-1-26), turkeys, geese, ducks, guineas, or other poultry. For the purposes of determining the number of units of livestock allowed on a parcel each unit of livestock shall equal 1000 pounds worth of livestock which shall be calculated pursuant to s. NR 243.05* of the Wisconsin Administrative Code.

(2) Keeping of Livestock.

a. Prohibition. It shall be unlawful for any person to keep any livestock within the Village unless otherwise permitted by this Chapter, and specifically by Sec. 7-1-26, or by the Zoning Code which has been adopted by the Village pursuant to Title 16 of this Code of Ordinances.

b. Exceptions.

1. Agricultural Use. Livestock may be kept on any parcel zoned for agricultural use provided the area of the parcel is at least two acres. The first two acres shall contain no more than one unit of livestock. Thereafter, each additional unit of livestock shall require one additional acre of land unless otherwise allowed by the zoning code or conditional use permit.

2. Residential Use. Residential Use. Livestock, except Chickens as that term is defined under Sec. 7-1-26, may be kept on any parcel zoned for residential use provided the area of the parcel is at least five acres and the livestock is housed more than 150 feet from every residence not on that parcel. The first two acres shall contain no more than one unit of livestock. Thereafter, each additional unit of livestock shall require one additional acre of land unless otherwise allowed by conditional use permit. The keeping of Chickens, as that term is defined under Sec. 7-1-26, on residentially zoned parcels shall only be allowed as permitted in accordance with Sec. 7-1-26 of this Code. Roosters on residentially zoned parcels are prohibited.

3. Pre-existing Uses. Livestock legally kept on a parcel prior to the adoption of this ordinance shall be allowed to remain on the parcel notwithstanding a violation of this section provided that the livestock is not determined by the Village Board to be a nuisance following a hearing on the matter if one is requested in writing by a neighbor residing on a parcel within 300 feet of the parcel where the livestock is kept.

c. Manure Management.

1. The Village may prepare a guide entitled Recommended Manure Management Practices.

2. Buffers Required. No accumulation or application of manure or any other material which causes any noxious or offensive odor or dust shall be closer than fifty (50) feet to a lot line in a residential zoning district. A twenty-five (25) foot wide area of vegetative cover shall be maintained between any unvegetated exercise area, manure pile, or application area and any surface water which is all or in-part off-site,

Existing Section 7-1-13(e)

or any well, in order to minimize runoff, prevent erosion, and promote quick nitrogen absorption, and prevent water contamination.

D. Nuisance. Any violation of this Section shall be deemed a public nuisance and the violator may be proceeded against in accordance with Title 11, Chapter 6 of the Village Code of Ordinances.

(e) Keeping of Livestock Restricted.

(1) Definition. "Livestock" means cattle, equine as that term is defined in Sec. 895.481 (1) (a), swine, sheep, goats, ~~alpacas, llamas, farm-raised deer as that term is defined under Sec. 95.001(1)(ag), Wis. Stat.,~~ and other such animals susceptible to use for commercial purposes, including domesticated fowl, such as chickens (includes hens and roosters)(as defined in, and except as may be permitted under Sec. 7-1-26), turkeys, geese, ducks, guineas, or other poultry. For the purposes of determining the number of units of livestock allowed on a parcel, ~~the following table applies: each unit of livestock shall equal 1000 pounds worth of livestock which shall be calculated pursuant to s. NR 243.05* of the Wisconsin Administrative Code:~~

Animal Units (AUs)	
Animal Type	Number = 1 AU
Cattle, Bison	1
Horse, mule, donkey, hinny, pony (Greater than 34 inches at withers)	1
Miniature Horse, mule, donkey, hinny, pony (34 inches or less measured from last hairs at the base of the mane to the ground)	2
Swine, Ostrich, Llamas	2
Goats, Sheep, Alpacas	10
Poultry	30
Rabbits	30

(2) Keeping of Livestock.

a. Prohibition. It shall be unlawful for any person to keep any livestock within the Village unless otherwise permitted by this Chapter, and specifically by Sec. 7-1-26, or by the Zoning Code which has been adopted by the Village pursuant to Title 16 of this Code of Ordinances.

b. ~~Exceptions.~~ Calculating Livestock Quantity per Parcel. ~~The first two acres of a parcel shall contain no more than one animal unit of livestock. Thereafter, each additional animal unit shall require one additional acre of land unless otherwise specified in the zoning code.~~

~~c.1.~~ Agricultural Use. Livestock may be kept on any parcel zoned for agricultural use provided the area of the parcel is at least two acres. ~~The first two acres shall contain no more than one unit of livestock. Thereafter, each additional unit of livestock shall require one additional acre of land unless otherwise allowed by the zoning code or conditional use permit.~~

~~d. 2.~~ Residential Use. ~~Residential Use.~~ Livestock, ~~except Chickens as that term is defined under Sec. 7-1-26,~~ may be kept on any parcel zoned for residential use provided the area of the parcel is at least five acres and the livestock is housed more than 150 feet from every residence not on that parcel. ~~The first two acres shall contain no more than one unit of livestock. Thereafter, each additional unit of livestock shall require one additional acre of land unless otherwise allowed by conditional use permit.~~ The keeping of Chickens, ~~as that term is defined under Sec. 7-1-26,~~ on residentially zoned parcels shall only be allowed as permitted in accordance with Sec. 7-1-26 of this Code. ~~Roosters on residentially zoned parcels are prohibited.~~

~~e.3.~~ Pre-existing Uses. Livestock legally kept on a parcel prior to the adoption of this ordinance shall be allowed to remain on the parcel notwithstanding a violation of this section

provided that the livestock is not determined by the Village Board to be a nuisance following a hearing on the matter if one is requested in writing by a neighbor residing on a parcel within 300 feet of the parcel where the livestock is kept.

c. Manure Management. Animal waste storage facility plan is required and is on file with the Village. The plan shall include:

1. The Village may prepare a guide entitled Recommended Manure Management Practices.

2. Buffers Required. No accumulation or application of manure or any other material which causes any noxious or offensive odor or dust shall be closer than fifty (50) feet to a lot line in a residential zoning district. A twenty-five (25) foot wide area of vegetative cover shall be maintained between any unvegetated exercise area, manure pile, or application area and any surface water which is all or in-part off-site, or any well, in order to minimize runoff, prevent erosion, and promote quick nitrogen absorption, and prevent water contamination.

(1) The number and kinds of animals for which manure storage is provided.

(2) A sketch of the facility and its location in relation to buildings within two hundred fifty (250) feet and homes within five hundred (500) feet of the proposed facility. The sketch will be drawn to scale, with a scale no smaller than one (1) inch equals one hundred (100) feet. Include the scale of the drawing and north arrow.

(3) The structural details, including dimensions, cross sections, and concrete thickness.

(4) The location of any wells within three hundred (300) feet of the facility.

(5) Provisions for adequate drainage and control of runoff to prevent pollution of surface water and ground water. If a navigable body of water lies within five hundred (500) feet of the facility, the location and distance to the body of water shall be shown.

(6) A time schedule for construction of the proposed facility.

(7) A description of the method of transferring animal waste into and from the facility.

(8) No accumulation or application of manure or any other material which causes any noxious or offensive odor or dust shall be closer than fifty (50) feet to a lot line in a residential zoning district. A twenty-five (25) foot wide area of vegetative cover shall be installed to minimize runoff, prevent erosion, promote quick nitrogen absorption, and prevent water contamination.

D-g. Nuisance. Any violation of this Section shall be deemed a public nuisance and the violator may be proceeded against in accordance with Title 11, Chapter 6 of the Village Code of Ordinances.

Section 7-1-13 PROHIBITED AND PROTECTED ANIMALS, FOWL, REPTILES AND INSECTS.

(e) Keeping of Livestock Restricted.

(1) Definition. "Livestock" means cattle, equine as that term is defined in Sec. 895.481 (1)(a), swine, sheep, goats, alpacas, llamas, and other such animals susceptible to use for commercial purposes, including domesticated fowl, such as chickens (includes hens and roosters)(as defined in, and except as may be permitted under Sec. 7-1-26), turkeys, geese, ducks, guineas, or other poultry. For the purposes of determining the number of units of livestock allowed, the following table applies:

Animal Units (AUs)	
Animal Type	Number = 1 AU
Cattle, Bison	1
Horse, mule, donkey, hinny, pony (Greater than 34 inches at withers)	1
Miniature Horse, mule, donkey, hinny, pony (34 inches or less measured from last hairs at the base of the mane to the ground)	2
Swine, Ostrich, Llamas	2
Goats, Sheep, Alpacas	10
Poultry	30
Rabbits	30

(2) Keeping of Livestock.

a. Prohibition. It shall be unlawful for any person to keep any livestock within the Village unless otherwise permitted by this Chapter, and specifically by Sec. 7-1-26, or by the Zoning Code which has been adopted by the Village pursuant to Title 16 of this Code of Ordinances.

b. Calculating Livestock Quantity per Parcel. The first two acres of a parcel shall contain no more than one animal unit of livestock. Thereafter, each additional animal unit shall require one additional acre of land unless otherwise specified in the zoning code.

c. Agricultural Use. Livestock may be kept on any parcel zoned for agricultural use provided the area of the parcel is at least two acres.

d. Residential Use. Livestock may be kept on any parcel zoned for residential use provided the area of the parcel is at least five acres and the livestock is housed more than 150 feet from every residence not on that parcel. The keeping of Chickens on residentially zoned parcels shall only be allowed as permitted in accordance with Sec. 7-1-26 of this Code.

e. Pre-existing Uses. Livestock legally kept on a parcel prior to the adoption of this ordinance shall be allowed to remain on the parcel notwithstanding a violation of this section provided that the livestock is not determined by the Village Board to be a nuisance following a hearing on the matter if one is requested in writing by a neighbor residing on a parcel within 300 feet of the parcel where the livestock is kept.

Clean Version of Section 7-1-13(e)

f. Manure Management. Animal waste storage facility plan required. The plan shall include:

- (1) The number and kinds of animals for which manure storage is provided.
- (2) A sketch of the facility and its location in relation to buildings within two hundred fifty (250) feet and homes within five hundred (500) feet of the proposed facility. The sketch will be drawn to scale, with a scale no smaller than one (1) inch equals one hundred (100) feet. Include the scale of the drawing and north arrow.
- (3) The structural details, including dimensions, cross sections, and concrete thickness.
- (4) The location of any wells within three hundred (300) feet of the facility.
- (5) Provisions for adequate drainage and control of runoff to prevent pollution of surface water and ground water. If a navigable body of water lies within five hundred (500) feet of the facility, the location and distance to the body of water shall be shown.
- (6) A time schedule for construction of the proposed facility.
- (7) A description of the method of transferring animal waste into and from the facility.
- (8) No accumulation or application of manure or any other material which causes any noxious or offensive odor or dust shall be closer than fifty (50) feet to a lot line in a residential zoning district. A twenty-five (25) foot wide area of vegetative cover shall be installed to minimize runoff, prevent erosion, promote quick nitrogen absorption, and prevent water contamination.

g. Nuisance. Any violation of this Section shall be deemed a public nuisance and the violator may be proceeded against in accordance with Title 11, Chapter 6 of the Village Code of Ordinances. maintained between any unvegetated exercise area, manure pile, or application area and any surface water which is all or in-part off-site,

Sec. 20-1226. Uses permitted conditionally.

The following industrial and agricultural uses shall be conditional uses and may be permitted as specified:

- (1) Animal hospitals in the A-1 and must meet W.S.A. § 91.01(1), A-2 and A-4 agricultural districts, the B-5 business district and the M-2 and M-3 industrial districts; provided the lot area is not less than three (3) acres, and all principal structures and uses are not less than one hundred (100) feet from any residential district.
- (2) Commercial raising, propagation, boarding or butchering of animals, such as dogs, mink, rabbits, foxes, goats and pigs; the commercial production of eggs; and the hatching, raising, fattening or butchering of fowl in the A-1 and A-2 agricultural districts. Pea vineries, creameries and condenseries in all agricultural districts and the M-3 industrial district.
- (3) Manufacture and processing of abrasives, acetylene, acid, alkalies, ammonia, asbestos, asphalt, batteries, bedding, bleach, bone, cabbage, candle, carpeting, celluloid, cement, cereals, charcoal, chemicals, chlorine, coal tar, coffee, coke, cordage, creosote, dextrine, disinfectant, dye, excelsior, felt, fish, fuel, furs, gelatin, glucose, gypsum, hair products, ice, ink, insecticide, lampblack, lime, lime products, linoleum, matches, meat, oil cloth, paint, paper, peas, perfume, pickle, plaster of paris, plastics, poison, polish, potash, pulp, pyroxylin, radium, rope, rubber, sausage, shoddy, shoe and lampblackening, size, starch, stove polish, textiles, and varnish, manufacturing, processing, and storage of building materials, explosives, dry ice, fat, fertilizer, flammables, gasoline, glue, grains, grease, lard, plastics, radioactive materials, shellac, soap, turpentine, vinegar and yeast; manufacture and bottling of alcoholic beverages, bag cleaning, bleacheries, canneries, cold storage warehouses; electric and steam generating plants; electroplating; enameling; forges, foundries; garbage; incinerators; lacquering; lithographing; offal, refuse, or animal reduction; oil, coal, and bone distillations; refineries, road test facilities; slaughterhouses; smelting; stockyards; tanneries; and weaving, all in the M-3 heavy industrial district and shall be at least six hundred (600) feet from residential and public and semipublic districts.
- (4) Outside storage and manufacturing areas in the M-3 heavy industrial district. Wrecking, junk, demolition and scrap yards shall be surrounded by a solid fence or evergreen planting screen completely preventing a view from any other property or public right-of-way and shall be at least six hundred (600) feet from residential, public and semipublic districts.
- (5) Commercial service facilities, such as restaurants and fueling stations, in the M-1, M-2 and M-3 industrial districts, provided all such services are physically and sales-wise oriented toward industrial district users and employees and other users are only incidental customers.
- (6) The parking of school buses, semi-tractors and trailers or other vehicles of a commercial nature in the A-2 agricultural district by the occupant, provided all such uses are at least six hundred (600) feet from any residential district and one hundred (100) feet from any other residence and landscape screening to be determined on a site-specific basis is in place. If the vehicles are parked inside a structure, the above distance may be reduced. Only one (1) vehicle unit (a school bus, a semi-tractor or trailer, etc.) may be allowed on a parcel of land with the exception that two (2) vehicle units may be allowed if both are parked within a fully enclosed structure.
- (7) Sanitary landfills and their related accessory uses when operated in accordance with the provisions of the applicable chapters of the Wisconsin Administrative Code in the M-3 industrial district.
- (8) Airports, airstrips and landing fields for the use of the property owner for personal and farm related activities in the A-1 and A-3 agricultural districts and must meet W.S.A., § 91.01(1).
- (9) Airports, airstrips and landing fields in the A-2 district.

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- (10) Storage and maintenance of construction equipment and vehicles, including landscaping vehicles and equipment, in the A-2 district. The storage area for all such equipment and vehicles shall be at least six hundred (600) feet from residential, public and semi-public districts. If the vehicles and equipment are parked/stored inside a structure, the above distance may be reduced. Some landscaping business type activities in the A-2 district may be regulated as a home occupation if the applicant secures a home occupation permit and abides by section 20-1015, including that there is no outdoor display or storage of materials, goods, or supplies and that no stock in trade shall be displayed or sold upon the premises.
- (11) Recycling centers and recycling plants in the M-3 district.
- (12) This conditional use category is created in recognition of the potential which exist in livestock facility operations for uncontrolled runoff and animal waste pollution of surface and groundwater and potential for such uses to become a nuisance. Livestock facilities as defined herein, including livestock and poultry of all types, may be permitted as conditional uses in all agricultural districts subject to the following:
- a. No livestock facility operation shall be permitted on less than thirty-five (35) acres of agriculturally-zoned land (including A-2) nor closer than one thousand (1,000) feet from any land presently zoned residential (does not include A-2 zoned parcels).
 - b. No accessory residence shall be permitted closer than one hundred (100) feet to the livestock facility.
 - c. Except as provided for waste storage structures, no part of the livestock facility operation shall be closer than one hundred (100) feet from the right-of-way line of any public road if the livestock facility will have fewer than one thousand (1,000) animal units, and one hundred fifty (150) feet if the livestock facility will have one thousand (1,000) or more animal units, nor closer than one hundred (100) feet if the livestock facility will have fewer than one thousand (1,000) animal units, and two hundred (200) feet if the livestock facility will have one thousand (1,000) or more animal units from any other lot lines of the site on which the production unit is situated. In addition the requirements below, proximity to lakes, ponds, rivers, streams, wells, bedrock and groundwater for feedlot and manure storage facility must meet NRCS standards.
 - d. A new waste storage structure may not be located within three hundred fifty (350) feet of the nearest point of any public road right-of-way.

A single new waste storage structure may be constructed closer to the property line or public road if a new structure is:
 - Located on the same tax parcel as a waste storage structure in existence before May 1, 2006;
 - No larger than the existing structure;
 - No further than fifty (50) feet from the existing structure; or
 - No closer to the road or property line than the existing structure.
This setback requirement does not apply to existing waste storage structures, except that an existing structure within three hundred fifty (350) feet of a property line or road may not expand toward that property line or road.
 - e. A livestock facility shall comply with setback and related requirements in any applicable shoreland or wetland zoning ordinances enacted within the scope of authority granted under W.S.A., § 59.692, 61.351 or 62.231, Stats., and a livestock facility shall comply with setback and related requirements in any applicable floodplain zoning ordinance that is enacted within the scope of statutory authority granted under W.S.A., § 87.30, Stats.

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- f. All wells located in a livestock facility shall comply with chs. NR811 and 812. New or substantially altered livestock structures shall be separated from existing wells by the distances required in chs. NR 811 and 812, regardless of whether the livestock facility operator owns the land on which the wells are located. A livestock structure in existence on May 1, 2006, may be altered as long as the alteration does not reduce the distance between the livestock structure and an existing well.
 - g. A conservation plan addressing the proposed methods of manure handling, storage, disposal and waste runoff controls shall be prepared and made a part of the plan of operation and shall be approved by the Racine County Land Conservation Division.
 - h. Animal waste shall be applied in accordance to the NRCS 590 Nutrient Management Standard and reviewed by the Racine County Land Conservation Division staff.
 - i. The site plan must show surface water drainage patterns and the methods to be employed to control, contain or divert clean water runoff from the manure storage facilities.
 - j. An operations plan detailing the method of operation and the equipment necessary to accomplish a safe and sanitary disposal of animal waste. An agreement must be filed with the county by the owner of the land that any manure discharged in a drainage way or a public way, either intentionally or accidentally, will be cleaned up by the owner and that the county may clean up such condition and the cost thereof assessed back to the property owner.
 - k. A statement of the maximum number of animals to be contained in the proposed livestock facility. This plan shall include numbers, types, and weights.
 - l. No single-family residence shall be constructed within one thousand (1,000) feet of a livestock structure or building. This provision shall not apply to dwelling units that are accessory to a livestock facility.
- (13) Off-season storage facilities for boats and other recreational vehicles, such as campers, travel trailers, snowmobiles, off-road vehicles, and motor homes, in the B-3, B-5, M-2, M-3, and A-2 districts.
- In the A-2 district, such storage may only occur in a barn or other accessory building that was constructed prior to January 1, 2000.
- In the B-3, B-5, and M-2 districts, such storage may only occur as an accessory use to an approved self-service storage facility.
- (14) Motorized off-road vehicles and trails as a conditional use in the B-3, B-5 and P-2 districts. Off-road trails intended for any and all self-propelled two-, three-, or four-wheeled recreational vehicles and any that have ground contact and are equipped with a saddle for the use of the operator, including, but not limited to, motorized scooters, mini-bikes, motorcycles, ATVs, UTVs, snowmobiles and off-road vehicles. This regulation does not apply to same type of vehicles used strictly for agricultural, governmental, emergency or utility purposes, which would be allowed in all zoning districts without permits.
- (15) Standards for home-based agricultural related business (HBARB):
- a. Allowed as a conditional use approval in all agricultural districts.
 - b. The operator shall reside in a residence on the property.
 - c. The operator shall grow the primary portion of materials or products sold onsite.
 - d. The HBARB must be located on a parcel not less than five (5) acres in area.
 - e. Maximum two (2) persons other than members of the immediate family may be employed in the HBARB at any given time.

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- f. Any signage associated with the HBARB must comply with chapter 20 zoning of the Racine County Code of Ordinances and will require zoning permit approval.
 - g. Any structure that is utilized at the subject site that is associated with any aspect of the HBARB must meet the principle structure setbacks for the zoning district.
 - h. Any accessory building used in association with the HBARB shall be clearly incidental to the principle use.
 - i. Retail sales of ancillary non-agricultural items is subject to detailed plan approval by the committee and local municipality.
 - j. Proper sanitation approval must be obtained in full compliance with state sanitation codes.
 - k. The HBARB product must consist of farm commodities that are entirely, or the majority of which are, planted or produced on the farm premises, or are agriculturally related.
 - l. Food shall not be served to patrons other than small sample of product produced by the HBARB.
 - m. Limited outside customer activity may occur on the premises in accordance with town/county approval.
- (16) Non-farm residences require a conditional use permit, unless the residence legally existed prior to January 1, 2014, and thus qualifies as a prior nonconforming use.
- a. Creation of a non-farm residence or conversion of a farm residence to a non-farm residence through a change in occupancy, subject to the following requirements:
 - 1. The ratio of all non-farm residential acreage to farm acreage on the base farm tract on which the residence is or will be located will not be greater than one (1) to twenty (20) after the residence is constructed or converted to a non-farm residence.
 - 2. There will not be more than four (4) dwelling units in non-farm residences, nor more than five (5) dwelling units in residences of any kind, on the base farm tract after the residence is constructed or converted to a non-farm residence.
 - 3. The location and size of the proposed non-farm residential parcel (residence and lot) will not do any of the following:
 - i. Convert prime farmland from agricultural use or convert land previously used as cropland, other than a woodlot, from agricultural use if on the farm there is a reasonable alternative location or size for a non-farm residential parcel or a non-farm residence.
 - ii. Significantly impair or limit the current or future agricultural use of other protected farmland.
 - 4. A deed restriction shall be recorded at the Racine County Register of Deeds office prior to release of any permits for construction on new parcels created for farm residential uses.
 - b. Creation of a non-farm residential cluster that covers more than one (1) non-farm residence if all of the following apply:
 - 1. The parcels on which the non-farm residences would be located are contiguous.
 - 2. Each non-farm residence constructed in the non-farm residential cluster must satisfy the requirements of section 20-1226(16)(a).
- (17) A-1 farmland preservation zoning district rezonings.

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- a. Except as provided in section 20-1226(17)(b), the Racine County Board and the Racine County Economic Development and Land Use Planning Committee may not rezone land out of the farmland preservation zoning district unless the Racine County Economic and Development and Land Use Planning Committee finds all of the following in writing, after public hearing, as part of the official record of rezoning:
 - 1. The rezoned land is better suited for a use not allowed in the farmland preservation zoning district.
 - 2. The rezoning is consistent with any applicable comprehensive plan.
 - 3. The rezoning is substantially consistent with the Racine County Farmland Preservation Plan, which is in effect at the time of the rezoning.
 - 4. The rezoning will not substantially impair or limit current or future agricultural use of other protected farmland.
 - b. Section 20-1226(17)(a) does not apply to any of the following:
 - 1. A rezoning that is affirmatively certified by the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) under W.S.A., ch. 91.
 - 2. A rezoning that makes the farmland preservation zoning ordinance map more consistent with the Racine County Farmland Preservation Plan map, certified under W.S.A., Ch. 91, which is in effect at the time of the rezoning.
 - c. By March 1 of each year, the Racine County Public Works and Development Services Department shall provide to the DATCP a report of the number of acres that Racine County has rezoned out of the farmland preservation zoning district under section 20-1226(16)(a) during the previous year and a map that clearly shows the location of those acres.
- (18) Event barns in the A-2 District. For the conversion of existing farm buildings constructed prior to 1965 on a farm, with the presence of a principal residence, for organized meetings and/or reception space as a gathering place for weddings, private parties, and corporate events.
- a. Town board approval shall be required prior to the issuance of a conditional use permit for an event barn.
 - b. The minimum parcel size shall be three (3) acres.
 - c. Event barn must be located no less than two hundred fifty (250) feet from any abutting residence on an adjoining parcel of land.
 - d. Buffer plantings shall be provided along a property line where there is an abutting residence and that are intended to screen views, lights and noise from the operation. A landscaping plan shall be submitted with the application for review and approval.
 - e. Parking areas may be graveled or paved. Overflow parking on grass or hay areas is permissible. Parking on public right-of-way is prohibited.
 - f. Parking areas shall meet the minimum standards of section 20-1088.
 - g. Signage shall comply with County ordinances and obtaining the necessary permit and approval.
 - h. A lighting plan shall be submitted for review and approval. Lighting fixtures shall be shielded in such a manner as to prevent light from shining directly onto abutting rights-of-way and adjacent properties.
 - i. Parcels not served by public sanitary sewer shall be served by a code-complying Private Onsite Wastewater Treatment System (POWTS) and shall meet all state and county ordinances.

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- j. It is the responsibility of the applicant to comply with all state and local regulations regarding public health.
 - k. It is the responsibility of the applicant to comply with all federal, state, and local building codes that apply to public use of a barn.
 - l. Music, dining and dancing permitted only within the barn structure.
 - m. Fires may only be within a contained area made specifically for outdoor fires and must be illustrated on accompanying site plan if applicable. Outdoor fires must also comply with local municipality regulations and local fire department.
 - n. Overnight camping is prohibited.

(Code 1975, § 7.049; Ord. No. 93-99, 9-14-93; Ord. No. 97-155, 11-11-97; Ord. No. 2005-69S, 9-13-05; Ord. No. 2006-91, 10-26-06; Ord. No. 2007-28, 6-26-07; Ord. No. 2008-127, 2-10-09; Ord. No. 2011-61, 11-8-11; Ord. No. 2013-54, 8-13-13; Ord. No. 2014-87, 12-9-14; Ord. No. 2015-90, 12-15-15; Ord. No. 2016-53, 6-14-16; Ord. No. 2017-1, 5-23-17; Ord. No. 2018-26, 6-26-18)

ARTICLE XIII. ANIMAL WASTE MANAGEMENT¹

Sec. 20-1701. Authority.

This article is adopted under authority granted by W.S.A., §§ 59.02, 59.70(1), 92.07, 92.15, and 92.16.
(Ord. No. 2012-24, 6-26-12)

Sec. 20-1702. Title.

This article shall be known as, referred to, and may be cited as the Racine County Animal Waste Management Ordinance and is hereinafter referred to as the article.
(Ord. No. 2012-24, 6-26-12)

Sec. 20-1703. Findings and declaration of policy.

The county board of supervisors finds that unregulated animal waste storage facilities not meeting current technical design and construction standards may cause pollution of the surface water and groundwater of Racine County, and may result in actual or potential harm to the health of county residents, transients, livestock, aquatic life and other animals and plants and decrease the property tax base of Racine County. The county board of supervisors also finds that improper management of animal waste storage facilities and utilization of animal wastes, including but not limited to the land application of animal waste, may cause pollution of the surface water and groundwater of Racine County. The county board of supervisors further finds that the technical standards developed by the United States Department of Agriculture - Natural Resources Conservation Service and adopted by the county economic development and land use planning committee provide effective, practical and environmentally safe methods of storing and managing animal waste.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1704. Purpose.

The purpose of this article is to regulate the location, design, construction, installation, operation, alteration, closure and use of animal waste storage facilities; the transfer systems that convey waste into an animal storage facility; and the abandonment of an idle animal waste storage facility in order to prevent water pollution, and thereby protect the health and safety of residents and transients, prevent the spread of disease, and promote the prosperity and general welfare of the citizens of Racine County. It is also intended to provide for the administration and enforcement of the article and to provide penalties for its violation.

(Ord. No. 2012-24, 6-26-12)

¹Editor's note(s)—Ord. No. 2012-24, adopted June 26, 2012, set out provisions intended for use as Art. XII.

Inasmuch as there were already provisions so designated, these provisions have been included as Art. XIII, §§ 20-1701—20-1721, at the direction of the county.

Sec. 20-1705. Interpretation.

The provisions of this article shall be considered to be minimum requirements and shall be liberally construed in favor of Racine County, and not be deemed a limitation or repeal of any other power granted by the Wisconsin Statutes.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1706. Applicability.

This article shall apply to all unincorporated areas of Racine County and to all animal waste storage facilities constructed therein. Animal waste storage facilities shall comply with all federal, state, and local laws, rules, and regulations.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1707. Definitions.

The following definitions shall apply to this article, and for purposes of this article only, shall supersede any definition in section 20-1 that is inconsistent with the definitions in this section.

Animal waste shall mean excreta from livestock, poultry, and other materials such as bedding, rain, or other water, soil, hair, feathers, and other debris normally included in animal waste handling operations.

Animal waste storage facility shall mean a concrete, steel, or otherwise fabricated structure, excavated pit or earthen impoundment, or any structure used to temporarily store, manure, waste water, and contaminated runoff.

Applicant shall mean any person who applies for a permit under this article.

Closure shall mean removal and proper disposal of accumulated wastes and proper abandonment of an animal waste storage facility.

Direct runoff shall mean a discharge of a significant amount of pollutants to waters of the state.

Land conservation committee shall mean the sub-committee of the economic development and land use planning committee, who by authority of W.S.A., ch. 92, is responsible for county-wide soil and water conservation activities conducted by the land conservation division. The sub-committee shall be referred to hereinafter as "LCC."

Land conservation division shall mean the division of the public works and development services department which is responsible for administering and enforcing this article. The division shall be referred to hereinafter as "LCD."

Livestock shall mean domestic animals such as cattle, horses, sheep, hogs, goats, poultry, fish, etc., or exotic animals such as llamas, ostriches, etc.

Livestock operation shall mean a feedlot or other facility or a pasture where animals are fed, confined, maintained, or stabled.

Milking center waste shall mean all wastewater, cleaning ingredients, and waste milk that is discharged from a milkhouse or milking parlor.

Nutrient management plan shall mean a plan that balances the nutrient needs of a crop with the nutrients available from legume crops, manure, fertilizer or other sources. Management includes the rate, method, and

timing of application of all sources of nutrients to minimize the amount of nutrients entering surface and groundwater. The requirements for a nutrient management plan are as established in ATCP 50.04(3).

Permit shall mean the signed, written statement issued by the LCD under this article.

Permittee shall mean any person to whom a permit is issued under this article.

Substantially altered shall mean a change to a structure or facility that results in relocation or a significant change in size, depth or configuration including; replacement of a liner, an increase in the volumetric capacity by greater than twenty (20) percent, or a change in livestock management from one (1) species of livestock to another, such as cattle to horses.

Technical standards shall mean the Wisconsin version of the United States Department of Agriculture, Natural Resources Conservation Service field office Technical Guide as adopted by the LCC.

Unconfined manure pile shall mean a quantity of manure, at least one hundred seventy-five (175) cubic feet in volume that covers the ground surface to a depth of at least two (2) inches and is not confined within a manure storage facility, livestock housing facility or barnyard runoff control facility.

Water pollution shall mean contaminating or rendering unclean or impure the ground or surface waters of the state, or making the same injurious to public health, harmful for commercial or recreational use, or deleterious to fish, bird, animal, or plant life.

Water quality management areas shall mean the area within one thousand (1,000) feet from the ordinary high water mark of navigable waters that consist of lake, pond or flowage; the area within three hundred (300) feet from the ordinary high water mark of navigable waters that consist of a river or stream; and a site that is susceptible to groundwater contamination, or that has the potential to be a direct conduit for contamination to reach groundwater.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1708. Activities subject to regulation.

- (a) *General requirement.* Any person who locates, installs, moves, reconstructs, extends, enlarges, converts, substantially alters or changes use of an animal waste storage facility or parts thereof; or who employs another to do the same, on land subject to this article, shall be subject to the provisions of this article.
- (b) *Compliance with permit requirements.* A person is in compliance with this article, who receives review and a permit from the land conservation division before commencing activities subject to regulation under this section, and complies with the requirements of the permit. If construction is not completed within twelve (12) months, a permit will be required under this article to continue construction. Repair, enlargement, alteration, abandonment, or temporary abandonment of pre-existing facilities requires a permit that is subject to all terms of this article.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1709. Standards.

- (a) *Standards for animal waste storage facilities.* The standards for design and construction of animal waste storage facilities and or abandonment/closure are those found in technical standards 313 (waste storage facility), 360 (waste facility closure) and 634 (waste transfer) of the technical guide as it existed on the date of the adoption of this article including any and all future standards amended thereto.

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- (b) *Standards for animal waste management and utilization.* The standards for management of animal waste storage facilities and utilization of animal waste are those in technical standard 590 (nutrient management) of the technical guide, including any and all existing and future standards amended thereto.
 - (c) *Septage.* Human waste and associated wastewater shall not be discharged into animal waste storage facilities unless permitted by applicable federal, state, or local regulations for the disposal of human waste and wastewater.
 - (d) *Standards for implementing prohibitions.* Prior to issuance of a permit under this article, compliance with the prohibitions, as identified in W.S.A., § 281.16(3), and any amendments thereto, shall be addressed. The prohibitions are:
 - (1) A livestock operation may have no overflow of an animal waste storage structure.
 - (2) A livestock operation may have no unconfined manure pile in a water quality management area.
 - (3) A livestock operation may have no direct runoff from a feedlot or stored manure into the waters of the state.
 - (4) A livestock operation may not allow unlimited access by livestock to waters of the state in a location where high concentrations of animals prevent the maintenance of adequate sod cover.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1710. Application for and issuance of permits.

- (a) *Permit required.* Except as hereinafter provided, no person may undertake activity subject to this article without first obtaining a new animal waste storage facility permit, a substantially altered facility permit, or a closure of existing facility permit from the county LCD.
- (b) *Exception to permit requirement.* Emergency minor repairs such as fixing a broken pipe or equipment, leaking dikes, or the removal of stoppages may be performed without a permit. If such repairs alter the original design and construction of the facility, work shall be reported to the LCD as soon as possible for a determination on whether a permit will be required for any additional alteration or repair to the facility.
- (c) *Permit fees.* The fee for a permit under this article shall be determined annually by the LCC during the annual LCD budget development cycle. The fee shall be nonrefundable and payable in advance to the LCD. Temporary abandonment of an animal waste storage facility is exempt from the fee schedule.
- (d) *Animal waste storage facility and nutrient management plan required.* Each application for a permit under this article shall include an animal waste storage facility plan. The plan shall include:
 - (1) The number and kinds of animals for which storage is provided.
 - (2) A sketch of the facility and its location in relation to buildings within two hundred fifty (250) feet and homes within five hundred (500) feet of the proposed facility. The sketch will be drawn to scale, with a scale no smaller than one (1) inch equals one hundred (100) feet. Include the scale of the drawing and north arrow.
 - (3) The structural details, including dimensions, cross sections, and concrete thickness.
 - (4) The location of any wells within three hundred (300) feet of the facility.
 - (5) The soil test pit locations and soil descriptions to a depth of at least three (3) feet below the planned bottom of the facility.
 - (6) The elevation of groundwater or bedrock if encountered in the soil profile and the date of any such determinations.

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- (7) Provisions for adequate drainage and control of runoff to prevent pollution of surface water and ground water. If a navigable body of water lies within five hundred (500) feet of the facility, the location and distance to the body of water shall be shown.
 - (8) A time of schedule for construction of the proposed facility.
 - (9) A description of the method in transferring animal waste into and from the facility.
 - (10) A nutrient management plan which meets the 590 technical standard and the agricultural performance standards as listed under section 20-1709.
 - (11) An unconfined manure pile may not be located within twenty (20) feet of a neighboring property line. A greater distance may be required depending on slope, soil type and runoff potential as determined by the LCD.
- (e) *Substantially altered facility permit.* Each application for a permit under this article shall include the facility alteration plan as listed in section 20-1710.
 - (f) *Closure of existing facility permit.* Each application for a permit under this article shall include the facility closure plan as listed in section 20-1710.
 - (g) *Review of application.* The LCD shall receive and review all permit applications. The LCD shall determine if the proposed facility meets the required standards set forth in section 20-1709. Within thirty (30) days after receiving the completed application and fee, the LCD shall inform the applicant in writing whether the permit application is approved or disapproved. If additional information is required, the LCD shall so notify the permit applicant. The LCD has thirty (30) days from the receipt of the additional information to approve or disapprove the application. If the LCD fails to approve or disapprove the permit application in writing with thirty (30) days of receipt of the permit application or additional information, as appropriate, the application shall be deemed approved and the applicant may proceed as if the permit had been issued.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1711. Permit conditions.

All permits issued under this article shall be subject to the following conditions and requirements:

- (1) Animal waste storage facility design, construction, modification, closure and management shall be carried out in accordance with the construction plan or closure plan and applicable standards specified in this article.
- (2) Any person applying for an animal waste storage facility permit or substantially altered facility permit under this article must develop a nutrient management plan as part of the application process to demonstrate their ability to utilize animal waste in an environmentally safe manner. This condition may require the applicant to hire a crop consultant to prepare the nutrient management plan.
- (3) The permittee must certify in writing that all other local, city, county, state, or federally required permits have been or will be obtained from the appropriate authorities. The LCD may require proof of any permit known to be needed prior to issuing an animal waste storage facility permit, substantially altered facility permit, or closure of existing facility permit.
- (4) Any change to an approved permit shall be approved in writing by the LCD. Written approval shall occur only after a registered professional engineer, DATCP engineer, or local agency staff having the appropriate engineering certification, has reviewed and approved the proposed modifications.
- (5) The permittee shall give no less than two (2) days notice before starting any construction activity authorized by the permit.

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- (6) Activities authorized by this permit shall be completed within two (2) years from the date of issuance after which such permit shall expire.
 - (7) The permittee shall certify in writing, by a registered professional engineer, DATCP engineer, or local agency staff having the appropriate engineering certification that the animal waste storage was installed or closed as planned. A copy of the certification sheet shall be given to the LCD within one (1) month of completion of installation, alteration or closure. Any approved changes made to the design shall be specified in the certification. LCD personnel may conduct site inspections during and following construction to determine that the facility was installed, altered or closed as planned and designed.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1712. Permit revocation.

The LCD may revoke the permit issued under this article if the holder of the permit has misrepresented any material fact in the permit application or plans, or if the holder of the permit violates any conditions of the permit.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1713. Delegation of authority.

The county board hereby designates the county land conservation division to administer and enforce this article.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1714. Administrative duties.

In the administration and enforcement of this article, the LCD shall:

- (1) Keep an accurate record of all permit applications, animal waste facility plans, nutrient management plans, alteration plans, closure plans, extensions issued and other official actions.
- (2) Review permit applications and issue permits in accordance with sections 20-1710—20-1712.
- (3) Periodically inspect animal waste storage facility construction to insure the facility is being constructed, altered or closed according to plan specifications.
- (4) Investigate complaints relating to compliance with this article.
- (5) Perform other duties as specified in this article.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1715. Inspection authority.

The LCD is authorized to enter upon any lands affected by this article to inspect the land prior to or after permit issuance to determine compliance with this article. If permission cannot be received from the applicant or permittee, entry shall be according to W.S.A., § 66.0119. Refusal to grant permission to enter lands affected by this article for purposes of inspection may be grounds for denial of a permit or revocation thereof.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1716. Enforcement authority.

The LCD is authorized to post an order stopping work upon land that has had a permit revoked or on land currently undergoing activity in violation of this article. Notice is given by both posting upon the land where the violation occurs one or more copies of a poster stating the violation, and by mailing a copy of the order by certified mail to the person whose activity is in violation of this article. The order shall specify that the activity must cease or be brought into compliance.

Any permit revocation or order stopping work shall remain in effect until retracted by the LCD, or by a court of general jurisdiction. The LCD is authorized to refer any violation of this article or of an order stopping work issued pursuant to this article, to the county corporation counsel for commencement of further legal proceedings.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1717. Violations.

- (a) *Penalties.* Any person who violates, neglects, or refuses to comply with or resists the enforcement of any of the provisions of this article shall be subject to a forfeiture of not less than two hundred dollars (\$200.00) and costs of prosecution for each violation. An unlawful violation includes failure to comply with any standard of this article or with any condition or qualification attached to the permit. Each day that a violation exists shall be a separate offense.
- (b) *Enforcement by injunction.* As a substitute for or an addition to forfeiture actions, the county may seek enforcement of any part of this article by court actions seeking injunctions or restraining orders.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1718. Appeals.

Under the authority of W.S.A., ch. 68, the county land conservation committee, created under W.S.A., § 59.878, and acting as an appeal authority under W.S.A., § 68.09(2), is authorized to hear and decide appeals where it is alleged that there is error in any order, requirement, decision, or determination by the LCD in administering this article.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1719. Procedure.

The rules, procedures, duties, and powers of the LCC and provisions of W.S.A., ch. 68, shall apply to this article.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1720. Who may appeal.

Appeals may be taken by any person having a substantial interest which is adversely affected by the order, requirement, decision, or determination made by the LCD.

(Ord. No. 2012-24, 6-26-12)

Sec. 20-1721. Variances.

The LCC may upon appeal authorize a variance from the requirements of this article. The granting of a variance shall:

- (1) Be consistent with the spirit and purpose of this chapter as stated in section 20-1704.
- (2) Not permit an activity or practice that may fail structurally or otherwise and cause significant water pollution or other offsite impacts.
- (3) Be due to unique circumstances and not to the general conditions of the area.
- (4) Not be granted unless it is shown that the variance will not be contrary to the public interest and will not be damaging to the rights of other persons.
- (5) Not be granted solely on the basis of economic gain or loss.
- (6) Not be granted solely on the fact that certain conditions existed prior to the effective date of the ordinance from which this article is derived.

The LCC may consider decisions made by the LCD, in accordance with local ordinance provisions, when making its determination whether to accept or deny the variance.

(Ord. No. 2012-24, 6-26-12)