



To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Peter Menser, Principal Planner

Date: July 29, 2020

Re: Special Use Permit #20021 (Andev Group, LLC)

Andev Group, LLC has submitted a special use permit (SUP) request to construct a building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard. Overall, 268,263 total square feet of building area is proposed, consisting of a 267,543 square foot senior living community building with 230 units and a 720 square foot garage. The project is proposed to be constructed in two phases, with 111,105 square feet consisting of 109 assisted living and memory care units in Phase 1 and 156,438 square feet consisting of 121 independent living units in Phase 2.

The Planning Commission held a public hearing on the proposal at its meeting on June 8, 2020 and voted to recommend approval at its meeting on June 22, 2020, citing the following reasons for their decision:

- The subject site is appropriately zoned RAA (Single Family-Low Density), which permits the construction of buildings greater than 25,000 square feet in size by special use permit.
- The proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.
- Municipal water and sanitary sewer is available to extend to serve the subject site.

The special use permit for building size was processed concurrently with SUP #20011, which was required to establish the senior living community as a non-residential use in a residential district under the Senior Living Communities ordinance amendment adopted by the Township Board in 2019 (ZA #19040). The SUP for the senior living community was subject only to review and approval by the Planning Commission, which held the public hearing on the request at its meeting on June 8, 2020 and approved it on June 22, 2020. The staff report for SUP #20011 is attached as it provides a comprehensive overview of the entire project and includes the application materials for both SUP requests.

Staff memorandums outlining the SUP request and minutes from the Planning Commission meetings at which the request was discussed are attached for the Board's review.

**Special Use Permit #20021 (Andev Group, LLC)
Township Board (August 6, 2020)
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Township Board Options

The Township Board may approve or deny the proposed special use permit. If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.

Attachments

1. Staff memorandum for Special Use Permit #20011 dated March 12, 2020 with SUP application and attachments.
2. Staff memorandums for Special Use Permit #20021 dated March 12, 2020 and June 17, 2020 with attachments.
3. Resolution recommending approval.
4. Planning Commission minutes dated June 8, 2020 (public hearing) and June 22, 2020 (recommendation).
5. Communications.

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To: Planning Commission

From: Peter Menser, Principal Planner

Date: March 12, 2020

Re: **Special Use Permit #20011 (Andev Group, LLC), establish an approximately 267,543 square foot senior living community comprised of 230 units on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.**

Andev Group, LLC has requested a special use permit to construct a 230 unit senior living community at the east end of Hannah Boulevard. The project site is 10.73 acres of a larger 58 acre unaddressed parcel identified by Parcel I.D. #20-401-005. The applicant is proposing to extend Hannah Boulevard further east and construct a cul-de-sac to serve the development. The property is zoned RAA (Single Family, Low Density), which allows senior living communities by special use permit. In addition to the special use permit for the senior living development, a special use permit is required to construct a group of buildings greater than 25,000 square feet in gross floor area (SUP #20021). The special use permits are being processed concurrently.

A total of 230 units are proposed in the 267,543 square foot building, which is comprised of a mix of assisted living, memory care, and independent living units, each located in a separate wing. A 720 square foot garage building is also proposed on the property. The applicant is proposing to construct the development in two phases, with the first phase consisting of the assisted living and memory care units and the second consisting of the independent living units. The following table provides information on the number each unit type in the building.

	Building Size	Memory Care	Assisted Living	Independent Living	Total # of Units
Phase 1	111,105 sq. ft.	42 units	67 units	0 units	109
Phase 2	156,438 sq. ft.	0 units	0 units	121 units	121

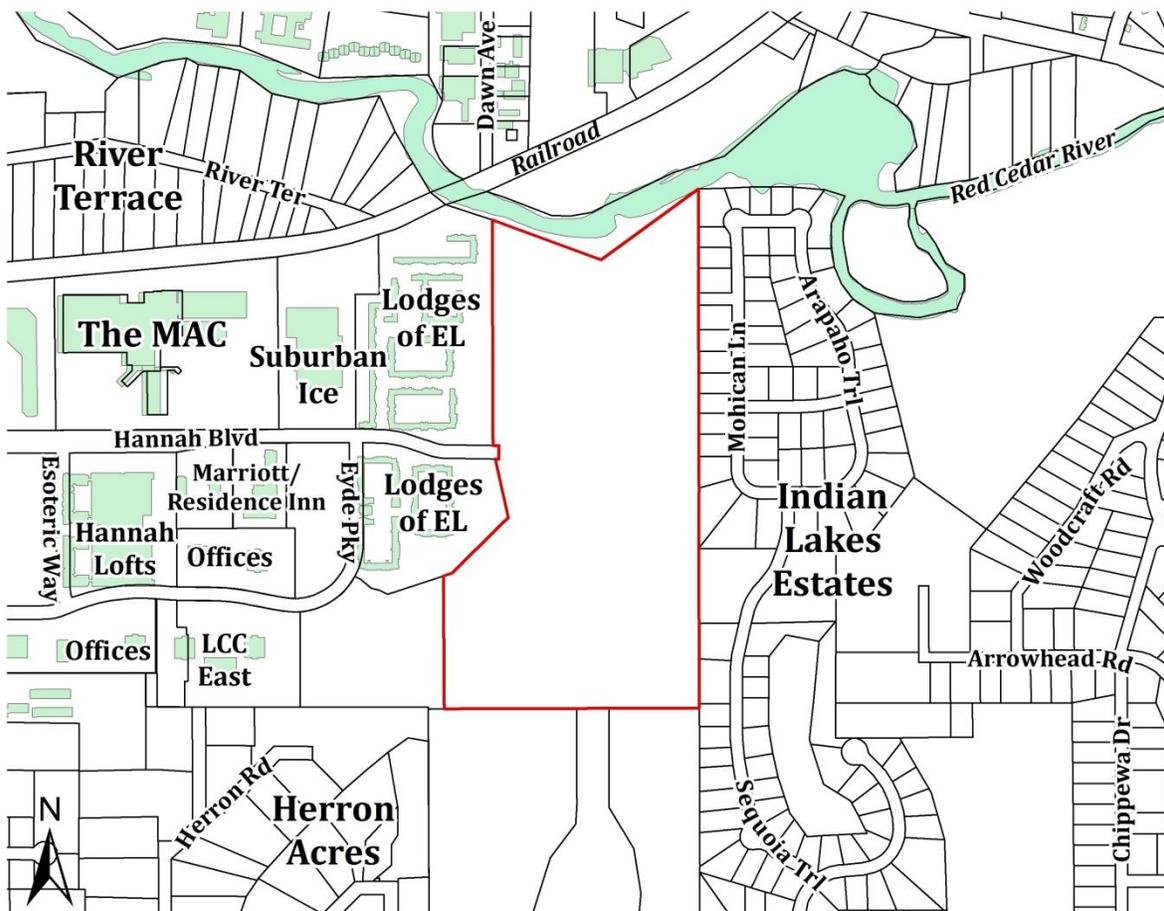
The building varies in height by wing, with the independent living wing at four stories tall, the assisted living wing at three stories tall, and the memory care wing at two stories tall. At its tallest point, the building is approximately 52 feet in height.

To facilitate the proposed development, and others like it, in 2019 the Township Board initiated a zoning amendment (ZA #19040) to allow Senior Living Communities to locate in residential zoning districts subject to approval of a special use permit. The amendment was approved for final adoption by the Board at its meeting on May 21, 2019. It added Senior Living Communities under the Institutions for Human Care category in Section 86-654(c) of the Code of Ordinances, which permitted those types of development by special use permit as a nonresidential use in residential zoning districts.

The adopted ordinance defines a Senior Living Community as: “a facility comprised of a building or group of buildings providing a continuity of residential occupancy and health care for elderly persons. This type of facility includes dwelling units for independent living, assisted living, and memory care or other licensed professional care for residents; it may include ancillary facilities for the further service or care of the residents. The facility is restricted to persons 55 years of age or older or married couples or domestic partners where either spouse or partner is 55 years of age or older.”

The ordinance allows the age restricted (persons 55 years of age or older) independent living units only in conjunction with the provision of licensed professional care units for residents, such as assisted living or memory care. A maximum 2:1 ratio of independent living units to required licensed professional care units is proposed. With 121 independent living units and 109 memory care/assisted living units proposed the project meets the established 2:1 maximum ratio.

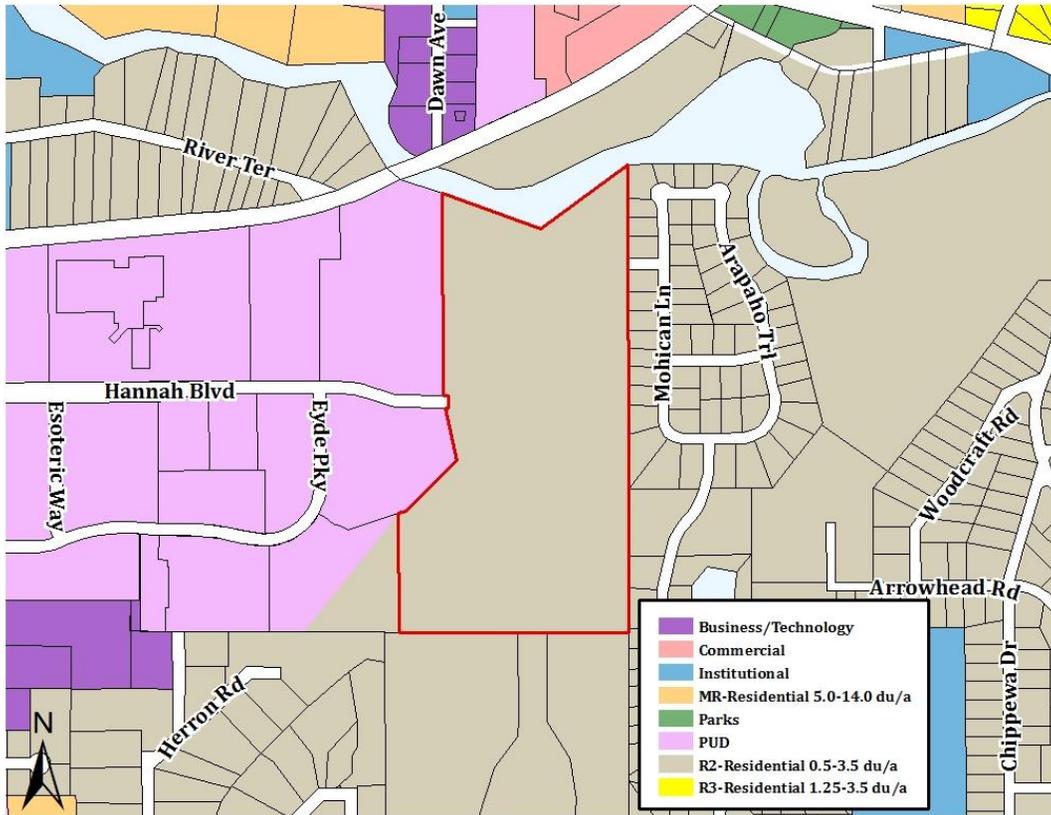
LOCATION MAP



Master Plan

The Future Land Use Map from the 2017 Master Plan designates the subject site in the R2-Residential 0.5 – 3.5 dwelling units per acre category.

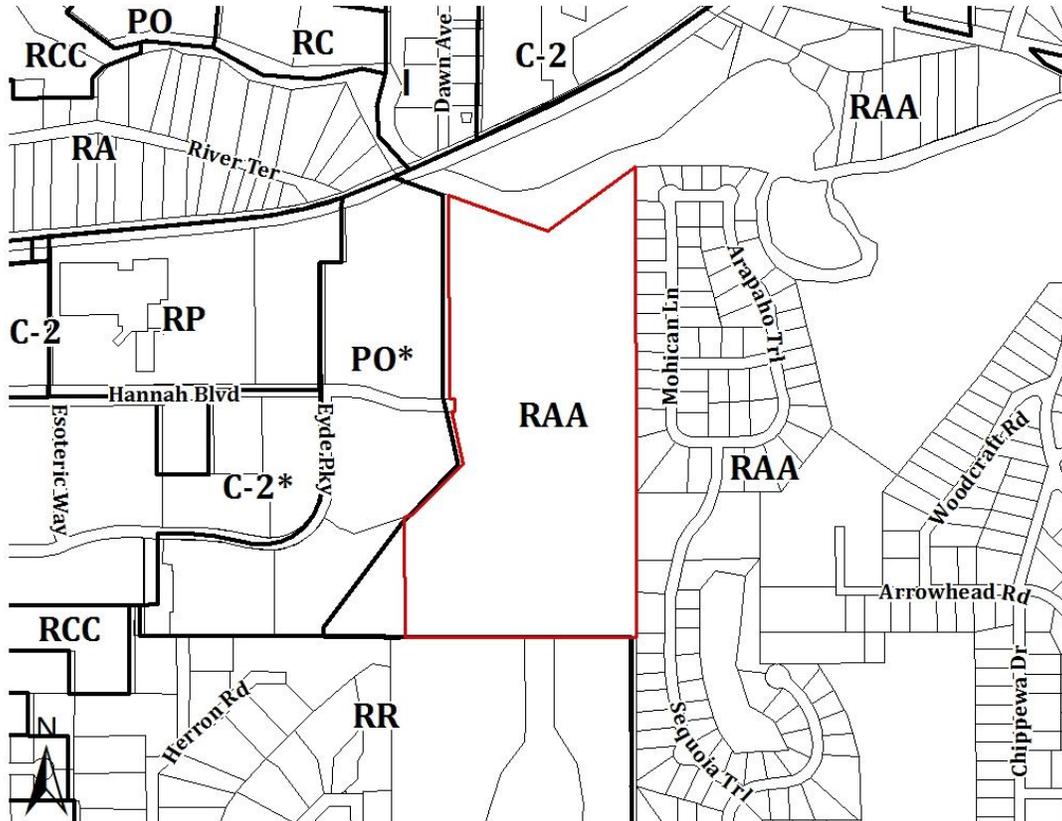
FUTURE LAND USE MAP



Zoning

The subject site is zoned RAA (Single Family-Low Density). The applicant is proposing to divide the current 58 acre parcel into three different parcels, the middle of which is proposed for development at this time. 10 acres is the minimum lot area requirement for a senior living community development. The minimum lot width requirement is 100 feet. Upon division the project site has 10.73 acres of lot area and over 300 feet of frontage on the to-be-extended Hannah Boulevard.

ZONING MAP



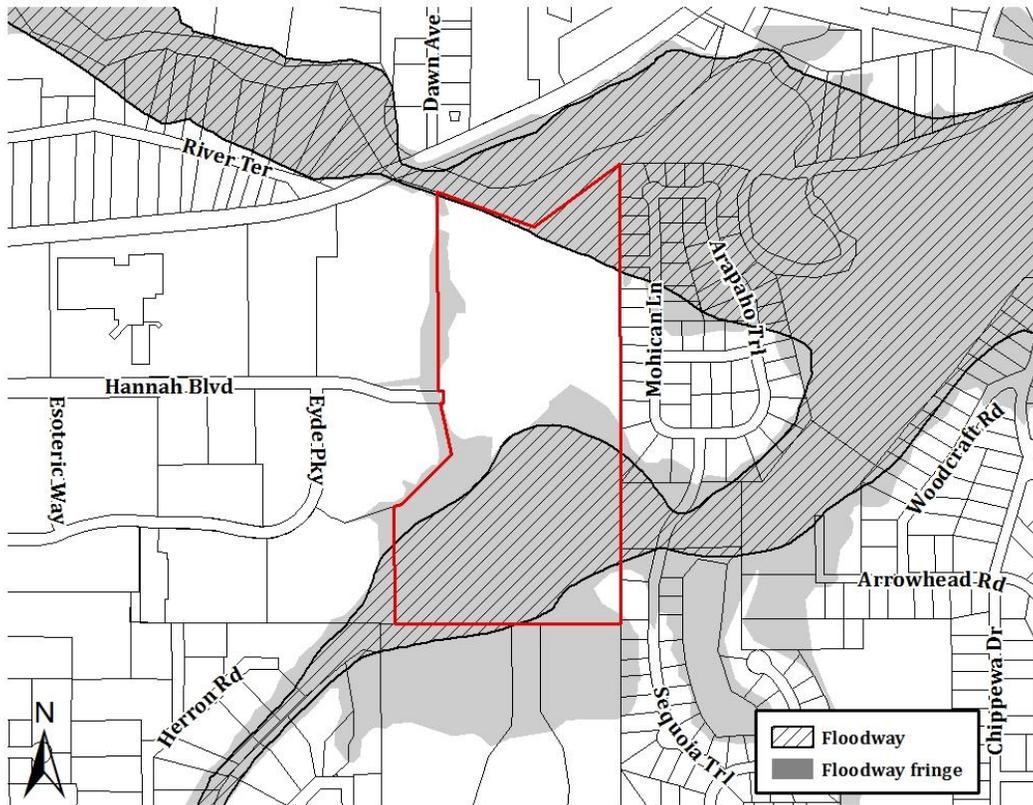
Physical Features

The site is currently undeveloped. The topography of the site, with corresponding elevations, is depicted on the property survey provided by the applicant. The applicant has also provided a natural features study prepared by Marx Wetlands LLC describing the vegetation on the site and an inventory of significant trees.

Floodplain

Portions of the property are located in both the floodway and 100 year floodplain. The proposed development project is located outside of the floodplain. The applicant's site plan shows the location and elevations of the floodplain on the property.

FLOODPLAIN MAP



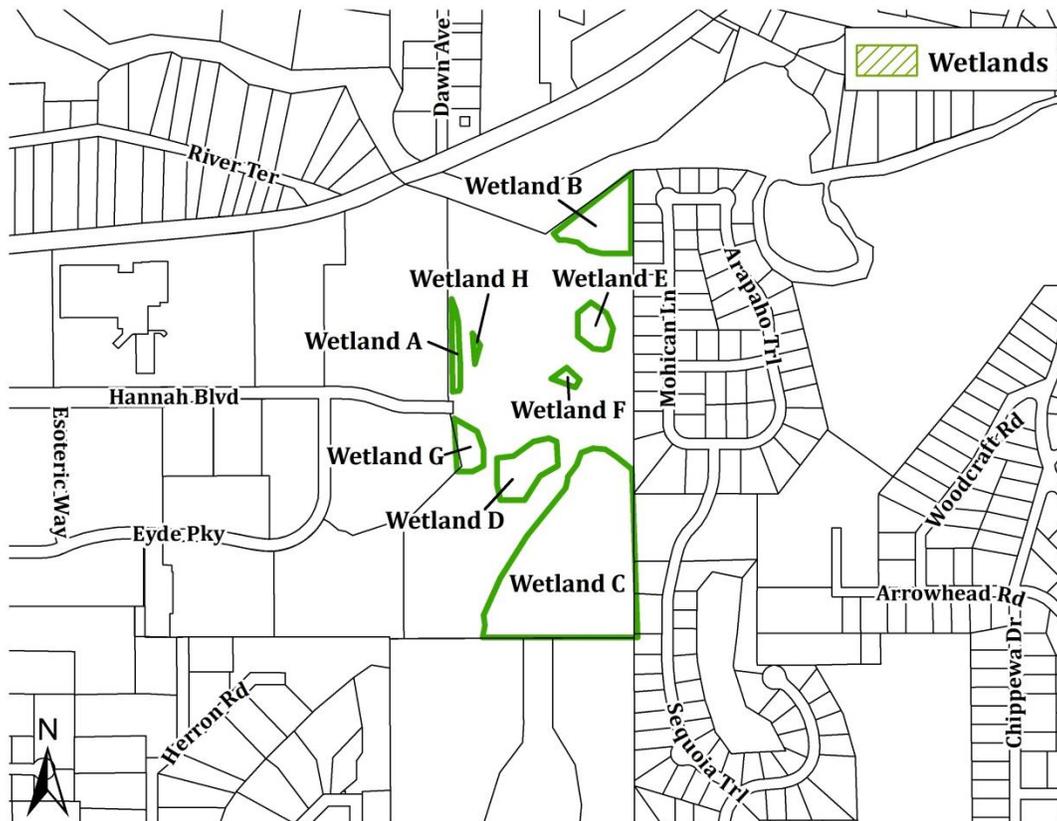
Wetlands

The applicant submitted a wetland delineation report prepared by Marx Wetlands LLC for the northern two-thirds of the 58 acre parcel in 2018, which are the limits of the developable portion of the property. The report has been verified by the Township’s wetland consultant. There are a total of eight wetlands distributed over the property, identified as A through H on the site plan and map below. Meridian Township regulates wetlands 0.25 acre or greater in size, or those contiguous to or within 500 feet of a regulated inland lake, stream, river, or pond. For wetlands equal to or greater than two acres in area the Township requires a 40 foot setback from the delineated wetland boundary. For wetlands equal to or greater than 0.25 acre, but less than two acres in size, a 20 foot setback is required from the delineated boundary.

Six of the eight wetlands on the site are regulated by the Township and the Department of Environment, Great Lakes, and Energy (EGLE). The applicant is proposing to fill Wetland F, which at 0.04 acre in size is not regulated. A permit is not required to fill Wetland F as it is not regulated by the State or Township due to it being under 0.25 acre in size. The following table shows the size, regulatory status, and required setback, if any, of each wetland on the property.

	Delineated Size	Regulatory Authority	Required Setback
Wetland A	Off-site	Township and State	40 feet
Wetland B	2.21 acres	Township and State	40 feet
Wetland C	5+ acres	Township and State	40 feet
Wetland D	0.21 acre	Township and State	20 feet
Wetland E	0.30 acre	Township and State	20 feet
Wetland F	0.04 acre	Not regulated	No setback required
Wetland G	5+ acres	Township and State	40 feet
Wetland H	0.38 acre	Township and State	20 feet

WETLAND MAP

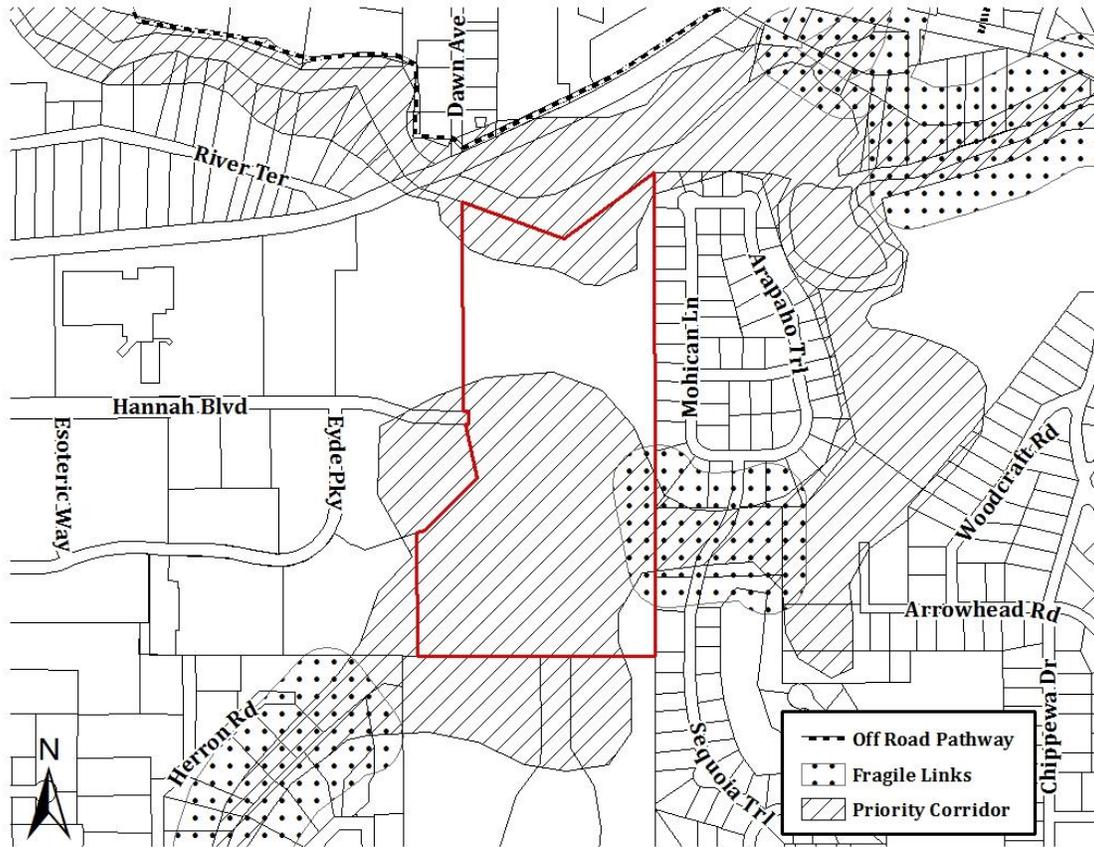


**Wetlands depicted by staff; see attached delineation report for details.*

Greenspace Plan

The Township Greenspace Plan shows a Priority Conservation Corridor (PCC) south of the area of the property proposed for development and a Fragile Link to the east of the project area. A PCC is a network of ecologically significant open spaces and a Fragile Link is an area where a PCC is exceptionally narrow or fragmented.

GREENSPACE MAP



Streets and Traffic

The site fronts on what is proposed to be an extension of Hannah Boulevard, which is designated as a Local Street on the Street Setbacks and Service Drives Map in the zoning ordinance. Neither the Ingham County Road Department (ICRD) nor the Michigan Department of Transportation (MDOT) has recent traffic count information for Hannah Boulevard. The applicant is proposing to construct a five foot wide sidewalk along the east side of the extended road, which will connect it with the other developments in the immediate area.

The applicant has submitted a trip generation letter prepared by Traffic Engineering Associates, Inc. providing information on the number of vehicle trips expected to be generated by the proposed development. The letter uses the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th edition) to identify expected traffic generation for the proposed land use. Land Use Code 255 (Continuing Care Community) was used to represent the proposed development.

A traffic impact study is required for new special uses which would generate over 100 directional trips during morning and afternoon peak hours of traffic, or over 750 trips on an average day. An average day is the average 24-hour total of all vehicle trips counted to and from a study site from Monday through Friday. A traffic assessment is required for new special uses which could generate between 50 and 99 directional trips during morning and afternoon peak hours of traffic. Based on the projected traffic volumes neither a traffic assessment nor traffic impact study is required.

Parking

The ordinance uses the following formula for determining required parking for a senior living community: One space for each dwelling unit of independent living + one space for every four units of licensed professional care + one space for each employee working on the largest shift.

With 121 independent living units + 109 assisted living/memory care units ($109/4 = 27.25$ or 28 spaces) + 40 employees at the largest shift a total of 189 parking spaces are required for the project. 227 parking spaces are proposed by the applicant.

Public Utilities

Municipal water and sanitary sewer are available to extend to serve the subject site. The location and capacity of utilities will be reviewed in detail during site plan review if the special use permit is approved.

Staff Analysis

The applicant is requesting a special use permit to construct a 230 unit senior living community in one 267,543 square foot building. The nine general special use permit criteria listed in Section 86-126 of the zoning ordinance and specific standards for senior living communities found in Section 86-654(f)(5) should be used for consideration of the request. The Planning Commission has the authority to approve the SUP for the senior living community, however the SUP for construction of a building greater than 25,000 square feet in size will go on to the Township Board for a final decision.

The following table provides a summary of the project's consistency with the ordinance standards for a senior living community development.

Density. The ordinance allows up to 25 dwelling units per acre (du/a). With 230 units on 10.73 acres the proposed density of the project is 21.4 du/a.

Maximum independent living unit to licensed professional care unit ratio. A maximum 2:1 ratio of independent living units to required licensed professional care units is proposed. With 121 independent living units and 109 memory care/assisted living units proposed the project meets the established 2:1 maximum ratio.

Accessory Uses. The ordinance allows a senior living community to have accessory uses such as places of worship, indoor and outdoor recreation, retail and banking facilities, dining facilities, beauty salons, gift shops, security facilities, medical offices, and pharmacies, provided that the accessory use is ancillary to the primary use of the property as a senior living community and not advertised for public use. A letter from the applicant indicates such uses as a dining facility, salon, medical clinic, and chapel, among others, are planned for the building.

Setbacks adjacent to residential property line. Buildings 35 feet or less in height can be no closer than 50 feet to a residential property line. When buildings taller than 35 feet are proposed, this setback is increased 1.5 feet for each foot the building exceeds 35 feet in height. At its tallest point the proposed building is 52 feet 4 inches tall, which requires a 76 foot setback from the north, east, and southern property lines, all of which have been met and exceeded.

Building height: The applicant is proposing a three-story building that is 39 feet, 2 inches in height measured at the midpoint of the peak and eaves. Building elevations are provided in the MUPUD application materials, which indicate the building complies with the maximum height limitation of 45 feet.

Other ordinance requirements related specifically to the senior living community ordinance are summarized in the table below.

Criteria	Requirement	Proposed
Minimum lot area	10 acres	10.73 acres
Minimum lot width	100 feet	300+ feet
Maximum building coverage	35%	19%
Front yard setback	25 feet	~90 feet at closest point
Maximum building height	60 feet	52 feet 4 inches at tallest point

The following is a review of additional considerations for the project.

Emergency access road. The submitted site plan depicts a 20 foot wide emergency access road from the north side of the cul-de-sac and out to the parking lot of the Lodges of East Lansing Development. The Fire Code requires that anytime there are 30 or more dwelling units on a road with one access then a second means of access is required. The width and composition of the emergency access road is subject to approval by the Fire Department. Prior to issuing a building permit for the project the applicant must provide an executed access agreement with the adjacent property owner.

Phasing. The project is proposed to be developed in two phases. Phase 1 of the project is the memory care/assisted living portion of the building and Phase 2 is the independent living portion of the building. Phase 1 will also include the extension of Hannah Boulevard and the emergency access road. Special use permit approval grants the applicant 24 months to commence the project. All construction on the project has to be completed within 36 months, unless specifically approved as a phased development. Site Plan Review provides 24 months for approval of a building permit.

**Special Use Permit #20011 (Andev Group, LLC)
Planning Commission (March 16, 2020)
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For phased developments the first building permit has to be approved within 24 months and all subsequent building permits have to be issued within 5 years of the date of Site Plan Review approval.

If the special use permit for the senior living community is approved by the Planning Commission, and the special use permit for the building size is approved by the Township Board, the applicant will be required to submit for Site Plan Review before work on the project can begin. Site Plan Review is a detailed staff-level analysis of the project which includes reviews of storm water, utilities, landscaping, grading, and other issues to ensure compliance with all applicable ordinances as well as confirmation of approvals from local agencies such as the Ingham County Drain Commissioner's Office and Road Department.

Planning Commission Options

The Planning Commission may approve, approve with conditions, or deny the special use permit. A resolution will be provided at a future meeting.

Attachments

1. Special use permit application and attachments received by the Township on February 11, 2020.
2. Letter from Michael Samuels dated February 28, 2020.
3. Site plans prepared by Kebs, Inc. dated March 25, 2019 and received by the Township on March 3, 2020.
4. Building elevations and floor plans prepared by Ganther Construction Architecture, Inc. dated February 11, 2020 and received by the Township on March 3, 2020.
5. Conceptual landscape plan prepared by Teska Associates dated February 28, 2020 and received by the Township on March 3, 2020.
6. Trip generation analysis prepared by Traffic Engineering Associates, Inc. dated February 3, 2020.
7. Natural Features Study prepared by Marx Wetlands LLC dated January 25, 2016.
8. Wetland delineation report prepared by Marx Wetlands LLC dated August 28, 2018.
9. Wetland verification prepared by FTCH dated December 10, 2018.

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

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

- A. Applicant ANDEV Group, LLC
 Address of Applicant 680 N. Lake Shore Dr., Unit 1103, Chicago, IL 60611
 Telephone - Work 847-525-6681 Home _____ Fax _____ Email anbarholdings@
 Interest in property (circle one): Owner _____ Tenant _____ Option _____ **Other** gmail.com
 (Please attach a list of all persons with an ownership interest in the property.) ~~Contract Purchaser~~
 See attached page from title commitment.
- B. Site address / location / parcel number "Hannah Farms" Parcel #33-02-02-20-401-005
 Legal description (please attach if necessary) See Attached.
 Current zoning RAA
 Use for which permit is requested / project name Development of a Senior Living Community / TBD
 Corresponding ordinance number 2019-09 * Non Residential use in Res. District
 Building over 25,000 S.F.
- C. Developer (if different than applicant) Same as above.
 Address _____
 Telephone – Work _____ Home _____ Fax _____
- D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:
 Name Ganther Construction|Architecture
 Address 4825 County Road A, Oshkosh, WI 54901
 Telephone – Work 920-426-4774 Home _____ Fax 920-426-4788
- E. Acreage of all parcels in the project: Gross 10.7 Net _____
- F. Explain the project and development phases: Project consists of an interconnected series of 2 story memory care, 3 story assisted living and 4 story independent senior residences. The project may be
phased to build the 2&3 story sections first and add the 4 story section later.
- G. Total number of:
 Existing: structures 0 bedrooms 0 offices 0 parking spaces 0 carports 0 garages 0
 Proposed: structures 1* bedrooms 262 offices 8 parking spaces 227 carports 0 garages 1
 *may be constructed in two phases
- H. Square footage: existing buildings 0 proposed buildings 267,543
 Usable Floor area: existing buildings 0 proposed buildings 267,543
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: See the attached schedule.
- J. Existing Recreation: Type None. Private property, no trespassing. Acreage 0
 Proposed Recreation: Type Landscaped grounds, walkways and patios Acreage 5.6
 Existing Open Space: Type Undeveloped land. Acreage 10.7
 Proposed Open Space: Type Fully landscaped and maintained. Acreage 5.6

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

Part II

**SUP REQUEST STANDARDS
Township Code of Ordinances, Section 86-126**

Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.

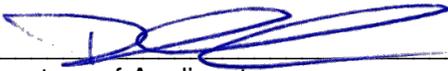
- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

Part III

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

Yes No (Please check one)

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



Signature of Applicant

February 10, 2020

Date

Dan E. Anbar, manager, ANDEV Group, LLC

Type/Print Name

Fee: _____

Received by/Date: _____

**Special Use Permit Application Attachment
Site Plan Requirements Per Section 86-124(c)(4)**

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.

SCHEDULE A

Issuing Office File No.: [REDACTED]
Commitment No.: [REDACTED]
Property Address: V/L Hannah Blvd, East Lansing, MI 48823

1. Commitment Date: June 20, 2019 at 8:00 am

2. Policy or Policies to be issued:

2006 ALTA Owner's Policy

Policy Amount: [REDACTED]

Proposed Insured: Andev Group, LLC, an Illinois Limited Liability Company

3. The estate or interest in the land described or referred to in this Commitment is Fee Simple

4. Title to the estate or interest in the Land is at the Commitment Date vested in

George F. Eyde Family, LLC, a Michigan limited liability company

5. The Land is described as follows:

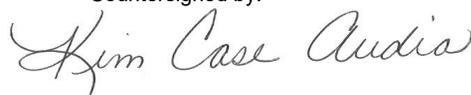
Located in the Township of Meridian, County of Ingham, State of Michigan,

SEE ATTACHED EXHIBIT "A"

This page is only a part of a 2016 ALTA Commitment for Title Insurance issued by Fidelity National Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I – Requirements; and Schedule B, Part II – Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

Underwritten by Fidelity National Title Insurance Company
Copyright 2006-2016 American Land Title Association. All rights reserved. The use of this Form (or any derivative thereof) is restricted to ALTA licensees and ALTA members in good standing as of the date of use. All other uses are prohibited. Reprinted under license from the American Land Title Association.
27C165B

Countersigned by:



Kim Case Audia

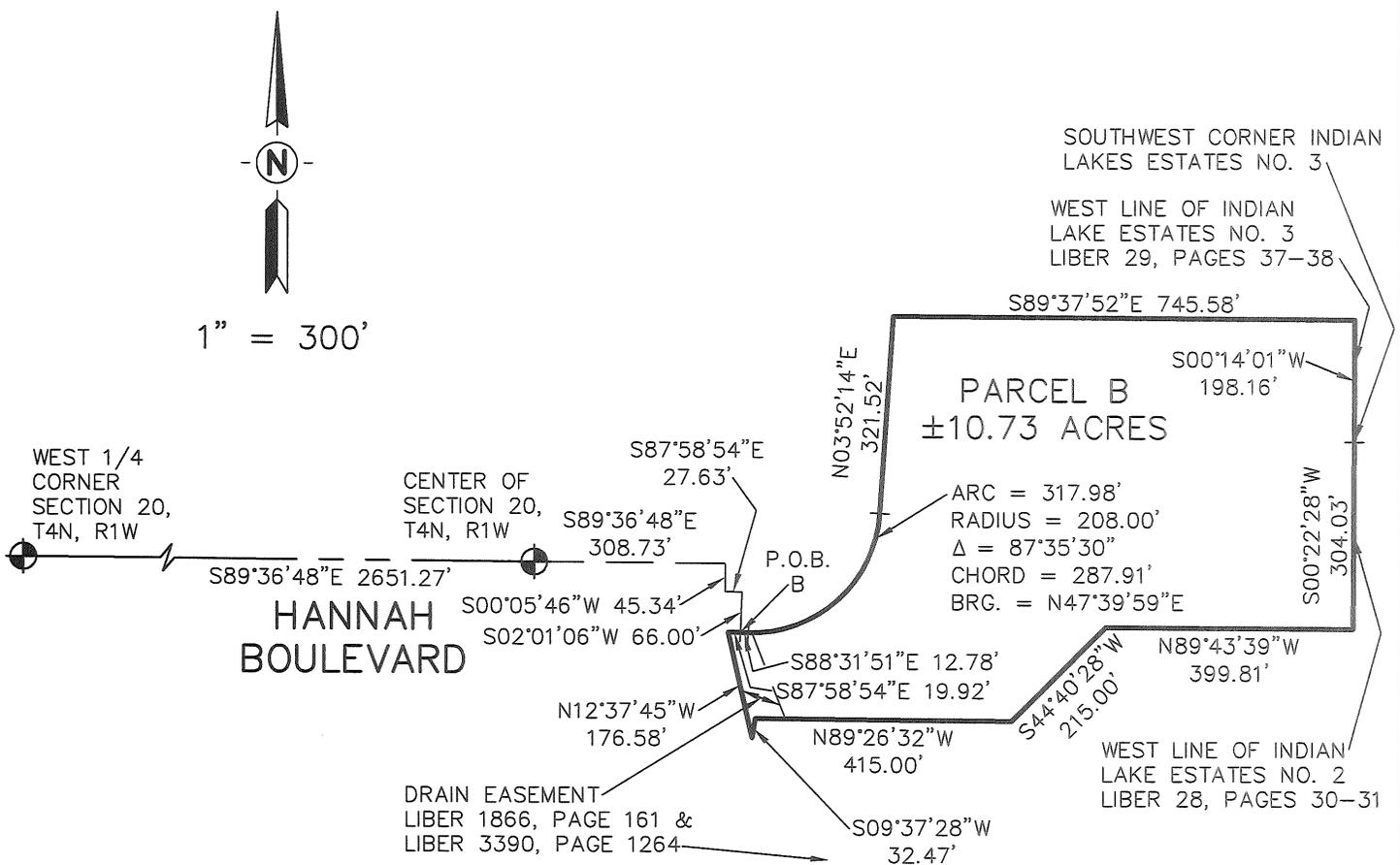
SKETCH OF DESCRIPTION

For:
 Andev Group, LLC
 680 N. Lake Shore Drive, Unit 1103
 Chicago, IL 60611

Survey Address:
 Vacant Hannah Boulevard
 East Lansing, MI 48823
 ID: 33-02-02-20-401-005

Parcel B:

A parcel of land in the Northeast 1/4 and the Southeast 1/4 of Section 20, T4N, R1W, Meridian Township, Ingham County, Michigan, the surveyed boundary of said parcel described as: Commencing at the West 1/4 corner of said Section 20; thence S89°36'48"E along the East-West 1/4 line of said Section 20 a distance of 2651.27 feet to the Center of said Section 20; thence continuing S89°36'48"E along said East-West 1/4 line 308.73 feet; thence S00°05'46"W 45.34 feet to the North line of Hannah Boulevard; thence S87°58'54"E along said North line 27.63 feet; thence S02°01'06"W 66.00 feet to the South line of Hannah Boulevard and the point of beginning of this description; thence S88°31'51"E 12.78 feet; thence Northeasterly 317.98 feet along a curve to the left, said curve having a radius of 208.00 feet, a delta angle of 87°35'30", and a chord of 287.91 feet bearing N47°39'59"E; thence N03°52'14"E 321.52 feet; thence S89°37'52"E 745.58 feet to the West line of Indian Lakes Estates No. 3 Subdivision, as recorded in Liber 29 of Plats, Pages 37-38, Ingham County Records; thence S00°14'01"W along said West line 198.16 feet to the Southwest corner of said Indian Lakes Estates No. 3 Subdivision; thence S00°22'28"W along the West line of Indian Lakes Estates No. 2 Subdivision, as recorded in Liber 28 of Plats, Pages 30-31, Ingham County Records, a distance of 304.03 feet; thence N89°43'39"W 399.81 feet; thence S44°40'28"W 215.00 feet; thence N89°26'32"W 415.00 feet; thence S09°37'28"W 32.47 feet; thence N12°37'45"W 176.58 feet to said South line of Hannah Boulevard; thence S87°58'54"E along said South line 19.92 feet to the point of beginning; said parcel containing 10.73 acres more or less; said parcel subject to all easements and restrictions if any.



This plan was made at the direction of the parties hereon and intended solely for their immediate use and no survey has been made and no property lines were monumented, all easements recorded or unrecorded may not be shown, unless specifically noted, and no dimensions are intended for use in establishing property lines.

— = Deed Line
 - - - = Distance Not to Scale



KEBS, INC. KYES ENGINEERING
 BRYAN LAND SURVEYS

2116 HASLETT ROAD, HASLETT, MI 48840
 PH. 517-339-1014 FAX. 517-339-8047

13432 PRESTON DRIVE, MARSHALL, MI 49068
 PH. 269-781-9800 FAX. 269-781-9805

DRAWN BY SSF	SECTION 20, T4N, R1W
FIELD WORK BY ---	JOB NUMBER:
SHEET 3 OF 5	94114.PLT

E. R. Friestrom 06/05/19
ERICK R. FRIESTROM DATE
PROFESSIONAL SURVEYOR NO. **53497**

ANDEV Group, LLC Employee and Shift Projections for Meridian Township Senior Living Community

<u>Independent Living Building</u>							<u>Employees Per Shift</u>			
	<u>Positions</u>	<u>FTE</u>	<u>Staff Projected</u>	<u>Positons</u>	<u>FTE</u>	<u>Employees</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Shift 3</u>	<u>Total</u>
Assistant Manager	1	1	1.00	1	1	1.00	1.00			1.00
Concierge	1	1.4	1.40	1	1.4	1.40	1.40			1.40
Sales and Marketing	(Accounted for in Marketing Project Budget Through Month 36)		2.80	2	1.4	2.80	2.80			2.80
Office	1	1.4	1.40	1	1.4	1.40	1.40			1.40
Maintenance and Janitorial	2	1.4	2.80	2	1.4	2.80	1.40		1.40	2.80
Cooks	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Kitchen Assistance	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Servers	3	1.4	4.20	3	1.4	4.20	2.10	2.10		4.20
Housekeeping	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Recreational directors	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Drivers and Valet Parking	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Total Employees - IL Building	Total		30.00	21		29.00	17.80	9.80	1.40	29.00

<u>Assisted Living & Memory Crae Building</u>					<u>Employees Per Shift</u>						
	<u>Resident</u>	<u>Ratio</u>	<u>Residents</u>	<u>Projected</u>	<u>Positons</u>	<u>FTE</u>	<u>Employees</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Shift 3</u>	<u>Total</u>
Memory Care			0	3.00	3	1	3.00	1.00	1.00	1.00	3.00
LPN - Manager		3.00	0	3.00	5	1.4	7.23	7.23			7.23
Shift 1	7	1.40	36,1491	5.16	5	1.4	7.23		7.23		7.23
Shift 2	7	1.40	36,1491	5.16	3	1.4	3.61			3.61	3.61
Shift 3	14	1.40	36,1491	2.58							
Total Caregiver Staffing				15.91	16		21.07	8.23	8.23	4.61	21.07
Convert To Full Time Equivalents				1.40							
Total 7 Day a Week Caregiver Staffing				22.27							

<u>Assisted Living</u>					<u>Employees Per Shift</u>						
	<u>For each Resident</u>	<u>FTE</u>	<u>Residents</u>	<u>Staff Projected</u>	<u>Positons</u>	<u>FTE</u>	<u>Employees</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Shift 3</u>	<u>Total</u>
AL Care Director		1.00	0	1.00	1	1	1.00	1.00			1.00
Shift 1	10	1.40	61,4653	6.15	6	1.4	8.61	8.61			8.61
Shift 2	10	1.40	61,4653	6.15	6	1.4	8.61		8.61		8.61
Shift 3	20	1.40	61,4653	3.07	3	1.4	4.30			4.30	4.30
Total Caregiver Staffing				15.37	16		22.51	9.61	8.61	4.30	22.52
Convert To Full Time Equivalents				1.40							
Total 7 Day a Week Caregiver Staffing				21.51							

<u>Other staffing (Expressed in Full Time Equivalents)</u>							<u>Employees Per Shift</u>			
	<u>Positions</u>	<u>FTE</u>	<u>Projected</u>	<u>Positons</u>	<u>FTE</u>	<u>Employees</u>	<u>Shift 1</u>	<u>Shift 2</u>	<u>Shift 3</u>	<u>Total</u>
On site manager	1	1	1.00	1	1	1.00	1.00			1.00
Assistant Manager	1	1	1.00	1	1	1.00	1.00			1.00
Sales and Marketing	(Accounted for in Marketing Project Budget Through Month 36)		2.80	2	1.4	2.80	2.80			2.80
Receptionists	1	1.4	1.40	1	1.4	1.40	1.40			1.40
Office	1	1.4	1.40	1	1.4	1.40	1.40			1.40
Nursing Staff - LPN	3	1.4	4.20	3	1.4	4.20	1.40	1.40	1.40	4.20
Maintenance Director	1	1.00	1.00	1	1	1.00	1.00			1.00
Maintenance and Janitorial	1	1.4	1.40	1	1.4	1.40	0.70		0.70	1.40
Dietary Supervisor	1	1	1.00	1	1	1.00	1.00			1.00
Cooks	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Kitchen Assistance	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Servers	4	1.4	5.60	3	1.4	4.20	2.10	2.10		4.20
Housekeeping	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Recreational directors	2	1.4	2.80	2	1.4	2.80	1.40	1.40		2.80
Total AL / MC Building				55		74.19	37.24	25.94	11.01	74.19
Totals Both Buildings				76		103.19	55.04	35.74	12.41	103.19



February 6, 2020

Mr. John Scott-Craig, Chairman
Members of the Meridian Township Plan Commission
c/o Mr. Mark Kieselbach, Community Planning and Development Director Kieselbach@meridian.mi.us

Re: Application for Design Review and Application for Site Plan Review

Ladies and Gentlemen,

Andev Group, LLC is the contract purchaser of the approximately 10.7-acre parcel located at the eastern end of Hannah Blvd. The attached proposal is for a Senior Living Community as defined by local ordinance to be located at the current terminus at the eastern end of Hannah Blvd. The property at this location is currently undeveloped land. The proposed purchaser of the property is ANDEV Group, LLC, or its nominee, who would be purchasing in order to provide the Senior Living Community facility to be operated by a yet-to-be-named, but major senior living operator. ANDEV Group, LLC is a Midwest developer of senior housing having developed multiple sites located in Wisconsin and Illinois.

The existing site is zoned RAA which requires a conditional use approval for a Senior Living Community facility. The proposed building will house three separate types of housing, specifically designed for and restricted to residents over the age of 55. The building will house an assisted living section with 67 apartments, a memory care section with 42 units and a section consisting of 121 independent living apartments with full kitchens and amenities. The assisted living and memory care portions of the facility will be licensed as a Home for the Aged through the Michigan Department of Licensing and Regulatory Affairs (LARA); whereas the independent living apartments will be age-restricted to residents 55 and older and will not require licensing through LARA.

The site is surrounded by zoning types: RAA to the north, RAA to the east, RAA to the south and RAA to the west. Based on the use of the facility, the road, and driveway design and landscaping features, the impact on neighboring parcels will be minimal.

Parking per zoning code is required to be 1 space per unit for the independent residences for a total of 121. Parking required for licensed professional care is to be 1 space/4 units plus 1 space for each employee in the largest shift for a total of 84 spaces. The total parking required for the entire development is 205 spaces. 227 spaces are proposed.

Parking for the assisted living and memory care portions of the facility is limited to staff and visitors, as residents do not drive, and transportation is provided by the operator by van or bus. Visitation is typically light, with an increase on certain holidays or special events. The day shift is the maximum staffed shift and includes approximately 56 employees. Shifts will most likely operate on a 7-3, 3-11 and 11-7, 24-hour rotation.



As residents of the memory care units are impaired and pose a wandering risk, that section of the building is a “secure” facility. Exterior courtyards are fenced and building exiting is controlled. Residents needing to go off-site are supervised. Fire exits are controlled through the use of code-approved delayed egress devices.

Like the country as a whole, East Lansing’s population is becoming significantly older, and the demographic and social changes that are beginning to affect the city will forever alter how the community looks and feels. With an aging population, this community will face both new opportunities and challenges in responding to older people’s needs and wishes.

In 2010, over 13% of Michigan’s population were 65 and older (an estimated 2 million people), and this percentage is rising. By 2023 this proportion will rise to almost 19% (an estimated 3 million people). In 2009, about 5.3 million Americans are living with Alzheimer’s disease, according to the national Alzheimer’s Association. This includes 5.1 million people age 65 and older and 200,000 individuals under age 65 with early-onset Alzheimer’s disease.

One out of eight people age 65 and older (13 percent) has Alzheimer’s disease. As older people move toward retirement, local governments, community and health organizations and families are becoming more aware of the challenges of our aging population:

- Local governments are realizing the demand for accessible, age-friendly infrastructure and transportation options.
- Families are navigating the social and economic challenges of parents and grandparents that require extra care and who may have to move from their homes and communities to access services and specialized accommodations.

All of ANDEV Group’s senior housing establishments are conceived and designed specifically to meet the needs of the growing segment of the senior population, many of whom are no longer capable of independently performing activities of daily living such as cooking, cleaning, laundry, dressing, bathing, etc. but are not so ill or incapacitated that they need full-time nursing care. Additionally, many of these older persons suffer from dementia and memory loss. These people are at risk to themselves as they become easily confused, disoriented and lost. They are not, however, necessarily in need of being placed in a nursing home. Assisted living housing provides a safe and protective environment for them in which their needs can be met while maintaining a residential setting for their comfort.

Older adults are a vibrant cohort of all communities and contribute to the economy, support extended families, participate in volunteerism, and generally enhance the social health of our neighborhoods. By encouraging creative housing solutions such as assisted living communities, transportation alternatives, and social and recreational programs we have the opportunity to play an important role in facilitating the ability of older adults to age in place in East Lansing.



With respect to the factors applicable to the Special Use contained within Meridian Township's ordinance section 86-126 for ANDEV's proposed Senior Living Community we submit the following:

(1) We believe that the project is consistent with the intent and purposes of the chapter and, specifically according to the provisions of Meridian Township ordinance 2019-09 to provide a variety of safe and secure senior housing alternatives for an aging population within a single integrated community.

(2) The project is consistent with applicable land-use policies contained in the Township's Master Plan of current adoption in that all building codes and zoning restrictions are being incorporated and respected without variance.

(3) The project, as can be seen from the elevations and renderings has been designed, and will be constructed, landscaped, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area. This area is currently vacant land covered with vegetation that is of no particular character and will improve that character with engineered stormwater control management, aesthetically pleasing buildings, and professional landscape design.

(4) The project will not adversely affect or be hazardous to existing neighboring uses. ANDEV will be meeting with the neighbors and their representatives prior to presenting its application to the Plan Commission to ensure that their questions, opinions, and preferences are heard and satisfactorily addressed. The developer has been informed that the primary concern of the residents of the single-family homeowners that will be nearest to the project is that there be no connection with Mohican Lane that would allow for cut-through traffic from Hannah Blvd. into their neighborhood. The project design has respected this preference. The second concern is with regard to building height. As previously stated, the proposed building respects the zoning requirements regarding height and setback requirements and has been designed and laid out to orient only the two-story element of the facility adjacent to the existing homes and will have an extra-large setback incorporating a large, heavily landscaped berm as an additional noise and visual barrier to the homesites.

(5) The project will not be detrimental to the economic welfare of surrounding properties or the community. To the contrary, the project anticipates the direct creation of approximately 110 new jobs and will support local businesses and suppliers – generating increased sales and real estate taxes that will benefit the residents of the entire township.

(6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service. All of the utilities necessary for the project's construction and maintenance will be extended to the site either within the proposed extension of Hannah Blvd or through the vacant property to the north and are sized of sufficient capacity to accommodate the needs of the proposed new community.

(7) The project is adequately served by public sanitation facilities. The same factors listed above regarding roads, stormwater, etc. are applicable to the availability and capacity of the water main and sanitary sewer connections.



(8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors. The project has been specifically designed and engineered to provide all necessary traffic improvements to accommodate further development consistent with existing zoning to the north of the project without connecting to the single-family neighborhood to the east, but still providing a second route for fire and emergency services from the north if necessary.

(9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas, all of which are being respected in the design of stormwater detention and avoidance of natural wetlands.

I am available to answer questions or provide further clarification if necessary,

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael D. Samuels", written over a horizontal line.

Michael D. Samuels, authorized agent for
Andev Group, LLC

February 28, 2020

FROM: ANDEV Group, LLC

TO: Meridian Township Project for Hannah Boulevard

Ladies and Gentlemen,

ANDEV is pleased to present its vision for the development of the eastern terminus of Hannah Boulevard. In a recently enacted ordinance, Meridian Township encapsulated the concept of a senior living campus (referred to as a Senior Living Community) to allow for the development in one integrated site of the following types of senior residences:

- Independent Living Apartments
 - Fully functional—includes fully equipped kitchen and in-unit washer/dryer
 - Choice of floorplans from Studio to Two-bedroom, two bath units available.
 - Community dining
 - Cafe
 - Chef-run kitchen for meal service
 - On site hair salon
 - Sports lounge
 - Card room
 - Exercise room
 - Media room/theater
 - Chapel
 - Meeting rooms
 - Concierge service
 - Housekeeping services available
 - In-home assistive services can be available (from third-party providers)
- Assisted Living Apartments
 - Choice of floorplans from Studio to Two-bedroom, two bath units available.
 - Community dining – all meals included
 - Cafe
 - Chef-run commercial kitchen for meal service
 - On site hair salon
 - Medical clinic room for visiting physicians
 - Card room
 - Exercise room
 - Media room/theater
 - Chapel
 - Housekeeping and laundry services included.
 - Activity director
 - Assisted living services included (Bathing, dressing, medication reminders, etc.)
 - Care givers and RN on staff.
 - Bus/van Transportation supplied

- Memory Care
 - All units (1 or 2 beds) are studio suites with handicap-accessible bathrooms.
 - *All features and services included above for assisted living PLUS:*
 - Specially trained care-giver staff
 - Full time RN
 - Controlled access to ensure residents are safe and secure within the building
 - Fully fenced and secure separate outdoor patio.

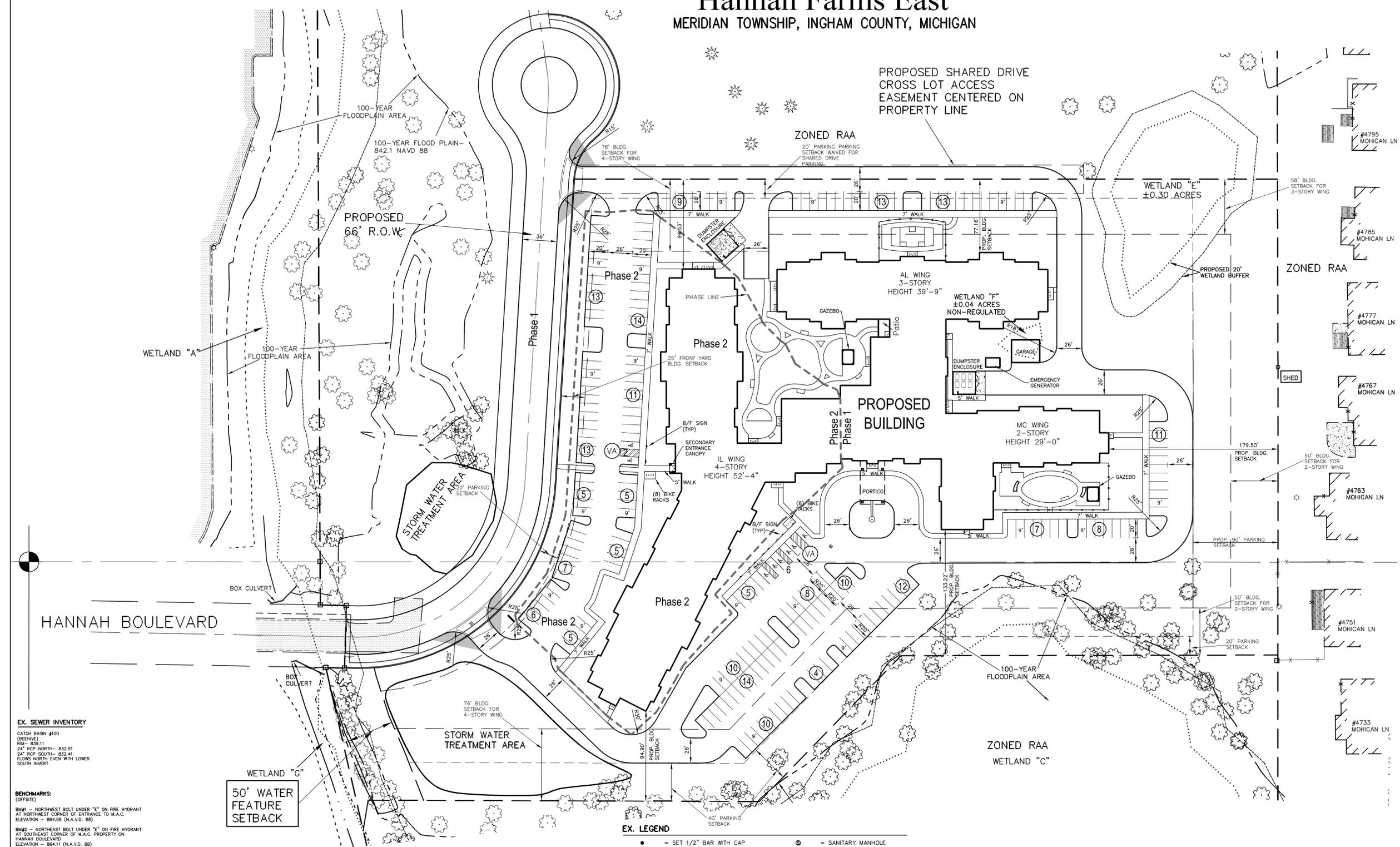
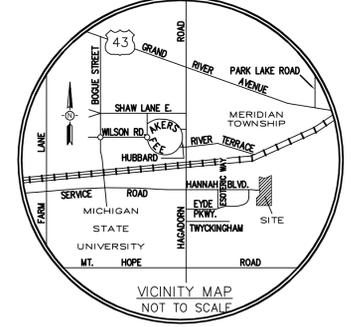
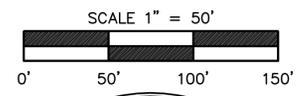
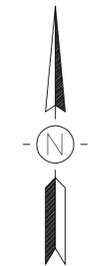
ANDEV intends to incorporate all three of the above housing types in its Senior Living Community proposed development. We have designed a single, integrated building to house all three types of senior residences. Each type will be contained within well-defined areas of the complex. It is anticipated that the building will be constructed in two phases. The first phase will entail the construction of the two-story memory care portion, containing 42 suites and the three-story assisted living section, containing 67 apartments. The second phase of development will add the four-story element housing 121 independent living apartments. This section will tie-in to the previously completed portion and will be constructed without disturbing the lives or services and amenities used by the existing residents.

As the project will be built in phases, the area shown as phase 2 on the site plan will not be constructed initially. The 4-story independent apartments, including the western parking area adjacent to Hannah Boulevard, will not be built. Perimeter and parking lot landscaping adjacent to the 4-story building will also not be installed during phase 1. The central courtyard sidewalks will be temporarily modified to function to only serve phase 1 until phase 2 is completed. The phase 2 area will be stripped, graded, and reseeded only as necessary to maintain proper drainage of that area until the construction of phase 2 commences. The remainder of the site outside of phase 2 will be completed, including required street, access lanes, utilities, and infrastructure.

We anticipate commencing construction within a short time after the final approval of the project. Construction of phase one will take approximately 18 months. Construction of phase two will start after the completed phase one is 50% occupied, or 18 months from the completion of phase one, whichever comes first. Its construction should also be completed approximately 18 months from commencement.

Michael Samuels, for
ANDEV Group, LLC

SUP PLAN FOR:
Hannah Farms East
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



PROPOSED UNIT BREAKDOWN

Independent Living:	(48) 1-bed apartments
	(39) 1-bed plus den apartments
	(28) 2-bed apartments
	(6) Studio apartments
	Total 121 IL apartments
Assisted Living:	(30) 1-bed apartments
	(24) 1-bed plus den apartments
	(4) 2-bed apartments
	(9) Studio apartments
	Total 67 AL apartments
Memory care:	(40) Memory care studio units
	(2) 2-bed memory care units
	Total 42 units

EX. SEWER INVENTORY
 CATCH BASIN #100 (BEEHIVE)
 R/W - 835.11
 24" RCP NORTH - 832.91
 24" RCP SOUTH - 832.41
 FLOWS NORTH EVEN WITH LOWER SOUTH INVERT

BENCHMARKS (OFFSITE)
 BM#1 - NORTHWEST BOLT UNDER "C" ON FIRE HYDRANT AT NORTHWEST CORNER OF ENTRANCE TO M.A.C. ELEVATION - 864.66 (N.A.V.D. 88)
 BM#2 - NORTHEAST BOLT UNDER "E" ON FIRE HYDRANT AT SOUTHEAST CORNER OF M.A.C. PROPERTY ON HANNAH BOULEVARD ELEVATION - 864.11 (N.A.V.D. 88)

NOTE: WATER SHALL HAVE 10" HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.

LEGEND

--- W ---	EXT. CONTOURS
--- SAN ---	EXT. WATER MAIN
--- ST ---	EXT. SANITARY SEWER
--- ST ---	EXT. STORM SEWER
--- W ---	EXT. ELEVATIONS
--- SAN ---	PROPOSED WATER MAIN
--- ST ---	PROPOSED SANITARY SEWER
--- ST ---	PROPOSED STORM SEWER
○	MANHOLE (NEW)
○	PROPOSED C.B. MANHOLE (EX.)
○	UTILITY EASEMENT
---	CENTER LINE OF ROAD
---	ROAD RIGHT OF WAY
---	PROPERTY LINE
○	FIRE HYDRANT
○	WATER VALVE
○	THRUST BLOCK
▲	PROPOSED TOP OF CURB ELEV.



EX. LEGEND

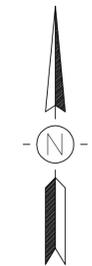
●	SET 1/2" BAR WITH CAP	⊙	SANITARY MANHOLE
□	FOUND MONUMENT UNLESS NOTED	⊙	DRAINAGE MANHOLE
---	DISTANCE NOT TO SCALE	⊙	ELECTRIC MANHOLE
---	FENCE	⊙	TELEPHONE MANHOLE
---	ASPHALT	○	CATCH BASIN
---	CONCRETE	○	SANITARY CLEANOUT
---	GRAVEL	○	FIRE HYDRANT
---	EXISTING SPOT ELEVATION	○	VALVE
---	EXISTING CONTOUR ELEVATION	○	UTILITY POLE
---	GAS LINE	○	LIGHT POLE
---	UNDERGROUND TELEPHONE	○	GUY POLE
---	UNDERGROUND TELEVISION	○	GUY WIRE
---	UNDERGROUND ELECTRIC	○	UTILITY PEDESTAL
---	OVERHEAD WIRES	○	TRANSFORMER
---	WETLAND BOUNDARY	○	ELECTRIC METER
---	EDGE OF WOODS	○	GAS METER
---	DECIDUOUS TREE	○	WATER METER
---	CONIFEROUS TREE	○	SOIL BORING
---	BUSH	○	SIGN
---		○	POST

- DENOTES PROPOSED NUMBER OF 9'x10' PARKING SPACES
- VA DENOTES PROPOSED VAN ACCESSIBLE SPACE
- 0 DENOTES PROPOSED NUMBER OF B/F SPACES

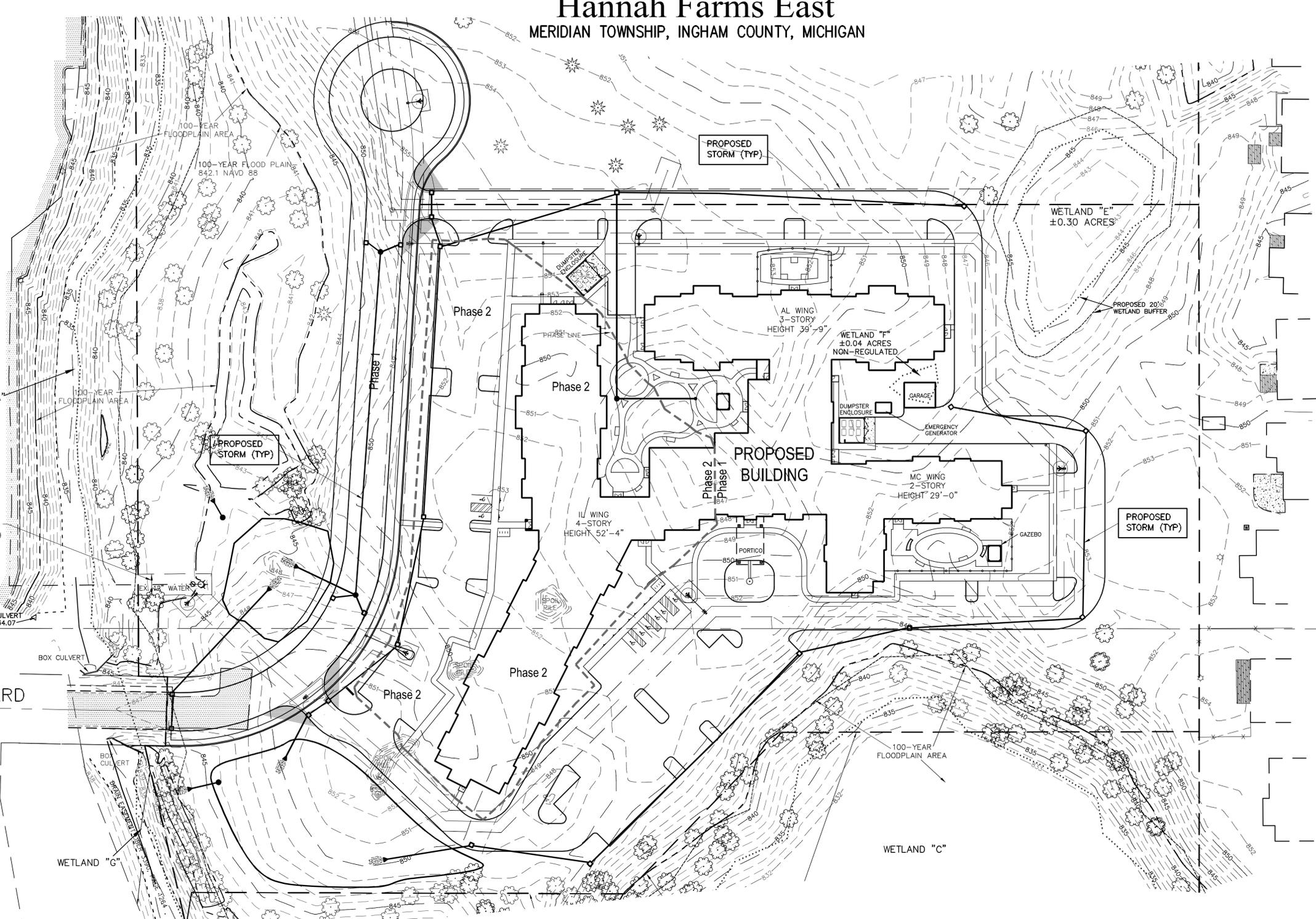
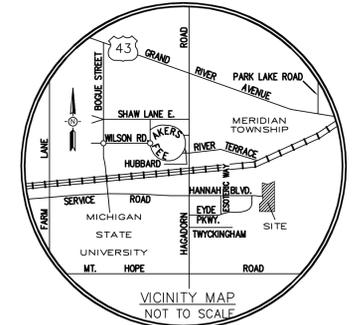
	REVISIONS 2-11-20 SUP SUBMITTAL 03-02-20 SUP		2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047 Marshall Office Ph. 269-781-9800
	<p align="center">Hannah Farms East</p> DIMENSION PLAN		
SCALE: 1" = 50' DATE: 3-25-19 AUTHORIZED BY: Andev Group, LLC		DESIGNER: JWK PROJECT MGR. JWK APPROVED BY: JWK SHEET 2 OF 6 JOB #: 96034	

E-96034
 SURVEY#89986TOP.JEFF

SUP PLAN FOR:
Hannah Farms East
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN



SCALE 1" = 50'
 0' 50' 100' 150'



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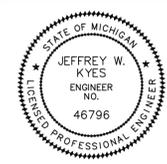
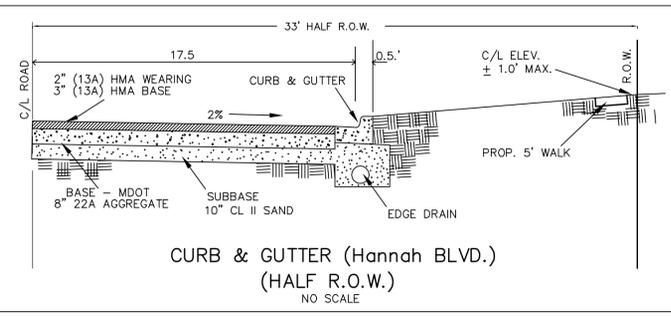
LEGEND

	EXT. CONTOURS
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	EXT. SANITARY SEWER
	EXT. STORM SEWER
	EXT. ELEVATIONS
	PROPOSED WATER MAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	MANHOLE (NEW)
	PROPOSED C.B. MANHOLE (EX.)
	UTILITY EASEMENT
	CENTER LINE OF ROAD
	ROAD RIGHT OF WAY
	PROPERTY LINE
	FIRE HYDRANT
	WATER VALVE
	THRUST BLOCK
	PROPOSED TOP OF CURB ELEV.



EX. LEGEND

	SET 1/2" BAR WITH CAP
	FOUND MONUMENT UNLESS NOTED
	DISTANCE NOT TO SCALE
	FENCE
	ASPHALT
	CONCRETE
	GRAVEL
	EXISTING SPOT ELEVATION
	EXISTING CONTOUR ELEVATION
	GAS LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND TELEVISION
	UNDERGROUND ELECTRIC
	OVERHEAD WIRES
	WETLAND BOUNDARY
	EDGE OF WOODS
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	SANITARY MANHOLE
	DRAINAGE MANHOLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	CATCH BASIN
	SANITARY CLEANOUT
	FIRE HYDRANT
	VALVE
	UTILITY POLE
	LIGHT POLE
	GUY POLE
	GUY WIRE
	UTILITY PEDESTAL
	TRANSFORMER
	ELECTRIC METER
	GAS METER
	WATER METER
	SOIL BORING
	SIGN
	POST



REVISIONS	KEYS, INC. KYES ENGINEERING BRYAN LAND SURVEYS
2-11-20 SUP SUBMITTAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047
03-02-20 SUP	Marshall Office Ph. 269-781-9800
	Hannah Farms East STORM, GRADING, AND STORM WATER MANAGEMENT PLAN
SCALE: 1" = 50'	DESIGNER: JWK
DATE: 3-25-19	PROJECT MGR. JWK
AUTHORIZED BY: Andev Group, LLC	APPROVED BY: SHEET 3 OF 6
	JOB #: 96034

E-96034
 SURVEY#89986TOP.JEFF

BOUNDARY & TOPOGRAPHIC SURVEY

"HANNAH FARMS EAST- NORTH PORTION"

EXISTING SURVEY & TREE REMOVAL PLAN NORTH

FOR: EYDE COMPANY

- LEGEND**
- = SET 1/2" BAR WITH CAP
 - = FOUND IRON AS NOTED
 - = DEED LINE
 - = DISTANCE NOT TO SCALE
 - = FENCE
 - = ASPHALT
 - = CONCRETE
 - = DECK
 - = EXISTING SPOT ELEVATION
 - = EXISTING CONTOUR ELEVATION
 - = SANITARY SEWER
 - = STORM SEWER
 - = WATER LINE
 - = GAS LINE
 - = UNDERGROUND TELEPHONE
 - = UNDERGROUND TELEVISION
 - = UNDERGROUND ELECTRIC
 - = OVERHEAD WIRES
 - ⊙ = DECIDUOUS TREE
 - ⊙ = CONIFEROUS TREE
 - ⊙ = SANITARY MANHOLE
 - ⊙ = DRAINAGE MANHOLE
 - ⊙ = ELECTRIC MANHOLE
 - ⊙ = TELEPHONE MANHOLE
 - ⊙ = CATCHBASIN
 - ⊙ = SANITARY CLEANOUT
 - ⊙ = FIRE HYDRANT
 - ⊙ = VALVE
 - ⊙ = UTILITY POLE
 - ⊙ = LIGHT POLE
 - ⊙ = GUY POLE
 - ⊙ = GUY WIRE
 - ⊙ = UTILITY PEDESTAL
 - ⊙ = TRANSFORMER
 - ⊙ = ELECTRIC METER
 - ⊙ = GAS METER
 - ⊙ = WATER METER
 - ⊙ = SOIL BORING
 - ⊙ = SIGN
 - ⊙ = POST
 - = WETLAND BOUNDARY
 - ⊙ = TREE IDENTIFICATION NUMBER

SEWER INVENTORY

CATCH BASIN #100
(BEEHIVE)
RIM- 839.11
24" RCP NORTH- 832.91
24" RCP SOUTH- 832.41
FLOWS NORTH EVEN WITH LOWER
SOUTH INVERT

BENCHMARKS:

BENCHMARK #1 ELEVATION: 864.68 (N.A.V.D. 88)
NORTHWEST BOLT UNDER "E" ON FIRE HYDRANT AT NORTHWEST
CORNER OF ENTRANCE TO M.A.C. (OFF-SITE)

BENCHMARK #2 ELEVATION: 864.09 (N.A.V.D. 88)
NORTHEAST BOLT UNDER "E" ON FIRE HYDRANT AT
SOUTHEAST CORNER OF M.A.C. PROPERTY ON HANNAH
BOULEVARD (OFF-SITE)

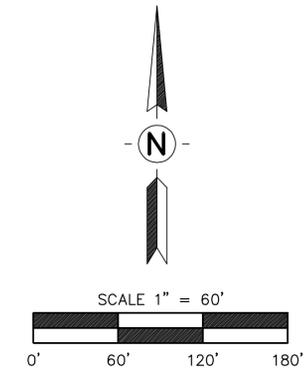
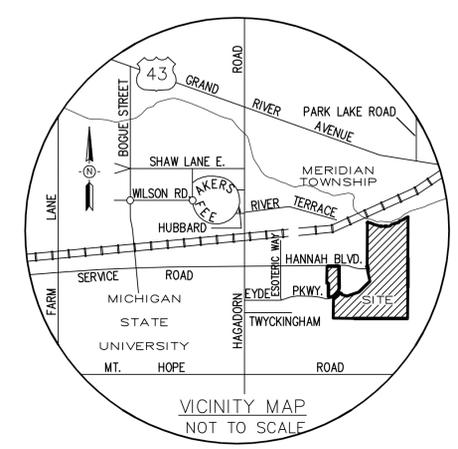
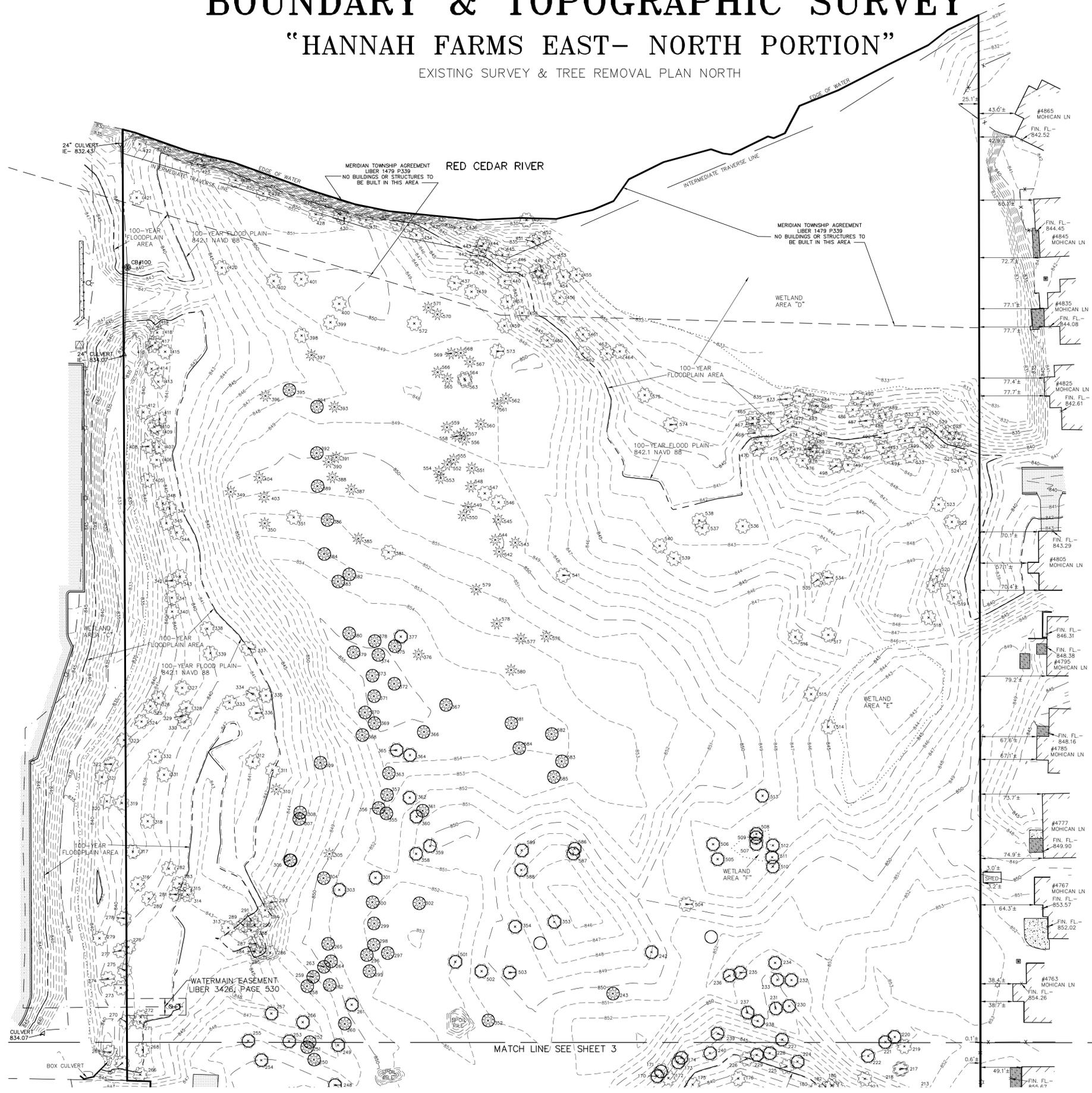
BENCHMARK #3 ELEVATION: 864.41 (N.A.V.D. 88)
BIG ARM OF FIRE HYDRANT ON THE WEST SIDE OF EYDE
PARKWAY, FIRST HYDRANT SOUTH OF THE INTERSECTION OF EYDE
PARKWAY AND HANNAH BOULEVARD. (SEE SHEET 4)

BENCHMARK #4 ELEVATION: 863.87 (N.A.V.D. 88)
BIG ARM OF FIRE HYDRANT AT THE NORTHEAST CORNER OF THE
LANSING COMMUNITY COLLEGE PARKING LOT ON THE WEST SIDE
OF THE SOUTHWEST PARCEL. (SEE SHEET 5)

BENCHMARK #5 ELEVATION: 853.12 (N.A.V.D. 88)
SOUTHWEST FLANGE BOLT OF FIRE HYDRANT ON THE SOUTH SIDE
OF HANNAH BOULEVARD, FIRST HYDRANT EAST OF THE
INTERSECTION OF EYDE PARKWAY AND HANNAH BOULEVARD. (SEE
SHEET 4)

BENCHMARK #6 ELEVATION: 846.60 (N.A.V.D. 88)
CHISELED "X" ON SOUTHWEST CORNER OF THE HEADWALL ON THE
SOUTH SIDE OF HANNAH BOULEVARD ON THE WEST SIDE OF THE
EASTERN PARCEL. (SEE SHEET 3)

BENCHMARK #7 ELEVATION: 865.46 (N.A.V.D. 88)
NORTHEAST FLANGE BOLT UNDER "W" IN EJIW ON FIRE HYDRANT
AT THE NORTHEAST CORNER OF PARKING LOT FOR BUILDING
#2852. (SEE SHEET 4)



ERICK R. FRIESTROM DATE
PROFESSIONAL SURVEYOR NO. 53497

89986.TOP/BND

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING	
12/22/15	ORIGINAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047 Marshall Office Ph. 269-781-9800	
12/23/15	ADDED FLOODPLAIN		
01/13/16	ADDED SHEETS 4&5		
2-11-20	SUP SUBMITTAL		
		DRAWN BY SLH	SECTION 20, T4N, R1W
		FIELD WORK BY RF	JOB NUMBER: 96034
		SHEET 4 OF 6	

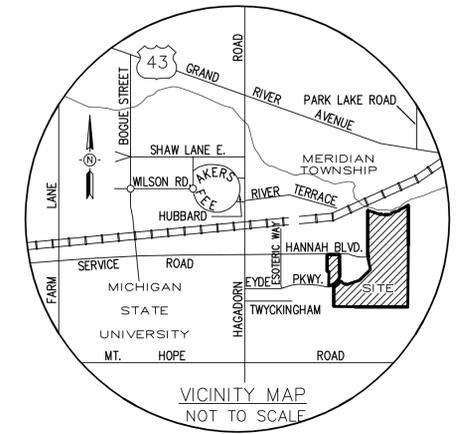
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BOUNDARY & TOPOGRAPHIC SURVEY

"HANNAH FARMS EAST- SOUTH PORTION"

EXISTING SURVEY & TREE REMOVAL PLAN SOUTH

FOR: EYDE COMPANY



LEGEND

- = SET 1/2" BAR WITH CAP
- = FOUND IRON AS NOTED
- = DEED LINE
- = DISTANCE NOT TO SCALE
- = FENCE
- = ASPHALT
- = CONCRETE
- = DECK
- = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = SANITARY SEWER
- = STORM SEWER
- = WATER LINE
- = GAS LINE
- = UNDERGROUND TELEPHONE
- = UNDERGROUND TELEVISION
- = UNDERGROUND ELECTRIC
- = OVERHEAD WIRES
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = SANITARY MANHOLE
- = DRAINAGE MANHOLE
- = ELECTRIC MANHOLE
- = TELEPHONE MANHOLE
- = CATCHBASIN
- = SANITARY CLEANOUT
- = FIRE HYDRANT
- = VALVE
- = UTILITY POLE
- = LIGHT POLE
- = GUY POLE
- = GUY WIRE
- = UTILITY PEDESTAL
- = TRANSFORMER
- = ELECTRIC METER
- = GAS METER
- = WATER METER
- = SOIL BORING
- = SIGN
- = POST
- = WETLAND BOUNDARY
- = TREE IDENTIFICATION NUMBER

FOR ADDITIONAL TOPO IN THIS AREA SEE SHEET 5



BENCHMARKS:

- BENCHMARK #1** ELEVATION: 864.68 (N.A.V.D. 88)
NORTHWEST BOLT UNDER "E" ON FIRE HYDRANT AT NORTHWEST CORNER OF ENTRANCE TO M.A.C. (OFF-SITE)
- BENCHMARK #2** ELEVATION: 864.09 (N.A.V.D. 88)
NORTHEAST BOLT UNDER "E" ON FIRE HYDRANT AT SOUTHEAST CORNER OF M.A.C. PROPERTY ON HANNAH BOULEVARD (OFF-SITE)
- BENCHMARK #3** ELEVATION: 864.41 (N.A.V.D. 88)
BIG ARM OF FIRE HYDRANT ON THE WEST SIDE OF EYDE PARKWAY, FIRST HYDRANT SOUTH OF THE INTERSECTION OF EYDE PARKWAY AND HANNAH BOULEVARD. (SEE SHEET 4)
- BENCHMARK #4** ELEVATION: 863.87 (N.A.V.D. 88)
BIG ARM OF FIRE HYDRANT AT THE NORTHEAST CORNER OF THE LANSING COMMUNITY COLLEGE PARKING LOT ON THE WEST SIDE OF THE SOUTHWEST PARCEL. (SEE SHEET 5)
- BENCHMARK #5** ELEVATION: 853.12 (N.A.V.D. 88)
SOUTHWEST FLANGE BOLT OF FIRE HYDRANT ON THE SOUTH SIDE OF HANNAH BOULEVARD, FIRST HYDRANT EAST OF THE INTERSECTION OF EYDE PARKWAY AND HANNAH BOULEVARD. (SEE SHEET 4)
- BENCHMARK #6** ELEVATION: 846.60 (N.A.V.D. 88)
CHISELED "X" ON SOUTHWEST CORNER OF THE HEADWALL ON THE SOUTH SIDE OF HANNAH BOULEVARD ON THE WEST SIDE OF THE EASTERN PARCEL. (SEE SHEET 3)
- BENCHMARK #7** ELEVATION: 865.46 (N.A.V.D. 88)
NORTHEAST FLANGE BOLT UNDER "W" IN EJW" ON FIRE HYDRANT AT THE NORTHEAST CORNER OF PARKING LOT FOR BUILDING #2852. (SEE SHEET 4)

○ DENOTES TREES TO BE REMOVED

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING	
12/22/15	ORIGINAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047	
12/23/15	ADDED FLOODPLAIN	Marshall Office Ph. 269-781-9800	
01/13/16	ADDED SHEETS 4&5	DRAWN BY SLH	SECTION 20, T4N, R1W
2-11-20	SUP SUBMITTAL	FIELD WORK BY RF	JOB NUMBER: 96034
		SHEET 5 OF 6	

ERICK R. FRIESTROM DATE PROFESSIONAL SURVEYOR NO. 53497

89986.TOP/BND

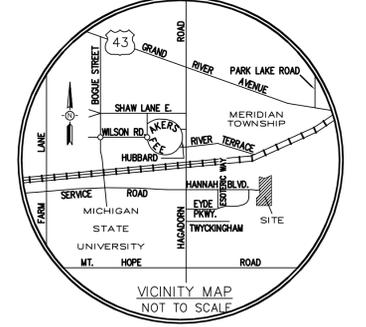
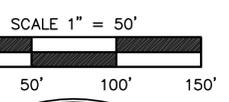
SUP PLAN FOR:
Hannah Farms East
 MERIDIAN TOWNSHIP, INGHAM COUNTY, MICHIGAN

N00
 NORTH-SO

ZONED PO

ZONED RAA

ZONED RAA



HANNAH BOULEVARD

EX. SEWER INVENTORY
 CATCH BASIN #100 (BEEHIVE)
 RM# - 838.11
 24" RCP NORTH - 832.91
 24" RCP SOUTH - 832.41
 FLOWS NORTH EVEN WITH LOWER SOUTH INVERT

BENCHMARKS:
 (OFFSITE)
 BM#1 - NORTHWEST BOLT UNDER "T" ON FIRE HYDRANT AT NORTHWEST CORNER OF ENTRANCE TO M.A.C. ELEVATION - 864.66 (N.A.V.D. 88)
 BM#2 - NORTHEAST BOLT UNDER "E" ON FIRE HYDRANT AT SOUTHEAST CORNER OF M.A.C. PROPERTY ON HANNAH BOULEVARD ELEVATION - 864.11 (N.A.V.D. 88)

NOTE: WATER SHALL HAVE 10" HORIZONTAL SEPARATION & 18" VERTICAL SEPARATION FROM ALL SEWERS.

LEGEND	
	EXT. CONTOURS
	EXT. WATER MAIN
	EXT. SANITARY SEWER
	EXT. STORM SEWER
	EXT. ELEVATIONS
	PROPOSED WATER MAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORM SEWER
	MANHOLE (NEW)
	MANHOLE (EX)
	UTILITY EASEMENT
	CENTER LINE OF ROAD
	ROAD RIGHT OF WAY
	PROPERTY LINE
	FIRE HYDRANT
	WATER VALVE
	THRUST BLOCK
	PROPOSED TOP OF CURB ELEV.

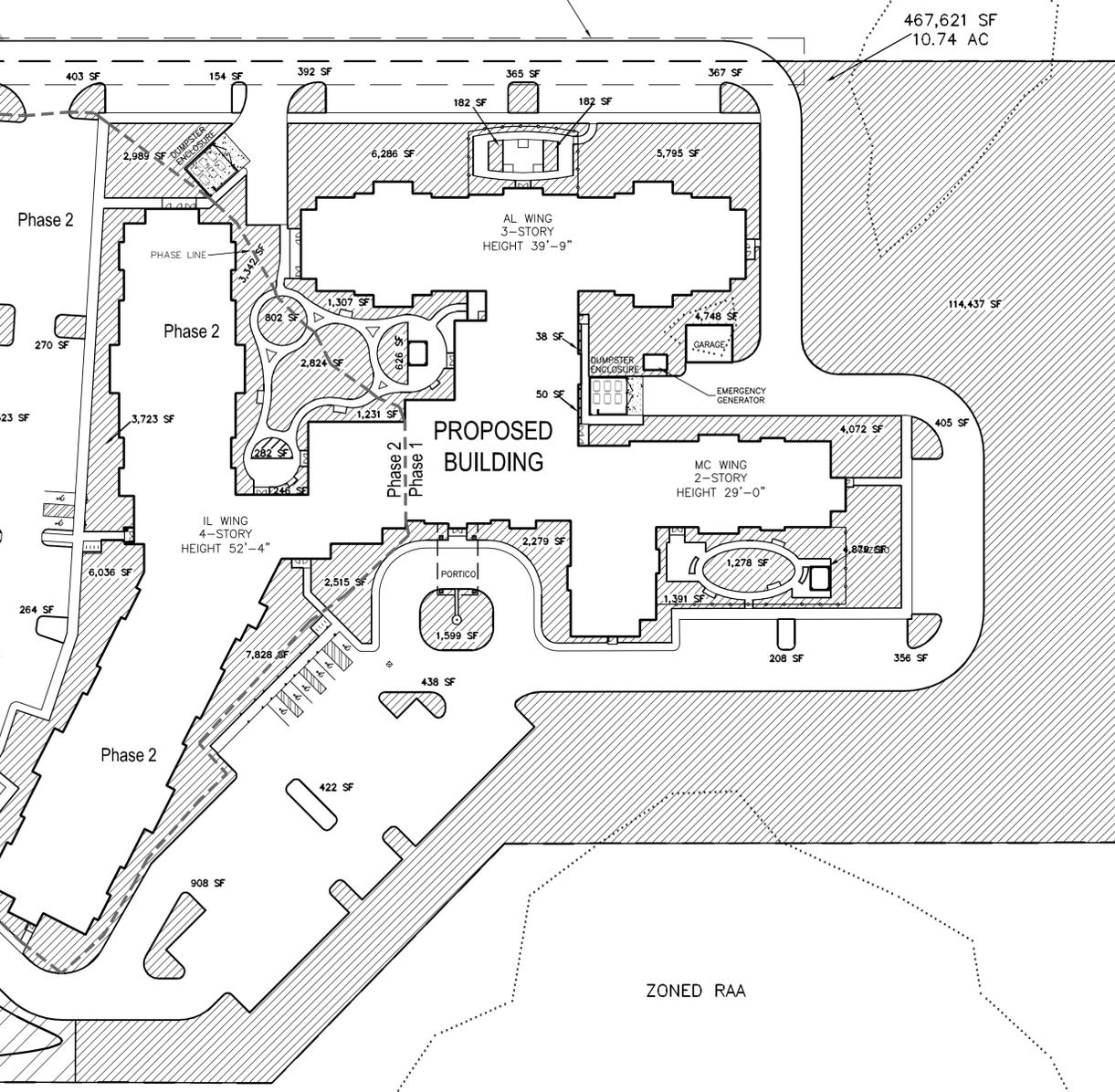


EX. LEGEND	
	SET 1/2" BAR WITH CAP
	FOUND MONUMENT UNLESS NOTED
	DISTANCE NOT TO SCALE
	FENCE
	ASPHALT
	CONCRETE
	GRAVEL
	EXISTING SPOT ELEVATION
	EXISTING CONTOUR ELEVATION
	GAS LINE
	UNDERGROUND TELEPHONE
	UNDERGROUND TELEVISION
	UNDERGROUND ELECTRIC
	OVERHEAD WIRES
	WETLAND BOUNDARY
	EDGE OF WOODS
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUSH
	SANITARY MANHOLE
	DRAINAGE MANHOLE
	ELECTRIC MANHOLE
	TELEPHONE MANHOLE
	CATCH BASIN
	SANITARY CLEANOUT
	FIRE HYDRANT
	VALVE
	UTILITY POLE
	LIGHT POLE
	GUY POLE
	GUY WIRE
	UTILITY PEDESTAL
	TRANSFORMER
	ELECTRIC METER
	GAS METER
	WATER METER
	SOIL BORING
	SIGN
	POST

38,350 SF TOTAL
 -10,959 SF
 27,391 SF

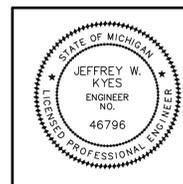
TOTAL DETENTION AREA = 21,918 SF

1/2 DETENTION AREA = 10,959 SF



MAXIMUM IMPERVIOUS SURFACE = 75%
 PROPOSED IMPERVIOUS SURFACE 244,352 SF / 467,621 SF = 52.25%

ESTATES NO. 2
 A.T.S. PAGES 30-31



REVISIONS 2-11-20 SUP SUBMITTAL 03-02-20 SUP	KEBS, INC. KYES ENGINEERING 2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047 Marshall Office Ph. 269-781-9800
SCALE: 1" = 50' DATE: 3-25-19 AUTHORIZED BY: Andev Group, LLC	DESIGNER: JWK PROJECT MGR. JWK APPROVED BY: JWK SHEET 6 OF 6 JOB #: 96034

E-96034
 SURVEY#89986TOP.JEFF



Ganter Construction
Architecture, Inc.
4825 County Road A
Oshkosh, Wisconsin 54901
tel. 920.426.4774 fax
920.426.4788 www.ganter.com

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BolenderDesigns
992 Pennings Street
De Pere, WI 54115
tel. 920.309.0309

PROPOSED PROJECT:
SENIOR LIVING COMMUNITY
MERIDIAN TOWNSHIP, MI



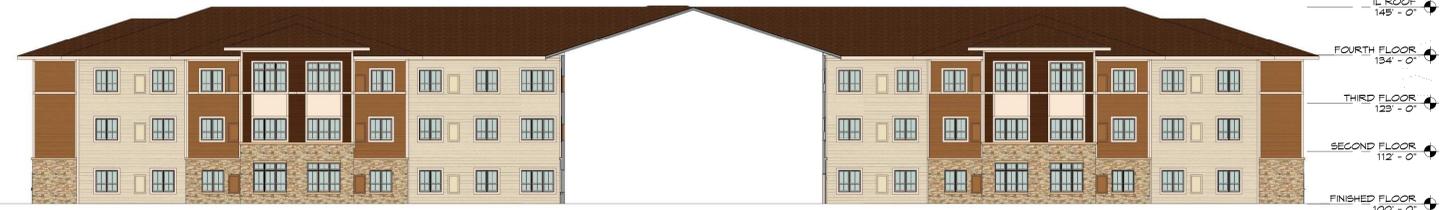
1 AL / MC EXTERIOR EAST
A3.1 SCALE: 1/16" = 1'-0"



2 AL EXTERIOR WEST (COURTYARD)
A3.1 SCALE: 1/16" = 1'-0"



3 IL EXTERIOR EAST (COURTYARD)
A3.1 SCALE: 1/16" = 1'-0"



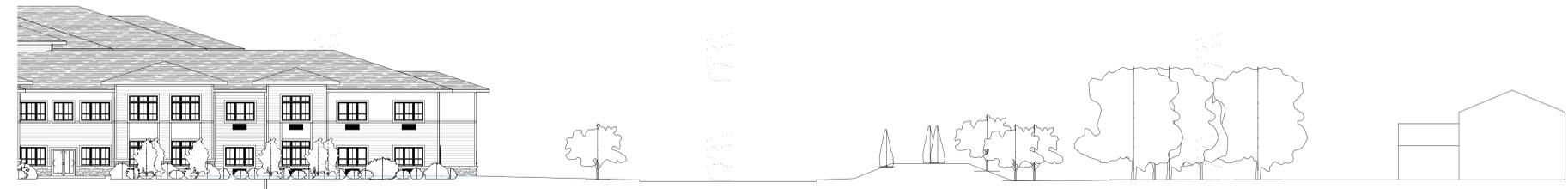
4 AL EXTERIOR NORTH (COURTYARDS)
A3.1 SCALE: 1/16" = 1'-0"



5 EXTERIOR SOUTH (COURTYARDS)
A3.1 SCALE: 1/16" = 1'-0"



6 MC EXTERIOR WEST
A3.1 SCALE: 1" = 20'-0"



7 CONCEPT DIAGRAM AT EAST PROPERTY LINE
A3.1 SCALE: 1/16" = 1'-0"

Schematic Design	OWNER REVIEW AND APPROVAL		PROJECT MANAGER REVIEW AND APPROVAL	
	DATE	SIGNATURE	DATE	SIGNATURE

REVISIONS	
#	DATE

Project Number 19-1010
Date 2-11-20
Drawn By VP
Checked By KK

A3.1

2-11-20 SUP SUBMITTAL

Z:\Projects\19-1010 Sr Living Lansing Phase 2\04 Architecture\04-03 Design\19-1010 Lansing 11-11-19.rvt 2/7/2020 4:06:35 PM



**Ganther Construction
Architecture, Inc.**
4825 County Road A
Oshkosh, Wisconsin 54901
tel. 920.426.4774 fax
920.426.4788 www.ganther.com

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bolenderDesigns
INCORPORATED
992 Pennings Street
De Pere, WI 54115
tel. 920.309.0309



PROPOSED PROJECT:
SENIOR LIVING COMMUNITY
MERIDIAN TOWNSHIP, MI

REVISIONS	
#	DATE

Project Number 19-1010
Date 2-11-20
Drawn By VP
Checked By KK

A3.2

Z:\Projects\19-1010 Sr Living Lansing Phase 2\04 Architecture\04-03 Design\19-1010 Lansing 11-11-19.rvt 2/7/2020 4:06:36 PM

Schematic Design	OWNER REVIEW AND APPROVAL		PROJECT MANAGER REVIEW AND APPROVAL	
	DATE	SIGNATURE	DATE	SIGNATURE

2-11-20 SUP SUBMITTAL



Ganther Construction
Architecture, Inc.
4825 County Road A
Oshkosh, Wisconsin 54901
tel. 920.426.4774 fax
920.426.4788 www.ganther.com

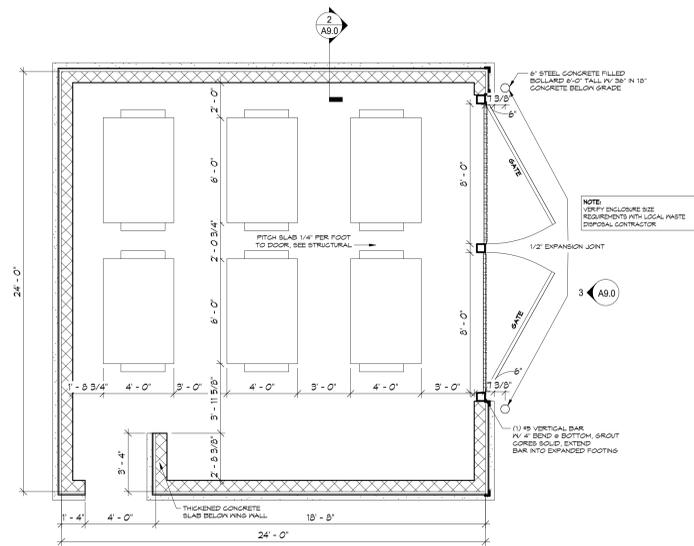
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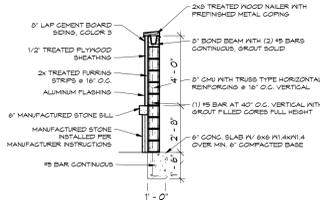
BolenderDesigns
992 Pennings Street
De Pere, WI 54115
tel. 920.309.0309

PROPOSED PROJECT:

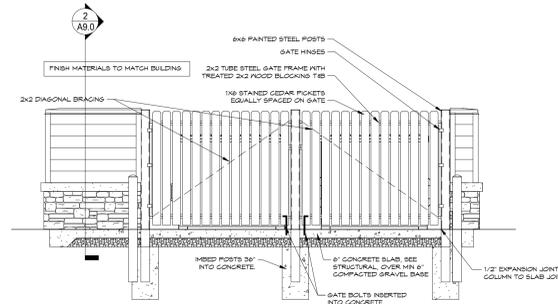
SENIOR LIVING COMMUNITY
MERIDIAN TOWNSHIP, MI



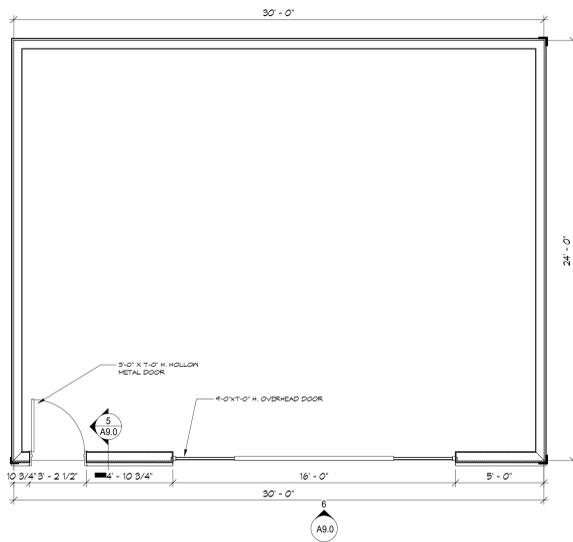
1 DUMPSTER ENCLOSURE
A9.0 SCALE: 1/4" = 1'-0"



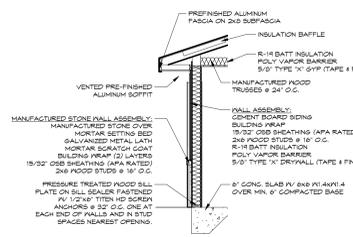
2 DUMPSTER ENCLOSURE SECTION
A9.0 SCALE: 1/4" = 1'-0"



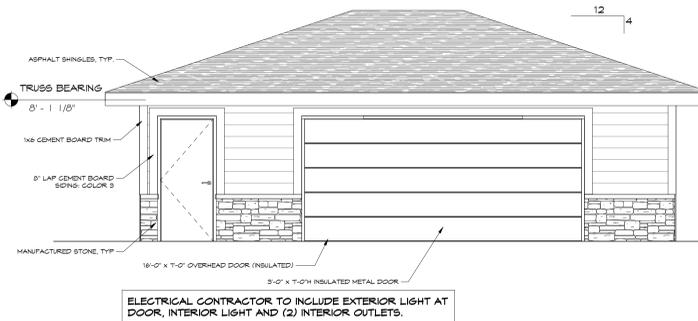
3 DUMPSTER ENCLOSURE
A9.0 SCALE: 1/4" = 1'-0"



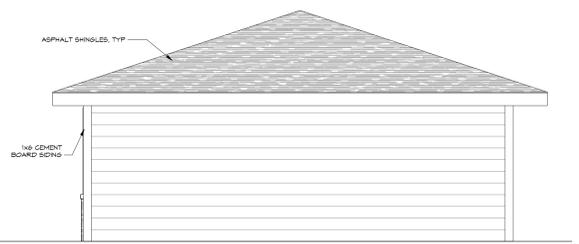
4 SHED FLOOR PLAN
A9.0 SCALE: 1/4" = 1'-0"



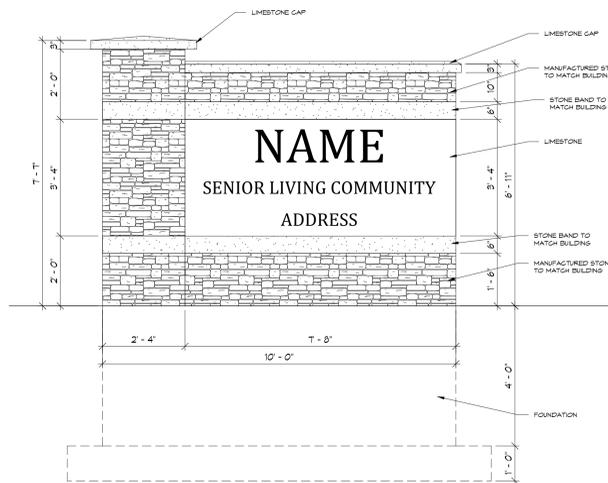
5 SHED WALL SECTION
A9.0 SCALE: 1/4" = 1'-0"



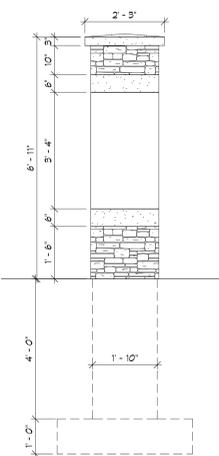
6 GARAGE FRONT ELEV.
A9.0 SCALE: 1/4" = 1'-0"



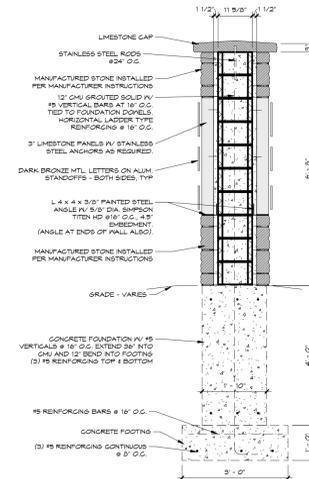
7 GARAGE END WALLS
A9.0 SCALE: 1/4" = 1'-0"



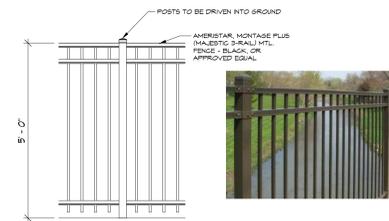
8 MONUMENT SIGN FRONT
A9.0 SCALE: 1/2" = 1'-0"



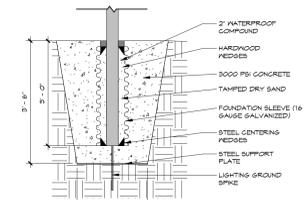
9 SIGN END
A9.0 SCALE: 1/2" = 1'-0"



10 SIGN SECTION
A9.0 SCALE: 1/2" = 1'-0"



11 COURTYARD FENCE
A9.0 SCALE: 1/2" = 1'-0"



12 FLAG POLE FOUNDATION
A9.0 SCALE: 1/2" = 1'-0"

Schematic Design

OWNER REVIEW AND APPROVAL

PROJECT MANAGER REVIEW AND APPROVAL

DATE	SIGNATURE	DATE	SIGNATURE

2-11-20 SUP SUBMITTAL

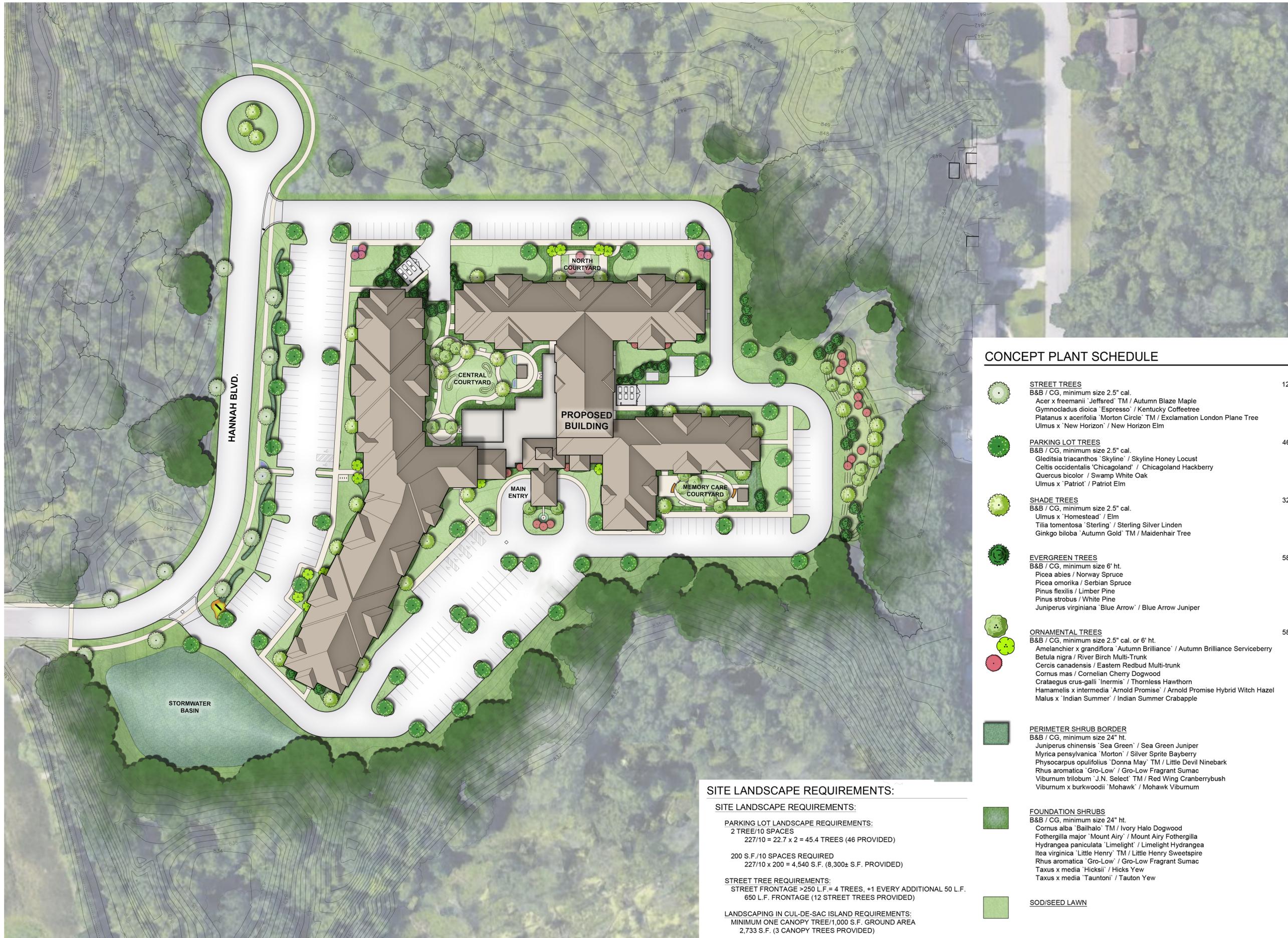
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Project Number 19-1010
Date 2-11-20
Drawn By VP
Checked By KK

REVISIONS	
#	DATE

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client / owner
Andev Group, LLC.
 project name
Hannah Farms East
 project address
 Meridian Township, Ingham County, Michigan

sheet name
**CONCEPTUAL
 LANDSCAPE PLAN
 SUP SUBMITTAL**

owner / developer
 Andev Group, LLC.
 680 N. Lake Shore Dr.
 Chicago, IL 60611
 p 312.927.4449

landscape design prepared by
TESKA ASSOCIATES, INC.
 627 Grove Street
 Evanston, IL 60201
 p 847.869.2015 f 847.869.2059

design builder
**GANTHER, INC.
 CONSTRUCTION | ARCHITECTURE, INC.**
 4825 County Road A
 Oshkosh, WI 54901
 p 920.426.4774 f 920.426.4788

engineer
KEBS, INC.
 211 Haslett Road
 Haslett, MI 48840
 p 517.339.1014 f 517.339.8047

CONCEPT PLANT SCHEDULE

- 
STREET TREES
 B&B / CG, minimum size 2.5" cal.
 Acer x freemanii 'Jeffersred' TM / Autumn Blaze Maple
 Gymnocladus dioica 'Espresso' / Kentucky Coffeetree
 Platanus x acerifolia 'Morton Circle' TM / Exclamation London Plane Tree
 Ulmus x 'New Horizon' / New Horizon Elm 12
- 
PARKING LOT TREES
 B&B / CG, minimum size 2.5" cal.
 Gleditsia triacanthos 'Skyline' / Skyline Honey Locust
 Celtis occidentalis 'Chicagoland' / Chicagoland Hackberry
 Quercus bicolor / Swamp White Oak
 Ulmus x 'Patriot' / Patriot Elm 46
- 
SHADE TREES
 B&B / CG, minimum size 2.5" cal.
 Ulmus x 'Homestead' / Elm
 Tilia tomentosa 'Sterling' / Sterling Silver Linden
 Ginkgo biloba 'Autumn Gold' TM / Maidenhair Tree 32
- 
EVERGREEN TREES
 B&B / CG, minimum size 6' ht.
 Picea abies / Norway Spruce
 Picea omorika / Serbian Spruce
 Pinus flexilis / Limber Pine
 Pinus strobus / White Pine
 Juniperus virginiana 'Blue Arrow' / Blue Arrow Juniper 58
- 
ORNAMENTAL TREES
 B&B / CG, minimum size 2.5" cal. or 6' ht.
 Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry
 Betula nigra / River Birch Multi-Trunk
 Cercis canadensis / Eastern Redbud Multi-trunk
 Cornus mas / Cornelian Cherry Dogwood
 Crataegus crus-galli 'Inermis' / Thornless Hawthorn
 Hamamelis x intermedia 'Arnold Promise' / Arnold Promise Hybrid Witch Hazel
 Malus x 'Indian Summer' / Indian Summer Crabapple 58
- 
PERIMETER SHRUB BORDER
 B&B / CG, minimum size 24" ht.
 Juniperus chinensis 'Sea Green' / Sea Green Juniper
 Myrica pensylvanica 'Morton' / Silver Sprite Bayberry
 Physocarpus opulifolius 'Donna May' TM / Little Devil Ninebark
 Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac
 Viburnum trilobum 'J.N. Select' TM / Red Wing Cranberrybush
 Viburnum x burkwoodii 'Mohawk' / Mohawk Viburnum
- 
FOUNDATION SHRUBS
 B&B / CG, minimum size 24" ht.
 Cornus alba 'Bailhalo' TM / Ivory Halo Dogwood
 Fothergilla major 'Mount Airy' / Mount Airy Fothergilla
 Hydrangea paniculata 'Limelight' / Limelight Hydrangea
 Itea virginica 'Little Henry' TM / Little Henry Sweetspire
 Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac
 Taxus x media 'Hicksii' / Hicks Yew
 Taxus x media 'Tauntoni' / Tauntoni Yew
- 
SOD/SEED LAWN

SITE LANDSCAPE REQUIREMENTS:

- SITE LANDSCAPE REQUIREMENTS:**
- PARKING LOT LANDSCAPE REQUIREMENTS:**
 2 TREE/10 SPACES
 227/10 = 22.7 x 2 = 45.4 TREES (46 PROVIDED)
- 200 S.F./10 SPACES REQUIRED
 227/10 x 200 = 4,540 S.F. (8,300± S.F. PROVIDED)
- STREET TREE REQUIREMENTS:**
 STREET FRONTAGE >250 L.F. = 4 TREES, +1 EVERY ADDITIONAL 50 L.F.
 650 L.F. FRONTAGE (12 STREET TREES PROVIDED)
- LANDSCAPING IN CUL-DE-SAC ISLAND REQUIREMENTS:**
 MINIMUM ONE CANOPY TREE/1,000 S.F. GROUND AREA
 2,733 S.F. (3 CANOPY TREES PROVIDED)

issue / revision	date	description
△		
△		
△		
△		
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△		
△		
△	2-28-2020	LANDSCAPE REVISION

pm	la	cad
	NP	LC

date
2/11/2020

**Traffic Engineering
Associates, Inc.**
517/627-6028 FAX: 517/627-6040

PO Box 100
Saranac, Michigan 48881

Michael D. Samuels
Attorney at Law
414 W. Burr Oak Drive
Arlington Heights, IL 60004

February 3, 2020

Dear Mr. Samuels:

Traffic Engineering Associates, Inc. (TEA) conducted a trip generation analysis for the proposed senior housing development which will be located on Hannah Boulevard in Meridian Charter Township, Ingham County, Michigan.

PROJECT DESCRIPTION

The proposed development will consist of 121 units of independent senior apartments, 67 units of assisted living and 42 memory care units, for a total of 230 units. The project site is located at the east end of Hannah Boulevard. There are two (2) proposed driveways on Hannah Boulevard.

TRAFFIC ANALYSIS

For this analysis, trip generation rates were derived from the ITE TRIP GENERATION MANUAL (10th edition). The ITE trip generation rates for Continuing Care Retirement Community (Land Use Code 255) were selected as representing the 230 units for the site. The ITE description of Continuing Care Retirement Community is as follows:

A continuing care retirement community (CCRC) is a land use that provides multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care, as lifestyle needs change with time. Housing options may include various combinations of senior adult (detached), senior adult (attached), congregate care, assisted living, and skilled nursing care—aimed at allowing the residents to live in one community as their medical needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages.

It is projected that the proposed development will generate 45 vehicle trips during the AM peak hour, 47 vehicle trips during the PM peak hour, and a weekday (24-hour) total of 552 vehicle trips.



Land Use	Size	AM Peak Hour			PM Peak Hour			Weekday
		In	Out	Total	In	Out	Total	
Continuing Care Retirement Community, Land Use Code 255	230 Units	29	16	45	18	29	47	552

FINDINGS

In accordance with the guidelines set forth in “Evaluating Traffic Impact Studies, A Recommended Practice for Michigan Communities,” sponsored by the Tri-County Regional Planning Commission and the Michigan Department of Transportation, if a proposed site is expected to generate at least 100 directional trips during the peak hour or at least 750 trips during an average day, a traffic impact statement is required. If the traffic generated by the site is expected to be between 50 and 99 directional trips during a peak hour, a traffic impact assessment shall be required.

Using the guidelines, neither a traffic impact assessment nor a traffic impact statement would be required for this development based on projected volumes.

If you have any questions, please write or call.

Sincerely,



Heather L. Zull, PE





MARX
WETLANDS
LLC

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APPENDICES

- I. Figure 1: Site Location Map
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- Figure 4: Township Wetland Map
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- Figure 6: Flood Insurance Rate Map
- Figure 7: Identified Areas of Groundwater Vulnerability
- Figure 8: County Soils Survey Map
- II. Tree Survey Results

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1.0 INTRODUCTION

Marx Wetlands, LLC (Marx) was contracted by Capstone Companies and the Eyde Company to perform a natural features assessment for an approximately 60-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, 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 60-acre subject site (hereafter referred to as the Site) is located along the east side of the Lodges of East Lansing housing complex, on the south bank of the Red Cedar River, and west of a residential subdivision in the east half of Section 20, Meridian Charter Township, Ingham County, Michigan. Capstone Companies/Eyde Company (Developer) is proposing to construct a senior 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 control measures will be removed upon completion of construction and stabilization. Please refer to Figure 1: Site Location Map in Appendix I.

The Site is +/- 60 acres in size and is currently vacant. It is bordered by The Lodges of East Lansing, the Red Cedar River, a residential subdivision, and a privately owned residential compound. The topography of the Site is rolling, higher in the middle of the site and lower on the south end and in the northeast corner. The Site contains areas of planted pines, a large wetland at its south end, and areas of open field and floodplain forest. Refer to the Figure 2: Aerial Imagery Map in Appendix I.

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, 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 November 19 to 30, 2015, Marx conducted an on-Site assessment and a tree survey. The on-Site assessment consisted 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 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 road end of Hannah Blvd, 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 west. To the east is the Indian Lakes Estates residential subdivision. South of the site is a large private residential compound, and the Red Cedar River borders the site on the north. Refer to Figure 2: Aerial Imagery Map in Appendix I.





Photo 1. Upland field/planted trees area near center of site.



Photo 2. Floodplain forest at northeast part of site.

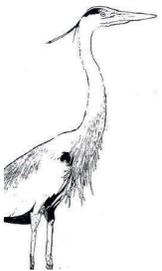




Photo 3. White pines in the planted tree area.



Photo 4. Southern wetland and the adjacent forest on the slope.



4.2 Topography

The lowest elevations on the Site are about 830 feet MSL, found in both the large wetland to the south and the edge of the Red Cedar River to the north. The highest elevation is about 856 found near the center west part of the site. The Site is rolling, with relatively steep slopes dropping down to the river and the wetlands at the north and south ends of the site (refer to Figure 1: Site Location Map in Appendix I).

4.3 Vegetation

A vegetation assessment was conducted during the Site survey. Marx found three distinct community types present on the Site. The north central high part of the Site contains Field/Tree Plantings, which is characterized by herbs, grasses, shrubs, with several stands of planted pine. In its northeast corner is a Floodplain Forest in the floodplain of the Red Cedar River. A similar but brushier floodplain forest lies along the west boundary of the site along the County Drain. The southern third or so of the site is characterized by a large Forested Wetland with an adjacent mature forest on a slope. The number of identifiable species was limited by the winter season, although the lack of deep snow cover allowed identification of numerous species and did not prevent an evaluation of the ecological stage and value of the two areas. The species identified in these three areas during the field investigation are provided in tables (refer to Appendix II).

The Field/Tree Plantings area is dominated by species which are associated with disturbed lands in the Great Lakes region. 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 blackberry (*Rubus alleghaniensis*), Tartarian honeysuckle (*Lonicera tartarica*), tall goldenrod (*Solidago altissima*), black raspberry (*Rubus occidentalis*), wild carrot (*Daucus carota*), switch grass (*Panicum virgatum*), panicked aster (*Aster lanceolatus*), ground ivy (*Glechoma hederacea*), common plantain (*Plantago major*), common buckthorn (*Rhamnus cathartica*), multi-flora rose (*Rosa multiflora*), and common mint (*Mentha arvensis*). The trees in this area include the many planted white pines (*Pinus strobus*), as well as box elder (*Acer negundo*), cottonwood (*Populus deltoides*), and green ash (*Fraxinus pennsylvanica*) which were largely in poor condition due to the emerald ash bore infestation.

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 3: Presettlement Vegetation/MNFI ca. 1800 map in Appendix I). 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 higher elevation part of the Site was cleared many decades ago for this purpose; notice the lighter color indicating open land in the 1970 USGS Topographic map (refer to Figure 1 in Appendix I). 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 pine were planted. The resulting native and non-native plants currently present are adept at this type of recolonization.

The Floodplain Forest areas are dominated by native hardwood forest trees, and relatively weedy shrubs and groundcover plants. This assemblage includes almost exclusively native species, with only the occasional Siberian Elm (*Ulmus pumila*) being the exceptions. Examples of the species present on the Site include red oak (*Quercus rubra*), swamp white oak (*Quercus bicolor*), silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), hackberry (*Celtis occidentalis*), basswood (*Tilia americana*), and black walnut (*Juglans nigra*). Again, the Site was apparently once part of an extensive beech-maple forest that extended many miles southward from the Red Cedar River. Parts of the floodplain areas where the floodplain forests are now may have been cleared for agriculture, but the many large trees indicates that the frequent flooding of these areas made them infeasible for agriculture, and the forests were largely left standing. These areas were likely selectively logged and the wood used for many purposes including building, fencing, and firewood. The changes on this Site over the last two-hundred years have left a significant remnant forest, with many of the maple, walnut, oak, hackberry, sycamore, basswood and hop hornbeam trees in the floodplain forest are probably directly descendent and/or residual from the original floodplain forest in this location.

The Forested Wetland area of the site are dominated by native hardwood forest trees typically found in such forests in southern Michigan. The area is characterized by muck soils and these soils are



saturated to the surface much of the time. The dominant species in this area include silver maple (*A. saccharinum*), red maple (*Acer rubrum*), green ash (*F. pennsylvanica*), cottonwood (*P. deltoides*), American elm (*Ulmus americana*), sycamore (*Platanus occidentalis*), swamp white oak (*Q. bicolor*), and hackberry (*C. occidentalis*). This area has likely been relatively undisturbed for many years due to the high water table and unstable soils that make it unsuitable for agriculture or any type of construction. The relatively small number of large trees in this wetland area is likely due to the unstable soils which provides poor support to larger trees which often blow down in storms. This area will remain undisturbed by the proposed activity on the site. Adjacent to the forested wetland is an area of mature forest on the slope that connects the wetland with the Field/Tree Planting area in the middle of the site. This forested area contains many large trees of several species, including sugar maple (*A. saccharum*), red oak (*Quercus rubra*), black cherry (*Prunus serotina*), white oak (*Quercus alba*), hackberry (*Celtis occidentalis*), and American beech (*Fagus grandifolia*). This sloped area will not likely be disturbed by the proposed development.

There are two small wetland areas the center of the site that lie in low areas extending south and west from the Red Cedar floodplain, and another small wetland in the southwest corner of the site. These areas are more disturbed than the southern wetland area, and are dominated by a less diverse assemblage of trees which are considerably smaller than the trees dominating the large wetland. These areas are dominated by cottonwood (*P. deltoides*), green ash (*F. pennsylvanica*) and silver maple (*A. saccharinum*), and have sandbar and pussy willow (*Salix exigua and discolor*), and silky and gray dogwood (*Cornus amomum and foemina*) shrubs around the margins. These areas have standing water in the middle of the depressions in the spring and after large precipitation events, and dry out in the late summer and fall. These areas will be likely be removed by the proposed development which will require a wetland permit from the Township.





Photo 5. Southern forested wetland viewing south.





Photo 6. Small forested wetland in southwest corner of site.





Photo 7. Area of mixed vegetation in Field/Planted Tree portion of site.



Development of the Site will require clearing most vegetation that is present in the Field/Tree Planting area and in the two small central wetlands. While no formal mitigation for vegetation removal has been planned, traditional landscape grass, shrub, and tree plantings are expected. The existing vegetation in the Floodplain Forest and in the Forested Wetland will remain intact. 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 (Appendix III). Results of the inventory identified 648 significant trees of 22 different species on the parcel. Of the 648 trees, 17 were larger than 30 inches in diameter, the largest being a cottonwood with a diameter of 55 inches, and second a red oak (*Quercus rubra*) with a diameter of 47 inches. Thirty six of the trees had multiple trunks of varying sizes. One hundred seven of the trees were between 20 and 30 inches and 428 were between 12 and 20 inches DBH.





Photo 8. Forested area near southern forested wetland.



Photo 8. Forested area near southern forested wetland.

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 dry late fall conditions. These conditions resulted in relatively dry conditions in the small central wetlands, in the forested floodplain wetland at the north end of the site, and the forested wetland along the drain on the west boundary of the site. The large forested wetland at the south end of the site exhibited saturated soils throughout most of its area.

Marx's inspection of these wetland areas found a predominance of hydrophytic vegetation in all of the areas. Delineations are not typically conducted in late fall due to the onset plant dormancy in the herbaceous vegetation, making many species difficult to identify, while some senesce and are no longer visible. Some remain identifiable in dormant form. Based upon this inspection, Marx believes the Site contains six areas of wetland, as indicated above. This finding is supported by the National Wetland Inventory Map, which show the large wetland areas at the north and south ends of the site, but not the small wetlands near the center or the narrow strip of wetland along the site's west boundary and by the Township's Wetland Inventory Map which shows all six areas. These include the floodplain forest wetland in the northeast corner of the site, the forested wetland that makes up approximately the southern third of the site, the linear wetland along the drain on the site's west boundary, and the two small isolated wetlands near the the center of the site, and the forested depression near the site's southwest corner (refer to Figure 4: Township Wetland Map and Figure 5: National Wetland Inventory Map in Appendix I).

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 a significant portion of the Site is included within the 100-year floodplain, which means that it is regulated pursuant to the floodplain regulatory statutes (refer to Figure 6: Flood Insurance Rate Map in Appendix I). Portions of the floodplains of the Red Cedar River and Herron Creek occur on the site. The Floodplain Forest at the north end of the site is within the Red Cedar floodplain, and the Forested Wetland in the south part of the site is within the Herron Creek floodplain. The FIRM shows the floodplain elevation in the north part of the site to be 842 feet above sea level, which the elevation associated with Herron Creek on the south part of the property is 843. There is also a narrow corridor of floodplain along the drain that runs along the site's west boundary. When an area is within the floodplain, a permit must be obtained to allow construction within the floodplain, and the project designed to the flood proofing standards that would minimize the risk of flood damage.

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 two floodway areas on the subject property, one along the Red Cedar River and the other along Herron Creek. Both occupy much of the wetland area adjacent to these watercourses. No



activities at the Site will have any impact upon these floodway areas, nor will these floodway areas have any impact on development at the Site.

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 on or directly adjacent to the Site. These include the Herron Creek, the Red Cedar River, and the drain along the site's west boundary that functions as a stream. Activities on the Site are not expected to directly 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 six soil types: Houghton muck, 0 to 1 percent slopes (11.7% of the site), Oshtemo-Spinks loamy sands, 0 to 6 percent slopes (34% of the site), Oshtemo-Spinks loamy sands 6 to 12 % slopes 43.3% of the site, Sebewa loam, 0 to 2 percent slopes (3.4 % of the site), Urban land-Boyer-Spinks complex, 0 to 10 % slopes (1% of the site) and Urban land-Fluvaquents complex (6.4% of the site).

(refer to Figure 8: County Soils Survey Map in Appendix I).

The Oshtemo Spinks loamy sands found in the higher upland parts of the site, consist of well drained, moderately rapidly permeable soils on outwash plains, and are formed in moderately coarse and coarse textured deposits. Houghton muck, which is found in the large southern wetland on the site, form in deep organic deposits formed in stable wetland areas, and have organic material greater than 51 inches deep. They are very poorly drained soils as are typically found in these wetlands. Sebewa loam, also found in the southern wetland and in the small wetland in the southwest corner of the site, is also a poorly drained soil found in outwash plains. It is a hydric soil, as is the Houghton muck, and is typically found in wetland areas. Urban land-Fluvaquents complex soils are found in urban area floodplains, and typically include 55 percent urban land.

Site balancing, filling, and subsurface excavation activities will take place within the limits of disturbance which are contained within the



areas of the well drained soil types. The wetland and floodplain areas will remain undisturbed by the project. The most suitable soils will be utilized on the Site during parking lot, driveway, and building construction. Unsuitable and excess soil 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 7: Identified Areas of Groundwater Vulnerability in Appendix I). This map is based upon the aggregation of four different vulnerability assessments or estimates. A small part of the subject Site falls within one of the designated areas. This area is located in the southeast corner of the site, within the large forested wetland that makes up the southern third of the site. This area will not be disturbed in any way by the proposed project. Therefore all construction activity on the Site will be 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 adjacent to the southern Forested Wetland and the northern Floodplain Forest, 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 spoils 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.

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 areas as this is a large undeveloped area with forest, field, and swamp areas surrounded by urbanized development. Evidence of white tailed deer (*Odocoileus virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), gray squirrels (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), and paper wasps (species undetermined) were observed. Squirrel evidence was mainly in the forested areas. Deer usage seemed to be throughout the site. One freshly dug animal den which was found may be used by raccoon or 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 (*Zenaidura macroura*), and black capped chickadees (*Poecile atricapillus*).

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 generalists 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.

Photograph 11. Animal usage of Site. Here a possible raccoon den in the east Tree Line. Photograph 12. Animal usage of Site. Here is an old paper wasp nest on a fallen branch.

5.0 CONCLUSIONS AND RECOMMENDATIONS



The proposed Site was reviewed for remnant and existing natural resources and features. The Site contains three major habitats and 4 small wetland areas. The Field/Tree Plantings habitat occupies most of the high upland area in the middle of the site, the Floodplain Forest occupies the northeast corner of the site adjacent to the Red Cedar River, and the Forested Wetland habitat is in the southern third of the site. The Site is vacant, but contains the road end of Hannah Boulevard. The Site apparently contains six wetland areas, two water bodies, and contains areas of floodplain and floodway. The Site is rolling, a result of its glacial moraine past and location adjacent to the Red Cedar River. The soils are likely original to the Site, and are upland loamy sands and muck soils that formed under what was once a beech maple forest, and under the large wetland area. The upland portion of the Site was once a small portion of that upland forest which covered thousands of acres, but was cut down to make way for agriculture. 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 remaining natural heritage on this Site appears to be the original topography, soils, and the relatively undisturbed areas of the floodplain forest and the southern forested wetland. 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 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 larger wetlands on the site, nor will it encroach into the floodway of the adjacent waterways.



Eyde Company
Hannah Farms East

January 25, 2016

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.



APPENDIX I

Figure 1: Site Location Map

Figure 2: Aerial Imagery Map

Figure 3: Presettlement Vegetation/MNFI ca. 1800 map

Figure 4: Township Wetland Map

Figure 5: National Wetland Inventory Map

Figure 6: Flood Insurance Rate Map

Figure 7: Identified Areas of Groundwater Vulnerability

Figure 8: County Soils Survey Map

APPENDIX II

Vegetation Lists and FQA

APPENDIX III

Tree Survey Results



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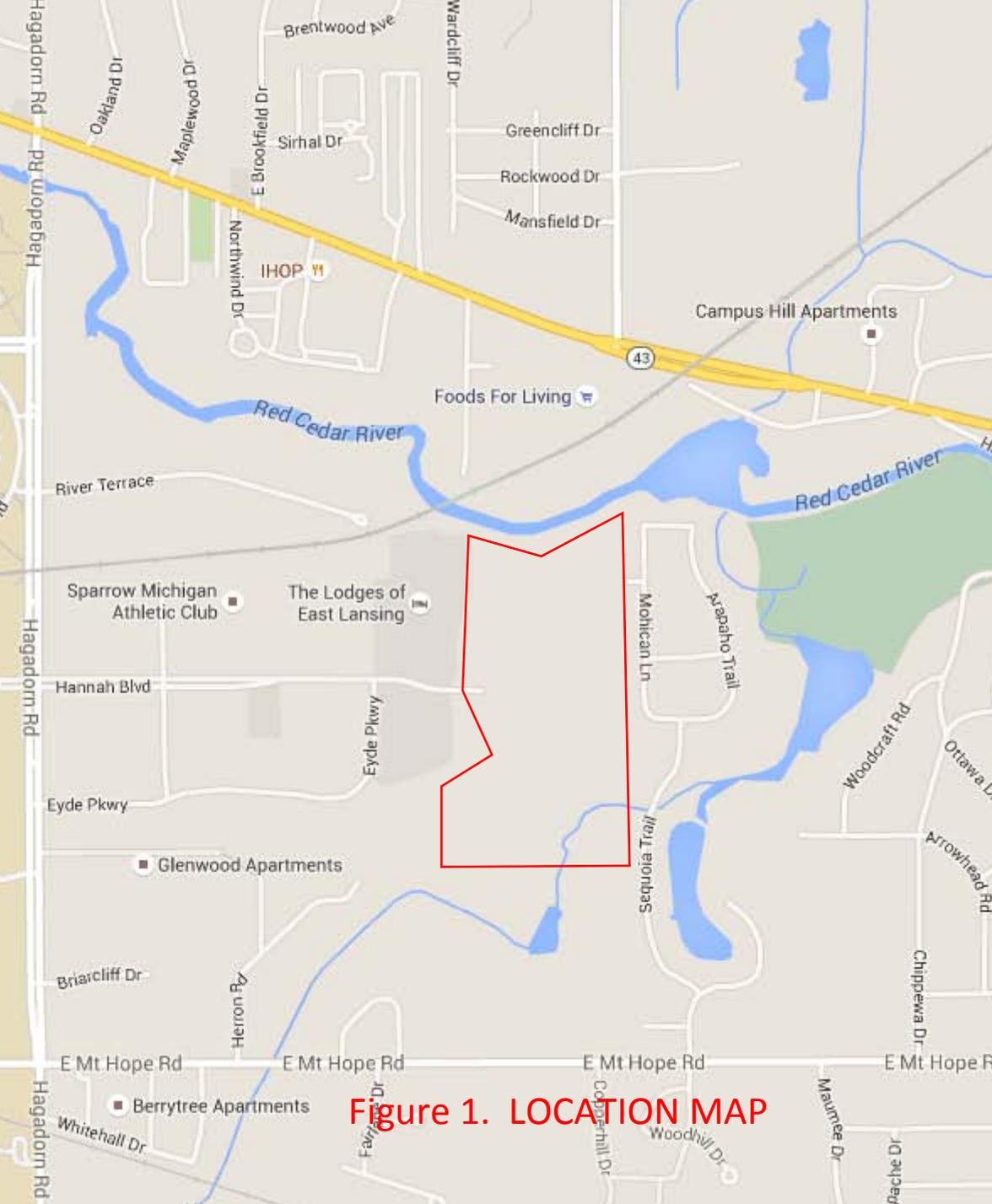


Figure 1. LOCATION MAP



Red Cedar River

33-02-02-20-401-005
EYDE CONSTRUCTION CO
0 HANNAH EAST LANSING 48823

Hannah Blvd

Sequoia Trail

Sequoia Trail

Hawthorne Ln

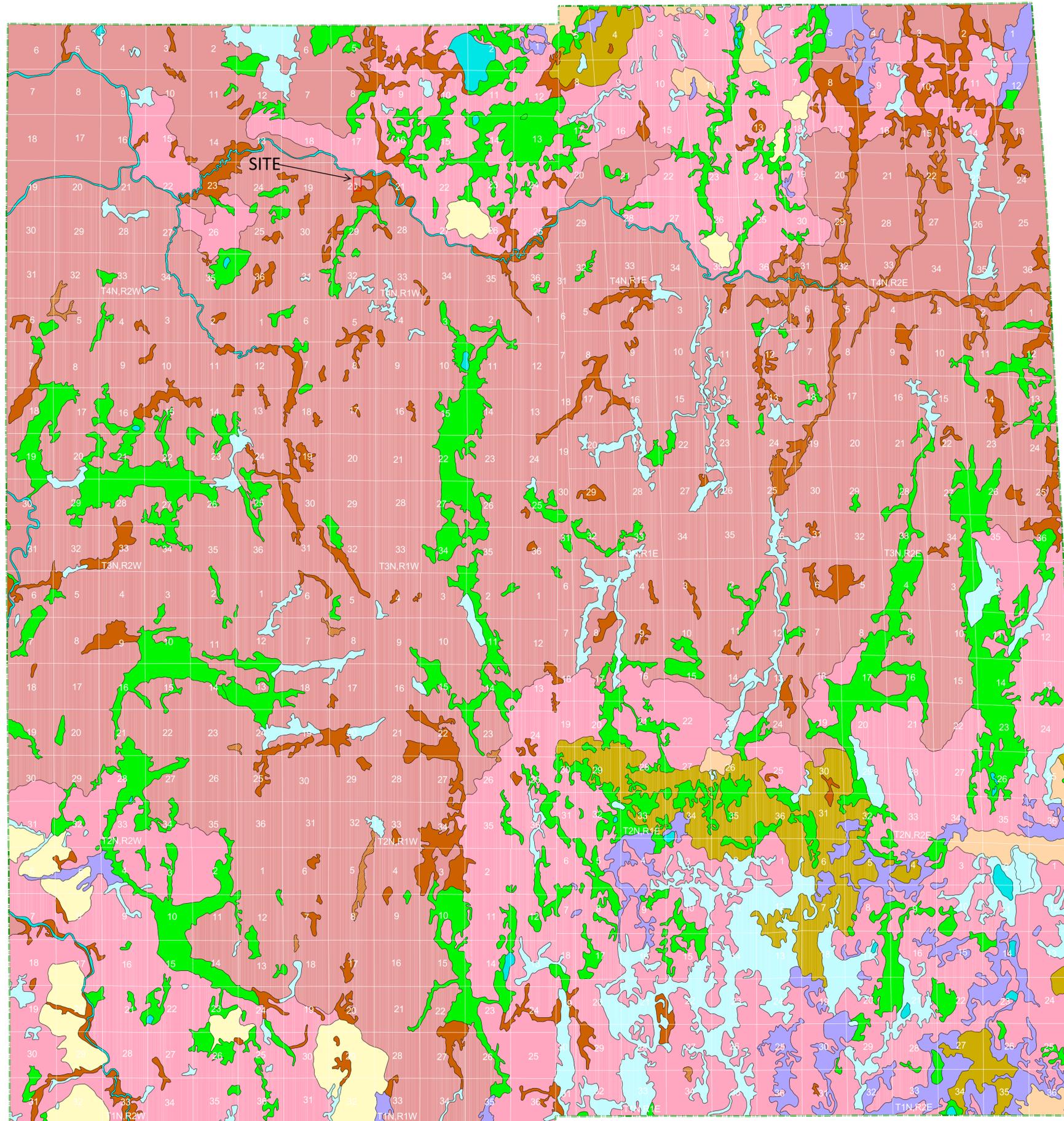
Mt Hope Rd

Figure 2. Aerial Imagery Map

Vegetation circa 1800 of Ingham County, Michigan

An Interpretation of the General Land Office Surveys

By P. J. Comer and D. A. Albert
Michigan Natural Features Inventory
1997



- Legend**
- ASPEN-BIRCH FOREST
 - BEECH-SUGAR MAPLE FOREST
 - BEECH-SUGAR MAPLE-HEMLOCK FOREST
 - BLACK ASH SWAMP
 - BLACK OAK BARREN
 - CEDAR SWAMP
 - GRASSLAND
 - HEMLOCK-WHITE PINE FOREST
 - HEMLOCK-YELLOW BIRCH FOREST
 - JACK PINE-RED PINE FOREST
 - LAKE/RIVER
 - MIXED CONIFER SWAMP
 - MIXED HARDWOOD SWAMP
 - MIXED OAK FOREST
 - MIXED OAK SAVANNA
 - MIXED PINE-OAK FOREST
 - MUSKEG/BOG
 - OAK-HICKORY FOREST
 - OAK-PINE BARREN
 - PINE BARREN
 - SAND DUNE
 - SHRUB SWAMP/EMERGENT MARSH
 - SPRUCE-FIR-CEDAR FOREST
 - WET PRAIRIE
 - WHITE PINE-MIXED HARDWOOD FOREST
 - WHITE PINE-RED PINE FOREST
 - WHITE PINE-WHITE OAK FOREST
- = LAND COVER TYPE PRESENT ON THIS MAP



Scale 1:80,000



Map Projection: Lambert Conformal Conic

SOURCE: Comer, P.J., D.A. Albert, H.A. Wells, B.L. Hart, J.B. Raab, D.L. Price, D.M. Kashian, R.A. Comer, D.W. Schuen (Map Interpretation), M.B. Austin, T.R. Leibfried, K.M. Koroch, L. Prange-Gregory, J.G. Spitzley, C.J. DeLain, L.J. Scribner, (Digital Map Production). 1995. Michigan's Presettlement Vegetation, as Interpreted from the General Land Office Surveys 1816-1856. Michigan Natural Features Inventory, Lansing, MI. Digital Map.



Figure 3. Presettlement Vegetation/MNFI cs. 1800 Map

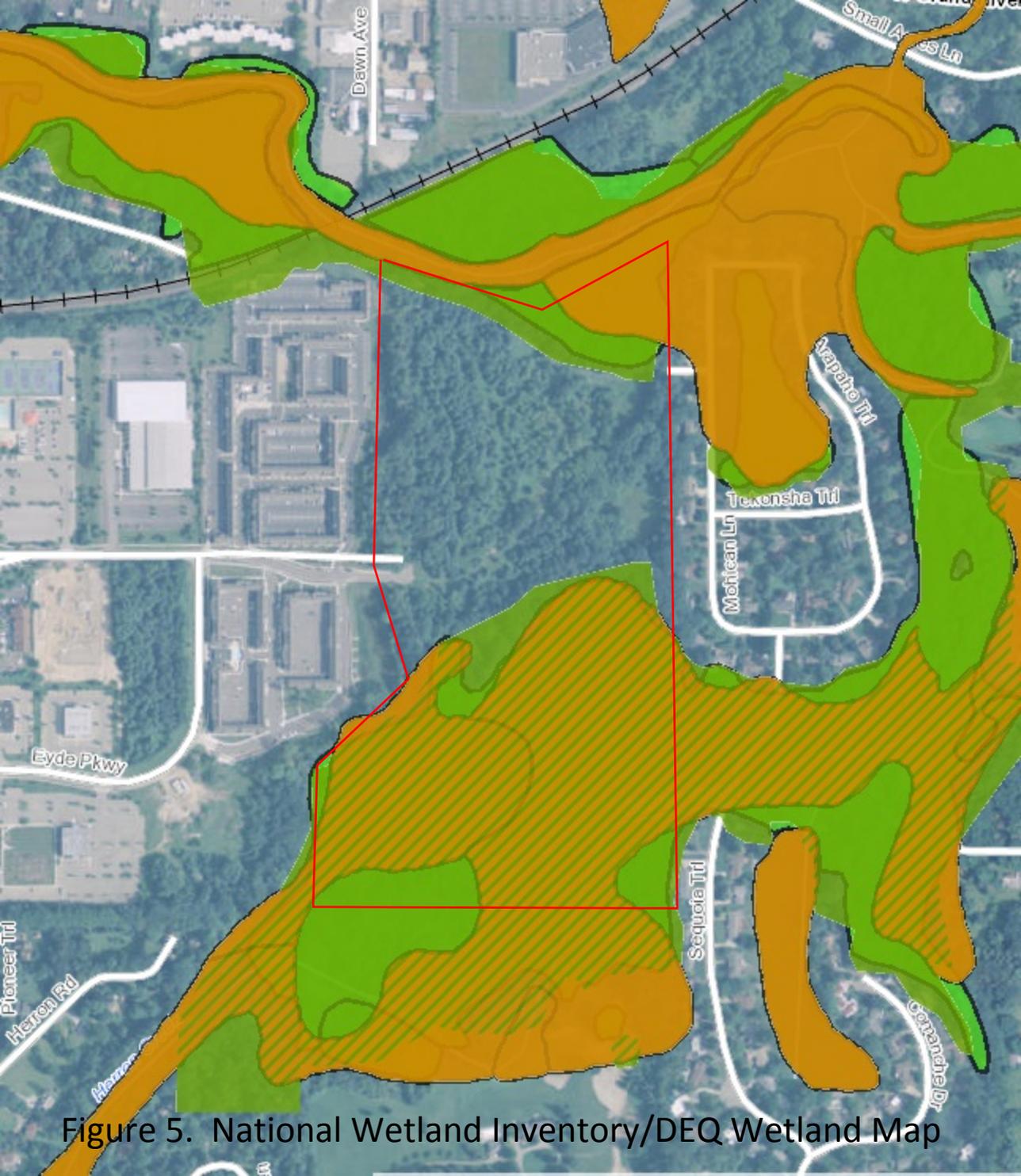


Figure 5. National Wetland Inventory/DEQ Wetland Map

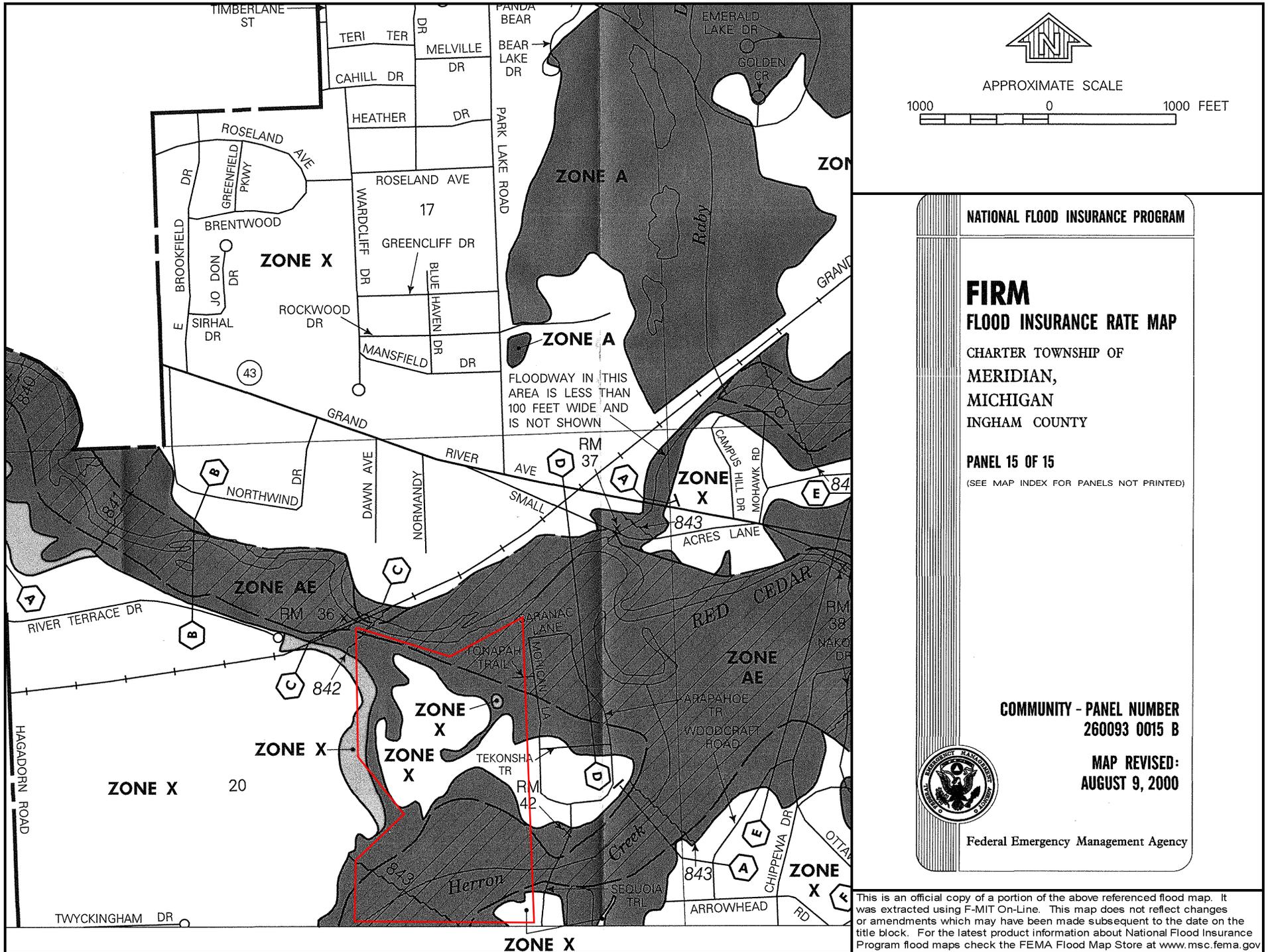


Figure 6. Flood Insurance Rate Map (FIRM)

Map 7-3
GROUNDWATER VULNERABILITY

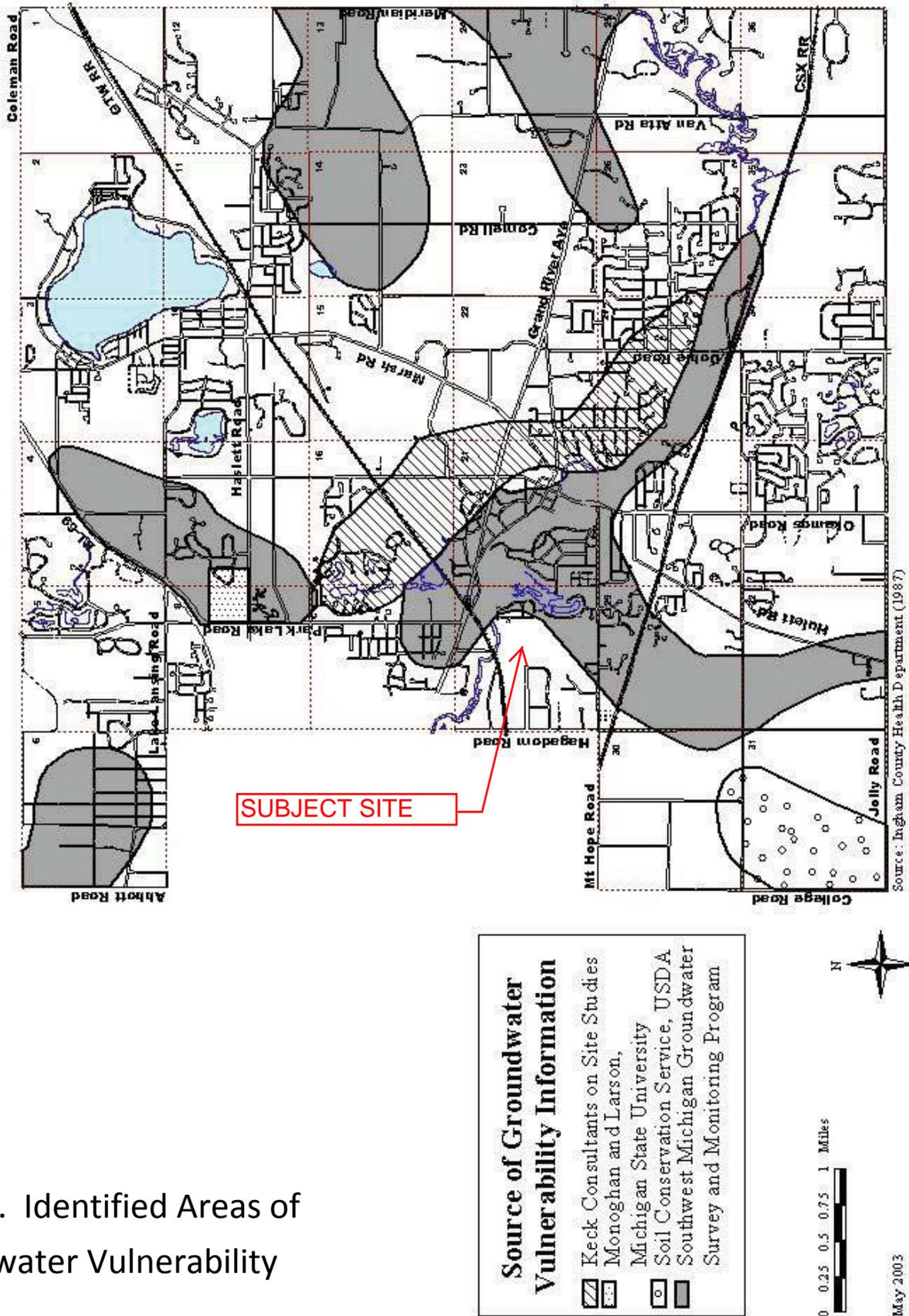
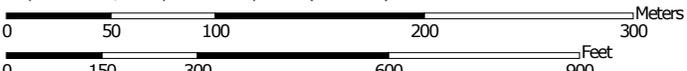


Figure 7. Identified Areas of Groundwater Vulnerability

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



Map Scale: 1:3,600 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



Figure 8. County
Soil Survey Map



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

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

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.

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	10.5	22.7%
OtB	Oshtemo-Spinks loamy sands, 0 to 6 percent slopes	12.4	26.6%
OtC	Oshtemo-Spinks loamy sands, 6 to 12 percent slopes	15.7	33.9%
Sb	Sebewa loam, 0 to 2 percent slopes	5.9	12.7%
UeB	Urban land-Boyer-Spinks complex, 0 to 10 percent slopes	0.4	0.9%
Uu	Urban land-Fluvaquents complex	1.5	3.2%
Totals for Area of Interest		46.4	100.0%

Tree Survey Data - Hannah Farms East Site

Tag #	Scientific Name	Common Name	DBH	Condition	Multiple	TOTALS		
						Scientific Name	Common Name	Count
1	<i>Juglans nigra</i>	Black Walnut	16	G				
2	<i>Juglans nigra</i>	Black Walnut	21	G		1	<i>Acer negundo</i>	Box Elder
3	<i>Juglans nigra</i>	Black Walnut	16.5	G		2	<i>Acer rubrum</i>	Red Maple
4	<i>Tilia americana</i>	Basswood	14	G		3	<i>Acer saccharinum</i>	Silver Maple
5	<i>Prunus serotina</i>	Black Cherry	14,14,14	G	M	4	<i>Acer saccharum</i>	Sugar Maple
6	<i>Tilia americana</i>	Basswood	18,13.5,13	G	M	5	<i>Celtis occidentalis</i>	Hackberry
7	<i>Tilia americana</i>	Basswood	17	F		6	<i>Fagus grandifolia</i>	American Beech
8	<i>Tilia americana</i>	Basswood	13,15,15	G	M	7	<i>Fraxinus pennsylvanica</i>	Green Ash
9	<i>Tilia americana</i>	Basswood	12.5	F		8	<i>Juglans nigra</i>	Black Walnut
10	<i>Tilia americana</i>	Basswood	16	G		9	<i>Ostrya virginiana</i>	Ironwood
11	<i>Tilia americana</i>	Basswood	17,13,12	G	M	10	<i>Pinus strobus</i>	White Pine
12	<i>Tilia americana</i>	Basswood	20,18	G	M	11	<i>Pinus sylvestris</i>	Scotch Pine
13	<i>Tilia americana</i>	Basswood	17.5	G		12	<i>Platanus occidentalis</i>	Sycamore
14	<i>Prunus serotina</i>	Black Cherry	12,14.5	G	M	13	<i>Populus deltoides</i>	Cottonwood
15	<i>Tilia americana</i>	Basswood	16.5	G		14	<i>Populus tremuloides</i>	Quaking Aspen
16	<i>Tilia americana</i>	Basswood	13,12	G	M	15	<i>Prunus serotina</i>	Black Cherry
17	<i>Prunus serotina</i>	Black Cherry	12	F		16	<i>Quercus alba</i>	White Oak
18	<i>Tilia americana</i>	Basswood	12,18,18,12	G	M	17	<i>Quercus macrocarpa</i>	Bur Oak
19	<i>Prunus serotina</i>	Black Cherry	15.5,15.5	G	M	18	<i>Quercus bicolor</i>	Swamp White Oak
20	<i>Tilia americana</i>	Basswood	13,22,22,12,21,20	G	M	19	<i>Quercus rubra</i>	Red Oak
21	<i>Juglans nigra</i>	Black Walnut	20.5	G		20	<i>Tilia americana</i>	Basswood
22	<i>Juglans nigra</i>	Black Walnut	22	G		21	<i>Ulmus americana</i>	American Elm
23	<i>Acer saccharum</i>	Sugar Maple	13.5	G		22	<i>Ulmus pumila</i>	Siberian Elm
24	<i>Prunus serotina</i>	Black Cherry	14	G				
25	<i>Quercus alba</i>	White Oak	20	G				
26	<i>Quercus rubra</i>	Red Oak	21.5	G				
27	<i>Quercus macrocarpa</i>	Bur Oak	22	G		1	<i>Populus deltoides</i>	Cottonwood
28	<i>Quercus rubra</i>	Red Oak	14	G		2	<i>Quercus rubra</i>	Red Oak
29	<i>Acer saccharum</i>	Sugar Maple	15.5	G		3	<i>Populus deltoides</i>	Cottonwood
30	<i>Quercus rubra</i>	Red Oak	23.5	G		4	<i>Quercus rubra</i>	Red Oak
31	<i>Prunus serotina</i>	Black Cherry	15,16	G	M	5	<i>Acer saccharinum</i>	Silver Maple
32	<i>Quercus rubra</i>	Red Oak	20,16.5	G	M	6	<i>Acer saccharum</i>	Sugar Maple
33	<i>Tilia americana</i>	Basswood	14.5	F		7	<i>Quercus rubra</i>	Red Oak
34	<i>Acer saccharinum</i>	Silver Maple	42	G		8	<i>Quercus rubra</i>	Red Oak
35	<i>Populus deltoides</i>	Cottonwood	15	G		9	<i>Fraxinus pennsylvanica</i>	Green Ash
36	<i>Populus deltoides</i>	Cottonwood	14	G		10	<i>Populus deltoides</i>	Cottonwood
37	<i>Populus deltoides</i>	Cottonwood	14.5	G		11	<i>Populus deltoides</i>	Cottonwood
38	<i>Populus deltoides</i>	Cottonwood	17.5	G		12	<i>Quercus rubra</i>	Red Oak
39	<i>Populus deltoides</i>	Cottonwood	12	F		13	<i>Quercus rubra</i>	Red Oak
40	<i>Populus deltoides</i>	Cottonwood	14	G		14	<i>Prunus serotina</i>	Black Cherry
41	<i>Populus deltoides</i>	Cottonwood	13	G		15	<i>Populus deltoides</i>	Cottonwood
42	<i>Populus deltoides</i>	Cottonwood	18	G		16	<i>Prunus serotina</i>	Black Cherry
43	<i>Ulmus pumila</i>	Siberian Elm	20.5	F		17	<i>Prunus serotina</i>	Black Cherry
44	<i>Populus deltoides</i>	Cottonwood	12	G				
45	<i>Populus deltoides</i>	Cottonwood	19	G				
46	<i>Populus deltoides</i>	Cottonwood	12	G				
47	<i>Acer saccharum</i>	Sugar Maple	22	G				
48	<i>Acer saccharum</i>	Sugar Maple	16	G				
49	<i>Acer saccharum</i>	Sugar Maple	25.5	G				
50	<i>Acer saccharum</i>	Sugar Maple	15.5	G				
51	<i>Acer saccharum</i>	Sugar Maple	17.5	G				
52	<i>Acer saccharum</i>	Sugar Maple	21	G				
53	<i>Acer saccharum</i>	Sugar Maple	25	G				
54	<i>Acer saccharum</i>	Sugar Maple	19.5	G				
55	<i>Acer saccharum</i>	Sugar Maple	18	G				
56	<i>Acer saccharinum</i>	Silver Maple	20.5	G				
57	<i>Acer saccharinum</i>	Silver Maple	27	G				
58	<i>Acer saccharinum</i>	Silver Maple	29	G				
59	<i>Acer saccharinum</i>	Silver Maple	22	G				
60	<i>Fraxinus pennsylvanica</i>	Green Ash	20	P				
61	<i>Acer saccharum</i>	Sugar Maple	16.5	G				
62	<i>Acer saccharum</i>	Sugar Maple	28	G				
63	<i>Acer saccharum</i>	Sugar Maple	14.5	G				
64	<i>Acer saccharum</i>	Sugar Maple	18	G				
65	<i>Acer saccharum</i>	Sugar Maple	22.5	G				
66	<i>Acer saccharum</i>	Sugar Maple	20.5	F				
67	<i>Acer saccharum</i>	Sugar Maple	19	G				
68	<i>Acer saccharum</i>	Sugar Maple	18	G				
69	<i>Acer saccharum</i>	Sugar Maple	13.5	G				
70	<i>Prunus serotina</i>	Black Cherry	13.5	F				
71	<i>Acer saccharum</i>	Sugar Maple	16	G				
72	<i>Acer saccharum</i>	Sugar Maple	24	G				
73	<i>Quercus rubra</i>	Red Oak	26	G				
74	<i>Acer saccharum</i>	Sugar Maple	16	G				
75	<i>Prunus serotina</i>	Black Cherry	12.5	F				
76	<i>Acer saccharum</i>	Sugar Maple	13	G				
77	<i>Quercus rubra</i>	Red Oak	26	G				
78	<i>Quercus rubra</i>	Red Oak	14	G				
79	<i>Prunus serotina</i>	Black Cherry	14	G				
80	<i>Prunus serotina</i>	Black Cherry	14	G				
81	<i>Prunus serotina</i>	Black Cherry	13.5	G				
82	<i>Quercus rubra</i>	Red Oak	18	G				
83	<i>Prunus serotina</i>	Black Cherry	15.5	G				
84	<i>Quercus rubra</i>	Red Oak	14	G				
85	<i>Quercus rubra</i>	Red Oak	13	G				
86	<i>Acer saccharum</i>	Sugar Maple	26	G				
87	<i>Acer saccharum</i>	Sugar Maple	16	G				
88	<i>Acer saccharum</i>	Sugar Maple	20,16,20	G	M			
89	<i>Prunus serotina</i>	Black Cherry	18	G				
90	<i>Prunus serotina</i>	Black Cherry	16	G				
91	<i>Quercus rubra</i>	Red Oak	25	G				
92	<i>Quercus rubra</i>	Red Oak	15	G				
93	<i>Acer saccharum</i>	Sugar Maple	12.5	G				
94	<i>Quercus rubra</i>	Red Oak	15.5	G				
95	<i>Quercus rubra</i>	Red Oak	16	G				
96	<i>Quercus rubra</i>	Red Oak	19	G				
97	<i>Quercus rubra</i>	Red Oak	16.5	G				
98	<i>Prunus serotina</i>	Black Cherry	30.5	G				
99	<i>Tilia americana</i>	Basswood	18	G				
100	<i>Prunus serotina</i>	Black Cherry	30	G				
102	<i>Tilia americana</i>	Basswood	13	G				
103	<i>Tilia americana</i>	Basswood	16.5	G				
104	<i>Tilia americana</i>	Basswood	20	G				
105	<i>Acer saccharum</i>	Sugar Maple	12	G				
106	<i>Prunus serotina</i>	Black Cherry	19	G				
107	<i>Acer saccharum</i>	Sugar Maple	15	P				
108	<i>Juglans nigra</i>	Black Walnut	15.5,16.5	G	M			
109	<i>Prunus serotina</i>	Black Cherry	12.5	F				

LARGEST TREES		
Scientific Name	Common Name	Count
<i>Populus deltoides</i>	Cottonwood	55
<i>Quercus rubra</i>	Red Oak	47
<i>Populus deltoides</i>	Cottonwood	46
<i>Quercus rubra</i>	Red Oak	44
<i>Acer saccharinum</i>	Silver Maple	42
<i>Acer saccharum</i>	Sugar Maple	38
<i>Quercus rubra</i>	Red Oak	36
<i>Quercus rubra</i>	Red Oak	35
<i>Fraxinus pennsylvanica</i>	Green Ash	34
<i>Populus deltoides</i>	Cottonwood	34
<i>Populus deltoides</i>	Cottonwood	32.5
<i>Quercus rubra</i>	Red Oak	31.5
<i>Quercus rubra</i>	Red Oak	31.5
<i>Prunus serotina</i>	Black Cherry	31
<i>Populus deltoides</i>	Cottonwood	31
<i>Prunus serotina</i>	Black Cherry	30.5
<i>Prunus serotina</i>	Black Cherry	30

MULTIPLES		
Multiples	Count	
Total Multiple Stems	36	
Total Stems 12" dbh or Greater	95	
	648	

110	<i>Acer saccharinum</i>	Silver Maple	18,15	G	M
111	<i>Quercus rubra</i>	Red Oak	17	G	
112	<i>Acer negundo</i>	Box Elder	15.5	F	
113	<i>Acer saccharum</i>	Sugar Maple	12	G	
114	<i>Juglans nigra</i>	Black Walnut	13	P	
115	<i>Acer saccharum</i>	Sugar Maple	12	F	
116	<i>Quercus rubra</i>	Red Oak	18	G	
117	<i>Quercus rubra</i>	Red Oak	20	G	
118	<i>Quercus alba</i>	White Oak	16	G	
119	<i>Acer saccharinum</i>	Silver Maple	22.5	G	
120	<i>Celtis occidentalis</i>	Hackberry	13	G	
121	<i>Prunus serotina</i>	Black Cherry	12.5	G	
122	<i>Prunus serotina</i>	Black Cherry	18	G	
123	<i>Acer saccharum</i>	Sugar Maple	19	G	
124	<i>Quercus rubra</i>	Red Oak	18	G	
125	<i>Quercus rubra</i>	Red Oak	16	G	
126	<i>Quercus rubra</i>	Red Oak	20	G	
127	<i>Quercus rubra</i>	Red Oak	20	G	
128	<i>Prunus serotina</i>	Black Cherry	16	G	
129	<i>Quercus rubra</i>	Red Oak	13	G	
130	<i>Prunus serotina</i>	Black Cherry	16	G	
131	<i>Prunus serotina</i>	Black Cherry	20.5	G	
132	<i>Quercus rubra</i>	Red Oak	20	G	
133	<i>Tilia americana</i>	Basswood	17	G	
134	<i>Tilia americana</i>	Basswood	17	G	
135	<i>Quercus rubra</i>	Red Oak	21	G	
136	<i>Fagus grandifolia</i>	American Beech	13.5	G	
137	<i>Tilia americana</i>	Basswood	14.5	G	
138	<i>Prunus serotina</i>	Black Cherry	16	G	
139	<i>Quercus rubra</i>	Red Oak	23	G	
140	<i>Prunus serotina</i>	Black Cherry	14	G	
141	<i>Ulmus americana</i>	American Elm	13.5	F	
142	<i>Acer saccharum</i>	Sugar Maple	14	G	
143	<i>Acer saccharum</i>	Sugar Maple	13	G	
144	<i>Quercus rubra</i>	Red Oak	19	G	
145	<i>Quercus rubra</i>	Red Oak	22	G	
146	<i>Quercus rubra</i>	Red Oak	19	G	
147	<i>Quercus rubra</i>	Red Oak	13.5	G	
148	<i>Quercus rubra</i>	Red Oak	15	G	
149	<i>Fraxinus pennsylvanica</i>	Green Ash	13.5	P	
150	<i>Prunus serotina</i>	Black Cherry	22	G	
151	<i>Ulmus americana</i>	American Elm	22	G	
152	<i>Prunus serotina</i>	Black Cherry	20	G	
153	<i>Prunus serotina</i>	Black Cherry	16	G	
154	<i>Acer saccharinum</i>	Silver Maple	12.5	G	
155	<i>Acer saccharinum</i>	Silver Maple	17.5	G	
156	<i>Acer saccharum</i>	Sugar Maple	21	G	
157	<i>Prunus serotina</i>	Black Cherry	16	G	
158	<i>Prunus serotina</i>	Black Cherry	31	G	
159	<i>Acer saccharum</i>	Sugar Maple	14.5	G	
160	<i>Acer saccharum</i>	Sugar Maple	15	G	
161	<i>Prunus serotina</i>	Black Cherry	14.5	G	
162	<i>Prunus serotina</i>	Black Cherry	15	G	
163	<i>Prunus serotina</i>	Black Cherry	18	G	
164	<i>Fraxinus pennsylvanica</i>	Green Ash	17	P	
165	<i>Tilia americana</i>	Basswood	18.5	G	
166	<i>Quercus rubra</i>	Red Oak	22	G	
167	<i>Quercus alba</i>	White Oak	22.5	G	
168	<i>Acer saccharum</i>	Sugar Maple	17.5	G	
169	<i>Prunus serotina</i>	Black Cherry	21.5	G	
170	<i>Acer negundo</i>	Box Elder	16	F	
171	<i>Acer negundo</i>	Box Elder	15	G	
172	<i>Prunus serotina</i>	Black Cherry	15	G	
173	<i>Tilia americana</i>	Basswood	13	G	
174	<i>Prunus serotina</i>	Black Cherry	14	G	
175	<i>Ostrya virginiana</i>	Ironwood	12	G	
176	<i>Acer saccharum</i>	Sugar Maple	13	G	
177	<i>Quercus rubra</i>	Red Oak	44	G	
178	<i>Tilia americana</i>	Basswood	14	G	
179	<i>Acer saccharum</i>	Sugar Maple	17	F	
180	<i>Prunus serotina</i>	Black Cherry	26	G	
181	<i>Prunus serotina</i>	Black Cherry	14	F	
182	<i>Prunus serotina</i>	Black Cherry	15	G	
183	<i>Prunus serotina</i>	Black Cherry	27	G	
184	<i>Prunus serotina</i>	Black Cherry	16	G	
185	<i>Prunus serotina</i>	Black Cherry	13	G	
186	<i>Prunus serotina</i>	Black Cherry	20	G	
187	<i>Prunus serotina</i>	Black Cherry	14.5	G	
188	<i>Prunus serotina</i>	Black Cherry	12	G	
189	<i>Tilia americana</i>	Basswood	16	G	
190	<i>Tilia americana</i>	Basswood	13	F	
191	<i>Tilia americana</i>	Basswood	16.5	G	
192	<i>Fraxinus pennsylvanica</i>	Green Ash	34	P	
193	<i>Tilia americana</i>	Basswood	13	G	
194	<i>Prunus serotina</i>	Black Cherry	20	G	
195	<i>Prunus serotina</i>	Black Cherry	14	G	
196	<i>Quercus rubra</i>	Red Oak	19	G	
197	<i>Quercus rubra</i>	Red Oak	12	G	
198	<i>Prunus serotina</i>	Black Cherry	20	G	
199	<i>Prunus serotina</i>	Black Cherry	20	G	
200	<i>Quercus rubra</i>	Red Oak	25	G	
201	<i>Quercus rubra</i>	Red Oak	19	G	
202	<i>Prunus serotina</i>	Black Cherry	27.5	G	
203	<i>Tilia americana</i>	Basswood	14	G	
204	<i>Fraxinus pennsylvanica</i>	Green Ash	17.5	P	
205	<i>Prunus serotina</i>	Black Cherry	16	G	
206	<i>Prunus serotina</i>	Black Cherry	16	G	
207	<i>Quercus rubra</i>	Red Oak	36	F	
208	<i>Quercus rubra</i>	Red Oak	21	G	
209	<i>Quercus rubra</i>	Red Oak	14	G	
210	<i>Quercus rubra</i>	Red Oak	16	G	
211	<i>Quercus rubra</i>	Red Oak	25	G	
212	<i>Quercus rubra</i>	Red Oak	22	G	
213	<i>Quercus rubra</i>	Red Oak	21	F	
214	<i>Quercus rubra</i>	Red Oak	26	G	
215	<i>Prunus serotina</i>	Black Cherry	20	G	
216	<i>Prunus serotina</i>	Black Cherry	16	F	
217	<i>Quercus rubra</i>	Red Oak	12.5	G	
218	<i>Quercus rubra</i>	Red Oak	13.5	G	
219	<i>Quercus rubra</i>	Red Oak	13.5	G	
220	<i>Quercus rubra</i>	Red Oak	16	G	

221	<i>Quercus rubra</i>	Red Oak	16.5	G	
222	<i>Quercus rubra</i>	Red Oak	13	G	
223	<i>Prunus serotina</i>	Black Cherry	19	G	
224	<i>Acer saccharinum</i>	Silver Maple	12	G	
225	<i>Acer saccharinum</i>	Silver Maple	17	G	
226	<i>Quercus rubra</i>	Red Oak	14	G	
227	<i>Quercus rubra</i>	Red Oak	15	G	
228	<i>Quercus rubra</i>	Red Oak	18	G	
229	<i>Quercus rubra</i>	Red Oak	17	G	
230	<i>Acer negundo</i>	Box Elder	12	G	
231	<i>Acer negundo</i>	Box Elder	12	G	
232	<i>Acer negundo</i>	Box Elder	13	G	
233	<i>Prunus serotina</i>	Black Cherry	18	G	
234	<i>Acer negundo</i>	Box Elder	14.5	G	
235	<i>Prunus serotina</i>	Black Cherry	12	G	
236	<i>Prunus serotina</i>	Black Cherry	12	G	
237	<i>Prunus serotina</i>	Black Cherry	13	G	
238	<i>Prunus serotina</i>	Black Cherry	14	G	
239	<i>Quercus rubra</i>	Red Oak	23.5	G	
240	<i>Quercus rubra</i>	Red Oak	19	G	
241	<i>Prunus serotina</i>	Black Cherry	12.5	F	
242	<i>Prunus serotina</i>	Black Cherry	15	G	
243	<i>Pinus strobus</i>	White Pine	12.5	G	
244	<i>Acer negundo</i>	Box Elder	16	G	
245	<i>Pinus strobus</i>	White Pine	12	G	
246	<i>Pinus strobus</i>	White Pine	13	G	
247	<i>Pinus strobus</i>	White Pine	15	G	
248	<i>Acer negundo</i>	Box Elder	13	G	
249	<i>Acer negundo</i>	Box Elder	15	G	
250	<i>Pinus strobus</i>	White Pine	16	G	
251	<i>Pinus strobus</i>	White Pine	13	G	
252	<i>Pinus strobus</i>	White Pine	13	G	
253	<i>Acer negundo</i>	Box Elder	12,13,12	G	M
254	<i>Pinus strobus</i>	White Pine	18.5	G	
255	<i>Acer negundo</i>	Box Elder	26	F	
256	<i>Acer negundo</i>	Box Elder	12	G	
257	<i>Acer negundo</i>	Box Elder	15	G	
258	<i>Pinus strobus</i>	White Pine	15	G	
259	<i>Pinus strobus</i>	White Pine	17	G	
260	<i>Pinus strobus</i>	White Pine	13	G	
261	<i>Acer negundo</i>	Box Elder	14	G	
262	<i>Pinus strobus</i>	White Pine	14	G	
263	<i>Pinus strobus</i>	White Pine	13	G	
264	<i>Pinus strobus</i>	White Pine	14	G	
265	<i>Pinus strobus</i>	White Pine	14	G	
266	<i>Quercus rubra</i>	Red Oak	18.5	G	
267	<i>Quercus rubra</i>	Red Oak	28,20,5,21	G	M
268	<i>Prunus serotina</i>	Black Cherry	18,16	G	M
269	<i>Tilia americana</i>	Basswood	15.5	G	
270	<i>Celtis occidentalis</i>	Hackberry	15	G	
271	<i>Prunus serotina</i>	Black Cherry	23	G	
272	<i>Tilia americana</i>	Basswood	15	G	
273	<i>Tilia americana</i>	Basswood	14	G	
274	<i>Quercus macrocarpa</i>	Bur Oak	22.5,13	G	M
275	<i>Fraxinus pennsylvanica</i>	Green Ash	12,14	P	M
276	<i>Tilia americana</i>	Basswood	14.5,12,13,13	G	M
277	<i>Tilia americana</i>	Basswood	12	G	
278	<i>Juglans nigra</i>	Black Walnut	15.5	F	
279	<i>Juglans nigra</i>	Black Walnut	17	P	
280	<i>Fraxinus pennsylvanica</i>	Green Ash	15	P	
281	<i>Acer negundo</i>	Box Elder	20	F	
282	<i>Prunus serotina</i>	Black Cherry	14	F	
283	<i>Prunus serotina</i>	Black Cherry	26	G	
284	<i>Populus deltoides</i>	Cottonwood	13	G	
285	<i>Populus deltoides</i>	Cottonwood	20	G	
286	<i>Populus deltoides</i>	Cottonwood	25	G	
287	<i>Populus deltoides</i>	Cottonwood	23	G	
288	<i>Populus deltoides</i>	Cottonwood	19	G	
289	<i>Populus deltoides</i>	Cottonwood	13,18	G	M
290	<i>Populus deltoides</i>	Cottonwood	25	G	
291	<i>Populus deltoides</i>	Cottonwood	12	G	
292	<i>Prunus serotina</i>	Black Cherry	25	F	
293	<i>Prunus serotina</i>	Black Cherry	25	G	
294	<i>Fraxinus pennsylvanica</i>	Green Ash	12	P	
295	<i>Pinus strobus</i>	White Pine	13,12	G	M
296	<i>Pinus strobus</i>	White Pine	14	G	
297	<i>Pinus strobus</i>	White Pine	12	G	
298	<i>Pinus strobus</i>	White Pine	14.5	G	
299	<i>Pinus strobus</i>	White Pine	14	G	
300	<i>Pinus strobus</i>	White Pine	16	G	
301	<i>Prunus serotina</i>	Black Cherry	20,12	G	M
302	<i>Pinus strobus</i>	White Pine	15	G	
303	<i>Acer negundo</i>	Box Elder	15	G	
304	<i>Pinus strobus</i>	White Pine	14.5	G	
305	<i>Pinus strobus</i>	White Pine	16.5	G	
306	<i>Pinus strobus</i>	White Pine	14	G	
307	<i>Pinus strobus</i>	White Pine	15.5	G	
308	<i>Pinus strobus</i>	White Pine	18	G	
309	<i>Pinus strobus</i>	White Pine	12	G	
310	<i>Pinus strobus</i>	White Pine	16	G	
311	<i>Prunus serotina</i>	Black Cherry	12	G	
312	<i>Acer negundo</i>	Box Elder	17	G	
313	<i>Tilia americana</i>	Basswood	13	G	
314	<i>Acer negundo</i>	Box Elder	13	F	
315	<i>Prunus serotina</i>	Black Cherry	13	G	
316	<i>Acer negundo</i>	Box Elder	20	G	
317	<i>Fraxinus pennsylvanica</i>	Green Ash	14	P	
318	<i>Prunus serotina</i>	Black Cherry	12	G	
319	<i>Prunus serotina</i>	Black Cherry	13	G	
320	<i>Acer negundo</i>	Box Elder	15	G	
321	<i>Tilia americana</i>	Basswood	18,12,12,13,13,13	G	M
322	<i>Fraxinus pennsylvanica</i>	Green Ash	22	P	
323	<i>Populus deltoides</i>	Cottonwood	14	G	
324	<i>Populus deltoides</i>	Cottonwood	46	G	
325	<i>Quercus bicolor</i>	Swamp White Oak	17	G	
326	<i>Quercus bicolor</i>	Swamp White Oak	26	G	
327	<i>Quercus bicolor</i>	Swamp White Oak	25	G	
328	<i>Quercus bicolor</i>	Swamp White Oak	15	G	
329	<i>Acer negundo</i>	Box Elder	12	G	
330	<i>Acer negundo</i>	Box Elder	15.5	F	
331	<i>Fraxinus pennsylvanica</i>	Green Ash	27	P	

332	<i>Acer negundo</i>	Box Elder	17	G	
333	<i>Acer negundo</i>	Box Elder	13	F	
334	<i>Prunus serotina</i>	Black Cherry	12	G	
335	<i>Acer negundo</i>	Box Elder	12.5	G	
336	<i>Acer negundo</i>	Box Elder	13	G	
337	<i>Prunus serotina</i>	Black Cherry	12	G	
338	<i>Populus deltoides</i>	Cottonwood	55	G	
339	<i>Populus deltoides</i>	Cottonwood	18	G	
340	<i>Quercus bicolor</i>	Swamp White Oak	19	G	
341	<i>Populus deltoides</i>	Cottonwood	27	P	
342	<i>Fraxinus pennsylvanica</i>	Green Ash	17	P	
343	<i>Fraxinus pennsylvanica</i>	Green Ash	17	P	
344	<i>Quercus rubra</i>	Red Oak	15	G	
345	<i>Populus deltoides</i>	Cottonwood	27	G	
346	<i>Fraxinus pennsylvanica</i>	Green Ash	12	P	
347	<i>Celtis occidentalis</i>	Hackberry	13	G	
348	<i>Fraxinus pennsylvanica</i>	Green Ash	12	P	
349	<i>Pinus strobus</i>	White Pine	17	G	
350	<i>Pinus strobus</i>	White Pine	15	G	
351	<i>Populus tremuloides</i>	Quaking Aspen	14	G	
352	<i>Pinus strobus</i>	White Pine	12	G	
353	<i>Acer negundo</i>	Box Elder	17	F	
354	<i>Pinus strobus</i>	White Pine	13	G	
355	<i>Pinus strobus</i>	White Pine	13.5	G	
356	<i>Pinus strobus</i>	White Pine	12	G	
357	<i>Pinus strobus</i>	White Pine	13.5	G	
358	<i>Acer negundo</i>	Box Elder	14	G	
359	<i>Prunus serotina</i>	Black Cherry	17	G	
360	<i>Acer negundo</i>	Box Elder	12	G	
361	<i>Pinus strobus</i>	White Pine	14	G	
362	<i>Acer negundo</i>	Box Elder	13	G	
363	<i>Pinus strobus</i>	White Pine	12	G	
364	<i>Prunus serotina</i>	Black Cherry	14	G	
365	<i>Pinus strobus</i>	White Pine	16	G	
366	<i>Pinus strobus</i>	White Pine	13	G	
367	<i>Pinus sylvestris</i>	Scotch Pine	12	G	
368	<i>Pinus strobus</i>	White Pine	13	G	
369	<i>Pinus strobus</i>	White Pine	12	G	
370	<i>Pinus strobus</i>	White Pine	13.5	G	
371	<i>Pinus strobus</i>	White Pine	16.5	G	
372	<i>Pinus strobus</i>	White Pine	13	G	
373	<i>Pinus strobus</i>	White Pine	13	G	
374	<i>Pinus strobus</i>	White Pine	13	G	
375	<i>Pinus strobus</i>	White Pine	13	G	
376	<i>Pinus strobus</i>	White Pine	13	G	
377	<i>Acer negundo</i>	Box Elder	14	G	
378	<i>Pinus strobus</i>	White Pine	14	G	
379	<i>Pinus strobus</i>	White Pine	12	G	
380	<i>Pinus strobus</i>	White Pine	13	G	
381	<i>Prunus serotina</i>	Black Cherry	15	G	
382	<i>Pinus strobus</i>	White Pine	16	G	
383	<i>Pinus strobus</i>	White Pine	15	G	
384	<i>Pinus strobus</i>	White Pine	15	G	
385	<i>Pinus strobus</i>	White Pine	13	G	
386	<i>Pinus strobus</i>	White Pine	14	G	
387	<i>Pinus strobus</i>	White Pine	13	G	
388	<i>Pinus strobus</i>	White Pine	13	G	
389	<i>Pinus strobus</i>	White Pine	12	G	
390	<i>Pinus strobus</i>	White Pine	13	G	
391	<i>Pinus strobus</i>	White Pine	12	G	
392	<i>Pinus strobus</i>	White Pine	13	G	
393	<i>Pinus strobus</i>	White Pine	13.5	G	
394	<i>Pinus strobus</i>	White Pine	13.5	G	
395	<i>Pinus strobus</i>	White Pine	12	G	
396	<i>Pinus strobus</i>	White Pine	13	G	
397	<i>Pinus strobus</i>	White Pine	14	G	
398	<i>Quercus rubra</i>	Red Oak	13.5	G	
399	<i>Pinus strobus</i>	White Pine	12.5	G	
400	<i>Pinus strobus</i>	White Pine	12	G	
401	<i>Quercus rubra</i>	Red Oak	12	G	
402	<i>Quercus rubra</i>	Red Oak	14	G	
403	<i>Pinus strobus</i>	White Pine	13	G	
404	<i>Pinus strobus</i>	White Pine	15	G	
405	<i>Tilia americana</i>	Basswood	13	G	
406	<i>Quercus rubra</i>	Red Oak	28,27	G	M
407	<i>Celtis occidentalis</i>	Hackberry	12	G	
408	<i>Tilia americana</i>	Basswood	12.5,12.5	G	M
409	<i>Tilia americana</i>	Basswood	14	G	
410	<i>Fraxinus pennsylvanica</i>	Green Ash	13	P	
411	<i>Fraxinus pennsylvanica</i>	Green Ash	29.5	P	
412	<i>Tilia americana</i>	Basswood	13.5	G	
413	<i>Tilia americana</i>	Basswood	19,17,17,13	G	M
414	<i>Tilia americana</i>	Basswood	12,12	G	M
415	<i>Quercus bicolor</i>	Swamp White Oak	15	G	
416	<i>Tilia americana</i>	Basswood	18,15	G	M
417	<i>Tilia americana</i>	Basswood	18	G	
418	<i>Tilia americana</i>	Basswood	13.5,12,13,13	G	M
419	<i>Quercus rubra</i>	Red Oak	13	G	
420	<i>Quercus rubra</i>	Red Oak	12	G	
421	<i>Quercus rubra</i>	Red Oak	25	G	
422	<i>Quercus bicolor</i>	Swamp White Oak	27	P	
423	<i>Quercus rubra</i>	Red Oak	16	G	
424	<i>Quercus bicolor</i>	Swamp White Oak	20	G	
425	<i>Quercus rubra</i>	Red Oak	47	G	
426	<i>Populus deltoides</i>	Cottonwood	19	G	
427	<i>Quercus alba</i>	White Oak	19	G	
428	<i>Prunus serotina</i>	Black Cherry	16	F	
429	<i>Quercus rubra</i>	Red Oak	21	G	
430	<i>Quercus rubra</i>	Red Oak	35	G	
431	<i>Quercus rubra</i>	Red Oak	21.5	G	
432	<i>Acer saccharum</i>	Sugar Maple	38	G	
433	<i>Quercus rubra</i>	Red Oak	31.5	F	
434	<i>Quercus rubra</i>	Red Oak	29	G	
435	<i>Quercus rubra</i>	Red Oak	21	G	
436	<i>Quercus rubra</i>	Red Oak	31.5	G	
437	<i>Acer saccharinum</i>	Silver Maple	13	G	
438	<i>Quercus rubra</i>	Red Oak	19.5	G	
439	<i>Acer negundo</i>	Box Elder	12	G	
440	<i>Acer saccharum</i>	Sugar Maple	27	G	
441	<i>Tilia americana</i>	Basswood	14.5	G	
442	<i>Celtis occidentalis</i>	Hackberry	12	G	

443	<i>Quercus rubra</i>	Red Oak	21.5	G	
444	<i>Quercus rubra</i>	Red Oak	16	G	
445	<i>Platanus occidentalis</i>	Sycamore	21	G	
446	<i>Acer saccharum</i>	Sugar Maple	15	G	
447	<i>Tilia americana</i>	Basswood	13	P	
448	<i>Tilia americana</i>	Basswood	24	G	
449	<i>Quercus alba</i>	White Oak	19	G	
450	<i>Acer saccharinum</i>	Silver Maple	49,14	G	M
451	<i>Tilia americana</i>	Basswood	19	F	
452	<i>Celtis occidentalis</i>	Hackberry	15.5	F	
453	<i>Celtis occidentalis</i>	Hackberry	14	G	
454	<i>Acer saccharum</i>	Sugar Maple	18	G	
455	<i>Tilia americana</i>	Basswood	15	G	
456	<i>Quercus rubra</i>	Red Oak	22	G	
457	<i>Quercus rubra</i>	Red Oak	13	G	
458	<i>Celtis occidentalis</i>	Hackberry	28,12	G	M
459	<i>Quercus rubra</i>	Red Oak	15	G	
460	<i>Quercus rubra</i>	Red Oak	19.5	G	
461	<i>Platanus occidentalis</i>	Sycamore	26	G	
462	<i>Quercus rubra</i>	Red Oak	14	G	
463	<i>Acer saccharinum</i>	Silver Maple	12	G	
464	<i>Acer saccharinum</i>	Silver Maple	13,12	G	M
465	<i>Populus deltoides</i>	Cottonwood	22.5	G	
466	<i>Populus deltoides</i>	Cottonwood	24.5	G	
467	<i>Ulmus americana</i>	American Elm	14	G	
468	<i>Ulmus americana</i>	American Elm	18	G	
469	<i>Ulmus americana</i>	American Elm	12	G	
470	<i>Populus deltoides</i>	Cottonwood	20	G	
471	<i>Prunus serotina</i>	Black Cherry	25	G	
472	<i>Populus deltoides</i>	Cottonwood	19	G	
473	<i>Acer negundo</i>	Box Elder	14.5	F	
474	<i>Populus deltoides</i>	Cottonwood	12	F	
475	<i>Populus deltoides</i>	Cottonwood	15,15	G	M
476	<i>Acer rubrum</i>	Red Maple	12.5	G	
477	<i>Populus deltoides</i>	Cottonwood	19	G	
478	<i>Populus deltoides</i>	Cottonwood	16	G	
479	<i>Populus deltoides</i>	Cottonwood	15.5	G	
480	<i>Populus deltoides</i>	Cottonwood	21	G	
481	<i>Ulmus americana</i>	American Elm	13	G	
482	<i>Populus deltoides</i>	Cottonwood	18	G	
483	<i>Populus deltoides</i>	Cottonwood	18	G	
484	<i>Populus deltoides</i>	Cottonwood	12	G	
485	<i>Populus deltoides</i>	Cottonwood	16	G	
486	<i>Populus deltoides</i>	Cottonwood	17	G	
487	<i>Populus deltoides</i>	Cottonwood	22	G	
488	<i>Populus deltoides</i>	Cottonwood	18	G	
489	<i>Populus deltoides</i>	Cottonwood	13.5	G	
490	<i>Ulmus americana</i>	American Elm	13	G	
491	<i>Fraxinus pennsylvanica</i>	Green Ash	13	P	
492	<i>Prunus serotina</i>	Black Cherry	17	G	
493	<i>Populus deltoides</i>	Cottonwood	20,17	G	M
494	<i>Populus deltoides</i>	Cottonwood	16	G	
495	<i>Populus deltoides</i>	Cottonwood	23.5	G	
496	<i>Populus deltoides</i>	Cottonwood	20.5	G	
497	<i>Populus deltoides</i>	Cottonwood	31	G	
498	<i>Populus deltoides</i>	Cottonwood	24	G	
499	<i>Populus deltoides</i>	Cottonwood	26.5	G	
500	<i>Populus deltoides</i>	Cottonwood	32.5	G	
501	<i>Prunus serotina</i>	Black Cherry	15	G	
502	<i>Prunus serotina</i>	Black Cherry	15	G	
503	<i>Prunus serotina</i>	Black Cherry	14	G	
504	<i>Prunus serotina</i>	Black Cherry	12	G	
505	<i>Populus deltoides</i>	Cottonwood	12	G	
506	<i>Populus deltoides</i>	Cottonwood	18	G	
507	<i>Populus deltoides</i>	Cottonwood	12	G	
508	<i>Populus deltoides</i>	Cottonwood	13.5	G	
509	<i>Populus deltoides</i>	Cottonwood	12.5	G	
510	<i>Populus deltoides</i>	Cottonwood	13	G	
511	<i>Populus deltoides</i>	Cottonwood	13	G	
512	<i>Populus deltoides</i>	Cottonwood	14	G	
513	<i>Acer negundo</i>	Box Elder	17	G	
514	<i>Populus deltoides</i>	Cottonwood	14	G	
515	<i>Acer negundo</i>	Box Elder	14.5	G	
516	<i>Prunus serotina</i>	Black Cherry	15	G	
517	<i>Acer negundo</i>	Box Elder	13	G	
518	<i>Acer negundo</i>	Box Elder	24	G	
519	<i>Quercus rubra</i>	Red Oak	14.5	G	
520	<i>Quercus rubra</i>	Red Oak	16	G	
521	<i>Prunus serotina</i>	Black Cherry	16	G	
522	<i>Tilia americana</i>	Basswood	14	G	
523	<i>Tilia americana</i>	Basswood	14	G	
524	<i>Juglans nigra</i>	Black Walnut	23.5	G	
525	<i>Populus deltoides</i>	Cottonwood	34	G	
526	<i>Quercus rubra</i>	Red Oak	21	G	
527	<i>Populus deltoides</i>	Cottonwood	17	G	
528	<i>Prunus serotina</i>	Black Cherry	13	G	
529	<i>Populus deltoides</i>	Cottonwood	25	G	
530	<i>Populus deltoides</i>	Cottonwood	21	G	
531	<i>Populus deltoides</i>	Cottonwood	19	G	
532	<i>Populus deltoides</i>	Cottonwood	18	G	
533	<i>Populus deltoides</i>	Cottonwood	21	G	
534	<i>Acer negundo</i>	Box Elder	12	G	
535	<i>Populus deltoides</i>	Cottonwood	17	G	
536	<i>Populus deltoides</i>	Cottonwood	19	G	
537	<i>Populus deltoides</i>	Cottonwood	13	G	
538	<i>Populus deltoides</i>	Cottonwood	20.5	G	
539	<i>Acer saccharinum</i>	Silver Maple	16	G	
540	<i>Prunus serotina</i>	Black Cherry	12	F	
541	<i>Acer negundo</i>	Box Elder	13	G	
542	<i>Pinus strobus</i>	White Pine	12.5	G	
543	<i>Pinus strobus</i>	White Pine	15	G	
544	<i>Pinus strobus</i>	White Pine	13.5	G	
545	<i>Pinus strobus</i>	White Pine	12	G	
546	<i>Acer negundo</i>	Box Elder	12	G	
547	<i>Acer negundo</i>	Box Elder	16	G	
548	<i>Pinus strobus</i>	White Pine	14	G	
549	<i>Pinus strobus</i>	White Pine	13	G	
550	<i>Pinus strobus</i>	White Pine	14	G	
551	<i>Pinus strobus</i>	White Pine	16	G	
552	<i>Pinus strobus</i>	White Pine	14	G	
553	<i>Pinus strobus</i>	White Pine	13	G	

554	<i>Pinus strobus</i>	White Pine	15	G
555	<i>Pinus strobus</i>	White Pine	13	G
556	<i>Pinus strobus</i>	White Pine	14	G
557	<i>Pinus strobus</i>	White Pine	12	G
558	<i>Pinus strobus</i>	White Pine	14	G
559	<i>Pinus strobus</i>	White Pine	13	G
560	<i>Pinus strobus</i>	White Pine	12	G
561	<i>Pinus strobus</i>	White Pine	15	G
562	<i>Pinus strobus</i>	White Pine	14	G
563	<i>Populus deltoides</i>	Cottonwood	12	G
564	<i>Pinus strobus</i>	White Pine	12	G
565	<i>Pinus strobus</i>	White Pine	13.5	G
566	<i>Pinus strobus</i>	White Pine	12	G
567	<i>Pinus strobus</i>	White Pine	15	G
568	<i>Pinus strobus</i>	White Pine	12	G
569	<i>Pinus strobus</i>	White Pine	15	G
570	<i>Pinus strobus</i>	White Pine	12	G
571	<i>Pinus strobus</i>	White Pine	13	G
572	<i>Quercus rubra</i>	Red Oak	16	G
573	<i>Quercus rubra</i>	Red Oak	14.5	G
574	<i>Acer saccharum</i>	Sugar Maple	13	G
575	<i>Populus deltoides</i>	Cottonwood	24	G
576	<i>Pinus strobus</i>	White Pine	13	G
577	<i>Pinus strobus</i>	White Pine	12	G
578	<i>Acer negundo</i>	Box Elder	12	G
579	<i>Acer negundo</i>	Box Elder	15	G
580	<i>Pinus strobus</i>	White Pine	12	G
581	<i>Pinus strobus</i>	White Pine	14	G
582	<i>Pinus strobus</i>	White Pine	12	G
583	<i>Pinus strobus</i>	White Pine	12	G
584	<i>Pinus strobus</i>	White Pine	13	G
585	<i>Pinus strobus</i>	White Pine	13	G
586	<i>Pinus strobus</i>	White Pine	12	G
587	<i>Pinus strobus</i>	White Pine	12	G
588	<i>Acer negundo</i>	Box Elder	13	F
589	<i>Prunus serotina</i>	Black Cherry	12	F



MARX
WETLANDS
LLC

August 28, 2018

Erick Friestrom
Kebs, Inc.
2116 Haslett Road
Haslett, MI 48840

**Re: Wetland Determination & Delineation Report: Hannah Boulevard
Section 20, Meridian Township, Ingham County, Michigan**

Dear Mr. Erick Friestrom:

Pursuant to your request, Marx Wetlands LLC conducted a wetland determination and delineation for an approximately 30-acre property for the above-referenced ("Project Site"). The Site is located directly east of the dead-end of Hannah Blvd, approximately 0.10 miles east of its intersection with Eyde Parkway in Section 20 of Meridian Township (T4N, R1W), Ingham County, Michigan. The intent of this determination is to provide a report of the character of any wetland areas within the subject parcel and an opinion as to the possible jurisdiction of the Michigan Department of Environmental Quality (MDEQ) and/or local governments over wetland areas identified on-site.

The wetland determination was performed in accordance with the Michigan Department of Environmental Quality Wetland Identification Manual (2001), the Northcentral-Northeast Manual to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. The delineation of any wetland depends on three basic parameters. These parameters are: 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 present in wetland systems. The wetland determination consisted of desktop review of available background documentation and mapping followed by a site visit performed on August 8, 2018. A review of the findings is provided below.

Site Characteristics

Based on review of aerial photographs and the on-site visits, the Site contains primarily undeveloped land, consisting of areas of upland open fields, scrub-shrub, forested, and wetland. Mowed paths were observed scattered throughout the Site. Upland scrub-shrub and forested areas were identified in the central portions of the Site. The Red Cedar is located along the northern boundary of the Site. The Site is within a largely commercial and residential region of Meridian Township, Michigan. The Site is bounded by undeveloped land to the north and south, and off-campus student housing to the west, and single-family residences to the east.

Cover Type Descriptions

Upland herbaceous species found in the open fields include orchard grass (*Dactylus glomerata*), common milkweed (*Asclepias syriaca*), smooth brome (*Bromus inermis*), Japanese hedge-parsley (*Torilis japonica*), common primrose

3309 Platt Road
Ann Arbor, Michigan
Mobile: 734-478-8277

e-mail

bg.marxwetlands@gmail.com

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(*Oenothera biennis*), bluegrasses (*Poa pratensis* & *P. compressa*), Queen Anne’s lace (*Daucus carota*), big bluestem (*Andropogon gerardii*), wild-bergamot (*Monarda fistulosa*), purple coneflower (*Echinacea purpurea*), sunflowers (*Helianthus spp.*), and goldenrods (*Solidago altissima* and *S. canadensis*).

The upland, scrub-shrub and mixed deciduous forested areas contain the following species: white avens (*Geum canadense*), ebony spleenwort (*Asplenium platyneuron*), white vervain (*Verbena urticifolia*), bluestem goldenrod (*Solidago caesia*), beggar’s lice (*Hackelia virginiana*), penn sedge (*Carex pennsylvanica*), orchard grass, Virginia creeper (*Parthenocissus quinquefolia*), oaks (*Quercus alba*, *Q. macrocarpa*, and *Q. rubra*), black walnut (*Juglans nigra*), white pine (*Pinus strobus*), box-elder (*Acer negundo*), sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), cottonwood (*Populus deltoides*), scattered with basswood (*Tilia americana*), American elm (*Ulmus americana*), bitternut hickory (*Carya cordiformis*), trembling aspen (*Populus tremuloides*), Siberian elm (*Ulmus pumila*), and ash (*Fraxinus spp.*) trees. Common native and non-native shrub species include common buckthorn (*Rhamnus cathartica*), Eurasian honeysuckle (*Lonicera spp.*), staghorn sumac (*Rhus typhina*), blackberry (*Rubus allegheniensis*), and black raspberry (*Rubus occidentalis*). Refer to the enclosed *Photographic Log*.

Wetland Determination & Delineation

Eight (8) wetlands (Wetlands A, B, C, D, E, F, G, and H) and the Red Cedar River were identified within the Site and/or along the site’s perimeters. No ponds appear within the Site. Refer to the enclosed Wetland Sketch.

Feature Name	Wetland/Watercourse Type	Regulatory Status
Wetland A	Open water (ponded)/Emergent/Scrub-shrub	Likely MDEQ & Township Regulated; within 500 Feet of Red Cedar River
Wetland B	Emergent/Scrub-shrub/Forested	Likely MDEQ Regulated & Township Regulated; connected to Red Cedar River
Wetland C	Emergent/Scrub-shrub/Forested	Likely MDEQ & Township regulated; > 5 acres in size & connected to off-site watercourse
Wetland D	Forested	Likely MDEQ and Township Non-Regulated; isolated and < 0.25 ac in size
Wetland E	Forested	Likely MDEQ Non-Regulated; isolated and < 5 ac in size; Likely Township Regulated: > 0.25 acre in size
Wetland F	Forested	Likely MDEQ and Township Non-Regulated; isolated and < 0.25 ac in size
Wetland G	Open water (ponded)/Emergent/Scrub-shrub	Likely MDEQ & Township Regulated; likely connects to Wetland C off-site and would be > 5 ac in size
Wetland H	Forested	Likely MDEQ & Township Regulated; within 500 Feet of Red Cedar River
Watercourse 1/Red Cedar River	Perennial	Likely MDEQ & Township Regulated; defined bed, banks, and evidence of continuance of water/flow

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Wetlands

Wetland A and G are linear multi-classified wetland containing open water, emergent, and scrub-shrub components observed along the western boundary of the Site, which extend off-site to the west and south respectively. Herbaceous vegetation within these wetlands include: reed canary grass (*Phalaris arundinacea*), rice-cut grass (*Leersia oryzoides*), cattails (*Typha angustifolia* and *T. latifolia*), grass-leaved goldenrod (*Euthamia graminifolia*), dark green bushrush (*Scirpus atrovirens*), and sedges (*Carex grayii*, *C. scoparia*, and *C. vulpinoidea*). Woody vines include riverbank grape (*Vitis riparia*) and poison-ivy (*Toxicodendron radicans*); and shrub species include: common buckthorn, and dogwoods (*Cornus amomum* and *C. racemosa*). Overhanging trees observed within Wetlands A & G include silver maple (*Acer saccharinum*), white swamp oak (*Quercus bicolor*), elm, and cottonwood. The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include: standing water (~18 inches), saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, and roadways, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch.

Wetlands D, E, F, and H are primarily forested wetlands. Herbaceous vegetation within these wetlands include: false nettle (*Boehmeria cylindrica*), reed canary grass, white grass (*Leersia virginica*), fowl manna grass (*Glyceria striata*), water-pepper (*Persicaria hydropiper*), and sedges (*Carex grayii*, *C. scoparia*, and *C. vulpinoidea*). Woody vines include riverbank grape and poison-ivy; and a few shrub species include: common buckthorn, and dogwoods. Eurasian honeysuckles were observed along the margins of most of these wetlands. Trees observed within Wetlands D, E, F, and H include silver maple, box-elder, white swamp oak, elm, and cottonwood. The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include: saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, and roadways, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch

Wetlands B and C are multi-classified wetlands containing, emergent, forested, and scrub-shrub components. Wetland B is a floodplain wetland associated with the Red Cedar River, extending off-site to the north and east. Wetland C is a large wetland system associated with Herron's Creek, extending south and west off-site. Herbaceous vegetation within these wetlands include: rice-cut grass, white grass, reed canary grass, moneywort (*Lysimachia nummularia*), bulrush (*Bolboschoenus fluviatilis*), sensitive fern (*Onoclea sensibilis*), and sedges (*Carex grayii*, *C. intumescens*, *C. scoparia*, *C. stipata*, and *C. vulpinoidea*). Shrub vegetation include dogwoods, elderberry (*Sambucus canadensis*), and common buckthorn. Trees

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observe include silver maple, white swamp oak, elm, and cottonwood. Wetland C also contains the following species: leafy satin grass (*Muhlenbergia mexicana*), lady fern (*Athyrium filix-femina*), tamarack (*Larix laricina*), Louisiana iris (*Iris xvinicolor*), and sedges (*C. lacustris* and *C. stricta*).

The species range in wetland indicator status from obligate (OBL) to facultative (FAC), indicating species that typically occur in wetlands. Wetland hydrology indicators observed include saturation, water-stained leaves, water marks, geomorphic position, and FAC Neutral Test. These wetlands appear to receive hydrology from precipitation, runoff from adjacent developed areas, roadways, and overflow from adjacent watercourses/wetland areas, resulting in seasonally saturated to seasonally inundated water regimes. Refer to the enclosed Wetland Sketch for the approximate location.

Regulations

Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse by the MDEQ if it possesses a defined bed, bank, and evidence of continued flow or a continued occurrence of water. Additionally, Part 301 states that if a pond with a surface area larger than five (5) acres should be considered regulated. Based on the site visit, one (1) regulated watercourse (Red Cedar River) is located along the northern periphery of the Site. No ponds were observed on-site.

Part 303, Wetlands Protection, of the NREPA states that if a wetland is five acres in size or larger and/or connected to or located within 500 feet of a river, stream, lake, or pond, it is considered regulated by the MDEQ. Marx Wetlands, LLC has the professional opinion that five (5) wetlands (Wetlands A, B, C, G, and H) are likely regulated by the MDEQ, because they appear to be within 500 feet and/or connected to a regulating feature (i.e., Red Cedar River or Herron's Creek). Wetlands D, E, and F are not likely regulated by the MDEQ because they appear less than 5 acres in size and isolated (i.e., not connected to or located within 500 feet of a regulating feature). Therefore, Marx Wetlands LLC has the professional opinion that Wetlands A, B, C, G, and H do appear to meet the requirements of Part 303, Wetlands Protection, of the NREPA.

In addition, Meridian Township (Township) has its own wetland protection ordinance. The township's Wetland Protection ordinance (Chapter 22, Article IV) states that wetlands are protected if they are:

- contiguous to any inland lake stream, river, or pond.
- Partially or entirely within 500 feet of the ordinary high-water mark of any inland lake, stream, river or pond.

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- Two or more areas of wetland separated only by barriers, such as dikes, roads, berms or other similar features, if any of those wetlands are contiguous to an inland lake, stream, river or pond.
- larger than two acres, even if not contiguous to an inland lake, stream, river or pond.
- not contiguous to any inland lake, stream, river or pond, if the state department of environmental quality determines the protection of the wetland is essential to the preservation of the natural resources of the state from pollution, impairment or destruction.
- wetlands, equal to or greater than one-quarter acre and equal to or less than two acres in size, which are not contiguous to any inland lake, stream, river or pond and are determined to be essential to the preservation of the natural resources of the Township as provided in township code § 22-156. Code § 22-156 provides that a wetland is essential to the preservation of the township's natural resources if it fulfills any of ten criteria.

The Red Cedar River is located along the northern boundary of the Site. Based upon proximity to this stream, Wetlands A, B, and H are likely MDEQ and Township regulated. In addition, Wetlands C and G extend south off-site and presumably connect and appear to be part of a wetland system larger than 5 acres in size, thus Wetlands C and G are also likely MDEQ and Township regulated.

Wetland E is at least one-quarter acre in size. By meeting at least one of ten Township criteria, this wetland may be found essential to the preservation of the natural resources of the Township as provided in township code § 22-156. Therefore, this feature is likely regulated by the Township.

Wetlands D and F are both non-contiguous to, and evidently not directly connected to a lake, stream, river, or pond. Furthermore, these wetlands each appear less than one-quarter acre in total size. It is Marx Wetlands' professional opinion that Wetlands D and F do not fall under MDEQ or Township jurisdiction.

Therefore, it is the professional opinion of Marx Wetlands LLC that six (6) wetlands (Wetlands A, B, C, E, G, and H) may be protected under the Meridian Township's *Chapter 22 Environment, Article IV Wetland Protection*, if it is determined that the protection of these wetland areas is important for the preservation of the local natural resources (Meridian Township- Code 1974, § 105-3; Ord. No. 2002-02, 3-19-2002; Ord. No. 2003-11, 7-6-2003; Ord. No. 2011-04, 3-15-2011).

A permit or approval is likely required by the Meridian Township for any proposed work (e.g., filling, dredging, construction, and draining and/or other development) that takes place within the boundaries of a regulated wetland. Most construction activities that take place outside of these boundaries do not require a wetland

August 28, 2018

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permit from the MDEQ or Meridian Township. Please note that the MDEQ and Township have the final authority on the extent of regulated wetlands, lakes, and streams in the State of Michigan and Meridian Township, respectively.

Please be advised the information provided in this report is a professional opinion. The ultimate decision on wetland boundary locations and jurisdiction thereof rests with the MDEQ or Township and, in some cases, the Federal government. Therefore, there may be adjustments to boundaries based upon review of a regulatory agency. An agency determination can vary, depending on various factors including, but not limited to, experience of the agency representative making the determination and the season of the year. In addition, the physical characteristics of the site can change with time, depending on the weather, vegetation patterns, drainage, activities on adjacent parcels, or other events. Any of these factors can change the nature / extent of wetlands on the site.

Thank you for the opportunity to provide this wetland determination. If you have any questions, please contact me at your convenience.

Sincerely,



Marx Wetlands LLC
Bryana J. Guevara, PWS 2949
ISA Certified Arborist MI-4204A
Environmental Consultant

Enclosures: 1) Photographic Log 2) Wetland Sketch

PHOTOGRAPHIC LOG



1) An east-facing view of existing two track.



2) A view of an upland old field with scattered shrubs and trees.



3) View of existing mowed paths observed throughout the Site.



4) View of upland mixed deciduous forested areas observed throughout the Site.

PHOTOGRAPHIC LOG



5) Another view of the central portion of the Site.



6) View of upland old field areas observed in the central portion of the Site.



7) View of Wetland A, an emergent wetland, observed along the western boundary of the Site.



8) A north-facing view of Wetland B, a forested wetland observed along the northern boundary. Red Cedar River observed in the background of the Site.

PHOTOGRAPHIC LOG



9) View of Wetland C, a forested and emergent wetland, observed along the southern boundary of the Site.



10) A north-facing view of Wetland D, a forested and scrub-shrub wetland observed in the central portion of the Site.



11) View of Wetland E, a forested wetland, observed in the northeastern portion.



12) A north-facing view of Wetland F, a scrub-shrub wetland observed in the central portion of the Site.

PHOTOGRAPHIC LOG



13) View of Wetland G, an emergent wetland, observed in the western boundary of the Site.



14) A north-facing view of Wetland H, a linear scrub-shrub and forested wetland observed in the western portion of the Site.



15) An east-facing view of Red Cedar River observed along the northern boundary of the Site.



16) A west-facing view of Red Cedar River observed along the northern boundary of the Site.

WETLAND SKETCH





December 10, 2018
Project No. 1817787

Mr. Peter Menser
Charter Township of Meridian
5151 Marsh Road
Okemos, MI 48864-1198

Re: Wetland Boundary Verification – WDV 18-15
Hannah Boulevard Property, Okemos, Ingham County, Michigan

Dear Peter:

On December 5, 2018, Fishbeck, Thompson, Carr & Huber, Inc. (FTCH) staff conducted a field investigation and verified wetland boundaries on approximately 30 acres of Parcel Number 33-02-02-20-401-005 (the Site). The Site contains vacant property in Section 20 of Meridian Township (Township) (Town 4 North, Range 1 West). The Red Cedar River is located along the Site's northern boundary and a county drain (the Hannah Farm Drain) is located along its western boundary. The Hannah Farm Drain is under the jurisdiction of the Ingham County Drain Commissioner.

Wetlands were delineated with pink survey ribbon by Marx Wetlands LLC (Marx), as described in its August 28, 2018, report entitled *Wetland Determination & Delineation Report: Hannah Boulevard, Section 20, Meridian Township, Ingham County, Michigan* (Report). Wetland boundary flags were surveyed and placed on base maps by the EYDE Company (EYDE). These maps were submitted to the Township and did not contain a scale.

Site Investigation

FTCH staff met Ms. Bryana Guevara of Marx at the site on December 5th and inspected the flagged wetland boundaries for eight wetlands. FTCH made minor changes to the wetland boundaries by eliminating and moving flags as follows:

Wetland A: Moved Flags A18, A19, and A20 west, closer to the Hannah Farm Drain.

Wetland F: Deleted Flag F6; Flag F5 connects to F7. Deleted Flag F9; Flag 1 connects to F8.

Wetlands B, C, D, E, G, and H: No changes.

We recommend EYDE update its base maps to reflect these changes.

Regulatory Review

The regulatory review was based upon the Report, Google Earth aerial photographs, and site observations. Section 22-116 of the Township's Wetland Protection Ordinance defines "protected wetlands" as any of the following:

- (1) Wetlands, regardless of size, which are contiguous (i.e. within 500 feet of) to any inland lake, stream, river, or pond, whether partially or entirely within the project site.
- (2) Wetlands which are larger than two acres, whether partially or entirely contained within a lot, and which are not contiguous to any inland lake, stream, river, or pond.

(3) Wetlands, equal to or greater than one-quarter acre and equal to or less than two acres in size, which are not contiguous to any inland lake, stream, river, or pond and are determined to be essential to the preservation of the natural resources of the Township as provided in Section 22-156 of the Township’s Wetland Ordinance.

Table 1 summarizes the regulatory status of the Site’s delineated wetlands.

Table 1 – Summary of Wetland Regulatory Status

Wetland Verification WDV 18-15

Hannah Boulevard Property, Meridian Township

Wetland	Wetland Type	Size (on Subject Property) (acres)	Corresponding Meridian Wetland	Regulated by the State of Michigan?	Regulated by Meridian?
A	Emergent/Scrub-shrub, contiguous to the Hannah Farm Drain and Red Cedar River		20-9	Yes	Yes
B	Emergent/Scrub-shrub/Forested, contiguous to the Red Cedar River	2.21	20-4	Yes	Yes
C	Emergent/Scrub-shrub/Forested	>5	20-18	Yes	Yes
D	Forested, contiguous to the Hannah Farm Drain	0.21	20-10	Yes	Yes
E	Forested	0.30	20-12	No	Yes, if determined to be essential
F	Forested	0.04	20-11	No	No
G	Emergent/Scrub-shrub, contiguous to the Hannah Farm Drain		20-9	Yes	Yes
H	Forested, contiguous to the Hannah Farm Drain	0.38	None	Yes	Yes

Because EYDE base maps containing the surveyed wetland boundaries did not contain a scale, FTCH estimated the distance from the Wetland E and F boundaries to the Red Cedar River and Hannah Farm Drain using Google Earth aerial photographs. These distances appear to exceed 600 feet. An essentiality determination is required to determine if Wetland E is regulated by the Township, because Wetland E is greater than 0.25 acre in size.

A Wetland Use Permit is required from the Township for any of the following activities within wetlands regulated by the Township:

- Placing fill or permitting the placement of fill.
- Dredging, removing, or permitting the removal of soil or minerals.
- Constructing, operating, or maintaining any use or development.
- Draining surface water.

In addition, the Township requires that all structures and grading activities during site development shall be set back 40 feet from delineated wetland boundaries and a natural vegetation strip shall be maintained within 20 feet of the wetland boundaries. Wetland mitigation will be required for wetland impacts, creating new wetland at a ratio of 1:1.5.

Mr. Peter Menser – Wetland Verification – WDV 18-15

Page 3

December 10, 2018



If you have any questions regarding this letter or any other wetland-related issues, please contact me at 616.464.3738 or ehtripp@ftch.com.

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

A handwritten signature in black ink, reading 'Elise Hansen Tripp'. The signature is written in a cursive, flowing style.

Elise Hansen Tripp, PWS

pmb

By email

cc: Mr. Mark Kieselbach – Charter Township of Meridian



To: Planning Commission

From: Peter Menser, Principal Planner

Date: March 12, 2020

Re: Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.

Andev Group, LLC has submitted a special use permit (SUP #20011) proposal to construct a 230 unit senior living community at the east end of Hannah Boulevard. The proposal includes the construction of a new 267,543 square foot senior living community building with 230 dwelling units. Overall, 268,263 total square feet of building area is proposed, consisting of the senior living community building and a 720 square foot garage. The project is proposed to be constructed in two phases, with 111,105 square feet consisting of 109 assisted living and memory care units in Phase 1 and 156,438 square feet consisting of 121 independent living units in Phase 2.

The construction of any building or group of buildings with a combined gross floor area greater than 25,000 square feet requires a special use permit due to the significant impact such development may have upon adjacent property owners, neighborhoods, and public infrastructure. The Code of Ordinances requires the special use permit to ensure that public utilities, roads, and other infrastructure systems are or will be adequate to support the proposed development.

The SUP for building size is being processed concurrently with the SUP for the senior living community development. The staff report for SUP #20011 should be referenced for a more complete overview of the project.

Staff Analysis

The special use permit review criteria found in Section 86-126 of the Code of Ordinances should be used when evaluating the proposed special use permit. The Planning Commission makes a recommendation on the special use permit request and the Township Board has final approval.

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.

G:\Community Planning & Development\Planning\SPECIAL USE PERMITS (SUP)\2020\SUP 20021 (Andev_blg. greater than 25,000 sq. ft.)\SUP 20021.pc1.docx



To: Planning Commission

From: Peter Menser, Principal Planner

Date: June 17, 2020

Re: **Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.**

The public hearing for Special Use Permit #20021 was held at the June 8, 2020 Planning Commission meeting, which was conducted virtually using the Zoom web conferencing application. A straw poll taken at the end of the public hearing indicated support for the proposed project.

This SUP request is being processed separately but concurrently with Special Use Permit #20011 to establish an approximately 267,543 square foot senior living community comprised of 230 units.

Planning Commission Options

The Planning Commission may recommend approval, approval with conditions, or denial of the special use permit. A resolution to recommend approval of the request with conditions is provided.

- **Move to adopt the resolution recommending approval of Special Use Permit #20021 to construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard.**

Attachment

1. Resolution to recommend approval.

G:\Community Planning & Development\Planning\SPECIAL USE PERMITS (SUP)\2020\SUP 20021 (Andev_blg. 25k)\SUP 20021.pc2.docx

RESOLUTION TO RECOMMEND APPROVAL

**Special Use Permit #20021
(Andev Group, LLC)**

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 22nd day of June, 2020, at 7:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, Andev Group, LLC has submitted a request to construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard; and

WHEREAS, the proposed project includes the construction of a 267,543 square foot senior living community building with 230 dwelling units and construction of a 1720 square foot garage; and

WHEREAS, a total of 268,263 square feet is proposed in the project; and

WHEREAS, a special use permit is required for constructing a building or group of buildings totaling more than 25,000 square feet in gross floor area; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 8, 2020, and has reviewed staff material forwarded under a cover memorandum dated March 12, 2020; and

WHEREAS, the subject site is appropriately zoned RAA (Single Family-Low Density), which permits the construction of buildings greater than 25,000 square feet in size by special use permit; and

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances; and

WHEREAS, municipal water and sanitary sewer is available to extend to serve the subject site.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #20021, subject to the following conditions:

1. Approval is in accordance with the site plan prepared by Kebs, Inc. dated March 25, 2019 (revision date March 2, 2020) and received by the Township on March 3, 2020.
2. Approval of the special use permit is subject to all conditions placed on Special Use Permit #20011 by the Township.

Resolution to Recommend Approval

SUP #20021 (Andev Group, LLC)

Page 2

3. Any future building additions will require an amendment to Special Use Permit #20021.

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chairperson of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 22nd day of June, 2020.

Scott Hendrickson
Planning Commission Chairperson

RESOLUTION TO RECOMMEND APPROVAL

**Special Use Permit #20021
(Andev Group, LLC)**

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 22nd day of June, 2020, at 7:00 p.m., Local Time.

PRESENT: Commissioners Premoe, Trezise, Cordill, Richards, Shrewsbury, Clark, McConnell, and Hendrickson

ABSENT: None

The following resolution was offered by Commissioner Trezise and supported by Commissioner Premoe.

WHEREAS, Andev Group, LLC has submitted a request to construct building greater than 25,000 square feet in size on 10.73 acres of a 58 acre undeveloped parcel identified as Parcel I.D. #20-401-005 located at the east end of Hannah Boulevard; and

WHEREAS, the proposed project includes the construction of a 267,543 square foot senior living community building with 230 dwelling units and construction of a 1720 square foot garage; and

WHEREAS, a total of 268,263 square feet is proposed in the project; and

WHEREAS, a special use permit is required for constructing a building or group of buildings totaling more than 25,000 square feet in gross floor area; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 8, 2020, and has reviewed staff material forwarded under a cover memorandum dated March 12, 2020; and

WHEREAS, the subject site is appropriately zoned RAA (Single Family-Low Density), which permits the construction of buildings greater than 25,000 square feet in size by special use permit; and

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances; and

WHEREAS, municipal water and sanitary sewer is available to extend to serve the subject site.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #20021, subject to the following conditions:

1. Approval is in accordance with the site plan prepared by Kebs, Inc. dated March 25, 2019 (revision date March 2, 2020) and received by the Township on March 3, 2020.
2. Approval of the special use permit is subject to all conditions placed on Special Use Permit #20011 by the Township.

Resolution to Recommend Approval

SUP #20021 (Andev Group, LLC)

Page 2

3. Any future building additions will require an amendment to Special Use Permit #20021.

ADOPTED: YEAS: Commissioners Trezise, Premoe, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioners McConnell and Richards

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chairperson of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 22nd day of June, 2020.

Scott Hendrickson
Planning Commission Chairperson

5. Communications - None

6. Public Hearings

- D. Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

Chair Hendrickson opened the public hearing at 7:13 p.m.

Principal Planner Menser provided an overview of the proposed rezoning request for the property.

Public Comment – None

A straw poll indicated the Planning Commission would be in support of recommending approval of the request. A resolution will be provided at the next meeting on June 8, 2020.

Chair Hendrickson closed the public hearing at 7:27 p.m.

- A. Special Use Permit #20011 (Andev Group, LLC), establish an approximately 268,263 square foot senior living community comprised of 230 units on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.



- B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.

Chair Hendrickson noted 6A and 6B will run concurrently and opened the public hearing at 7:28 p.m.

Principal Planner Menser noted the public hearing was originally scheduled for March 16, 2020 but was cancelled due to the COVID19 pandemic.

Principal Planner Menser provided a summary of the project requests and said he would be available to answer questions. Special Use Permit #20011 addresses land use and to establish non-residential use for a senior living community and Special Use Permit #20021 addresses the building size.

Principal Planner Menser introduced the applicant's representative Mark Clouse, on behalf of the George Eyde Family LLC. There were numerous other guests in attendance, who are involved with the proposed project. Mike Samuels is with the ANDEV Group and discussed the building proposal. Dan Anbar is the Principal of the ANDEV Group and he introduced himself and shared information about their company. They are located at 680 N. Lake Shore Drive in Chicago, IL. Ben Ganther is with the design build group at Ganther Construction/Architecture. They are located at 4825 County Road A in Oshkosh, WI. Jeff Kyes with Kebs Inc. was in attendance also and noted the Ingham County Road Commission and Drain Office didn't note any issues but during the Site Plan Review process all details will be reviewed.

Public Comment:

- A. David Lewis Skole, 4845 Mohican Lane, spoke with concerns regarding the Nature Features Survey and water levels in the proposed area being prone to flooding.
- B. Joe Pavona, 4726 Arapaho Trail, and is also the President of the Homeowners Association for Indian Lake Estates. He commented on the berm design at the proposed property line and expressed concern for follow through. Mr. Pavona would also like to have a copy of the executed access agreement with the adjacent property owner. He also expressed concern with the surface water management plan to protect the Indian Lake Estates Homeowners Association in the future.
- C. Kevin Roragen, Loomis Law Firm, 124 W. Allegan Street, Suite 700, Lansing, spoke on behalf of the Indian Lakes Estates Homeowners Association suggested the berm be added as a condition on the Special Use Permit. He commented on the emergency access road agreement and finally discussed the concerns regarding flooding in the area, excess water and how surface water is an issue that needs to be addressed and the importance of sharing storm water data.
- D. Joe Zimmerman, 4715 Mohican Lane, spoke in concern regarding flooding in the area, trees dying due to excess standing water and wild life concerns.

Planning Commission Discussion:

- The developer listened to concerns expressed in the past regarding heights of buildings in relation to single family dwellings.
- The storm water issues will be addressed during Site Plan Review. Perhaps the resident, Joe Zimmerman, could share video/photos he has taken of the area with flooding issues.
- A question was asked to clarify the 2008 Rezoning that tied 80 acres contingent on developing property and must use the Mixed Use M.U.P.U. D. Ordinance. Principal Planner Menser will provide the information at the next meeting.
- Transportation for residents will be provided by the complex. Significant developments often add access to public transit options for the area.
- The natural tree line will be preserved as much as possible near the area where the berm will be added.
- The Wildlife Study may need to be updated.
- There is no ordinance guidance for the Natural Features Study but this is a requirement of the Special Use Permit submittal.
- Ten acres out of a 60 acre lot should not have a significant environmental impact. The developer used a previous study since no other development has been done. A new study could also delay the project from moving forward.
- Include the berm as a condition in the approval of the Special Use Permit.

A straw poll indicated the Planning Commission would be in support of recommending approval of the Special Use Permit for the senior living community however the Special Use Permit for construction of the building will go to the Township Board for a final decision.

Chair Hendrickson closed the public hearing at 9:08 p.m.



7. UNFINISHED BUSINESS

- A. Special Use Permit #20011 (Andev Group, LLC), establish an approximately 268,263 square foot senior living community comprised of 230 units on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.

Commissioner Clark moved to adopt the resolution.
Supported by Commissioner Shrewsbury.

Principal Planner Menser reminded the Planning Commission there are 21 conditions listed and he hopes everyone has had time to review them. He noted at the previous meeting the applicant's opposition to having the sidewalk along both sides of the extended Hannah Boulevard and cul-de-sac to connect to existing sidewalks along Hannah Boulevard which is item #8 and a request by a resident to add a condition to share the data relating to the water management plan so it could be discussed.

Chair Hendrickson noted a difference in the square footage numbers for Special Use Permit #20011. The Agenda states 268,263 square feet and the resolution states 267,543 square feet and wanted to confirm the correct number. Principal Planner Menser confirmed 267,543 square feet noted in the resolution is correct and apologized for the error.

Planning Commission Discussion:

- Athena McLean submitted documentation to the Planning Commission, and it was appreciated by the commission.
- The criteria listed for a special use permit notes no adverse impact on environment and taking green space and building the development on it will have an adverse impact.
- Flooding and storm water issues will be evaluated by the Ingham County Drain Commissioner.
- The project is located outside the flood plain and is not located in the wetland area.
- The Climate Sustainability Plan calls for re-evaluating the use of the traditional 100-year flood plain as a criterion.
- In 2013 a level spreader was retooled because there was erosion into the detention pond and a future concern of instead of water flowing north to the Red Cedar River it might flow south towards the Herron Drain.
- The public transit system is a long distance away for employees who may need to use the service and the area doesn't seem like it will be adequately served the public.
- The Nature Features Survey submitted was taken from years past and during a season that does not capture the true abundance of wildlife and vegetation in the area.
- Indian Hills has water problems and we cannot require the new applicant to address problems from past projects.
- Residents who have drain issues should contact the Ingham County Drain Commissioner in order to address their concerns.
- When the plans are submitted the specifications come from the Ingham County Drain Commissioner.

A proposed amendment was made to the motion to share data with the Indian Lake Estates Homeowners Association about the storm water management plan and that the applicant demonstrate that the project is adequately served by storm water drainage.

Commissioner McConnell moved to adopt the revised amendment.
Supported by Commissioner Richards.

ROLL CALL VOTE:

YEAS: Commissioner McConnell, Richards

NAYS: Commissioner Premoe, Cordill, Shrewsbury, Clark, Trezise, and Chair Hendrickson

MOTION FAILED: 2-6

Motion to have all documentation and supporting studies submitted to the Drain Commissioner as part of the storm water treatment plan, be shared with the Indian Lakes Estates Homeowners Association at the time they are submitted to the Drain Commissioner.

Motion by Commissioner Trezise to adopt the revised amendment to share the data.
Seconded by Commissioner McConnell

Ken Lane, Economic Development Director, advocates development and supports the proposed project and wanted to remind the Planning Commission that they determine land use and should rely on the expertise of others involved in the proposal such as the Drain Commissioner.

Jeff Kyes, Engineer with Kebs, Inc. stated the reports submitted to the drain office and all calculations are available to the public and provided to the Meridian Township Engineering Department.

Mike Samuels noted he agreed with Jeff Kyes and the final engineering calculations will be shared with the Indian Lakes Estates Homeowners Association.

ROLL CALL VOTE:

YEAS: Commissioner Trezise, McConnell, Premoe, Cordill, Shrewsbury, Richards, Clark and Chair Hendrickson

NAYS: None

MOTION CARRIED: 8-0

Chair Hendrickson asked if there was any discussion regarding the applicant's opposition to condition #8. The Planning Commission agreed the condition will remain stating a sidewalk will be constructed on both sides of the extended Hannah Boulevard and cul-de-sac to connect to the existing sidewalks along Hannah Boulevard.

Commissioner McConnell moved to add an additional condition to have the applicant submit a more complete updated Natural Features Inventory.

Seconded by Commissioner Richards.

The project would be on hold until the Natural Features Study came back if we proceed with this request.

Commissioner Premoe requested to move the previous question on all matters pending and vote.

Seconded by Commissioner Trezise

ROLL CALL VOTE:

YEAS: Commissioner Premoe, Trezise, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2

Motion to adopt the resolution as amended approving Special Use Permit #20011.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, Trezise, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2



- B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.

Commissioner Trezise moved to adopt the resolution.

Seconded by Commissioner Premoe.

Planning Commission Discussion: None

ROLL CALL VOTE:

YEAS: Commissioner Trezise, Premoe, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2

- C. Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).

Principal Planner Menser noted no further information was received since the last meeting. The proposal will go to the Township Board after the Planning Commission recommendation.

Commissioner Clark moved to adopt the resolution.

Seconded by Commissioner Premoe.

Planning Commission Discussion:

- The applicant did not provide sufficient evidence to prove why the current zoning is incorrect or why the new rezoning would be a better fit for the property.

ROLL CALL VOTE:

YEAS: Commissioner Clark, Premoe, McConnell, Cordill, Shrewsbury, Richards, Trezise, and Chair Hendrickson

NAYS: None

MOTION CARRIED: 8-0

From: [Tom Dietz](#)
To: [Planning Commision \(DG\); Peter Menser](#)
Cc: [Linda Kalof](#)
Subject: March 16 hearing
Date: Friday, March 13, 2020 8:02:38 PM

We would urge you to postpone the meeting until the COVID-19 emergency has subsided. It seems inappropriate to ask citizens who wish to express their views about issues on the agenda, in particular the huge development proposed by the Andev Group, to put themselves and others at risk in a public meeting at this time.

We appreciate that developers are always pushing for speedy hearings. But this land was purchased with zoning in place. Granting the SUP would vastly increase the value of the property in a windfall, while we have serious concerns about the impacts on neighbors and the Township overall. So we see no public urgency in this hearing, particularly given the current state of emergency.

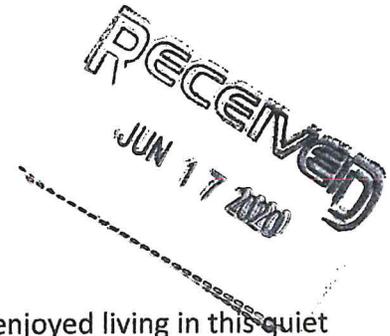
Sincerely,

Thomas Dietz and Linda Kalof
4651 Sequoia Trail
Okemos

Special Use Permit/Andev Development

Carol Chapman <cchapman@tomieraines.com>

Wed 6/17/2020 1:44 PM



Dear Planning Commission,

I have been a resident of Indian Lakes for 45 years and have thoroughly enjoyed living in this quiet subdivision with no street lights or sidewalks. This area is very attractive to people because of the privacy, wooded setting and location. We sincerely hope our area will continue to be special to forthcoming homeowners.

I have attended Township Meetings over the years with deep concern over water run-off issues resulting from the construction of the Michigan Athletic Club, Shopping Strip and Ice Arena plus Hotel & The Lodges. All of this development has increased our water table dramatically with tree roots being undermined, dying & falling down throughout the subdivision. The foregoing developers have assured us they would take care of water run off with retention ponds, etc. This has not happened & the result has been increased water resulting in flooded basements and undermining structural walls in our homes. A 3,000 s.f. home on Mohican Lane - 2 story brick home was condemned & removed that was the result of an underground stream. The lot that was left is now Mohican Park.

I live at the corner of Mohican Lane & Tonapah Trail and have the flood bank for the Red Cedar River-- Tonapah Trail is located in a flood throughway! Flood Insurance is required at many of the houses situated in a lower elevation from the proposed Andev Development. Our property has always had a backyard with grass to cut, up until the last 2 years of dramatic increase of the water table - both underground and increased level of the Red Cedar River. Our yard is nothing but mud and felled trees.

Please stop by this corner and take a look!

We sincerely beg of you to turn down this development. Please listen to our Homeowners requests!

Truly yours, Carol & Bud Chapman

Sincerely,

Carol Chapman
 REALTOR®, QSC Platinum, Luxury Home Specialist
 Berkshire Hathaway HomeServices
 Tomie Raines REALTORS®
 1400 Abbot Road, Suite 200
 East Lansing, MI 48823
 Cell-Phone: 517-202-2240
 Office Phone: 517-853-6305
 cchapman@tomieraines.com


*Chapman
 4825 Mohican Ln
 Okemos Michigan
 1-517-202-2240*

RECEIVED
JUN 17 2020

PLANING COMISSION MERIDIAN TWP ----- WED JUNE 17,2020

IT IS MY UNDERSTANDING THAT YOU ARE IN THE PROCESS OF DETERMINING TO ALLOW A LARGE(268,263 FOOD SENIOR LIVING STRUCTURE) ONE OF TWO SUCH STRUCTURES TO BE BUILT ON WHAT IS A FLOOD PLANE AND A FLOOD FLOW AREA.

I LIVE AT 4865 MOHICAN LANE, RIGHT ON THE RIVER,I HAVE BEEN THERE FOR SOME 40 YEARS, AND SEEN A DRASTIC CHANGE IN THE AMT OF WATER THAT REMAINS IN MY BACK YARD AFTER A HEAVY RAIN, AND ALSO WITH THE FLOODING. I HAVE ENCLOSED A RECENT PHOTO OF MY BACK YARD TAKEN IN DECEMBER WHEN A TREE FELL ON MY HOUSE. THERE IS A 5 FOOT CYCLONE FENCE THAT SURROUNDS THE BACK YARD.

AS YOU ARE AWARE EYDE COMPANY HAS CONTINUED TO SELL THE LAND TO DEVELOPERS THRU THE YEARS, IN DOING SO HAS BROUGHT IN FILL IN SOME AREAS, ELIMINATING THE AREAS WHERE WATER CAN BE ABSORBED INTO THE LAND AFTER A HEAVY RAIN OR THE SPRING FLOODS. AS THEY HAVE CONTINUED TO ENCROACH AND FILL THE FLOOD PLANE, WE HAVE SEEN MANY CHANGES IN THE WATER IN AND AROUND OUR HOUSE, DUE TO THE DECREASED AREA DUE TO FILL THAT THE EYDE'S HAVE ALLOWED.

1-40 YEARS AGO THE RIVER WAS SMALLER, THE TREES ON THE BANKS OF THE RIVER HAVE SLOWLY FALLEN INTO THE RIVER AS IT HAS ENLARGED DUE TO THE FACT NOT AS MUCH WATER CAN BE ABSORBED, DUE TO FILL AND THE CONSTRUCTION,OF THE MAC,MANY STUDENT APARTMENTS,ICE ARENA, AND NOW YOU WANT TO TAKE AWAY MORE LAND, AND REPLACE IT WITH TWO LARGE BUILDINGS, AND A LOT OF ASPHALT.

2-30 YEARS AGO, WE NOTICED A LITTLE MORE FLOODING IN THE BACK YARD,THE WATER WOULD STAY LONGER, THAN BEFOR,AND WE NOTICED MAYBE 2 OR 3 FEET OF WATER IN THE BACK YARD

3-20 YEARS AGO, THE WATER WAS AS HIGH AS THE 5 FOOT CYCLONE FENCE, AND WOULD STAY FOR MAYBE 4 TO 6 DAYS BEFOR RECEEDING.

4-WITHIN THE LAST 5 YEARS WE HAVE SEEN A DRAUMATIC CHANGE IN WATER RETENTION IN OUR BACK YARD, LAST YEAR IT WAS OVER 12 FEET OF WATER IN OUR BACK YARD, UP TO THE AREA MARKED ON THE PHOTO, ABOUT 4 FEET BELOW OUR HOUSE.

5-IF YOU ALLOW THIS PROJECT TO GO THRU, AND TAKE AWAY MORE LAND THAT IS IN THE FLOOD FLOW OR PLANE AREA DUE TO BUILDING AND ASPHALT

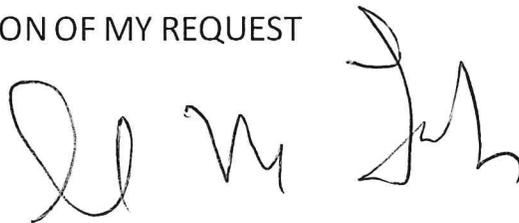
COVERING THE GROUND, THERE IS A VERY STRONG CHANCE THAT THE WATER WILL COME INTO MY HOUSE.

I UNDERSTAND THAT MR EYDE HAS A RIGHT TO SELL HIS LAND, AND YOU CERTAINLY HAVE THE RIGHT TO APPROVE THE CONSTRUCTION, EVEN THOUGH IT IS ON A FLOOD FLOW AREA, AND THERE IS ONLY SO MANY PLACES FOR THE WATER TO GO. MR EYDE WILL SELL THE LAND, THE FOLKS THAT DEVELOP IT WILL SELL IT EVENTUALLY, LEAVING ONLY THE TOWNSHIP TO SUE IF MY HOUSE FLOODS DUE TO THE FACT THAT THEY ALLOWED CONTINUED CONSTRUCTION DECREASING THE LAND AVAILABLE TO LET THE WATER DRAIN. CAUSING MY PROPERTY TO SUSTAIN DAMAGE DUE TO WATER FLOWING INTO MY HOUSE FROM A RIVER THAT CONTINUES TO RISE.

I DO NOT THINK IT IS JUST CLIMATE CHANGE THAT HAS CAUSED WHAT SEEMS LIKE A VERY LARGE INCREASE IN RAIN FALL, AND THE FLOODING THAT RESULTS, I STRONGLY FEEL THAT WITH THE CONTINUED BUILDING THAT THE TWP HAS ALLOWED, REDUCING THE AREAS FOR THE WATER TO FLOW ONTO LAND, BECAUSE THERE IS NOW ASPHALT PARKING LOTS AND LARGE BUILDINGS, IS THE REASON THAT I NOW HAVE 12 FEET OF WATER AT SOME TIMES IN MY BACK YARD. JUST A HEAVY RAIN NOW WILL OFTEN LEAVE OVER A FOOT OF WATER IN MY BACK YARD IN ONE DAY, WHICH HAS NEVER HAPPENED, UNTIL RECENTLY.

SO I AM ASKING YOU TO NOT ALLOW THE CONSTRUCTION OF THIS LARGE PROJECT THAT IS PROPOSED, AS THERE IS AT THE PRESENT NO PLACE FOR THE WATER TO DRAIN TO, AND THIS WOULD ONLY INCREASE THE PROBLEMS I AM SEEING OCCUR IN MY BACK YARD

THANK YOU FOR YOUR CONSIDERATION OF MY REQUEST
DAVID W. FRENCH –HOME OWNER
4865 MOHICAN LANE
OKEMOS, MICH 48864
517 337 2101

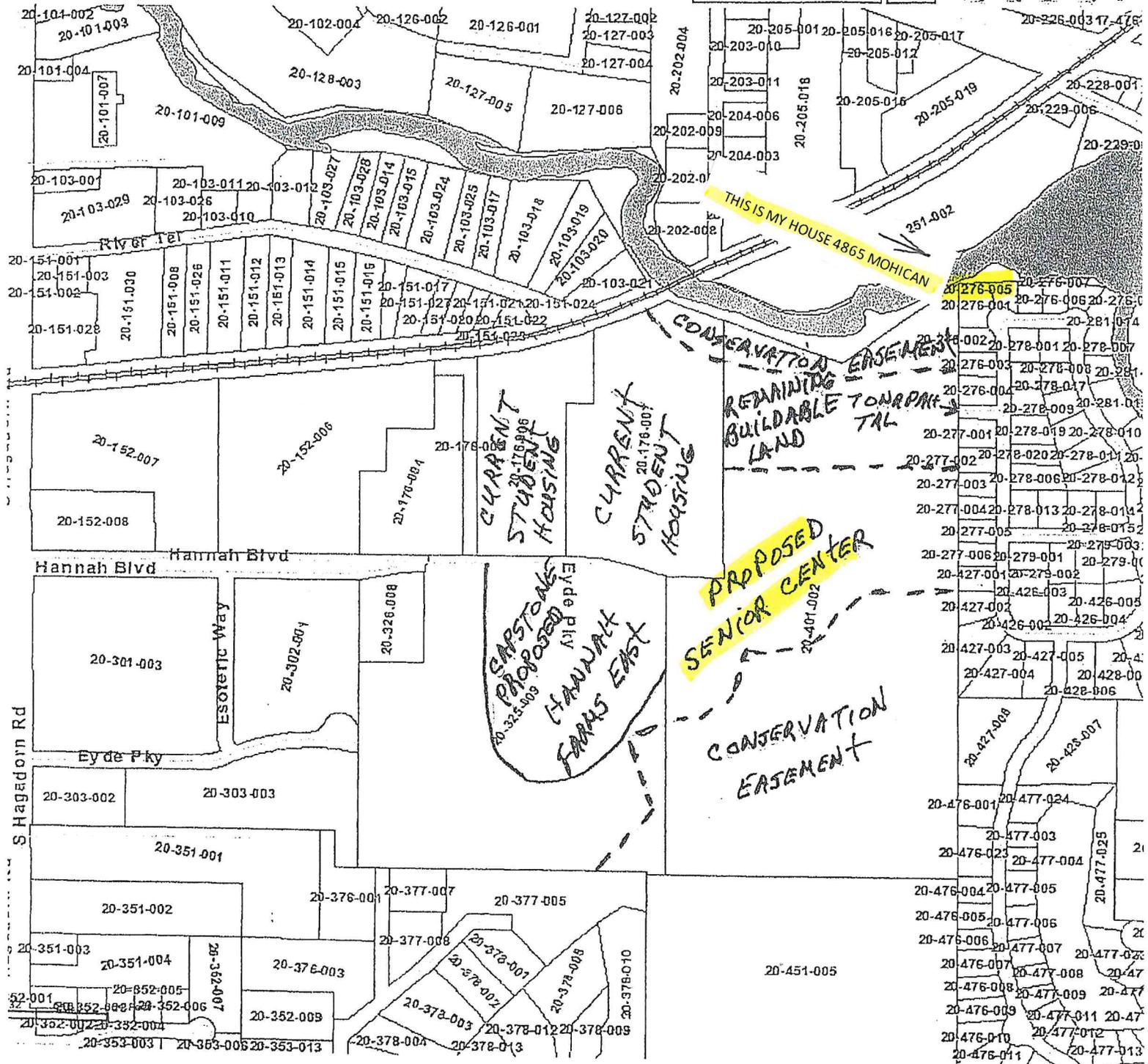
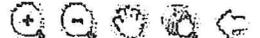
A handwritten signature in black ink, appearing to read 'D W French', written in a cursive style.

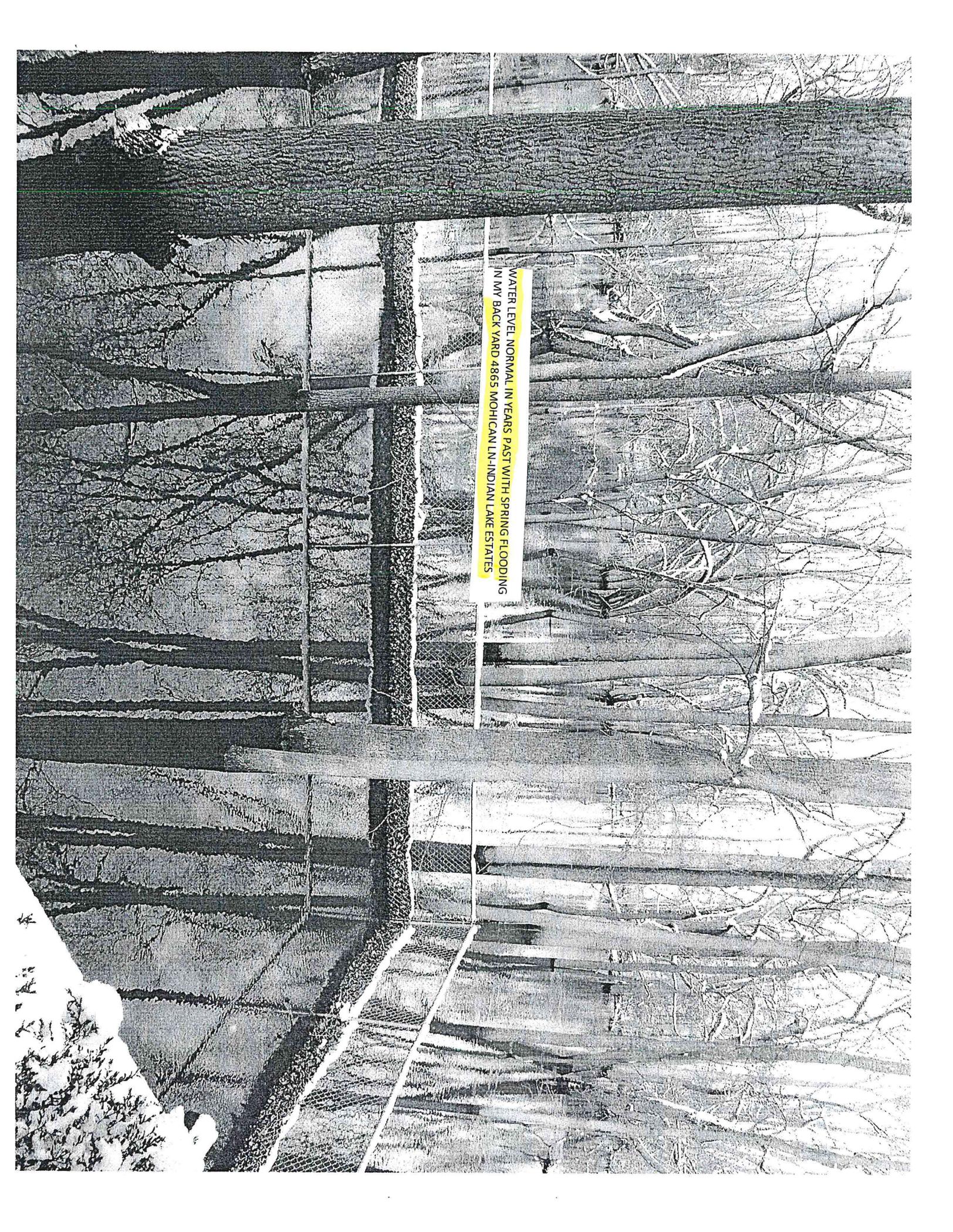
Charter Township Parcel Viewer

Attributes

1:6,445

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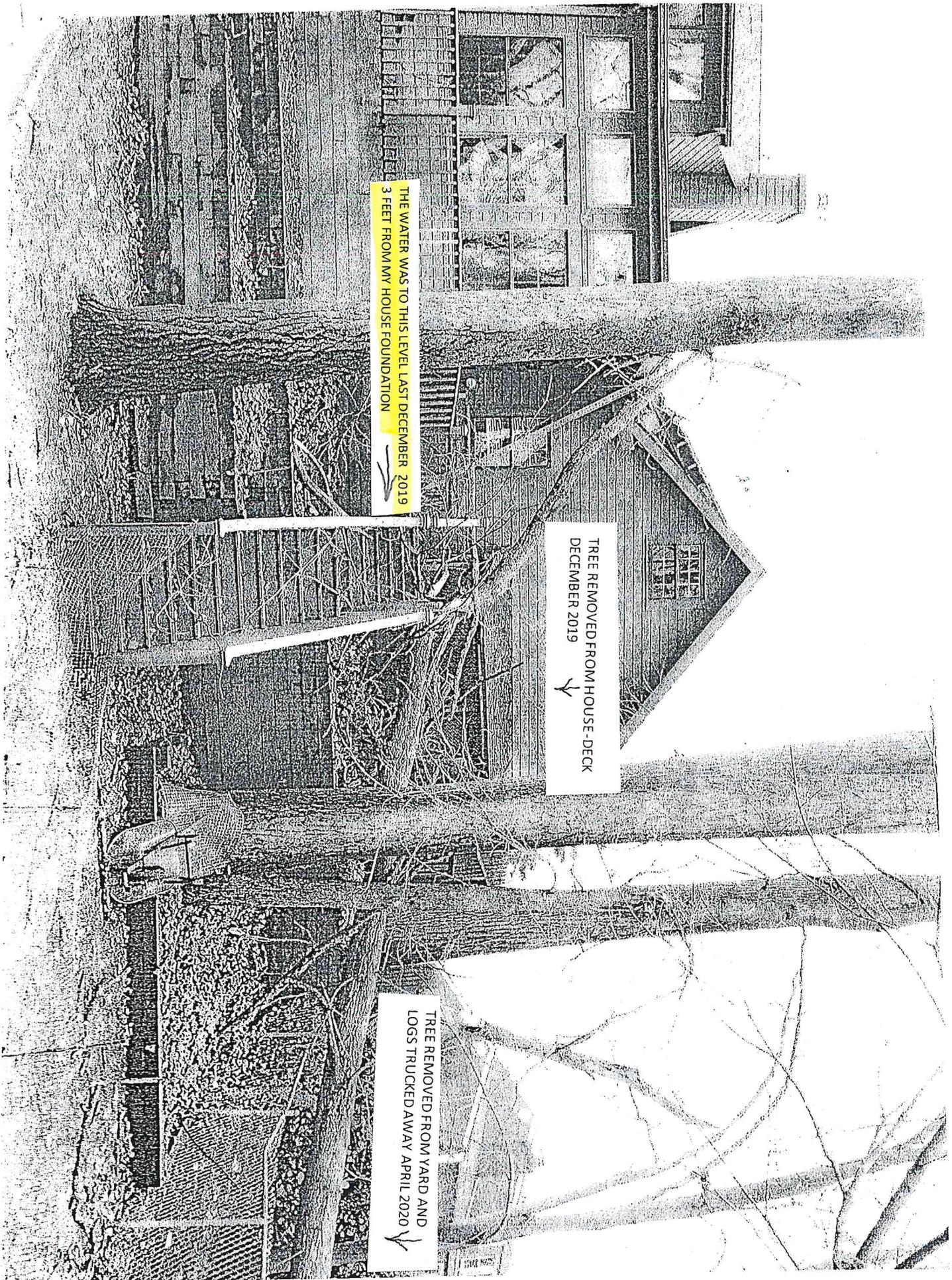


WATER LEVEL NORMAL IN YEARS PAST WITH SPRING FLOODING
IN MY BACK YARD 4865 MOHICAN LN INDIAN LAKE ESTATES

THE WATER WAS TO THIS LEVEL LAST DECEMBER 2019
3 FEET FROM MY HOUSE FOUNDATION

TREE REMOVED FROM HOUSE - DECK
DECEMBER 2019

TREE REMOVED FROM YARD AND
LOGS TRUCKED AWAY APRIL 2020



Peter Menser

From: Simon, Amy <simonamy@msu.edu>
Sent: Wednesday, June 17, 2020 9:01 PM
To: Planning Commision (DG)
Subject: Proposed Hannah Farms senior center development
Attachments: IMG_9064.JPG

Hello,

My name is Amy Simon, and I live at 4763 Mohican Lane, Okemos, MI 48864. My home is one of the few that will be immediately adjacent to the proposed Hannah Farms senior center development, SUP #20011. I have read through previous materials as well as the packet for the June 8 planning commission meeting. I have also watched that meeting. My sense from these is that the concerns from the Indian Lakes Estates homeowner's association have been taken seriously and some measures have been adopted based on our concerns. I also understand that the biggest question about water management has not yet been resolved, as much of that work will come during the next stage of development. It seems to me that there is a general consensus among the committee that this development should move forward, as it meets or exceeds all legal requirements. I am therefore not writing to provide environmental or legal reasons why it should not move forward. Instead, I am writing to express my personal perspective as someone who will be directly impacted by this development.

I have attached here a picture of my backyard from this weekend. I bought my husband a hammock for Father's Day, and he, along with my twin four-year-olds, were enjoying the peace and quiet of nature in our backyard. The wind rustled the leaves of the enormous trees overhead, and all we could hear were birds chirping. It was idyllic. Later that day, from inside our screened porch, we watched as a fox played near the kids' swing set. Yesterday, when I went out to put away toys, I found myself face-to-face with a deer just past our property line. We shared a glance for a moment before I went back inside. I cannot count the number of times I have sat in our living room, which includes large picture windows with a view to the backyard, and felt a welling of peace and tranquility because of the beautiful scenery that I am fortunate to see. In this world of struggle, I have found sanctuary in my home and its environs.

This development will impinge on, if not destroy those environs. I have not seen anything in the plans that demonstrates that natural features will completely shield my home from this development. Based on those plans, it looks like, instead of a beautiful field and trees, I will have a parking lot 90 feet from my backyard. It seems that even a 4-6 foot berm will not be able to provide complete protection from this building. Allowing these facts, I have two specific questions I would like to address:

1. Assuming this project moves forward, when will the construction begin? How long will it last? How will the developers compensate myself and others directly abutting the development for the noise and disruption of our lives (how can someone digging around for a prolonged period just behind our yard not disrupt our lives?)
2. How will the developers take responsibility for the strong potential that our property values will significantly decrease? It is well-known that one of the most attractive aspects of living in Indian Lakes Estates is the natural beauty. In fact, I would not have bought this house had there been a huge senior center just behind it. I am concerned that it will become increasingly difficult for me to sell my house, especially for a reasonable price.

These questions may make it sound like I am interested in financial compensation. In fact, I would rather just be able to sit with my family in our hammock in the backyard. This is the first home I have ever bought, and I have raised my children here from the time they were six months old. I have made major investments in the home, hoping to stay for a long time. I would like more than anything to continue to live here and to enjoy my home the way I purchased it. However, if that becomes impossible to do because of this construction and development, I would like to know that I am in a financial situation to be able to move to a home more comfortable for myself and my family.

Thank you for your time. I hope to hear a response, if only an acknowledgement of receipt.

Best,
Amy

Amy Simon, PhD
Assistant Professor
William and Audrey Farber Family Endowed Chair in Holocaust Studies and European Jewish History
Michigan State University, James Madison College, 842 Chestnut Rd. Rm. S310, East Lansing, MI 48825
Tel: 517-884-1270



Peter Menser

From: Meridian Township, MI <meridian-mi@enotify.visioninternet.com>
Sent: Wednesday, June 17, 2020 9:44 PM
To: Planning Commision (DG)
Subject: Special use Permits #20011 and #20021 (Andev Group)

Message submitted from the <Meridian Township, MI> website.

Site Visitor Name: Jack Baldwin
Site Visitor Email: baldwi80@msu.edu

Dear Commissioner,

I am a resident of the Indian Hills subdivision in Okemos, and I want to express my appreciation for the support that the planning commission has given to maintaining the quality of life in our neighborhood. However, I also want to convey my concern about the effects of the continuing development of the Hannah Farm property, which is directly adjacent to our residential neighborhood.

One obvious and growing problem that I believe is a direct effect of that development is the ever-increasing water levels in our area. I live at 4716 Arapaho Trail. The back of my house looks southward out onto the wetland that surrounds Herron Creek as it flows down towards the Red Cedar River. Every year, the area behind my house floods more and more. An obvious sign that this is a growing problem is that large trees are steadily dying and then breaking off several feet above the ground and falling over. I hear and see them falling down every few weeks, and one just has to walk out into the wetland and look around to see that this is part of a steady change for the worse.

Other houses in the neighborhood already have wet basements that they did not experience in earlier years. And backyards that nowadays are frequently flooded. In our particular case, we have a finished walk-out basement, so a catastrophe for us will be when the water surface reaches a level where it will flow straight in through the basement door. The water is not there yet, but it certainly appears to be headed in that direction.

Having allowed significant areas of Hannah Farm to be paved over must be a significant contributor to this problem. The Planning Commission needs to make very sure that future development will not make things worse yet. And I am sure that you know better than me that developers do not always do what they say they will do.

Please continue to stick up for the long-term residents of the township. We need your help.

Yours sincerely,
Jack Baldwin

Telephone
242-0816



Ms Linda M Stober
4835 Mohican Ln.
Okemos, MI 48864

Dear Planning Commission,

We bought this house 20 years ago when it was on a wooded lot with shade trees. Today there is not one tree left. Every tree either drowned and fell over or had to be cut down because it became a danger to the house.

The photo depicts my husband with a saw trying to curtail some cost from a tree that fell. He is standing on the property line we share with the Eydies.



We don't have trees now, but every year entails a huge clean up because the increasingly large floods bring in more and more lumber floating in from the river. The back of our house is impassable now, the water table is so high our yard is wet all the time and we can't keep up with the dead wood.

The river water, which increasingly smells like sewage, is now creeping up our hill into my flower beds, so as of this year I have stopped gardening in back.

We have a loss of property, isn't that illegal?!?
The previous developers promised us we would not be impacted! That was and is a lie.

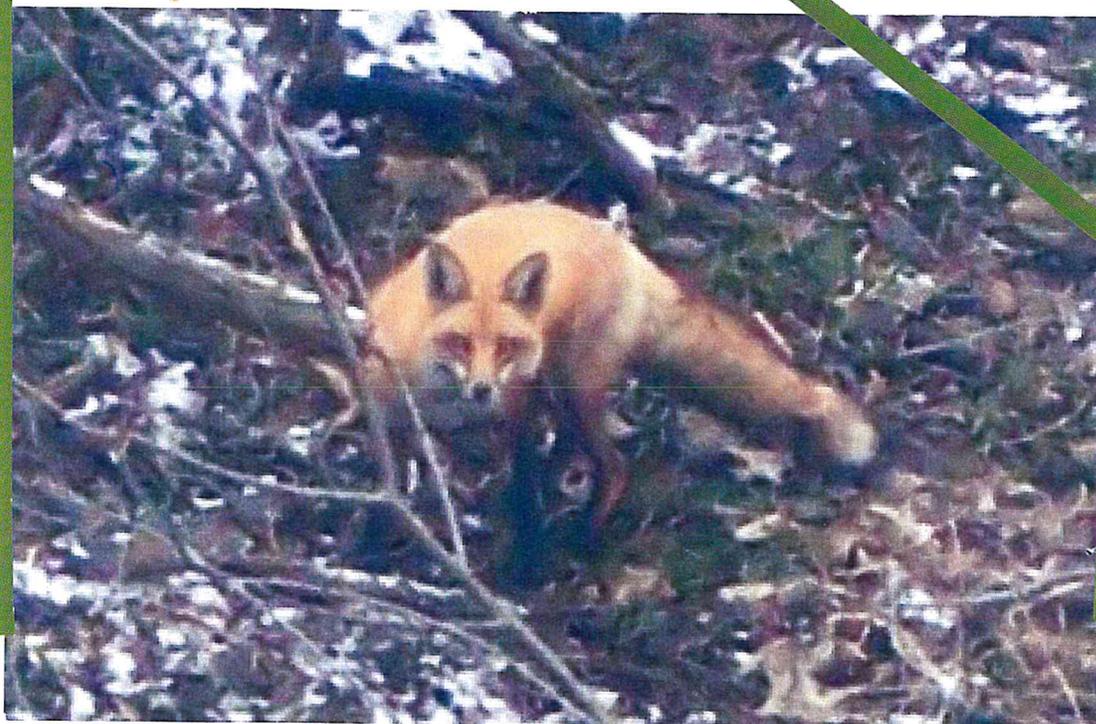
RECEIVED
JUN 18 2020

I watched the meeting when Eyde/Andev asked you to rush. I am appalled at their request that you ignore your job! Please don't rush! The residents of ILEHA have had their due process rights compromised because of COVID 19. The federal gov. said that was not suppose to happen.

The residents of ILEHA have already engaged a Hydrologist to get CURRENT figures. Please do not put another development in back of us until the water problems are solved from the last 2 developments approved by this Township.

Thank you,
Linda Stober

Providing a safe and welcoming, sustainable, prime community.

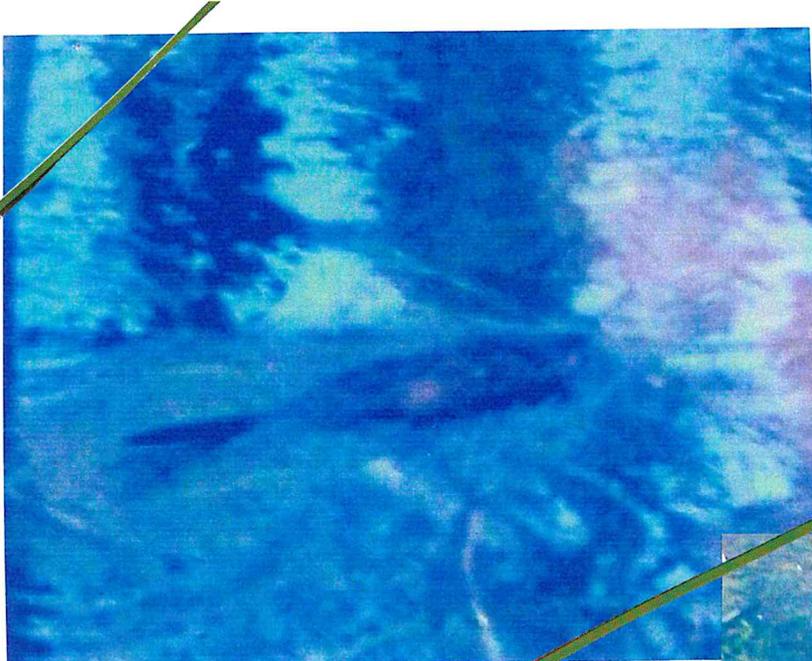


We are not trespassing,
We live here.

Red Fox is behind
our house



tree is approximate
property line.



When planning a new development, isn't it best to combine it with the Wonders of the old one...?

↑ Beaver
→
our deck
→



Beaver Home Depot



Still there...

..On river bank, within Public Domain

Peter Menser

From: greg humbert <gregagrumpbert@gmail.com>
Sent: Thursday, June 18, 2020 11:37 AM
To: Planning Commision (DG)
Subject: andev senior living project

from: greg humbert
4835 Mohican Ln, Okemos, MI 48864

I have resided at this location in Indian Lakes Estates for approximately 20 years. The land behind my home is labelled as a conservation easement and wetland adjoining the red cedar river on maps. In fact, the red cedar river floods into my back yard regularly. Twenty years ago my backyard would flood once per year, at snow melt. Twenty years ago I could not see the river from my windows due to thick forest. A few years later, during one of the annual backyard floods, trees began falling toward my house. I have had many of the trees in my backyard removed and many of the forest trees behind my house have died and fallen. I am aware that the emerald ash borer is at work here, but not all of these trees are ash trees. Also, I recall that drain commissioner lindemann examined a fallen ash tree across the street from my house and declared that it was not killed by the ash borer. In one year, all the cottonwood trees in the area behind my house that had double trunks became cottonwood trees with single trunks (these are very large trees). I believe that the water table is also responsible for the stress to the trees. I now have a mostly clear view of the red cedar river from my windows.

In recent years the flooding has evolved into several episodes each year and has been causing water in neighborhood basements.

In my backyard, I am quite certain that the red cedar river level and the water table are synonymous.

I am concerned that the water table in the area of the Andev senior living project maps labelled 'wetland c' has strong correlation to water table levels throughout Indian Lakes Estates. Drainage to and from 'wetland c' runs through and around Indian Lakes Estates. The Herron Creek, the Herron Creek drain, the Hannah Farms drain, an 8" overflow pipe and spillway all converge at 'wetland c'. The Andev stormwater treatment ponds are proposed to exist 50 feet from 'wetland c'. The stormwater ponds appear to drain into the Hannah Farms drain. (The Hannah Farms drain system overflows into 'wetland c').
Is the Andev ponds system proposed to be a detention system?
Will the stormwater system have an effect on Indian Lakes Estates water table?
I would like to hear the opinion of a professional hydrologist.

thank you

Peter Menser

From: Meridian Township, MI <meridian-mi@enotify.visioninternet.com>
Sent: Thursday, June 18, 2020 1:29 PM
To: Planning Commision (DG)
Subject: Hannah Farms

Message submitted from the <Meridian Township, MI> website.

Site Visitor Name: Tom Dietz
Site Visitor Email: tdietzvt@gmail.com

I am concerned about the surface water management plan. We are already experiencing serious problems and the surface water management systems needs to be planned to avoid exacerbating those problems. And it has to be designed to handle the increase in intense precipitation that is already occurring in our region and that is projected to get worse. That is, a plan that might be adequate to handle what we have seen even over the last decade or so will almost certainly be inadequate in the future.

The US National Climate Assessment prepared by the federal Global Change Research Program notes:

“Climate change poses several challenges to transportation and storm water systems in the Midwest. Annual precipitation in the Midwest has increased by 5% to 15% from the first half of the last century (1901–1960) compared to present day (1986–2015). Winter and spring precipitation are important to flood risk in the Midwest and are projected to increase by up to 30% by the end of this century. Heavy precipitation events in the Midwest have increased in frequency and intensity since 1901 and are projected to increase through this century.

There has been an increase in extreme precipitation events that overwhelm storm water sewage systems, disrupt transportation networks, and cause damage to infrastructure and property. Runoff from extreme precipitation events can exceed the capacity of storm water systems, resulting in property damage, including basement backups.”

National Climate Assessment Midwest Chapter
<https://nca2018.globalchange.gov/chapter/21/>

4738 Arapaho Trail
Okemos, MI 48864
June 17, 2020

RE: Special Use Permit #20011 and #20021 (Andev Group LLC)/ Parcel #20-401-005

Dear Members of the Meridian Township Planning Commission:

I am a resident of Indian Lakes Estates, taking the opportunity to comment on the proposed project of the Andev Group LLC. I had not received the May 21st notification for the public hearing scheduled on June 8, 2020, or I would have attended. I did, however, go back and carefully listen to the recorded meeting and examined the accompanying materials. Because of my professional obligations and caretaking responsibilities, I also had not kept abreast of the changes in zoning of RAA (single family low density development) that Meridian Township had pushed forward during the last couple years, which has enabled consideration of this project.

Professionally, I have spent the largest part of my career studying long term care facilities, particularly those designed for persons with dementia. In 2009 I won the national New Millennial Book Award from the Society for Medical Anthropology for *The Person in Dementia: a study of nursing home care in the U.S.* I have written extensively on this subject, spent a year as part of a 60 person, 4-University research team in Ireland studying home care, and have been invited to speak on this subject and conferences globally. I now offer to bring my expertise to my community and this proposal.

For my book, I spent two years conducting intensive observational research comparing two cutting edge 40- bed memory care units on the east coast. I spent long hours daily at the units, often staying overnight and weekends to get a sense of what life was like for residents, staff, and visitors. The memory care units housed up to 42 residents, mostly in large shared double rooms. What haunts me most was the immense loneliness of the residents, and their unanswered pleas. "I want to go home." I was also struck by the rapidity by which infections spread in such congregate settings, for example, a scabies outbreak that affected staff and residents alike. Most important was the care philosophy that governed the way staff interacted with residents. The memory units I compared were structurally identical, but their different care philosophies led to starkly different outcomes for residents in quality of life and longevity.

Most people think that dementia progressively worsens. My own research led me to question this, as I found improvements in some cases, whenever residents' behavioral expressions (e.g., agitation) were taken seriously; I also witnessed precipitous unexpected decline in cases where they were not. The philosophy that shapes memory care is **absolutely fundamental** to sustaining elders. But the physical structure of the facility also matters, and much has been learned about that in the years following my own research. The evidence consistently suggests that small homey houses (for 8-12 residents) in private rooms make all the difference in sustaining a person's memory and happiness. It also matters to families.

Most families who shop for a residential care facility for their elder compare ratings for facilities in their area, and then visit to see the quality and condition of the facility and grounds. They typically want to be within visiting distance and so are restricted by local offerings. Very few have investigated philosophy of care that may have shaped design; they rely on the provider to have done that. Yet the majority of even the most luxurious (and expensive) assisted living and memory care facilities maintain a traditional winged unit design with long corridors, often with double rooms, similar to nursing homes. If Covid 19 taught the long term care industry anything, it is that such designs can be **deadly** in an outbreak; this was true in our own community, even in one of the most luxurious facilities. **Covid 19 is a game changer** and an opportunity for communities like ours to act proactively, with innovative providers, to prevent needless deaths. In light of the Covid outbreak, David Grabowski, Professor of Health Care Policy at

Harvard, is advocating promoting "smaller home environments where we value the caregivers and residents... houses with just eight to 12 residents living together." One provider, Daniel Ruth, agrees that "Limiting occupancy can also help control the spread of infection" and that "all rooms should be single rooms." <https://www.npr.org/2020/05/21/855821083/ideal-nursing-homes-individual-rooms-better-staffing-more-accountability> Indeed, as of June 16, while over 250,000 cases of Covid-19 and **50,000 deaths** have been reported in long term care facilities, only 9 cases (and **6 deaths**) had occurred by late May among the 2653 residents living in 245 small houses called GreenHouses (<https://www.nytimes.com/2020/05/22/health/coronavirus-nursing-homes.html>). About 45% of all covid deaths have occurred in long term care facilities according to The Kaiser Family Foundation. States are inconsistent in including assisted living facilities in their numbers; Michigan does not. However, because they are less regulated, assisted living facilities may pose an even greater threat, according to some writers. <https://www.statnews.com/2020/03/25/assisted-living-covid-19-kirkland-nursing-home/>

I share all this, because as responsible citizens and planners of a wonderful community, we owe it to our elders to promote our best for them. I wish to bring my knowledge to bear to work with all stakeholders to help maximize the success of this project and make it a welcome addition to our community. That said, my review of the June 8, 2020 meeting and materials lead me to make three points. **First**, I am excited at the **PHASE II** project, which will bring a senior independent living residence close to the university and the Lodges. Many similar projects have begun, including one by the U of Michigan and seniors find them a valuable way to stay active, engaged in university classes and activities, and interact intergenerationally. In fact, one such senior housing project in Ohio reserved several apartments for students (See <https://www.aarp.org/livable-communities/housing/info-2019/student-housing-retirees.html>).

Second, I do worry, though, that relying on 4 ½ yr natural feature study may be misleading given the ecological changes so many of us have witnessed in our locality the last several years. Even though the most recent rains were not as severe as many from previous years, they have resulted in high levels of still and dirty water that harbors potentially disease infested mosquitos; I have never seen anything like this in the 23 years I have resided here. I am also saddened by the growing number of downed and rotting trees. I would hope that there would be an updated natural feature study and/ or other measures taken before launching this project to avoid exacerbating an already worsening flood problem for nearby residents.

Third, as I stated above, this community lacks access to innovative long term care residences. Those that exist are outdated, and in the post Covid era being called to task to redesign their physical structures and care approaches. The proposed plan of the Andev Group is an opportunity to correct that. However, its proposal adopts a pre-Covid large facility design embodying long corridors and a "secure" (locked) memory unit. This approach has been challenged in the long term care literature about its contribution to agitation and injury, its needlessly upsetting residents, and its ethical concerns. For the assisted living proposal, the 67 residents would occupy individual studio or double bedroom suites. The memory care portion would house 42 residents in single or double studio suites. This design is no longer supportable in a post – Covid 19 era which calls for single rooms and smaller houses both to stem infection.

Over the last 20 years, considerable research has been conducted in designing the very type of smaller houses (<https://www.iadvanceseniorcare.com/from-nursing-home-to-home-the-small-house-movement/>) researchers, policy makers and long term care providers are promoting in this post-Covid age. The GreenHouse Project is just one example of a highly successful small house, adopted in Michigan, including Grand Rapids and Holland, is <https://www.thegreenhouseproject.org/about/visionmission>. It was developed to create warmer, greener, and smarter places in which **to live, not die**, according to its creator, Dr. William Thomas, who initially developed the Eden Alternative for existing facilities. He

determined that they could not be rescued without a complete overturn in design, hence his smaller house approach which has won favor with families, residents, and staff. But this is only one of many existing models. I have attached a resource page with citations to articles, including a small house design guide https://www.fgiguilines.org/wpcontent/uploads/2018/03/MMP_DesignGuideLongTermCareHomes_2018.01.pdf. I also have attached in hard copy two of my articles (one on GreenHouses) and several other pages from articles of relevance to my discussion. In my email version of this letter, I will also attach a power point presentation I delivered in Ireland ten years ago on new approaches to dementia care.

I invite the community, the planning commission and the Andev Group to take the time to get this project right and re-imagine the continuing care community in light of the issues Covid has exposed. Instead of a large 3-story assisted living facility and 2-story memory care unit, why not envision instead 8-10 strategically placed small houses in the area being developed? They could utilize the built-in vista, offer a measure of freedom for residents, and keep them connected to nature through large windows. The staff in such facilities often assume many responsibilities, more like housekeeper/ family members than medicalized specialists and previous projects have proven economically successful, and highly desirable by private payers. In addition, the lower lighting and parking requirements could also reduce environmental impact, and perhaps retain more features of the existing environment, instead of necessitating a berm tended to minimize such impacts (and possibly introduce new ones).

I have many contacts with individual and organizations that have elected to develop small houses designs for their community. There are better, smaller, warmer, more homey designs out there that would more optimally serve the client basis the Andev Group is targeting. It is incumbent upon us to provide state of the art quality designs for elder living; Covid,19 necessitates that. I appeal to you to work together so we can realize a safe and promising future for the elders in our community, and our own futures.

I understand that representatives for the Andev Group had planned to meet with residents potentially impacted by the project to discuss concerns before bringing it to the Planning Commission. The Covid crisis interfered with that good intention. Nevertheless, given the potential impacts of the project, I request that further decisions by the Planning Commission be halted until that due diligence be fulfilled and Indian Lakes Estate residents have an opportunity to talk firsthand with members of the Andev Group, especially given the urgent post-Covid design considerations which I have discussed here.

I am including a resource page, a 1-page c.v., and the email presentation, as well as the hard copies of selected portions of articles and 2 of my publications. I will reach out to the Andev group and include Mr. Styka, Mr. Dreyfus, and Mr. Menser in my emails to Planning Commission. I hope to talk with you soon.

Sincerely,

Athena H. McLean

Athena H. McLean, Ph.D.,
Professor, Sociology, Anthropology and Social Work,
Central Michigan University, Mount Pleasant, MI 48859

Enclosures:

1-p. Curriculum vitae, June 2020, **Athena McLean**
4738 Arapaho trail, Okemos MI 48864 USA;
mclealah@cmich.edu +1.517.8626206

Education

Ph.D.	Temple University (Anthropology)	May 1990
M.A.	University of Pittsburgh (Anthropology)	August 1980
B.A.	University of Chicago (3 yrs), Temple University (Anthropology)	May 1977

Research/Professional Positions

2005 -	Professor (Sociology, Anthropology & Social Work) Central Michigan University
2007 – 2008 (<i>on leave</i>)	Sr Research Fellow, Irish Ctr for Social Geontology, National U of Ireland, Galway
2000 - 2005	Associate Professor, Central Michigan University, Mount Pleasant, Michigan
1997 - 2000	Assistant Professor, Central Michigan University
1995 - 1996	Adjunct Research Associate of Anthropology, Temple University Philadelphia, PA
1992 - 1994	Research Anthropologist, The Philadelphia Geriatric Center
1990 - 1992	Postdoc Fellow, Inst for Health, Health Care Policy & Aging, New Brunswick, NJ

Books

2007 *The Person in Dementia: A Study of Nursing Home Care in the US*. UT Press, Toronto CA.
Awarded the 2009 Millennium Book Award, Society for Medical Anthropology, AAA.
2007 *The Shadow Side of Field Work: Exploring the Blurred Borders between Ethnography and Life*, edited with Annette Leibing. Blackwell Pub, Malden, MA.

Selected Articles, Chapters, Book Reviews

2006. From Commodity to Community: An Impossibility? *Forum. Ageing and Society*. 26:925-937.
2006. Coherence Without Facticity in Dementia: the curious case of Mrs. Fine. In *Thinking About Dementia: Culture, Loss & the Anthropology of Senility*:157-179. A Leibing & L Cohen, eds. Rutgers UP.
2007. Dementia Care as a Moral Enterprise: A Call for a Return to the Sanctity of Lived Time. *Alzheimer's Care Quarterly (Now, Alzheimer's Care Today)* 8(4):360-372.
2007. The Therapeutic Landscape of Dementia Care: Intersubjective Aspects in the Sustenance of the Person. In *Therapeutic Landscapes: Advances and Application*: 315-332. Allison Williams, ed. Ashgate.
2009. Beyond the Institution: Dementia Care and the Promise of the Greenhouse Project. In *The Cultural of Aging: Worldwide Perspectives*:589-605, 3rd ed. Jay Sokolovsky, ed, Westport, CN: Praeger Press.
2010. Beyond impediments to caring: Toward a morality of late-life care. *Medische Antropologie* 22(1): 13-30.(with Deanna Trakas).
2011. Ethical Frontiers of ICT and Older Users: Cultural, Pragmatic & Ethical Issues. *ETI* 13(4):313-26.
2014. Supporting the Person with Dementia: Do monitoring technologies provide care or merely Surveillance? Pp207-49. In *The Body Under Surveillance*: A George, A Chatjouli & T Manolis, eds. Pedio
2015. Book review *The Alzheimer Conundrum* by Margaret Lock. *American Anthropologist* 117(1):194-5.
2019. Deanna Jeanne Trakas (1943–2016). *American Anthropologist* 121(4):969-971

Recent sabbatical research

Summer 2017 *Negotiating Care of Co-Residing Greek & German Elders in a Nursing Home*, Athens, Gr

Working Group

2020 - Collaborator, *Smart Homes, Older Adults, And Caregiver*, Tenzin Wagno, U of Basel, Switzerland

Society for Medical Anthropology (SMA) Committee work

SMA Annual AAA Program Committee Chair or Co-chair (2014,15,16); SMA New Millennium Book Award Committee Co-Chair (2015); SMA Career Achievement Award Committee (2016).

Resources:

1. Small house design guide:

https://www.fgiguilines.org/wp-content/uploads/2018/03/MMP_DesignGuideLongTermCareHomes_2018.01.pdf

2. Dementia friendly envs take root:

<https://www.statnews.com/2015/10/18/efforts-spread-to-aid-dementia-sufferers/>

3. Small design, low lights, non-institutional design help patients thrive

<https://www.buckner.org/blog/small-home-concept-helps-seniors-with-alzheimers-and-dementia-thrive-and-flourish/>

4. Assisted living like a small town from the 40s

<https://www.countryliving.com/life/a39630/nursing-home-tiny-houses/>

5. College students living in retirement communities

<https://www.aarp.org/livable-communities/housing/info-2019/student-housing-retirees.html>

and high demand by retirees: <https://www.insidehighered.com/news/2019/01/09/high-demand-retirees-live-campus-arizona-state-university>

6. Covid deaths in MI by

facility <https://www.detroitnews.com/story/news/local/michigan/2020/06/15/new-michigan-numbers-34-covid-19-deaths-linked-nursing-homes/3193407001/>

7. Nursing homes & Veteran Homes as epicenters for covid

19 <https://www.statnews.com/2020/05/08/nursing-homes-veterans-homes-national-epicenters-covid-19/>

8. Why Assisted Living facilities are especially vulnerable under covid 19

<https://www.statnews.com/2020/03/25/assisted-living-covid-19-kirkland-nursing-home/>

<https://www.wsj.com/articles/assisted-living-facilities-are-vulnerable-to-coronavirus-11586084400>
apartments: <https://www.craigslist.com/coronavirus/detroit-findings-so-far-87-percent-senior-apartment-facilities-have-covid-19-cases>

nursing homes: <https://www.detroitnews.com/story/news/local/michigan/2020/06/15/new-michigan-numbers-34-covid-19-deaths-linked-nursing-homes/3193407001/>

9. GH and Covid

<https://skillednursingnews.com/2020/05/born-before-covid-19-30m-green-house-nursing-home-development-takes-on-greater-significance/>

<https://www.nytimes.com/2020/05/22/health/coronavirus-nursing-homes.html>

10. Claude Pepper Center – excellent website with many resources on COVID's impact on long term care <https://claudpeppercenter.fsu.edu/coronavirus-covid-19-and-you/covid-19s-impact-on-long-term-care/>

11. why we should not be surprised at covid deaths at long term care homes

<https://www.forbes.com/sites/howardgleckman/2020/04/27/why-are-we-so-shocked-by-covid-19-nursing-home-deaths-we-have-been-failing-our-frail-older-adults-for-decades/#3e534bfc4aad>

Selected Articles (by Athena McLean):

Dementia Care as a Moral Enterprise: A Call for a Return to the Sanctity of Lived Time. *Alzheimer's Care Today* (formerly, Alzheimer's Care Quarterly) 8(4): 360-372. 2007.

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ILLiad TN: 20020

Borrower: EZC

Lending String: *NDM,JHZ,CS1,HD4,JVD

Patron: Mclean, Athena

Journal Title: Alzheimer's care today.

Volume: 8 **Issue:** 4

Month/Year: 2007 **Pages:** 360-372

Article Author:

Article Title: Athena McLean; Dementia Care as a Moral Enterprise; a call for a return to the sanctity of lived time

Imprint: Hagerstown, MD ; Lippincott Williams & W

ILL Number: 47711999



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Dementia Care as a Moral Enterprise

A Call for a Return to the Sanctity of Lived Time

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By ATHENA MCLEAN, PHD

Nursing home care continues to fall short of the vision of the 1987 Omnibus Reconciliation Act's to promote quality care, in spite of expenditures to develop finer assessments and regulations. This shortcoming is partly the legacy of a hospital model never designed to support long-term residents and of a cult of "task and time" that promotes *instrumental* care over intersubjective *person* care. This article calls for a return to the sanctity of unregulated time as lived and a blurring of the distinction between "life" and "care." This shift will transform the concept of dementia care from a *commoditized industry* to a *moral enterprise* designed to support the person with dementia.

Key words: caregiving, lived time, OBRA, personhood, commoditization

This December marks the 20th anniversary of the enactment into US law of the Nursing Home Reform Act, part of the 1987 Omnibus Reconciliation Act (OBRA 87). Building on years of research by the Institute of Medicine and input from advocacy groups, this historic law promised to address serious issues of neglect and abuse in nursing homes, but also to set in place standards of care and compliance. Significantly, OBRA 87 obligated nursing homes to provide care that would not only meet baseline standards, but would promote "the highest practicable physical, mental, and psychosocial well-being" of residents.^{1,2} Thus, of utmost importance for those who would spend their remaining years in a nursing home, OBRA 87 attempted to address quality-of-life issues.¹ Indeed, it led to drastic reduction in restraint usage, but its bold vision has not been realized. In recent years, there has been extensive noncompliance with existing standards,

combined with chronic understaffing in many facilities.²⁻⁵ Moreover, pending laws threaten to further compromise accountability of violators.⁶

To address violations, the Centers for Medicare and Medicaid Services (CMS) have been spending over \$400 million annually to regulate the nursing home industry.⁷ Further, CMS has continued to support research to develop finer "measures" of quality care standards [eg, the current minimum data set (MDS) 3.0], to improve quality across nursing facilities,⁸ and to fund contracts with quality improvement organizations to help nursing homes improve quality of care in key areas. Research groups have also worked to translate standards for consumers to assist them in comparing "quality" among different nursing homes, and

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to further stimulate competition⁹ and improvement in the homes. The CMS has also spent over a decade trying to determine how to collect, audit, and publicly report accurate nurse staffing data,⁵ and has extended contracts to researchers to recommend quality nurse staffing standards.⁴ While all this effort is laudable, it is puzzling that 20 years after the enactment of OBRA 87, so much funding must continue to be expended to establish baselines for quality care and to encourage its provision. It is also curious that the quality of care remains problematic in many nursing homes.^{5,6} Moreover, the CMS has not yet implemented recommended changes, despite considerable research recommending increases in nursing staff standards.¹

These problems, I believe, are related to the way the caregiving enterprise has been conceptualized and executed. Our enduring problems derive from the early fashioning of long-term care after a medically oriented hospital model that was never intended to sustain life over the long run. This model has misguided the development of long-term care, particularly of dementia, in several ways: (1) by defining the institutional locus in which caregiving would occur and the medicalized shape of that care, (2) by defining its regimented mode of delivery, (3) by influencing the selection of standardized criteria used to measure and monitor quality, and (4) by inadvertently promoting for-profit conglomerates over the smaller single-owner homes¹⁰ that provide the greater flexibility and environment that are often better suited to addressing residents' needs.^{11†} As a result of these developments, our understanding of the nature of "care" and "caregiving" and its relation to quality of life has become distorted, particularly with regard to persons with dementia. Even more significantly, the practice of caregiving itself has become compromised, with serious consequences for both care receivers and caregivers.

This article will examine these developments with particular regard to persons with dementia and their care needs. Taking into account both the unique care needs of those with dementia and the actual nature of "care" and

⁹ Competition for Medicaid nursing home recipients will result in higher quality only in more competitive markets. The nursing home market is generally not competitive because the federal government passed Certificate of Need (CON) legislation to limit Medicaid expenditures and set moratoria on new construction, effectively eliminating competition. See Mukamel and Spector 2003.⁹

[†] This is because the for-profit conglomerates were in a position to spread the cost of regulation across their businesses and were able to develop expertise in compliance^{7(p132)}—what Harrington^{5(p8)} calls a kind of "gaming."

"caregiving," it will consider some of the challenges and contradictions for dementia care posed by nursing home practices fashioned after an institutional model that conceptualizes caregiving as a *commoditized industry*. This situation, I suggest, is related to the naturalistic, mechanistic view of the universe and of the self that dominates the particular concepts and approaches to life and caring we have unconsciously adopted in our society. The consequence has been a dominant view of caregiving as an *instrumental* pragmatic enterprise, rather than an intersubjective *moral* one that recognizes the ultimately shared vulnerability both of the cognitively frail and the rest of us.

THE HOSPITAL MODEL FOR LONG-TERM CARE: A CULT OF "TASK AND TIME"

One of the aims of the Social Security Act of 1932 was to provide payment mechanisms that shifted care for the indigent elderly from horrific almshouses, where they were subject to abuse and neglect, to the community. Funding became available for private boarding homes that were the precursor to nursing homes. Since too few of these boarding homes were willing to support indigent elders with dementia, these elders were committed to psychiatric facilities, where they accounted for 40% of the population.¹² Laws passed in the 1950s encouraged the funding for nursing homes that utilized a medicalized, hospital-based model that did not address the chronic care needs of persons with dementia. Forty per cent of these new homes housed persons with dementia, but the inadequate number of required facilities led to the continued warehousing of these individuals in psychiatric hospitals, which reformers challenged as inappropriate.

With the passage of Medicare and Medicaid legislation in 1965, considerable new funding became available for elder care and others with disabilities. However, political pressure by physicians and the nursing home industry assured that this funding would be channeled into nursing homes, under medically trained staff, rather than to community settings, where people might receive nonmedical support better suited to their needs.¹³ This new public funding led to an explosion of new, privately built nursing homes during the 1960s and 1970s. Despite the public support made available to this new industry, poor conditions and inadequate monitoring led to the passage of OBRA 87. Thus, from the earliest days of public investment in elder care, institutions provided the chief locus of care for those with dementia, despite the fact that most placements resulted from unavailable community resources, not the need for ongoing medical care.¹⁴ Nursing homes have remained the primary

site for long-term care in the United States, although assisted living facilities that have slowly emerged as major competitors, mostly in the private pay market.

Nursing homes were designed on an acute care hospital model that allowed for examination of the body (its functioning, evidence of disease and symptoms, and general maintenance) during cyclical daily "rounds." Although fashioned after physicians' rounds, most of the work was carried out by nurses and nursing assistants who operated within what Neil Henderson calls an institutional "cult of time and task,"^{12(p13)} (or more precisely, "clock time and task"). This framework has governed the lives of residents and the nursing assistants responsible for the majority of the work.¹⁵ Within that culture, time is a precious commodity¹⁴ to be carefully and judiciously¹⁶ allocated, dividing the work among specific "care" tasks to be completed per resident.

Within this institutional culture, the focus has been on "bed and body tasks"¹⁵—basic hygiene, protection, body maintenance, and medical protocols. The quality of care is monitored by surveyors who examine care plans and scores of requisite resident assessments (versions of the MDS) aiming to measure each resident's functional abilities, behavior, physical, and mental health. A *low* score, which is supposed to reflect the *absence* of disease or disability, is expected to provide evidence of health, well-being, and good care. Inferring a condition of health and well-being from discrete measures is, however, limiting; what is missed is the elusive state of experiential wholeness that defies quantification and measurement, and yet is so important, especially in dementia.³ In addition, in emphasizing medical and physical *care outcomes* at single points in time, these assessments sacrifice the possibility of accessing a more holistic understanding of dynamic *life processes*,^{10,17} subject to continual change.

The focus on physical well-being and care has occurred much to the neglect of *psychosocial well-being*, which was also mandated by OBRA as part of quality care.² Psychosocial well-being—"person work"—however, is less readily achievable than concrete "bed and body" work,¹⁵ since there are no precise directions and it requires an ongoing sustenance of the person through a caregiving relationship.¹⁶ Such a relationship takes time, lacks definitive specifications, and may be difficult to establish under typical institutional working conditions and constraints. Because of the need to carefully parcel out task and time, very little remains for strictly nonmedical concerns, which typically take priority in a medical model, in spite of

OBRA's broader mandate.¹⁴ Efficient dispensing of physical care tasks thus has overshadowed relational care interactions, *even when they overlap*; the latter are not compatible with clock time parameters, and often go unrewarded (or even punished as avoidance of "real work") by supervisors¹⁶ and surveyors.¹⁴

Many nursing assistants are simply not able to do all the tasks required by regulations, given the enormous time pressures under which they work and the understaffing of most nursing homes. As Alice Hedt noted, "there simply is a limit on how much care a single person can provide."¹⁸ This has left nursing assistants feeling as if they are "routinely in violation" and "always coming up short."^{3(p57)} Thus, the medical model and the cult of time and task under which it has been applied in nursing homes has dominated the ways in which caregivers have regarded both bodies and persons, has shaped institutional priorities, and has affected the lives of both residents and their caregivers.

OBRA'S INFLUENCE ON NURSING HOME PRACTICES

This regimented approach to nursing home care, which dictates and controls the flow of life of residents and their caregivers, contradicts OBRA's vision to promote quality of life by enhancing dignity and self-determination.¹⁹ However, in an attempt to monitor the quality of care across CMS-certified facilities, the regulations have themselves placed emphasis on completion of mechanical tasks on itemized checklists. OBRA has mandated nursing homes to complete the resident assessment instrument of the MDS for all residents in order to be able to identify and address changes in functional and health status and to allow statistical comparison of assessments across facilities. The extensive documentation of a resident's condition into numerous *functions* within sections of the MDS is consistent with a nursing home economy that divides caregiving into specific activities or tasks divided into units of time with a dollar value.

Consistent with regulations, nursing home inspectors evaluate "quality of care" overwhelmingly on the basis of timely charting of care plans and medical records rather than on evidence of caregiver-resident interactions.¹⁴ Thus, paper compliance substitutes "caring to the regulatory standards" for "caring to the preferences or perspectives of the resident."[†] The old adage applies: "If it's not documented, it didn't happen." The documentation is what counts and yet documentation offers no guarantee that the

[†] Of course, what one determines to be judicious is itself a judgment call based on that which one values.

[†] In all fairness, the MDS 3.0 is designed to seriously try to address resident preferences.

staff members have actually completed care routines.⁵ By unintentionally diverting nurses' attention from residents to the paperwork, regulations have ironically further reduced the contact hours that boost the quality of care. The heavy demands on documenting changes in residents' conditions and potentially harmful incidents occupy much of a nurse's day. Regulatory pressures have thus encouraged practices that protect the nursing home, perhaps to the disadvantage of residents.

The MDS assesses the changes in various disease conditions, mood, function, and behavior of residents to identify and address problems. The MDS is also used as the basis of consumer-oriented tools as evidence of quality care among facilities. Having this information offers some residents assurance that their basic physical care needs are being provided, particularly those with serious medical conditions. The most recent version of the MDS (3.0), in particular, takes into account the views of residents directly—even those with dementia—about important concerns like pain, of which they are the most reliable judge.⁴ To those with dementia, however, who may not have significant medical needs, the items may hold little relevance to their problems or daily concerns about living and learning how to negotiate their lives in a nursing home.⁵

CARING FOR PERSONS WITH DEMENTIA

Quantitative measures have provided the principal means for estimating the quality of nursing home care. These offer useful standardized tools for providing baseline measures and comparative data for tracking an individual's physical and functional status, and presumably for comparing nursing home quality nationwide. They have been limited, however, in assessing psychosocial well-being and the more ambiguous,²⁰ yet relevant question of a resident's life quality.²¹ Changes in mood, behavior, and functional status are only superficial indicators of well-being or of good care. To interpret them that way is to misconstrue both the specific needs of persons with dementia and the nature of care and caregiving.

To begin to understand both quality of care and quality of life of persons with dementia residing in long-term care set-

tings, it is important to understand the unique personal needs of each resident.²² For those with dementia, that means understanding the particular kinds of challenges and related-care needs that dementia poses to them and their caregivers. It also requires understanding the fundamental nature of care and caregiving.

UNIQUE PROBLEMS AND NEEDS OF DEMENTIA

Dementia affects people in varying ways and the symptoms, rate of decline, and length of illness also vary widely.²³ Impairments that occur in cognition (thinking, perception, and organization), language, and behavior are common. These impairments can be frightening, particularly earlier in the illness when people have the greatest awareness of their difficulties and what might follow; this creates a need for considerable emotional support. The recognition of failing abilities may lead to loss of self-confidence and self-esteem, especially as others become aware of them too. Incontinence may bring shame and loss of self-esteem, and efforts to hide accidents may make the person appear even more impaired. Someone in this situation may need his or her caregiver to protect him or her from public embarrassment.²⁴

Impairments impede one's ability to perform both basic and complex activities of daily living (ADLs and IADLs), resulting in dependency on others for assistance. Persons vary in their wishes to retain their independence, and this may become an issue in their willingness to accept help from a caregiver. Knowledge about each person's preferences about receiving help⁸ and adequate time to establish a relationship with him or her enable the caregiver to assist optimally.

Memory impairments, particularly when accompanied by distortions in the sequence of events, can shatter a person's confidence about his or her history and achievements and produce a disturbing, fragmented sense of self.⁴ Moving to an unfamiliar setting is further disorienting and disruptive to old routines and the flow of life, and may exacerbate confusion and fragmentation, promoting even further decline. Given the severity of fragmentation and multiple losses of memory, place, and familiar people, the most critical aspect of dementia care may be enduring attention from an attentive caregiver.²⁵

⁵ The MDS Version 3.0, which is currently in draft form (see the next footnote)² and being tested, has explicitly attempted to incorporate quality of life by its very administration, attuned to respect the resident through efforts to capture resident voice directly. <http://www.cms.hhs.gov/NursingHomeQuality/tnits/downloads/MDS30Draft.pdf>. Accessed June 6, 2007.

⁴ Draft version of Minimum Data Version 3.0 (MDS 3.0). For Nursing Home Resident Assessment and Care Screening, July 31, 2006. Centers for Medicare and Medicaid Services, Washington, DC.

⁸ The new MDS Version 3.0 has been restructured to gain information from each resident herself about her preferences in daily routines and desire for independence.

²⁵ For clarification among the terms self, person and identity, see McLean.^{166(pp49-56)}

A sensitive nursing assistant can ease the transition for the resident and encourage social engagement in the new setting.²⁶ As the person with the most contact with the resident, the nursing assistant is in the position to reinforce the sense of self in the face of confusion, uncertainty, fragmentation, and loss. This can be accomplished by taking the time to acknowledge both the person's past accomplishments and her continuing social roles (eg, helper, mother, and grandmother). As suggested by Sabat and Harré, "the self does not depend on memory for its preservation, but on the way in which others treat the person."²⁷ Over time, persons with dementia may develop problems recognizing persons who had been close to them, fracturing relational ties to loved ones. The nursing assistant can help mend those losses by establishing a supportive tie that opens up new relational possibilities.

Confusion from symptoms may lead a resident to behave in ways that appear disturbed—for example, constantly repeating questions, displaying agitation, or "wandering" away toward a familiar place like "home" to prepare her husband dinner, or toward the bus stop, to meet her children—forgetting that her husband is deceased and the children are now grown. Behaviors that appear disturbed in today's context, however, may have been reasonable in that of yesterday.²⁸ It is as if the resident found herself in a time warp.* The behavior must thus be understood beyond its current context of apparently distorted expression, and regarded in relation to former contexts that hold personal and emotional significance to the person. To understand this, the caregiver must become familiar with person's biographical history.²⁹

Extreme reactions (crying, pacing, and aggression) to seemingly mild stressors may suggest *that something is amiss*, for example, pain, the urge to urinate, or an overly stimulating environment.³⁰ Such reactions may also be stimulated by the speed of a caregiver's pace, or abruptness of her entry, which may frighten the resident. How caregivers understand and respond to an aberrant behavior may affect both the condition and the resident's sense of well-being. If a caregiver regards the behavior as evidence of decline without addressing the problem that triggered it,²⁷ the resident may feel distrustful and withdraw. If the caregiver ignores the message (eg, disturbing pain) associated with the problematic behavior, and regards the behavior strictly as a *symptom* to be controlled, his or her actions may pose serious clinical risks for the resident and be *ethically contestable* as well. This is because medication may be used to suppress a disruptive behavior such as screaming that signaled a genuine

problem such as pain. The disruptive behavior may stop, but not the suffering, leaving the person without the ability to communicate it.³¹

The use of body (body praxis) by nursing home residents may, in addition, signal protest or resistance (a subversive reaction) against their conditions of living or perceived relations of power with caregivers and others.³² This can be a sign of vitality in the person's continued attempts to communicate, however negative the message. An astute caregiver, in coming to know the person, becomes highly attuned to such communication, and attempts to sensitively respond directly to the need.¹⁶ When the caregiver instead medicalizes the person's *communications* as individual pathology, the communication loses its potency.

A resident's awareness of her debilities may lead him or her to leave situations (eg, group activities) in which these may be exposed. Caregivers who interpret such behavior as further evidence of pathology (eg, labeling it "social withdrawal") without adequate evidence or understanding, dishonor the deliberateness of his or her action,²⁷ and may frustrate her agency and future communication. As dementia advances, the abilities to speak, walk, and swallow may also become compromised, necessitating additional care from the caregiver. However, the person's need to communicate remains strong very late in the course. This can be seen through deliberate gestures that clearly register will and intention,^{27,29} often to the surprise of witnesses.³³

Researchers and practitioners, propelled by the pioneering efforts of Thomas Kitwood^{34,35} and colleagues,³⁶ have made great strides in looking at disturbed behaviors as more than random symptoms of disease.³⁷ Behaviors previously seen as pathological, meaningless, or ill-willed²⁸ are now regarded as plausible efforts to deliberately communicate needs, maintain a sense of self, or revive personal stories.²⁷ Despite these strides in how to understand the *meaning* of residents' responses, working conditions at many nursing homes, where staff ratios are low, make it very unlikely that such a perspective will be adopted there.

Dementia's most profound and enduring impact is in shattering the affected person's sense of self, history, and relationship—the defining elements of personhood. For this reason, it has been called a *disease of the person*. Thus in dementia, the most pressing care needs are for *person work*¹⁵ to help promote psychosocial well-being. These sadly are the very care needs which have been marginalized in favor of standard physical and custodial care. Diverting attention from these person-sustaining needs, however, inhibits improvements in psychosocial well-being, quality of life, and even course and outcome.¹⁶ As long as care is conceptualized as a commodity in a caregiving

*I thank Deanna Trakas for suggesting this metaphor.

industry where body work overshadows person work, and caregivers must fight the clock even to complete that, otherwise healthy person's with dementia will not have their unique needs met and committed caregivers will be denied the opportunity to make a difference.

ON THE NATURE OF "CARE" GIVING

Dementia "care" giving is concerned with giving "care" to those who need it. As simple as this may sound, how this occurs depends on how "care" is understood and rendered, how care "needs" are defined, and who is defining them. Although care is a purchasable commodity in an industry where caregivers are themselves commodities, the very nature of care and caregiving distinguishes it from other "products." Giving care to another person is fundamentally different from giving or delivering an object or a product to someone. Unlike objects, care is not a thing that can be readily given to another person. Nor is care something that is done *to* a person, like a goal-directed task; *such a task would be an instrumental procedure*, done for the sake of something else, not necessarily having to do with the person,^{16,20} but it is not *care*. Care involves a *relational transaction* between the caregiver and the care receiver that inevitably transforms the *nature* of the "service" or product being rendered beyond anything instrumental. It depends on the consent,³⁸ will, and sometimes sacrifice³⁹ of the caregiver, not control or contract from the service provider.

Care is necessarily intersubjective; it is "opening the self to another's inner life."^{3(p186)} It is a mutual relationship and ongoing negotiation involving both caregiver and care receiver. When this relational dimension is missing, there can be no genuine *care transaction*, only action mislabeled as "care." In such cases, the very absence of a relational dimension affects both the "care" giving and receiving experience. This is particularly true with dementia, where the person requires ongoing acknowledgment and support to counteract the subjective unraveling of self the illness entails. Here there is *no possibility of curing*, only of *validating* the person, thereby allowing *healing* to take place. The nursing assistant, as the main caregiver, is the crucial person to enable this to happen. When he or she is diverted to different priorities, this healing process is disabled.

Richard Martin and Stephen Post call *caring* one of the highest human values because it involves the sustenance of one human being by another—a practice fundamental to the perpetuation of all societies.⁴⁰ In genuine dementia care, the caregiver helps sustain not only bodies but also persons. Caring for the person is necessary to offset the fragmentation of his or her identity.^{36,41} Unlike bodies, which are attached to

individuals, persons are *produced* out of human relationship, and in dementia, where the personal fragility is so extreme, they must be replenished continually.⁵⁰ *Dignity* is the defining characteristic of personhood, according to Kitwood, because it is rooted in human relationship and the social acknowledgment and respect of one person by the other.

Dignity inheres in all human beings as "ends in themselves," independent of any instrumental value⁴²; thus, it is accessible to all persons, with or without dementia. Both humanistic and religion-based approaches to personhood emphasize the dignity and intrinsic worth of all persons, for which there can be no monetary value. As Immanuel Kant stated, "What has a price can equally be replaced by something else of an equivalent value. What is superior to any price, however, and what, therefore, has no equivalent is what has dignity."^{43(p58)}

How care needs are defined also affects the quality of caregiving. If one considers care needs to include correctable organic conditions or physical abnormalities or injuries, then service providers can use treatment procedures, medications, and rehabilitative therapy to *cure* the patient or help recover lost functioning. Such procedures or techniques, however, are also likely to include a subjective dimension when the service provider extends interpersonal support, encouragement, and/or hope to the patient; this is the relational provenance of care and healing. It can be part of any care transaction whether it involves cure or not.

In dementia, although cure is not possible, care and healing can be effected. Dementia care can include medical treatments and rehabilitation for other disabilities, as well as preservative services, such as hygienic maintenance and protective care. The "care" giver can perform individual care tasks (such as ADLs) strictly as *instrumental procedures* for the institutional employer in exchange for a salary. In such cases, the recipient of these procedures can be seen as marginal to the process since his or her body becomes the instrumental vehicle for purposes outside of relational care. With instrumental caregiving, *completing the task, not rendering care*, becomes the goal. Thus, the person becomes the *means* for accomplishing the task, rather than the reason for doing it. This may be why the person who receives instrumental "care" may be seen as actually "getting in the way" of the task. Instrumental caregiving regards medications and other technologies mainly as tools to *manage* the person so that the caregiver can complete the tasks, rather than as aids to help the resident himself or herself. In such cases, the caregiver exercises control over those who are unable to resist—a practice some bioethicists consider to be potentially immoral.^{40,42}

Alternatively, the caregiver can treat these procedures as intersubjective rituals of care in which the resident actively participates and through which he or she receives recognition and dignity. In these cases, the *care procedures*, by the quality of the intersubjective engagement, can be *preservative of the person* with dementia. Such encounters can help *beal* the individual who is undergoing personal fragmentation due to the dementia. Both care receiver and caregiver mutually gain from such encounters well beyond accomplishing the institutionally prescribed task or receiving the paycheck. Intersubjective care is above all person sustaining, serving to reinforce the subjectivity of the person by engaging with him or her interpersonally throughout the caregiving process. Because the emphasis is on preserving the person, such care approaches attempt to respect wishes and personal preferences and are attuned to his or her history and identity. It embodies an ethics of intimacy and love and is seen by some as a spiritual practice, meaningful in itself, without any expectation for improvement.⁴⁴

Giving care to someone with dementia imposes an immense moral and personal responsibility to prevent "the loss of the patient to the disease."^{40(p57)} As Richard Martin and Stephen Post observe, caring is "a way of being in the world," a source of meaning in life, a type of faith.^{40(p58)} They poignantly add that its only alternative is "the destruction of the radically infirm."^{40(p58)}

Who defines care needs and *how* also affects caregiving because it concerns the exercise of power, of particular concern when the dementia renders the care receiver vulnerable and frail. When external *institutionally* defined care needs are imposed on the resident without equally considering his or her *personally* defined needs, the care receiver may be more resistant to receiving "care" and may display more behavioral upsets as a way of communicating his or her own unmet needs. That is why, "aggressive" behaviors occur most often during personal care activities. Whenever instrumental care, directed at body maintenance *tasks*, occurs without regard to the *person*, an act of violence occurs. The exercises of strength over defenseless failing persons damage both bodies and spirits and raise the specter of immorality to which bioethicists have alerted us.^{40,41,45}

At its most basic, dementia care is a moral enterprise because it addresses fundamental human needs and vulnerabilities, both of frail care receivers and their more powerful, but equally vulnerable caregivers. This recognition of shared human frailty lends an ethical dimension of *intersubjectivity* to caregiving as the relational "act of honoring the vulnerability of the other ... by righting the imbalance created in that vulnerability."^{46(p.530)} This relational dimension constitutes the very essence of dementia "care." Yet it is one that is not

compatible with institutional practices under the cult of task and clock time.

THE MECHANISTIC APPROACH TO LIFE AND CARE

The medicalization and regimented institutional approach to nursing home care and the efforts of regulatory agencies to measure and monitor the quality of care contradict the natural flow of life and the intersubjective character of the caregiving relationship, which are not amenable to measurement and control.⁴⁷ This contradiction creates a tension that, I believe, is the source of the widespread dissatisfaction of nursing home care by residents, their families, and those who work there. It helps explain why the CMS has been dissatisfied with its standardized criteria for measuring quality care and quality of life. It is most palpably apparent in our practice of commoditizing *care*, and our artificially distinguishing it from *life*.⁴⁸

These practices and the problems they produce are tied to the mechanistic assumptions of a naturalistic, materialist philosophy that dominates the western view of the world. These assumptions are *culturally specific* to a modernistic, scientific worldview that divides and frames the world in specific ways. These shape the ways in which we regard time, work, persons, and life. This worldview has also affected the way we conceptualize dementia, care, and both caregivers and care receivers. It frames our cultural view of the universe and the self, leading us to artificially disrupt and divide life as lived. Within caregiving, the mechanistic view leads us to divide life into discrete functions and tasks that divert attention from more meaningful personal relationships and intersubjective dimensions of care.

A prime example of the impact of the mechanistic view of the world on western thinking can be seen by its conceptualization of clock time, which deeply penetrates our understanding of the universe and the self, and on the way we have regarded care and caregiving. This approach to time affects the way in which we conduct business and value (or devalue) the uneven flow of life as lived, dividing it into tasks and functions in various arenas. The following discussion will examine the impact of clock time on life as lived, considering its particular consequences on life and care in the nursing home.

THE IMPACT OF CLOCK TIME ON LIFE AS LIVED

In a recent article, philosopher Teresa Reed observes the immense impact that clock time has had in the way science in particular, and western cultures more generally,

conceptualize the world and the persons who inhabit it.⁴⁹ It does so by imposing a mechanistic and uniform view of the universe and of the self, which clashes with the natural flow of life. Modern science, like modern thought, she observes, privileges abstractions, uniformity, and *objectivity* while detaching itself from concrete individuals, the unevenness of life as lived, and subjectivity—"the messy personal stuff"^{49(p168)}—moral values, preferences, intentions, and personal goals. In biomedical settings, like nursing homes, this encourages a *neutral stance* on the part of the person who is examining the body. Personal or emotional attachment is seen as only interfering with this evaluative process. This encourages detachment or *disengagement* by the caregiver from the resident, which counteracts the personal reinforcement and attention often required by someone with dementia.

Clock time imposes a uniformity and management over natural lived time by dividing it into standard measurable units. This had been beneficial in promoting scientific discoveries, synchronizing human activities, and expanding communication networks. It has also promoted a profit-driven model that divides work into uniform shifts and ties wages to hours. This is compatible with an industrial model that conceptualizes labor (and laborers) as line item among the productive forces that help produce profit. It has also been applied to the nursing home industry, managing the hourly work of caregivers whose approach to caring for bodies during rounds could resemble the work of a piecemeal assembly line worker.

In her elaboration about the impact of regulated clock time on our lives, Reed discusses how abstract schedules "force" uniform structures over irregularly experienced "lived time" in human events.^{49(p169)} In the nursing home, this occurs through daily forced interactions.¹⁶ These demands impose a kind of structural violence⁵⁰ by rupturing the self and intersubjective relations with other persons, the environment, and objects in it.⁵¹ Clock time transforms the self as lived into a compartmentalized collection of functions, similar to the items on the MDS assessments or the ADL task lists that NAs check off as they proceed on their timely rounds. Thus, it fragments the naturally lived time both of caregivers and care receivers, fracturing the inclination for intimacy that this relation brings.³ Under this regimented system, time is allotted to particular functions, even sleeping.⁴⁹ Under these conditions, Reed observes, the person loses a sense of wholeness, or, citing Gabriel Marcel, experiences a "fragmentation of personality."⁵² This

³Intersubjective relations also refer, as Reed makes clear, to spiritual relations between a person and God.

is particularly detrimental to those with dementia whose illness has already fractured their sense of personal wholeness and integration.

The world of clock time, Reed continues, enables a world of "total work."^{49(p171)} This is the world inhabited by nursing home residents, whose lived time has been taken over by their caregivers' sense of time constituted into shifts and hours. This is a world where efficiency reigns, where life is translated into full-time "care," caregiving into an "industry," dining into a "function," daily routines into "services," and time into dollars. In this world, life as lived is transformed into around-the-clock "care," and caregiving, as a relation between persons is reduced to a vulgar commodity—fetishized as a thing with a market value. However, as Charles Phillips so poignantly states, to reduce the variety of intersubjective interactions that occur in nursing homes simply to "care," "devalues both the actions of those identified as caregivers and strips those who would be seen as care recipients of much of their individuality and humanity."^{48(p164)}

One head nurse in a 2-year study I conducted of nursing home care was very aware of the importance of efficiency when she refused to accommodate a family member's request to use a special bathing bonnet with her aunt during baths.¹⁶ The elderly resident would scream whenever she got water in her ears, and the screaming was becoming increasingly prolonged; using the bonnet, her niece had hoped to check the problem at its source. The nurse refused to use it, however, because of the additional time it would take the bathing assistant, a part-time employee, to go to the elder's room to get the bonnet. The bathing assistant was allotted less than 4 hours each day to bathe 8 residents. During that time, she was required to bathe, wash the hair, check the skin, dress, and take vital signs of all 8 residents, documenting everything in the charts. She had to accomplish this within the allotted time or she would receive a poor evaluation and risk losing her job. In addition, if she went over her time, the facility would have to pay her benefits. It just did not make *economic sense* to exceed her allotted time, even though it would have made good clinical sense, because the elder's condition quickly deteriorated.

The same naturalistic mechanical worldview, which reduces lived time to clock time also reduces creatures of the living world to inert machines. Thus, the "purely subjective self is reduced to an objective mechanism."^{49(p174)} In nursing home care, this is manifested in the prioritization of body maintenance and function, backed up by checklists and itemized assessments. The biomedical model is itself a naturalistic mechanical

model in which natural phenomena are expected to conform to the laws of nature.¹⁶ Disease, as evidenced in the body or behavior gone astray, must be corrected, managed, or controlled to enable conformation to natural law once again. It operates instrumentally to impose a particular order—presumably natural order—even where this order may not naturally occur. In this scheme of things, physical dimensions, like the body, which can be objectively measured, take priority over subjective impressions, such as a person's emotions and cognitions, which are less likely to conform to natural law and to restore some semblance of *normality*. This helps explain why psychosocial well-being has received so little attention in many nursing homes. In addition, since all phenomena are expected to conform to natural laws and causation, they are generalizable to everyone; this leads as well to universal applications. However, in caregiving, as Gass cautions, universal directives impede nursing assistants from being "truly decent" because standardized caregiving discourages unique individualized attention to personal care needs.³

To establish causal links, the mechanical view of the universe reduces complex phenomena to their component parts, disconnected from each other.⁵³ This isolates the subjective self by disconnecting it from other persons and the relational world.⁴⁹ Disease is located foremost in the *individual* and his or her body, which is further broken down into its ever-reducible parts. In this view, the cause or causes of dementia lie strictly within the body, most likely the brain, which is reduced still further to neuronal cells, molecules, and ultimately, to genes. This model directs its attention to these finite processes, and *away from the person who is experiencing them*. Thus, the subjective self is reduced to a mechanical object—the brain.^{16,49} In dementia in particular, when the brain as object does not properly function, it becomes devalued. On this basis in fact, influential western views of the self, based on individual attributions like reason, deny personhood to those with dementia. What is thus extracted from this artificial construction of the universe is *the person* and the sanctity of a life lived through intersubjective relationships in a "multidimensional world."⁴⁹

In this scheme of things, the interiority of the experiential, biographical, relational person, is dismissed; social phenomena are beyond its purview. Only body, object, and concrete fact are relevant to its concerns. As Gass reminds us, "We truly forget that the boundaries of our nature far exceed the limits of our skin. We ... maintain the body while leaving the person to languish..."^{3(p184)}

Complex behavioral phenomena must also be reduced to organic principles to be understood, or must be ignored. This disregards holistic views that illness affects *the whole person* and can never be seen apart from the person's *agency* and meaningful interpretation of the illness.⁵⁴ For dementia, this means that deviant behaviors are seen as simply artifacts of *objective* disease processes while ignoring *subjective* concerns of the possibility that the disordered behaviors may be intentional acts in response to other conditions (psychological, social, physical, or environmental).³ Changes in mood and behavior similarly are seen as stemming strictly from the disease; social and environmental conditions, which may affect the person's condition, are ignored. Reed argues, however, that the very distinction subject/object on which the mechanical view depends is itself an artificial construction. It ignores the intersubjective relational world in which the person lives and may be meaningfully involved through other persons, things, and the spiritual world. The functionalized consuming world of the clock leaves little room, for any relational experience, especially contemplation of the spiritual.⁴⁹

DISCUSSION

In controlled and formal settings like nursing homes, life is dominated by clock time and mechanical models of the person. These settings cannot adequately handle the dilemmas of the human condition. Only in settings where lived time is permitted can fallibility, lamentation, and the tragedy of life be fully embraced.³⁸ This may be why smaller, more casually operated homes, with 25 or fewer residents, which may perform less well than larger homes on objective measures of the structural environment, perform better on subjective assessment of both residents and their caregivers, where both share the importance of interpersonal relationship as a value.¹¹ More importantly, in these small settings, occupants view themselves not in the segregated roles of caregiver and care receiver, but rather as "living together"—that is, within lived time. This may also be why models built on culture change⁵⁵ principles are similarly seeking to transform the uniform clock time into "person-centered" models congenial with residents' and caregivers' lived time.⁵⁶ But, as a recent study showed, if a facility trains its workers in culture change principles, but does not invest adequate funds to fulfill its promise, the effort may backfire.⁵⁷

³The subjective, Reed argues, was created as a counterpart to the objective (reference 49, p169, fn5). This distinction, however, is a misconstrual of the distinction, interiority versus exteriority. Drawing from Josef Pieper, she describes how to have interiority (an inside) means to be able to enter into an entire field of intersubjective relations with the external world.

Nursing homes are a business. Even nonprofit homes, especially when large, typically follow an efficiency model of time and task management, where caregivers lose their personhood as they are transformed into instruments of care. The largest for-profit chains that operate on the keenest efficiency models, ironically have survived over smaller operations because these have been marginally profitable.¹¹ Because of economy of scale, larger operations can spread the cost of regulation across their businesses and develop expertise in compliance or “gaming” of the regulations. This mechanized approach to caregiving effectively transforms the *subjective ethically* based *relation* between people (caregivers and care receivers) into an objective, amoral “thing”—a fetishization of the potentially sacred caregiving relation that shifts care into the realm of the profane. Furthermore, the commodification of caregiving into a service imposes an abstraction onto “care” as a thing that is “delivered.” This works to detach the caregiver from the resident, destroying the possibility of developing a committed relationship so vital for supporting the fragile person with dementia. Such fracturing of life into institutionally defined “care” work, by alienating the caregiver from the resident, may leave both dissatisfied. This may also explain why those who continue to provide intersubjective care exhaust themselves in trying to engage with residents in life as lived while meeting the demands of clock time. The dissatisfaction, beyond the typically low pay, must also contribute to the high rate of turnover in a field to which many were initially drawn out of commitment to an ideal of caring. Furthermore, the regimentation of the world of “care” work under clock time promotes instrumental goals that may attract dominating persons who disrespect those under their care. Even caregivers who are not predisposed to such dark practices may become instruments of control in mechanized care settings that are directed by instrumental goals.

Despite this pressure to conform to clock time, there are those who somehow manage to overcome the pressures of clock time to continue to engage intersubjectively with residents. The most dedicated caregiver I ever met was able to overcome the constraints of clock time as she rendered life and nurturance through intersubjective engagement with those residents she served. She adopted an *ethic of intimacy*⁴⁰ and *love* as she involved herself with residents strictly as a way of being, not with any expectation of cure or any other instrumental goal. As a spiritual person and masterful caregiver, caring was a *moral and spiritual act* to her, meaningful in and of itself. Motivated by a faith in the divinity of the person and the conviction to preserve the thread of person that remained, she often missed meals to fulfill

required tasks. She regularly came to visit residents on her days off. Care to her was not compartmentalized within the precept of commoditized work; it was part and parcel of the sanctity of life as lived. It derived from a sense of identity and belonging with the resident, and with something greater.

CONCLUSION: DEMENTIA CARE AS A MORAL ENTERPRISE

Dementia care is a *moral enterprise* because it addresses fundamental human vulnerabilities, both of care receivers and their caregivers. The survival and quality of life of vulnerable, fragile persons at the end stage of their lives depend on decent dementia care. When this care is poor, they suffer immeasurably. Thus dementia caregiving *cannot be treated as merely another commodity*. High-quality person-preserving care begins with caring relationship and labor-intensive person work. But as a moral enterprise, responsibility for dementia care extends to all stakeholders involved in formulating, advocating for, and implementing dementia care policy. As long as nursing assistant/resident contact is severely restricted because of restricted government support, warehousing and instrumental care will continue to dominate the caregiving of those with dementia, and concerns for their agency and personhood will be put aside.

If we advance more “cost-saving” instrumental practices, at the expense of a person’s well-being, we will subject the person to continued structural violence. If we are to nurture those with dementia, however, we must also be sure to nurture their caregivers by creating optimal conditions to foster attentive body care and relational care. That means a genuine investment to support both of them. When the Supreme Court upholds a decision that refuses to pay elderly home caregivers their overtime due because Medicaid and Medicare cannot afford it,⁵⁸ we dishonor our caregivers. When we try to increase quality of care by conducting criminal checks on caregivers without also transforming their working conditions and wages, we are dishonoring them. When a for-profit industry manages to increase profits by trimming staff, both persons with dementia and their caregivers are dishonored. When CMS ignores major studies⁵⁹⁻⁶¹ that urge raising of the minimal standard of contact hours for nurses to improve resident safety and well-being, they are dishonoring both care receivers and their caregivers. Quality care is not a product, even though it is treated that way. It is a mutual relationship that requires time and proper conditions to nurture. When a caregiving relation is fractured such that those with dementia do not adequately have their unique care needs met, we are evading our commitment to them. As a

moral enterprise, we must aspire to a higher standard and support conditions that will nurture their personhood and foster intersubjectivity in appropriate environments.

OBRA 1987 mandated a person-supportive care for those with dementia. The mechanistic models by which the nursing home system has run has made it impossible to actualize that mandate. This article has argued for a radical rethinking of the nature of dementia care from one driven by a uniform model based on clock time and efficiency to a moral enterprise that honors the dignity of both caregiver and care receiver. Such an enterprise, however, must encompass responsibility and participation by a broader group of stakeholders. Doing so will force us to reconsider our responsibility to support a long-term care industry that has fallen short of OBRA's mandate to promote "the highest practicable physical, mental, and psychosocial well-being" of residents. It will force us to consider ways to maximize the quality of life for residents with dementia by honoring the sanctity of lived time and the need for nurturance and respect. Only when dementia care is appreciated as a fundamentally moral enterprise, dedicated to supporting persons, as the culture change movement is urging, might OBRA's original vision bring genuine quality into the lives of nursing home residents with dementia. ■

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New Approaches to Nursing Home/ Dementia Care in the US: a contextual review

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Context

- Historical background
- OBRA (Nursing Home Reform Act), 1987
- Needs of the person with dementia
- Pioneer Movement (“culture change”)
- The Green House[®] Project

Historical background to nursing home care in the U.S.

Early history of Elder Care in U.S.

- 1700s-1850 – families and communities
- 1850- 1900 – almshouses (indigent, chronically ill)
- 1900-1930 – charitable homes, almshouses, psychiatric hospitals
- 1932 – Social Security Act
 - private boarding homes (precursor to nursing homes)
 - state mental hospitals (overflow)

1950s – Warehousing in state institutions (dementia)



More recent history, Elder Care, U.S.

- 1950s – new laws for hospital based nursing homes
- 1965- Medicare and Medicaid legislation
 - New funding sources for nursing home care
 - Encouraged private investment to build more nursing homes
- ❖ 1960s & 70s – deinstitutionalization from psychiatric institutions to nursing homes
- ❖ 1970s – explosive growth of private nursing homes thru public funding
 - Minimal regulation, Scandalous *abuse, neglect*
- 1987 – Nursing Home Reform Act, in OBRA (Omnibus Reconciliation Act)
 - Standards and regulations

More than abuse and neglect....

- Jules Henry, *Culture against Man*, 1963
 - greed, demoralization, orderliness

“the mind of the patients gets in the way of the real business....medical care, feeding, asepsis”

.....More than abuse, neglect

- Jaber Gubrium, *Living and Dying in Murray Manor*, 1975
 - Efficiency of “**bed and body work**” at cost of “**person work**”
- Jennie Kayser-Jones, *Old, Alone, Neglected*, 1981
 - **Depersonalization** in US compared to Scotland
- Karen Lyman, *Day in and Day out with Alzheimer’s*, 1993
 - Limitations of the **biomedical** approach

.....“Homelessness” *within* the nursing home

- Judith Carboni, “Homelessness among the Elderly, ” 1990

*“The elderly individual wandering the streets is easily identified as homeless, yet there is an entire population of elders who suffer silently, enduring the **painful state of homelessness within** the confines of the total institution of the **nursing home.**”¹*

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**OBRA, 1987 (the Nursing
Home Reform Act),**

Reasons for OBRA

- Widespread neglect, abuse, poor care
- Need for
 - Federal oversight
 - Better staff training
 - Better assessment of needs
 - Standards and inspections
 - Stronger regulations

What OBRA did

- Set minimal **standards** to improve care
- Established tools/ **language** for residents' rights
 - a resident council
 - Ombudsman
 - freedom from “unnecessary” restraints (chemical or physical)
- Set **regulations** & remedies for violating homes

OBRA's promise

- the “highest practicable¹ physical, mental and psychosocial well-being”
- rights to dignity, respect, freedom
- privacy and confidentiality
- full disclosure
- participation in their care.

1. “Practicable”: capability *regardless* of circumstances.

Frank, Barbara. “From Institutional to Individualized Care” Part I of the CMS satellite broadcast four part series. November 3, 2006. www.cms.internetstreaming.com

Nursing homes after OBRA: *the positives*

- Drastic reduction in restraint use
- Reduction of abuse and neglect in the worst settings
 - Economic and licensure sanctions
- More training
- MDS (minimum data set) in all facilities
- Regular case reviews

Nursing homes in spite of OBRA: *the negatives*

- Chronic Non-compliance w. standards
 - 90% in 2008, mostly in for-profit facilities¹
- Basic disabilities (e.g., hearing)² ignored
- Understaffing in >1/2 nursing homes³ → poor care
 - ❖ **No min. federal requirements** for CNAs
 - ↑ incontinence, dehydration, restraint use
 - Needless deaths
- Staff demoralization, turnover (100%+)²

1. McKinney, R. "Most homes violate federal standards." InjuryBoard.com. Oct. 01, 2008.

2. Winzelberg, Gary. (2003). The quest for nursing home quality. *Archives of Internal Medicine*, 163, 2552-6

3. Zhang, Xinzi, and David Grabowski. (2004). Nursing home staffing and quality under the nursing home reform act. *The Gerontologist*, 44, 13-23.

OBRA's *Unintended* Consequences

- attention to *task*, away from person
- *from* care work *to* paperwork
 - “*If it did not get documented, it did not happen*”
- discouraged innovation in best facilities
- Protection overshadowed freedom
- efficiency eroded homeliness
- hygiene without happiness

The Person with Dementia

Persons w. dementia in the U.S. nursing homes

- ~ 40 Million people over 65 in US¹
- ~5 million have dementia ²
- ***Most nursing home residents have dementia***
 - > 1 million live in nursing homes (68% of all residents)
 - ~ 500,000 live in assisted living (55% residents)
- 2/3 persons with dementia die in nursing homes³

1. US Census as of 2009. <http://quickfacts.census.gov/qfd/states/00000..html>.

2. 2010 AD Facts and Figures. Alzheimer's Association.
http://www.alz.org/documents_custom/report_alzfactsfigures2010.pdf

3. Mitchell SL. et al. 2005. A national study of the location of death for older persons with dementia. *J Am Geriatr Soc.* 53(2):299-305.

Impairments associated with dementia

- Impairments
 - Cognitive – memory, reasoning
 - Linguistic
 - Mood
 - Depth perception
- ADLs decline
- Motor control loss
- “Disturbed” Behaviors (BDs)
 - repetitiveness, wandering, combativeness, confusion

Challenges of dementia for the person

- Impaired memory
 - Distorts events and their sequence
- Disorientation to place and time
 - *Feels like “living in a time warp”*
- Confusion, trouble communicating
 - being discounted by others
 - shame
- ❖ Fragmentation of self (one’s very being)

Consequences of fragmentation: *appearance of BDs*

Due to:

- Frustration w. self and others
- Anger, embarrassment, confusion
- Worry, fear for future
- Feeling “exposed”
- Inability to be understood

Conventional NH approach to dementia care and BDs

- Instrumental
 - Efficient, follows “clock time”,
 - Task-oriented, rigid
 - Custodial, body care, safety
 - BDs – medical model (“symptoms”)
 - controlled or managed
 - meds, restraint, behavioral therapy
- ❖ Outcome
 - Resistance, exacerbation of BDs

What is needed

- Person-oriented approach (Kitwood, Sabat, Hughes)
 - Relational, spiritual
 - Affirming the person
 - “lived time” - following person’s own rhythm
 - Waking up, meals, ADLs
 - BD seen as meaningful expressions of needs that must be addressed
- ❖ Ultimately, preventing the loss of the person to the disease (Gadow)

How might it be achieved?

- Small, quieter, more relaxed environment
- Homeliness
 - stimulate sensuous comfort
 - Familiarity, predictability,
 - Safe, but “free”
- Relational support
 - To nurture the person
 - Ease sense of fragmentation
- ❖ “Culture Change”

Pioneer Movement and “Culture Change” in the United States

Early Initiatives: *environments matter*:

- M. Powell Lawton
 - 1965 - Environments may assist or obstruct functioning
 - 1970 – privacy vital
 - 1973 - Docility H °: “the lower the level of functioning, the greater the environmental impact”¹
 - 1974 – 1st special care units -Sley Units

1. Lawton, M.P. and L. Nahemow. 1973. Ecology and the aging process In: Eisdorfer C. Lawton M.P., eds. Psychology of Adult Development and Aging. Washington, D.C.: APA, pp. 619-674.

Pioneer (“culture change”) movement

- 1975, NCCNHR – humanize nursing homes
 - for residents, families, staff
- OBRA 1987 – impetus to rethink practices
- 1997 – Pioneer Network - nursing home innovators meet
 - Deinstitutionalize
 - Humanize
 - Deep system change
 - “Person before task”
 - Create “homelike” environments

Culture change is slow¹

- Only 5% NH achieved by 2007
 - 10% initiated significant change
 - 1/3 some change
 - 1/3 planning in future
-
- 1. Mary Jane Koren, 2007 National Survey, Commonwealth Fund.

Culture Change: 3 generations

- 1. Eden Alternative
- 2. Households and Neighborhoods
- 3. Small House Movement

Generation 1: Eden Alternative

William Thomas



Eden Alternative¹: *bringing “home” to the nursing home, 1991*

- Plagues: loneliness, helplessness, boredom
- Medicine should serve, not dictate care
- habitats “where life is worth living”
 - living things (“green”)
 - children, pets, plants, “growth”
- Widespread – US, Canada, Europe, Australia
 - 17,000 + associates; 300 registered homes

1. <http://www.edenalt.org>

Generation 2: Households & neighborhoods

- Goal
 - Breaking down the institution
 - Community, household and private spaces
- *Variations on a theme*
 1. Evergreen Community, 1987, new building designs
 2. The “Mount” - 1990 -transform existing structures:
 3. Meadowlark , 2001, Household as Sanctuary:

1. The Evergreen Household: *designing new structures*¹

- small-scaled design resembling large family
- Skilled nursing home
- 11 rooms (7 private)
- Kitchen with steam table
 - Food brought in
- Part of larger nursing unit (neighborhood)



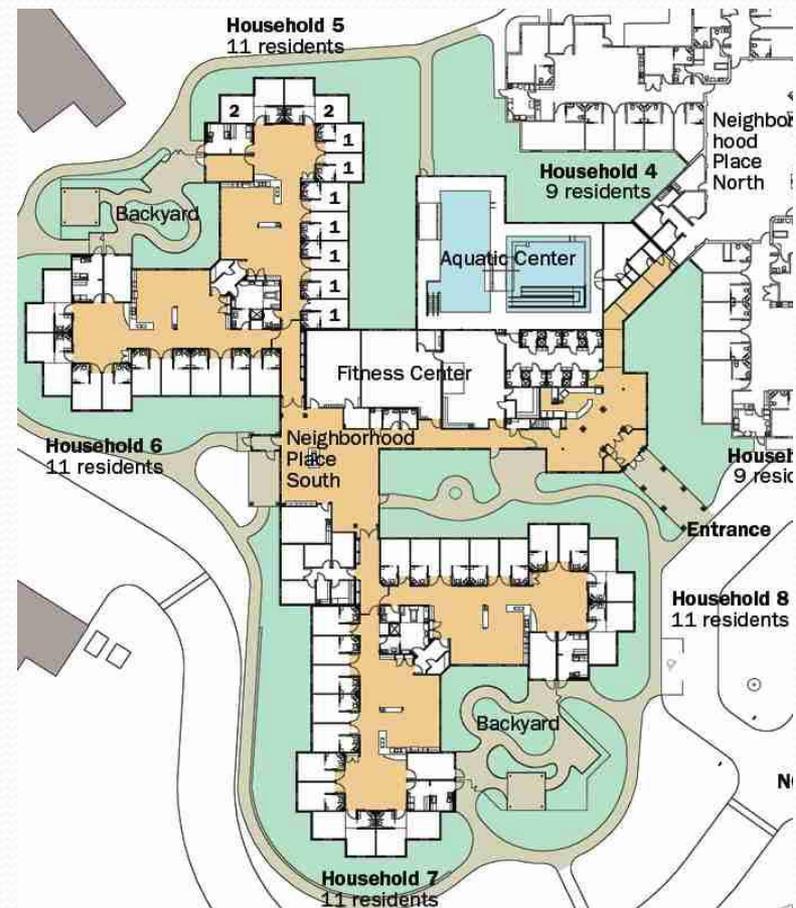
Household Plan

1. In Evergreen Retirement Community, Oshkosh, Wisconsin, 1997

The Evergreen neighborhood¹

- 4 households in nursing unit (neighborhood)
- Each household shares kitchen, living & dining
- Nbhd shares fitness and aquatic center

1. Gaius G. Nelson. 2008. Household Models for Nursing Home Environments.
<http://www.pioneernetwork.net/Data/Documents/NelsonHousehold-ResidentialPaper.pdf>.



2. The “Mount”: *Culture change in existing nursing homes*

- all nursing homes can't all start from scratch¹
- 5-story building
 - divided the nursing home into eight 20- to 23-bed “neighborhoods” – skilled nursing
- Integrated residents with dementia throughout
- Stable care team for each nbhd
- Turnover dropped to 10-15% (fr 70-100%)

1. Charlene Boyd and Bruce Johansen. 2008. A Cultural Shift. Resident Directed Care at Providence Mount St. Vincent in Seattle. *Health Progress*. Jan-Feb. 2008:37-42.

3. Meadowlark¹:

- Porch reminiscent of home
- front entrance defines the household
- Commands respect for privacy
- Must knock and be admitted



1. Shields, Steve and Norton, LaVrene. 2006. *"In Pursuit of the Sunbeam": A Practical Guide to Transformation from Institution to Household*. Action Pact Press.

Generation 3: Small House Movement¹ *for radical transformation*

- Philosophical reframing of person as driver of care
- Changed architecture – beyond neighborhoods and households to *self-contained “homes”*
- Re-engineer the organizational structure
 - Challenges staff hierarchy

1. Rabig, Judith and Rabig, Donald. 2008. From ‘nursing home’ to ‘home’: The small house movement. *Long-Term Living* 57(3): 12-16.

Paths to Small Houses

- Consultant led implementations within organizations
 - Lavrene Norton, e.g., of Action Pact
- Self-implemented visions
- Trademarked, versions, e.g., Green House[®]
 - More tightly defined

The Green House[®] Project

A successful small house model

The Green House[®] Project:

beyond the Eden Alternative

- By 1999 William Thomas: radical redesign needed
 - Culture Change in Eden facilities slow
- A nursing home “abolitionist”
 - 1000s NH from 1960s & 70s decaying, outmoded
 - Replace 16,000 nh with 100,000 Green Houses
- Green House
 - Intentional communities in free-standing house/ (s)
 - ❖ a skilled nursing home

Jump starting Green Houses

- 2002 Robert Wood Johnson Foundation
 - Demonstration grant
 - Business plan
- 2005 RWJ
 - \$10 M for five years
 - To subsidize first 50
 - Goal – to build 100+

Current Status of GHP

- 91 Green Houses
- Over 24 states
- Over 120 more planned or in process
- RWJ Foundation – extended funding, July 2010
 - \$4.8 Million – 3 more years
 - Expanding to new communities
 - policy work, and resource development, GH peer network

GreenHouse design



Driving force of architecture: *Culture replacement, not change*

“This is culture replacement. *Culture change* is taking an existing structure and trying to change what’s going on. *Culture replacement* is smashing what’s there and replacing it.” ¹

(Steve McAlilly, 1st Green House administrator, Tupelo, Mississippi)

1. Baker, Beth. 2007. *Old Age in a New Age: The Promise of Transformative Nursing Homes*. Vanderbilt University Press: Nashville Tennessee.

Location of Green House/(s)[®]

- In residential neighborhood
- Possibly paired together →
- May be part of large continuing care campus



Warm, Smart, Green

- **Warm**
 - Pleasant cooking smells
 - *Hearth* - central focus
- **Smart**
 - Technology fosters homeliness (vibrating pagers, no intercom)
- **Green**
 - living world
 - Continued growth



The Green House philosophy

- Communication key
- Conflict resolution
 - Admit, solve, don't erase differences
- Mutual Respect, Autonomy, Choice
- Growth even in old age
- Eldertopia – generational interdependence

Vision for GH: *an innovation that can change how we age*

- Privacy, dignity, autonomy
- life and relationships
- a social *and* a care model”
- “lived time”
 - Elder controls when to wake up, when to eat
 - no frenetic race of staff to beat the clock
 - “*Is your housework ever done?*”

“Where love matters....”

- Protect
 - by support, not restrain
- Sustain
 - “convivium” – sharing good food
 - All meals prepared in the kitchen
- Nurture
 - mutual relationships



Available to all: the *policy piece*

- Ability to pay should not matter
- Green House qualifies for Medicaid grants (public payment)
 - Negotiating with CMS¹ a more reasonable public pay amount
- ❖ *Single most important reason GH are becoming widely adopted*

❖ 1. CMS (Center for Medicare and Medicaid Services)

Still, economic constraints of GH model

- \$85,000/ year vs. \$65,000 for standard NH
- Restricted interest to faith-based foundations
 - Even they must limit # of public recipients (as government pays less than private payers)
- 1st for-profits adopting model – hoping to recoup costs over time

Eliminate signs of institution¹

Nurses station



Medicine cart



1. Cutler, L. and Kane, R. Transforming Nursing Homes. *Implications*. 5(9):1-8. Informedesign.umn.edu, .

Maintain semblance of home

Cooking in kitchen

Visitors (even employees)(
must be admitted



Staffing

- Direct Care Staff (shabazzim) + “Guide”
 - 2 for day and evening shifts
 - 1 for night shift
- Clinical Support team:
 - Nurses (1 for every 2 houses all shifts)
 - social workers,
 - physical/occupational/speech therapists
 - Activity /recreation therapists
 - dieticians
 - a medical director

Direct care team: *the Shabazim*

- Works with “Guide” to coordinate all functions
 - Direct care
 - Housekeeping
 - Cleaning, laundry
 - Cooking, food choices
 - With elders
 - Self-scheduling
 - Team coordination



Training of Shabazzim

- CNA
- 120 more hours, including
 - 42 hours Green House[®] core values & philosophy
 - CPR and emergency response
 - first aid
 - safe food handling
 - culinary skills
 - basic maintenance

The Shabazim:

- “I never worry about talking with someone and looking over my shoulder to see if the boss is watching; that *is* working.”¹
- Shabaz: *“I would love to come here to live when I get old.”*
- me: *and how about the nursing home?*
- Shabaz: *“Never!”*

1. *Where Love Matters*. Dvd. The Green House[®] Project.

Research: *initial findings*¹....

- Higher satisfaction - residents, family and staff
- The Residents
 - Less decline in late-loss ADLs
(bed mobility, transfer, eating and toileting)
 - Less depression
 - Increased sense of privacy, dignity, individuality
 - more meaningful activity, relationships and food enjoyment

1. Kane, R., Lum, T., Cutler, L., Degenholtz, H., and Yu, T.-C. 2007. Resident Outcomes in Small-House Nursing Homes: A Longitudinal Evaluation of the Initial Green House Program. *Journal of the American Geriatrics Society* 55:832-839.

Research: *Nursing Home Workflow Study/ 2008-2009* ²

- 14 GH vs 13 traditional nursing units
 - 25 minutes (vs 5) direct engagement beyond ADLs
 - 1.5 hours more nursing staff time
 - 30 minutes more in direct care activities
 - 45 minutes less simply transporting residents

2. Conducted by Institute for Clinical Outcomes Research (ICOR) and Health Management Strategies (HMS).

Research: *The Role of the Nurse* *Research Study / 2008-2009*¹

- Greater familiarity with residents
- Enhanced communication
- closer scrutiny

*“Things don't get overlooked at a Green House, as they might be in a nursing home, where caregivers don't work so closely with each other. If an elder stumbles at a Green House, every caregiver knows it and starts watching that person”*³

1. Dr. Barbara Bowers, University of Wisconsin. RWJ funded.

Lessons learned...*the residents.*

GH model is not for every elder,¹ such as:

- People who like constant activity and buzz
- Those “we managed to be successfully institutionalized”
 - Two women whose “home” was at the nurses’ station
 - *“We miss the gossip.”*

1. Interview with Bill Keane, GH Project Guide, Sept. 7, 2010

Lessons learned....*the nurse/shabazzim relationship.*

Breaking down staff hierarchy should not irresponsibly empower CNAs (the Shabazim) and disempower nurse¹

- Need “integrated” model
 - Nurse and shabazzim “hand in hand”
 - Teamwork, w. specialized roles
 - Pitching in when needed, where needed

1. Interview with Bill Keane, GH Project Guide, Sept. 7, 2010

Early Lessons learned...*the model*, at three different sites

The success of the model will depend on

- The Guide's embrace of Culture Change
- The administration's commitment to the model
- The selection of staff who are enthusiastic about the model
- Staff who respect, and can engage w. elders
- Staff who are not afraid to exercise judgment
- A balanced relationship between Guide & Shabazzim
 - To coach but not take charge

Conclusions

- Culture Change is vital for dementia care
- The Green House[®] design is a promising CC model
 - Person-centered philosophy supports elders w dementia
 - Small house design creates relaxed pace that reduces stress
 - The organizational makes for happy staff who can support elders
 - But it all depends on the people

Ultimately, what matters more: People or the structure?

“Real care does not reside in the building or its facilities, but rather in the spirit of the people within.”

(Alan Gilsean,¹ *Irish Times*, Sept. 28, 2010)

1. Creator of documentary series, *“The Home,”*

Limitations *beyond* the GH model

- Model constrained by govt regulations
 - skilled care as defined by state
- Regulations impose costs
 - rigid training requirements costly
 - \$200,000 + for basic training GH model
 - Food safety, first aid – additional training costs
- Abbeyfield – more promising?
 - Community needs, not government regulations

Wherefore Ireland?

Bill Kean, Project Guide, the Green House® Project

Ruta Kadonoff, the Green House® Project

Karl Schillinger, Redford Village, MI

Nancy Burkitt, Restaven Care Community, Holland, MI

Cheryl Van Bemden, Porter Hills, Grand Rapids, MI

Websites:

www.thegreenhouseproject.org/

www.ncbcapitalimpact.org/thegreenhouse

<http://www.rwjf.org>

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CHAPTER 44

Beyond the Institution: Dementia Care and the Promise of the Green House Project

Athena McLean

Liberating dreams are those which keep you vigilant in a sometimes miserable existence.

They are the dreams you know when you lose yourself in a book, enjoy a piece of music, dream about falling in love. Liberating dreams hate all those things that keep us grounded in life.... and we emerge rejuvenated from any liberating dream.

.... the non-liberating dream ... is the dream which.... advertising tries to sell you.... telling you you will achieve happiness if you buy....

The nonliberating dream is everywhere today.... Everyone is selling it

Vassilis Vassilikos 1996

The long-term care industry in the United States is facing a crisis. Not only is there increasing difficulty meeting the needs of a growing population of elders, but the very quality of existing care remains poor in many facilities in spite of two decades of efforts to correct shortcomings (see Polivka, this volume). The year 2007 marked the twenty-year anniversary of the federal Nursing Home Reform Act (as part of OBRA 87), which put in place historic regulations to address serious issues of neglect and abuse in nursing homes and to establish standards to promote both quality of care and quality of life.¹ Unfortunately, extensive noncompliance with those standards, chronic understaffing and turnover, and ongoing confusion, even among professionals, about what actually constitutes quality have impeded the realization of OBRA 87's promise, particularly in dementia care (McLean 2007a).

During these same twenty years, the visionary work of British psychologist Thomas Kitwood (1989, 1997), and others, has led to optimistic reconceptualization of the person with dementia and her care (cf. Shomaker 1987; Sabat and Harré 1992; Hughes 2001). This has placed new emphasis on the *person* with dementia, as a dignified social being with a will and ability to meaningfully

communicate even late in the illness (Killick and Allan 2001; McLean 2007b). It has also encouraged a shift from *instrumental* care, focused on custodial maintenance and medicalized *control* of the body and behaviors (as *symptoms*), to a person-centered approach to *quality of life* and understanding behaviors in the context of the person's life experience. The very locus of dementia care in a medicalized institutional setting, like a nursing home, has also been questioned since many elders with dementia lack other pressing needs for ongoing medical attention. Such settings nurture neither care receiver nor giver and may be viewed as depressing by families, who often prefer smaller homelike settings (Greene et al. 1998; Hodder 2004).

THE BIRTH OF A CULTURE CHANGE MOVEMENT

In the United States, these shifts have been promoted by advocacy organizations like the National Citizen's Coalition for Nursing Home Reform (NCCNHR) and innovative providers and other advocates of "culture change" (CC), largely through a group called the Pioneer Network.² More recently, the Centers for Medicare and Medicaid Services (CMS), which serve as both the federal regulatory body and the major funder for long term care, have also encouraged the adoption of CC reforms consonant with the goals of OBRA 87.

This changing climate has sparked consumer demand for new "person-centered" care, and many new "dreams" are being fashioned and marketed as person-centered approaches in long-term care (McLean 2007c). Some, like PACE (Program of All Inclusive Care for the Elderly), provide a full spectrum of long-term care directly in the home and the community. Others offer new caregiving models and training approaches for long-term facilities, such as "dementia care mapping" (Innes 2003),³ innovations for humanizing nursing home like the "Eden Alternative" (Thomas 1996),⁴ and new designs for creating smaller, more sociable "neighborhoods" or "households" in a larger residential unit (Shields and Norton 2006).⁵ Promoting privacy, individualized care, and respect for the dignity of each resident, many of these options have appealed to private-paying families, often seeking assisted living options developed for elders less physically and cognitively impaired than those now typically in nursing homes (Eckert and Morgan 2001; Ball et al. 2005). Others, like Green Houses (GH), developed by physician William Thomas, founder of the Eden Alternative, were intended to virtually replace⁶ nursing homes of the future, and were designed for all elders, regardless of income, as a "wonderful kind of dream idea" (Thomas 2004; Thomas this volume; Kane et al. 2007).

This chapter will consider the potential of the Green House Project (GHP) as a liberating dream for persons with dementia, who constitute a majority of people in nursing homes today. I begin by briefly describing the unique problems and care needs of people with dementia. Then, I offer conclusions from my own research comparing a dementia unit dominated by a biomedical approach to one with a more holistic, person-focused one. Pulling from my case studies and other work on person-sustaining environments, I then consider

the potential of Green Houses for long-term dementia care in the future (see Thomas this volume).

DEMENTIA AND THE CARE NEEDS OF AFFECTED PERSONS

Senile dementia is a considered a progressive disorder of older persons (sixty-five and older) that varies in symptomatology, rate of decline, and length and course of illness from three to twenty years (Richter and Richter 2002:35; see also Traphagan this volume). Most common impairments occur in cognition (thought processes and organization), language, behavior, orientation to time and place, and often, mood. The ability to recognize and use objects may also be impaired. Taken together, these changes affect people's activities of daily living as well (ADLs and IADLs).⁷ Memory (short term, and later, possibly long term) is affected, leading to distortions in the sequencing of events. This shatters the person's confidence about the past, and produces a sense of fragmentation of self. Moving to an unfamiliar institutional setting often exacerbates confusion and fragmentation, and promotes cognitive and social decline. Over time, persons with dementia may develop problems recognizing those who had been close to them, fracturing relational ties to loved ones as well. In very advanced dementia, incontinence, hallucinations, and the inability to speak, walk, and swallow often occur. This typically necessitates additional care, and may involve increasing resistance from the elder, unless effective, trusting relations are established with the caregiver.

Impairments can be frightening to elders, particularly earlier in the illness when they have the most awareness and fears of what might follow; this creates a need as well for considerable emotional support. Recognizing failing abilities may lead to loss of self-confidence and self-esteem, especially as others become aware of these. Incontinence may bring shame and further erode self-esteem, and efforts to hide accidents may make the person appear even more impaired.

Elders with dementia respond in different ways to their growing dependence on others; wishes to retain independence may affect their willingness to accept help from caregivers. Those who have been independent may be especially aggressive with caregivers who come to cleanse or toilet them. Their responses have typically been interpreted as *symptoms* of their disease, not as the understandable effort to retain some control and independence. Confusion, related to memory losses and fragmentation, often leads an elder to display behaviors that appear disturbed.

Given the multiple personal and social losses that occur in dementia, its most profound impact is in shattering the person's sense of self, history and relationships—the defining elements of personhood. This is why researchers have long urged that the most pressing needs of someone with dementia are *for person work* through an enduring relationship with a supportive caregiver (Gubrium 1975; Kuhn 2002:165–6; Eggers, Norberg and Ekman 2005:343). Yet regulations, staffing levels, and institutional prescripts have continued to place emphasis instead on standard physical and custodial *body work*.

My own observational research, summarized in the following discussion, found dramatic differences between residents on two identical, innovatively designed units with different approaches to care—a biomedicalized approach emphasizing *body work* and a *person-centered* approach where disturbed behaviors were viewed as more than just symptoms. I introduce this material for three reasons. First, I want to illustrate that physical models and structural designs alone are no guarantee of quality care; the underlying philosophy and values make greater difference in optimizing dementia care. Second, the unit that allowed for better care and resident outcomes adopted a philosophy of care consonant with that of the Green House Project. Finally, the care issues raised by the cases in both units provide serious care challenges. This offers an opportunity to consider the capacity of the Green House Project for handling them.

RESEARCH OF TWO SPECIAL CARE UNITS: THE HISTORIC SLEY UNITS

Setting of the Units: the First Special Care Units in the United States

In 1992–1994, I conducted research on the first two special care units in the United States designed with special environmental features to help people with mild dementia maintain their autonomy, and cognitive and functional capacities. The units opened in 1974 due to pioneering efforts of Powell Lawton.⁸ By the mid 1960s, Lawton and his colleagues had already envisioned an environment that challenged standard “dehumanizing” custodial care conducted “in the name of easing the effort of staff and maintaining cleanliness at all costs” (Liebowitz et al.1979:59–61).⁹ Extremely innovative for its time, this new approach was the product of a decade of research, years of planning, and considerable input from international experts in gerontology, geriatrics, and architecture, and of staff, families, and residents.

The units were designed to compensate for deficits, while offering stimulation to help residents maintain existing capacities. Special design features, such as color-coding of rooms (to enable residents to locate them) served as visual memory aids to enable the residents to negotiate the environment (Liebowitz 1976). An open floor plan allowing visibility of activities was intended to socially cue people’s memories, spark interest to engage in activities, and passively stimulate residents for possible therapeutic effect (Liebowitz et al. 1979). A kitchen for cooking activities, pleasant lighting features, bright color schemes, and a gazebo with safe plants were included to add meaning to elders’ lives and provide cognitive stimulation (Cohen and Kirsten 1992:131). Residents dined together in one section of the floor around large tables.

By the time of my study, however, the intended use of the innovative floor plan, with all its special features, had dramatically changed, together with the level of impairment of residents who occupied the units. Many of the special design features, like the color coding of rooms and the kitchen, were either

8

9

gone or in disuse. The gazebo was now used strictly by staff as a getaway, and residents were forbidden to go there. As residents became more impaired, the open design resounded with noise they produced, compounded by other institutional sounds from staff and visitors, the loudspeaker, and the floor cleaners. To avoid conflict among residents during meals, residents were now seated alone, or at the same small table with another resident. As residents became more cognitively impaired and less ambulatory, a number of demographic, fiscal, and institutional factors conspired against preserving the original ideal. The vision, energies, wisdom, and dreams of the early planners were no longer benefiting the elders, who, like their families and most of the staff, knew little of the units' illustrious beginnings. The value of special care units themselves as superior facilities to support persons with dementia also was called into question. In one of his last published articles, Powell Lawton himself concluded that special care units could not be distinguished for offering better care (2001:158).

CASE STUDIES

Background to my study

By the time I began studying the units, researchers were beginning to suggest that behavioral disturbances (BDs), such as fighting with caregivers, which were previously regarded as disease *symptoms*, might actually have some reasonable basis in the person's struggle to regain lost autonomy. Other BDs, such as repetition or agitation, might reflect the person's struggles both with cognitive impairment and the loss of social regard by others. Typically, confusion, evidenced by "wandering," had been seen only as a symptom. However, studies were beginning to suggest that a person did not wander aimlessly, but toward a familiar place, like "home," for example, to prepare her husband's dinner, or the bus stop to meet her children, forgetting that her husband had died or that the children were now grown. It was as if the resident found herself in a time warp.¹⁰ So while the behavior seemed to lack sense in the present context, it clearly had some historical relevance in past contexts. Thus behaviors that had been regarded as meaningless were beginning to gain credence as plausible efforts to *communicate* genuine needs, maintain a sense of self, or revive personal stories (Sabat and Harré 1992; Hughes 2001).

One goal of my work was to study problematic behaviors in the contexts in which they occurred—locations (the resident's room or dinner table), conditions (after pressure to wake up), persons involved (a family, nurse, NA), and time (upon waking, before dinner)—and the resolution (staff intervention, family involvement) that followed. I also tried to learn about the history of the person and more recent events that might have affected the behavior. To do so, I talked with the person (if possible), the family, and staff, and read their medical records.

The units each housed forty residents and were identical in design and admissions criteria: severe dementia and BDs (often verbal or physical

aggressiveness). Their residents were the most severely impaired in the nursing home, whose disturbed behaviors led to their admission there. The median age on Sley 1 was 86.5, and 88.5 on Sley 2. Both units had somewhat higher than usual portions of female residents, with 80 percent females on Sley 1, 85 percent on Sley 2.¹¹ Both units also enjoyed similar staffing levels: a head nurse (an R.N.) on the day shift, responsible for setting the philosophy and organizing the delivery of care; a nurse who served as care manager on all shifts and during weekends, responsible for supervising staff and dispensing medicine and treatments; five Nurse Assistants (NAs) during the morning and evening shifts, and one or two at night; a part-time bathing assistant; and professional staff (physician and physician assistant, psychiatrist, activities specialist, nutritionist, and social worker) who regularly visited the units.

However, more residents on Sley 1 were ambulatory and somewhat more behaviorally disturbed than on Sley 2, and the unit overall seemed noisier. After visiting the two units, I also discovered differences in the tenure of staff and residents, and evidence of differing philosophies of care by the head nurse, who was responsible for structuring and prioritizing care. These differences, I felt, warranted a comparative study as they might contribute to differences in the residents' behaviors. I thus decided to split my time on the two units, spending nine to ten months on Sley 1, and then the same time on Sley 2. I began by conducting general observations of the lives of the residents, their families, and the staff. After a couple of months on each unit, the staff helped me select seven residents with severe BDs to study intensively over all shifts for one month each. The following focuses on one case study from each of the Sley units as an example for comparing the two approaches to care. In addition, I offer a second particularly challenging case from Sley 2 in considering the demands on the Green House as a long-term care model.

Sley 1: Margaret—Unquieting Noise

“My greatest fear is the inability to take care of myself ever.”

“They made this lovely place for the people, but it isn't though.”

Margaret was the first person I came to know on Sley 1. During my first months there, she would regularly roll her wheelchair over to chat. Despite some confusion from her dementia, she was very pleasant and welcomed company. She was also socially sensitive with me, taking care not to interrupt me if I looked busy. The first time we met, she asked where she could find the trolley station, as it was getting late and her mother might worry. I explained I was new here and did not know. On later visits, she described her mother's lovely flower garden or the book club over which she had presided. At eighty-nine, she had survived two husbands and was childless. However, her brother and sister-in-law were very concerned for her and visited her frequently.

Margaret had lived in the nursing home complex for eight years, first in an apartment, and after her arthritis worsened, in a nursing unit. Previously independent, this move upset her. She lacked dementia at the time, but moving

symbolized loss of autonomy and led to depression. A few years later, following hip surgery, she declined cognitively as well. During her last year on her unit, she began to call out loudly to staff when she was hungry or uncomfortable. This disturbed other residents, and she was placed on a small dosage of an antipsychotic medication (20 mg. of Mellaril[®]) and transferred to Sley 1 several months before I started my research.

Except for her occasional calling out, Margaret was not seen as a difficult resident. However, during baths, she would cry out loudly, and her cries were becoming more intense and generalized to other times. Her sister-in-law, who was a social worker, asked to observe her bath to see if she could find some triggers to Margaret's screaming. She found that Margaret started screaming only if she got water in her ears. To prevent this from happening, her sister-in-law brought in a rubber sunbonnet she had purchased on a trip to a tropical island specifically for Margaret. It fit snugly around Margaret's head and blocked her ears from the water. Much to her surprise, Hazel, the head nurse, could not promise it would be used.

Hazel later explained to me that locating the bonnet and using it was just too time-consuming for Rhonda, the part-time bathing assistant who bathed eight residents a day. Rhonda had to complete the eight baths within 3.75 hours or the nursing home would have to pay her benefits, which they tried to avoid. If she exceeded her allotted time, her evaluation would suffer and she could risk losing her job. Rather than let another resident delay in getting a bath, or leave bathing to the already overworked nursing assistant, Hazel encouraged Rhonda to complete her standard bathing tasks, skin checks, vital signs, and dressing routines rather than to spend time with the sunbonnet, even if it improved Margaret's bath. Indeed, the one time that Rhonda tried it, Margaret was calmer and did not scream. Still, to Hazel, Margaret's problem was much larger than anything that could be solved by a "localized environmental accommodation," since to her, it stemmed directly from the dementia. It remains unclear whether the bonnet would have made a more lasting difference since Hazel no longer permitted Rhonda to use it.

Around this same time, a six-month psychiatric consultation, required by OBRA, led to a series of medication changes that exacerbated Margaret's symptoms. In keeping with OBRA's mandate to use milder psychiatric medications and smaller dosages, the psychiatrist switched Margaret to Buspar[®], a milder antipsychotic medication, which took six weeks to take effect. Almost immediately, Margaret complained about dizziness. She became intolerant of other residents and started yelling incessantly. With every medication change, her condition worsened. She became more confused, and could no longer converse, recognize her family, or feed herself. When other medications were added, she began to hallucinate. Her family insisted that she be returned to her original medication, and after twenty-nine changes, and a nine-fold increase from her original dosage of Mellaril[®], she temporarily improved, although not to her previous level.

Then suddenly, she declined sharply. She tightly shut her eyes and just shouted or sang loudly, shutting out the world. Her brother appreciated the

existential quality of her new behavior, which effectively separated her from an environment of which she would say, even in her deteriorated state, “I don’t like this place; it’s the *whole* thing I don’t like.” Hazel and her staff did not acknowledge the validity of Margaret’s perceptions; to them, her decline was the predictable outcome of someone with dementia. However, for Margaret, constrained as she was, her increasingly pervasive outbursts were her only available means of articulating her existential condition.¹² Outbursts of this quality were not amenable to silencing via magic bullets.

12

Sley 2: Mrs. Fine—the Wicked Witch of the West

“I have nothing—just this, while they have a very big house.”

“That is their world, and this is mine; I like it here.”

When she was first entering the nursing home three years earlier, Mrs. Fine scored only four out of thirty possible points in the mini-mental status exam (MMSE) and another cognitive test.¹³ Mrs. Fine stated that her husband had died a year before, when it was actually twenty years, and she seemed confused and hostile. At eighty-five, she had endured the loss of a second close male companion, six hospitalizations, a stroke, and a broken hip. Left with a severe speech impediment and the inability to walk, she became depressed, more cognitively impaired, and began to hallucinate. These led to brief psychiatric hospitalizations, which her daughter ended because she could not bear the artificial effects of the antidepressant on her mother: “I wanted my critical mother back!” While this endeared her to her daughter, it gained her the reputation in the nursing home as the “wicked witch of the west.”

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Mrs. Fine had lived on two other units before Sley 2, becoming increasingly aggressive. A tranquilizer at her previous unit disturbed her gait and she was restrained in her wheelchair. She began to disrobe in public, became incontinent, and in need of total hygienic and grooming care. At that point, she was transferred to Sley 2. Jenny, the head nurse there, determined that Mrs. Fine’s anger stemmed from her loss of control and dependence on others. She secured Mrs. Fine’s cooperation for physical rehabilitation. As Mrs. Fine began walking again with the aid of a walker, her mood improved, so she was taken off the tranquilizer. An observant NA saw her remove her diaper to go to the bathroom and after additional assessment, she was deemed continent and the staff were alerted not to use diapers. They were also asked to respect Mrs. Fine’s wishes to gain help with hygienic care only in the evening, the only time she wanted it. Mrs. Fine improved so markedly that staff visiting from other units could not even recognize her.

Because she had significantly improved, her family encouraged staff to transfer her to a unit with higher-functioning residents. After moving, she declined and once again was restrained in her wheelchair. She returned once again to Sley 2, this time to a highly coveted private room. With patience from the staff, she restored some autonomy, gained confidence, and resumed walking independently. Her speech *aphasia* (difficulty in finding words)—brought

on by a stroke—had worsened, but the staff were patient and supportive of her efforts to talk. However, following hospitalization, due to a possible stroke, she became more aggressive again, and also became obsessed with photographs of family members and with fears for the safety of her daughter. She also became paranoid about others going through her belongings, and seemed more deeply depressed. The psychiatrist and unit physician disagreed about how to handle this. The physician had known Mrs. Fine since her initial admission to the home and felt her behavior was only marginally more extreme than before and that the unit staff could handle it. He did not want to risk her losing functional improvement by introducing psychotropic medications.

The psychiatrist was also aware of risks in using antipsychotic medications with elderly patients, especially when dementia is involved. Tranquilizers can lead to dizziness and falls, and even have disinhibiting effects, like disrobing. Antidepressants can also increase agitation or confusion. Still, the psychiatrist did not like to see Mrs. Fine suffer, so she convinced the unit physician to start Mrs. Fine on an antidepressant. In fact, Mrs. Fine's mood did improve, her depression lifted, and her paranoia diminished. She also viewed the nursing home more positively: "I like it here; I have two good doctors here." Her minimal status exam showed higher functioning than at any time since her admission several years earlier, and she developed a strong relationship with the psychiatrist. However, a month later, after another hospitalization for a urinary tract infection (UTI), she became irritable, so her physician withdrew the antidepressant, but her mood remained unchanged. "This," he insisted "is just Mrs. Fine."

A few weeks later, she was looking quite content, glad to be back from the hospital, but disappointed that her daughter had not yet visited her. However, this time, instead of worrying that her daughter was dead, she calmly observed that it did not really matter "as long as she's okay."

Mrs. Fine told me she had torn off a sign from her door. The sign, "Nurse in Charge," had been placed on her door because of a suspected infectious virus she might be carrying. "I just tore the 'Nurse in Charge' sign off my door," because, she confidently explained, "*I'm* in charge."

"You are protesting?" I asked.

"Yes," she firmly stated.

It appeared she was back to her old spunky self.

CONTRASTS AND IMPLICATIONS OF THE TWO APPROACHES

In contrast to the staff of Sley 1, who disregarded Margaret's complaints, those of Sley 2 not only responded to Mrs. Fine's wishes, but also were attuned to her history, personality, and preferences. This led them to design and adjust her care so as to maximize her functional capacities while supporting her as a *person*, with all her foibles, including her occasionally sour disposition. Her treatment team were even willing to revisit possibilities like physical therapy, years after other clinicians had abandoned it as an option, to help her restore

some independence, viewing this as vital for increasing her quality of life. This involved *working with* Mrs. Fine to help her attain greater well-being. The head nurse could look beyond the dementia and try to understand Mrs. Fine's anger as legitimate in light of the loss of her highly valued independence. This was in striking contrast to Mrs. Fine's experience at previous units, which like Margaret's, "treated" her existential protests as medical symptoms needing containment and restraint.

Rather than suppress Mrs. Fine's expressions of anger, her care team appreciated their legitimacy. To improve her functioning, they tried to determine, and then move to correct, what stimulated her disruptive behaviors. This approach served to preserve—not pathologize and suppress—the obdurate, cantankerous person, however difficult, who had always been that way. It also helped her function at a level unimaginable by staff from other units.

At Sley 1, residents' behaviors were attributed entirely to medical causes, and their *personal* needs were invalidated or relegated as secondary to the *instrumental* needs of the staff and institution to efficiently complete care tasks. What differentiated care on Sley 2 from Sley 1 was the willingness of the staff to see residents as *persons*, beyond their dementia, and to flexibly organize care to identify and correct not only medical problems, but excess disability¹⁴ not related to the dementia, like vision problems, to optimize their life quality (McLean 2007b:23).

In another particularly challenging case in Sley 2, the care team expended extraordinary effort in helping Mrs. Gold, a woman who had become very unsteady and whose sleep pattern had become reversed. To protect her, staff initially restrained her in bed, but after she climbed over the bedrails and injured herself, her physician gradually withdrew her medications, which he suspected had increased her unsteadiness. Meanwhile, nursing staff gave her one-on-one attention and used less invasive protection, like a floor-level bed, and naturally tired her out by walking with her while conducting their rounds. This was time consuming, and one nurse did quit, but the situation was resolved within two months. Through experimentation and devoted personal attention, the staff restored her ambulation, sleep routine, and calmness, without placing her at risk. While the demands on the staff were immense, so were the positive outcomes.

The challenge is to develop person-centered care that may be high intensity at times, but sufficiently productive that both the resident and staff are rewarded. This requires adequate staff to prevent burnout, and skilled specialists to guide an optimal outcome. Any model of residential care, like the Green House, that offers skilled nursing care must be able to address such complex challenges in promoting quality of life for residents, even during difficult periods.

THE GREEN HOUSE PROJECT (GHP)

The Green House Project is an innovative approach to long-term care that, under federal regulations, fully qualifies as skilled nursing home provision.¹⁴

Green Houses were deliberately developed to meet regulatory and reimbursement criteria to be accessible even to the indigent elderly. Green Houses, however, were designed as intentional communities that depart radically from traditional nursing homes both structurally (in physical environment and organization of care) and philosophically. Green Houses were developed by William Thomas, founder of the Eden Alternative, a previous “culture change” (CC) approach designed to humanize nursing homes by promoting relationships and life. Eden intended to eliminate loneliness, helplessness, and boredom in residents, to bring life through plants, animals, and children to the home, and to empower both residents and frontline staff to make everyday decisions. Despite the international popularity of the Eden Alternative, Thomas found progress to culture change slow, evaluations unimpressive, and by 1999 he became convinced of the need to fully redesign the nursing home from the beginning in order to effect the kinds of changes he had in mind.

What initially motivated Thomas to design these CC initiatives was his encounter with an elder at a nursing home where he worked in the early 1990s. As he prepared to leave her bedside, she grabbed his arm and uttered, “I’m so lonely” (Williams 2004:180). From that haunting moment, he has been on his own CC journey, with the mission of liberating elders from institutional existence, promoting instead a new world vision of interdependence and well-being among generations, what he calls “eldertopia.” This involves sustaining and protecting elders, who in turn impart wisdom and foresight to the community (see Thomas, this volume).

For Thomas, the GHP was one vehicle toward achieving this vision, an “opportunity ... to transform the *dream* of a warm, loving, nurturing sanctuary into a specific *innovation* that can change how we age” (Thomas 2004:222). These affect size, design, conception of residents’ needs, staffing roles, and delivery of expert services. Green Houses are designed as places where assistance with daily living and clinical care are available, but where the focus is not on care, but on life and relationships. Thus, by design, it redirects attention from the instrumental care task in the realm of timed work, to the person in the realm of life as nonprescriptively lived (cf. McLean 2007a).

To achieve this, he adopted a philosophy emphasizing residents’ strengths and freedom to choose, used the principles of *warm* (small and nonhierarchical), *smart* (technology to foster well-being), and *green* (connection to the living world) in designing the physical environment. To create a new notion of care in this setting, Thomas evoked the mythical creature of the Shahbaz, the royal falcon who stood as protector, sustainer, and nurturer of people, as the model for the *assistant* or helper of elders. He was careful, however, to distinguish *protection* (as a form of reciprocal support for those cherished) from the *restraint* and control more common in nursing home care (Thomas 2004:259–261). *Sustenance* involved friendship, homemaking, and the pleasure of sharing food (what he calls *convivium*). *Nurturance* above all was relational, holding the capacity for mutual fulfillment in carrying out even the most mundane routines. Through mutual cooperation with elders, the Shabaz is invested in the enormous charge of creating a new societal understanding of elderhood.

Structurally, the GH is deliberately small¹⁵—a self-contained house for seven to ten residents. Ideally, it is located in a neighborhood and blends in architecturally with other homes. Up to ten private bedrooms with full bathrooms surround the heart of the home—the hearth room and kitchen. Food is cooked in the kitchen, as one would expect in one’s home, and residents can participate in preparation, and delight in the sensuousness of the smells of food cooking. Because of the small distance of travel to the kitchen and other places within the home, mobility is encouraged and wheelchairs are often not needed. Safety features are built in, and there is access to an outdoor garden and patio. The appearance of medical apparatuses is deliberately avoided by eliminating medication charts (keeping residents’ medication cabinets in their own rooms instead), replacing a visible nurse’s station with a closed-off den, and using wireless call systems and silent pagers. Each bedroom has a track for a ceiling lift to assist with lifting residents from their bed to a wheel chair. The Green House may incorporate smart technology as well, to enhance communication, for example, using interactive television to connect with remote family (Rabig et al. 2006:534). But while the Green House may have the markers of a home, Thomas is clear that it is “not a family dwelling,” but a particular kind of “intentional community” (2004:232).

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In contrast to those in nursing homes, elders in a GH retain control over such vital daily activities as when to get up, bathe, eat, and sleep, preserving the *sanctity of lived time* (McLean 2007a). Residents engage in activities whenever they want, as part of life, not as a “billable service.” Elders and Shahbazim participate together in life by eating, talking, engaging in activities, and even playing together (Rabig et al. 2006:534–5). They are supported physically, emotionally, and spiritually. Importantly, the hope was to engage the broader community as well.

The Shahbazim are housekeepers and caregivers in the broadest sense, responsible for cooking, cleaning, and laundry, as well as personal care and nurturance. Beyond CNA (certified nursing assistant) training, they receive 120 hours of training in the GH philosophy. There are two Shahbazim during the day and evening shifts, and one during the night shift, accounting for forty hours for ten residents. In a typical nursing home where CNAs conduct rounds, this would amount to four hours per resident. In a Green House, it is both less and more—less, since with her other obligations, the Shahbaz is less likely to spend four hours exclusively with one resident; more, because residents can be in the presence of a Shahbaz a full twenty-four-hour period if they wish. The Shahbazim¹⁶ are supervised by an administrator (“guide”), rather than by nurses, to avoid the traditional hierarchy in nursing relations. To break down existing professional hierarchies and organizational rigidity, Williams made Shahbazim central to life in Green Houses, and removed professionals from any nonclinical decision-making. The clinical support team (nurses, a medical director, social worker, activities specialist, dietician, and other therapists) visit on a schedule dictated by regulatory mandates and needs for assessment and treatment, but are expected to “behave as guests.” This further identifies the Green House as a home, not a clinical space.

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PROMISES (AND CAVEATS)

Because the Green House Project (GHP) is young and little research is yet available on it, my observations will be largely speculative. Early findings from the study in Tupelo, Mississippi, of the first Green Houses, however, are promising. Self-reported quality of life measures of residents in GHs were superior to those at the two nursing homes with which they were compared.¹⁷ On quality of care, GH residents equaled those of nursing homes, and showed less decline in late-loss ADL functioning. Surprisingly, though, they showed more incontinence. Although Green Houses do not emphasize structured activities, in seven areas they equaled the comparison group (Kane et al. 2007). Anecdotal evidence is even more telling. One woman, who was viewed as too impaired and unresponsive to actually benefit from a Green House environment, was transferred there from her 140-bed nursing home at her family's request. Upon arriving at the Green House, she perked up immediately and continued to improve, talking and singing again, going from being fed pureed foods to feeding herself whole foods, and gaining a spark of life (Baker 2007:88–89). Still, the original study showed that one resident was asked to leave and another returned to the nursing home (Kane et al. 2007:833). It would be worth exploring why these removals occurred in order to gain insight as to what the issues were that led the residents to leave, and how well the model might be able to better address these in the future.

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The GHP has succeeded in removing the medical wrappings and institutional controls that have oppressed life in nursing homes for decades. By radically reconfiguring not just the physical structure, but also the power relations between the supervisory and rank nursing staff, and the pace of life within, it has enabled possibilities for elders to reconnect with their world and reinvigorate their lives. By refashioning CNAs as venerable homemakers, it has invested these women with enormous responsibility to sustain a portion of society's frail elders, to nurture relations and protect elders as those one cherishes. Yet Shahbazim begin as strangers to elders, lacking a shared history. Some will nonetheless embrace this responsibility out of sheer grace and desire for growth; others may come to this with time—or, they will not. Indeed, the success of eldertopia, as advanced within GH, relies mainly, if not entirely, on the Shahbazim. Yet while invested with immense social responsibility for *all* of us, Shahbazim—often women of color and of modest backgrounds¹⁸—continue to be paid quite poorly (Baker 2007). Thus their accepting this charge is no small feat, aspiring toward what philosopher Charles Taylor has called “a new horizon of meaning,” that they are part of a larger whole both socially and spiritually (1991). But how are the rest of us to be involved?

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In Tupelo, GH were integrated into regular neighborhoods, providing greater opportunity for social inclusion and intergenerational relationships within a broader community beyond strictly the Shahbazim. However, some GH are being planned to be built on campuses of long-term care facilities, thus limiting broader social integration and perpetuating an association with a medicalized

and geriatric-segregated establishment. Beyond the resident-Shahbazim relation, the GHP has not developed ways of creating the intergenerational reciprocity eldertopia seeks to promote, perhaps to avoid overly prescribing it. Nonetheless, unlike small owner-operated board and care homes, Shahbazim are less likely to gain access to informal supports (family, friends, and neighbors) available to the owner-operators who live on the premises of their board and care home unless they are also part of the community (Eckert and Morgan 2001). Identifying nonprofessional staff as the core staff of the Green Houses reinforces the nonmedicalized aspects of daily life and combined resident/Shahbazim control over everyday decision-making, with help from the guide as needed. Still, some losses may result from this arrangement, such as the reduction of exposure of residents to exceptional clinicians, like Jenny, of Sley 2, whose insights helped reduce Mrs. Fine's excess disabilities, and increased her autonomy. In addition, the move away from a medical model, while vital for the everyday life of residents, may lead to false dismissal of signs of genuine medical conditions (Baker 2007:77).

Implications for Dementia

Despite these potential limitations, the GHP has worked at reversing a mindset that ignores elders' needs as secondary to institutional prescripts. For elders with dementia, whose aberrant behaviors have long been pathologized as senseless symptoms of their disease and ignored, this is no less than revolutionary. Further, in redefining itself as a genuine home, not a place of shift work and rounds, the Green House frees elders and Shabahzim alike to enjoy the tempo of life as lived. Here *relationships* reign supreme and central to life quality. For the person with dementia, such relationships perpetuate meaning-making in their lives and validate both their fragile identities and their enduring need to engage meaningfully with their world (Frank 2005:177). This is therapeutic to someone whose impaired memory disrupts their sense of a unified self. Shahbazim can effectively restore that sense by continuing to acknowledge the elder. Indeed, in dementia, quality of life depends on the sense of self-esteem and belonging that derive from meaningfully relating with others (Nolan et al. 2002:200–201).

Some elders are privileged to remain in their own homes, where a sense of personal meaning and belonging has been fostered over their entire life course (Stafford this volume). For those who lack this privilege, the Green House may provide a substitute locus for home. In fact, for some people the experience of home—or of a home yearned for—is not attached to an external place at all, but to an interior space of personal security and social connectedness (Reed-Danahay 2001:60). This may be why, in the absence of these positive conditions, an elder *already* in her home may still longingly cry out for it (Frank 2005). Thus, emotional connections to the referents of home may matter even more to the elder than the actual physical site (Brent 1999:78).

How, then, might the Green House Project succeed in fostering social connectedness? It is less likely to do so by creating a generic sense of “hominess”

in the environment than by providing ongoing opportunities for each elder to make meaningful connections to both past and present (Post 2006:226). These connections help to preserve a positive social identity and to fend off insecurity, social isolation, and depression (cf. Williams 2004:145). As a potentially healing environment, the Green House can help maintain identity in dementia by sparking cognitive, sensorial (e.g., by smelling favorite foods cooking), and emotional experiences that recall past memories. These can be compared against experiences in other settings (Williams 2002:148), or enable the construction of new meanings through new relationships and experiences. Such experiences, together with the sense of freedom and privacy, reinforce the delicate sense of being at “home” with one’s self (Frank 2005:184, 187–188), so vital to well-being in dementia (Williams 2002:145–146, 148). Finally, insofar as the Green House “shelters daydreaming” and “protects the dreamer ... to dream in peace,” it reinforces meaningful continuity with the past: “it is because our memories of former home-places are relived as daydreams that these home-places of the past remain in us for all time” (Bachelard 1993:6).¹⁹

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CONCLUSION

As the Pioneer Network gains force, many more homes are promoting person-centered care, often through remodeling to appear more homelike and appealing. While many of these homes are run by individuals or groups that have been on the forefront of change, or welcoming of it, others may see this more as a necessary marketing scheme. What is unique about the GHP is that its vision was matched with a design to reach those whose economic situations could never afford access to this kind of model. Thus, it has the makings of a broadly liberating dream. Of course, the GH is not the first to do this; Quaker facilities predated even OBRA in working to validate and dignify all elders, no matter how impaired (McLean 2007b:241–2).²⁰

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Dreams, though, are actualized by real people in real circumstances; they are never universally guaranteed no matter how liberating the possibilities. Thus, in the final analysis, it is people themselves (Shahbazim, guides, administrators, residents, families, policy-makers, and the public) who will determine the extent to which the GH—and other CC models—will or will not be liberating and sustainable. Some will decide whether to preserve or alter the initial model to meet the needs of those who live and work there, as they strive to make the GH financially sustainable. Already, Cedars, the nonprofit owner of the four GHs in Tupelo, has built six more GHs, but with twelve beds, not the six to ten beds Thomas had in mind. To actualize his dream-idea, Thomas stayed within CMS costs. Yet to fully deliver its dream to elders with varying skilled-care needs, the GHP may need to build in additional help in exceptional circumstances, as with Mrs. Gold on Sley 2, where intensive individual staff support for two months helped her to ride out a difficult period. The challenge is to accommodate residents like her without overburdening staff and other residents; this may demand higher funding. With its call to support the human

spirit, rather than to make profits, it is not surprising that GH and CC have been promoted mainly by nonprofit faith-based organizations (Baker 2007:3). One thing is for sure. The call for CC will not die, as CC agents are mobilizing internationally²¹ to realize a dream of better life for elders. How this will be realized in particular contexts, both locally and internationally, will be something anthropologists will surely wish to follow and help to inform for future initiatives.

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NOTES

1. The Nursing Home Reform Act, as part of the 1987 Omnibus Reconciliation Act (OBRA 87), intended to address neglect and abuse in nursing homes, but also to establish standards of care and compliance. These standards addressed quality of life by obligating nursing homes to provide “the highest practicable physical, mental, and psychosocial well-being” of residents (Turnham 2001). While heroic in intent, even with success in several areas such as restraint reduction and continual efforts to improve regulations and compliance, it has fallen short of its goals. For further elaboration on its shortcomings, see *Faces of Neglect* by NCCNHR. See www.nccnhr.org/action_center/366_1994_12825.cfm (accessed on August 15, 2008).

2. Although reformers had long complained about conditions in institutionalized homes for the aged (e.g., Henry 1963), the “culture change” movement finally gained momentum when a group of “pioneers” of nursing home reform gathered in Rochester, New York, in 1992 and again in 1997. In 2000, the group named themselves the “Pioneer Network,” and have gained influence with consumers, care facilities, and policy makers. For more information on its history, see www.pioneernetwork.net/who-we-are/our-history.php (accessed on August 15, 2008).

3. Dementia Care Mapping is an intensive observational method used to determine quality of dementia services on the basis of specific indicators of quality of life (Capstick 2003:11–22). It was developed by Kitwood and colleagues, the Bradford Dementia Group, UK.

4. The Eden Alternative was a new concept in nursing home care and philosophy, developed by William Thomas to tackle “loneliness, helplessness and boredom” through a habitat that engaged people in the “green” noninstitutional world of plants, animals and children. It challenged the hierarchical model of institutional organization and returned control to the direct caregivers (Thomas 1996; 2004:179–90). This model has been very successful internationally with at least 300 registered “edenized” homes See www.edenalt.org (accessed on August 15, 2008).

5. *Neighborhoods* refer to structural divisions within nursing homes, which serve as smaller clusters of residents (about twelve per neighborhood). Each is further divided into two “houses,” consisting of residents’ rooms surrounding a kitchen, den, and formal living room. This innovation was developed by Charlene Boyd and the staff of Providence Mount St. Vincent, in Seattle, Washington. However, in more vulgarized commercially exploitative forms, a simple door is said to divide a wing into neighborhoods, without further structural or conceptual changes.

6. By 2025, Thomas envisioned a system of home and community care with 100,000 Green Houses and a few leftover nursing homes. In five years, fifty Green Houses have opened (Kane et al. 2007:839).

7. ADLs are Activities of Daily Living—personal care routines like combing one’s hair; IADLs are Independent Activities of Daily Living—more complex chores like balancing a checkbook.

8. Powell Lawton was probably the most influential psychologist in reconceptualizing environmental designs for optimizing cognition and dementia care in the United States. He forged efforts to understand the impact of environment on the care and quality of life of those in nursing homes, and conducted innovative research on ways to evaluate these impacts.

9. This was the type of care that Jules Henry had decried in *Culture against Man* in 1963.

10. I thank Deanna Trakas for this metaphor.

11. Most homes average around 75 percent women.

12. I thank Robert Rubinstein for this observation.

13. The difference in Mrs. Fine's performance went beyond the tests to her disposition toward being tested as well as actual differences in her cognitive status during times of testing.

14. States have ultimate jurisdiction over classification of long-term residence. In those states where skilled nursing certification is not allowed, the Green House Project allows them to be built as assisted living facilities. See CMS letter, December 21, 2006 from www.ncbcapitalimpact.org/default.aspx?id=414 (accessed on August 15, 2008).

15. Smaller facilities have been associated with less anxiety and depression in residents (Rabig et al. 2006:534), especially those with dementia.

16. The word *shahbaz* is Persian and a singular form of the assistant he calls the "midwife of elderhood." *Shahbazim* uses the Hebrew "im" ending to create the plural form, to capture a mixture of traditions in a novel blend, like the Green House itself (Thomas 2004:239, 255).

17. There were four Green Houses with ten residents each; two were dementia-specific. The comparison nursing homes were owned by the same nonprofit organization, and one of the homes shared their administration with the Green Houses (Kane et al. 2007).

18. Because Green Houses in many states qualify for Medicaid grants, many Green House residents may share backgrounds with the *Shahbazim*, in contrast to caregivers in private homes.

19. Cited in Brent (1999:72).

20. Quakers are a religious society that accepts the fundamental divinity in all things. This includes extremely frail and demented persons. Long before the CC movement began, Quakers had designed long-term care to support the dignity and respect of both care receiver and caregiver in demedicalized settings. Quaker-sponsored facilities such as Chandler Hall, in Newtown, Pennsylvania, have also pioneered in intergenerational programs with on-site child care and development facilities See www.chandlerhall.org (accessed on August 15, 2008). In addition, since 1973, Kendal, in Longwood, Pennsylvania, has promoted an "Untie the Elderly" movement to eliminate the use of both physical and chemical restraints. See <http://ute.kendaloutreach.org/learning/learning.aspx> (accessed on August 15, 2008).

21. In Ireland, on December 5–6, 2007, CC experts Steve Shields and LaVrene Norton, at workshops organized by the Health Service Executive and the National Council on Ageing and Older People, were enthusiastically received for their ideas on transforming care in the Irish context.

June 18, 2020

Dear Commissioners and Fellow Residents:

I am writing as a follow-up to my comments made at the Planning Commission public hearing on June 8, 2020. I have two areas of concern regarding the planning for a new senior center in the Hannah Farms development, relating to the request for a Special Use Permit. The areas of concern are 1) the provision of a suitable and accurate Natural Features Survey, and 2) provision of a sound water management practices and engineering.

I have organized my rather extensive comments in four sections and an Appendix: i) Introduction, ii) Natural Features and Functions, iii) Water Management and Flooding, and iv) specific conclusions and recommendations. The Appendix contains Figures and Graphics, which you can use with the written text.

Sincerely yours,



David L. Skole and Deana L. Haner
4845 Mohican Lane
Okemos, MI.

Introduction

My standing in this matter arises as a property owner that abuts the planned project property, where I reside at 4945 Mohican Lane. My standing also arises as a citizen and taxpayer in Meridian Township, where I expect sustainability-based planning and forward-looking land stewardship to guide decision making. The concerns I have, which are detailed below, follow concepts that the Township has adopted and published in several important planning documents.

The Greenspace Plan, now 16 years into its implementation, lays out broad concepts for economic development that does not come at the expense of water quality, natural systems and wildlife. The report states:

“There is a desire that growth come not at the expense of water quality, natural systems, and wildlife, rather, that new development be used as a tool to permanently protect key natural and cultural resources and enhance the Township’s sense of place. The plan outlines ways in which growth and development in the Township can continue to occur while simultaneously protecting the natural systems and community character of the Township.”

The project for which a SUP is requested is located in close proximity – abutting – of a Township Priority Conservation Corridor, as identified and mapped in the Plan. This Corridor has unusual natural characteristics which I discuss below and as such should elevate the level of care and oversight in your deliberations, including an overt effort to seek or assess alternative uses.

The 2017 Master Plan identifies as one of its important goals to “preserve open space and natural areas”. It states:

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Water Management.

The project site is situated on a veritable island, surrounded (on all sides) by the 100-year floodplain. All sides are designated in zone AE. (see figures in Appendix) Three sides are in the regulated floodway. The base flood elevation is set at 842 feet. From a close inspection of the site plans, as best I can tell the site will be elevated at 845 feet to 850 feet. The site is thus a very low situated impervious service, which raises two general concerns about water impact and water management.

The Hannah Farms developed area and surrounding built-up area is one of the most extensive impervious surface footprints in Meridian Township. Its surface area is approximately 600,000 m² with the new development included, compared to the Meridian Mall complex at Grand River and Marsh/Okemos which is the largest impervious surface comprising approximately 1,100,000 m². For comparison, within this expansive area the Mall itself occupies ~350,000 m², Meijer is ~145,000 m², the Target-Kroger-Home Depot conglomeration is ~245,000 m². The Wall Mart site is ~77,000 m². The large developed area at Jolly and Okemos (actually in Alaiedon Township) is ~630,000 m². Thus, as a distinct impervious surface the Hannah Farms area is the second or third most concentrated water runoff contributor in the Township. I think that warrants very careful consideration about additional large and completely hard surfaces.

The Indian Lakes Estates neighborhood residents are already concerned about increased runoff not only from the Hannah Farms area but throughout the Township. Even the most cursory look at the County drain and fluvial areas shows that the Red Cedar (See figures in Appendix) carries the brunt of most runoff. The County drain system substantially flows into the Red Cedar, and other runoff does as well. The Indian Lakes area is situated at the confluence of three major drainage routes. While total runoff

from the Township contributes substantially to flooding conditions in Indian Lakes, so does the Hannah Farms directly through the Hannah Farms Drain and the Herron Creek Drain.

At the June 8 hearing a representative of the developer made the claim that all runoff water would flow west. This statement was disingenuous at best and perhaps a deliberate mis-statement. Runoff could flow into the Hannah Farm Drain and then west to the Red Cedar River, emptying downstream from Indian Lakes (see Appendix). But with enough water it could also flow east into the Herron Creek, joining flows from the Herron Creek Drain into the large wetland at the cross over of Sequoia Trail and east behind the neighbor hood into the Red Cedar upstream from the neighborhood. At a connection at Indian Lakes close to the so-called Small Acres is the confluence of the Red Cedar, the Hannah Farms/Herron Creek Drain and the Mud Lake Drain (see Appendix). My understanding is that the Mud Lake Drain contains runoff from the Meridian Mall Complex. So, just upstream of Indian Lakes Estates the Red Cedar gets a combined contribution from drains that carry water from the two largest impervious surfaces in the Township.

There have been concerns by residents that storm water runoff and discharge/stage of the Red Cedar has been raising the water table, causing tree mortality. Water logging of trees can lead to tree mortality over a long period of time. This could be an issue, and it would not have been immediately obvious to planners. It is entirely possible that we are only now seeing the effects of decisions made a decade ago. So, I would not discount residents concerns quickly. The picture can be complex in that the ash trees are seeing high mortality due to the EAB infestation. But other species are also falling. Managing of surface water runoff needs new and novel thinking.

I realize a couple of important points here. First, there is a lot of water flowing past Indian Lakes from contributing runoff and drainage further upstream, including the Smith Drain that carries the Jolly/Okemos complex so Hannah Farms is by no means a sole contributor. Second, the use of the Herron Creek wetlands is to some degree sound environmental management; the value of wetlands to buffer flows and filter water has been known and advocated for decades.

The Township Climate Change Sustainability Plan argues that one of the more important expected impacts of climate change will be increased precipitation and flooding. Given the current configuration of the drain and flow system, and the extremely high dependence on the Red Cedar River to carry storm water surge, a concern about flooding – especially in Indian Lakes Estates -- is quite reasonable. Indeed, without engineering flood control measures and structures it seems unlikely that the Red Cedar and the current water management infrastructure will be able to avoid seeing events that closely resemble a 100-year flood with higher probability than 1% per year.

Since 1920, or the past 100 years, there have been 12 major flood events as recorded at the Red Cedar gaging station by the USGS (see figure in Appendix 1). For this example I note all floods above a discharge of 3000 cfs and a stage higher than 8 ft. Two of these occurred in the last two years, one being this past May. The flood of 2018 was the third highest stage in a century. The flood stage of 1975 was the highest and documented air photos and other evidence shows that a major part of the Indian Lakes Estates (not at the time completely constructed) was flooded, as was a portion of the proposed site. I am still reviewing information on how much land was inundated by the 2018 flood.

With climate change it is expected that more frequent floods of stage 8 ft or higher will occur. The FEMA measure of a “one hundred year flood” means that there is a 1% chance of flooding each year. To put this into perspective, over the course of a standard mortgage of 30 years, that would be a 30% chance of

flood. Flood ratings are not done on a frequent basis, and it is entirely conceivable that increased impervious surfaces will exacerbate the increased storm frequency from climate change. The climate change influence is actually rather complicated to model, but most scientists consider the highly “energized” hydrologic cycle that comes with higher surface temperatures would lead to more intense storm events (the influence on hurricanes for instance is largely in their intensity not frequency), which means more rain over a shorter period of time, which is exactly the kind of event that when combined with storm water runoff, causes river stage to rise high and rapidly.

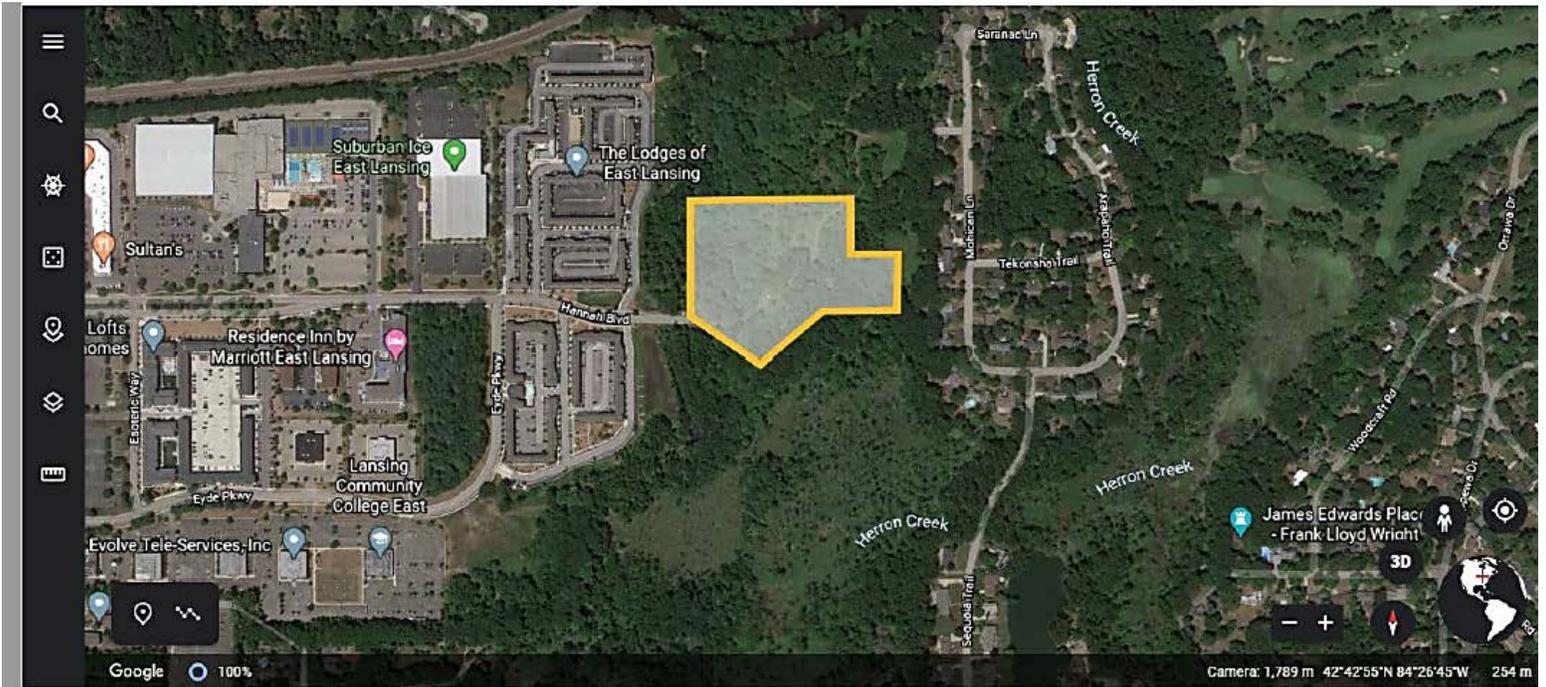
Conclusion

To simply relegate the process of planning to an adage that all development comes at a cost is today an ineffective strategy and would lead to risks that can be avoided. The Township has a long history of bold and responsible planning that considers natural greenspaces, natural resource values and sustainability directly in the planning process, on equal footing with other important factors such as economic and social. With this letter, I have tried to point out specific areas of concern, which I think require careful attention. I would weigh carefully all possible alternatives to the proposed project – even going as far as taking consideration of a purchase agreement with the current owner. I understand that our laws and ordinances have been created to guide the planning process, and all parties need to plan – or negotiate – in good faith following these rules. Let us strive for win-win solutions.

Some specific recommendations include: 1) re-initiate the Natural Features Report so you have a thorough assessment that can actually guide planning, 2) develop a suite of 4 alternatives to this proposed development, including a land preservation option, 3) develop an explicit natural areas and wildlife mitigation plan that will compensate for the loss of corridor function, 4) develop an explicit water management plan, with external independent engineering review, that eliminates storm water runoff and directs water flows downstream of the Indian Lakes Estates, 5) perhaps begin discussions, not necessarily coupled to this project proposal, with the Drain Commissioner on options for engineered flood control in the Township, to alleviate the burden of the Red Cedar and its associate drains.

I appreciate what the Commission has done so far. The set backs are much improved over alternatives. The berm has potential for creating a natural barrier to the visual impact, but I would also look at how it shall block the biological corridor. From what I know there is some willingness to think hard about water management, and new regulations will help with retention strategies. The transport plan is better than some in the past, if there is a way to connect to mass transit.

Let me close by stating that were I a Commissioner I would vote against the provision of a SUP for this project. As Commissioners I recognize that you were elected to work on behalf of residents, and that you will exercise your own judgment and conscience in this decision. Should this project move forward, I hope you will take a renewed diligence to follow it and track it and continue to provide close oversight. The developer needs to make all facets of the through the project completely transparent, especially during the site review. Past projects and developers for the Hannah Farms development have in my view a poor track record sticking to its promises and agreed conditions.



Proposed project site shown in yellow. This outlines the dimensions of the constructed parts of the project, including buildings and parking lots.

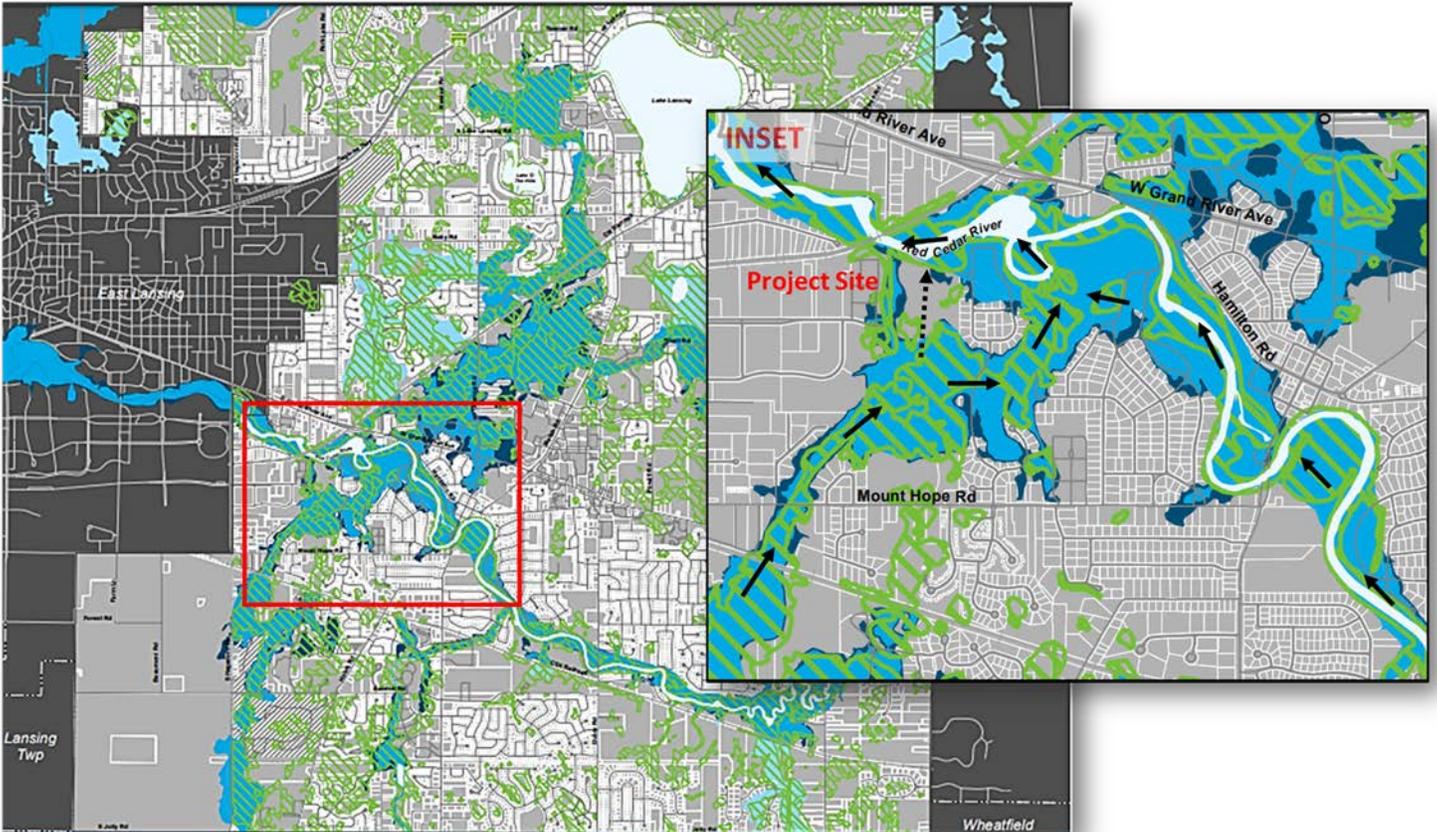
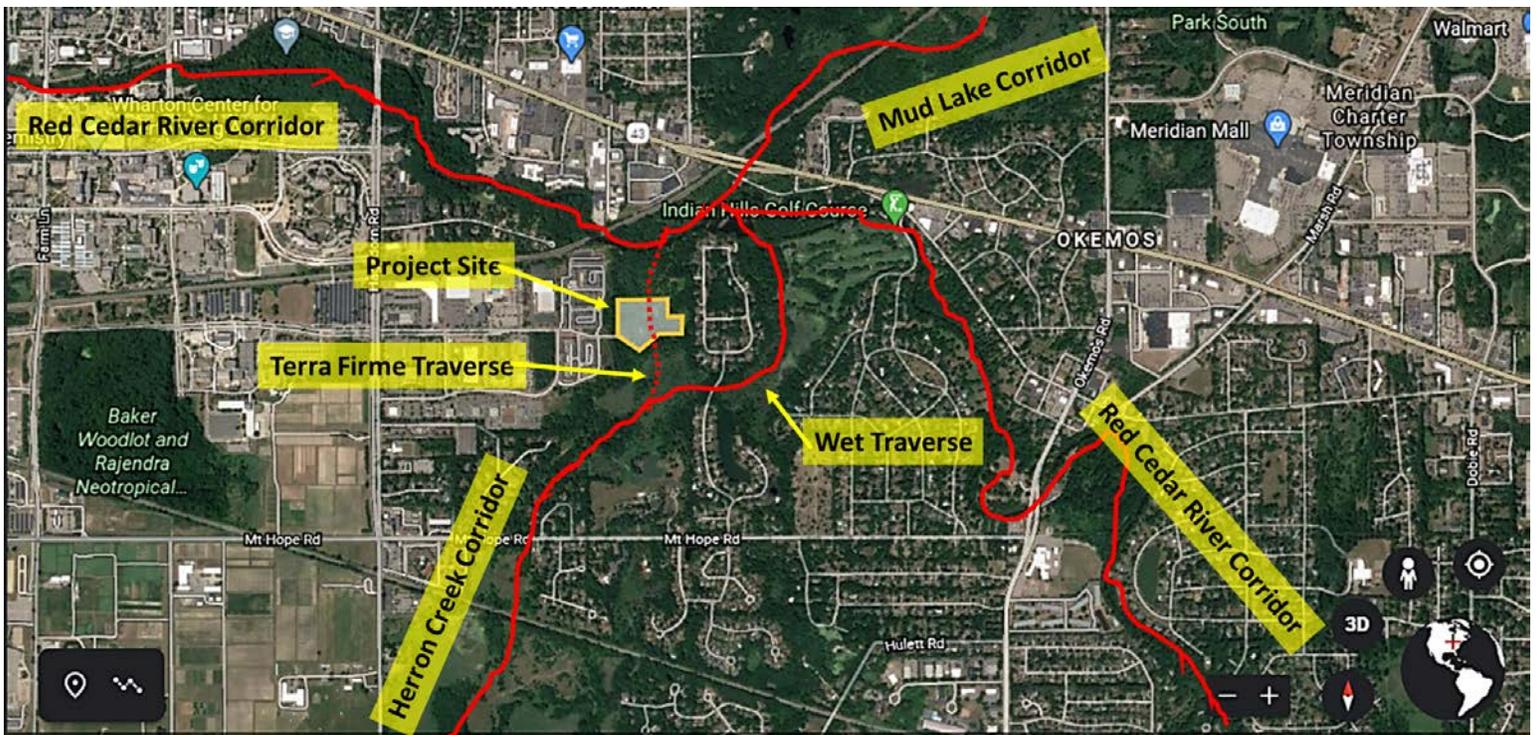
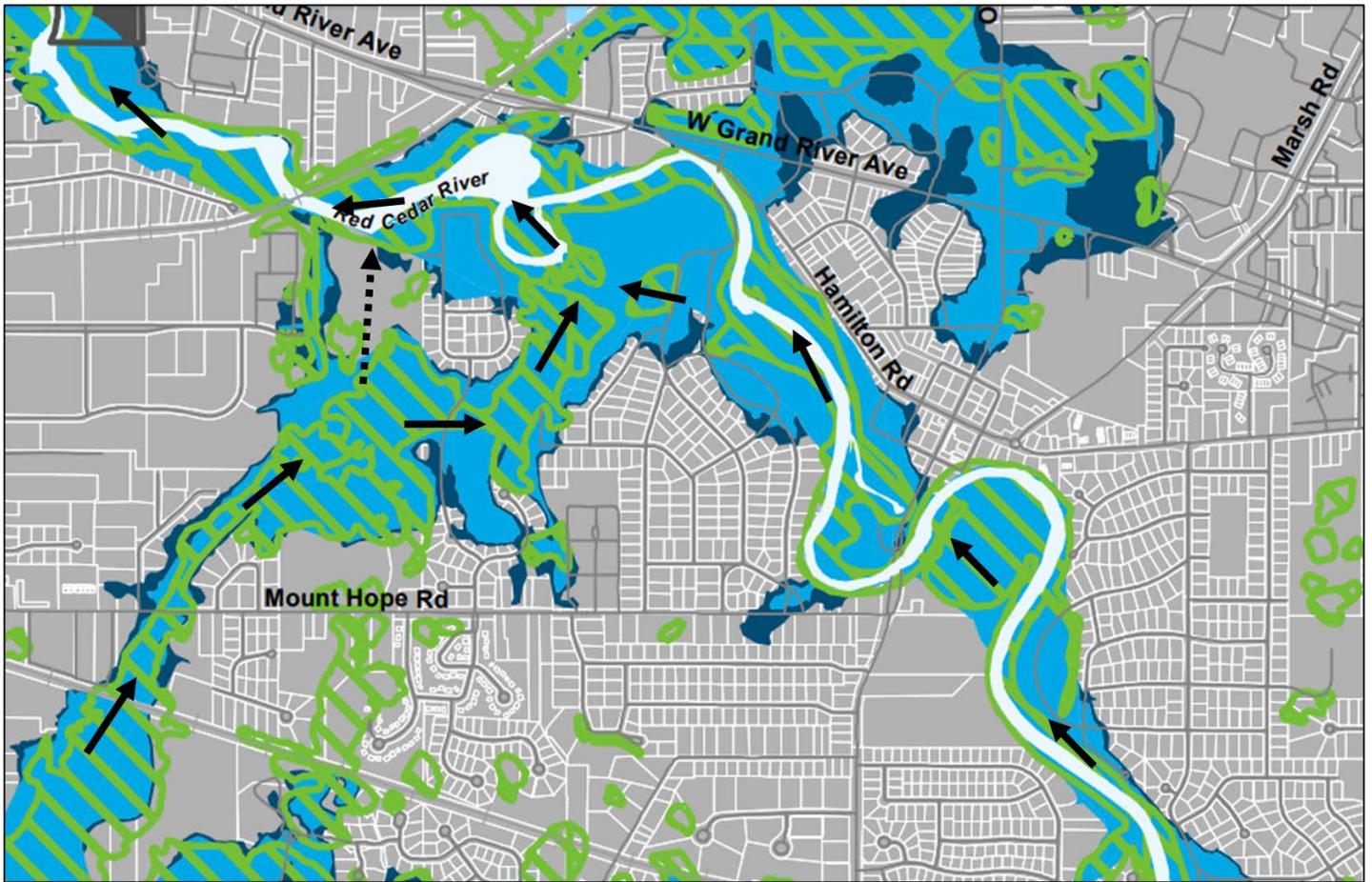
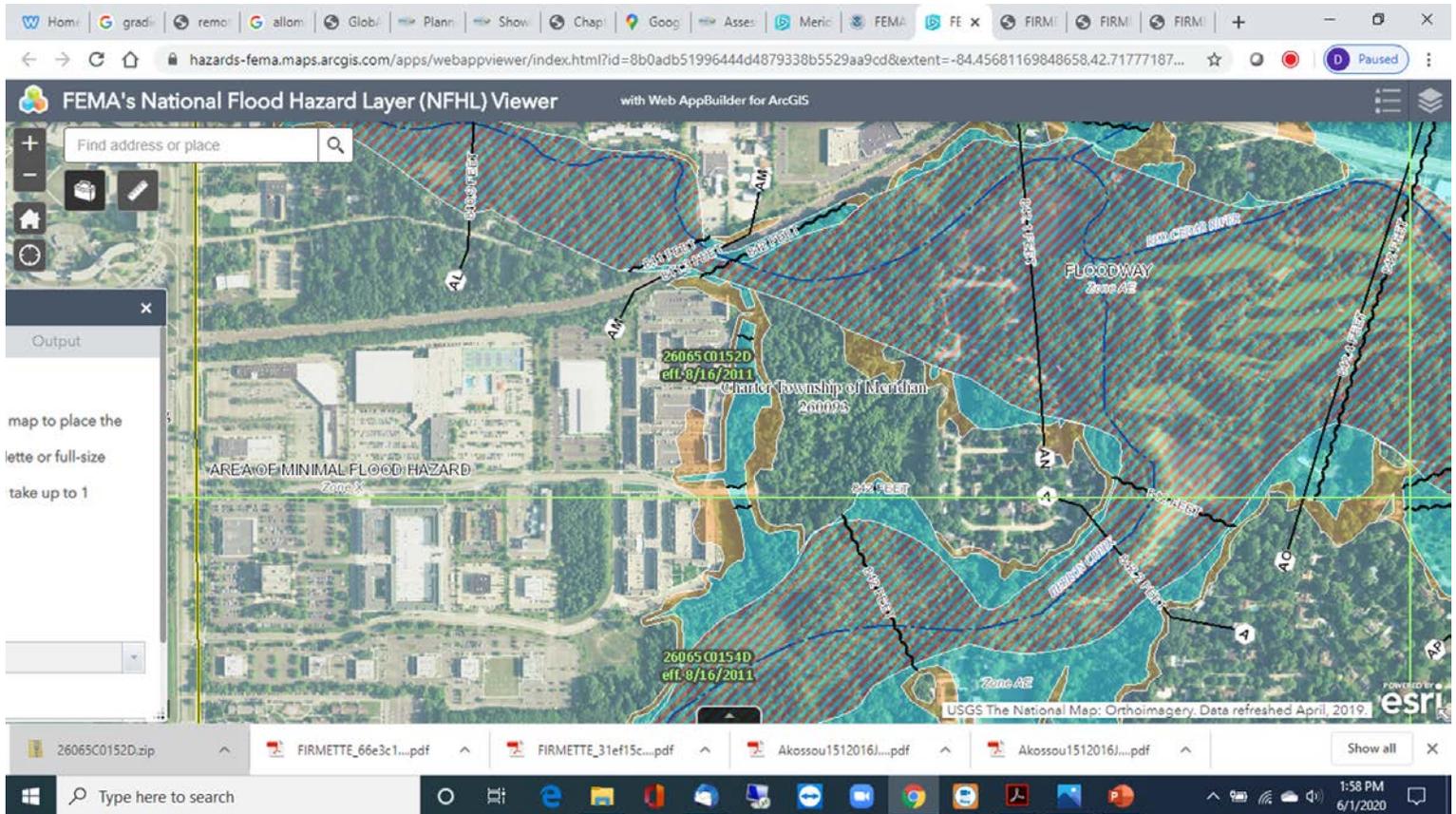


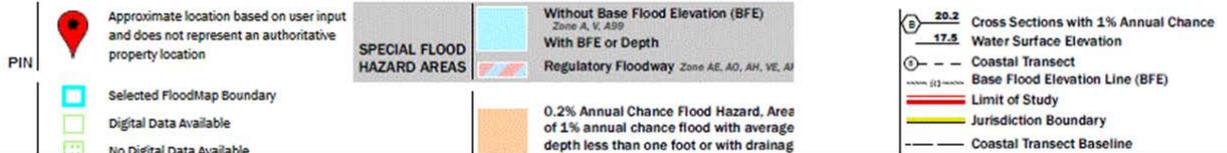
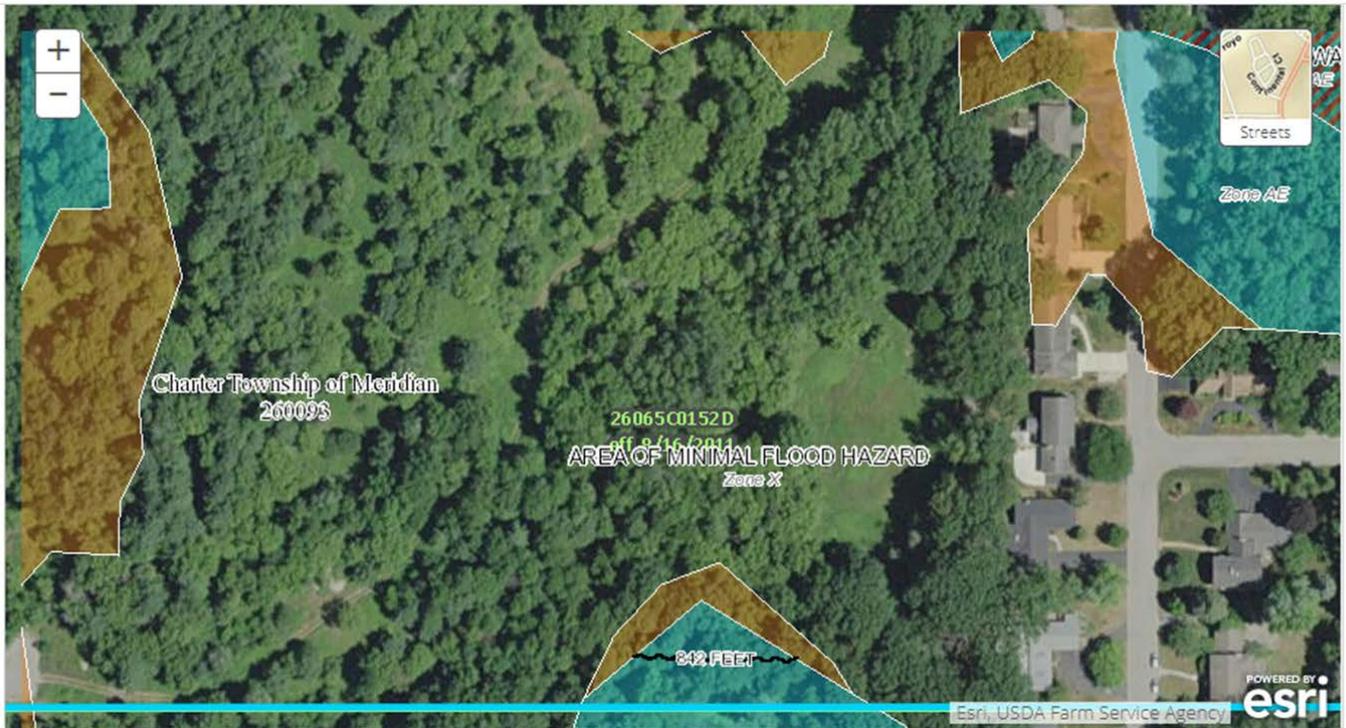
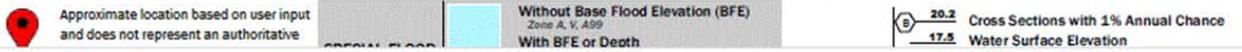
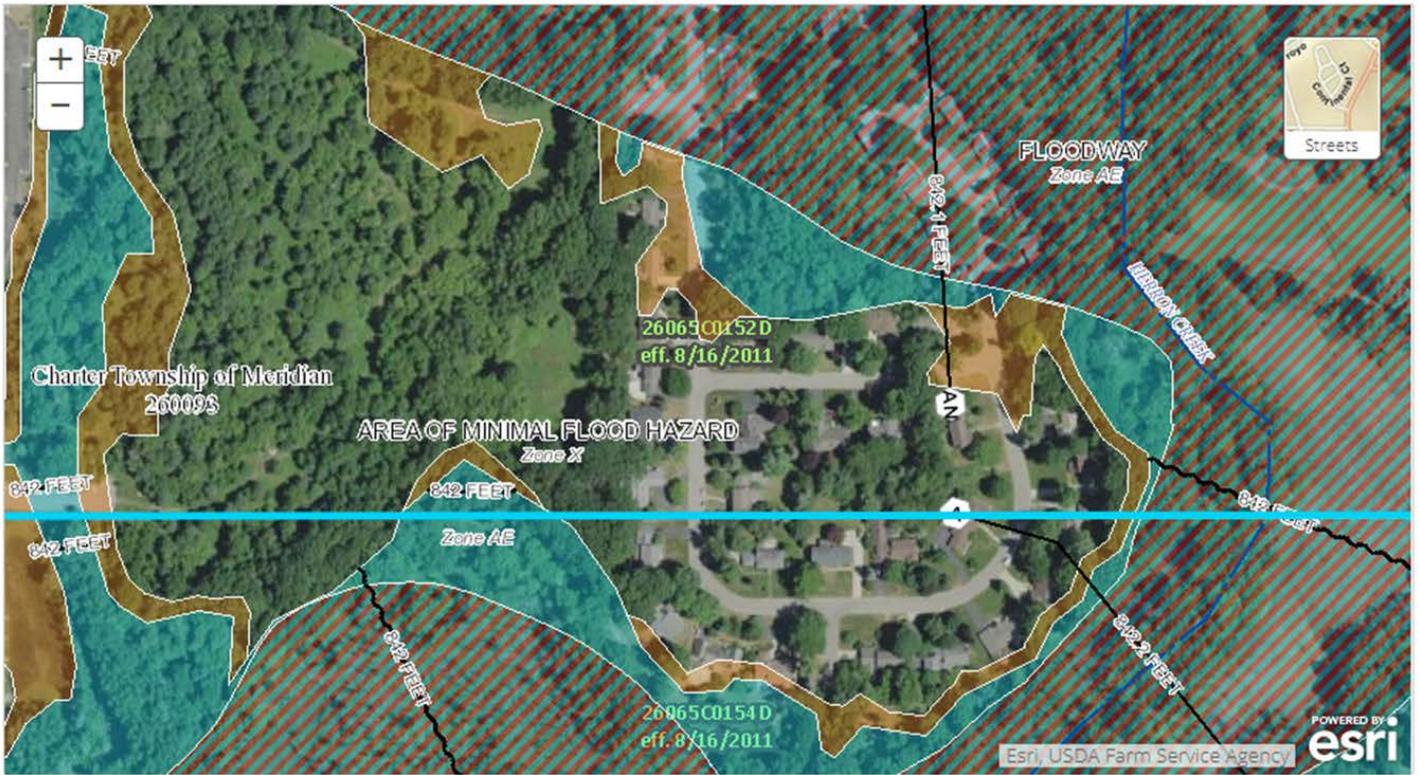
Diagram using Meridian Township Master Plan showing the convergence of three major natural greenspace corridors. The three corridors converge with a nexus of the confluence of Red Cedar River and Herron Creek at the northern part of Indian Lakes Estates and in close proximity with the proposed project. The proposed project presents as a higher ground, terra firme, traverse adjoining with a wet connection. This landscape position makes the site a high-quality natural feature in a broader landscape.



This diagram shows the landscape close to the proposed project, and the three connecting green corridors. The project footprints is shown outlined in yellow. The red lines indicate the corridors, while the dashed red line shows the traverse for terra firme, and its juxtaposition with the wet corridor, providing a diverse landscape features.

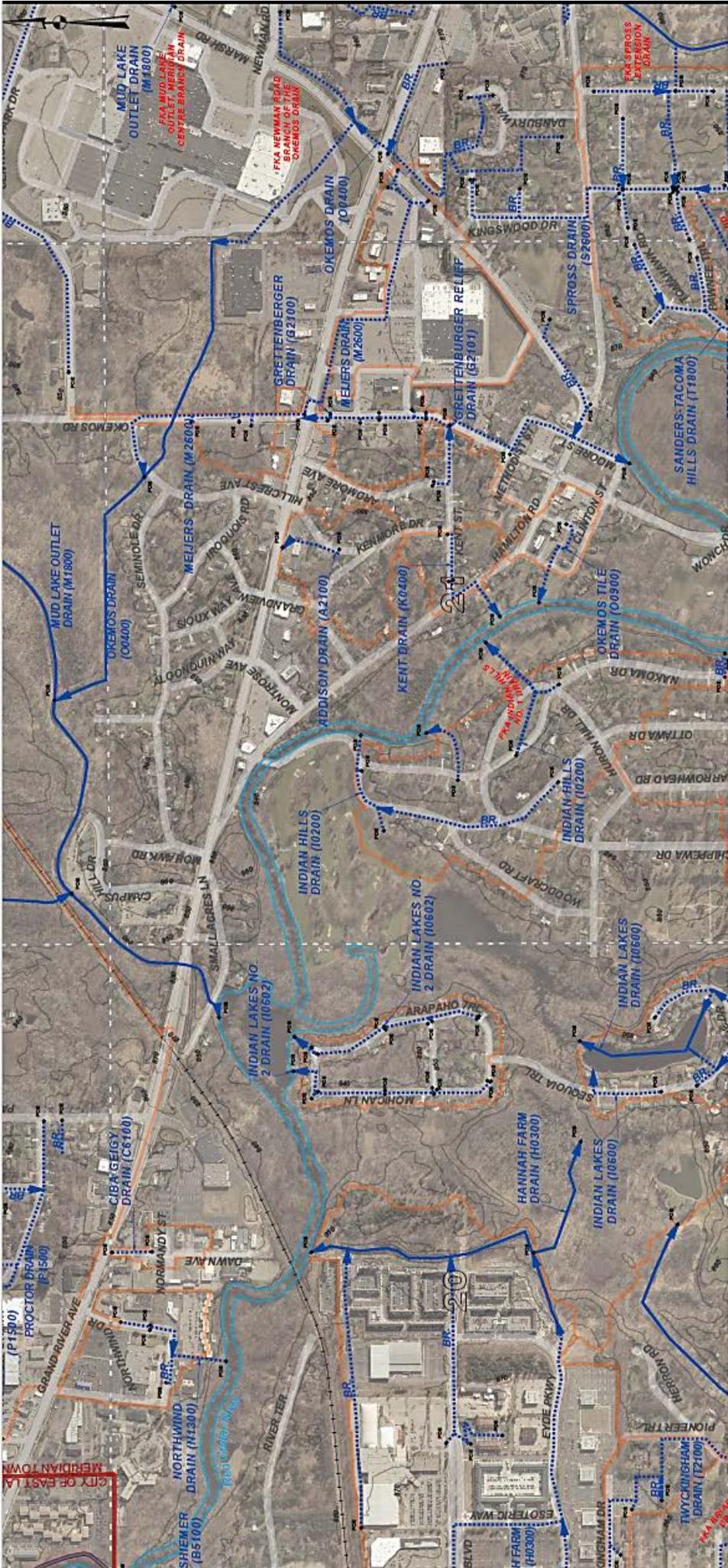


Wide view from FEMA mapping of the community surrounding the project site. The project sites is an island surrounded by zoned AE, 100-year flood, with the regulated floodway shown as cross hatching. Blue shaded areas are also zone AE. The base flood elevations as cross sections are shown as wavy black lines at 842 feet. The large impervious surface of the Hannah Farms development area writ large, is shown to the west. It is the second largest impervious surface in the Township. The diagrams that follow are zoom perspectives.



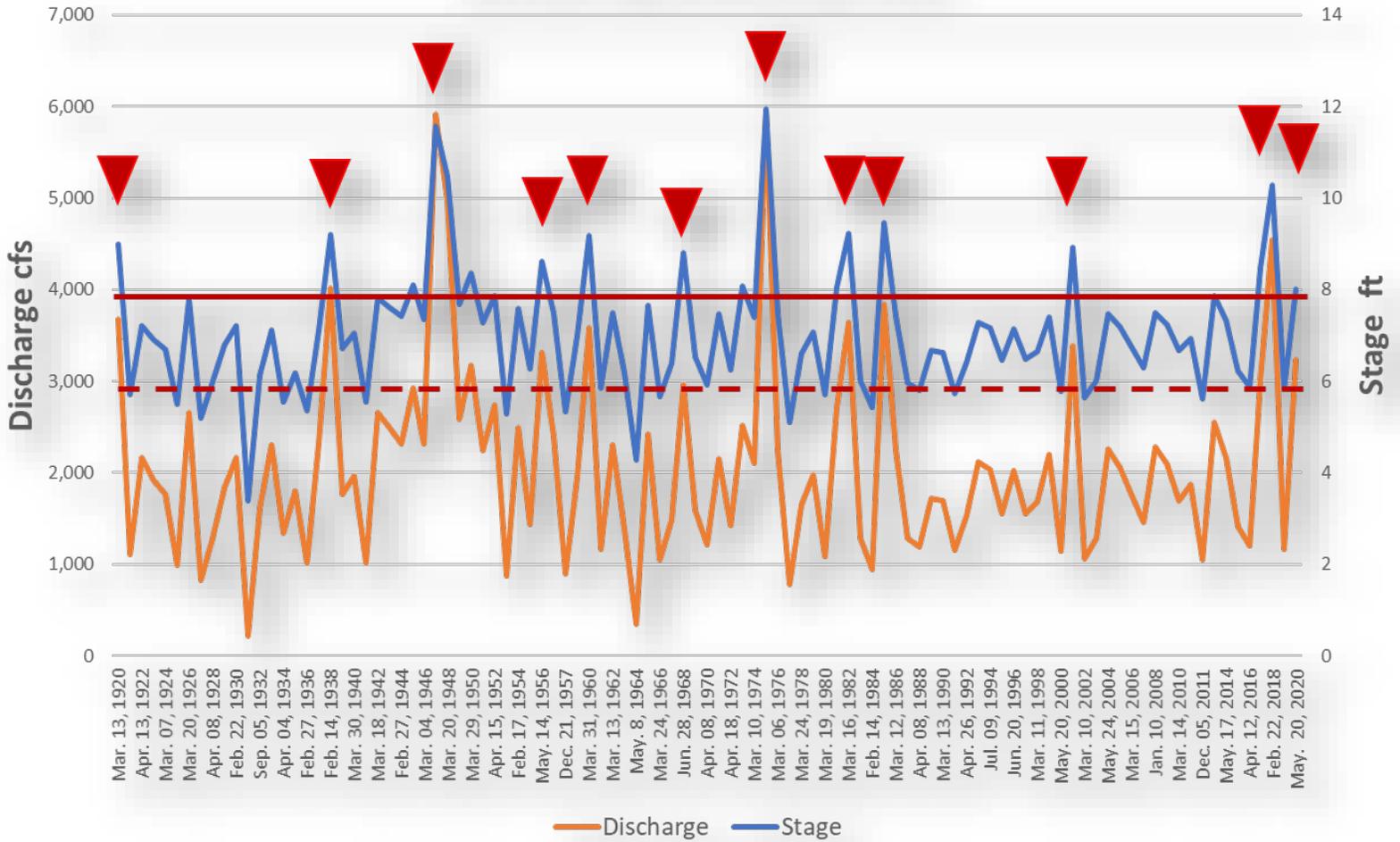


Drainage system for the area surrounding the project site and the Indian Lakes Estates. It shows three important drains, the Hannah Farms drain (A), the Herron Creek Drain (B) and the Mud Lake Drain (C). These converge at the area of “small acres”. The Hannah Farms drain can flow west to the Red Cedar downstream of Indian Lakes Estates, and east through Indian Lakes Estates, joining the Herron Creek drain at the low wetland.



The wider perspective of township drains with water from the Mall as well as other surrounding lands east and south draining into the Red Cedar at the Indian Lakes and the project site (please rotate)

Red Cedar Stage and Discharge History



I created this diagram using the USGS gaging station daily records at the Red Cedar station very close to the project site to plot the peak discharge and peak stage for the last 100 years. The Stage is the height above the regular flow shown in blue. The discharge is amount of water flow shown in orange. The red solid line is set at a discharge of 3000 cfs and the red solid line is set at a stage of 8 ft. Note that there were 12 major floods at the project site, as marked with a triangle. Two were recent, in 2018 and 2020.

June 18, 2020

Dear Commissioners and Fellow Residents:

I am writing as a follow-up to my comments made at the Planning Commission public hearing on June 8, 2020. I have two areas of concern regarding the planning for a new senior center in the Hannah Farms development, relating to the request for a Special Use Permit. The areas of concern are 1) the provision of a suitable and accurate Natural Features Survey, and 2) provision of a sound water management practices and engineering.

I have organized my rather extensive comments in four sections and an Appendix: i) Introduction, ii) Natural Features and Functions, iii) Water Management and Flooding, and iv) specific conclusions and recommendations. The Appendix contains Figures and Graphics, which you can use with the written text.

Sincerely yours,



David L. Skole and Deana L. Haner
4845 Mohican Lane
Okemos, MI.

Introduction

My standing in this matter arises as a property owner that abuts the planned project property, where I reside at 4845 Mohican Lane. My standing also arises as a citizen and taxpayer in Meridian Township, where I expect sustainability-based planning and forward-looking land stewardship to guide decision making. The concerns I have, which are detailed below, follow concepts that the Township has adopted and published in several important planning documents.

The Greenspace Plan, now 16 years into its implementation, lays out broad concepts for economic development that does not come at the expense of water quality, natural systems and wildlife. The reports states:

“There is a desire that growth come not at the expense of water quality, natural systems, and wildlife, rather, that new development be used as a tool to permanently protect key natural and cultural resources and enhance the Township’s sense of place. The plan outlines ways in which growth and development in the Township can continue to occur while simultaneously protecting the natural systems and community character of the Township.”

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Water Management.

The project site is situated on a veritable island, surrounded (on all sides) by the 100-year floodplain. All sides are designated in zone AE. (see figures in Appendix) Three sides are in the regulated floodway. The base flood elevation is set at 842 feet. From a close inspection of the site plans, as best I can tell the site will be elevated at 845 feet to 850 feet. The site is thus a very low situated impervious service, which raises two general concerns about water impact and water management.

The Hannah Farms developed area and surrounding built-up area is one of the most extensive impervious surface footprints in Meridian Township. Its surface area is approximately 600,000 m² with the new development included, compared to the Meridian Mall complex at Grand River and Marsh/Okemos which is the largest impervious surface comprising approximately 1,100,000 m². For comparison, within this expansive area the Mall itself occupies ~350,000 m², Meijer is ~145,000 m², the Target-Kroger-Home Depot conglomeration is ~245,000 m². The Wall Mart site is ~77,000 m². The large developed area at Jolly and Okemos (actually in Alaiedon Township) is ~630,000 m². Thus, as a distinct impervious surface the Hannah Farms area is the second or third most concentrated water runoff contributor in the Township. I think that warrants very careful consideration about additional large and completely hard surfaces.

The Indian Lakes Estates neighborhood residents are already concerned about increased runoff not only from the Hannah Farms area but throughout the Township. Even the most cursory look at the County drain and fluvial areas shows that the Red Cedar (See figures in Appendix) carries the brunt of most runoff. The County drain system substantially flows into the Red Cedar, and other runoff does as well. The Indian Lakes area is situated at the confluence of three major drainage routes. While total runoff

from the Township contributes substantially to flooding conditions in Indian Lakes, so does the Hannah Farms directly through the Hannah Farms Drain and the Herron Creek Drain.

At the June 8 hearing a representative of the developer made the claim that all runoff water would flow west. This statement was disingenuous at best and perhaps a deliberate mis-statement. Runoff could flow into the Hannah Farm Drain and then west to the Red Cedar River, emptying downstream from Indian Lakes (see Appendix). But with enough water it could also flow east into the Herron Creek, joining flows from the Herron Creek Drain into the large wetland at the cross over of Sequoia Trail and east behind the neighborhood into the Red Cedar upstream from the neighborhood. At a connection at Indian Lakes close to the so-called Small Acres is the confluence of the Red Cedar, the Hannah Farms/Herron Creek Drain and the Mud Lake Drain (see Appendix). My understanding is that the Mud Lake Drain contains runoff from the Meridian Mall Complex. So, just upstream of Indian Lakes Estates the Red Cedar gets a combined contribution from drains that carry water from the two largest impervious surfaces in the Township.

There have been concerns by residents that storm water runoff and discharge/stage of the Red Cedar has been raising the water table, causing tree mortality. Water logging of trees can lead to tree mortality over a long period of time. This could be an issue, and it would not have been immediately obvious to planners. It is entirely possible that we are only now seeing the effects of decisions made a decade ago. So, I would not discount residents concerns quickly. The picture can be complex in that the ash trees are seeing high mortality due to the EAB infestation. But other species are also falling. Managing of surface water runoff needs new and novel thinking.

I realize a couple of important points here. First, there is a lot of water flowing past Indian Lakes from contributing runoff and drainage further upstream, including the Smith Drain that carries the Jolly/Okemos complex so Hannah Farms is by no means a sole contributor. Second, the use of the Herron Creek wetlands is to some degree sound environmental management; the value of wetlands to buffer flows and filter water has been known and advocated for decades.

The Township Climate Change Sustainability Plan argues that one of the more important expected impacts of climate change will be increased precipitation and flooding. Given the current configuration of the drain and flow system, and the extremely high dependence on the Red Cedar River to carry storm water surge, our concern about flooding – especially in Indian Lakes Estates -- is quite reasonable. Indeed, without engineering flood control measures and structures it seems unlikely that the Red Cedar and the current water management infrastructure will be unable to avoid seeing future events that closely resemble a 100-year flood with higher probability than 1% per year.

Since 1920, or the past 100 years, there have been 12 major flood events as recorded at the Red Cedar gaging station by the USGS (see figure in Appendix 1). For this example I note all floods above a discharge of 3000 cfs and a stage higher than 8 ft. Two of these occurred in the last two years, one being this past May. The flood of 2018 was the third highest stage in a century. The flood stage of 1975 was the highest and documented air photos and other evidence shows that a major part of the Indian Lakes Estates (not at the time completely constructed) was flooded, as was a portion of the proposed site. I am still reviewing information on how much land was inundated by the 2018 flood.

With climate change it is expected that more frequent floods of stage 8 ft or higher will occur. The FEMA measure of a “one hundred year flood” means that there is a 1% chance of flooding each year. To put this into perspective, over the course of a standard mortgage of 30 years, that would be a 30% chance of

flood. Flood ratings maps are not done on a frequent basis, and it is entirely conceivable that increased impervious surfaces will exacerbate the increased storm frequency from climate change over current map conditions. The climate change influence is actually rather complicated to model, but most scientists consider the highly “energized” hydrologic cycle that comes with higher surface temperatures would lead to more intense storm events (the influence on hurricanes for instance is largely in their intensity not frequency), which means more rain over a shorter period of time, which is exactly the kind of event that when combined with storm water runoff, causes river stage to rise high and rapidly.

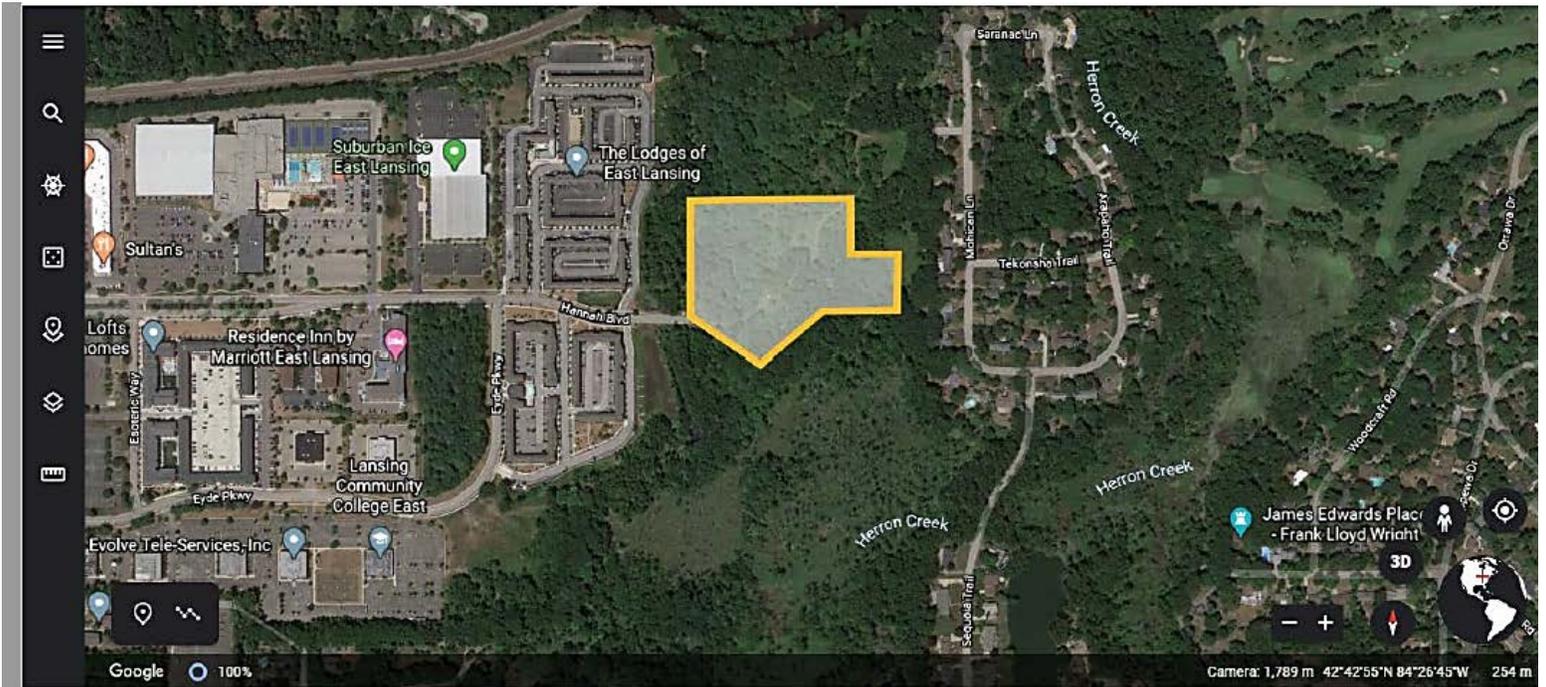
Conclusion

To simply relegate the process of planning to an adage that all development comes at a cost is today an ineffective strategy and would lead to risks that can be avoided. The Township has a long history of bold and responsible planning that considers natural green spaces, natural resource values and sustainability directly in the planning process, on equal footing with other important factors such as economic and social. With this letter, I have tried to point out specific areas of concern, which I think require careful attention. I would weigh carefully all possible alternatives to the proposed project – even going as far as taking consideration of a purchase agreement with the current owner. I understand that our laws and ordinances have been created to guide the planning process, and all parties need to plan – or negotiate – in good faith following these rules. Let us strive for win-win solutions.

Some specific recommendations include: 1) re-initiate the Natural Features Report so you have a thorough assessment that can actually guide planning, 2) develop a suite of 4 alternatives to this proposed development, including a land preservation option, 3) develop an explicit natural areas and wildlife mitigation plan that will compensate for the loss of corridor function, 4) develop an explicit water management plan, with external independent engineering review, that eliminates storm water runoff and directs water flows downstream of the Indian Lakes Estates, 5) perhaps begin discussions, not necessarily coupled to this project proposal, with the Drain Commissioner on options for engineered flood control in the Township, to alleviate the burden of the Red Cedar and its associate drains.

I appreciate what the Commission has done so far. The setbacks are much improved over alternatives. The berm has potential for creating a natural barrier to the visual impact, but I would also look at how it shall block the biological corridor. From what I know there is some willingness to think hard about water management, and new regulations will help with retention strategies. The transport plan is better than some in the past, if there is a way to connect to mass transit.

Let me close by stating that were I a Commissioner I would vote against the provision of a SUP for this project. As Commissioners I recognize that you were elected to work on behalf of all residents, and that you will exercise your own judgment and conscience in this decision. Should this project move forward, I hope you will take a renewed diligence to follow it and track it and continue to provide close oversight. The developer needs to make all facets of the through the project completely transparent, especially during the site review. Past projects and developers for the Hannah Farms development have in my view a poor track record sticking to its promises and agreed conditions.



Proposed project site shown in yellow. This outlines the dimensions of the constructed parts of the project, including buildings and parking lots.

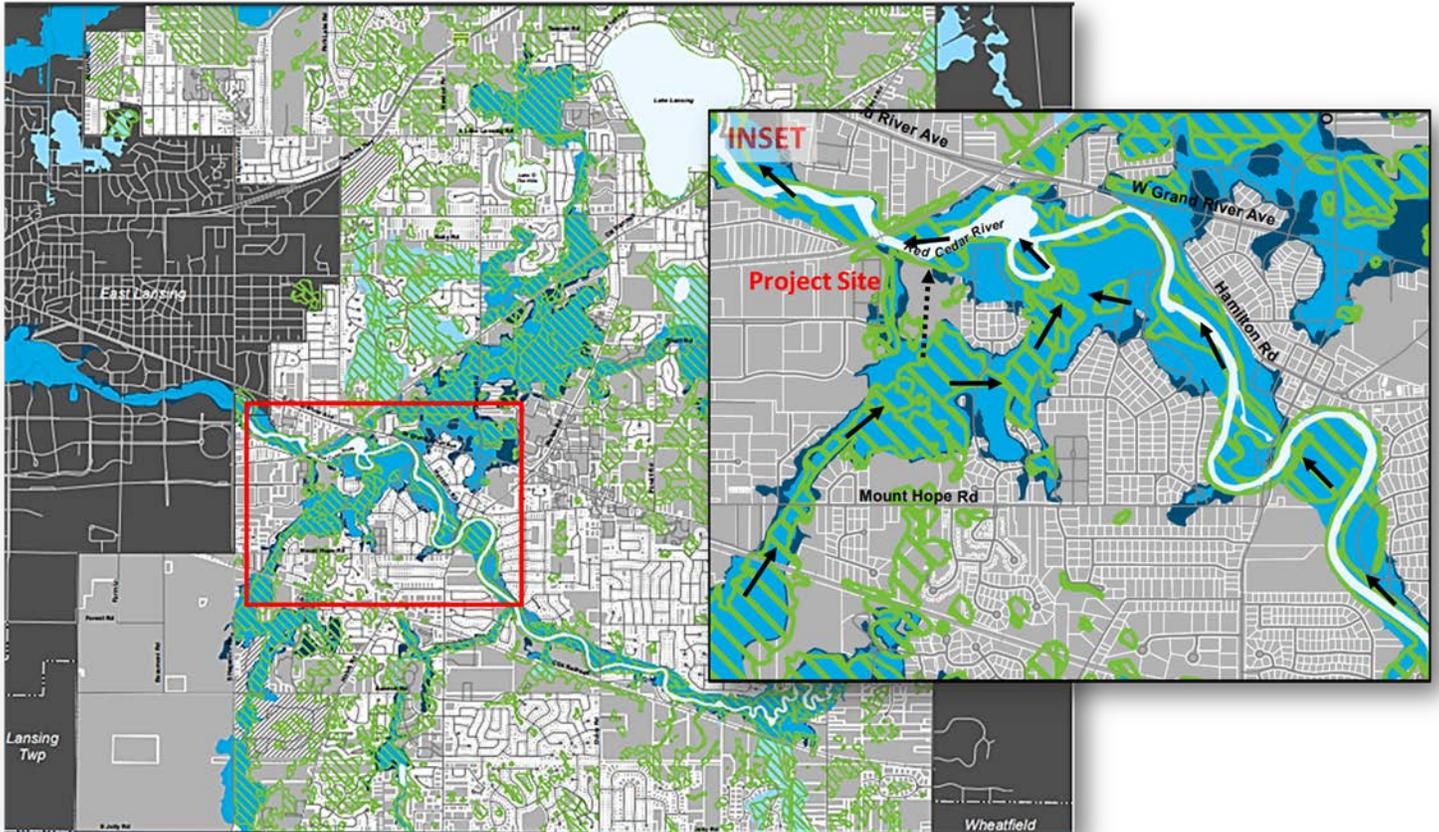
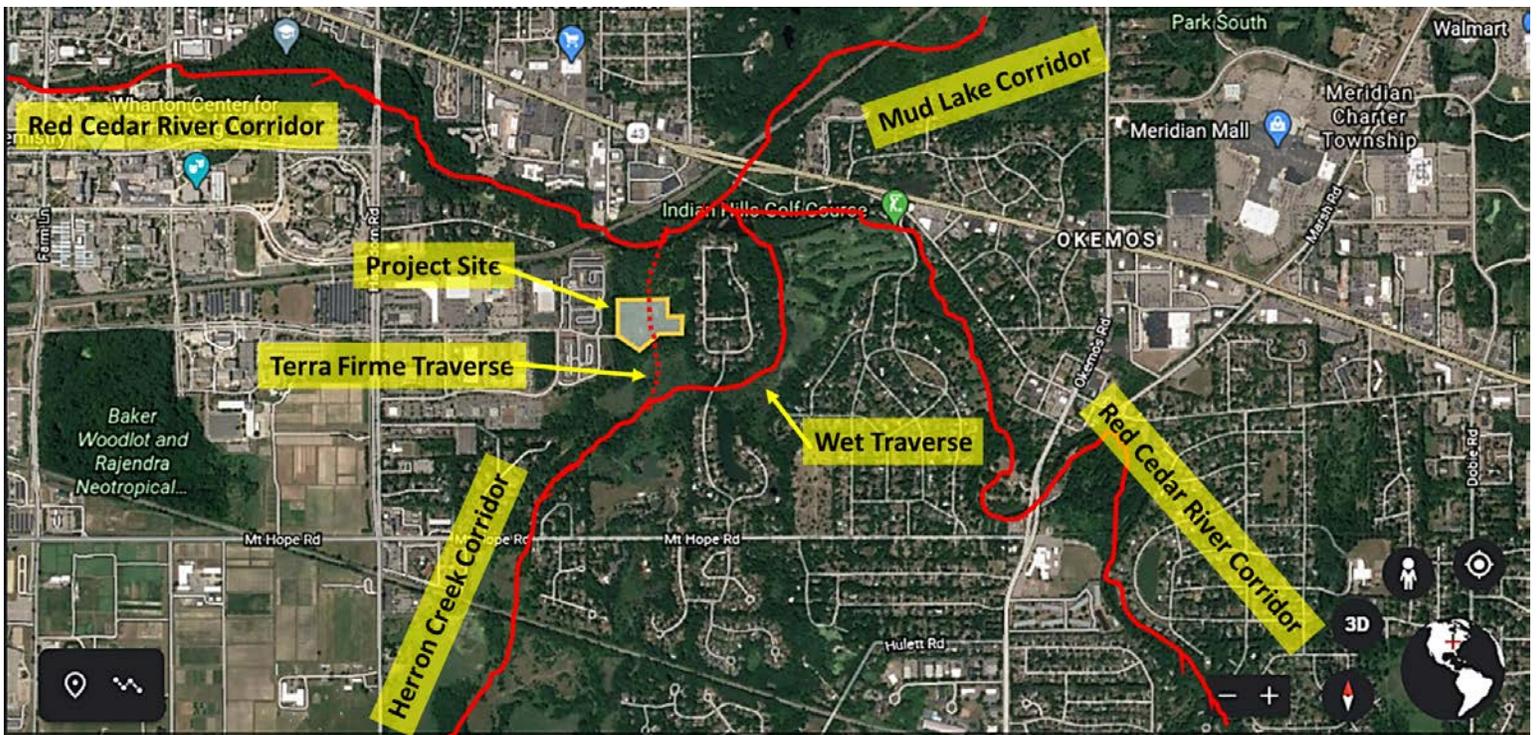
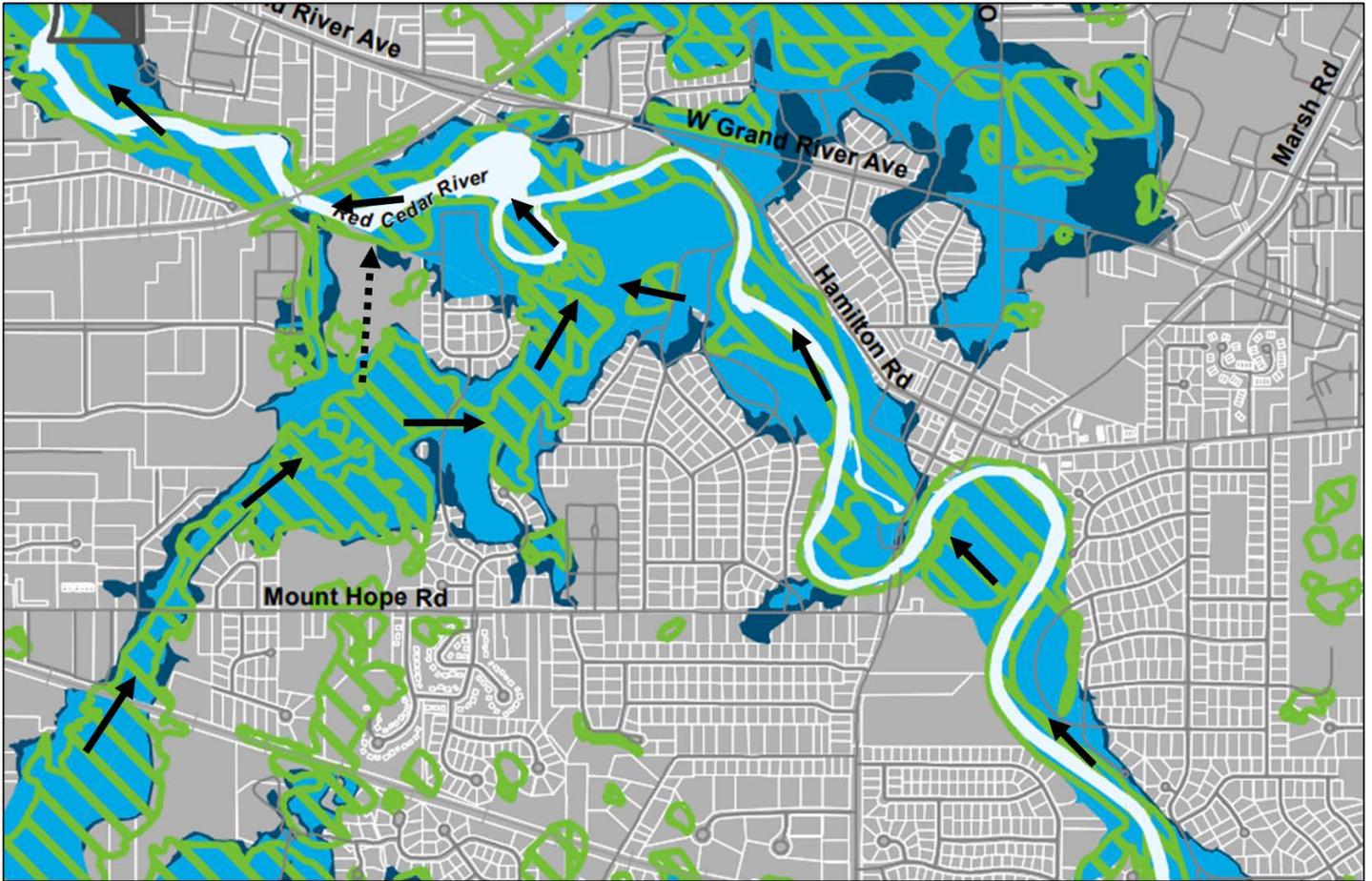
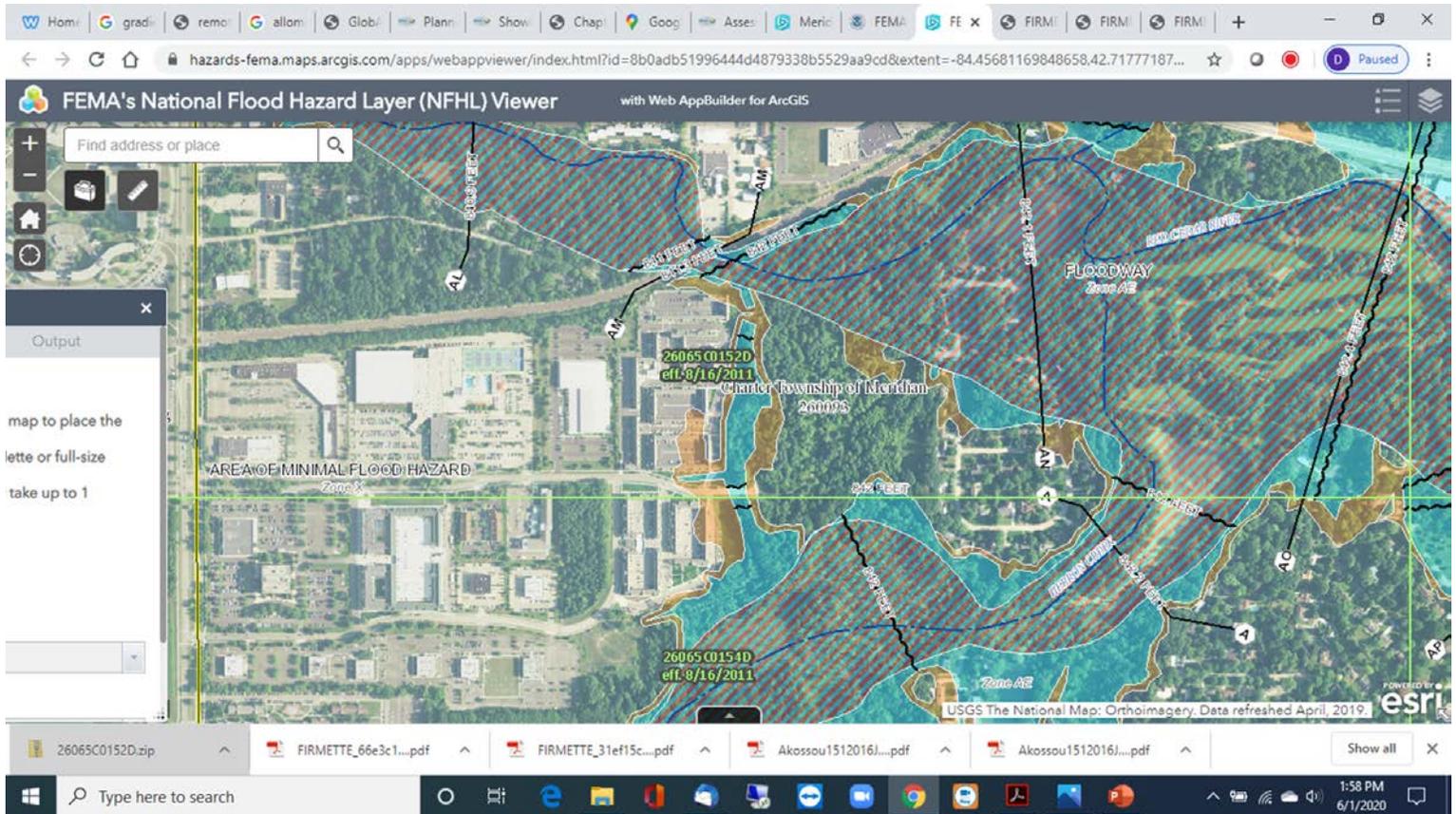


Diagram using Meridian Township Master Plan showing the convergence of three major natural greenspace corridors. The three corridors converge with a nexus of the confluence of Red Cedar River and Herron Creek at the northern part of Indian Lakes Estates and in close proximity with the proposed project. The proposed project presents as a higher ground, terra firme, traverse adjoining with a wet connection. This landscape position makes the site a high-quality natural feature in a broader landscape.



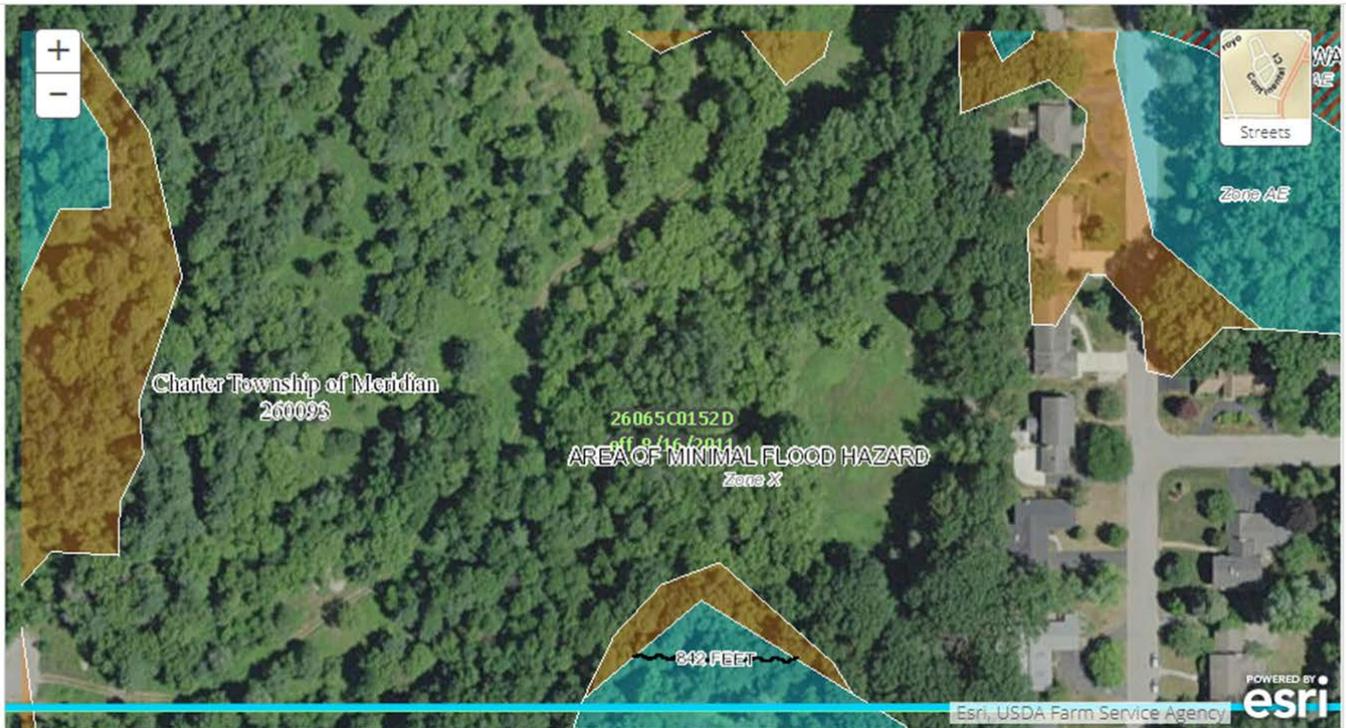
This diagram shows the landscape close to the proposed project, and the three connecting green corridors. The project footprints is shown outlined in yellow. The red lines indicate the corridors, while the dashed red line shows the traverse for terra firme, and its juxtaposition with the wet corridor, providing a diverse landscape features.



Wide view from FEMA mapping of the community surrounding the project site. The project sites is an island surrounded by zoned AE, 100-year flood, with the regulated floodway shown as cross hatching. Blue shaded areas are also zone AE. The base flood elevations as cross sections are shown as wavy black lines at 842 feet. The large impervious surface of the Hannah Farms development area writ large, is shown to the west. It is the second largest impervious surface in the Township. The diagrams that follow are zoom perspectives.



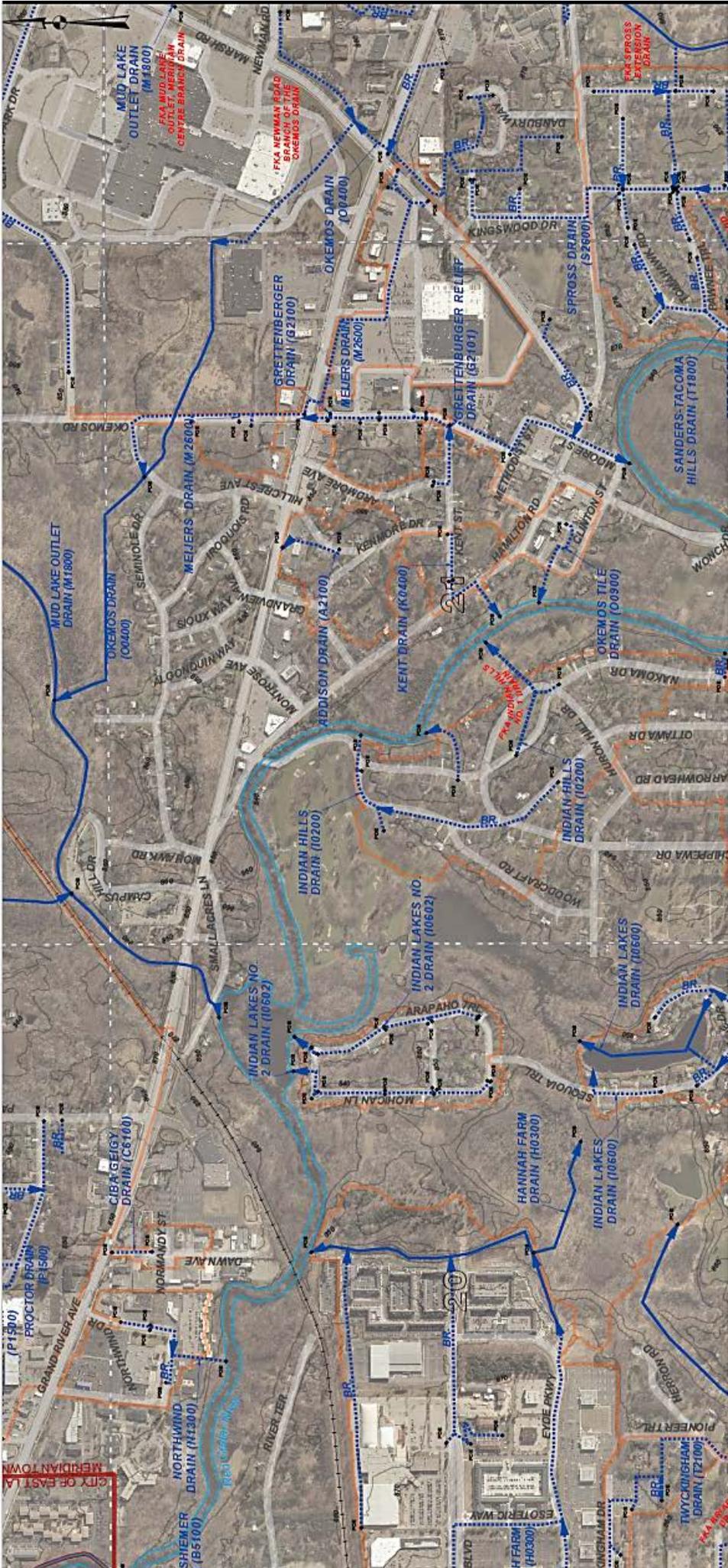
● Approximate location based on user input and does not represent an authoritative
 Without Base Flood Elevation (BFE) Zone A, V, A99
 With BFE or Depth
 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
 17.5



● Approximate location based on user input and does not represent an authoritative property location
 Selected FloodMap Boundary
 Digital Data Available
 No Digital Data Available
 Without Base Flood Elevation (BFE) Zone A, V, A99
 With BFE or Depth
 Regulatory Floodway Zone AE, AO, AH, VE, AI
 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag
 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
 Coastal Transect Base Flood Elevation Line (BFE)
 Limit of Study
 Jurisdiction Boundary
 Coastal Transect Baseline

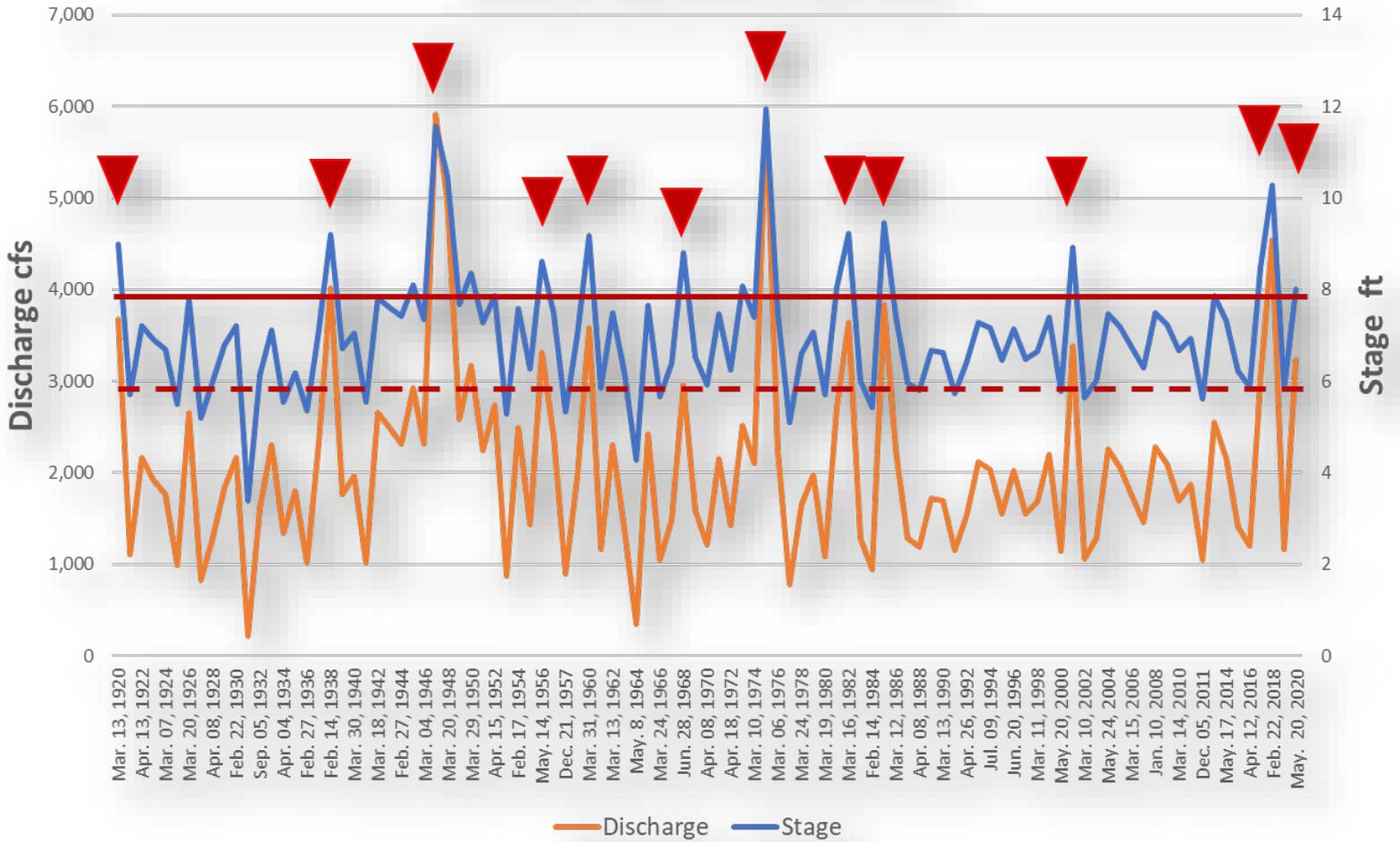


Drainage system for the area surrounding the project site and the Indian Lakes Estates. It shows three important drains, the Hannah Farms drain (A), the Herron Creek Drain (B) and the Mud Lake Drain (C). These converge at the area of "small acres". The Hannah Farms drain can flow west to the Red Cedar downstream of Indian Lakes Estates, and east through Indian Lakes Estates, joining the Herron Creek drain at the low wetland.



The wider perspective of township drains with water from the Mall as well as other surrounding lands east and south draining into the Red Cedar at the Indian Lakes and the project site (please rotate)

Red Cedar Stage and Discharge History



I created this diagram using the USGS gaging station daily records at the Red Cedar station very close to the project site to plot the peak discharge and peak stage for the last 100 years. The Stage is the height above the regular flow shown in blue. The discharge is amount of water flow shown in orange. The red solid line is set at a discharge of 3000 cfs and the red solid line is set at a stage of 8 ft. Note that there were 12 major floods at the project site, as marked with a triangle. Two were recent, in 2018 and 2020.

Peter Menser

From: CYNTHIA CARSON <cindyjcarson14@att.net>
Sent: Monday, June 22, 2020 6:50 PM
To: Planning Commision (DG)
Subject: Special Use Permits #20011 & #20021

Planning Commission of the Charter Township of Meridian:

My name is Cindy Carson. I live at 4714 Arapaho Trail, Okemos, MI. I have been a resident at this location for 46 years.

My e-mail is in reference to the Planning Commission's meeting on June 22nd concerning Special Use Permits #20011 & #20021.

As a long-time resident, I have observed many changes over the last 46 years. However, the most extreme changes have resulted because of the development of Capstone's Lodges. Some of the negative impact to our neighborhood, Indian Lakes Estates, include but are not limited to, loss of vegetation, animal life, and trees. The flooding of water in our back yards have caused many trees to fall leaving swamp-like conditions where green lush vegetation once flourished. This is due to the impermeable surfaces created by the development of the Lodges. Increased impermeable surfaces are alarming to our residents and to the threat it may cause to our homes. This concern, along with the loss of the natural beauty, the wild life that can no longer sustain itself, the loss of our beautiful trees causes our residents concern that the impact of another development may be disastrous to our homes and our environment.

I sincerely hope you will consider these issues when making your decisions about the proposed Andev Development at Hannah Farms.

Sincerely,

Cindy Carson
Sent from my iPhone



To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Keith Chapman, Assistant Planner

Date: July 31, 2020

Re: Rezoning #20010 (Ho Cho)

Young Ho Cho requested the rezoning of approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density). The site is located on the east side of Okemos Road, south of Haslett Road, and north of Raby Road.

The Planning Commission held the public hearing on the rezoning request at its June 8, 2020 meeting and voted to recommend denial at the June 22, 2020 meeting, citing the following reasons for its decision:

- The current RR zoning of the subject property is consistent with the zoning of adjacent properties to the east, west, north, and south of the site.
- The current residential use of the subject property is consistent with the residential use of adjacent properties to the north, east, and south of the subject site.
- The applicant has not adequately demonstrated why the requested rezoning to RAA is appropriate or why the current RR zoning is unreasonable.
- The subject property could be developed as currently zoned.

Staff memorandums outlining the rezoning and minutes from the Planning Commission meetings at which the rezoning was discussed are attached for the Board's review.

Township Board Options

The Township Board may approve or deny the proposed rezoning from RR (Rural Residential) to RAA (Single Family-Low Density). If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.

Rezoning #20010 (Ho Cho)
Township Board (August 6, 2020)
Page 2

Attachments

1. Staff memorandums dated March 13, 2020 and June 18, 2020 with attachments.
2. Resolution recommending denial dated June 22, 2020.
3. Planning Commission minutes dated June 8, 2020(public hearing) and June 22, 2020 (decision).
4. Communications

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To: Planning Commission

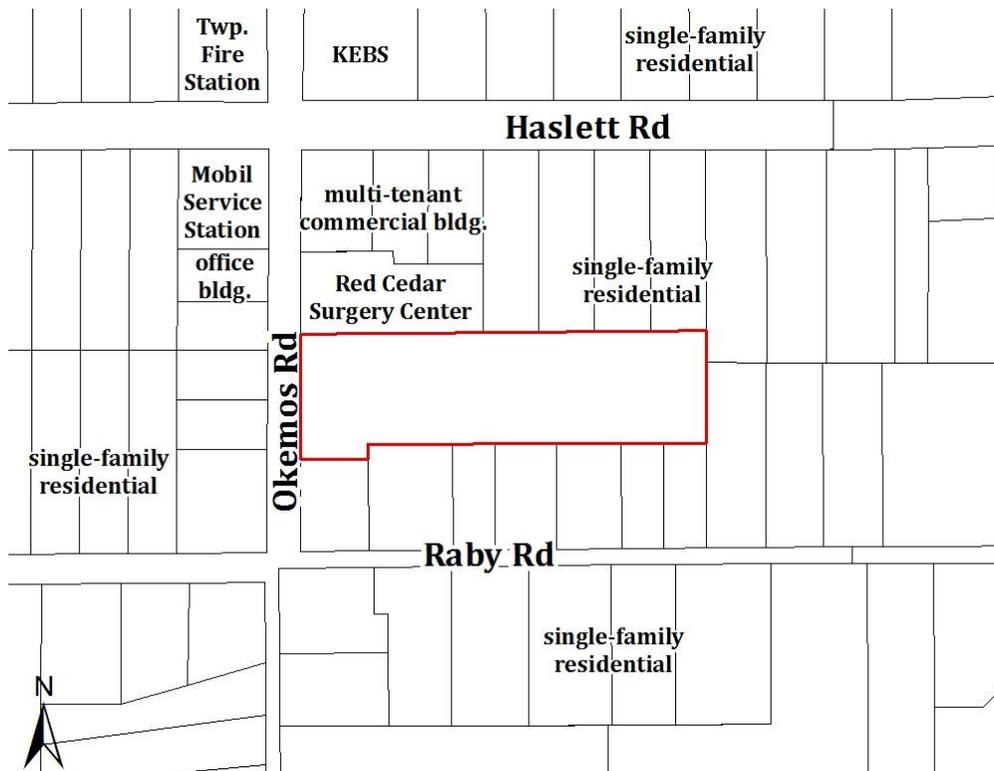
From: Peter Menser, Principal Planner

Date: March 13, 2020

Re: Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).

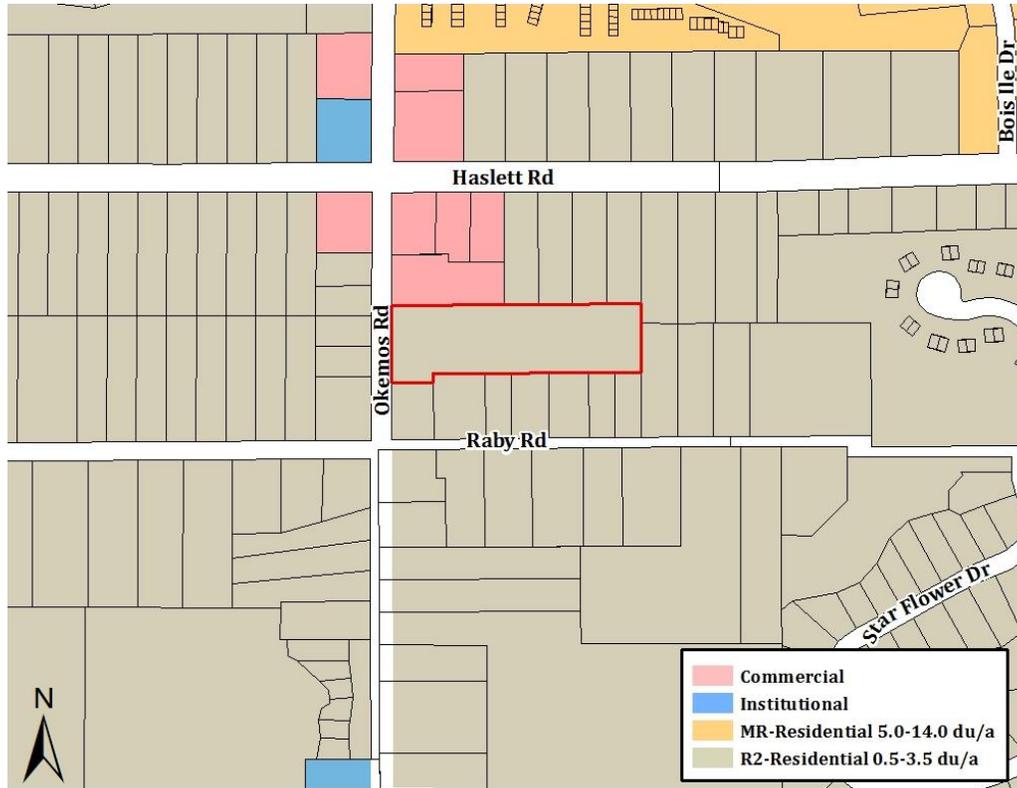
Young Ho Cho has requested the rezoning of approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density). The site is located on the east side of Okemos Road, south of Haslett Road, and north of Raby Road. The property has 280 feet of frontage on Okemos Road.

LOCATION MAP



The Future Land Use Map from the 2017 Master Plan designates the subject property in the R2 Residential 0.5 – 3.5 dwelling units per acre (du/a) category.

2017 FUTURE LAND USE MAP

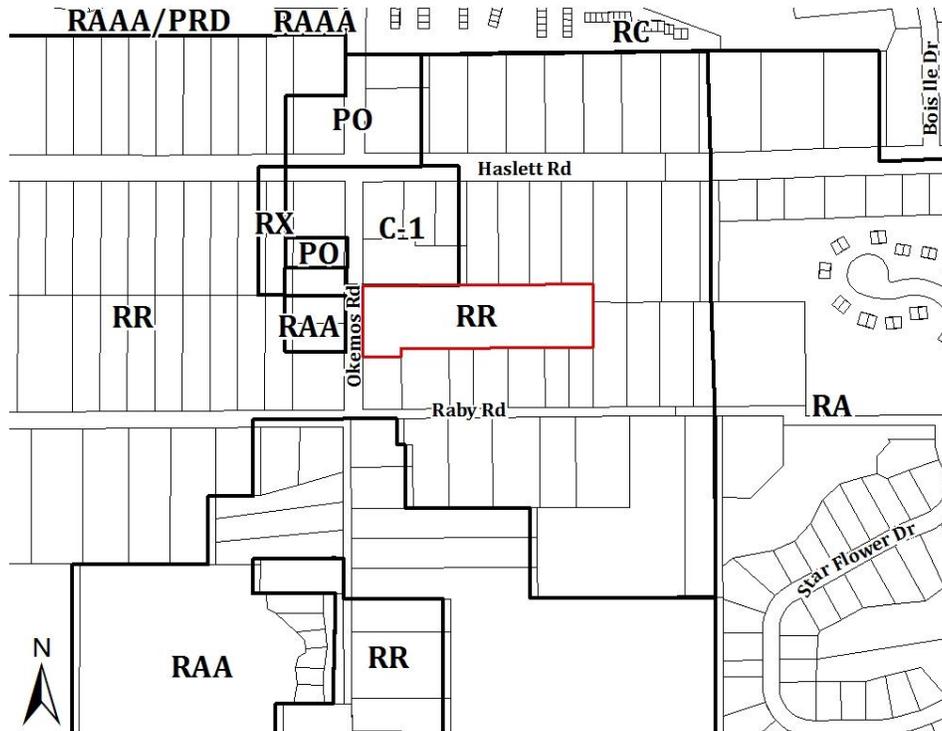


Zoning

The subject site is zoned RR (Rural Residential). With 280 feet of lot width on Okemos Road and 4.67 acres (203,425.2 square feet) in lot area, the site meets the minimum standards for both lot area and lot width for both the current RR and proposed RAA zoning districts. The following table illustrates the minimum lot width and lot area requirements for the existing RR and proposed RAA zoning districts:

ZONING DISTRICT	MINIMUM LOT AREA	MINIMUM LOT WIDTH
RR	40,000 sq. ft.	200 ft.
RAA	13,500 sq. ft.	90 ft.

ZONING MAP



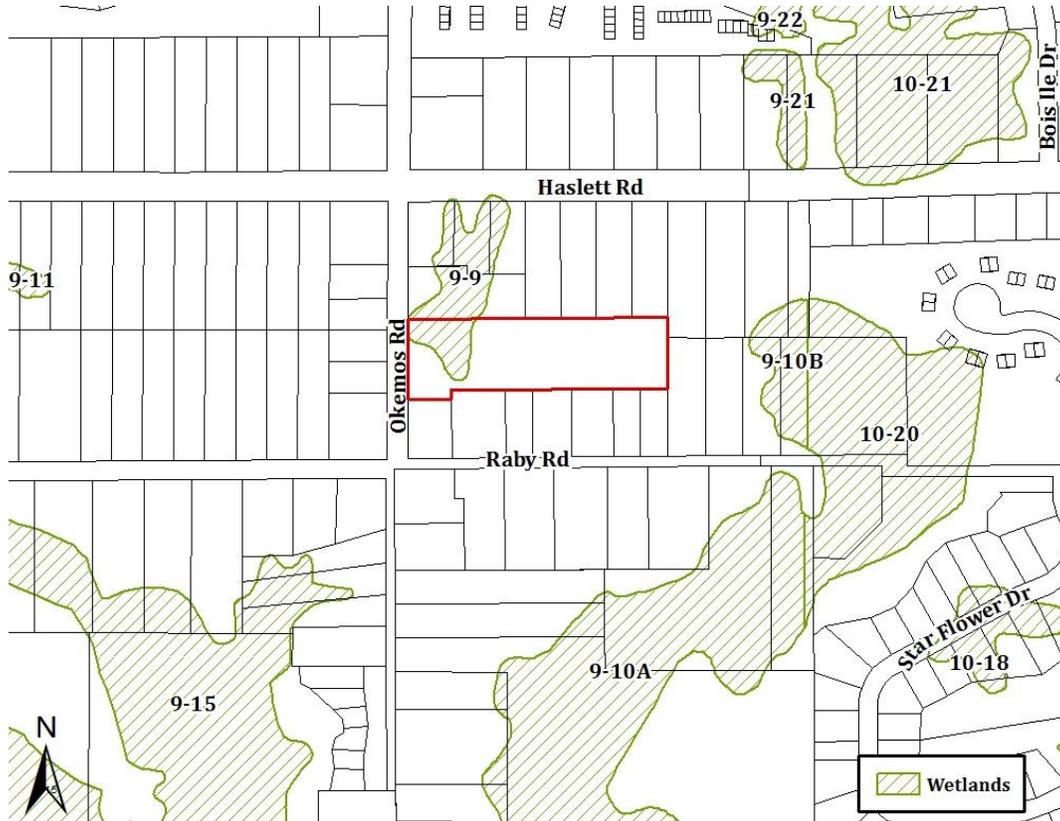
Physical Features

The site contains a 2,513 square foot, two-story single family house built in 1875. The topography of the site slopes from 854 feet above mean sea level where the existing house is located to a high point of 861 feet above mean sea level near the eastern edge of the site. The Flood Insurance Rate Map (FIRM) for Meridian Township indicates the property is not located in a floodplain. The site has no special designation on the Township Greenspace Plan.

Wetlands

The Township Wetland Map shows a potential wetland on the site. If development is proposed a wetland delineation report will be required to determine the boundary, size, and regulatory status of any wetlands. Future development of the site will be required to comply with the wetland protection ordinance and water features setbacks as applicable.

WETLANDS MAP



Streets & Traffic

The site fronts on Okemos Road, which in the segment adjacent to the subject site, is a two-lane road classified as a Minor Arterial on the Street Setbacks and Service Drives Map in the zoning ordinance. A seven foot wide pedestrian and bicycle pathway is located along the Okemos Road property frontage. The most recent (2017) traffic count information from the Ingham County Road Department (ICRD) for Okemos Road, between Haslett Road and Raby Road, showed a total of 10,679 vehicles in a 24 hour period.

The following table compares estimated traffic generation for the existing RR zoning district and proposed RAA zoning district. It estimates future traffic using data from the highest potential traffic generator allowed in each zoning district, which in this case is one single family house. Traffic generation was calculated using the estimated maximum number of dwelling units that could be developed on the property under the existing RR and proposed RAA zoning districts.

	Existing RR zoning 1 single family dwelling	Proposed RAA zoning 3 single family dwellings	Change
Peak Hour trips	0.74 (a.m.) 0.99 (p.m.)	2.22 (a.m.) 2.97 (p.m.)	+1.48 +1.98
Weekday trips	9.44	28.32	+18.88

A rezoning traffic study is required when the trips from the highest potential traffic generator in the requested zoning district would generate more than 100 additional directional trips during a peak hour than the highest potential traffic generator permitted under the current zoning. In this case, the rezoning does not generate greater than 100 peak hour trips so a traffic study was not required.

Utilities

Municipal water and sanitary sewer serve the subject site. The location and capacity of utilities for any proposed development will be reviewed in detail by the Department of Public Works and Engineering at the time of a development submittal.

Staff Analysis

The applicant has requested the rezoning of an approximate 4.67 acre parcel from RR to RAA. When evaluating a rezoning request, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts, as well as the reasons for rezoning listed on page two of the rezoning application (attached).

One option for development of the site would be through the land division process. The RR zoning district requires parcels to have at least 200 feet of lot frontage; therefore the property, with 280 feet of frontage on Okemos Road, could not be divided into additional parcels without receiving a variance from the Zoning Board of Appeals (ZBA). If rezoned to RAA the property could likely be divided into three parcels with 90 feet of lot frontage each.

The subject property is Lot 61 of the Pleasant Acres subdivision, which when platted in 1946 contained 79 lots. There is potential to re-plat the subject property to facilitate the division of land to create lots in a different configuration than metes and bounds parcels with frontage on Okemos Road. Approval from the Township and the Ingham County Road Department would be required to construct a public road (cul-de-sac) to serve additional parcels.

The following chart outlines the differences in lot area, lot width, and building setbacks between the RR and RAA zoning districts.

	RR	RAA
Side/Rear Setback:	20 feet/35 feet	10 feet/30-40 feet
Lot Area:	40,000 square feet	13,500 square feet
Lot Width:	200 feet	90 feet
Maximum Lot Coverage:	20 percent	30 percent
Building Height:	35 feet	35 feet

Planning Commission Options

The Planning Commission may recommend approval or denial of the request to rezone from RR to RAA. A resolution will be provided at a future meeting.

Attachments

1. Rezoning application and attachments dated February 7, 2020 and received by the Township on February 7, 2020.
2. Rezoning criteria.

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

REZONING APPLICATION

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

Part I

A. Owner/Applicant Young Ho Cho
Address of applicant 5053 Okemos Rd
Telephone: ~~at~~ Work (517) 902-4483 Home _____
Fax _____ Email Joanokgarnian@yahoo.com

If there are multiple owners, list names and addresses of each and indicate ownership interest. Attach additional sheets if necessary. If the applicant is not the current owner of the subject property, the applicant must provide a copy of a purchase agreement or instrument indicating the owner is aware of and in agreement with the requested action.

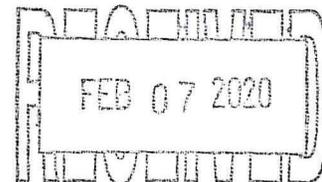
B. Applicant's Representative, Architect, Engineer or Planner responsible for request:
Name / Contact Person _____
Address _____
Telephone: Work _____ Home _____
Fax _____ Email _____

C. Site address/location 5654 Okemos Rd
Legal description (Attach additional sheets if necessary) _____
Parcel number _____ Site acreage 4.6 Ac

D. Current zoning RR Requested zoning RAA

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

1. Nonrefundable fee.
2. Evidence of fee or other ownership of the subject property.
3. A rezoning traffic study prepared by a qualified traffic engineer based on the most current edition of the handbook entitled *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation, is required for the following requests:
 - a. Rezonings when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning.
 - b. Rezonings having direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district.
(Information pertaining to the contents of the rezoning traffic study will be available in the Department of Community Planning and Development.)
4. Other information deemed necessary to evaluate the application as specified by the Director of Community Planning and Development.



Part II

REASONS FOR REZONING REQUEST

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

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: NO
- 2) The conditions of the surrounding area have changed in the following respects: NA
- 3) The current zoning is inconsistent with the Township's Master Plan, explain: _____
- 4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: NO
- 5) The Township did not have a reasonable basis to support the current zoning classification at the time it was adopted; and the zoning has exempted the following legitimate uses from the area: NO
- 6) The current zoning restrictions on the use of the property do not further the health safety or general welfare of the public, explain: NO

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is yes consistent with the Township's Master Plan, explain: _____
- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: Surrounding Area is RAA (Zone)
- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: NO
- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: NO
- 5) Requested rezoning addresses a proven community need, specifically: Rezoning will allow for another single family parcel.
- 6) Requested rezoning results in logical and orderly development in the Township, explain: Consistent with same residential use.
- 7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: it could increase property tax (Build new House)

Part III

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

Yes No (Please check one)

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

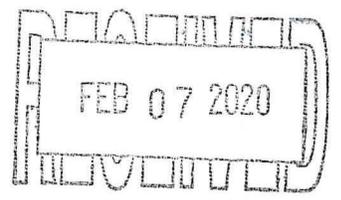
Y Ho Cho
Signature of Applicant

2/7/2020
Date

Young Ho Cho
Type/Print Name

Fee: \$740.⁰⁰

Received by/Date: Justin Quagliata
2/7/20



Part II

REASONS FOR REZONING REQUEST

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

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: _____

- 2) The conditions of the surrounding area have changed in the following respects: _____

- 3) The current zoning is inconsistent with the Township's Master Plan, explain: _____

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

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

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

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is consistent with the Township's Master Plan, explain: _____

- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: _____

- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: _____

- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: _____

- 5) Requested rezoning addresses a proven community need, specifically: _____

- 6) Requested rezoning results in logical and orderly development in the Township, explain: _____

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



To: Planning Commission

From: Peter Menser, Principal Planner

Date: June 18, 2020

Re: **Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).**

The Planning Commission held a public hearing on Rezoning #20010 at its regular meeting on June 8, 2020. The meeting was held virtually using the Zoom web conferencing application. A straw poll taken at the end of the public hearing indicated the Planning Commission does not support the proposed rezoning of the property from RR (Rural Residential) to RAA (Single Family-Low Density).

Planning Commission Options

The Planning Commission may recommend approval or denial of the request to rezone from RR to RAA. A resolution to recommend denial of the proposed rezoning to the Township Board is provided.

- **Move to adopt the resolution recommending denial of Rezoning #20010 to rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).**

Attachment

1. Resolution to recommend denial.

G:\Community Planning & Development\Planning\REZONINGS (REZ)\2020\REZ 20010 (Ho Cho)\REZ 20010.pc.docx

RESOLUTION TO RECOMMEND APPROVAL

**Rezoning #20030
5937 Potter Street**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held virtually using the Zoom web conferencing application on the 22nd day of June, 2020, at 7:00 p.m., Local Time.

PRESENT: Commissioners Premoe, Trezise, Cordill, Richards, Shrewsbury, Clark, McConnell, Hendrickson

ABSENT: None

The following resolution was offered by Commissioner Cordill and supported by Commissioner McConnell.

WHEREAS, the Planning Commission initiated the rezoning of one 0.10 acre parcel addressed as 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential); and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 8, 2020 and discussed the staff material forwarded under cover a memorandum dated March 13, 2020; and

WHEREAS, the proposed rezoning to RN (Mixed Residential) is consistent with the 2017 Future Land Use Map designation of R3 Residential 1.25 – 3.5 dwelling units per acre; and

WHEREAS, the property proposed for rezoning is developed with a single family residence, which is a use allowed by right in the proposed RN zoning district; and

WHEREAS, the property proposed for rezoning is located adjacent to properties used for single family purposes to the east and south; and

WHEREAS, the current zoning of C-1 imposes nonconforming status on the existing single family house, requiring variances from the Zoning Board of Appeals to make improvements to the properties beyond general upkeep and limits the property owner from rebuilding if the structure is removed or destroyed; and

WHEREAS, the proposed rezoning to RN will allow the property owner to maintain the existing use of the property in conformance with the ordinance.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Rezoning #20030 to rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).



- C. Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).

Chair Hendrickson opened the public hearing at 9:09 p.m.

Principal Planner Menser provided an overview of the request and was available to answer questions.

The applicant, Young Ho Cho, 5053 Okemos Road introduced himself and was available for questions.

Public Comment:

- A. Sam Smith, 2091 Raby Road, spoke in opposition to Rezoning #20030.
- B. Jeff Cole, 2090 Raby Road, spoke in opposition to Rezoning #20030.
- C. Richard Klingensmith, 2030 Raby Road, spoke in opposition to Rezoning #20030.

Planning Commission Discussion:

- The property is unique and the owner is looking at possible options.
- The surrounding properties are zoned RR.
- The answers noted in the application did not provide reasoning or plans for additional consideration by the Planning Commission.

A straw poll indicated the Planning Commission would not be in support of recommending approval of the rezoning proposal. A resolution will be provided at a later meeting.

7. **UNFINISHED BUSINESS** – None

8. **OTHER BUSINESS** – None

9. **REPORTS AND ANNOUNCEMENTS**

- A. Township Board update.

Principal Planner Menser provided a summary of the June 2, 2020 Zoom Township Board meeting and provided a preview of what is on the agenda for the June 16, 2020 Zoom Township Board meeting.

10. **PROJECT UPDATES**

- A. New Applications
 - 1. Special Use Permit #20-19-99021 (Williams Volkswagen, Inc.), amend special use permit for minor adjustment to size of building addition to automobile dealership at 2186 Jolly Road.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, Trezise, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2

Motion to adopt the resolution as amended approving Special Use Permit #20011.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, Trezise, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2

- B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.

Commissioner Trezise moved to adopt the resolution.

Seconded by Commissioner Premoe.

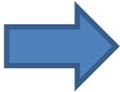
Planning Commission Discussion: None

ROLL CALL VOTE:

YEAS: Commissioner Trezise, Premoe, Cordill, Shrewsbury, Clark, and Chair Hendrickson

NAYS: Commissioner McConnell and Richards

MOTION CARRIED: 6-2



- C. Rezoning #20010 (Ho Cho), rezone approximately 4.67 acres located at 5654 Okemos Road from RR (Rural Residential) to RAA (Single Family-Low Density).

Principal Planner Menser noted no further information was received since the last meeting. The proposal will go to the Township Board after the Planning Commission recommendation.

Commissioner Clark moved to adopt the resolution.

Seconded by Commissioner Premoe.

Planning Commission Discussion:

- The applicant did not provide sufficient evidence to prove why the current zoning is incorrect or why the new rezoning would be a better fit for the property.

ROLL CALL VOTE:

YEAS: Commissioner Clark, Premoe, McConnell, Cordill, Shrewsbury, Richards, Trezise, and Chair Hendrickson

NAYS: None

MOTION CARRIED: 8-0

March 3, 2020

Meridian Township Planning Commission
5151 Marsh Rd.
Okemos, MI 48864

Dear Planning Commission:

We, Laurretta and Jeffery Cole, 2090 Raby Rd. are writing to strongly oppose the proposed rezoning (case #20010 Ho Cho) from Rural Residential to Single family low density. The property in question is directly behind our lot.

We object to this rezoning proposal for several reasons. The wooded area behind us and our neighbors provides a barrier, for privacy and a buffer against noise from Haslett Road. We are also concerned that because the area behind us is in a wetland, flood plain, if trees are removed the back of our lot will experience even more flooding that it does now.

The quality of our lives and our neighbors would be compromised if housing is allowed to be built on this narrow section of land, not to mention also the displacement of wildlife, beauty and the necessity of trees to provide wind breaks and oxygen!

Please help us preserve this small green space and not over develop it.

Sincerely,

Handwritten signature in cursive script that reads "Laurretta and Jeffery Cole".

Laurretta and Jeffery Cole

2090 Raby Rd.
Haslett, MI 48840
517 339-0757



To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Keith Chapman, Assistant Planner

Date: July 31, 2020

Re: Rezoning #20030 (Planning Commission) 5937 Potter Street

At its meeting on February 10, 2020, the Planning Commission initiated the rezoning of an approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential). The property is located on the west side of Potter Street, south side of Lake Lansing Road.

The Planning Commission held the public hearing on the rezoning request at its June 8, 2020 meeting and voted to recommend approval at the June 22, 2020 meeting, citing the following reasons for its decision:

- The proposed rezoning to RN (Mixed Residential) is consistent with the 2017 Future Land Use Map designation of R3 Residential 1.25 – 3.5 dwelling units per acre.
- The property proposed for rezoning is developed with a single family residence, which is a use allowed by right in the proposed RN zoning district.
- The property proposed for rezoning is located adjacent to properties used for single family purposes to the east and south.
- The current zoning of C-1 imposes nonconforming status on the existing single family house, requiring variances from the Zoning Board of Appeals to make improvements to the properties beyond general upkeep and limits the property owner from rebuilding if the structure is removed or destroyed.
- The proposed rezoning to RN will allow the property owner to maintain the existing use of the property in conformance with the ordinance.

Staff memorandums outlining the rezoning and minutes from the Planning Commission meetings at which the rezoning was discussed are attached for the Board’s review.

Township Board Options

The Township Board may approve or deny the proposed rezoning from C-1 (Commercial) to RN (Mixed Residential). If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.



To: Planning Commission

From: Peter Menser, Principal Planner

Date: March 13, 2020

Re: Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

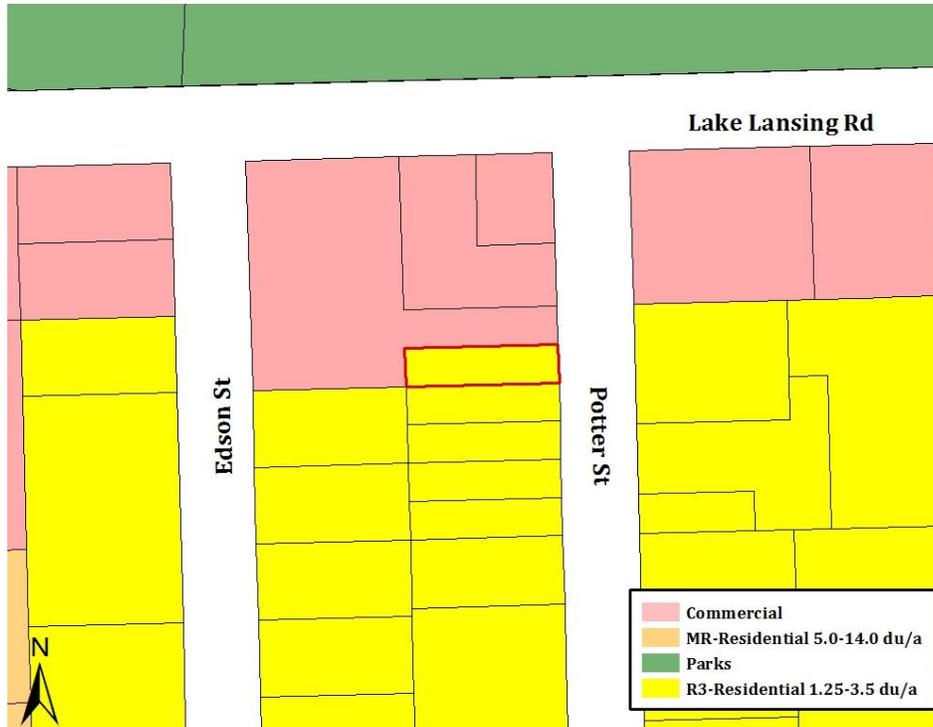
At its meeting on February 10, 2020 the Planning Commission initiated the rezoning of approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential). The site is located on the west side of Potter Street and south of Lake Lansing Road. The property is one-half of Lot 5 of the Village of Nemoka subdivision, which was platted in 1883. The site has 33 feet of frontage on Potter Street.

LOCATION MAP



The Future Land Use Map from the 2017 Master Plan designates the subject property in the R3 Residential 1.25 – 3.5 dwelling units per acre (du/a) category.

2017 FUTURE LAND USE MAP



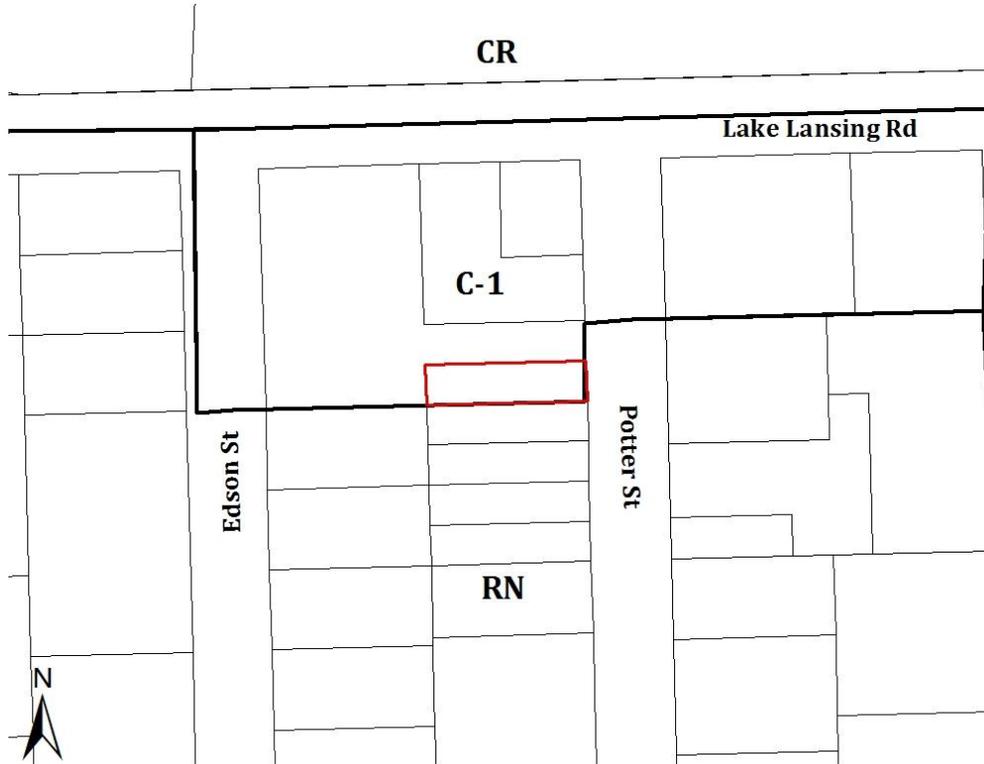
Zoning

The subject site is zoned C-1 (Commercial). With 33 feet of lot width on Potter Street and 0.10 acre (4,356 square feet) in lot area, the site does not meet the lot area and lot width minimum standards for either the current C-1 or proposed RN zoning districts. The following table illustrates the minimum lot width and lot area requirements for the existing C-1 and proposed RN zoning districts:

ZONING DISTRICT	MINIMUM LOT AREA	MINIMUM LOT WIDTH
C-1	4,000 sq. ft.	50 ft.
RN	8,000 sq. ft.	65 ft.

The RN zoning district permits a mixture of single family and multiple family residential dwellings within the area commonly known as the Village of Nemoka, which is generally described as the area bounded on the north by Lake Lansing Road, on the west by Marsh Road, on the east by Lake Lansing, and on the south by Haslett Road. The RN district allows single family and duplex development by right and multiple family buildings at a maximum density of 14 units per acre by special use permit. Single family detached structures in the RN district must comply with the dimensional requirements for RB district (Single Family-High Density) construction contained in Section 86-374(d).

ZONING MAP



Physical Features

The site contains an 816 square foot, two-story single family house built in 1921. The house on the site is in disrepair and will likely be demolished by the new owner. The Township Wetland Map and the Flood Insurance Rate Map (FIRM) for Meridian Township indicate neither wetlands nor floodplain are present on the site. The site has no special designation on the Township Greenspace Plan.

Streets & Traffic

The site fronts on Potter Street, which is a two-lane road classified as a Local Street on the Street Setbacks and Service Drives Map in the zoning ordinance. A four foot wide sidewalk is located along the property's Potter Street frontage, however sidewalks are not consistently present throughout the Village of Nemoka subdivision. The Ingham County Road Department (ICRD) does not have traffic count information for Potter Street.

A rezoning traffic study is required when the trips from the highest potential traffic generator in the requested zoning district would generate more than 100 additional directional trips during a peak hour than the highest potential traffic generator permitted under the current zoning. In this case, the proposed rezoning does not generate greater than 100 peak hour trips so a traffic study was not required.

Utilities

Municipal water and sanitary sewer serve the subject site.

Staff Analysis

The Planning Commission has initiated the rezoning of an approximate 0.10 acre parcel from C-1 to RN. When evaluating a rezoning, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts.

In 2007 the Planning Commission initiated the rezoning of five parcels (REZ #07100) in the area around the subject site from C-1 to RN. At the time the owner of the subject site objected to the rezoning. When the Township Board approved the rezoning the subject site was excluded while the other properties were rezoned to RN.

Single family detached structures in the RN district must comply with the dimensional requirements for RB district construction. RB zoning standards include a minimum lot area requirement of 8,000 square feet and a minimum lot width requirement of 65 feet. With 4,356 square feet of lot area and 33 feet of lot width the subject site does not meet the minimum lot area and lot width standards for RN/RB single family residential parcels. Variances from the minimum dimensional standards would be required from the Zoning Board of Appeals to construct a new single family house if the existing house is demolished.

The subject site was split in the past and therefore has lost lot of record status. A lot of record is a parcel created prior to 1960 which has retained its current configuration since creation. The zoning ordinance provides measures of relief for variance requirements for lots of record. As the subject site has been split, those measures of relief are not applicable. Additionally, Section 86-368(b)(1)(e) of the zoning ordinance requires single family dwellings to be a minimum of 20 feet in width. The required seven foot side yard setback in the RN/RB zoning district could not be met from both side lot lines if the property owner constructed a 20 foot wide house, therefore a variance from the side yard setback would be required from the Zoning Board of Appeals if a new house is proposed.

The current zoning of C-1 poses nonconforming status on the residential use of the property, making variances from the Zoning Board of Appeals necessary to make improvements to the existing single family house. However, because the lot is dimensionally nonconforming variances from the Zoning Board of Appeals would still be required to make improvements to the property if rezoned to RN.

Rezoning #20030 (Planning Commission)
Planning Commission (March 16, 2020)
Page 5

Uses permitted in the RB zoning district include single family dwellings and related home occupations. The home occupation ordinance (Section 86-368(b)(2) of the Code of Ordinances) allows home offices for professional services, personal service establishments, and offices of professionals licensed by the state to treat human patients. Home occupations cannot utilize more than 500 square feet of a dwelling and can only be used on an appointment basis.

The C-1 commercial district is intended to provide day-to-day retail and personal services to persons living in adjacent residential areas with a minimum impact upon surrounding residential development. The following commercial uses are allowed in C-1 zoning:

- Personal service establishments which perform services on the premises
- Retail merchandise establishments
- Restaurants and cafes
- Financial institutions
- Offices

The following chart outlines the differences in lot area, lot width, and building setbacks between the C-1 and RN zoning districts.

	C-1	RN (RB for single family)
Side/Rear Setback:	15 feet	15 feet/30-40 feet
Setback when adjacent to Residential district:	50 feet (35 feet with landscape screening)	N/A
Lot Area:	4,000 square feet	8,000 square feet
Lot Width:	50 feet	65 feet
Maximum Lot Coverage/ Impervious Surface:	70 percent	35 percent
Building Height:	35 feet	35 feet

Planning Commission Options

The Planning Commission may recommend approval or denial of the request. A resolution will be provided at a future meeting.

Attachment

1. Rezoning criteria.

**Rezoning #20030 (Planning Commission)
Township Board (August 6, 2020)
Page 2**

Attachments

1. Staff memorandums dated March 13, 2020, and June 18, 2020 with attachments.
2. Resolution recommending approval dated June 22, 2020.
3. Planning Commission minutes dated February 10, 2020 (discussion), June 8, 2020 (discussion), and June 22, 2020 (decision).
4. Communications

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To: Planning Commission

From: Peter Menser, Principal Planner

Date: June 18, 2020

Re: Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

The Planning Commission held the public hearing on Rezoning #20030 at its regular meeting on June 8, 2020. The meeting was held virtually using the Zoom web conferencing application. A straw poll taken at the end of the public hearing indicated the Planning Commission supports rezoning the property from C-1 to RN.

Planning Commission Options

The Planning Commission may recommend approval or denial of the request. A resolution to recommend approval of the rezoning to the Township Board is provided.

- **Move to adopt the resolution recommending approval of Rezoning #20030 to rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).**

Attachment

1. Resolution to recommend approval.

RESOLUTION TO RECOMMEND APPROVAL

**Rezoning #20030
5937 Potter Street**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held virtually using the Zoom web conferencing application on the 22nd day of June, 2020, at 7:00 p.m., Local Time.

PRESENT: Commissioners Premoe, Trezise, Cordill, Richards, Shrewsbury, Clark, McConnell, Hendrickson

ABSENT: None

The following resolution was offered by Commissioner Cordill and supported by Commissioner McConnell.

WHEREAS, the Planning Commission initiated the rezoning of one 0.10 acre parcel addressed as 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential); and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 8, 2020 and discussed the staff material forwarded under cover a memorandum dated March 13, 2020; and

WHEREAS, the proposed rezoning to RN (Mixed Residential) is consistent with the 2017 Future Land Use Map designation of R3 Residential 1.25 – 3.5 dwelling units per acre; and

WHEREAS, the property proposed for rezoning is developed with a single family residence, which is a use allowed by right in the proposed RN zoning district; and

WHEREAS, the property proposed for rezoning is located adjacent to properties used for single family purposes to the east and south; and

WHEREAS, the current zoning of C-1 imposes nonconforming status on the existing single family house, requiring variances from the Zoning Board of Appeals to make improvements to the properties beyond general upkeep and limits the property owner from rebuilding if the structure is removed or destroyed; and

WHEREAS, the proposed rezoning to RN will allow the property owner to maintain the existing use of the property in conformance with the ordinance.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Rezoning #20030 to rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

7. Unfinished Business - None

8. Other Business

A. Brownfield Redevelopment Authority recommendation

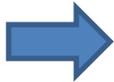
Principal Planner Menser asked the Planning Commission if a member would be willing to fill the position of representative on the Meridian Township Brownfield Redevelopment Authority (MTBRA) for the remainder of the term which expires December 31, 2020. Former Planning Commission chair John Scott-Craig served in the position since 2017 and with his resignation in November a new Commissioner is needed to fill the vacancy.

Commissioner Premoe accepted the opportunity to serve and fulfill the remainder of the term, if appointed, as the representative on the Meridian Township Brownfield Redevelopment Authority as long as Commissioner McConnell could take over the role as Planning Commission liaison with the Environmental Commission.

Commissioner Trezise made a motion to recommend Commissioner Premoe as the representative on the Meridian Township Brownfield Redevelopment Authority and for Commissioner McConnell to assume the position of Planning Commission representative for the Environmental Commission. Seconded by Commissioner Cordill.

VOICE VOTE: Motion approved unanimously.

Commissioner Cordill asked if item 8.D could be moved up so the property owners would not have to wait longer and everyone agreed to address that item next.



D. 5937 Potter Street

Principal Planner Menser provided an overview of the proposal to rezone the property at 5937 Potter Street from C-1 (Commercial) to RN (Village of Nemoka Mixed Residential District).

Commissioner Premoe made a motion to initiate a rezoning of the property from C-1 to RN. Seconded by Commissioner Cordill

VOICE VOTE: Motion approved unanimously.

B. 2020 Planning Commission goals

Principal Planner Menser provided copies of the 2019 Planning Commission goals, 2020 Meridian Township Board Goal Action Plan for 2020, and the 2020 Work Plan for the Community Planning and Development Department for review in an effort to assist the Planning Commission's discussion to set goals for 2020.

Planning Commission Discussion:

- Set timelines on goals to stay on track. For example by the end of April complete the work on Form Based Code and then present to the Township Board for review.
- Move forward with implementing the Grand River Corridor initiative.

5. **Communications** - None

6. **Public Hearings**

- 
- D. Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

Chair Hendrickson opened the public hearing at 7:13 p.m.

Principal Planner Menser provided an overview of the proposed rezoning request for the property.

Public Comment – None

A straw poll indicated the Planning Commission would be in support of recommending approval of the request. A resolution will be provided at the next meeting on June 8, 2020.

Chair Hendrickson closed the public hearing at 7:27 p.m.

- A. Special Use Permit #20011 (Andev Group, LLC), establish an approximately 268,263 square foot senior living community comprised of 230 units on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.
- B. Special Use Permit #20021 (Andev Group, LLC), construct building greater than 25,000 square feet in size on an undeveloped parcel identified as Parcel Number 20-401-005, located at the east end of Hannah Boulevard.

Chair Hendrickson noted 6A and 6B will run concurrently and opened the public hearing at 7:28 p.m.

Principal Planner Menser noted the public hearing was originally scheduled for March 16, 2020 but was cancelled due to the COVID19 pandemic.

Principal Planner Menser provided a summary of the project requests and said he would be available to answer questions. Special Use Permit #20011 addresses land use and to establish non-residential use for a senior living community and Special Use Permit #20021 addresses the building size.

Principal Planner Menser introduced the applicant's representative Mark Clouse, on behalf of the George Eyde Family LLC. There were numerous other guests in attendance, who are involved with the proposed project. Mike Samuels is with the ANDEV Group and discussed the building proposal. Dan Anbar is the Principal of the ANDEV Group and he introduced himself and shared information about their company. They are located at 680 N. Lake Shore Drive in Chicago, IL. Ben Ganther is with the design build group at Ganther Construction/Architecture. They are located at 4825 County Road A in Oshkosh, WI. Jeff Kyes with Kebs Inc. was in attendance also and noted the Ingham County Road Commission and Drain Office didn't note any issues but during the Site Plan Review process all details will be reviewed.



- D. Rezoning #20030 (Planning Commission), rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential)

Principal Planner Menser noted there was nothing new to add to this request. This will move to the Township Board for consideration after the Planning Commission recommendation.

Motion by Commissioner Cordill
 Seconded by Commissioner McConnell

ROLL CALL VOTE:

YEAS: Commissioner Cordill, McConnell, Premoe, Shrewsbury, Richards, Clark, Trezise, and Chair Hendrickson

NAYS: None

MOTION CARRIED: 8-0

8. OTHER BUSINESS - None

9. REPORTS AND ANNOUNCEMENTS

- A. Township Board update.

Principal Planner Menser provided a summary of the June 16, 2020 Zoom Township Board meeting.

There is no update on the filling of the final seat on the Planning Commission currently.

- B. Liaison reports.

Chair Hendrickson attended the Zoning Board of Appeals meeting on June 10, 2020 and provided an update.

Commissioner Richards and Commissioner McConnell attended the Transportation Commission meeting on June 18, 2020 and provided an update. They also noted there was interest with the Corridor Improvement Authority to schedule a joint meeting with the Planning Commission possibly in August.

10. PROJECT UPDATES

- A. New Applications - None
- B. Site Plans Received - None
- C. Site Plans Approved - None

11. PUBLIC REMARKS

- A. Joe Zimmerman, 4715 Mohican Lane, spoke with concerns regarding Rezoning #20040 and Special Use Permit #20011. He also noted the Drain Commissioner is not serving the interests of residents and their concerns with water problems.

DARCIE J. WHIDDON

4090 WABANINGO ROAD

OKEMOS, MI 48864

(517) 927-7806

January 29, 2020

Charter Township of Meridian
Planning Commission
5151 Marsh Road
Okemos, MI 48864

Dear Members of the Planning Commission:

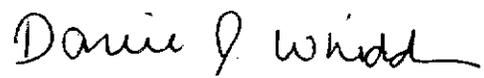
I am writing in regard to 5937 Potter Street in Haslett. 5937 Potter Street is located in the Village of Nemoka. It is an 816 square foot residential 3-bedroom and 1-bathroom house built in 1921. According to Associate Planner Mackenzie Dean in the Meridian Township Zoning Department, 5937 Potter was placed into a C-1 commercial district in the 1960s. Ms. Dean further noted that in 2007, there was an effort by Meridian Township to re-zone the property to RN District (Village of Nemoka Mixed Residential District). However, the property was excluded at the request of then-property owner Darwin D. Hart. Currently, the subject property remains in the C-1 zoning district.

I am requesting that the members of the Planning Commission bring forth an initiative to remove 5937 Potter from the C-1 zone and place it the proper zone, the RN District. 5937 Potter has been continuously used as a residential home for almost a century. It has not been used for any commercial purposes. Furthermore, it does not even meet the standards that apply to all C-1 uses. Specifically, it does not meet the minimum lot width of 50 feet nor the side setback requirements of 50 feet from an adjacent residential structure or 35 foot side setback if a screen of double-row interlocking trees is provided (§86-403(b)(2) and (3)). 5937 Potter is merely 33 feet wide—17 feet short of the minimum width requirement. And, it is not feasible to achieve either side setback that is required next to a residential structure, of which it's closest neighbor is a residential home in the RN district.

As the 5937 Potter Street home stands, it has insignificant value. If this home were to be placed into the correct zone, I would be able to properly renovate and increase the value of the subject property and surrounding areas. As such, I respectfully request that you continue the efforts of previous Township planning members and rectify this ill-zoned property.

Should you have any questions or concerns, please feel free to contact me at (517) 927-7806. I appreciate your time and consideration.

Sincerely,

A handwritten signature in black ink that reads "Darcie J. Whiddon". The signature is written in a cursive style with a long horizontal flourish at the end.

Darcie J. Whiddon
Owner of 5937 Potter St, LLC



13.D

To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Peter Menser, Principal Planner

Date: July 29, 2020

Re: Special Use Permit #19191 (Green Peak Innovations, LLC)

Green Peak Innovations, LLC has applied for a special use permit (SUP) to construct a commercial medical marihuana provisioning center on an undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue. The 1.79 acre project site is zoned C-2 (Commercial).

The Planning Commission held a public hearing on the proposal at its meeting on June 22, 2020 and on July 13, 2020 voted to recommend approval, citing the following reasons for their decision:

- The subject site is located entirely within Overlay Area 3 and is appropriately zoned C-2 (Commercial), which allows commercial medical marihuana provisioning centers by special use permit.
- The proposed commercial medical marihuana provisioning center meets the required setbacks from any public or private K-12 school, church, place of worship or other religious facility, library, preschool, or child care center established in Section 40-31 of the Code of Ordinances.
- The proposed commercial medical marihuana provisioning center will not adversely affect adjacent land uses or the health, safety, and general welfare of the community.
- The proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

Staff memorandums outlining the SUP request and minutes from the Planning Commission meetings at which the request was discussed are attached for the Board's review.

Township Board Options

The Township Board may approve or deny the proposed special use permit proposal. If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.

Special Use Permit #19191 (Green Peak Innovations, LLC)

Township Board (August 6, 2020)

Page 2

Attachments

1. Staff memorandums dated June 19, 2020 and July 8, 2020 with attachments.
2. Resolution recommending approval.
3. Planning Commission minutes dated June 22, 2020 (public hearing) and July 13, 2020 (recommendation).
4. Communications.



To: Planning Commission

From: Peter Menser, Principal Planner
Keith Chapman, Assistant Planner

Date: June 19, 2020

Re: Special Use Permit #19191 (Green Peak Innovations, LLC), establish a commercial medical marihuana provisioning center on a vacant parcel located south of Grand River Avenue on Northwind Drive.

Green Peak Innovations, LLC has applied for a special use permit (SUP) to establish a commercial medical marihuana provisioning center on a vacant parcel located south of Grand River Avenue on Northwind Drive. The applicant has submitted a site plan that shows a proposed 2,700 square foot building. The 1.79 acre project site is zoned C-2 (Commercial). The site is currently a community garden.

A provisioning center, also referred to a dispensary, is a facility where marihuana, or products derived from marihuana, is sold to registered medical marihuana patients or primary caregivers in accordance with the Michigan Medical Marihuana Act that was approved in 2008. A provisioning center license obtained from the State of Michigan, Department of Licensing and Regulatory Affairs (LARA), authorizes the holder to purchase or transfer marihuana only from growers and processors and to sell or transfer marihuana only to registered qualifying patients or registered primary caregivers. Under current State law consumption or use of marihuana or marihuana products at a provisioning center is prohibited. Provisioning centers are also prohibited from selling or allowing the consumption or use of alcohol or tobacco products on their premises, and from allowing a physician to conduct examinations and issue medical certifications for the purpose of obtaining a registry identification card.

Background

At its meeting on May 21, 2019 the Township Board adopted both zoning and non-zoning ordinances allowing commercial medical marihuana facilities in designated areas in the Township. The non-zoning ordinance established the application process, the facility types allowed, the number of permits, and the general operational standards for the different types of commercial facilities, which include growers, processors, secure transporters, provisioning centers, and safety compliance facilities. The zoning ordinance established seven designated areas in the Township where commercial medical marihuana facilities are permitted and identified the zoning districts in which each of the five types of commercial medical marihuana facilities can locate, as identified in the table on the following page.

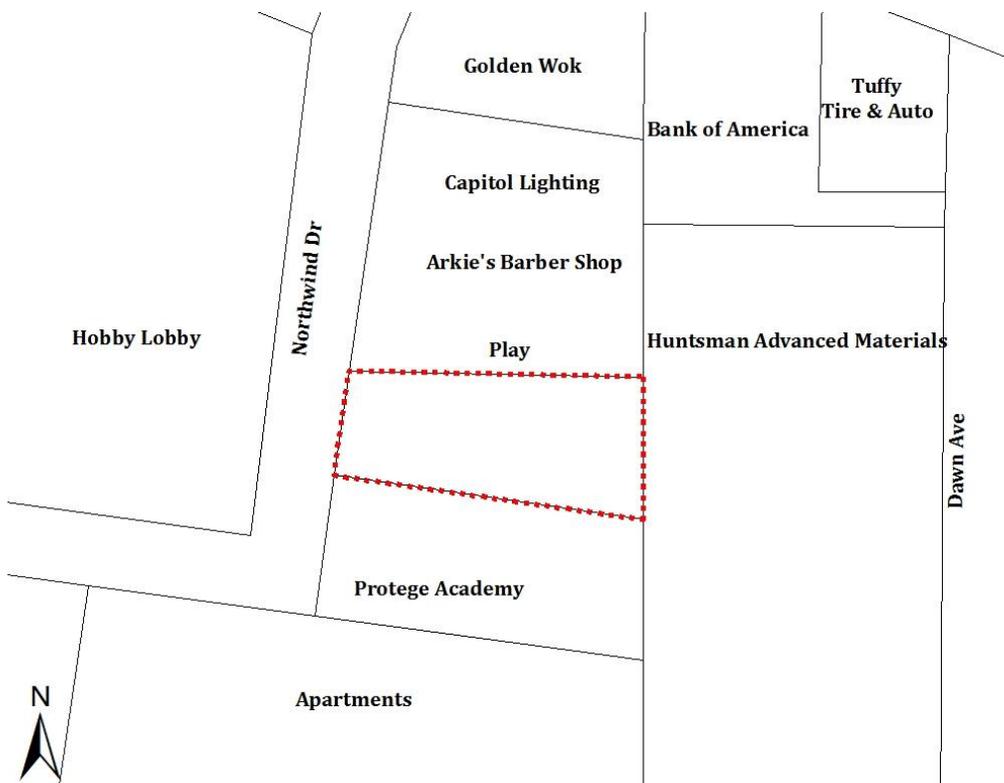
Special Use Permit #19191 (Green Peak Innovations, LLC)

Planning Commission (June 22, 2020)

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<i>Facility type</i>	<i>Zoning District(s) allowed</i>	<i>Overlay Area(s) allowed</i>
Grower	I (Industrial)	1, 4, 6
Processor	I (Industrial)	1, 4, 6
Provisioning Center	I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park)	1, 2, 3, 4, 5, 6, 7
Safety Compliance Facility	I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park)	1, 2, 3, 5, 6, 7
Secure Transporter	I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park)	1, 2, 3, 5, 6, 7

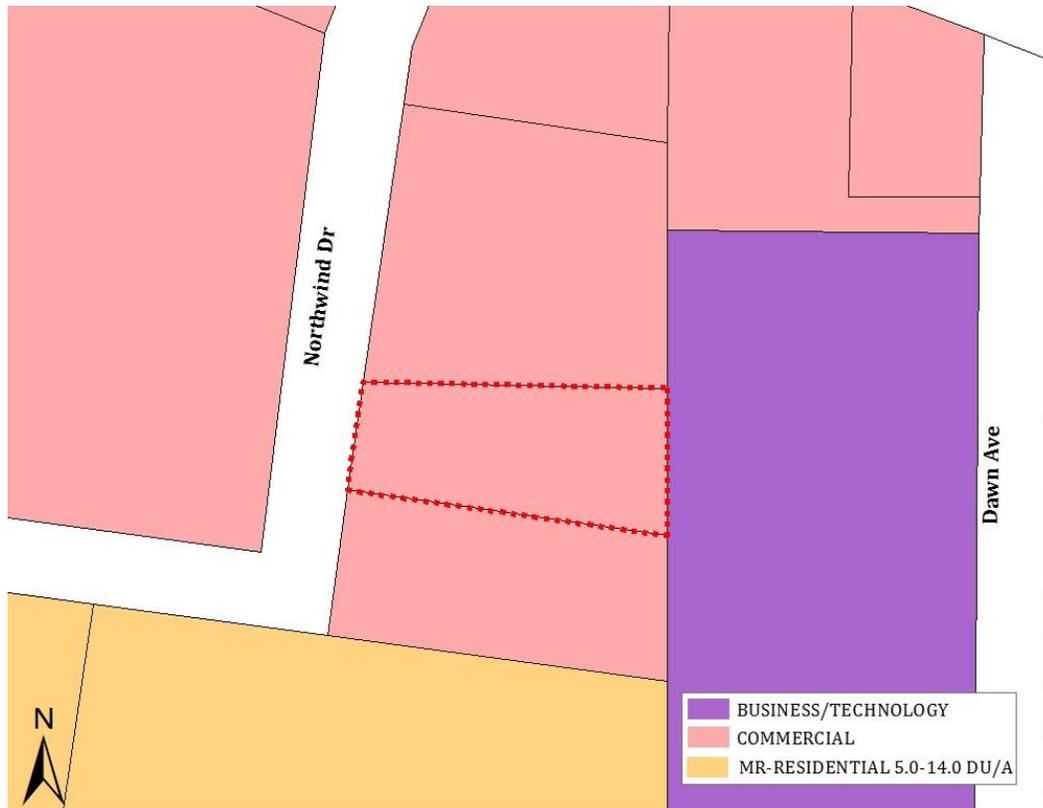
LOCATION MAP



Master Plan

The Future Land Use Map from the 2017 Master Plan designates the subject site in the Commercial category.

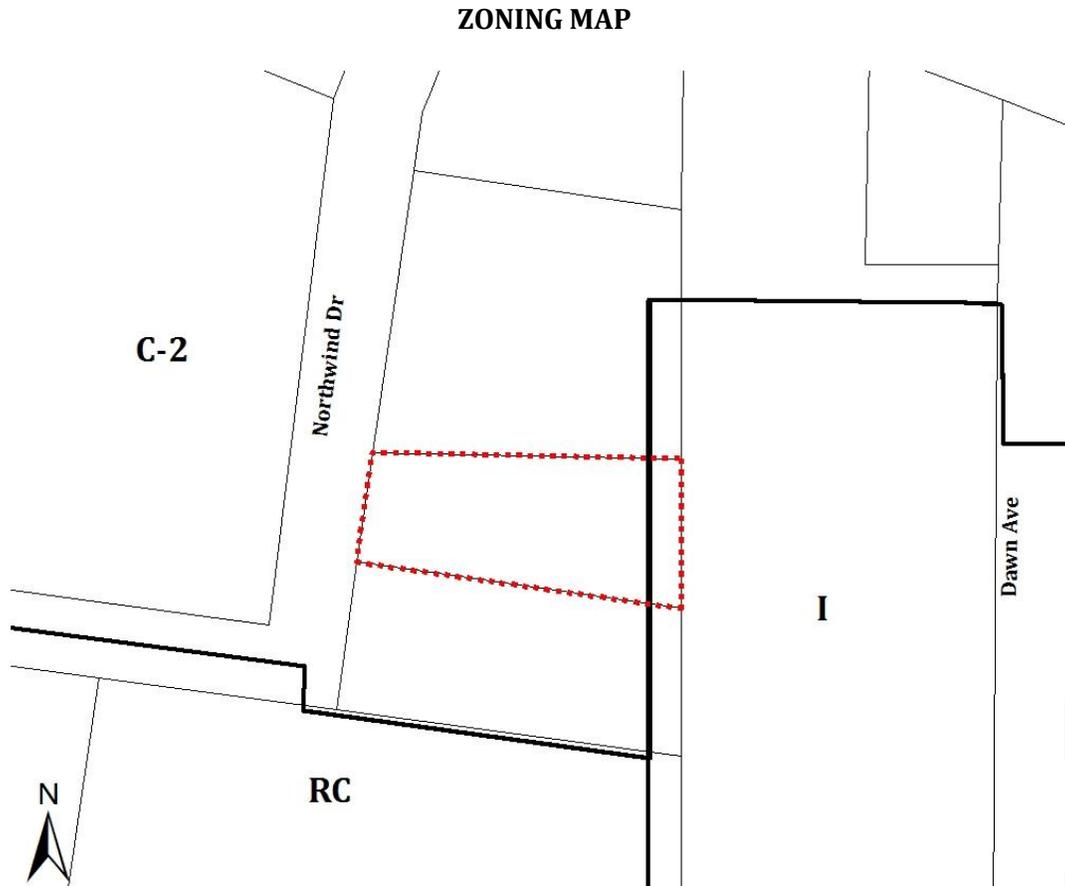
FUTURE LAND USE MAP



Zoning

The proposed project is located in the C-2 (Commercial) zoning district. A provisioning center is permitted in the C-1, C-2, C-3 (Commercial), I (Industrial), and RP (Research and Office Park) zoning districts subject to approval of a special use permit reviewed by the Planning Commission and approved by the Township Board.

The C-1 district requires a minimum of 100 feet of lot frontage and 4,000 square feet of lot area. The property is 1.79 acres in size (77,972.4 square feet) and has 90 feet of frontage along Northwind Drive. The applicant has submitted a property split/combination application to receive 15 feet from the property to the north, bringing the total lot size to 105 feet.



Physical Features

The site is undeveloped and is being utilized as a community garden.

The Flood Insurance Rate Map (FIRM) for Meridian Township indicates the property is not located in a floodplain and wetlands are not present on the site. The Township Greenspace Plan shows no special designation on the site.

Streets and Traffic

The approximate 1.92 acre site is located on the east side of Northwind Drive, south of Grand River Avenue. Access to the site is proposed to be from a driveway on Northwind Drive. Northwind Drive is a two-lane road with curb and gutter that are classified as a local street in the Street Setbacks and Service Drive map in Section 86-367 of the Code of Ordinances. The most recent (2018) traffic count information from the Michigan Department of Transportation (MDOT) showed a total of 25,147 two-way vehicle trips in a 24 hour period on Grand River Avenue. There are no traffic counts available for Northwind Drive.

A traffic assessment is required for an expansion or change of an existing special use where the increase in intensity would generate an additional 50 to 99 directional trips during morning and afternoon peak hours of traffic. The applicant submitted a traffic assessment prepared by Progressive AE dated February 13, 2020 that provides information on traffic generated by the proposed provisioning center.

The assessment looks at existing and future level of service (LOS) during the AM (7:30-8:30 a.m.) and PM (4:45-5:45 p.m.) peak hours at the intersection of Grand River Avenue and Northwind Drive. The traffic assessment notes existing traffic at the studied location operates at an acceptable LOS (LOS B or better) during the AM and PM peak hours. Under future conditions, it is projected all movements will operate at an acceptable level of service (LOS B or better).

The submitted traffic assessment contains a trip generation analysis which estimates future vehicle trips that could be generated by the proposed provisioning center. The Institute of Transportation Engineers (ITE) trip generation rates for a Marijuana Dispensary (Land Use Code 882) were selected to represent the proposed provisioning center. The following table summarizes findings from the trip generation analysis.

Description	Size	AM Peak Hour			PM Peak Hour			Weekday
		In	Out	Total	In	Out	Total	
Marijuana Dispensary, Land Use Code 882	2,700 sq. ft.	16	13	29	30	30	60	445

The findings of the traffic assessment shows traffic generated by the proposed provisioning center would not create a significant impact at the studied location.

Parking

The Township Code of Ordinances requires five (minimum) to 5.5 (maximum) parking spaces per 1,000 square feet of gross floor area retail businesses having a gross floor area less than 25,000 square feet. The 2,700 square feet shopping requires a minimum of 14 parking spaces and a maximum of 15 parking spaces. The submitted site plan shows 14 parking spaces provided.

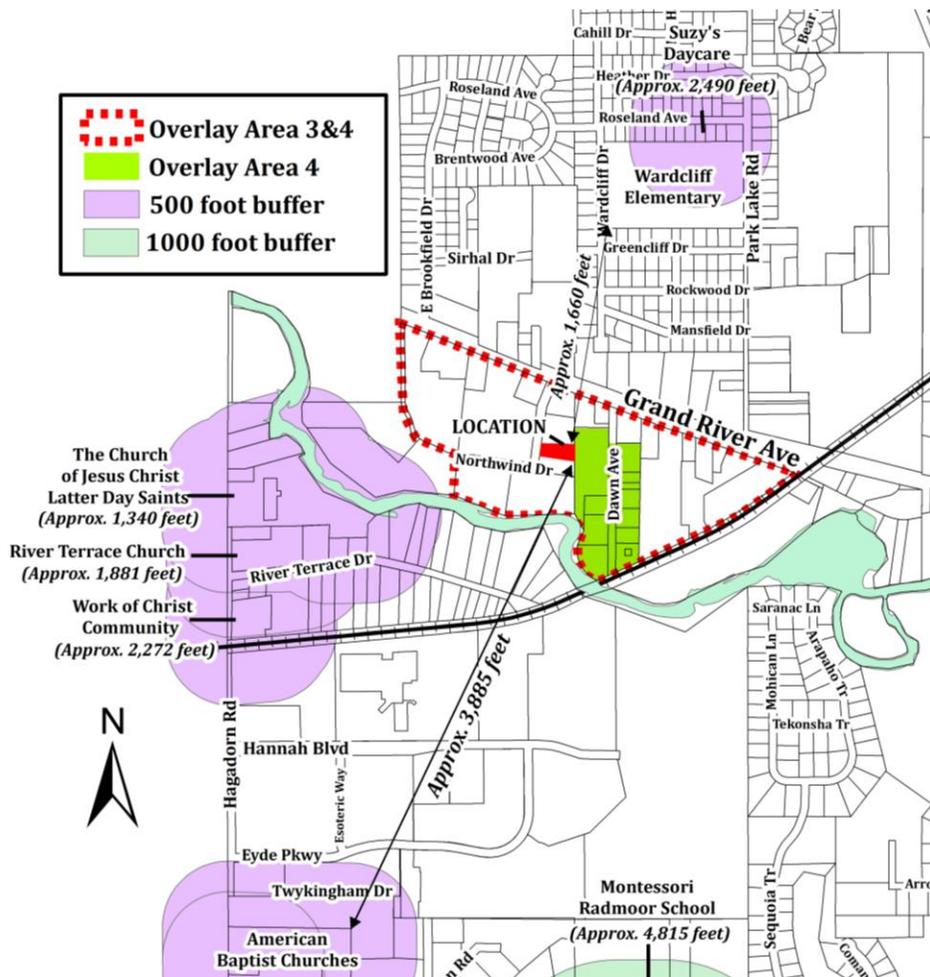
Staff Analysis

Green Peaks Innovations, LLC has requested special use permit approval to occupy a currently vacant parcel located south of Grand River Avenue on Northwind Drive to construct a commercial medical marijuana provisioning center. For commercial medical marijuana facilities the Planning Commission makes a recommendation on the request and the Township Board makes the final decision. The special use permit review criteria found in Section 86-126 of the Code of Ordinances should be used when evaluating the proposed special use permit.

Required Spacing

The non-zoning ordinance adopted by the Township Board requires commercial medical marihuana facilities to be located one-thousand (1,000) feet from any public or private K-12 school, five hundred (500) feet from any church, place of worship or other religious facility, and five hundred (500) feet from any library, preschool, or child care center. The minimum distance between uses is measured horizontally between the nearest property lines. The map on the following page shows the 500 and 1,000 foot buffers near the proposed provisioning center. The closest facility to the proposed provisioning center is The Church of Jesus Christ Latter Day Saints. The Church is located at 4910 Hagadorn Road which is approximately 1,340 feet away from the proposed provisioning center.

SETBACKS MAP



Commercial Medical Marihuana Facility Permit Application

Applicants for a commercial medical marihuana facility must go through various steps in order to establish a facility within Meridian Township, including securing local and state approval. The local process begins with the initial application for a Commercial Medical Marihuana Facility Permit. To be eligible for a permit the applicant was required to submit a non-refundable \$5,000 dollar application fee and address at least two of the following three requirements: (1) an official statement issued by the Department of Licensing and Regulatory Affairs (LARA) indicating that the applicant has completed state prequalification for a license, (2) proof that the applicant or owners of at least 75% of the applicant are current Township residents and were residents for at least twelve months prior to filing the application, (3) signing of a certification restricting the transfer of the permit for a period of not less than 30 months after issuance. The applications were reviewed internally by Township staff and the Township Attorney. Other important aspects of the permit application process included submittal of documents addressing the organizational structure of the applicant, passing background checks, submitting a security plan for the facility, addressing waste disposal, providing details on staffing, and submitting information on product vendors and transporters. Once the facility application is deemed complete, the applicant receives conditional approval from the Director of Community Planning and Development. In this initial application period the Township did received only applications for provisioning centers.

Lottery

If multiple applications are received for an overlay area a lottery is held to establish the order applicants can apply for a special use permit. If a conditionally approved applicant fails to submit a SUP application within the required 60 day period after the lottery then the applicant's conditional approval is revoked and the next applicant drawn in the lottery receives an opportunity to submit a SUP application. In the case of the current request, Green Peak Innovations, LLC was one of five conditionally approved applications in Overlay Area 3, so a lottery was required.

State Review and Next Steps

SUP approval must be granted by the Township Board before an application can move forward to the final steps of approval for a Commercial Medical Marihuana Facility Permit. Before operations may begin at the facility the applicant must be granted a permit by the Director of Community Planning and Development and receive final approval from the State of Michigan by completing the License Qualification and Final Approval steps of the state application process. Only when the facility has been inspected and the Township has confirmed all applicable State approvals will a Commercial Medical Marihuana Facility Permit be issued and the facility allowed to open. The commercial medical marihuana facility permit is issued for a period of one year.

Special Use Permit #19191 (Green Peak Innovations, LLC)

Planning Commission (June 22, 2020)

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Renewal

After one year, the applicant must submit an application to renew the Commercial Medical Marihuana Facility Permit. A \$5,000 renewal fee is required at the time of application. Each year, any pending applications for renewal or amendment of valid, unexpired permits are reviewed and granted or denied before applications for new permits are considered. If a renewal is denied or licensure is not granted the permit shall be forfeited and the Director may accept new applicants in the next application period. If the applicant maintains a valid State license and remains in good standing with both the State and Township a renewal will be granted for another one year period.

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.

Attachments

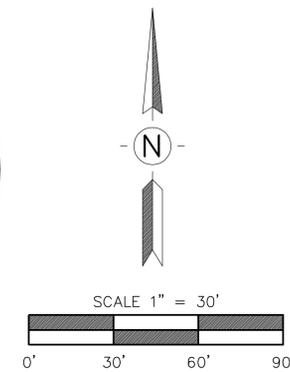
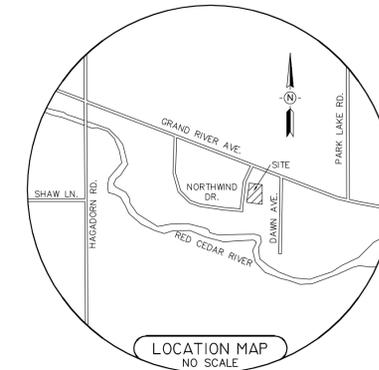
1. Special use permit application and attachments.
2. Site plan prepared by Kebs, Inc. dated December 19, 2019 and received by the Township on February 13, 2020.
3. Trip Generation Comparison prepared by Progressive AE dated February 13, 2020 and received by the Township on February 27, 2020.
4. Medical Marihuana Overlay Area Map dated May 16, 2019.

G:\Community Planning & Development\Planning\SPECIAL USE PERMITS (SUP)\2019\SUP 19191 (Green Peak Innovations, LLC)\SUP 19191.pc1.docx

LOT & TOPOGRAPHIC SURVEY

"4972 & VACANT - NORTHWIND DRIVE, OKEMOS, MI 48864"

FOR: STUDIO INTRIGUE ARCHITECTS, LLC



SEWER INVENTORIES

STORM MANHOLE #100
RIM - 853.40
24" RCP N - 845.33
24" RCP W - 845.20

STORM MANHOLE #101
RIM - 852.67
12" RCP N - 847.16
12" VCP NE - 848.07
12" RCP NE - 846.82
24" RCP S - 845.66
18" RCP NW - 845.84
12" RCP NW - 846.54

CATCH BASIN #102
RIM - 853.39
12" RCP SE - 848.84

STORM MANHOLE #103
RIM - 854.98
12" RCP N - 847.70
18" RCP SE - 847.58
18" RCP NW - 847.58

CATCH BASIN #104
RIM - 851.90
6" VCP NE - 846.92
12" RCP SW - 846.88

CATCH BASIN #105
RIM - 853.05
10" VCP E - 848.10
12" VCP SW - 848.10

CATCH BASIN #106
RIM - 853.62
8" VCP N - 849.54
10" VCP W - 849.27

CATCH BASIN #107
RIM - 853.79
8" VCP S - 850.99

CATCH BASIN #108
RIM - 852.81
6" VCP NW - 850.09

STORM MANHOLE #109
RIM - 853.61
6" VCP NE - 848.30
6" VCP E - 848.31
12" RCP S - 848.20

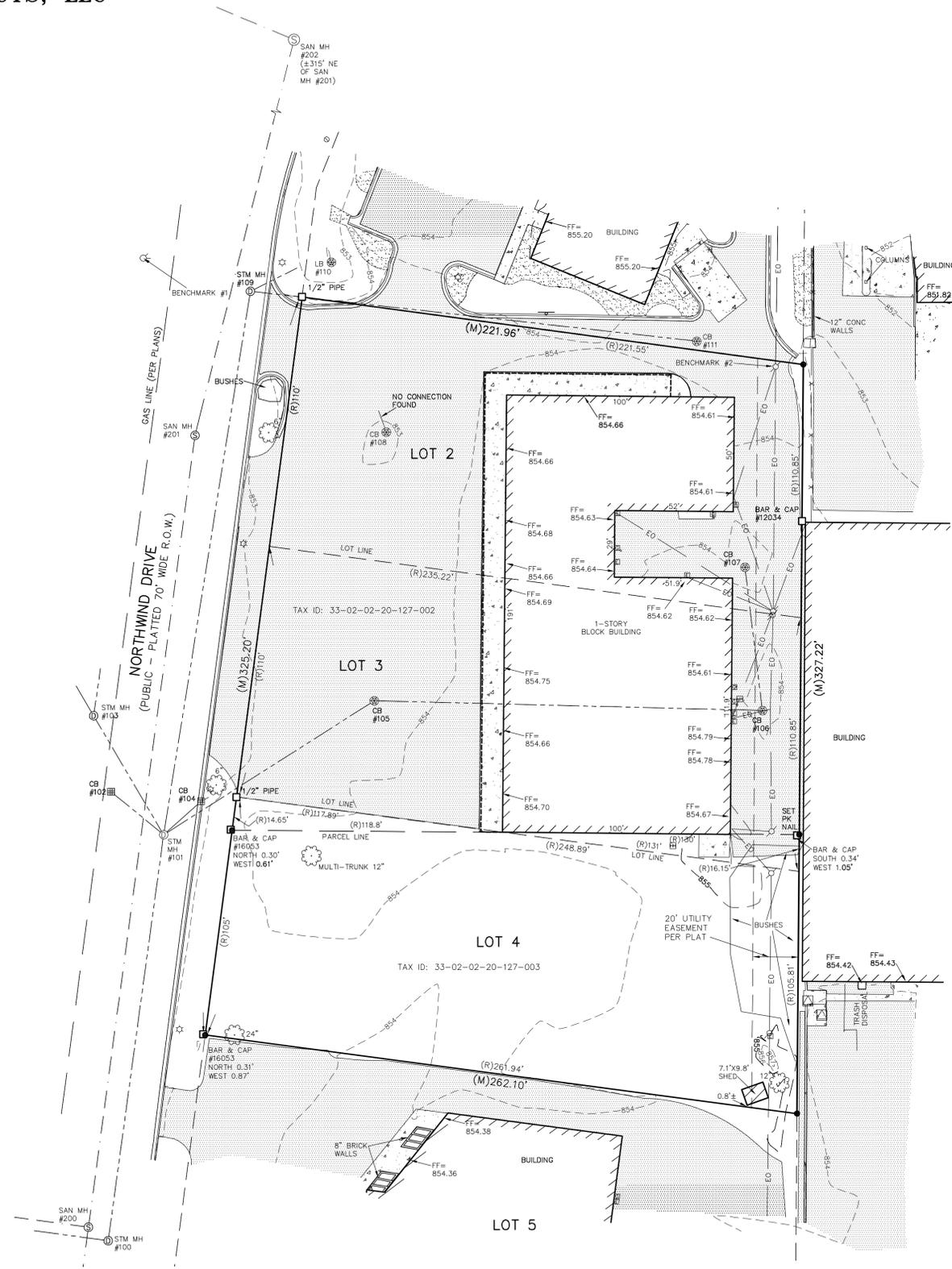
LAWN BASIN #110
RIM - 851.89
NO STRUCTURE - UNABLE TO DETERMINE PIPE DIRECTION

CATCH BASIN #111
RIM - 853.11
6" VCP W - 850.53

SANITARY MANHOLE #200
RIM - 853.41
8" VCP N - 842.21
8" VCP S - 843.23
8" VCP W - 842.33

SANITARY MANHOLE #201
RIM - 853.42
8" VCP N - 840.70
8" VCP S - 840.70

SANITARY MANHOLE #202
RIM - 851.55
8" VCP S - 839.47
8" VCP W - 839.47



LEGAL DESCRIPTIONS:

(As Provided in Tax Assessing Records):

33-02-02-20-127-002
LOTS 2 & 3 & PART OF LOT 4 DESC. AS BEG. AT NW COR. OF LOT 4 & RUNNING TH S 81 DEG 50' E 117.89 FT. ALONG N'LY LINE OF LOT 4 TO COR. OF CONCRETE BLDG. (BRICK FACE) TH N 88 DEG 55' W 118.8 FT. TO W'LY LINE OF LOT 4 & TH N 8 DEG 10' E 14.65 FT. TO PT. OF BEG. EXC. PART OF LOT 3 DESC. AS BEG. AT SE COR. OF LOT 3, TH N 1 DEG 05' E 16.15 FT. ALONG E LOT LINE, TH N 88 DEG 55' W 130 FT. TO INTER- SECT S'LY LOT LINE, TH S 81 DEG 50' E 131 FT. TO PT. OF BEG. NORTHWIND SUBDIVISION.

ALSO

33-02-02-20-127-003
LOT 4 & PART OF LOT 3 DESC. AS BEG. AT SE COR. OF LOT 3 TH N 1 DEG 05' E 16.15 FT. ALONG E LOT LINE, TH N 88 DEG 55' W 130 FT. TO INTERSECT S'LY LOT LINE, TH S 81 DEG 50' E 131 FT. TO PT. OF BEG. EXC. BEG. AT NW COR. OF LOT 4 & RUNNING TH S 81 DEG 50' E 117.89 FT. ALONG N'LY LINE OF LOT 4 TO COR. OF CONCRETE BLDG. (BRICK FACE) TH N 88 DEG 55' W 118.8 FT. TO W'LY LINE OF LOT 4 & TH N 8 DEG 10' E 14.65 FT. TO PT. OF BEG. NORTHWIND SUBDIVISION.

SURVEYOR'S NOTES:

- This plan was made at the direction of the parties named hereon and is intended solely for their immediate use. Survey prepared from fieldwork performed in December 2019.
- All bearings and distances on the survey are record and measured unless otherwise noted.
- All elevations are North American Vertical Datum of 1988 (NAVD88).
- All dimensions are in feet and decimals thereof.
- No building tie dimensions are to be used for establishing the property lines.
- There are no observable potential encroachments onto the subject property from adjoining lands, or from the subject property onto adjoining lands, except as shown hereon.
- Utility information as shown was obtained from available public records and from supporting field observations, where possible, and is subject to verification in the field by the appropriate authorities prior to use for construction. MISS DIG was not contacted to mark utilities on site.
- All easements may not be shown. Any easements as shown on the recorded plot of "Northwind" are shown hereon.
- No wetlands were delineated onsite, if any.
- By scaled map location and graphic plotting only, this property lies entirely within Flood Zone "X", areas outside the 0.2% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate map for the Charter Township of Meridian, Ingham County, Michigan, Community Panel No. 260093 0152 D, dated August 16, 2011.

BENCHMARKS

BENCHMARK #1 ELEV. = 855.43 (NAVD88)
WEST FLANGE BOLT, UNDER "E" IN "EJIW", FIRE HYDRANT, WEST SIDE OF NORTHWIND DRIVE, ±300' SOUTHWEST OF CENTERLINE GRAND RIVER AVENUE.

BENCHMARK #2 ELEV. = 855.18 (NAVD88)
NAIL IN WEST SIDE UTILITY POLE, ±22' NORTHEAST OF NORTHEAST CORNER OF BUILDING #4972 NORTHWIND DRIVE.

LEGEND

(M)	= MEASURED DISTANCE	⊙	= SANITARY MANHOLE
(R)	= RECORD DISTANCE	⊕	= DRAINAGE MANHOLE
●	= SET 1/2" BAR WITH CAP	⊖	= ELECTRIC MANHOLE
□	= FOUND IRON AS NOTED	Ⓣ	= TELEPHONE MANHOLE
—	= DEED LINE	⊞	= CATCHBASIN
—	= DISTANCE NOT TO SCALE	⊞	= SANITARY CLEANOUT
—	= FENCE	⊞	= FIRE HYDRANT
—	= ASPHALT	⊞	= VALVE
—	= CONCRETE	⊞	= UTILITY POLE
—	= DECK	⊞	= LIGHT POLE
—	= GRAVEL	⊞	= GUY POLE
—	= EXISTING SPOT ELEVATION	⊞	= GUY WIRE
—	= EXISTING CONTOUR ELEVATION	⊞	= UTILITY PEDESTAL
—	= BUILDING OVERHANG	⊞	= TRANSFORMER
—	= SANITARY SEWER	⊞	= HANDHOLE
—	= STORM SEWER	⊞	= ELECTRIC METER
—	= WATER LINE	⊞	= GAS METER
—	= GAS LINE	⊞	= WATER METER
—	= UNDERGROUND TELEPHONE	⊞	= SOIL BORING
—	= UNDERGROUND TELEVISION	⊞	= SIGN
—	= UNDERGROUND ELECTRIC	⊞	= POST
—	= OVERHEAD WIRES	⊞	= AIR CONDITIONING UNIT
—	= EDGE OF WOODS		
—	= DECIDUOUS TREE		
—	= CONIFEROUS TREE		

REVISIONS	COMMENTS	KEBS, INC. ENGINEERING AND LAND SURVEYING	
12/19/2019	ORIGINAL	2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX 517-339-8047 WWW.KEBS.COM	
		Marshall Office - Ph. 269-781-9800	
		DRAWN BY: SSF	SECTION 17, T4N, R1W
		FIELD WORK BY: RR	JOB NUMBER:
		SHEET 1 OF 1	96043.LOT

ERICK R. FRIESTROM DATE
PROFESSIONAL SURVEYOR NO. 53497

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

SPECIAL USE PERMIT APPLICATION

Before submitting this application for review, an applicant may meet with the Director of Community Planning and Development to discuss the requirements for a special use permit and/or submit a conceptual plan for review to have preliminary technical deficiencies addressed prior to submittal of the application. If the property or land use is located in the following zoning districts RD, RC, RCC, RN then the applicant must meet with the Planning Director to discuss technical difficulties before filing a formal application.

Part I

- A. Applicant Green Peak Innovations, LLC
 Address of Applicant 10070 Harvest Park, Dimondale, MI 48821
 Telephone - Work 517-408-0172 Home _____ Fax _____ Email see below
 Interest in property (circle one): Owner _____ Tenant _____ Option _____ Other _____
 (Please attach a list of all persons with an ownership interest in the property.)
Email contact: Joe Neller at, jneller@greenpeakinnovations.com
- B. Site address / location / parcel number 33-02-02-127-003 Northwind Dr. Okemos, MI 48864
 Legal description (please attach if necessary) _____
 Current zoning C-2 Commercial
 Use for which permit is requested / project name Medical Marijuana Provisioning Center
 Corresponding ordinance number 2019-01,5-21-2019 (5)
- C. Developer (if different than applicant) _____
 Address _____
 Telephone – Work _____ Home _____ Fax _____
- D. Architect, Engineer Planner or Surveyor responsible for design of project if different from applicant:
 Name Studio [intrigue] Architects
 Address 1114 S. Washington Ave. #100
 Telephone – Work 517-371-8804 Home _____ Fax 517-371-8805
 Email contact: Ken Jones at, kenj@studiointriguearchitects.com
- E. Acreage of all parcels in the project: Gross ± 0.629 Net _____
 ACRES
- F. Explain the project and development phases: Construction of new ±2,700.4 S.F. Marijuana provisioning Center
- G. Total number of:
 Existing: structures 0 bedrooms _____ offices _____ parking spaces 0 carports _____ garages _____
 Proposed: structures 1 bedrooms _____ offices _____ parking spaces 14 carports _____ garages _____
- H. Square footage: existing buildings 0 proposed buildings Total Building Gross ±2,700.4 S.F.
 Usable Floor area: existing buildings _____ proposed buildings Interior Gross ±2,556 S.F.
- I. If employees will work on the site, state the number of full time and part time employees working per shift and hours of operation: Owner anticipates a maximum of 13 employees per shift. Hours as dictated by local ordinance.
- J. Existing Recreation: Type _____ Acreage _____
 Proposed Recreation: Type _____ Acreage _____
 Existing Open Space: Type _____ Acreage _____
 Proposed Open Space: Type _____ Acreage _____

- K. If Multiple Housing: n/a
- Total acres of property _____
- Acres in floodplain _____ Percent of total _____
- Acres in wetland (not in floodplain) _____ Percent of total _____
- Total dwelling units _____
- Dwelling unit mix:
- | | | |
|------------------------------------|----------------|-------------|
| Number of single family detached: | for Rent _____ | Condo _____ |
| Number of duplexes: | for Rent _____ | Condo _____ |
| Number of townhouses: | for Rent _____ | Condo _____ |
| Number of garden style apartments: | for Rent _____ | Condo _____ |
| Number of other dwellings: | for Rent _____ | Condo _____ |

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

1. Nonrefundable Fee.
2. Legal Description of the property.
3. Evidence of fee or other ownership of the property.
4. Site Plan containing the information listed in the attachment to this application.
5. Architectural sketches showing all sides and elevations of the proposed buildings or structures, including the project entrance, 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.
6. A Traffic Study, 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.
 - a. A traffic assessment will be required for the following:
 - 1) New special uses which could, or expansion or change of an existing special use where increase in intensity would, generate between 50 to 99 directional trips during a peak hour of traffic.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
 - b. A traffic impact study will be required for the following:
 - 1) New special uses which would, or expansion or change of an existing special use where increase in intensity would, generate over 100 directional trips or more during a peak hour of traffic, or over 750 trips on an average day.
 - 2) All other special uses requiring a traffic assessment as specified in the Township Code of Ordinances, Chapter 86, Article IV, Division 2.
7. Natural features assessment which includes 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, waterbodies, 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.

The natural features assessment may be waived by the Director of Community Planning and Development in certain circumstances.

- M. Any other information specified by the Director of Community Planning and Development which is deemed necessary to evaluate the application.
- N. In addition to the above requirements, for zoning districts, **RD, RC, RCC, RN, and CV** and **Group Housing Residential Developments** the following is required:
1. Existing and proposed contours of the property at two foot intervals based on United States Geological Survey (USGS) data.
 2. Preliminary engineering reports in accordance with the adopted Township water and sewer standards, together with a letter of review from the Township Engineer.
 3. Ten copies of a report on the intent and scope of the project including, but not limited to: Number, size, volume, and dimensions of buildings; number and size of living units; basis of calculations of floor area and density and required parking; number, size, and type of parking spaces; architectural sketches of proposed buildings.
 4. Seven copies of the project plans which the Township shall submit to local agencies for review and comments.
- O. In addition to the above requirements, a special use application in zoning district **RP** requires the following material as part of the site plan:
1. A description of the operations proposed in sufficient detail to indicate the effects of those operations in producing traffic congestion, noise, glare, air pollution, water pollution, fire hazards or safety hazards or the emission of any potentially harmful or obnoxious matter or radiation.
 2. Engineering and architectural plans for the treatment and disposal of sewerage and industrial waste tailings, or unusable by-products.
 3. Engineering and architectural plans for the handling of any excessive traffic congestion, noise, glare, air pollution, or the emission of any potentially harmful or obnoxious matter or radiation.
- P. In addition to the above requirements, a special use application for a use in the Floodway Fringe of zoning district **CV** requires the following:
1. A letter of approval from the State Department of Environmental Quality.
 2. A location map including existing topographic data at two-foot interval contours at a scale of one inch representing 100 feet.
 3. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits, extent, and elevations of the proposed fill, excavation, and occupation.
 4. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- Q. In addition to the above requirements, a special use application for a use in the Groundwater Recharge area or zoning district **CV** requires the following:
1. A location map including existing topographic data at two-foot interval contours.
 2. A map showing proposed grading and drainage plans including the location of all public drainage easements, the limits and extent of the proposed fill, excavation, and occupation.
 3. A statement from the County Drain Commissioner, County Health Department, and Director of Public Works and Engineering indicating that they have reviewed and approved the proposal.
- R. In addition to the above requirements, the Township Code of Ordinances, Article VI, should be reviewed for the following special uses: group housing residential developments, mobile home parks, nonresidential structures and uses in residential districts, planned community and regional shopping center developments, sand or gravel pits and quarries, sod farms, junk yards, sewage treatment and disposal installations, camps and clubs for outdoor sports and buildings greater than 25,000 square feet in gross floor area.

Part II

SUP REQUEST STANDARDS
Township Code of Ordinances, Section 86-126

Applications for Special Land Uses will be reviewed with the standards stated below. An application that complies with the standards stated in the Township Ordinance, conditions imposed pursuant to the Ordinance, other applicable Ordinances, and State and Federal statutes will be approved. Your responses to the questions below will assist the Planning Commission in its review of your application.

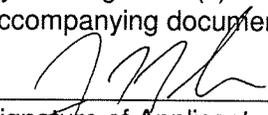
- (1) The project is consistent with the intent and purposes of this chapter.
- (2) The project is consistent with applicable land use policies contained in the Township's Master Plan of current adoption.
- (3) The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area.
- (4) The project will not adversely affect or be hazardous to existing neighboring uses.
- (5) The project will not be detrimental to the economic welfare of surrounding properties or the community.
- (6) The project is adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service.
- (7) The project is adequately served by public sanitation facilities if so designed. If on-site sanitation facilities for sewage disposal, potable water supply, and storm water are proposed, they shall be properly designed and capable of handling the longterm needs of the proposed project.
- (8) The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors.
- (9) The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township, including, but not limited to, prime agricultural soils, water recharge areas, lakes, rivers, streams, major forests, wetlands, and wildlife areas.

Part III

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

Yes No (Please check one)

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



Signature of Applicant

02/13/2020
Date

Joe Neller
Type/Print Name

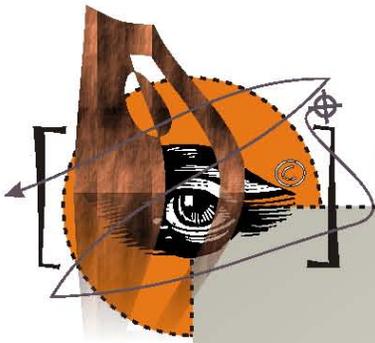
Fee: _____

Received by/Date: _____

Special Use Permit Application Attachment
Site Plan Requirements Per Section 86-124(c)(4)

A site plan, drawn to a legible scale, containing the following information where applicable:

- a. Boundaries of the subject property.
- b. Total area of the subject property.
- c. Location of all existing and proposed structures.
- d. Approximate location and distance of all structures within 100 feet of the subject property.
- e. Uses of existing and proposed buildings, on the subject site.
- f. Proposed means of vehicular and pedestrian ingress and egress to the subject property.
- g. Public and private roads and streets, rights-of-way, and easements, indicating names and widths, which abut or cross the site.
- h. Existing and proposed parking spaces, and vehicular and pedestrian circulation patterns.
- i. The buildable area of the subject property indicating all required setbacks, yards and open space.
- j. Zoning classification of the subject and adjacent properties.
- k. Existing and proposed fencing, screening, landscaping, and buffers.
- l. Location and sizes of existing utilities including power lines and towers, both above and below the ground.
- m. Amount and location of all impervious surfaces.
- n. The verified boundaries of all natural water features and required setback lines.



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David C. VanderKlok,
AIA, NCARB

Kenneth L. Jones II
AIA, NCARB

February 13th, 2020

**Skymint Medical Marijuana Provisioning Center
33-02-02-127-003 Northwind Dr. Okemos, MI 48864
Architects Job number: # 19.098**

Written Support Material to Application for Special Use Permit Application

The proposed project includes parcel 20-127-003 and a portion of parcels 20-127-002 as needed to meet the minimum lot width and frontage required. The proposed project is to construct a 2,700.4 s.f. single story Medical Marijuana Provisioning Center on the vacant parcel.

The natural features present on the primary parcel will be minimally impacted. Two of the three existing surveyed trees larger than 12" Dia. shall be retained. The parcel is not located in floodways or floodplains and there are no wetlands or waterbodies on site. Please see attached site plan for further details. The project is not expected to endanger wildlife.

In response to the standards outlined in section 86-126 of the Township Code of Ordinances, the proposed project intends to be consistent with the intent and purposes of the chapter. The project will comply with applicable land use policies contained in the Township's Master Plan of current adoption. The project is designed, constructed, operated, and maintained so as to be harmonious and appropriate in appearance with the existing or intended character of the general vicinity and that such a use will not change the essential character of the same area. The project will not adversely affect or be hazardous to existing neighboring uses. The project will not be detrimental to the economic welfare of surrounding properties or the community. The project will be adequately served by public facilities, such as existing roads, schools, stormwater drainage, public safety, public transportation, and public recreation, or that the persons or agencies responsible for the establishment of the proposed use shall be able to provide any such service. The project will adequately serve public sanitation. The project will not involve uses, activities, processes, materials, and equipment and conditions of operation that will be detrimental to any persons, property, or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare, or odors. The project will not directly or indirectly have a substantial adverse impact on the natural resources of the Township.

Please feel free to contact Studio [intrigue] Architects at (517) 372-8804 if you have any questions.

architectural design

interiors

master planning

feasibility studies

construction
drawings

renderings

specifications

ADA studies

ordinance research

code research

logo design

graphic design

furniture design

brochure design

NCARB



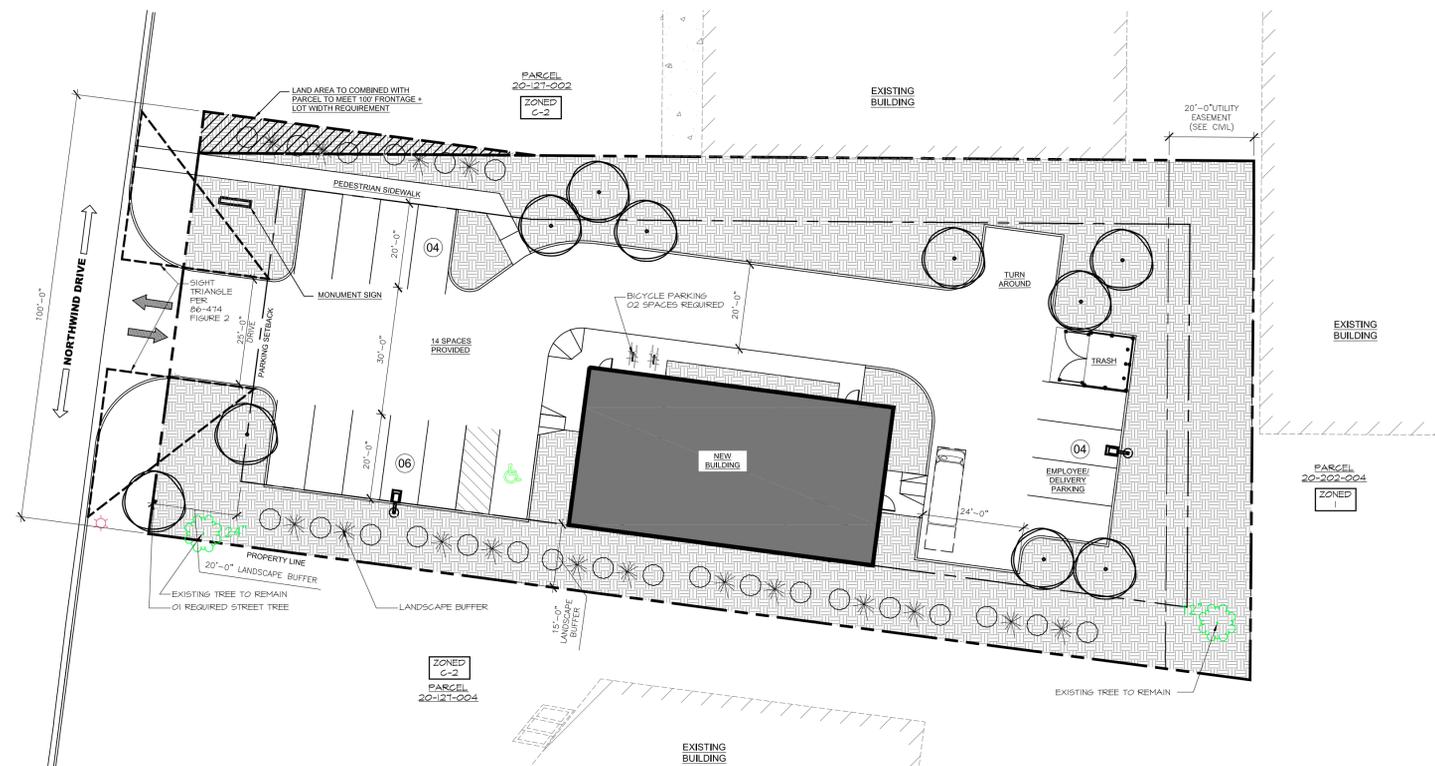
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517.372.8804 PHONE ✕ 517.372.8805 FAX ✕ WWW.STUDIOINTRIGUE.COM





SITE LOCATION
PARCEL 20-127-003

PARCEL MAP
N.T.S.



**NORTHWIND DRIVE
PARCEL 20-127-003
GRAPHIC SITE PLAN**

1"=20'-0"

SITE DATA	
ZONING=	C-2 (COMMERCIAL)
PARCEL AREA=	± 0.629 ACRES
NEW BUILDING AREA=	± 12,700.4 S.F.
IMPERVIOUS AREA=	± 19,546.25 SF (± 49.4% LOT AREA) 49.4% < 70% MAX
PARKING REQUIREMENTS:	
RETAIL (NON-SPECIFIC UNDER 25,000 GFA)	5.5 SPACE PER 1,000 GROSS FLOOR AREA MAXIMUM.
GROSS FLOOR AREA=	± 2,556 S.F.
2,556/1,000=	2.556 X 5.5
	14.05 SPACES PERMITTED
SPACES PROVIDED=	14 SPACES

APPLICANT

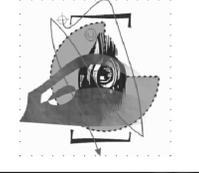
GREEN PEAK INNOVATIONS, LLC
10070 HARVEST PARK,
DIMONDALE, MI 48821
517-408-0172

SUP SUBMITTAL

02/13/20

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STATE OF MICHIGAN
KENNETH LEROY JONES
ARCHITECT
No. 1301054003
LICENSED ARCHITECT

FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

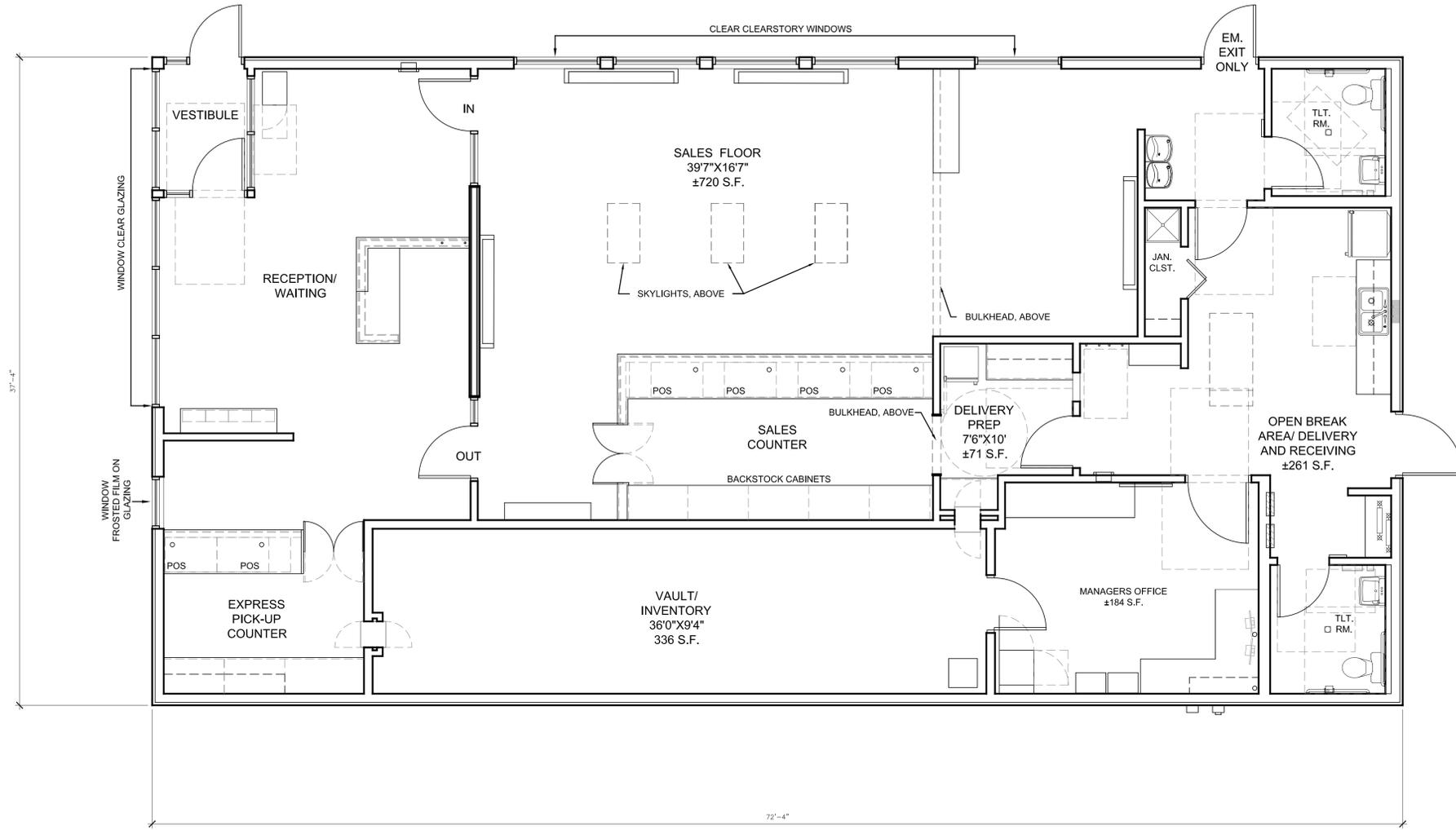
Project
**SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER**
NORTHWIND DR., PARCEL 20-127-003
OKEMOS, MI 48864

Client
**GREEN
PEAK
INNOV.**
10070 HARVEST PARK
DIMONDALE, MI 48821

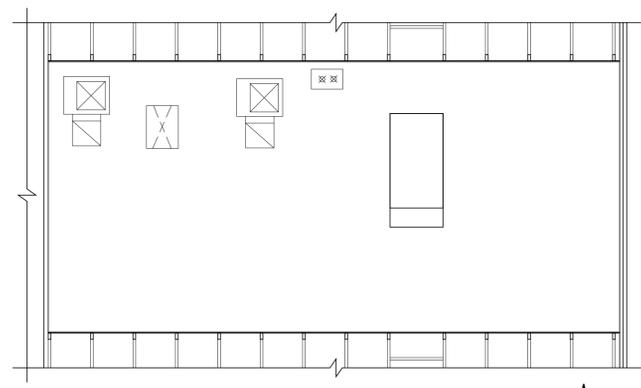
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Project Number
19.098

Sheet
C-100



GRAPHIC FLOOR PLAN
 1/4" = 1'-0"

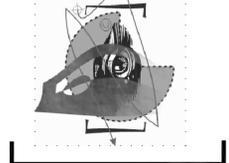


UTILITY ROOM/ ATTIC PLAN
 1/4" = 1'-0"

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 02/13/20

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FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

Project
SKYMINT
 MEDICAL MARIJUANA
 PROVISIONING CENTER
 NORTHWIND DR., PARCEL 20-127-003
 OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
 10070 HARVEST PARK
 DIMONDALE, MI 48821

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Project Number
19.098

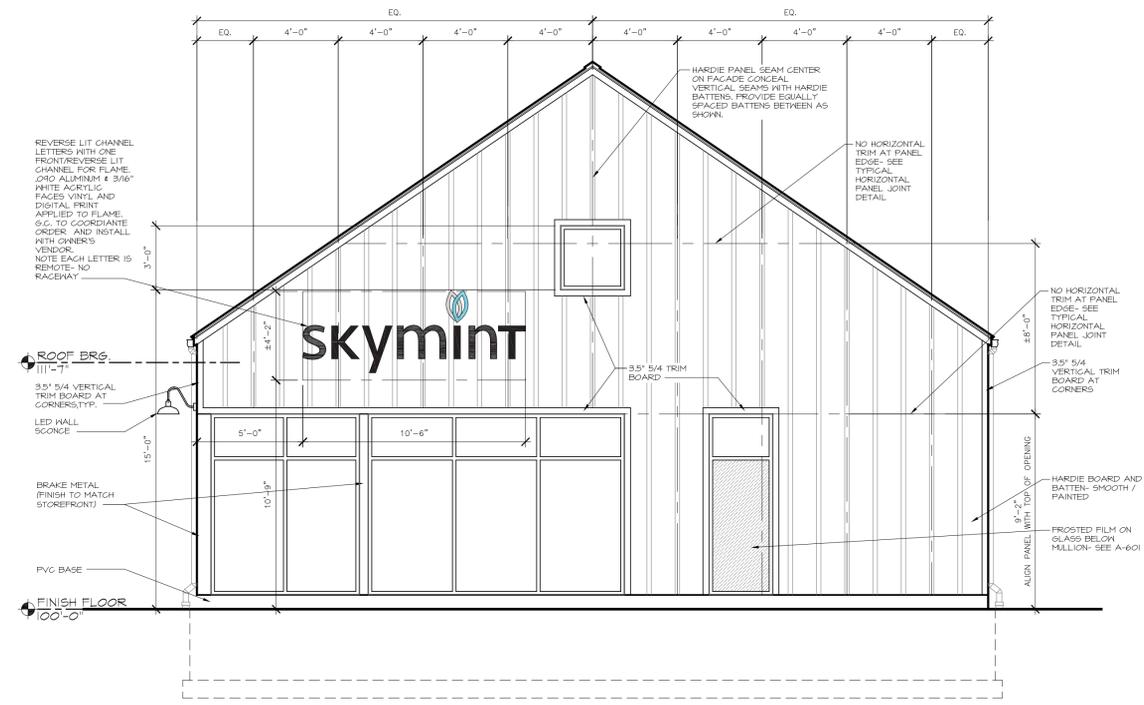
Sheet
A-101

EXTERIOR FINISH SCHEDULE					
MATERIAL	FINISH	MANUFACTURER	MODEL / TYPE / SERIES	COLOR	COMMENTS
ALUMINUM STOREFRONT	PRE-FINISHED/ ANODIZED	TBD	TBD	DARK BRONZE	-
BOARD AND BATTEN	PRE-FINISHED	JAMES HARDIE	SMOOTH	ARCTIC WHITE	SMOOTH BATTENS AND TRIM- COLOR ARCTIC WHITE
STANDING SEAM METAL ROOF	PRE-FINISHED	TBD	TBD	BLACK	SNAPLOCK SYSTEM - 1 3/4" RIBS 12" O.C. 24 GA.
FIBER CEMENT CORNER TRIM	PRE-FINISHED	JAMES HARDIE	3.5" 5/4 TRIM BOARD	TBD	-
FIBER CEMENT WINDOW / DOOR TRIM	PRE-FINISHED	JAMES HARDIE	3.5" 5/4 TRIM BOARD	TBD	-
GUTTER AND DOWNSPOUTS	PRE-FINISHED	TBD	TBD	WHITE TO MATCH HARDIE - SUBMIT SAMPLES TO ARCHITECT FOR APPROVAL	-
PVC BASE TRIM	PRE-FINISHED	PLY-SEM OR APPROVED EQUAL	5/4X16 SMOOTH TRIM BOARD	WHITE	-
METAL FLASHING	PRE-FINISHED	CMG (COATED METALS GROUP)	-	BRIGHT WHITE	-

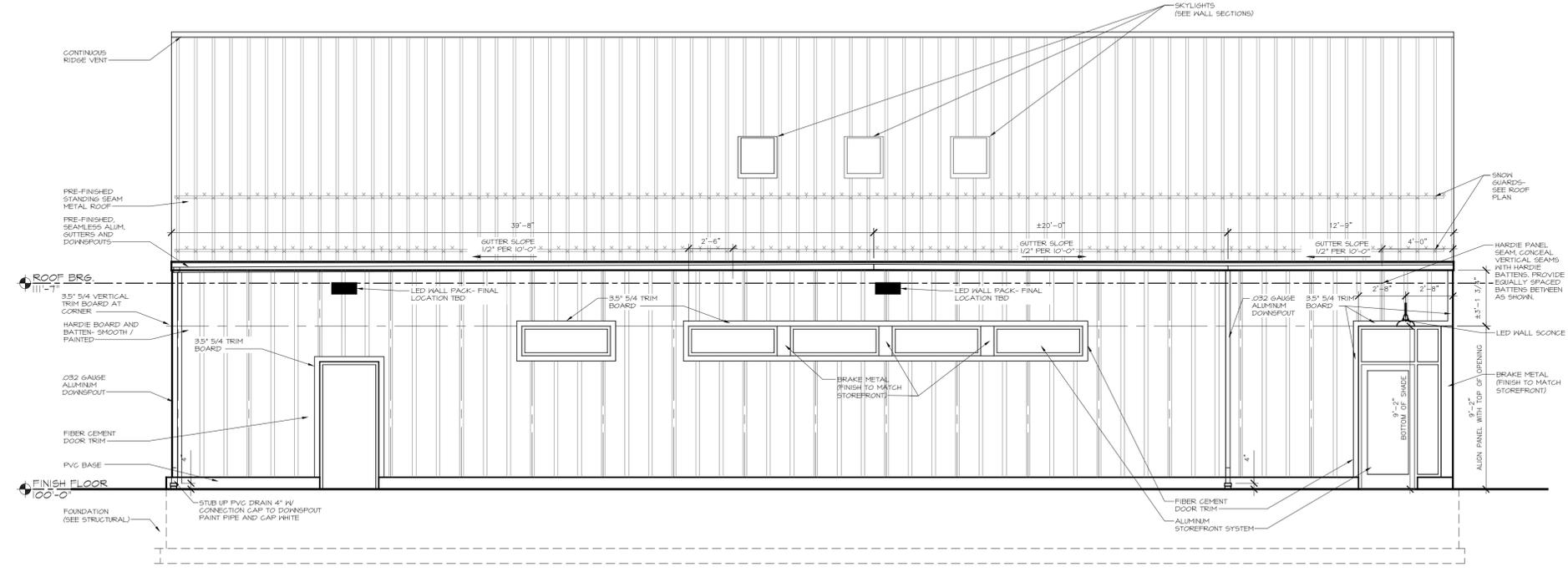
PROVIDE ALTERNATE FOR:

* STANDING SEAM METAL ROOF	PRE-FINISHED	TBD	TBD	BLACK	1 1/2" NAIL STRIP SYSTEM WITH RIBS 12" O.C. 24 GA.
----------------------------	--------------	-----	-----	-------	--

- ALL GAS PIPING SHALL BE PAINTED.
- PROVIDE SEALANT BETWEEN ALL DISSIMILAR MATERIALS - COLOR TO MATCH ADJACENT PRIMARY MATERIAL.
- ALL MASONRY SHALL RECEIVE A FIELD-APPLIED MASONRY SEALER, PROSOCCO SILOXANE OR EQUAL, WHERE MASONRY IS ADJACENT TO CONCRETE FLATWORK OR ASPHALT PAVING, THE LOWER 4'-0" OF THE MASONRY SHALL BE SEALED WITH PROSOCCO SALTGUARD OR EQUAL.



WEST ELEVATION
1/4"=1'-0"



NORTH ELEVATION
1/4"=1'-0"

SIGNAGE NOTE:

GENERAL CONTRACTOR SHALL PROVIDE SIGNAGE IN CONTRACT. PLEASE USE OWNER'S PREFERRED VENDOR FOR SIGN FABRICATION.

OWNER'S PREFERRED VENDOR:

SHAD SPRAGUE
HIGHER IMAGE SIGNS+WRAPS
PHONE: 484-464-0443
EMAIL: SHAD@HIGHERIMAGE.NET

NOTE: SIGN VENDOR IS RESPONSIBLE FOR SIGN PERMITS AND VERIFYING FINAL DESIGN COMPLIANCE WITH LOCAL ORDINANCE REQUIREMENTS

* PROVIDE SHOP DRAWINGS TO ARCHITECT AND OWNER. OWNER APPROVAL REQUIRED PRIOR TO SIGN FABRICATION.

BUILDING WALL SIGNAGE

WALL SIGNS SHALL BE ALLOWED UP TO A SIZE EQUIVALENT TO ONE SQUARE FOOT FOR EACH ONE LINEAL FOOT OF BUILDING FRONTAGE OCCUPIED.

ALLOWABLE SIGNAGE:
WEST FACADE LENGTH: 37'-4"
FACADE AREAS: 37 FEET X 1 = 37 S.F.

PROPOSED BUILDING SIGNAGE:
EAST ELEVATION SIGN 19.95 SQ. FT.

TOTAL WALL SIGN 19.95 SQ. FT. < 37 S.F. ALLOWED (OK)

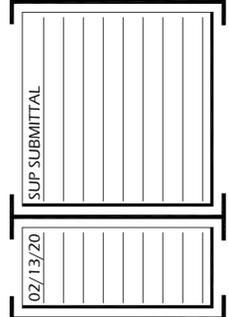
NOTE!!! THE SIGNAGE SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. DO NOT SCALE THE ARCHITECTURAL DRAWINGS FOR FABRICATION OF SIGN DRAWINGS - THESE DRAWINGS ARE NOT SHOP DRAWINGS. THE SIGN VENDOR SHALL, PRIOR TO FABRICATING ANY SIGNS, VISIT THE PROJECT SITE TO MEASURE & OBSERVE FIELD CONDITIONS.

NOTE:

FINAL FINISH SELECTIONS SHALL BE SUBMITTED TO OWNER AND ARCHITECT FOR FINAL APPROVAL PRIOR TO ORDERING OR INSTALLATION.

FACADE NOTES

- PROVIDE SEALANT AT EXTERIOR AT THE INTERSECTIONS OF ALL DISSIMILAR MATERIALS. COLOR TO MATCH THE COLOR OF THE PRIMARY ADJACENT MATERIAL.
- FIELD VERIFY ALL OPENINGS FOR ALUMINUM STOREFRONT FRAMING PRIOR TO ORDERING OF MATERIALS OR FABRICATION.
- PROVIDE ISOLATION COATING BETWEEN ALL DISSIMILAR METALS (I.E.--ALUM TO STEEL).
- FABRIC CANOPIES AND SIGNAGE SHALL BE DESIGNED AND PERMITTED BY OWNER'S SIGNAGE SUBCONTRACTOR. G.C. TO COORDINATE ORDER AND INSTALL.
- ANY SIGNAGE SHOWN IS FOR ILLUSTRATIVE PURPOSES ONLY. DO NOT SCALE THE ARCHITECTURAL DRAWINGS FOR FABRICATION OF SIGN DRAWINGS (THESE DRAWINGS ARE NOT SHOP DRAWINGS). THE SIGNAGE SUBCONTRACTOR SHALL VISIT THE PROJECT SITE TO MEASURE AND OBSERVE FIELD CONDITIONS PRIOR TO FABRICATION.
- ALL MASONRY SHALL RECEIVE A FIELD-APPLIED MASONRY SEALER/WATER REPELLENT, THE LOWER 48" OF THE MASONRY, WHERE ADJACENT TO ASPHALT/CONCRETE FLATWORK SHALL BE SEALED WITH PROSOCCO SALTGUARD OR APPROVED EQUAL; ALL OTHER AREAS SHALL BE SEALED WITH PROSOCCO SILOXANE OR APPROVED EQUAL.
- ALL EXPOSED STEEL PLATES, ANGLES AND OTHER STRUCTURAL SHAPES SHALL BE PRIMED AND PAINTED IN THE FIELD.
- ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE TREATED.
- 'BARRIER' E.I.P.S. SYSTEMS ARE NOT AN ACCEPTABLE ALTERNATIVE. INSTALLED 'BARRIER' SYSTEMS WILL BE REMOVED BY THE CONTRACTOR AT THE CONTRACTOR'S FULL EXPENSE. REINSTALLATION OF SPECIFIED SYSTEMS WILL BE COMPLETED AT NO ADDITIONAL COST TO THE OWNER.



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FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

Project
SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER

Client
GREEN PEAK INNOV.

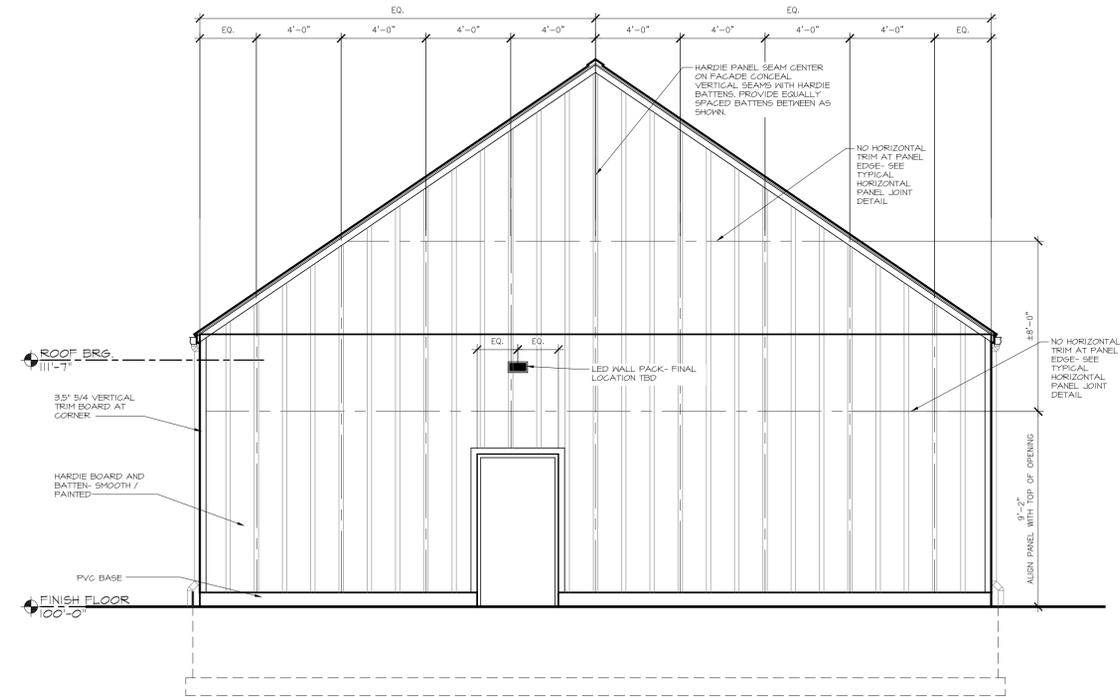
10070 HARVEST PARK
DIMONDALE, MI 48821

NORTH WIND DR., PARCEL 20-127-003
OKEMOS, MI 48864

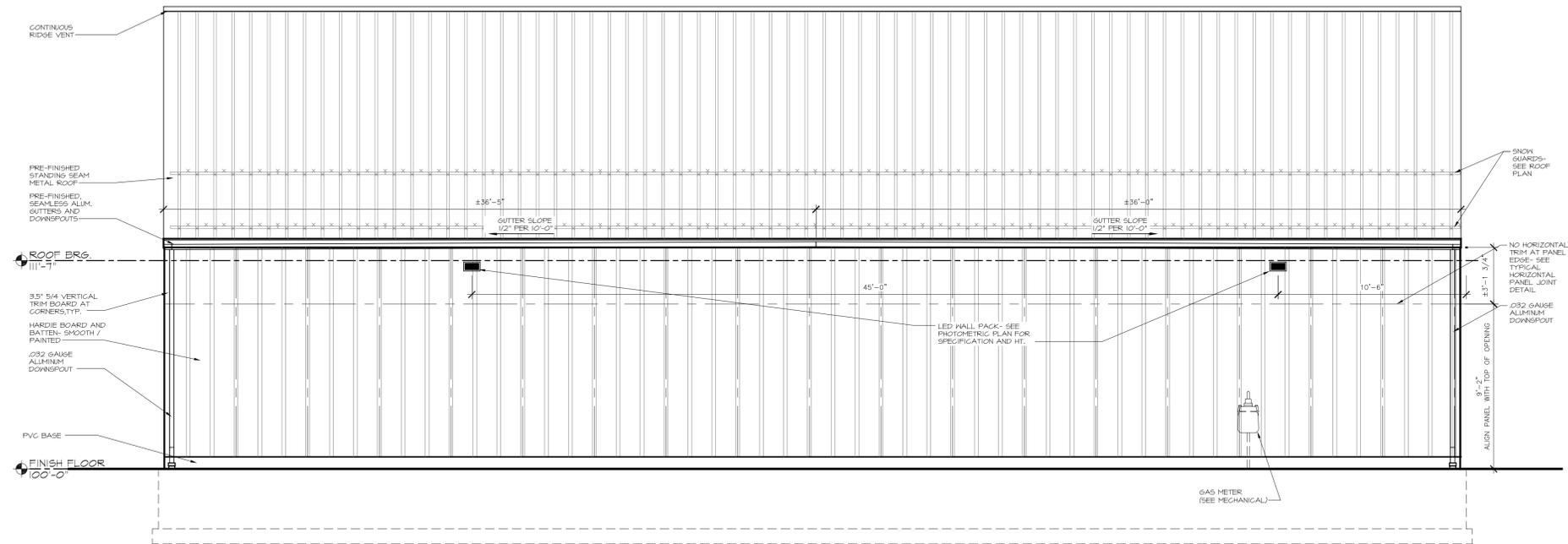
Project Number
19.098

Sheet
A-301

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EAST ELEVATION
1/4"=1'-0"



SOUTH ELEVATION
1/4"=1'-0"

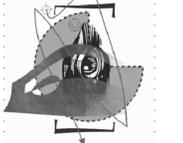
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STATE OF MICHIGAN
KENNETH LEROY JONEST
ARCHITECT
No. 1301054003
LICENSED ARCHITECT

FOR SUP SUBMITTAL

Project Type
NEW CONSTRUCTION

Project
SKYMINT MEDICAL MARIJUANA PROVISIONING CENTER
NORTH/WIND DR., PARCEL 20-127-003
OKEMOS, MI 48864

Client
GREEN PEAK INNOV.
10070 HARVEST PARK
DIMONDALE, MI 48821

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Project Number
19.098

Sheet
A-302

February 13, 2020

Mr. Kenneth Jones
Studio Intrigue Architects, LLC
1114 South Washington Avenue
Lansing, Michigan 48910

Re: Traffic Impact Analysis — Skymint Provisioning Center, Meridian Township, MI

Dear Mr. Jones:

Progressive AE has completed a review of the current and future traffic operations along M-43 (Grand River Avenue) at the intersection with Northwind Drive adjacent to the proposed marijuana provisioning center being proposed by Skymint. The following sections summarize our findings and recommendations regarding potential measures to address existing and future concerns.

INTRODUCTION

A marijuana provisioning center is being proposed on a vacant site on the east side of Northwind Drive, just south of M-43 (Grand River Avenue) in Meridian Township. Figure 1 shows the proposed location of the site. The provisioning center will include a 2,700-square-foot building with an access driveway to Northwind Drive. A copy of the site plan is included in the appendix to this report. The intersection of Northwind Drive with M-43 (Grand River Avenue) is currently signalized. For the purposes of this study, the provisioning center is assumed to be completed and fully operational this year (2020).

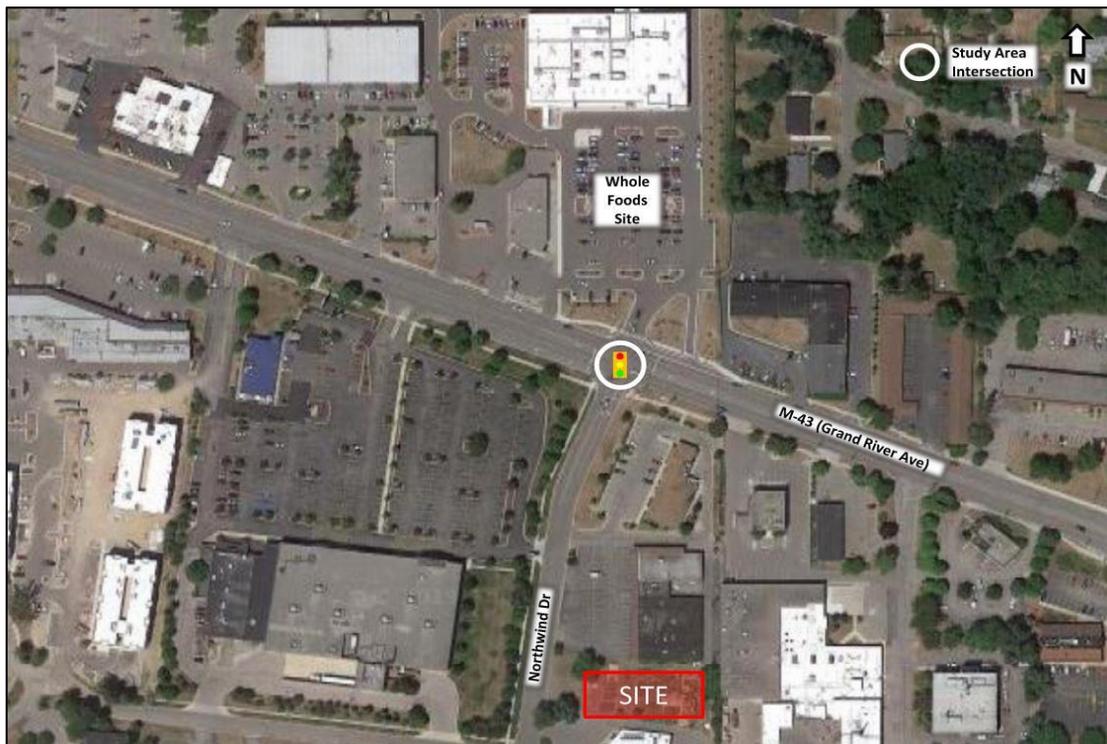


Figure 1. Location map and study area.

As part of the project approval process, the township has requested a traffic impact study be prepared to quantify the potential impacts the proposed provisioning center may have on the adjacent roadway network. The study includes analyses of the signalized M-43 (Grand River Avenue)/Northwind Drive intersection during the typical morning and afternoon peak hours.

The purpose of this traffic impact study was to analyze the potential impacts of the proposed provisioning center and to identify what physical and/or operational roadway system improvements, if any, may be necessary to mitigate existing or projected background issues, and/or impacts created by this development's traffic.

EXISTING CONDITIONS

The first step in the identification of potential traffic impacts is to determine how well the adjacent streets are operating under current conditions. The existing conditions provide a comparison to subsequent future conditions analyses. This section summarizes the data collection and existing operating conditions analysis procedures.



Northbound Northwind Drive at M-43 (Grand River Avenue)

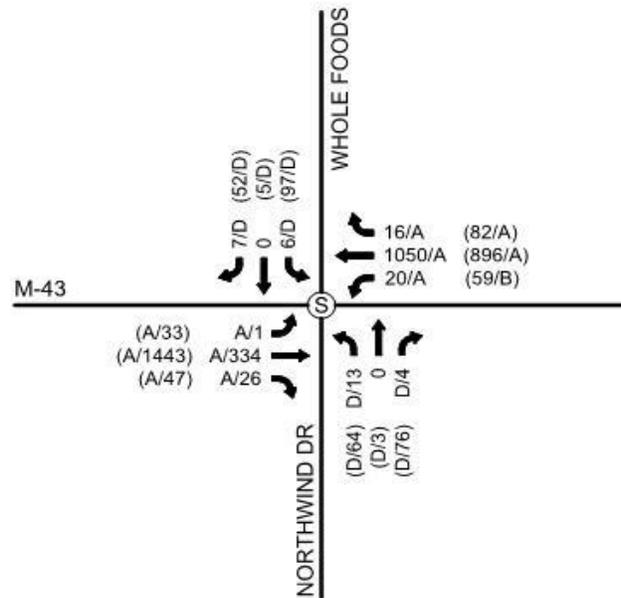
Study Area

The study area includes the signalized intersection of M-43 (Grand River Avenue) with Northwind Drive which is under the operation jurisdiction of the Michigan Department of Transportation (MDOT). The north leg of the intersection forms the driveway to the existing Whole Foods supermarket site. The existing speed limit along M-43 (Grand River Avenue) is 40 mph in the vicinity of the site. All approaches to the intersection include separate left-turn lanes. The eastbound and westbound M-43 (Grand River Avenue) approaches include separate right-turn lanes while the northbound and southbound approaches have a shared through/right-turn lane. The existing signal currently operates as a two-phase signal with a 100-second cycle length during the morning and afternoon peak-hours. Left-turn movements operate as permissive only on all approaches to the intersection.

Data Collection

Existing peak-hour turning movement counts at the M-43 (Grand River Avenue)/Northwind Drive intersection were collected on December 10, 2019. Turning movement counts were performed from 7 a.m. to 9 a.m. and from 4 p.m. to 6 p.m. Detailed printouts of the count report is included in the appendix.

These counts indicated that the weekday peak-hour generally occurs between 7:30–8:30 a.m. and 5:00–6:00 p.m. Figure 2 shows the existing peak-hour volumes at the study area intersections.



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

Figure 2. Existing Peak-Hour Volumes and LoS

Vehicle Volumes and Capacity Calculations

Intersection "level-of-service" or capacity calculations were completed to evaluate the existing operations of the M-43 (Grand River Avenue)/Northwind Drive intersection. These calculations were completed using techniques outlined in the *2000 Highway Capacity Manual*. Synchro® traffic analysis software, based on the *Highway Capacity Manual* methodologies, was used in the analysis. Levels-of-Service (LoS) at signalized intersections relate to the delay, traffic volumes, and intersection geometry. Levels of Service (LoS) are expressed in a range from "A" to "F", with "A" denoting the best operating conditions. Generally, a LoS "D" is considered the minimum acceptable service level for signalized intersections in most areas, although a LoS "E" or LoS "F" can be deemed as acceptable at times in urban areas or during the peak-hours. Criteria for determining the LoS at signalized intersections is outlined in the appendix of this report.

Results of the level-of-service analyses are shown in Table 1 and in Figure 2. The intersection currently operates at an overall LoS "A" during the morning peak-hour and LoS "B" during the afternoon peak-hour. All individual movements currently operate at LoS "D" or better during both peak hours. Copies of the Synchro® analyses are included in the appendix.

Table 1. Existing Levels-of-Service and Delay

Intersection/ Movement	Existing Conditions			
	AM		PM	
	LoS	Delay (s)	LoS	Delay (s)
M-43 (Grand River Ave) / Northwind Drive				
Overall	A	3.5	B	10.2
<i>EBL</i>	A	1.4	A	4.4
<i>EBT</i>	A	1.7	A	7.3
<i>EBR</i>	A	1.5	A	3.8
<i>WBL</i>	A	1.5	B	10.4
<i>WBT</i>	A	2.5	A	5.5
<i>WBR</i>	A	1.4	A	3.9
<i>NBL</i>	D	50.0	D	40.7
<i>NBT/R</i>	D	46.3	D	38.5
<i>SBL</i>	D	47.8	D	44.7
<i>SBT/R</i>	D	46.4	D	37.3

Source: Progressive AE, December 2019

FUTURE (2020) CONDITIONS

The purpose of this section is to summarize the anticipated future (2020) traffic conditions within the study area with background traffic growth and the proposed development traffic in place. These analyses provide the before/after comparison of anticipated conditions and help define the timing and applicability of any potential roadway improvements necessary to mitigate the impact of the proposed development.

Background Traffic Growth

The existing peak-hour volumes within the study area were increased by 1.0 percent annually to account for background traffic growth. As the analysis year for this study is 2020 (one year), existing traffic volumes were increased by 1.0 percent.

Proposed Development and Site Access

The proposed marijuana provisioning center will occupy a 2,700-square-foot building constructed on a vacant lot on the east side of Northwind Drive, just south of M-43 (Grand River Avenue). Access to the provisioning center will be via a new site driveway to Northwind Drive.

Trip Generation

Trip Generation, Tenth Edition, by the Institute of Transportation Engineers (ITE) was used to calculate the anticipated traffic that may be generated by the proposed marijuana provisioning center. Trips were calculated for the typical weekday morning and afternoon peak-hours. Table 2 shows the typical weekday peak-hour trips anticipated to be generated by the proposed development.

Table 2. Weekday Morning and Afternoon Peak-Hour Trip Generation Summary

Land Use	ITE Code	Size	AM		PM	
			Enter	Exit	Enter	Exit
Marijuana Dispensary	882	2,700 sft	16	13	30	30

Source: Progressive AE, February 2020

Trip Distribution

The directional distribution of the project-generated new trips was based upon existing travel patterns and engineering judgment. The directional distribution to/from the proposed development is expected to be approximately 60 percent to/from the west along M-43 (Grand River Avenue) and 40 percent to from the east along M-43 (Grand River Avenue). While a small portion of the trips to/from the site may be from the south on Northwind Drive, this percentage was assumed to be zero to be conservative and assign all new trips to the signalized intersection at M-43 (Grand River Avenue) and Northwind Drive.

Based upon the anticipated distribution patterns for new trips, the peak-hour development traffic was assigned to the M-43 (Grand River Avenue)/Northwind Drive intersection. Figure 3 shows the total anticipated morning and afternoon peak-hour trips for site-generated traffic upon full completion and occupancy of the proposed site.

The anticipated site trips were added to the existing peak-hour volumes to depict the estimated total future (2020) volumes during the morning and afternoon peak-hours. Figure 4 shows the total anticipated future (2020) volumes including background traffic growth and site-generated traffic.

Future (2020) Capacity Analysis

Intersection level-of-service calculations were completed to evaluate the future (2020) morning and afternoon peak-hour conditions at the M-43 (Grand River Avenue)/Northwind Drive intersection. No improvements or signal timing adjustments were made for this analysis. The results of the level-of-service analyses are shown in Table 3 and Figure 4.

As shown in Table 3 and Figure 4, the intersection is anticipated to continue to operate at an overall LoS "A" during the morning peak-hour and LoS "B" during the afternoon peak-hour. All individual movements are anticipated to continue to operate at LoS "D" or better during the morning and afternoon peak-hours. Copies of the Synchro® analyses are included in the appendix.

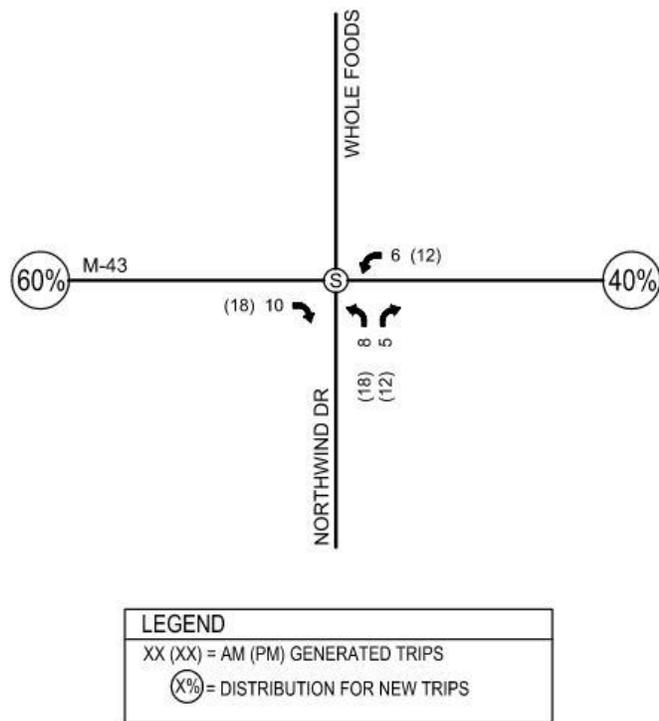


Figure 3. Future (2020) Trip Distribution

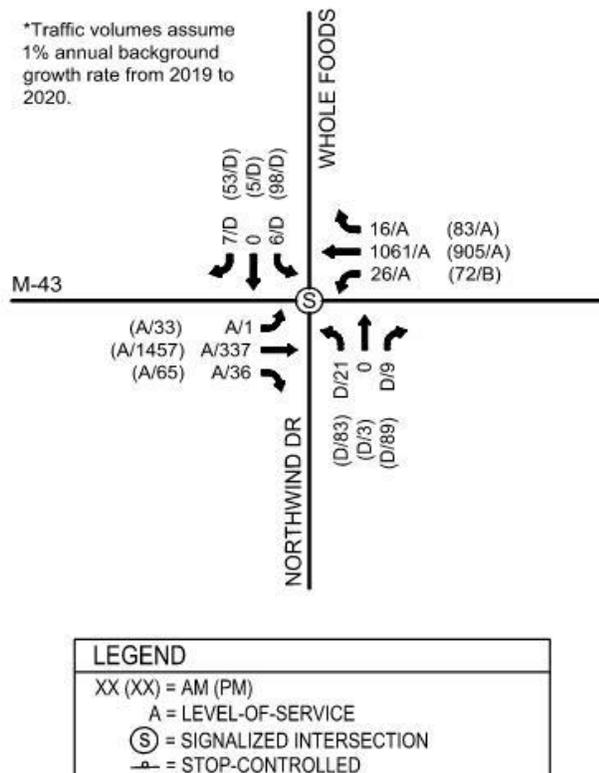


Figure 4. Future (2020) Peak-Hour Volumes and LoS

Table 3. Future (2020) Levels-of-Service and Delay

Intersection/ Movement	Existing Conditions				Future (2020) Conditions			
	AM		PM		AM		PM	
	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)	LoS	Delay (s)
M-43 (Grand River Ave) / Northwind Drive								
Overall	A	3.5	B	10.2	A	4.5	B	10.7
<i>EBL</i>	A	1.4	A	4.4	A	1.8	A	4.5
<i>EBT</i>	A	1.7	A	7.3	A	2.2	A	7.5
<i>EBR</i>	A	1.5	A	3.8	A	1.9	A	3.9
<i>WBL</i>	A	1.5	B	10.4	A	2.0	B	13.5
<i>WBT</i>	A	2.5	A	5.5	A	3.2	A	5.6
<i>WBR</i>	A	1.4	A	3.9	A	1.9	A	4.0
<i>NBL</i>	D	50.0	D	40.7	D	49.6	D	42.0
<i>NBT/R</i>	D	46.3	D	38.5	D	44.2	D	38.9
<i>SBL</i>	D	47.8	D	44.7	D	45.2	D	45.0
<i>SBT/R</i>	D	46.4	D	37.3	D	44.1	D	37.2

Source: Progressive AE, February 2020

CONCLUSIONS

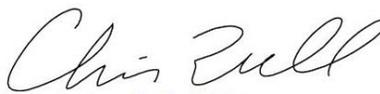
Based on the analyses performed, the future development of the proposed marijuana provisioning center will have minimal impacts to existing operations within the study area. The findings of this study are as follows:

- The proposed marijuana provisioning center is anticipated to generate 29 (16 entering, 13 exiting) new weekday morning peak-hour trips and 60 (30 entering, 30 exiting) new weekday afternoon peak-hour trips.
- The M-43 (Grand River Avenue)/Northwind Drive intersection currently operates at an overall LoS “B” or better during the morning and afternoon peak hours. All individual movements operate at LoS “D” or better during both peak hours.
- After the completion of the proposed marijuana provisioning center, the M-43 (Grand River Avenue)/Northwind Drive intersection is anticipated to continue to operate at LoS “B” or better during the morning and afternoon peak-hours. All individual movements are also anticipated to continue to operate at LoS “D” or better during both peak hours.
- The analyses show the existing M-43 (Grand River Avenue)/Northwind Drive signalized intersection has adequate capacity to handle the anticipated traffic from the proposed provisioning center. No improvements or signal timing adjustments at the intersection would be recommended based on the analyses.

Sincerely,



Nicholas D. LaCroix, PE, PTOE
Senior Transportation Engineer



Christopher E. Zull, PE
Transportation Practice Leader

NDL:smg

Enclosures

p:\89200001\03 wip\c1 pre design\traffic study\reports\2020 02 13 draft\2020 02 13 skymint provisioning center tis.docx

Technical Appendix
Skymint Provisioning Center TIS

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

Level of Service Definitions

Signalized Intersections

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

Level of Service Definitions

Unsignalized Intersections

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

Glossary

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

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

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

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

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

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

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

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

Cycle: Any complete sequence of traffic signal indications.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Unsignalized Intersection: Any intersection not controlled by traffic signals.

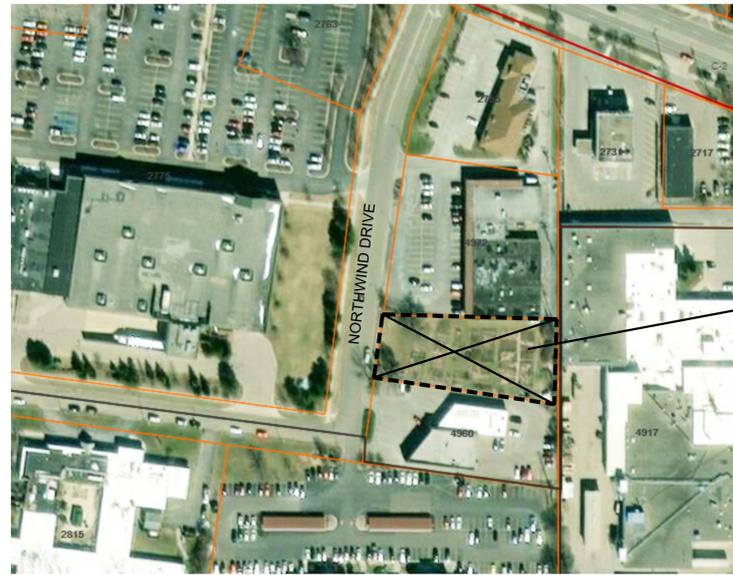
Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

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

Site Plan

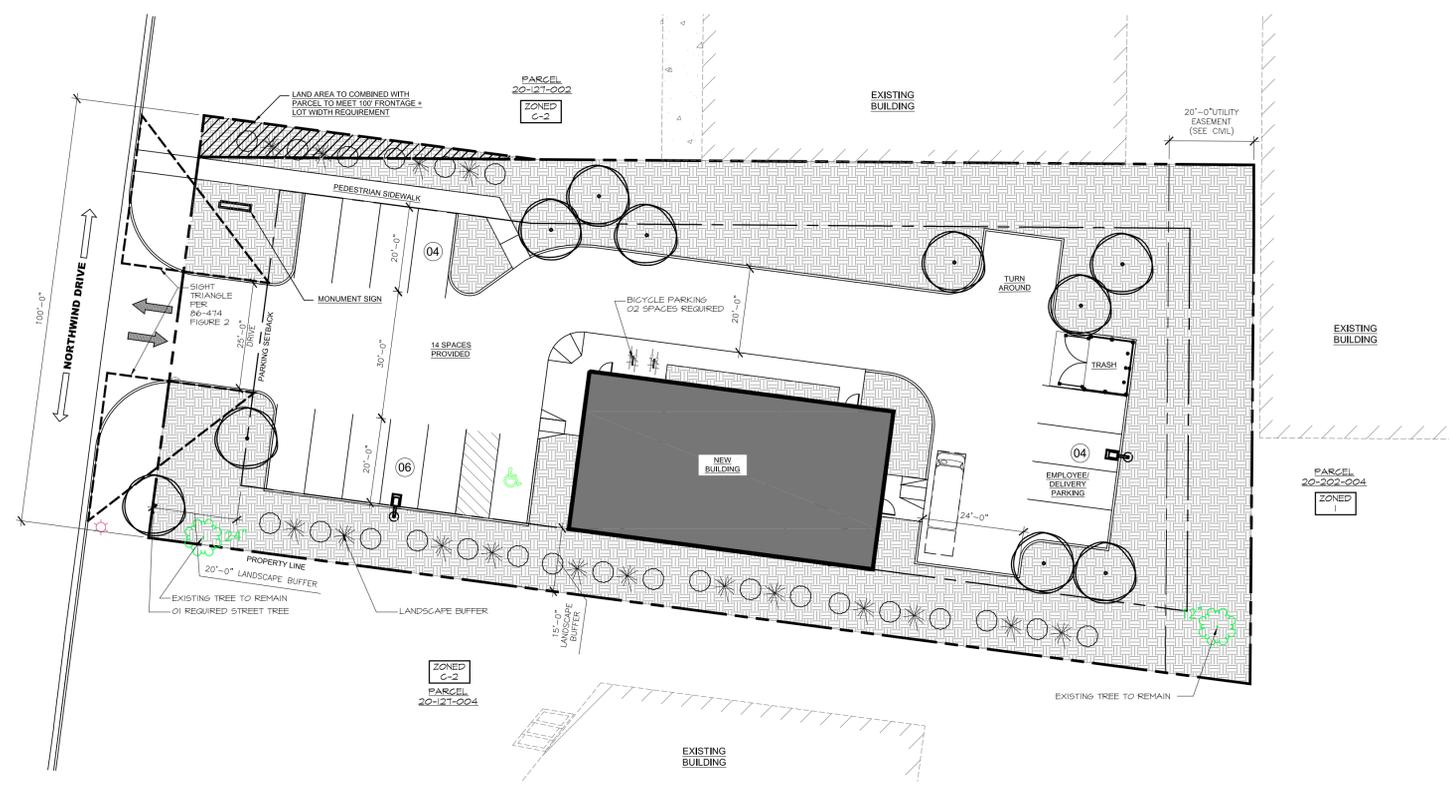
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NOT FOR
CONSTRUCTION**

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**SITE LOCATION
PARCEL 20-127-003**

PARCEL MAP
N.T.S.



**NORTHWIND DRIVE
PARCEL 20-127-003
GRAPHIC SITE PLAN**

1"=20'-0"

SITE DATA

ZONING= C-2 (COMMERCIAL)
 PARCEL AREA= ± 0.629 ACRES
 NEW BUILDING AREA= ±2,700.4 S.F.
 IMPERVIOUS AREA= ±19,546.25 SF (±49.4% LOT AREA)
 49.4% < 70% MAX

PARKING REQUIREMENTS:
 RETAIL (NON-SPECIFIC UNDER 25,000 GFA) 5.5 SPACE PER 1,000 GROSS FLOOR AREA MAXIMUM.
 GROSS FLOOR AREA= ±2,556 S.F.
 2,556/1,000= 2.556 X 5.5
 14.05 SPACES PERMITTED
 SPACES PROVIDED= 14 SPACES

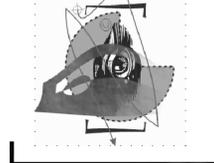
APPLICANT
GREEN PEAK INNOVATIONS, LLC
 10070 HARVEST PARK,
 DIMONDALE, MI 48821
 # 517-408-0172

SUP SUBMITTAL

02/11/20

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Project Type
NEW CONSTRUCTION

Project
**SKYMINT
MEDICAL MARIJUANA
PROVISIONING CENTER**
 NORTHWIND DR., PARCEL 20-127-003
 OKEMOS, MI 48864

Client
**GREEN
PEAK
INNOV.**
 10070 HARVEST PARK
 DIMONDALE, MI 48821

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Project Number
19.098

Sheet
C-100

Traffic Count Data



Progressive AE
1811 4 Mile Rd NE

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

Count Name: M-43 at Northwind Dr
Site Code:
Start Date: 12/10/2019
Page No: 1

Turning Movement Data

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	52	2	1	54	0	124	3	0	127	8	0	1	0	9	2	0	0	0	2	192
7:15 AM	0	58	1	0	59	3	204	0	0	207	3	0	2	0	5	1	0	0	0	1	272
7:30 AM	0	76	2	0	78	2	277	2	0	281	4	0	2	0	6	1	0	0	0	1	366
7:45 AM	1	89	6	0	96	2	298	4	0	304	3	0	1	1	4	2	0	1	0	3	407
Hourly Total	1	275	11	1	287	7	903	9	0	919	18	0	6	1	24	6	0	1	0	7	1237
8:00 AM	0	78	6	0	84	7	250	8	0	265	1	0	1	0	2	1	0	3	1	4	355
8:15 AM	0	91	12	0	103	9	225	2	0	236	5	0	0	0	5	2	0	3	0	5	349
8:30 AM	2	106	5	0	113	3	216	8	0	227	5	0	2	0	7	3	0	0	0	3	350
8:45 AM	3	90	2	1	95	18	244	6	0	268	4	0	2	0	6	2	0	4	0	6	375
Hourly Total	5	365	25	1	395	37	935	24	0	996	15	0	5	0	20	8	0	10	1	18	1429
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	305	8	0	317	15	205	14	1	234	18	0	21	1	39	26	0	10	1	36	626
4:15 PM	9	295	12	1	316	14	211	14	0	239	13	0	13	1	26	18	1	9	1	28	609
4:30 PM	8	308	5	3	321	13	203	13	0	229	32	1	28	0	61	21	3	10	1	34	645
4:45 PM	11	332	6	0	349	15	191	19	0	225	14	0	15	0	29	16	2	14	1	32	635
Hourly Total	32	1240	31	4	1303	57	810	60	1	927	77	1	77	2	155	81	6	43	4	130	2515
5:00 PM	6	381	11	0	398	9	200	10	0	219	18	0	22	1	40	22	0	17	0	39	696
5:15 PM	5	384	9	1	398	21	242	21	0	284	17	1	16	1	34	25	2	10	0	37	753
5:30 PM	12	355	13	0	380	18	226	22	0	266	14	0	19	0	33	22	2	12	0	36	715
5:45 PM	10	323	14	2	347	11	228	29	0	268	15	2	19	0	36	28	1	13	0	42	693
Hourly Total	33	1443	47	3	1523	59	896	82	0	1037	64	3	76	2	143	97	5	52	0	154	2857
Grand Total	71	3323	114	9	3508	160	3544	175	1	3879	174	4	164	5	342	192	11	106	5	309	8038
Approach %	2.0	94.7	3.2	-	-	4.1	91.4	4.5	-	-	50.9	1.2	48.0	-	-	62.1	3.6	34.3	-	-	-
Total %	0.9	41.3	1.4	-	43.6	2.0	44.1	2.2	-	48.3	2.2	0.0	2.0	-	4.3	2.4	0.1	1.3	-	3.8	-
Lights	70	3265	113	-	3448	159	3487	171	-	3817	173	4	161	-	338	190	11	105	-	306	7909
% Lights	98.6	98.3	99.1	-	98.3	99.4	98.4	97.7	-	98.4	99.4	100.0	98.2	-	98.8	99.0	100.0	99.1	-	99.0	98.4
Mediums	0	52	1	-	53	1	43	3	-	47	0	0	3	-	3	2	0	1	-	3	106
% Mediums	0.0	1.6	0.9	-	1.5	0.6	1.2	1.7	-	1.2	0.0	0.0	1.8	-	0.9	1.0	0.0	0.9	-	1.0	1.3
Articulated Trucks	1	6	0	-	7	0	14	1	-	15	1	0	0	-	1	0	0	0	-	0	23
% Articulated Trucks	1.4	0.2	0.0	-	0.2	0.0	0.4	0.6	-	0.4	0.6	0.0	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.3
Pedestrians	-	-	-	9	-	-	-	-	1	-	-	-	-	5	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (7:30 AM)

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:30 AM	0	76	2	0	78	2	277	2	0	281	4	0	2	0	6	1	0	0	0	1	366
7:45 AM	1	89	6	0	96	2	298	4	0	304	3	0	1	1	4	2	0	1	0	3	407
8:00 AM	0	78	6	0	84	7	250	8	0	265	1	0	1	0	2	1	0	3	1	4	355
8:15 AM	0	91	12	0	103	9	225	2	0	236	5	0	0	0	5	2	0	3	0	5	349
Total	1	334	26	0	361	20	1050	16	0	1086	13	0	4	1	17	6	0	7	1	13	1477
Approach %	0.3	92.5	7.2	-	-	1.8	96.7	1.5	-	-	76.5	0.0	23.5	-	-	46.2	0.0	53.8	-	-	-
Total %	0.1	22.6	1.8	-	24.4	1.4	71.1	1.1	-	73.5	0.9	0.0	0.3	-	1.2	0.4	0.0	0.5	-	0.9	-
PHF	0.250	0.918	0.542	-	0.876	0.556	0.881	0.500	-	0.893	0.650	0.000	0.500	-	0.708	0.750	0.000	0.583	-	0.650	0.907
Lights	0	314	25	-	339	20	1036	14	-	1070	12	0	3	-	15	6	0	6	-	12	1436
% Lights	0.0	94.0	96.2	-	93.9	100.0	98.7	87.5	-	98.5	92.3	-	75.0	-	88.2	100.0	-	85.7	-	92.3	97.2
Mediums	0	14	1	-	15	0	9	1	-	10	0	0	1	-	1	0	0	1	-	1	27
% Mediums	0.0	4.2	3.8	-	4.2	0.0	0.9	6.3	-	0.9	0.0	-	25.0	-	5.9	0.0	-	14.3	-	7.7	1.8
Articulated Trucks	1	6	0	-	7	0	5	1	-	6	1	0	0	-	1	0	0	0	-	0	14
% Articulated Trucks	100.0	1.8	0.0	-	1.9	0.0	0.5	6.3	-	0.6	7.7	-	0.0	-	5.9	0.0	-	0.0	-	0.0	0.9
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Progressive AE
1811 4 Mile Rd NE

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

Count Name: M-43 at Northwind Dr
Site Code:
Start Date: 12/10/2019
Page No: 3

Turning Movement Peak Hour Data (5:00 PM)

Start Time	M-43 (Grand River Ave) Eastbound					M-43 (Grand River Ave) Westbound					Northwind Dr Northbound					Whole Foods Drwy Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 PM	6	381	11	0	398	9	200	10	0	219	18	0	22	1	40	22	0	17	0	39	696
5:15 PM	5	384	9	1	398	21	242	21	0	284	17	1	16	1	34	25	2	10	0	37	753
5:30 PM	12	355	13	0	380	18	226	22	0	266	14	0	19	0	33	22	2	12	0	36	715
5:45 PM	10	323	14	2	347	11	228	29	0	268	15	2	19	0	36	28	1	13	0	42	693
Total	33	1443	47	3	1523	59	896	82	0	1037	64	3	76	2	143	97	5	52	0	154	2857
Approach %	2.2	94.7	3.1	-	-	5.7	86.4	7.9	-	-	44.8	2.1	53.1	-	-	63.0	3.2	33.8	-	-	-
Total %	1.2	50.5	1.6	-	53.3	2.1	31.4	2.9	-	36.3	2.2	0.1	2.7	-	5.0	3.4	0.2	1.8	-	5.4	-
PHF	0.688	0.939	0.839	-	0.957	0.702	0.926	0.707	-	0.913	0.889	0.375	0.864	-	0.894	0.866	0.625	0.765	-	0.917	0.949
Lights	33	1433	47	-	1513	59	886	82	-	1027	64	3	76	-	143	97	5	52	-	154	2837
% Lights	100.0	99.3	100.0	-	99.3	100.0	98.9	100.0	-	99.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	100.0	99.3
Mediums	0	10	0	-	10	0	10	0	-	10	0	0	0	-	0	0	0	0	-	0	20
% Mediums	0.0	0.7	0.0	-	0.7	0.0	1.1	0.0	-	1.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	3	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Synchro Analysis Results

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

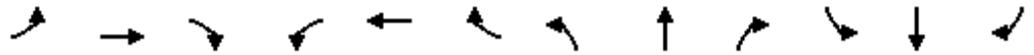
Skymint - Meridian Twp
 Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	1	334	26	20	1050	16	13	0	4	6	0	7
Future Volume (vph)	1	334	26	20	1050	16	13	0	4	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	3406	1490	1767	3539	1548	1612	1442		1671	1495	
Flt Permitted	0.23	1.00	1.00	0.53	1.00	1.00	1.00	1.00		1.00	1.00	
Satd. Flow (perm)	414	3406	1490	979	3539	1548	1696	1442		1759	1495	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.71	0.71	0.71	0.65	0.65	0.65
Adj. Flow (vph)	1	380	30	22	1180	18	18	0	6	9	0	11
RTOR Reduction (vph)	0	0	5	0	0	3	0	6	0	0	11	0
Lane Group Flow (vph)	1	380	25	22	1180	15	18	0	0	9	0	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	12%	12%	12%	8%	8%	8%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	83.2	83.2	83.2	83.2	83.2	83.2	3.8	3.8		3.8	3.8	
Effective Green, g (s)	83.2	83.2	83.2	83.2	83.2	83.2	3.8	3.8		3.8	3.8	
Actuated g/C Ratio	0.83	0.83	0.83	0.83	0.83	0.83	0.04	0.04		0.04	0.04	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	344	2833	1239	814	2944	1287	64	54		66	56	
v/s Ratio Prot		0.11			c0.33			0.00			0.00	
v/s Ratio Perm	0.00		0.02	0.02		0.01	c0.01			0.01		
v/c Ratio	0.00	0.13	0.02	0.03	0.40	0.01	0.28	0.00		0.14	0.01	
Uniform Delay, d1	1.4	1.6	1.4	1.4	2.1	1.4	46.8	46.3		46.5	46.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.1	0.4	0.0	3.3	0.0		1.3	0.1	
Delay (s)	1.4	1.7	1.5	1.5	2.5	1.4	50.0	46.3		47.8	46.4	
Level of Service	A	A	A	A	A	A	D	D		D	D	
Approach Delay (s)		1.7			2.5			49.1			47.0	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			3.5	HCM 2000 Level of Service						A		
HCM 2000 Volume to Capacity ratio			0.40									
Actuated Cycle Length (s)			100.0	Sum of lost time (s)						13.0		
Intersection Capacity Utilization			48.3%	ICU Level of Service						A		
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

Skymint - Meridian Twp
 Existing PM Peak



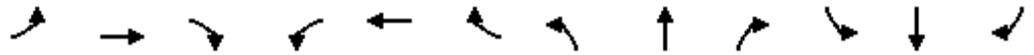
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗		↘	↗	
Traffic Volume (vph)	33	1443	47	59	896	82	64	3	76	97	5	52
Future Volume (vph)	33	1443	47	59	896	82	64	3	76	97	5	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3574	1560	1786	3574	1599	1800	1625		1805	1615	
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.72	1.00		0.70	1.00	
Satd. Flow (perm)	509	3574	1560	251	3574	1599	1358	1625		1330	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	35	1519	49	65	985	90	72	3	85	105	5	57
RTOR Reduction (vph)	0	0	13	0	0	24	0	45	0	0	49	0
Lane Group Flow (vph)	35	1519	36	65	985	66	72	43	0	105	13	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	72.9	72.9	72.9	72.9	72.9	72.9	14.1	14.1		14.1	14.1	
Effective Green, g (s)	72.9	72.9	72.9	72.9	72.9	72.9	14.1	14.1		14.1	14.1	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.14	0.14		0.14	0.14	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	371	2605	1137	182	2605	1165	191	229		187	227	
v/s Ratio Prot		c0.42			0.28			0.03			0.01	
v/s Ratio Perm	0.07		0.02	0.26		0.04	0.05			c0.08		
v/c Ratio	0.09	0.58	0.03	0.36	0.38	0.06	0.38	0.19		0.56	0.06	
Uniform Delay, d1	3.9	6.4	3.8	5.0	5.1	3.8	39.0	37.9		40.1	37.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.0	0.1	5.4	0.4	0.1	1.7	0.5		4.6	0.1	
Delay (s)	4.4	7.3	3.8	10.4	5.5	3.9	40.7	38.5		44.7	37.3	
Level of Service	A	A	A	B	A	A	D	D		D	D	
Approach Delay (s)		7.2			5.6			39.4			42.0	
Approach LOS		A			A			D			D	

Intersection Summary		
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.58	B
Actuated Cycle Length (s)	100.0	Sum of lost time (s)
Intersection Capacity Utilization	73.1%	13.0
Analysis Period (min)	15	ICU Level of Service
		D

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

Skymint - Meridian Twp
 Future (2020) AM Peak



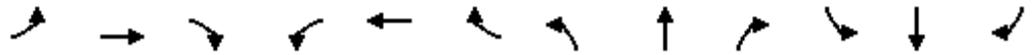
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗		↖	↗	
Traffic Volume (vph)	1	337	36	26	1061	16	21	0	9	6	0	7
Future Volume (vph)	1	337	36	26	1061	16	21	0	9	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	3406	1490	1767	3539	1548	1612	1442		1671	1495	
Flt Permitted	0.22	1.00	1.00	0.52	1.00	1.00	0.75	1.00		0.75	1.00	
Satd. Flow (perm)	401	3406	1490	977	3539	1548	1273	1442		1318	1495	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.71	0.71	0.71	0.65	0.65	0.65
Adj. Flow (vph)	1	383	41	29	1192	18	30	0	13	9	0	11
RTOR Reduction (vph)	0	0	8	0	0	3	0	12	0	0	10	0
Lane Group Flow (vph)	1	383	33	29	1192	15	30	1	0	9	1	0
Confl. Peds. (#/hr)	1		1	1		1						
Heavy Vehicles (%)	6%	6%	6%	2%	2%	2%	12%	12%	12%	8%	8%	8%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	80.9	80.9	80.9	80.9	80.9	80.9	6.1	6.1		6.1	6.1	
Effective Green, g (s)	80.9	80.9	80.9	80.9	80.9	80.9	6.1	6.1		6.1	6.1	
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81	0.81	0.06	0.06		0.06	0.06	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	324	2755	1205	790	2863	1252	77	87		80	91	
v/s Ratio Prot		0.11			c0.34			0.00			0.00	
v/s Ratio Perm	0.00		0.02	0.03		0.01	c0.02			0.01		
v/c Ratio	0.00	0.14	0.03	0.04	0.42	0.01	0.39	0.01		0.11	0.01	
Uniform Delay, d1	1.8	2.1	1.9	1.9	2.8	1.8	45.2	44.1		44.4	44.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.1	0.0	0.1	0.4	0.0	4.4	0.1		0.9	0.0	
Delay (s)	1.8	2.2	1.9	2.0	3.2	1.9	49.6	44.2		45.2	44.1	
Level of Service	A	A	A	A	A	A	D	D		D	D	
Approach Delay (s)		2.1			3.1			47.9			44.6	
Approach LOS		A			A			D			D	

Intersection Summary		
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.41	A
Actuated Cycle Length (s)	100.0	Sum of lost time (s)
Intersection Capacity Utilization	48.3%	13.0
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 1: Northwind Dr/Whole Foods Drwy & M-43 (Grand River Ave)

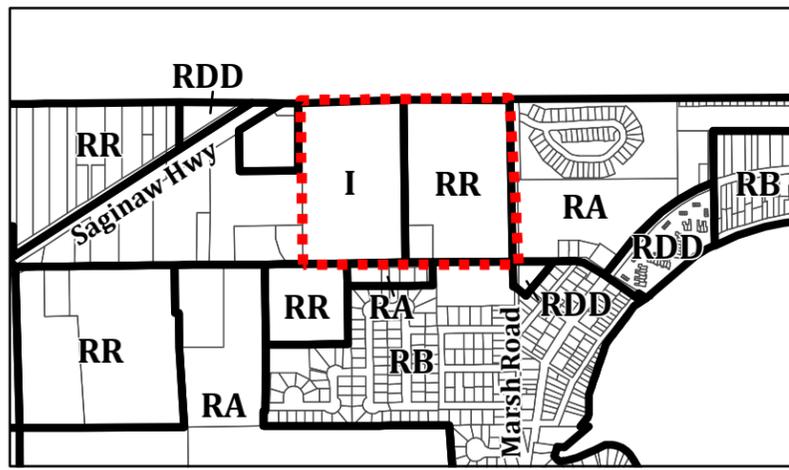
Skymint - Meridian Twp
 Future (2020) PM Peak



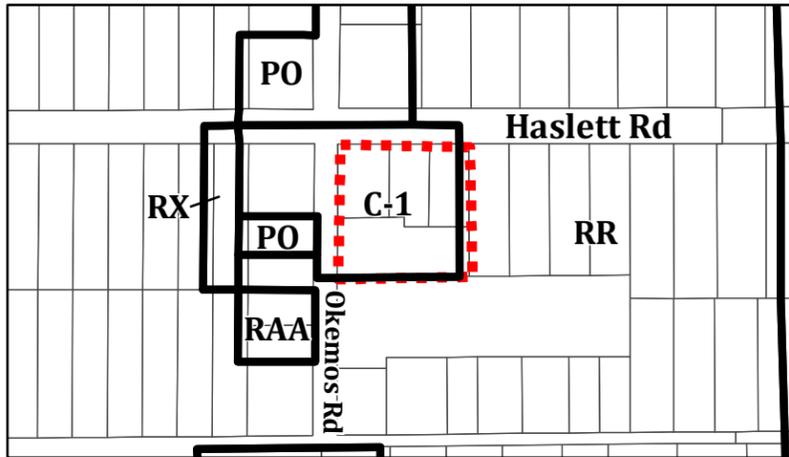
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗		↘	↗	
Traffic Volume (vph)	33	1457	65	72	905	83	83	3	89	98	5	53
Future Volume (vph)	33	1457	65	72	905	83	83	3	89	98	5	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3574	1560	1787	3574	1599	1800	1623		1805	1615	
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.72	1.00		0.69	1.00	
Satd. Flow (perm)	502	3574	1560	244	3574	1599	1356	1623		1312	1615	
Peak-hour factor, PHF	0.95	0.95	0.95	0.91	0.91	0.91	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	35	1534	68	79	995	91	93	3	100	107	5	58
RTOR Reduction (vph)	0	0	19	0	0	25	0	43	0	0	50	0
Lane Group Flow (vph)	35	1534	49	79	995	66	93	60	0	107	13	0
Confl. Peds. (#/hr)			2	2			3					3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4			8		
Actuated Green, G (s)	72.7	72.7	72.7	72.7	72.7	72.7	14.3	14.3		14.3	14.3	
Effective Green, g (s)	72.7	72.7	72.7	72.7	72.7	72.7	14.3	14.3		14.3	14.3	
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.14	0.14		0.14	0.14	
Clearance Time (s)	5.9	5.9	5.9	5.9	5.9	5.9	7.1	7.1		7.1	7.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	364	2598	1134	177	2598	1162	193	232		187	230	
v/s Ratio Prot		c0.43			0.28			0.04			0.01	
v/s Ratio Perm	0.07		0.03	0.32		0.04	0.07			c0.08		
v/c Ratio	0.10	0.59	0.04	0.45	0.38	0.06	0.48	0.26		0.57	0.06	
Uniform Delay, d1	4.0	6.5	3.8	5.5	5.2	3.9	39.4	38.1		40.0	37.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.0	0.1	7.9	0.4	0.1	2.6	0.8		5.0	0.1	
Delay (s)	4.5	7.5	3.9	13.5	5.6	4.0	42.0	38.9		45.0	37.2	
Level of Service	A	A	A	B	A	A	D	D		D	D	
Approach Delay (s)		7.3			6.0			40.4			42.1	
Approach LOS		A			A			D			D	

Intersection Summary		
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.59	B
Actuated Cycle Length (s)	100.0	Sum of lost time (s)
Intersection Capacity Utilization	77.6%	13.0
Analysis Period (min)	15	ICU Level of Service
		D

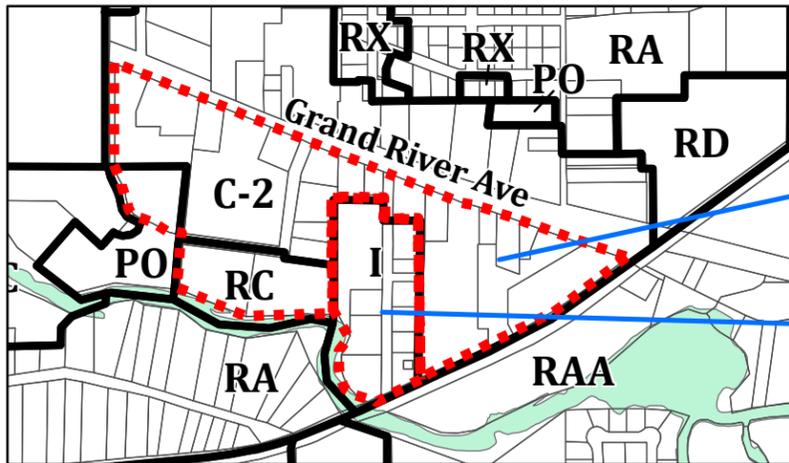
c Critical Lane Group



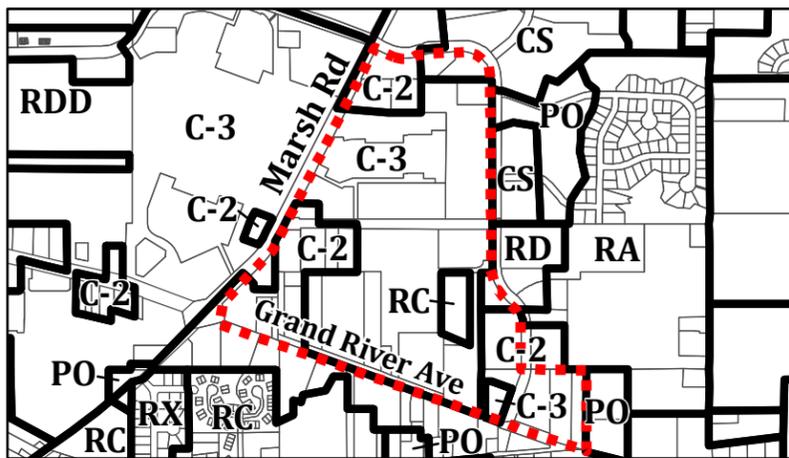
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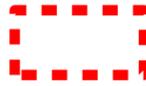
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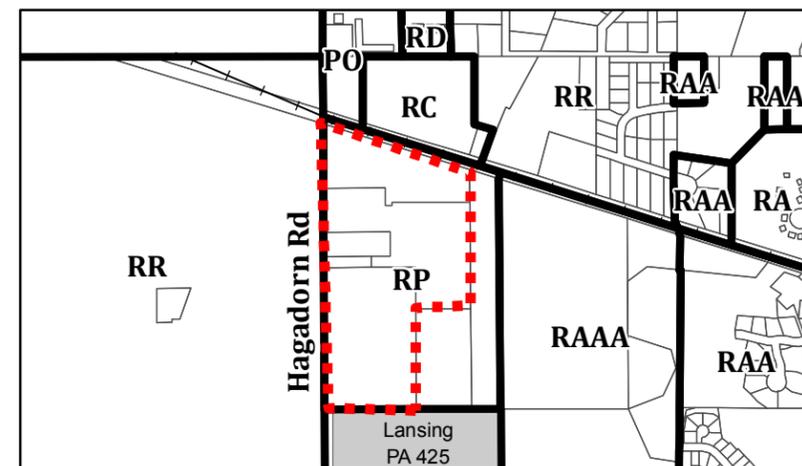
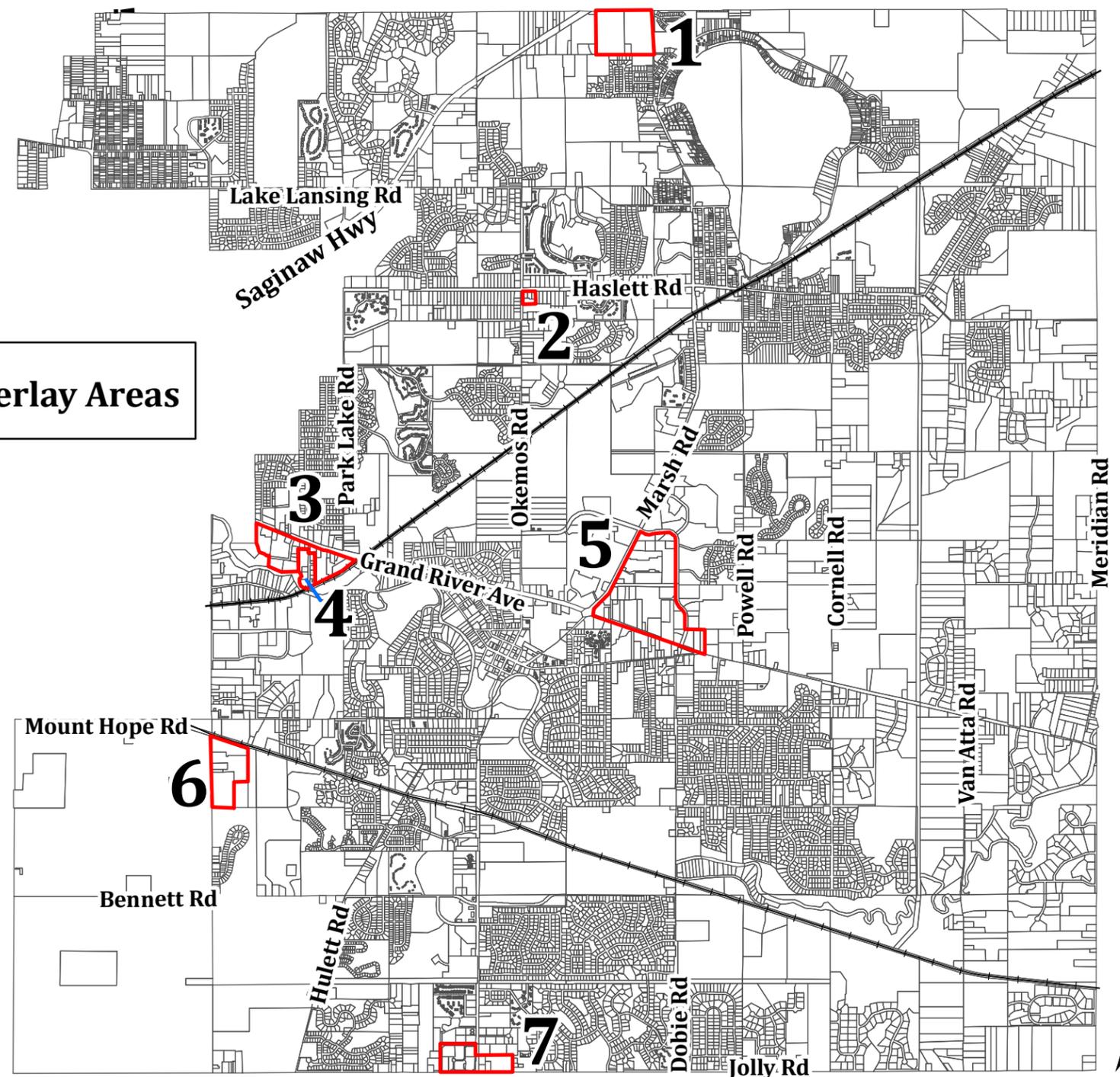


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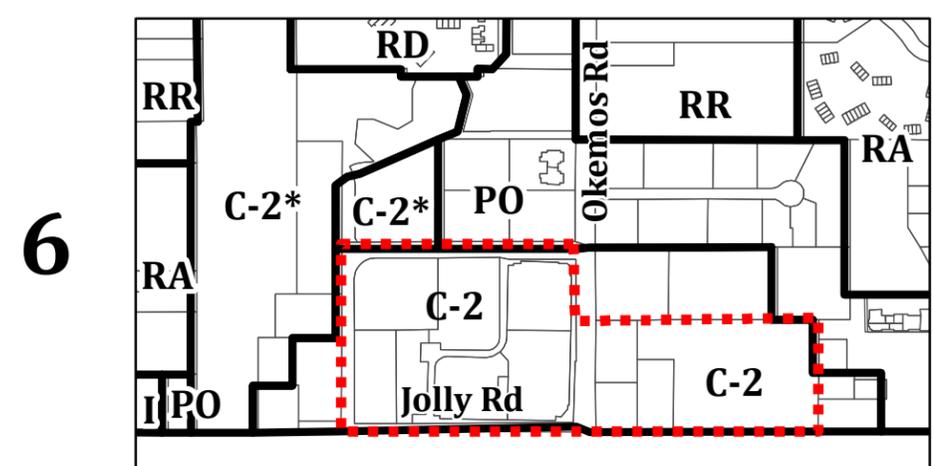


5

 Proposed Overlay Areas



5



6

7

Updated:
5/16/19



To: Planning Commission

From: Peter Menser, Principal Planner

Date: July 8, 2020

Re: **Special Use Permit #19191 (Green Peak Innovations, LLC), construct commercial medical marihuana provisioning center on a 1.79 acre undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue.**

The public hearing for Special Use Permit #19191 was held at the June 22, 2020 Planning Commission meeting. A straw poll taken at the meeting indicated the Planning Commission would consider a resolution to recommend approval of the request at its next meeting on July 13, 2020.

At the public hearing a member of the Planning Commission identified a church on Grand River Avenue that was thought to be potentially located near the proposed provisioning center. The church, the Community of Christ Journey House Campus Ministry Center, is located at 1628 Grand River Avenue in the City of East Lansing. Staff research indicates the church is over 2,000 feet away from the proposed provisioning center on Northwind Drive. The non-zoning medical marihuana ordinance adopted by the Township Board requires commercial medical marihuana facilities to be located one-thousand (1,000) feet from any public or private K-12 school, five hundred (500) feet from any church, place of worship, or other religious facility, and five hundred (500) feet from any library, preschool, or child care center.

The Planning Commission is advisory as it pertains to requests for special use permit approval to establish commercial medical marihuana facilities, therefore once it has made a recommendation the request will move on to the Township Board for further consideration and a final decision.

Planning Commission Options

The Planning Commission may recommend approval, approval with conditions, or denial of the proposed special use permit. A resolution to recommend approval of the request is provided.

- **Move to adopt the resolution to recommend approval of Special Use Permit #19191 to construct a commercial medical marihuana provisioning center on a 1.79 acre undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue.**

Attachment

1. Resolution to recommend approval.

G:\Community Planning & Development\Planning\SPECIAL USE PERMITS (SUP)\2019\SUP 19191 (Green Peak Innovations, LLC)\SUP 19191.pc2.docx

RESOLUTION TO RECOMMEND APPROVAL

**Special Use Permit #19191
(Green Peak Innovations, LLC)**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held virtually using the Zoom web conferencing application on the 13th day of July, 2020, at 7:00 p.m., Local Time.

PRESENT: _____

ABSENT: _____

The following resolution was offered by _____ and supported by _____.

WHEREAS, Green Peak Innovations, LLC has submitted a request to construct a new freestanding 2,700 square foot commercial medical marihuana provisioning center on a 1.79 acre undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue; and

WHEREAS, the Township Board adopted both zoning and non-zoning ordinances allowing commercial medical marihuana facilities in designated overlay areas throughout the Township at its meeting on May 21, 2019; and

WHEREAS, the zoning ordinance established seven designated areas in the Township where commercial medical marihuana facilities are permitted and identified the zoning districts in which each of the five types of commercial medical marihuana facilities can locate; and

WHEREAS, the non-zoning ordinance established the application process, the facility types allowed, the number of permits, and the general operational standards for the different types of commercial facilities, which include growers, processors, secure transporters, provisioning centers, and safety compliance facilities; and

WHEREAS, the overlay areas adopted by the Township Board allow commercial medical marihuana provisioning centers in the I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park) zoning districts subject to the approval of a special use permit reviewed by the Planning Commission and approved by the Township Board; and

WHEREAS, the subject site is located entirely within Overlay Area 3 and is appropriately zoned C-2 (Commercial), which allows commercial medical marihuana provisioning centers by special use permit; and

WHEREAS, the proposed commercial medical marihuana provisioning center meets the required setbacks from any public or private K-12 school, church, place of worship or other religious facility, library, preschool, or child care center established in Section 40-31 of the Code of Ordinances; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 22, 2020, and has reviewed staff material forwarded under cover memorandums dated June 19, 2020 and July 8, 2020; and

**Resolution to Recommend Approval
SUP #19191 (Green Peak Innovations, LLC)
Page 2**

WHEREAS, the proposed commercial medical marihuana provisioning center will not adversely affect adjacent land uses or the health, safety, and general welfare of the community; and

WHEREAS, municipal water and sanitary sewer is available to serve the subject site; and.

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #19191, subject to the following conditions:

1. Approval is in accordance with the site plan, floor plan, and building elevations prepared by Studio Intrigue Architects dated February 13, 2020.
2. Approval is subject to the applicant receiving approval of a Commercial Medical Marihuana Facility permit by the Director of Community Planning and Development.
3. Approval is subject to the applicant receiving Final Approval for a medical marihuana license from the State of Michigan, Department of Licensing and Regulatory Affairs.
4. Approval is subject to the applicant finalizing the lot split with the parcel to the north to attain the required 100 feet of lot frontage to develop the parcel.
5. The applicant shall obtain and maintain any and all other applicable permits, licenses, and approvals necessary to operate the proposed commercial medical marihuana provisioning center from the State of Michigan, Township, and any other applicable agencies. Copies of all permits, licenses, and approvals shall be submitted to the Department of Community Planning and Development.
6. Site plan review approval is required to construct the proposed building. The final site plan, building elevations, and landscape plan shall be subject to the approval of the Director of Community Planning and Development.
7. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Road Department, Ingham County Drain Commissioner, Michigan Department of Environment, Great Lakes, and Energy, and the Township, as applicable. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.
8. Utility, grading, and storm drainage plans for the site are subject to the approval of the Director of Public Works and Engineering and Ingham County Drain Commissioner and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. No grading or land clearing shall take place on the site until the site plan has been approved by the Director of Community Planning and Development and building, grading, and soil erosion and sedimentation control (SESC) permits have been issued for the project.
10. All utility service distribution lines shall be installed underground.

**Resolution to Recommend Approval
SUP #19191 (Green Peak Innovations, LLC)**

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11. Any future building additions or revisions to the site layout will require amendments to Special Use Permit #19191.
12. The final design of the trash and recycling facilities and related enclosures shall be subject to the approval of the Director of Community Planning and Development.
13. Site accessories such as railings, benches, exterior lighting fixtures, and bicycle racks shall be of commercial quality and complement the building design. The final design and location of such accessories shall be subject to the approval of the Director of Community Planning and Development.
14. All mechanical, heating, ventilation, air conditioning, and similar systems shall be screened from view by an opaque structure or landscape materials (if at street level) selected to complement the building. Such screening is subject to the approval of the Director of Community Planning and Development.
15. Sign permits shall be required for any signage proposed on the property.
16. The provisioning center shall remain in compliance with the operational requirements established in Section 40-31 of the Code of Ordinances.
17. The special use permit shall be revoked if the applicant fails to maintain a valid Commercial Medical Marihuana Facility permit from the Township and Facility License from the State of Michigan.

ADOPTED: YEAS: _____

NAYS: _____

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chairperson of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 13th day of July, 2020.

Scott Hendrickson
Planning Commission Chairperson

RESOLUTION TO RECOMMEND APPROVAL

**Special Use Permit #19191
(Green Peak Innovations, LLC)**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held virtually using the Zoom web conferencing application on the 13th day of July, 2020, at 7:00 p.m., Local Time.

PRESENT: Commissioners Premoe, Trezise, Richards, McConnell, Hendrickson

ABSENT: Commissioners Cordill, Shrewsbury, Clark

The following resolution was offered by Commissioner Trezise and supported by Commissioner McConnell.

WHEREAS, Green Peak Innovations, LLC has submitted a request to construct a new freestanding 2,700 square foot commercial medical marihuana provisioning center on a 1.79 acre undeveloped parcel (Parcel I.D. #20-127-003) located on the east side of Northwind Drive, south of Grand River Avenue; and

WHEREAS, the Township Board adopted both zoning and non-zoning ordinances allowing commercial medical marihuana facilities in designated overlay areas throughout the Township at its meeting on May 21, 2019; and

WHEREAS, the zoning ordinance established seven designated areas in the Township where commercial medical marihuana facilities are permitted and identified the zoning districts in which each of the five types of commercial medical marihuana facilities can locate; and

WHEREAS, the non-zoning ordinance established the application process, the facility types allowed, the number of permits, and the general operational standards for the different types of commercial facilities, which include growers, processors, secure transporters, provisioning centers, and safety compliance facilities; and

WHEREAS, the overlay areas adopted by the Township Board allow commercial medical marihuana provisioning centers in the I (Industrial), C-1, C-2, C-3 (Commercial), and RP (Research and Office Park) zoning districts subject to the approval of a special use permit reviewed by the Planning Commission and approved by the Township Board; and

WHEREAS, the subject site is located entirely within Overlay Area 3 and is appropriately zoned C-2 (Commercial), which allows commercial medical marihuana provisioning centers by special use permit; and

WHEREAS, the proposed commercial medical marihuana provisioning center meets the required setbacks from any public or private K-12 school, church, place of worship or other religious facility, library, preschool, or child care center established in Section 40-31 of the Code of Ordinances; and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 22, 2020, and has reviewed staff material forwarded under cover memorandums dated June 19, 2020 and July 8, 2020; and

**Resolution to Recommend Approval
SUP #19191 (Green Peak Innovations, LLC)
Page 2**

WHEREAS, the proposed commercial medical marihuana provisioning center will not adversely affect adjacent land uses or the health, safety, and general welfare of the community; and

WHEREAS, municipal water and sanitary sewer is available to serve the subject site; and.

WHEREAS, the proposed project is consistent with the general standards for granting a special use permit found in Section 86-126 of the Code of Ordinances.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Special Use Permit #19191, subject to the following conditions:

1. Approval is in accordance with the site plan, floor plan, and building elevations prepared by Studio Intrigue Architects dated February 13, 2020.
2. Approval is subject to the applicant receiving approval of a Commercial Medical Marihuana Facility permit by the Director of Community Planning and Development.
3. Approval is subject to the applicant receiving Final Approval for a medical marihuana license from the State of Michigan, Department of Licensing and Regulatory Affairs.
4. Approval is subject to the applicant finalizing the lot split with the parcel to the north to attain the required 100 feet of lot frontage to develop the parcel.
5. The applicant shall obtain and maintain any and all other applicable permits, licenses, and approvals necessary to operate the proposed commercial medical marihuana provisioning center from the State of Michigan, Township, and any other applicable agencies. Copies of all permits, licenses, and approvals shall be submitted to the Department of Community Planning and Development.
6. Site plan review approval is required to construct the proposed building. The final site plan, building elevations, and landscape plan shall be subject to the approval of the Director of Community Planning and Development.
7. The applicant shall obtain all necessary permits, licenses, and approvals from the Ingham County Road Department, Ingham County Drain Commissioner, Michigan Department of Environment, Great Lakes, and Energy, and the Township, as applicable. Copies of all permits, licenses, and approval letters shall be submitted to the Department of Community Planning and Development.
8. Utility, grading, and storm drainage plans for the site are subject to the approval of the Director of Public Works and Engineering and Ingham County Drain Commissioner and shall be completed in accordance with the Township Engineering Design and Construction Standards.
9. No grading or land clearing shall take place on the site until the site plan has been approved by the Director of Community Planning and Development and building, grading, and soil erosion and sedimentation control (SESC) permits have been issued for the project.
10. All utility service distribution lines shall be installed underground.

**Resolution to Recommend Approval
SUP #19191 (Green Peak Innovations, LLC)**

Page 3

11. Any future building additions or revisions to the site layout will require amendments to Special Use Permit #19191.
12. The final design of the trash and recycling facilities and related enclosures shall be subject to the approval of the Director of Community Planning and Development.
13. Site accessories such as railings, benches, exterior lighting fixtures, and bicycle racks shall be of commercial quality and complement the building design. The final design and location of such accessories shall be subject to the approval of the Director of Community Planning and Development.
14. All mechanical, heating, ventilation, air conditioning, and similar systems shall be screened from view by an opaque structure or landscape materials (if at street level) selected to complement the building. Such screening is subject to the approval of the Director of Community Planning and Development.
15. Sign permits shall be required for any signage proposed on the property.
16. The provisioning center shall remain in compliance with the operational requirements established in Section 40-31 of the Code of Ordinances.
17. The special use permit shall be revoked if the applicant fails to maintain a valid Commercial Medical Marihuana Facility permit from the Township and Facility License from the State of Michigan.

ADOPTED: YEAS: Commissioners Premoe, McConnell, Trezise, and Chair Hendrickson

NAYS: Commissioner Richards

STATE OF MICHIGAN)

) ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified and acting Chairperson of the Planning Commission of the Charter Township Meridian, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and a complete copy of a resolution adopted at a regular meeting of the Planning Commission on the 13th day of July, 2020.

Scott Hendrickson
Planning Commission Chairperson

Planning Commission Discussion:

- The proposed car detailing will be a good addition to services offered
- Conditions outlined by Principal Planner Menser are reasonable
- There will be no fumes and all products are water based and environmentally safe
- Servicing of vehicles will take place with the doors closed
- All products are applied with pads or towels, no spraying will be used
- No exhaust system is needed and the only personal protection items used are gloves
- The traffic is minimal and will not impact local school traffic
- Parking spots for drop off/pick up clients is available on Haslett Road in front of business
- A honking policy is in place for staff if they need to exit the garage door to Haslett Road near the sidewalk and it was suggested to offer a light also to alert both visual and hearing impaired and to make the community safer.

A straw poll indicated the Planning Commission would be in support of recommending approval of the proposed Special Use Permit with the five conditions listed in the staff report. A resolution will be provided for the next meeting on July 13, 2020.

Chair Hendrickson closed the public hearing at 8:12 p.m.



- B. Special Use Permit #19191 (Green Peak Innovations, LLC), construct new 2,700 square foot commercial medical marihuana provisioning center on an unaddressed parcel on the east side of Northwind Drive identified as Parcel #20-127-003.

Chair Hendrickson opened the public hearing at 8:13 p.m.

Principal Planner Menser provided a preamble and overview of the proposed special use permit request for the Property and noted he would be available to answer questions.

The applicant, Joe Neller, one of the co-founders of Green Peak Innovations, LLC, 10070 Harvest Park, Dimondale provided an overview of the business.

- Joe is one of four owners and they are all from the Lansing area
- Green Peak grows and manufacturers their own products
- Green Peak is involved with Medical and Adult Use Marijuana
- SkyMint is the retail product and they sell to wholesalers also
- They have a manufacturing/cultivating building in Dimondale and a cultivating building in Lansing
- All 9 provisioning centers have a consistent look and feel
- All centers are highly secure and safe and have video cameras, some have security guards also
- All products are prepackaged in jars or bags and vacuum sealed with tamper evident seals
- No odors on site but locations have carbon filtration as an extra level of protection

Public Comment:

Scott Comer, 7295 Cutler Road, Bath and the owner of Protégé Beauty School at 4960 Northwind. Mr. Comer expressed concern of the perception of students (clients) and parents visiting the beauty school. Currently Students are 18 years old and up but many minors are visiting the site with their parents to register. Concerns were also raised about the limited parking in the area. In addition, Scott Comer noted the proposed high school program that is being offered would not be allowed with a provisioning center next door. Principal Planner Menser asked Scott to contact him so they could discuss further.

Planning Commission Discussion:

- Commissioner Premoe noted The Journey House at 1628 East Grand River is a church group. The resident house is supported by a church and this may be within the 1000 feet of the proposed provisioning center. Principal Planner Menser will talk to the Township Attorney and follow up with the Planning Commission.
- Green Peak Innovations owns and operates the provisioning center located at 2508 S. Cedar Street in Lansing and at 3315 Coolidge Street in East Lansing. Commissioner McConnell noted the Cedar Street location improves the character of the neighborhood, while the Coolidge location is in keeping with the character of the area.
- The zoning is currently C-2 and there will be no change in the zoning district as it was an error made by staff.
- Economic Development Director, Ken Lane, noted the distance a provisioning center needs to be from a church is 500 feet and not 1000 feet as mentioned in the discussion.
- The empty lot formally known as the community garden would be a unwelcome loss to the area.
- The Planning Commission appreciated the applicant explaining concerns with safety and odors relating to the proposed business.
- Concern was expressed regarding the SUP Request Standards in the Township Code of Ordinances, Section 86-126, item number (5) states "The project will not be detrimental to the economic welfare of surrounding properties or the community."

A straw poll indicated the Planning Commission would be in support of recommending approval of the proposed Special Use Permit. A resolution will be provided for the next meeting on July 13, 2020.

Chair Hendrickson closed the public hearing at 8:57 p.m.

- C. Rezoning #20040 (Michigan Baptist Convention). Rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

Chair Hendrickson opened the public hearing at 8:59 p.m.

Principal Planner Menser provided an overview of the rezoning request for the property and noted the resolution was omitted from the packet in error but was emailed to the Planning Commission members. The applicant has requested to decide on the rezoning the same night as the public hearing and before acting on the applicant's request, the Planning Commission must first suspend Bylaw 6.4a. should they approve the request. Principal Planner Menser noted he would be available to answer questions.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, McConnell, Richards, Trezise, and Chair Hendrickson.

NAYS: None

MOTION CARRIED: 5-0



- B. Special Use Permit #19191 (Green Peak Innovations, LLC), construct new 2,700 square foot commercial medical marihuana provisioning center on an unaddressed parcel on the east side of Northwind Drive identified as Parcel #20-127-003.

Principal Planner Menser provided a brief introduction of the resolution and noted it is the same format as the other Special Use Permits for commercial medical marihuana provisioning centers. The Planning Commission decision is only advisory the Township Board.

Motion by Commissioner Trezise to recommend approval of Special Use Permit #19191.
Supported by Commissioner McConnell.

Planning Commission Discussion:

- The non-zoning medical marihuana ordinance definition of “facilities” seems to cause confusion. (Residents expressing concerns with the dance studio, play area, and beauty school located on Northwind Drive and the reference of public or private K-12 school, preschool or childcare center noted in the ordinance language.)
- The concerns of the public are understood by the Planning Commissioners and the applicant.
- The perception of the community could have a future impact on the businesses currently operating in the area. The area has a beauty school, dance studio, and play area for preschoolers.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, McConnell, Trezise, and Chair Hendrickson.

NAYS: Commissioner Richards

MOTION CARRIED: 4-1

- C. Rezoning #20040 (Michigan Baptist Convention). Rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

Principal Planner Menser had no updates on the proposed resolution and noted the recommendation would go to the Township Board.

Motion by Commissioner Premoe to recommend approval of Rezoning #20040.
Supported by Commissioner Richards.

Planning Commission Discussion:

- Last year the property was approved for rezoning for a Mixed Use Plan Unit Development with a time limit for development and the time lapsed and the sale didn't go through.
- The space is appropriate as office space, as a buffer between offices and apartments near Hagadorn and Eyde Parkway and a buffer between the neighborhood to the south.

From: [Ann Lynn](#)
To: [Peter Menser](#)
Subject: Fw: Opposition to sale for marijuana store
Date: Tuesday, June 23, 2020 12:05:22 PM

Hi

I sent this to the board. Have not heard anything. Can you give me some feedback. I assumed my email went to the board meeting last night. I don't have zoom. The twnshp did not answer the email
Sent from my LG Phoenix 3, an AT&T 4G LTE smartphone

----- Original message-----

From: Ann Lynn
Date: Mon, Jun 22, 2020 7:00 PM
To: board@meridian.mi.us;
Cc:
Subject:Opposition to sale for marijuana store

Dear Board Members

This is written to bring to your attention theses objections on the sale of a pot storre on Northwind Drive between the Educatioal Protege and Play..

This Protege Acaedemy has students who merely need to have graduated high school. An event that could take place at the age of 16 or 17 years of age. It is an accredited institution. Can the Board guarantee they would not loose that accreditation if next to a pot store?

They don't want their students getting high on break and then cutting someone's hair with scissors. I would think twice before going there as a customer. I would not want my son or daughter there as a student next to a pot store. Play also receives children. It must be licensed in order to have children in their care. This too violates the ordinance. Third there is a medical care facility for seniors next to campus apartments behind Hobby Lobby. Fourth the Northwind Garden has been established there for 10 years working with the Township and Greater Lansing Food Bank to establish Gardens. All members the shed and water tanks need to move.

A sign only went up a couple weeks ago on the sale at the proposed site. If you do not disapprove this sale at least I am asking more time for public awareness and comments be allowed before making this decision
Please do not approve this.

Ann Lynn

Sent from my LG Phoenix 3, an AT&T 4G LTE smartphone



4960 Northwind Dr.
East Lansing, MI 48823

Via Electronic Mail

planningcommission@meridian.mi.us

July 6, 2020

Planning Commission

Meridian Township

5151 Marsh Road

Okemos, MI 48064

Re: Special Use Permit #19191

(Green Peak Innovations, LLC)

Medical Marihuana Provisioning Center

Dear Commissioners:

The purpose of this communication is to register an objection to the issuance of Special Use Permit #19191. This pertains to the construction of a medical marihuana provisioning center.

We take no position on the suitability of the applicant or whether the criteria required by Meridian Township have been satisfied. However, as a property owner and operator of a business in the immediate vicinity, we have strong

concerns that the project will be detrimental to the economic welfare of our business.

By way of brief background, Protege Academy is a school of cosmetology. We are an accredited Title IV private college and have been in existence since __2005_____.

We currently have a facility in the City of Mt. Pleasant and another, the location of concern, at 4960 Northwind Drive within Meridian Township.

Our students are required to have either a high school diploma or GED before entering the program. At the Northwind Drive location, we typically have about _50__ students. Students receive 1500 clock hours of training. Those in the daytime section attend classes and participate in training 35 hours per week. Our night students attend 25 hours per week.

Section 9.3(c) of the Michigan Regulation and Taxation Medical Marihuana Act (MCL 333.27959) provides as follows:

3. ...the department shall approve a state licensed application and issue a state license if:

c. the property...is not within 1,000 feet of a pre-existing public or private school providing education in kindergarten or any of grades 1 through 12, unless a municipality adopts an ordinance that reduces this distance requirement;

We certainly acknowledge that the current construct of Protege Academy would not serve as a legal bar to a medical marihuana provisioning center at the contemplated site. We would, however, like to share with the Commission information about our future intent. As a part of our business plan, we hope to provide a skilled trade vocational program for students from area high schools. The program would be designed to lead to a professional cosmetology license. Although this might not be specifically prohibited by the presence of the medical marihuana provisioning center, it is certainly within the spirit of the protections of the Michigan Act.

I intend to participate in the July 13, 2020 meeting via Zoom and will be prepared to answer any questions the Commissioners may have. I would also be happy to supply any additional information the Commissioners may request in advance of the meeting.

Thank you for your consideration.

Sincerely,

Scott Comer

Vice President/COO

cc: Peter Menser

Peter Menser

From: Donna Holz <dhcotr@gmail.com>
Sent: Monday, July 13, 2020 2:30 PM
To: Planning Commision (DG)
Subject: Fwd: Comments re zoning commission agenda item tonight: No one responds to your phone number.

Comments re zoning commission agenda item tonight: No one responds to your phone number.

Inbox

reply you got this message



Donna C

to me



I called number on website 349 1232 to try to get name on comments list for agenda tonight re: proposed zoning changes for proposed Medical Marijuana shop on Northwind. No one answered. I will try for zoom meeting connection tonight but wanted information on time, etc. I have never used zoom before and am new to this.

Here are some of my comments

The 3 and 6 year olds have memberships at PLAY next to proposed Medical Marijuana Shop rezoning changes.

There are infants, toddlers, and preschoolers going in/out the front of the property.

There are preschool and elementary age children going in/out of the back of the property for dance classes even in the evening.

There are movement groups, preschool prep class, parties scheduled, and art/craft activities, There are holiday parties scheduled.

These are all for young children.

Next door to school like (and sometimes Day Care like) setting where sometimes parents drop off kids and pick them up for preschool readiness groups.

The Medical Marijuana business on Pennsylvania and Jolly most often has a full lot, with lines of people, and adults milling around outside.

This kind of situation, young children in close proximity with adults (maybe high on the drug) is not Safe!

Parking Lot: Will the toddlers and preschoolers have to dodge all the extra vehicles this kind of situation attracts?

Donna Carrion
248 842 0403

Meridian Twsp. resident

Attention: Meridian Township Board & Planning Commission,

I own and operate Platinum Dance Academy, LLC located at 4976 ½ Northwind Dr. and Play. EL, LLC located at 4972 Northwind Dr. Platinum Dance Academy has been in business since 2003 and Play. since 2012. I have been a tenant at this location for approximately 14 years. On June 23, 2020 I received a phone call by Peter Menser regarding the possible medical marijuana development site on Northwind Dr. Both businesses are located at the south end of the building closest to the property line of the possible new development site. Both businesses need to maintain compliance with the law and ordinances to protect the children who attend them. I was not in attendance prior to June 23rd, 2020 due to no notification sent to either of my business locations.

- 1) Platinum Dance Academy, LLC located at 4976 ½ Northwind Dr. was not listed on the building site plan at the June 22nd meeting. The dance studio instructs dance to children age 2 through adults. Many of our clients are women with children. The dance studio is located at the rear of the plaza. Our customers park in the front or back of the building. They walk to the back alley and enter our business through the back door of the plaza at any given time of day until 11pm at night in a dimly lit alley.
- 2) Play., LLC, an indoor playspace and instructional center for children. It operates under the “child care use” zoning codes. Our Preschool Prep program is an educational enrichment program that provides children age 3-5 years old an opportunity to experience a classroom setting and social learning environment. We are in the process of obtaining our childcare license for this program. Play. has been working with LARA since 2018 on this compliance and was asked by LARA in the fall of 2019 to obtain a license to continue our program as is. This application has been processed and is necessary to continue economic welfare of the business.
- 3) The possible new development site of Green Peak Innovations includes a split lot zoning use of the building where both Platinum Dance Academy and Play. are located and the empty lot next to it. The landlord has confirmed the building where both of my businesses are located will be sold to Green Peak Innovations if the special use permit goes through. Special use permit clause #5 states, “Project will not be detrimental to the economic welfare, surrounding property of community.” This includes businesses located in the community. Without a clear understanding on the intent of the use of the building I am located at I am unable to further highlight on how my businesses will be affected by the possible new development site and coinciding purchase of the 4972 Northwind Dr. building without the following questioned answered below.
 - A) How will moving the zoning line to create a split lot zoning affect the 4972 business I operate out of?
 - B) What is Green Peak Innovations intent regarding the building I operate out of if they purchase the 4972 Northwind building?
 - C) If customers have concerns regarding to the possible Green Peak Innovations development site the economic welfare of both businesses would be impacted due to loss of clients.

The outcome to any of the above questions could have detrimental outcomes to both businesses I have been operating for 17 years.

Sincerely,

Shelley Thomas
Owner/Operator
Play., EL, LLC
Platinum Dance Academy, LLC

Robin Faust

From: Peter Menser
Sent: Wednesday, August 5, 2020 1:59 PM
To: Brett Dreyfus; Robin Faust; Bette Bigsby
Cc: Mark Kieselbach; Kenneth P. Lane; Frank Walsh
Subject: RE: Special Use Permit #19191 (Green Peak Innovations)

This communication was received just a few minutes ago, could you please send it via email to all Board members ahead of Thursday evening's meeting? Just like we would normally do if a paper letter had been submitted after the packet was posted. Thank you.

-Peter



A Prime Community

Peter Menser
Principal Planner
menser@meridian.mi.us
517.853.4576
5151 Marsh Road | Okemos, MI 48864
meridian.mi.us

From: ceo [mailto:ceo@brianhicks.com]
Sent: Wednesday, August 05, 2020 1:46 PM
To: Peter Menser
Cc: Board; Mark Kieselbach; Kenneth P. Lane
Subject: Special Use Permit #19191 (Green Peak Innovations)

To the Meridian Township Board:

Northwind Property Group, LLC is the owner of the shopping center at 4972-4988 Northwind Drive, together with the adjacent vacant parcel. The vacant parcel is the subject of the above captioned SUP. Both the shopping center and vacant parcel are being sold to Green Peak Innovations.

During the Planning Commission deliberation on the SUP, several comments were made which I wish to address.

First, concern was expressed that two tenants in the shopping center, Play and Platinum Dance Academy cater to minors and that the proposed use under the SUP could in some way be problematic for the two businesses. Both Play and Platinum Dance Academy closed back in the spring pursuant to the orders issued by Governor Whitmer. Recently, both businesses elected to vacate the shopping center and are no longer tenants. Given this fact, the concerns expressed regarding minors visiting these businesses are a moot point.

Second, for many years I have donated the use of the vacant parcel for the operation of a community garden by the Garden Project of the Greater Lansing Food Bank. Comments were directed to the Planning Commission lamenting the loss of the garden if the SUP were approved. When the original conditions regarding the use of the parcel were established, one explicit condition was the acknowledgement by the Garden Project that the land was eventually going to be developed, and when that day arrived, the Garden Project agreed that they would in no way object to such development. The person(s) who cited the garden as a reason for denying the SUP were clearly not speaking for the Garden Project and were violating the original conditions of use. The Garden Project was given the option of continuing to use the property during the current growing season with

the understanding that the season might be cut short if the approval process for the SUP moved quickly. Given the challenges presented by COVID-19 restrictions early in the spring, together with the potentially shortened season, the Garden Project elected not to continue the operation of the garden on the parcel.

Thank you for the opportunity to clarify those two issues.

Northwind Property Group, LLC
PO Box 100, Laingsburg, MI 48848

Brian L. Hicks, Owner/Sole Member



To: Township Board

From: Mark Kieselbach, Director of Community Planning and Development
Keith Chapman, Assistant Planner

Date: July 31, 2020

Re: Rezoning #20040 (Michigan Baptist Convention)

Michigan Baptist Convention has requested the rezoning of approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office). The site is located on the east side of Hagadorn Road, south of Eyde Parkway.

The Planning Commission held the public hearing on the rezoning request at its June 22, 2020 meeting and voted to recommend approval at the July 12, 2020 meeting, citing the following reasons for its decision:

- The proposed rezoning to PO (Professional and Office) is consistent with the 2017 Future Land Use Map designation of Business/Technology for the property.
- The subject site meets or exceeds the minimum standards for lot area and lot width of the proposed PO (Professional and Office) zoning district.
- The subject site is located adjacent to property zoned PO (Professional and Office) to the south.
- Public water and sanitary sewer serve the subject site.

Staff memorandums outlining the rezoning and minutes from the Planning Commission meetings at which the rezoning was discussed are attached for the Board's review.

Township Board Options

The Township Board may approve or deny the proposed rezoning from RR (Rural Residential) to PO (Professional Office). If the Board amends the proposal, the request may be referred back to the Planning Commission for a recommendation. A resolution will be provided at a future meeting.

Attachments

1. Staff memorandums dated June 19, 2020 and July 9, 2020 with attachments.
2. Resolution recommending approval dated July 13, 2020.
3. Planning Commission minutes dated June 22, 2020 (public hearing) and July 12, 2020 (decision).

G:\Community Planning & Development\Planning\REZONINGS (REZ)\2020\REZ 20040 (Michigan Baptist Convention)\REZ 20040.tb1.docx



To: Planning Commission

From: Peter Menser, Principal Planner

Keith Chapman, Assistant Planner

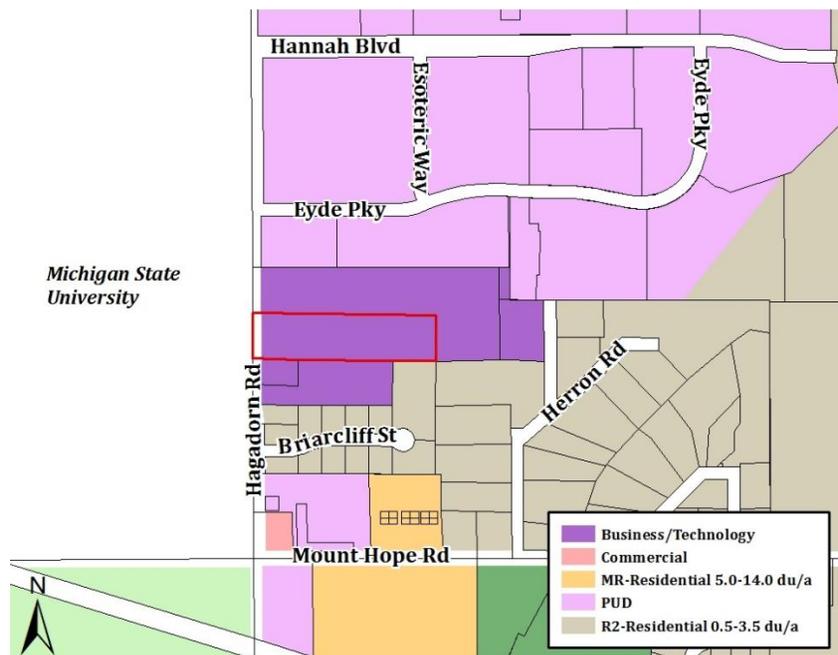
Date: June 19, 2020

Re: Rezoning #20040 (Michigan Baptist Convention), rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

Michigan Baptist Convention has requested the rezoning of approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office). The site is located on the east side of Hagadorn Road, south of Eyde Parkway. In 2019, a similar application was submitted from a different applicant that offered to condition the rezoning on approval of a mixed use planned unit development (MUPUD) and purchase of the property within 12 months. The Planning Commission recommended approval but the request was withdrawn by the applicant.

The Future Land Use Map from the 2017 Master Plan designates the subject property in the Business/Technology category.

2017 FUTURE LAND USE MAP



Zoning

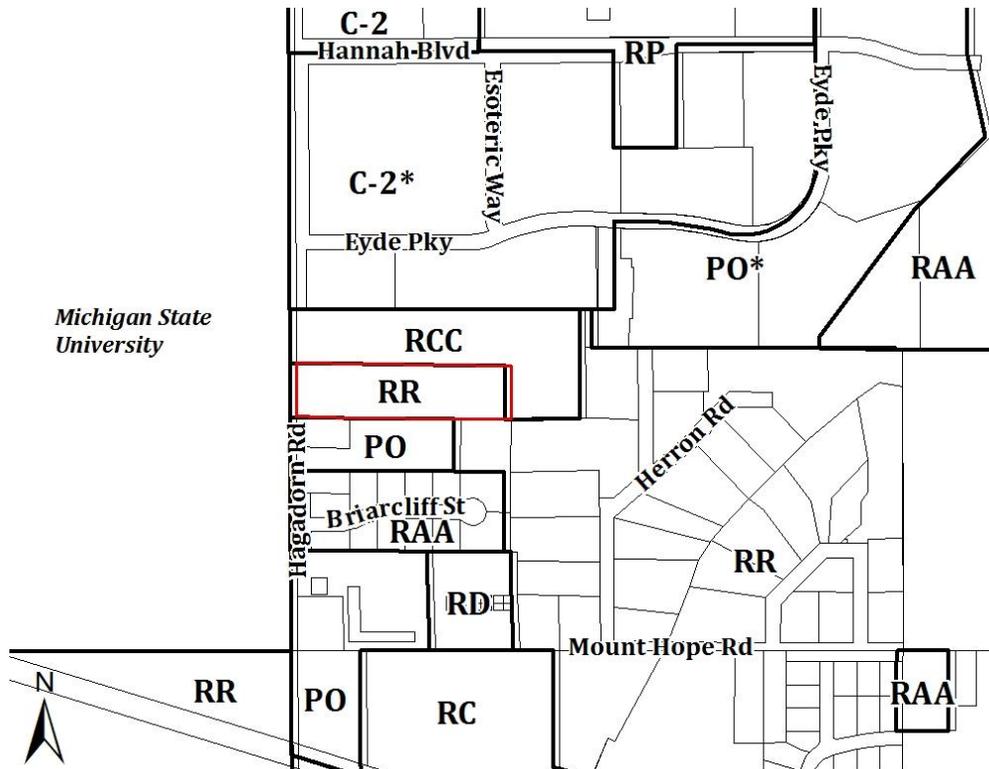
Rezoning #20040 (Michigan Baptist Convention)
Planning Commission (June 22, 2020)
Page 2

The property is currently zoned RR (Rural Residential), which requires a minimum of 200 feet of lot width and 40,000 square feet of lot area. The requested PO zoning district requires a minimum of 50 feet of lot width and 5,000 square feet of lot area.

With 232.40 feet of lot width on Hagadorn Road and 4.999 acres (217,756.44 square feet) of lot area the site meets the minimum standards for both lot area and lot width of the existing RR and the proposed PO zoning districts. The following table illustrates the minimum lot width and lot area requirements for the existing RR and proposed PO zoning districts:

ZONING DISTRICT	MINIMUM LOT AREA	MINIMUM LOT WIDTH
RR	40,000 sq. ft.	200 ft.
PO	5,000 sq. ft.	50 ft.

ZONING MAP



Physical Features

**Rezoning #20040 (Michigan Baptist Convention)
 Planning Commission (June 22, 2020)
 Page 3**

University Baptist Church (11,428 square feet) and a parsonage house occupies the subject site. The site is generally level, with elevations ranging from 859 feet above mean sea level near Hagadorn Road and gradually rising to 862 feet above mean sea level near the east property line. The Township Wetland Map and the Flood Insurance Rate Map indicate neither wetlands nor floodplain are present on or near the site. The site has no special designation on the Township Greenspace Plan.

Streets & Traffic

The site fronts on Hagadorn Road, which is a four-lane divided road with curb and gutter classified as a Minor Arterial on the Street Setbacks and Service Drives Map in the zoning ordinance. A seven foot wide pedestrian pathway is located along the Hagadorn Road property frontage. The most recent (2018) traffic count information from the Michigan Department of Transportation (MDOT) for Hagadorn Road, between Hannah Boulevard and Eyde Parkway, showed a total of 9,127 northbound vehicle trips and 13,431 southbound vehicle trips in a 24 hour period.

The previous applicant submitted a rezoning traffic study prepared by Giffels Webster dated October 1, 2019 that estimates vehicle trips generated by the existing church and future vehicle trips that could be generated by redevelopment of the property under the proposed PO zoning. The Institute of Transportation Engineers (ITE) trip generation rates for Church (Land Use Code 560) were selected to represent the existing church. Apartments (Land Use Code 221) and General Office Building (Land Use Code 710) trip generation rates were selected to represent redevelopment of the subject site under the proposed PO zoning with 102 apartment units and a 5,000 square foot general office building. The following table summarizes findings from the submitted traffic study.

Land Use	ITE Use No.	Size	Week-day Trips	AM Peak-Hour Trips			PM Peak-Hour Trips		
				In	Out	Total	In	Out	Total
Existing Land Use									
Church	560	11,000 SF	76	2	2	4	2	3	5
Proposed Land Use									
Apartments	221	102 DU	555	9	26	35	27	18	45
General Office Building	710	5,000 SF	58	27	4	31	1	6	7
Total Trips by Proposed Land-Use			613	36	30	66	28	24	52
Total Trips Increased by Proposed Land-Use			537	34	28	62	26	21	47

Rezoning #20040 (Michigan Baptist Convention)
Planning Commission (June 22, 2020)
Page 4

A traffic study is required for rezonings when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning, or for rezonings of land with direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district. A peak hour of traffic is the hour of highest volume of traffic entering and exiting the site during the a.m. or p.m. hours. The rezoning traffic study concluded the total number of vehicle trips generated by the apartment and office building uses under the proposed PO zoning district would not generate more than 100 additional directional trips during peak hours of traffic than the existing church under the existing RR zoning district.

Utilities

Municipal water and sanitary sewer serve the subject site. The location and capacity of utilities for any proposed development will be reviewed in detail by the Department of Public Works and Engineering at the time of a development submittal.

Staff Analysis

The applicant has requested the rezoning of approximately 4.999 acres from RR to PO. When evaluating a rezoning request, the Planning Commission should consider all uses permitted by right and by special use permit in the current and proposed zoning districts, as well as the reasons for rezoning listed on page two of the rezoning application (attached).

The applicant has requested the Planning Commission make a decision on the rezoning the same night as the public hearing. Before acting on the applicant's request, the Planning Commission must first suspend Bylaw 6.4a, which states that a decision on a special use permit, zoning request, or ordinance will not be made on the date of the public hearing considering such item. While not done on a regular basis, the Planning Commission has voted on some requests, particularly those that are smaller scale or require timely action, the same night as the public hearing. The following motion is provided to suspend Bylaw 6.4a for this rezoning request:

- **Move to suspend Planning Commission Bylaw 6.4a to consider Rezoning #20040 the same night as the public hearing.**

The following motion is provided to adopt the resolution to recommend approval of Rezoning #20040.

- **Move to adopt the resolution to approve Rezoning #20040.**

Planning Commission Options

The Planning Commission may recommend approval or denial of the request, or it may recommend a different zoning designation than proposed by the applicant to the Township Board. A resolution is provided in the attachments.

Rezoning #20040 (Michigan Baptist Convention)
Planning Commission (June 22, 2020)
Page 5

Attachments

1. Rezoning application dated March 11, 2020 and received by the Township on March 13, 2020.
2. Rezoning traffic study prepared by Giffels Webster dated October 1, 2019 and received by the Township on October 1, 2019.
3. Decision request from Michigan Baptist Convention dated March 18, 2020 and received by the Township on March 18, 2020.
4. Rezoning criteria.

G:\Community Planning & Development\Planning\REZONINGS (REZ)\2019\REZ 19080 (Minerva Realty Capital, LLC)\REZ 19080.pc1.doc

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

RECEIVED
MAR 13 2020

REZONING APPLICATION

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

Part I

A. Owner/Applicant Michigan Baptist Convention
Address of applicant 4578 S. Hagadorn Road, East Lansing, MI 48823
Telephone: Work 517.332.3594 Home _____
Fax _____ Email jgunneman@abc-mi.org

If there are multiple owners, list names and addresses of each and indicate ownership interest. Attach additional sheets if necessary. If the applicant is not the current owner of the subject property, the applicant must provide a copy of a purchase agreement or instrument indicating the owner is aware of and in agreement with the requested action.

B. Applicant's Representative, Architect, Engineer or Planner responsible for request:
Name / Contact Person Jane Gunneman or Brian Johnson
Address 4578 S. Hagadorn Road, East Lansing, MI 48823
Telephone: Work 517.332.3594 Home _____
Fax 517.332.3186 Email jgunneman@abc-mi.org or brianj@abc-mi.org

C. Site address/location 4606 S. Hagadorn Road, East Lansing
Legal description (Attach additional sheets if necessary) M20-29 Beg 1020.2 FT N of SW Cor of Sec - N 232.4 FT - E 937 FT - S 232.4 FT - W 937 FT to Beg on SW ¼ of Sec. 20, T4N R1W.
Parcel number 33-02-02-20-351-002 Site acreage Five

D. Current Zoning Rural Residential Requested Zoning Professional Office

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

1. Nonrefundable fee.
2. Evidence of fee or other ownership of the subject property.
3. A rezoning traffic study prepared by a qualified traffic engineer based on the most current edition of the handbook entitled *Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities*, published by the State Department of Transportation, is required for the following requests:
 - a. Rezoning when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning.
 - b. Rezoning having direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district.
(Information pertaining to the contents of the rezoning traffic study will be available in the Department of Community Planning and Development.)
4. Other information deemed necessary to evaluate the application as specified by the Director of Community Planning and Development.

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

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: _____

- 2) The conditions of the surrounding area have changed in the following respects: The existing church building was constructed approximately in 1975 and the surrounding properties have either been developed as apartments or office buildings. The property is currently listed for sale and to maximize the number of interested parties, a proactive re-zoning of the property to PO will help assist a developer.
- 3) The current zoning is inconsistent with the Township’s Master Plan, explain: The current zoning: RR, is not consistent with the Township’s Master Plan. The property in the master plan is designated as Business/Technology and feel PO would allow the proper zoning.
- 4) The Township did not follow the procedures that are required by Michigan laws, when adopting the Zoning Ordinance, specifically: _____

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

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

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is consistent with the Township’s Master Plan, explain: Requested zoning is consistent with the Township’s Master Plan as the property is located within Business/Technology and zoning PO should be acceptable.
- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: Two properties located to the south (4578 and 4572 S. Hagadorn Road) are both zoned PO.
- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: _____
- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: _____
- 5) Requested rezoning addresses a proven community need, specifically: _____

- 6) Requested rezoning results in logical and orderly development in the Township, explain:

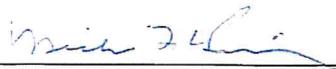
7) Requested rezoning will result in better use of Township land, resources and properties and therefore more efficient expenditure of Township funds for public improvements and services, explain: _____

Part III

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

Yes No (Please check one)

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



Signature of Applicant

03-11-2020
Date

Michael F Kingsbury, MBC President
Type/Print Name

Fee: _____

Received by/Date _____

MEMORANDUM



TO: Matt Durbin

CC: Russell Caplin, Michael Darga, Scott Clein

FROM: William Stimpson, Mohamed Aguib

SUBJECT: Minerva Development Rezoning Traffic Study

DATE: September 17, 2019

Introduction

This memorandum documents a rezoning traffic study (RTS) performed for a proposed redevelopment of a 5-acre parcel (4606 Hagadorn Road) located on the east side of S. Hagadorn Road between Hannah Boulevard and Mt. Hope Road. The subject parcel is currently zoned RR (Rural Residential) which is intended to be rezoned conditionally to PO (Professional and Office) through this rezoning traffic study.

According to the Meridian Township Rezoning Application, two conditions require a rezoning traffic study; 1) when the proposed district would permit uses that could generate more than 100 additional directional trips during the peak hour than the principal uses permitted under the current zoning, and 2) when the rezoning parcel has direct access to a principal or minor arterial street, unless the uses in the proposed zoning district would generate fewer peak hour trips than uses in the existing zoning district.

Existing Land Use & Traffic Characteristics

The subject parcel is currently occupied by a church (University Baptist Church), which is non-operational, and a single-family house with site access provided on S. Hagadorn Road through a driveway. The site location and adjacent land-use are shown on **Figure 1**.

South Hagadorn Road between Hannah Boulevard and Mt Hope Road is classified as a minor arterial consisting of four-travel lanes with a divided median and a speed limit of 45 mph. Daily traffic volumes along S. Hagadorn Road were obtained from the Michigan Department of Transportation Transportation Data Management System) (TDMS). The study segment has an interpolated Annual Average Daily Traffic volume (AADT 2018) of 22,557 vehicles-per-day.

Zoning Ordinance & Master Plan

The existing zoning of the subject parcel is RR District (Rural Residential) which is defined in the Meridian Township ordinance as "A one-family residential district implies a predominant occurrence of dwelling structures located on individual lots of land and housing only one family of household group. There exists, however, a range of preference relative to the character and size of individual residential properties prompts creation of at least three one-family residential districts." The uses permitted by right under the RR Districts, as per the township's ordinance, include single-family dwellings, home occupations,

recreational uses, golf courses, public educational institutions, and others. The dimensional requirements under existing zoning specifies that the maximum lot coverage by all buildings, including accessory buildings, shall not cover more than 20% of the lot area.

The proposed zoning of the subject parcel is PO District (Professional and Office) which is defined in the Meridian Township ordinance as *“The PO District is intended to accommodate those nonresidential uses of an administrative or professional nature which are necessary to the normal conduct of a community’s activities. It is specifically designed, however, to prohibit the introduction of commercial establishments of a retail nature, or other activities which require the constant visits of the general public.”* The uses permitted by right under PO Districts, as per the township’s ordinance, include professional offices, hospitals, medical clinics, religious institutions, research & development facility, and others.

According to the Meridian Township Master Plan (dated 2017), Future Land Use Map, the subject parcel is located in a business/technology area which “should serve the community’s need for research facilities, light industrial opportunities, or corporate campuses.” Several business/technology designated areas were identified in the Master Plan including Hagadorn Road near the Michigan State University campus. The business/technology areas also are planned for ongoing non-retail business uses which are not intended to directly provide goods and services to the community.

Figure 1 – Site Location and Adjacent Land-use



Trip Generation Comparison

Land uses from the *ITE Trip Generation Manual (10th Edition)* were identified to correspond with the uses permitted by right under the existing and proposed zoning. The land uses with possible application under existing and proposed zoning were compared. The building footprint used in the trip generation comparison was estimated using a 20% of the subject parcel total area, as identified in the Ordinance.

Several possible land uses were identified from the *ITE Trip Generation Manual (10th Edition)* that would correspond with the uses permitted by right, as per Meridian Township Zoning Ordinance, under the existing and proposed zoning. The possible land uses under existing zoning are public park (LUC 411), elementary school (LUC 520), and nursery (garden center) (LUC 817), while those identified under the proposed zoning are clinic (LUC 630), general office building (LUC 710), and research and development center (LUC 760).

The published daily and peak hour trip generation rates and/or equations, along with inbound/outbound percentages from the Institute of Transportation Engineer’s *Trip Generation Manual (10th Edition)* were used to calculate the number of daily and peak hour trips for the land uses under existing and proposed zoning. **Table 1** shows a summary of the trip generation comparison.

Table 1 – Trip Generation Comparison

Land Use	ITE Use No.	Size	Wee k-day Trips	AM Peak-Hour Trips			PM Peak-Hour Trips		
				In	Out	Total	In	Out	Total
Existing Zoning (RR)									
Public Park	411	5 Acre	92	2	2	4	13	10	23
Elementary School	520	43,500 SF	849	167	136	303	27	33	60
Nursery Green House (not retail)	818	5 Acre	98	1	1	2	1	1	2
Maximum Trips for RR Zoning			849	167	136	303	27	33	60
Proposed Zoning (PO)									
Clinic	630	43,500 SF	1,660	125	36	161	41	102	143
General Office Building	710	43,500 SF	473	58	9	67	8	44	52
Research and Development Center	760	43,500 SF	650	13	5	18	3	18	21
Maximum Trips for PO Zoning			1,660	125	36	161	41	102	143
Total Trips Increased/Reduced by PO Zoning			811	-42	-100	-142	14	69	83

The trip generation comparison indicates that the highest trip generator under the proposed zoning district (PO) will not generate more than 100 additional directional peak hour trips than the highest trip generator under the existing zoning district (RR).

Sight Distance Evaluation

According to the handbook titled “Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities” published by Michigan Department of Transportation, a rezoning traffic study requires a sight distance evaluation. The subject parcel has an existing driveway which will continue to be used as the site driveway and access point to Hagadorn Road. Since there is an existing driveway to the site which was used previously by parcel user, a sight distance evaluation may not be necessary. However, an evaluation of sight distance was performed using provided resources such as aerials and street images. As per AASHTO’s manual “A Policy on Geometric Design of Highways and Streets”, the minimum intersection sight distance for passenger car at a subdivision road and a two-lane primary road, 45 mph

speed, is 430 feet. As per **Figures 2** and **3** shown below, there is an adequate sight distance at the site driveway for passenger cars to turn right on Hagadorn Road, in condition that a clear sight is maintained. The sight distance triangle with 430 feet leg is shown on **Figure 2**.

Figure 2 – Sight Distance Evaluation



Figure 3 – Street View from Site Driveway (looking South)



Conclusions

The rezoning study concluded that highest trip generating land use under the proposed zoning district (PO) will not add more than 100 directional trips during the peak hour period than the principal uses permitted under the existing zoning district (RR).

The Meridian Township Master Plan (adopted 2017) was reviewed as part of this study, and it was concluded that the proposed zoning will bring the subject parcel closer to the future land use plan in the area. The proposed zoning district (PO) will provide land uses such as office and research & development which will achieve the future land use plan goal of serving the community needs for research facilities and providing uses not intended to directly provide goods and services.

A sight distance evaluation was performed concluding that an adequate sight distance is provided at the existing site driveway.

Peter Menser

From: Brian Johnson <brianj@abc-mi.org>
Sent: Wednesday, March 18, 2020 11:52 AM
To: Peter Menser
Cc: Jane Gunneman
Subject: suspension of procedures

Dear Peter,

Greetings to you this morning! I trust you are doing well in this moment we find ourselves in. We met with you on Friday, March 13th to submit our application for rezoning of our property at 4606 S. Hagadorn Rd. East Lansing. We would like to formally request that the board suspend their bylaws and act on this motion when you convene your initial meeting of the Meridian Township. By suspending your bylaws and acting on this request it will allow us to be more attractive to potential buyers who may be interested in our property that is for sale. Thank you in advance for your consideration of this matter.

Sincerely,

Rev. Brian D. Johnson

Rev. Brian D. Johnson
Regional Executive Minister
American Baptist Churches of Michigan
brianj@abc-mi.org
Office: 517-332-3594

Part II

REASONS FOR REZONING REQUEST

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

A. Reasons why the present zoning is unreasonable:

- 1) There is an error in the boundaries of the Zoning Map, specifically: _____

- 2) The conditions of the surrounding area have changed in the following respects: _____

- 3) The current zoning is inconsistent with the Township's Master Plan, explain: _____

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

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

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

B. Reasons why the requested zoning is appropriate:

- 1) Requested rezoning is consistent with the Township's Master Plan, explain: _____

- 2) Requested rezoning is compatible with other existing and proposed uses surrounding the site, specifically: _____

- 3) Requested rezoning would not result in significant adverse impacts on the natural environment, explain: _____

- 4) Requested rezoning would not result in significant adverse impacts on traffic circulation, water and sewer systems, education, recreation or other public services, explain: _____

- 5) Requested rezoning addresses a proven community need, specifically: _____

- 6) Requested rezoning results in logical and orderly development in the Township, explain: _____

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



To: Planning Commission

From: Peter Menser, Principal Planner

Date: July 9, 2020

Re: Rezoning #20040 (Michigan Baptist Convention), rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

The Planning Commission held the public hearing on Rezoning #20040 at its meeting on June 22, 2020. At the meeting the Planning Commission agreed to consider a resolution to recommend approval of the rezoning at its next meeting on July 13, 2020.

Planning Commission Options

The Planning Commission may recommend approval or denial of the request, or it may recommend a different zoning designation than proposed by the applicant to the Township Board. A resolution to recommend approval of the rezoning from RR to PO is provided.

- **Move to adopt the resolution recommending approval of Rezoning #20040 to rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).**

Attachment

1. Resolution to recommend approval.

G:\Community Planning & Development\Planning\REZONINGS (REZ)\2020\REZ 20040 (Michigan Baptist Convention)\Staff memos\REZ 20040.pc2.docx

RESOLUTION TO RECOMMEND APPROVAL

**Rezoning #20030
5937 Potter Street**

RESOLUTION

At a regular meeting of the Planning Commission of the Charter Township of Meridian, Ingham County, Michigan, held virtually using the Zoom web conferencing application on the 22nd day of June, 2020, at 7:00 p.m., Local Time.

PRESENT: Commissioners Premoe, Trezise, Cordill, Richards, Shrewsbury, Clark, McConnell, Hendrickson

ABSENT: None

The following resolution was offered by Commissioner Cordill and supported by Commissioner McConnell.

WHEREAS, the Planning Commission initiated the rezoning of one 0.10 acre parcel addressed as 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential); and

WHEREAS, the Planning Commission held a public hearing at its regular meeting on June 8, 2020 and discussed the staff material forwarded under cover a memorandum dated March 13, 2020; and

WHEREAS, the proposed rezoning to RN (Mixed Residential) is consistent with the 2017 Future Land Use Map designation of R3 Residential 1.25 – 3.5 dwelling units per acre; and

WHEREAS, the property proposed for rezoning is developed with a single family residence, which is a use allowed by right in the proposed RN zoning district; and

WHEREAS, the property proposed for rezoning is located adjacent to properties used for single family purposes to the east and south; and

WHEREAS, the current zoning of C-1 imposes nonconforming status on the existing single family house, requiring variances from the Zoning Board of Appeals to make improvements to the properties beyond general upkeep and limits the property owner from rebuilding if the structure is removed or destroyed; and

WHEREAS, the proposed rezoning to RN will allow the property owner to maintain the existing use of the property in conformance with the ordinance.

NOW THEREFORE, BE IT RESOLVED THE PLANNING COMMISSION OF THE CHARTER TOWNSHIP OF MERIDIAN hereby recommends approval of Rezoning #20030 to rezone approximately 0.10 acre located at 5937 Potter Street from C-1 (Commercial) to RN (Mixed Residential).

ROLL CALL VOTE:

YEAS: Commissioner Premoe, McConnell, Richards, Trezise, and Chair Hendrickson.

NAYS: None

MOTION CARRIED: 5-0

- B. Special Use Permit #19191 (Green Peak Innovations, LLC), construct new 2,700 square foot commercial medical marihuana provisioning center on an unaddressed parcel on the east side of Northwind Drive identified as Parcel #20-127-003.

Principal Planner Menser provided a brief introduction of the resolution and noted it is the same format as the other Special Use Permits for commercial medical marihuana provisioning centers. The Planning Commission decision is only advisory the Township Board.

Motion by Commissioner Trezise to recommend approval of Special Use Permit #19191.

Supported by Commissioner McConnell.

Planning Commission Discussion:

- The non-zoning medical marihuana ordinance definition of “facilities” seems to cause confusion. (Residents expressing concerns with the dance studio, play area, and beauty school located on Northwind Drive and the reference of public or private K-12 school, preschool or childcare center noted in the ordinance language.)
- The concerns of the public are understood by the Planning Commissioners and the applicant.
- The perception of the community could have a future impact on the businesses currently operating in the area. The area has a beauty school, dance studio, and play area for preschoolers.

ROLL CALL VOTE:

YEAS: Commissioner Premoe, McConnell, Trezise, and Chair Hendrickson.

NAYS: Commissioner Richards

MOTION CARRIED: 4-1

- 
- C. Rezoning #20040 (Michigan Baptist Convention). Rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

Principal Planner Menser had no updates on the proposed resolution and noted the recommendation would go to the Township Board.

Motion by Commissioner Premoe to recommend approval of Rezoning #20040.

Supported by Commissioner Richards.

Planning Commission Discussion:

- Last year the property was approved for rezoning for a Mixed Use Plan Unit Development with a time limit for development and the time lapsed and the sale didn't go through.
- The space is appropriate as office space, as a buffer between offices and apartments near Hagadorn and Eyde Parkway and a buffer between the neighborhood to the south.

ROLL CALL VOTE:

YEAS: Commissioner Trezise, Premoe, McConnell, Richards, and Chair Hendrickson.

NAYS: None

MOTION CARRIED: 5-0

8. OTHER BUSINESS – None

9. REPORTS AND ANNOUNCEMENTS

A. Township Board update.

Principal Planner Menser provided a summary of the July 7, 2020 Zoom Township Board meeting.

B. Liaison reports.

- Commissioner Premoe provided a summary on the Zoom Building Board of Appeals hearing held on June 29, 2020 for Walnut Hills Country Club.
- Commissioner McConnell provided an update on the Zoom Environmental Commission meeting held on July 1, 2020.

10. PROJECT UPDATES

A. New Applications- None

B. Site Plans Received

1. Site Plan Review #20-05 (Hudson Senior Living), construct Pine Village mixed use project consisting of a 147,721 square foot senior apartment building with a total of 133 dwelling units and 9,114 square feet of leasable commercial space.

C. Site Plans Approved

1. Site Plan Review #20-00-09 (Williams Volkswagen, Inc.), construct 15,120 square foot addition to existing 30,420 Square foot automobile dealership at 2186 Jolly Road.
2. Site Plan Review #20-02 (Meridian Investment Group, LLC), construct new 73,050 square foot mixed use building with 78 dwelling units and 2,830 square feet of commercial space at 2875 Northwind Drive.
3. Site Plan Review #20-09-08 (East Lansing 1 LLC), add covered patio, sand volleyball court, and dog park to The Lodges apartment complex at 2700 Hannah Boulevard.

11. PUBLIC REMARKS- None

12. ADJOURNMENT

Commissioner Richards moved to adjourn the meeting.

Supported by Commissioner Premoe.

VOICE VOTE: Motion carried unanimously.

Chair Hendrickson adjourned the regular meeting at 7:59 p.m.

Respectfully Submitted,

Debbie Budzynski, Recording Secretary

Public Comment:

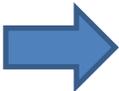
Scott Comer, 7295 Cutler Road, Bath and the owner of Protégé Beauty School at 4960 Northwind. Mr. Comer expressed concern of the perception of students (clients) and parents visiting the beauty school. Currently Students are 18 years old and up but many minors are visiting the site with their parents to register. Concerns were also raised about the limited parking in the area. In addition, Scott Comer noted the proposed high school program that is being offered would not be allowed with a provisioning center next door. Principal Planner Menser asked Scott to contact him so they could discuss further.

Planning Commission Discussion:

- Commissioner Premoe noted The Journey House at 1628 East Grand River is a church group. The resident house is supported by a church and this may be within the 1000 feet of the proposed provisioning center. Principal Planner Menser will talk to the Township Attorney and follow up with the Planning Commission.
- Green Peak Innovations owns and operates the provisioning center located at 2508 S. Cedar Street in Lansing and at 3315 Coolidge Street in East Lansing. Commissioner McConnell noted the Cedar Street location improves the character of the neighborhood, while the Coolidge location is in keeping with the character of the area.
- The zoning is currently C-2 and there will be no change in the zoning district as it was an error made by staff.
- Economic Development Director, Ken Lane, noted the distance a provisioning center needs to be from a church is 500 feet and not 1000 feet as mentioned in the discussion.
- The empty lot formally known as the community garden would be a unwelcome loss to the area.
- The Planning Commission appreciated the applicant explaining concerns with safety and odors relating to the proposed business.
- Concern was expressed regarding the SUP Request Standards in the Township Code of Ordinances, Section 86-126, item number (5) states "The project will not be detrimental to the economic welfare of surrounding properties or the community."

A straw poll indicated the Planning Commission would be in support of recommending approval of the proposed Special Use Permit. A resolution will be provided for the next meeting on July 13, 2020.

Chair Hendrickson closed the public hearing at 8:57 p.m.

- 
- C. Rezoning #20040 (Michigan Baptist Convention). Rezone approximately 4.999 acres located at 4606 Hagadorn Road from RR (Rural Residential) to PO (Professional and Office).

Chair Hendrickson opened the public hearing at 8:59 p.m.

Principal Planner Menser provided an overview of the rezoning request for the property and noted the resolution was omitted from the packet in error but was emailed to the Planning Commission members. The applicant has requested to decide on the rezoning the same night as the public hearing and before acting on the applicant's request, the Planning Commission must first suspend Bylaw 6.4a. should they approve the request. Principal Planner Menser noted he would be available to answer questions.

The applicant's representative, Ed Ritzler, 4606 Hagadorn Road, introduced himself and explained the reason for the rezoning request. Mr. Ritzler noted he would be available to answer questions.

Public Comments:

- A. Dave Rogers, 2924 Briarcliff Drive, spoke in opposition to Rezoning #20040 (Michigan Baptist Convention) and requested the extra time by not suspending Bylaw 6.4a.
- B. Kelly Rogers, 2924 Briarcliff Drive, spoke in opposition to Rezoning #20040 (Michigan Baptist Convention). Ms. Rogers noted three specific reasons for her decision, and they included PO Zoning could allow for a Mixed Use Planned Unit Development opportunity. The Ordinance 86-440 does not place many restrictions and the rezoning is not consistent with the Master Plan.
- C. Chris Buck, 2642 Loon Lane, with Martin Commercial Properties expressed support for Rezoning #20040. Mr. Buck previously served as Economic Development Director for Meridian Township and noted the Michigan Baptist Convention has been vacant and if rezoned would help to market the property quickly noting the area is desirable in this district.

Planning Commission Discussion:

- Several months passed with no Planning Commission meetings conducted due to the pandemic and instead of delaying the decision any longer the Planning Commission should act on the proposal for approval. The next step for the applicant would be to go to the Township Board for review and approval.
- The current zoning is not appropriate and does not meet the Master Plan.
- The applicant could request conditions to rezoning such as a single office use.
- The property is adjacent to a single-family district.
- Suspending Bylaw 6.4a should be reserved for actions of an urgent nature.
- The zoning request should not be denied because of a proposal that may be presented in the future.
- A Mixed Use Planned Unit Development would not be allowed in RP zoning.
- RP and PO are the best districts for the area if a Business Technology Use is considered.

Commissioner Clark moved to suspend Planning Commission Bylaw 6.4a to consider Rezoning #20040 the same night as the public hearing.

Seconded by Commissioner Richards.

ROLL CALL VOTE:

YEAS: Commissioner Richards and Chair Hendrickson

NAYS: Commissioner McConnell, Premoe, Cordill, Shrewsbury, Clark and Trezise

MOTION FAILED: 2-6

A straw poll indicated the Planning Commission would be in support of recommending approval of the proposed rezoning request. A resolution will be provided for the next meeting on July 13, 2020.

Chair Hendrickson closed the public hearing at 9:37 p.m.

The Planning Commission took a brief recess from 9:38 p.m. until 9:43 p.m.