

**CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION  
AGENDA**

**WORK SESSION and REGULAR MEETING**

**DECEMBER 19, 2016**

**Town Hall Room, Meridian Municipal Building  
5151 Marsh Road, Okemos, MI 48864**

**Work Session Meeting**

1. Call meeting to order at approximately 6:00 p.m.
2. Approval of agenda
3. Discussion
  - A. Master Plan Update
4. Public Remarks
5. Adjournment

**NOTE: The work session may be recessed and reconvened after the regular meeting**

**Regular Meeting**

1. Call meeting to order at approximately 7:00 p.m.
2. Approval of agenda
3. Approval of minutes
  - A. November 14, 2016 Regular Meeting
  - B. November 21, 2016 Regular Meeting
4. Public remarks
5. Communications
  - A. Chris Edwards RE: Special Use Permit #16111
6. Public Hearings
  - A. Mixed Use Planned Unit Development #16024 (Capstone), construct Hannah Farms East project consisting of 296 multiple family residential units at Hannah Boulevard/Eyde Parkway.
  - B. Special Use Permit #16111 (Capstone), construct group of buildings greater than 25,000 square feet at Hannah Boulevard/Eyde Parkway.

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7. Unfinished Business
  - A. Special Use Permit #16101 (Gillett), install outdoor barbeque smoker at 1754 Central Park Drive.
8. Other Business
  - A. Master Plan update
9. Township Board, Planning Commission officer, committee chair, and staff comment or reports
  - A. New Applications - NONE
  - B. Update of Ongoing Projects
    1. Site Plans Received - NONE
    2. Site Plans Approved - NONE
10. Public Remarks
11. Adjournment

**Post Script: Ken Lane**

The Planning Commission's Bylaws state agenda items shall not be introduced for discussion or public hearing that is opened after 10:00 p.m. The chair may approve exceptions when this rule would cause substantial backlog in Commission business (Rule 5.14 Limit on Introduction of Agenda Items).

Persons wishing to appeal a decision of the Planning Commission to the Township Board in the granting of a Special Use Permit must do so within ten (10) days of the decision of the Planning Commission (Sub-section 86-189 of the Zoning Ordinance).

**TENTATIVE  
PLANNING COMMISSION AGENDA**

**WORK SESSION and REGULAR MEETING**

**JANUARY 9, 2016**

**Town Hall Room, Meridian Municipal Building  
5151 Marsh Road, Okemos, MI 48864**

**Work Session Meeting**

1. Master Plan Update

**Regular Meeting**

1. Public Hearings
  - A. Wetland Use Permit #16-06 (Stockwell), discharge storm water runoff to regulated wetland at 1560 Grand River Avenue.
  - B. Rezoning #16070 (Singh), rezone 1.6 acres from RR (Rural Residential) to RDD (Multiple Family) at 1954 Saginaw Highway.
2. Unfinished Business
  - A. Special Use Permit #16091 (Stockwell Development Co., LLC), construct an approximately 12,000 square foot shopping center with two (2) drive-through windows at 1560 Grand River Avenue.
  - B. Mixed Use Planned Unit Development #16024 (Capstone), construct Hannah Farms East project consisting of 296 multiple family residential units at Hannah Boulevard/Eyde Parkway.
  - C. Special Use Permit #16111 (Capstone), construct group of buildings greater than 25,000 square feet at Hannah Boulevard/Eyde Parkway.
3. Other Business

## Peter Menser

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**From:** Chris Edwards <chris.edwards@superiorbrass-mi.com>  
**Sent:** Friday, December 09, 2016 3:44 PM  
**To:** Peter Menser  
**Cc:** Sally Edwards (Sallythevet@comcast.net)  
**Subject:** Capstone Collegiate Communities. Special use permit # 16111

*Hello Peter,*

*It was a pleasure meeting with you today.*

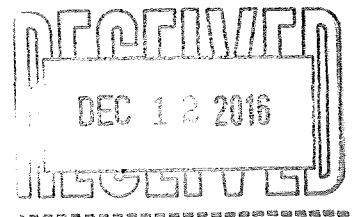
*My wife and I reside at 4612 Herron Road Okemos Michigan. Our home borders the south property line of the proposed Capstone mixed use planned development. When the Eyde Company built the office buildings that are positioned on the south property line and slightly west of the planned development they graciously agreed to an added amount of distance (maybe 15 feet?) to the township set back guidelines. They also planted pine trees on the southern border as part of the setback shield. We would like to see this same setback distance continued down the entire southern border to help shield our home like our neighbors have been able to do. This extra distance will help us block out the lights of the cars parking in the proposed parking spaces that face our property.*

*Our home stands on the same foundation that my father constructed his home on in the late 40's when we bordered the 200 acre Hannah farm. Our north east corner of our home is very close to the north lot line where the new town homes are proposed.*

*Thank you for looking into what was done in the past and considering our request to maintain what has been started. It might help the visualization if we set up a meeting at the house to view what I have tried to describe.*

*Thank you for your time.*

*Chris Edwards  
W 351-7534 C 881-6306*



**CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION  
REGULAR MEETING MINUTES**

**DRAFT**

November 14, 2016  
5151 Marsh Road, Okemos, MI 48864-1198  
853-4000, Town Hall Room, 7:00 P.M.

PRESENT: Commissioners DeGroff, Honicky, Ianni, Jackson, Lane, Opsommer, Scott-Craig,  
Tenaglia, Van Coevering  
ABSENT: None  
STAFF: Director of Community Planning and Development Mark Kieselbach, Senior Planner  
Menser

**1. Call meeting to order**

Chair Scott-Craig called the regular meeting to order at 7:00 P.M.

**2. Approval of agenda**

**Commissioner Ianni moved to approve the agenda. Seconded by Commissioner Honicky.**

VOICE VOTE: Motion carried unanimously.

**3. Approval of Minutes**

**Commissioner Ianni moved to approve the minutes from the October 24, 2016 Regular Meeting and the October 24, 2016 Work Session Meeting. Seconded by Commissioner Opsommer.**

VOICE VOTE: Motion carried unanimously.

**4. Public Remarks**

Chair Scott-Craig opened and closed the floor for public remarks.

**5. Communications**

- A. Dr. Karen Renner, 6270 Skyline Drive, East Lansing; RE: Rezoning #16060
- B. William and Mary Triola, 6292 Skyline Drive, East Lansing; RE: Rezoning #16060
- C. Joseph D. Reid III, 6340 Skyline Drive, East Lansing; RE: Rezoning #16060
- D. Benjamin Louagie, 6118 Skyline Drive, East Lansing; RE: Rezoning #16060

**6. Public hearings**

- A. Rezoning #16060 (Summer Park Realty), rezone approximately 157 acres from RR (Rural Residential) to RAA (Single Family, Low Density) at 2874 Lake Lansing Road.

Chair Scott-Craig opened the public hearing at 7:06 P.M.

- Introduction by the Chair (announcement of procedures, time limits and protocols for public participation and applicants)
- Summary of subject matter  
Senior Planner Menser summarized the rezoning request as outlined in staff memorandum dated November 8, 2016.

- Applicant

Steven Schafer, Schafer Development, 31400 Northwestern Highway #H, Farmington Hills, provided history on this property as a bank foreclosure. He indicated he met with a group of nearby property owners regarding his thoughts on future development of the property. Mr. Schafer indicated it is his intent to rezone the property to one (1) zoning designation (RAA), stating the RR zoned portion is not a good transitional zoning designation given the zoning of the surrounding RAA parcels, adding its designation as a golf course has spanned over a 125 year period. He believed a residential community with four (4) to five (5) different types of housing options, including multi-generational and senior housing, would be well received. Mr. Schafer stated it also is his desire to have “strong” pedestrian linkage through pathways, possibly utilizing the planned unit development (PUD) concept with an open space option. He noted this concept would provide ample buffers to the adjoining neighborhoods. Mr. Schafer indicated it is his intent to work with the Ingham County Drain Commissioner to preserve the wetlands through conscientious awareness of the drainage patterns.

- Public

Leonard Provencher, 5824 Buena Parkway, Haslett, spoke in support of the letters contained in tonight’s packet, and indicated all options should be considered. He believed the amount of growth proposed does not “fit” the Metropolitan Planning Organization’s (MPO) smart growth model.

Lane Barnett, 6126 W. Longview Drive, East Lansing, spoke in support of Mr. Schafer as a sensitive and thoughtful developer who is interested in what is right for the community. He noted he sits on the Board of Directors of the Greens Association. Mr. Barnett expressed appreciation for Mr. Schafer’s willingness to meet with neighbors early in the process to help determine the type of housing stock needed in the community and learn the “flavor” of the area.

Karen Renner, 6270 Skyline Drive, East Lansing, spoke in opposition to the proposed rezoning and indicated her preference for the zoning in the northern half to remain RR. She noted the subject property is unique and expressed a desire to retain the “park-like” setting. Ms. Renner believed the Township would gain revenue with development under the RR zoning designation. She also believed there is a demand for executive-style homes on larger lots with a greenspace look and thought they would sell well. Ms. Renner encouraged Planning Commissioners to walk the property prior to next week’s meeting to review the wetlands and tree location.

Chester Lewis, 5944 Patriots Way, East Lansing, spoke in opposition to the proposed rezoning. He voiced concern with the speed in which the proposed development is moving forward and believed it to be an “inappropriate” step. Mr. Lewis suggested the Planning Commission consider what is the best use of this property for the Township and then work with the owner to obtain maximum benefit on the parcel. He believed its present use is fine and the rezoning would decrease the value of the property.

Randolph Rifkin, 6280 Pine Hollow Drive, East Lansing, stated approval of the rezoning request will change the dynamics of the entire area, including the traffic pattern, the number of people living in the area and property values. He expressed regret that Walnut Hills can never be replaced and a vote to rezone the subject property will take away history of the area.

Geoff Recktenwald, 6035 Dawn Avenue, East Lansing, requested the rezoning be conditioned upon approval of an acceptable planned unit development (PUD). He requested another meeting be scheduled so the PUD can be thoroughly vetted through dialogue with the developer and the community.

Phil Ballbach, 2723 Lake Lansing Road, East Lansing, stated many residents in the neighborhood are not yet aware the impact this project will have on the area. He requested the Planning Commission not rush this request and provide the public with the timetable and steps involved in making decisions on the subject proposal.

Kelley Minnehan, 6108 Skyline Drive, East Lansing, believed a traffic study is essential to approval of the rezoning request as there is an elementary school right down the street on Lake Lansing Road. He stated traffic is the number one issue, especially with the impending Costco development. Mr. Minnehan was concerned with safety because of increased traffic.

Jan Jenkins, 6030 Skyline Drive, East Lansing, stated her property backs up to Walnut Hills. She believed most of the water from the street drains through her basement into Walnut Hills. Ms. Jenkins voiced concern about the water pattern with the proposed rezoning and resulting development. She believed having the development as far from her back yard as possible would be best.

Karla Hudson, 6009 Skyline Drive, East Lansing, spoke to the current challenge for students attending Donley Elementary School in crossing Lake Lansing Road at Hagadorn Road. She expressed concern over children's safety when the traffic increases due to development on the subject property. Ms. Hudson also addressed the health impact of noise emitted from increased traffic.

Mary Leffler, 5978 Patriots Way, East Lansing, stated a family of sand hill cranes took up residence at Walnut Hills. She expressed disappointment that any heavy equipment on the subject property will end the traversing of wildlife at Walnut Hills.

Connie Maundu-Pajak, 6025 Dawn Avenue, East Lansing, expressed concern over increased traffic as she has a special needs son. She requested a traffic study be conducted. Ms. Maundu-Pajak believed her quality of life will be affected and desired to see the green space remain intact.

- Planning Commission discussion:  
Commissioner Ianni noted there were issues with traffic study submitted by the applicant and inquired if an amended traffic study will be submitted to address concerns.

Senior Planner Menser responded the submitted traffic study used a different approach than how the Township usually reviews rezoning requests. He added the Township typically sees a more basic traffic analysis which considered the number of trips generated for the current as well as proposed district. In this instance, Mr. Menser noted the applicant used a specific development scenario of 353 single family homes with points of access on Park Lake Road and Lake Lansing Road. He noted staff supplemented what was submitted by providing background information in the staff report estimating current trips produced by a golf course. Mr. Menser stated it was up to the Planning Commission if they wish to revise portions of the traffic study to cover elements typically discussed during the rezoning process.

Commissioner VanCoevering inquired if the trip generation chart on page 5 of the Planning Commission memorandum was accurate, given the number of trips for the proposed development shown as 3,351 per day and the vehicle trips per day for an existing golf course weekday as 643.

Senior Planner Menser responded staff calculated those numbers using the Institute of Transportation Engineers (ITE) Trip Generation Manual, as it did not receive actual counts for the existing use of the property. He explained the guide looks at traffic generation for many types of uses and estimates the traffic generated by those uses.

Commissioner VanCoevering believed the numbers show a significant increase in traffic. She inquired as to the number of proposed trips if the zoning remained the same and the proposed development was constructed.

Senior Planner Menser indicated he would provide information at the next meeting which will generally look at how many trips a household produces and use different development scenarios (e.g., 200, 300, 400 single family homes) to multiply out the equation.

Commissioner VanCoevering asked if the Planning Commission can request a new traffic study.

Senior Planner Menser replied the Planning Commission can certainly request a supplement to what was provided by the applicant.

Commissioner VanCoevering inquired if the current traffic study includes the increased traffic for the Costco development.

Senior Planner Menser responded in the affirmative. He noted the traffic study will look at level of service (LOS) before and after development.

Commissioner VanCoevering inquired if the wetland map shows which wetlands are regulated.

Senior Planner Menser replied that at this time, the regulated wetlands are not known as delineations have not yet been completed.

Commissioner VanCoevering inquired as to what was in the "purple area" of the Greenspace Map shown by staff on the overhead projector.

Senior Planner Menser responded it is the restoration link, where there is potential to connect the fragile link to the right and the priority conservation corridor to the left.

Commissioner VanCoevering inquired as to how that could happen.

Senior Planner Menser stated how that would happen will be determined based on site design and other factors.

Commissioner VanCoevering inquired about the applicant's statement concerning potential senior and empty nester housing. She asked if that type of housing would be multi-unit or individual homes.



Mr. Schafer responded they are looking at five (5) potential housing products, one of which may be a duplex or a three (3) or four (4) plex. He added market studies show attached units do not sell well.

Mr. Schafer expounded on the questions concerning the traffic study by noting they used the maximum amount of trips for the Township to see what is allowed under its ordinance. He stated he would have the traffic engineer revise the numbers based on different density scenarios. Mr. Schafer noted it is his intent to cater to empty nesters, and believed the traffic manual segregates for senior or active adult type housing v. a conventional family.

Commissioner VanCoevering asked if all of the units will be owner occupied.

Mr. Schafer responded they are anticipated to be owner occupied, with a range from the middle \$300,000 to \$800,000.

Commissioner VanCoevering asked if the zoning can be restricted based on the units being owner occupied.

Senior Planner Menser believed the zoning cannot be restricted based on ownership of the units.

Commissioner DeGroff spoke to the price range given by the applicant. He reiterated there is a big need in the community for diverse housing which is affordable for all persons at all income levels. He believed the price quoted would preclude the ability to offer affordable housing.

Mr. Schafer noted more dense development (i.e., townhomes) allow the price to be brought down v. a single family detached home. He added he looked at that, but was unsure the residents in the area would support that concept. Mr. Schafer stated he will consider including those as a component of the various housing products.

Mr. Schafer mentioned it is his desire to preserve the clubhouse and open it up to the neighbors adjoining the proposed development through use of pathways.

Commissioner DeGroff inquired of staff as to the timetable and steps involved in this process.

Senior Planner Menser replied the process for a rezoning is to hold a public hearing which has been noticed in the paper. He stated the next meeting, based on the tone of the conversation this evening, will either constitute more discussion or a potential Planning Commission recommendation to the Township Board. Senior Planner Menser explained the next step will be for the Township Board to discuss the proposed development, adding he will send all communications from the public on to the Township Board at the appropriate time. He clarified the discussion will dictate how quickly the process moves along, although the Board typically discusses a rezoning at one meeting and votes at the next. Senior Planner Menser explained the Board uses a two-step adoption process for rezonings; one for introduction and one for final adoption.

Mr. Schafer added it is anticipated the golf course will be operational in 2017.

Commissioner DeGroff asked if the rezoning approval could be conditioned on development as a PUD.

Senior Planner Menser responded it can be done, but the condition must be offered by the applicant.

Commissioner Jackson expressed appreciation for the applicant's consideration to preserve and/or redevelop the recreational assets on the property. She voiced concern with the number of trips which existed in 2005 on Lake Lansing Road (5,332) according to the Ingham County Road Department (ICRD). She noted the impact of the proposed number of residences would only exacerbate an already existing problem. Commissioner Jackson asked if there are more recent trip generations for Lake Lansing Road and Park Lake Road.

Senior Planner Menser responded he used the most recent traffic counts provided by the ICRD. He stated he will obtain information on when and where the traffic counts are performed. Mr. Menser believed they are not conducted as often or updated as frequently as they had been in the past.

Commissioner Jackson asked staff how far away is the decision on what will actually be built on the property.

Senior Planner Menser did not want to speculate on when a potential project may be submitted to the Township. He added the rezoning process will likely extend through December, 2016.

Commissioner Jackson stated it can be years between a rezoning approval and submission of a specific project.

Chair Scott-Craig asked how quickly a rezoning request must be resolved.

Senior Planner Menser responded there is no specific timeframe in which the rezoning request must be approved.

Commissioner Honicky addressed wage earner housing, as it is an issue that is on the forefront for the Planning Commission. He stated the "graying" of the population has resulted in more extended care facilities, nursing homes, etc. and employees of those facilities currently are not able to afford to live in the area. Commissioner Honicky noted the importance of providing housing for those employees to enable them to live nearby in order to walk or bike to work. He requested the applicant use a ratio of one (1) wage earner housing per ten (10) units, reducing the lower end range to \$100,00 plus. Commissioner Honicky expressed a desire to ask property owners on Skyline Drive and those on The Greens as to the size of their lots. He spoke to the need for a gradation between the two neighborhoods which can be achieved through careful development of the subject parcel.

Commissioner VanCoevering reiterated the acreage size of parcels in Skyline is two-thirds (2/3) to three-quarters (3/4) of an acre.

Commissioner Honicky asked for the acreage of parcels in The Greens.

[Response from the public was inaudible.]

Chair Scott-Craig commented the vast majority of the lots “up and down” Skyline were .4 acres. He noted on the other side, there are 89-91 condominiums within the PUD, adding that 50% of the upland had to be retained as greenspace.

Commissioner Ianni thanked the developer for his offering of amenities, believing the amenities typically surface during the PUD process, not at the time of the rezoning. He believed the developer has thoughtfully worked to make a positive contribution to the surrounding area. Commissioner Ianni noted the proposed RAA zoning designation is consistent with the surrounding uses, and the Planning Commission must consider what is allowed by right in the RR and RAA zoning currently on the property. Commissioner Ianni felt it important to see what is currently allowed, what could be built there and preferred to table the rezoning until an addendum is received which shows the traffic pattern to be generated by the rezoning.

Commissioner VanCoevering inquired if the East Lansing Schools were notified of the rezoning request and if they provided any response.

Senior Planner Menser replied that everyone within 300 feet of the subject property was notified, including residents in Bath Township on the north side.

Commissioner VanCoevering asked that, in the case of the school, would the notice be sent to the school board.

Senior Planner Menser believed it would have gone to the school address.

Director Kieselbach stated it is dependent upon who is listed on the parcel number card as a rezoning is sent to all property owners within 300 feet. He added that in the case of a subdivision plat, it requires notification to the local school district and other reviewing agencies.

Commissioner Opsommer noted the Township has had conditional rezonings in the past. He asked under what conditions could a conditional rezoning revert if a development does not occur within some specific time frame.

Senior Planner Menser responded there have been time limits placed on rezonings in the past.

Commissioner Opsommer noted the public policy purpose of placing a time limit is to ensure it is flagged for a new Board in the future or for the same Board to revisit the issue at the specific time. He asked why the applicant was not looking for a plat on this site instead of a PUD.

Mr. Schafer replied plats are outdated since the evolvement of the condominium ordinance at the state level. He indicated he is unsure at this point whether the streets will be public or private, but the PUD allows the applicant the ability to maintain roads, while in a platted development the roads become public. Ms. Schafer voiced his preference to work through the condominium process.

Commissioner Opsommer inquired if staff was operating under the assumption the project would come forth as a PUD when it analyzed how many units could be developed under the current zoning v. under the proposed rezoning.

Senior Planner Menser responded he was not operating under either assumption, but used the reduction factor (a.k.a. maximum dwelling units per acre) noted in the 1993 Comprehensive Plan to estimate the number of lots. He indicated there is a reduction for road right-of-way.

Commissioner Opsommer stated that under a PUD, the lot widths are different than with a plat, so there is more flexibility to fit in lots.

Senior Planner Menser stated they are not held to the underlying zoning, so it is a negotiation dependent upon what is submitted in the site layout.

Director Kieselbach reminded Planning Commissioners that a PUD is an overlay district, so it depends upon what the underlying zoning calls for relative to overall density. He acknowledged the PUD is an option to be used and allows for all types of housing options, with the idea to cluster units which results in less infrastructure and road costs.

Commissioner Opsommer expressed a desire to have Ingham County Drain Commissioner Pat Lindemann come to a Planning Commission meeting to offer insight.

Chair Scott-Craig reiterated the Planning Commission is a recommending body to the Township Board where the entire process will be repeated before being acted on. He reminded fellow Commissioners that the rezoning goes with the property, even if it is sold to someone else. Chair Scott-Craig stated that many of the uses for RR zoning and RAA zoning are the same. He clarified Planning Commissioners want to know, as soon as possible, what type of development will be constructed on this property. Chair Scott-Craig offered an example of a previously successful rezoning request.

Mr. Schafer stated he will preserve the existing wetlands and any regulated wetland will not be calculated into the site plan. He stated his goal is to retain over 50% of the property as open space and would create significant buffers to the adjacent neighborhoods. Mr. Schafer believed the current zoning on the property is "out of line" as there is no transition to the adjacent properties. He noted the rezoning request complies with the Master Plan and will work to achieve a good PUD plan. Mr. Schafer stated it is his intent to install a stormwater system which can help relieve the continuous running of sump pumps in neighboring homes. He envisioned not having many back-to-back lots on the single family homes portion of the PUD. Mr. Schafer believed he could provide the Planning Commission with concepts on how to avoid the wetlands, placement of buffers and the various development layouts on the property. He stated he would update the traffic study and have that information available for the next meeting.

Mr. Schafer requested some assurance on the zoning issue as he believed the RR zoning is not consistent with the surrounding area.

Chair Scott-Craig reminded the applicant the area is complicated as the subject property backs up to a functioning farm to the north.

Commissioner VanCoevering asked the applicant if the applicant would provide a concept plan and the date which Commissioners could expect that plan.

Mr. Schafer replied he could make a concept plan available for the next meeting.

Chair Scott-Craig inquired as to the location of a Consumers Energy easement on the property.

Mr. Schafer responded he believed it was in the open space, but, in any event, would not build within that easement.

Chair Scott-Craig requested the applicant attempt to preserve trees, especially on the western border.

Mr. Schafer replied that he will show on the concept plan where the perimeter trees will remain and will construct the roads in such a manner as to avoid more mature trees.

Chair Scott-Craig asked if the applicant saw a problem with the proposed retention of the club house and accompanying restaurant as a commercial entity. He was concerned whether the PUD allowed for such flexibility.

Director Kieselbach stated the club house and restaurant would have to be part of the PUD, which allows 3% of the area to be used for commercial.

Chair Scott-Craig pointed out that a road diet has been under consideration for Lake Lansing Road, which would take a two lane road in each direction and reduce it to one travel lane each way with a center turn lane and bicycle lanes on each side. He believed the center turn lane would affect the traffic pattern in the area of the subject property.

Commissioner DeGroff believed the most productive way for the community to engage in conversation is to imagine an acceptable change for the area.

Commissioner VanCoevering asked if the applicant would have the requested information available to be included in next week's Commission packet which will be delivered the evening of November 18<sup>th</sup>.

Senior Planner Menser assured Commissioners their packets will be delivered to their homes early in the evening of November 18<sup>th</sup>. He reminded them the packet will also be posted to the Township website shortly after 5:00 P.M. the evening of November 18<sup>th</sup>. Senior Planner Menser indicated it is up to the applicant if he can turn the information around within the specified time frame.

Mr. Schafer responded it may be tight, but he would contact his traffic engineer and attempt to provide the traffic information for the next meeting. He added he could provide the concept plan electronically. Mr. Schafer indicated he would try to provide an analysis to look at the surrounding lots in order to obtain an idea of the density for the parcels which abut the subject property.

Chair Scott-Craig closed the public hearing at 8:50 P.M.

- B. Zoning Amendment #16050 (Township Board), amend Section 86-435 and Chapter 38, Article IV, Division 3 of the Code of Ordinances to add instructional centers, mobile food vending units, and outdoor seating as uses permitted in the Industrial (I) zoning district.

Chair Scott-Craig opened the public hearing at 8:50 P.M.

- Summary of subject matter  
Senior Planner Menser summarized the proposed zoning amendment as outlined in staff memorandum dated November 10, 2016.
- Public  
Leonard Provencher, 5824 Buena Parkway, Haslett, stated there was no indication on Dawn Avenue as to the location of Ellison Brewery. He believed extending the “privilege” of allowing a brewery to locate in the industrial district is an “end run” maneuver in order to avoid the strictness of commercial zoning relative to parking, health standards, etc. Mr. Provencher alleged this zoning amendment is for the benefit of the Economic Development Corporation to help its business model. He wondered why the EDC is not considering other commercial areas with the required amount of parking, given the large amount of vacant commercial property in the Township (e.g., empty Chucky Cheese).

Bill McConnell, 4376 Manitou Drive, Okemos, spoke in support of the proposed change to the zoning ordinance. He believed the expansion of the industrial category is forward thinking, as no one could have predicted the current trend ten (10) years ago. Mr. McConnell stated a brewery makes “perfect sense” in an industrial area, as they are manufacturing a product. He noted there is a trend for people to enjoy sampling the wares at the place of manufacture. Mr. McConnell believed the proposed extension of the River Trail along what is currently a dead end will considerably change the character of the area.

- Planning Commission discussion:  
Commissioner Ianni supported the proposed amendment as it caters to changing needs in the community. He noted there is a movement throughout the state to have on-site tasting at local breweries and provide visits to manufacturing facilities with an option for food and drink. Commissioner Ianni believed allowing expansion of skilled trades near Michigan State University and a community college will make the Township more of an educational center for the area.

Commissioner DeGroff reiterated earlier public comment on whether this type of activity is more appropriate in traditional commercial locations such as downtown Okemos. He believed that not necessarily to be the case, as turning a brewery into a place where you can drink a beer is not “entirely” commercial, but part industrial and not an activity suitable for pure commercial areas. Commissioner DeGroff believed an industrial zoned area to be the appropriate place.

Commissioner Honicky stated he has visited a number of wine tasting facilities and finds it to be recreational as well as a gathering activity. He believed a brewery offering beer for sale fits together and makes “sense.” Commissioner Honicky spoke to a different experience he has had with mobile food units, as they traveled from one work site to another, offering coffee and doughnuts. He inquired as to why a mobile food unit owner needed a license at each site. Commissioner Honicky offered an example of a barbeque unit next to Tom’s Party Store as the trailer is “fixed” and not mobile, although it includes wheels. He voiced his preference for the vendors to have more leeway, with one license to operate within Meridian Township.

Senior Planner Menser replied that when the mobile food vending unit ordinance was adopted, there were several iterations of language proposed to be placed in Chapter 38, Licenses and Permits. He indicated all the different aspects and provisions of the proposed language were discussed and ultimately approved by the Township Board.

Commissioner Honicky inquired if the Planning Commission could propose an amendment to the present ordinance to provide vendors with more mobility.

Senior Planner Menser responded the Planning Commission can include an amendment in its recommendation to the Township Board.

Commissioner Opsommer reminded fellow Commissioners the mobile food unit ordinance is not what is before the Planning Commission this evening.

Commissioner Jackson inquired if a food truck operator was required to obtain permission from the property owner in order to temporarily locate their food truck and then come to the Township and pay a fee to obtain a license to stop there.

Senior Planner Menser responded in the affirmative. He added the units are required to have an electrical inspection and receive a building/fire review from the Township.

Commissioner Jackson inquired if that activity takes place for each location.

Senior Planner Menser stated the unit is inspected once and would be licensed at whatever number of locations they apply for. He clarified that to date, the three (3) or four (4) mobile food vending units which have been licensed have requested only one (1) location.

Commissioner Jackson wondered if the reason the mobile food vending unit operators have only requested one (1) location is due to the cost of licensure for each location. She noted the Township is already regulating where they can locate by limiting them to certain zoning districts. Commissioner Jackson believed it burdensome and expensive to require operators to obtain a license for each location.

Commissioner Opsommer believed the zoning amendment to be a useful repurposing tool to allow industrial areas to be used for breweries and distilleries. He noted the success of Red Cedar Spirits, which is a former industrial site with outdoor seating. Commissioner Opsommer also indicated there is an abundance of parking on that site. He spoke to the ratio of employees per square foot when the site was used for heavy industrial manufacturing, acknowledging the ratio has been lowered as industrial uses have evolved over time. Commissioner Opsommer noted Lansing has an industrial district directly adjacent to its downtown area, which was renovated into a mid-town district. He spoke in support of the zoning amendment, stating the Township must ensure the industrial areas have a secondary use, as that need will continue to grow.

Chair Scott-Craig also expressed support for the zoning amendment. He recalled that when one of the owners of Ellison Brewery spoke before the Planning Commission, he reminded Commissioners that because they are producing a food product (beer), they have strict health code regulations mandated by the State of Michigan. Chair Scott-Craig noted there is an issue with the appropriate amount of parking, but shared parking with the foundry next door should suffice.

Chair Scott-Craig asked if staff had determined whether smoking would be allowed in the outdoor seating area.

Senior Planner Menser stated he will follow-up on that question and provide an answer at the next meeting.

Commissioner Opsommer clarified that if staff is serving patrons on the patio, smoking is not permitted.

Chair Scott-Craig closed the public hearing at 9:19 P.M.

**7. Unfinished Business (None)**

**8. Other Business (None)**

**9. Township Board, Planning Commission officer, committee chair, and staff comment or reports**  
Commissioner VanCoevering congratulated fellow Commissioners Jackson and Opsommer on their election to the Township Board.

Chair Scott-Craig announced the Michigan Association of Planning will host a day-long Transportation Bonanza #8 event on Thursday, December 1<sup>st</sup> which will be held at the Lansing Center.

He reported his attendance at December's Environmental Commission meeting where a one hour work session focused on the Township's Master Plan and the protection of open space. Chair Scott-Craig indicated the latest edition of *Planning and Zoning News* was dedicated to the issue of medical marijuana. He suggested fellow Commissioners read the issue, since medical marijuana will come before the Planning Commission at some point. Chair Scott-Craig reported his attendance at the November 3<sup>rd</sup> Economic Development Corporation (EDC) meeting, where time was spent on the EDC's goals and objectives. He noted EDC Chair Buck reported his attendance at a Shaping the Corridor meeting in October concerning a Federal Transit Authority grant awarded to CATA to work on form based code for the corridor. At that meeting, Chair Scott-Craig learned the former Meridian Area Resource Center (MARC) building may not be converted into a Tavern and Tap Restaurant. He thanked Commissioners Jackson and Opsommer for their service on the Planning Commission.

Commissioner Jackson voiced her pleasure at serving Meridian Township as a Planning Commissioner for the last 16 years and working with fellow Commissioners. She noted her intent to earn the trust of the Meridian Township residents over the next four (4) years who voted for her in her new capacity as Township Trustee.

Chair Scott-Craig announced Commissioner Lane's agreement to attend the next Zoning Board of Appeals meeting as the Planning Commission representative.

**A. New Applications - None**

**B. Update of Ongoing Projects**

i. Site Plans Received - NONE

ii. Site Plans Approved – NONE



**10. Public remarks**

Chair Scott-Craig opened public remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, thanked Planning Commissioners for their service to the community. He voiced appreciation to the Planning Commission as a whole for its respect shown to one another during proceedings.

Bill McConnell, 4376 Manitou Drive, Okemos, noted the Planning Commission met this evening in a work session on the Master Plan. During the regular meeting, he noted the Commission held a public hearing on a rezoning application to change the zoning on a large parcel within the Township. Mr. McConnell stated that when the Planning Commission and Township Board look back to the last visionary document for guidance on whether to approve the rezoning request, that document indicates it should be a higher residential zoning. He noted the number of residents who are attempting to retain the current zoning on this parcel is much larger than the number of people who participate in making the next vision. Mr. McConnell stated now is the moment for citizens to participate in visioning as to which of the undeveloped properties they would like to remain undeveloped.

Chair Scott-Craig closed public remarks.

**11. Adjournment**

Chair Scott-Craig adjourned the regular meeting at 8:31 P.M.

Respectfully Submitted,

Sandra K. Otto  
Recording Secretary

**CHARTER TOWNSHIP OF MERIDIAN  
PLANNING COMMISSION  
REGULAR MEETING MINUTES**

**DRAFT**

**November 21, 2016  
5151 Marsh Road, Okemos, MI 48864-1198  
853-4000, Town Hall Room, 7:00 P.M.**

PRESENT: Commissioners DeGroff, Honicky, Ianni, Jackson, Lane, Opsommer, Scott-Craig, Tenaglia  
ABSENT: Commissioner VanCoevering  
STAFF: Director of Community Planning and Development Mark Kieselbach, Senior Planner Peter Menser, Associate Planner/Economic Development Coordinator Ben Motil

**1. Call meeting to order**

Chair Scott-Craig called the regular meeting to order at 7:00 P.M.

**2. Approval of agenda**

**Commissioner Ianni moved to approve the agenda. Seconded by Commissioner Honicky.**

VOICE VOTE: Motion carried 8-0.

**3. Approval of Minutes**

**Commissioner Ianni moved to approve the Work Session Meeting Minutes of November 14, 2016. Seconded by Commissioner Jackson.**

VOICE VOTE: Motion carried 8-0.

**4. Public Remarks**

Chair Scott-Craig opened the floor for public remarks.

Bill McConnell, 4376 Manitou, Okemos, believed the request contained in Rezoning #16060 is in line with the current Future Land Use Map (FLUM) contained in the Master Plan.

Greg Gray, 3381 Canopy Drive, DeWitt, a member of Walnut Hills Country Club for 30 years, spoke in opposition to Rezoning #16060. He believed the rezoning request is in direct conflict to Goal #2 of the Master Plan.

Pat Bridson, 6336 Skyline Drive, East Lansing, spoke in opposition to Rezoning #16060.

Paul Kindel, 2915 Margate Lane, East Lansing, expressed concerns about several issues with Rezoning #16060. He addressed proper handling of water on the site, protected wetlands, site walkability and connection, and installation of pocket parks.

Neil Bowlby, 6020 Beechwood Drive, Haslett, spoke to the lack of a concept plan for Rezoning #16060. He reminded the Planning Commission it should consider all possible uses on the site allowed through the proposed rezoning from RR to RAA. He offered his calculation of the number of dwelling units on the approximately 157 acre parcel, stating it could be from 500-600 dwelling units in a planned unit development (PUD). Mr. Bowlby alleged the proposed layout is an impediment to free flow of wildlife.

Thomas Collins 6116 E. Longview, East Lansing, a member of Walnut Hills since 1977, spoke in opposition to Rezoning #16060.

Rex Foster, 5857 Troyes Road, East Lansing, believed the property owner of Rezoning #16060 is seeking a maximum profit through this rezoning request. He asked the Planning Commission to consider whether the proposed development benefits the Township. Mr. Foster indicated there are people willing to purchase Walnut Hills to retain it as a golf course

Patrick Crilley, 2568 Heather Circle, East Lansing, addressed Goal #1 and #2 of the Master Plan, alleging Rezoning #16060 is in conflict with both of the stated goals. He stated the Township purchased 40 acres of land from Walnut Hills in 2005 at the end of Skyline Drive to be designated as greenspace. Mr. Crilley indicated no nearby neighborhood would benefit from the rezoning request.

Karla Hudson, 6009 Skyline Drive, East Lansing, addressed the walking school children in the area. She spoke to the safety of the Donley Elementary School children who walk to school due to increased traffic as a result of development of the subject property. Ms. Hudson addressed what she believed would be a decrease in the children's quality of life.

Linda McCardel, 9432 Lookout Point, Laingsburg, a member of the Walnut Hills Country Club for over 20 years, spoke in opposition to Rezoning #16060.

Karen Renner, 6270 Skyline Drive, East Lansing, spoke in opposition to Rezoning #16060. She suggested the Township purchase a portion of the site which would be adjacent to the 40 acre parcel it purchased from the owner in 2005. Ms. Renner voiced concern with drainage off the property due to the potential number of dwelling units.

Bruce McFee, 6217 Island Lake Drive, East Lansing, a member of Walnut Hills for 24 years, spoke to the value of homes which abut the Walnut Hills Golf Course. He voiced concern over a decrease in home values if the property is rezoned.

Bill Triola, 6292 Skyline Drive, East Lansing, spoke to the traffic which will come to the area with Rezoning #16060 and the proposed Costco development. He voiced concern with what he believed would be a diminished quality of life. Mr. Triola suggested the Township seek input from Donley Elementary School officials before the proposed rezoning moves forward. He expressed concern over water runoff which would come from any proposed development.

Chris Triola, 6292 Skyline Drive, East Lansing, spoke to the Walnut Hills Golf Course as open space, which forms an undisturbed green corridor in conjunction with a sod farm to the north and a nature preserve to the west. She requested the Planning Commission "do the right thing" for the land, wildlife and residents.

Chester Lewis, 5944 Patriots Way, East Lansing, believed the Master Plan validates why Rezoning #16060 should be denied.

Ken Ketchom, 8445 Cutler Road, Bath, believed retention of the Walnut Hills land to continue to be used as a golf course is economically feasible. He addressed the nearby residents attempt to purchase the golf course.

Anyssa Marvin, 2914 Margate Lane, East Lansing, spoke in opposition to Rezoning #16060 and any additional homes constructed on the subject property.

Steven Marvin, 2914 Margate Lane, East Lansing, spoke in opposition to Rezoning #16060.

David Johnson, 6503 Park Lake Road, East Lansing, stated the drainage system in the area is fragile and voiced concern with water problems as a result of Rezoning #16060.

Erin Recktenwald, 6035 Dawn Avenue, East Lansing, spoke to increased traffic along Lake Lansing Road. She voiced concern with the additional traffic which would be created if Rezoning #16060 is approved. She addressed the potential for increased noise pollution in the area.

Ellie Heusner, 6216 Skyline Drive, East Lansing, stated her preference for Walnut Hills to remain as a golf course. She requested the zoning remain RR as it would allow for much fewer additional homes in the area.

Gay Heusner, 6216 Skyline Drive, East Lansing, spoke to the abundance of wildlife which traverse the grounds of Walnut Hills. She voiced concern with development in the already established wetland areas as depicted on the map. Ms. Heusner expressed concern with increased traffic.

Donna Bozgan, 2715 Skyline Court, East Lansing, spoke in opposition to Rezoning #16060 as it would allow for twice the number of homes to be constructed than under the current RR zoning.

Ben Louagie, 6118 Skyline Drive, East Lansing, spoke in opposition to Rezoning #16060. He noted he built his home in the area because of the greenspace and proximity to Donley Elementary School. Mr. Louagie expressed concern about the increased traffic from the development which would use Lake Lansing Road and the safety of school children who walk to and from Donley and White Hills elementary schools.

Scott Murray, 1550 Stan Lake Drive, East Lansing, a member of Walnut Hills Country Club for 34 years, believed Summer Park Realty is not a developer, but a speculator. He reiterated the zoning goes with the property and once this land is rezoned, it is changed "forever." Mr. Murray voiced opposition to Rezoning #16060.

Rob McDonnell, 5947 Highgate Avenue, East Lansing, addressed the amount of traffic which currently cuts through the Heritage Hills neighborhood to avoid the light at Hagadorn and Lake Lansing Roads. He requested if development of 2874 Lake Lansing Road happens, some measures be put in place to prohibit traffic cut through.

Mary Hoffmann, 6324 Skyline Drive, East Lansing, spoke in opposition to Rezoning #16060.

Robert Baker, 6010 Skyline Drive, East Lansing, made a decision to purchase a home in the area near Walnut Hills last year based on criteria which would no longer apply if the rezoning is approved.

Bill Flynn, 6086 Skyline Drive, East Lansing, believed Rezoning #16060 will diminish property values in the area. He questioned the need for additional housing given the number of homes for sale within the Township. Mr. Flynn voiced concern with increased traffic and opposed the rezoning.

Helena Clark, 5998 Highgate, East Lansing, spoke in opposition to Rezoning #16060 due to increased traffic.

Fred Stacks, 5913 Highgate, East Lansing, believed Rezoning #16060 is a "good idea gone bad." He

requested the Planning Commission not make a decision this evening to allow for more information to be provided. Mr. Stacks spoke to a study conducted which stated no homes in Meridian Township were needed until 2030. He addressed the potential for declining property values because of the sale of the Walnut Hills property.

Candace Bennett, 6305 Skyline Drive, East Lansing, spoke in opposition to Rezoning #16060.

LaNita Campbell, 6049 Skyline Drive, East Lansing, President of the Skyline Hills Association, stated residents of Skyline Drive are not transient and the greenspace in Walnut Hills acts as a buffer for noise from Lake Lansing Road.

## 5. Communications

- A. Jennifer Louagie, 6118 Skyline Drive, East Lansing; RE: Opposition to Rezoning #16060
- B. Chester Lewis, 5944 Patriots Way, East Lansing; RE: Rezoning #16060
- C. Ryan Henry, Owner, Kincaid Henry, 934 Clark Street, Lansing; RE: Rezoning #16060
- D. Anne Hirschel, 5990 Highgate, East Lansing; RE: Opposition to Rezoning #16060
- E. Dr. Karen Renner, 6270 Skyline Drive, East Lansing; RE: Rezoning #16060
- F. Howard Majors, 6310 Island Lake Drive, East Lansing; RE: Opposition to Rezoning #16060
- G. Bill and Chris Triola, 6292 Skyline Drive, East Lansing; RE: Rezoning #16060
- H. Larry and Jane Schneider, 6295 Skyline Drive, East Lansing; RE: Opposition to Rezoning #16060
- I. Donna Rose, 6207 Cobblers Drive, East Lansing; RE: Rezoning #16060
- J. Dr. Karen Renner, 6270 Skyline Drive, East Lansing; RE: Opposition to Rezoning #16060
- K. Jim Bartow, 6164 W. Longview, East Lansing; RE: Support for Rezoning #16060
- L. Chester Lewis, 5944 Patriots Way, East Lansing; RE: Rezoning #16060
- M. Allison Parker, 6150 Skyline Drive, East Lansing; RE: Concerns with Rezoning #16060
- N. Rex Foster, 5857 Troyes Road, East Lansing; RE: Rezoning #16060

## 6. Public hearings

- A. Special Use Permit #16101 (Gillett), install outdoor barbeque smoker at 1754 Central Park Drive.  
Chair Scott-Craig opened the public hearing at 8:21 P.M.
  - Introduction by the Chair (announcement of procedures, time limits and protocols for public participation and applicants)
  - Summary of subject matter  
Senior Planner Menser summarized the special use permit request as outlined in staff memorandum dated November 16, 2016.
  - Applicant  
Matt Gillett Saddleback BBQ, 837 Fred Street, Lansing, stated he and his business partner have an opportunity to expand his current business with an additional location in Meridian Township.
  - Public  
Eric Chagnon, NAI Mid-Michigan, 1754 Central Park Drive, Okemos, and a representative of the landlord, spoke in support of the proposed use for this prospective tenant.
  - Planning Commission discussion:  
Commissioner Ianni inquired if the smoker runs mostly in the evening.

Mr. Gillett replied two (2) individuals come in at 10:00 P.M. to operate the smoker throughout the evening.

Commissioner Ianni stated if there were any odors from the smoker, they would be emitted at night.

Mr. Gillett indicated that if necessary, the smoker can be run during the day. He indicated there is a three (3) to four (4) hour window at the current establishment in the late afternoon and early evening where it is cleaned out. He added the BBQ smoker is operated by hard wood and uses white oak and cherry wood.

Commissioner Honicky inquired if the Environmental Protection Agency (EPA) would have any comment regarding air pollution as a result of use of the smoker.

Mr. Gillett responded he did not know, but will look into that question.

Commissioner Honicky noted the EPA has proposed a catalytic converter on top of wood burning stoves to limit the amount of air pollution.

Mr. Gillett replied this issue was raised in the Austin, TX area and the concept of a "purifier" machine was explored. He noted it was determined to be not workable.

Commissioner Lane asked the applicant if he has had any interactions with other business owners in the existing shopping center.

Mr. Gillett replied he has had discussions with the current business owner where the pad is to be located, but has not reached out to the other businesses.

Commissioner Jackson asked if the pad is considered a structure and must comply with the setback requirements.

Senior Planner Menser responded the pad is considered an accessory structure which must be ten (10) feet from any other structure and five (5) feet from the property line.

Commissioner Jackson reiterated there are setback requirements from the natural features in the rear.

Senior Planner Menser replied in the affirmative.

Chair Scott-Craig encouraged Mr. Gillett to reach out to the neighboring businesses to apprise them of the possible new business.

Chair Scott-Craig closed the public hearing at 8:36 P.M.

## **7. Unfinished Business**

- A. Rezoning #16060 (Summer Park Realty), rezone 157 acres from RR (Rural Residential) to RAA (Single Family, Low Density) at 2874 Lake Lansing Road.  
Senior Planner Menser summarized the process to date and information provided in the staff memorandum dated November 17, 2016.

Planning Commission, applicant and staff discussion:

- Number of lots contained in the traffic engineering addendum were based on the current zoning, the rezoning request if approved and a PUD
- Applicant's "parallel plan" took a conservative approach in order to provide comparisons
- Proposed project will function within the current acceptable levels of service (LOS)
- Analysis contained in the November 14<sup>th</sup> staff memorandum regarding potential density was based on any residential development and used a factor which originated in the 1993 comprehensive plan as a guide
- Applicant's plans to mitigate capacity constraints for the westbound movement at Lake Lansing and Hagadorn Road intersection include the possibility of accelerate and decelerate lanes, turn lanes, additional lanes or resignaling
- Applicant's belief that under the Township's Master Plan it "contemplates" for such changes
- Planned residential development (PRD) asks for the rezoning and provides a plat
- Density of the PRD is based on the underlying zoning
- PRD requires 25% open space
- Commissioner concern with changing the zoning designation on an 157 acre parcel which has unique assets
- Scope of the Planning Commission is to discuss and interpret the 13 rezoning review criteria
- Planning Commission can limit the number of units placed on the parcel by placing conditions on its approval
- Buffers between uses making those uses harmonious is an odd concept
- Reminder that the zoning stays with the land
- Examples of harmonious uses
- Draft layout plan does not provide a greenway or path for wildlife to traverse
- Inquiry if the applicant has a contingency plan if the rezoning request is not approved
- Applicant is amenable to having a discussion with the Township regarding potential purchase of a portion of the property
- Applicant's belief the current RR zoned parcel is spot zoning
- Rezoning request is consistent with the Township's FLUM
- Lack of detail regarding intersection improvement to retain current LOS
- Inquiry as to how the applicant would address the rezoning criteria regarding community need for the proposed development
- Applicant had a market analysis performed which indicated approximately 20,000 households are over the age of 65 and these households would benefit from the type of "empty nester" housing contemplated
- Demand exists for quality one-story housing for aging residents
- Golf courses are typically infill development sites
- Compliance with the Master Plan is more than compliance with the FLUM
- Concern with the direction of water flow
- Preference for the applicant to provide "visuals" of the manner in which it is changing the community
- Preference for the applicant to demonstrate plans for walkability on the property
- Commissioner preference to have more information regarding traffic patterns
- Applicant will work with residents of Skyline and the Greens in extending pedestrian walkways
- Applicant is attempting to preserve the clubhouse for community use
- Clubhouse will be taken down if a conventional subdivision must be built
- Commissioner belief this is not necessarily spot zoning
- The Planning Commission is the recommending body to the Township Board

- Upzoning is considerable given the site is 157 acres
- Concern this upzoning request offers nothing to the Township
- Applicant request for clarification as to the level of plan detail expected
- Preference for the applicant to provide detailed conceptual plans to the Planning Commission prior to making a decision on the rezoning
- Applicant can offer development conditions (e.g., PUD) in conjunction with the rezoning request
- Commissioner preference for affordable housing (\$100,000+) to be included in the conceptual plan
- Applicant statement affordable single family housing is not “doable” based on today’s development costs as they have increased 41% over the last seven (7) years

**It was the consensus of the Planning Commission for the applicant to provide additional information.**

- B. Zoning Amendment #16050 (Planning Commission), amend Section 86-435 and Chapter 38, Article IV, Division 3 of the Code of Ordinances to add instructional centers and outdoor seating as uses permitted in the Industrial (I) zoning district.

**Commissioner DeGroff moved [and read into the record] NOW THEREFORE BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Zoning Amendment #16050, to amend Section 86-435 to allow instructional centers, outdoor seating, and mobile food vending in the Industrial Zoning District. Seconded by Commissioner Honicky.**

Planning Commission discussion:

- All of the new uses will benefit the community
- Appreciation for Meridian Plumbing’s innovation in developing an instructional center and requesting a rezoning which will produce needed skilled laborers

ROLL CALL VOTE: YEAS: Commissioners DeGroff, Honicky, Ianni, Jackson, Lane, Opsommer, Tenaglia, Chair Scott-Craig

NAYS: None

Motion carried 8-0.

## 8. Other Business

### A. 2017 Meeting Schedule

**Commissioner Tenaglia moved [and read into the record] NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN, INGHAM COUNTY, MICHIGAN as follows:**

1. **The Planning Commission will meet for regular meetings on certain Mondays, January through December in 2017 in the Town Hall Room of the Meridian Municipal Building, 5151 Marsh Road, Okemos, MI 48864, 517-853-4560.**
2. **The specific dates for meetings are as follows:**

January

9 - regular meeting



	<b>23 - regular meeting</b>
<b>February</b>	<b>13 - regular meeting</b> <b>27 - regular meeting</b>
<b>March</b>	<b>13 - regular meeting</b> <b>27 - regular meeting</b>
<b>April</b>	<b>10 - regular meeting</b> <b>24 - regular meeting</b>
<b>May</b>	<b>8 - regular meeting</b> <b>22 - regular meeting</b>
<b>June</b>	<b>12 - regular meeting</b> <b>26 - regular meeting</b>
<b>July</b>	<b>10 - regular meeting</b> <b>24 - regular meeting</b>
<b>August</b>	<b>14 - regular meeting</b> <b>28 - regular meeting</b>
<b>September</b>	<b>11 - regular meeting</b> <b>25 - regular meeting</b>
<b>October</b>	<b>9 - regular meeting</b> <b>23 - regular meeting</b>
<b>November</b>	<b>13 - regular meeting</b> <b>27 - regular meeting</b>
<b>December</b>	<b>11 - regular meeting</b> <b>18 - regular meeting</b>

3. Meetings will begin at approximately 7:00 p.m.
4. Special meetings of the Planning Commission may be called pursuant to the applicable statute.
5. Regular meetings may be canceled, recessed, or postponed by members of the Planning Commission pursuant to the applicable statute.
6. A summary of this resolution stating date, place, and time shall be posted in the Meridian Municipal Building within ten (10) days after the first regularly scheduled meeting of the year in accordance with MCL 15.265.

Seconded by Commissioner Ianni.

ROLL CALL VOTE: YEAS: Commissioners DeGroff, Honicky, Ianni, Jackson, Lane, Opsommer, Tenaglia, Chair Scott-Craig  
NAYS: None  
Motion carried 8-0.

- 9. Township Board, Planning Commission officer, committee chair, and staff comment or reports**  
Commissioner DeGroff attended the last meeting of the Downtown Development Authority (DDA) where discussion took place regarding form based code. The DDA also entered into dialog regarding its on-going debt obligations.

Commissioner Honicky spoke to a recent article in the *Lansing State Journal* where the City of Lansing is beginning its discussion of medical marihuana dispensaries. He believed Meridian Township will be faced with a similar discussion.

Commissioner DeGroff added over the last eight (8) years, the federal government has used its prosecutorial discretion relative to marihuana violations in states which have approved the use of medical and/or recreational marihuana as such use continues to be prohibited under federal law.

Chair Scott-Craig announced a form based code training session will be held on December 5, 2016 in East Lansing.

Director Kieselbach announced the Township will hold a session on form based codes for Township Board and Commission members on December 7, 2016 beginning at 3:30 PM at the Meridian Township Hall.

**A. New Applications**

1. Commercial Planned Unit Development #16014 (Saroki), construct a gasoline station at 1619 Haslett Road
2. Rezoning #16070 (Singh), rezone 1.6 acres from RR (Rural Residential) to RDD (Multiple Family) at 1954 Saginaw Highway
3. Wetland Use Permit #16-06 (Stockwell), discharge stormwater runoff to regulated wetland at 1560 Grand River Avenue

**B. Update of Ongoing Projects**

1. Site Plans Received
  - a. Site Plan Review 16-15 (Okemos Pointe, LLC), construct phase one of a mixed use planned unit development located northwest of Jolly Oak Road
2. Site Plans Approved - NONE

**10. Public remarks**

Chair Scott-Craig opened public remarks.

Leonard Provencher, 5824 Buena Parkway, Haslett, inquired if a professional opinion can be obtained

from the Ingham County Drain Commissioner relative to the storm water issues for Rezoning #16060 prior to any action being taken on this rezoning request. He expressed continued opposition to Zoning Amendment #16050 as he believed it is being amended to deal with one individual businesses in Meridian Township.

Chair Scott-Craig closed public remarks.

**11. Adjournment**

Chair Scott-Craig adjourned the regular meeting at 10:00 P.M.

Respectfully Submitted,

Sandra K. Otto  
Recording Secretary

**Mixed Use Planned Unit Development #16024  
(Capstone Collegiate Communities, LLC)  
December 19, 2016**

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

**STATUS OF APPLICANT:** Developer

**REQUEST:** Construct Hannah Farms East mixed use planned unit development

**CURRENT ZONING:** C-2 (Commercial) and PO (Professional and Office)

**LOCATION:** Hannah Boulevard/Eyde Parkway

**AREA OF SUBJECT SITE:** 10.60 acres

**EXISTING LAND USE:** Undeveloped

**EXISTING LAND USES IN AREA:** North: Suburban Ice  
South: Single family residences  
East: Herron Creek Drain, wetland area  
West: Residence Inn hotel, Lansing Community College East, Cornerstone Family Practice

**CURRENT ZONING IN AREA:** North: RP (Research Park)  
South: RR (Rural Residential)  
East: RAA (Single Family, Low Density), PO (Professional and Office)  
West: C-2 (Commercial), PO (Professional and Office)

**FUTURE LAND USE DESIGNATION:** Office

**FUTURE LAND USE MAP:** North: Office  
South: Residential 1.25-3.5 du/a  
East: Office, Residential 1.25-3.5 du/a  
West: Office

# MEMORANDUM

**TO:** Planning Commission

**FROM:**   
Peter Menser  
Senior Planner

**DATE:** December 13, 2016

**RE:** Mixed Use Planned Unit Development (MUPUD) #16024 (Capstone Collegiate Communities, LLC), request to construct Hannah Farms East at Hannah Boulevard/Eyde Parkway.

Capstone Collegiate Communities, LLC has submitted a proposal to construct Hannah Farms East, a multiple family residential project consisting of two 4-story apartment buildings, an 116,000 square foot, 2-story parking garage, and 56 3-story townhouses. The two apartment buildings and the parking garage are proposed for a location at the southwest corner of Hannah Boulevard and Eyde Parkway. The townhouses are proposed along the southeast side of Eyde Parkway as it turns north toward Hannah Boulevard. A total of 296 residential units are proposed. The total project site is approximately 10.60 acres in size on portions of two parcels.

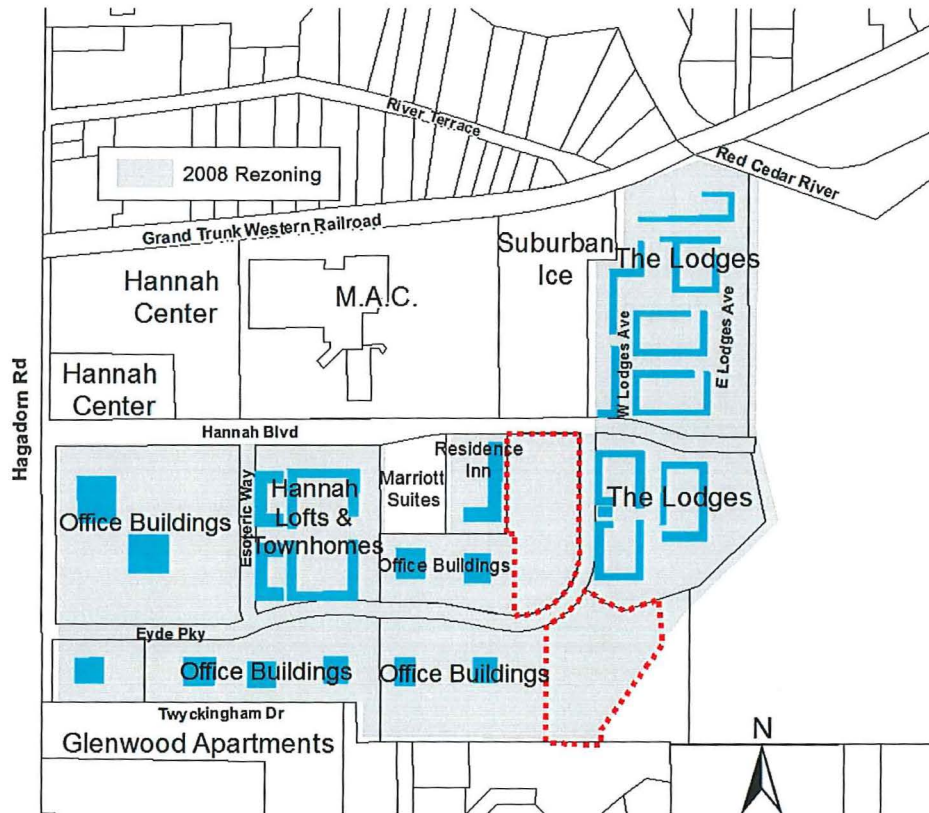
Hannah Farms East is the fifth mixed use planned unit development (MUPUD) project stemming from the 2008 rezoning (REZ #08080) of 81 acres located east of Hagadorn Road that encompassed Hannah Boulevard, Eyde Parkway and Esoteric Way. The 2008 rezoning changed the zoning on five parcels in that area from RP (Research Park) to PO (Professional and Office) and C-2 (Commercial). The rezoning was conditioned on the development of the entire 81 acres in the rezoning using the MUPUD ordinance, construction of a maximum of 1,010 to 1,159 residential units distributed throughout and/or on portions of the subject property, and availability and adequate capacity of public utility services. The other MUPUD projects in the 81 acre rezoning area were The Lodges (2009), The Lodges II (2012), the Residence Inn extended stay hotel (2013), and Hannah Lofts (2013). The table below provides details on each project.

Project	Units	Bedrooms	Total Square Feet	Acreage
Lodges I	220	683	301,271	15.71 acres
Lodges II	144	366	146,318	9.06 acres
Residence Inn	96 rooms	N/A	72,091	2.5 acres
Hannah Lofts	282	702	378,240	7.9 acres

If the 296 units proposed in the Hannah Farms East MUPUD are approved there will be a total of 942 residential units distributed over the properties.

**MUPUD #16024 (Capstone)  
Planning Commission (12/19/16)  
Page 2**

The following map identifies the proposed MUPUD in the context of the 2008 rezoning.



Hannah Farms East will be comprised of two apartment buildings, a parking garage, and 56 townhomes. A total of 381,740 square feet of residential space is proposed. The following is a review of each component of the project, including a breakdown of the number of residential units in each building and the number of bedrooms in each unit.

**Apartment Building #1**

A 4-story apartment building, identified as Building #1 on the submitted site plans, is proposed along the west side of Eyde Parkway, south of Hannah Boulevard. The building is 155,500 square feet in size and has 138 residential units. There are 64 1-bedroom units, 24 2-bedroom units, 28 3 bedroom units, and 22 4-bedroom units. There are a total number of 284 beds in Building #1.

**Apartment Building #2**

A 4-story apartment building, identified as Building #2 on the submitted site plans, is proposed at the southwest corner of Hannah Boulevard and Eyde Parkway. The building is 90,700 square feet in size with 102 residential units. There are 67 1-bedroom units and 35 2-bedrooms units for a total of 137 beds in Building #2.

**Townhouses**

There are 56 townhouses proposed in an area south of Hannah Boulevard and east of Eyde Parkway, southeast of the two apartment buildings. The townhouses are grouped into 10 buildings, each with a different number of residential units. There are two 7-unit buildings, four 4-unit buildings, one 5-unit building, two 6-unit buildings, and one 9-unit building. Each townhouse has four bedrooms, for a total of 224 beds. Eight out of the 10 townhouse buildings have a 2-car garage on the 1<sup>st</sup> (ground) floor.

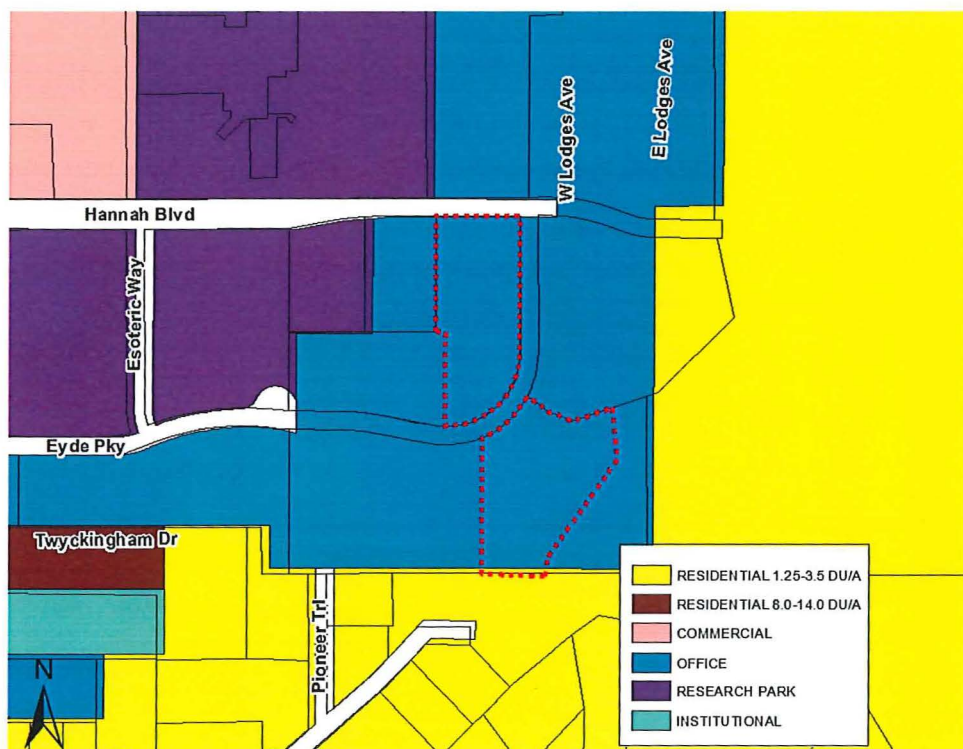
The proposed amenities for the MUPUD include recreational resources (parks), community centers/clubhouses with Wi-Fi, covered bike rack areas, bike racks, a pool, and connections to sidewalks. The proposed amenities will be discussed in detail in the Staff Analysis section of this memorandum.

In addition to the MUPUD, a special use permit (SUP) is required for constructing a building or group of buildings totaling more than 25,000 square feet in gross floor area. The special use permit (SUP #16111) is being processed concurrently with the MUPUD request. The Planning Commission will make recommendations to the Township Board on both the MUPUD and SUP requests, with the Township Board making the final decision on the permit requests.

**Master Plan**

The properties in the project area are designated on the Future Land Use Map from the 2005 Master Plan as Office.

**FUTURE LAND USE MAP**

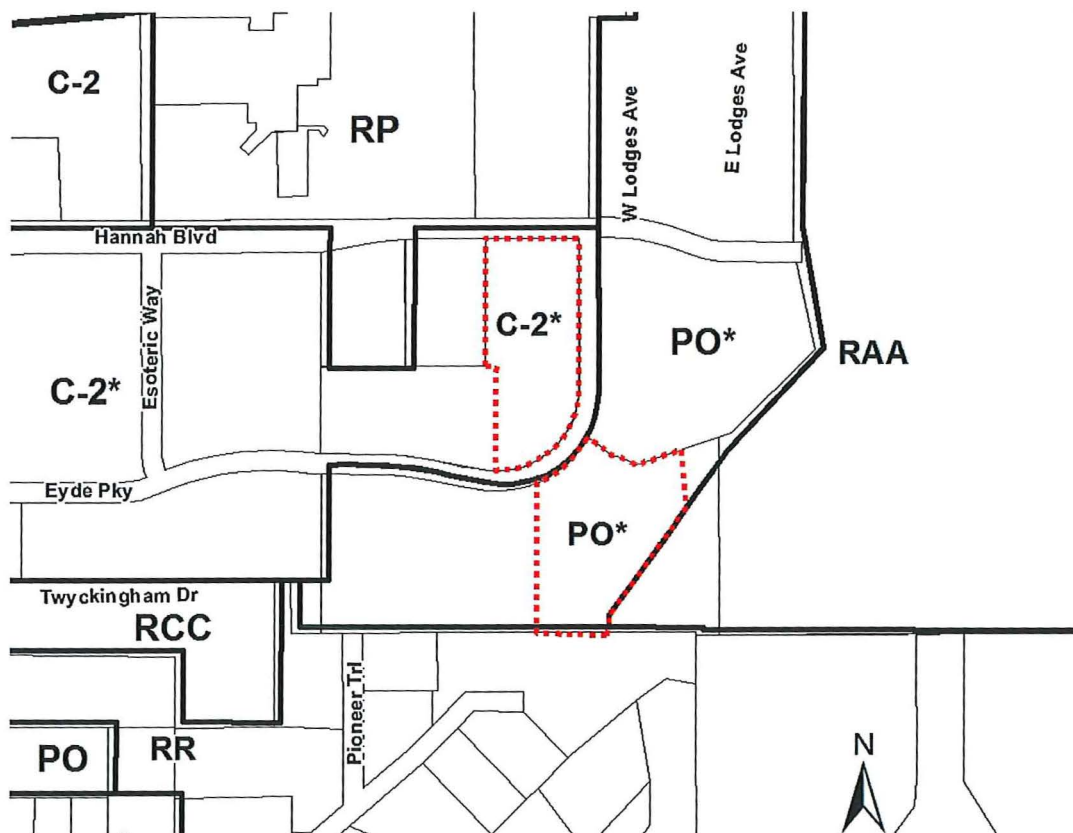


**Zoning**

The proposed project is located in both the C-2 (Commercial) and PO (Professional and Office) zoning districts, the north portion with the apartment buildings and parking ramp is zoned C-2 and the south portion with the townhouses is zoned PO. The C-2 zoning district allows for a mixed use planned unit development (MUPUD). The PO zoning district allows for a MUPUD, but only where public water and sewer are available, and when the MUPUD is adjacent to land zoned and developed in a single-family residential district, the height of buildings in the MUPUD are limited to being no taller than the abutting residential district would allow.

The project area is broken down into what will likely in the future be two separate parcels, a 4.72 acre, C-2 zoned parcel that contains the two apartment buildings and the parking garage, and a 5.87 acre PO zoned parcel that includes the townhouses. The C-2 zoned parcel has approximately 307 feet of frontage along Hannah Boulevard and approximately 950 feet of frontage along Eyde Parkway. The PO zoned parcel has approximately 288 feet of frontage along Eyde Parkway. Both parcels meet and exceed the minimum requirements for lot width and lot area for the C-2 zoning district (100 feet of frontage, 4,000 square feet of lot area) and PO zoning districts (50 feet of frontage and 5,000 square feet of lot area).

**ZONING MAP**





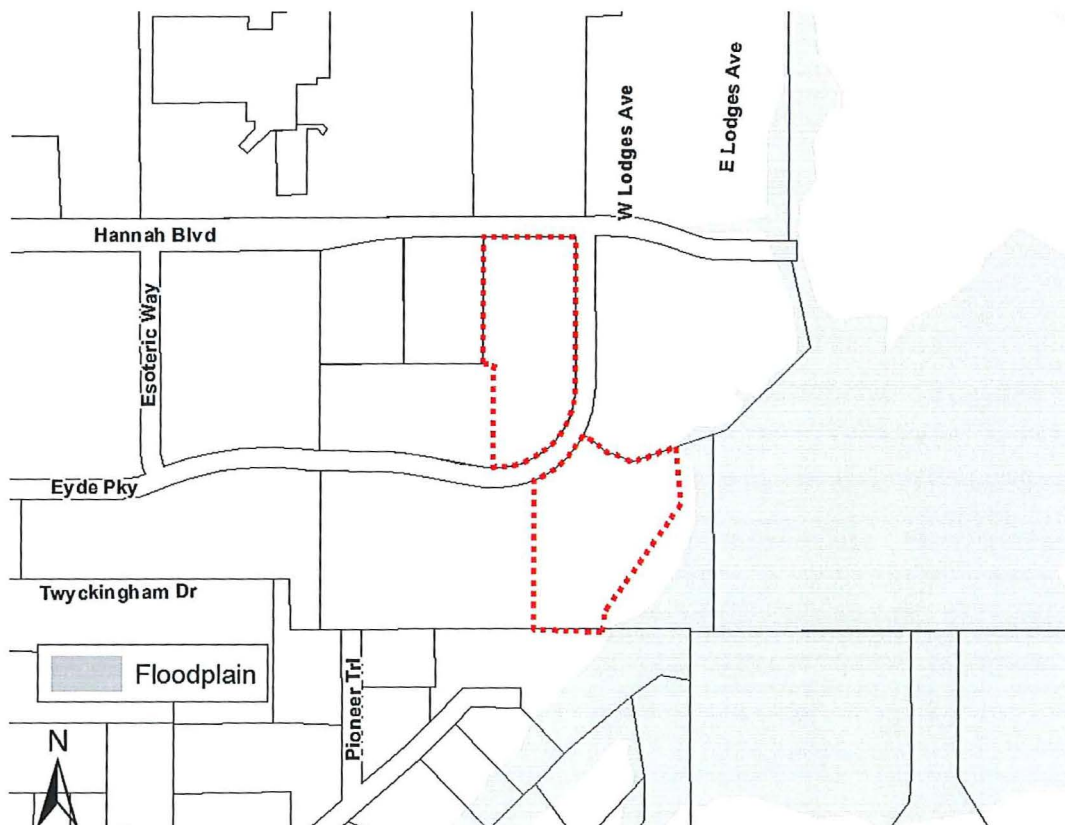
### Physical Features

The subject site is undeveloped. The applicant submitted a Natural Features Assessment for the proposed project that provides extensive review of the natural features in the area proposed for development, including a tree survey showing trees with a dbh (diameter at breast height) of 12 inches or larger. The northern portion of the project area is currently occupied by a planted section of pine trees and a small immature deciduous forest habitat. The southern portion of the project area is an open field. The entire site is relatively flat, with the southeastern most portion of the site sloping toward a wetland area and the Herron Creek Drain. Spoils piles and some construction debris were observed on the southern portion of the site.

### Floodplain

There is a floodplain area located south and east of the southern portion of the project site. No work is proposed in the floodplain.

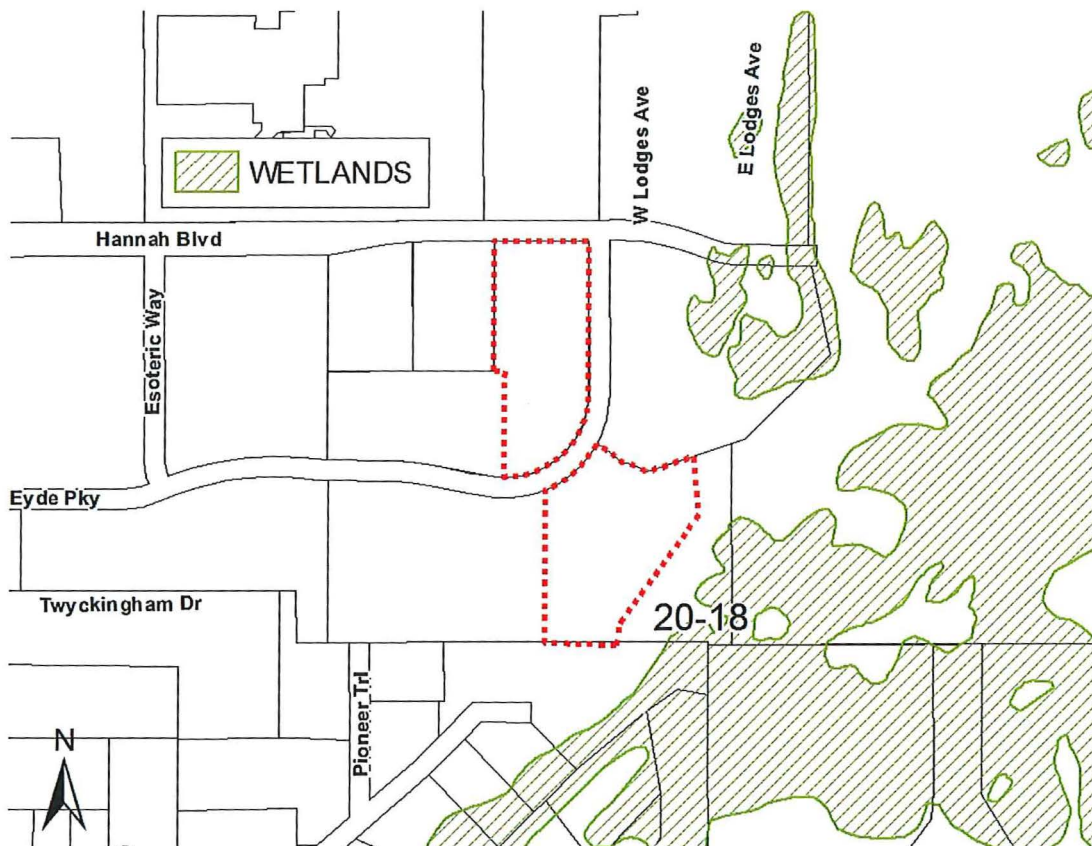
FLOODPLAIN MAP



### Wetlands

Township wetland #20-18 is located southeast of the project site where the property slopes down toward the Herron Creek Drain.

**WETLAND MAP**



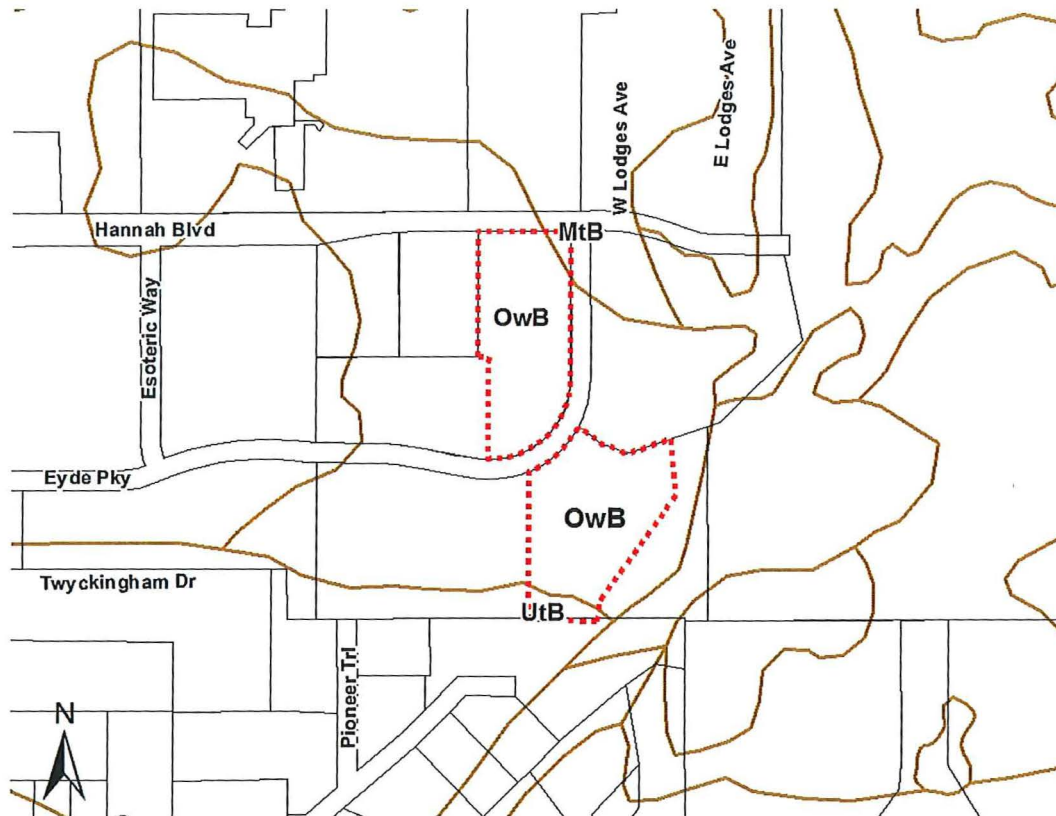
**Soils**

The following chart and map summarize soil information for the subject site:

SOIL ASSOCIATION	SEVERE BUILDING SITE LIMITATIONS
MtB (Metea loamy sand)	None
OwB (Owosso- Marlette sandy loam)	Shrink-swell potential, wetness
UtB (Urban Land – Marlette complex)	Wetness

Source: Soil Survey of Ingham County, Michigan, 1992.

### SOILS MAP



### Streets and Traffic

Hannah Boulevard and Eyde Parkway will provide direct access to the proposed development. Both are classified as local streets and provide access to Hagadorn Road. Hagadorn Road is classified as a Minor Arterial in the 2005 Master Plan. It is a four lane roadway with a center median and curb and gutter. A seven foot wide pathway, part of the Township's Pedestrian-Bicycle Pathway Master Plan, exists on the east side of Hagadorn Road. The Ingham County Road Department's (ICRD) most recent traffic count for Hagadorn Road was taken on a weekday in April, 2011 between Mt. Hope Road and Briarcliff Drive. 17,324 vehicle trips were counted in a 24-hour period, 8,871 travelling northbound and 8,453 southbound. Hagadorn Road, Hannah Boulevard, and Eyde Parkway are all under the jurisdiction of the Ingham County Road Department.

Hannah Boulevard is a four lane divided roadway with a grass median that runs east from Hagadorn Road and terminates just east of the proposed project site. The grass median is not present in the area of the proposed development. There are seven foot sidewalks on the north and south side of Hannah Boulevard. There are no recent traffic counts available for Hannah Boulevard. Eyde Parkway is a two lane roadway with five foot sidewalks on the east side of the property in the vicinity of the proposed project site. There are no recent traffic counts available for Eyde Parkway.

The applicant submitted a traffic study prepared by Traffic Engineering Associates, Inc. dated June 2016 that provides information on traffic generated by the proposed Hannah Farms East development. The study looks at existing, background (future traffic volumes without the traffic generated by the proposed development), and future level of service (LOS) during the AM (8:00-9:00 a.m.) and PM (4:45-5:45 p.m.) peak hours at the following six intersections around the project site.

- Hannah Boulevard at Hagadorn Road
- Hannah Boulevard at Esoteric Way
- Hannah Boulevard at Eyde Parkway
- Hagadorn Road at Eyde Parkway
- Eyde Parkway at Esoteric Way
- Hagadorn Road at Mt. Hope Road

The traffic study notes that existing traffic at the studied intersections all operate at an acceptable LOS (LOS D or better) during the AM and PM peak hours, with the exception of the southbound left turn at the Hagadorn Road/Mt. Hope Road intersection, which operates at a LOS of F during the PM peak hour. The study shows that background traffic at the studied intersections will operate at an acceptable level of service during AM and PM peak hours, with the exception of the southbound left turn at the Hagadorn Road/Mt. Hope Road intersection, which is anticipated to continue operating at a LOS of F.

For future traffic, the study indicates that all studied intersections will continue to operate at an acceptable LOS (if the Hagadorn Road/Mt. Hope Road intersection signal timing is modified) during AM and PM peak hours, except for the southbound left turn at Hagadorn Road/Mt. Hope Road and the northbound through-right movement on Hagadorn Road at Eyde Parkway, which are both expected to operate at a LOS of E during the PM peak hour. The study, based on field counts at the existing Hannah Lodges development, projects that Hannah Farms East will generate 118 vehicle trips during the AM peak hours and 254 vehicle trips during the PM peak hour.

The applicant's traffic consultant recommends modifying the traffic signal timing at Hagadorn Road/Mt. Hope Road, suggesting that the LOS can be upgraded from F to E by doing so. The consultant also recommends modifying the signal timing at the Hagadorn Road/Eyde Parkway intersection to improve LOS. Suggestions were also made to ensure sight distance is maintained at the driveways to the proposed development relative the location of landscape materials.

Preliminary comments from the Ingham County Road Department (ICRD) indicate the proposed driveway locations for the development do not meet ICRD spacing requirements and must be revised. Further, they note that the parallel parking shown along the west side of Eyde Parkway is prohibited because of a "No Parking" Traffic Control Order (TCO) issued by the Michigan State Police. Staff will discuss these preliminary comments with the applicant and ICRD staff and report findings at a future meeting.

### **Utilities**

The Department of Public Works and Engineering has indicated that municipal water and sanitary sewer are both available to serve the proposed development. The location and capacity of utilities will be reviewed in detail during site plan review if the MUPUD and SUP are approved.

## **Parking**

A total of 609 parking spaces are proposed on the site plan, comprised of a mix of surface parking (164 spaces), ramp parking (323 spaces), ground level garage parking under the townhouses (84 spaces), and on-street (38 spaces). 34 of the 609 proposed parking spaces will be lost due to the prohibition of on-street parking along the west side of Eyde Parkway, reducing the number of proposed parking spaces to 575. Staff will verify if the on-street parking spaces will be allowed.

The Township parking ordinance requires two parking spaces for each dwelling unit. 296 dwelling units are proposed, so a minimum of 592 parking spaces are required for the project. One bicycle parking space for every 10 required vehicle parking spaces is also required. 72 inverted U-type bicycle parking racks are proposed in several areas around the development. Each rack provides space for two bicycles for a total of 144 bicycle parking spaces. The ordinance allows the number of required motor vehicle parking spaces on a site to be reduced by one motor vehicle parking space for every two bicycle parking spaces installed on a site, up to a maximum of 10% of the total number of required motor vehicle parking spaces. Using this formula the total number of motor vehicle parking spaces can be reduced by 29 spaces, making a total of 563 required parking spaces for the project. With 575 parking spaces proposed, the parking requirement for the project is met.

## **Staff Analysis**

The applicant has requested to construct two apartment buildings, a parking garage, and 56 townhouses using the MUPUD process for a project named Hannah Farms East. A MUPUD is permitted in the C-2 (Commercial) and PO (Professional and Office) zoning districts. The MUPUD is related to a 2008 rezoning (REZ #08080) that required any project proposed in the 81 acre rezoning area to be developed using the MUPUD ordinance.

The MUPUD ordinance generally waives the standard requirements for lot size, yards, frontage requirements, setbacks, maximum impervious surface, and type and size of dwelling unit, provided the purpose and intent of the ordinance are incorporated into the overall development plan. The MUPUD ordinance is intended to provide flexibility for the Planning Commission and Township Board to set appropriate standards during the review process.

Following is a summary of the project's consistency with the MUPUD ordinance standards. As part of this project analysis, standards for the underlying C-2 and PO zoning districts and other requirements applicable to development in the C-2 and PO districts will be compared to what is proposed on the submitted site plan.

*Land use:* All uses permitted by right and by special use permit in the underlying zoning district are allowed in a MUPUD. A MUPUD in the PO zoning district is allowed only limited commercial uses; the type, size, and location of which must be depicted on a site plan and approved by the Township Board at the time the MUPUD is considered. The proposed land use is multiple family residential.

*Density:* The 2008 rezoning established that a maximum of 1,010 to 1,159 residential units can be distributed throughout and/or on portions of the entire 81 acres that were rezoned. The applicant is proposing 296 multiple family residential units.

**MUPUD #16024 (Capstone)**  
**Planning Commission (12/19/16)**  
**Page 10**

*Phasing:* The applicant has not indicated a phasing plan for the proposed project.

*Amenities:* One or more amenities are required for every MUPUD project and should represent multiple categories from the list of amenity categories found in Section 86-440(e), which are Conservation; Environment; Accessibility; Parks, Recreation, and Culture; Social Interaction; and Site and Building Design. Criteria to determine whether a proposed amenity is acceptable for consideration are found in Section 86-440(e)(2) of the MUPUD ordinance.

The site plan lists the following amenities on Sheets 2 and 3 with a letter designation assigned for each amenity: recreational resources, parks, community center/clubhouse with Wi-Fi, covered bike rack areas, bike racks, a pool, sidewalks that connect to Township sidewalks, and recycle area.

*Building Height:* The maximum building height allowed in a MUPUD is 45 feet. One exception is that in a MUPUD proposed on land zoned PO, when adjacent to land zoned and developed in a single-family residential district, building height is limited to being no taller than the abutting residential district would allow. The submitted building elevations indicate Building #1, the 138 unit apartment building proposed along the west side of Eyde Parkway, is 40 feet tall. Building elevations for the other apartment building and the townhouses are provided but building height is not shown on the plans. The applicant's architect has indicated the apartment buildings are approximately 45 feet tall as measured to the top of the roof and the townhouses are 40 feet tall. Detailed, scaled building elevations will be required to confirm building heights.

The townhouse portion of the MUPUD proposed on the south side of Eyde Parkway is on land zoned PO. Directly south of the PO zoning is a single family residential neighborhood which is zoned RR (Rural Residential) and to the east is land zoned RAA (Single Family, Low Density). The maximum building height allowed in RR and RAA is 35 feet. The PO zoned portion of the MUPUD, which includes the proposed townhouses, will be limited to 35 feet in height. A variance may be required to construct the townhouses taller than 35 feet in height.

*Building Materials:* Generally, building materials in a MUPUD should include, but are not limited to, wood, brick, clapboards, beadboard, glass, and stone. Other materials such as vinyl, aluminum, and other metal sidings should be avoided. All buildings should be completed on all sides with acceptable materials. The design of the building should relate to and blend with the facades of adjacent buildings and complement streetscape improvements in the area.

The proposed building material for the apartment buildings is brick. The applicant's architect has indicated fiber cement board will also be used, however a sample of that material was not provided. Vinyl siding is proposed for the townhouses; however the applicant's architect indicated via email cement board may also be an option. The MUPUD ordinance specifically discourages the use of vinyl siding. Color renderings of the building elevations are attached to this memorandum. A sample board of the building materials submitted by the applicant will be displayed at the public hearing.

*Architectural design:* The MUPUD ordinance states that buildings wider than 50 feet shall be divided into increments of not more than 50 feet through articulation of the façade. If not provided, a variance is required from the Zoning Board of Appeals. Scaled building elevations have not been provided thus staff could not confirm the status of the articulation.

*Railings, benches, trash receptacles, or bicycle racks:* Accessory items such as railings, benches, trash receptacles, or bicycle racks shall be of commercial quality and complement the building design and style. 72 bicycle racks are shown on the submitted site plans, as are two areas for covered bike parking in the proposed parking ramp, one at the northeast corner and one at the southeast corner. Information on proposed railings, benches, trash receptacles or other accessory items were not provided.

*Trash and Recycling:* A trash compactor is shown in an area near the proposed townhouses along Eyde Parkway. A recycling area is shown adjacent to the trash compactor. Details on the trash compactor and recycling area, including elevation drawings, were not provided.

*Parking:* The setbacks for a parking area and the number of parking spaces required can be waived in a MUPUD. 592 parking spaces are required for the project and the applicant is proposing 609 parking spaces. 34 of those proposed parking spaces will be removed due to a prohibition of on-street parking along the north and west side of Eyde Parkway.

*Landscaping:* Proposed landscaping must generally comply with the provisions of the Code of Ordinances. Section 86-758 of the Code of Ordinances outlines the typical landscape requirements for off-street parking areas including landscaped islands at least ten feet in width, a minimum of 200 square feet of interior landscaping for every ten parking spaces, and two interior canopy trees per ten parking spaces. Section 86-473 provides standards for street trees. A landscape plan was not provided but will be required should the proposed project move to the site plan review process.

*Lighting:* The MUPUD ordinance requires site lighting to comply with the Outdoor Lighting Ordinance (Section 38-371 of the ordinance) and limits street lighting intended to provide illumination for pedestrians on the sidewalk to no taller than 15 feet in height. Information on proposed site lighting was provided and will be reviewed in detail during site plan review.

*Signs:* A sign program is required as part of the MUPUD application showing the style, size, number, and location of any proposed signs. The sign program is approved as part of the MUPUD. The submitted architectural plans show the locations of several proposed signs; two wall signs on the west elevation and one wall sign on the east elevation of the clubhouse attached to Building #1, one wall sign on the east elevation of the clubhouse attached to Building #2, one monument sign facing Hannah Boulevard, and signs indicating the unit number for each townhouse. Additional details on proposed signage, including proposed sizes and materials, will be required.

*Sidewalks:* Generally, sidewalks in a MUPUD must be a minimum of five feet in width. Seven foot wide sidewalks are required when a sidewalk is located immediately adjacent to an off-street parking area. The proposed five foot sidewalk proposed along the west side of Building #1 near the clubhouse must be widened to seven feet as it is adjacent to an off-street parking area. The submitted site plan shows internal circulation is provided via five foot wide sidewalks around the proposed buildings. The applicant is proposing to widen the existing five foot wide sidewalks to seven feet along the south side of Eyde Parkway along the townhouse parcel frontage. All sidewalks in this area, with the exception of the seven foot pathway on the east side of Hagadorn Road, are not part of the Township's pathway system and are privately owned and maintained.

**Waiver requests**

The MUPUD ordinance generally waives the standard requirements for lot size, setbacks, type and size of dwelling unit, frontage, number of required parking spaces, and impervious surface coverage, provided the purpose and intent of the ordinance are incorporated into the overall development plan. Based on the submitted site plan the applicant is requesting the following waivers for the Hannah Farms East project.

*Front yard setback*

A 25 foot front yard setback from the street right-of-way (ROW) line is required along Hannah Boulevard and Eyde Parkway. At its closest point Building #2 is setback approximately 17 feet from the Hannah Boulevard ROW and nine feet from the Eyde Parkway ROW. Building #1 is setback approximately 5.12 feet at its closest point to the Eyde Parkway ROW.

*Rear yard setback*

The PO zoning district requires a 50 foot rear yard setback from an adjacent residential zoning district boundary. The proposed townhouses border the RAA (Single Family, Low Density) at the east and the RR (Rural Residential) zoning district on the south. The townhouses are setback approximately 10 feet from the RAA zoning district line on the east.

*Parking setbacks*

Where a parking area adjoins the same or any other nonresidential district a landscaped buffer at least 15 feet wide must be provided between the parking area and the property line. On the north side of Eyde Parkway the surface parking lot is depicted approximately two feet off the western property line. The proposed parking ramp is shown 11 feet off the property line.

Where a parking area with a capacity of 50 or more vehicles adjoins a residential district a landscaped buffer at least 40 feet wide must be provided between the parking area and the adjoining property line. A vertical screen no less than four feet in height must also be erected consisting of a masonry wall, plant materials, a landscaped earth berm, or a combination thereof, as appropriate for the site. The parking lot at the south side of the townhouse parcel is located five feet from the RR zoning district line.

*Impervious surface coverage*

The maximum impervious surface allowed in the C-2 zoning district is 70 percent. The project proposes 75 percent impervious for the portion located in the C-2 zoning district. In the PO zoning district the maximum impervious surface allowed is 75 percent. 53 percent impervious surface is proposed for the portion of the project located in the PO zoning district. The overall project site is 63.58 percent impervious.

The Township Development Review Committee (DRC) met on Tuesday, December 13, 2016 and discussed details of the project, including fire protection for the proposed 2-story parking ramp. Fire officials and the applicant will meet to establish a plan for coverage of the ramp.



**MUPUD #16024 (Capstone)**  
**Planning Commission (12/19/16)**  
**Page 13**

**Planning Commission Options**

The Planning Commission may recommend approval, approval with conditions, or denial of the proposed MUPUD. A resolution will be provided at a future meeting.

**Attachments**

1. Application and attachments
2. Site plans dated June 3, 2016
3. Building elevations and floor plans stamped received on November 14, 2016
4. Letter from Ingham County Drain Commissioner's office dated November 29, 2016

G:\Community Planning & Development\Planning\MIXED USE PLANNED UNIT DEVELOPMENTS (MUPUD)\2016\MUPUD 16024 (Capstone)\MUPUD 16024.pc1

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

MIXED USE PLANNED UNIT DEVELOPMENT APPLICATION

Before submitting this application for review, an applicant shall participate in the pre-application conference with the Director of Community Planning and Development to discuss the requirements for a Mixed Use Planned Unit Development.

**Part I**

A. Applicant CAPSTONE COLLEGIATE COMMUNITIES, LLC  
 Address of Applicant 431 OFFICE PARK DR., BIRMINGHAM, AL 35223  
 Telephone - Work (205) 414-6432 E-Mail JACKAN@CAPSTONEAL.COM Fax (205) 414-6405  
 Interest in property (circle one): Owner Tenant Option Other \_\_\_\_\_  
 (Please attach a list of all persons with an ownership interest in the property.)

B. Site address / location / parcel number PART OF PARCELS 33-02-02-20-326-009 (6010)  
 Legal description (please attach if necessary) SEE PLANS  
 Current zoning C-2 / P-O  
 Project name HANNAH FARMS EAST

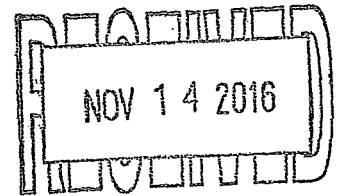
C. Developer (if different than applicant) SAME  
 Address \_\_\_\_\_  
 Telephone: Work \_\_\_\_\_ E-Mail \_\_\_\_\_ Fax \_\_\_\_\_

D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:  
 Name KEBS INC - GREG PETRU  
 Address 2116 HASLETT ROAD, HASLETT ME 48840  
 Telephone(s) (517) 339-1014 E-Mail G.PETRU@KEBS.COM Fax (517) 339-8017

E. Acreage of all parcels in the project: Gross 10.60 Net 10.60

F. Proposed Uses and Site Amenities:

1. Non-residential uses:
  - a. Type CLUBHOUSE (2), PARKING RAMP, MAINTENANCE
  - b. Percent of project area 16.23% OF BUILDING AREA (1ST FLOOR)
  - c. Total square feet for non-residential uses 71,450 SF
  - d. Usable floor area 13,000 SF
  - e. Number of employees 5 FULL TIME, 10-15 PART TIME
  - f. Hours of operation 7 AM - 9 PM

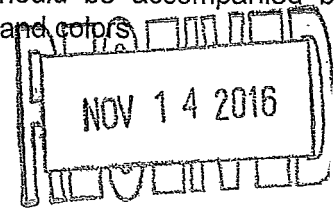


2. Residential Uses:
  - a. Percent of project area \_\_\_\_\_
  - b. Total dwelling units 296
  - c. Dwelling unit mix:
    - i. Number of single family detached: for Rent \_\_\_\_\_ Condo \_\_\_\_\_
    - ii. Number of duplexes: for Rent \_\_\_\_\_ Condo \_\_\_\_\_
    - iii. Number of townhouses: for Rent 56 Condo \_\_\_\_\_
    - iv. Number of garden style apartments: for Rent 240 Condo \_\_\_\_\_
    - v. Number of other dwellings: for Rent \_\_\_\_\_ Condo \_\_\_\_\_

3. Parking:
- a. Non-residential uses     =
- b. Residential uses   609
4. Proposed Amenities: Type CONNECTING SIDEWALKS
- (General) Type GREEN SPACE / PARK AREA
- (SEE PLANS) Type CLOSET / POOL
- Type COFFEE BIKE RACKS
- Proposed Amenities: Type \_\_\_\_\_
- (Density Bonus) Type \_\_\_\_\_
- Type \_\_\_\_\_
- Type \_\_\_\_\_

G. The following support materials must be submitted with the application:

1. Nonrefundable fee.
2. Legal Description of the property. (A sealed survey may be required) - SEE PLANS
3. Evidence of fee or other ownership of the property or a letter from the owner authorizing the request including the owner's proof of ownership.
4. A written description of the project including, but not limited to: a site analysis; the principal factors which influenced the site plan and architectural elements; and, the proposed phasing program for non-residential and residential uses, installation and/or construction of amenities.
5. Fourteen copies (Thirteen (13) 24"x36" and one 8½" x11") of a Site Plan drawn to a readable scale containing the following (may be a set of plans for readability):
  - Total property, its location in the Township, its relationship to adjacent properties
  - Boundaries of subject property
  - Location and dimensions of all existing and proposed structures
  - Approximate location and distance of all structures within 100 feet of the subject property
  - Proposed means of vehicular and pedestrian ingress and egress to the subject property
  - Public and private roads and streets, rights-of-way and easements indicating names and widths of streets which abut or cross the site
  - Existing and proposed parking spaces and vehicular and pedestrian circulation patterns
  - Dimensions of setbacks from streets, property lines and between buildings on the site
  - Location of proposed amenities
  - Location and size of existing utilities including power lines and towers, both above and below ground
  - Amount and location and calculation of all impervious surfaces
  - Verified boundaries of all natural water features and required setback lines
6. A reproducible two foot contour topographic map based on United States Geological Survey (USGS) drawn at the same scale as the site plan and showing existing relief features on the site.
7. A schematic layout of the proposed storm sewer system.
8. Architectural sketches of all elevations of proposed buildings or structures, including the project entrances, as they will appear upon completion. The sketches should be accompanied by material samples or a display board of the proposed exterior materials and colors.
9. Floor plans of proposed residential units.



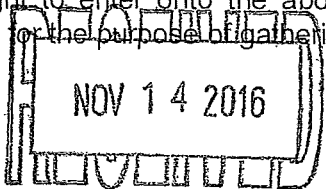
- 10. A Traffic Study (if the project will exceed 100 vehicle trips during the peak hours of the roadway(s), prepared by a qualified traffic engineer, based on the most current edition of *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation.
- 11. Natural Features Study for previously undeveloped properties which includes a written description of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, floodways, floodway fringe, waterbodies, significant stands of trees or individual trees greater than 12 inches dbh, identified groundwater vulnerable areas, slopes greater than 20 percent.
- 12. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
- 13. A sign program illustrating size and location of each proposed sign type.
- 14. A lighting plan (see Chapter 38, Article VII).
- 15. Copies of comments from reviewing agencies such as, but not limited to, the following:
  - Ingham County Road Commission
  - Ingham County Drain Commission
  - Michigan Department of Transportation (if applicable) *N/A*
  - Michigan Department of Environmental Quality (if applicable) *N/A*
  - The appropriate school board (as applicable)

H. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.

**Part II**

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

*J. Paul Maxwell*  
Signature of Applicant

11/11/16  
Date

DAVIS MAXWELL  
Type/Print Name

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

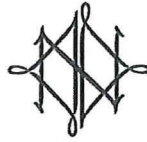
Received by: *Peter Messer*

Date: 11-14-16

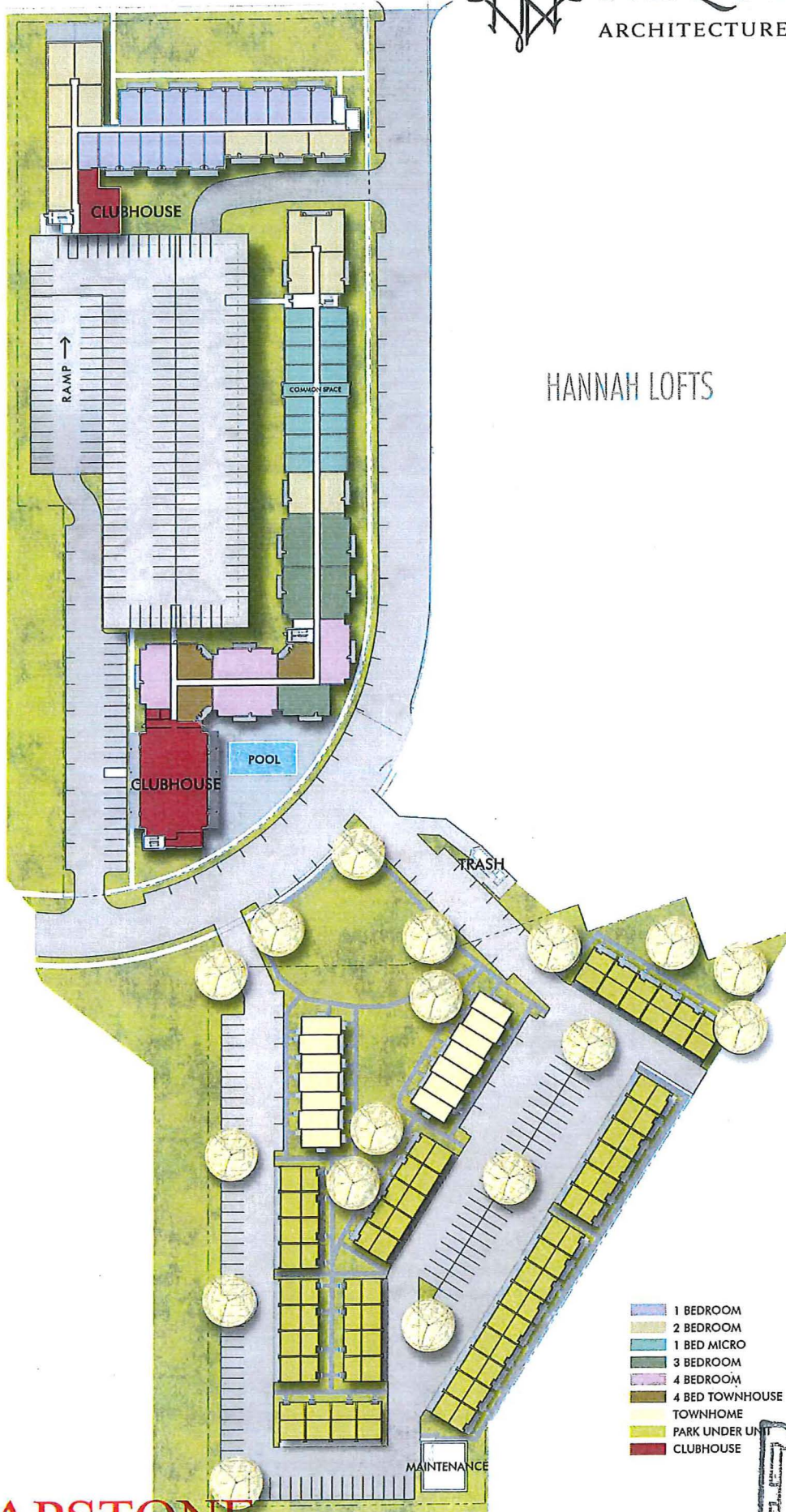
Pre-Application Meeting Held: \_\_\_\_\_  
Date

Application Complete: \_\_\_\_\_  
Date

By: \_\_\_\_\_  
Staff



**CEQUETTE**  
ARCHITECTURE & DESIGN



HANNAH LOFTS

- 1 BEDROOM
- 2 BEDROOM
- 1 BED MICRO
- 3 BEDROOM
- 4 BEDROOM
- 4 BED TOWNHOUSE
- TOWNHOME
- PARK UNDER UNIT
- CLUBHOUSE



MARX  
WETLANDS  
LLC

## Natural Features Assessment Report Hannah Farms West Site

### 1.0 INTRODUCTION

Marx Wetlands, LLC (Marx) was contracted by Capstone Companies to perform a natural features assessment for an approximately 10-acre parcel in Meridian Township, Ingham County, Michigan.

As part of a Special Use Permit Application, the Charter Township of Meridian Department of Community Planning and Development requires a "Natural Features Assessment," which is to include "a written description of the anticipated impacts on the natural features at each phase and at project completion that contains the following:

- a. An inventory of natural features proposed to be retained, removed, or modified. Natural features shall include, but are not limited to, wetlands, significant stands of trees or individual trees greater than 12 inches dbh, floodways, floodplains, water bodies, identified groundwater vulnerable areas, slopes greater than 20 percent, ravines, and vegetative cover types with potential to sustain significant or endangered wildlife.
- b. Description of the impacts on natural features.
- c. Description of any proposed efforts to mitigate any negative impacts."

After obtaining site location information, Marx conducted desktop information reviews, on-site assessments, a tree survey, and information analysis in order to help address the Township's natural features assessment requirements. This report provides results of Marx's natural features assessment.

### 2.0 SITE LOCATION AND PROJECT DESCRIPTION

The approximately 10-acre subject site (hereafter referred to as the Site) includes two parcels located along the west and south sides of the Lodges of East Lansing II housing complex, south of the Red Cedar River, and south of ARC Ice Sports in the east half of Section 20, Meridian Charter Township, Ingham County, Michigan. Capstone Companies (Developer) is proposing to construct a multi-unit residential complex on the Site. The proposed structures and parking facilities on this parcel will be completed in one phase. Prior to site clearing and grading, soil erosion and sediment control measures will be installed and will be inspected and maintained during the construction project. All soil erosion and sedimentation

2990 Lake Lansing Rd.

Suite 201

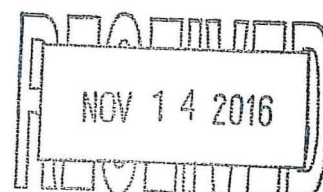
East Lansing, MI 48823

Tel: 517-333-8833

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control measures will be removed upon completion of construction and stabilization. Please refer to Site Location Map, Figure 1.

The Site is +/- 10 acres in size and is currently vacant. The north parcel is bordered on the east by The Lodges of East Lansing II complex and the Residence Inn of East Lansing on the west. The south parcel is south of the Lodges II site and immediately east of the Lansing Community College facility. The topography of the northern Site is relatively flat, and the southern parcel is relatively flat with significant slopes dropping down to the adjacent wetland on its south and east sides. The North Site contains an area of planted pines and an area of deciduous forest. The South site includes an open old field area and a sloping area of mature deciduous forest. Refer to the Aerial Imagery Map, Figure 2.

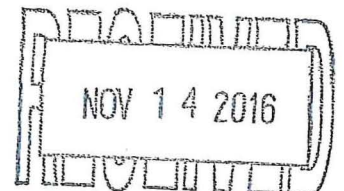
### 3.0 METHODS

Marx Wetlands conducted a desktop review for the Site using existing information and imagery, including the United States Geological Service (USGS) topographic map, aerial photographs, a site specific topographic map, Meridian Township's Wetland Inventory Map, National Wetland Inventory (NWI) map, USDA county soil survey map, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), and the Township's groundwater vulnerability map.

From January 11 to 15, 2016, Marx conducted a tree survey. On May 26, 2016, Marx conducted an on-Site assessment consisting of a site walkthrough to conduct a current and prior land use evaluation, habitat type determination, habitat quality evaluation, preliminary wetland assessment, wildlife observations, and floodplain or other special concern observations.

The tree survey consisted of identifying the species, general health status, and dbh (diameter-breast-height) of each tree on the subject site with a dbh of 12 inches or larger, and to these affixing a uniquely numbered metal tag and the surveyor collecting a GPS location point.

The findings from the desktop review, site assessment, and tree survey were combined to help interpret the subject Site's natural features and evaluate potential project impacts upon those natural features.



#### 4.0 RESULTS, FINDINGS, AND DISCUSSION

##### 4.1 Existing Structures, Materials, and Adjacent Land use

Other than the portion of Eyde Parkway that passes between the north and south parcels, there are no existing structures on the site.

Much of the land immediately surrounding the Site is already developed. The nearest structures are Lodges of East Lansing residential buildings just to the east and north. To the west is the East Lansing Residence Inn and the Lansing Community College facility. There are some piles of debris on the south parcel and some old piles of soil within the pine planting area. South and east of the south parcel is a large wetland that is mostly off the Site. Refer to Figure 2.

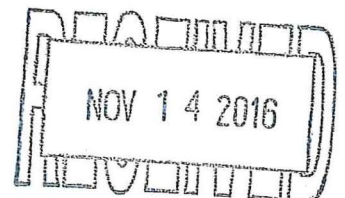
##### 4.2 Topography

The lowest elevations on the Site are about 845 feet MSL, found at the bottom of the forested slope on the south parcel. The highest elevation is about 865 found near the north part of the north parcel. The north parcel is relatively flat, and the south part is partly flat with relatively steep slopes dropping down to the wetlands at the south and east ends of the site (refer to Figure 3, Topographic Map).

##### 4.3 Vegetation

A vegetation assessment was conducted during the Site survey. Marx found four distinct community types present on the Site. The north parcel is divided into a planted pine plantation, and an immature deciduous forest area. The south parcel includes an old field area, which is characterized by herbs, grasses, and some shrubs, and an area of mature forest on the sloped areas stretching down to the wetland area on the adjacent parcels to the south. The species identified in these three areas during the field investigation are provided in tables (refer to Figure 10).

The Vegetation circa 1800 map produced by the Michigan Natural Features Inventory shows the Site to be part of an extensive beech-maple forest that extended many miles southward from the Red Cedar River (refer to Figure 4: Pre-settlement Vegetation/MNFI ca. 1800 map). Prior to extensive land clearing these shady forests were common on the flatter till plains of mid-Michigan. They often contained a wide variety of tree species, such as sugar maple, red maple, red oak, white oak, American beech, white ash, basswood, tulip tree, walnut, and hop hornbeam. These forests were commonly cleared to enable agricultural production, and it is likely that most of the higher elevation part of the Site was cleared many decades ago for this purpose. As twentieth century commercial





development began to fill in lands between East Lansing and Okemos, the Site was probably eventually left idle due to commercial property expectations and to the infeasibility of continuing agriculture on a small scale. Whether the Site had been used for hay or crops, the cessation of this use would have spurred numerous plant species to colonize (or recolonize) from field edges and the surrounding landscape. Along the way, numerous white pines were planted. The resulting native and non-native plants currently present are adept at this type of recolonization.

The Forested Slope area is the most diverse area and is dominated by species which are associated with the pre-settlement forest in the Red Cedar watershed. These include trees such as sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), white oak (*Quercus alba*), red oak (*Quercus rubra*), bur oak (*Quercus macrocarpa*), swamp white oak (*Quercus bicolor*), cottonwood (*Populus deltoides*), basswood (*Tilia americana*) and American elm (*Ulmus americana*), and other species such as hackberry (*Celtis occidentalis*), hop hornbeam (*Ostrya virginiana*), Mayapple (*Podophyllum peltatum*), choke cherry (*Prunus virginiana*), black raspberry (*Rubus occidentalis*), Virginia creeper (*Parthenocissus quinquefolia*) and false Solomon Seal (*Smilacina racemosa*). A few invasive species were also noted, including garlic mustard (*Alliaria petiolata*), and Tartarian honeysuckle (*Lonicera tartarica*). The changes on this Site over the last two-hundred years have left this small remnant forest, with many of the maple, walnut, oak, hackberry, basswood and hop hornbeam trees in the forest are probably directly descendent and/or residual from the original forest in this location.

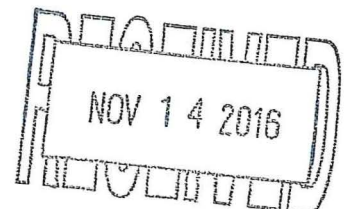




Photo 1. Mature forest on the south side of the south parcel.

The old field part of the south parcel is dominated by species typical of farmed areas that have been left to revegetate after farming activities have ceased for various reasons. These include non-native species, invasive species, native species that are tolerant of human land uses, and native pioneer species that normally colonize land after activities are abandoned. Examples of these species present on the Site include Tartarian honeysuckle (*Lonicera tartarica*), tall goldenrod (*Solidago altissima*), black raspberry (*Rubus occidentalis*), wild carrot (*Daucus carota*), dames rocket (*Hesperis matronalis*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), box elder (*Acer negundo*), garlic mustard (*Alliaria petiolata*), and burdock (*Arctium minus*). The few trees in this area include white pines (*Pinus strobus*), as well as box elder (*Acer negundo*), and Siberian elm (*Ulmus pumila*).

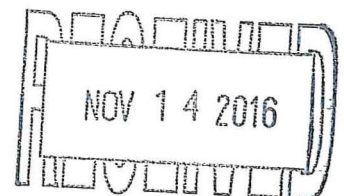




Photo 2. Old field area which occupies the majority of the south parcel.

The planted pine area is dominated by the planted white pines (*P. strobus*), green ash (*Fraxinus pennsylvanica*), black walnut (*Juglans nigra*), red pine (*Pinus resinosa*), cottonwood (*Populus deltoides*) and black cherry (*Prunus serotina*), with a variety of disturbed area herbaceous vegetation such as dogbane (*Apocynum cannabinum*), field mustard (*Brassica sp.*), enchanter's nightshade (*Circaea lutetiana*), dames rocket (*H. matronalis*) and riverbank grape (*Vitis riparia*). It is likely that this area was farmed for a time and was later planted with several hundred white pines.

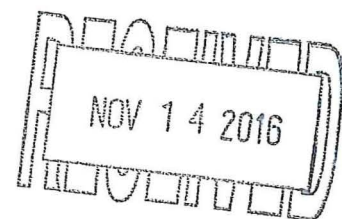




Photo 3. White pines in the planted tree area.

The deciduous forest part of the north parcel was also likely farmed, and was just allowed to re-vegetate, and the species found there came onto the site from adjacent areas, the seeds brought by the wind, animals, and birds. This area is dominated by native hardwood forest trees, and relatively weedy shrubs and groundcover plants. Examples of the tree species present on the Site include red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), pignut hickory (*Carya glabra*), hackberry (*Celtis occidentalis*), black walnut (*Juglans nigra*), quaking aspen (*Populus tremuloides*), white oak (*Quercus alba*), red oak (*Quercus rubra*), and American elm (*Ulmus americana*), as well as a few herbaceous species such as garlic mustard (*Brassica sp.*), mayapple (*Podophyllum peltatum*), tall goldenrod (*Solidago altissima*), and poison ivy (*Toxicodendron radicans*). Again, this part of the Site was also likely once part of the extensive historical beech-maple forest.

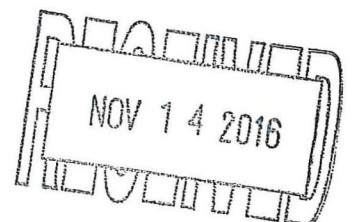




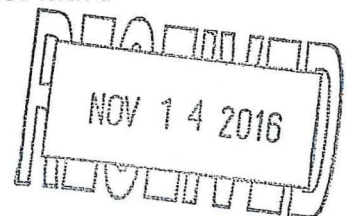
Photo 4. Deciduous forest area of the north parcel.

There is a large wetland area extending south and east from the site, that just touches the south and east side of the south parcel. This wetland extends south to and across Herron Creek which is tributary to the Red Cedar River east of the Site. There will be no impacts to this wetland from the proposed development.

Development of the Site will require clearing most vegetation that is present in the planted pine and immature deciduous forest areas of the north parcel, as well as the open field portion of the south parcel. Much of the mature forest on the steep slopes around the south parcel will remain intact, as well as some of the large trees around the periphery of the site. While no formal mitigation for vegetation removal has been planned, traditional landscape grass, shrub, and tree plantings are expected. Existing vegetation in the upland areas, particularly some of the larger trees, may be incorporated into the traditional landscaping to the extent possible.

#### 4.4 Significant Tree Inventory

As part of the vegetation assessment, a tree survey was also conducted in the non-wetland areas of the site. The survey included trees considered "significant" or deserving special protection because of their size, relative rarity, or historical importance. During the inventory, trees with a



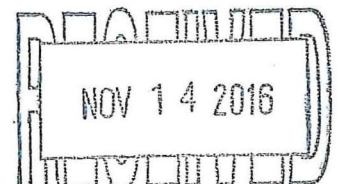
diameter at breast height (DBH) (the standard measure for tree size) of 12 inches or greater were located on the Site and mapped. The trees were identified to species and their size recorded (Figure 11). Results of the inventory identified 340 significant trees of 14 different species on the parcel. Of the 340 trees, 21 were larger than 25 inches in diameter, the largest being a sugar maple (*Acer saccharum*) with a diameter of 43 inches, and second a red oak (*Quercus rubra*) with a diameter of 42 inches. Twelve of the trees had multiple trunks of varying sizes.



Photo 5. Debris pile on south parcel.

#### 4.5 Wetlands

Marx conducted a preliminary review for wetlands while on the Site. In accordance with the Midwestern Interim Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, wetland are defined by the presence of three basic parameters: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time). The above parameters are virtually always inter-related and normally present in wetland systems.



Marx's site visit occurred during relatively wet early spring conditions. These conditions resulted in very wet conditions in the large offsite wetland that borders the south and east boundaries of the south parcel.

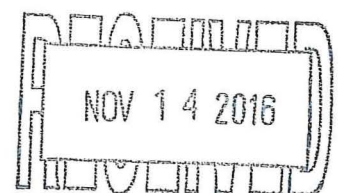
Marx's inspection of these parcels found no wetland areas. A large wetland area is present south and east of the south parcel, but no wetlands extend onto the Site. (refer to Figure 5: Township Wetland Map and Figure 6: National Wetland Inventory Map).

#### 4.6 Special Flood Hazard Area

Flood Hazard Areas are those which are most likely to be inundated during flood events. Flood Hazard Areas are regulated by local, state, and federal regulations designed to reduce the damage to structures during floods. The regulations apply to areas within 100-year floodplains, which are defined by a one percent (1%) annual probability of flood occurrence. These areas are mapped by the Federal Emergency Management Agency on Flood Insurance Rate Maps, or FIRMs. These maps were developed using flow modeling and the existing USGS topographic maps. The modeling produces an elevation associated with 100-year flood events, and areas below these elevations are designated as the 100-year floodplains.

The FIRM for the subject area shows that the site is above the flood elevation and no areas of the Site are included within the 100-year floodplain, which means that no part of the site is regulated pursuant to the floodplain regulatory statutes (refer to Figure 7: Flood Insurance Rate Map). As noted above, the lowest elevation on the site is approximately 845 while the 100-year frequency flood elevation nearest to the site is 842. The floodplain largely coincides with the large wetland that occurs south and east of the south parcel of the site.

Sometimes FIRM maps can incorrectly show areas of 100-year floodplain. In such cases, a site's topography can be surveyed using modern techniques. When such studies show that the mapped floodplain is above the determined flood elevation or that the FIRM is otherwise inaccurate, this information can be sent to the National Flood Insurance Program to obtain a Letter of Map Amendment (LOMA) which officially changes the area included within the floodplain. It does not appear that this site will require such additional work.



#### 4.7 Floodways

A floodway is the portion of the floodplain that is required to carry and discharge flood waters during a flood event. They have more rapidly moving water during flood events. They include river channels, upper banks, and adjacent areas that effectively become part of the water transit process during a flood. The FIRM for Meridian Township shows that there are no floodway areas on the subject property.

#### 4.8 Water Bodies

Streams, rivers, lakes, and many ponds are afforded legal protection under a combination of Township, county, state, and federal regulations pertaining to wetlands, flood prone areas, and water bodies. Any filling or alteration of these areas would typically require one or more permits from state agencies, county agencies, federal agencies, or Meridian Township.

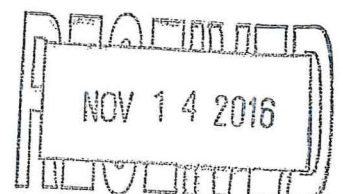
There are three open water bodies near the Site but not directly on the Site. These include the Herron Creek, the Red Cedar River, and the drain that runs north and south to the east of the site that functions as a stream. Activities on the Site are not expected to have any significant impact these water bodies or any others.

#### 4.9 Soils

The NRCS digital county soils map identifies the soils on the Site. The map identifies four soil types: Owosso-Marlette sandy loams, 2 to 6 percent slopes (91.6%), Urban land-Marlette complex, 2 to 12 percent slopes (7.4%), Metea loamy sand, 2 to 6 percent slopes (0.6%) and Sebewa loam, 0 to 2 percent slopes (0.4 %). (Refer to Figure 8: County Soils Survey Map).

The Owosso Marlette sandy loams that make up almost 92% of the site consist of well drained, moderately rapidly permeable soils on till plains and end moraines, and are formed in moderately coarse and coarse textured deposits. The remaining soils are well drained except for the Sebewa loam which is poorly drained and in the wetland along the south border of the south parcel.

Site balancing, filling, and subsurface excavation activities will take place within the limits of disturbance which are all contained within the area of the well-drained soil types. The most suitable soils will be utilized on the Site during parking lot, driveway, and building construction. Unsuitable and excess soil, if any, will be trucked to authorized off-site areas.





Soil erosion and sedimentation control (SESC) measures will be installed and maintained by the developer throughout the construction period, as required by the State of Michigan, Meridian Township, and the Ingham County Drain Commissioner, and will be removed once the entire Site has been stabilized. These measures will significantly reduce the possibility of soil erosion and the water transport of these soil materials, which could cause the degradation of areas receiving the Site's stormwater.

#### 4.10 Identified Areas of Groundwater Vulnerability

Areas of groundwater vulnerability are those areas where the hydrologic and geologic surface and subsurface setting makes the groundwater more vulnerable to contamination than in other areas. The 2005 Meridian Township Master Plan groundwater vulnerability map shows areas identified as being vulnerable (refer to Figure 9: Identified Areas of Groundwater Vulnerability). This map is based upon the aggregation of four different vulnerability assessments or estimates. No part of the subject Site falls within any of the designated areas, so there will be no disturbance in any of the designated areas by the proposed project. Therefore, all construction activity on the Site will be well outside the bounds of Identified Areas of Groundwater Vulnerability. Stormwater on the site will be collected and treated in accordance with local regulations designed to protect water quality and runoff volumes.

#### 4.11 Slopes Greater than 20 Percent

Slopes of greater than 20% are highly susceptible to soil erosion which can lead to sedimentation in other on and off-site areas such as ponds, streams and lakes. On the Site, slopes steeper than 20% do not exist. While slopes do exist along the south and east edges of the south parcel, the slopes are less than 20%. Even though the slopes are less than 20%, they will not be disturbed by the proposed project.

The development project will observe the structure and grading setbacks provided in Meridian Township ordinances. During construction, the small spoil and waste material piles will be removed. Any slopes created by the project that are over 20% will be intentionally designed and stabilized with appropriate landscaping materials. Soil erosion and sedimentation measures will be placed and maintained in the areas necessary to control any erosion that may occur during construction.

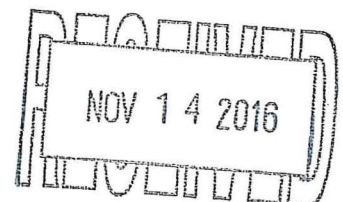
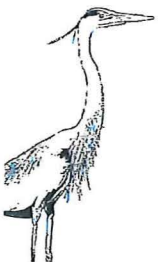


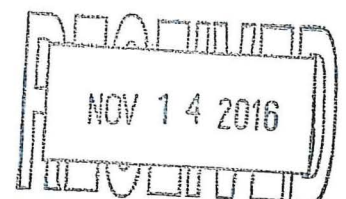


Photo 6. Sloped part of mature forest on south parcel.

#### 4.12 Wildlife

Evidence of wildlife presence has been observed throughout the Site in the form of tracks, droppings, and holes, the amount of animal usage being greater than in the surrounding developed areas as this is an undeveloped area with forest and field areas surrounded by urbanized development. Evidence of white tailed deer (*Odocoileus virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), gray squirrels (*Sciurus carolinensis*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*), were observed. Deer usage seemed to be throughout the site. One freshly dug animal den which was found would likely be used by a woodchuck (*Marmota monax*), though this was not certain. It is highly likely that the Site also serves as foraging or resting ground for numerous other insects and birds, such as Monarch butterflies (*Danaus plexippus*), honeybees (*Apis mellifera*), robins (*Turdus migratorius*), mourning doves (*Zenaida macroura*), red bellied woodpeckers (*Melanerpes carolinus*), black capped chickadees (*Poecile atricapillus*), many other birds and insects.

Overall, the fauna at the Site can be viewed as urban and suburban wildlife. Urban and suburban wildlife species are common across the Midwest. Urban and suburban wildlife are mainly generalist species that

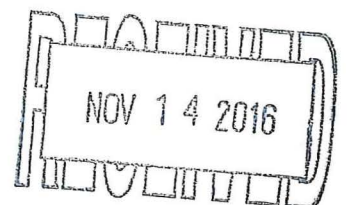


have wide tolerance in diet and behavioral flexibility. They are very unlike threatened and endangered species, which are almost all specialized and intolerant of numerous human disturbances. Some urban and suburban wildlife species have become so common that they are actually reducing the populations of less common native species (e.g. raccoons that feed on human food waste and garbage are believed to be a factor behind a widespread decline in turtle numbers). Therefore the decline in certain very abundant wildlife species should not be assumed to bear negative consequences. Wildlife will be displaced to a degree by the proposed development, but even after the development is completed, some of these common urban and suburban wildlife species will continue to use the Site.

#### 5.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed Site was reviewed for remnant and existing natural resources and features. The Site contains four major habitats and no wetland areas. The pine planting and immature deciduous forest habitat occupies most of the north parcel, and the mature forest occupies the edges of the south parcel while the old field habitat occupies the majority of that parcel. The Site is vacant, and contains no structures. The Site contains no wetland areas, or any water bodies, areas of floodplain or floodway. The Site is mostly flat with slopes falling away to a large wetland around the south and east sides of the south parcel, a result of the area's glacial past and location adjacent to the Red Cedar River. The soils are likely original to the Site, and are upland sandy loams that formed under what was once a beech maple forest. The vast majority of the Site was once a small portion of that upland forest which covered thousands of acres, but was largely cut down to make way for agriculture, except for the slope at the south end. Within the last few decades this particular Site has been surrounded by residential and growing commercial development.

Wildlife that use the site are common in the urban and suburban landscape and their populations won't be significantly affected by the development of this site. Vegetation on the Site includes planted pines, native trees, and relatively common native and non-native groundcover species. The loss of vegetation due to development on the Site will occur, though the species lost are very unlikely to include any that are locally rare (i.e. rare county-wide) or state threatened and endangered. There are numerous trees on the Site which are in good condition, including both planted pines and unplanted hardwoods. The only significant



June 20, 2016

remaining natural heritage on this Site appears to be the original topography, soils, and the relatively undisturbed areas of the forest on the slopes at the south end of the south parcel. The commercialized land use context, vehicle access, and economic valuation might limit some design options, but for this Site the primary likelihood of preserving natural resource values within the developed parts would be associated with incorporating some of the larger or native trees into the landscape design, and thereby preserving them on the post development landscape. The proposed development will not impact the mature forests on the site.

Should you have any questions regarding this or any other matter, please feel free to contact our office at (517) 898-4187.

Sincerely,

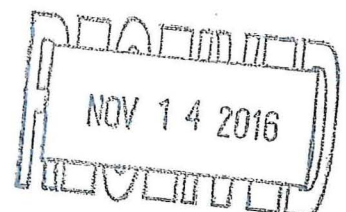
Marx Wetlands, LLC



Gary F. Marx, Ph.D.

**FIGURES**

- Figure 1: Site Location Map
- Figure 2: Aerial Imagery Map
- Figure 3: Site Topographic Map
- Figure 4: Presettlement Vegetation/MNFI ca. 1800 map
- Figure 5: Township Wetland Map
- Figure 6: National Wetland Inventory Map
- Figure 7: Flood Insurance Rate Map
- Figure 8: Identified Areas of Groundwater Vulnerability
- Figure 9: County Soils Survey Map
- Figure 10: Vegetation Lists and FQA
- Figure 11: Tree Survey Results



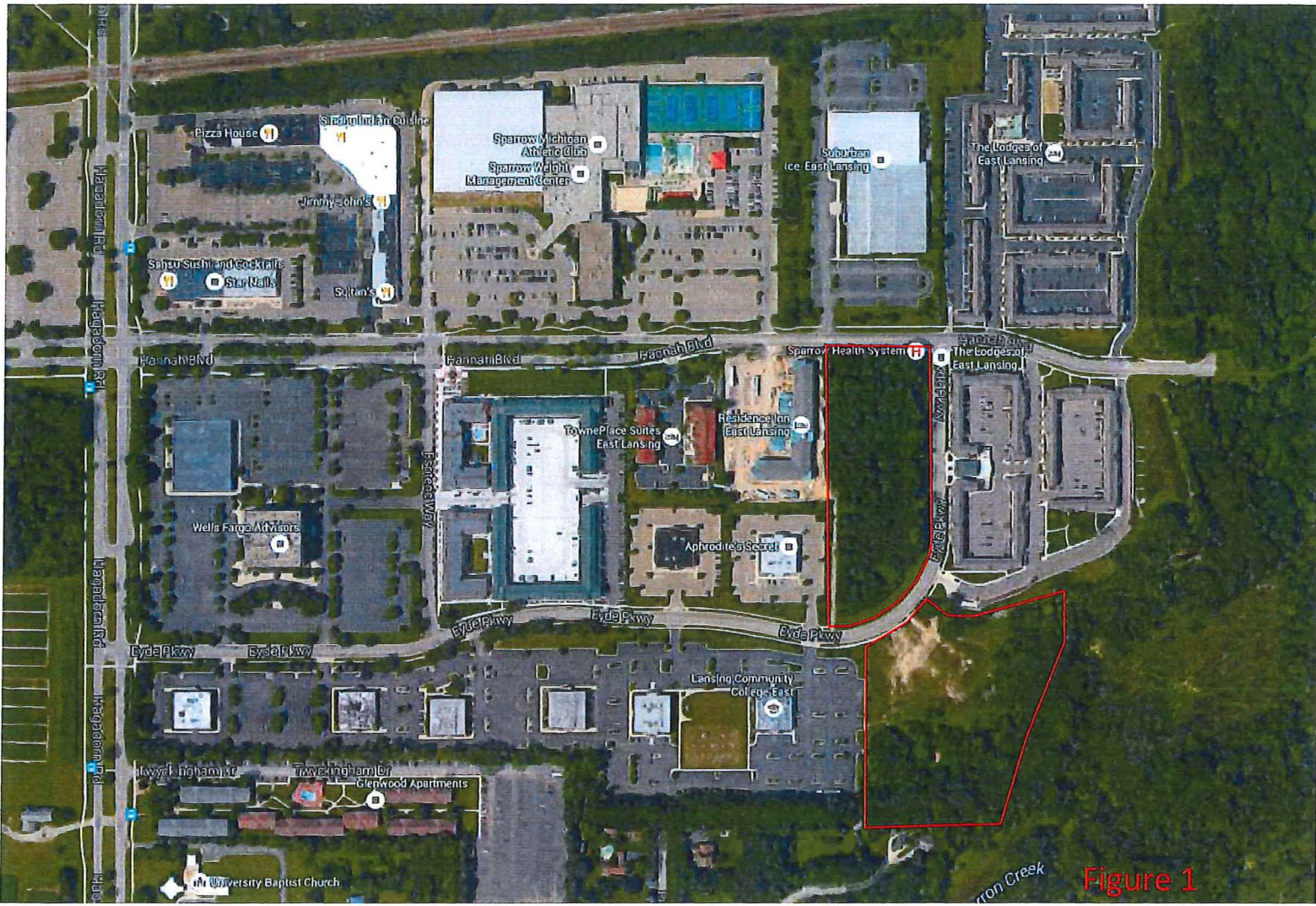


Figure 1

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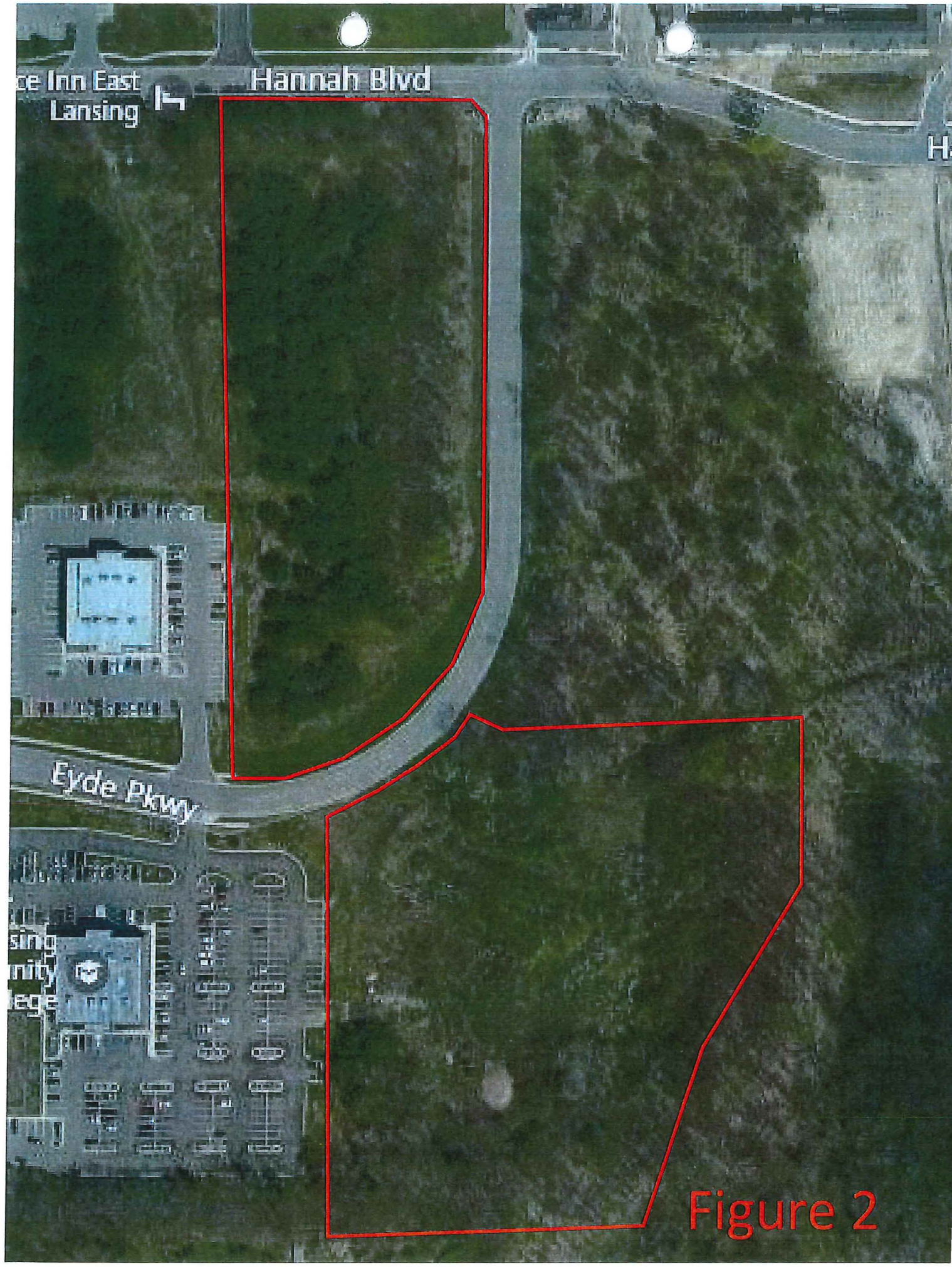
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Community  
Center

Figure 2



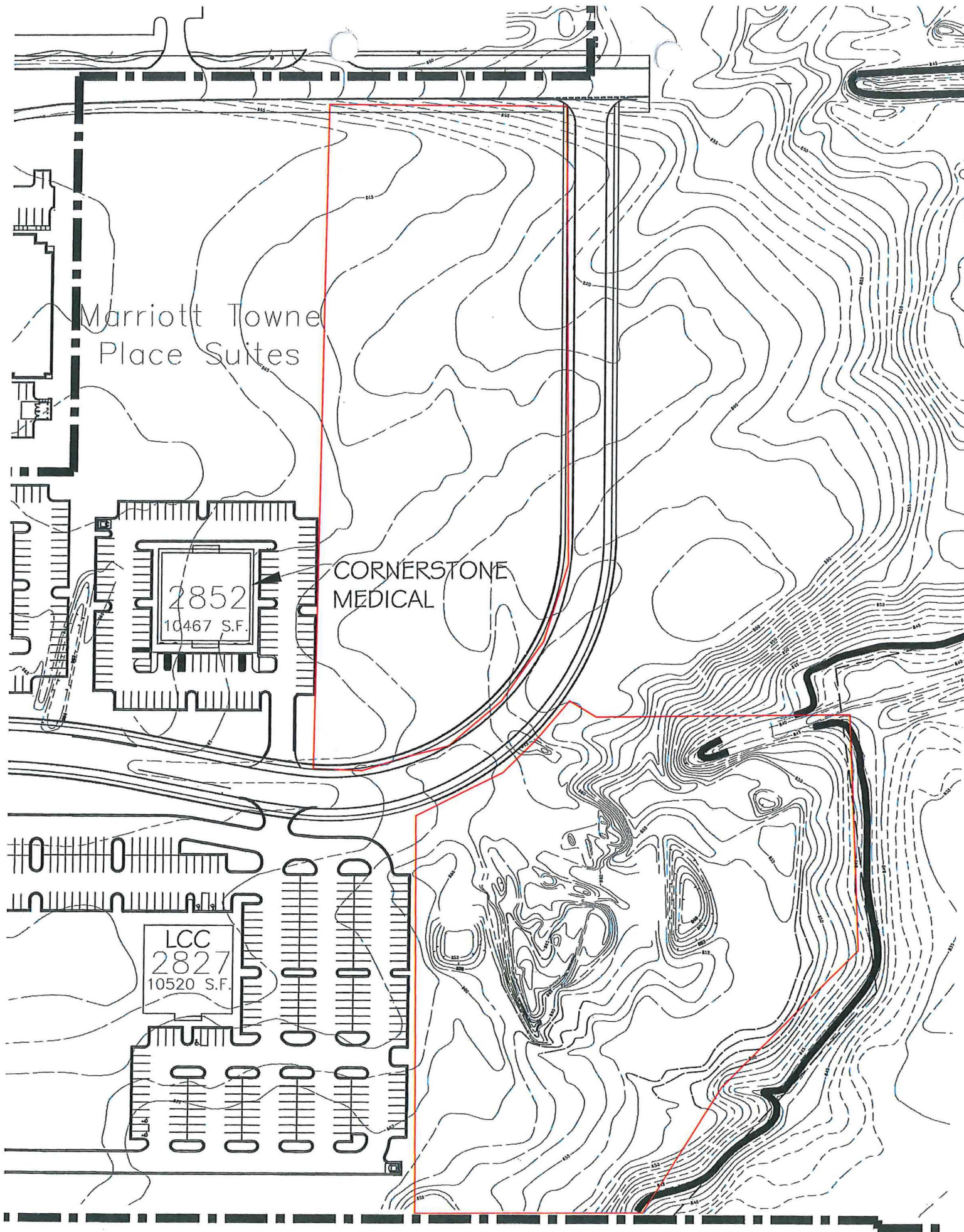
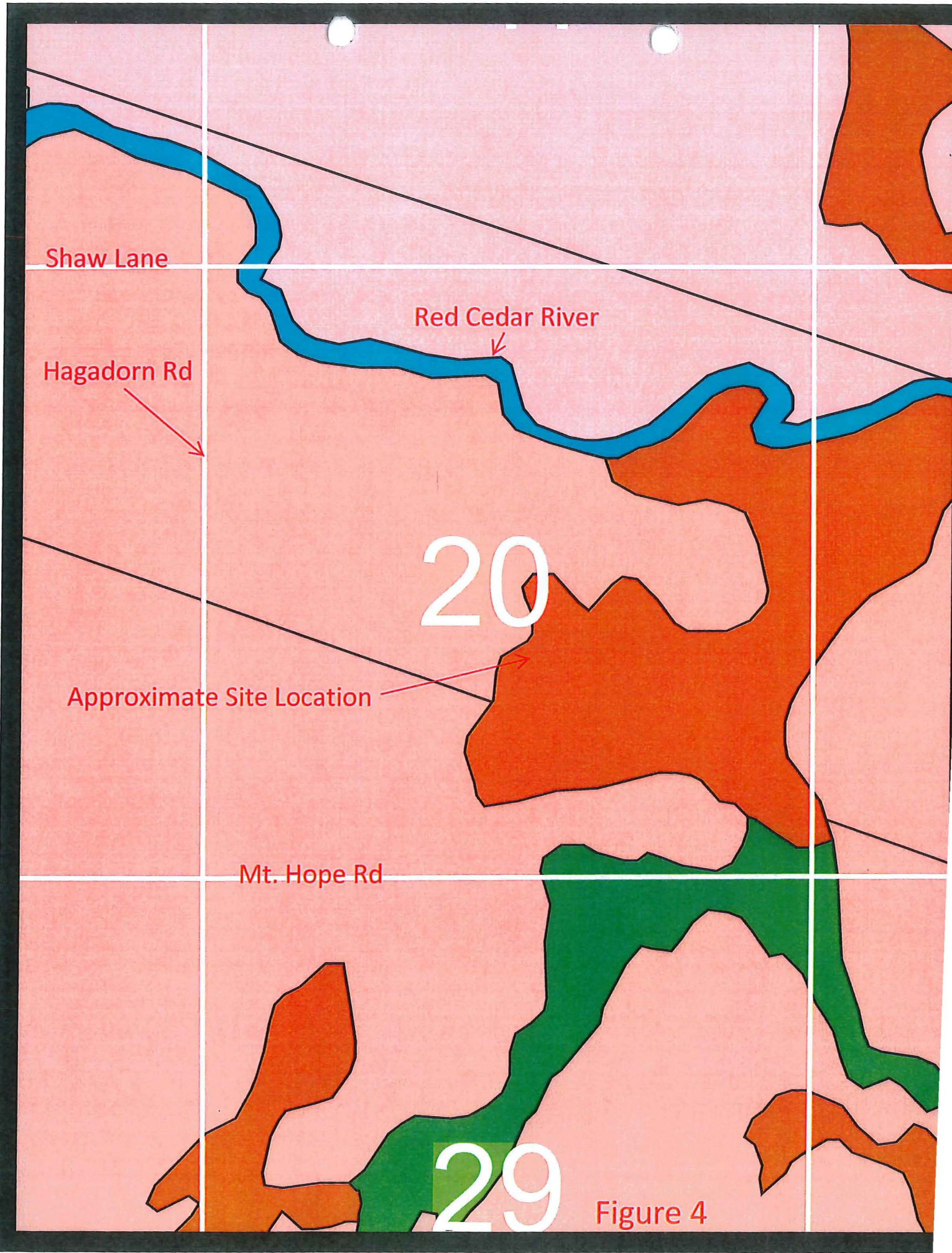


Figure 3



Shaw Lane

Hagadorn Rd

Red Cedar River

20

Approximate Site Location

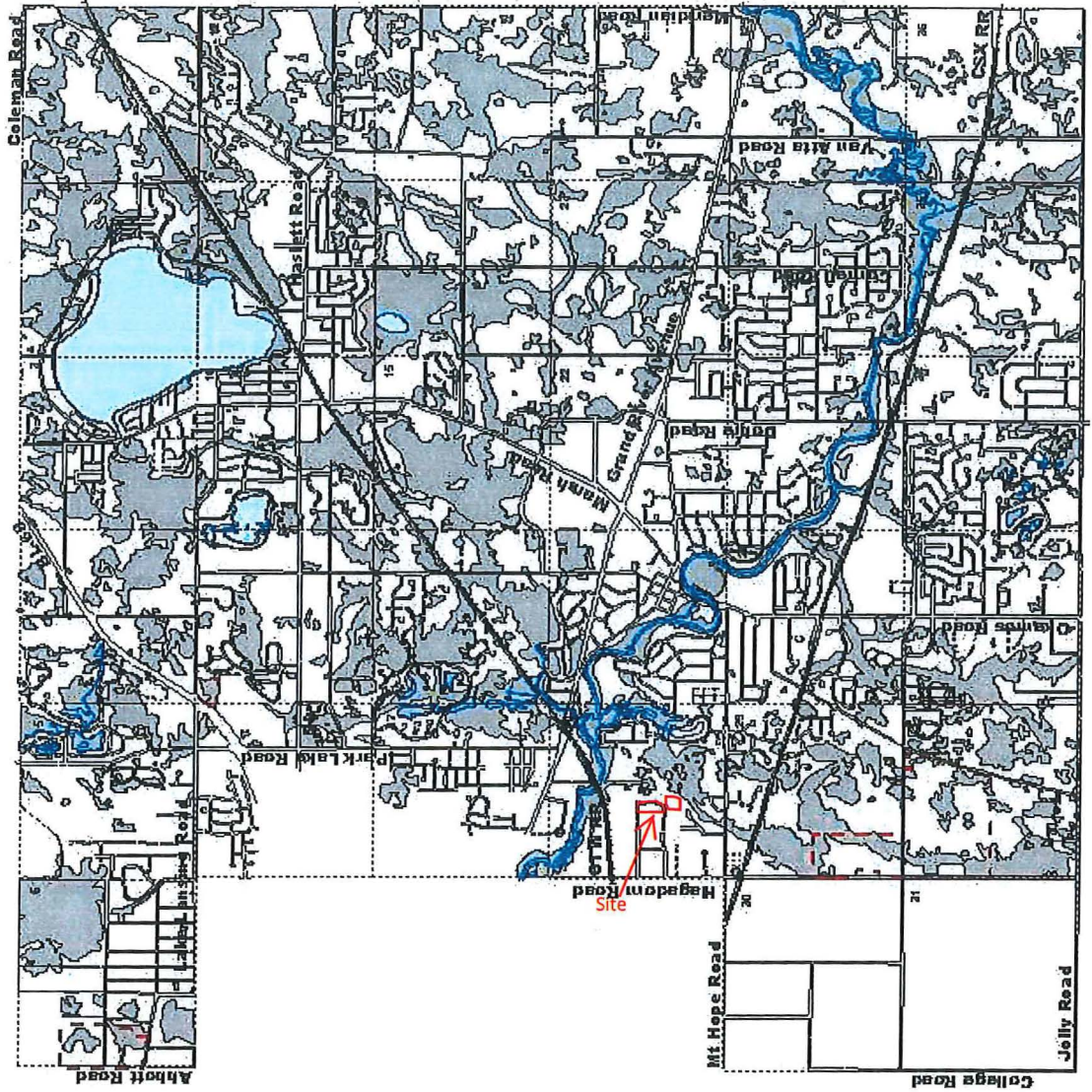
Mt. Hope Rd

29

Figure 4



Map 7-5  
TOWNSHIP WETLANDS MAP



Source: Department of Community Planning, Charter Township of Meridian

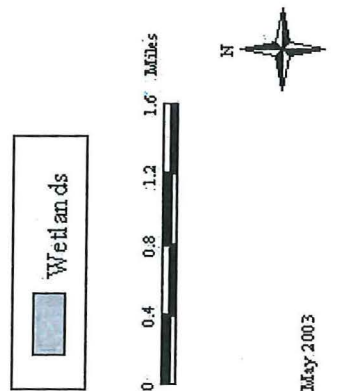


Figure 5

May 2003

## Wetlands Map Viewer

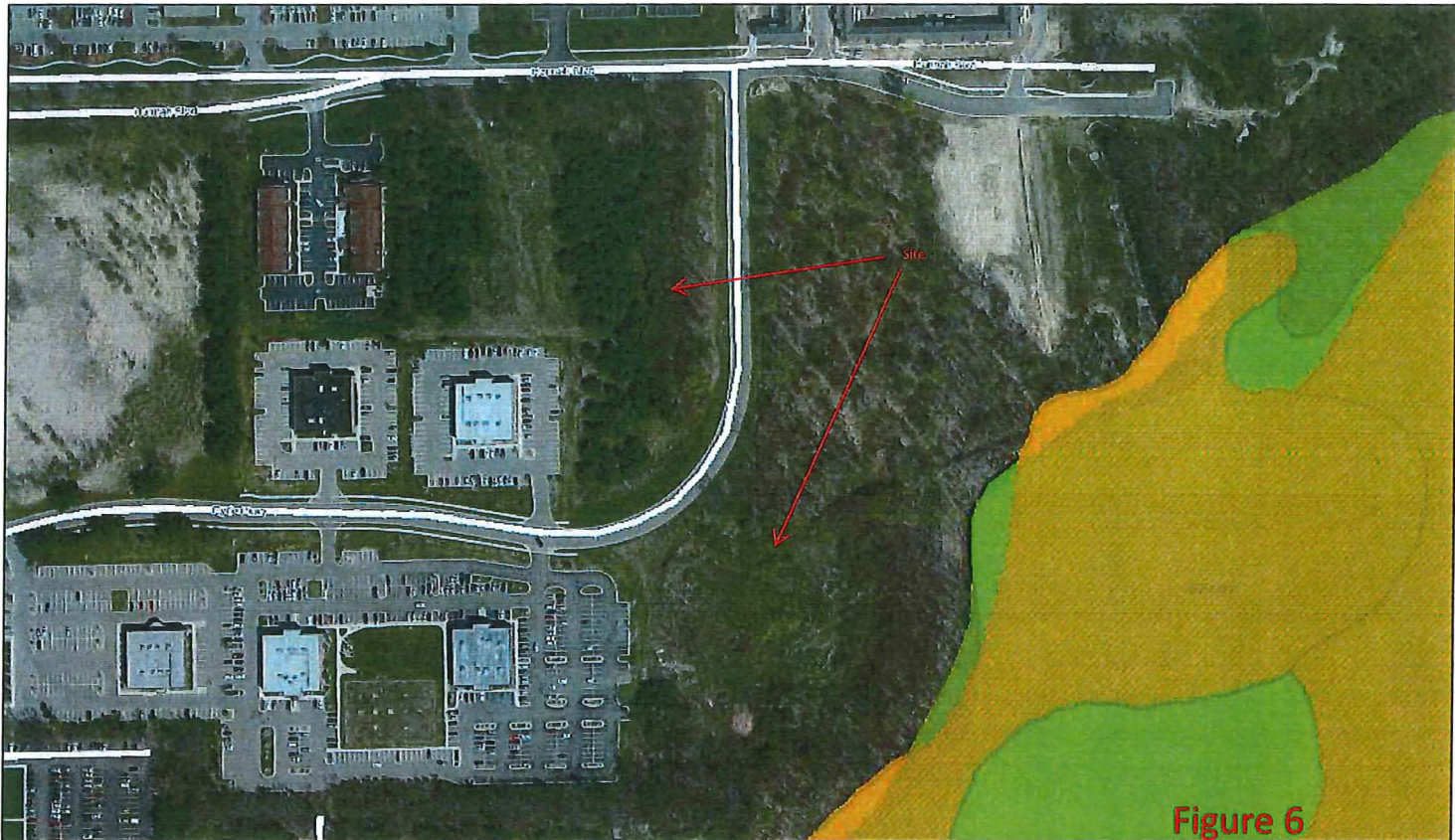
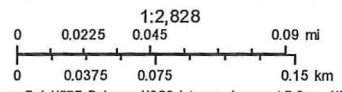


Figure 6

May 25, 2016

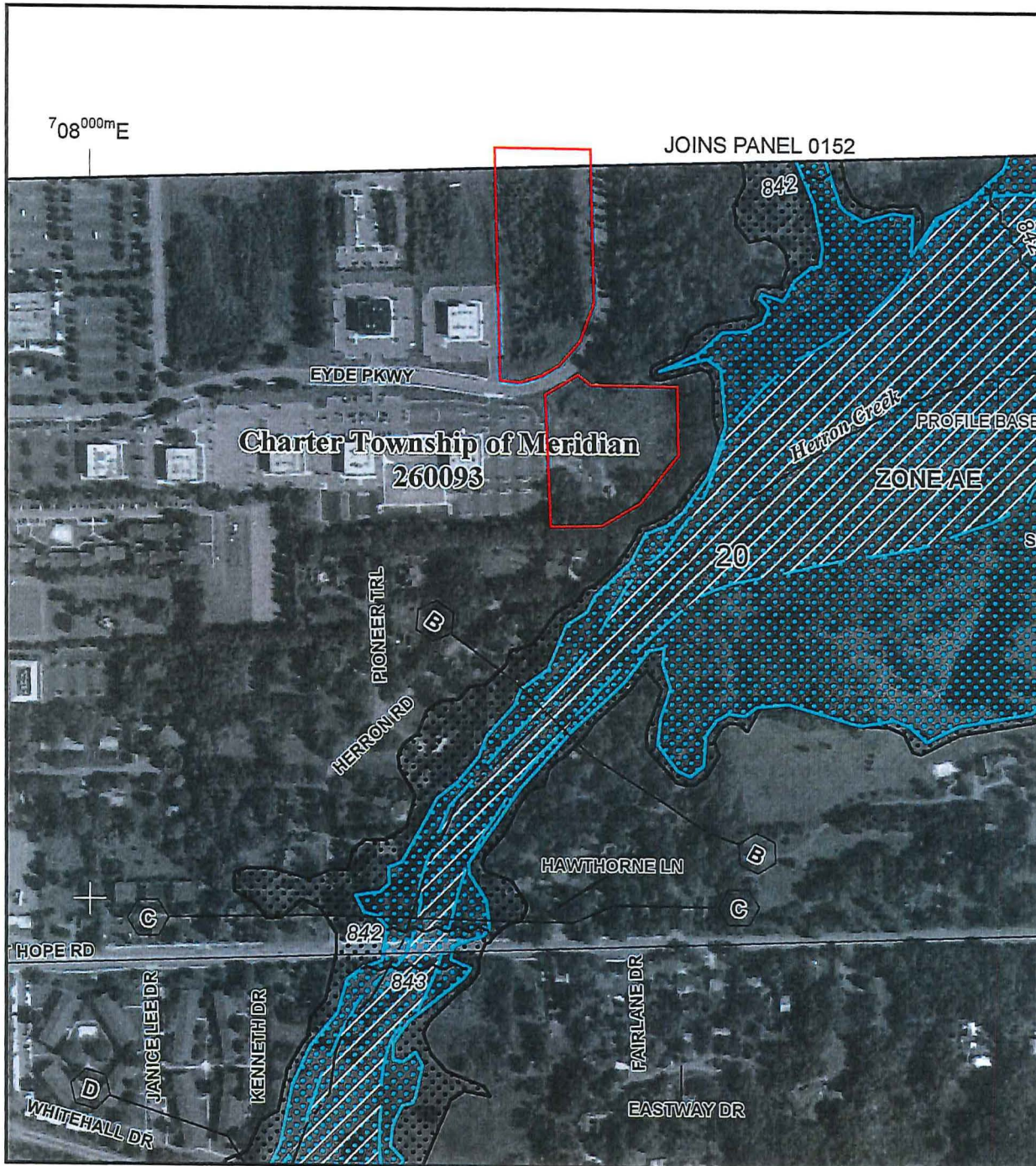
**Part 303 Final Wetlands Inventory**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Wetlands as identified on NWI and MIRIS maps</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #FFD700; border: 1px solid black; margin-right: 5px;"></span> Soil areas which include wetland soils</li> </ul> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, #FFD700 2px, #FFD700 4px); border: 1px solid black; margin-right: 5px;"></span> Wetlands as identified on NWI and MIRIS maps and soil areas which include wetland soils</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #A52A2A; border: 1px solid black; margin-right: 5px;"></span> Wetland (Hydric) Soils</li> <li><span style="display: inline-block; width: 15px; height: 10px; background-color: #008000; border: 1px solid black; margin-right: 5px;"></span> National Wetlands Inventory 2005</li> </ul> |
|--|---|



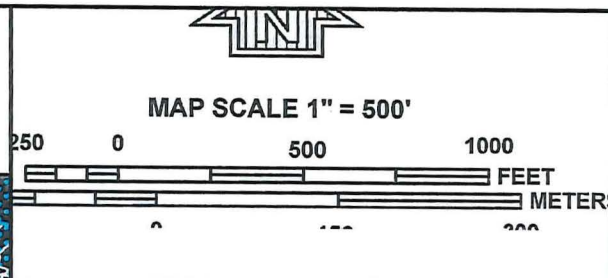
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

Disclaimer: This map is not intended to be used to determine the specific locations and jurisdictional boundaries of wetland areas subject to regulation. More information regarding this map, including how to obtain a copy can be accessed at [www.michigan.gov/wetlands](http://www.michigan.gov/wetlands).  
Map by: State of Michigan - CSS  
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708<sup>000m</sup>E

JOINS PANEL 0152



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0154D

**FIRM**  
**FLOOD INSURANCE RATE MAP**  
**INGHAM COUNTY,**  
**MICHIGAN**  
**(ALL JURISDICTIONS)**

PANEL 154 OF 425  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST LANSING, CITY OF	260089	0154	D
LANSING, CITY OF	260090	0154	D
MERIDIAN, CHARTER TOWNSHIP OF	260093	0154	D

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER  
 26065C0154D  
 EFFECTIVE DATE  
 AUGUST 16, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)

Figure 7





































Soil Map—Ingham County, Michigan  
(Hannah Farms West)



Figure 8

Soil Map—Ingham County, Michigan  
(Hannah Farms West)

**MAP LEGEND**

- |                               |   |                        |   |                       |
|-------------------------------|---|------------------------|---|-----------------------|
| <b>Area of Interest (AOI)</b> |    | Area of Interest (AOI) |  | Spoil Area            |
| <b>Soils</b>                  |    | Soil Map Unit Polygons |  | Stony Spot            |
|                               |    | Soil Map Unit Lines    |  | Very Stony Spot       |
|                               |    | Soil Map Unit Points   |  | Wet Spot              |
| <b>Special Point Features</b> |    | Blowout                |  | Other                 |
|                               |    | Borrow Pit             |  | Special Line Features |
|                               |    | Clay Spot              | <b>Water Features</b>   |                       |
|                               |    | Closed Depression      |  | Streams and Canals    |
|                               |    | Gravel Pit             | <b>Transportation</b>   |                       |
|                               |    | Gravelly Spot          |  | Rails                 |
|                               |    | Landfill               |  | Interstate Highways   |
|                               |    | Lava Flow              |  | US Routes             |
|                               |    | Marsh or swamp         |  | Major Roads           |
|                               |    | Mine or Quarry         |  | Local Roads           |
|                               |   | Miscellaneous Water    | <b>Background</b>   |                       |
|                               |  | Perennial Water        |  | Aerial Photography    |
|                               |  | Rock Outcrop           |   |                       |
|                               |  | Saline Spot            |   |                       |
|                               |  | Sandy Spot             |   |                       |
|                               |  | Severely Eroded Spot   |   |                       |
|                               |  | Sinkhole               |   |                       |
|                               |  | Slide or Slip          |   |                       |
|                               |  | Sodic Spot             |   |                       |

**MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ingham County, Michigan  
Survey Area Data: Version 13, Sep 18, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Appendix 8.2

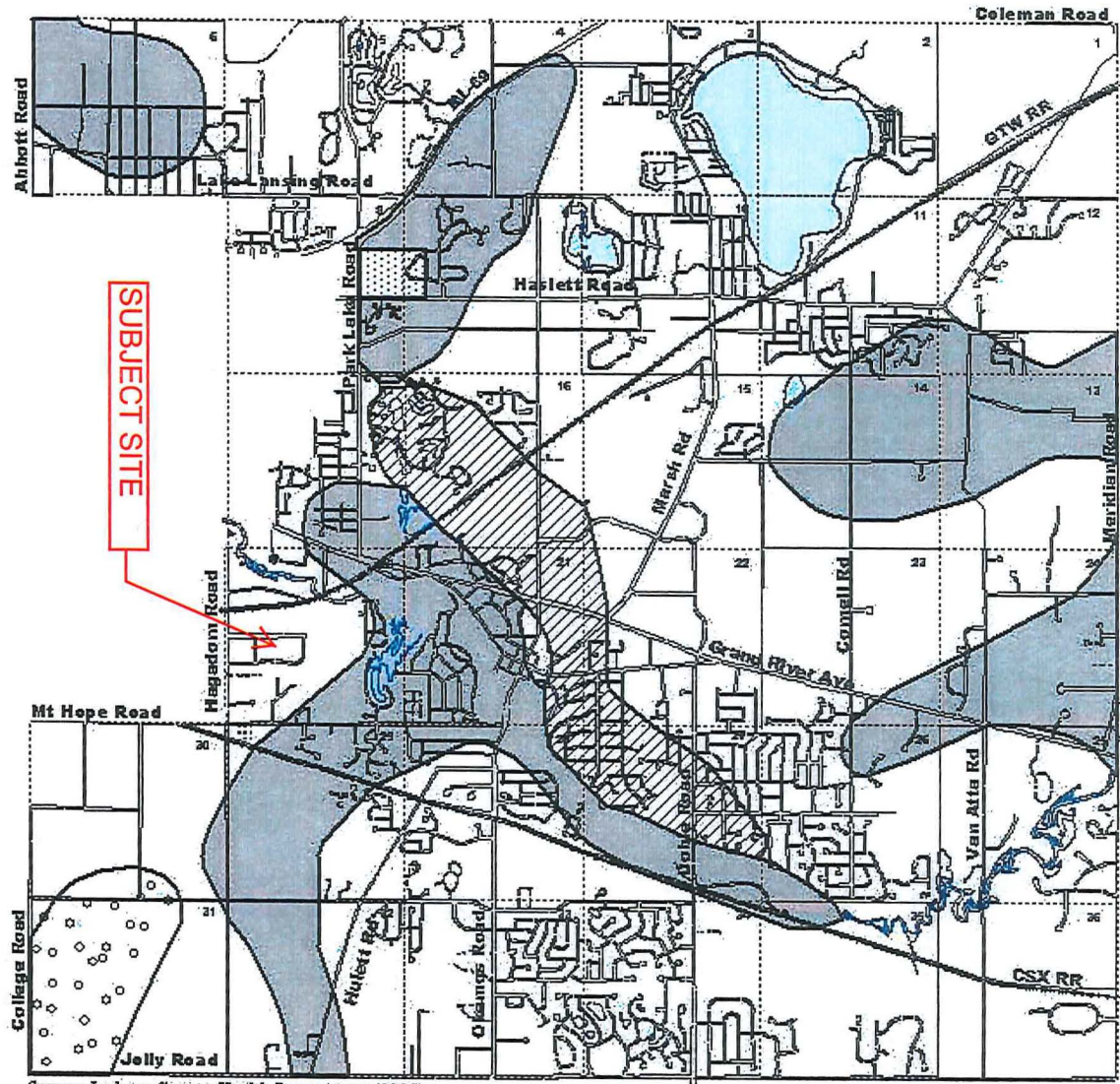
## Map Unit Legend

Ingham County, Michigan (MI065)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hn	Houghton muck, 0 to 1 percent slopes	0.0	0.0%
KbA	Kibbie loam, 0 to 3 percent slopes	1.2	2.9%
MtB	Metea loamy sand, 2 to 6 percent slopes	3.2	7.6%
OtB	Oshtemo-Spinks loamy sands, 0 to 6 percent slopes	2.2	5.3%
OtC	Oshtemo-Spinks loamy sands, 6 to 12 percent slopes	1.4	3.2%
OwB	Owosso-Marlette sandy loams, 2 to 6 percent slopes	27.9	65.9%
Sb	Sebewa loam, 0 to 2 percent slopes	3.1	7.4%
UtB	Urban land-Marlette complex, 2 to 12 percent slopes	3.2	7.7%
<b>Totals for Area of Interest</b>		<b>42.4</b>	<b>100.0%</b>

## Appendix 8.3



## Map 7-3 GROUNDWATER VULNERABILITY



**Source of Groundwater Vulnerability Information**

- Keck Consultants on Site Studies
- Monaghan and Larson, Michigan State University
- Soil Conservation Service, USDA
- Southwest Michigan Groundwater Survey and Monitoring Program

0 0.25 0.5 0.75 1 Miles



May 2003

Source: Ingham County Health Department (1987)

Figure 9

**Figure 10. Plant List for  
Hannah Farms West Natural  
Features Inventory Report**

**Old Field**

<u>Scientific Name</u>	<u>Common Name</u>
<i>Acer negundo</i>	Box Elder
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Arctium minus</i>	Burdock
<i>Brassica spp</i>	Field Mustard
<i>Bromus spp</i>	Brome Grass
<i>Cirsium arvense</i>	Canada Thistle
<i>Cirsium vulgare</i>	Bull Thistle
<i>Daucus carota</i>	Queen Anne's Lace
<i>Fraxinus pennsylvanica</i>	Green Ash
<i>Galium triflorum</i>	Bedstraw
<i>Hesperis matronalis</i>	Dames Rocket
<i>Leersia oryzoides</i>	Fowl Manna Grass
<i>Matteuccia struthiopteris</i>	Ostrich Fern
<i>Pinus strobus</i>	White Pine
<i>Rubus occidentalis</i>	Black Raspberry
<i>Rumex crispus</i>	Curly Dock
<i>Solidage altissima</i>	Tall Goldenrod
<i>Stachys byzantina</i>	Lambs Ear
<i>Trifolium pratense</i>	Red Clover
<i>Ulmus pumila</i>	Siberian Elm
<i>Urtica dioica</i>	Stinging Nettles

**Forested Slope**

<i>Acer saccharum</i>	Sugar Maple
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Carex sp.</i>	Sedge
<i>Celtis occidentalis</i>	Hackberry
<i>Circaea lutetiana</i>	Enchanters nightshade
<i>Lonicera tartarica</i>	Tartarian Honeysuckle
<i>Ostrya virginiana</i>	Hop Hornbeam
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Picea abies</i>	Norway Spruce
<i>Pinus resinosa</i>	Red Pine
<i>Podophyllum peltatum</i>	Mayapple
<i>Populus deltoides</i>	Cottonwood
<i>Prunus serotina</i>	Black Cherry
<i>Prunus virginiana</i>	Choke Cherry
<i>Quercus alba</i>	White Oak
<i>Quercus discolor</i>	Swamp White Oak
<i>Quercus macrocarpa</i>	Bur Oak



<i>Quercus rubra</i>	Red Oak
<i>Rubus occidentalis</i>	Black Raspberry
<i>Smilacina racemosa</i>	False Solomonseal
<i>Tilia americana</i>	Basswood
<i>Ulmus americana</i>	American Elm

### **Planted Pines**

<i>Apocynum cannabinum</i>	Dogbane
<i>Brassica spp</i>	Field Mustard
<i>Circaea lutetiana</i>	Enchanters Nightshade
<i>Fraxinus pennsylvanica</i>	Green Ash
<i>Galium triflorum</i>	Bedstraw
<i>Hesperis matronalis</i>	Dames Rocket
<i>Juglans nigra</i>	Black Walnut
<i>Lonicera tartarica</i>	Tartarian Honeysuckle
<i>Morus rubra</i>	Mulberry
<i>Parthenociccuc quinquefolia</i>	Virginia Creeper
<i>Pinus resinosa</i>	Red Pine
<i>Pinus strobus</i>	White Pine
<i>Populus deltoides</i>	Cottonwood
<i>Prunus serotina</i>	Black Cherry
<i>Pteridium sp</i>	Fern
<i>Rubus occidentalis</i>	Black Raspberry
<i>Ulmus pumila</i>	Siberian Elm
<i>Vitis riparia</i>	Riverbank Grape

### **Deciduous Forest**

<i>Acer rubrum</i>	Red Maple
<i>Acer saccharum</i>	Sugar Maple
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Carya glabra</i>	Pignut Hickory
<i>Celtis occidentalis</i>	Hackberry
<i>Juglans nigra</i>	Black Walnut
<i>Podophyllum peltatum</i>	Mayapple
<i>Populus tremuloides</i>	Quaking Aspen
<i>Quercus alba</i>	White Oak
<i>Quercus rubra</i>	Red Oak
<i>Solidago altissima</i>	Tall Goldenrod
<i>Toxicodendron radicans</i>	Poison Ivy
<i>Ulmus americana</i>	American Elm

Figure 11. Tree Survey Data - Hannah Farms West Site

<u>Tag #</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>DBH</u>	<u>Condition</u>
601	<i>Pinus strobus</i>	White Pine	22	Good
602	<i>Pinus strobus</i>	White Pine	15	Dead
603	<i>Pinus strobus</i>	White Pine	28	Good
604	<i>Pinus strobus</i>	White Pine	19	Good
605	<i>Pinus strobus</i>	White Pine	17	Good
606	<i>Pinus resinosa</i>	Red Pine	16	Good
607	<i>Pinus resinosa</i>	White Pine	14	Good
608	<i>Juglans nigra</i>	Black Walnut	19	Good
609	<i>Juglans nigra</i>	Black Walnut	24	Good
610	<i>Pinus strobus</i>	White Pine	16	Good
611	<i>Pinus strobus</i>	White Pine	15	Dead
612	<i>Prunus serotina</i>	Black Cherry	14	Dead
613	<i>Prunus serotina</i>	Black Cherry	13	Good
614	<i>Pinus strobus</i>	White Pine	15	Good
615	<i>Pinus strobus</i>	White Pine	19	Good
616	<i>Pinus strobus</i>	White Pine	17	Good
617	Lost Tag			
618	<i>Pinus resinosa</i>	Red Pine	16	Good
619	<i>Juglans nigra</i>	Black Walnut	16	Good
620	<i>Pinus strobus</i>	White Pine	21	Good
621	<i>Pinus resinosa</i>	Red Pine	13	Good
622	<i>Pinus resinosa</i>	Red Pine	14	Good
623	<i>Populus deltoides</i>	Cottonwood	15	Good
624	<i>Juglans nigra</i>	Black Walnut	13	Good
625	<i>Tilia americana</i>	Basswood	13	Good
626	<i>Quercus rubra</i>	Red Oak	23,23	Good
627	<i>Quercus rubra</i>	Red Oak	21.15	Good
628	<i>Tilia americana</i>	Basswood	19	Good
629	<i>Populus deltoides</i>	Cottonwood	13	Good
630	<i>Pinus strobus</i>	White Pine	13	Good
631	<i>Pinus strobus</i>	White Pine	13	Good
632	<i>Pinus strobus</i>	White Pine	12	Good
633	<i>Pinus strobus</i>	White Pine	12	Good
634	<i>Pinus strobus</i>	White Pine	14	Good
635	<i>Pinus strobus</i>	White Pine	12	Good
636	<i>Pinus strobus</i>	White Pine	12	Good
637	<i>Pinus strobus</i>	White Pine	14	Good
638	<i>Pinus strobus</i>	Tulip Tree	12	Good
639	<i>Pinus strobus</i>	Black Walnut	13	Good
640	<i>Pinus strobus</i>	White Pine	12	Good
641	<i>Pinus strobus</i>	White Pine	14	Good
642	<i>Pinus strobus</i>	White Pine	12	Good
643	<i>Pinus strobus</i>	White Pine	12	Good
644	<i>Pinus strobus</i>	White Pine	13	Good

645	<i>Pinus strobus</i>	White Pine	12	Good
646	<i>Pinus strobus</i>	White Pine	13	Good
647	<i>Pinus strobus</i>	White Pine	12	Good
648	<i>Pinus strobus</i>	White Pine	13	Good
649	<i>Pinus strobus</i>	White Pine	13	Good
650	<i>Pinus strobus</i>	White Pine	13	Good
651	<i>Pinus strobus</i>	White Pine	15	Good
652	<i>Pinus strobus</i>	White Pine	13	Good
653	<i>Pinus strobus</i>	White Pine	13	Good
654	<i>Pinus strobus</i>	White Pine	13	Good
655	<i>Pinus strobus</i>	White Pine	13	Good
656	<i>Pinus strobus</i>	White Pine	14	Good
657	<i>Pinus strobus</i>	White Pine	14	Good
658	<i>Pinus strobus</i>	White Pine	15	Good
659	<i>Pinus strobus</i>	White Pine	17	Good
660	<i>Pinus strobus</i>	White Pine	13	Good
661	<i>Pinus strobus</i>	White Pine	13	Good
662	<i>Pinus strobus</i>	White Pine	12	Good
663	<i>Pinus strobus</i>	White Pine	13	Good
664	<i>Pinus strobus</i>	White Pine	14	Good
665	<i>Pinus strobus</i>	White Pine	15	Good
666	<i>Pinus strobus</i>	White Pine	12	Good
667	<i>Pinus strobus</i>	White Pine	12	Good
668	<i>Pinus strobus</i>	White Pine	14	Good
669	<i>Pinus strobus</i>	White Pine	13	Good
670	<i>Pinus strobus</i>	White Pine	14	Good
671	<i>Pinus strobus</i>	White Pine	13	Good
672	<i>Pinus strobus</i>	White Pine	12	Good
673	<i>Pinus strobus</i>	White Pine	12	Good
674	<i>Pinus strobus</i>	White Pine	12	Good
675	<i>Pinus strobus</i>	White Pine	13	Good
676	<i>Pinus strobus</i>	White Pine	13	Good
677	<i>Pinus strobus</i>	White Pine	15	Good
678	<i>Pinus strobus</i>	White Pine	13	Good
679	<i>Pinus strobus</i>	White Pine	14	Good
680	<i>Pinus strobus</i>	White Pine	16	Good
681	<i>Pinus strobus</i>	White Pine	12	Good
682	<i>Pinus strobus</i>	White Pine	13	Good
683	<i>Pinus strobus</i>	White Pine	16	Good
684	<i>Pinus strobus</i>	White Pine	13	Good
685	<i>Pinus strobus</i>	White Pine	14	Good
686	<i>Pinus strobus</i>	White Pine	13	Good
687	<i>Pinus strobus</i>	White Pine	14	Good
688	<i>Pinus strobus</i>	White Pine	13	Good
689	<i>Pinus strobus</i>	White Pine	13	Good
690	<i>Pinus strobus</i>	White Pine	12	Good
691	<i>Pinus strobus</i>	White Pine	12	Good

692	<i>Pinus strobus</i>	White Pine	14	Good
693	<i>Pinus strobus</i>	White Pine	14	Good
694	<i>Pinus strobus</i>	White Pine	15	Good
695	<i>Pinus strobus</i>	White Pine	12	Good
696	<i>Pinus strobus</i>	White Pine	14	Good
697	<i>Pinus strobus</i>	White Pine	14	Good
698	<i>Pinus strobus</i>	White Pine	14	Good
699	<i>Pinus strobus</i>	White Pine	13	Good
700	<i>Pinus strobus</i>	White Pine	13	Good
701	<i>Pinus strobus</i>	White Pine	15	Good
702	<i>Pinus strobus</i>	White Pine	12	Good
703	<i>Pinus strobus</i>	White Pine	16	Good
704	<i>Pinus strobus</i>	White Pine	15	Good
705	<i>Pinus strobus</i>	White Pine	12	Good
706	<i>Pinus strobus</i>	White Pine	15	Good
707	<i>Pinus strobus</i>	White Pine	13	Good
708	<i>Pinus strobus</i>	White Pine	15	Good
709	<i>Pinus strobus</i>	White Pine	15	Good
710	<i>Pinus strobus</i>	White Pine	17	Good
711	<i>Pinus strobus</i>	White Pine	13	Good
712	<i>Pinus strobus</i>	White Pine	16	Good
713	<i>Pinus strobus</i>	White Pine	18	Good
714	<i>Pinus strobus</i>	White Pine	18	Good
715	<i>Pinus strobus</i>	White Pine	12	Good
716	<i>Pinus strobus</i>	White Pine	15	Good
717	<i>Pinus strobus</i>	White Pine	12	Good
718	<i>Pinus strobus</i>	White Pine	13	Good
719	<i>Pinus strobus</i>	White Pine	12	Good
720	<i>Pinus strobus</i>	White Pine	12	Good
721	<i>Pinus strobus</i>	White Pine	13	Good
722	<i>Pinus strobus</i>	White Pine	15	Good
723	<i>Pinus strobus</i>	White Pine	13	Good
724	<i>Pinus strobus</i>	White Pine	12	Good
725	<i>Pinus strobus</i>	White Pine	18	Good
726	<i>Pinus strobus</i>	White Pine	14	Good
727	<i>Pinus strobus</i>	White Pine	16	Good
728	<i>Pinus strobus</i>	White Pine	16	Good
729	<i>Pinus strobus</i>	White Pine	13	Good
730	<i>Pinus strobus</i>	White Pine	14	Good
731	<i>Pinus strobus</i>	White Pine	14	Good
732	<i>Pinus strobus</i>	White Pine	12	Good
733	<i>Pinus strobus</i>	White Pine	16	Good
734	<i>Pinus strobus</i>	White Pine	15	Good
735	<i>Pinus strobus</i>	White Pine	12	Good
736	<i>Pinus strobus</i>	White Pine	12	Good
737	<i>Pinus strobus</i>	White Pine	12	Good
738	<i>Pinus strobus</i>	White Pine	15	Good

739	<i>Pinus strobus</i>	White Pine	13	Good
740	<i>Pinus strobus</i>	White Pine	12	Good
741	<i>Pinus strobus</i>	White Pine	13	Good
742	<i>Pinus strobus</i>	White Pine	14	Good
743	<i>Pinus strobus</i>	White Pine	13	Good
744	<i>Pinus strobus</i>	White Pine	14	Good
745	<i>Pinus strobus</i>	White Pine	15	Good
746	<i>Pinus strobus</i>	White Pine	15	Good
747	<i>Pinus strobus</i>	White Pine	15	Good
748	<i>Pinus strobus</i>	White Pine	14	Good
749	<i>Pinus strobus</i>	White Pine	15	Good
750	<i>Pinus strobus</i>	White Pine	16	Good
751	<i>Pinus strobus</i>	White Pine	12	Good
752	<i>Pinus strobus</i>	White Pine	14	Good
753	<i>Pinus strobus</i>	White Pine	15	Good
754	<i>Pinus strobus</i>	White Pine	14	Good
755	<i>Pinus strobus</i>	White Pine	15	Good
756	<i>Pinus strobus</i>	White Pine	13	Good
757	<i>Pinus strobus</i>	White Pine	13	Good
758	<i>Pinus strobus</i>	White Pine	14	Good
759	<i>Pinus strobus</i>	White Pine	15	Good
760	<i>Pinus strobus</i>	White Pine	14	Good
761	<i>Pinus strobus</i>	White Pine	12	Good
762	<i>Pinus strobus</i>	White Pine	12	Good
763	<i>Populus deltoides</i>	Cottonwood	12	Good
764	<i>Pinus strobus</i>	White Pine	12	Good
765	<i>Pinus strobus</i>	White Pine	15	Good
766	<i>Pinus strobus</i>	White Pine	15	Good
767	<i>Pinus strobus</i>	White Pine	13	Good
768	<i>Pinus strobus</i>	White Pine	12	Good
769	<i>Pinus strobus</i>	White Pine	13	Good
770	<i>Pinus strobus</i>	White Pine	16	Good
771	<i>Pinus strobus</i>	White Pine	13	Good
772	<i>Pinus strobus</i>	White Pine	13	Good
773	<i>Pinus strobus</i>	White Pine	19	Good
774	<i>Pinus strobus</i>	White Pine	15	Good
775	<i>Pinus strobus</i>	White Pine	12	Good
776	<i>Pinus strobus</i>	White Pine	14	Good
777	<i>Pinus strobus</i>	White Pine	15	Good
778	<i>Pinus strobus</i>	White Pine	16	Good
779	<i>Pinus strobus</i>	White Pine	14	Good
780	<i>Pinus strobus</i>	White Pine	14	Good
781	<i>Pinus strobus</i>	White Pine	15	Good
782	<i>Pinus strobus</i>	White Pine	14	Good
783	<i>Pinus strobus</i>	White Pine	13	Good
784	<i>Prunus serotina</i>	Black Cherry	21	Fair
785	<i>Celtis occidentalis</i>	Hackberry	21	Good

786	<i>Carya cordiformis</i>	Bitternut Hickory	18	Good
787	<i>Prunus serotina</i>	Black Cherry	23	Fair
788	<i>Prunus serotina</i>	Black Cherry	31	Good
789	<i>Acer saccharinum</i>	Silver Maple	20	Fair
790	<i>Acer saccharinum</i>	Silver Maple	12,19	Good
791	<i>Tilia americana</i>	Basswood	16,15	Good
792	<i>Acer saccharum</i>	Sugar Maple	15	Good
793	<i>Quercus rubra</i>	Red Oak	12	Good
794	<i>Prunus serotina</i>	Black Cherry	21	Good
795	<i>Acer saccharum</i>	Sugar Maple	14	Fair
796	<i>Acer saccharum</i>	Sugar Maple	16	Good
797	Lost Tag			
798	<i>Acer rubrum</i>	Red Maple	15	Good
799	<i>Acer rubrum</i>	Red Maple	12	Good
800	<i>Prunus serotina</i>	Black Cherry	14	Good
801	<i>Populus deltoides</i>	Cottonwood	13	Good
802	<i>Juglans nigra</i>	Black Walnut	20	Good
803	<i>Acer saccharum</i>	Sugar Maple	12,18	Poor
804	<i>Prunus serotina</i>	Black Cherry	17	Poor
805	<i>Juglans nigra</i>	Black Walnut	25	Good
806	<i>Celtis occidentalis</i>	Hackberry	17	Good
807	<i>Juglans nigra</i>	Black Walnut	16	Good
808	<i>Prunus serotina</i>	Black Cherry	15	Fair
809	<i>Quercus rubra</i>	Red Oak	16	Good
810	<i>Carya cordiformis</i>	Bitternut Hickory	16	Good
811	<i>Quercus rubra</i>	Red Oak	17	Good
812	<i>Quercus alba</i>	White Oak	29	Good
813	<i>Populus deltoides</i>	Cottonwood	12	Good
814	<i>Pinus strobus</i>	White Pine	12	Good
815	<i>Pinus strobus</i>	White Pine	12	Good
816	<i>Populus deltoides</i>	Cottonwood	12	Good
817	<i>Pinus strobus</i>	White Pine	12	Good
818	<i>Populus deltoides</i>	Cottonwood	12	Good
819	<i>Prunus serotina</i>	Black Cherry	21	Fair
820	<i>Quercus rubra</i>	Red Oak	13	Good
821	<i>Populus deltoides</i>	Cottonwood	13	Good
822	<i>Prunus serotina</i>	Black Cherry	27	Good
823	<i>Prunus serotina</i>	Black Cherry	16	Fair
824	<i>Juglans nigra</i>	Black Walnut	17	Good
825	<i>Acer saccharum</i>	Sugar Maple	16	Good
826	<i>Populus deltoides</i>	Cottonwood	12	Good
827	<i>Pinus strobus</i>	White Pine	13	Good
828	<i>Prunus serotina</i>	Black Cherry	16	Good
829	<i>Prunus serotina</i>	Black Cherry	16	Good
830	<i>Quercus rubra</i>	Red Oak	19	Good
831	<i>Acer saccharum</i>	Sugar Maple	29	Good
832	<i>Acer saccharum</i>	Sugar Maple	23	Good

833	<i>Acer saccharum</i>	Sugar Maple	32	Good
834	<i>Quercus rubra</i>	Red Oak	12	Good
835	<i>Prunus serotina</i>	Black Cherry	14	Good
836	<i>Quercus rubra</i>	Red Oak	19	Good
837	<i>Quercus rubra</i>	Red Oak	21	Good
838	<i>Pinus strobus</i>	White Pine	12	Good
839	<u><i>Prunus serotina</i></u>	<u>Black Cherry</u>	<u>17</u>	Good
840	<i>Pinus strobus</i>	White Pine	15	Good
841	<i>Pinus strobus</i>	White Pine	12	Good
842	<i>Pinus strobus</i>	White Pine	13	Good
843	<i>Pinus strobus</i>	White Pine	12	Good
844	<i>Pinus strobus</i>	White Pine	12	Good
845	<i>Populus deltoides</i>	Cottonwood	12	Good
846	<i>Pinus strobus</i>	White Pine	12,14	Good
847	<i>Pinus strobus</i>	White Pine	13	Good
848	<i>Ulmus pumila</i>	Siberian Elm	22	Poor
849	<i>Juglans nigra</i>	Black Walnut	13	Good
850	<i>Populus deltoides</i>	Cottonwood	14,16	Fair
851	<i>Fraxinus pennsylvanica</i>	Green Ash	15	Fair
852	<i>Acer negundo</i>	Box Elder	13	Fair
853	<i>Ulmus pumila</i>	Siberian Elm	29	Fair
854	<i>Fraxinus pennsylvanica</i>	Green Ash	16	Dead
855	<i>Quercus alba</i>	White Oak	19	Good
856	<i>Quercus alba</i>	White Pine	14	Good
857	<i>Quercus rubra</i>	Red Oak	17	Good
858	<i>Prunus serotina</i>	Black Cherry	22	Fair
859	<i>Prunus serotina</i>	Black Cherry	29	Good
860	<i>Quercus rubra</i>	Red Oak	16	Good
861	<i>Quercus rubra</i>	Red Oak	15	Good
862	<i>Pinus strobus</i>	White Pine	18	Good
863	<i>Prunus serotina</i>	Black Cherry	16	Poor
864	<i>Celtis occidentalis</i>	Hackberry	25	Good
865	<i>Quercus rubra</i>	Red Oak	17,14	Good
866	<i>Quercus rubra</i>	Red Oak	22	Good
867	<i>Prunus serotina</i>	Black Cherry	14	Poor
868	<i>Quercus alba</i>	White Oak	22	Good
869	<i>Quercus alba</i>	White Oak	13	Good
870	<i>Fraxinus pennsylvanica</i>	Green Ash	13	Dead
871	<i>Populus deltoides</i>	Cottonwood	14	Good
872	<i>Prunus serotina</i>	Black Cherry	15	Fair
873	<i>Prunus serotina</i>	Black Cherry	14	Good
874	<i>Pinus strobus</i>	White Pine	19	Fair
875	<i>Quercus alba</i>	White Oak	17	Good
876	<i>Ulmus pumila</i>	Siberian Elm	16	Good
877	<i>Quercus alba</i>	White Oak	16,19	Good
878	<i>Picea abies</i>	Norway Spruce	23	Good
879	<i>Quercus alba</i>	White Oak	15	Good

880	<i>Quercus alba</i>	White Oak	18	Good
881	<i>Quercus rubra</i>	Red Oak	15	Good
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883	<i>Quercus rubra</i>	Red Oak	33	Good
884	<i>Quercus rubra</i>	Red Oak	14	Good
885	<i>Juglans nigra</i>	Black Walnut	34	Fair
886	<i>Quercus rubra</i>	Red Oak	20	Good
887	<i>Quercus alba</i>	White Oak	13	Fair
888	<i>Juglans nigra</i>	Black Walnut	24	Good
889	<i>Quercus rubra</i>	Red Oak	42	Good
890	<i>Quercus rubra</i>	Red Oak	17	Good
891	<i>Fraxinus pennsylvanica</i>	Green Ash	13	Fair
892	<i>Ulmus americana</i>	American Elm	15	Fair
893	<i>Ulmus americana</i>	American Elm	19	Good
894	<i>Quercus alba</i>	White Oak	19	Good
895	<i>Quercus alba</i>	White Oak	21	Good
896	<i>Juglans nigra</i>	Black Walnut	21	Good
897	<i>Quercus rubra</i>	Red Oak	16	Good
898	<i>Salix fragilis</i>	Crack Willow	15	Good
899	<i>Populus deltoides</i>	Cottonwood	22	Good
900	<i>Populus deltoides</i>	Cottonwood	20	Good
901	<i>Populus deltoides</i>	Cottonwood	14	Good
902	<i>Populus deltoides</i>	Cottonwood	18	Good
903	<i>Ulmus pumila</i>	Siberian Elm	13	Good
904	<i>Populus deltoides</i>	Cottonwood	21	Good
905	<i>Populus deltoides</i>	Cottonwood	13,16	Good
906	<i>Quercus rubra</i>	Red Oak	15	Good
907	<i>Juglans nigra</i>	Black Walnut	17	Good
908	<i>Juglans nigra</i>	Black Walnut	12	Good
909	<i>Juglans nigra</i>	Black Walnut	14	Fair
910	<i>Fraxinus pennsylvanica</i>	Green Ash	15	Good
911	<i>Juglans nigra</i>	Black Walnut	15	Good
912	<i>Quercus alba</i>	White Oak	13	Good
913	<i>Acer saccharum</i>	Sugar Maple	18	Good
914	<i>Quercus alba</i>	White Oak	28	Good
915	<i>Acer saccharum</i>	Sugar Maple	39	Good
916	<i>Acer saccharum</i>	Sugar Maple	17	Good
917	<i>Tilia americana</i>	Basswood	21	Good
918	<i>Quercus alba</i>	White Oak	25	Fair
919	<i>Quercus rubra</i>	Red Oak	15	Good
920	<i>Populus deltoides</i>	Cottonwood	14	Good
921	<i>Populus deltoides</i>	Cottonwood	13	Good
922	<i>Acer saccharum</i>	Sugar Maple	22	Good
923	<i>Acer saccharum</i>	Sugar Maple	18	Good
924	<i>Acer saccharum</i>	Sugar Maple	43	Good
925	<i>Acer saccharum</i>	Sugar Maple	13	Good
926	<i>Quercus rubra</i>	Red Oak	17	Good



927	<i>Quercus alba</i>	White Oak	37	Good
928	<i>Acer saccharum</i>	Sugar Maple	22	Good
929	<i>Acer saccharum</i>	Sugar Maple	36	Good
930	<i>Populus deltoides</i>	Cottonwood	17	Good
931	<i>Populus deltoides</i>	Cottonwood	19	Good
932	<i>Populus deltoides</i>	Cottonwood	17	Good
933	<i>Populus deltoides</i>	Cottonwood	17	Good
934	<i>Fraxinus pennsylvanica</i>	Green Ash	36	Dead
935	<i>Quercus rubra</i>	Red Oak	20	Good
936	<i>Juglans nigra</i>	Black Walnut	34	Fair
937	<i>Juglans nigra</i>	Black Walnut	20	Good
938	<i>Juglans nigra</i>	Black Walnut	16	Good
939	<i>Juglans nigra</i>	Black Walnut	18	Fair
940	<i>Juglans nigra</i>	Black Walnut	12	Good



# TRAFFIC IMPACT STUDY

For The Proposed

Hannah Apartments

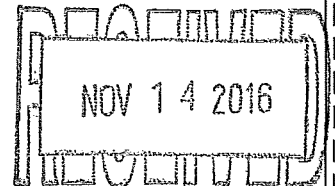
Meridian Charter Township  
Ingham County, MI

June, 2016

Prepared by:

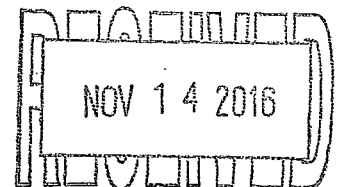
**Traffic Engineering  
Associates, Inc.**

PO Box 100 • Saranac, Michigan 48881  
517/627-6028 FAX: 517/627-6040



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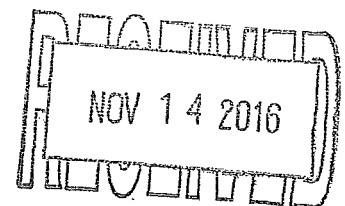


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## EXECUTIVE SUMMARY

Traffic Engineering Associates, Inc. (TEA) conducted a traffic impact study to determine the impact from the new traffic generated by the Hannah Apartments development in Meridian Charter Township, Ingham County, Michigan. The project includes two (2) sites, the first site (north) being located on the southwest corner of Eyde Parkway and Hannah Boulevard and the second site (south) is located across the street on the south side of Eyde Parkway. The proposed project sites are vacant land.

The proposed north site of the Hannah Apartments development will contain two (2) apartment buildings and will consist of a total of 182 apartment units. There are two (2) proposed driveways on Eyde Parkway for this site which both provide full access to a parking garage. The proposed south site of the Hannah Apartments development will contain sixty nine (69) townhouse units. The south site will have one (1) new driveway with full access on Eyde Parkway.

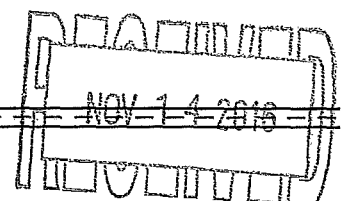
TEA, Inc. conducted vehicle counts during the midweek, of a non-holiday week, in the month of January, 2016, at six (6) intersections in the project area, which include Hannah Boulevard at Hagadorn Road, Hannah Boulevard at Esoteric Way, Hannah Boulevard at Eyde Parkway, Hagadorn Road at Eyde Parkway, Eyde Parkway at Esoteric Way and Hagadorn Road at Mt. Hope Road. The weekday AM and PM peak hours of existing traffic on the adjoining road system are 8:00 – 9:00 AM and 4:45 – 5:45 PM, respectively.

For existing traffic conditions, all existing geometrics and traffic control were used except at the intersection of Hagadorn Road and Mt. Hope Road. The Ingham County Road Department is currently under contract to reconstruct this intersection by adding an additional southbound thru lane on Hagadorn Road. As this intersection will be reconstructed before this development is approved and operational, the new reconstructed intersection was considered “existing” conditions.

A level of service analysis for existing traffic at the studied intersections during the AM and PM peak hours was conducted. All existing turning movements at the studied intersections operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours, except for the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road which operates at a LOS F during the PM peak hour.

Background traffic represents future volumes without the traffic generated by the proposed Hannah Apartments development. The target year for completion is the fall of 2018. An exponential growth rate of one point zero three percent (1.03%) was utilized for the background growth period to project traffic to the build out date.

All background turning movements at the studied intersections are expected to operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the



southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road which is anticipated to continue to operate at a LOS F during the PM peak hour.

The level of service for the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road will be a LOS F for both the existing conditions and for the background conditions. An analysis was conducted to determine if a different traffic signal timing would improve this level of service. By modifying the traffic signal splits, the background level of service, LOS F, was improved to a LOS E with a reduction in vehicle delay of over 160 seconds.

For this study, the field data collected at the Lodges of East Lansing – Phase I facility was utilized for trip generation of the Hannah Apartments development given that the proposed units for the Hannah Apartments development and the existing housing in the Lodges of East Lansing – Phase I are anticipated to be marketed to the same consumer audience, college students. Additionally, they are both located in the same area and would have similar statistics.

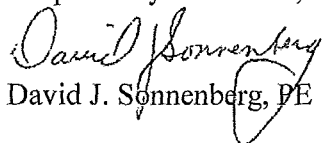
Based on the Lodges of East Lansing – Phase I rates, and utilizing the number of units as the independent variable, it is projected that the proposed Hannah Apartments development will generate 118 vehicle trips during the AM peak hour and 254 vehicle trips during the PM peak hour. Data was not collected for the weekday daily total.

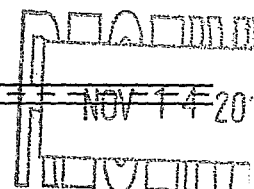
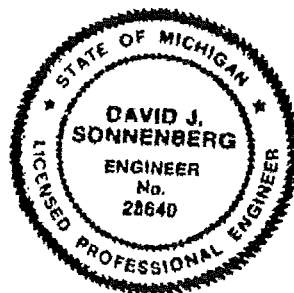
For future traffic conditions, all existing geometrics and traffic control were used, except at the intersection of Mt. Hope Road and Hagadorn Road where the new geometrics were added and the traffic signal timing was modified for the PM peak hour per recommendations for mitigated background conditions. All future turning movements at the studied intersections are anticipated to operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road which is expected to operate at a LOS E during the PM peak hour, and the northbound thru-right movement on Hagadorn Road at Eyde Parkway which is anticipated to operate at a LOS E during the PM peak hour.

An analysis was conducted to determine if updating the traffic signal timing at the Hagadorn Road and Eyde Parkway intersection would improve the northbound thru-right movement level of service. The analysis shows that by increasing the cycle length from the current 80 seconds to a 90 second cycle length, and optimizing the traffic signal splits, the future level of service, LOS E, was improved to a LOS D.

The Ingham County Road Department should consider optimizing the traffic signal timing at the intersections of Mt. Hope Road and Hagadorn Road, as well as the signal at Hagadorn Road and Eyde Parkway.

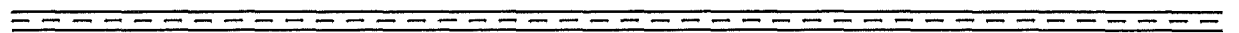
Respectfully Submitted,

  
David J. Sonnenberg, PE



# INTRODUCTION

NOV 14 2016



## PROJECT DESCRIPTION

The purpose of this study is to determine the impact from the new traffic generated by the Hannah Apartments development in Meridian Charter Township, Ingham County, Michigan. The project includes two (2) sites, the first site (north) being located on the southwest corner of Eyde Parkway and Hannah Boulevard and the second site (south) is located across the street on the south side of Eyde Parkway. Both of the proposed project sites are vacant land.

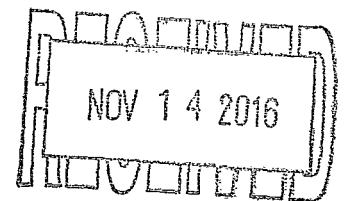
The proposed north site of the Hannah Apartments development will contain two (2) apartment buildings which consist of a total of 182 apartment units. There are two (2) proposed driveways on Eyde Parkway for this site which both provide full access to a parking garage. The proposed south site of the Hannah Apartments development will contain sixty nine (69) townhouse units. The south site will have one (1) new driveway with full access on Eyde Parkway.

The study will focus on the impacts to the surrounding roadway system due to the proposed Developments. The project has an anticipated completion by the fall of 2018.

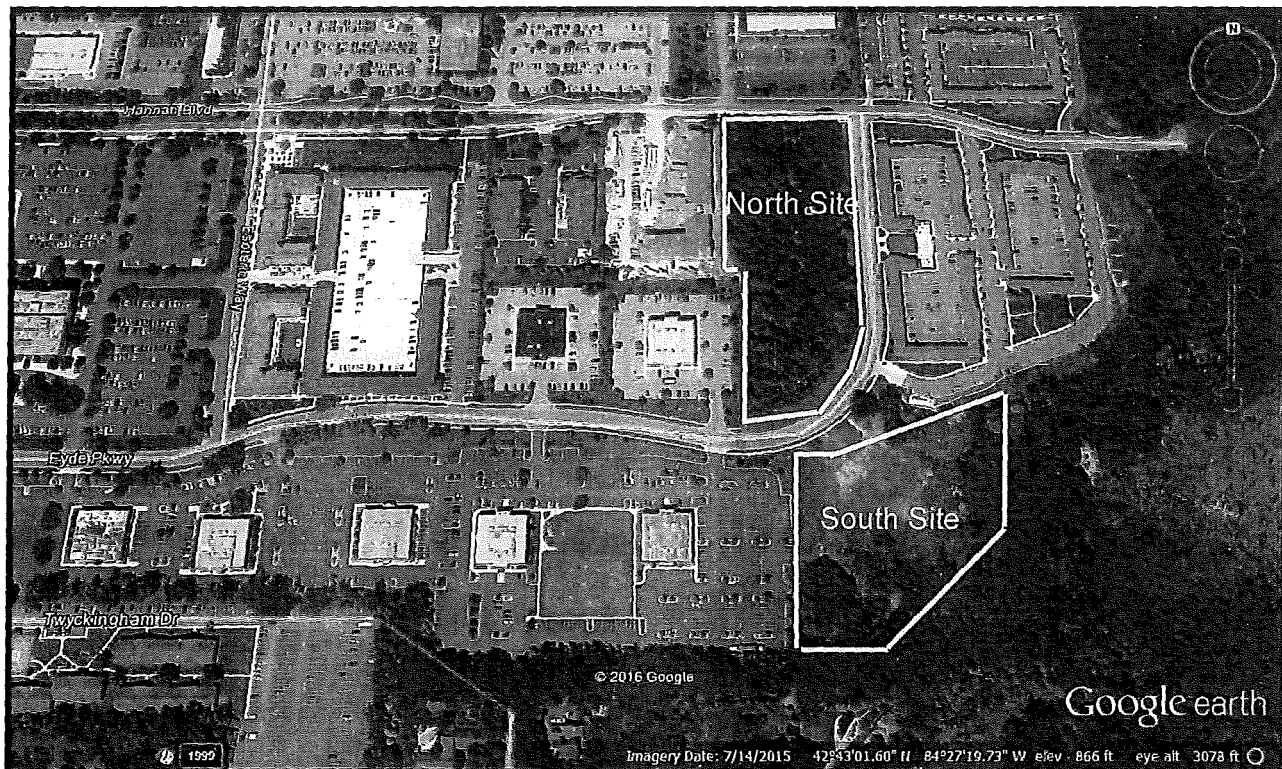
## SCOPE OF WORK

The scope of work contained in this report is as follows:

- Analysis of existing traffic conditions on the adjoining street system.
- Analysis of background traffic conditions for the future year (fall of 2018) volumes without the proposed Hannah Apartments development.
- Projection of future traffic volumes to be generated by the proposed Hannah Apartments development.
- Evaluation of the impact of future traffic with the proposed Hannah Apartments development.
- Determination of what roadway and traffic control improvements, if any, will be needed to accommodate future (fall of 2018) traffic volumes.





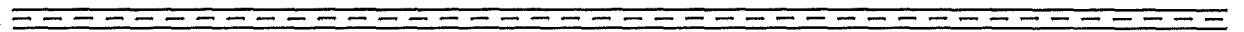
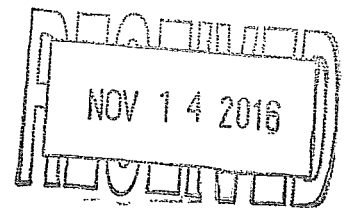


Aerial Photo

NOV 14 2016



**EXISTING CONDITIONS**



## ROADWAYS AND INTERSECTIONS

### Roadways

Hagadorn Road is a four lane divided boulevard roadway in the project area. There are sidewalks on both sides of the roadway and the posted speed limit is 45 MPH. Hagadorn Road is under the jurisdiction of the Ingham County Department of Roads.

Hannah Boulevard is a four lane divided roadway with a grass boulevard. There are sidewalks on both sides of Hannah Boulevard. There is no posted speed limit; therefore, the prima facie speed is 25 MPH. Hannah Boulevard is under the jurisdiction of the Ingham County Department of Roads.

Esoteric Way is a two lane roadway with sidewalks on the east side. There is no posted speed limit; therefore, the prima facie speed is 25 MPH. Esoteric Way is under the jurisdiction of the Ingham County Department of Roads.

Eyde Parkway is a two lane roadway with sidewalk on the south and east sides of the roadway. There is no posted speed limit; therefore, the prima facie speed is 25 MPH. Eyde Parkway is under the jurisdiction of the Ingham County Department of Roads.

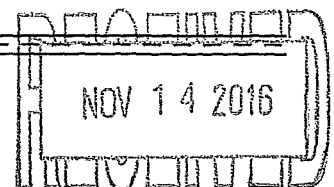
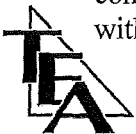
### Intersections

The intersection of Hagadorn Road and Hannah Boulevard is controlled by a two-phase traffic signal. The north and south approaches on Hagadorn Road are five (5) lanes; two (2) thru lanes, one (1) exclusive right turn lane with two (2) outbound lanes. The east approach on Hannah Boulevard is five (5) lanes: one (1) thru lane, one (1) thru-right turn lane, one (1) right turn lane and two (2) outbound lanes. The west approach on Service Road is four (4) lanes; one (1) thru lane, one (1) thru-right turn lane with two (2) outbound lanes. There are no left turns allowed at this intersection; rather, all left turn movements are made via four (4) Michigan lefts.

The intersection of Hagadorn Road and Eyde Parkway forms a "T" intersection and is controlled by traffic signal. The north approach on Hagadorn Road is five (5) lanes; two (2) thru lanes, one (1) exclusive left turn lane, and two (2) outbound lanes. The south approach on Hagadorn Road is four (4) lanes; one (1) thru lane, one (1) thru-right turn lane, and two (2) outbound lanes. The east approach on Eyde Parkway is two (2) lanes; one (1) left-right lane and one (1) outbound lane.

The intersection of Hannah Boulevard and Esoteric Way forms a "T" intersection and is controlled by a traffic signal. The south approach is two (2) lanes with one (1) inbound and one (1) outbound lane. The east and west approach on Hannah Boulevard are two (2) lanes eastbound and two (2) lanes westbound with a grass median, the north approach is a private driveway.

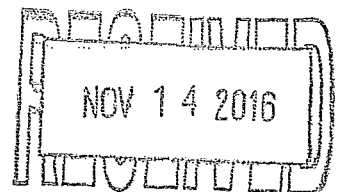
The intersection of Hannah Boulevard and Eyde Parkway forms a "T" intersection and is controlled by STOP control for northbound Eyde Parkway. All approaches are two (2) lanes with one (1) inbound and one (1) outbound lane.



The intersection of Esoteric Way and Eyde Parkway forms a "T" intersection and is controlled by STOP control on southbound Esoteric Way. All approaches are two (2) lanes with one (1) inbound and one (1) outbound lane.

The intersection of Hagadorn Road and Mt. Hope Road is controlled by a fully-actuated traffic signal with permissive-protective left turn phases in all four directions, and pedestrian push buttons in all four approaches. This intersection is currently under contract by the Ingham County Road Department to reconstruct the north and south approaches on Hagadorn Road which will add a second thru lane for the southbound traffic and realign the curb lines. As this construction will be completed prior to the completion and occupation of the Hannah Apartments, this traffic study considered the new design for the north and south approaches as existing conditions.

The north approach is six (6) lanes; one (1) exclusive right turn lane, two (2) thru lanes, one (1) exclusive left turn lane with two (2) outbound lanes. The south approach on Hagadorn Road and the east and west approaches on Mt. Hope Road are five (5) lanes; one (1) exclusive left turn lane, one (1) thru lane, one (1) thru-right lane with two (2) outbound lanes.



## LAND USE

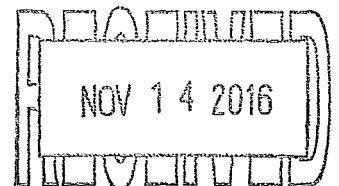
The proposed Hannah Apartments development will be located on the north and south side of Eyde Parkway south of Hannah Boulevard. Both of the proposed project sites are vacant land. The surrounding land use is mostly residential rental buildings and businesses.

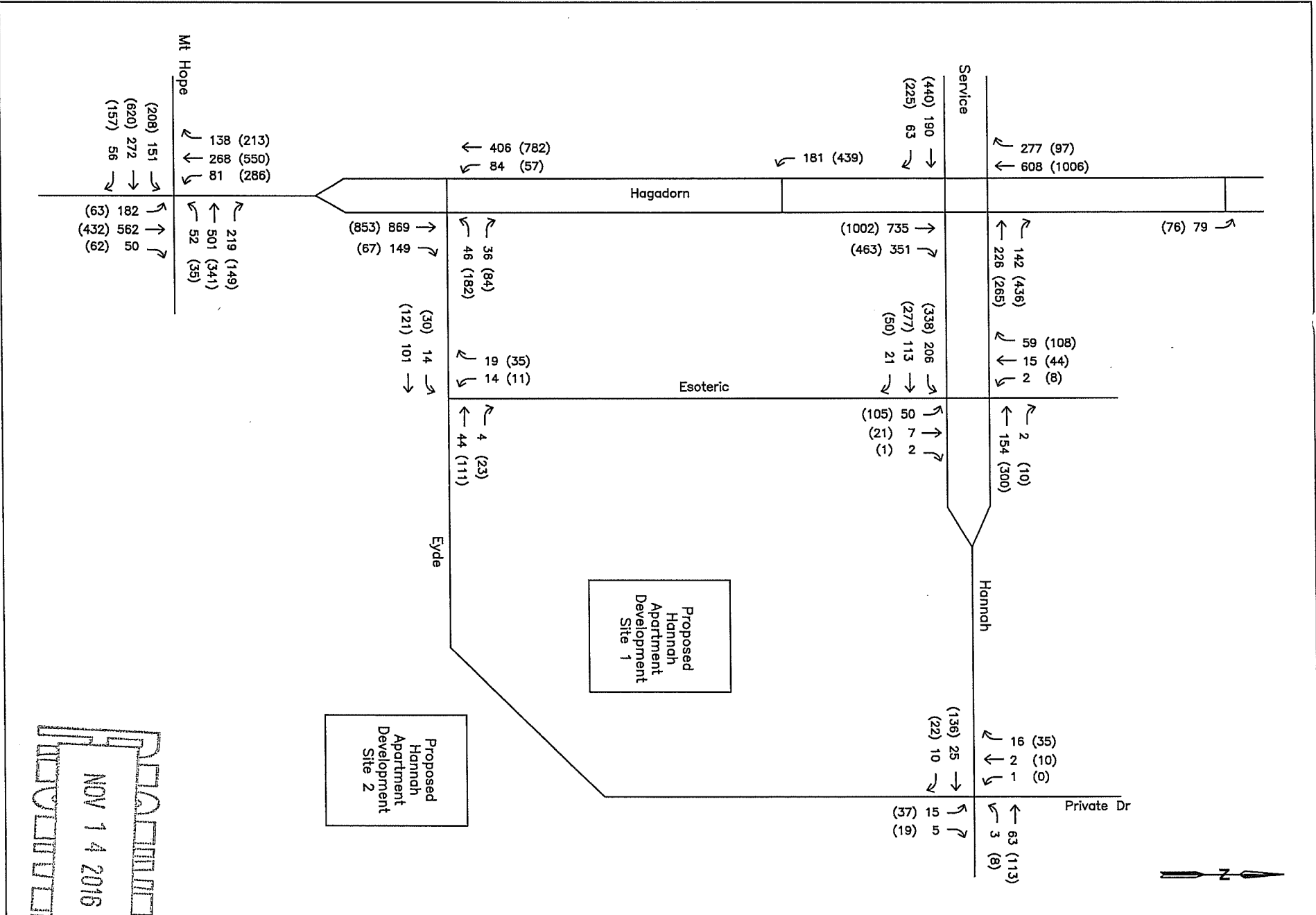
## EXISTING TRAFFIC VOLUMES

TEA, Inc. conducted vehicle counts during the midweek, of a non-holiday week in the month of January, 2016, at the following intersections:

- Hagadorn Road and Mt. Hope Road
- Hagadorn Road and Eyde Parkway
- Hagadorn Road and Hannah Boulevard
- Eyde Parkway and Hannah Boulevard
- Eyde Parkway and Esoteric Way
- Hannah Boulevard and Esoteric Way

The weekday AM and PM peak hours of existing traffic on the adjoining road system are 8:00 – 9:00 AM and 4:45 – 5:45 PM, respectively. The existing peak hour volumes are illustrated in **Figure 1**.





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## LEVEL OF SERVICE ANALYSIS FOR EXISTING TRAFFIC

The critical intersections defined for this study were analyzed according to the methodologies published in the most recent edition of the *Highway Capacity Manual*. The analysis determines the “Level of Service” of the intersections and is based on factors such as the number and types of lanes, signal timing, traffic volumes, pedestrian activity, etc. The level of service (LOS) is defined by average vehicle delay in seconds created by a traffic control device for a given traffic movement or intersection approach.

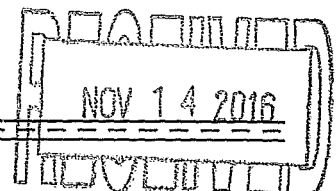
Level of Service	Delay per Vehicle (seconds)	
	Non-Signalized	Signalized
A	< 10	<10
B	10 to 15	10 to 20
C	15 to 25	20 to 35
D	25 to 35	35 to 55
E	35 to 50	55 to 80
F	> 50	> 80

Levels of Service are expressed in a range from “A” to “F,” with “A” being the highest LOS and “F” representing the lowest LOS. Level of service “D” is considered the minimum acceptable LOS in an urban area. The above table shows the thresholds for Levels of Service “A” through “F” for non-signalized and signalized intersections, respectively.

All Level of Service computations contained in this report were based upon the Synchro 8 software package which is approved by the Michigan Department of Transportation (MDOT). Delay per vehicle includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

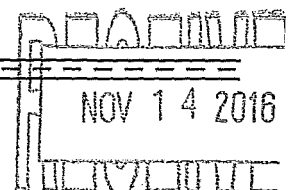
For existing traffic conditions, all existing geometrics and traffic control were used except at the intersection of Hagadorn Road and Mt. Hope Road. The Ingham County Road Department is currently under contract to reconstruct this intersection by adding an additional southbound thru lane on Hagadorn Road. As this intersection will be reconstructed before this development is approved and operational, the new reconstructed intersection was considered “existing” conditions.

All existing turning movements at the studied intersections operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours, except for the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road which operates at a LOS F during the PM peak hour with a vehicle delay of 190.7 seconds. The Level of Service analysis for existing traffic at the subject intersections during the AM and PM peak hours is summarized in **Table 1**.



**Table 1**  
**Level of Service (LOS) Summary**  
**Existing Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Hagadorn Road and Mt. Hope Road	EB Left	48.3	D	40.9	D
	EB Thru-Right	26.1	C	33.6	C
	WB Left	18.1	B	24.3	C
	WB Thru-Right	35.1	D	26.7	C
	NB Left	26.8	C	26.0	C
	NB Thru-Right	34.0	C	31.3	C
	SB Left	30.7	C	<u>190.7</u>	F
	SB Thru	29.4	C	31.4	C
	SB Right	4.2	A	5.0	A
	Intersection Overall	31.3	C	45.0	D
Hagadorn Road and Eyde Parkway	WB Left-Right	25.9	C	38.8	D
	NB Thru-Right	21.8	C	41.1	D
	SB Left	28.2	C	33.8	C
	SB Thru	2.6	A	10.0	B
	Intersection Overall	20.7	B	38.8	D
Hagadorn Road and Hannah Boulevard/ Service Drive	EB Thru-Right	20.6	C	28.5	C
	WB Thru	24.5	C	24.5	C
	WB Right	8.6	B	24.3	C
	NB Thru	2.9	A	6.6	A
	NB Right	0.9	A	5.7	A
	SB Thru	9.8	A	13.2	B
	SB Right	2.7	A	2.3	A
	Intersection Overall	7.3	A	22.7	C
Hagadorn Road SB to NB X Over	EB Left	12.1	B	19.3	C
Hagadorn Road NB to SB X Over	WB Left	12.4	B	15.1	C

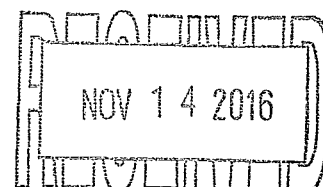




**Table 1 (continued)**  
**Level of Service (LOS) Summary**  
**Existing Traffic**

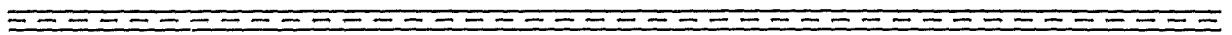
Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Eyde Parkway and Hannah Boulevard	EB Thru-Right	Free	-	Free	-
	WB Left-Thru	7.5	A	7.6	A
	NB Left-Right	9.8	A	12.3	B
	SB Right	8.9	A	9.8	A
	Intersection Overall	3.0	A	3.3	A
Eyde Parkway and Esoteric Way	EB Left-Thru	7.6	A	7.6	A
	WB Thru-Right	Free	-	Free	-
	SB Left-Right	9.7	A	9.8	A
	Intersection Overall	1.8	A	1.9	A
Hannah Boulevard and Esoteric Way	EB Left	7.9	A	13.7	B
	EB Thru-Right	5.5	A	7.8	A
	WB Thru-Right	17.4	B	22.0	C
	NB Left-Thru-Right	16.5	B	16.2	B
	SB Left-Thru-Right	8.7	A	8.4	A
	Intersection Overall	9.7	A	13.4	B

Note: Delay = Average vehicle delay in seconds  
LOS = Level of Service



**BACKGROUND CONDITIONS**

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## BACKGROUND TRAFFIC GROWTH VOLUMES

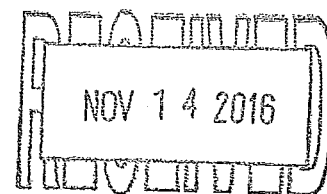
Background traffic represents future volumes without the traffic generated by the proposed Hannah Apartments development. The target year for completion is the fall of 2018.

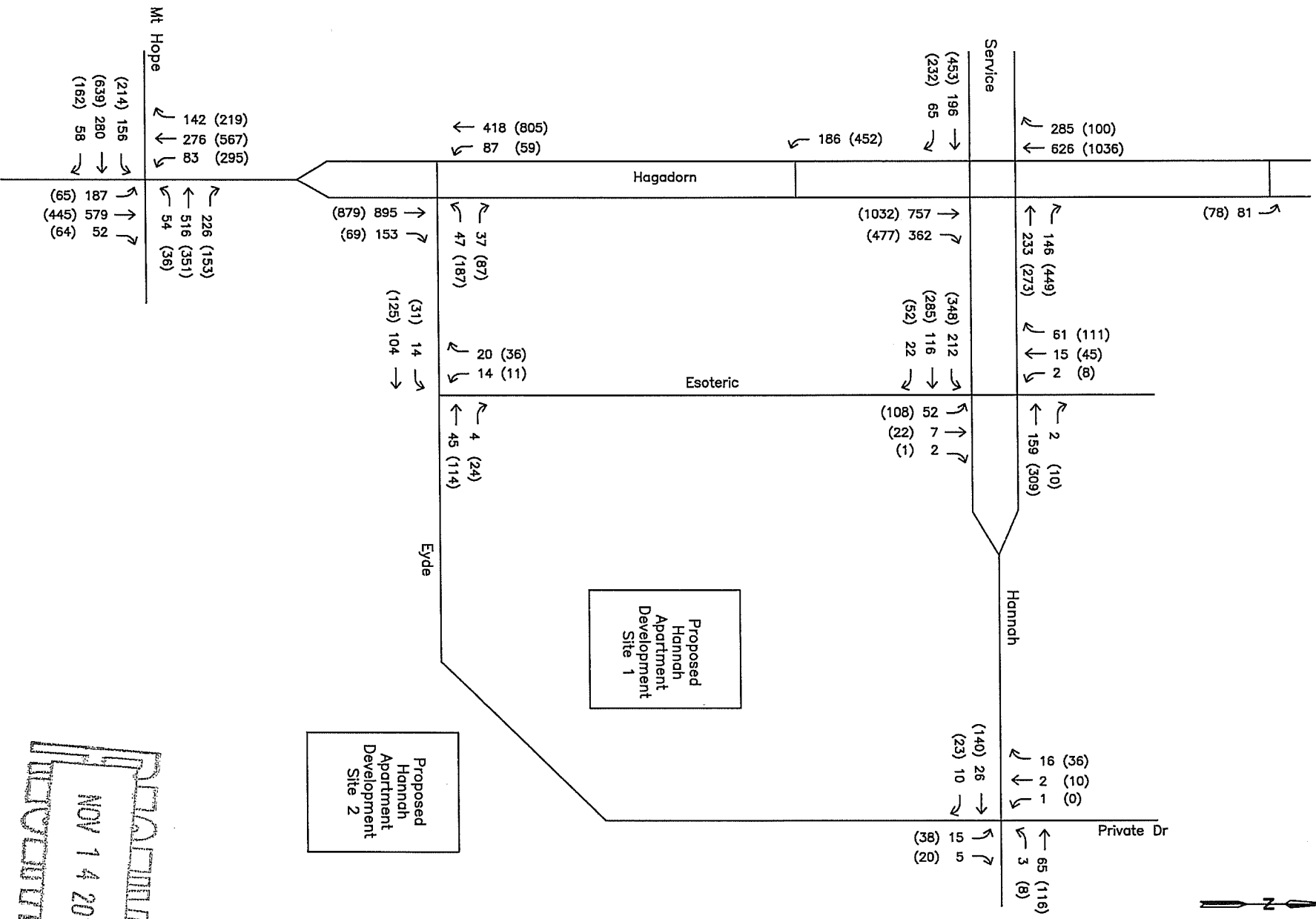
According to the US Census Bureau, the population growth for Ingham County from 2010 to 2014 was one point three percent (1.3%). The US Census Bureau also shows that the population growth from 2010 to 2014 for Meridian Charter Township was five point zero percent (5.0%).

The 5.0% total growth rate was used to determine the annual exponential growth rate of one point zero three percent (1.03%) for the background growth period to project traffic to the build out date of the fall of 2018. Background traffic growth volumes during the AM and PM peak hours are shown in **Figure 2**.

## BACKGROUND DEVELOPMENT TRAFFIC VOLUMES

There were no new developments with completed traffic impact studies identified by Meridian Charter Township that would have an impact on background development traffic. Therefore, background development traffic volumes were not included in this study.



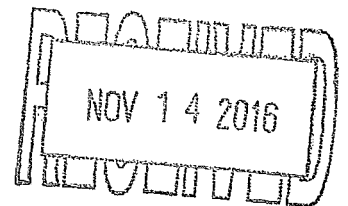


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## LEVEL OF SERVICE ANALYSIS FOR BACKGROUND TRAFFIC

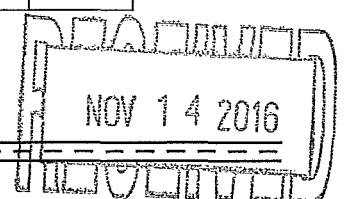
For background traffic conditions, all geometrics and traffic control from existing conditions were utilized. All background turning movements at the studied intersections are expected to operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road which is anticipated to operate at a LOS F during the PM peak hour with a vehicle delay of 221.7 seconds, an increase of 31.0 seconds in vehicle delay from existing conditions.

The level of service analysis for background traffic at the subject intersections during the AM and PM peak hours is summarized in **Table 2**.



**Table 2**  
**Level of Service (LOS) Summary**  
**Background Traffic**

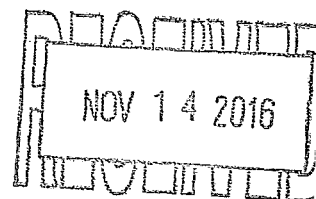
Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Hagadorn Road and Mt. Hope Road	EB Left	53.9	D	44.6	D
	EB Thru-Right	26.4	C	34.5	C
	WB Left	18.4	B	24.7	C
	WB Thru-Right	36.4	D	27.1	C
	NB Left	27.1	C	27.4	C
	NB Thru-Right	34.5	C	31.7	C
	SB Left	32.3	C	<u>221.7</u>	<u>F</u>
	SB Thru	29.5	C	31.7	C
	SB Right	4.6	A	5.1	A
	Intersection Overall	32.2	C	48.6	D
Hagadorn Road and Eyde Parkway	WB Left-Right	25.9	C	39.7	D
	NB Thru-Right	22.6	C	45.6	D
	SB Left	28.4	C	34.2	C
	SB Thru	2.7	A	10.5	B
	Intersection Overall	21.3	C	42.2	D
Hagadorn Road and Hannah Boulevard/ Service Drive	EB Thru-Right	20.9	C	29.8	C
	WB Thru	24.6	C	25.3	C
	WB Right	9.7	B	25.4	C
	NB Thru	2.9	A	6.7	A
	NB Right	0.9	A	6.1	A
	SB Thru	10.0	A	13.5	B
	SB Right	3.1	A	2.2	A
	Intersection Overall	7.5	A	10.7	B
Hagadorn Road SB to NB X Over	EB Left	12.4	B	21.0	C
Hagadorn Road NB to SB X Over	WB Left	13.0	B	15.5	C



**Table 2 (continued)**  
**Level of Service (LOS) Summary**  
**Background Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Eyde Parkway and Hannah Boulevard	EB Thru-Right	Free	-	Free	-
	WB Left-Thru	7.5	A	7.6	A
	NB Left-Right	9.8	A	12.4	B
	SB Right	8.9	A	9.8	A
	Intersection Overall	3.0	A	3.3	A
Eyde Parkway and Esoteric Way	EB Left-Thru	7.7	A	7.6	A
	WB Thru-Right	Free	-	Free	-
	SB Left-Right	9.7	A	9.8	A
	Intersection Overall	1.8	A	1.9	A
Hannah Boulevard and Esoteric Way	EB Left	8.1	A	14.6	B
	EB Thru-Right	5.6	A	8.0	A
	WB Thru-Right	17.6	B	22.3	C
	NB Left-Thru-Right	16.3	B	16.2	B
	SB Left-Thru-Right	8.8	A	8.4	A
	Intersection Overall	9.7	A	13.7	A

Note: Delay = Average vehicle delay in seconds  
LOS = Level of Service

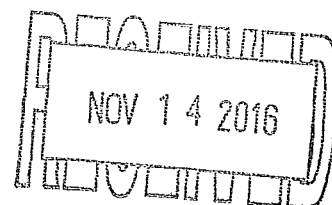


## LEVEL OF SERVICE ANALYSIS FOR BACKGROUND MITIGATED TRAFFIC

The level of service for the southbound left turning movement on Hagadorn Road to eastbound Mt. Hope Road will be a LOS F for both existing conditions and background conditions. An analysis was conducted to determine if different traffic signal timing could improve this level of service and reduce the vehicle delays.

Keeping the cycle length at the existing 100 seconds, the traffic signal splits were modified to try and improve the level of service for the southbound left turning movement for the background conditions. By modifying the traffic signal splits, the background level of service, LOS F, was improved to a LOS E. The southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road is expected to operate at a LOS E during the PM peak hour with a vehicle delay of 58.1 seconds, a significant decrease of 163.6 seconds in vehicle delay from background unmitigated conditions.

The level of service analysis for background mitigated traffic at the Mt. Hope Road and Hagadorn Road intersection during the AM and PM peak hours is summarized in **Table 3**.

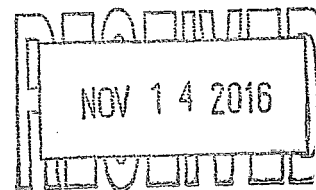




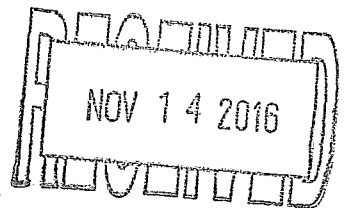
**Table 3**  
**Level of Service (LOS) Summary**  
**Background Mitigated Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Hagadorn Road and Mt. Hope Road	EB Left	53.9	D	44.6	D
	EB Thru-Right	26.4	C	34.5	C
	WB Left	18.4	B	24.7	C
	WB Thru-Right	36.4	D	27.1	C
	NB Left	27.1	C	27.4	C
	NB Thru-Right	34.5	C	31.7	C
	SB Left	32.3	C	<u>58.1</u>	<u>E</u>
	SB Thru	29.5	C	31.7	C
	SB Right	4.6	A	5.1	A
	Intersection Overall	32.2	C	48.6	D

Note: Delay = Average vehicle delay in seconds  
LOS = Level of Service



## FUTURE CONDITIONS



## SITE TRAFFIC GENERATION

The trip generation rates were derived from the existing traffic counts taken at the Lodges of East Lansing – Phase I site driveways and compared to the ITE TRIP GENERATION MANUAL (9th edition).

The existing peak hour traffic volumes for the Lodges of East Lansing – Phase I site driveways during the AM and PM peak hours are 8:00 – 9:00 AM and 4:00 – 5:00 PM, respectively. These site peak hours do not correspond with the surrounding roadway peak hours; however, they represent the highest trip generation volumes during the peaks and thus, make the most conservative estimates for the proposed site. The following information was obtained from existing traffic counts:

	AM Peak Hour	PM Peak Hour
<b>Enter</b>	28	102
<b>Exit</b>	76	120
<b>Total</b>	104	222

The Lodges of East Lansing – Phase I development consists of 220 apartment units and 683 bedrooms and TEA was informed that the occupancy was 99% leased out when counts were taken in January, 2012. For the purposes of this report, it was assumed that the data collected at the existing Lodges of East Lansing – Phase I driveways accounted for the entire site fully occupied. Given that information, the following rates were determined:

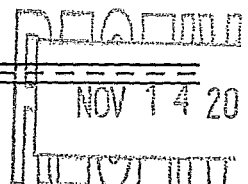
	AM Peak Hour	PM Peak Hour
<b>Units</b>	0.47	1.01
<b>Bedrooms</b>	0.15	0.325

These rates were applied to the proposed apartments and townhouses for the Hannah Apartments development to determine future trip generation estimates.

In addition, a trip generation analysis was conducted utilizing the ITE Trip Generation Manual (9<sup>th</sup> Edition) for comparison purposes. The ITE trip generation rates for Apartment (Land Use Code 220) were selected as representing the 182 apartment units in the Hannah Apartments development. The ITE description is as follows:

*Apartments are rental dwelling units located within the same building with at least three other dwelling units, for example, quadrplexes and all types of apartment buildings. The studies included in this land use did not identify whether the apartments were low-rise, or high-rise.*

The ITE trip generation rates for Rental Townhouse (Land Use Code 224) were selected as representing the 69 townhouse units in the Hannah Apartments development. The ITE description is as follows:



*Rental townhouses are townhouse developments with rented rather than owned units and a minimum of two attached units per building structure. Units are not stacked on top of one another.*

Comparing the estimated rates from the data collected at the Lodges of East Lansing – Phase I site against the ITE Trip Generation Manual, the independent variable of apartment units has similar numbers. The widest variation occurs when you look at the trip distribution between entering and exiting traffic, as displayed below.

	<b>Lodges of East Lansing Field Data</b>	<b>ITE Trip Generation Manual</b>
<b>AM Peak Hour</b>		
Enter	27%	20%
Exit	73%	80%
<b>PM Peak Hour</b>		
Enter	46%	65%
Exit	54%	35%

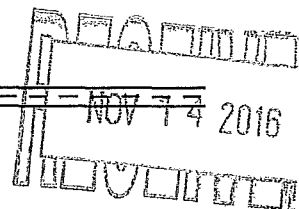
During the AM peak hour, the distribution is fairly similar between the two sources. However, in the PM peak hour the existing field data taken at the Lodges of East Lansing shows a more even split of entering and exiting traffic than the ITE Trip Generation Manual. This discrepancy may be due to the difference between a typical apartment facility where the occupants are more likely to leave for work in the AM peak hour and arrive home from work during the PM peak hour; whereas, at a more college student oriented facility the entering and exiting trips would be more dependent on the student class hours.

Based on the trip generation rates for the number of units from the Lodges of East Lansing field data, it is projected that the proposed 251 units in the Hannah Apartments development will generate 118 trips in the AM peak hour and 254 trips in the PM peak hour. Data was not collected for the weekday daily total.

Based on the trip generation rates for the number of bedrooms from the Lodges of East Lansing field data, it is projected that the proposed 680 bedrooms in the Hannah Apartments development will generate 102 trips in the AM peak hour and 221 trips in the PM peak hour. Data was not collected for the weekday daily total.

Based on the trip generation rates ITE Trip Generation Manual, it is projected that the proposed Hannah Apartments development will generate 164 trips in the AM peak hour, 210 trips in the PM peak hour, and 1337 during a weekday.

For this study, the data collected at the Lodges of East Lansing – Phase I facility was utilized for trip generation of the Hannah Apartments development given that the proposed units for the new development, and the existing housing in Lodges of East Lansing – Phase I, are anticipated to be marketed to the same consumer audience, college students. Additionally, they are both in the same immediate area and would have similar statistics.



Comparing the Lodges of East Lansing – Phase I rates to the ITE Trip Generation Rates, and utilizing the number of units as the independent variable (not the number of beds), it is projected that the proposed townhouse apartments for the Hannah Apartments development will generate 118 vehicle trips during the AM peak hour and 254 vehicle trips during the PM peak hour. Data was not collected for the weekday daily total.

The comparison of the projected traffic to be generated by the proposed Hannah Apartments development is summarized in **Table 4**.

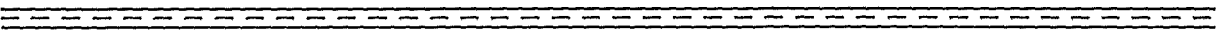
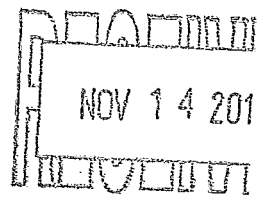


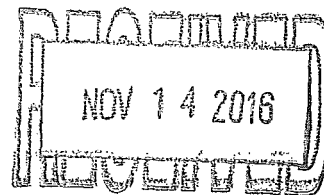
Table 4

**Vehicle Trip Generation Comparison Summary  
Proposed Hannah Apartments Development**

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday 24-Hour
		In	Out	Total	In	Out	Total	
Lodges of East Lansing Rate Estimate	251 Units	32	86	118	117	137	254	N/A
<b>Total Trips</b>		<b>32</b>	<b>86</b>	<b>118</b>	<b>117</b>	<b>137</b>	<b>254</b>	<b>N/A</b>

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday 24-Hour
		In	Out	Total	In	Out	Total	
Lodges of East Lansing Rate Estimate	680 Bedrooms	28	74	102	102	119	221	N/A
<b>Total Trips</b>		<b>28</b>	<b>74</b>	<b>102</b>	<b>102</b>	<b>119</b>	<b>221</b>	<b>N/A</b>

Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday 24-Hour
		In	Out	Total	In	Out	Total	
Apartments (ITE Code 220)	404 Bedrooms	23	93	116	104	56	160	1337
Rental Townhouse (ITE Code 224)	69 Units	16	32	48	26	24	50	N/A
<b>Total Trips</b>		<b>39</b>	<b>125</b>	<b>164</b>	<b>130</b>	<b>80</b>	<b>210</b>	<b>1337</b>



**SITE TRAFFIC DISTRIBUTION**

The distribution of traffic volumes to be generated by the proposed Hannah Apartments development during the future AM and PM peak hours is illustrated in **Figure 3**.

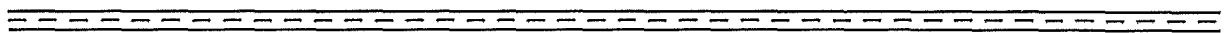
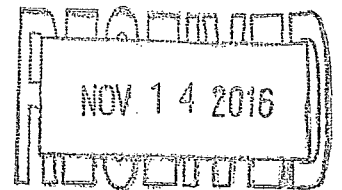
Traffic distribution was based on existing traffic patterns on the surrounding roadways. Typically, a residential facility has people exiting in the morning and entering in the evening; therefore, the traffic exiting the roadway system during the morning and entering during the evening generated the distribution for this study. There are very similar traffic patterns between the two peak hours, as displayed below.

<b>Direction of Approach and Departure</b>	<b>AM Peak Hour Distribution</b>	<b>PM Peak Hour Distribution</b>
To/From the SOUTH on Hagadorn Road	25%	35%
To/From the NORTH on Hagadorn Road	45%	40%
To/From the WEST on Service Drive	30%	25%

Traffic was then further distributed by driveway. All townhouse traffic on the south site was distributed to the driveway for that facility. At the north site, the apartment traffic was distributed with 80% of traffic utilizing the nearest driveway, whether coming from the north or the south on Eyde Parkway, with the remaining 20% utilizing the second driveway.

It was determined that the majority of the Hannah Apartments development traffic at the north site would access the closest driveway that provided the shortest route; however, some residents might decide to access the driveway closest to their building. Therefore, 20% of the traffic was distributed to the second driveway after passing up on the first driveway.

Adding the site generated traffic volumes to the background volumes yielded the total future traffic volumes. Total traffic volumes for the future AM and PM peak hours are illustrated in **Figure 4**.



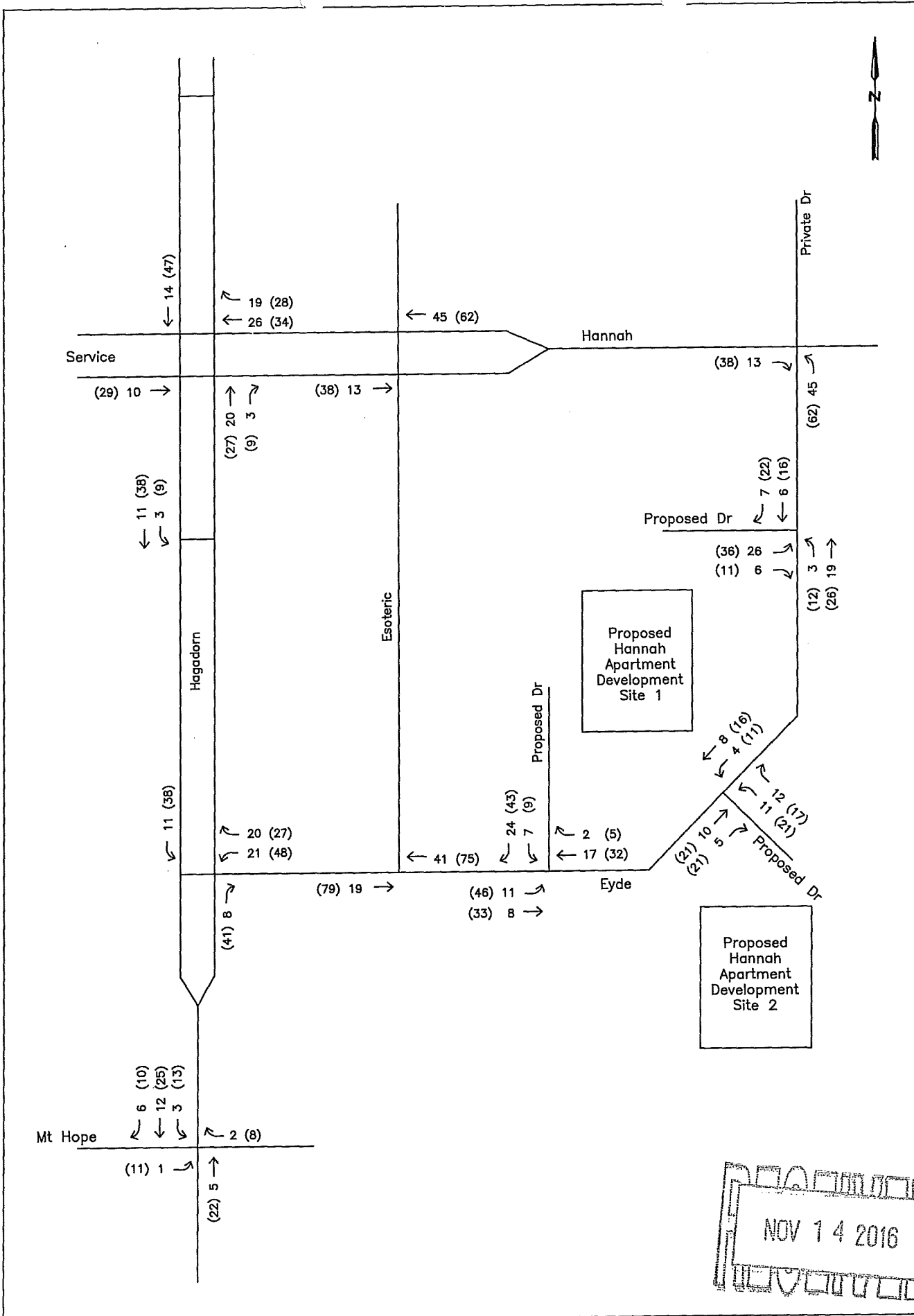
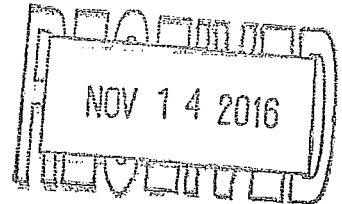


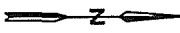
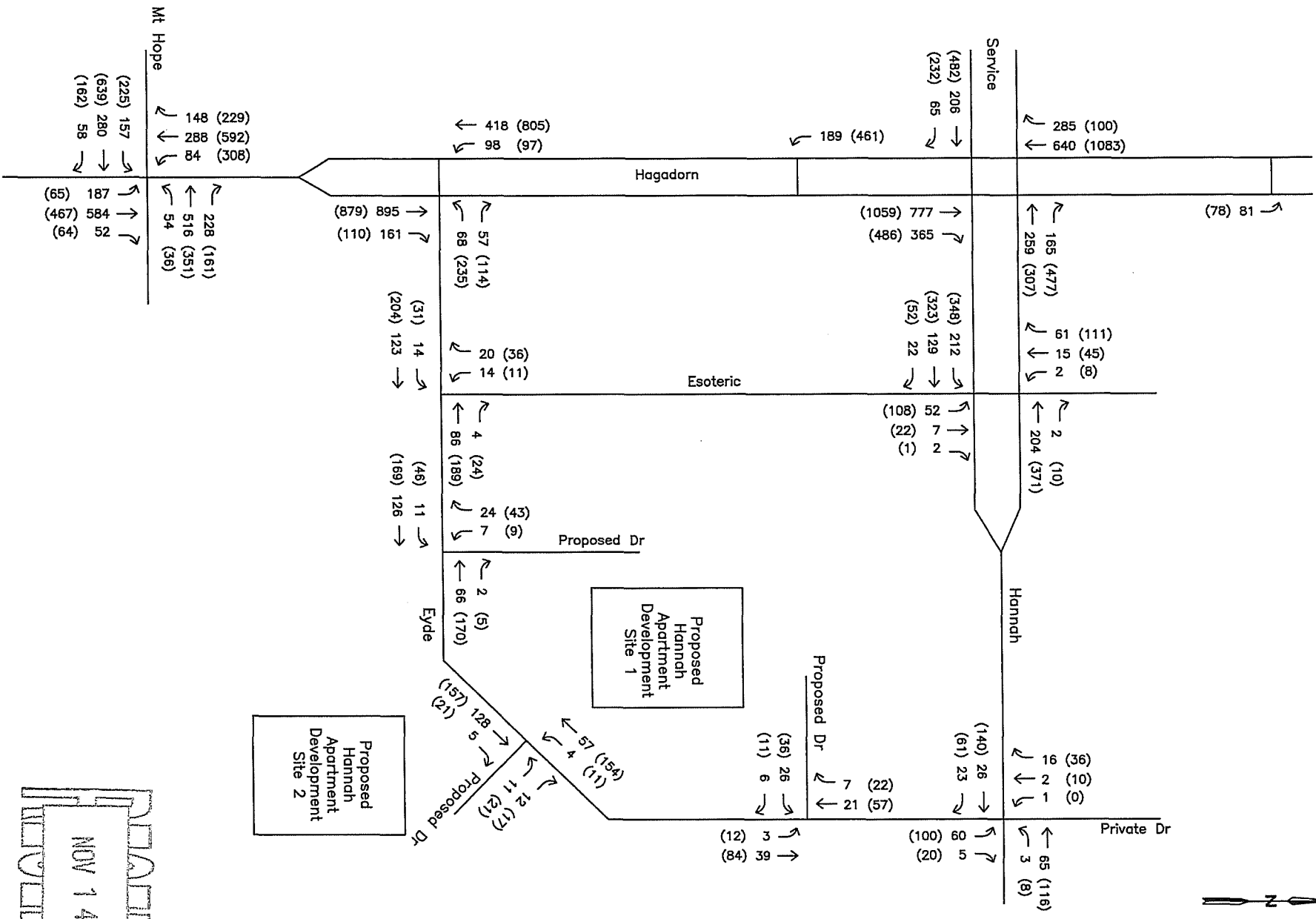
FIGURE 3: Site Traffic - Peak Hours

LEGEND  
 XXX AM PK Hr (8:00-9:00 AM) Volumes  
 (XXX) PM PK Hr (4:45-5:45 PM) Volumes

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**LEGEND**  
 XXX AM Pk Hr (8:00-9:00 AM) Volumes  
 (XXX) PM Pk Hr (4:45-5:45 PM) Volumes

**FIGURE 4: Future Traffic - Peak Hours**

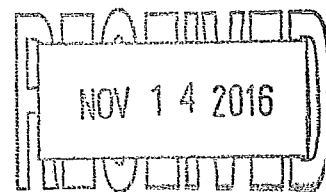
DATE: June, 2016	SCALE: NTS	PAGE: 27
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## LEVEL OF SERVICE ANALYSIS FOR FUTURE TRAFFIC

For future traffic conditions, all existing geometrics and traffic control were used, except at the intersection of Mt. Hope Road and Hagadorn Road where the new geometrics were added and the traffic signal timing was modified for the PM peak hour per recommendations for mitigated background conditions. All future turning movements at the studied intersections are anticipated to operate at an acceptable level of service (LOS D or better) during the AM and PM peak hours except for the following movements;

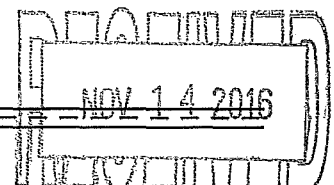
- Southbound left turn movement from Hagadorn Road to Mt. Hope Road is expected to operate at a LOS E during the PM peak hour with a vehicle delay of 68.1 seconds, an increase of 10 seconds in vehicle delay from background mitigated conditions.
- Northbound thru-right movement on Hagadorn Road at Eyde Parkway is anticipated to operate at a LOS E during the PM peak hour with a vehicle delay of 55.1 seconds, an increase of 9.5 seconds in vehicle delay from background conditions.

The level of service analysis for future AM and PM peak hour traffic is summarized in **Table 5**.



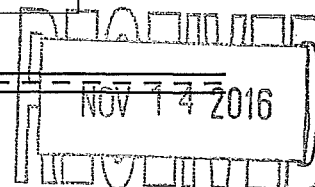
**Table 5  
Level of Service (LOS) Summary  
Future Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Hagadorn Road and Mt. Hope Road	EB Left	54.2	D	47.9	D
	EB Thru-Right	26.4	C	42.9	D
	WB Left	18.5	B	25.3	C
	WB Thru-Right	36.5	D	36.2	D
	NB Left	27.4	C	28.6	C
	NB Thru-Right	34.7	C	42.5	D
	SB Left	32.6	C	<u>68.1</u>	<u>E</u>
	SB Thru	29.7	C	28.3	C
	SB Right	5.1	A	4.5	A
	Intersection Overall	32.3	C	38.8	D
Hagadorn Road and Eyde Parkway	WB Left-Right	29.3	C	50.8	D
	NB Thru-Right	22.8	C	<u>55.1</u>	<u>E</u>
	SB Left	31.4	C	38.5	D
	SB Thru	3.4	A	12.0	B
	Intersection Overall	21.8	C	50.4	D
Hagadorn Road and Hannah Boulevard/ Service Drive	EB Thru-Right	21.2	C	32.0	C
	WB Thru	24.9	C	26.8	C
	WB Right	12.1	B	27.5	C
	NB Thru	3.5	A	7.2	A
	NB Right	1.0	A	6.9	A
	SB Thru	10.3	B	13.9	B
	SB Right	4.1	A	2.2	A
	Intersection Overall	8.2	A	13.9	B
Hagadorn Road SB to NB X Over	EB Left	12.4	B	21.4	C
Hagadorn Road NB to SB X Over	WB Left	13.1	B	16.0	C



**Table 5 (continued)**  
**Level of Service (LOS) Summary**  
**Future Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Eyde Parkway and Hannah Boulevard	EB Thru-Right	Free	-	Free	-
	WB Left-Thru	7.5	A	7.7	A
	NB Left-Right	10.3	B	14.2	B
	SB Right	8.9	A	9.9	A
	Intersection Overall	4.7	A	4.6	A
Eyde Parkway and Esoteric Way	EB Left-Thru	7.8	A	7.9	A
	WB Thru-Right	Free	-	Free	-
	SB Left-Right	10.3	B	10.7	B
	Intersection Overall	1.5	A	1.4	A
Hannah Boulevard and Esoteric Way	EB Left	8.1	A	14.6	B
	EB Thru-Right	5.7	A	8.3	A
	WB Thru-Right	18.1	B	23.7	C
	NB Left-Thru-Right	16.5	B	16.4	B
	SB Left-Thru-Right	7.8	A	8.5	A
	Intersection Overall	10.5	B	14.7	B
Eyde Parkway and Proposed Drive North	EB Left-Right	9.1	A	9.9	A
	NB Left-Thru	7.3	A	7.5	A
	SB Thru-Right	Free	-	Free	-
	Intersection Overall	2.6	A	2.2	A
Eyde Parkway and Proposed Middle Drive	WB Left-Right	10.3	B	10.6	B
	SB Left-Thru	7.8	A	7.7	A
	NB Thru-Right	Free	-	Free	-
	Intersection Overall	0.8	A	1.2	A
Eyde Parkway and Proposed South Drive	EB Left-Thru	7.5	A	7.8	A
	SB Left-Right	9.5	A	10.3	B
	WB Thru-Right	Free	-	Free	-
	Intersection Overall	1.2	A	1.9	A

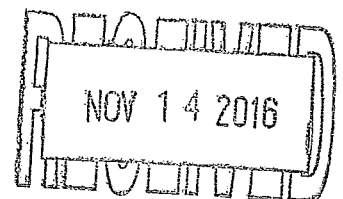


## LEVEL OF SERVICE ANALYSIS FOR FUTURE MITIGATED TRAFFIC

The level of service for the northbound thru-right movement on Hagadorn Road at Eyde Parkway will operate at a LOS E under future conditions. An analysis was conducted to determine if updating the traffic signal timing would improve this level of service.

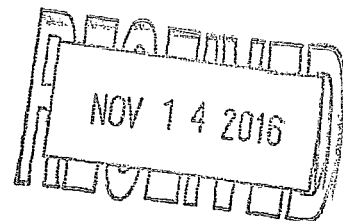
By increasing the cycle length from the current 80 seconds to a 90 second cycle length, and optimizing the traffic signal splits, the future level of service, LOS E, was improved to a LOS D. The northbound thru-right movement on Hagadorn Road at Eyde Parkway is expected to operate at a LOS D during the PM peak hour with a vehicle delay of 36.6 seconds, a decrease of 18.5 seconds in vehicle delay from future unmitigated conditions. This signal timing change will also reduce the vehicle delays under background conditions by 9.0 seconds.

The level of service analysis for future mitigated traffic at the Hagadorn Road and Eyde Parkway intersection during the AM and PM peak hours is summarized in **Table 6**.



**Table 6**  
**Level of Service (LOS) Summary**  
**Future Mitigated Traffic**

Location	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Delay	LOS	Delay	LOS
Hagadorn Road and Eyde Parkway	WB Left-Right	29.3	C	54.7	D
	NB Thru-Right	22.8	C	36.6	D
	SB Left	31.4	C	43.2	D
	SB Thru	3.4	A	11.6	B
	Intersection Overall	21.8	C	39.4	D



**SIGNIFICANT FINDINGS**

NOV 14 2016



## INTERSECTION IMPROVEMENT CONSIDERATIONS

### Hagadorn Road and Mt. Hope Road

This intersection is a fully-actuated, signalized intersection with permissive/protected left turn phasing for all four approaches. Under background conditions the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road is anticipated to operate at a LOS F during the PM peak hour with a vehicle delay of 221.7 seconds.

For mitigation purposes, under background conditions, the traffic signal at this intersection was analyzed to determine a more efficient timing plan to improve the level of service and to decrease the vehicle delays. The cycle length was optimized from the current 108 second cycle length to a 100 second cycle length and the timing splits were also optimized. With the modified traffic signal timing plan, the southbound left turn movement from Hagadorn Road to eastbound Mt. Hope Road is expected to operate at a LOS E with 68.1 seconds of vehicle delay under future modified conditions, a significant decrease in the vehicle delay of 153.6 seconds from background conditions.

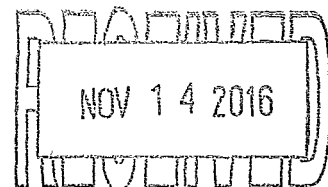
### Hagadorn Road and Eyde Parkway

This intersection is a fully-actuated, signalized intersection with permissive/protected left turn phasing for the south approach. Under future conditions the northbound thru-right movement from Hagadorn Road to Eyde Parkway is expected to operate at a LOS E during the PM peak hour with a vehicle delay of 55.1 seconds.

For mitigation purposes, under future conditions, the traffic signal at this intersection was analyzed to determine a more efficient timing plan and improve the level of service and to decrease the vehicle delays. The cycle length was optimized from the current 80 second cycle length to a 90 second cycle length and the timing splits were then optimized. With the modified traffic signal timing plan, the northbound thru-right movement from Hagadorn Road to Eyde Parkway is anticipated to operate at a LOS D with 36.6 seconds of vehicle delay under future modified conditions, a decrease in the vehicle delay of 18.5 seconds from future conditions.

This intersection is coordinated with the Hagadorn Road and Hannah Boulevard/Service Drive intersection. The cycle length at Hagadorn Road and Hannah Boulevard/Service Drive was increased to 90 seconds to match the new PM peak hour cycle length at Hagadorn Road and Eyde Parkway and the intersections re-coordinated. The LOS at Hagadorn Road and Hannah Boulevard/Service with the new 90 second cycle length remained the same for all movements with only a slight change in the vehicle delays.

There are no recommended changes for the remaining intersections in this traffic study.





**NON-MOTORIZED TRANSPORTATION**

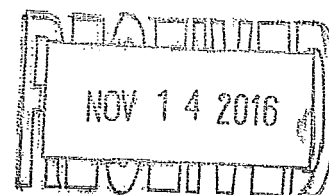
Eyde Parkway is a two-lane, two-way roadway with a marked double yellow centerline. There also is existing roadside parking on the east side near the Hannah Boulevard intersection. There are no marked non-motorized pathways on Eyde Parkway.

**SIGHT DISTANCE**

The proposed site driveway for the south site will be located on the south side of Eyde Parkway approximately halfway between two (2) existing driveways. This proposed driveway will be located on the outside of the curve with ample sight distance along Eyde Parkway.

The proposed south driveway for the north site with ingress and egress to the parking ramp is proposed to be constructed along the west property line immediately adjacent to an existing commercial driveway. Consideration should be given to the separation between the existing driveway and the proposed site driveway. The driveway separation should meet the Ingham County Road Department guidelines for local roads.

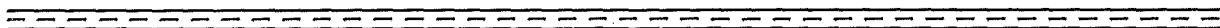
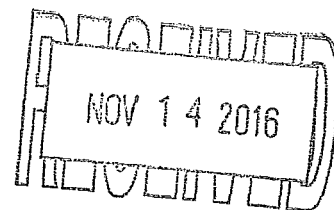
Given the location of the south driveway in relation to the existing curve on Eyde Parkway, all effort should be made by the landscape architect to provide a safe sight distance triangle with appropriate plantings to the northeast so that driveway traffic will be able to see southbound traffic on Eyde Parkway. The speed limit on Eyde Parkway is a prima facie 25 MPH; therefore, in accordance with the Ingham County Road Department driveway standards a stopping sight distance of 280 feet is required, or, if there is a substantial reason where this cannot be achieved, a minimum stopping sight distance of 155 feet is required.



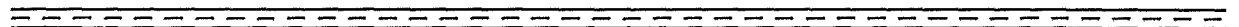
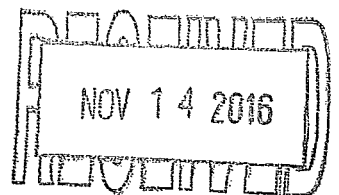
## CONCLUSIONS

The findings of this report are as follows:

- The Ingham County Road Department should consider optimizing the traffic signal timing at the intersection of Hagadorn Road at Mt. Hope Road to provide a better level of service and to decrease vehicle delay.
- The Ingham County Road Department should consider optimizing the traffic signal timing at the intersection of Hagadorn Road at Eyde Parkway to provide a better level of service and to decrease vehicle delay.

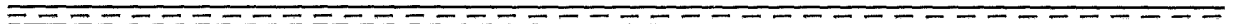
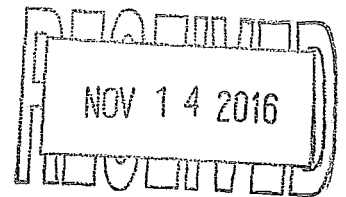


**SUPPLEMENTAL INFORMATION**



## Supplemental Information

Site Plan  
Census Population Estimates  
Timing Plans  
Vehicle Volume Counts  
ICRD Sight Distance Tables  
LOS Computations



# Patrick E. Lindemann

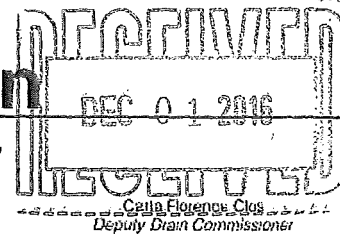
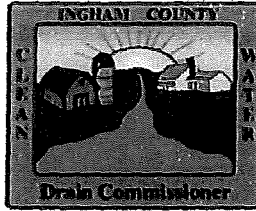
## Ingham County Drain Commissioner

PO Box 220  
707 Buhl Avenue  
Mason, MI 48854-0220

Phone: (517) 676-8395

Fax: (517) 676-8364

<http://dr.ingham.org>



Paul C. Pratt  
Deputy Drain Commissioner

David C. Love  
Chief of Engineering and Inspection

Sheldon Lewis  
Administrative Assistant

November 29, 2016

To: Greg Petru, P.E.  
KEBS, Inc.

From: David Love, Ingham County Drain Engineer 

CC: Meridian Charter Township, Mark Kieselbach

Re: Meridian Charter Township – Section 20  
Capstone Collegiate Communities / MUPUD Conceptual Site Plan Review  
Drain Office #16118

COPY

This comment is in response to your request for input dated November 14, 2016 and is in reference to a proposed MUPUD development for housing units to be designated as Hannah Farms East. The proposed project will add an additional 296 units with a total of 645 beds at two separate locations on both sides of Eyde Parkway.

- 1) The site is located southeast of the intersection of Hannah Boulevard and Eyde Parkway and on the south side of Eyde Parkway in Section 20 of Meridian Charter Township.
- 2) This area is served by the Hannah Farm Drain.
- 3) There is floodplain associated with the Hannah Farm Drain at this location as noted on the plan.
- 4) The following items pertain to handling the stormwater on the site:
  - Provision is being made for pretreatment of the first 1.0 inch of rainfall before the stormwater leaves the site;
  - Detention for this site is provided regionally and is already constructed;
  - The site plan must be submitted to this office for Site Plan Review and Drainage Review;
  - Drainage plans must meet the Ingham County Drain Commissioner's Standards for low impact development (LID), detaining the 100-year storm and outletting the detained water at a predevelopment rate of flow (0.15 cfs/ac). Applicable fees must be paid before the review process will begin. Forms can be obtained from the Ingham County website: [http://www.ingham.org/elected\\_officials/drain\\_commissioner](http://www.ingham.org/elected_officials/drain_commissioner);
  - Dedication of drainage facilities or a maintenance agreement will be required; and

- All legal and engineering costs to prepare the stormwater plans to meet the Specifications of the Ingham County Drain Commissioner must be paid by the developer.
- 5) A copy of the Soil Erosion and Sedimentation Control Permit and plan from Meridian Charter Township is required to be submitted.

**Special Use Permit #16111  
(Capstone Collegiate Communities, LLC)  
December 19, 2016**

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

**STATUS OF APPLICANT:** Developer

**REQUEST:** Construct group of buildings greater than 25,000 square feet  
in size

**CURRENT ZONING:** C-2 (Commercial) and PO (Professional and Office)

**LOCATION:** Hannah Boulevard/Eyde Parkway

**AREA OF SUBJECT SITE:** 10.60 acres

**EXISTING LAND USE:** Undeveloped

**EXISTING LAND USES  
IN AREA:** North: Suburban Ice  
South: Single family residences  
East: Herron Creek Drain, wetland area  
West: Residence Inn hotel, Lansing Community College  
East, Cornerstone Family Practice

**CURRENT ZONING IN AREA:** North: RP (Research Park)  
South: RR (Rural Residential)  
East: RAA (Single Family, Low Density), PO (Professional  
and Office)  
West: C-2 (Commercial), PO (Professional and Office)

**FUTURE LAND USE  
DESIGNATION:** Office

**FUTURE LAND USE MAP:** North: Office  
South: Residential 1.25-3.5 du/a  
East: Office, Residential 1.25-3.5 du/a  
West: Office

# MEMORANDUM

TO: Planning Commission

FROM:   
Peter Menser  
Senior Planner

DATE: December 13, 2016

RE: Special Use Permit (SUP) #16111 (Capstone Collegiate Communities, LLC),  
request to construct Hannah Farms East at Hannah Boulevard/Eyde Parkway.

---

In conjunction with MUPUD #16024, a special use permit is being requested to construct Hannah Farms East, a multiple family residential project consisting of two 4-story apartment buildings, an 116,000 square foot, 2-story parking garage, and 56 3-story townhouses. The two apartment buildings and the parking garage are proposed for a location at the southwest corner of Hannah Boulevard and Eyde Parkway. The townhouses are proposed along the southeast side of Eyde Parkway as it turns north toward Hannah Boulevard. A total of 296 residential units are proposed. The total project site is approximately 10.60 acres in size on portions of two parcels.

A special use permit (SUP) is required for constructing a building or group of buildings totaling more than 25,000 square feet in gross floor area. A total of 381,740 square feet of residential space is proposed, along with an 116,000 square foot parking garage. The mixed use planned unit development (MUPUD #16024) is being processed concurrently with the SUP request. The Planning Commission will make recommendations to the Township Board on both the MUPUD and SUP requests, with the Township Board making the final decision on the permit requests.

A synopsis of background information provided in the staff report for MUPUD #16024 dated December 13, 2016 follows.

## **Apartment Building #1**

A 4-story apartment building, identified as Building #1 on the submitted site plans, is proposed along the west side of Eyde Parkway, south of Hannah Boulevard. The building is 155,500 square feet in size and has 138 residential units. There are 64 1-bedroom units, 24 2-bedroom units, 28 3 bedroom units, and 22 4-bedroom units. There are a total number of 284 beds in Building #1.

## **Apartment Building #2**

A 4-story apartment building, identified as Building #2 on the submitted site plans, is proposed at the southwest corner of Hannah Boulevard and Eyde Parkway. The building is 90,700 square feet in size with 102 residential units. There are 67 1-bedroom units and 35 2-bedrooms units for a total of 137 beds in Building #2.



### **Townhouses**

There are 56 townhouses proposed in an area south of Hannah Boulevard and east of Eyde Parkway, southeast of the two apartment buildings. The townhouses are grouped into 10 buildings, each with a different number of residential units. There are two 7-unit buildings, four 4-unit buildings, one 5-unit building, two 6-unit buildings, and one 9-unit building. Each townhouse has four bedrooms, for a total of 224 beds. Eight out of the 10 townhouse buildings have a 2-car garage on the 1<sup>st</sup> (ground) floor.

The proposed amenities for the MUPUD include recreational resources (parks), community centers/clubhouses with Wi-Fi, covered bike rack areas, bike racks, a pool, and connections to sidewalks.

### **Master Plan**

The properties in the project area are designated on the Future Land Use Map from the 2005 Master Plan as Office.

### **Zoning**

The proposed project is located in both the C-2 (Commercial) and PO (Professional and Office) zoning districts, the north portion with the apartment buildings and parking ramp is zoned C-2 and the south portion with the townhouses is zoned PO. The C-2 zoning district allows for a mixed use planned unit development (MUPUD). The PO zoning district allows for a MUPUD, but only where public water and sewer are available, and when the MUPUD is adjacent to land zoned and developed in a single-family residential district, the height of buildings in the MUPUD are limited to being no taller than the abutting residential district would allow.

### **Physical Features**

The subject site is undeveloped. The applicant submitted a Natural Features Assessment for the proposed project that provides extensive review of the natural features in the area proposed for development, including a tree survey showing trees with a dbh (diameter at breast height) of 12 inches or larger. The northern portion of the project area is currently occupied by a planted section of pine trees and a small immature deciduous forest habitat. The southern portion of the project area is an open field. The entire site is relatively flat, with the southeastern most portion of the site sloping toward a wetland area and the Herron Creek Drain. Spoils piles and some construction debris were observed on the southern portion of the site.

### **Streets and Traffic**

Hannah Boulevard and Eyde Parkway will provide direct access to the proposed development. Both are classified as local streets and provide access to Hagadorn Road.

**SUP #16111 (Capstone)**  
**Planning Commission (12/19/16)**  
**Page 3**

Preliminary comments from the Ingham County Road Department (ICRD) indicate the proposed driveway locations for the development do not meet ICRD spacing requirements and must be revised. Further, they note that the parallel parking shown along the west side of Eyde Parkway is prohibited because of a "No Parking" Traffic Control Order (TCO) issued by the Michigan State Police. Staff will discuss these preliminary comments with the applicant and ICRD staff and report findings at a future meeting.

**Utilities**

The Department of Public Works and Engineering has indicated that municipal water and sanitary sewer are both available to serve the proposed development. The location and capacity of utilities will be reviewed in detail during site plan review if the MUPUD and SUP are approved.

**Staff Analysis**

The purpose of the special use permit to construct a building or a group of buildings greater than 25,000 square feet in gross floor area is to consider potential impacts that such a development may have on adjacent land uses. The special use permit criteria from Section 86-126 of the Code of Ordinances should be used to evaluate the special use permit request.

**Planning Commission Options**


The Planning Commission may recommend approval, approval with conditions, or denial of the proposed special use permit. A resolution will be provided at a future meeting.

CHARTER TOWNSHIP OF MERIDIAN

MEMORANDUM

TO: Planning Commission

FROM:   
Peter Menser  
Senior Planner

  
Jennifer Quinlivan  
Assistant Planner

DATE: December 13, 2016

RE: Special Use Permit #16101 (Gillett), request to install an outdoor barbeque smoker behind the existing shopping center at 1754 Central Park Drive.

The Planning Commission held the public hearing for Special Use Permit (SUP) #16101 at the November 21, 2016 meeting. No objections were raised regarding the installation and use of the outdoor barbeque smoker. At the meeting, the Planning Commission agreed to consider a resolution for approval of the special use permit request at their next meeting.

**Planning Commission Options**

The Planning Commission has the option to approve, approve with conditions, or deny the special use permit to install an outdoor barbeque smoker. A resolution to approve is attached.

**Attachment**

1. Resolution to approve

**RESOLUTION TO APPROVE**

**SUP #16101  
(Gillett)  
1754 Central Park Drive**

**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 19th day of December, 2016 at 7:00 p.m., Local Time.

PRESENT: \_\_\_\_\_  
\_\_\_\_\_

ABSENT: \_\_\_\_\_

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

WHEREAS, Matthew Gillett has requested a special use permit to install an outdoor barbeque smoker behind the existing shopping center on an approximate 3.79 acre site addressed as 1754 Central Park Drive and zoned CS (Community Service); and

WHEREAS, the outdoor barbeque smoker will be used by a restaurant in the shopping center and restaurants are a use permitted by right in the C-2 (Commercial) zoning district; and

WHEREAS, the installation of the outdoor barbeque smoker is being considered for a special use permit under Section 86-659(a), Other Special Uses, of the Code of Ordinances; and

WHEREAS, the outdoor barbeque smoker will be secured within an enclosure and properly screened from surrounding properties by its installation in a location behind the shopping center; and

WHEREAS, the Planning Commission held a public hearing on the request at its regular meeting on November 21, 2016 and reviewed and discussed staff material forwarded under cover a memorandum dated November 13, 2016; and

WHEREAS, the Township Fire Department has reviewed and voiced no objection to the request.

NOW THEREFORE BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby approves Special Use Permit #16101 (Gillett) to install an outdoor barbeque smoker behind the existing shopping center at 1754 Central Park Drive subject to the following conditions:

- 1. The applicant shall obtain all necessary and applicable permits and approvals from the Ingham County Department of Health, and all other relevant entities.

ADOPTED: YEAS: \_\_\_\_\_  
\_\_\_\_\_

NAYS: \_\_\_\_\_

