



**AGENDA**  
CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION – REGULAR MEETING  
March 9, 2026 6:30 PM

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1. CALL MEETING TO ORDER
2. ROLL CALL
3. PUBLIC REMARKS
4. APPROVAL OF AGENDA
5. APPROVAL OF MINUTES
  - A. February 23, 2026
6. COMMUNICATIONS
  - A. City of Williamston re: Notice of Distribution
7. PUBLIC HEARINGS
  - A. REZ #26006 – Tekchandani
8. UNFINISHED BUSINESS
  - A. REZ #26004 – Capstone
9. OTHER BUSINESS
  - A. None
10. REPORTS AND ANNOUNCEMENTS
  - A. Township Board update
  - B. Liaison reports
11. PROJECT UPDATES
12. PUBLIC REMARKS
13. COMMISSIONER COMMENTS
14. ADJOURNMENT

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Individuals with disabilities requiring auxiliary aids or services should contact: Director of Community Planning and Development  
Timothy R. Schmitt, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4506 - Ten Day Notice is Required.  
Meeting Location: 5151 Marsh Road, Okemos, MI 48864



**TENTATIVE PLANNING COMMISSION AGENDA**  
**March 23, 2026**

1. PUBLIC HEARINGS
  - A. ZA #26001 – Parking Ordinance Update
  - B. ZA #26002 – Chicken Regulation Update
  
2. UNFINISHED BUSINESS
  - A. REZ #26006 – Tekchandani
  
3. OTHER BUSINESS
  - A. Mass Timber Construction Discussion

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Individuals with disabilities requiring auxiliary aids or services should contact: Director of Community Planning and Development  
Timothy R. Schmitt, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4506 - Ten Day Notice is Required.  
Meeting Location: 5151 Marsh Road, Okemos, MI 48864

Providing a safe and welcoming, sustainable, prime community.



CHARTER TOWNSHIP OF MERIDIAN  
REGULAR MEETING PLANNING COMMISSION  
5000 Okemos Road, Okemos MI 48864-1198  
517.853.4000, Township Townhall Room  
Monday, February 23, 2026, 6:30 pm

PRESENT: Chair Romback, Vice-Chair McCurtis, Commissioners Snyder, Brooks, McConnell, and Nahum; Commissioner Shrewsbury arrived late

ABSENT: None

STAFF: Director Timothy Schmitt and Principal Planner Shorkey

1. CALL MEETING TO ORDER

Chair Romback called the February 23, 2026, regular meeting for the Meridian Township Planning Commission to order at 6:30 pm.

2. ROLL CALL

Chair Romback called the roll of the Board. All Board members were present except for Commissioner Shrewsbury.

3. PUBLIC REMARKS

None

4. APPROVAL OF AGENDA

Chair Romback asked for approval of the agenda.

**Commissioner Brooks moved to approve the February 9, 2026, Regular Planning Commission meeting agenda. Seconded by Vice-Chair McCurtis. Motion passed unanimously.**

5. APPROVAL OF MINUTES

**Commissioner Snyder moved to approve Minutes of the February 9, 2026 meeting as written. Seconded by Commissioner McConnell. Motion passed unanimously.**

Commissioner Shrewsbury arrived at 6:38.

6. COMMUNICATIONS

No additional communications.

7. PUBLIC HEARINGS

A. REZ #26004 – Capstone

Director Schmitt opened the discussion and summarized the application and the conditions of approval.

Chair Romback asked about the approval process for the application and asked about the jurisdiction of the property. Director Schmitt confirmed that the property is in Meridian Township. Chair Romback asked if the condition of the lack of connection to the neighborhood would be included in the PUD if the rezoning is approved. Vice-Chair McCurtis asked what the neighborhood is named and asked if there was enough access for the property without the connection. Vice-Chair McCurtis asked if there was enough access for fire safety.

Commissioner Brooks asked how units are defined versus beds and how the 270 units are converted and if the number of beds were used for the traffic study. Commissioner Brooks asked if any policies for the existing Hannah developments transfer to this property. Director Schmitt said no, and it requires a rezoning and a new PUD. Commissioner Brooks asked how the conditions are attached to the rezoning.

Commissioner McConnell discussed the application and asked what would happen if the rezoning was approved but the PUD did not go forward. Director Schmitt said that the state rules had a reverter clause.

Mark Clause, representing the Eyde Company, discussed the public input process leading up to the application. Mr. Clause brought up the future land use map and pointed out that the development is being directed away from the neighborhood and toward Hagadorn Road.

John Atkin, Capstone, showed a presentation about the company and the proposed plan for the site. Commissioner McConnell asked about bus service availability. Mr. Atkin said that they were planning on providing bus service. Vice-Chair McCurtis asked about potential rental rates. Mr. Atkins described the potential rental rates. Commissioner Shrewsbury asked who the cottages were expected to be marketed to. Mr. Atkins said that the cottages were rented on a per bed basis and usually rented to students. Commissioner Shrewsbury asked about the furnishings of the cottages.

Chair Romback asked about the pre-application meetings and asked if RD is compatible with the zoning of the existing development. Chair Romback asked about the meaning of 'rent growth'. Mr. Atkins said that it is the yearly rate of increase in rents. Commissioner McConnell asked if the applicants were planning any tree plantings in the natural area. Mr. Atkins said that they planned on leaving it natural but were open to suggestions from the neighbors.

Commissioner Brooks asked about bed and bath ratios in the units and asked if the traffic calculations were based on units or beds. Mr. Atkins said that he would have to get that information. Commissioner Brooks asked the intention of telling about the rent growth information. Commissioner Brooks asked about the timeframe of the potential PUD application and asked what would happen if the property sold between the rezoning and the PUD. Director Schmitt said that the state rules had a reverter clause. Mr. Clause said that the applicant could apply for the PUD within the next two to six months and ensured the Planning Commission that the PUD would happen. Commissioner McConnell discussed the future process of the PUD. Chair Romback asked about rental rates and asked if they applicant had ever seen them come down. Commissioner Snyder discussed students' desire to leave dorms and live off campus.

Chair Romback called a recess at 7:45.

Chair Romback called the meeting to order at 7:51 and opened the public hearing.

Ms. Linda Stober Humbert spoke against the application.  
Ms. Fran Jozefowicz spoke about the application.  
Dr. Ben Jozefowicz asked questions about the application.  
Ms. Carol Chapman spoke about the application.  
Mr. David Skole spoke about the application.  
Mr. Joe Pavona, speaking on behalf of the Indian Lakes Homeowner Association, spoke in favor of the application.  
Ms. Andrea Shoka spoke against the application.

Chair Romback closed the public hearing at 8:15.

Mr. Atkins addressed some of the questions from the public comments. Mr. McConnell asked Director Schmitt to discuss the approval process and describe when the Drain Commission's office gets involved. Vice-Chair McCurtis discussed the flooding concerns brought up by the public. Commissioner Nahum asked about the site plan approval process. Commissioner Snyder asked if another traffic study was required for the PUD and how bussing might affect the data. Director Schmitt said that he would follow up. Commissioner Snyder asked that the study be based on beds instead of units.

Commissioner McConnell asked if the ITE Manual has a category for student housing. Director Schmitt said that he would follow up. Commissioner Brooks asked about the possibility of connecting the sidewalk to the Red Cedar Trail. Commissioner Brooks asked about the ownership of the Lodges and if the applicant still owned them. Vice-Chair McCurtis asked if one had to be a student to live in one of the units. Director Schmitt said no and that fair housing law prohibited such a restriction.

8. UNFINISHED BUSINESS

A. None

9. OTHER BUSINESS

A. None

10. REPORTS AND ANNOUNCEMENTS

a. Township Board Update

Director Schmitt updated the Planning Commission on recent Board activities.

b. Liaison Reports

Commissioner Nahum discussed the Zoning Board of Appeals and said that the ZBA suggested reviewing the sign ordinance.

11. PROJECT UPDATES

Principal Planner Shorkey pointed out the report in the packet.

12. PUBLIC REMARKS

None

13. COMMISSIONER COMMENTS

Commissioner Brooks discussed his idea of making a new library as an anchor for an Okemos Village project.

14. ADJOURNMENT

Chair Romback called for a motion to adjourn the meeting.

**Commissioner Brooks moved to adjourn the February 23, 2026 regular meeting of the Planning Commission. Seconded by Vice-Chair McCurtis. Motion passed unanimously at 8:37.**

Rec'd  
2.24.26



February 20, 2026

**Subject: City of Williamston, Ingham County, State of Michigan  
Notice of Distribution and Public Comment Period and the Public Hearing**

To Whom It May Concern,

In accordance with the requirements of Michigan's PA 33 of 2008 and related amendments, this is to notify you that the City of Williamston, Ingham County, Michigan, has begun the 63-day distribution and public comment period for its Master Plan update. McKenna is assisting with this planning process. The public comment and distribution period ends on April 24, 2026.

The draft Master Plan is available for viewing at either the Williamston City Hall Offices (address below) or on the City's website at: <https://williamston-mi.us/>.

If you have any thoughts, concerns, or issues you feel should be addressed in this effort, please send a letter stating your opinions, position, or questions regarding the Master Plan to City of Williamston (Attn. John Hanifan, City Manager), 161 East Grand River Ave., Williamston, MI 48895 by April 24, 2026.

Following the 63-day public comment period, the Planning Commission will hold a public hearing on May 4, 2026. The Commission will also consider adoption of the Master Plan at this meeting.

The City of Williamston thanks you for your cooperation and assistance.

Sincerely,

Laura Haw, AICP, NCI  
Vice President



**To:** Planning Commission

**From:** Brian Shorkey, Principal Planner

**Date:** March 9, 2026

**Re:** Rezoning #26006 – (Tekchandani), rezone one parcel, approximately 0.5 acre, located at 2936 Jolly Road, from C-1 (Commercial) to RB (Single-Family Residential).

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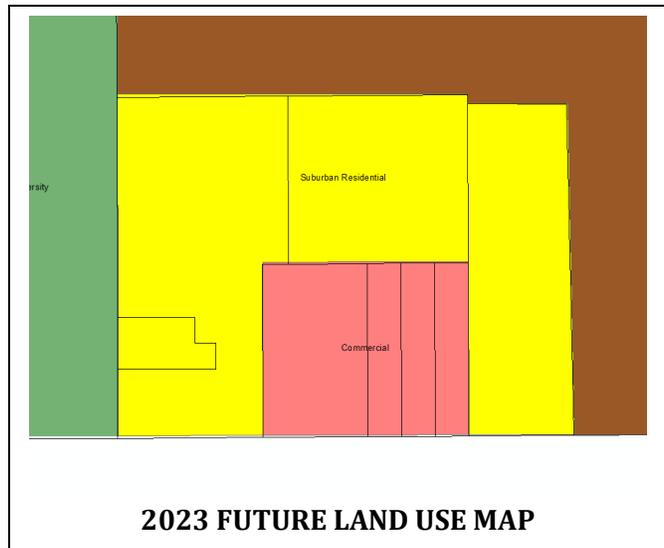
Tekchandani Enterprises (Applicant) has requested the rezoning of one property, approximately 0.5 acre in size (Subject Property) located at 2936 Jolly Road from C-1 (Commercial) to RB (Single-Family Residential). The Subject Property contains a single-family home.

**Future Land Use**

The Subject Property is shown on the Future Land Use map as Commercial. This corresponds to the existing C-1 zoning. The properties to the west are similarly designated as Commercial while the properties to the north and east are designated as Suburban Residential. This correlates with the requested RB zoning. The property to the south is in Alaiedon Township.

**Zoning**

As noted, the Subject Property is zoned C-1 – Commercial. The properties to the west, which consist of two more single-family homes and the Big Ten Party Store, are similarly zoned C-1. The properties to the north and east are zoned RR – Rural Residential. The property to the south is in Alaiedon Township.

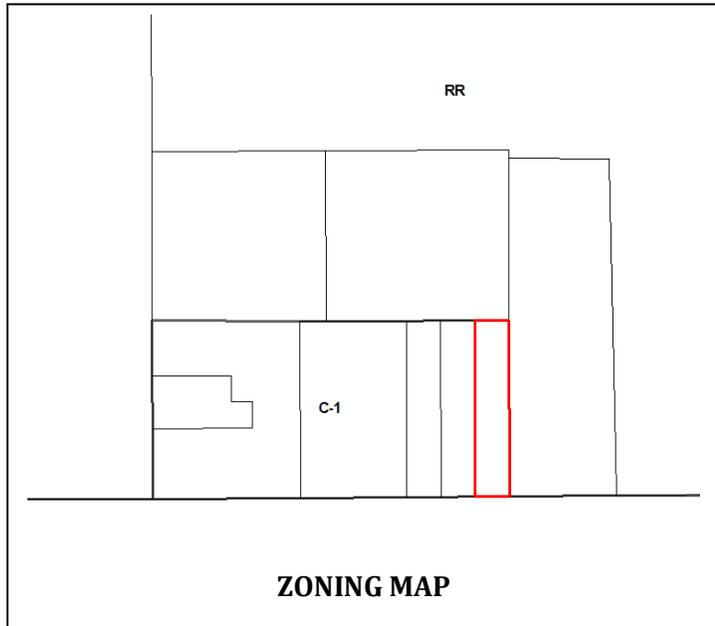


The requested RB zoning district requires a minimum of 65 feet of lot width and 8,000 square feet of lot area. The Subject Property is 65 feet in width and over 21,000 square feet in area and complies with the RB dimensional requirements.

**Physical Features**

As noted, the Subject Property is developed with a single-family house. There does not appear to be any wetlands on the property, although Township data shows a wetland on the property adjacent to the north. This wetland will not be impacted by this rezoning. Township data also indicates that the Subject Property is entirely within a floodway. Again, the floodway is not expected to be impacted by this rezoning. However, any future addition to the house will require approval for building in the floodway.

According to the Greenway Plan, there are no greenway corridors on the Subject Property.



**Streets & Traffic**

The Subject Property is accessed from Jolly Road. Jolly Road is a two-lane principal arterial. A 7-foot pedestrian pathway terminates at the eastern property line.

**Utilities**

Municipal sanitary sewer serves the subject site from Jolly Road. The property is currently served by a well and has municipal water available south of Jolly Road from the Board of Water and Light. No connection is required for this rezoning.

The Hetton Creek Drain runs along the eastern property line of the property. This rezoning will not affect the drain. No approvals are necessary from the Ingham County Drain Commission.

**Staff Analysis**

The applicant has requested the rezoning of one property, approximately 0.5 acre in size (Subject Property) located at 2936 Jolly Road from C-1 (Commercial) to RB (Single-Family Residential). When evaluating a rezoning request, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts, as well as the reasons for rezoning listed on page two of the rezoning application (attached). Based on this, Planning Staff has the following comments:

1. The current request is to rezone the Subject Property to RB, which allows single-family development. As noted in the report, the Subject Property contains a single-family house and conforms to the RB zone. The home is currently a non-conforming use in the C-1 district.
2. The Subject Property has been used as a single-family residence since 2009. The requested RB zoning would be consistent with the RR zoning adjacent to the east.
3. The requested rezoning would have no impact on traffic circulation, water and sewer systems, or other public services.

**Planning Commission Options**

The Planning Commission may recommend approval or denial of the request, or it may recommend a different zoning designation than proposed by the applicant to the Township Board. A resolution will be provided at a future meeting.

**Attachments**

1. Rezoning application and attached materials, dated February 4, 2026 and received by the Township on February 5, 2026.
2. Rezoning criteria.

CHARTER TOWNSHIP OF MERIDIAN  
DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT  
5151 MARSH ROAD, OKEMOS, MI 48864  
PHONE: (517) 853-4560, FAX: (517) 853-4095

REZONING APPLICATION

Part I, II and III of this application must be completed. Failure to complete any portion of this form may result in the denial of your request.

Part I

- A. Owner/Applicant TEKCHANDANI ENTERPRISES LLC / HARISH TEKCHANDANI  
Address of applicant [REDACTED]  
Telephone: Work \_\_\_\_\_ Home 517-214-6222  
Fax \_\_\_\_\_ Email TEKCHANDANI HARISH C 9 MAIL.COM  
If there are multiple owners, list names and addresses of each and indicate ownership interest. Attach additional sheets if necessary. If the applicant is not the current owner of the subject property, the applicant must provide a copy of a purchase agreement or instrument indicating the owner is aware of and in agreement with the requested action.
- B. Applicant's Representative, Architect, Engineer or Planner responsible for request:  
Name / Contact Person RICK VAN HOUTEN  
Address [REDACTED]  
Telephone: Work 517-881-1467 Home \_\_\_\_\_  
Fax \_\_\_\_\_ Email RICK.VANHOUDEN@CBPROFESSIONALS.COM
- C. Site address/location 2936 JOLLY RD. OKEMOS, MI 48864  
Legal description (Attach additional sheets if necessary) SEE ATTACHED  
Parcel number 33-02-02-300-013 Site acreage 1/2 ACRE
- D. Current zoning C-1 Requested zoning RB
- E. The following support materials must be submitted with the application:
1. Nonrefundable fee.
  2. Evidence of fee or other ownership of the subject property.
  3. A rezoning traffic study prepared by a qualified traffic engineer based on the most current edition of the handbook entitled *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation, is required for the following requests:
    - a. Rezoning when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning.
    - b. Rezoning having direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district.  
(Information pertaining to the contents of the rezoning traffic study will be available in the Department of Community Planning and Development.)
  4. Other information deemed necessary to evaluate the application as specified by the Director of Community Planning and Development.

Part II

REASONS FOR REZONING REQUEST

Respond only to the items which you intend to support with proof. Explain your position on the lines below, and attach supporting information to this form.

A. Reasons why the present zoning is unreasonable: - HIGHEST AND BEST USE AS A RESIDENTIAL DWELLING UNABLE TO FINANCE

1) There is an error in the boundaries of the Zoning Map, specifically: N/A

2) The conditions of the surrounding area have changed in the following respects: N/A

3) The current zoning is inconsistent with the Township's Master Plan, explain: N/A

4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: N/A

5) The Township did not have a reasonable basis to support the current zoning classification at the time it was adopted; and the zoning has exempted the following legitimate uses from the area: NA

6) The current zoning restrictions on the use of the property do not further the health safety or general welfare of the public, explain: N/A

B. Reasons why the requested zoning is appropriate:

1) Requested rezoning is consistent with the Township's Master Plan, explain: N/A

2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: NEIGHBORING DWELLING TO THE EAST 2918 JULY RD IS ZONED RR SEE ATTACHED

3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: SUBJECT PROPERTY HAS BEEN USED AS A SINGLE FAMILY RENTAL SINCE 2009

4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: SAME AS #3 ABOVE

5) Requested rezoning addresses a proven community need, specifically: N/A

6) Requested rezoning results in logical and orderly development in the Township, explain: N/A

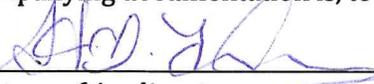
7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: N/A

Part III

I (we) hereby grant permission for members of the Charter Township of Meridian's Boards and/or Commissions, Township staff member(s) and the Township's representatives or experts the right to enter onto the above described property (or as described in the attached information) in my (our) absence for the purpose of gathering information including but not limited to the taking and the use of photographs.

Yes     No    (Please check one)

By the signature(s) attached hereto, I (we) certify that the information provided within this application and accompanying documentation is, to the best of my (our) knowledge, true and accurate

  
\_\_\_\_\_  
Signature of Applicant

2-4-2026  
Date

HARISH TEKCHANDANI  
Type/Print Name

Fee: \_\_\_\_\_

Received by/Date: \_\_\_\_\_

February 4, 2026

Timothy R. Schmitt, AICP  
Meridian Township  
Director of Community Planning and Development  
5151 Marsh Road  
Okemos, MI 48864

Dear Tim,

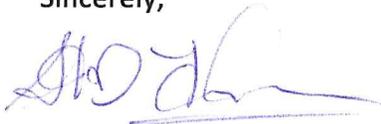
Under the current zoning of C-1 and the uses permitted, the subject property has limitations for commercial use, such as limited parking, ADA compliance, no access to rear yard to expand parking and a non conducive floor plan with over fifty percent of usable floor space on the second floor.

The subject property is a large 4 to 5 bedroom, 3 full baths with 2844 sq. ft. of finished area above grade. In my real estate broker's professional opinion, the highest and best use would be a single family residence. As a residential property, financing is unavailable due to the commercial zoning. Standard underwriting prohibits residential mortgages on commercial zoned properties. We have investigated with four local lenders for alternative financing, such as a portfolio loan. All have stated their guidelines for portfolio loans can't be commercially zoned. See attached emails

The property directly East, 2918 Jolly Rd. Okemos is zoned RR see attached

Due to health reasons, I need to liquidate my interest in this property. Under the current zoning of C-1, the property is not marketable. Your help and consideration is very appreciative.

Sincerely,

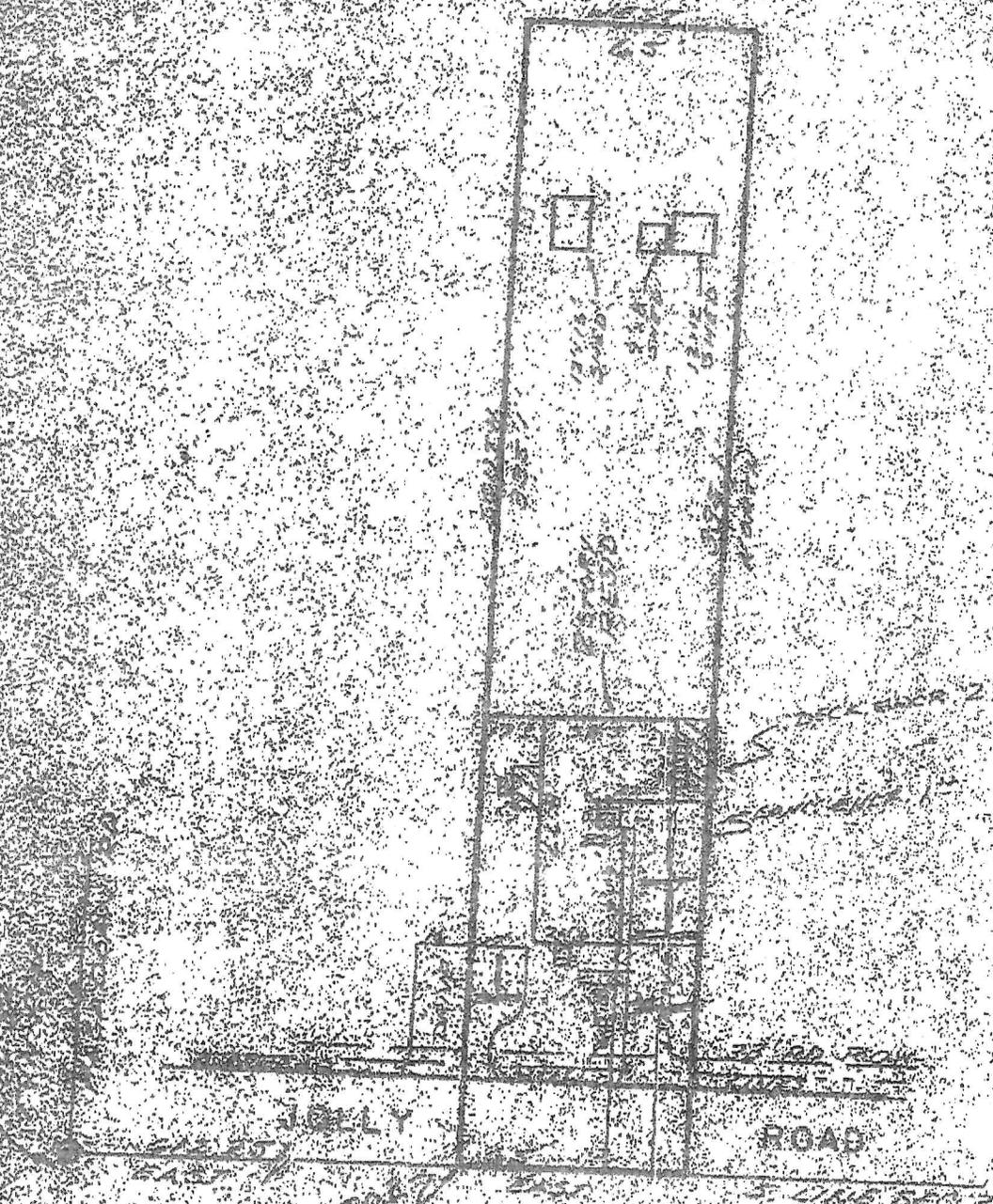
A handwritten signature in blue ink, appearing to read 'Timothy R. Schmitt', with a horizontal line underneath.

Harish Tekchandani

Scott E. Koch  
Professional Surveyor  
Chicago, Ill. 60605

Continental Life Insurance Co.  
600 W. St. Joseph Hwy  
Baltimore, Md. 21201

Survey of the boundary lines of the boundary lines of Section 22, Town 4  
North, Range 12 East of State Township North 22 East, Range 12 East



This report was prepared by the undersigned, a duly licensed and qualified surveyor, for the purposes of the premises hereinafter stated. The measurements and lines on the map portion of this report are completely within the professional capacity of the undersigned and were made by the undersigned or a duly licensed and qualified surveyor under the direct supervision of the undersigned.

This report was prepared for the purpose of showing only dimensions from monuments to monuments or from monuments to fences (if any) shown on the portion of the map portion of this report. It is not intended to indicate the existence of a lease in the vicinity of the parcel boundary shown on the map portion of this report. A certified boundary survey of the premises hereinafter described and the location of the monuments for the same will be made by the undersigned and is not intended for the same.

The State of Michigan, County of [blank],  
I, Scott E. Koch, a duly licensed and qualified surveyor,  
do hereby certify that the above is a true and correct copy  
of the original of the report of the undersigned.

*Scott E. Koch*  
Scott E. Koch  
Professional Surveyor No. 41103



**Part II**

**REASONS FOR REZONING REQUEST**

**Respond only to the items which you intend to support with proof. Explain your position on the lines below, and attach supporting information to this form.**

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 2) The conditions of the surrounding area have changed in the following respects: \_\_\_\_\_  
\_\_\_\_\_
- 3) The current zoning is inconsistent with the Township's Master Plan, explain: \_\_\_\_\_  
\_\_\_\_\_
- 4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 5) The Township did not have a reasonable basis to support the current zoning classification at the time it was adopted; and the zoning has exempted the following legitimate uses from the area: \_\_\_\_\_  
\_\_\_\_\_
- 6) The current zoning restrictions on the use of the property do not further the health safety or general welfare of the public, explain: \_\_\_\_\_  
\_\_\_\_\_

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is consistent with the Township's Master Plan, explain: \_\_\_\_\_  
\_\_\_\_\_
- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: \_\_\_\_\_  
\_\_\_\_\_
- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: \_\_\_\_\_  
\_\_\_\_\_
- 5) Requested rezoning addresses a proven community need, specifically: \_\_\_\_\_  
\_\_\_\_\_
- 6) Requested rezoning results in logical and orderly development in the Township, explain: \_\_\_\_\_  
\_\_\_\_\_
- 7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: \_\_\_\_\_  
\_\_\_\_\_



**To:** Planning Commission

**From:** Brian Shorkey, Principal Planner

**Date:** March 9, 2026

**Re:** **Rezoning #26004 – Capstone, Rezone approximately 69 acres located at the east end of Hannah Boulevard from PO, Professional Office and RAA, One Family-Low Density Residential, to RD, Multiple Family, up to 8 dwelling units per acre, subject to a Conditional Rezoning Agreement.**

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Capstone Collegiate Communities, the Applicant, has requested the rezoning of two properties of approximately 69 acres in size (Subject Property) located at the eastern end of Hannah Boulevard from PO, Professional Office and RAA, One Family – Low Density Residential, to RD, Multiple Family, up to a maximum 8 dwelling units per acre, subject to a conditional rezoning agreement. The Subject Property is the last phase of the overall Planned Unit Development (PUD) known as Hannah Farms. If approved, the rezoning will be followed by a new PUD request for the Subject Property.

The Planning Commission held a public hearing for Rezoning #26004 at its February 23, 2026 regular meeting and the Planning Commission indicated that they supported the rezoning. Several residents spoke about the application and brought up concerns, including comments about flooding in the area. A representative from the Indian Lakes Estates Homeowner Association indicated that the HOA didn't oppose the rezoning if the conditions stayed in place as proposed.

The original staff report, dated February 23, 2026, is attached. Additional materials from the public hearing may be found at the following link: [https://www.meridian.mi.us/government/boards-and-commissions/agendas-packets-and-minutes/-folder-3684#docan5601\\_5944\\_42](https://www.meridian.mi.us/government/boards-and-commissions/agendas-packets-and-minutes/-folder-3684#docan5601_5944_42)

The applicant has provided a revised Traffic Impact Statement, based on number of beds instead of number of units, based on the conversation at the Public Hearing. That report shows roughly the same results as the previous report, with minimal impact on the level of service at the Hagadorn intersections where the traffic will flow through. A copy of that report is attached, along with a cover memo address a few other minor concerns from the previous meeting.

### **Planning Commission Options**

The Planning Commission may recommend approval or denial of the request, or it may recommend a different zoning designation than proposed by the applicant to the Township Board. Staff **recommends approval** of Rezoning #26004 to rezone the Subject Property from PO, Professional Office and RAA, One Family – Low Density Residential, to RD, Multiple Family, up to a maximum 8 dwelling units per acre, subject to a conditional rezoning agreement.

Staff would offer the following motion for the Planning Commission if they wish to approve the resolution to recommend **approval** of the proposed rezoning request. Should the Planning Commission have additional reasons for supporting the recommendation, they can be added to the end of the motion.

**Move to adopt the resolution to recommend approval of Rezoning #26004 to rezone approximately 69 acres located at the east end of Hannah Boulevard from PO, Professional Office and RAA, One Family-Low Density Residential, to RD, Multiple Family, up to 8 dwelling units per acre, subject to a Conditional Rezoning Agreement, for the following reasons:**

- The conditions proposed by the applicant would mitigate the effects of the development on the Indian Lakes Estates neighborhood to the east.
- The proposed rezoning and associated development complies with the goal of promoting infill development within the Urban Service Boundary and increasing housing diversity in the Township.
- The proposed development can be seen as completing the broader mixed-use development, known as Hannah Farms, which complies with the Master Plan's goal of encouraging mixed-use development.
- The proposed 270 dwelling units under the conditional rezoning is well below the approximately 440 units permitted under the RD zoning.

***Subject to the following conditions offered by the applicant:***

- A Planned Unit Development application be submitted for the development of the site, in a specific timeframe
- The number of units on the site shall not exceed 270
- Approximately 38 acres of the site shall remain undeveloped open space
- A natural buffer zone of 248' feet (no development zone) shall be provided adjacent to the Indian Lakes residential neighborhood

**Attachments**

1. Resolution recommending approval of the REZ #26004
2. Additional information provided by applicant
3. Staff report from the public hearing, dated February 23, 2026

**RESOLUTION TO RECOMMEND APPROVAL**

**Rezoning #26004  
Capstone**

**RESOLUTION**

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held at the Meridian Municipal Building, in said Township on the 9th day of March, 2026, at 6:30 p.m., Local Time.

PRESENT:

ABSENT:

The following resolution was offered by Commissioner \_\_\_\_\_ and supported by Commissioner \_\_\_\_\_.

WHEREAS, Capstone Collegiate Communities, the applicant, has requested the rezoning of two properties of approximately 69 acres in size (Subject Property) located at the eastern end of Hannah Boulevard from PO, Professional Office and RAA, One Family – Low Density Residential, to RD, Multiple Family, up to a maximum 8 dwelling units per acre, subject to a conditional rezoning agreement; and

WHEREAS, the Planning Commission held a public hearing and discussed the rezoning at its regular meeting on February 23, 2026; and

WHEREAS, the conditions proposed by the applicant would mitigate the effects of the development on the Indian Lakes Estates neighborhood to the east; and

WHEREAS, the conditions proposed by the applicant were the result of several months of discussion between the applicant and the Indian Lakes Estates neighborhood to the east and were mutually agreed upon; and

WHEREAS, the proposed rezoning and associated development complies with the goal of promoting infill development within the Urban Service Boundary and increasing housing diversity in the Township; and

WHEREAS, the proposed development can be seen as completing the broader mixed-use development, known as Hannah Farms, which complies with the Master Plan's goal of encouraging mixed-use development; and

WHEREAS, the proposed 270 dwelling units under the conditional rezoning is well below the approximately 440 units permitted under the RD zoning; and

WHEREAS, the proposed redevelopment would require a Planned Unit Development and site plan approval after the rezoning.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends **approval** of Rezoning #26004 to rezone the subject property, approximately 69 acres in size located at the eastern end of Hannah Boulevard from PO, Professional Office and RAA, One Family – Low Density Residential, to RD, Multiple Family, up to a

**Resolution to Recommend Approval**

**Rezoning #26004 (Capstone)**

**Page 2**

maximum 8 dwelling units per acre, subject to a conditional rezoning agreement, subject to the following conditions as offered by the applicant:

1. A Planned Unit Development application be submitted for the development of the site, in a specific timeframe
2. The number of units on the site shall not exceed 270
3. Approximately 38 acres of the site shall remain undeveloped open space
4. A natural buffer zone of 248' feet (no development zone) shall be provided adjacent to the Indian Lakes residential neighborhood

ADOPTED: YEAS:

NAYS:

STATE OF MICHIGAN )

) ss

COUNTY OF INGHAM )

I, the undersigned, the duly qualified and acting Chair of the Planning Commission of the Township of Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 9th day of March, 2026.

---

Jeff Romback  
Planning Commission Chair



Date: March 5, 2026

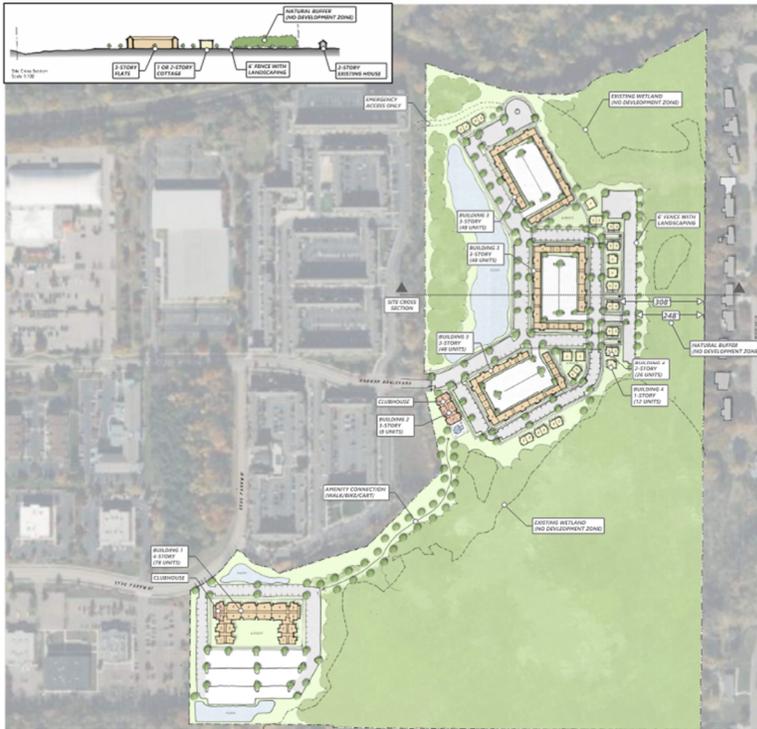
From: Capstone Collegiate Communities

To: Meridian Township -Planning Commission

Re: Rezoning #26004 Response Letter

Our team at Capstone Collegiate Communities has prepared responses to three items that were addressed at the February 23, 2026 Planning Commission Meeting.

1. Traffic Study:
  - a. Progressive Companies has updated the traffic study to reflect 824 Beds rather than 262 Units.
  - b. The result was no change to the previous Conclusion and Recommendation
2. PUD Submittal:
  - a. Additional work is needed from our civil engineers and architects to generate schematic storm-water plans, building elevations-colored, and other items.
  - b. The plans and elevations will require local agency review and neighborhood review.
  - c. Once we have incorporated all comments into the plans and elevations we will submit the PUD.
3. Native Plantings in the proposed buffer zone:
  - a. We are willing to work with the neighborhood to incorporate native plantings into the proposed buffer area. Once we have on-boarded a landscape architect we will evaluate this area.



## TRAFFIC IMPACT STUDY HANNAH FARMS MERIDIAN TOWNSHIP, MICHIGAN

### Prepared for:

Capstone Collegiate Communities, LLC  
431 Office Park Drive  
Birmingham, AL 35223

### Prepared by:

Progressive Companies  
1811 4 Mile Road NE  
Grand Rapids, MI 49525

March 2026  
Project No. 22820001

# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>3</b>
<b>EXISTING CONDITIONS.....</b>	<b>5</b>
Key Study Area Roadways .....	5
Data Collection .....	5
Existing Conditions Capacity Analysis .....	6
Crash Analysis .....	6
<b>FUTURE (2029) CONDITIONS .....</b>	<b>9</b>
Proposed Development and Site Access.....	9
Background Traffic Volumes .....	9
Trip Generation .....	9
Trip Distribution .....	10
Future (2029) Capacity Analysis .....	10
<b>CONCLUSIONS AND RECOMMENDATION .....</b>	<b>14</b>
Conclusions.....	14
Recommendations .....	14

## APPENDIX

# LIST OF FIGURES AND TABLES

## FIGURES

Figure 1. Study Location .....	3
Figure 2. Existing Peak Hour Volumes and Levels of Service.....	8
Figure 3. Preliminary Site Plan .....	9
Figure 4. Future (2029) Trip Distribution and Traffic Assignment.....	12
Figure 5. Future (2029) Peak Hour Volumes and Levels of Service .....	13

## TABLES

Table 1. Existing Intersections .....	5
Table 2. Existing Levels of Service and Delay.....	6
Table 3. Trip Generation .....	10
Table 4. Future (2029) Levels of Service and Delay .....	10

## EXECUTIVE SUMMARY

### INTRODUCTION

Capstone Collegiate Communities, LLC is working to construct a residential development on vacant parcel land, located near Hannah Boulevard and Eyde Parkway in Meridian Township, Michigan. The development will consist of 262 off-campus student housing units, totaling 824 rooms. Access to the development will be via two (2) new driveways, one (1) to Eyde Parkway and one (1) to Hannah Boulevard.

The purpose of this Traffic Impact Study is to analyze the potential impacts of the new development and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or anticipated background issues and/or impacts created by this development's traffic.

Pre-study coordination was completed with Meridian Township and Ingham County Road Department staff to help identify the required study area, study parameters, and any specific areas of concern.

### Study Area

The study area includes three (3) signalized intersections and two (2) existing stop-controlled intersections, as listed below:

- Hannah Boulevard / Eyde Parkway (One-Way Stop)
- Hannah Boulevard / Esoteric Way (Signalized)
- Hannah Boulevard / Hagadorn Road (Signalized)
- Eyde Parkway / Esoteric Way (One-Way Stop)
- Eyde Parkway / Hagadorn Road (Signalized)

### Data Collection

Morning (7:00 a.m.–9:00 a.m.) and evening (4:00 p.m.–6:00 p.m.) peak hour turning movement counts at the study area intersections were collected in January 2026 on a typical weekday. These counts indicate that the typical weekday morning peak hour generally occurs between 8:00 a.m. to 9:00 a.m. and the typical afternoon peak hour occurs between 4:30 p.m. to 5:30 p.m.

### Analysis

Two (2) analysis scenarios were completed for the weekday morning and afternoon peak hours as part of the study, as follows:

- Existing Conditions
- Future (2029) Conditions

### Background Traffic Volumes

An annual traffic growth rate was used to estimate growth on the study area roadways. An annual growth rate of 1% (one percent) was applied to the existing peak hour volumes to help determine the background (2029) peak hour volumes. To our knowledge, no other developments are planned near the study area that could influence 2029 traffic patterns. A separate analysis of the background traffic conditions was not completed as part of this study, as the results would be largely the same as existing conditions, with only slightly more delay due to the minor increase in traffic volumes.

### Trip Generation

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* was used to calculate the anticipated traffic that may be generated by the proposed development. Trips are measured individually for inbound and outbound movements; therefore, a visit to the site by a resident, for instance, generates two (2) trips – one (1) inbound and one (1) outbound. Based on the land use descriptions provided within the ITE *Trip Generation Manual*, the most applicable land use for the proposed site is Off-Campus Student Apartments (low-rise) (Land Use Code 225). While ITE does have an additional land use of Off-Campus Student Apartments (mid-rise) (Land Use Code 226) for buildings that are four (4) to 10 stories tall, the survey sample size was low and projects significantly lower trip generation than the low-rise land use. To remain conservative, the low-rise land use was used to calculate the anticipated trip generation for this development.

Trip generation for the site was calculated for the typical weekday morning and afternoon peak hours based on the site plan provided by the site owner as well as the methodology defined in the *ITE Trip Generation Manual*.

### **Conclusions**

Based on the analyses performed as part of this study, the proposed development will have minimal impact to the surrounding roadway network. The findings of this study are as follows:

### **Existing Conditions**

Based on the existing conditions analysis, it appears that all intersections in the study area currently operate at a level of service (LOS) "B" or better for both peak periods. Additionally, all individual turning movements operate at a LOS "D" or better and queues in the study area are shown to be acceptable and within the storage space available.

### ***Crash Analysis***

Crash information for the most recent five (5) years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed for each signalized intersection in the study area.

Overall, the majority of crashes in the study area were rear-end crashes on Hagadorn Road. This crash type is common for signalized intersections and the majority of crashes resulted in no injuries. There does not appear to be any abnormal crash patterns in the study area, however upgrading the signals on Hagadorn Road to box span configurations and adding traffic signal backplates can help improve signal visibility and potentially reduce rear-end and angle crashes.

### **Future (2029) Conditions**

The future (2029) conditions analysis showed that all intersections in the study area are anticipated to operate at a LOS "C" or better during the morning and afternoon peak hours. Queues are also expected to remain acceptable.

The most effected individual turning movement in the study area was at the Hagadorn Road and Eyde Parkway intersection. The southbound left turning movement LOS is anticipated to decrease from a LOS "D" to a LOS "E" and delay is projected to increase by 29 seconds in the afternoon peak hour. While this increase in delay is significant, queues are anticipated to remain within the available storage lane and not back up into through traffic. If queuing problems become present in the future, changes to signal timing at this approach can be made to give more time to the southbound turning movement phase.

### **Turn Lane Warrant Analysis**

Since the north driveway is essentially a continuation of Hannah Boulevard, turn lanes are not applicable at this location. Additionally, since the speed limit on Eyde Parkway is 25 miles per hour and is a local roadway with low traffic volumes, a dedicated turn lane is not recommended for the south driveway.

### **Recommendations**

Based on the analysis of the study area intersections and proposed site driveways, no further infrastructure improvements are recommended for the study area. The southbound left turn movement on Hagadorn Road at Eyde Parkway should be observed after the proposed development is constructed, and signal timing adjustments may need to be made to ensure that queues do not exceed the available storage lane.

# CHAPTER 1

## INTRODUCTION

Capstone Collegiate Communities, LLC is working to construct a residential development on vacant parcel land, located near Hannah Boulevard and Eyde Parkway in Meridian Township, Michigan. The development will consist of 262 off-campus student housing units, totaling 824 rooms. Access to the development will be via two (2) new driveways, one (1) to Eyde Parkway and one (1) to Hannah Boulevard.

The purpose of this Traffic Impact Study is to analyze the potential impacts of the new development and identify what physical and/or operational roadway system improvements may be necessary to mitigate existing or anticipated background issues and/or impacts created by this development's traffic.

Pre-study coordination was completed with the Township and Ingham County Road Department (ICRD) staff to help identify the required study area, study parameters, and any specific areas of concern. The following chapters outline the results of analyses completed during the study process. Tasks undertaken to complete the analyses include:

### 1. Data Collection

Morning and afternoon peak hour turning movement counts were completed at the five (5) study area intersections in January 2026. Information regarding lane configurations, speed limits, traffic controls, and other related data for the study area roadways was also collected.



Figure 1. Study Area

### 2. Background Growth

An annual background traffic growth rate of 1% (one percent) was applied to the existing volumes to help reflect anticipated non-development traffic increases by the 2029 horizon year. This background growth rate was provided by Township staff.

### 3. Trip Generation/Distribution

The number of trips the proposed development is expected to generate during peak hours was identified. These trips were then assigned to the adjacent street system based upon the patterns followed by existing traffic and engineering judgment.

### 4. Levels of Service

Capacity calculations were completed at the study area intersections to identify existing and anticipated future peak hour operational characteristics.

5. **Mitigation**

Roadway/intersection improvements were identified, when applicable, that will enable the adjacent roadways and study area intersections to maintain equal and/or acceptable levels of operation under future conditions, upon the addition of background traffic growth and/or due to the development's traffic.

The following chapters outline the results of analyses completed during the study process.

## CHAPTER 2

### EXISTING CONDITIONS

The first step in identifying potential traffic impacts is to determine how well the adjacent streets are operating under current conditions. This chapter summarizes the data collection and analysis procedures for existing operating conditions.

#### Key Study Area Roadways

##### Hannah Boulevard

Hannah Boulevard is an east-west local roadway within the study area under Township jurisdiction. It has a two (2)-lane to four (4)-lane cross section with one (1) to two (2) travel lanes in each direction and a speed limit of 25 miles per hour (mph) within the study area.

##### Eyde Parkway

Eyde Parkway is an east-west local roadway within the study area under the Township jurisdiction. It has a Two (2)-lane cross section with one (1) travel lane in each direction and a speed limit of 25 mph within the study area.

##### Hagadorn Road

Hagadorn Road is a north-south arterial roadway within the study area under the ICRD. It has a four (4)-lane cross section with two (2) travel lanes in each direction and a speed limit of 45 mph within the study area. Weekday 24-hour traffic volumes along Hagadorn Road average approximately 25,000 vehicles per day.

The study area includes three (3) signalized intersections and two (2) existing stop-controlled intersections, as listed in Table 1:



Westbound Hannah Boulevard at Hagadorn Road



Westbound Eyde Parkway at Hagadorn Road



Southbound Hagadorn Road at Hannah Boulevard

**Table 1. Existing Intersections**

Intersection	Traffic Control
Hannah Boulevard / Eyde Parkway	One-Way Stop
Hannah Boulevard / Esoteric Way	Signalized
Hannah Boulevard / Hagadorn Road	Signalized
Eyde Parkway / Esoteric Way	One-Way Stop
Eyde Parkway / Hagadorn Road	Signalized

#### Data Collection

Morning (7:00 a.m.–9:00 a.m.) and evening (4:00 p.m.–6:00 p.m.) peak hour turning movement counts at the study area intersections were collected in January 2026 on a typical weekday. These counts indicate that the typical weekday morning peak hour generally occurs between 8:00 a.m. to 9:00 a.m. and the typical afternoon peak hour occurs between 4:30 p.m. to 5:30 p.m.

## Existing Conditions Capacity Analysis

Intersection “level of service” (LOS) calculations were completed to evaluate the current operational efficiency of the study area intersections. These calculations were completed using techniques outlined in the *Highway Capacity Manual*, published by the Transportation Research Board. Per Michigan Department of Transportation (MDOT) requirements, *Synchro*® traffic analysis software, Version 11, based on the *Highway Capacity Manual* methodologies, was used in the analysis.

Levels of service at signalized and unsignalized intersections relate to the delay, traffic volumes, and intersection geometry. Levels of service are expressed in a range from “A” to “F,” with “A” denoting the highest or best operating conditions. Generally, a LOS “D” rating is considered the minimum acceptable service level for signalized and unsignalized intersections in most areas, although a LOS “E” or LOS “F” can be deemed as acceptable during the peak hours. The criteria for determining the LOS at signalized and unsignalized intersections are outlined in the Appendix of this report.

The existing morning and afternoon peak hours were analyzed at the study area intersections. Table 2 shows the overall levels of service, while Figure 2 shows the levels of service for all movements at the study area intersections. Copies of the *Synchro*® analyses are included in the Appendix.

**Table 2. Existing Levels of Service and Delay**

Intersection	Existing Conditions			
	A.M.		P.M.	
	LOS	Delay(s)	LOS	Delay(s)
Hagadorn Road / Eyde Parkway	B	14.8	B	18.1
Hagadorn Road / Hannah Boulevard / Service Road	B	10.6	B	14.9
Hannah Boulevard / Esoteric Way	B	11.7	B	13.2
Eyde Parkway / Hannah Boulevard <sup>1</sup>	A	9.7	B	10.6
Eyde Parkway / Esoteric Way <sup>1</sup>	A	9.2	B	10.2

<sup>1</sup>Unsignalized intersection, critical/worst approach/movement shown

Source: Progressive Companies, January 2026

Based on the existing conditions analysis, it appears that all intersections in the study area currently operate at a LOS “B” or better for both peak periods. Additionally, all individual turning movements operate at a LOS “D” or better and queues in the study area are shown to be acceptable and within the storage space available.

## Crash Analysis

Crash information for the most recent five (5) years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed for each intersection in the study area.

### Hagadorn Road/Hannah Boulevard

There was a total of 81 crashes at the Hagadorn Road and Hannah Boulevard intersection in the last five (5) years. Of these crashes, three (3) crashes resulted in a “B” minor injury, nine (9) crashes resulted in a “C” possible injury, and the remaining crashes resulted in no injury. Rear-end crashes were the most common crash type at this intersection (37 crashes), followed by sideswipe crashes (20 crashes), and angle crashes (17 crashes). There were no crashes involving pedestrians or bicyclists.

One (1) of the “B” injury crashes involved a single motorcycle that slid and injured the driver. The other two (2) “B” injury crashes involved a vehicle running a red light. The majority of crashes were rear-end crashes, which are common for signalized intersections. A box span traffic signal and traffic signal backplates can increase signal visibility and help reduce rear-end and angle crashes at this location.

### **Hagadorn Road/Eyde Parkway**

There was a total of 32 crashes at the Hagadorn Road and Eyde Parkway intersection. Of these crashes, two (2) crashes resulted in an “A” serious injury, one (1) crash resulted in a “B” minor injury, four (4) crashes resulted in a “C” possible injury, and the remaining crashes resulted in no injury. Rear-end crashes (14 crashes) were the most common types of crashes at this intersection, followed by angle crashes (seven (7) crashes) and single motor vehicle crashes (six (6) crashes). Two (2) crashes involved bicyclists, both resulting in “C” injuries and caused by vehicles turning right on red. There were no crashes involving pedestrians.

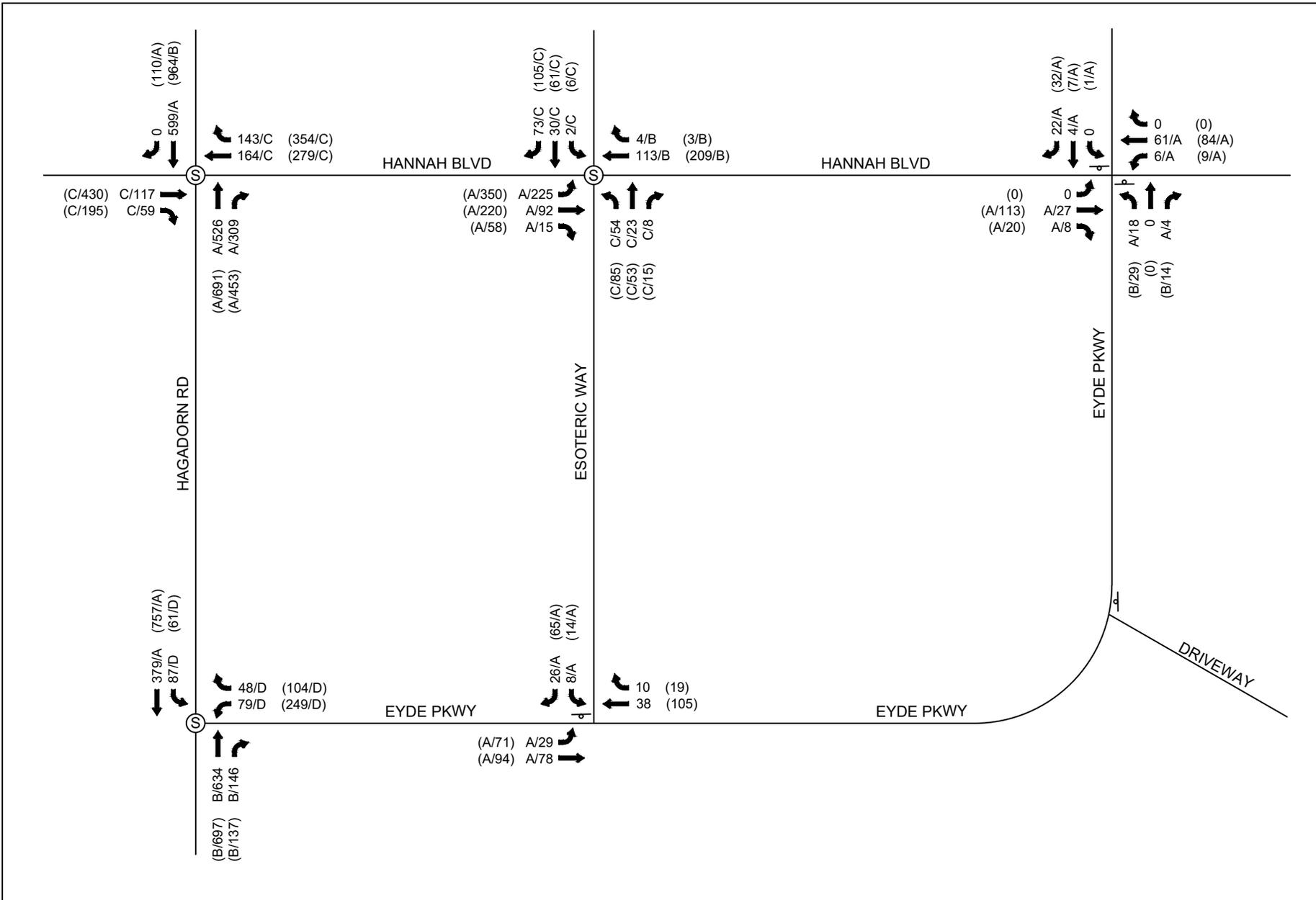
One (1) of the “A” injuries involved a driver having a heart attack and one (1) “A” injury involved a rear-end crash. The one (1) “B” injury crash involved a truck that was unable to stop in snowy conditions. The majority of crashes were rear-end crashes, which are common for signalized intersections. A box span traffic signal and traffic signal backplates can increase signal visibility and help reduce rear-end and angle crashes at this location.

### **Hannah Boulevard/Esoteric Way**

There was a total of 15 crashes at the Hannah Boulevard and Esoteric Way intersection. Of these crashes, one (1) crash resulted in an “A” serious injury, two (2) crashes resulted in a “B” minor injury, two (2) crashes resulted in a “C” possible injury, and the remaining crashes resulted in no injury. Angle crashes (five (5) crashes) were the most common types of crash at this intersection, followed by sideswipe crashes (four (4) crashes) and single motor vehicle crashes (three (3) crashes).

Two (2) crashes involved bicyclists, one (1) resulting in a “B” injury and one (1) resulting in a “C” injury. The “B” injury involved a cyclist in the roadway and the “C” injury involved a cyclist in the crosswalk. The “A” injury crash involved a pedestrian crossing on a “Do Not Walk” signal and ran into the side of a vehicle. The traffic signal at this location is a box span signal, however the addition of backplates can increase signal visibility and reduce the prevalence of angle crashes. Signal timing should also be reviewed for proper yellow and all-red times to ensure proper clearance times are met.

Overall, the majority of crashes in the study area were rear-end crashes on Hagadorn Road. This crash type is common for signalized intersections and the majority of crashes resulted in no injuries. There does not appear to be any abnormal crash patterns in the study area; however, upgrading the signals on Hagadorn Road to box span configurations and adding traffic signal backplates can help improve signal visibility and potentially reduce rear-end and angle crashes.



CAPSTONE COLLEGIATE COMMUNITIES - TIS

LEGEND	
XX (XX)	= AM (PM)
A	= LEVEL-OF-SERVICE
Ⓢ	= SIGNALIZED INTERSECTION
Ⓟ	= STOP-CONTROLLED

EXISTING PEAK-HOUR VOLUMES  
+ LEVELS-OF-SERVICE



FIGURE  
**2**



Trip generation for the site was calculated for the typical weekday morning and afternoon peak hours based on the site plan provided by the site owner as well as the methodology defined in the ITE *Trip Generation Manual*.

**Table 3. Trip Generation**

Land Use	ITE Code	Size	A.M.			P.M.		
			Total	Enter	Exit	Total	Enter	Exit
Off-Campus Student Apartment (Low-Rise)	225	824 Rooms	135	37	98	225	133	122
<b>Total</b>			<b>135</b>	<b>37</b>	<b>98</b>	<b>225</b>	<b>133</b>	<b>122</b>

The development is expected to generate approximately 135 weekday morning peak hour vehicle trips (37 inbound, 98 outbound) and approximately 255 weekday afternoon peak hour vehicle trips (133 inbound, 122 outbound) onto the street system.

**Trip Distribution**

The directional distribution of the site-generated new trips was based upon existing travel patterns and engineering judgment. New trips followed existing traffic patterns, the proposed building’s location on the site, and locations of destinations nearby. These distributions are shown below:

	<u>A.M. Peak</u>	<u>P.M. Peak</u>
To/from Hagadorn Road North	60%	60%
To/from Hagadorn Road South	5%	5%
To/from Service Drive West	30%	30%
To/from Esoteric Drive North (Shopping Center)	5%	5%

The anticipated site trips were added to the background (2029) peak hour volumes to depict the estimated total future (2029) volumes during the morning and afternoon peak hours. Figure 4 and Figure 5 show the total anticipated future (2029) new generated trips and total future (2029) volumes, respectively.

**Future (2029) Capacity Analysis**

Intersection level of service calculations were completed to evaluate the future (2029) morning and afternoon peak hour conditions at the site access driveways and study area intersections, assuming the completion of the proposed development. Table 4 and Figure 5 summarize the levels of service at the study area intersections. Copies of the *Synchro*® analyses are included in the Appendix.

**Table 4. Future (2029) Levels of Service and Delay**

Intersection	Future (2029) Conditions			
	A.M. Peak		P.M. Peak	
	LOS	Delay(s)	LOS	Delay(s)
Hagadorn Road / Eyde Parkway	B	15.8	C	20.5
Hagadorn Road / Hannah Boulevard / Service Road	B	11.1	B	15.6
Hannah Boulevard / Esoteric Way	B	11.7	B	13.5
Eyde Parkway / Hannah Boulevard <sup>1</sup>	B	10.7	B	11.7
Eyde Parkway / Esoteric Way <sup>1</sup>	A	9.3	B	10.4
Eyde Parkway / Driveway <sup>1</sup>	A	8.7	A	8.9

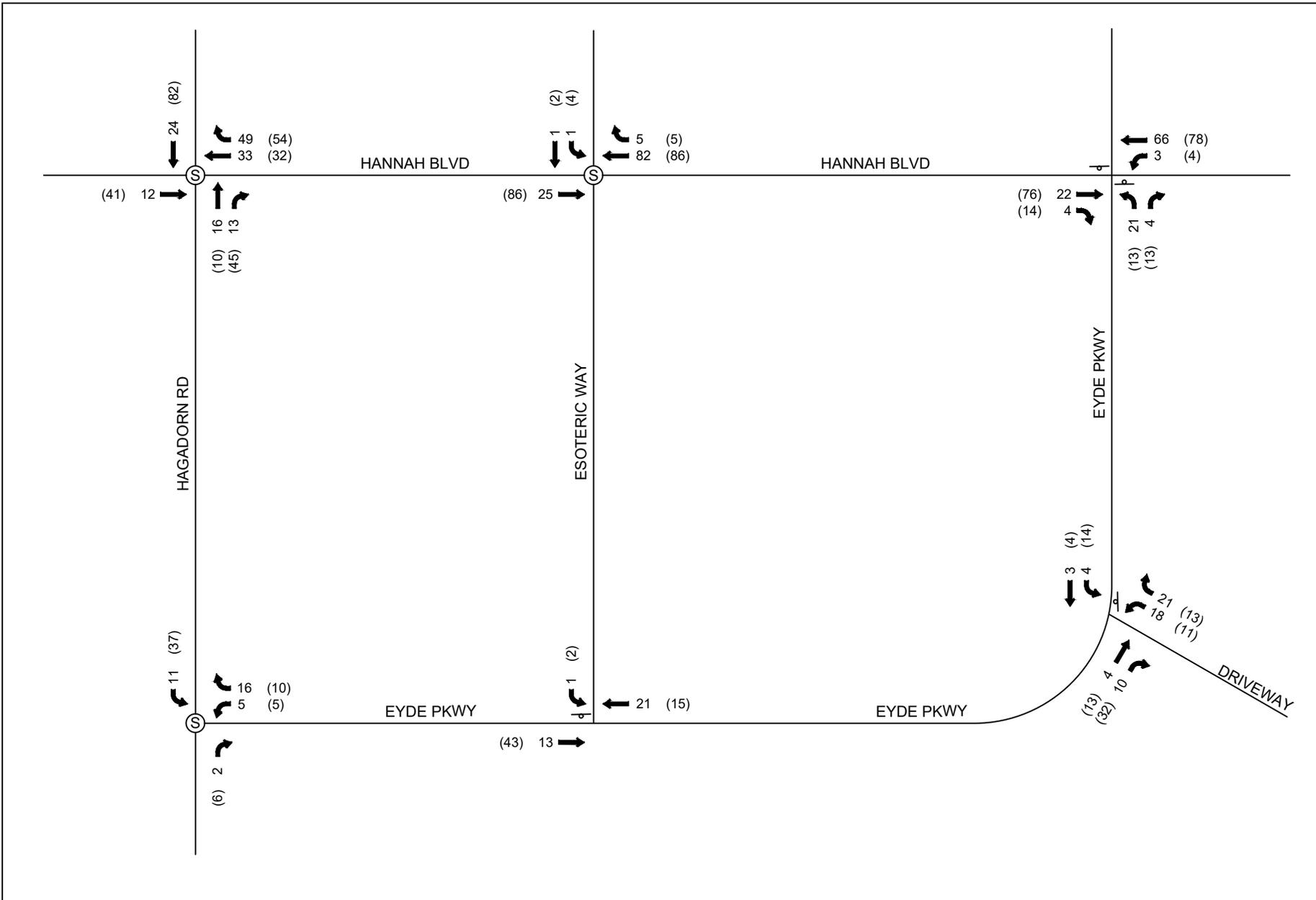
<sup>1</sup>Unsignalized intersection, critical/worst approach/movement shown  
Source: Progressive Companies, January 2026

The future (2029) conditions analysis showed that all intersections in the study area are anticipated to operate at a LOS “C” or better during the morning and afternoon peak hours. Queues are also expected to remain acceptable.

The most effected individual turning movement in the study area was at the Hagadorn Road and Eyde Parkway intersection. The southbound left turning movement LOS is anticipated to decrease from a LOS "D" to a LOS "E" and delay is projected to increase by 19.8 seconds in the afternoon peak hour. While this increase in delay is significant, queues are anticipated to remain within the available storage lane and not back up into through traffic. If queuing problems become present in the future, changes to signal timing at this approach can be made to give more time to the southbound turning movement phase.

#### **Turn Lane Warrant Analysis**

Since the north driveway is essentially a continuation of Hannah Boulevard, turn lanes are not applicable at this location. Additionally, since the speed limit on Eyde Parkway is 25 mph and it is a local roadway with low traffic volumes, a dedicated turn lane is not recommended for the south driveway.



CAPSTONE COLLEGIATE COMMUNITIES - TIS

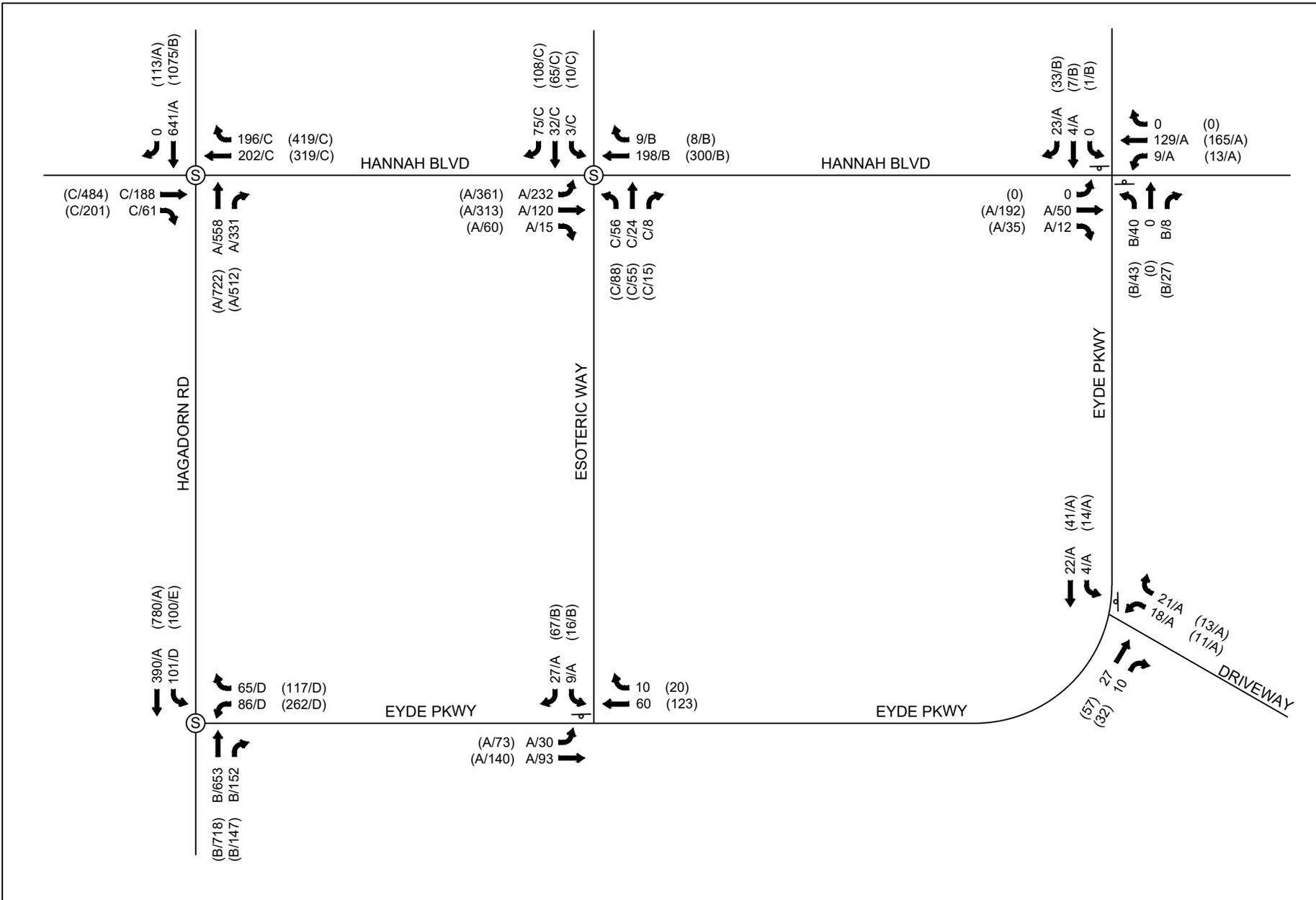
LEGEND

- XX (XX) = AM (PM) GENERATED TRIPS
- (X%) = DISTRIBUTION FOR NEW TRIPS

FUTURE (2029) TRIP DISTRIBUTION  
+ TRAFFIC ASSIGNMENT



FIGURE  
4



CAPSTONE COLLEGIATE COMMUNITIES - TIS

LEGEND	
XX (XX)	= AM (PM)
A	= LEVEL-OF-SERVICE
Ⓢ	= SIGNALIZED INTERSECTION
Ⓟ	= STOP-CONTROLLED

FUTURE (2029) PEAK-HOUR VOLUMES  
+ LEVELS-OF-SERVICE



FIGURE  
5

## CHAPTER 4

### CONCLUSIONS AND RECOMMENDATION

This chapter summarizes the results of the analyses performed as part of the study. A recommendation to improve the surrounding roadway network is also presented.

#### Conclusions

Based on the analyses performed as part of this study, the proposed development will have minimal impact to the surrounding roadway network. The findings of this study are as follows:

#### Existing Conditions

Based on the existing conditions analysis, it appears that all intersections in the study area currently operate at a level of service (LOS) "B" or better for both peak periods. Additionally, all individual turning movements operate at a LOS "D" or better and queues in the study area are shown to be acceptable and within the storage space available.

#### *Crash Analysis*

Crash information for the most recent five (5) years available (2020–2024) was reviewed, based on information available on the *Michigan Traffic Crash Facts* website. The crash analysis was completed for each signalized intersection in the study area.

Overall, the majority of crashes in the study area were rear-end crashes on Hagadorn Road. This crash type is common for signalized intersections and the majority of crashes resulted in no injuries. There does not appear to be any abnormal crash patterns in the study area, however upgrading the signals on Hagadorn Road to box span configurations and adding traffic signal backplates can help improve signal visibility and potentially reduce rear-end and angle crashes.

#### Future (2029) Conditions

The future (2029) conditions analysis showed that all intersections in the study area are anticipated to operate at a LOS "C" or better during the morning and afternoon peak hours. Queues are also expected to remain acceptable.

The most effected individual turning movement in the study area was at the Hagadorn Road and Eyde Parkway intersection. The southbound left turning movement LOS is anticipated to decrease from a LOS "D" to a LOS "E" and delay is projected to increase by 19.8 seconds in the afternoon peak hour. While this increase in delay is significant, queues are anticipated to remain within the available storage lane and not back up into through traffic. If queuing problems become present in the future, changes to signal timing at this approach can be made to give more time to the southbound turning movement phase.

#### **Turn Lane Warrant Analysis**

Since the north driveway is essentially a continuation of Hannah Boulevard, turn lanes are not applicable at this location. Additionally, since the speed limit on Eyde Parkway is 25 miles per hour and is a local roadway with low traffic volumes, a dedicated turn lane is not recommended for the south driveway.

#### **Recommendations**

Based on the analysis of the study area intersections and proposed site driveways, no further infrastructure improvements are recommended for the study area. The southbound left turn movement on Hagadorn Road at Eyde Parkway should be observed after the proposed development is constructed, and signal timing adjustments may need to be made to ensure that queues do not exceed the available storage lane.

**TECHNICAL APPENDIX**  
**HANNAH FARMS**  
**TRAFFIC IMPACT STUDY**

- **Level of Service Definitions and Glossary**
- **Site Plan**
- **Traffic Count Data**
- **Synchro Analyses Results**

## Level of Service Definitions

### Signalized Intersections

- Level of Service A:** Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
- Level of Service B:** Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- Level of Service C:** Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- Level of Service D:** Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
- Level of Service E:** Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
- Level of Service F:** Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

## Level of Service Definitions

### Unsignalized Intersections

<b>Level of Service A:</b>	Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low side street and/or main street traffic.
<b>Level of Service B:</b>	Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.
<b>Level of Service C:</b>	Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.
<b>Level of Service D:</b>	Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.
<b>Level of Service E:</b>	Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.
<b>Level of Service F:</b>	Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

## Glossary

**Approach:** A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

**Arterial:** Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

**Average Stopped Delay:** The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

**Background Traffic:** Traffic volumes that will be on the roadway network without the presence of the proposed development.

**Bypass Lane:** A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

**Capacity:** The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

**Conflicting Traffic Volume:** The volume of traffic which conflicts with a specific movement at an intersection.

**Corridor:** A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

**Cycle:** Any complete sequence of traffic signal indications.

**Cycle Length:** The total time for a traffic signal to complete one cycle.

**Design Hour Volume:** The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

**Diverted Linked Trips:** Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

**Driveway Offset:** Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

**Freeway:** A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

**Gaps (Critical Gap):** The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

**Green Time:** The actual length of the "green" indication for a given movement at a signalized intersection.

**Level of Service:** A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

**Operational Analysis:** A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

**Pass-by Trips:** Trips made as intermediate stops on the way from an origin to a primary trip destination.

**Peak Hour (A.M.):** The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

**Peak Hour (P.M.):** The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

**Peak Hour Factor:** The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

**Phase:** The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

**Roadway Conditions:** Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

**Service Drive:** A roadway (usually private) that provides internal access to two or more uses.

**Site Traffic:** Existing or projected vehicular traffic generated by the development.

**Study Area:** The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

**System Improvements:** Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

**Traffic Impact:** The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

**Trip (Directional Trip):** A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

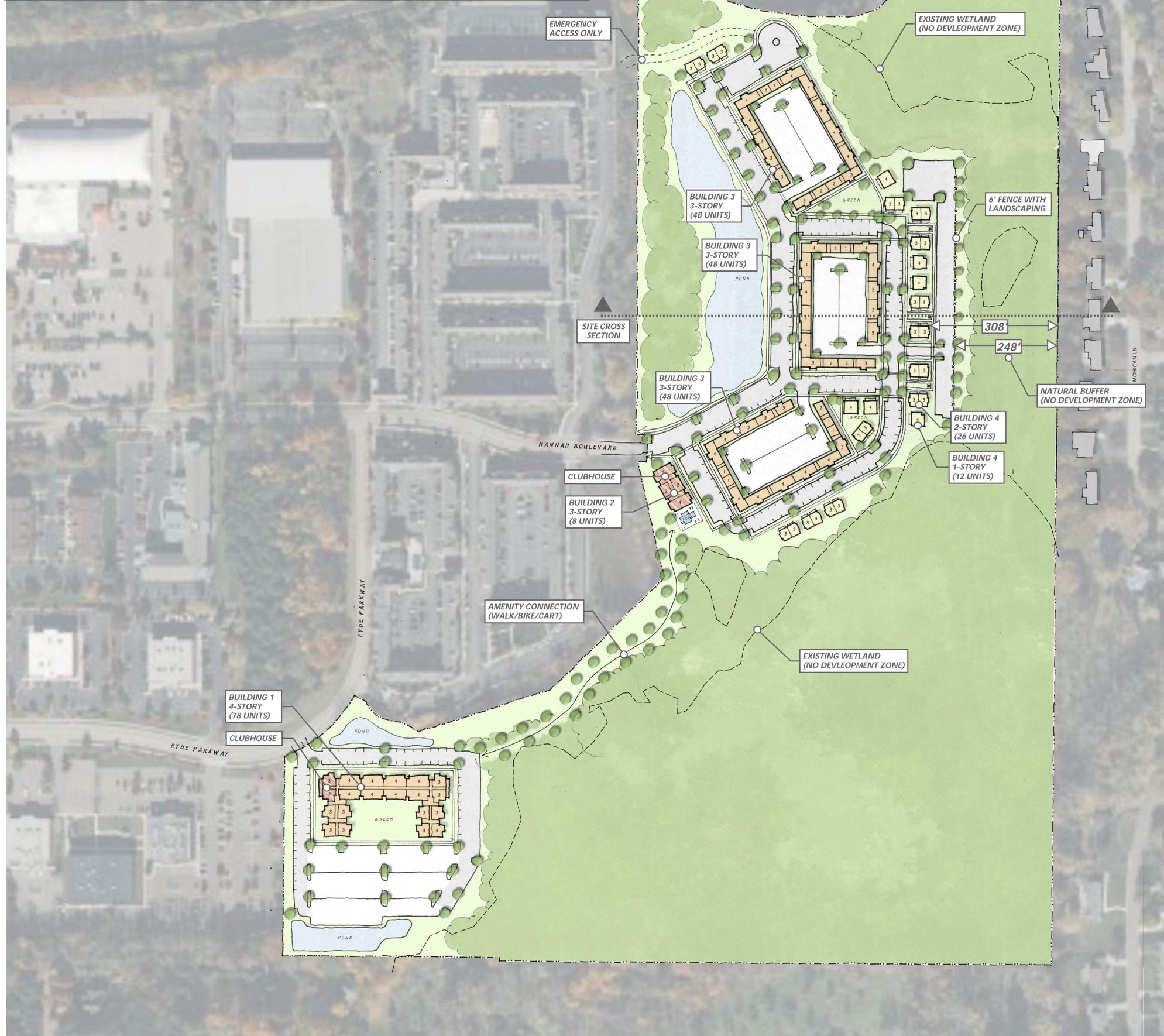
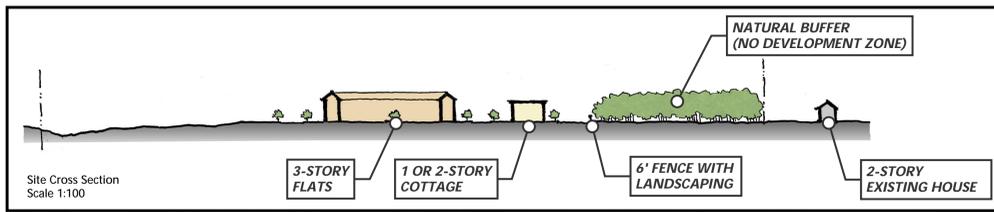
**Trip Distribution:** The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

**Unsignalized Intersection:** Any intersection not controlled by traffic signals.

**Volume:** The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

**Volume-to-Capacity Ratio (V/C):** The ratio of demand flow rate to capacity for a traffic facility.

## SITE PLAN



**CAPSTONE AT HANNAH FARMS EAST**  
EAST LANSING, MICHIGAN  
**SITE LEGEND**

Building	Use/Product Type	Quantity	Building Height (Level Above Grade)	Bed Unit				Total Unit Count	
				1	2	3	4		
1	4-Story Multi-Family Flats w/ Clubhouse	1	4			46	32	78	
2	3-Story Multi-Family Flats w/ Clubhouse	1	3		4			8	
3	3-Story Multi-Family Flats	3	3	24	15	42	63	144	
4	Cottages	19	1 or 2				26	32	
<b>TOTALS</b>				<b>24</b>	<b>19</b>	<b>88</b>	<b>26</b>	<b>99</b>	<b>262</b>

Parking Ratio Required at 3:1 Spaces per Bed	824 Beds	907 Required
Parking Provided		909 Provided



Scale 1:100  
September 10, 2025

NEQUETTE  
ARCHITECTURE & DESIGN

## TRAFFIC COUNT DATA



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Eyde Pkwy &  
Esoteric Way  
Site Code:  
Start Date: 01/13/2026  
Page No: 1

### Turning Movement Data

01/13/2026	Eyde Pkwy Eastbound				Eyde Pkwy Westbound				Esoteric Way Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	5	7	0	12	6	0	0	6	4	11	0	15	33
7:15 AM	5	6	0	11	9	0	0	9	2	6	0	8	28
7:30 AM	6	15	0	21	9	0	1	9	7	8	0	15	45
7:45 AM	11	19	0	30	14	1	0	15	4	7	0	11	56
Hourly Total	27	47	0	74	38	1	1	39	17	32	0	49	162
8:00 AM	4	13	0	17	9	4	0	13	2	10	0	12	42
8:15 AM	7	13	0	20	5	3	0	8	4	5	1	9	37
8:30 AM	5	23	0	28	16	0	0	16	0	8	0	8	52
8:45 AM	13	29	0	42	8	3	0	11	2	3	0	5	58
Hourly Total	29	78	0	107	38	10	0	48	8	26	1	34	189
01/13/2026	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	14	26	0	40	36	5	1	41	3	11	2	14	95
4:15 PM	19	21	0	40	13	6	0	19	2	18	0	20	79
4:30 PM	18	25	0	43	29	5	1	34	2	12	0	14	91
4:45 PM	20	22	0	42	27	3	2	30	7	24	0	31	103
Hourly Total	71	94	0	165	105	19	4	124	14	65	2	79	368
5:00 PM	15	20	0	35	25	12	3	37	3	18	0	21	93
5:15 PM	19	17	0	36	16	1	0	17	3	16	0	19	72
5:30 PM	6	12	0	18	16	5	1	21	1	15	0	16	55
5:45 PM	13	14	0	27	13	3	2	16	2	19	0	21	64
Hourly Total	53	63	0	116	70	21	6	91	9	68	0	77	284
Grand Total	180	282	0	462	251	51	11	302	48	191	3	239	1003
Approach %	39.0	61.0	-	-	83.1	16.9	-	-	20.1	79.9	-	-	-
Total %	17.9	28.1	-	46.1	25.0	5.1	-	30.1	4.8	19.0	-	23.8	-
Lights	171	281	-	452	250	49	-	299	40	189	-	229	980
% Lights	95.0	99.6	-	97.8	99.6	96.1	-	99.0	83.3	99.0	-	95.8	97.7
Mediums	9	1	-	10	1	2	-	3	8	2	-	10	23
% Mediums	5.0	0.4	-	2.2	0.4	3.9	-	1.0	16.7	1.0	-	4.2	2.3
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	11	-	-	-	3	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Eyde Pkwy &  
Esoteric Way  
Site Code:  
Start Date: 01/13/2026  
Page No: 2

### Turning Movement Peak Hour Data (8:00 AM)

01/13/2026	Eyde Pkwy Eastbound				Eyde Pkwy Westbound				Esoteric Way Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
8:00 AM	4	13	0	17	9	4	0	13	2	10	0	12	42
8:15 AM	7	13	0	20	5	3	0	8	4	5	1	9	37
8:30 AM	5	23	0	28	16	0	0	16	0	8	0	8	52
8:45 AM	13	29	0	42	8	3	0	11	2	3	0	5	58
Total	29	78	0	107	38	10	0	48	8	26	1	34	189
Approach %	27.1	72.9	-	-	79.2	20.8	-	-	23.5	76.5	-	-	-
Total %	15.3	41.3	-	56.6	20.1	5.3	-	25.4	4.2	13.8	-	18.0	-
PHF	0.558	0.672	-	0.637	0.594	0.625	-	0.750	0.500	0.650	-	0.708	0.815
Lights	27	78	-	105	38	10	-	48	8	26	-	34	187
% Lights	93.1	100.0	-	98.1	100.0	100.0	-	100.0	100.0	100.0	-	100.0	98.9
Mediums	2	0	-	2	0	0	-	0	0	0	-	0	2
% Mediums	6.9	0.0	-	1.9	0.0	0.0	-	0.0	0.0	0.0	-	0.0	1.1
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

### Turning Movement Peak Hour Data (4:00 PM)

01/13/2026	Eyde Pkwy Eastbound				Eyde Pkwy Westbound				Esoteric Way Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
4:00 PM	14	26	0	40	36	5	1	41	3	11	2	14	95
4:15 PM	19	21	0	40	13	6	0	19	2	18	0	20	79
4:30 PM	18	25	0	43	29	5	1	34	2	12	0	14	91
4:45 PM	20	22	0	42	27	3	2	30	7	24	0	31	103
Total	71	94	0	165	105	19	4	124	14	65	2	79	368
Approach %	43.0	57.0	-	-	84.7	15.3	-	-	17.7	82.3	-	-	-
Total %	19.3	25.5	-	44.8	28.5	5.2	-	33.7	3.8	17.7	-	21.5	-
PHF	0.888	0.904	-	0.959	0.729	0.792	-	0.756	0.500	0.677	-	0.637	0.893
Lights	69	93	-	162	104	18	-	122	9	64	-	73	357
% Lights	97.2	98.9	-	98.2	99.0	94.7	-	98.4	64.3	98.5	-	92.4	97.0
Mediums	2	1	-	3	1	1	-	2	5	1	-	6	11
% Mediums	2.8	1.1	-	1.8	1.0	5.3	-	1.6	35.7	1.5	-	7.6	3.0
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	4	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hagadorn Rd &  
Eyde Pkwy  
Site Code:  
Start Date: 01/13/2026  
Page No: 1

### Turning Movement Data

01/13/2026	Eyde Pkwy Westbound				Hagadorn Rd Northbound				Hagadorn Rd Southbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
7:00 AM	16	2	0	18	77	15	0	92	5	65	0	70	180
7:15 AM	15	3	0	18	82	27	0	109	10	85	0	95	222
7:30 AM	17	7	0	24	145	45	0	190	14	89	0	103	317
7:45 AM	20	7	1	27	177	62	0	239	33	78	0	111	377
Hourly Total	68	19	1	87	481	149	0	630	62	317	0	379	1096
8:00 AM	19	5	0	24	134	32	0	166	20	101	0	121	311
8:15 AM	13	3	3	16	137	33	1	170	19	81	0	100	286
8:30 AM	27	18	2	45	164	37	2	201	20	83	0	103	349
8:45 AM	20	22	0	42	199	44	1	243	28	114	0	142	427
Hourly Total	79	48	5	127	634	146	4	780	87	379	0	466	1373
01/13/2026	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	39	34	2	73	145	30	1	175	26	129	0	155	403
4:15 PM	51	22	2	73	180	36	0	216	17	181	0	198	487
4:30 PM	63	33	8	96	164	39	0	203	13	162	0	175	474
4:45 PM	66	24	4	90	160	31	1	191	20	189	0	209	490
Hourly Total	219	113	16	332	649	136	2	785	76	661	0	737	1854
5:00 PM	69	25	3	94	193	31	4	224	11	225	0	236	554
5:15 PM	41	17	5	58	176	28	0	204	17	163	0	180	442
5:30 PM	41	19	6	60	172	18	2	190	10	146	0	156	406
5:45 PM	27	9	2	36	151	24	0	175	9	130	0	139	350
Hourly Total	178	70	16	248	692	101	6	793	47	664	0	711	1752
Grand Total	544	250	38	794	2456	532	12	2988	272	2021	0	2293	6075
Approach %	68.5	31.5	-	-	82.2	17.8	-	-	11.9	88.1	-	-	-
Total %	9.0	4.1	-	13.1	40.4	8.8	-	49.2	4.5	33.3	-	37.7	-
Lights	542	249	-	791	2438	530	-	2968	262	1991	-	2253	6012
% Lights	99.6	99.6	-	99.6	99.3	99.6	-	99.3	96.3	98.5	-	98.3	99.0
Mediums	2	1	-	3	18	2	-	20	10	30	-	40	63
% Mediums	0.4	0.4	-	0.4	0.7	0.4	-	0.7	3.7	1.5	-	1.7	1.0
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	38	-	-	-	12	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hagadorn Rd &  
Eyde Pkwy  
Site Code:  
Start Date: 01/13/2026  
Page No: 2

### Turning Movement Peak Hour Data (8:00 AM)

01/13/2026	Eyde Pkwy Westbound				Hagadorn Rd Northbound				Hagadorn Rd Southbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
8:00 AM	19	5	0	24	134	32	0	166	20	101	0	121	311
8:15 AM	13	3	3	16	137	33	1	170	19	81	0	100	286
8:30 AM	27	18	2	45	164	37	2	201	20	83	0	103	349
8:45 AM	20	22	0	42	199	44	1	243	28	114	0	142	427
Total	79	48	5	127	634	146	4	780	87	379	0	466	1373
Approach %	62.2	37.8	-	-	81.3	18.7	-	-	18.7	81.3	-	-	-
Total %	5.8	3.5	-	9.2	46.2	10.6	-	56.8	6.3	27.6	-	33.9	-
PHF	0.731	0.545	-	0.706	0.796	0.830	-	0.802	0.777	0.831	-	0.820	0.804
Lights	79	48	-	127	628	145	-	773	85	373	-	458	1358
% Lights	100.0	100.0	-	100.0	99.1	99.3	-	99.1	97.7	98.4	-	98.3	98.9
Mediums	0	0	-	0	6	1	-	7	2	6	-	8	15
% Mediums	0.0	0.0	-	0.0	0.9	0.7	-	0.9	2.3	1.6	-	1.7	1.1
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	5	-	-	-	4	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-

### Turning Movement Peak Hour Data (4:15 PM)

01/13/2026	Eyde Pkwy Westbound				Hagadorn Rd Northbound				Hagadorn Rd Southbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
4:15 PM	51	22	2	73	180	36	0	216	17	181	0	198	487
4:30 PM	63	33	8	96	164	39	0	203	13	162	0	175	474
4:45 PM	66	24	4	90	160	31	1	191	20	189	0	209	490
5:00 PM	69	25	3	94	193	31	4	224	11	225	0	236	554
Total	249	104	17	353	697	137	5	834	61	757	0	818	2005
Approach %	70.5	29.5	-	-	83.6	16.4	-	-	7.5	92.5	-	-	-
Total %	12.4	5.2	-	17.6	34.8	6.8	-	41.6	3.0	37.8	-	40.8	-
PHF	0.902	0.788	-	0.919	0.903	0.878	-	0.931	0.763	0.841	-	0.867	0.905
Lights	249	104	-	353	696	137	-	833	59	743	-	802	1988
% Lights	100.0	100.0	-	100.0	99.9	100.0	-	99.9	96.7	98.2	-	98.0	99.2
Mediums	0	0	-	0	1	0	-	1	2	14	-	16	17
% Mediums	0.0	0.0	-	0.0	0.1	0.0	-	0.1	3.3	1.8	-	2.0	0.8
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	17	-	-	-	5	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hagadorn Rd &  
Hannah Blvd  
Site Code:  
Start Date: 01/13/2026  
Page No: 1

### Turning Movement Data

01/13/2026	Service Rd Eastbound					Hannah Blvd Westbound					Hagadorn Rd Northbound					Hagadorn Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	27	3	0	30	0	32	26	0	58	0	70	36	0	106	0	96	21	0	117	311
7:15 AM	0	23	2	0	25	0	36	24	0	60	0	72	35	0	107	0	111	32	2	143	335
7:30 AM	0	41	2	0	43	0	68	43	0	111	0	123	57	0	180	0	140	85	2	225	559
7:45 AM	0	51	21	1	72	0	63	35	0	98	0	139	81	0	220	0	122	72	2	194	584
Hourly Total	0	142	28	1	170	0	199	128	0	327	0	404	209	0	613	0	469	210	6	679	1789
8:00 AM	0	36	10	0	46	0	55	33	0	88	0	110	59	0	169	0	145	42	1	187	490
8:15 AM	0	48	18	0	66	0	44	33	0	77	0	107	80	0	187	0	136	32	3	168	498
8:30 AM	0	40	11	2	51	0	24	31	0	55	0	146	79	0	225	0	150	48	3	198	529
8:45 AM	0	47	20	1	67	0	41	46	0	87	0	163	91	1	254	0	168	49	0	217	625
Hourly Total	0	171	59	3	230	0	164	143	0	307	0	526	309	1	835	0	599	171	7	770	2142
01/13/2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	94	51	4	145	0	41	83	0	124	0	161	93	0	254	0	201	22	7	223	746
4:15 PM	0	104	42	1	146	0	49	93	0	142	0	175	104	0	279	0	232	23	8	255	822
4:30 PM	0	117	38	2	155	0	67	86	0	153	0	159	124	0	283	0	245	40	11	285	876
4:45 PM	0	88	43	4	131	0	68	77	0	145	0	143	126	0	269	0	234	22	15	256	801
Hourly Total	0	403	174	11	577	0	225	339	0	564	0	638	447	0	1085	0	912	107	41	1019	3245
5:00 PM	0	115	62	1	177	0	81	100	0	181	0	193	111	0	304	0	267	26	7	293	955
5:15 PM	0	110	52	1	162	0	63	91	0	154	0	196	92	0	288	0	218	22	11	240	844
5:30 PM	0	100	25	0	125	0	82	77	0	159	0	167	114	0	281	0	211	22	8	233	798
5:45 PM	0	79	41	0	120	0	81	95	0	176	0	137	93	0	230	0	181	36	4	217	743
Hourly Total	0	404	180	2	584	0	307	363	0	670	0	693	410	0	1103	0	877	106	30	983	3340
Grand Total	0	1120	441	17	1561	0	895	973	0	1868	0	2261	1375	1	3636	0	2857	594	84	3451	10516
Approach %	0.0	71.7	28.3	-	-	0.0	47.9	52.1	-	-	0.0	62.2	37.8	-	-	0.0	82.8	17.2	-	-	-
Total %	0.0	10.7	4.2	-	14.8	0.0	8.5	9.3	-	17.8	0.0	21.5	13.1	-	34.6	0.0	27.2	5.6	-	32.8	-
Lights	0	1102	424	-	1526	0	869	969	-	1838	0	2237	1373	-	3610	0	2831	591	-	3422	10396
% Lights	-	98.4	96.1	-	97.8	-	97.1	99.6	-	98.4	-	98.9	99.9	-	99.3	-	99.1	99.5	-	99.2	98.9
Mediums	0	18	17	-	35	0	26	3	-	29	0	23	2	-	25	0	26	3	-	29	118
% Mediums	-	1.6	3.9	-	2.2	-	2.9	0.3	-	1.6	-	1.0	0.1	-	0.7	-	0.9	0.5	-	0.8	1.1
Articulated Trucks	0	0	0	-	0	0	0	1	-	1	0	1	0	-	1	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.1	-	0.1	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	17	-	-	-	-	0	-	-	-	-	1	-	-	-	-	84	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hagadorn Rd &  
Hannah Blvd  
Site Code:  
Start Date: 01/13/2026  
Page No: 2

### Turning Movement Peak Hour Data (8:00 AM)

01/13/2026	Service Rd Eastbound					Hannah Blvd Westbound					Hagadorn Rd Northbound					Hagadorn Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
8:00 AM	0	36	10	0	46	0	55	33	0	88	0	110	59	0	169	0	145	42	1	187	490
8:15 AM	0	48	18	0	66	0	44	33	0	77	0	107	80	0	187	0	136	32	3	168	498
8:30 AM	0	40	11	2	51	0	24	31	0	55	0	146	79	0	225	0	150	48	3	198	529
8:45 AM	0	47	20	1	67	0	41	46	0	87	0	163	91	1	254	0	168	49	0	217	625
<b>Total</b>	<b>0</b>	<b>171</b>	<b>59</b>	<b>3</b>	<b>230</b>	<b>0</b>	<b>164</b>	<b>143</b>	<b>0</b>	<b>307</b>	<b>0</b>	<b>526</b>	<b>309</b>	<b>1</b>	<b>835</b>	<b>0</b>	<b>599</b>	<b>171</b>	<b>7</b>	<b>770</b>	<b>2142</b>
Approach %	0.0	74.3	25.7	-	-	0.0	53.4	46.6	-	-	0.0	63.0	37.0	-	-	0.0	77.8	22.2	-	-	-
Total %	0.0	8.0	2.8	-	10.7	0.0	7.7	6.7	-	14.3	0.0	24.6	14.4	-	39.0	0.0	28.0	8.0	-	35.9	-
PHF	0.000	0.891	0.738	-	0.858	0.000	0.745	0.777	-	0.872	0.000	0.807	0.849	-	0.822	0.000	0.891	0.872	-	0.887	0.857
Lights	0	166	55	-	221	0	157	141	-	298	0	520	308	-	828	0	593	170	-	763	2110
% Lights	-	97.1	93.2	-	96.1	-	95.7	98.6	-	97.1	-	98.9	99.7	-	99.2	-	99.0	99.4	-	99.1	98.5
Mediums	0	5	4	-	9	0	7	1	-	8	0	6	1	-	7	0	6	1	-	7	31
% Mediums	-	2.9	6.8	-	3.9	-	4.3	0.7	-	2.6	-	1.1	0.3	-	0.8	-	1.0	0.6	-	0.9	1.4
Articulated Trucks	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.7	-	0.3	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	1	-	-	-	-	7	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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

01/13/2026	Service Rd Eastbound					Hannah Blvd Westbound					Hagadorn Rd Northbound					Hagadorn Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	117	38	2	155	0	67	86	0	153	0	159	124	0	283	0	245	40	11	285	876
4:45 PM	0	88	43	4	131	0	68	77	0	145	0	143	126	0	269	0	234	22	15	256	801
5:00 PM	0	115	62	1	177	0	81	100	0	181	0	193	111	0	304	0	267	26	7	293	955
5:15 PM	0	110	52	1	162	0	63	91	0	154	0	196	92	0	288	0	218	22	11	240	844
<b>Total</b>	<b>0</b>	<b>430</b>	<b>195</b>	<b>8</b>	<b>625</b>	<b>0</b>	<b>279</b>	<b>354</b>	<b>0</b>	<b>633</b>	<b>0</b>	<b>691</b>	<b>453</b>	<b>0</b>	<b>1144</b>	<b>0</b>	<b>964</b>	<b>110</b>	<b>44</b>	<b>1074</b>	<b>3476</b>
Approach %	0.0	68.8	31.2	-	-	0.0	44.1	55.9	-	-	0.0	60.4	39.6	-	-	0.0	89.8	10.2	-	-	-
Total %	0.0	12.4	5.6	-	18.0	0.0	8.0	10.2	-	18.2	0.0	19.9	13.0	-	32.9	0.0	27.7	3.2	-	30.9	-
PHF	0.000	0.919	0.786	-	0.883	0.000	0.861	0.885	-	0.874	0.000	0.881	0.899	-	0.941	0.000	0.903	0.688	-	0.916	0.910
Lights	0	426	191	-	617	0	273	354	-	627	0	689	453	-	1142	0	954	110	-	1064	3450
% Lights	-	99.1	97.9	-	98.7	-	97.8	100.0	-	99.1	-	99.7	100.0	-	99.8	-	99.0	100.0	-	99.1	99.3
Mediums	0	4	4	-	8	0	6	0	-	6	0	2	0	-	2	0	10	0	-	10	26
% Mediums	-	0.9	2.1	-	1.3	-	2.2	0.0	-	0.9	-	0.3	0.0	-	0.2	-	1.0	0.0	-	0.9	0.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	8	-	-	-	-	0	-	-	-	-	0	-	-	-	-	44	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hannah Blvd &  
Esoteric Way  
Site Code:  
Start Date: 01/13/2026  
Page No: 1

### Turning Movement Data

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Esoteric Way Northbound					Private Drive Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	26	10	5	1	41	0	19	0	0	19	2	5	0	0	7	0	10	30	1	40	107
7:15 AM	22	11	3	0	36	0	27	0	4	27	2	2	2	0	6	0	6	21	4	27	96
7:30 AM	37	30	6	0	73	0	44	2	5	46	16	4	0	0	20	1	3	33	6	37	176
7:45 AM	56	14	4	0	74	0	32	1	2	33	14	7	3	1	24	0	5	22	2	27	158
Hourly Total	141	65	18	1	224	0	122	3	11	125	34	18	5	1	57	1	24	106	13	131	537
8:00 AM	43	18	3	0	64	0	38	0	3	38	19	6	0	0	25	1	11	9	4	21	148
8:15 AM	48	19	7	0	74	0	23	1	2	24	12	6	1	3	19	0	5	21	2	26	143
8:30 AM	59	29	2	0	90	0	23	1	1	24	11	3	3	1	17	0	9	14	1	23	154
8:45 AM	75	26	3	0	104	0	29	2	3	31	12	8	4	0	24	1	5	29	3	35	194
Hourly Total	225	92	15	0	332	0	113	4	9	117	54	23	8	4	85	2	30	73	10	105	639
01/13/2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	61	55	10	0	126	0	46	2	11	48	15	10	2	2	27	1	13	27	9	41	242
4:15 PM	84	36	11	0	131	0	40	2	10	42	14	14	5	1	33	1	18	22	15	41	247
4:30 PM	101	60	15	0	176	0	50	1	12	51	23	13	4	1	40	0	9	21	10	30	297
4:45 PM	92	56	18	0	166	0	56	2	17	58	17	14	5	7	36	2	16	22	23	40	300
Hourly Total	338	207	54	0	599	0	192	7	50	199	69	51	16	11	136	4	56	92	57	152	1086
5:00 PM	75	52	14	0	141	0	55	0	12	55	29	8	4	0	41	3	19	24	12	46	283
5:15 PM	82	52	11	0	145	0	47	0	4	47	16	18	2	1	36	1	17	38	7	56	284
5:30 PM	71	50	18	0	139	0	66	3	10	69	16	4	3	1	23	0	15	31	4	46	277
5:45 PM	65	42	11	0	118	0	63	1	8	64	17	4	4	2	25	2	18	30	6	50	257
Hourly Total	293	196	54	0	543	0	231	4	34	235	78	34	13	4	125	6	69	123	29	198	1101
Grand Total	997	560	141	1	1698	0	658	18	104	676	235	126	42	20	403	13	179	394	109	586	3363
Approach %	58.7	33.0	8.3	-	-	0.0	97.3	2.7	-	-	58.3	31.3	10.4	-	-	2.2	30.5	67.2	-	-	-
Total %	29.6	16.7	4.2	-	50.5	0.0	19.6	0.5	-	20.1	7.0	3.7	1.2	-	12.0	0.4	5.3	11.7	-	17.4	-
Lights	997	551	133	-	1681	0	642	18	-	660	223	125	42	-	390	13	176	393	-	582	3313
% Lights	100.0	98.4	94.3	-	99.0	-	97.6	100.0	-	97.6	94.9	99.2	100.0	-	96.8	100.0	98.3	99.7	-	99.3	98.5
Mediums	0	9	8	-	17	0	16	0	-	16	12	1	0	-	13	0	3	1	-	4	50
% Mediums	0.0	1.6	5.7	-	1.0	-	2.4	0.0	-	2.4	5.1	0.8	0.0	-	3.2	0.0	1.7	0.3	-	0.7	1.5
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	104	-	-	-	-	20	-	-	-	-	109	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive Companies  
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Grand Rapids, Michigan, United States 49525  
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Count Name: Hannah Blvd &  
Esoteric Way  
Site Code:  
Start Date: 01/13/2026  
Page No: 2

### Turning Movement Peak Hour Data (8:00 AM)

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Esoteric Way Northbound					Private Drive Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
8:00 AM	43	18	3	0	64	0	38	0	3	38	19	6	0	0	25	1	11	9	4	21	148
8:15 AM	48	19	7	0	74	0	23	1	2	24	12	6	1	3	19	0	5	21	2	26	143
8:30 AM	59	29	2	0	90	0	23	1	1	24	11	3	3	1	17	0	9	14	1	23	154
8:45 AM	75	26	3	0	104	0	29	2	3	31	12	8	4	0	24	1	5	29	3	35	194
<b>Total</b>	<b>225</b>	<b>92</b>	<b>15</b>	<b>0</b>	<b>332</b>	<b>0</b>	<b>113</b>	<b>4</b>	<b>9</b>	<b>117</b>	<b>54</b>	<b>23</b>	<b>8</b>	<b>4</b>	<b>85</b>	<b>2</b>	<b>30</b>	<b>73</b>	<b>10</b>	<b>105</b>	<b>639</b>
<b>Approach %</b>	<b>67.8</b>	<b>27.7</b>	<b>4.5</b>	<b>-</b>	<b>-</b>	<b>0.0</b>	<b>96.6</b>	<b>3.4</b>	<b>-</b>	<b>-</b>	<b>63.5</b>	<b>27.1</b>	<b>9.4</b>	<b>-</b>	<b>-</b>	<b>1.9</b>	<b>28.6</b>	<b>69.5</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total %</b>	<b>35.2</b>	<b>14.4</b>	<b>2.3</b>	<b>-</b>	<b>52.0</b>	<b>0.0</b>	<b>17.7</b>	<b>0.6</b>	<b>-</b>	<b>18.3</b>	<b>8.5</b>	<b>3.6</b>	<b>1.3</b>	<b>-</b>	<b>13.3</b>	<b>0.3</b>	<b>4.7</b>	<b>11.4</b>	<b>-</b>	<b>16.4</b>	<b>-</b>
<b>PHF</b>	<b>0.750</b>	<b>0.793</b>	<b>0.536</b>	<b>-</b>	<b>0.798</b>	<b>0.000</b>	<b>0.743</b>	<b>0.500</b>	<b>-</b>	<b>0.770</b>	<b>0.711</b>	<b>0.719</b>	<b>0.500</b>	<b>-</b>	<b>0.850</b>	<b>0.500</b>	<b>0.682</b>	<b>0.629</b>	<b>-</b>	<b>0.750</b>	<b>0.823</b>
<b>Lights</b>	<b>225</b>	<b>87</b>	<b>15</b>	<b>-</b>	<b>327</b>	<b>0</b>	<b>109</b>	<b>4</b>	<b>-</b>	<b>113</b>	<b>50</b>	<b>23</b>	<b>8</b>	<b>-</b>	<b>81</b>	<b>2</b>	<b>30</b>	<b>72</b>	<b>-</b>	<b>104</b>	<b>625</b>
<b>% Lights</b>	<b>100.0</b>	<b>94.6</b>	<b>100.0</b>	<b>-</b>	<b>98.5</b>	<b>-</b>	<b>96.5</b>	<b>100.0</b>	<b>-</b>	<b>96.6</b>	<b>92.6</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>95.3</b>	<b>100.0</b>	<b>100.0</b>	<b>98.6</b>	<b>-</b>	<b>99.0</b>	<b>97.8</b>
<b>Mediums</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>-</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>-</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>14</b>
<b>% Mediums</b>	<b>0.0</b>	<b>5.4</b>	<b>0.0</b>	<b>-</b>	<b>1.5</b>	<b>-</b>	<b>3.5</b>	<b>0.0</b>	<b>-</b>	<b>3.4</b>	<b>7.4</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>4.7</b>	<b>0.0</b>	<b>0.0</b>	<b>1.4</b>	<b>-</b>	<b>1.0</b>	<b>2.2</b>
<b>Articulated Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>
<b>% Articulated Trucks</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>
<b>Pedestrians</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>10</b>	<b>-</b>	<b>-</b>
<b>% Pedestrians</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>

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

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Esoteric Way Northbound					Private Drive Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:30 PM	101	60	15	0	176	0	50	1	12	51	23	13	4	1	40	0	9	21	10	30	297
4:45 PM	92	56	18	0	166	0	56	2	17	58	17	14	5	7	36	2	16	22	23	40	300
5:00 PM	75	52	14	0	141	0	55	0	12	55	29	8	4	0	41	3	19	24	12	46	283
5:15 PM	82	52	11	0	145	0	47	0	4	47	16	18	2	1	36	1	17	38	7	56	284
<b>Total</b>	<b>350</b>	<b>220</b>	<b>58</b>	<b>0</b>	<b>628</b>	<b>0</b>	<b>208</b>	<b>3</b>	<b>45</b>	<b>211</b>	<b>85</b>	<b>53</b>	<b>15</b>	<b>9</b>	<b>153</b>	<b>6</b>	<b>61</b>	<b>105</b>	<b>52</b>	<b>172</b>	<b>1164</b>
<b>Approach %</b>	<b>55.7</b>	<b>35.0</b>	<b>9.2</b>	<b>-</b>	<b>-</b>	<b>0.0</b>	<b>98.6</b>	<b>1.4</b>	<b>-</b>	<b>-</b>	<b>55.6</b>	<b>34.6</b>	<b>9.8</b>	<b>-</b>	<b>-</b>	<b>3.5</b>	<b>35.5</b>	<b>61.0</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total %</b>	<b>30.1</b>	<b>18.9</b>	<b>5.0</b>	<b>-</b>	<b>54.0</b>	<b>0.0</b>	<b>17.9</b>	<b>0.3</b>	<b>-</b>	<b>18.1</b>	<b>7.3</b>	<b>4.6</b>	<b>1.3</b>	<b>-</b>	<b>13.1</b>	<b>0.5</b>	<b>5.2</b>	<b>9.0</b>	<b>-</b>	<b>14.8</b>	<b>-</b>
<b>PHF</b>	<b>0.866</b>	<b>0.917</b>	<b>0.806</b>	<b>-</b>	<b>0.892</b>	<b>0.000</b>	<b>0.929</b>	<b>0.375</b>	<b>-</b>	<b>0.909</b>	<b>0.733</b>	<b>0.736</b>	<b>0.750</b>	<b>-</b>	<b>0.933</b>	<b>0.500</b>	<b>0.803</b>	<b>0.691</b>	<b>-</b>	<b>0.768</b>	<b>0.970</b>
<b>Lights</b>	<b>350</b>	<b>220</b>	<b>54</b>	<b>-</b>	<b>624</b>	<b>0</b>	<b>204</b>	<b>3</b>	<b>-</b>	<b>207</b>	<b>82</b>	<b>52</b>	<b>15</b>	<b>-</b>	<b>149</b>	<b>6</b>	<b>60</b>	<b>105</b>	<b>-</b>	<b>171</b>	<b>1151</b>
<b>% Lights</b>	<b>100.0</b>	<b>100.0</b>	<b>93.1</b>	<b>-</b>	<b>99.4</b>	<b>-</b>	<b>98.1</b>	<b>100.0</b>	<b>-</b>	<b>98.1</b>	<b>96.5</b>	<b>98.1</b>	<b>100.0</b>	<b>-</b>	<b>97.4</b>	<b>100.0</b>	<b>98.4</b>	<b>100.0</b>	<b>-</b>	<b>99.4</b>	<b>98.9</b>
<b>Mediums</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>-</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>-</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>-</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>-</b>	<b>1</b>	<b>13</b>
<b>% Mediums</b>	<b>0.0</b>	<b>0.0</b>	<b>6.9</b>	<b>-</b>	<b>0.6</b>	<b>-</b>	<b>1.9</b>	<b>0.0</b>	<b>-</b>	<b>1.9</b>	<b>3.5</b>	<b>1.9</b>	<b>0.0</b>	<b>-</b>	<b>2.6</b>	<b>0.0</b>	<b>1.6</b>	<b>0.0</b>	<b>-</b>	<b>0.6</b>	<b>1.1</b>
<b>Articulated Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>
<b>% Articulated Trucks</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>	<b>0.0</b>
<b>Pedestrians</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>45</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>52</b>	<b>-</b>	<b>-</b>
<b>% Pedestrians</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.0</b>	<b>-</b>	<b>-</b>



Progressive Companies  
1811 4 Mile Rd NE

Grand Rapids, Michigan, United States 49525  
(616) 361-2664

Count Name: Hannah Blvd &  
Eyde Pkwy  
Site Code:  
Start Date: 01/13/2026  
Page No: 1

### Turning Movement Data

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Eyde Pkwy Northbound					Private Dr Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	5	2	0	7	0	5	0	0	5	1	0	2	0	3	0	0	4	0	4	19
7:15 AM	0	4	3	0	7	2	11	0	1	13	3	0	0	0	3	0	0	3	0	3	26
7:30 AM	0	3	2	0	5	0	18	0	0	18	6	0	0	0	6	0	1	7	0	8	37
7:45 AM	0	5	1	0	6	2	17	0	2	19	2	0	1	0	3	0	1	4	2	5	33
Hourly Total	0	17	8	0	25	4	51	0	3	55	12	0	3	0	15	0	2	18	2	20	115
8:00 AM	0	5	1	0	6	2	19	0	3	21	3	0	1	0	4	0	1	11	0	12	43
8:15 AM	0	7	3	0	10	2	12	0	0	14	7	0	0	2	7	0	1	3	0	4	35
8:30 AM	0	10	3	0	13	0	13	0	1	13	6	0	2	2	8	0	1	4	0	5	39
8:45 AM	0	3	2	0	5	1	11	0	0	12	4	0	0	0	4	0	0	6	0	6	27
Hourly Total	0	25	9	0	34	5	55	0	4	60	20	0	3	4	23	0	3	24	0	27	144
01/13/2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	47	2	1	49	0	20	0	1	20	7	0	4	1	11	0	3	8	2	11	91
4:15 PM	0	22	4	0	26	0	12	0	0	12	3	0	3	3	6	0	1	4	5	5	49
4:30 PM	0	24	7	0	31	4	20	0	3	24	7	0	10	2	17	2	0	5	3	7	79
4:45 PM	0	29	5	0	34	2	19	0	0	21	8	0	5	5	13	0	3	7	9	10	78
Hourly Total	0	122	18	1	140	6	71	0	4	77	25	0	22	11	47	2	7	24	19	33	297
5:00 PM	0	26	7	0	33	3	21	0	1	24	10	0	3	1	13	0	0	7	4	7	77
5:15 PM	0	27	4	0	31	2	20	0	3	22	6	0	3	1	9	0	2	8	3	10	72
5:30 PM	0	31	4	0	35	2	24	0	1	26	5	0	3	5	8	1	2	10	3	13	82
5:45 PM	0	23	4	0	27	0	15	0	0	15	7	0	3	2	10	2	1	12	1	15	67
Hourly Total	0	107	19	0	126	7	80	0	5	87	28	0	12	9	40	3	5	37	11	45	298
Grand Total	0	271	54	1	325	22	257	0	16	279	85	0	40	24	125	5	17	103	32	125	854
Approach %	0.0	83.4	16.6	-	-	7.9	92.1	0.0	-	-	68.0	0.0	32.0	-	-	4.0	13.6	82.4	-	-	-
Total %	0.0	31.7	6.3	-	38.1	2.6	30.1	0.0	-	32.7	10.0	0.0	4.7	-	14.6	0.6	2.0	12.1	-	14.6	-
Lights	0	263	54	-	317	22	257	0	-	279	69	0	31	-	100	4	17	103	-	124	820
% Lights	-	97.0	100.0	-	97.5	100.0	100.0	-	-	100.0	81.2	-	77.5	-	80.0	80.0	100.0	100.0	-	99.2	96.0
Mediums	0	8	0	-	8	0	0	0	-	0	16	0	9	-	25	1	0	0	-	1	34
% Mediums	-	3.0	0.0	-	2.5	0.0	0.0	-	-	0.0	18.8	-	22.5	-	20.0	20.0	0.0	0.0	-	0.8	4.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	16	-	-	-	-	24	-	-	-	-	32	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive Companies  
1811 4 Mile Rd NE

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(616) 361-2664

Count Name: Hannah Blvd &  
Eyde Pkwy  
Site Code:  
Start Date: 01/13/2026  
Page No: 2

### Turning Movement Peak Hour Data (7:45 AM)

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Eyde Pkwy Northbound					Private Dr Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:45 AM	0	5	1	0	6	2	17	0	2	19	2	0	1	0	3	0	1	4	2	5	33
8:00 AM	0	5	1	0	6	2	19	0	3	21	3	0	1	0	4	0	1	11	0	12	43
8:15 AM	0	7	3	0	10	2	12	0	0	14	7	0	0	2	7	0	1	3	0	4	35
8:30 AM	0	10	3	0	13	0	13	0	1	13	6	0	2	2	8	0	1	4	0	5	39
Total	0	27	8	0	35	6	61	0	6	67	18	0	4	4	22	0	4	22	2	26	150
Approach %	0.0	77.1	22.9	-	-	9.0	91.0	0.0	-	-	81.8	0.0	18.2	-	-	0.0	15.4	84.6	-	-	-
Total %	0.0	18.0	5.3	-	23.3	4.0	40.7	0.0	-	44.7	12.0	0.0	2.7	-	14.7	0.0	2.7	14.7	-	17.3	-
PHF	0.000	0.675	0.667	-	0.673	0.750	0.803	0.000	-	0.798	0.643	0.000	0.500	-	0.688	0.000	1.000	0.500	-	0.542	0.872
Lights	0	22	8	-	30	6	61	0	-	67	14	0	4	-	18	0	4	22	-	26	141
% Lights	-	81.5	100.0	-	85.7	100.0	100.0	-	-	100.0	77.8	-	100.0	-	81.8	-	100.0	100.0	-	100.0	94.0
Mediums	0	5	0	-	5	0	0	0	-	0	4	0	0	-	4	0	0	0	-	0	9
% Mediums	-	18.5	0.0	-	14.3	0.0	0.0	-	-	0.0	22.2	-	0.0	-	18.2	-	0.0	0.0	-	0.0	6.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	6	-	-	-	-	4	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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

01/13/2026	Hannah Blvd Eastbound					Hannah Blvd Westbound					Eyde Pkwy Northbound					Private Dr Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	29	5	0	34	2	19	0	0	21	8	0	5	5	13	0	3	7	9	10	78
5:00 PM	0	26	7	0	33	3	21	0	1	24	10	0	3	1	13	0	0	7	4	7	77
5:15 PM	0	27	4	0	31	2	20	0	3	22	6	0	3	1	9	0	2	8	3	10	72
5:30 PM	0	31	4	0	35	2	24	0	1	26	5	0	3	5	8	1	2	10	3	13	82
Total	0	113	20	0	133	9	84	0	5	93	29	0	14	12	43	1	7	32	19	40	309
Approach %	0.0	85.0	15.0	-	-	9.7	90.3	0.0	-	-	67.4	0.0	32.6	-	-	2.5	17.5	80.0	-	-	-
Total %	0.0	36.6	6.5	-	43.0	2.9	27.2	0.0	-	30.1	9.4	0.0	4.5	-	13.9	0.3	2.3	10.4	-	12.9	-
PHF	0.000	0.911	0.714	-	0.950	0.750	0.875	0.000	-	0.894	0.725	0.000	0.700	-	0.827	0.250	0.583	0.800	-	0.769	0.942
Lights	0	113	20	-	133	9	84	0	-	93	25	0	10	-	35	1	7	32	-	40	301
% Lights	-	100.0	100.0	-	100.0	100.0	100.0	-	-	100.0	86.2	-	71.4	-	81.4	100.0	100.0	100.0	-	100.0	97.4
Mediums	0	0	0	-	0	0	0	0	-	0	4	0	4	-	8	0	0	0	-	0	8
% Mediums	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	13.8	-	28.6	-	18.6	0.0	0.0	0.0	-	0.0	2.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	5	-	-	-	-	12	-	-	-	-	19	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

## SYNCHRO ANALYSIS RESULTS

Queues

1: Hagadorn Rd & Eyde Pkwy



Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	976	106	462
v/c Ratio	0.65	0.51	0.48	0.18
Control Delay	37.0	14.0	45.7	3.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	37.0	14.0	45.7	3.6
Queue Length 50th (ft)	69	159	55	31
Queue Length 95th (ft)	94	205	93	38
Internal Link Dist (ft)	823	982		755
Turn Bay Length (ft)			90	
Base Capacity (vph)	333	1921	293	2577
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.51	0.36	0.18

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
1: Hagadorn Rd & Eyde Pkwy

Capstone Collegiate Communities - TIS  
Existing AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	79	48	634	146	87	379
Future Volume (vph)	79	48	634	146	87	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.5		6.0	5.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frpb, ped/bikes	1.00		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.95		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1748		3487		1805	3610
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1748		3487		1805	3610
Peak-hour factor, PHF	0.71	0.71	0.80	0.80	0.82	0.82
Adj. Flow (vph)	111	68	792	182	106	462
RTOR Reduction (vph)	28	0	15	0	0	0
Lane Group Flow (vph)	151	0	961	0	106	462
Confl. Peds. (#/hr)	4			5	5	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases	4					
Actuated Green, G (s)	11.4		42.5		8.6	57.1
Effective Green, g (s)	11.4		42.5		8.6	57.1
Actuated g/C Ratio	0.14		0.53		0.11	0.71
Clearance Time (s)	6.0		5.5		6.0	5.5
Vehicle Extension (s)	3.0		0.2		3.0	0.2
Lane Grp Cap (vph)	249		1852		194	2576
v/s Ratio Prot	c0.09		c0.28		c0.06	0.13
v/s Ratio Perm						
v/c Ratio	0.61		0.52		0.55	0.18
Uniform Delay, d1	32.2		12.1		33.9	3.8
Progression Factor	1.00		1.00		1.20	0.84
Incremental Delay, d2	4.1		1.0		3.1	0.1
Delay (s)	36.3		13.2		43.8	3.3
Level of Service	D		B		D	A
Approach Delay (s)	36.3		13.2			10.9
Approach LOS	D		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			14.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	20.5
Intersection Capacity Utilization			49.0%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Queues  
2: Hagadorn Rd & Service Rd/Hannah Blvd



Lane Group	EBT	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	268	245	108	641	377	673
v/c Ratio	0.43	0.42	0.33	0.26	0.31	0.28
Control Delay	24.4	25.8	8.8	2.8	0.6	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	25.8	8.8	2.8	0.6	6.1
Queue Length 50th (ft)	48	49	0	25	0	60
Queue Length 95th (ft)	73	75	39	33	0	102
Internal Link Dist (ft)	509	819		755		1166
Turn Bay Length (ft)			85		175	
Base Capacity (vph)	1037	979	488	2428	1209	2428
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.25	0.22	0.26	0.31	0.28

Intersection Summary

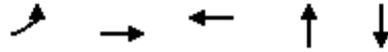
HCM Signalized Intersection Capacity Analysis  
2: Hagadorn Rd & Service Rd/Hannah Blvd

Capstone Collegiate Communities - TIS  
Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑		↑↑	↑		↑↑	↑
Traffic Volume (vph)	0	171	59	0	164	143	0	526	309	0	599	0
Future Volume (vph)	0	171	59	0	164	143	0	526	309	0	599	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		7.0	7.0		7.0	
Lane Util. Factor		0.95			0.91	0.91		0.95	1.00		0.95	
Frbp, ped/bikes		1.00			1.00	0.98		1.00	1.00		1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			0.97	0.85		1.00	0.85		1.00	
Flt Protected		1.00			1.00	1.00		1.00	1.00		1.00	
Satd. Flow (prot)		3458			3294	1431		3610	1615		3610	
Flt Permitted		1.00			1.00	1.00		1.00	1.00		1.00	
Satd. Flow (perm)		3458			3294	1431		3610	1615		3610	
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.82	0.82	0.82	0.89	0.89	0.89
Adj. Flow (vph)	0	199	69	0	189	164	0	641	377	0	673	0
RTOR Reduction (vph)	0	51	0	0	38	90	0	0	123	0	0	0
Lane Group Flow (vph)	0	217	0	0	207	18	0	641	254	0	673	0
Confl. Peds. (#/hr)	7		1	1		7	3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA	Perm		NA	Perm		NA	Perm
Protected Phases		2			4			1			3	
Permitted Phases						4			1			3
Actuated Green, G (s)		13.2			13.2	13.2		53.8	53.8		53.8	
Effective Green, g (s)		13.2			13.2	13.2		53.8	53.8		53.8	
Actuated g/C Ratio		0.16			0.16	0.16		0.67	0.67		0.67	
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0		7.0	
Vehicle Extension (s)		5.0			5.0	5.0		0.2	0.2		0.2	
Lane Grp Cap (vph)		570			543	236		2427	1086		2427	
v/s Ratio Prot		0.06			c0.06			0.18			c0.19	
v/s Ratio Perm						0.01			0.16			
v/c Ratio		0.38			0.38	0.08		0.26	0.23		0.28	
Uniform Delay, d1		29.8			29.8	28.2		5.2	5.1		5.3	
Progression Factor		1.00			1.00	1.00		0.45	0.01		1.00	
Incremental Delay, d2		0.9			0.9	0.3		0.2	0.5		0.3	
Delay (s)		30.6			30.7	28.5		2.6	0.5		5.6	
Level of Service		C			C	C		A	A		A	
Approach Delay (s)		30.6			30.0			1.8			5.6	
Approach LOS		C			C			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			10.6				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		13.0			
Intersection Capacity Utilization			53.3%				ICU Level of Service		A			
Analysis Period (min)			15									

c Critical Lane Group

Queues  
3: Esoteric Way/Driveway & Hannah Blvd



Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	281	134	152	100	140
v/c Ratio	0.30	0.05	0.10	0.41	0.40
Control Delay	6.6	4.1	12.9	25.5	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	4.1	12.9	25.5	12.0
Queue Length 50th (ft)	35	6	17	30	14
Queue Length 95th (ft)	68	15	32	59	37
Internal Link Dist (ft)		819	606	729	236
Turn Bay Length (ft)	205				
Base Capacity (vph)	931	2483	1498	497	632
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.05	0.10	0.20	0.22
Intersection Summary					

HCM Signalized Intersection Capacity Analysis  
3: Esoteric Way/Driveway & Hannah Blvd

Capstone Collegiate Communities - TIS  
Existing AM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 			 		
Traffic Volume (vph)	225	92	15	0	113	4	54	23	8	2	30	73	
Future Volume (vph)	225	92	15	0	113	4	54	23	8	2	30	73	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0		
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00		
Frbp, ped/bikes	1.00	1.00			1.00			1.00			1.00		
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00		
Frt	1.00	0.98			1.00			0.99			0.91		
Flt Protected	0.95	1.00			1.00			0.97			1.00		
Satd. Flow (prot)	1781	3520			3587			1814			1720		
Flt Permitted	0.66	1.00			1.00			0.79			0.99		
Satd. Flow (perm)	1229	3520			3587			1476			1705		
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.85	0.85	0.85	0.75	0.75	0.75	
Adj. Flow (vph)	281	115	19	0	147	5	64	27	9	3	40	97	
RTOR Reduction (vph)	0	6	0	0	3	0	0	8	0	0	84	0	
Lane Group Flow (vph)	281	128	0	0	149	0	0	92	0	0	56	0	
Confl. Peds. (#/hr)	10		4	4		10			9	9			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Turn Type	pm+pt	NA			NA		Perm	NA		Perm	NA		
Protected Phases	1	6			2			8			4		
Permitted Phases	6						8			4			
Actuated Green, G (s)	39.8	39.8			23.8			8.2			8.2		
Effective Green, g (s)	39.8	39.8			23.8			8.2			8.2		
Actuated g/C Ratio	0.66	0.66			0.40			0.14			0.14		
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0		
Vehicle Extension (s)	3.0	0.2			0.2			3.0			3.0		
Lane Grp Cap (vph)	907	2334			1422			201			233		
v/s Ratio Prot	c0.05	0.04			0.04								
v/s Ratio Perm	c0.15							c0.06			0.03		
v/c Ratio	0.31	0.05			0.10			0.46			0.24		
Uniform Delay, d1	4.4	3.5			11.4			23.9			23.1		
Progression Factor	1.00	1.00			1.00			1.01			1.00		
Incremental Delay, d2	0.2	0.0			0.1			1.7			0.5		
Delay (s)	4.6	3.6			11.5			25.6			23.7		
Level of Service	A	A			B			C			C		
Approach Delay (s)		4.3			11.5			25.6			23.7		
Approach LOS		A			B			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			11.7									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.38										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			43.8%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	27	8	6	61	0	18	0	4	0	4	22
Future Vol, veh/h	0	27	8	6	61	0	18	0	4	0	4	22
Conflicting Peds, #/hr	2	0	4	4	0	2	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	80	80	80	69	69	69	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	40	12	8	76	0	26	0	6	0	7	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	56	0	0	164	144	56	149	150	78
Stage 1	-	-	-	-	-	-	50	50	-	94	94	-
Stage 2	-	-	-	-	-	-	114	94	-	55	56	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1533	-	-	1562	-	-	805	751	1016	824	745	988
Stage 1	-	-	-	-	-	-	968	857	-	918	821	-
Stage 2	-	-	-	-	-	-	896	821	-	962	852	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1530	-	-	1557	-	-	764	743	1008	811	738	986
Mov Cap-2 Maneuver	-	-	-	-	-	-	764	743	-	811	738	-
Stage 1	-	-	-	-	-	-	965	854	-	916	815	-
Stage 2	-	-	-	-	-	-	851	815	-	952	849	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.7			9.7			9		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	799	1530	-	-	1557	-	-	938
HCM Lane V/C Ratio	0.04	-	-	-	0.005	-	-	0.046
HCM Control Delay (s)	9.7	0	-	-	7.3	0	-	9
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	29	78	38	10	8	26
Future Vol, veh/h	29	78	38	10	8	26
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	75	75	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	45	122	51	13	11	37

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	65	0	-	0	271 59
Stage 1	-	-	-	-	59 -
Stage 2	-	-	-	-	212 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1550	-	-	-	723 1012
Stage 1	-	-	-	-	969 -
Stage 2	-	-	-	-	828 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1549	-	-	-	699 1011
Mov Cap-2 Maneuver	-	-	-	-	699 -
Stage 1	-	-	-	-	938 -
Stage 2	-	-	-	-	827 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1549	-	-	-	915
HCM Lane V/C Ratio	0.029	-	-	-	0.052
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Queues

1: Hagadorn Rd & Eyde Pkwy



Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	384	896	70	870
v/c Ratio	0.82	0.53	0.53	0.40
Control Delay	40.5	17.1	50.3	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.5	17.1	50.3	8.7
Queue Length 50th (ft)	165	166	36	67
Queue Length 95th (ft)	256	238	m67	136
Internal Link Dist (ft)	823	982		755
Turn Bay Length (ft)			90	
Base Capacity (vph)	547	1689	135	2170
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	0.53	0.52	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis  
 1: Hagadorn Rd & Eyde Pkwy

Capstone Collegiate Communities - TIS  
 Existing PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	249	104	697	137	61	757
Future Volume (vph)	249	104	697	137	61	757
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.5		6.0	5.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frpb, ped/bikes	1.00		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.96		0.98		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1762		3483		1805	3610
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1762		3483		1805	3610
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.87	0.87
Adj. Flow (vph)	271	113	749	147	70	870
RTOR Reduction (vph)	20	0	14	0	0	0
Lane Group Flow (vph)	364	0	882	0	70	870
Confl. Peds. (#/hr)	5			17	17	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases	4					
Actuated Green, G (s)	20.4		37.3		4.8	48.1
Effective Green, g (s)	20.4		37.3		4.8	48.1
Actuated g/C Ratio	0.25		0.47		0.06	0.60
Clearance Time (s)	6.0		5.5		6.0	5.5
Vehicle Extension (s)	3.0		0.2		3.0	0.2
Lane Grp Cap (vph)	449		1623		108	2170
v/s Ratio Prot	c0.21		c0.25		0.04	c0.24
v/s Ratio Perm						
v/c Ratio	0.81		0.54		0.65	0.40
Uniform Delay, d1	28.0		15.3		36.8	8.4
Progression Factor	1.00		1.00		1.04	0.90
Incremental Delay, d2	10.6		1.3		10.8	0.5
Delay (s)	38.6		16.6		49.1	8.0
Level of Service	D		B		D	A
Approach Delay (s)	38.6		16.6			11.1
Approach LOS	D		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			18.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	20.5
Intersection Capacity Utilization			62.8%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Queues  
2: Hagadorn Rd & Service Rd/Hannah Blvd

Capstone Collegiate Communities - TIS  
Existing PM Peak



Lane Group	EBT	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	711	500	228	735	482	1048	120
v/c Ratio	0.66	0.47	0.43	0.38	0.51	0.54	0.13
Control Delay	24.7	17.7	9.7	6.3	4.3	14.1	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.7	17.7	9.7	6.3	4.3	14.1	2.6
Queue Length 50th (ft)	142	77	27	49	21	177	0
Queue Length 95th (ft)	187	113	79	65	42	242	24
Internal Link Dist (ft)	509	819		755		1166	
Turn Bay Length (ft)			85		175		190
Base Capacity (vph)	1203	1172	580	1931	939	1931	904
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	0.39	0.38	0.51	0.54	0.13
<b>Intersection Summary</b>							

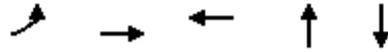
HCM Signalized Intersection Capacity Analysis  
2: Hagadorn Rd & Service Rd/Hannah Blvd

Capstone Collegiate Communities - TIS  
Existing PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	430	195	0	279	354	0	691	453	0	964	110
Future Volume (vph)	0	430	195	0	279	354	0	691	453	0	964	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		7.0	7.0		7.0	7.0
Lane Util. Factor		0.95			0.91	0.91		0.95	1.00		0.95	1.00
Frbp, ped/bikes		1.00			0.99	0.96		1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.95			0.95	0.85		1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3441			3225	1410		3610	1615		3610	1587
Flt Permitted		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3441			3225	1410		3610	1615		3610	1587
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	0	489	222	0	321	407	0	735	482	0	1048	120
RTOR Reduction (vph)	0	45	0	0	89	110	0	0	76	0	0	56
Lane Group Flow (vph)	0	666	0	0	411	118	0	735	406	0	1048	64
Confl. Peds. (#/hr)	44					44	8					8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA	Perm		NA	Perm		NA	Perm
Protected Phases		2			4			1			3	
Permitted Phases						4			1			3
Actuated Green, G (s)		24.2			24.2	24.2		42.8	42.8		42.8	42.8
Effective Green, g (s)		24.2			24.2	24.2		42.8	42.8		42.8	42.8
Actuated g/C Ratio		0.30			0.30	0.30		0.53	0.53		0.53	0.53
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)		5.0			5.0	5.0		0.2	0.2		0.2	0.2
Lane Grp Cap (vph)		1040			975	426		1931	864		1931	849
v/s Ratio Prot		c0.19			0.13			0.20			c0.29	
v/s Ratio Perm						0.08			0.25			0.04
v/c Ratio		0.64			0.42	0.28		0.38	0.47		0.54	0.08
Uniform Delay, d1		24.1			22.3	21.2		10.9	11.6		12.2	9.0
Progression Factor		1.00			1.00	1.00		0.50	0.29		1.00	1.00
Incremental Delay, d2		1.9			0.6	0.7		0.5	1.7		1.1	0.2
Delay (s)		26.0			22.9	22.0		5.9	5.1		13.3	9.2
Level of Service		C			C	C		A	A		B	A
Approach Delay (s)		26.0			22.6			5.6			12.9	
Approach LOS		C			C			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.9				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		13.0			
Intersection Capacity Utilization			68.0%				ICU Level of Service		C			
Analysis Period (min)			15									

c Critical Lane Group

Queues  
3: Esoteric Way/Driveway & Hannah Blvd



Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	393	312	232	164	223
v/c Ratio	0.52	0.15	0.19	0.64	0.49
Control Delay	12.5	5.1	16.0	31.8	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	5.1	16.0	31.8	12.2
Queue Length 50th (ft)	63	17	30	52	27
Queue Length 95th (ft)	136	40	61	95	52
Internal Link Dist (ft)		819	606	729	236
Turn Bay Length (ft)	205				
Base Capacity (vph)	750	2107	1197	419	662
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.15	0.19	0.39	0.34

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
3: Esoteric Way/Driveway & Hannah Blvd

Capstone Collegiate Communities - TIS  
Existing PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	350	220	58	0	208	3	85	53	15	6	61	105	
Future Volume (vph)	350	220	58	0	208	3	85	53	15	6	61	105	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0		
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00		
Frbp, ped/bikes	1.00	0.99			1.00			0.99			1.00		
Flpb, ped/bikes	0.94	1.00			1.00			1.00			1.00		
Frt	1.00	0.97			1.00			0.99			0.92		
Flt Protected	0.95	1.00			1.00			0.97			1.00		
Satd. Flow (prot)	1701	3472			3596			1813			1738		
Flt Permitted	0.61	1.00			1.00			0.66			0.98		
Satd. Flow (perm)	1087	3472			3596			1236			1714		
Peak-hour factor, PHF	0.89	0.89	0.89	0.91	0.91	0.91	0.93	0.93	0.93	0.77	0.77	0.77	
Adj. Flow (vph)	393	247	65	0	229	3	91	57	16	8	79	136	
RTOR Reduction (vph)	0	26	0	0	1	0	0	8	0	0	109	0	
Lane Group Flow (vph)	393	286	0	0	231	0	0	156	0	0	114	0	
Confl. Peds. (#/hr)	52		9	9		52			45	45			
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Turn Type	pm+pt	NA			NA		Perm	NA		Perm	NA		
Protected Phases	1	6			2			8			4		
Permitted Phases	6						8			4			
Actuated Green, G (s)	36.0	36.0			20.0			12.0			12.0		
Effective Green, g (s)	36.0	36.0			20.0			12.0			12.0		
Actuated g/C Ratio	0.60	0.60			0.33			0.20			0.20		
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0		
Vehicle Extension (s)	3.0	0.2			0.2			3.0			3.0		
Lane Grp Cap (vph)	754	2083			1198			247			342		
v/s Ratio Prot	c0.09	0.08			0.06								
v/s Ratio Perm	c0.23							c0.13			0.07		
v/c Ratio	0.52	0.14			0.19			0.63			0.33		
Uniform Delay, d1	7.5	5.2			14.2			22.0			20.6		
Progression Factor	1.00	1.00			1.00			1.01			1.00		
Incremental Delay, d2	0.7	0.1			0.4			5.2			0.6		
Delay (s)	8.2	5.4			14.6			27.5			21.2		
Level of Service	A	A			B			C			C		
Approach Delay (s)		6.9			14.6			27.5			21.2		
Approach LOS		A			B			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			13.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			60.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			79.4%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	113	20	9	84	0	29	0	14	1	7	32
Future Vol, veh/h	0	113	20	9	84	0	29	0	14	1	7	32
Conflicting Peds, #/hr	19	0	12	12	0	19	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	89	89	89	83	83	83	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	119	21	10	94	0	35	0	17	1	9	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	113	0	0	152	0	0	282	275	147	276	285	113
Stage 1	-	-	-	-	-	-	142	142	-	133	133	-
Stage 2	-	-	-	-	-	-	140	133	-	143	152	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1489	-	-	1441	-	-	674	636	905	680	628	945
Stage 1	-	-	-	-	-	-	866	783	-	875	790	-
Stage 2	-	-	-	-	-	-	868	790	-	865	775	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1465	-	-	1427	-	-	627	615	892	650	607	930
Mov Cap-2 Maneuver	-	-	-	-	-	-	627	615	-	650	607	-
Stage 1	-	-	-	-	-	-	857	775	-	861	772	-
Stage 2	-	-	-	-	-	-	814	772	-	845	767	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.7			10.6			9.6		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	694	1465	-	-	1427	-	-	842
HCM Lane V/C Ratio	0.075	-	-	-	0.007	-	-	0.062
HCM Control Delay (s)	10.6	0	-	-	7.5	0	-	9.6
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	71	94	105	19	14	65
Future Vol, veh/h	71	94	105	19	14	65
Conflicting Peds, #/hr	2	0	0	2	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	76	76	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	75	99	138	25	22	102

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	165	0	-	0	406 153
Stage 1	-	-	-	-	153 -
Stage 2	-	-	-	-	253 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1426	-	-	-	605 898
Stage 1	-	-	-	-	880 -
Stage 2	-	-	-	-	794 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1424	-	-	-	569 897
Mov Cap-2 Maneuver	-	-	-	-	569 -
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	792 -

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1424	-	-	-	814
HCM Lane V/C Ratio	0.052	-	-	-	0.152
HCM Control Delay (s)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

Queues

1: Hagadorn Rd & Eyde Pkwy



Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	200	1005	117	476
v/c Ratio	0.70	0.53	0.51	0.19
Control Delay	39.4	14.7	45.6	3.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.4	14.7	45.6	3.7
Queue Length 50th (ft)	77	173	61	32
Queue Length 95th (ft)	104	213	101	39
Internal Link Dist (ft)	823	982		755
Turn Bay Length (ft)			90	
Base Capacity (vph)	335	1892	293	2560
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.60	0.53	0.40	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
 1: Hagadorn Rd & Eyde Pkwy

Capstone Collegiate Communities - TIS  
 Future (2029) AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	85	57	653	151	96	390
Future Volume (vph)	85	57	653	151	96	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.5		6.0	5.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frpb, ped/bikes	1.00		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.95		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1745		3486		1805	3610
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1745		3486		1805	3610
Peak-hour factor, PHF	0.71	0.71	0.80	0.80	0.82	0.82
Adj. Flow (vph)	120	80	816	189	117	476
RTOR Reduction (vph)	31	0	16	0	0	0
Lane Group Flow (vph)	169	0	989	0	117	476
Confl. Peds. (#/hr)	4			5	5	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases	4					
Actuated Green, G (s)	11.8		41.8		8.9	56.7
Effective Green, g (s)	11.8		41.8		8.9	56.7
Actuated g/C Ratio	0.15		0.52		0.11	0.71
Clearance Time (s)	6.0		5.5		6.0	5.5
Vehicle Extension (s)	3.0		0.2		3.0	0.2
Lane Grp Cap (vph)	257		1821		200	2558
v/s Ratio Prot	c0.10		c0.28		c0.06	0.13
v/s Ratio Perm						
v/c Ratio	0.66		0.54		0.58	0.19
Uniform Delay, d1	32.2		12.7		33.8	3.9
Progression Factor	1.00		1.00		1.18	0.84
Incremental Delay, d2	6.0		1.2		4.2	0.2
Delay (s)	38.2		13.9		44.2	3.4
Level of Service	D		B		D	A
Approach Delay (s)	38.2		13.9			11.5
Approach LOS	D		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			15.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.60			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	20.5
Intersection Capacity Utilization			51.1%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Queues  
2: Hagadorn Rd & Service Rd/Hannah Blvd



Lane Group	EBT	WBT	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	285	304	137	671	401	712
v/c Ratio	0.40	0.45	0.36	0.29	0.34	0.30
Control Delay	23.4	24.4	7.6	3.3	0.7	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	24.4	7.6	3.3	0.7	7.2
Queue Length 50th (ft)	52	59	0	29	0	71
Queue Length 95th (ft)	74	85	40	38	0	122
Internal Link Dist (ft)	509	819		755		1166
Turn Bay Length (ft)			85		175	
Base Capacity (vph)	1036	983	509	2337	1187	2337
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.27	0.29	0.34	0.30
<b>Intersection Summary</b>						

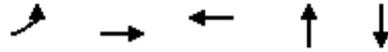
HCM Signalized Intersection Capacity Analysis  
2: Hagadorn Rd & Service Rd/Hannah Blvd

Capstone Collegiate Communities - TIS  
Future (2029) AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑		↑↑	↑		↑↑	↑
Traffic Volume (vph)	0	184	61	0	195	189	0	550	329	0	634	0
Future Volume (vph)	0	184	61	0	195	189	0	550	329	0	634	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		7.0	7.0		7.0	
Lane Util. Factor		0.95			0.91	0.91		0.95	1.00		0.95	
Frbp, ped/bikes		1.00			1.00	0.98		1.00	1.00		1.00	
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00		1.00	
Frt		0.96			0.96	0.85		1.00	0.85		1.00	
Flt Protected		1.00			1.00	1.00		1.00	1.00		1.00	
Satd. Flow (prot)		3463			3274	1431		3610	1615		3610	
Flt Permitted		1.00			1.00	1.00		1.00	1.00		1.00	
Satd. Flow (perm)		3463			3274	1431		3610	1615		3610	
Peak-hour factor, PHF	0.86	0.86	0.86	0.87	0.87	0.87	0.82	0.82	0.82	0.89	0.89	0.89
Adj. Flow (vph)	0	214	71	0	224	217	0	671	401	0	712	0
RTOR Reduction (vph)	0	46	0	0	47	111	0	0	141	0	0	0
Lane Group Flow (vph)	0	239	0	0	257	26	0	671	260	0	712	0
Confl. Peds. (#/hr)	7		1	1		7	3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA	Perm		NA	Perm		NA	Perm
Protected Phases		2			4			1			3	
Permitted Phases						4			1			3
Actuated Green, G (s)		15.2			15.2	15.2		51.8	51.8		51.8	
Effective Green, g (s)		15.2			15.2	15.2		51.8	51.8		51.8	
Actuated g/C Ratio		0.19			0.19	0.19		0.65	0.65		0.65	
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0		7.0	
Vehicle Extension (s)		5.0			5.0	5.0		0.2	0.2		0.2	
Lane Grp Cap (vph)		657			622	271		2337	1045		2337	
v/s Ratio Prot		0.07			c0.08			0.19			c0.20	
v/s Ratio Perm						0.02			0.16			
v/c Ratio		0.36			0.41	0.10		0.29	0.25		0.30	
Uniform Delay, d1		28.2			28.5	26.7		6.1	5.9		6.2	
Progression Factor		1.00			1.00	1.00		0.45	0.01		1.00	
Incremental Delay, d2		0.7			0.9	0.3		0.3	0.5		0.3	
Delay (s)		28.9			29.4	27.1		3.0	0.6		6.5	
Level of Service		C			C	C		A	A		A	
Approach Delay (s)		28.9			28.7			2.1			6.5	
Approach LOS		C			C			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			11.1				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.33									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		13.0			
Intersection Capacity Utilization			54.0%				ICU Level of Service		A			
Analysis Period (min)			15									

c Critical Lane Group

Queues  
3: Esoteric Way/Driveway & Hannah Blvd



Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	290	162	248	103	145
v/c Ratio	0.33	0.07	0.17	0.42	0.40
Control Delay	7.2	4.2	13.2	25.6	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	4.2	13.2	25.6	12.0
Queue Length 50th (ft)	37	8	30	31	14
Queue Length 95th (ft)	72	18	48	61	38
Internal Link Dist (ft)		819	606	729	236
Turn Bay Length (ft)	205				
Base Capacity (vph)	874	2483	1489	490	633
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.33	0.07	0.17	0.21	0.23

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
3: Esoteric Way/Driveway & Hannah Blvd

Capstone Collegiate Communities - TIS  
Future (2029) AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗			↖			↗			↗	↖
Traffic Volume (vph)	232	114	15	0	184	7	56	24	8	3	31	75
Future Volume (vph)	232	114	15	0	184	7	56	24	8	3	31	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frbp, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	0.99	1.00			1.00			1.00			1.00	
Frt	1.00	0.98			0.99			0.99			0.91	
Flt Protected	0.95	1.00			1.00			0.97			1.00	
Satd. Flow (prot)	1786	3536			3584			1815			1720	
Flt Permitted	0.60	1.00			1.00			0.78			0.99	
Satd. Flow (perm)	1124	3536			3584			1453			1701	
Peak-hour factor, PHF	0.80	0.80	0.80	0.77	0.77	0.77	0.85	0.85	0.85	0.75	0.75	0.75
Adj. Flow (vph)	290	142	19	0	239	9	66	28	9	4	41	100
RTOR Reduction (vph)	0	6	0	0	4	0	0	8	0	0	86	0
Lane Group Flow (vph)	290	156	0	0	244	0	0	95	0	0	59	0
Confl. Peds. (#/hr)	10		4	4		10			9	9		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6						8			4		
Actuated Green, G (s)	39.7	39.7			23.7			8.3			8.3	
Effective Green, g (s)	39.7	39.7			23.7			8.3			8.3	
Actuated g/C Ratio	0.66	0.66			0.39			0.14			0.14	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	0.2			0.2			3.0			3.0	
Lane Grp Cap (vph)	854	2339			1415			200			235	
v/s Ratio Prot	c0.06	0.04			0.07							
v/s Ratio Perm	c0.17							c0.07			0.03	
v/c Ratio	0.34	0.07			0.17			0.48			0.25	
Uniform Delay, d1	4.6	3.6			11.8			23.8			23.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.1			0.3			1.8			0.6	
Delay (s)	4.9	3.6			12.1			25.7			23.6	
Level of Service	A	A			B			C			C	
Approach Delay (s)		4.4			12.1			25.7			23.6	
Approach LOS		A			B			C			C	

Intersection Summary

HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	46	10	9	124	0	29	0	7	0	4	23
Future Vol, veh/h	0	46	10	9	124	0	29	0	7	0	4	23
Conflicting Peds, #/hr	2	0	4	4	0	2	0	0	6	6	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	80	80	80	69	69	69	60	60	60
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	69	15	11	155	0	42	0	10	0	7	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	88	0	0	281	260	87	267	267	157
Stage 1	-	-	-	-	-	-	81	81	-	179	179	-
Stage 2	-	-	-	-	-	-	200	179	-	88	88	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1435	-	-	1520	-	-	675	648	977	690	642	894
Stage 1	-	-	-	-	-	-	932	832	-	827	755	-
Stage 2	-	-	-	-	-	-	806	755	-	925	826	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1433	-	-	1515	-	-	635	640	969	674	634	893
Mov Cap-2 Maneuver	-	-	-	-	-	-	635	640	-	674	634	-
Stage 1	-	-	-	-	-	-	929	830	-	825	747	-
Stage 2	-	-	-	-	-	-	758	747	-	911	824	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			10.7			9.5		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1433	-	-	1515	-	-	842
HCM Lane V/C Ratio	0.077	-	-	-	0.007	-	-	0.053
HCM Control Delay (s)	10.7	0	-	-	7.4	0	-	9.5
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	30	87	51	10	8	27
Future Vol, veh/h	30	87	51	10	8	27
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	64	64	75	75	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	47	136	68	13	11	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	82	0	-	0	306 76
Stage 1	-	-	-	-	76 -
Stage 2	-	-	-	-	230 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1528	-	-	-	690 991
Stage 1	-	-	-	-	952 -
Stage 2	-	-	-	-	813 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1527	-	-	-	666 990
Mov Cap-2 Maneuver	-	-	-	-	666 -
Stage 1	-	-	-	-	920 -
Stage 2	-	-	-	-	812 -

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1527	-	-	-	891
HCM Lane V/C Ratio	0.031	-	-	-	0.055
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	10	26	4	2	22
Future Vol, veh/h	9	10	26	4	2	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	11	28	4	2	24

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	58	30	0	0	32	0
Stage 1	30	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	949	1044	-	-	1580	-
Stage 1	993	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	948	1044	-	-	1580	-
Mov Cap-2 Maneuver	948	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	994	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	996	1580
HCM Lane V/C Ratio	-	-	0.021	0.001
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Queues

1: Hagadorn Rd & Eyde Pkwy



Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	404	928	93	897
v/c Ratio	0.84	0.56	0.69	0.42
Control Delay	41.7	17.8	60.4	9.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.7	17.8	60.4	9.9
Queue Length 50th (ft)	173	180	48	89
Queue Length 95th (ft)	#295	249	m#93	150
Internal Link Dist (ft)	823	982		755
Turn Bay Length (ft)			90	
Base Capacity (vph)	547	1660	135	2140
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.56	0.69	0.42

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis  
1: Hagadorn Rd & Eyde Pkwy

Capstone Collegiate Communities - TIS  
Future (2029) PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	260	111	718	145	81	780
Future Volume (vph)	260	111	718	145	81	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.5		6.0	5.5
Lane Util. Factor	1.00		0.95		1.00	0.95
Frpb, ped/bikes	1.00		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.96		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1761		3480		1805	3610
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	1761		3480		1805	3610
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.87	0.87
Adj. Flow (vph)	283	121	772	156	93	897
RTOR Reduction (vph)	20	0	15	0	0	0
Lane Group Flow (vph)	384	0	913	0	93	897
Confl. Peds. (#/hr)	5			17	17	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Prot	NA
Protected Phases	4		2		1	6
Permitted Phases	4					
Actuated Green, G (s)	21.1		36.6		4.8	47.4
Effective Green, g (s)	21.1		36.6		4.8	47.4
Actuated g/C Ratio	0.26		0.46		0.06	0.59
Clearance Time (s)	6.0		5.5		6.0	5.5
Vehicle Extension (s)	3.0		0.2		3.0	0.2
Lane Grp Cap (vph)	464		1592		108	2138
v/s Ratio Prot	c0.22		c0.26		c0.05	0.25
v/s Ratio Perm						
v/c Ratio	0.83		0.57		0.86	0.42
Uniform Delay, d1	27.7		16.0		37.3	8.8
Progression Factor	1.00		1.00		1.04	0.99
Incremental Delay, d2	11.6		1.5		39.3	0.5
Delay (s)	39.3		17.5		78.1	9.3
Level of Service	D		B		E	A
Approach Delay (s)	39.3		17.5			15.7
Approach LOS	D		B			B
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	20.5
Intersection Capacity Utilization			65.0%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

Queues  
2: Hagadorn Rd & Service Rd/Hannah Blvd



Lane Group	EBT	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	760	548	246	762	530	1133	123
v/c Ratio	0.68	0.50	0.45	0.40	0.58	0.60	0.14
Control Delay	25.6	17.7	11.6	6.8	6.0	15.3	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	17.7	11.6	6.8	6.0	15.3	2.6
Queue Length 50th (ft)	154	84	38	54	36	205	0
Queue Length 95th (ft)	207	125	96	70	61	270	25
Internal Link Dist (ft)	509	819		755		1166	
Turn Bay Length (ft)			85		175		190
Base Capacity (vph)	1196	1178	573	1893	911	1893	891
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.47	0.43	0.40	0.58	0.60	0.14
<b>Intersection Summary</b>							

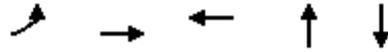
HCM Signalized Intersection Capacity Analysis  
2: Hagadorn Rd & Service Rd/Hannah Blvd

Capstone Collegiate Communities - TIS  
Future (2029) PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑	↑		↑↑	↑		↑↑	↑
Traffic Volume (vph)	0	468	201	0	301	390	0	716	498	0	1042	113
Future Volume (vph)	0	468	201	0	301	390	0	716	498	0	1042	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0		7.0	7.0		7.0	7.0
Lane Util. Factor		0.95			0.91	0.91		0.95	1.00		0.95	1.00
Frbp, ped/bikes		1.00			0.99	0.96		1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.95			0.94	0.85		1.00	0.85		1.00	0.85
Flt Protected		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3448			3218	1410		3610	1615		3610	1587
Flt Permitted		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3448			3218	1410		3610	1615		3610	1587
Peak-hour factor, PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	0	532	228	0	346	448	0	762	530	0	1133	123
RTOR Reduction (vph)	0	34	0	0	96	101	0	0	65	0	0	58
Lane Group Flow (vph)	0	726	0	0	452	145	0	762	465	0	1133	65
Confl. Peds. (#/hr)	44					44	8					8
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA	Perm		NA	Perm		NA	Perm
Protected Phases		2			4			1			3	
Permitted Phases						4			1			3
Actuated Green, G (s)		25.0			25.0	25.0		42.0	42.0		42.0	42.0
Effective Green, g (s)		25.0			25.0	25.0		42.0	42.0		42.0	42.0
Actuated g/C Ratio		0.31			0.31	0.31		0.52	0.52		0.52	0.52
Clearance Time (s)		6.0			6.0	6.0		7.0	7.0		7.0	7.0
Vehicle Extension (s)		5.0			5.0	5.0		0.2	0.2		0.2	0.2
Lane Grp Cap (vph)		1077			1005	440		1895	847		1895	833
v/s Ratio Prot		c0.21			0.14			0.21			c0.31	
v/s Ratio Perm						0.10			0.29			0.04
v/c Ratio		0.67			0.45	0.33		0.40	0.55		0.60	0.08
Uniform Delay, d1		23.9			22.0	21.1		11.4	12.7		13.2	9.4
Progression Factor		1.00			1.00	1.00		0.51	0.34		1.00	1.00
Incremental Delay, d2		2.2			0.7	0.9		0.6	2.4		1.4	0.2
Delay (s)		26.1			22.7	22.0		6.4	6.7		14.6	9.6
Level of Service		C			C	C		A	A		B	A
Approach Delay (s)		26.1			22.5			6.6			14.1	
Approach LOS		C			C			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			15.6				HCM 2000 Level of Service		B			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			80.0				Sum of lost time (s)		13.0			
Intersection Capacity Utilization			68.2%				ICU Level of Service		C			
Analysis Period (min)			15									

c Critical Lane Group

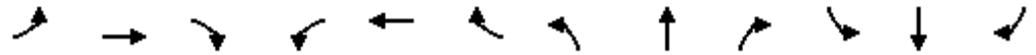
Queues  
3: Esoteric Way/Driveway & Hannah Blvd



Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	406	385	285	170	235
v/c Ratio	0.56	0.18	0.24	0.66	0.51
Control Delay	13.9	5.7	16.6	32.9	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	5.7	16.6	32.9	13.0
Queue Length 50th (ft)	67	24	38	54	31
Queue Length 95th (ft)	146	52	74	98	56
Internal Link Dist (ft)		819	606	729	236
Turn Bay Length (ft)	205				
Base Capacity (vph)	725	2094	1171	408	656
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.18	0.24	0.42	0.36
Intersection Summary					

HCM Signalized Intersection Capacity Analysis  
3: Esoteric Way/Driveway & Hannah Blvd

Capstone Collegiate Communities - TIS  
Future (2029) PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	361	283	60	0	253	6	88	55	15	9	64	108
Future Volume (vph)	361	283	60	0	253	6	88	55	15	9	64	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0			6.0			6.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frbp, ped/bikes	1.00	0.99			1.00			0.99			1.00	
Flpb, ped/bikes	0.95	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			1.00			0.99			0.92	
Flt Protected	0.95	1.00			1.00			0.97			1.00	
Satd. Flow (prot)	1714	3495			3583			1813			1740	
Flt Permitted	0.58	1.00			1.00			0.65			0.98	
Satd. Flow (perm)	1041	3495			3583			1206			1702	
Peak-hour factor, PHF	0.89	0.89	0.89	0.91	0.91	0.91	0.93	0.93	0.93	0.77	0.77	0.77
Adj. Flow (vph)	406	318	67	0	278	7	95	59	16	12	83	140
RTOR Reduction (vph)	0	22	0	0	3	0	0	7	0	0	106	0
Lane Group Flow (vph)	406	363	0	0	282	0	0	163	0	0	129	0
Confl. Peds. (#/hr)	52		9	9		52			45	45		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6						8			4		
Actuated Green, G (s)	35.6	35.6			19.6			12.4			12.4	
Effective Green, g (s)	35.6	35.6			19.6			12.4			12.4	
Actuated g/C Ratio	0.59	0.59			0.33			0.21			0.21	
Clearance Time (s)	6.0	6.0			6.0			6.0			6.0	
Vehicle Extension (s)	3.0	0.2			0.2			3.0			3.0	
Lane Grp Cap (vph)	729	2073			1170			249			351	
v/s Ratio Prot	c0.09	0.10			0.08							
v/s Ratio Perm	c0.24							c0.14			0.08	
v/c Ratio	0.56	0.17			0.24			0.65			0.37	
Uniform Delay, d1	8.1	5.5			14.8			21.8			20.4	
Progression Factor	1.00	1.00			1.00			1.02			1.00	
Incremental Delay, d2	0.9	0.2			0.5			6.1			0.7	
Delay (s)	9.1	5.7			15.3			28.3			21.1	
Level of Service	A	A			B			C			C	
Approach Delay (s)		7.4			15.3			28.3			21.1	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	169	27	11	123	0	36	0	23	1	7	33
Future Vol, veh/h	0	169	27	11	123	0	36	0	23	1	7	33
Conflicting Peds, #/hr	19	0	12	12	0	19	0	0	5	5	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	89	89	89	83	83	83	77	77	77
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	178	28	12	138	0	43	0	28	1	9	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	218	0	0	392	385	209	392	399	157
Stage 1	-	-	-	-	-	-	204	204	-	181	181	-
Stage 2	-	-	-	-	-	-	188	181	-	211	218	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1435	-	-	1364	-	-	571	552	836	571	542	894
Stage 1	-	-	-	-	-	-	803	737	-	825	754	-
Stage 2	-	-	-	-	-	-	818	754	-	796	726	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1412	-	-	1350	-	-	526	532	824	537	522	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	526	532	-	537	522	-
Stage 1	-	-	-	-	-	-	795	730	-	812	734	-
Stage 2	-	-	-	-	-	-	761	734	-	766	719	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	11.7	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	612	1412	-	-	1350	-	-	777
HCM Lane V/C Ratio	0.116	-	-	-	0.009	-	-	0.069
HCM Control Delay (s)	11.7	0	-	-	7.7	0	-	10
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	73	119	115	20	15	67
Future Vol, veh/h	73	119	115	20	15	67
Conflicting Peds, #/hr	2	0	0	2	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	76	76	64	64
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	77	125	151	26	23	105

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	179	0	-	0	449 166
Stage 1	-	-	-	-	166 -
Stage 2	-	-	-	-	283 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1409	-	-	-	571 884
Stage 1	-	-	-	-	868 -
Stage 2	-	-	-	-	770 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1407	-	-	-	535 883
Mov Cap-2 Maneuver	-	-	-	-	535 -
Stage 1	-	-	-	-	815 -
Stage 2	-	-	-	-	768 -

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1407	-	-	-	789
HCM Lane V/C Ratio	0.055	-	-	-	0.162
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	6	53	14	6	39
Future Vol, veh/h	5	6	53	14	6	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	7	58	15	7	42

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	122	66	0	0	73
Stage 1	66	-	-	-	-
Stage 2	56	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	873	998	-	-	1527
Stage 1	957	-	-	-	-
Stage 2	967	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	869	998	-	-	1527
Mov Cap-2 Maneuver	869	-	-	-	-
Stage 1	957	-	-	-	-
Stage 2	962	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	935	1527
HCM Lane V/C Ratio	-	-	0.013	0.004
HCM Control Delay (s)	-	-	8.9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0



**To: Planning Commission**

**From: Brian Shorkey, Principal Planner**

**Date: February 23, 2026**

**Re: Rezoning #26004 – Capstone, Rezone approximately 69 acres located at the east end of Hannah Boulevard from PO, Professional Office and RAA, One Family-Low Density Residential, to RD, Multiple Family, up to 8 dwelling units per acre, subject to a Conditional Rezoning Agreement.**

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Capstone Collegiate Communities, the Applicant, has requested the rezoning of two properties of approximately 69 acres in size (Subject Property) located at the eastern end of Hannah Boulevard from PO, Professional Office and RAA, One Family – Low Density Residential, to RD, Multiple Family, up to a maximum 8 dwelling units per acre, subject to a conditional rezoning agreement. The Subject Property is the last phase of the overall Planned Unit Development (PUD) known as Hannah Farms. If approved, the rezoning will be followed by a new PUD request for the Subject Property.

The Applicant is proposing to develop a series of multi-story buildings, duplexes, and single-family style buildings on the Subject Property. The majority of the buildings are proposed on the larger of the two parcels, the northern one, and would access Hannah Parkway. The final building is proposed on the smaller parcel to the south and would access Eyde Parkway. The rezoning is subject to the following conditions, proposed by the Applicant:

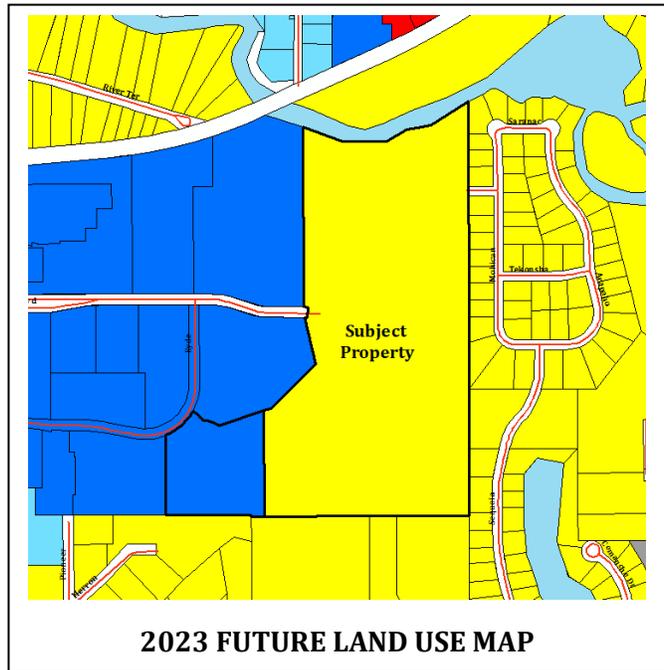
- PUD to be submitted in a specific timeframe
- Limits the number of units to no more than 270 units
- Approximately 38 acres of open space (wetlands/floodplain included)
- Natural Buffer Zone of 248' (no development zone) adjacent to the Indian Hills Neighborhood

### **Future Land Use**

**Rezoning #26004 – (Capstone)  
Planning Commission (February 23, 2026)  
Page 2**

As noted, the Subject Property consists of two parcels. The smaller parcel, fronting on Eyde Parkway, is shown as Mixed Use on the Future Land Use Map. These are areas envisioned for mixed uses containing engaging and walkable streetscapes with varied activities, including multiple residential housing. The Mixed Use designation supports the requested RD zoning in conjunction with the proposed PUD followup.

The second, larger parcel is shown as Suburban Residential on the Future Land Use Map. This is the most prevalent residential category in the Township and is characterized by planned aesthetics, proximity to retail and cultural centers. The Suburban Residential designation correlates with the RAAA, RAA, and RA zoning designations.

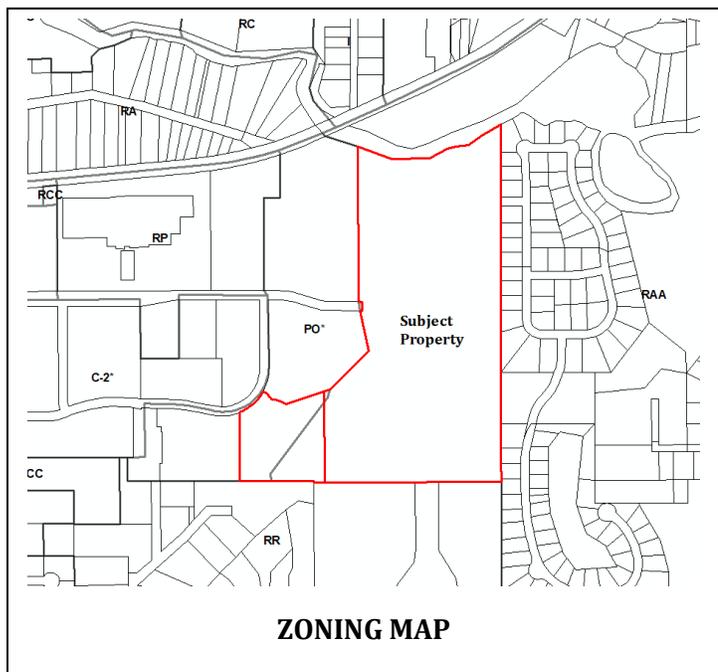


**Zoning**

The first parcel in the Subject Property, fronting on Eyde Parkway, is split zoned between PO (Professional Office) on the west side and RAA (Single-Family Residential) on the east side.

The requested RD zoning district requires a minimum of 100 feet of lot width, 11,000 square feet of lot area for duplexes, and no minimum lot area for multiple family. This parcel in the Subject Property complies with the RD dimensional requirements.

The second, larger, parcel is zoned RAA (Single-Family Residential). It too complies with the dimensional regulations for the requested RD zoning.



As previously noted, if approved, the rezoning will be followed by a Planned Unit Development (PUD) amendment. The PUD would allow flexibility in the dimensional regulations for the Subject Property.

### **Physical Features**

As shown on the attached proposed site plan, the Subject Property is undeveloped and consists of natural vegetation. The Township online GIS shows the presence of wetlands on the southeast and northeast corners of the Subject Property. These wetlands coincide with floodways associated with the Red Cedar River and the associated wetlands. The site plan that was submitted with the application indicates that the Applicant has taken the wetlands and floodways into account.

According to the Greenway Plan, the wetlands/floodways coincide with Priority Conservation Corridors. As noted, the proposed site plan shows that these areas are being preserved.

### **Streets & Traffic**

The Subject Property is accessed from Hannah Boulevard Eyde Parkway. Both of these roads are two-lane local roads with curb and gutter. A 7-foot pedestrian pathway is located along both of those roads.

An updated traffic impact analysis was submitted with this updated application, prepared by Progressive Companies and dated January 2026. The assessment used data from the Institute of Transportation Engineers (ITE) Trip Generation Manual edition to estimate trip generation rates for the proposed development. The analysis concluded that no further infrastructure improvements are recommended, although the study also suggests that signal timing adjustments may need to be made to ensure that queues do not exceed the storage capacity.

A traffic impact study is required for developments that are expected to generate more than 250 additional directional trips during the peak hour. The traffic assessment estimated that the development will generate approximately 110 weekday morning peak hour vehicle trips and approximately 131 afternoon peak hour vehicle trips. The following table summarizes findings from the submitted traffic assessment.

Based on the findings of the attached traffic analysis, the traffic expected to be generated by the proposed rezoning does not require a full traffic impact study. Note that the traffic assessment will have to be reviewed and accepted by the ICRD during Site Plan review.

Although there is a stub street from the Indian Lakes Estates neighborhood going from Mohican into the Subject Property, it is clear from previous development proposals that connecting into the Neighborhood was a strongly undesired outcome. As such, the development proposed secondary access through existing development to the west and functionally seals off the stub street through long term preservation of the land where the stub runs into.

### **Utilities**

Municipal water and sanitary sewer are available to serve the subject site. Sewer and water run along Hannah Boulevard and Eyde Parkway and serve the existing development in Hannah Farms. The location and capacity of utilities for any proposed development will be reviewed in detail by the Department of Public Works and Engineering during Site Plan review.

The Hannah Farm Drain runs along the front of the property. There is also a branch of the Hannah Farm Drain that runs through the southern part of the Subject Property.

### **Staff Analysis**

The applicant has requested the conditional rezoning of an approximately 69-acre parcel on Hannah Parkway from PO and RAA to RD. When evaluating a rezoning request, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts, as well as the reasons for rezoning listed on page two of the rezoning application (attached). Based on this, Planning Staff has the following comments:

1. The current request is to rezone the Subject Property to RD, which allows multiple-family developments up to eight units per acre. Several conditions of approval have been proposed by the Applicant in conjunction with this application, including the following:
  - a. PUD to be submitted in a specific timeframe
  - b. Limits the number of units to no more than 270 units
  - c. Approximately 40 acres of open space (wetlands/floodplain included)
  - d. Natural Buffer Zone of 248' (no development zone) to the Indian Lakes Estates Neighborhood
2. The attached site plan shows a series of buildings on the Subject Property. The setbacks appear to comply with and/or exceed the zoning requirements within the RD zoning district. If the rezoning to RD as proposed is approved, the next step will require an amended Planned Unit Development, followed by site plan approval.
3. The proposed multiple-family development is more intense than anticipated by the Future Land Use map. However, the proposed development does comply with the goal of promoting infill development within the Urban Service Boundary and increasing housing diversity in the Township. In addition, the proposed development can be seen as completing the broader mixed-use development, known as Hannah Farms, which complies with the Master Plan's goal of encouraging mixed-use development.
4. The proposed 270 dwelling units under the conditional rezoning is well below the approximately 440 units permitted under the RD zoning.

### **Planning Commission Options**

The Planning Commission may recommend approval or denial of the request, or it may recommend a different zoning designation than proposed by the applicant to the Township Board. A resolution will be provided at a future meeting.

### **Attachments**

1. Rezoning application and attached materials, dated December 12, 2025 and received by the Township on January 27, 2026.
2. Site plan, prepared by Nequette Architecture and Design, Inc., and received by the Township on January 27, 2026.
3. Traffic Impact Analysis, prepared by Progressive Companies, received by the Township on January 27, 2026.
4. Rezoning criteria.