

**HOWELL TOWNSHIP BOARD  
REGULAR MEETING  
Rod Bushey Performing Arts Center  
1200 W. Grand River Ave  
Howell, MI 48843  
December 8, 2025  
6:30 pm**

1. Call to Order
2. Roll Call:     ( ) Mike Coddington                             ( ) Matt Counts  
                    ( ) Sue Daus                                     ( ) Tim Boal  
                    ( ) Jonathan Hohenstein                     ( ) Shane Fagan  
   ( ) Bob Wilson
3. Pledge of Allegiance
4. **Call to the Board**
5. Approval of the Minutes:  
    A. Regular Board Meeting November 10, 2025
6. Public Hearing: Stantec Consulting Michigan, Inc. and Randee, LLC, to conditionally rezone various parcels in the area of Grand River Ave. and Fleming Rd., from Agricultural Residential (AR), Single Family Residential (SFR), and Neighborhood Service Commercial (NSC) to Research and Technology (RT)
7. Call to the Public
8. Stantec Consulting Michigan, Inc. and Randee, LLC, Zoning Ordinance Text Amendment, Article 2 – Definitions, regarding Article 5 – Research and Technology (RT) Zoning District, to define Data Processing
9. Call to the Public
10. Adjournment

5A

**HOWELL TOWNSHIP REGULAR BOARD  
MEETING MINUTES**  
1200 W. Grand River Ave, Howell, MI 48843  
November 20, 2025  
6:30 P.M.

**MEMBERS PRESENT:**

Mike Coddington	Supervisor
Sue Daus	Clerk
Jonathan Hohenstein	Treasurer
Matthew Counts	Trustee
Tim Boal	Trustee
Shane Fagan	Trustee
Bob Wilson	Trustee

**MEMBERS ABSENT:**

**Also in Attendance:**

Township attorneys Christopher Patterson and Sophia Youssif

524 people signed in.

Supervisor Coddington called the meeting to order at 6:30 p.m. The roll was called. Supervisor Coddington requested members rise for the Pledge of Allegiance.

**CALL TO THE BOARD:**

None

**APPROVAL OF THE AGENDA:**

November 20, 2025

**Motion** by Hohenstein, **Second** by Daus, **“To approve the agenda as presented.”** Motion carried.

**APPROVAL OF BOARD MEETING MINUTES:**

October 14, 2025

REGULAR BOARD MEETING MINUTES

**Motion** by Hohenstein, **Second** by Counts, **“To accept the minutes from October 14<sup>th</sup> as presented.”**  
Motion carried.

Data Center Moratorium Ordinance

Township attorney Christopher Patterson gave an overview on the proposed data center moratorium ordinance and answered questions from board members.

**CALL TO THE PUBLIC:**

Topics discussed: Moratorium language change, alternate location for development, lack of job creation, high utility bills, strain on the electricity infrastructure, Township Master Plan, community impact, rezoning, community vote, water and air pollution, natural resources, damage to wells, bond for well damage, local wildlife, community values, NDA's, drone ordinance, oath of office, community health, falsified certifications,

transparency, terrorism, farmland and rural land preservation, home values, environmental concerns, Township Board recall and resignations, tax breaks for data centers, impact study and economic analysis transparency, health risks, and concerns, digital weaponization, flooding, fire department, cyber security, hyperscale data center, closed loop water system, swamp coolers.

Public comments received by: Cory Alchin 800 Sleaford Rd., Bill Brancheau 4130 Rurik Dr., Oliver Shampine 309 N Lake, Mary Motto 780 Henderson, Charles Smith 5136 Fleming Rd., Don LeChevalier 2900 Brewer, Dan Wholihan 8162 Majestic Blvd., Rob Howard, Anne-Elise Patterson Hughes Rd, Vanessa North 2950 W. Marr, Emma Sova 322 W. Washington, Jessica Kupfer 3575 Brighton Rd., Lauren Prebenda 930 Gulley Rd., Gina Lowe 5789 Preston Rd., Andrew Hamm 14 Santa Rosa Dr., Sheryl Morse 3259 Kneeland Cr., Kristin Dennison 7196 Manor Ln., Robert Patterson Handy Twp., Bernadette McAllister Milford, Tom Buman Warner Rd., Jacquelyn Peters 2035 Norton Rd., Evelyn Redwine 444 Inverness St., Gary Burtka, Don Bonello 3531 Warner Rd., Cassie Helton 2854 High Meadows Dr., Thomas Ranke Sargent Rd., Harold Wines 4400 w Grand River Ave., Victoria Alchin 800 Sleaford Rd., Angela Barbash 4211 Crandall Rd., Stephanie Booth City of Howell, Trisha Murphy Howell, Susan Klepinger Marion Twp., Allen Romain Owosso Rd., Alissa Recker 7171 Manor Ln., Debbie Mannisto 2330 Tooley Rd., Jodi Fulton 3528 Warner Rd., David Foreman 6126 Pheasant Ridge Dr., Ryan Feasal 5200 Autumn Kirsten Cir., Jessica Mace 1220 Weatherstone Ln., Jake Iovan 4300 Fleming Rd., Rich Allen Shiawassee County, Maggie Tenant 2578 Marr Rd., Mark Freude 3550 Byron Rd., Martin Kubiak Owosso Rd., Andrew Kimball 1039 E Davis Rd., Donald Atkins 2660 Bowen Rd., Sandy Bessert 3011 Fisher Rd., Magdalen Tonks 1405 Shire Ct., Christa Miner 1356 W. Marr Rd., Steve Smith Conway Twp., Micki, Krista Smith 2024 Oak Grove, Joy Dettling 2516 Curdy Rd., John Galopin Putnam Twp.

**Motion** by Boal, **Second** by Counts **“To move back to the Data Center Moratorium Ordinance.”** Motion carried.

Discussion followed. **Motion** by Boal, **“To enact the moratorium with the language that includes the rezoning at the same time.”** Motion failed due to no support. Discussion followed. **Motion** by Hohenstein, **Second** by Fagan, **“To support the moratorium as presented and set the current rezoning application for a Public Hearing on December 8<sup>th</sup> at the Township Board meeting so the community gets an answer and so does the applicant, and we will be treating every applicant the same.”** **“Amend motion to include ordinance No. 296.”** Roll call vote: Boal – yes, Counts – yes, Wilson – yes, Daus – yes, Fagan – yes, Hohenstein – yes, Coddington – yes.” Motion carried (7-0).

**Motion** by Counts, **Second** by Boal, **“To recess for 10 minutes.”** Motion carried.

**Motion** by Daus, **Second** by Counts, **“To reopen the meeting.”** Motion carried.

#### **UNFINISHED BUSINESS:**

A. Renewable Energy Ordinance and Overlay District

**Motion** by Hohenstein, **Second** by Boal, **“To accept Ordinance No. 297, zoning amendment to the Renewable Energy Facilities and Overlay District as presented.”** Roll call vote: Hohenstein – yes, Boal – yes, Counts – no, Wilson – no, Fagan – yes, Daus – yes, Coddington – yes. Motion carried (5-2).

B. Howell Twp. V. Fagan

Informational and added to the packet for the Board’s review.

**NEW BUSINESS:**

- C. 2026 Water Connection Fee  
2026 Sewer Connection Fee

**Motion** by Boal, **Second** by Counts, “**Resolution 11.25.558 and 11.25.559 as 0% increase for the following year.**” Roll call vote: Daus – yes, Counts – yes, Wilson – yes, Fagan – yes, Boal – yes, Hohenstein – yes, Coddington – yes. Motion carried (7-0).

- D. 2026 Meeting Dates

Treasurer Hohenstein discussed that the 2026 meeting dates need to be set by resolution.

**Motion** by Counts, **Second** by Hohenstein, “**To accept resolution 11.25.260.**” Roll call vote: Hohenstein – yes, Fagan – yes, Boal – yes, Counts – yes, Daus – yes, Wilson – yes, Coddington – yes. Motion carried (7-0).

- E. FOIA Appeal Determination – Ben Gresko

Township attorney Patterson discussed the processes and fee calculations that are involved with processing FOIA requests and the appeal process. **Motion** by Hohenstein, **Second** by Fagan, “**To adopt the Township Attorney’s recommendation as to Mr. Gresko’s FOIA Appeal and to authorize the Supervisor to sign the appeal determination and related certification for the Township Board**” Motion carried.

- F. Planning Commission Appointment to Open Seat

Supervisor Coddington invited members applying for the Planning Commission seat to stand and introduce themselves. Maureen Heikkinen introduced herself. Alissa Recker introduced herself. Aaren Currie introduced himself. Dan Bonello introduced himself. Trent Holman introduced himself. **Motion** by Hohenstein, **Second** by Boal, “**To accept the Supervisors appointment of Trent Holman to the vacant Planning Commission seat, term ending 12-31-27.**” Motion carried, two dissents.

**CALL TO THE PUBLIC:**

Public comments received by: Oliver Shampine, Spring Lake: Jennifer Provencal, 245 Foxfire Dr.: Kristin Dennison, 7196 Manor Ln.: Dan Wholihan, 8162 Majestic Blvd.: Jason Monteer, 3450 Amber Oaks Dr.: Maggie Tonks, 1405 Shire Ct. Topics discussed: opposition to the data center, Planning Commission appointment, and Wrangler’s Saloon.

**REPORTS:**

- A. SUPERVISOR:

Supervisor Coddington discussed signing an NDA and having the NDAs rescinded

- B. TREASURER:

See Treasurer Hohenstein’s report. Discussion followed

- C. CLERK:

Clerk Daus reported that the Clerk’s department has been inundated working on FOIA requests

- D. ZONING:

See Zoning Administrator Hohenstein’s report. Discussion followed

E. ASSESSING:

See Assessor Kilpela's report

F. FIRE AUTHORITY:

Supervisor Coddington reported on Fire Authority

G. MHOG:

Trustee Counts reported on MHOG

H. PLANNING COMMISSION:

Trustee Boal reported on Planning Commission. See draft minutes.

Resident Research Advisory Committee – a resident lead advisory group established to gather, analyze, and present information relevant to ordinances and regulations and relay it to the Planning Commission for further review.

I. ZONING BOARD OF APPEALS (ZBA):

No report

J. WWTP:

BioTech Agronomics contract is due for renewal. **Motion** by Hohenstein, **Second** by Daus , **“To accept the agreement with BioTech Agronomics for 3 years as presented.”** Motion carried.

K. HAPRA:

See report

L. PROPERTY COMMITTEE:

No report

M. PARK & RECREATION COMMITTEE:

See report

N. Shiawassee River Committee:

No report

**DISBURSEMENTS: REGULAR PAYMENTS AND CHECK REGISTER:**

**Motion** by Hohenstein, **Second** by Counts, **“To accept the disbursements as presented and any normal and customary payments for the month.”** Motion carried.

**ADJOURNMENT:**

**Motion** by Counts, **Second** by Daus, **“To adjourn”** Motion carried. The meeting was adjourned at 11:17 p.m.

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Sue Daus, Howell Township Clerk

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Mike Coddington, Howell Township Supervisor

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Tanya Davidson, Recording Secretary

DRAFT

6A



**HOWELL TOWNSHIP**  
**Application for Re-Zoning/Text Amendment**

3525 Byron Road Howell, MI 48855

Phone: 517-546-2817 ext. 108

Email: [inspector@howelltownshipmi.org](mailto:inspector@howelltownshipmi.org)

Fee: \$1000.00

Parcel ID #: 4706	See Attached PID List	Date <u>9/3/2025</u>
Stantec Consulting Michigan, Inc Agent: Jack Ammerman		
Applicant Name _____		Applicant Address _____
Phone _____	Fax _____	Email _____
-		
See attached Property Owner List		
Property Owner Name _____		
Phone _____	Fax _____	Email _____
Provided Upon Request	N/A	Provided Upon Request

Current Zoning Classification <u>AR, SFR, NSC</u>	Proposed Zoning Classification <u>RT</u>
Existing Use <u>Agricultural, Single Family, Commercial</u>	Proposed Use <u>Data Processing Facility</u>
Legal Description (attach copy if necessary): See attached Exhibit A	

Requested change in Ordinance / Zoning Map: Request to change the existing zoning for all listed parcels to Research and Technology District (RT) zone.
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**Reason for Requested Change:**

To support the proposed future development of the combined parcels for a Data Processing Facility within the Research and Technology District.

Has the Applicant made a previous request to rezone the property?

Yes

No

If yes, state when and the decision of the Township Board:

See attached separate exhibit for ownership consent and signatures for rezoning application.

## M E M O R A N D U M

**To:** Howell Township  
**From:** Randee, LLC  
**Date:** September 3, 2025  
**Re:** Conditional Rezoning Request

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Randee, LLC (“Randee”) submits this conditional rezoning request pertaining to 25 parcels identified on the attached **Exhibit A** (collectively, the “Property”). Randee seeks to rezone all parcels in the Property to RT – Research & Technology from the Property’s current zoning designations of Neighborhood Service Commercial, Single Family Residential, and Agricultural Residential, so that the parcels can be combined and developed as a data processing facility (the “Data Processing Facility”). To ensure that the Data Processing Facility is sited and developed responsibly and compatibly with the surrounding area, Randee offers, as voluntary conditions of the proposed rezoning, certain use and development restrictions, as detailed in Section II below.

### **I. Zoning Ordinance Analysis**

For the reasons stated below, the proposed conditional rezoning of the Property satisfies the requirements set forth in Zoning Ordinance Sections 23.02 and 23.03.

#### **1. The proposed conditional rezoning to RT is consistent with the policies and uses proposed in the Township’s Master Land Use Plan**

The proposed conditional rezoning to permit the Data Processing Facility is consistent with the Township’s Master Land Use Plan. While the majority of the Property is designated as Agricultural Preservation, the Master Plan also makes clear that “[t]he [Master Plan’s] Future Land Use Strategy recognizes and encourages...**focusing higher density residential, commercial, and industrial development around M-59, Grand River, the airport, and I-96.**” P 18 (emphasis added). As depicted in the enclosed conceptual plan, the proposed Data Processing Facility straddles Grand River and will be sited approximately a quarter-mile from I-96. Further, due to the voluntary conditions offered concerning siting, development, and operations, the proposed Data Processing Facility will be designed to operate in harmony with surrounding land uses, allowing for continued agricultural operations and the preservation of surrounding agricultural land.

MEMO: Howell Township  
DATE: September 3, 2025  
PAGE: 2

**2. The use allowed by the proposed conditional rezoning (data processing) is compatible with other zones and uses in the surrounding area.**

The Data Processing Facility will be compatible with the other zones and uses in the area surrounding the Property. The Property was selected, in part, due to its favorable location in relation to surrounding properties—with the Property being adjacent to undeveloped agricultural land and mature forests on the western and northern borders. The eastern and southern borders of the Property are adjacent to a low number of occupied residences; however, due to the Property’s size, the proposed Data Processing Facility will employ increased setbacks at the Property’s boundaries, substantially reducing or eliminating any impacts on surrounding uses. Landscape buffering within these extended setbacks will further mitigate any potential visual impacts of the development.

Regarding any concerns over potential noise, Randee evaluates potential noise impacts at each site and implements tailored mitigation strategies such as site layout modifications, quieter equipment selection, operational adjustments, tree planting, and equipment orientation. The proposed Data Processing Facility will be designed to comply with all local sound regulations. Site lighting will also be designed to minimize disturbance, with all lighting directed downward and shielded to prevent glare. The company also assesses potential impacts to cultural resources, including historic buildings, archaeological sites, and cemeteries, working closely with relevant authorities to avoid or mitigate impacts and remain at all times in compliance with all regulations.

**3. No public services or facilities would be significantly adversely impacted by the development proposed by the requested conditional rezoning.**

Randee is committed to being a good neighbor and good steward of community’s services and resources. Accordingly, Randee will cover all infrastructure costs necessary to support the development, including roadway (collaborating with the Township, County Road Commission, and MDOT, as necessary), water, sewer/wastewater, fiber, and electrical infrastructure, ensuring the community is not financially burdened. Further, the proposed Data Processing Facility will implement water efficiency and sustainability practices, while also leading water restoration projects. Specifically, such measures will include, at a minimum, recycling water through cooling systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing and infiltrating rainwater on site, incorporating water-saving fixtures and technologies within data center Facilities. Water use by the project will not overburden the Township’s water system.

MEMO: Howell Township  
DATE: September 3, 2025  
PAGE: 3

**4. The use allowed by the proposed conditional rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.**

Utilizing the Property for the proposed Data Processing Facility is the highest and best economic use of the Property and will bring numerous benefits to the community. As noted above, the land itself is ideal for the proposed use due to its size—allowing for development while maintaining extended setbacks and landscape buffering—and location relative to the low number of surrounding land uses. In addition to these favorable siting considerations, the project brings a capital investment exceeding \$1 billion to the Township that will yield substantial, long-term economic benefits to the community including, without limitation:

- ***Job Creation:***
  - Over 1,000 construction workers daily at peak during the construction phase
  - Hundreds of employees, vendors, and contractors badging into the facility once the project is operational
  - Job types span technicians, administrative support, facility management, project and technology managers, engineers, construction management, network engineers, logistics, safety and security personnel, culinary staff, energy and water specialists, and janitorial services
- ***Tax Benefits:***
  - The proposed Data Processing Facility is expected to be the largest tax payer in Livingston County and will likely generate more tax revenue than many of the largest taxpayers in Livingston County combined, providing significant ongoing funding to the County, School District, and Township.
- ***Community Engagement & Support:***
  - Though its annual grants program, the operator of the Data Processing Facility provides direct funding to schools, registered nonprofits, and community organizations in locations where it operates data centers. These grants support projects addressing critical community needs by leveraging technology to build strong, sustainable communities and improve local STEM (Science, Technology, Engineering, and Mathematics) education.

MEMO: Howell Township  
DATE: September 3, 2025  
PAGE: 4

## II. Voluntarily Offered Conditions of Rezoning

Randee acknowledges that the RT Zoning District allows for a wide range of developments that, without appropriate conditions in place, may not be harmonious with the surrounding area. Accordingly, Randee voluntarily offers the following use and development restrictions as a condition to the rezoning of the Property. The following conditions are offered pursuant to Section 23.03 of the Zoning Ordinance and MCL 125.3405.

### 1. Offered Use Restriction

Randee offers to restrict the future use of the Property to Data Processing, as the term is defined below.

**Data Processing.** A facility or facilities used to house, and in which are operated, maintained and replaced from time to time, computer systems and associated components, including but not limited to telecommunications and storage systems, cooling systems, power supplies and systems for managing property performance (including generators and mechanical and electrical yards), and equipment used for the transformation, transmission, distribution and management of electricity (including private substations), internet-related equipment, data communications connections, private communication towers, environmental controls and security devices, structures and site features, as well as certain accessory uses, buildings or structures located on the same lot such as utility buildings, offices, warehousing, cafeteria, guardhouses, diesel storage tanks, water storage tanks, security fencing, and other similar structures, improvements and appurtenances.

### 2. Offered Development Restrictions

In addition to the use restriction described above, Randee offers the following conditions to site design and development for the proposed Data Processing Facility:

- **Increased Setbacks:**
  - Outer Boundary Setbacks for Entire Development Site (all parcels on Exhibit A)
    - Front Yard: Minimum of 100' from the adjacent road right of way (greater than double current code minimum)
    - Side Yard: Minimum of 50' or height of building, whichever is greater (greater than double current code minimum)
    - Rear Yard: Minimum of 100' (double code minimum)

MEMO: Howell Township  
DATE: September 3, 2025  
PAGE: 5

- Grand River Road: Minimum of 100' from road right of way (double code minimum)

- ***Landscape Buffering:***

- The project will provide minimum landscape buffers to off street parking of not less than 30' in width (double code minimum) which is planted and maintained with trees or shrubs, including earth berms, fencing, walls, etc. In areas adjacent to residential or land zoned for residential, the greenbelt buffer will be at least 40' wide (double code minimum).

- ***Sound Mitigation:***

The Data Processing Facility will implement tailored sound mitigation strategies such as site layout modifications, quieter equipment selection, operational adjustments, tree planting, and equipment orientation.

- ***Lighting:***

The Data Processing Facility will utilize site lighting that is designed to minimize disturbance, with all lighting directed downward and shielded to prevent glare.

- ***Water:***

- The Data Processing Facility will implement water efficiency and sustainability practices measures including, at a minimum, recycling water through cooling systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing and infiltrating rainwater on site, incorporating water-saving fixtures and technologies within data center Facilities.

- ***Reimbursement of Expenses:***

- The developer will pay for, or reimburse the Township for, all infrastructure costs necessary to support development of the Data Processing Facility, including roadway, water, sewer/wastewater, fiber, and electrical infrastructure.

## EXHIBIT A

### PARCEL 1:

Commencing at the Northeast corner of Section 12, Town 3 North, Range 3 East, Handy Township, Livingston County, Michigan; thence South 00 degrees 23 minutes 09 seconds West 420.39 feet along the centerline of Owosso Road, the East line of said Section 12 and the Handy-Howell Township line to the Place of Beginning; thence continuing South 00 degrees 23 minutes 09 seconds West 2051.65 feet along said centerline of Owosso Road, said East line of said Section 12 and said Handy-Howell Township line to the West 1/4 corner of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan; thence continuing South 00 degrees 23 minutes 09 seconds West 193.18 feet (recorded as 193.16 feet) to the East 1/4 corner of said Section 12 along said centerline of Owosso Road, said East line of said Section 12 and said Handy-Howell Township line; thence North 86 degrees 31 minutes 50 seconds West 962.95 feet (recorded as North 86 degrees 31 minutes 39 seconds West 962.93 feet) along the East-West 1/4 line of said Section 12; thence North 00 degrees 15 minutes 00 seconds East (recorded as North 00 degrees 15 minutes 17 seconds East) 2666.73 feet; thence South 86 degrees 27 minutes 43 seconds East (recorded as South 86 degrees 27 minutes 48 seconds East) 389.56 feet along the centerline of Sharpe Road and the North line of said Section 12; thence South 03 degrees 25 minutes 15 seconds West 92.00 feet; thence South 57 degrees 38 minutes 52 seconds East 377.70 feet; thence South 31 degrees 16 minutes 18 seconds East 122.30 feet; thence North 89 degrees 41 minutes 18 seconds East 80.18 feet; thence South 46 degrees 23 minutes 38 seconds East 83.69 feet; thence South 89 degrees 36 minutes 51 seconds East 58.00 feet to the Place of Beginning, being a part of the Northeast 1/4 of Section 12, Town 3 North, Range 3 East, Handy Township, Livingston County, Michigan.

### PARCEL 2:

The East 3/4 of the Southeast 1/4 of Section 12, Handy Township, Livingston County, Michigan, lying North of U.S. 16 EXCEPT that part lying West a line commencing at a point North 86 degrees 43 minutes 13 seconds West 982.86 feet from the East quarter corner thence South 02 degrees 23 minutes 27 seconds West to the centerline of Grand River Avenue. ALSO EXCEPTING the West 16 acres of the East 3/4 of the Southeast 1/4 lying North of U.S. 16 Town 3 North, Range 3 East, Michigan.

### PARCEL 3:

Section 12, Town 3 North, Range 3 East, Commencing at the Southeast corner, thence North 87 degrees West 533.70 feet to point of beginning, thence North 87 degrees West 578.75 feet, thence North 03 degrees East 1226.46 feet; thence Southeasterly along centerline of Grand River Avenue 666.06 feet to centerline of County Drain; thence South 07 degrees West 1174.73 feet to point of beginning.

### PARCELS 4 & 5 (listed as Parcels 5A and 5B in title work):

Part of the Southeast 1/4 of Section 12 and the Northeast 1/4 of Section 13, all in Town 3 North, Range 3 East, Handy Township, Livingston County, Michigan, described as follows: Beginning at the Southeast corner of Section 12 and the Northeast corner of Section 13; running thence Due South 1325.27 feet along the East line of Section 13; thence North 87 degrees 36 minutes 40 seconds West 300.00 feet along the South line of the Northeast 1/4 of the Northeast 1/4 of said Section 13 to a traverse stake; thence North 87 degrees 36 minutes 40 seconds West 26.29 feet to the centerline of county drain; thence along the centerline of said county drain the following, North 00 degrees 49 minutes 06 seconds East 603.48 feet; thence North 16 degrees 31 minutes 01 seconds West 760.25 feet; thence North 07 degrees 12 minutes 39 seconds East 1177.33 feet all along the centerline of said county drain to a traverse point located North 00 degrees 15 minutes 03 seconds West 604.52 feet and North 16 degrees 31 minutes 01 seconds West 760.25 feet and North 06 degrees 29 minutes 08 seconds East 1175.54 feet from the first mentioned traverse point, the second traverse point being on the centerline of Grand River Ave. (120 feet wide) and on the point of a curve; thence Southeasterly 392.49 feet along the arc of a curve right and along the centerline of Grand River Ave. (120 feet wide), with a central angle of 8 degrees 49 minutes 50 seconds and a radius of 2546.64 feet, the long chord of which bears South 71 degrees 04 minutes 28 seconds East a distance of 392.10 feet to a point on the curve and the East line of Section 12; thence South 00 degrees 48 minutes 03 seconds East 1061.58 feet along the East line of



Section 12 to the point of beginning.

PARCEL 6 (listed as Parcel 4 in title work):

Section 13, Town 3 North, Range 3 East, Commencing at the Northeast corner thence North 87 degrees West 533.70 feet to point of beginning, thence South 07 degrees West 2.60 feet along County Drain; thence South 16 degrees East 760.25 feet; thence South 603.28 feet, thence North 87 degrees West 579.93 feet; thence North 1327.25 feet; thence South 87 degrees East 379.84 feet to point of beginning.

The Land referred to herein below is situated in the Township of Howell, County of Livingston, State of Michigan, and is described as follows:

PARCEL 7 (listed as parcel 6 in title work):

The North 1/2 of the South 1/2 of the Northwest 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan.

PARCEL 8:

A part of the Northeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan described as: Commencing at the center of said Section 7; thence North 745 feet to the point of beginning of the parcel to be described; thence North 580 feet; thence East 645 feet; thence South 580 feet; thence West 645 feet to the point of beginning.

PARCEL 9 (listed as parcel 7 in title work):

The South 1/2 of the South 1/2 of the Northwest 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan.

PARCEL 10 (listed as 9A in title work):

A part of the Northeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan described as follows: Beginning at the East 1/4 post of said Section 7; thence North 45 rods; thence West 160 rods to North and South 1/4 line of Section 7; thence South 45 rods along said 1/4 line to East and West 1/4 line of Section 7; thence East 160 rods along said 1/4 line to the point of beginning, EXCEPTING therefrom the East 35.55 rods.

PARCEL 10 continued (listed as 9B in title work):

A part of the Northeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as follows: Commencing at the Northeast corner of said Section 7; thence along the East line of said Section 7 and the centerline of Fleming Road (66 foot wide public right of way) due South 1910.00 feet; thence North 88 degrees 58 minutes 00 seconds West 1089.00 feet to the point of beginning of the parcel to be described; thence North 88 degrees 58 minutes 00 seconds West 924.00 feet; thence North 00 degrees 08 minutes 24 seconds East 544.48 feet; thence South 88 degrees 58 minutes 00 seconds East 922.67 feet; thence due South 544.50 feet to the point of beginning.

PARCEL 11:

A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Beginning at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East 1012.59 feet; thence South 01 degree 56 minutes 24 seconds East 1777.13 feet to the centerline of Howell Drain #2; thence the following 3 courses along said centerline: 1) North 67 degrees 36 minutes 05 seconds East 187.15 feet, 2) North 71 degrees 19 minutes 17 seconds East 171.88 feet, 3) North 84 degrees 36 minutes 59 seconds East 22.33 feet; thence South 02 degrees 01 minute 22 seconds East 942.22 feet; thence South 88 degrees 43 minutes 35 seconds West 303.70 feet; thence South 34 degrees 48 minutes 00 seconds East 79.17 feet; thence South 88 degrees 43 minutes 35 seconds West 73.53 feet; thence along right of way 269.00 feet along the arc of a curve to the left, with radius of 2486.59 feet, a central angle of 06 degrees 11 minutes 54

seconds and a chord which bears North 39 degrees 44 minutes 56 seconds West along right of way 268.87 feet; thence South 42 degrees 55 minutes 46 seconds West 293.62 feet; thence South 88 degrees 43 minutes 35 seconds West 644.27 feet; thence North 02 degrees 31 minutes 35 seconds West 2474.48 feet; thence North 02 degrees 01 minute 11 seconds West 193.21 feet to the point of beginning.

PARCEL 12 (listed as 12A in title work):

A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way) 1012.59 feet to the point of beginning; thence continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line of said Section 7 693.14 feet; thence South 01 degree 56 minutes 24 seconds East 1631.26 feet to the centerline of Howell Drain #2; thence the following three courses along said centerline: 1) South 84 degrees 36 minutes 59 seconds West 353.77 feet, 2) South 71 degrees 19 minutes 17 seconds West 171.88 feet, 3) South 67 degrees 36 minutes 05 seconds West 187.15 feet; thence North 01 degree 56 minutes 24 seconds West 1777.13 feet to said East-West 1/4 line of said Section 7 to the point of beginning.

PARCEL 12A AND PARCEL 12B ALSO DESCRIBED AS:

A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 1012.59 feet to the Point of Beginning; thence continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line of said Section 7, 743.14 feet; thence South 01 degree 56 minutes 24 seconds East, 1330.00 feet; thence South 88 degrees 51 minutes 43 seconds West, 50.00 feet; thence South 01 degree 56 minutes 24 seconds East, 301.26 feet to the centerline of Howell Drain #2; thence the following three (3) courses along said centerline: 1) South 84 degrees 36 minutes 59 seconds West, 353.77 feet, 2) South 71 degrees 19 minutes 17 seconds West, 171.88 feet, 3) South 67 degrees 36 minutes 05 seconds West, 187.15 feet; thence North 01 degree 56 minutes 24 seconds West, 1777.13 feet to said East and West 1/4 line of said Section 7 to the Point of Beginning.

PARCEL 13 continued (listed as parcel 13A in title work):

A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 1705.73 feet to the Point of Beginning; thence from the Point of Beginning continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line and centerline of West Marr Road, 1000.00 feet to the center of section of said Section 7; thence South 01 degree 56 minutes 24 seconds East along the North-South 1/4 line of said Section 7, 1330.00 feet; thence South 88 degrees 51 minutes 43 seconds West, 1000.00 feet; thence North 01 degree 56 minutes 24 seconds West, 1330.00 feet to said East-West 1/4 line and the Point of Beginning, EXCEPTING therefrom the following described parcel: A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7, North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 1705.73 feet to the Point of Beginning; thence continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line and said centerline, 50.00 feet; thence South 01 degree 56 minutes 24 seconds East, 1330.00 feet; thence South 88 degrees 51 minutes 43 seconds West, 50.00 feet; North 01 degree 56 minutes 24 seconds West, 1330.00 feet to said East-West 1/4 line, said centerline, and the Point of Beginning.

PARCEL 13 (listed as parcel 12B in title work):

A part of the Southwest fractional 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township,

Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7, North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 1705.73 feet to the Point of Beginning; thence continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line and said centerline, 50.00 feet; thence South 01 degree 56 minutes 24 seconds East, 1330.00 feet; thence South 88 degrees 51 minutes 43 seconds West, 50.00 feet; North 01 degree 56 minutes 24 seconds West, 1330.00 feet to said East-West 1/4 line, said centerline, and the Point of Beginning.

PARCEL 13A AND PARCEL 13B ALSO DESCRIBED AS:

A part of the Southwest fractional 1/4 and the Southeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 1755.73 feet to the Point of Beginning; thence from the Point of Beginning continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line and centerline of West Marr Road, 950.00 feet to the center of section of said Section 7; thence continuing North 88 degrees 51 minutes 43 seconds East along said East-West 1/4 line and centerline of West Marr Road, 50.01 feet; thence South 01 degree 56 minutes 24 seconds East, 1329.99 feet; thence South 88 degrees 51 minutes 43 seconds West, 1000.00 feet; thence North 01 degree 56 minutes 24 seconds West, 1330.00 feet to said East-West 1/4 line and the Point of Beginning.

PARCEL 14 (listed as parcel 13B in title work):

A part of the Southeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Beginning at the center of section corner of said Section 7, thence North 88 degrees 52 minutes 21 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 50.01 feet; thence South 01 degree 56 minutes 24 seconds East, 1329.99 feet; thence South 88 degrees 51 minutes 43 seconds West, 50.00 feet to the North-South 1/4 line of said Section 7; thence North 01 degree 56 minutes 24 seconds West along said North-South 1/4 line, 1330.00 feet to said centerline, said center of section, and the Point of Beginning.

PARCEL 14 continued (listed as Parcel 14 in title work):

A part of the Southwest fractional 1/4 and the Southeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as: Commencing at the West 1/4 of said Section 7; thence North 88 degrees 51 minutes 43 seconds East along the East-West 1/4 line of said Section 7 and the centerline of West Marr Road (66 foot wide right of way), 2705.73 feet to the center of section of said Section 7; thence North 88 degrees 52 minutes 21 seconds East continuing along said East-West 1/4 line and said centerline, 50.01 feet to the Point of Beginning; thence North 88 degrees 52 minutes 21 seconds East continuing along said East-West 1/4 line and said centerline, 2623.93 feet to the East 1/4 of said Section 7; thence South 01 degree 54 minutes 02 seconds East along the East line of said Section 7 and the centerline of Fleming Road (66 foot wide right of way), 2651.30 feet to the Southeast corner of said Section 7; thence South 88 degrees 40 minutes 04 seconds West along the South line of said Section 7, 2672.00 feet to the South 1/4 of said Section 7; thence South 88 degrees 43 minutes 35 seconds West continuing along said South line, 1590.22 feet to the centerline of East Grand River Avenue (variable width right of way); thence North 34 degrees 48 minutes 00 seconds West along said centerline of East Grand River Avenue, 79.17 feet to the intersection with a line being 66.00 feet North (measured at right angles) and parallel to the South line of said Section 7; thence along said line being parallel to and 66.00 feet North of the South line of said Section 7, North 88 degrees 43 minutes 35 seconds East, 303.70 feet to the West line of the East 1/2 of the Southwest 1/4 of said Section 7; thence North 02 degrees 01 minute 22 seconds West along said West line, 942.23 feet to the centerline of Howell Drain #2; thence North 84 degrees 36 minutes 59 seconds East along said centerline, 331.44 feet; thence North 01 degree 56 minutes 24 seconds West, 301.26 feet; thence North 88 degrees 51 minutes 43 seconds East, 1050.00 feet; thence North 01 degree 56 minutes 24 seconds

West, 1329.99 feet to said East-West 1/4 line and said centerline of Marr Road and the Point of Beginning.

PARCEL 15:

All that part of the West half of the Northwest fractional quarter of Section 18, Town 3 North, Range 4 East, Michigan that lies West of the center of Highway M-43 (old highway US 16).

PARCEL 16 (listed as parcel 16A in title work):

Commencing in the center of the Grand River Road where the said road crosses the West line of the East one-half (1/2) of the Northwest quarter (1/4) of Section 18; running thence South seventeen (17) rods; thence East eight (8) rods and five (5) feet to the center of the Grand River Road; thence fifteen (15) rods and four (4) feet to the place of beginning, in Town 3 North, Range 4 East, Michigan.

PARCEL 16 continued (listed as parcel 16B in title work):

All that part of the Northeast quarter of the Northwest fractional quarter of Section 18, Town 3 North, Range 4 East, Michigan, that lies West of the center of Highway U.S. 16, EXCEPTING therefrom a parcel of land described as follows: Beginning on the West line of the Northeast quarter of the Northwest fractional quarter of said Section 18 at the intersection of said line with the center of said highway; thence South 17 rods; thence Easterly eight rods and five feet to the center of the said highway; thence Northwesterly in center of said highway fifteen rods and four feet to the place of beginning.

PARCEL 17:

A part of the Northwest fractional 1/4 and part of the Northeast 1/4 of Section 18, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as follows: Commencing at the Northwest corner of said section; thence South 89 degrees 44 minutes 41 seconds East along the North line of said section, 1091.71 feet to the centerline of Grand River Avenue and the Point of Beginning of the parcel to be described; thence continuing South 89 degrees 44 minutes 41 seconds East along said North line 2265.48 feet; thence South 00 degrees 26 minutes 25 seconds East 1501.45 feet; thence South 87 degrees 35 minutes 40 seconds West 1247.50 feet to said centerline of Grand River Avenue; thence North 33 degrees 22 minutes 00 seconds West along said centerline 1835.00 feet; thence continuing Northwesterly along said centerline on an arc left, having an arc length of 37.92 feet, a central angle of 01 degree 48 minutes 26 seconds, a radius of 1202.36 feet and a chord that bears North 34 degrees 16 minutes 13 seconds West 37.92 feet to the Point of Beginning.

PARCEL 18:

All that part of the West 1/2 of the Northwest 1/4 of Section 18 lying Northeast of Grand River Avenue, all that part of the Northeast 1/4 of the Northwest 1/4 of Section 18 lying Northeast of Grand River Avenue, the Southeast 1/4 of the Northwest 1/4 of Section 18, the Northeast 1/4 of Section 18, the Southwest 1/4 of Section 18 except the Southwest 1/4 of the Southwest 1/4 of said section, the Northwest 1/4 of the Southeast 1/4 of Section 18, and all that part of the Southwest 1/4 of the Southeast 1/4 of Section 18 lying Northeast of Grand River Avenue, which property is in Town 3 North, Range 4 East, Michigan, EXCEPTING therefrom the following described parcel: A part of the Northwest fractional 1/4 and part of the Northeast 1/4 of Section 18, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as follows: Commencing at the Northwest corner of said section; thence South 89 degrees 44 minutes 41 seconds East along the North line of said section, 1091.71 feet to the centerline of Grand River Avenue and the Point of Beginning of the parcel to be described; thence continuing South 89 degrees 44 minutes 41 seconds East along said North line 2265.48 feet; thence South 00 degrees 26 minutes 25 seconds East 1501.45 feet; thence South 87 degrees 35 minutes 40 seconds West 1247.50 feet to said centerline of Grand River Avenue; thence North 33 degrees 22 minutes 00 seconds West along said centerline 1835.00 feet; thence continuing Northwesterly along said centerline on an arc left, having an arc length of 37.92 feet, a central angle of 01 degree 48 minutes 26 seconds, a radius of 1202.36 feet and a chord that bears North 34 degrees 16 minutes 13 seconds West 37.92 feet to the Point of Beginning.

PARCEL 19:

The Southwest quarter of the Southeast quarter of Section 18, Town 3 North, Range 4 East, Michigan, lying South of Grand River Road, EXCEPTING therefrom a parcel of land described as follows: Commencing at the Southwest corner of the Southeast quarter of said Section 18 and in the center of the highway; thence running North on the quarter line 16 rods; thence East 10 rods; thence South 16 rods to the center of the highway; thence West in the center of the highway 10 rods to the place of beginning; ALSO EXCEPTING therefrom a parcel of land commencing 10 rods east of the Southwest corner of the Southeast quarter of said Section 18, Town 3 North, Range 4 East, Michigan, thence North 16 rods; thence East 10 rods; thence South 16 rods; thence West 10 rods to the point of beginning.

PARCEL 20 (listed as parcel 22 in title work):

Commencing at a point 4 chains and 3 links West of the Southeast corner of Section 18, Town 3 North, Range 4 East, Michigan; running thence West to the Southwest corner of the East half of the Southeast quarter of the aforesaid section; thence North to the center of Grand River Road, so called; thence Southeasterly in the center of Grand River Road to a point due North of beginning; thence South to the place of beginning, EXCEPT two acres of land on the East end of the above described land.

PARCEL 21 (listed as parcel 20 in title work):

A part of the Southeast 1/4 of Section 18, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as: Commencing at the Southwest corner of the Southeast 1/4 of said Section 18, in the center of the highway; running thence North 16 rods; thence East 10 rods, thence South 16 rods; thence West 10 rods to the place of beginning.

PARCEL 22 (listed as parcel 21 in title work):

Commencing 10 rods East of the Southwest corner of the Southeast 1/4 of Section 18, Town 3 North, Range 4 East, Michigan, thence North 16 rods; thence East 10 rods; thence South 16 rods; thence West 10 rods to the point of beginning.

PARCEL 23 (listed as parcel 29 in title work):

A part of the Northeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, described as: Commencing at the Northeast corner of said Section 7; thence due South 1565.50 feet along the centerline of Fleming Road, also being the East section line of said Section 7 to the point of beginning of the parcel to be described; thence continuing due South 344.50 feet along the centerline of Fleming Road to a point 45 rods North of the East 1/4 post of said Section 7; thence North 88 degrees 58 minutes 00 seconds West 2013 feet to a point 40 rods East of the North and South 1/4 line of said Section 7; thence North 00 degrees 08 minutes 24 seconds East 544.48 feet; thence South 88 degrees 58 minutes 00 seconds East 922.67 feet; thence due South 200.00 feet; thence South 88 degrees 58 minutes 00 seconds East 1089.00 feet to the point of beginning, EXCEPTING therefrom the following described parcel: A part of the Northeast 1/4 of Section 7, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan, more particularly described as follows: Commencing at the Northeast corner of said Section 7; thence along the East line of said Section 7 and the centerline of Fleming Road (66 foot wide public right of way) due South 1910.00 feet; thence North 88 degrees 58 minutes 00 seconds West 1089.00 feet to the point of beginning of the parcel to be described; thence North 88 degrees 58 minutes 00 seconds West 924.00 feet; thence North 00 degrees 08 minutes 24 seconds East 544.48 feet; thence South 88 degrees 58 minutes 00 seconds East 922.67 feet; thence due South 544.50 feet to the point of beginning.

PARCEL 24 (listed as parcel 23 in title work):

The North 20 acres of the East 1/2 of the Southeast 1/4 of Section 18, Town 3 North, Range 4 East, Howell Township, Livingston County, Michigan.

PARCEL 28:

The Southwest 1/4 of the Southwest fractional 1/4 of Section 18, Town 3 North, Range 4 East, Livingston

County, Michigan.



TETRA TECH

# Information Summary Report

Aquifers at the MHOG SWATH Norton Road Well Field

**Prepared for:**

Marion, Howell, Oceola and Genoa (MHOG)  
Sewer and Water Authority (SWATH)

**Prepared by:**

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**Approval for issue**

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## Table of Contents

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<b>Definitions .....</b>	<b>i</b>
<b>Executive Summary .....</b>	<b>iii</b>
<b>1.0 Introduction .....</b>	<b>1</b>
1.1 Scope and Tetra Tech’s role .....	1
1.2 Approach.....	1
1.3 Limitations .....	1
1.4 What this Information Summary Report can and cannot do .....	1
<b>2.0 Hydrogeology .....</b>	<b>2</b>
2.1 What and where the Marshall Sandstone is.....	2
2.2 Typical water quality and common issues .....	3
2.3 How groundwater moves .....	4
2.4 What “recharge” means and where it happens.....	4
2.5 How productive the Marshall Sandstone Aquifer is .....	5
2.6 How the aquifer behaves at the MHOG wells.....	6
<b>3.0 Planned capacity and future wells .....</b>	<b>10</b>
<b>4.0 Summary of Findings.....</b>	<b>10</b>
<b>5.0 References.....</b>	<b>11</b>

### List of Tables

- Table 1: Comparison of the number of wells in the unconsolidated and bedrock aquifers.**
- Table 2. Modification of Kransy’s (1993) classification of transmissivity by magnitude.**
- Table 3. Average Pump Rates in Million Gallons per Day (MGPD) for Each Well and Period.**
- Table 4. Average Water Levels (Feet Below Ground Surface) for Each Well and Period.**
- Table 5. Maximum Safe Pumping Level (Feet Below Ground Surface).**
- Table 6. Well Field Production for each Period.**

### List of Figures

- Figure 2. Plan view of Marshall Formation: MHOG Well Locations**
- Figure 3. Geologic Map: Livingston County**
- Figure 4. Geologic Cross Section**
- Figure 5. Distribution of freshwater, saline and brine in the Marshall Aquifer: MHOG Well Locations**
- Figure 6. Groundwater Flow Direction in Mississippian Aquifer: MHOG Well Locations**

### Appendices

- APPENDIX A. WELL LOGS**
- APPENDIX B. WELL FIELD DATA**

## Definitions

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**Anticline:**

A type of fold in rock layers that forms an arch-like shape, with the oldest rocks at its core.

**Aquifer:**

A layer of rock, sand, or gravel underground that holds and allows water to move through it, providing a source of groundwater for wells and springs.

**Bedrock:**

The solid rock layer found beneath soil, sand, or gravel. Bedrock can store and transmit groundwater if it has cracks or pores.

**Crest:**

The highest point or top of a hill, wave, or fold such as an anticline.

**Cross Section:**

A side-view drawing or diagram that shows what the ground looks like below the surface, as if it were sliced open, to reveal layers of soil, rock, and water.

**Freshwater:**

Water that has very low concentrations of dissolved salts, making it suitable for drinking, irrigation, and most uses by people and animals.

**Glacial Drift:**

Material such as clay, sand, gravel, and boulders that was carried and deposited by glaciers during past ice ages.

**Hydraulic Conductivity:**

A measure of how easily water can move through a material, such as soil or rock. Higher hydraulic conductivity means water flows more easily.

**Outcrop:**

An area where bedrock or other layers of rock are exposed at the Earth's surface, often visible on hillsides or road cuts.

**Permeability:**

The ability of a material, like soil or rock, to allow water to pass through it. Materials with high permeability let water flow through quickly.

**Recharge:**

The process by which water from rain, snow, or other sources soaks into the ground and replenishes an aquifer.

**Saline:**

Saline water (more commonly known as salt water) is water that contains a high concentration of dissolved salts (mainly sodium chloride).

**Transmissivity:**

A measure of how much water can be transmitted horizontally through an entire thickness of an aquifer.

**Well Hydraulics:**

The study of how water moves to and from wells, including how pumping affects groundwater levels and flow.

## Executive Summary

---

This information summary report was prepared in response to request by the MHOG Sewer and Water Authority to perform a literature review as well as a review of the 2004 Hydrogeologic Study for the MHOG Well Field to verify their permitted and planned ultimate well capacity. Specifically this report was prepared to answer whether increasing water production at the Norton Road Well Field (Well Field) to the maximum permitted level of 13.5 million gallons per day (MGPD) would cause (1) water-quality degradation or salinization, (2) drawdown and loss of water to nearby private wells, (3) water quantity or (4) long-term depletion of the Marshall Sandstone aquifer. The information that was reviewed and summarized in this document corroborated the 2004 hydrogeologic study conclusions and did not identify any “red flags” associated with MHOG pumping at its permitted withdrawal capacity. In summary, we were able to address the following concerns:

1. **Water quality / salinity:** There is a regional presence of saline zones in the Marshall Sandstone, but current Well Field water meets drinking-water requirements and there has been no observed increase in salinity (sodium, chloride and other ions) over the years and no observed relationship between volume of water pumped and salinity values.
2. **Nearby wells / going dry:** At the Well Field, the pumping wells cause a decrease in water levels. However, the deepest water level measured in the Well Field wells is less than 50%, or half of the deepest that they can get. The decrease in water levels due to the Well Field wells pumping is not expected to be seen in private wells that are installed in shallower sand and gravel aquifers because at the Well Field, the Marshall Sandstone is isolated from the shallower sand and gravel aquifers by an extensive clay layer. The decrease in water levels due to the MHOG wells pumping is expected to be a zero to minor decrease in private wells that are installed in the Marshall Sandstone within one mile of the Well Field.
3. **Water quantity:** At the well field the Marshall Sandstone has an exceptional aquifer rating in terms of what it can produce and is considered to have a water supply potential of a Natural Resource. A conservative groundwater model (no recharge, 100-day simulation, 12 MGPD pumping) indicates a maximum drawdown within the Well Field of about 63 feet, approximately 64% of available drawdown. A conservative groundwater model (no recharge, 100-day simulation, 18 MGPD pumping) indicates a maximum drawdown within the Well Field of about 92.4 ft, approximately 85–95% of the currently available drawdown. This means the Well Field likely can physically produce the EGLE permitted (and even higher) rates.
4. **Long-term depletion:** Longer-term sustainability depends on actual recharge. While recharge has not been measured at the Well Field, there is published information that suggests the Well Field is in proximity to where the Marshall could be recharged via contact with sand and gravel aquifers, contact with the ground surface where precipitation infiltrates, and near areas where the bedrock is fractured which increases the opportunity for freshwater to recharge the aquifer. In addition, Tetra Tech notes a strong relationship between water levels measured at the Well Field and the amount of water being pumped. This means that months with more pumping is likely the reason for the occurrence of deeper water levels versus other causes like lack of recharge to the aquifer.

For further proof, a site-specific groundwater model could be completed to confirm or refute the findings that are summarized above. Tetra Tech can provide our recommended approach to the model upon request.

## 1.0 Introduction

---

This Information Summary Report gives municipal leaders a clear, nontechnical summary of the Marshall Sandstone (Marshall) aquifer at both the regional scale and for the Marion-Howell-Genoa-Oceola (MHOG) Sewer and Water Authority (SWATH) Norton Road Well Field (Well Field) that is in Livingston County, Michigan. Its goal is to explain what is known about water quality, water levels, and water availability from publicly available studies and MHOG SWATH records so decision-makers can weigh permit and operational decisions with better context.

### 1.1 Scope and Tetra Tech's role

Tetra Tech prepared this summary at the request of MHOG SWATH by collecting and reviewing readily available information about the Marshall aquifer and the Well Field. Our role is to synthesize existing data and published studies, describe how those findings apply (or do not apply) to the Well Field, and point out important uncertainties that decision-makers should consider.

### 1.2 Approach

We used readily available public sources (published reports, maps, and online data) and MHOG SWATH's well records and monitoring data. We focused on material directly relevant to the Well Field: aquifer type and extent, local water quality results, measured water levels, historical pumping, and known regional issues (for example, saline zones and extents).

Our review is documented in **Section 5** (References), which lists the specific publications and data sets we examined.

### 1.3 Limitations

Because this Information Summary Report is based on existing, publicly available information, there are some important limits to what it can tell us:

- Some published studies do not give precise locations for the wells or data they report, so it can be hard to directly match their results to the Well Field.
- Many reports use historical data; conditions in the subsurface (water levels, water quality) can change over time and may not be the same today.
- The Marshall is commonly buried beneath many feet of glacial drift (silt, clay, sand, and/or gravel). Where bedrock is not exposed, published interpretations depend on driller logs. Driller log descriptions are useful but are subjective and can vary between drillers; correlating those logs across an area adds uncertainty.
- There may be additional studies, proprietary data, or recently collected monitoring results that were not publicly available and therefore are not included here.

### 1.4 What this Information Summary Report can and cannot do

What it can do: summarize the best available public information, identify regional patterns and known hydrogeologic conditions, and highlight gaps where further, targeted study would reduce uncertainty. What

it cannot do: replace a site specific hydrogeologic investigation or up-to-date field testing (for example, a detailed pumping test, groundwater modeling, or new water chemistry sampling). Despite these limitations, the reviewed publications and local records provide useful, decision-related information. The next sections summarize the hydrogeology, describe how that information applies to current and potential future operation of the Well Field, and present a summary of findings.

## 2.0 Hydrogeology

Michigan’s groundwater is withdrawn from five principal aquifer systems. These systems occur in rock formations (bedrock aquifers) and unconsolidated aquifers (sand and gravel). There are approximately 15 major bedrock aquifers and more than 100 localized sand-and-gravel aquifers across the state.

Livingston County’s groundwater is withdrawn from primarily sand and gravel (unconsolidated) aquifers and the Marshall (bedrock) aquifer. Across Livingston County there are ~21,218 wells mapped in the unconsolidated aquifers and ~5,134 mapped in bedrock aquifers. **Table 1** and **Figure 1** present the number of wells in each type of aquifer within 2 miles of the Well Field.

**Table 1: Comparison of the number of wells in the unconsolidated and bedrock aquifers.**

Aquifer Type	Number of Wells within 2 miles of the Norton Rd. Well Field
<b>Unconsolidated Wells (Primarily sand-and-gravel wells)</b>	231
<b>Bedrock Wells (inclusive of MHOG wells)</b>	466

The Marshall aquifer is one of the 15 major bedrock aquifer units and is a source of freshwater not only to MHOG SWATH but to several other Michigan communities, including: Howell, Kalamazoo, Battle Creek, Bad Axe, Summit Township, Marshall, Middleville, Lansing, Albion, Jackson, Sandusky, Caledonia Township, Springfield, Carsonville, Spring Arbor Township, Leoni Township, Millington, Wayland, Elkton, Holly, and Marlette.

### 2.1 What and where the Marshall Sandstone is

The Marshall lies under the ground across a large part of the Lower Peninsula - on the order of a few thousand square miles - and is exposed at the surface (“outcrop”) in a much smaller area where the rock is visible at the ground surface. Outcrops at the surface are found chiefly in Jackson and Calhoun counties and in the northern part of Huron County where this sandstone forms the “Thumb Nail” of Michigan. **Figure 2** shows the location of the Marshall aquifer in Michigan. The map labels some areas as “sub-outcrop” of the Marshall - that means the Marshall lies directly under the drift (silt, clay, sand, and/or gravel) where not exposed at the surface. The Well Field is in the southeasternmost portion of the Marshall Formation.

**Figure 3** is the geologic map for Livingston County and shows the bedrock you are most likely to encounter beneath the loose, near-surface material (called drift). Where the Marshall sub-outcrops and the overlying

drift is coarse, there is a good chance the Marshall is hydraulically connected to shallower sand-and-gravel aquifers (so surface water can more readily reach the sandstone). Where other bedrock units (for example the Michigan or Saginaw formations) lie on top of the Marshall, those younger rocks separate the Marshall from the surface and the connection to shallow groundwater is weaker.

A key local feature is the Howell Anticline - a broad fold in the bedrock that trends northwest-southeast through Livingston County. Because the fold lifts and bends the rock layers, erosion has removed the Marshall in the highest part of the fold's crest. That is why the Marshall is missing in the central part of the county but reappears (sub-outcrops) on the arms of the fold to the southwest and northeast. In short: the fold changes where the Marshall sits under the ground and where it can receive recharge or connect with other aquifers.

In eastern Livingston County, the Coldwater Shale and other younger shales and sandstones are the first bedrock units encountered beneath the drift. These rocks occupy the eroded crest of the anticline where the Marshall and some other formations were worn away before the area was covered by glacial drift. Because of these local changes in bedrock and drift thickness, recharge, well yields, and how pumping affects nearby wells can differ markedly across short distances.

A generalized geologic cross section was created using well logs (**Appendix A**) near the Well Field (**Figure 4**). This cross section shows MHOG production well #4 along with Howell production well #5, and a few residential wells that are installed in drift and bedrock aquifers. The bedrock wells are installed at depths ranging from 391 to 420 feet below the surface in an aquifer consisting of primarily alternating limestone and sandstone layers and thicker sandstone units. The upper part of the bedrock where the limestone is present is likely part of the Michigan Formation whereas the underlying relatively thicker units of sandstone are likely part of the Marshall.

On top of the bedrock are layers of drift comprised of clay, sand and gravel to an approximate depth of at least 100 feet below surface grade. The clay layer is approximately 13 feet thick and is continuous in lateral extent at the well field. This clay layer is a confining layer for the bedrock aquifers in this location.

The total depth of the Marshall in this location is not discernable based on the review of the well logs used in the cross section. Further examination of surrounding well logs is needed to be able to approximate the vertical extent of the Marshall aquifer in Livingston County.

## 2.2 Typical water quality and common issues

Water from the Marshall aquifer is generally fresh and close to neutral pH (roughly 6.8–8.0). Total dissolved solids and most natural minerals are usually below federal health guidelines in much of the aquifer. Concentrations of calcium, magnesium, iron, manganese, and bicarbonate vary by location. These are common natural minerals that affect hardness and taste more than safety in most places. Arsenic, nitrate, sulfate, chloride, and naturally occurring bacteria are generally low across most of the aquifer, although they can be elevated locally.

The Well Field wells and associated water plant, continually meets water quality requirements. Water quality reports can be viewed at the following website: [mhog.org/waterquality](http://mhog.org/waterquality).

There are documented pockets or zones of salty (saline) water in parts of the Marshall. **Figure 5** shows where studies have indicated that saline water is present within the Marshall. These saline zones, estimated

to have greater than 1,000 milligrams per Liter of dissolved solids, occur for several reasons: isolated, trapped ancient saline water in cracks; brine that collects where the sandstone thins; and deep, confined salty layers under low areas of the basin (for example, in parts of the Saginaw Bay/Ottawa lowlands). Because salty water is denser and often deeper, it usually does not affect shallow freshwater, but deep pumping can change pressures and, in some places, raise the risk of pulling salty water toward freshwater wells.

The Marshall aquifer contains freshwater in sub outcrop areas (**Figures 2 and 3**), where it is in direct contact with glacial drift aquifers like sand and gravel formations. Salinity increases from these outer areas towards the center of the lower peninsula where the aquifer is buried by thick sequences of shales, carbonates and evaporates.

The Well Field is located within a freshwater portion of the Marshall, south of areas considered to be saline (**Figure 5**). Review of sodium, chloride and other ion results of the Well Field water supply indicate that the total dissolved solid concentration is well below that of a saline water source. Also of note is that the concentrations of parameters have remained consistent over time, indicating that operation of the well field, and other activities in the surrounding area has not had a negative impact on water quality.

## 2.3 How groundwater moves

Shallow groundwater generally moves from higher elevations (where the rock is closer to the surface and receives more recharge) toward lower elevations (wetlands, streams, lakes, and lowland basins). This flow follows the regional slope of the land but can be changed locally by geologic structures such as folds and faults (for example, the Howell Anticline).

The Howell Anticline is a regional geologic fold (an arch-shaped bend in the rock layers) whose crest runs through parts of Livingston County. The fold raises the Marshall (and other bedrock layers) closer to the surface along the crest.

Why that matters for water: where the anticline brings the Marshall closer to the surface or causes folding/fracturing, (a) recharge can be better (water has a shorter path to reach the sandstone), (b) fracture density and connectivity can be greater (which can increase well yields), and (c) local flow directions and the area influenced by pumping can be different from the regional pattern.)

**Figure 6** shows the general direction of groundwater movement in the Marshall aquifer (the figure shows horizontal movement). The Well Field is in a region with groundwater movement to the north, although groundwater flow direction may differ on a local scale.

## 2.4 What “recharge” means and where it happens

Recharge is the natural refilling of the aquifer when water from rain, snowmelt, streams, or wetlands infiltrates into the ground and becomes groundwater. Recharge can also occur where overlying coarse sand and gravel or fractures give water an easy path down to the sandstone. Recharge to the Marshall is strongest where the sandstone is at or near the surface or where overlying deposits are permeable. In areas where the Marshall is deeply buried under thick, low permeability material, recharge to the deep sandstone is much slower and the aquifer is more sensitive to heavy pumping.



As previously mentioned, the Well Field is in a portion of the Marshall that is relatively closer to the surface and near areas that sub-outcrop beneath unconsolidated drift materials. Recharge rates differ by location and depend on soil, land cover, and precipitation. Specific annual recharge rates in the vicinity of the well field have not been estimated but a typical ballpark range is about 0.5 to 2.0 inches per year.

## 2.5 How productive the Marshall Sandstone Aquifer is

The Marshall aquifer is known to be a productive bedrock aquifer in many places. Technical measures used by hydrogeologists include:

- Hydraulic conductivity (how easily water flows through the rock): on the order of 10 - 50 feet per day in typical areas (this is an engineering way of saying water moves relatively easily through the rock).
- Transmissivity (a combined measure of how much water a rock can transmit): roughly 2,000 - 30,000 square feet per day in productive areas
- Practically, drilled wells in the Marshall commonly yield hundreds of gallons per minute (gpm) (for example, 100 - 500 gpm) and in some high-yield areas can reach about 1,000 gpm.

How much groundwater is a lot? **Table 2** provides a classification system that helps to provide a way for professionals to agree on what defines a water supplies potential.

**Table 2. Modification of Kransy’s (1993) classification of transmissivity by magnitude.**

Transmissivity (square feet per day)	Class	Meaning	Supply Potential
>16,099	I	Exceptional	A Natural Resource
>10,750	II	Very High	Of Great Regional Importance
>1,075	III	High	Of Regional Importance
>107.5	IV	Intermediate	Of Local Importance
>10.75	V	Low	Of Local Value
>1.075	VI	Very Low	Limited to Private Supplies
<1.075	VII	Imperceptible	Probably Not An Aquifer

Source: Applied Ground-Water Hydrology and Well Hydraulics, Michael Kasenow, Ph.D.

With a transmissivity of 2,000 – 30,000 square feet per day, the Marshall aquifer is considered of regional to great regional importance as well as a natural resource which is why it is used for many municipal and large-capacity water supplies.

## 2.6 How the aquifer behaves at the MHOG wells

Pumping tests and aquifer analyses have been completed at the Well Field wells as part of EGLE permitting requirements. Following is a summary of the test findings:

- The average transmissivity is 28,500 square feet per day, indicating that the aquifer has an exceptional rating and is considered to have a water supply potential of a Natural Resource (**Table 2**).
- All of the Well Field wells (#1 through #6) can pump simultaneously at 1,400 gpm without causing excessive drawdown of water levels in the well field. The theoretical water level drawdown in the wells after 100 days of continuous pumping at 1,400 gpm without any recharge to the aquifer, were estimated to be from 61 to 63 feet below static water levels. This estimated drawdown is approximately 57 to 64% of the available drawdown in the well field.

The current operation of the MHOG wells does not include simultaneous pumping of wells #1 through #6. To understand how the well field operates and performs, Tetra Tech reviewed measured pump discharge rates, water plant volumes and well water level data that were provided by MHOG SWATH for the period between October 2020 and October 2025 (**Appendix A**). **Tables 3** and **4** provide the yearly averages of total pumping rate and average water levels per well.

**Table 3. Average Pump Rates in Million Gallons per Day (MGPD) for Each Well and Period.**

Period	Well #1	Well #2	Well #3	Well #4	Well #5	Well #6
Nov 2020– Oct 2021	0.31	0.29	0.22	0.28	0.95	1.38
Nov 2021– Oct 2022	0.38	0.22	0.22	0.21	0.95	1.21
Nov 2022– Oct 2023	0.32	0.04	0.23	0.24	0.95	1.33
Nov 2023– Oct 2024	0.29	0.26	0.20	0.21	0.85	1.17
Nov 2024– Oct 2025	0.26	0.29	0.21	0.27	0.99	1.21

In general, the wells on average are operated 0.62 and to 1.79 MGPD less than what a given well can produce.

**Table 4. Average Water Levels (Feet Below Ground Surface) for Each Well and Period.**

Period	Well #1	Well #2	Well #3	Well #4	Well #5	Well #6
Nov 2020– Oct 2021	16.08	19.53	16.67	16.64	22.77	44.13
Nov 2021– Oct 2022	16.33	18.99	15.82	16.38	22.67	43.13
Nov 2022– Oct 2023	17.01	20.84	17.14	17.94	23.76	43.92
Nov 2023– Oct 2024	15.36	19.08	15.56	16.60	22.32	42.86
Nov 2024– Oct 2025	17.15	20.68	17.40	18.73	24.56	44.39

The average water levels are well above the safe pumping levels for each well that was determined in the pumping tests and aquifer analyses that have been completed at the Well Field wells as part of EGLE permitting requirements. These maximum safe pumping levels are noted in **Table 5** below.

**Table 5. Maximum Safe Pumping Level (Feet Below Ground Surface).**

	Well #1	Well #2	Well #3	Well #4	Well #5	Well #6
<b>Safe Pumping Level</b>	111	116	119	125	139	138

**Table 6. Well Field Production for each Period.**

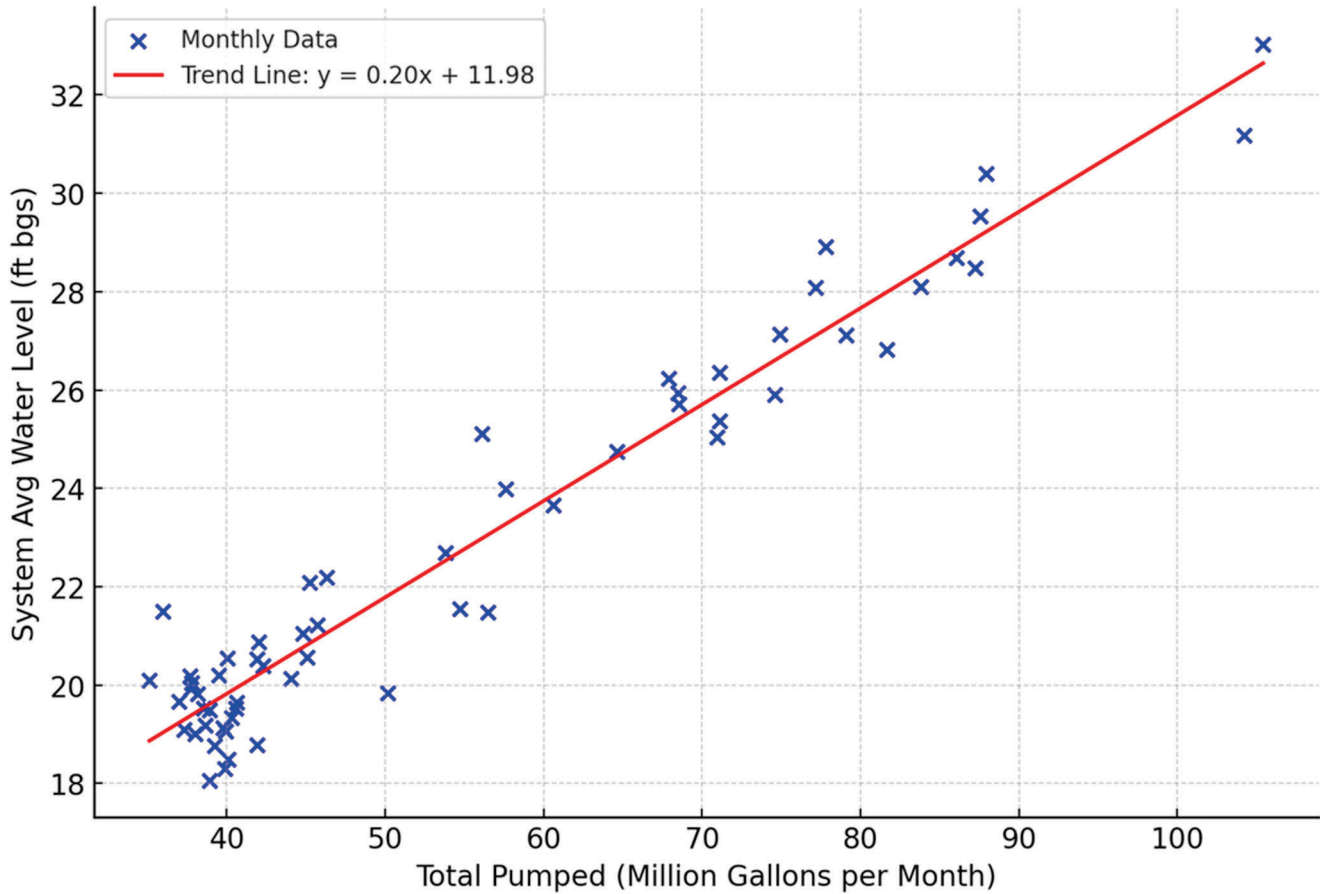
Period	Production in MGPY
Nov 2020–Oct 2021	655.130
Nov 2021–Oct 2022	673.330
Nov 2022–Oct 2023	659.462
Nov 2023–Oct 2024	633.648
Nov 2024–Oct 2025	685.869

The data summarized in Tables 3 – 6 and provided in **Appendix B**, can be used to help understand the effects of increased water withdrawal at the Well Field.

The water level data was plotted versus the well field production volumes to show how the water levels in the well field are related to the pumping of the wells. This is useful in predicting what happens with water levels under different pumping scenarios. Below is a graph of each month’s total water pumped (x-axis) against the water level that month (y-axis). Please note that the water level data used in the graph represents an average of all six production well water levels per month between October 2020 and October 2025. The graph was created by:

1. Using the system average water level for each month.
2. Aligning it with the total monthly pumping.
3. Fit a regression (trend line) and show the equation.
4. Create a scatter plot with the trend line and equation.

### System Avg Water Level vs. Pumping



Above is the scatter plot of **system average water level (feet below ground surface(bgs))** versus **total water pumped (million gallons per month)**, with a trend line and its equation:

- **Blue dots:** Each dot is a month, showing the average water level and the total water pumped.
- **Red line:** The trend line (regression line) summarizes the relationship. The equation is shown on the plot.

**What Does This Show?**

The **trend line equation** is:

$$\text{Water Level (ft bgs)} = 0.20 \times \text{Total Pumped (MG)} + 11.98$$

**Interpretation:**

For every additional million gallons pumped in a month, the average water level drops by about **0.20 feet** (about 2.5 inches).

**Correlation:**

The correlation is **0.97**—a very strong relationship. This means that months with more pumping is likely the reason for the occurrence of deeper water levels versus other causes like lack of recharge to the aquifer.

### 3.0 Planned capacity and future wells

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Each of MHOG's six wells can produce 2 MGD, for a total production capacity of 12 MGD. EGLE requires one well to serve as a backup well; therefore, the firm capacity for the Well Field is 10 MGD with its current wells. However, the Baseline Well Capacity as permitted by EGLE is 13.5 MGD, meaning that additional wells could be added and water production increased under current permit conditions, provided that the water plant and distribution system were updated to accommodate this water volume.

At its current location, MHOG is master planned to ultimately install two additional 2 MGD production wells, which would increase their production capacity to 14 MGD. This is planned based on an analysis of long-term (more than 20 years) land use plans of the member communities. For short-term planning (next 20 years), the latest Reliability Study used 8.63 MGD as the max day demand. The expected growth and associated water demand over the next 20 years is estimated to be under the 14 MGD planned increase in production capacity by approximately 5.37 MGD.

In 2004, as part of permitting activities for MHOG wells #5 and #6, Tetra Tech evaluated the effect on water levels if three additional wells (proposed PW-7 through PW-9) were installed and operated at the Well Field. Tetra Tech reran the model in support of this Information Summary Report and found consistent results with what was reported in 2004.

To predict drawdown in the aquifer with nine wells discharging at 2 MGD (18 MGD cumulative), a 100-day groundwater flow simulation, was performed using a computer program called AQTESOLV. As required by EGLE the groundwater flow simulation assumes no recharge to the aquifer. The results suggest that the maximum drawdown in the well field would be 92.4 feet. This value is approximately 85 to 95 percent of the available drawdown in the wells. Based on this model the current location of Well Field could support up to 18 MGD water production, provided that the water plant and distribution system were updated to accommodate this water volume.

### 4.0 Summary of Findings

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- This Information Summary Report describes the Marshall Sandstone as one of Michigan's principal bedrock aquifers and notes that Livingston County also relies heavily on unconsolidated (sand-and-gravel) aquifers.
- The Marshall near the Well Field is relatively close to the surface in places and commonly lies beneath many feet of glacial drift; where bedrock is buried, interpretations rely on driller logs (which are subjective).
- Typical hydrogeologic properties cited for productive Marshall areas: hydraulic conductivity roughly 10–50 ft/day, transmissivity roughly 2,000–30,000 ft<sup>2</sup>/day, and common well yields of about 100–500 gpm

(with high-yield areas up to ~1,000 gpm). These values indicate the formation can be highly productive in many locations but are locally variable.

- Recharge at the site depends on local soils, land cover, and rainfall; a general ballpark recharge range in the vicinity is about 0.5–2.0 inches per year (site-specific recharge has not been estimated).
- Measured water-level data (system averages) show seasonal and year-to-year variation but remain many tens of feet above the permitted safe pumping levels for each well (i.e., current water levels are well above the maximum drawdown allowed).
- Current installed capability: each of MHOG’s six production wells is rated ~2 MGD, giving a theoretical total of 12 MGD; EGLE permits require one well be reserved as backup, so firm capacity is 10 MGD.
- MHOG’s master plan calls for two additional 2-MGD wells at the Well Field site (bringing total production capacity to 14 MGD). The 20-year planning demand used in the Reliability Study is a max-day of 8.63 MGD. The Baseline Well Capacity as permitted by EGLE is 13.5 MGD, meaning that additional wells could be added and water production increased under current permit conditions, provided that the water plant and distribution system were updated to accommodate this water volume.
- Historical/operational data show annual production in the range ~634–686 million gallons per year (MGPY) across recent 12-month periods, and system average monthly water-level vs. monthly pumping shows a strong correlation: the regression indicates about a 0.20-ft drop in average water level per additional 1 million gallons pumped per month. Correlation = 0.97, indicating pumping largely explains observed water-level changes.
- Past modeling (2004) assessed the effect of adding three wells (PW-7 through PW-9). Tetra Tech reran that model for this Information Summary Report and found results consistent with the earlier analysis, indicating the historical modeling is still relevant but should be updated with current data if used for permitting or design.
- The information that was reviewed and summarized in this document corroborated the 2004 hydrogeologic study conclusions and did not identify any “red flags” associated with MHOG pumping at its permitted withdrawal capacity of 13.5 MGD.

## 5.0 References

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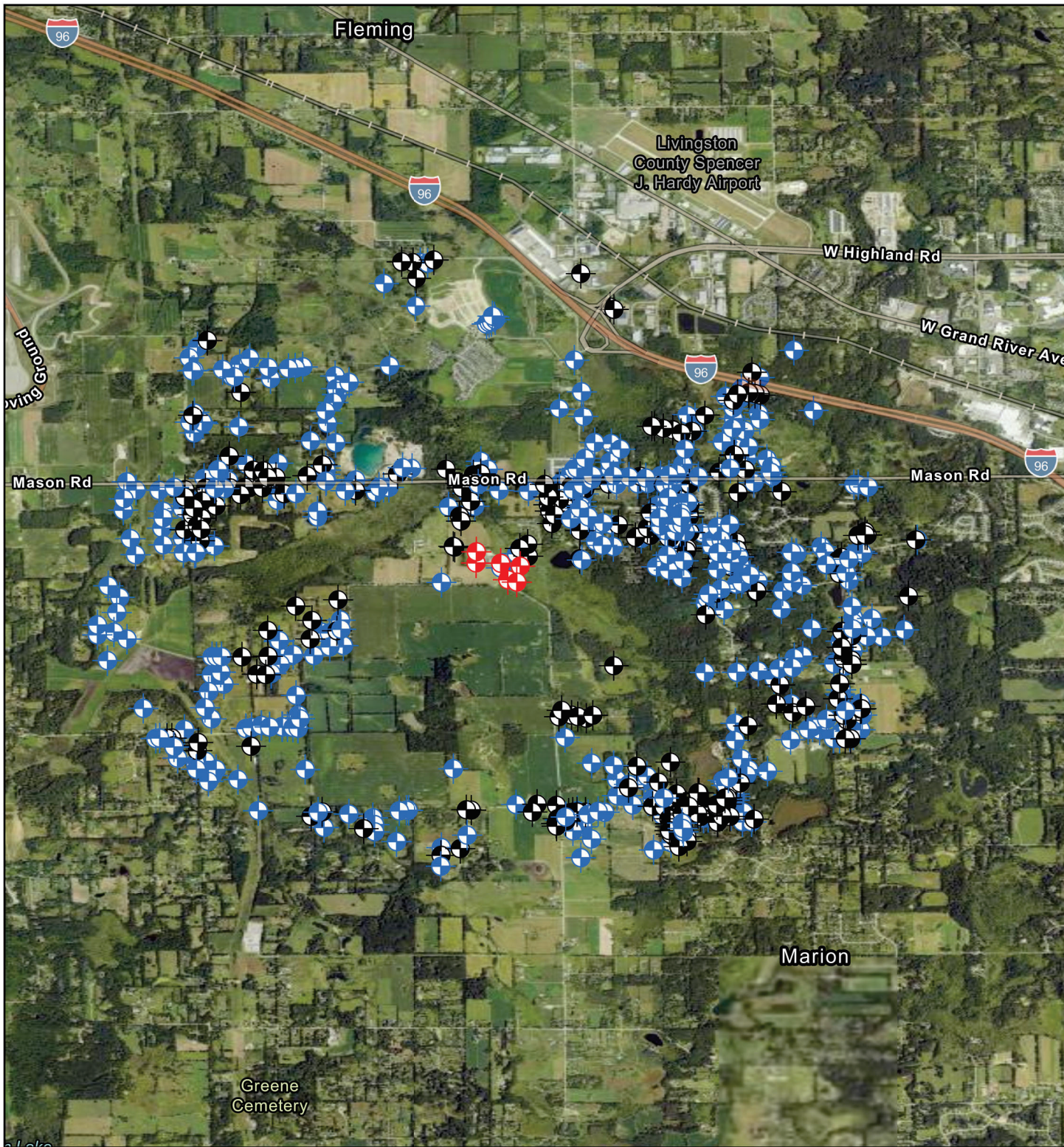


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# Figures

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Credits: Esri, Vantor, Earthstar Geographics, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Esri, USDA FSA  
 Adapted from WellLogic by Michigan Department of Environment, Great Lakes, and Energy (EGLE) Maps and Data,  
[www.michigan.gov/egle/about/organization/water-resources/groundwater/well-logs-and-publications/wellogis](http://www.michigan.gov/egle/about/organization/water-resources/groundwater/well-logs-and-publications/wellogis)

-  Unconsolidated Wells
-  MHOG Wells
-  Bedrock Wells



	MHOG Sewer and Water Utilities	PROJECT NO.:117-01271-26001
		DATE: 11/28/2025
		DESIGNED BY: JDS
	<b>SUMMARY OF WELL TYPES</b>	FIGURE
	<b>WELL LOCATIONS</b>	<b>1</b>
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MI 48108 PHONE: 734.665.6000		

Copyright: Tetra Tech



Adapted from Marshall aquifer by Water Resources Mission Area, [www.usgs.gov/media/images/marshall-aquifer](http://www.usgs.gov/media/images/marshall-aquifer).

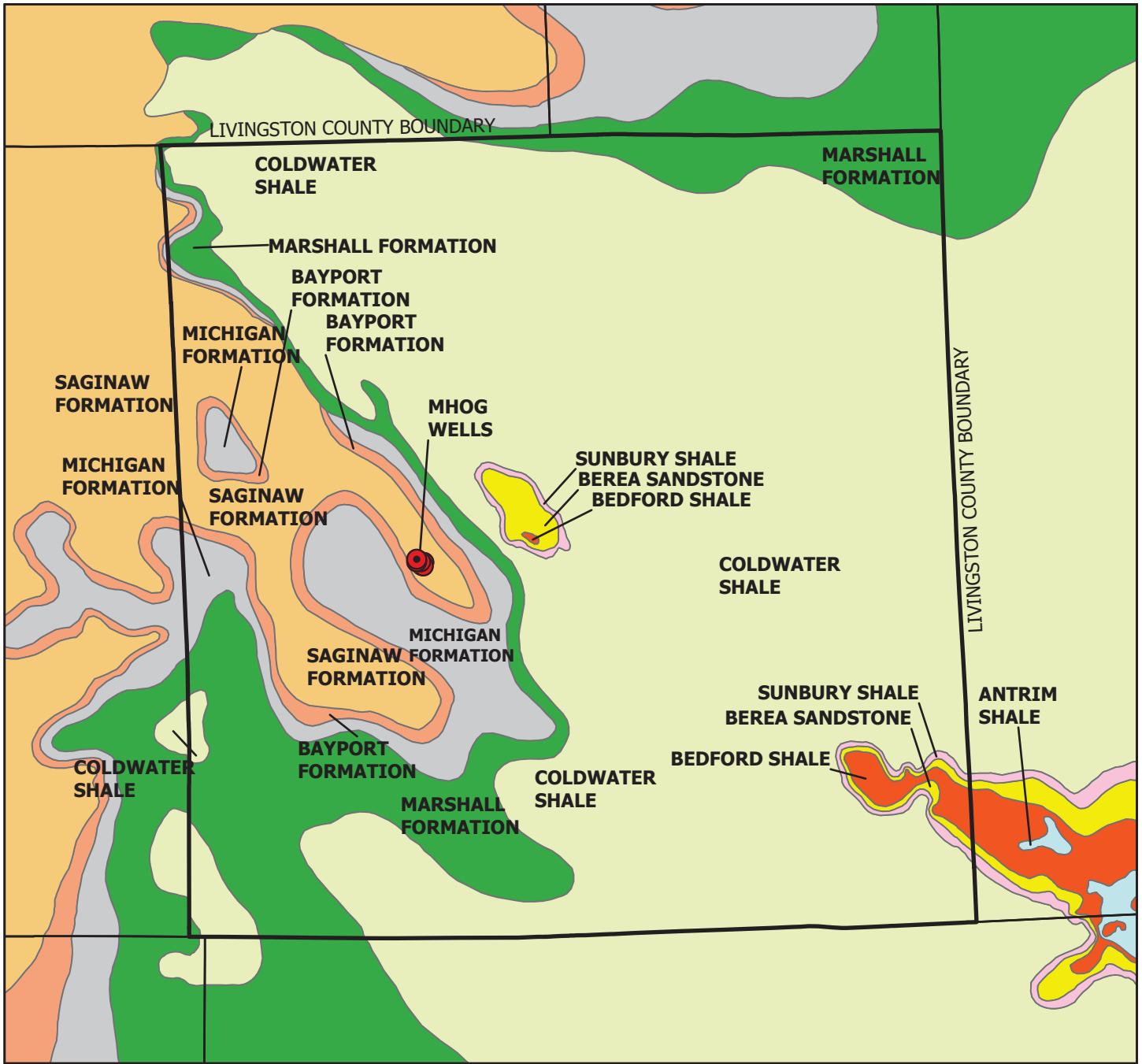
 MHOG Wells

Description: Plan view of Marshall Formation. The green areas highlight places where water may soak down from the sand and gravel aquifers above (if present), known as "Sub Crop" areas. The gray areas show where the Marshall Formation is covered by other layers of bedrock.



	MHOG Sewer and Water Utilities	PROJECT NO.:117-01271-26001
	<b>Plan view of Marshall Formation</b>  <b>MHOG WELL LOCATIONS</b>	DATE: 11/28/2025
DESIGNED BY: JDS		
FIGURE <span style="font-size: 2em;"><b>2</b></span>		
1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MI 48108 PHONE: 734.665.6000		

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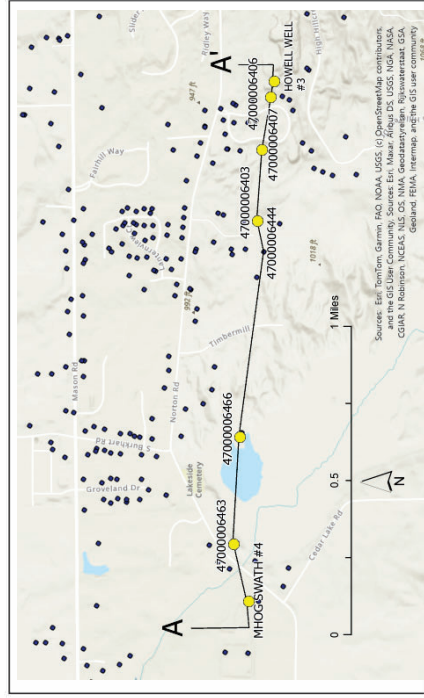


Credits: Esri, NASA, NGA, USGS, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community  
 Adapted from Michigan Bedrock Geology by Michigan Department of Environment, Great Lakes, and Energy (EGLE) Maps and Data,  
[gis-egle.hub.arcgis.com/datasets/egle:michigan-bedrock-geology/about](https://gis-egle.hub.arcgis.com/datasets/egle:michigan-bedrock-geology/about)

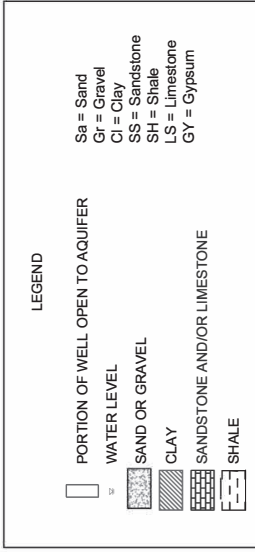
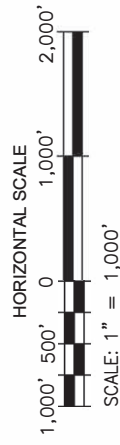
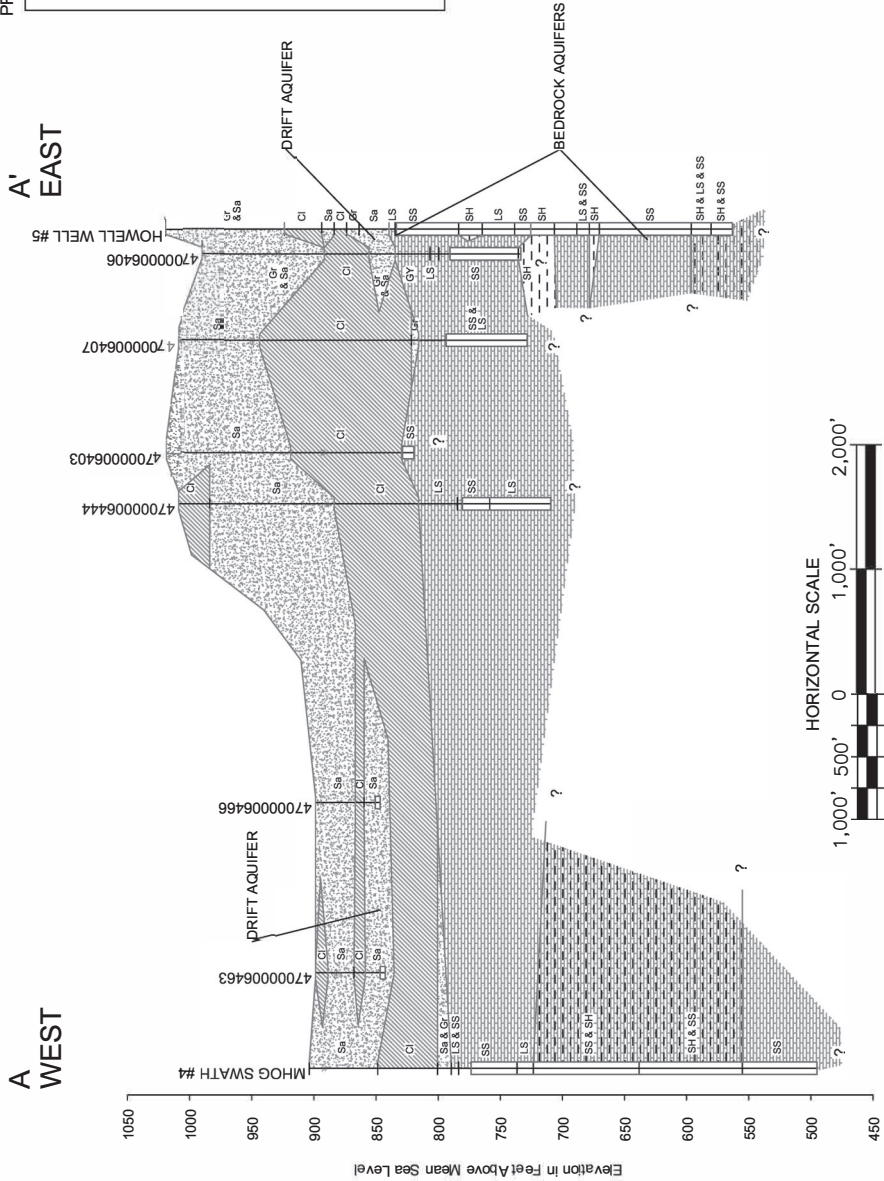
MHOG Wells	Bayport Formation	Michigan Formation
Livingston County Boundary	Bedford Shale	Saginaw Formation
Other Michigan County Boundaries	Berea Sandstone	Sunbury Shale
Antrim Shale	Coldwater Shale	
	Marshall Formation	

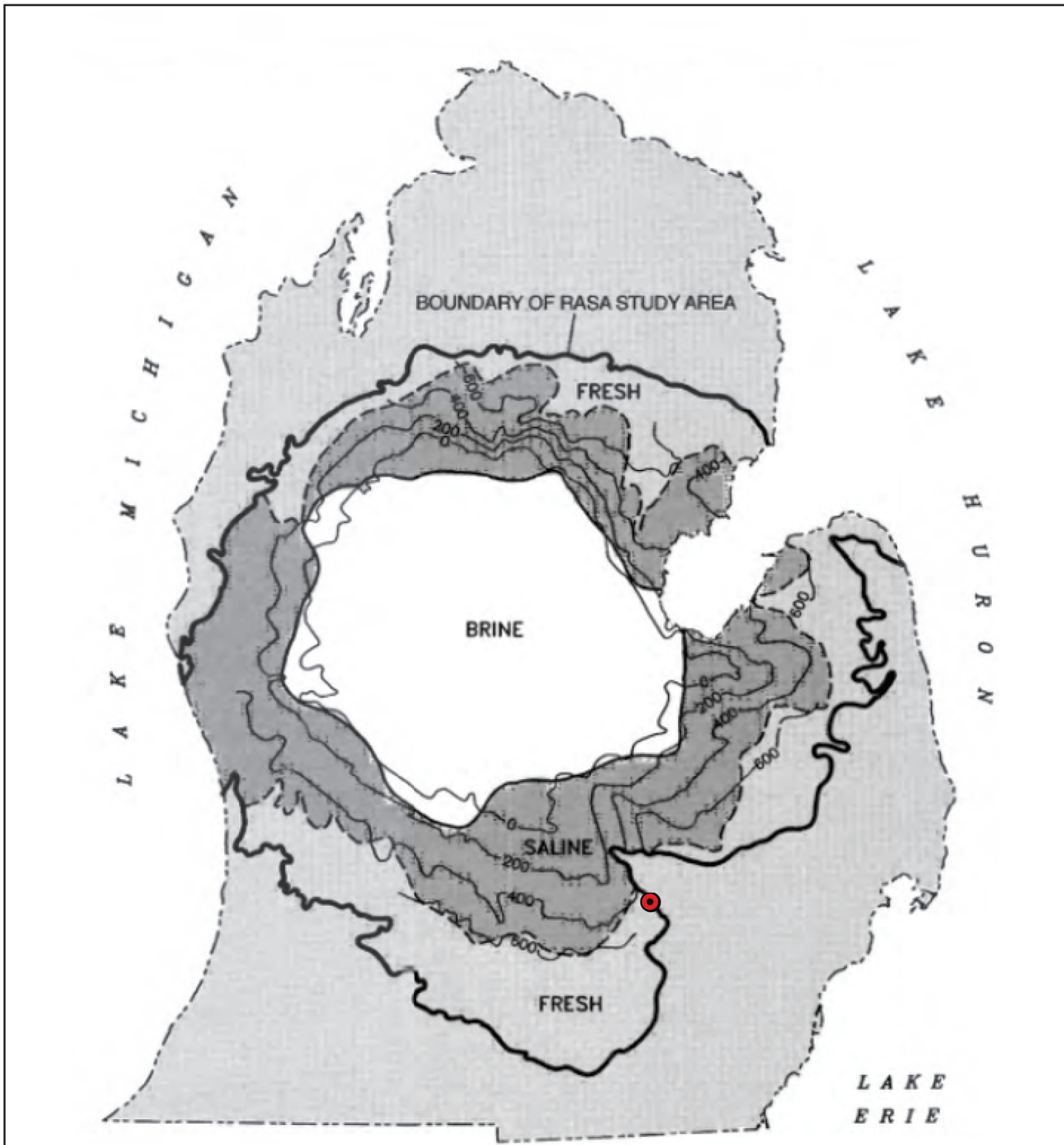
<p><b>TETRA TECH</b></p> <p>1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MI 48108 PHONE: 734.665.6000</p>	<p>MHOG Sewer and Water Utilities</p> <p><b>GEOLOGIC MAP</b></p> <p><b>LIVINGSTON COUNTY</b></p>	<p>PROJECT NO.:117-01271-26001</p> <p>DATE: 11/28/2025</p> <p>DESIGNED BY: JDS</p> <p>FIGURE</p> <p style="font-size: 2em; font-weight: bold;">3</p>
	<p>Bar Measures 1 Inch</p>	

PROFILE ORIENTATION MAP



NOTE: THIS CROSS SECTION IS GENERALIZED FROM WELL LOG INFORMATION. REFER TO WELL LOG FOR SPECIFIC LITHOLOGIES AT EACH LOCATION.



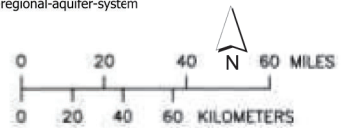


Adapted from Westjohn and Weaver (1998). Base from U.S. Geological Survey 1:500,000, state base map, 1970, [www.usgs.gov/publications/hydrogeologic-framework-michigan-basin-regional-aquifer-system](http://www.usgs.gov/publications/hydrogeologic-framework-michigan-basin-regional-aquifer-system)

- 200— BEDROCK CONTOUR—Shows altitude of top of Marshall aquifer in selected areas. Contour interval 200 feet. Datum is sea level
- - - - FRESH WATER/SALINE WATER INTERFACE
- SALINE WATER/BRINE INTERFACE

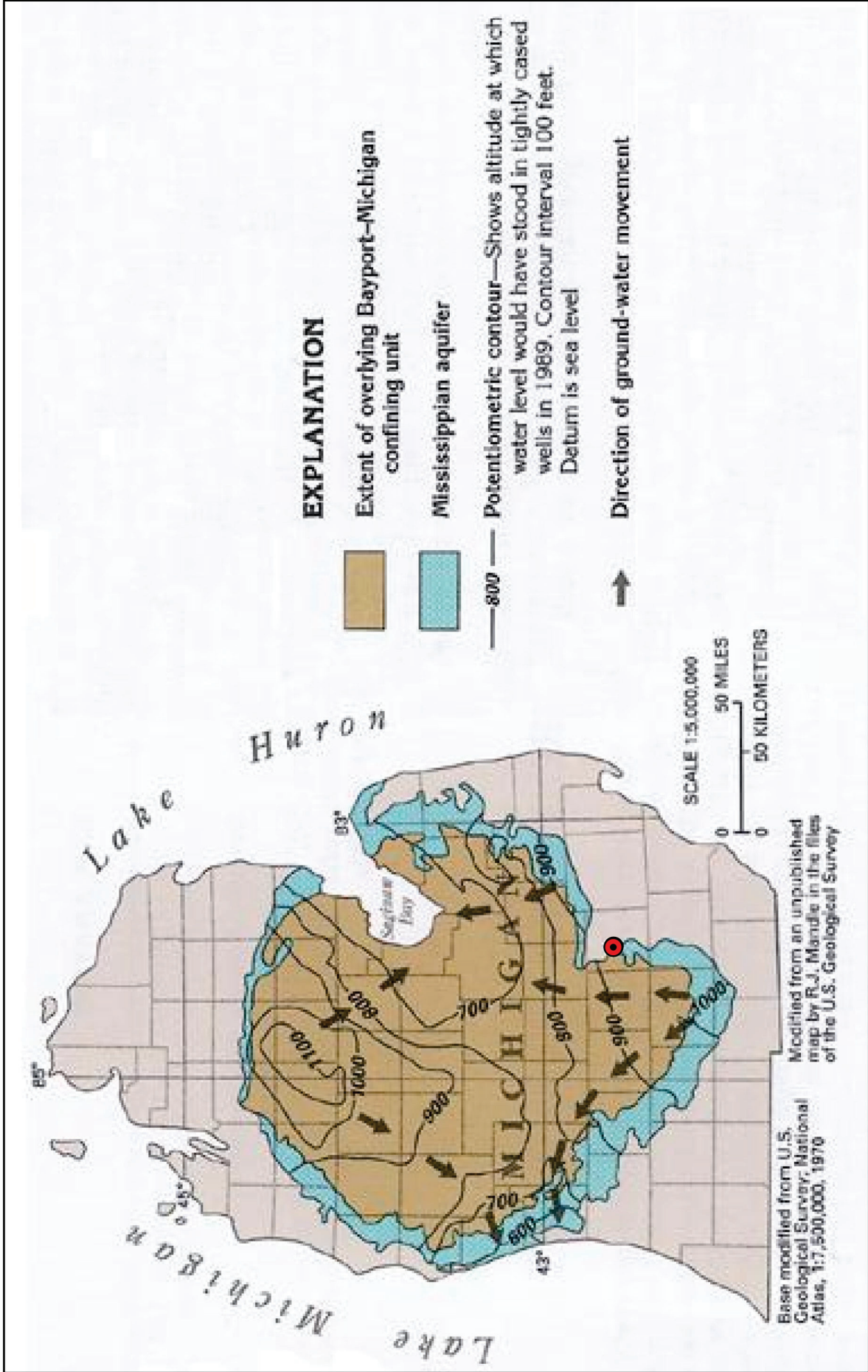
- FRESH** FRESH WATER—1,000 mg/L (milligrams per liter) or less dissolved solids
- SALINE** SALINE WATER—Greater than 1,000 and less than 100,000 mg/L dissolved solids
- BRINE** 100,000 mg/l. or more dissolved solids

● MHOG Wells



1136 OAK VALLEY DRIVE, SUITE 100 ANN ARBOR, MI 48108 PHONE: 734.665.6000	MHOG Sewer and Water Utilities	PROJECT NO.:117-01271-26001
	<b>Distribution of freshwater, saline and brine in the Marshall Aquifer</b>	DATE: 11/28/2025
	<b>MHOG WELL LOCATIONS</b>	DESIGNED BY: JDS  FIGURE <h1 style="margin: 0;">5</h1>

Copyright: Tetra Tech



Adapted from United States Geological Survey, pubs.usgs.gov/ha/ha700/ch\_11/jpeg/0065.jpeg

**MHOG Wells**

Description: Groundwater in Michigan's Mississippian aquifer—mainly made up of the Marshall aquifer—travels from areas where water enters the ground in the north and south, moving east toward Saginaw Bay and west toward Lake Michigan, where it eventually flows out. The term "Mississippian" refers to a geologic time period that occurred about 359 to 323 million years ago (i.e. 359-323 Ma).

MHOG Sewer and Water Utilities

PROJECT NO. 117-01271-28001

DATE: 11/28/2025

DESIGNED BY: JDS

GROUNDWATER FLOW DIRECTION IN MISSISSIPPIAN AQUIFER

1136 OAK VALLEY DRIVE, SUITE 100  
 ANN ARBOR, MI 48108  
 PHONE: 734.665.6000

MHOG WELL LOCATIONS

FIGURE

**6**



# Appendix A

## Well Logs

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# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-04-100-030	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion
<b>Well ID: 47000006403</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 4
		<b>Well Status:</b> Active	<b>WSSN:</b>
<b>Elevation:</b> 1020 ft.		<b>Distance and Direction from Road Intersection:</b> S OFF NORTON ONTO ROLLING OAKS RD BET HARDMAN DR & BONNIE CRL. ON THE E SIDE OF RD.	
<b>Latitude:</b> 42.5912551143		<b>Well Owner:</b> ROGGERO, RONALD	
<b>Longitude:</b> -83.9829537553		<b>Well Address:</b> 445 ROLLING OAKS HOWELL, MI 48843	<b>Owner Address:</b> 445 ROLLING OAKS HOWELL, MI 48843
<b>Method of Collection:</b> Interpolation-Map			

<b>Drilling Method:</b> Cable Tool	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 199.00 ft.	<b>Date Completed:</b> 3/1/1978	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Other	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b>
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 147.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 190.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 127.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 135.00 ft. after 4.00 hrs. at 9 GPM		Sand	100.00	100.00
		Clay	89.00	189.00
		Sandstone	10.00	199.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No		
<b>Screen Diameter:</b> 3.75 in.	<b>Blank:</b> 0.00 ft. Above		
<b>Screen Material Type:</b> Stainless steel-wire wrapped			
<b>Screen Installation Type:</b> Unknown			
<b>Slot Length Set Between</b>			
10.00 9.00 ft. 190.00 ft. and 199.00 ft.			
<b>Fittings:</b> Neoprene packer			

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>
<b>Grouting Material:</b> Bentonite slurry	<b>Bags Additives Depth:</b> Unknown	

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type Distance Direction:</b> Septic tank 100 ft. North	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 81-1586
	<b>Business Name:</b>	
	<b>Business Address:</b>	

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b> <b>Date</b>

**General Remarks:** MODIFIED LOC DESC, SCRNM MAT, ACC, CON TYPE - KW 02/03/22

**Other Remarks:** Pump Manufacturer:REDA



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-04-201-023	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion
<b>Well ID: 47000006406</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 4
		<b>Well Status:</b> Active	<b>WSSN:</b>
<b>Elevation:</b> 990 ft.		<b>Distance and Direction from Road Intersection:</b>	
<b>Latitude:</b> 42.590644		LOT #23 S OF NORTON RD ONTO BONNIE CRL INTO HOWELLS HEIGHTS	
<b>Longitude:</b> -83.977126		SUBD, S.E. CORNER OF CIRCLE	
<b>Method of Collection:</b> Interpolation-Map		<b>Well Owner:</b> GREDER, EDWARD	
		<b>Well Address:</b>	<b>Owner Address:</b>
		421 BONNIE CIR	421 BONNIE CIR
		HOWELL, MI 48843	HOWELL, MI 48843

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 255.00 ft.	<b>Date Completed:</b> 7/7/1986	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b>
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 140.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 198.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 60.00 ft. Below Grade	<b>Well Yield Test:</b>	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>		<b>Thickness</b>	<b>Depth to Bottom</b>
			Pumping level 120.00 ft. after 2.00 hrs. at 15 GPM			
<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well		Topsoil	5.00	5.00	
			Gravel & Sand	92.00	97.00	
			Gray Clay	36.00	133.00	
			Gravel & Sand	21.00	154.00	
			Gypsum W/Sand	28.00	182.00	
			Limestone	7.00	189.00	
			Sandstone	64.00	253.00	
			Shale Soft	2.00	255.00	

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>
<b>Grouting Material:</b> Unknown	<b>Bags:</b> Unknown	
<b>Additives:</b> Unknown	<b>Depth:</b> Unknown	

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type:</b> Septic tank	
<b>Distance:</b> 75 ft.	
<b>Direction:</b> East	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 47-0994
	<b>Business Name:</b>	
	<b>Business Address:</b>	

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:** MODIFIED LOC DESC, W LOC, COORDS, ACC, CON TYPE - KW 02/04/22

**Other Remarks:**



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-04-201-013	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion
<b>Well ID: 47000006407</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 4
<b>Elevation:</b> 1010 ft.		<b>Well Status:</b> Active	<b>WSSN:</b>
<b>Latitude:</b> 42.591086		<b>Source ID/Well No:</b>	
<b>Longitude:</b> -83.979625		<b>Distance and Direction from Road Intersection:</b> LOT #13 S OF NORTON RD ONTO BONNIE CRL INTO HOWELLHEIGHTS SUBD, ON W SIDE OF RD	
<b>Method of Collection:</b> Interpolation-Map		<b>Well Owner:</b> ERVIN, MICHAEL	
		<b>Well Address:</b> 539 BONNIE CIRCLE HOWELL, MI 48843	<b>Owner Address:</b> 539 BONNIE CIRCLE HOWELL, MI 48843

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 280.00 ft.	<b>Date Completed:</b> 1/27/1986	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Height:</b>	<b>Manufacturer:</b> F.E. Myers	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black		<b>Model Number:</b>	<b>Pump Capacity:</b> 0 GPM
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 180.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 215.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 125.00 ft. Below Grade	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 278.00 ft. after 1.00 hrs. at 30 GPM		Sand & Clay	3.00	3.00
		Sand	59.00	62.00
		Clay & Sand	51.00	113.00
<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	Clay & Gravel	74.00	187.00
		Gravel	6.00	193.00
		Sandstone & Limestone	87.00	280.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>
<b>Grouting Material:</b> Unknown	<b>Grouting Additives:</b> Unknown	
<b>Grouting Bags:</b>	<b>Grouting Depth:</b>	

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type:</b> Septic tank	
<b>Distance:</b> 75 ft.	
<b>Direction:</b> West	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 47-0994
	<b>Business Name:</b>	
	<b>Business Address:</b>	

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:** MODIFIED LOC DESC, W LOC, COORDS, ACC, CON TYPE - KW 02/04/22

**Other Remarks:**



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-04-100-028	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion
<b>Well ID: 47000006444</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 4
<b>Elevation:</b> 1010 ft.		<b>Well Status:</b> Active	<b>WSSN:</b>
<b>Latitude:</b> 42.5910026108		<b>Source ID/Well No:</b>	
<b>Longitude:</b> -83.9843850815		<b>Distance and Direction from Road Intersection:</b> 1.2 MILE S OF NORTON RD, 3/10 M E OF BURKHARD RD	
<b>Method of Collection:</b> Interpolation-Map		<b>Well Owner:</b> WILLIAMS, PATRICK	
		<b>Well Address:</b> 490 ROLLING OAKS HOWELL, MI 48843	<b>Owner Address:</b> 490 ROLLING OAKS HOWELL, MI 48843

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 299.00 ft.	<b>Well Type:</b> Replacement	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Date Completed:</b> 12/31/1986	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Steel - black	<b>Height:</b> 1.50 ft. above grade	<b>Model Number:</b>	<b>Pump Capacity:</b>
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 160.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 228.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 6.25 in. to 226.40 ft. depth		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 120.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 160.00 ft. after 0.00 hrs. at 15 GPM	Clay & Gravel Sandy	8.00	8.00
<b>Yield Test Method:</b> Unknown	Clay & Gravel Sandy W/Stones	17.00	25.00
	Sand & Gravel W/Stones	21.00	46.00
<b>Screen Installed:</b> No	Sand & Gravel W/Clay Brown	79.00	125.00
<b>Intake:</b> Bedrock Well	Gray Clay & Gravel W/Stones	48.00	173.00
	Gravel	2.00	175.00
	Gray Clay & Gravel W/Stones	11.00	186.00
	Red Clay W/Gravel	7.00	193.00
	Limestone W/Clay W/Gravel	27.00	220.00
	Yellow Shale & Sandstone W/Limestone	4.00	224.00
	Green Sandstone	26.00	250.00
	Limestone W/Shale Strips	49.00	299.00

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>
<b>Grouting Material:</b> Bentonite slurry	<b>Bags:</b> Unknown	
<b>Additives:</b> Unknown	<b>Depth:</b>	

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type:</b> Septic tank	
<b>Distance:</b> 75 ft.	
<b>Direction:</b> North	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 47-0994
	<b>Business Name:</b>	
	<b>Business Address:</b>	

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b>
	<b>Date</b>

**General Remarks:** MODIFIED LOC DESC, GEOL, ACC, CON TYPE - KW 02/04/22

**Other Remarks:**



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-04-200-023	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion
<b>Well ID: 47000006448</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 4
		<b>Well Status:</b> Active	<b>WSSN:</b> 3250
<b>Elevation:</b> 1020 ft.		<b>Source ID/Well No:</b> HOWELL WELL #5	
<b>Latitude:</b> 42.590510911		<b>Distance and Direction from Road Intersection:</b> WSSN# 03250; NORTON ROAD	
<b>Longitude:</b> -83.9764132289		<b>Well Owner:</b> CITY OF HOWELL	
<b>Method of Collection:</b> Interpolation-Map		<b>Well Address:</b> HOWELL WELL #5 HOWELL, MI 48843	<b>Owner Address:</b> NORTON RD. HOWELL, MI 48843

<b>Drilling Method:</b> Cable Tool	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No
<b>Well Depth:</b> 455.00 ft.	<b>Well Type:</b> Replacement	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> Replacement	<b>Date Completed:</b> 9/1/1966	<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> Unknown	<b>Height:</b> 0.00 ft. below grade	
<b>Casing Joint:</b> Threaded & coupled		
<b>Casing Fitting:</b> Drive shoe		
<b>Diameter:</b> 14.00 in. to 185.00 ft. depth		
<b>Borehole:</b>		

<b>Static Water Level:</b> 95.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 10.00 ft. after 12.00 hrs. at 1108 GPM	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
			Gray Gravel & Sand Fine To Medium	95.00	95.00
			Gray Clay Sandy Gravely	10.00	105.00
			Gray Clay Gravely Sandy	10.00	115.00
			Brown Clay Sandy	10.00	125.00
			Sand Fine To Medium W/Gravel	10.00	135.00
			Gray Clay Sandy	10.00	145.00
			Gravel Fine To Medium	10.00	155.00
			Sand Coarse Fine	24.00	179.00
			Sandstone W/Limestone	3.00	182.00
			Limestone	2.00	184.00
			Sandstone	31.00	215.00
			Limestone W/Sandstone	20.00	235.00
			Green Shale	15.00	250.00

(Continued On Page 2)

<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Unknown	<b>Geology Remarks:</b>
<b>Grouting Material:</b> Unknown	<b>Bags:</b> None	
<b>Additives:</b> None	<b>Depth:</b>	

<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type:</b> Unknown	
<b>Distance:</b>	
<b>Direction:</b>	

(Continued on page 2)

<b>Abandoned Well Plugged:</b> Unknown	
<b>Casing Removed:</b>	

**General Remarks:** ORIG WELLID# WAS 04061; WATER LVL INFLUENCED BY INTERMITTENT PUMPAGE FROM CITY'S OTHER WELL AND POSS INSTITUTIONAL PUMPAGE; REC ENTERED BY LHD, MATCHES INFO FROM MDEQ FOR HOWELL WELL#5; ENTERED THIS AS WELL ADDR 5/97 MODIFIED GEO & CON TYPE - KW 02/03/2

**Other Remarks:**





# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-05-200-004	<b>Permit No:</b>	<b>County:</b> Livingston		<b>Township:</b> Marion		
<b>Well ID: 47000006463</b>  <b>Elevation:</b> 900 ft. <b>Latitude:</b> 42.592377 <b>Longitude:</b> -83.998111 <b>Method of Collection:</b> Interpolation-Map		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 5	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> ON W SIDE OF NORTON BET GRANITE DR & CEDAR LAKE RD.				
		<b>Well Owner:</b> DOUGLAS, R.M.				
<b>Well Address:</b> 4245 NORTON ROAD HOWELL, MI 48843			<b>Owner Address:</b> 4245 NORTON ROAD HOWELL, MI 48843			

<b>Drilling Method:</b> Cable Tool <b>Well Depth:</b> 56.00 ft. <b>Well Type:</b> Replacement	<b>Well Use:</b> Household <b>Date Completed:</b> 9/18/1973	<b>Pump Installed:</b> Yes <b>Pump Installation Date:</b> <b>Manufacturer:</b> Red Jacket	<b>Pump Installation Only:</b> No <b>HP:</b> <b>Pump Type:</b> Submersible <b>Pump Capacity:</b> 0 GPM <b>Pump Voltage:</b> <b>Drilling Record ID:</b>
<b>Casing Type:</b> Unknown <b>Casing Joint:</b> Threaded & coupled <b>Casing Fitting:</b> Drive shoe	<b>Height:</b>	<b>Model Number:</b> <b>Drop Pipe Length:</b> 42.00 ft. <b>Drop Pipe Diameter:</b> <b>Draw Down Seal Used:</b> No	<b>Pressure Tank Installed:</b> No <b>Pressure Relief Valve Installed:</b> No
<b>Diameter:</b> 4.00 in. to 56.00 ft. depth		<b>Borehole:</b>	

<b>Static Water Level:</b> 18.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 40.00 ft. after 2.00 hrs. at 15 GPM	<b>Yield Test Method:</b> Unknown	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
		Topsoil	2.00	2.00
<b>Screen Installed:</b> Yes <b>Screen Diameter:</b> 4.00 in. <b>Screen Material Type:</b> Stainless steel-wire wrapped <b>Screen Installation Type:</b> Unknown <b>Slot Length Set Between:</b> 18.00 4.00 ft. 52.00 ft. and 56.00 ft. <b>Fittings:</b> None		Yellow Clay	8.00	10.00
		Yellow Sand	21.00	31.00
		Gray Clay Sandy	9.00	40.00
		Gray Sand Water Bearing	16.00	56.00

<b>Well Grouted:</b> Yes <b>Grouting Material:</b> Unknown <b>Grouting Method:</b> Unknown	<b>Grouting Material:</b> Unknown <b>Bags:</b> 0.00 <b>Additives:</b> None <b>Depth:</b>	<b>Geology Remarks:</b>
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<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type:</b> Septic tank <b>Distance:</b> 75 ft. <b>Direction:</b> North	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor <b>Business Name:</b> <b>Business Address:</b>	<b>Reg No:</b> 47-0994
--	---	------------------------

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b> This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
	<b>Signature of Registered Contractor</b>	<b>Date</b>

**General Remarks:** MODIFIED LOC DESC, SCRNM MAT, CON TYPE - KW 02/07/22

**Other Remarks:**





# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b> 010-05-200-029	<b>Permit No:</b>	<b>County:</b> Livingston	<b>Township:</b> Marion			
<b>Well ID: 47000006466</b>  <b>Elevation:</b> 900 ft. <b>Latitude:</b> 42.5921183754 <b>Longitude:</b> -83.9930912356 <b>Method of Collection:</b> Interpolation-Map		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 5	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
		<b>Distance and Direction from Road Intersection:</b> OFF W SIDE OF NORTON RD BET NORTON & CEDAR LAKE				
		<b>Well Owner:</b> FYKE, BEN				
<b>Well Address:</b> 3995 NORTON RD. HOWELL, MI 48843			<b>Owner Address:</b> 3995 NORTON RD. HOWELL, MI 48843			

<b>Drilling Method:</b> Cable Tool	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 52.00 ft.	<b>Date Completed:</b> 10/20/1973	<b>Pump Installation Date:</b>	<b>HP:</b>
<b>Well Type:</b> Replacement	<b>Height:</b> 3.00 ft. above grade	<b>Manufacturer:</b> Red Jacket	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> Unknown		<b>Model Number:</b>	<b>Pump Capacity:</b>
<b>Casing Joint:</b> Threaded & coupled		<b>Drop Pipe Length:</b> 30.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> Drive shoe		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 4.00 in. to 48.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b>		<b>Pressure Tank Installed:</b> No	
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 4.00 ft. Below Grade <b>Well Yield Test:</b> Pumping level 40.00 ft. after 1.50 hrs. at 20 GPM <b>Yield Test Method:</b> Unknown	Formation Description	Thickness	Depth to Bottom
	Brown Sand	32.00	32.00
	Gray Clay & Gravel	7.00	39.00
	Gray Sand	13.00	52.00

<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No
<b>Screen Diameter:</b> 3.00 in.	<b>Blank:</b> 0.00 ft. Above
<b>Screen Material Type:</b> Stainless steel-wire wrapped	
<b>Screen Installation Type:</b> Unknown	
<b>Slot Length Set Between</b>	
8.00 4.00 ft. 48.00 ft. and 52.00 ft.	
<b>Fittings:</b> Other	

<b>Well Grouted:</b> No	<b>Geology Remarks:</b>
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<b>Wellhead Completion:</b> Pitless adapter	<b>Drilling Machine Operator Name:</b>
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Unknown
<b>Type</b> <b>Distance</b> <b>Direction</b>	
Septic tank                      75 ft.	

<b>Abandoned Well Plugged:</b> Unknown	<b>Contractor Type:</b> Water Well Drilling Contractor <b>Reg No:</b> 47-0026
	<b>Business Name:</b>
	<b>Business Address:</b>

<b>Casing Removed:</b>	<b>Water Well Contractor's Certification</b>
	This well was drilled under my supervision and this report is true to the best of my knowledge and belief.
	<b>Signature of Registered Contractor</b> <b>Date</b>

**General Remarks:** MODIFIED LOC DESC, SCRIN, ACC, CON TYPE - KW 02/07/22

**Other Remarks:** Screen Fittings:Type Unknown



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b>	<b>County:</b> Livingston			<b>Township:</b> Marion	
<b>Well ID: 47000023216</b>		<b>Town/Range:</b> 02N 04E	<b>Section:</b> 5	<b>Well Status:</b> Active	<b>WSSN:</b> 4098	<b>Source ID/Well No:</b> 4
		<b>Distance and Direction from Road Intersection:</b> .25 mi W of Burkhart Rd & 600 ft N of Norton Rd.				
		<b>Well Owner:</b> MHOG Water & Sewer Authority				
<b>Elevation:</b> 905 ft.		<b>Well Address:</b> MHOG SWATH #4		<b>Owner Address:</b> 1577 N Latson Rd. Howell, MI 48843		
<b>Latitude:</b> 42.59167464						
<b>Longitude:</b> -84.00080838						
<b>Method of Collection:</b> GPS Differential (DGPS)						

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Type I public	<b>Pump Installed:</b> No
<b>Well Depth:</b> 408.00 ft.	<b>Date Completed:</b> 1/28/2003	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> New		<b>Pressure Relief Valve Installed:</b> No
<b>Casing Type:</b> Steel - black	<b>Height:</b> 3.00 ft. above grade	
<b>Casing Joint:</b> Welded		
<b>Casing Fitting:</b> Centralizer		
<b>Diameter:</b> 16.00 in. to 130.00 ft. depth		
<b>Borehole:</b> 22.00 in. to 130.00 ft. depth 15.00 in. to 408.00 ft. depth		

<b>Static Water Level:</b> 13.00 ft. Below Grade	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
<b>Well Yield Test:</b> Pumping level 30.00 ft. after 4.00 hrs. at 1800 GPM			
<b>Yield Test Method:</b> Test pump	Sand & Silt Fine	55.00	55.00
	Gravel Stony	5.00	60.00
	Clay W/Gravel	20.00	80.00
	Gray Clay Hard	15.00	95.00
	Sand & Gravel W/Boulders	8.00	103.00
	Limestone & Sandstone Fractured	11.00	114.00
	Green Sandstone W/Shale Stringers	6.00	120.00
	Sandstone	20.00	140.00
	Sandstone W/Shale Stringers	27.00	167.00
	Limestone Sandy Hard	13.00	180.00
	Sandstone & Shale W/Limestone Stringers	85.00	265.00
	Shale & Sandstone W/Limestone Stringers	43.00	308.00
	Shale & Sandstone Soft	40.00	348.00
	White Sandstone Hard	60.00	408.00

<b>Screen Installed:</b> No	<b>Intake:</b> Bedrock Well	<b>Geology Remarks:</b>
<b>Well Grouted:</b> Yes	<b>Grouting Method:</b> Grout pipe outside casing	
<b>Grouting Material:</b> Neat cement	<b>Bags:</b> 101.00	
	<b>Additives:</b> None	
	<b>Depth:</b> 0.00 ft. to 130.00 ft.	

<b>Wellhead Completion:</b> 12 inches above grade	<b>Drilling Machine Operator Name:</b> Mike Smith
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<b>Nearest Source of Possible Contamination:</b>	<b>Employment:</b> Employee
<b>Type:</b> None	
<b>Distance:</b> 200 ft.	
<b>Direction:</b>	

<b>Contractor Type:</b> Water Well Drilling Contractor	<b>Reg No:</b> 41-1913
<b>Business Name:</b> Kelley Dewatering & Const. Co.	
<b>Business Address:</b> Wyoming, MI	

<b>Water Well Contractor's Certification</b>	
This well was drilled under my supervision and this report is true to the best of my knowledge and belief.	
<b>Signature of Registered Contractor</b>	<b>Date</b>

<b>General Remarks:</b>
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<b>Other Remarks:</b>
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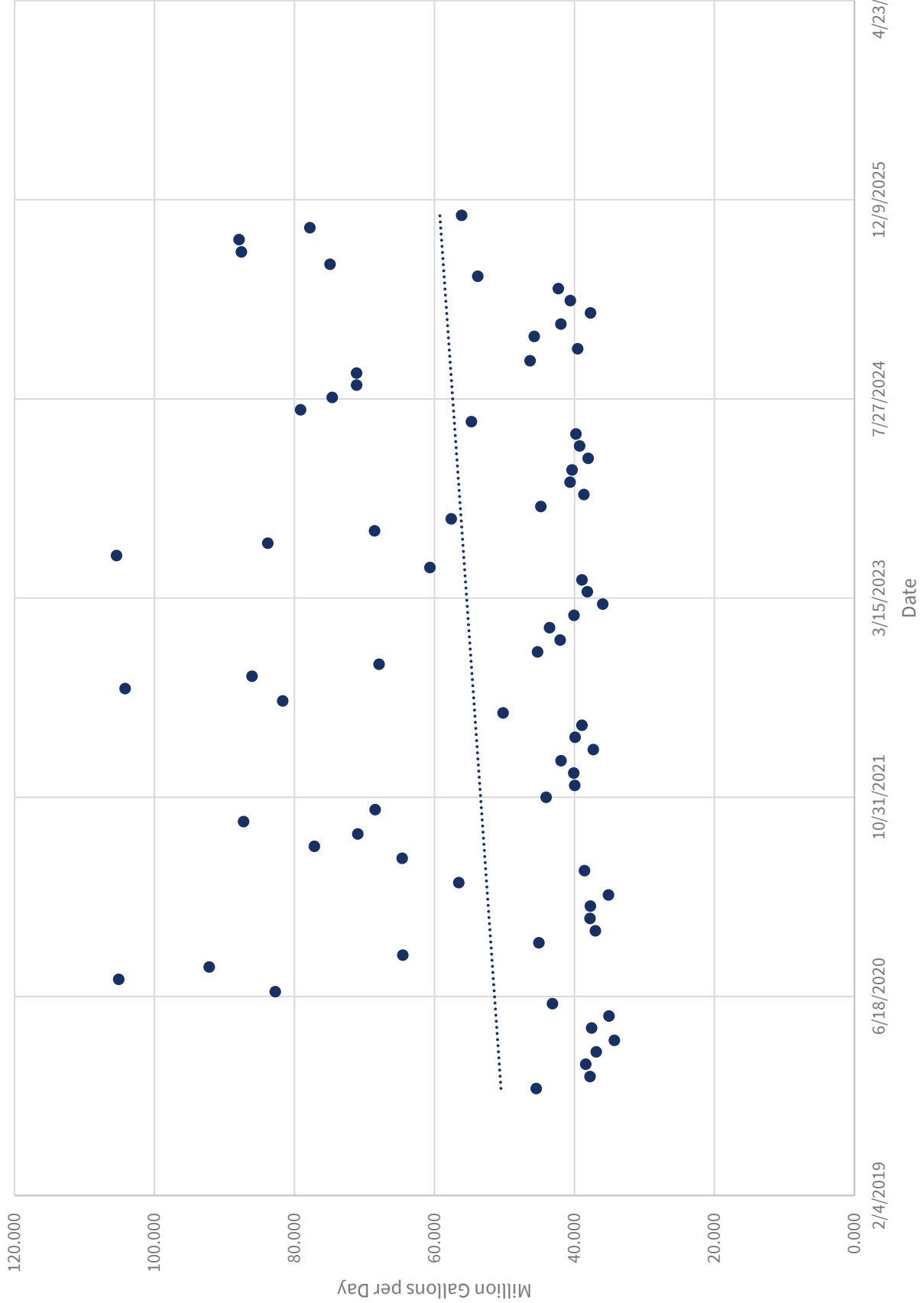
# Appendix B

## Well Field Data

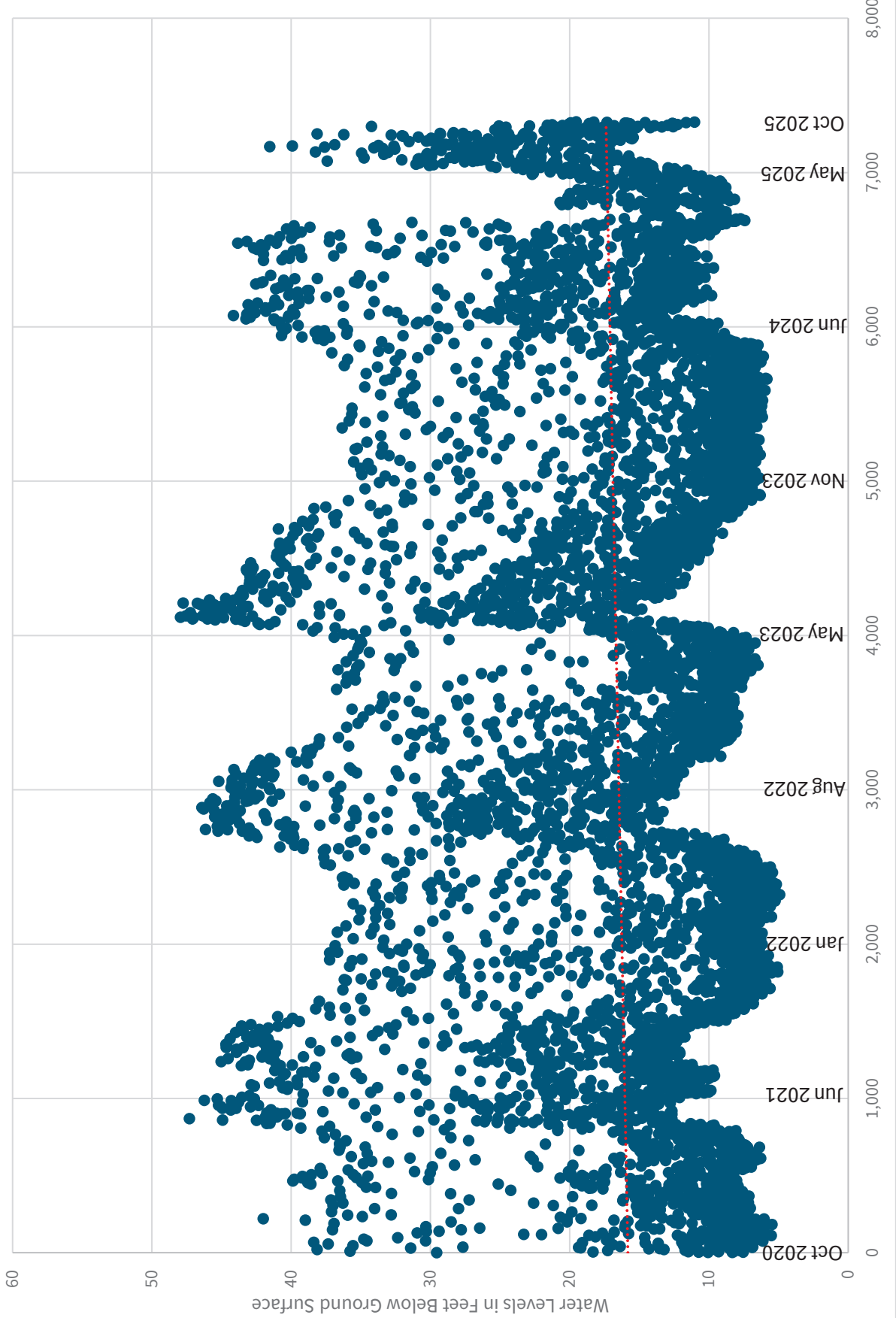
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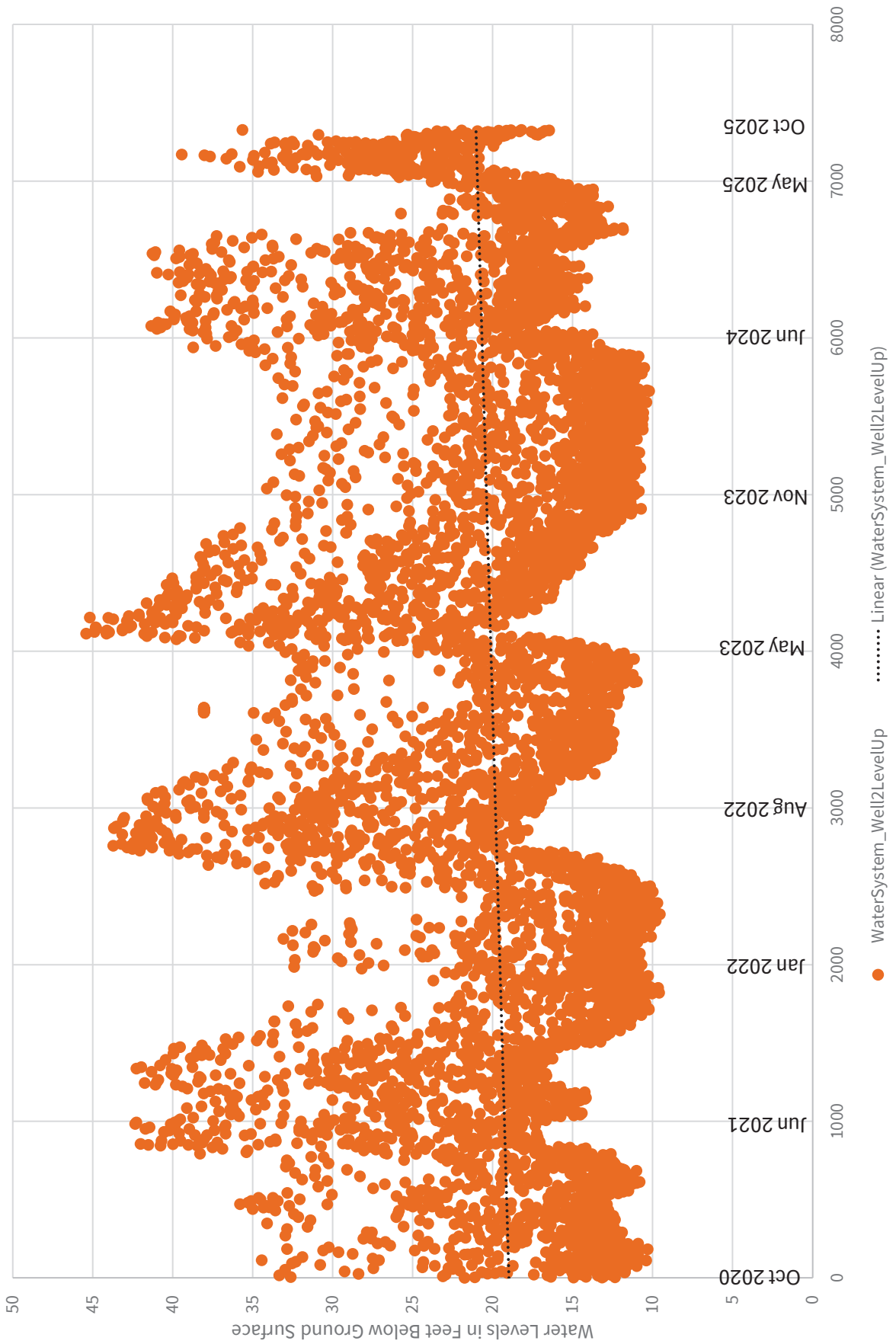
# Water Production (MGD)



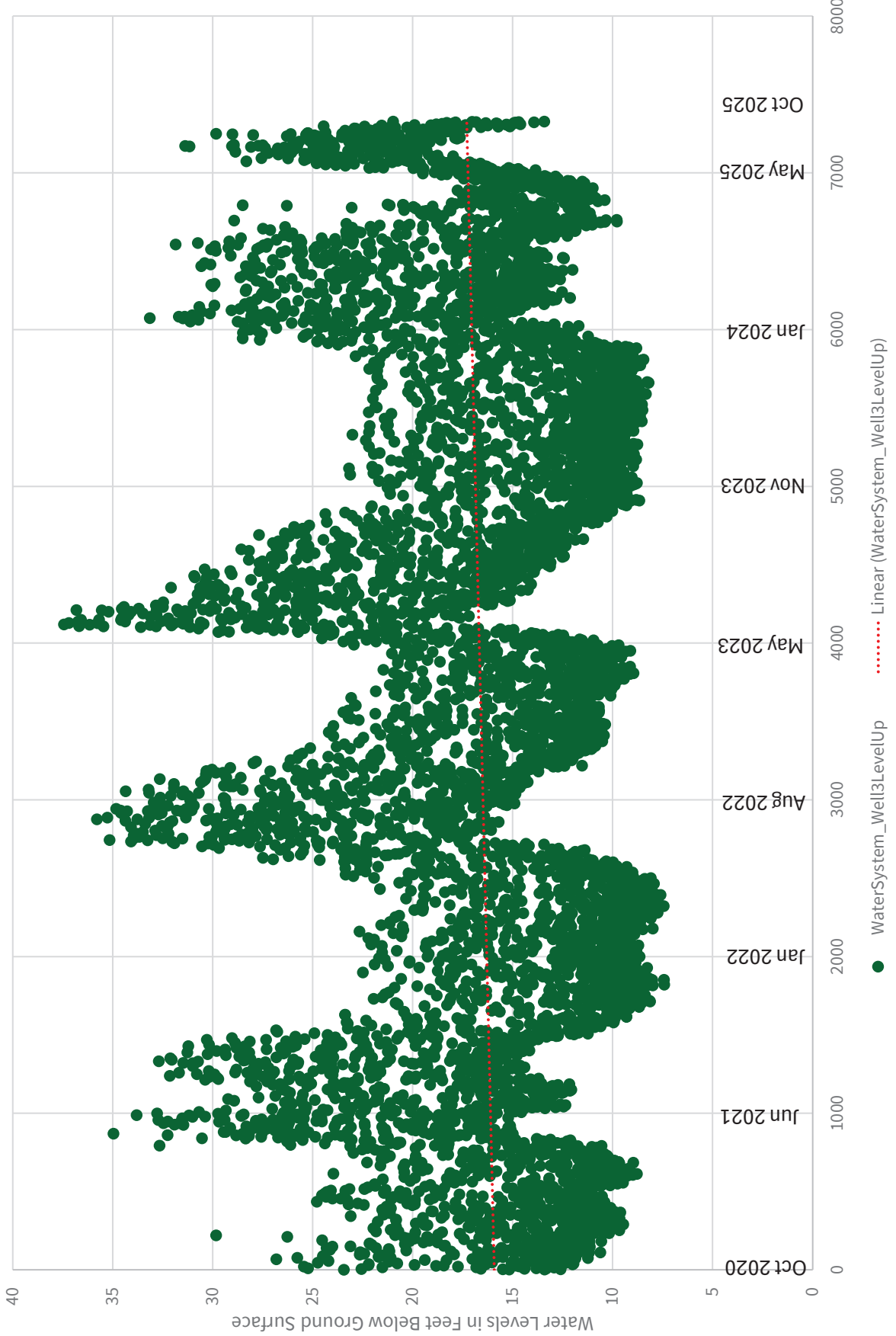
Well 1  
October 2020 to October 2025



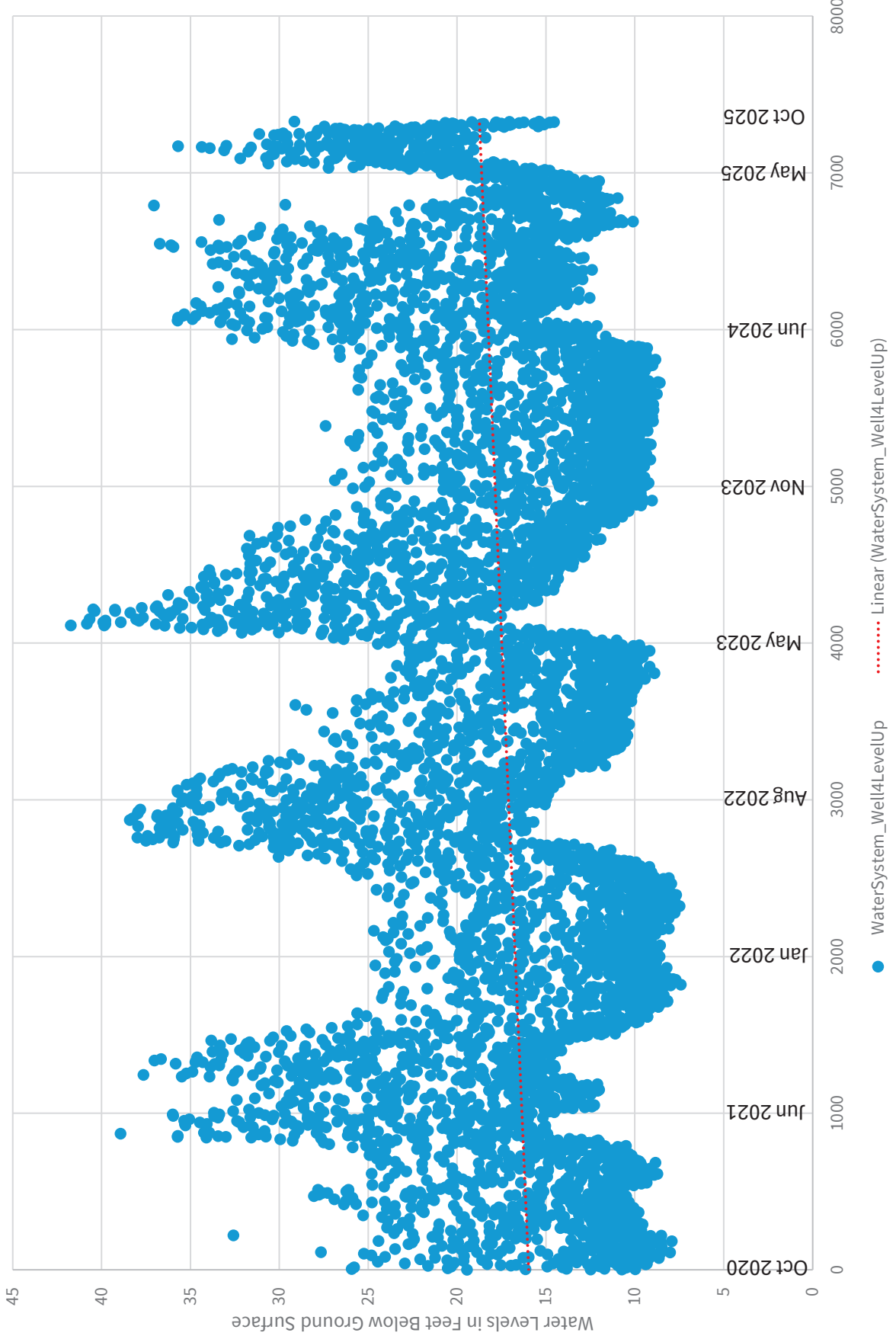
# Well 2 October 2020 to October 2025



Well 3  
October 2020 to October 2025

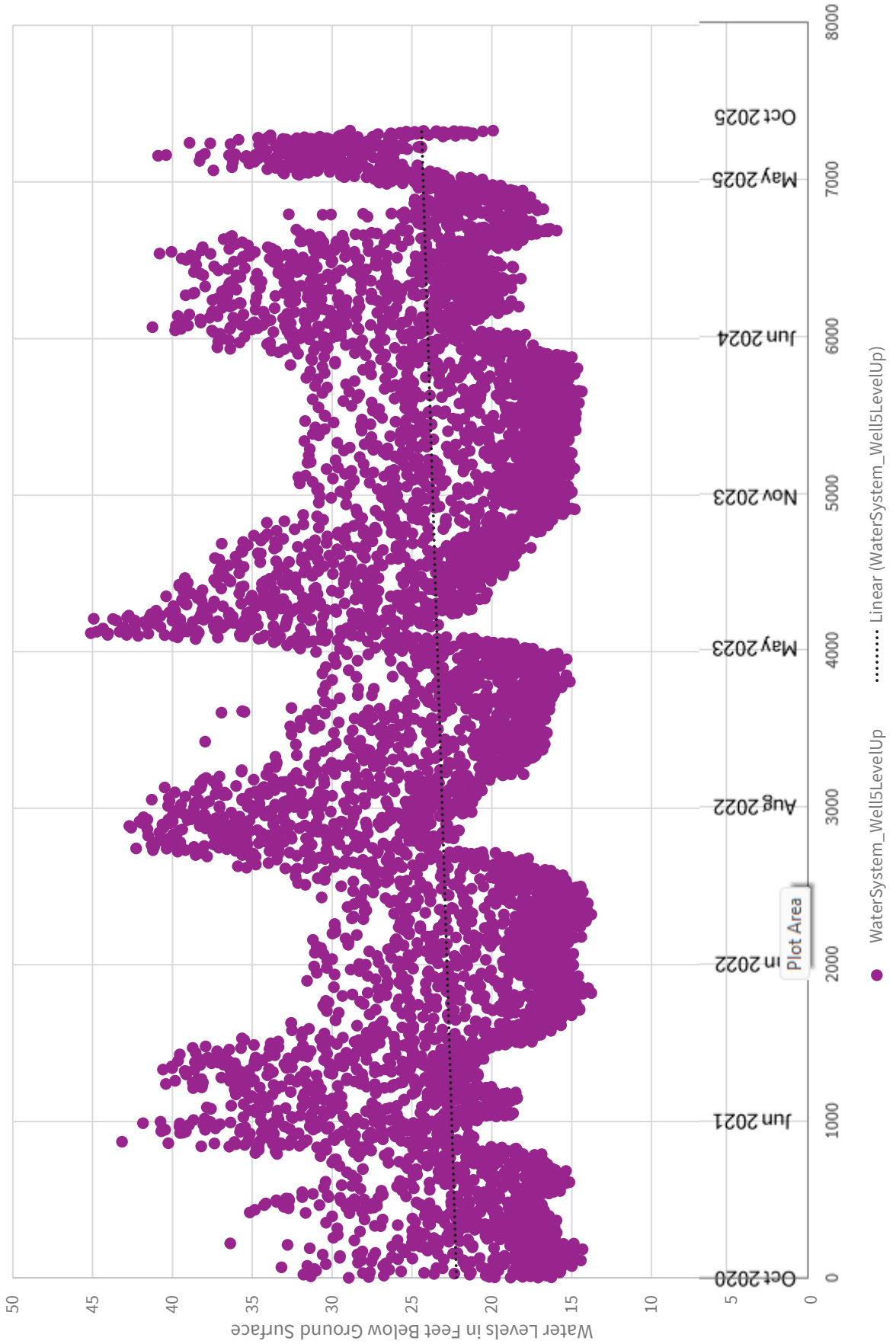


Well 4  
October 2020 to October 2025





# Well 5 October 2020 to October 2025



# Well 6 October 2020 to October 2025

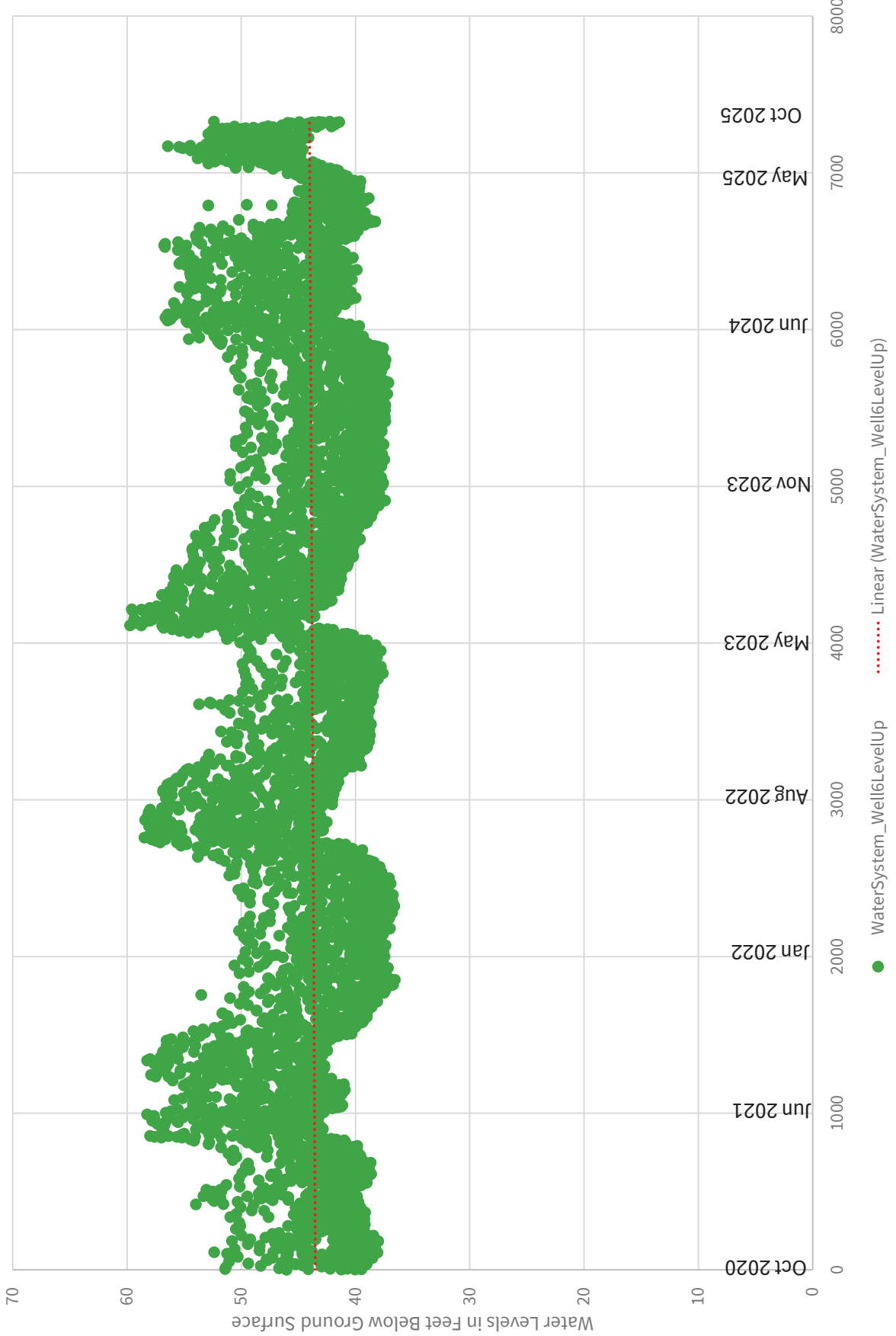


Exhibit A  
 Chart of Parcel Ownership  
 Howell Township – Livingston County, MI

Parcel	Township	APN	Entity
7	Howell	4706-07-100-003	Van Gilder Properties LLC
8	Howell	4706-07-200-018	Van Gilder Properties LLC
9	Howell	4706-07-100-004	Van Gilder Properties LLC
10	Howell	4706-07-200-017	Van Gilder Properties LLC
11	Howell	4706-07-300-007	Van Gilder Holdings LLC
12	Howell	4706-07-300-008	Lance Van Gilder / Ashley Van Gilder
13	Howell	4706-07-300-006	Kimberly Griffes / Kerrek Griffes
14	Howell	4706-07-400-005	Van Gilder Holdings LLC
15	Howell	4706-18-100-003	Van Gilder Holdings LLC
16	Howell	4706-18-100-004	Van Gilder Holdings LLC
17	Howell	4706-18-200-003	Van Gilder Properties LLC
18	Howell	4706-18-200-002	Van Gilder Holdings LLC
19	Howell	4706-18-400-002	David Culver
20	Howell	4706-18-400-003	Steve Thumser / Nancy Thumser
21	Howell	4706-18-400-001	Richard Van Gilder/Ryan Van Gilder/Lance Van Gilder
22	Howell	4706-18-400-021	Richard Van Gilder
23	Howell	4706-07-200-003	Rex A Peckens
24	Howell	4706-18-400-017	Jonathon Ott
28	Howell	4706--18-300-002	Van Gilder Holdings LLC



Date: September 18, 2025

## Conditional Land Use and Zoning Analysis For Howell Township, Michigan

**Applicant:** Stantec Consulting Michigan Inc., Randee LLC.

**Location:** 19 parcels east of Handy Township along Marr Road, Fleming Road, Warner Road, and Owosso Road.

**Parcel ID:** Shown in Figure 1 on page 3 and the Access Point Names (APN) written below:

4706-07-100-003	4706-07-200-018	4706-07-100-004
4706-07-200-017	4706-07-300-007	4706-07-300-008
4706-07-300-006	4706-07-400-005	4706-18-100-003
4706-18-100-004	4706-18-200-003	4706-18-200-002
4706-18-400-002	4706-18-400-003	4706-18-400-001
4706-18-400-021	4706-07-200-003	4706-18-400-017
4706-18-300-002		

**Current Zoning:** AR – Agriculture Residential, SFR – Single Family Residential, and NSC – Neighborhood Service Residential

**Action Requested:** Conditional Rezoning from AR, SFR, NSC to RT – Research and Technology / Zoning Ordinance Text Amendment

### PETITION

The applicant has submitted two petitions to the township including a text amendment to the Zoning Ordinance to include a definition of Data Processing as well as a petition to conditionally rezone nineteen (19) parcels near the northwest corner of the Township in

Sections 07 and 18 from AR – Agriculture Residential, SFR – Single Family Residential, and NSC – Neighborhood Service Residential to RT – Research and Technology for a Data Processing Center. The parcels are east of Handy Township along Marr, Fleming, Warner, and Owosso Roads, with Grand River Avenue going through the middle of the subject area. The application did not include a site plan.

The applicant offered a list of conditions for the requested rezoning including limiting the use exclusively to data processing as defined in their application as well as other development restrictions, such as increased setbacks, landscape buffering, sound mitigation, light pollution protection, water efficiency and sustainability practices, and reimbursement of expenses which will be discussed later in this review. If the rezoning is approved the applicant and any future property owner(s) would be bound to these conditions.

Section 125.3405 of The Michigan Zoning Enabling Act allows an owner of land to voluntarily offer in writing certain restrictions to the use and development of the land as a condition to an amendment to the zoning map subject to approval by the Township. In approving a conditional rezoning, the Township may establish a time period by which the conditions must apply. If the conditions are not satisfied within the period of time established by the Township, then the land will revert back to its former zoning classification. The landowner may extend the time period in which the conditions must be met with approval of the Township. The Township shall not add or alter the conditions that were originally approved. The Township also shall not require a landowner to offer conditions as a requirement for rezoning.

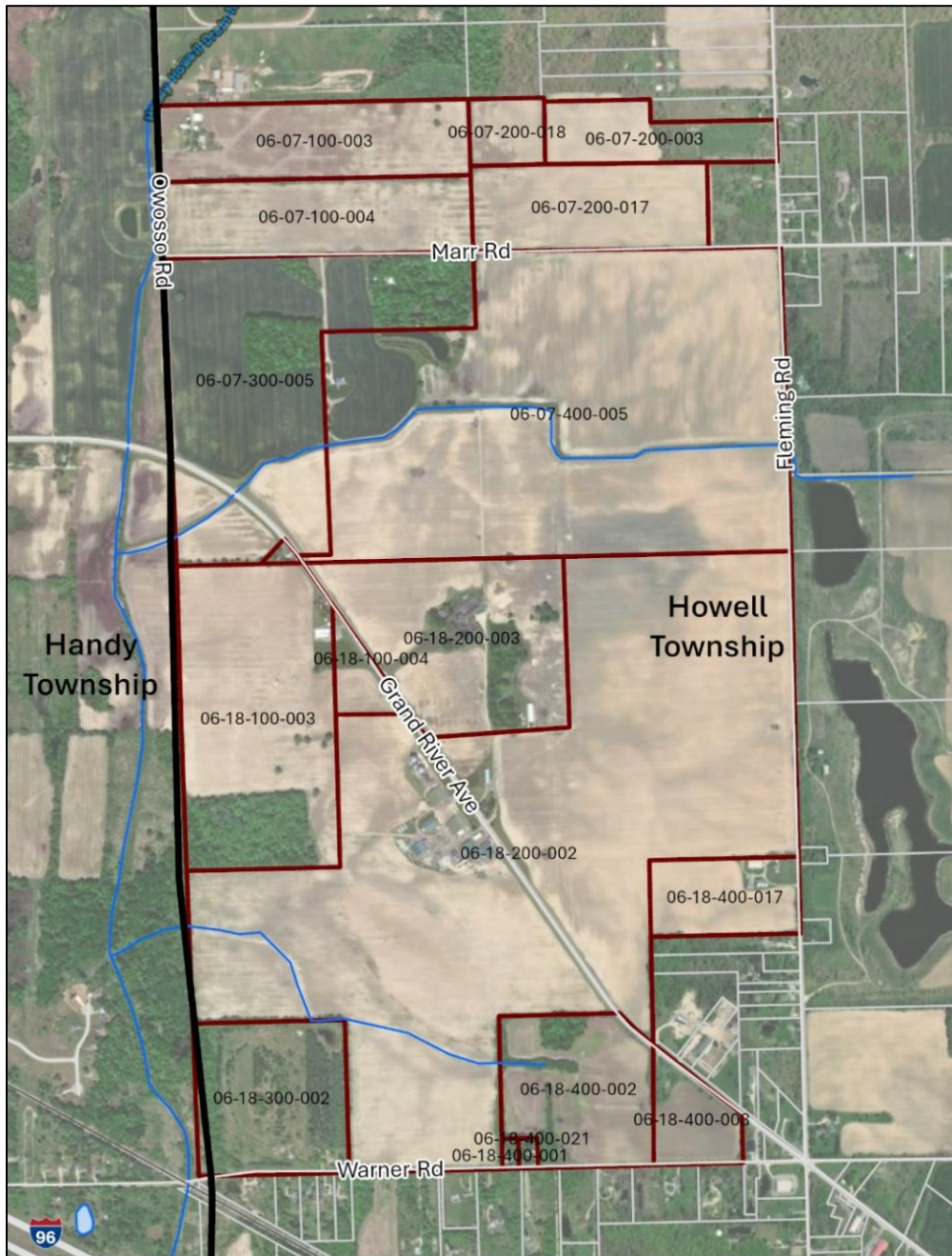
The RT zoning district allows for data processing as a permitted use, however, there is no definition for data processing. The applicant has offered the following definition, which would be added to Section 2.02 of the Zoning Ordinance if it were approved:

**Data Processing.** A facility or facilities used to house, and in which are operated, maintained and replaced from time to time, computer systems and associated components, including but not limited to telecommunications and storage systems, cooling systems, power supplies and systems for managing property performance (including generators and mechanical and electrical yards), and equipment used for the transformation, transmission, distribution and management of electricity (including private substations), internet-related equipment, data communications connections, private communication towers, environmental controls and security devices, structures and site features, as well as certain accessory uses, buildings or structures located on the same lot such as utility buildings, offices, warehousing, cafeterias, guardhouses, diesel storage tanks, water storage tanks, security fencing, and other similar structures, improvements and appurtenances.

## SITE DESCRIPTION / CURRENT USE

The subject parcels combined are one thousand seventy-seven point three (1,077.3) acres to build a Data Processing Center. The site appears to be mostly flat with some areas having dense tree coverage, and the Handy Howell Drain No. 1 runs through parcels 06-07-300-005, 06-07-400-005, and 06-18-200-002. The parcels are currently used for growing crops, farm operation, and single family residential.

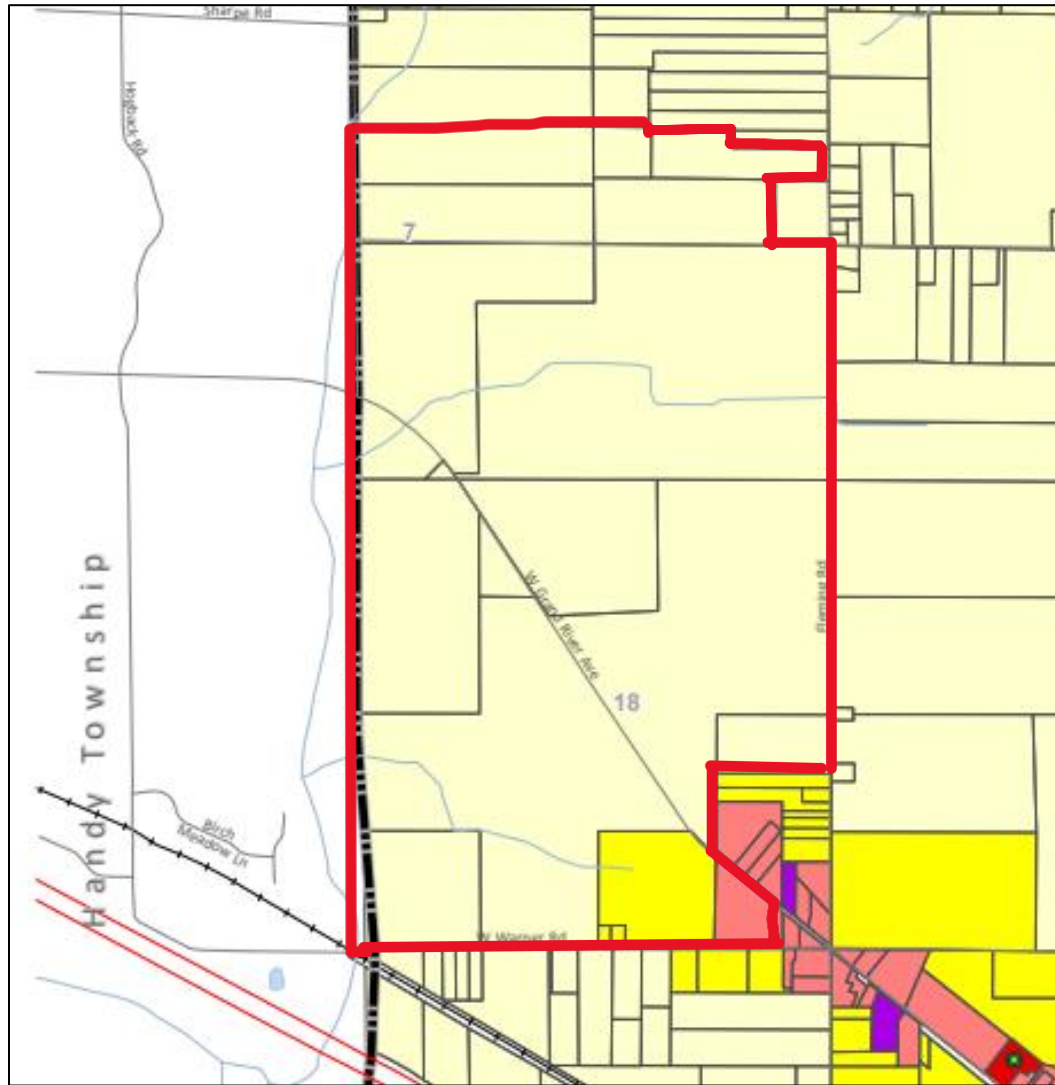
**Figure 1. Subject properties and vicinity**



Source: ArcGIS Pro

**SURROUNDING ZONING, LAND USE, AND FUTURE LAND USE**

**Figure 2. Zoning of Subject Properties**



Zoning Designation		
Conditional Zoning	OS - Office Service	RT - Research & Technology
PUD - Planned Unit Development	NSC - Neighborhood Service Commercial	<b>Wellhead Protection Areas</b>
AR - Agricultural Residential	HSC - Highway Service Commercial	1 YR
SFR - Single Family Residential	RSC - Regional Service Commercial	5 YR
MFR - Multiple Family Residential	IFZ - Industrial Flex Zone	10 YR
MHD - Manufactured Housing District	I - Industrial	

**Figure 3. Future Land Use Map**

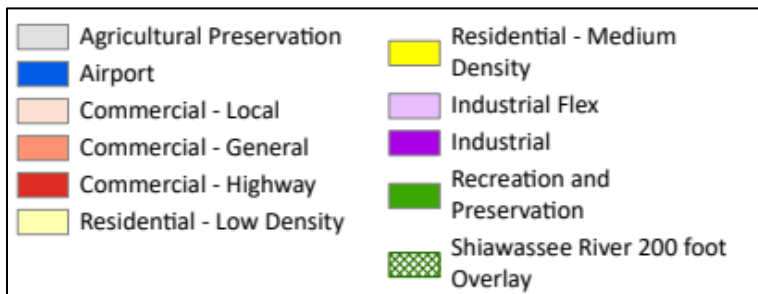




Table 1 summarizes the zoning, existing land use, and the future land use designation from the Township Master Plan of the subject parcels and the surrounding parcels.

**Table 1. Zoning, land use, and future land use or subject parcel and vicinity**

	<b>Zoning</b>	<b>Existing Land Use</b>	<b>Future Land Use</b>
<b>Subject parcels</b>	AR – Agricultural Residential, SPR – Single Family Residential, and NSC – Neighborhood Service Commercial	Vacant parcels, agricultural operations, single family residences, and commercial building	Agricultural Preservation and Residential – Low Density
<b>North</b>	AR – Agricultural Residential	Agriculture and vacant	Agricultural Preservation
<b>East</b>	AR – Agricultural Residential, SFR – Single Family Residential, NSC – Neighborhood Service Commercial, RSC – Regional Service Commercial	Agriculture, single family residences, commercial buildings, and vacant parcels	Agricultural Preservation and Residential – Low Density
<b>South</b>	AR – Agricultural Residential and SFR – Single Family Residential	Single family residences and agriculture operations	Agricultural Preservation
<b>West (Handy Township)</b>	NSC – Neighborhood Commercial and AR – Agricultural Residential	Single family residences, agricultural operations, and vacant parcels	Medium Density Residential and Local Commercial

As Figures 1 and 2, and Table 1 depicts, the subject parcels and surrounding parcels including Handy Township are zoned as agricultural residential, single family residential, neighborhood service commercial, and regional service commercial. There majority of the subject area is used for agricultural operations, with some single family residences on large lots. The future land use designates the majority of the subject parcels and most of the surrounding parcels as agricultural preservation, with two parcels in the southeast corner of the subject land designated as low and medium residential.

The Master Plan states the following on **Agricultural Preservation**: These areas are intended to remain rural. These areas are intended to maintain the existing agricultural lands in the Township. Housing in these areas should be on large lots to keep density low. The area planned for Agricultural Preservation includes the majority of the Township. In addition to preserving large swaths of active farmland that helps to support the agricultural industry in the community, these areas also help to maintain the existing character that many Township residence identify as what they feel is most important about the community.

The Master Plan States the following on **Residential – Low Density**: The characteristics of these areas are intended to be consistent with typical suburban residential areas. The land use would include suburban style residential housing and customary accessory uses in neighborhoods or individual lots. Neighborhood developments would have low volume neighborhood scale roads that are lined with sidewalks, pedestrian scale lighting and street trees. Neighborhoods should include amenities such as neighborhood scale parks or playgrounds. Individual lots may be located along rural connector roads in closer proximity to the city.

## **DEVELOPMENT POTENTIAL**

### Current Zoning

The parcels that make up the site of the Data Processing Center are currently zoned as AR – Agricultural Residential, SFR – Single Family Residential, and NSC – Neighborhood Service Commercial. None of these Zoning Districts allow for data processing center as a permitted or special land use.

### Proposed Zoning

The intent of the RT – Research and Technology District is to provide an area surrounding the Livingston County Airport property and other areas of the Township for the planning and development of land uses that directly relate to airport service, research and technology, and research office-type uses. The RT District is designed to recognize the growing convergence of office, industrial and research in terms of function, location, appearance and activities. However, this district is intended to permit only those uses which emit a minimum of noise, vibration, smoke, dust and dirt, gases or offensive odors, glare and radiation. Storage of materials, supplies, products and equipment shall be within a structure. Further, the RT District is so structured as to permit, along with any specific uses, the light assembly and/or treatment of finished or semi-finished products from previously prepared material. The processing of raw material for shipment in built form, to be used in an industrial operation at another location, is not permitted.

The Research and Technology District allows data processing centers as a permitted use.

## **ZONING AMENDMENT PROCEDURE / CONDITIONAL REZONING**

Article 23 of the Zoning Ordinance outlines the requirements and procedures to review a conditional rezoning. The applicant has submitted an application for a conditional rezoning and text amendment to the Zoning Ordinance to define Data Processing. The public hearing notices have been published in the newspaper, sent out to the parcels surrounding subject

parcels and on the Township website fifteen (15) days before the public hearing which will be at the Planning Commission meeting on September 23, 2025, at 6:30 p.m.

The applicant has clear intentions to use all twenty-five (25) parcels that make up the site for a Data Processing Facility. The applicant's offered conditions of rezoning are use restriction to only data processing as defined through their proposed Zoning Ordinance text amendment, and development restrictions that include increased setbacks, landscape buffering, sound mitigation, light pollution protection, water efficiency and sustainability practices, and reimbursement of expenses.

The conditions offered by the applicant may need some clarification and we encourage the Planning Commission to discuss these with the applicant to ensure there is clear understanding of the intended conditions. The Planning Commission is not enabled to request revisions or additions to the conditions. However, the offer of conditions may be amended during the process of rezoning consideration provided that any amended or additional conditions are entered voluntarily by the owner. We recommend that the applicant review our feedback regarding the offered condition list prior to the Planning Commission taking action on the proposed conditional rezoning. The applicant has the opportunity to revise their offer of condition prior to the Planning Commission taking action.

- The applicant offers a minimum of thirty (30) foot wide landscape buffers around parking areas, doubling the code minimum, which is to be planted and maintained with trees, shrubs, berms, fencing, and walls.
- The applicant has offered significant additional setbacks around the perimeter of the site, 100 foot front and rear yards and 50 foot side yards, all more than double what is required in the RT district. The ordinance requires buffers between certain land uses but there is no mention of additional buffers around elements other than parking areas.
- There are areas of the site that have a dense tree canopy. The applicant should specify whether the trees will be clear cut or preserved in some areas.
- The applicant has indicated that they will implement tailored sound mitigation strategies however, specific limitation to sound levels at the property lines should be similar to the recently approved renewable energy ordinance may provide more certainty.
- The applicant offers that the facility will implement water efficiency and sustainability by recycling water through cooling systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing and infiltrating rainwater on site, incorporating water-saving fixtures and technologies within the facility. There may need to be more detail on how the water will be recycled, how the discharge process will work, and what water-saving fixtures and technologies will be used for sustainable water usage for cooling the computers. There is no mention of how the Handy Howell Drain No. 1 that runs through parcels 06-07-300-005, 06-07-400-005, and 06-18-200-002 will be incorporated or preserved.

## **FINDINGS FOR REZONING**

According to Section 23.02.D.5 in the Zoning Ordinance states, in reviewing an application for the rezoning of land, whether the application be made with or without an offer of conditions, factors that should be considered by the Planning Commission and the Township Board include, but are not limited to, the following:

**A. Whether the rezoning is consistent with the policies and uses proposed for that area in the Township’s Master Land Use Plan.**

The proposed rezoning is not consistent with the designated land use in the future land use plan for the subject area in the Township’s Master Plan. The proposed parcels have an agricultural preservation and a residential – low density land use designation, which are intended to keep the area rural and with suburban style residential housing. However, the applicant states that the Data Processing Facility will be setback far enough to maintain the rural character of the area.

The Future Land Use Strategy in the Master Plan recognizes and encourages the continued use of the agricultural residential zoning pattern in most of the Township while focusing higher density residential, commercial, and industrial development around M-59, Grand River, the airport, and I-96. The subject site is located along Grand River.

In order to develop this site utilities will be extended to this area. This will make it easier to achieve higher density residential, commercial, and industrial development in that area.

**B. Whether all of the uses allowed under the proposed rezoning would be compatible with other zones and uses in the surrounding area.**

The site is one thousand seventy-seven point three (1,077.3) acres in size, and according to the applicant the Data Processing Center won’t take up the entire site. While no site plan was provided in the application, two (2) of the conditions made by the applicant are increased setbacks, and landscaped buffers with both being greater than the code minimum. The rural character of the area will be preserved with increased setbacks and landscape buffers. There should be adequate screening to hide the building(s) and parking lot(s).

The applicant stated that the facility will be designed to operate in harmony with the surrounding land uses, allowing for continued agricultural operations and the preservation of surrounding agricultural land. The owners of the parcels that make up the site for the facility have agreed to sell their land, and the ones that didn’t should be able to continue to operate with no issues with noise and light pollution.

**C. Whether any public services and facilities would be significantly adversely impacted by a development or use allowed under the requested rezoning.**

Data Centers tend to use a large amount of water and electricity. The applicant stated that the community will not be financially burdened, however they don't address the amount of services needed for the facility to operate on a daily basis. In preliminary and ongoing conversation with the applicant and DTE Energy, DTE has indicated that they have the capacity to support this development while continuing to provide the same service to existing customers in the area.

Additionally, it is our understanding that the applicant has been in communication with Marion, Howell, Oceola, and Genoa (MHOG) Sewer and Water Utilities who have indicated that there is capacity to provide water and sanitary sewer to the property. We understand that there can be a considerable amount of water necessary for data center operation. The applicant stated that there will be water efficiency and sustainability practices such as recycling water through cooling systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing and infiltrating rainwater on site, and incorporating water-saving fixtures and technologies within the facility. The applicant has not specifically addressed the Handy Howell Drain No. 1 that runs through parcels 06-07-300-005, 06-07-400-005, and 06-18-200-002. Any work related to the drains will require review and approval from the Livingston County Drain Commissioner's office.

The applicant has offered to pay or reimburse the Township for all necessary infrastructure costs necessary to support the development of the facility including roads, water, sewer/wastewater, fiber, and electrical infrastructure. The cost to build the facility should be on the applicant, however the expansion of utilities and services to that area will be a huge benefit for landowners, and future development.

**D. Whether the uses allowed under the proposed rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.**

The site is an ideal location for a Data Processing Facility as they require a lot of land within a rural area. There is a large amount of land already zoned for RT – Research and Technology along West Grand River, North Burkhardt, Emmons, and Tooley Roads, but that land is used for the County Airport.

The property owner who farms most of the subject land has indicated that this is not their most productive farmland.

It is our understanding that the facility will increase tax revenue for the Township Potentially representing the highest tax revenue form a single use in the entire county. There is the benefit of expanded utilities and services for landowners and future development in the Township. The facility will also add jobs in the Township, and the

applicant states that it will support the community with grants for schools, registered nonprofits, and community organizations. The applicant should provide more information on the intended user(s) for the facility.

## RECOMMENDATIONS

The applicant should consider amending their letter offering conditions to address any question or concern raised in this memo or identified by the planning commission.

We recommend that the Planning Commission review the findings from Article 23 of the zoning ordinance as they evaluate the proposed rezoning. The findings made by the Planning Commission should be the basis of any recommendation to the Township Board to approve or deny the proposed rezoning. The Planning Commission should make two separate motions, one on the map amendment and one on the text amendment.

Respectfully submitted,

  
\_\_\_\_\_  
CARLISLE/WORTMAN ASSOC., INC.  
Paul Montagno, AICP  
Principal

  
\_\_\_\_\_  
CARLISLE/WORTMAN ASSOC., INC.  
Brady Heath  
Community Planner

#308-2512

CC: Joannathan Hohenstein, Township Zoning Administrator  
Marnie Hebert, Administrator

DRAFT

**HOWELL TOWNSHIP PLANNING COMMISSION  
REGULAR MEETING MINUTES  
3525 Byron Road Howell, MI 48855  
September 23, 2025  
6:30 P.M.**

**MEMBERS PRESENT:**

Robert Spaulding      Vice Chair  
Mike Newstead        Secretary  
Tim Boal                Board Representative  
Chuck Frantjeskos    Commissioner  
Matt Stanley            Commissioner  
Sharon Lollo          Commissioner

**MEMBERS ABSENT:**

Wayne Williams      Chair

**ALSO IN ATTENDANCE:**

Township planners Paul Montagno and Brady Heath, Township attorneys Christopher Patterson and Sophia Youssif, Zoning Administrator Jonathan Hohenstein, MHOG Director Greg Tatara, Township Assessor Brent Kilpela, Steve Schimpke with SC Develop LLC, Applicants Mike Vogt and Jack Ammerman on behalf of Randee LLC, and Dan Mahoney with DTE

Vice Chairman Spaulding called the meeting to order at 6:30 pm. The roll was called. Vice Chairman Spaulding requested members rise for the Pledge of Allegiance.

**Motion** by Newstead, **Second** by Frantjeskos, **“To recess the meeting of the Planning Commission for 30 minutes to reconvene at the Rod Bushey Center at Howell High School, 1200 W. Grand River Ave. Howell, MI 48843 at 7:00 P.M. due to public health, safety, and traffic concerns to accommodate the public in sufficient space to observe and effectively participate in the meeting. Acknowledging that the Township has posted an amended notice at the Township Hall, provided notice on the Township’s website and staff is remaining at the Township Hall to direct public members to the new meeting location.”** Roll Call: Stanley-yes, Boal- yes, Newstead- yes, Spaulding- yes, Frantjeskos- yes, Lollo- No. Motion passes 5-1.

**APPROVAL OF THE AGENDA:**

**Motion** by Frantjeskos, **Second** by Boal with friendly amendment, **“To move business items 12A and B in front of 10.”** Motion carried.

**APPROVAL OF THE MEETING MINUTES:**

August 26, 2025

**Motion** by Boal, **Second** by Newstead, **“To Approve the minutes as presented.”** Motion carried.

**CALL TO THE PUBLIC**

Topics discussed: water demands, concerns about local wells, ground water, long term resources, property values, property rights, cyber-security, costs of upgrades to the infrastructure, power supply, pollution, excessive noise, lack of transparency, wildlife, Howell Township Master Plan, light pollution, visual buffers, jobs created, high/low paying jobs, loss of farm land, environmental contamination, tax revenue, concerns of additional data centers, ordinances, health and safety of residents

Public comments received by: Vanessa North 2950 W. Marr Rd., Denise Pollizella 4200 Sweet Rd., Joe Farkas 738 Old English Circle, Deborah Towles 3210 Pineview Trail, Alivia Christie 3885 Byron Rd., Dan Wholihan 8162 Majestic Fowlerville, Andrew Paulika 840 Lucy Rd., Gary Burtka 10099 Stow Rd., Henry Petrovich 5205 Warner Rd., Ronald 3620 Allen Rd., Emma Sova 322 W. Washington, Joe Smith 5136 Fleming Rd., Dan Bonello 3531 Warner Rd., Joe Fulton 3528 Warner Rd., Jodie Fulton 3531 Warner Rd., Darian Wolfe 804 W. Michigan Ave., Beth Brown 409 Indian Camp Trail, Patrick Kosin 2512 Eason Dr, Christina Frederick 418 Lake St, Andrea Rasizzi 4379 Indian Camp Trail, Debi Samuells 4302 Cornell, Angela Barbash 4211 Crandall Rd., Delilah Barbash 4211 Crandall Rd., Richard Allen Livingston/Shiawassee Border, Steven Cornea 3287 Hill Hollow Lane, Danielle Preston Rd., Tyler Rose 4334 W. Grand River Ave., Liz Rowse 2484 Tooley Rd., Cassandra McFarland 5650 Fleming Rd., Tayla Vance 3701 Cedar Lake Rd., Kristen Dennison 7196 Maner Ln., Alora Dennison 7196 Maner Ln., Autumn Dennison 7196 Maner Ln., Steve Dennison 7196 Maner Ln., Alissa Recker 7171 Manor Ln., Lori Barnard 1257 Peavy Rd., Jeannie Matovski 4149 Sonata Dr., Christine Brondyke 5707 Crandall Rd., Clint Beach 1138 Owosso Rd., Heather Uratchko 3777 Hogback Rd., Joshua 5640 Fleming Rd., Agnieszka Bisbiki 2511 Little Sunset Trail, Stephanie Fuerst 2575 W. Marr Rd., Chris Strandt, Richard Kaminski 4505 W. Marr Rd., Kristina Beaubien 4408 Ellis Rd., Justine O'Connor 5495 Layton Rd., Austin Breuer 1414 Steeplechase Ct., Richard Vessella, Greg Lehr 2530 Tooley Rd., Earl Beach 5412 Owosso Rd., Joy Dettling 2516 Curdy Rd., Zach Rucic 8139 Majestic Blvd., Dominic and Jessica Rodriguez Burkhart Rd., Sarah Porter, Lee Graham, Cory Alchin, Brian Brubaker 5761 Warner Rd., John Ryan 3457 Byron Rd., Kari Ryan 3457 Byron Rd., Jessica Burtica 10099 Stow Rd., Evelyn Redwine 444 Inverness St., Gus Parson Downtown Howell, Peter York, Breanne Green, Thomas Reinke, Dave Rowe, Katie Corbin, Lauren Prebenda 930 Gully Rd., Valerie 3223 Byron Rd., Michelle Vecheta 3252 Warner Rd., Kerry McFarland 2885 W. Marr Rd., Carol McClements 2988 N. Burkhart Rd., Calvin Heckman 6420 Warner Rd., Steve Smith 8763 Robb Rd., Connie Johnson, Dave Foreman 6126 Pheasant Ridge Dr., Doug Helzerman 6815 Sharpe Rd., John Paul 5630 Curzon St., Craig Zube 1560 Wood Haven, Diane Dombrowski 4707 Hogback Rd., John Belcher

**Motion** by Spaulding, **Second** by Newstead **“To recess until 11:15.”** Motion carried.

**Motion** by Spaulding, **Second** by Newstead, **“To reconvene the meeting.”** Motion carried.

**ZONING BOARD OF APPEALS REPORT:**

None

**TOWNSHIP BOARD REPORT:**

Draft minutes are included in the packet.

**ORDINANCE VIOLATION REPORT:**

Report in packet.

**BUSINESS ITEMS:**

New Business:

1. Union of Oak Grove- Major Change to Approved Site Plan- Township Planner Montagno gave a review of the request to amend the previously approved site plan. The site plan was originally approved in December 2020. The applicant is requesting to replace one of the five approved toddler lots with a frisbee golf amenity. The change will not alter the overall site layout and the four toddler lots will continue to serve younger children. Commissioner Frantjeskos questioned if the applicant was present. **Motion** by Boal, **Second** by Frantjeskos, **“To table this request until the applicant can be present.”** Motion carried.



2. Pirate's Cove Self-Storage- Request for Extension of Approved Site Plan- Planner Montagno gave an update for the extension. They are requesting an extension due to increased costs of materials and interest rates. **Motion** by Stanley, **Second** by Frantjeskos, **"To approve it."** Motion carried.

**SCHEDULED PUBLIC HEARINGS:**

- A. SC Develop, LLC, to Rezone portion of vacant land on corner of Grand River Ave. and M-59, PC 2025-19, Parcel # 4706-28-400-016 from Regional Service Commercial (RSC) to Industrial (I)- **Motion** by Boal, **Second** by Newstead, **"To open the public hearing for SC Develop LLC, to rezone portion of vacant land on the corner of Grand River Ave and M-59, PC 2025-19."** Township Planners Heath and Montagno gave an overview of the proposed rezoning. The applicant requests that the 11.64-acre portion be rezoned from Regional Service Commercial (RSC) to Industrial (I). Applicant Steve Schimpke from SC Develop spoke on the site and answered questions. Board Representative Boal questioned what the property may be used for and if traffic would exit from Trans West Industrial Park. Commissioner Lollo has concerns about what types of businesses would be present there.

Patricia Murphy- 139 Lakeshore- questioned if this parcel is related to the data center

**Motion** by Newstead, **Second** by Boal, **"To close the Public Hearing."** Motion carried.

**Motion** by Newstead, **Second** by Frantjeskos, **"To recommend conditional rezoning for SC Development LLC for the vacant land on the corner of Grand River and M-59, PC2025-19, Parcel # 4706-28-400-016 from Regional Service Commercial (RSC) to Industrial (I) based on the following two conditions: 1.) The request to Rezone conditional on SC Develop LLC owning the property in the event SC Develop LLC does not close on the purchase of the property the rezone application shall no longer be valid and the underlying zoning should remain and 2.) It's understood that in addition to closing on the property SC Develop LLC would be required to obtain a formal lot split should it be approved by the Howell Township and this conditional rezoning would be valid for a period of one year."** Motion carried.

- B. Stantec Consulting Michigan, Inc., to conditionally rezone various parcels in the area of Grand River Ave. and Fleming Rd. PC2025-20, from Agricultural Residential (AR), Single Family Residential (SFR) and Neighborhood Service Commercial (NSC) to Research and Technology (RT)
- C. Stantec Consulting Michigan, Inc., Zoning Ordinance Text Amendment, PC2025-21, for a text amendment to Article 2- Definitions, regarding Article 5- Research and Technology (RT) Zoning District. Planner Montagno gave an overview of the proposed conditional rezoning of nineteen parcels. These parcels are located east of Handy Township along Marr, Fleming, Warner and Owosso Roads. This would be to rezone these parcels to Research Technology for a data processing center. The applicant has offered conditions with self-imposed limitations. These limitations include increased setbacks, increased landscape buffers, sound mitigation, light pollution protection, water efficiency, sustainable practices and reimbursement of expenses. They have also petitioned to include a text amendment to the Zoning Ordinance to include a definition for Data Processing Centers. On behalf of the applicant Mike Vogt presented information, discussed the rezoning proposal, and answered questions. No site plan has been submitted; they are there for a recommendation for zoning not site plan approval. They are proposing a definition for Data Center and have provided conditions tailored to concerns of the community and the Planner's report. Some of the conditions proposed are setbacks of a minimum of 100 ft., lot coverage restrictions and landscaping buffers. Jack Ammerman from Stantec Consulting of

Michigan spoke about his work previously with this developer of data centers throughout the United States. He discussed jobs, screening, traffic analysis, long term jobs that would be available, water usage, noise, and power. Dan Mahoney Director of Policy and Regional Affairs for DTE spoke on the planning they do to support data centers. He talked about how residents would benefit from data centers and their positive effects to the community.

**Motion by Boal, Second by Newstead, "To open the public hearing for Stantec Consulting Zoning Ordinance and Text Amendment PC2025-20."** Motion carried.

ALL PUBLIC COMMENTS FROM EARLIER ARE INCORPORATED AS PART OF THE PUBLIC HEARING FOR THIS MATTER

Topics Discussed: definition of Data Center, noise and decibels allowed, DTE's interest in the data center, minimal jobs, Township Master Plan, lack of information provided, water demands, setbacks, number of phases proposed, cost of infrastructure, utilization of buildings already present, Artificial Intelligence, environmental contamination, wildlife, children unable to play outside

Lauren 930 Gulley, Betsy Keeran, John Paul, Evelyn Redwine, Chandler John 5565 Warner Rd., Dan Bonello 3531 Warner Rd., Greg Zumidian, Shawn Williams, Aaren Currie 6880 Chase Lake Rd.

**Motion by Boal, Second by Newstead, "To close the public hearing."** Motion carried.

Commissioner Lollo questioned the Community Outreach Plan and the potential of a Water Treatment Plant, energy considerations, mitigation measures and adjusting site layout and what is a water restoration project and how it works. Commissioner Frantjeskos questioned how many buildings will be present when the build out is done, what prevents the company from splitting and selling the "green space" to another company once the 1,077 acres is rezoned and his concern with the lack of transparency of this project. Secretary Newstead questioned if there was a decommissioning plan if the buildings were no longer being used as a Data Center. Board Representative Boal spoke on supporting the Township Master Plan. Commissioner Stanley questioned recycling water through the cooling systems and height of the buildings. Vice Chair Spaulding questioned the definition of data processing in the ordinance, how many phases are expected, total time length it will take to be built out, why are they trying to rezone more property than what they are proposing to develop, is there anything added to the large amounts of water for cooling, is there any intention to utilize a 70 ft building height and the capacity of waste water that will be discharged into the sewer system. Commissioner Lollo questioned wastewater demand scenarios and the guarantee that there will be enough water. Greg Tatara from MHOG answered questions regarding water capacity. Commissioner Frantjeskos questioned the dewatering process during construction, and the Howell drain that runs through the property. Board Representative Boal spoke on stricter restrictions with other ordinances from different locations with data centers. Discussion followed. **Motion by Boal, Second by Frantjeskos, "To recommend to the Township Board denial of the rezoning application #308-25.12, for parcel numbers listed in the petition, to rezone from Agricultural Residential, Single Family Residential, and Neighborhood Service Commercial to Research and Technology based on the following findings pursuant to Section 23.02 of the Howell Township Zoning Ordinance: A.) The rezoning is not consistent with the policies and uses proposed for that area in the Township's Master Land Use Plan B.) All of the uses allowed under the proposed rezoning would not be compatible with the other zones and uses in the surrounding areas C.) Public Services and facilities would be significantly adversely impacted by a development or use allowed under the requested zoning D.) The uses allowed under the proposed rezoning would not be equally or better suited to the area than uses**

**allowed under the current zoning of the land.”** Roll Call: Frantjeskos-yes, Spaulding- yes, Newstead-yes, Lollo- yes, Boal-yes, Stanley-yes. Motion passes 6-0.

**Motion** by Boal, **Second** by Newstead, **“To recommend to the Township Board the denial of the text amendment and definition for the RT Zone.”** Motion carried.

**Motion** by Spaulding, **Second** by Newstead, **“To excuse Chairman Williams from tonight’s meeting.”** Motion carried.

OLD BUSINESS:  
None

**CALL TO THE PUBLIC:**  
None

**ADJOURNMENT:**  
**Motion** by Newstead , **Second** by Lollo, **“To adjourn.”** Motion carried. The meeting was adjourned at 2:46 A.M.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mike Newstead  
Planning Commission Secretary

\_\_\_\_\_  
Marnie Hebert  
Recording Secretary



# Livingston County Department of Planning

November 20, 2025

**Scott Barb**  
AICP, PEM  
Director

**Robert A. Stanford**  
AICP, PEM  
Principal Planner

**Martha Haglund**  
Principal Planner

Howell Township Board of Trustees  
c/o Sue Daus, Clerk  
3525 Byron Road  
Howell, MI 48855

**Re: Planning Commission Review of Ordinance Text Amendment Z-34-25  
and Conditional Rezoning Request Z-35-25.**

Dear Board Members:

The Livingston County Planning Commission met on Wednesday, November 19, 2025, and reviewed the text amendments and conditional rezoning request detailed above. The County Planning Commissioners made the following recommendations:

**Z-34-25**      **Disapproval.** The definition of 'data processing' refers to methods and operations of analyzing data rather than a facility. The term should read 'data processing facility'.

**Z-35-25**      **Disapproval.** The proposed rezoning from AR (Agricultural Residential, SFR (Single Family Residential), and NSC (Neighborhood Service Commercial), is not consistent with the overall goals, objectives, and future land use intentions of the Howell Township Master Plan.

Copies of the staff review and Livingston County Planning Commission meeting minutes are enclosed. Please do not hesitate to contact our office should you have any questions regarding county action.

**Department Information**

Administration Building  
304 E. Grand River Avenue  
Suite 206  
Howell, MI 48843-2323

●  
(517) 546-7555  
Fax (517) 552-2347

●  
Web Site  
<http://www.livgov.com>

Sincerely,  
*Scott Barb*

Scott Barb

sb

Enclosures

c: Wayne Williams, Vice Chair, Planning Commission  
Jonathan Hohenstein, Township Zoning Administrator

Meeting minutes and agendas are available at:  
<https://milivcounty.gov/planning/commission/>



# Livingston County Department of Planning

## LIVINGSTON COUNTY PLANNING COMMISSION MEETING Wednesday, November 19, 2025 – 6:30 p.m.

Howell High School, Rod Bushey Performing Arts Center  
1200 West Grand River, Howell, MI 48843

### Agenda

Scott Barb  
AICP, PEM  
Director

Robert A. Stanford  
AICP  
Principal Planner

Martha Haglund  
AICP  
Principal Planner

Abby Carrigan  
Planning Intern

1. Call to Order
2. Pledge of Allegiance to the Flag
3. Roll and Introduction of Guests
4. Approval of Agenda – November 19, 2025
5. Approval of Meeting Minutes – October 15, 2025
6. Call to the Public
7. Zoning Reviews
  - A. Z-34-25: Howell Township Text Amendment, Section 2.02 Definitions
  - B. Z-35-25: Howell Township Conditional Rezoning, Sections 7 and 18, AR-NSC-SFR to RT
  - C. Z-36-25: Oceola Township Text Amendment, Section 12.31 Waste Receptacles and Management
  - D. Z-37-25: Oceola Township Text Amendment, Section 15.02 Procedures for Making Application
  - E. Z-38-25: Oceola Township Text Amendment, Section 16.11 Sketch Plan Review Standards
  - F. Z-39-25: Cohoctah Township Text Amendments, Section 13.29 Moratoriums
8. Old Business:
9. New Business:
10. Reports
  - A. Welcome new Planning Commissioner Chuck Wright
  - B. Annual Meeting to Follow Regular Meeting Adjournment
11. Commissioners Heard and Call to the Public
12. Adjournment

#### Department Information

Administration Building  
304 E. Grand River Avenue  
Suite 206  
Howell, MI 48843-2323

•  
(517) 546-7555  
Fax (517) 552-2347

•  
Web Site  
<https://milivcounty.gov/planning/>

# WELCOME TO THE LIVINGSTON COUNTY PLANNING COMMISSION MEETING

NOVEMBER 19, 2025

## Rules of “Call to Public:”

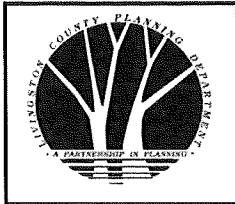
- A. The public will be allowed to address the Planning Commission on any item NOT on the agenda during the initial “Call to the Public” (**Agenda Item #6**).
- B. There will also be an opportunity for the public to speak regarding each agenda item. (**Agenda Item #7**).

This will take place once all the case details have been provided to the Planning Commission by Planning Staff and the Applicant, and before the final vote by the Planning Commission on the case.

- C. During this time, the speaker will address the Planning Commission Chair only, not individual Commissioners, and not the public.
- D. Speakers will refrain from the use of profanity as well as any attacks on and elected or appointed officials and any attendees
- E. If there are several individuals that wish to speak on the same subject matter, for consideration of all attendees time and a reasonable allowance of time for all to adequately participate, the Planning Commission would request that these individuals appoint a spokesperson to speak on their behalf prior to the meeting.
- F. Speakers will be limited to 3 minutes (with the exception of approved presentations).
- G. Failure to comply with any of the above rules shall result in the speaker being ruled out-of-order and informed that their time is up.

## Public conduct during a “Public Hearing:”

- A. All speakers will address the Planning Commission Chair, not individual Commissioners, and not the audience.
- B. Each speaker speaking in favor or opposing the matter will be allowed to speak once.
- C. If there are several individuals who would like to have one person be their spokesperson, the Planning Commission may at its discretion, allow the spokesperson additional time.
- D. If there are several individuals that wish to speak on the same subject matter, for consideration of all attendees time and a reasonable allowance of time for all to adequately participate, the Planning Commission would request that these individuals appoint a spokesperson to speak on their behalf prior to the meeting.
- E. All speakers must refrain from any verbal attacks on elected and appointed officials and any attendees, as well as against the applicant.
- F. All speakers will refrain from the use of profanity.
- G. Failure to comply with any of the above rules shall result in the speaker being ruled out-of-order and requested to sit down.



**LIVINGSTON COUNTY PLANNING DEPARTMENT  
CONDITIONAL REZONING REQUEST**

**CASE NUMBER:  
Z-35-25**

<b>COUNTY CASE NUMBER:</b>	<b>Z-35-25</b>	<b>TOWNSHIP:</b>	<b>Howell Township</b>
<b>REPORT DATE:</b>	<b>November 10, 2025</b>	<b>SECTION NUMBER:</b>	<b>Sections 7 &amp; 18</b>
<b>STAFF ANALYSIS BY:</b>	<b>Scott Barb</b>	<b>TOTAL ACREAGE:</b>	<b>1007.3 acres</b>

<b>APPLICANT / OWNER:</b>	<b>Stantec Consulting, Jack Ammerman</b>
<b>LOCATION:</b>	<b>19 parcels bounded by Owosso Road, Marr Road, Fleming Road, and Warner Road.</b>
<b>LAND USE:</b>	<b>Currently vacant farmland with some low density residential.</b>

<b>CURRENT ZONING:</b>	<b>REQUESTED ZONING:</b>
<b>AR – Agricultural Residential, SFR – Single Family Residential, and NSC – Neighborhood Service Cm</b>	<b>RT – Research and Technology</b>
<b>PERMITTED/SPECIAL USES (Not all inclusive):</b>	<b>PERMITTED/SPECIAL USES (Not all inclusive):</b>
<u>Permitted:</u>  <b>AR:</b> General agriculture, single-family dwellings, churches, stables.  <b>SFR:</b> Single-family dwellings, day care facilities.  <b>NSC:</b> Retail and service establishments, vehicle repair, contractor offices.	<u>Permitted:</u>  <b>RT:</b> Airport related uses, scientific research, business research, testing labs, educational facilities, professional and medical offices and facilities, institutional offices, computer applications and data processing.
<u>Special:</u>  <b>AR:</b> Airports, campgrounds, cemeteries.  <b>SFR:</b> Adult day care, child group day care.  <b>NSC:</b> Automotive gas stations, neighborhood shopping centers, commercial kennels.	<u>Special:</u>  <b>RT:</b> Tool and die, machine shops, light assembly, mini-warehouse facilities, general storage, restaurants.
<b>Minimum Lot Areas:</b> <b>AR:</b> 1 acre; <b>SFR:</b> 1 acre, 10,000 sq. ft. with water and sewer; <b>NSC:</b> 1 acre or 10,000 sq. ft. with water and sewer; <b>RT:</b> 2 acres, 20,000 sq. ft with water and sewer.	

<b>TOWNSHIP PLANNING COMMISSION RECOMMENDATION AND PUBLIC COMMENTS:</b>	<b>ESSENTIAL FACILITIES AND ACCESS:</b>
The proposed conditional rezoning was <b>DENIED</b> at the September 23, 2025, public hearing. Minutes of the meeting demonstrate a few proponents of the project with an overwhelming majority of attendees voicing their opposition to the proposed data center conditional rezoning.	<b>Water:</b> Potential connection to MHOG
	<b>Sewer:</b> Potential connection to Sanitary
	<b>Access:</b> Property access has not been determined as there is no site plan submitted with the rezoning application to the County.

<b>EXISTING LAND USE, ZONING AND MASTER PLAN DESIGNATION:</b>				
		<b>Land Use:</b>	<b>Zoning:</b>	<b>Master Plan:</b>
<b>Subject Sites:</b>		Primarily vacant parcels with some single-family residences	AR – Ag. Residential, SFR – Single Family Residential, NSC – Neighborhood Service Commercial	Agricultural Preservation and Low Density Residential
	<b>To the North:</b>	Agricultural vacant	AR – Agricultural Residential	Agricultural Preservation
	<b>To the East:</b>	Agriculture, single family residences, few commercial buildings	AR – Agricultural Residential, SFR – Single family res., NSC – Neigh. Service Commercial	Agricultural Preservation and Low-Density Residential
	<b>To the South:</b>	Single family residences and agricultural	AR – Agricultural Residential, SFR – Single family Residential	Agricultural Preservation
	<b>To the West:</b>	Single family residences, agriculture	NSC – Neighborhood Service Commercial, AR – Agricultural Residential	Medium Density Residential and Local Commercial

<b>ENVIRONMENTAL CONDITIONS:</b>	
<b>Soils / Topography:</b>	Primary soil types on the parcels consist of Miami and Conover loams. These are prime farmland soils based on the USDA Soil Survey of Livingston County, MI.
<b>Wetlands:</b>	Small pockets of wetland soils exist on the sites and are located adjacent to county drains on the property per the Michigan Department of Environmental Quality wetland mapping service.
<b>Vegetation:</b>	The overall project site has been used as cropland. Sparse vegetation exists in some areas.
<b>County Priority Natural Areas:</b>	A few small Priority 2 and 3 natural sites are on site: one along Marr Road and the other along Owosso Road.

<b>TOWNSHIP MASTER PLAN DESIGNATION:</b>
<p>The Howell Township Future Land Use Map (2022) designates the subject parcels under the conditional rezoning request as <b>Agricultural Preservation and Low-Density Residential</b>. The Township Master Plan states the following regarding the land use classifications:</p> <p><i>'Agricultural Preservation: These areas are intended to remain rural. These areas are intended to maintain the existing agricultural lands in the Township. Housing in these areas should be on large lots to keep density low. The area planned for Agricultural Preservation includes the majority of the Township. In addition to preserving large swaths of farmland that helps to support the agricultural industry in the community, these areas also help to maintain the existing character that many Township residents identify as what they feel is most important about the community.'</i></p>



*'Residential – Low Density: The characteristics of these areas are intended to be consistent with typical suburban residential uses. The land use would include suburban style residential housing and customary accessory uses in the neighborhoods or individual lots. Neighborhood developments would have low volume neighborhood scale roads that are lined with sidewalks, pedestrian scale lighting and street trees. Neighborhoods should include amenities such as neighborhood scale parks or playgrounds. Individual lots may be located along rural connector roads in closer proximity to the city.'*

The significant portion of the proposed conditional rezoning will involve parcels that are master planned as Agricultural Preservation and are labeled as prime farmland by the USDA Soil Conservation Service. The remainder of parcels that comprise the conditional rezoning request are classified as Low-Density Residential and can be found along Fleming Road and Warner Road. Preservation of open space and community character is a primary goal of importance that is detailed in the Township's Master Plan (page 13) with 88 percent of township residents indicating that preservation of farmland was important.

While the applicant has indicated that setbacks for the proposed use of the property as a data center will be significant, these setbacks alone do not replace the loss of open space and prime farmland that will result if the proposed conditional rezoning is approved. The Township Master Plan does not lend support to the request to rezone the parcels to Research and Technology. Designated future land use classifications are distinct within the Township and are designed to keep the Township of a rural nature as stipulated throughout the plan. The request to conditionally rezone to RT – Research and Technology is not consistent with the Howell Township Future Land Use Plan.

#### **COUNTY COMPREHENSIVE PLAN:**

The 2026 Livingston County Master Plan is currently being drafted. While the document will not direct parcel specific land use decisions, it will define policies that Townships should consider when amending their own future land use maps and plans. An overwhelming theme as the 2026 plan is being drafted was the concern over rural character and how to maintain that character for generations to come. We encourage local governments to make wise land use decisions that will mitigate potential land use conflicts while promoting good governance and land management.

#### **COUNTY PLANNING STAFF COMMENTS:**

The applicant is proposing to conditionally rezone 1,007 acres of land in Sections 7 and 18 for the purpose of constructing a data processing facility in the Research and Technology District. The intent of this district is to provide an area in the Township for the planning and development of land uses that directly relate to research, technology, office, and other professional uses including data processing. Section 125.3405 of the Michigan Zoning Enabling Act allows any landowner to voluntarily offer in writing conditions for the use and/or development of land subject to required approvals by that municipality.

Article 23 of the Howell Township Zoning Ordinance establishes the criteria and factors that are to be considered for a conditional rezoning. Currently, the applicant has applied to the Township for a text amendment to define 'data processing' and has applied for conditional rezoning with the following conditions:

- The applicant offers a minimum of thirty (30) ft. wide landscaped buffers around parking areas, with planted and maintained trees, shrubs, berms, fencing, and walls.
- The applicant has offered significant setbacks (100 ft. front and rear yards, 50 ft. side yards).

- The applicant has offered tailored sound mitigation strategies.
- The applicant offers that the facility will implement water efficiency and sustainability by recycling water through cooling systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing rainwater on site, and incorporating water saving features and fixtures within the facility.

It should be noted that no specific information has been submitted as to how some of these conditions will be met and we are not confident that the public hearing requirements of the Open Meetings Act were applied due to the last-minute change of location.

Article 23.02 of the Howell Township Zoning Ordinance details the information to be considered by the Planning Commission and Township Board for approval of a rezoning of land whether conditional or not:

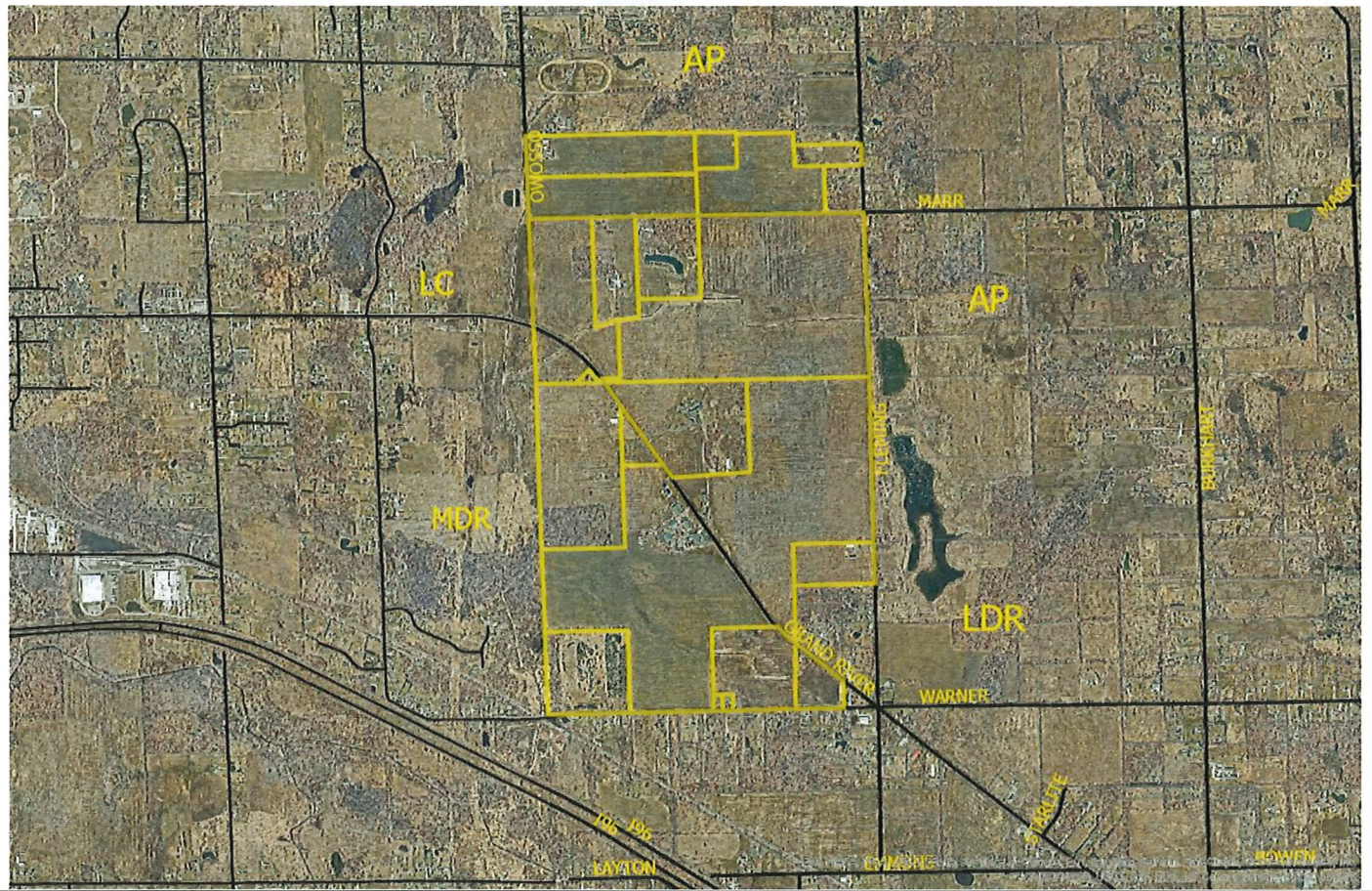
1. **Whether the rezoning is consistent with the policies and uses proposed for that area in the Township's Master Land Use Plan.** The proposed conditional rezoning is not consistent with the Howell Township Master Plan. The Township FLU map identifies Agricultural Preservation and Low-Density Residential for the proposed parcels under consideration.
2. **Whether all the uses allowed under the proposed rezoning would be compatible with other zones and uses in the surrounding area.** The submitted information indicated that with significant setbacks and increased landscaping, potential land use conflicts may be mitigated. A proposed data center on the site could be potentially harmonious with adjacent land uses. Additional information would be needed to determine development potential.
3. **Whether any public services and facilities would be significantly adversely impacted by a development or use allowed under the requested rezoning.** While the developer has offered to pay for any necessary infrastructure improvements, there is no data to suggest whether public services would be affected or not. Capacity studies, cost analysis, and feasibility studies may be required to place the burden of proof on the applicant prior to any action on the rezoning.
4. **Whether the uses allowed under the proposed rezoning would be equally or better suited to the area than uses allowed under the current zoning of the land.** Data processing facilities need large amounts of land to be developed, and the selected sites offer an opportunity for such a proposal. The current zoning of land as agricultural preservation offers the Township the rural landscape and character that has been a hallmark for the community for decades. The Township will ultimately need to determine if this agricultural hallmark is worth the exchange of any potential benefits that would result with a data processing center. We believe there are benefits and constraints with either current zoning designation.

The proposed conditional rezoning offers opportunities and constraints based on our review of the application as submitted. It is our understanding that potential benefits of such a development would be significant tax revenue, expanded utilities for owners of land and future development, additional jobs, and potential grant support for schools and other community organizations. We also understand that the Township Master Plan has been designed to keep the community rural and to maintain the existing rural character that has been a hallmark of the community for many decades. Eighty-eight (88) percent of township residents determined that preservation of existing farmland and open space was important in the community, and we see that continued trend across the county. As submitted, the proposed conditional rezoning is not consistent with the Howell Township Master Plan and does not provide specific information to determine if the rezoning to Research and Technology is a sound benefit to the community.

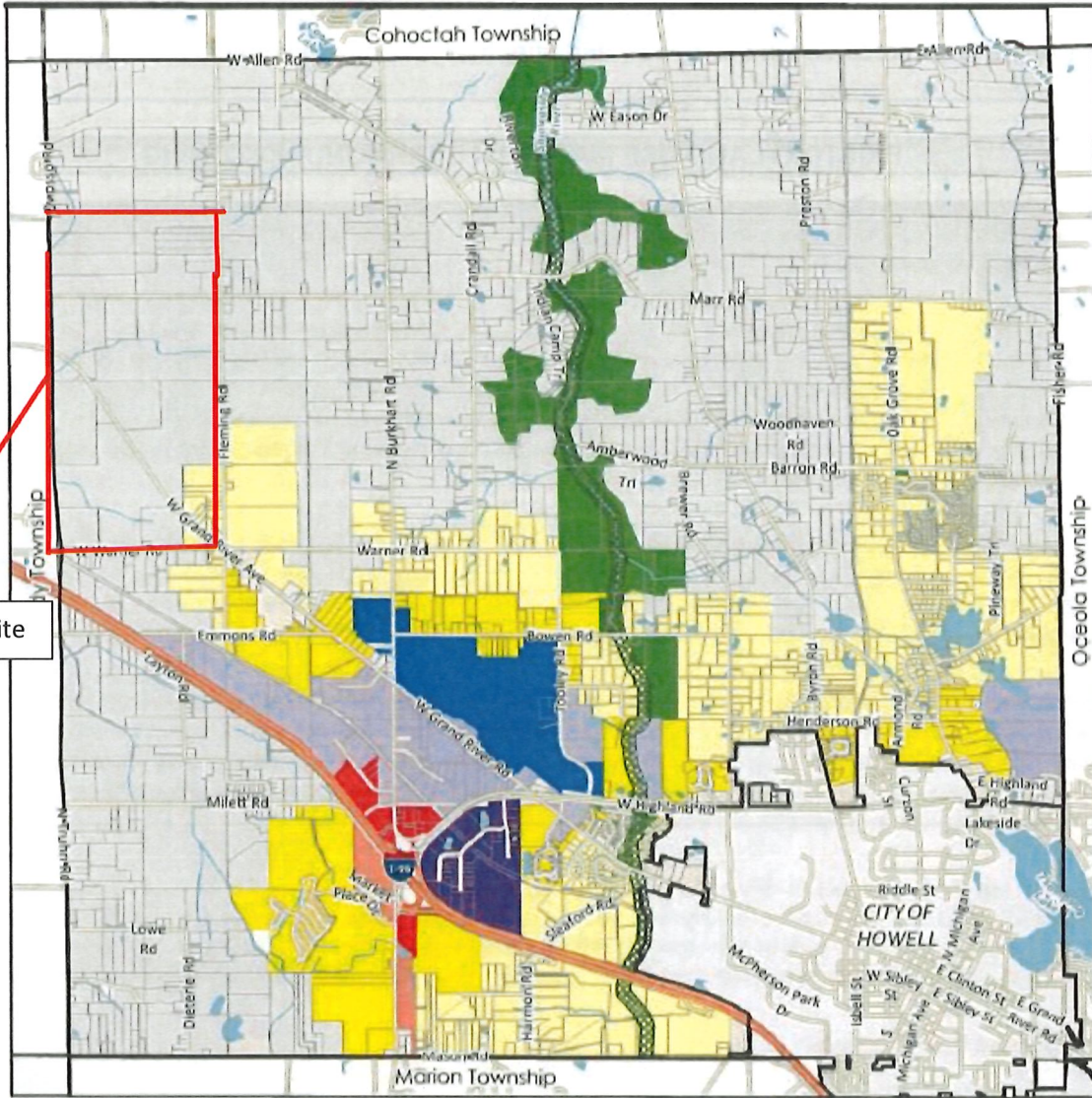
**COUNTY PLANNING STAFF RECOMMENDATION:**

The proposed rezoning from AR (Agricultural Residential), SFR (Single Family Residential), and NSC (Neighborhood Service Commercial) to RT (Research & Technology) is not consistent with the overall goals, objectives, and future land use intentions of the Howell Township Master Plan. The Planning Commission should review the facts presented in this review and offer their recommendation to the Howell Township Board.

**EXISTING LAND USE MAP WITH SURROUNDING ZONING**



### FUTURE LAND USE MAP

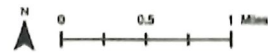


Project Site

- Agricultural Preservation
- Airport
- Commercial - Local
- Commercial - General
- Commercial - Highway
- Residential - Low Density
- Residential - Medium Density
- Industrial Flex
- Industrial
- Recreation and Preservation
- Shiawassee River 200 foot Overlay

## Future Land Use

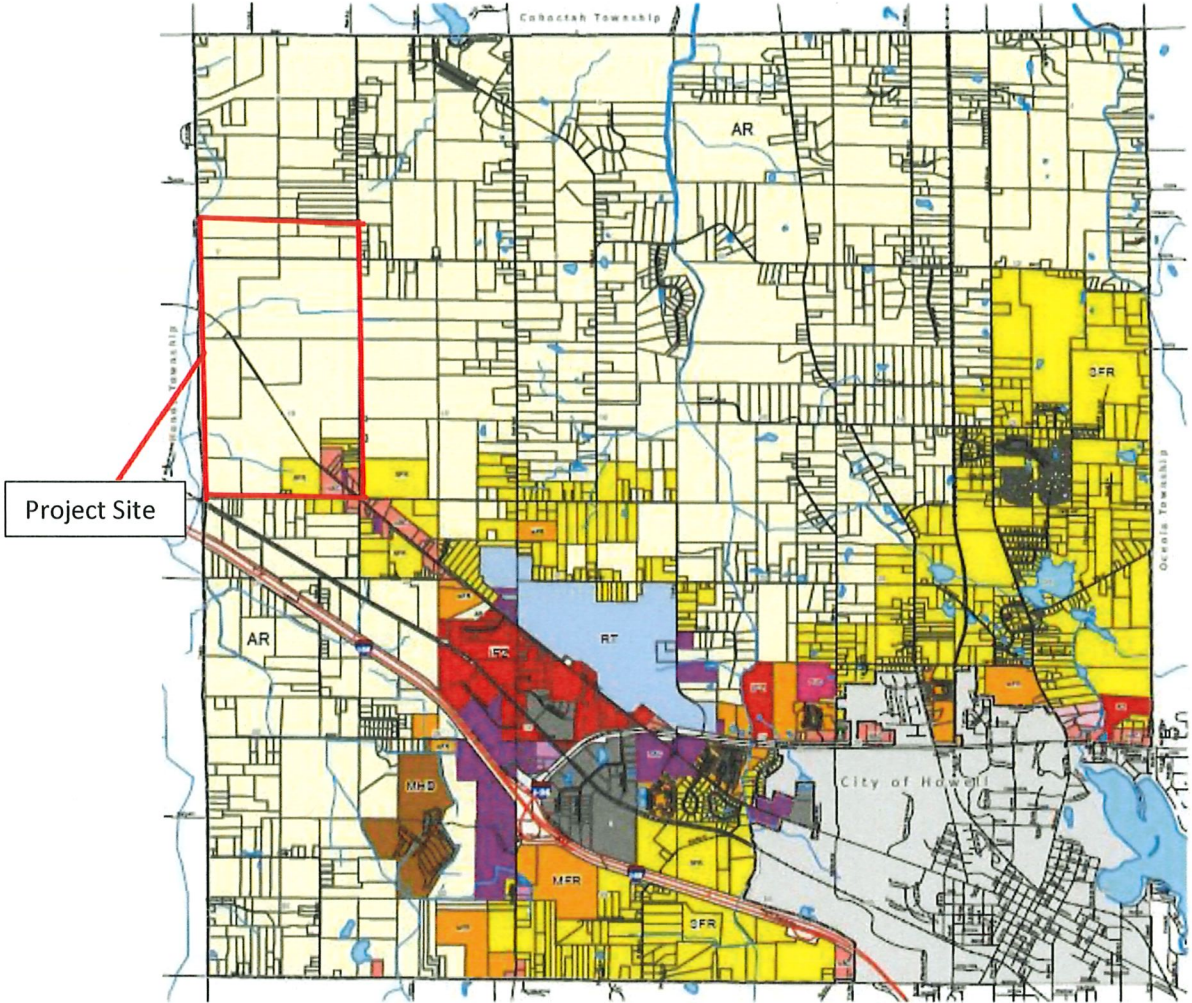
Howell Township  
Livingston County, Michigan



Date: Livingston County, State of Michigan  
Prepared by: Carlisle/Warman Associates, Inc.  
Date: December 7, 2021



### TOWNSHIP ZONING MAP



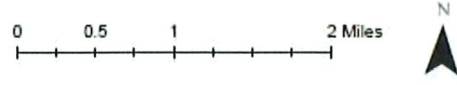
Project Site

Zoning Designation	
● Conditional Rezoning	NSC - Neighborhood Service Commercial
■ PUD - Planned Unit Development	HSC - Highway Service Commercial
■ AR - Agricultural Residential	RSC - Regional Service Commercial
■ SFR - Single Family Residential	IFZ - Industrial Flex Zone
■ MFR - Multiple Family Residential	I - Industrial
■ MHD - Manufactured Housing District	RT - Research & Technology
■ OS - Office Service	

**CERTIFICATION**  
 This is to certify that this is the official Zoning Map referred to in the Zoning Ordinance of Howell Township, Livingston, Michigan.  
 Township Supervisor: ma [signature] Date: 1-14-2021  
 Township Clerk: [signature] Date: 1-13-2021

### ZONING DISTRICTS MAP

Howell Township  
Livingston County



**DRAFT  
LIVINGSTON COUNTY PLANNING COMMISSION  
MEETING MINUTES  
Howell High School  
Rod Bushey Performing Arts Center  
Howell, Michigan  
NOVEMBER 19, 2025  
6:30 p.m.**

**PLEASE NOTE:**  
Public Comments: Names of those who spoke at the call to the public are on file and available if requested.

<b>PLANNING COMMISSION</b>			
<b>COMMISSIONERS PRESENT:</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> <b>Matt Ikle Bill Call Dennis Bowdoin Paul Funk</b> </td> <td style="width: 50%; border: none;"> <b>Margaret Burkholder Kevin Galbraith Chuck Wright</b> </td> </tr> </table>	<b>Matt Ikle Bill Call Dennis Bowdoin Paul Funk</b>	<b>Margaret Burkholder Kevin Galbraith Chuck Wright</b>
<b>Matt Ikle Bill Call Dennis Bowdoin Paul Funk</b>	<b>Margaret Burkholder Kevin Galbraith Chuck Wright</b>		
<b>COMMISSIONERS ABSENT:</b>			
<b>STAFF PRESENT:</b>	<b>Scott Barb Rob Stanford Martha Haglund Abby Carrigan</b>		
<b>OTHERS PRESENT:</b>	<b>Various members of the public spoke, and names have been attached on the sign in sheet.</b>		

1. **CALL TO ORDER:** Meeting was called to order by Planning Commissioner Ikle at 6:30 PM.
2. **PLEDGE OF ALLEGIANCE TO THE FLAG**
3. **ROLL AND INTRODUCTION OF GUESTS:** None.
4. **APPROVAL OF AGENDA:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER BOWDOIN TO APPROVE THE AGENDA, DATED NOVEMBER 19, 2025, SECONDED BY COMMISSIONER BURKHOLDER.**

**All in favor, motion passed 7-0**

5. **APPROVAL OF PLANNING COMMISSION MEETING MINUTES:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER FUNK TO APPROVE THE MINUTES DATED OCTOBER 15, 2025, SECONDED BY COMMISSIONER CALL.**

**Motion passed 6-0  
(ABSTAIN: WRIGHT)**

6. **CALL TO THE PUBLIC:** Mary Hayak from Howell Township spoke about a previous zoning case in Howell Township and supports the planning commission's recommendation on that case. Charles Smith from Howell Township spoke in opposition to the data center project and said the data center should first use superfund sites. A resident said she would support renewable energy projects but not data centers.

7. **ZONING REVIEWS:**

A. **Z-34-25: HOWELL TOWNSHIP TEXT AMENDMENTS**  
**SECTION 2.02 DEFINITIONS**

The Howell Township Planning Commission is proposing to amend the definitions in the Township Ordinance with the addition of 'Data Processing'. Staff have reviewed the proposed amendments for accuracy and compatibility with the existing ordinance language.

**Township Recommendation: Disapproval.** The proposed definition was denied at the September 23, 2025, public hearing on the proposed amendment.

**Staff Recommendation:** The definition is incorrect as noted in staff comments. The Planning Commission should consider the error as stated in staff comments and offer their recommendation to the Howell Township Board.

**Commissioner Discussion:** None.

**Public Comments:** None.

**Commission Action:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER CALL TO RECOMMEND DISAPPROVAL, SECONDED BY COMMISSIONER FUNK.**

**Motion passed: 7-0**

B. **Z-35-25: HOWELL TOWNSHIP CONDITIONAL REZONING**  
**AGRICULTURAL RESIDENTIAL (AR), NEIGHBORHOOD SERVICE COMMERCIAL (NSC),**  
**AND SINGLE FAMILY RESIDENTIAL (SFR) TO RESEARCH AND TECHNOLOGY (RT)**  
**SECTIONS 7 & 18.**

**Current Zoning:** Agricultural Residential (AR), Single Family Residential (SFR), and Neighborhood Service Commercial

**Proposed Zoning:** Research and Technology (RT)

**Sections:** 7 and 18

**Township Recommendation:** The proposed conditional rezoning was Denied at the September 23, 2025, public hearing. Minutes of the meeting demonstrate a few proponents of the project with an overwhelming majority of attendees voicing their opposition to the proposed data center conditional rezoning.

**Staff Recommendation:** The proposed rezoning from AR (Agricultural Residential), SFR (Single Family Residential), and NSC (Neighborhood Service Commercial) to RT (Research & Technology) is not consistent with the overall goals, objectives, and future land use intentions of the Howell Township Master Plan. The Planning Commission should review the facts presented in this review and offer their recommendation to the Howell Township Board.

**Commissioner Discussion:** None.

**PLEASE NOTE: Public Comments: Names of those who spoke at the call to the public are on file and available if requested.**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER CALL TO RECOMMEND DISAPPROVAL, SECONDED BY COMMISSIONER BOWDOIN.**

**ROLL CALL VOTE REQUESTED BY COMMISSIONER IKLE: BURKHOLDER: YES; BOWDOIN: YES; GALBRAITH: YES; CALL: YES; FUNK: YES; WRIGHT: YES; IKLE: YES**

**Motion passed: 7-0**

**Planning Commission Recessed for a break at 8:38 PM**

**Planning Commission Reconvened at 8:47 PM**

**C. Z-36-25: OCEOLA TOWNSHIP TEXT AMENDMENTS  
SECTION 12.31 WASTE RECEPTACLES AND MANAGEMENT**

The Oceola Township Planning Commission proposes to add an entirely new section to **Article 12 General Provisions** of the Oceola Township Zoning Ordinance dealing with screening of solid waste receptacle areas.

**Township Recommendation: Approval.** The Oceola Township Planning Commission recommended Approval of this zoning amendment at its October 14, 2025, public hearing. According to the meeting minutes supplied for this case, there were no public comments.

**Staff Recommendation:** Based on the information provided by Oceola Township for this case, the proposed new provisions related to the management of waste receptacles appear to be suitable and reasonable.

**Commissioner Discussion:** Commissioner Call inquired if this is only for residential land uses.

**Public Comments:** None.

**Commission Action:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER BOWDOIN TO RECOMMEND APPROVAL, SECONDED BY COMMISSIONER BURKHOLDER**

**Motion passed: 7-0**

**D. Z-37-25: OCEOLA TOWNSHIP TEXT AMENDMENTS  
SECTION 15.02 (2) and (6) PROCEDURES FOR MAKING APPLICATION**

The Oceola Township Planning Commission proposes adding two entirely new sections to Article 15 Special Permits of the Oceola Township Zoning Ordinance dealing with the making of special use permit application.

**Township Recommendation: Approval.** The Oceola Township Planning Commission recommended Approval of this zoning amendment at its October 14, 2025, public hearing. According to the meeting minutes supplied for this case, there were no public comments.

**Staff Recommendation:** Based on the information provided by Oceola Township regarding this case, the proposed new provisions related to the administrative site plan approvals for special uses appear to be suitable and reasonable. The proposed provisions should help to streamline the administrative process when and where necessary for the township going forward.

**Commissioner Discussion:** Commissioner Bowdoin would like the Township to reconsider using sketch plans.

**Public Comments:** None.



**Commission Action:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER BOWDOIN TO RECOMMEND APPROVAL WITH CONDITIONS, SECONDED BY COMMISSIONER BURKHOLDER.**

**Motion passed: 7-0**

**E. Z-38-25: OCEOLA TOWNSHIP TEXT AMENDMENTS  
SECTION 16.11 SKETCH PLAN REVIEW STANDARDS**

The Oceola Township Planning Commission proposes to add an entirely new section to **Article 16 Site Plan Approval** of the Oceola Township Zoning Ordinance dealing with sketch plan review standards.

**Township Recommendation: Approval.** The Oceola Township Planning Commission recommended Approval of this zoning amendment at its October 14, 2025, public hearing. According to the meeting minutes supplied for this case, there were no public comments.

**Staff Recommendation:** Based on the information provided by Oceola Township regarding this case, the proposed new provisions related to the administrative site plan approvals and the allowance for sketch plan approval for certain special uses, appear to be straightforward, suitable and reasonable. The proposed provisions, connected appropriately with the newly proposed provisions in **Article 15 Special Permits, Section 15.02(6) Procedures for Making Application – Site Plan Approval** (County Case Z-37-25), should help to streamline the administrative process when and where necessary for the township going forward.

**Commissioner Discussion:** None.

**Public Comments:** None.

**Commission Action:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER CALL TO RECOMMEND APPROVAL, SECONDED BY COMMISSIONER GALBRAITH.**

**Motion passed: 6-1, NAY BOWDOIN**

**F. Z-39-25: COHOCTAH TOWNSHIP TEXT AMENDMENTS  
SECTION 13.29 MORATORIUMS**

The Cohoctah Township Planning Commission is proposing to amend their Zoning Ordinance to include standards for Moratoriums including stating the purpose of the moratorium and adding language regarding deadline and extension guidelines.

**Township Recommendation: APPROVAL.** The Cohoctah Township Planning Commission recommended approval at their November 6, 2025, meeting. During the public hearing one person spoke in favor of the proposed ordinance.

**Staff Recommendation:** The proposed ordinance amendment has been thoroughly reviewed by staff and the Township Attorney. The proposed amendments are appropriate and consistent with zoning ordinance language.

**Commissioner Discussion:** None.

**Public Comments:** None.

**Commission Action:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER BOWDOIN TO RECOMMEND APPROVAL, SECONDED BY COMMISSIONER BURKHOLDER**

**Motion passed: 6-1, NAY IKLE**

8. **OLD BUSINESS:**

9. **NEW BUSINESS:**

10. **REPORTS:**

A. Welcome New Planning Commissioner Chuck Wright

B. Annual Meeting to Follow Regular Meeting Adjournment.

11. **COMMISSIONERS HEARD AND CALL TO THE PUBLIC:** None.

12. **ADJOURNMENT:**

**Commissioner Action: IT WAS MOVED BY COMMISSIONER BOWDOIN TO ADJOURN THE MEETING AT 9:11 PM, SECONDED BY COMMISSIONER CALL.**

**Motion passed: 7-0**

# MEMORANDUM

**To:** Howell Township  
**From:** Applicants Listed in Rezoning Request  
**Date:** October 23, 2025  
**Re:** Second Amended Offered Condition of Rezoning

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The Applicant submits this second amendment to its offered conditions of the proposed rezoning, which may be recorded by Howell Township with the Livingston County Register of Deeds, and shall run with the land, and be binding upon all successors.<sup>1</sup>

## **I. Voluntarily Offered Conditions of Rezoning**

Applicant acknowledges that the RT Zoning District allows for a wide range of developments that, without appropriate conditions in place, may not be harmonious with the surrounding area. Accordingly, Applicant voluntarily offers the following use and development restrictions as a condition to the rezoning of the Property. The following conditions are offered pursuant to Section 23.03 of the Zoning Ordinance and MCL 125.3405.

### **1. Offered Use Restriction**

Applicant offers to restrict the future use of the Property to Data Processing, as the term is defined below.

**Data Processing.** A facility or facilities used to house, and in which are operated, maintained and replaced from time to time, computer systems and associated components, including but not limited to telecommunications and storage systems, cooling systems, power supplies and systems for managing property performance (including generators and mechanical and electrical yards), and equipment used for the transformation, transmission, distribution and management of electricity (including private substations), internet-related equipment, data communications connections, private communication towers, environmental controls and security devices, structures and site features, as well as certain accessory uses, buildings or structures located on the same lot such as utility buildings, offices, warehousing, cafeteria, guardhouses, diesel storage tanks, water storage tanks, security fencing, and other similar structures, improvements and appurtenances.

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<sup>1</sup> All capitalized terms shall be given the definition ascribed to them in original rezoning and text amendment Application materials submitted on September 3, 2025. Applicant hereby incorporates all exhibits to the Application into this amendment of the voluntarily offered conditions of rezoning.

## 2. Amended Offered Development Restrictions

In addition to the use restriction described above, Applicant offers the following conditions to site design and development for the proposed Data Processing Facility:

- ***Increased Setbacks:***

- Outer Boundary Building Setbacks for Northern Development Site (all parcels north of Grand River, as listed on **Exhibit A**)

- As shown on attached plan (**Exhibit C**), **the entire Northern Development Site will utilize building setbacks of at least 400'**.
- This results in a total building setback area of 245.7 acres on the Northern Development Site.
  - NOTE: The specific location and design of essential public service infrastructure are outside of the developer's control and may be located within the offered setbacks.

- Outer Boundary Building Setbacks for Southern Development Site (all parcels south of Grand River, as listed on **Exhibit B**)

- As shown on the attached plan (Ex. C), if the Southern Development Site is developed in the future, **the future development would utilize a minimum of 400' building setbacks for the entire boundary**, with the exception of the following:
  - The southern boundary at the Conservation Area will have setbacks of at least 50' (**creating a total of 550' setback from Warner Road when including the Conservation Area**).
  - The western boundary of the Southern Development Site, which shall have a **setback of at least 100' from the adjoining properties, and at least 1,000' from existing neighboring residences** to the West.
- This results in a **total building setback area of 232.1 acres** on the Southern Development Site.
  - NOTE: The specific location and design of essential public service infrastructure are outside of the developer's control and may be located within the offered setbacks.

- ***Additional Restrictions on Southern Development Site:***

- Following receipt of all required Township approvals for the proposed Data Processing Facility on the Northern Development Site, **the Applicant will convey to a public partner or Howell-area nonprofit partner the area of land within the 500' setback from Warner Road, which is approximately 121 acres in size, and which is shaded along on southern border of the Southern Development Site on Exhibit C (the "Conservation Area")**. The Conservation Area shall be used by the public partner or local nonprofit partner, at the public partner's sole discretion, as either: (a) permanent conservation area with restrictions against all future development; (b) park/public open space; or (c) agricultural preservation. This will create a permanent 550' minimum buffer between the residences on Warner Road and any future development on the Southern Development Site.
- **Applicant will convey parcel no. 05-12-400-026 which is shaded in pink on the attached plan to Livingston County or a Livingston County nonprofit for a public use to be determined by the County.**
- **Applicant will restrict all use on the Southern Development Site to only those uses which are permitted in the AR zoning district for four (4) years immediately following receipt of all Township approvals for the proposed Data Processing Facility on the Northern Development Site.**

- ***Landscape Buffering:***

- To provide additional screening and site beautification, the project will install and maintain a landscaped berm within the setback areas, as shown in green on the attached plan. **The landscape buffer area will be at least 40' in width (double code minimum)** and maintained with trees or shrubs pursuant to a landscape plan that will be approved by the Township.

- ***Lot Coverage:***

- The Data Processing Facility will be developed such that impervious surfaces shall cover only **50% or less of the Northern Development Site**, and only **50% or less of the Southern Development Site**.

- ***Sound Mitigation:***

Once operational, **the Data Processing Facility shall not generate a maximum sound in excess of 55 average hourly decibels as modeled at the property line of the nearest dwelling located on an adjacent residential property**. The Data Processing Facility will implement tailored sound mitigation strategies such as site layout modifications, quieter equipment selection, operational adjustments, tree planting, and equipment orientation.

- **Lighting:**

The Data Processing Facility will utilize site lighting with cutoff fixtures that is designed to minimize disturbance, with all lighting directed downward and shielded to prevent glare.

- **Water:**

- The Data Processing Facility shall not overburden local water resources and shall coordinate all water usage with the governing water resource authority(ies). To proactively prevent any adverse effects to adjacent residential water wells, an independent aquifer analysis, field drawdown tests, and monitoring wells will be implemented to ensure the protection of surrounding water wells. **If wells on any residential properties run dry as a result of the Data Processing Facility's water usage, the Data Processing Facility would cover all costs associated with fixing the impacted wells.**
- The Data Processing Facility shall commit to minimizing water usage through water efficient cooling systems, and will support Marion-Howell-Oceola-Geona Water Authority (MHOG) commissioning an independent aquifer study (discussed in the bullet below) which establishes to the reasonable satisfaction of MHOG and the independent firm that there is sufficient and adequate water supply for the approved cooling methodology. The utilized technology will also fit into the available Howell Township capacity allocation within MHOG for this land use.
- In coordination with MHOG the Data Processing Facility shall, at its sole cost and expense, engage an independent qualified water resource professional or team to conduct a comprehensive aquifer and water resource impact study evaluating existing groundwater conditions, aquifer recharge rates, current water usage levels, and anticipated demand of the proposed project, to determine the project water use and any potential impacts on local water resources or neighboring wells. In addition, the Data Processing Facility will also, at its sole cost and expense, engage an independent qualified water resource professional or team to conduct a comprehensive distribution system impact determination to determine the scope of any needed distribution system improvement(s) necessary to serve the development and without negatively impacting the existing MHOG Distribution System.
- With respect to all water usage, the developer shall coordinate and comply with all applicable environmental agencies pursuant to all applicable county, state, and federal laws and regulations.
- The developer will coordinate with the Livingston County Drain Commissioner to address any impacted drains, and shall bear the cost of any required work related to improving any impacted drains.
- Data Processing Facility will implement water efficiency and sustainability practices measures including, at a minimum, recycling water through cooling

systems before discharge, landscaping with native vegetation to reduce irrigation needs, capturing and infiltrating rainwater on site (when practical), and generally incorporating water-saving fixtures and technologies.

- ***Reimbursement of Expenses:***

- The developer will pay for, or reimburse the Township for, all infrastructure costs necessary to support development of the Data Processing Facility, including roadway, water, sewer/wastewater, fiber, police, fire, emergency response, and electrical infrastructure.

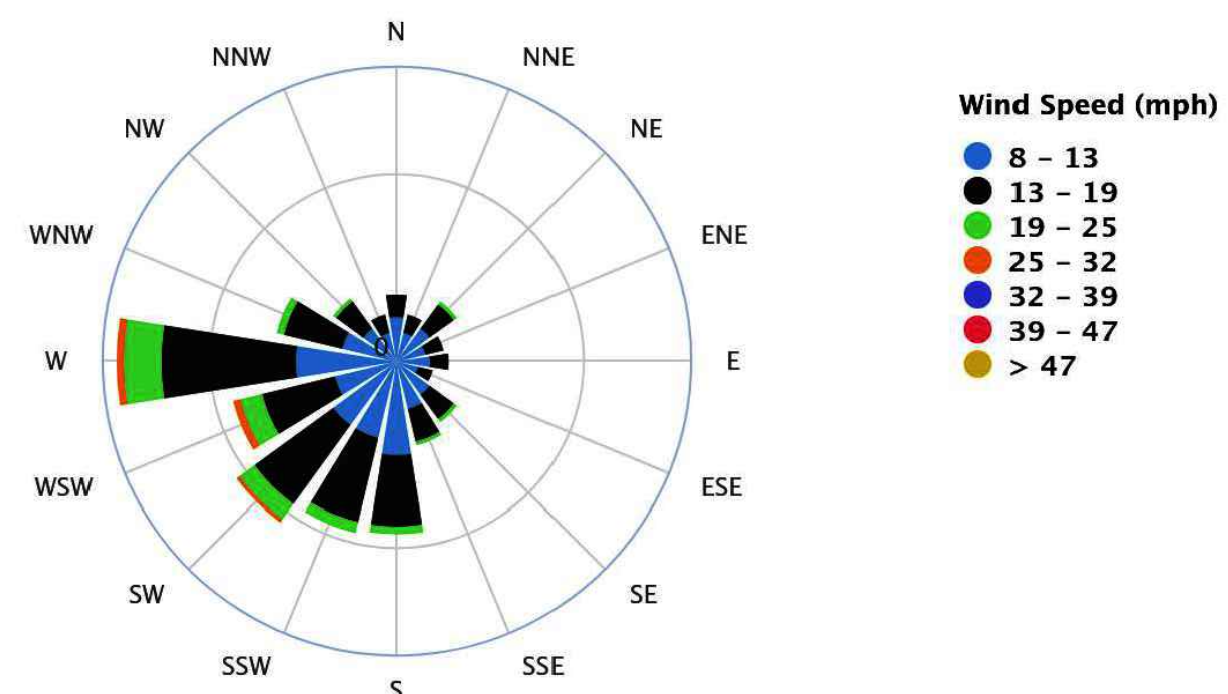
## LEGEND

- EXISTING TOWNSHIP BOUNDARY
- PROPOSED SITE BOUNDARY
- PARCELS IN REZONING LETTER
- PROPOSED BUILDING SETBACK
- 4 YEAR LAND USE RESTRICTION, LIMITED TO AGRICULTURAL
- DEDICATION TO PUBLIC ENTITY FOR PUBLIC USE



LANSING CAPITAL CITY AP (MI) Wind Rose

10/2/1996 - 10/2/2025  
Sub-Interval: Jan 1 - Dec 31, 00:00 - 23:59





## LEGEND

- EXISTING TOWNSHIP BOUNDARY
- PROPOSED SITE BOUNDARY
- PROPOSED BUILDING
- PROPOSED MECHANICAL YARD
- PROPOSED IBOS / ADMIN BUILDING
- LANDSCAPE BERM
- PROPOSED BUILDING SETBACK
- 3.5 MILE EQUESTRIAN / WALKING TRAIL
- PROPOSED SWITCHING STATION
- PROPOSED SUBSTATION
- PROPOSED 500' NO BUILD DEDICATION OF LAND SETBACK
- 4 YEAR LAND USE RESTRICTION, LIMITED TO AGRICULTURAL
- DEDICATION TO PUBLIC ENTITY FOR PUBLIC USE

CONCEPTUAL PLAN: SUBJECT TO TOWNSHIP REVIEW AND APPROVAL



CONCEPTUAL PLAN SUBJECT TO TWP SITE PLAN REVIEW & APPROVAL PROCESS

50' SETBACK FROM NO BUILD DEDICATION OF LAND SETBACK. TOTAL 550' SETBACK FROM WARNER RD.

500' NO BUILD DEDICATION OF LAND SETBACK

EQUESTRIAN / WALKING TRAIL (120+ ACRES DEDICATED)

TRAIL PARKING



**Carlisle | Wortman**  
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

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**TO:** Howell Township Board

**FROM:** Paul Montagno, AICP, Principal  
Brady Heath, Community Planner

**DATE:** December 3, 2025

**RE:** Splitrock Amended Offer of Conditions

On September 3, 2025, Splitrock submitted an application to rezone 19 parcels on the west side of the Township from AR – Agricultural Residential, SFR – Single Family Residential, and NSC - Neighborhood Service Commercial to RT – Research Technology to build a data center. The applicant also submitted a Text Amendment application to add the definition of Data Processing to the Zoning Ordinance.

On September 23, 2025, the Planning Commission recommended denial of both rezoning and text amendment to the Township Board. The Livingston County Planning Commission voted unanimously to reject the rezoning on November 19, 2025. Additionally, the Howell Township Board of Trustees placed a 6-month moratorium on the establishment and use of data centers. It is our understanding that the moratorium would not apply to a rezoning, though it would apply to subsequent site plan approval necessary to build and operate a center on the property. Further, the intent of the moratorium is to review, and potentially amend regulations for data centers. This could include a consideration of a definition for data centers which is related to the applicants proposed text amendment.

On October 23, 2025, Splitrock submitted an amended offer of conditions in addition to the initial offer of conditions. We provided a full review letter dated September 18, 2025, which was presented to the Planning Commission to help with their review. This memorandum highlights the changes made by the applicant to the original offer of conditions.

## **Increased Setbacks**

The applicant has provided separate conditions for the development areas on the northern and southern sides of Grand River Ave.

### **Northern Development Area:**

- The setbacks were increased to 400 feet on all sides when they were originally 50 feet for side setbacks and 100 feet for front and rear. This will result in 245.7 acres of space between the buildings and neighboring properties at the northern development area.

### **Southern Development Area:**

- The southern setback was increased to 550 feet from Warner Road with 50 feet being part of the conservation area. The setback was originally 100 feet with no mention of a conservation area.
- The western boundary setback increased from 50 feet to 100 feet from adjoining properties and 1,000 feet from existing neighboring residences. This will result in 232.1 acres of space between the buildings and neighboring properties at the southern development area.
  - The applicant leaves a note for both northern and southern development areas stating that the specific location and design of essential public service infrastructure are outside the developer's control and may be located within the offered setbacks.

The applicant also added additional restrictions to the southern development area that include:

- Conveying a public partner or Howell-area nonprofit partner within the 500-foot setback from Warner Road, which is approximately 121 acres in size.
- Conveying parcel no. 05-12-400-026 to Livingston County or a Livingston County nonprofit for public use.
- Restricting all uses on the southern development site to only those uses which are permitted in the AR Zoning District for 4 years.

### **Landscape Buffering:**

- The landscape buffer area increased from 30 feet to 40 feet.

**Lot Coverage:**

- The applicant added a section on lot coverage, stating that impervious surfaces shall cover only 50% or less for both northern and southern development sites.

**Sound Mitigation:**

- The applicant added that the facility shall not generate a maximum sound in excess of 55 average hourly decibels as modeled at the property line of the nearest dwelling located on an adjacent residential property.

**Lighting:**

- The applicant added that all site lighting will be with cutoff fixtures to minimize disturbance.

**Water:**

- The applicant added that if wells on any residential properties run dry as a result of the facility, they would cover the costs associated with fixing the impacted wells.
- The data center processing facility will commit to minimizing water usage and commits to commissioning an independent aquifer study that will confirm to MHOG that there is a sufficient and adequate water supply for the approved cooling methodology.
- The facility will engage an independent qualified water resource professional or team to conduct a comprehensive distribution impact determination to determine the scope of any needed distribution system improvements necessary to serve the development without negatively impacting the existing MHOG Distribution System.
- The developer will coordinate and comply with all applicable environmental agencies on water usage.
- The applicant will coordinate with the Livingston County Drain Commissioner to address any impact on the drains and shall bear the cost of any required work related to improving any impacted drains. The first offer of conditions did not address the drains.

**Reimbursement of Expenses:**

- The applicant added police, fire, and emergency response to reimbursement costs.

**Review Notes**

- The applicant increased the setbacks for both northern and southern development sites.
- The applicant added a conservation area which will be given to the Township or a local nonprofit.
- Increased the landscape buffering.
- Provided more information on lot coverage, sound mitigation, lighting, and water.
- The applicant will engage an independent qualified water resource professional or team to conduct a comprehensive distribution impact determination.
- Police, fire, and emergency services were added to the list of reimbursed expenses.

In consideration of the proposed rezoning we recommend the Township Board consider the findings from Article 23 of the zoning ordinance as they evaluate the proposed rezoning.

Sincerely,

  
\_\_\_\_\_  
CARLISLE/WORTMAN ASSOC., INC.  
Paul Montagno, AICP  
Principal

  
\_\_\_\_\_  
CARLISLE/WORTMAN ASSOC., INC.  
Brady Heath  
Community Planner

## ESTIMATED TAX IMPACT OF AN INITIAL \$1 BILLION INVESTMENT

-INVESTMENT LOCATED IN HOWELL PUBLIC SCHOOLS DISTRICT

	HOWELL TWP	HOWELL	
TAX ENTITIES	2024 TAX YEAR	DATA CENTER	% INCREASE OF
	TOTALS	TAX BILL	2024 TOTALS
STATE EDUCATION TAX	\$3,021,104	\$3,000,000	99%
HOWELL SCHOOL OPERATING	3,600,757	4,500,000	125%
HOWELL SCHOOL DEBT	1,355,909	1,375,000	101%
FOWLerville SCHOOL OPERATING	24,805	N/A	0%
LIVINGSTON ISD	1,611,285	790,050	49%
COUNTY ALLOCATED	1,622,714	795,475	49%
COUNTY AMBULANCE	142,498	70,575	50%
HCMA - PARKS	104,080	51,550	50%
VETERANS RELIEF	46,326	22,950	50%
HOWELL TWP ALLOCATED***	429,347	211,326	49%
HOWELL TWP ROAD***	457,234	225,050	49%
HOWELL LIBRARY	504,486	255,800	51%
HOWELL FIRE AUTHORITY	1,007,745	496,000	49%
HOWELL PARKS & RECREATION	246,516	125,000	51%
FOWLerville SCHOOL DEBT	142,111	N/A	0%
FOWLerville LIBRARY	19,657	N/A	0%
<b>TOTAL TAX REVENUE</b>	<b>\$14,336,574</b>	<b>\$11,918,775</b>	<b>83%</b>

\*TAXES REFLECT A PA 198 INDUSTRIAL FACILITIES TAX ABATEMENT

**\*\*IF THE DATA CENTER INVESTMENT WAS INCLUDED IN THE 2024 TAX YEAR,  
THE ENTIRE TOWNSHIP COLLECTION WOULD HAVE ALMOST DOUBLED.**

\*\*\*HOWELL TWP ALLOCATED (GENERAL FUND) & HOWELL TWP ROADS (ROAD FUND)  
COLLECTIONS STAY AT HOWELL TOWNSHIP. ALL OTHER REVENUE FLOWS TO THE ENTITY.

## ESTIMATED TAX IMPACT OF AN INITIAL \$1 BILLION INVESTMENT

-INVESTMENT LOCATED IN FOWLerville COMMUNITY SCHOOLS DISTRICT

	HOWELL TWP	FOWLerville	
TAXING ENTITIES	2024 TAX YEAR	DATA CENTER	% INCREASE OF
	TOTALS	TAX BILL	2024 TOTALS
STATE EDUCATION TAX	\$3,021,104	\$3,000,000	99%
HOWELL SCHOOL OPERATING	3,600,757	N/A	0%
HOWELL SCHOOL DEBT	1,355,909	N/A	0%
FOWLerville SCHOOL OPERATING	24,805	4,500,000	18142%
LIVINGSTON ISD	1,611,285	790,050	49%
COUNTY ALLOCATED	1,622,714	795,475	49%
COUNTY AMBULANCE	142,498	70,575	50%
HCMA - PARKS	104,080	51,550	50%
VETERANS RELIEF	46,326	22,950	50%
HOWELL TWP ALLOCATED***	429,347	211,326	49%
HOWELL TWP ROAD***	457,234	225,050	49%
HOWELL LIBRARY	504,486	N/A	0%
HOWELL FIRE AUTHORITY	1,007,745	496,000	49%
HOWELL PARKS & RECREATION	246,516	N/A	0%
FOWLerville SCHOOL DEBT	142,111	2,387,500	1680%
FOWLerville LIBRARY	19,657	330,250	1680%
<b>TOTAL TAX REVENUE</b>	<b>\$14,336,574</b>	<b>\$12,880,725</b>	<b>90%</b>

\*TAXES REFLECT A PA 198 INDUSTRIAL FACILITIES TAX ABATEMENT

**\*\*IF THE DATA CENTER INVESTMENT WAS INCLUDED IN THE 2024 TAX YEAR,  
THE ENTIRE TOWNSHIP COLLECTION WOULD HAVE ALMOST DOUBLED.**

\*\*\*HOWELL TWP ALLOCATED (GENERAL FUND) & HOWELL TWP ROADS (ROAD FUND)  
COLLECTIONS STAY AT HOWELL TOWNSHIP. ALL OTHER REVENUE FLOWS TO THE ENTITY.

## Frequently Asked Questions

### **How does the Data Center affect my taxes?**

With the location of the proposed project, it will affect both the Howell and Fowlerville School districts. Each district has a school debt millage. Every year school districts calculate a debt millage rate by looking at the taxable value of the district and the debt obligation for that year.

The calculation is  $\text{Millage Rate} = \text{Debt Owed} / \text{Taxable Value}$

The calculated millage rate is put on every property tax bill in the school district. This is important to note that it applies to more than just Howell Township properties. If you have either Howell or Fowlerville Schools on your tax bill, you will be affected.

Adding a large taxpayer to a school district redistributes the debt millage burden. The millage rate must decrease with a substantial increase in taxable value to collect the obligated debt. Notice the debt gets paid at the same scheduled amount.

The theory that adding a Data Center to the tax roll will wipe away the school debt is not true. The only way the debt gets eliminated is if the data center company enters an agreement with the schools to pay the school debt off early. If this were to happen, the debt millages would then be removed from the affected tax bills in the following year.



## **Is it true that the schools do not benefit from a large Data Center moving into their district?**

School operating budgets are typically funded from two sources. These are local non-homesteaded property taxes and the State of Michigan per pupil funding. The typical maximum a school district receives is calculated by the number of students in the district multiplied by the per pupil funding amount set by the State of Michigan education budget. A simple example of this is to think of a cup and saucer. The cup is filled with both the local property tax revenue and the State per pupil funding. If there is no local tax revenue the State must fill the cup completely. If local tax revenue fills the cup halfway, the State fills the remainder of the cup. In the rare situation where the local tax revenue can fill the cup completely the State dollars are not needed. If the cup is overfilled onto the saucer by local tax revenue, the school district gets to keep all the extra local tax revenue. In this situation the school district would benefit from the large Data Center. To recap, if local tax revenue exceeds the level set by the state per pupil funding the school operating budget benefits by keeping the excess revenue.

## **How do tax breaks work for Data Centers?**

The Sales and Use Exemption is available at the State level. This exemption of the 6% sales tax on eligible data center construction and equipment purchases is the main reason behind hyperscale data centers considering Michigan as a destination.

The Industrial Facilities Tax Abatement (IFT) would be available for this project at the local level. The IFT can cover the Real Property

(buildings) and the Personal Property (Servers inside the buildings). The tax break does not include Land. Each Abatement can be up to 12 years in length. The tax break cuts the millage rates in half aside from the State Education Tax. The burden is on the Taxpayer to follow through with annual reporting including employment numbers and corresponding salaries that would support living in the Township.

### **Will the Data Center affect the value of my home?**

The honest answer is there is not enough information to draw a conclusion. There are no hyperscale data centers in Michigan. Assessors let the market tell the story. Assessed Values must be fair, equitable, and defensible. Assessments are never based on future predictions.



## MHOG Utility Department

2911 Dorr Road  
Brighton, MI 48116  
810-227-5225  
[www.mhog.org](http://www.mhog.org)

# Fact Sheet

**To:** Interested Parties to the Proposed Hyperscale Data Center in Howell Township  
**From:** Greg Tatara, Utility Director  
**Date:** October 28, 2025

The Marion, Howell, Oceola, and Genoa Sewer and Water Authority (MHOG) have prepared this fact sheet with regard to the service of a proposed hyper scale data center in Howell Township. In this fact sheet we address well field capacity, participating township capacity, the distribution system, and sanitary sewer service as it relates to MHOG.

### Definitions

To assist in some of the technical terms, please refer to the below definitions;

*Firm Capacity:* the reliable, sustained pumping rate of the MHOG well field with one of the wells out of service.

*Production Capacity:* the total pumping capacity with all available wells in operation

*Treatment Capacity:* the capacity of the water treatment plant equipment to soften, disinfect, and pump to the distribution system

*Physical Capacity:* The combined ability of the well field to pump and the plant to treat water for conveyance to the distribution system

*Distribution System:* the network of pipes, pumps, storage tanks, valves and hydrants that transport treated water from the plant to consumers for drinking, commercial use, and fire fighting needs.

### Well Field Capacity

When we discuss capacity of the MHOG Water Treatment Plant, we must consider both the designed and permitted physical capacity of the wells and treatment system as well as the capacity each participating township owns in the MHOG System.

The MHOG plant is situated in Marion Township over the Marshall Sandstone Aquifer. MHOG currently has six (6) 400 foot deep production wells set in the bedrock and isolated by surface and shallower perched aquifers by a confining clay layer(s). Each well is capable of producing 2 Million Gallons Per Day (MGD), for a total production capacity of 12 MGD. Our Baseline Well Capacity as permitted by the State of Michigan is currently set at 13.5 MGD. Our current treatment plant is capable of treating, through lime softening, 12 MGD. It is important to note that with our current well field, our firm capacity is 10 MGD. Currently, MHOG averages peak summer demand days of 4.5 MGD, with an annual average of 2 MGD. Irrigation on hot, dry summer days typically increases our demand from a baseline winter usage of 1.8 MGD to up to 4.5 MGD with our current customer base. On our current site, MHOG is master planned to ultimately install two additional 2 MGD production wells, which, would increase our firm treatment and production capacity to 14 MGD. This is planned based on an analysis of long-term land use plans of the member communities.

Using funds deposited by the proposed developer, MHOG has hired hydrogeologic consultants to review information on the Marshall Aquifer, review current plant production data and well level drawdown data, and review construction of the existing wells in order to complete the following scope to evaluate the Marshall Sandstone aquifer and MHOG system:

1. Provide regional information about the Marshall Sandstone aquifer based on readily available public information.
2. Document local conditions at the MHOG well field based on normal operation.
3. Prediction and modeling of water levels due to added water withdrawal.
4. Provide guidance on the process and potential costs associated with adding additional wells at the MHOG well field location.

The information obtained from this study will be shared with the decision makers so that the impact of the additional withdrawal is factually documented.

### **Individual Township Capacity**

When MHOG was formed in the late 1990's, each township contributed 25% of the cost to build the plant and well field. Therefore, each township owns 25% or 2.5 MGD of the plant's current firm capacity. Under the Master Operating Agreement between MHOG and the participating townships, each township has the unilateral right to utilize their capacity, which is determined by the meter reads in each township. As MHOG has no land use authority in the townships, MHOG must legally provide each township water within its available capacity. If a township desires to go over their current owned capacity then that capacity may be purchased from another township or that township can petition to construct more capacity in the plant. Currently, what is being stated as the proposed additional demand in Howell Township would fall within the township's dedicated available capacity.

## **Distribution System Capacity & Improvements**

Under the Master Operating Agreement, whenever a development is proposed in MHOG that will use more than 100 Residential Equivalents of Water (an REU is 218 gallons per day), then the developer is required to fund MHOG's engineers performing an impact determination study. In the impact determination, demands are placed into MHOG's calibrated hydraulic water model. This allows MHOG to determine what improvements are needed in the distribution system (if any) to serve that development within the entire MHOG distribution system. Our model covers the entire MHOG System as water is dynamic and follows elevations and hydraulic grade lines and not geopolitical boundaries. Therefore, in modeling the demand at the location of the proposed data center, we will look at the improvements to serve the proposed data center, as well as evaluate what other improvements would be necessary to protect the existing MHOG System.

Another important aspect of the distribution system modeling is an evaluation of water age and quality. It is important when designing distribution improvements to look at the age of the water from leaving the plant to ultimate use. In cases where water ages in mains and storage structures due to minimal use, it is difficult for system operators to maintain the water's chlorine residual for disinfection potential as well as other concerns for taste and quality. It is critically important to design main and storage structure size to maintain high water quality in the system.

## **Financial Considerations**

It is our understanding that all costs for improvements to the MHOG system will be borne by the developer, which is also the case for all developments that connect to the MHOG System. However, once a developer constructs infrastructure meeting MHOG's design standards and inspection during construction, then that infrastructure will become part of the MHOG System and MHOG will be responsible for the operation, maintenance, and repair of that infrastructure. The cost for that maintenance and repair is paid for by the rates for water usage. In the case of a large hyper scale data center, MHOG anticipates that it will acquire a large amount of new infrastructure, and therefore must make sure that enough volume is used to cover the cost of the infrastructure maintenance. MHOG desires to have a very efficient cooling system and not consume water at volumes that could negatively impact our ability to serve all of our customers. However, enough water or unique rate structure for the data center must be ensured to make sure this demand does not impact the rates of our existing customers.

## **Conclusion**

It is the goal of MHOG, that if a data center or other high-capacity land use is developed, the following conditions be met to the extent MHOG is able to control them, including:

1. Demand that falls within the Townships available and existing capacity;

- 
2. A use and/or rate structure that covers the long-term cost for maintenance and operation of the infrastructure without negatively impacting our existing or future customers;
  3. Proper sizing and location of infrastructure for maintenance of water quality while also being able to meet peak and fire flow demands;
  4. A determination by the system and the State of Michigan that there are no detrimental impacts to the existing Marshall Sandstone Aquifer; and,
  5. Payment for all infrastructure needed to support the development by the developer without impacting MHOG finances.

8A

**HOWELL TOWNSHIP**  
**Application for Re-Zoning/Text Amendment**

3525 Byron Road Howell, MI 48855

Phone: 517-546-2817 ext. 108

Email: [inspector@howelltownshipmi.org](mailto:inspector@howelltownshipmi.org)

Fee: \$1000.00

Parcel ID #:	4706	See Attached PID List	Date	9/3/2025
Applicant Name	Stantec Consulting Michigan, Inc Agent: Jack Ammerman		Applicant Address	
Phone		Fax		Email
Property Owner Name	See attached Property Owner List			
Phone	Provided Upon Request	Fax	N/A	Email
				Provided Upon Request

Current Zoning Classification	AR, SFR, NSC	Proposed Zoning Classification	RT
Existing Use	Agricultural, Single Family, Commercial	Proposed Use	Data Processing Facility
Legal Description (attach copy if necessary):	See attached Exhibit A		

Requested change in Ordinance / Zoning Map: Request for a text amendment to add the attached definition of data processing to Zoning Ordinance Section 2.02 (Definitions).
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Reason for Requested Change:

To support the proposed future development of the combined parcels for a Data Processing Facility within the Research and Technology District.

Has the Applicant made a previous request to rezone the property?

Yes

No

If yes, state when and the decision of the Township Board:

See attached separate exhibit for ownership consent and signatures for rezoning application.

**Proposed Text Amendment:**

**Data Processing.** A facility or facilities used to house, and in which are operated, maintained and replaced from time to time, computer systems and associated components, including but not limited to telecommunications and storage systems, cooling systems, power supplies and systems for managing property performance (including generators and mechanical and electrical yards), and equipment used for the transformation, transmission, distribution and management of electricity (including private substations), internet-related equipment, data communications connections, private communication towers, environmental controls and security devices, structures and site features, as well as certain accessory uses, buildings or structures located on the same lot such as utility buildings, offices, warehousing, cafeteria, guardhouses, diesel storage tanks, water storage tanks, security fencing, and other similar structures, improvements and appurtenances.

DRAFT

**HOWELL TOWNSHIP PLANNING COMMISSION  
REGULAR MEETING MINUTES  
3525 Byron Road Howell, MI 48855  
September 23, 2025  
6:30 P.M.**

**MEMBERS PRESENT:**

Robert Spaulding      Vice Chair  
Mike Newstead        Secretary  
Tim Boal                Board Representative  
Chuck Frantjeskos    Commissioner  
Matt Stanley            Commissioner  
Sharon Lollo            Commissioner

**MEMBERS ABSENT:**

Wayne Williams      Chair

**ALSO IN ATTENDANCE:**

Township planners Paul Montagno and Brady Heath, Township attorneys Christopher Patterson and Sophia Youssif, Zoning Administrator Jonathan Hohenstein, MHOG Director Greg Tatara, Township Assessor Brent Kilpela, Steve Schimpke with SC Develop LLC, Applicants Mike Vogt and Jack Ammerman on behalf of Randee LLC, and Dan Mahoney with DTE

Vice Chairman Spaulding called the meeting to order at 6:30 pm. The roll was called. Vice Chairman Spaulding requested members rise for the Pledge of Allegiance.

**Motion** by Newstead, **Second** by Frantjeskos, **“To recess the meeting of the Planning Commission for 30 minutes to reconvene at the Rod Bushey Center at Howell High School, 1200 W. Grand River Ave. Howell, MI 48843 at 7:00 P.M. due to public health, safety, and traffic concerns to accommodate the public in sufficient space to observe and effectively participate in the meeting. Acknowledging that the Township has posted an amended notice at the Township Hall, provided notice on the Township’s website and staff is remaining at the Township Hall to direct public members to the new meeting location.”** Roll Call: Stanley-yes, Boal- yes, Newstead- yes, Spaulding- yes, Frantjeskos- yes, Lollo- No. Motion passes 5-1.

**APPROVAL OF THE AGENDA:**

**Motion** by Frantjeskos, **Second** by Boal with friendly amendment, **“To move business items 12A and B in front of 10.”** Motion carried.

**APPROVAL OF THE MEETING MINUTES:**

August 26, 2025

**Motion** by Boal, **Second** by Newstead, **“To Approve the minutes as presented.”** Motion carried.

**CALL TO THE PUBLIC**

Topics discussed: water demands, concerns about local wells, ground water, long term resources, property values, property rights, cyber-security, costs of upgrades to the infrastructure, power supply, pollution, excessive noise, lack of transparency, wildlife, Howell Township Master Plan, light pollution, visual buffers, jobs created, high/low paying jobs, loss of farm land, environmental contamination, tax revenue, concerns of additional data centers, ordinances, health and safety of residents

Public comments received by: Vanessa North 2950 W. Marr Rd., Denise Pollizella 4200 Sweet Rd., Joe Farkas 738 Old English Circle, Deborah Towles 3210 Pineview Trail, Alivia Christie 3885 Byron Rd., Dan Wholihan 8162 Majestic Fowlerville, Andrew Paulika 840 Lucy Rd., Gary Burtka 10099 Stow Rd., Henry Petrovich 5205 Warner Rd., Ronald 3620 Allen Rd., Emma Sova 322 W. Washington, Joe Smith 5136 Fleming Rd., Dan Bonello 3531 Warner Rd., Joe Fulton 3528 Warner Rd., Jodie Fulton 3531 Warner Rd., Darian Wolfe 804 W. Michigan Ave., Beth Brown 409 Indian Camp Trail, Patrick Kosin 2512 Eason Dr, Christina Frederick 418 Lake St, Andrea Rasizzi 4379 Indian Camp Trail, Debi Samuells 4302 Cornell, Angela Barbash 4211 Crandall Rd., Delilah Barbash 4211 Crandall Rd., Richard Allen Livingston/Shiawassee Border, Steven Cornea 3287 Hill Hollow Lane, Danielle Preston Rd., Tyler Rose 4334 W. Grand River Ave., Liz Rowse 2484 Tooley Rd., Cassandra McFarland 5650 Fleming Rd., Tayla Vance 3701 Cedar Lake Rd., Kristen Dennison 7196 Maner Ln., Alora Dennison 7196 Maner Ln., Autumn Dennison 7196 Maner Ln., Steve Dennison 7196 Maner Ln., Alissa Recker 7171 Manor Ln., Lori Barnard 1257 Peavy Rd., Jeannie Matovski 4149 Sonata Dr., Christine Brondyke 5707 Crandall Rd., Clint Beach 1138 Owosso Rd., Heather Uratchko 3777 Hogback Rd., Joshua 5640 Fleming Rd., Agnieszka Bisbiki 2511 Little Sunset Trail, Stephanie Fuerst 2575 W. Marr Rd., Chris Strandt, Richard Kaminski 4505 W. Marr Rd., Kristina Beaubien 4408 Ellis Rd., Justine O'Connor 5495 Layton Rd., Austin Breuer 1414 Steeplechase Ct., Richard Vessella, Greg Lehr 2530 Tooley Rd., Earl Beach 5412 Owosso Rd., Joy Dettling 2516 Curdy Rd., Zach Rucic 8139 Majestic Blvd., Dominic and Jessica Rodriguez Burkhart Rd., Sarah Porter, Lee Graham, Cory Alchin, Brian Brubaker 5761 Warner Rd., John Ryan 3457 Byron Rd., Kari Ryan 3457 Byron Rd., Jessica Burtica 10099 Stow Rd., Evelyn Redwine 444 Inverness St., Gus Parson Downtown Howell, Peter York, Breanne Green, Thomas Reinke, Dave Rowe, Katie Corbin, Lauren Prebenda 930 Gully Rd., Valerie 3223 Byron Rd., Michelle Vecheta 3252 Warner Rd., Kerry McFarland 2885 W. Marr Rd., Carol McClements 2988 N. Burkhart Rd., Calvin Heckman 6420 Warner Rd., Steve Smith 8763 Robb Rd., Connie Johnson, Dave Foreman 6126 Pheasant Ridge Dr., Doug Helzerman 6815 Sharpe Rd., John Paul 5630 Curzon St., Craig Zube 1560 Wood Haven, Diane Dombrowski 4707 Hogback Rd., John Belcher

**Motion** by Spaulding, **Second** by Newstead **“To recess until 11:15.”** Motion carried.

**Motion** by Spaulding, **Second** by Newstead, **“To reconvene the meeting.”** Motion carried.

**ZONING BOARD OF APPEALS REPORT:**

None

**TOWNSHIP BOARD REPORT:**

Draft minutes are included in the packet.

**ORDINANCE VIOLATION REPORT:**

Report in packet.

**BUSINESS ITEMS:**

New Business:

1. Union of Oak Grove- Major Change to Approved Site Plan- Township Planner Montagno gave a review of the request to amend the previously approved site plan. The site plan was originally approved in December 2020. The applicant is requesting to replace one of the five approved toddler lots with a frisbee golf amenity. The change will not alter the overall site layout and the four toddler lots will continue to serve younger children. Commissioner Frantjeskos questioned if the applicant was present. **Motion** by Boal, **Second** by Frantjeskos, **“To table this request until the applicant can be present.”** Motion carried.

2. Pirate's Cove Self-Storage- Request for Extension of Approved Site Plan- Planner Montagno gave an update for the extension. They are requesting an extension due to increased costs of materials and interest rates. **Motion** by Stanley, **Second** by Frantjeskos, **"To approve it."** Motion carried.

**SCHEDULED PUBLIC HEARINGS:**

- A. SC Develop, LLC, to Rezone portion of vacant land on corner of Grand River Ave. and M-59, PC 2025-19, Parcel # 4706-28-400-016 from Regional Service Commercial (RSC) to Industrial (I)- **Motion** by Boal, **Second** by Newstead, **"To open the public hearing for SC Develop LLC, to rezone portion of vacant land on the corner of Grand River Ave and M-59, PC 2025-19."** Township Planners Heath and Montagno gave an overview of the proposed rezoning. The applicant requests that the 11.64-acre portion be rezoned from Regional Service Commercial (RSC) to Industrial (I). Applicant Steve Schimpke from SC Develop spoke on the site and answered questions. Board Representative Boal questioned what the property may be used for and if traffic would exit from Trans West Industrial Park. Commissioner Lollo has concerns about what types of businesses would be present there.

Patricia Murphy- 139 Lakeshore- questioned if this parcel is related to the data center

**Motion** by Newstead, **Second** by Boal, **"To close the Public Hearing."** Motion carried.

**Motion** by Newstead, **Second** by Frantjeskos, **"To recommend conditional rezoning for SC Development LLC for the vacant land on the corner of Grand River and M-59, PC2025-19, Parcel # 4706-28-400-016 from Regional Service Commercial (RSC) to Industrial (I) based on the following two conditions: 1.) The request to Rezone conditional on SC Develop LLC owning the property in the event SC Develop LLC does not close on the purchase of the property the rezone application shall no longer be valid and the underlying zoning should remain and 2.) It's understood that in addition to closing on the property SC Develop LLC would be required to obtain a formal lot split should it be approved by the Howell Township and this conditional rezoning would be valid for a period of one year."** Motion carried.

- B. Stantec Consulting Michigan, Inc., to conditionally rezone various parcels in the area of Grand River Ave. and Fleming Rd. PC2025-20, from Agricultural Residential (AR), Single Family Residential (SFR) and Neighborhood Service Commercial (NSC) to Research and Technology (RT)
- C. Stantec Consulting Michigan, Inc., Zoning Ordinance Text Amendment, PC2025-21, for a text amendment to Article 2- Definitions, regarding Article 5- Research and Technology (RT) Zoning District. Planner Montagno gave an overview of the proposed conditional rezoning of nineteen parcels. These parcels are located east of Handy Township along Marr, Fleming, Warner and Owosso Roads. This would be to rezone these parcels to Research Technology for a data processing center. The applicant has offered conditions with self-imposed limitations. These limitations include increased setbacks, increased landscape buffers, sound mitigation, light pollution protection, water efficiency, sustainable practices and reimbursement of expenses. They have also petitioned to include a text amendment to the Zoning Ordinance to include a definition for Data Processing Centers. On behalf of the applicant Mike Vogt presented information, discussed the rezoning proposal, and answered questions. No site plan has been submitted; they are there for a recommendation for zoning not site plan approval. They are proposing a definition for Data Center and have provided conditions tailored to concerns of the community and the Planner's report. Some of the conditions proposed are setbacks of a minimum of 100 ft., lot coverage restrictions and landscaping buffers. Jack Ammerman from Stantec Consulting of

Michigan spoke about his work previously with this developer of data centers throughout the United States. He discussed jobs, screening, traffic analysis, long term jobs that would be available, water usage, noise, and power. Dan Mahoney Director of Policy and Regional Affairs for DTE spoke on the planning they do to support data centers. He talked about how residents would benefit from data centers and their positive effects to the community.

**Motion by Boal, Second by Newstead, "To open the public hearing for Stantec Consulting Zoning Ordinance and Text Amendment PC2025-20."** Motion carried.

ALL PUBLIC COMMENTS FROM EARLIER ARE INCORPORATED AS PART OF THE PUBLIC HEARING FOR THIS MATTER

Topics Discussed: definition of Data Center, noise and decibels allowed, DTE's interest in the data center, minimal jobs, Township Master Plan, lack of information provided, water demands, setbacks, number of phases proposed, cost of infrastructure, utilization of buildings already present, Artificial Intelligence, environmental contamination, wildlife, children unable to play outside

Lauren 930 Gulley, Betsy Keeran, John Paul, Evelyn Redwine, Chandler John 5565 Warner Rd., Dan Bonello 3531 Warner Rd., Greg Zumidian, Shawn Williams, Aaren Currie 6880 Chase Lake Rd.

**Motion by Boal, Second by Newstead, "To close the public hearing."** Motion carried.

Commissioner Lollo questioned the Community Outreach Plan and the potential of a Water Treatment Plant, energy considerations, mitigation measures and adjusting site layout and what is a water restoration project and how it works. Commissioner Frantjeskos questioned how many buildings will be present when the build out is done, what prevents the company from splitting and selling the "green space" to another company once the 1,077 acres is rezoned and his concern with the lack of transparency of this project. Secretary Newstead questioned if there was a decommissioning plan if the buildings were no longer being used as a Data Center. Board Representative Boal spoke on supporting the Township Master Plan. Commissioner Stanley questioned recycling water through the cooling systems and height of the buildings. Vice Chair Spaulding questioned the definition of data processing in the ordinance, how many phases are expected, total time length it will take to be built out, why are they trying to rezone more property than what they are proposing to develop, is there anything added to the large amounts of water for cooling, is there any intention to utilize a 70 ft building height and the capacity of waste water that will be discharged into the sewer system. Commissioner Lollo questioned wastewater demand scenarios and the guarantee that there will be enough water. Greg Tatara from MHOG answered questions regarding water capacity. Commissioner Frantjeskos questioned the dewatering process during construction, and the Howell drain that runs through the property. Board Representative Boal spoke on stricter restrictions with other ordinances from different locations with data centers. Discussion followed. **Motion by Boal, Second by Frantjeskos, "To recommend to the Township Board denial of the rezoning application #308-25.12, for parcel numbers listed in the petition, to rezone from Agricultural Residential, Single Family Residential, and Neighborhood Service Commercial to Research and Technology based on the following findings pursuant to Section 23.02 of the Howell Township Zoning Ordinance: A.) The rezoning is not consistent with the policies and uses proposed for that area in the Township's Master Land Use Plan B.) All of the uses allowed under the proposed rezoning would not be compatible with the other zones and uses in the surrounding areas C.) Public Services and facilities would be significantly adversely impacted by a development or use allowed under the requested zoning D.) The uses allowed under the proposed rezoning would not be equally or better suited to the area than uses**

**allowed under the current zoning of the land.”** Roll Call: Frantjeskos-yes, Spaulding- yes, Newstead-yes, Lollo- yes, Boal-yes, Stanley-yes. Motion passes 6-0.

**Motion** by Boal, **Second** by Newstead, **“To recommend to the Township Board the denial of the text amendment and definition for the RT Zone.”** Motion carried.

**Motion** by Spaulding, **Second** by Newstead, **“To excuse Chairman Williams from tonight’s meeting.”** Motion carried.

OLD BUSINESS:  
None

**CALL TO THE PUBLIC:**  
None

**ADJOURNMENT:**  
**Motion** by Newstead , **Second** by Lollo, **“To adjourn.”** Motion carried. The meeting was adjourned at 2:46 A.M.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Mike Newstead  
Planning Commission Secretary

\_\_\_\_\_  
Marnie Hebert  
Recording Secretary

# Howell Township

3525 Byron Road • Howell, MI 48855  
Phone: (517) 546-2817 • Fax (517) 546-1483  
www.howelltownshipmi.org



October 9, 2025

Livingston County Department of Planning  
Scott Barb, Director  
304 E. Grand River Ave., Suite 206  
Howell, MI 48843

RE Proposed Ordinance Text Amendment to the RT Zoning District

Scott,

Today, Howell Township received correspondence from the applicant, of the ordinance text amendment, requesting action from the County Department of Planning be postponed. The applicant has indicated that they would like the rezoning request and the text amendment to be considered by the County Planning Department at the same time. Since the applicant has previously requested that the County Department of Planning not consider their rezoning request at this time, this letter kindly requests that the County Department of Planning also postpone action on the proposed text amendment. When the applicant is ready Howell Township will forward both files on for your review.

I apologize for any inconvenience this may have caused. If you have any questions, please let me know.

Thanks,

A handwritten signature in black ink, appearing to read "Jonathan Hohenstein". The signature is stylized and somewhat abstract, with several overlapping strokes.

Jonathan Hohenstein  
Howell Township Treasurer  
Howell Township Zoning Administrator  
treasurer@howelltownshipmi.org  
517-546-2817 x 103





# Livingston County Department of Planning

November 20, 2025

**Scott Barb**  
AICP, PEM  
Director

**Robert A. Stanford**  
AICP, PEM  
Principal Planner

**Martha Haglund**  
Principal Planner

Howell Township Board of Trustees  
c/o Sue Daus, Clerk  
3525 Byron Road  
Howell, MI 48855

**Re: Planning Commission Review of Ordinance Text Amendment Z-34-25  
and Conditional Rezoning Request Z-35-25.**

Dear Board Members:

The Livingston County Planning Commission met on Wednesday, November 19, 2025, and reviewed the text amendments and conditional rezoning request detailed above. The County Planning Commissioners made the following recommendations:

**Z-34-25**

**Disapproval.** The definition of 'data processing' refers to methods and operations of analyzing data rather than a facility. The term should read 'data processing facility'.

**Z-35-25**

**Disapproval.** The proposed rezoning from AR (Agricultural Residential, SFR (Single Family Residential), and NSC (Neighborhood Service Commercial), is not consistent with the overall goals, objectives, and future land use intentions of the Howell Township Master Plan.

Copies of the staff review and Livingston County Planning Commission meeting minutes are enclosed. Please do not hesitate to contact our office should you have any questions regarding county action.

**Department Information**

Administration Building  
304 E. Grand River Avenue  
Suite 206  
Howell, MI 48843-2323

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(517) 546-7555  
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Web Site  
<http://www.livgov.com>

Sincerely,  
*Scott Barb*

Scott Barb

sb

Enclosures

c: Wayne Williams, Vice Chair, Planning Commission  
Jonathan Hohenstein, Township Zoning Administrator

Meeting minutes and agendas are available at:  
<https://milivcounty.gov/planning/commission/>



# Livingston County Department of Planning

## MEMORANDUM

Scott Barb  
AICP, PEM  
Director

Robert A. Stanford  
AICP  
Principal Planner

Martha Haglund  
AICP  
Principal Planner

**TO:** Livingston County Planning Commission and the Howell Township Board of Trustees

**FROM:** Scott Barb

**DATE:** November 10, 2025

**SUBJECT:** Z-34-25 Amendments to the Zoning Ordinance: Article 2, Section 2.02 Definitions.

The Howell Township Planning Commission is proposing to amend the definitions in the Township Ordinance with the addition of 'Data Processing'. Staff have reviewed the proposed amendments for accuracy and compatibility with the existing ordinance language and offer the following summary for your review. Staff comments are written in *italic and underlined* with additions and changes to the Ordinance written in **red**.

### Article 2, Section 2.02 Definitions

The following definition will be added to the subsection:

**Data Processing.** A facility or facilities used to house, and in which are operated, maintained and replaced from time to time, computer systems and associated components, including but not limited to telecommunications and storage systems, cooling systems, power supplies and systems for managing property performance (including generators and mechanical and electrical yards), and equipment used for the transformation, transmission, distribution and management of electricity (including private substations), internet related equipment, data communications connections, private communications towers, environmental controls and security devices, structures and site features, as well as certain accessory uses, buildings or structures located on the same lot such as utility buildings, offices, warehousing, cafeteria, guardhouses, diesel storage tanks, water storage tanks, security fencing, and other similar structures, improvements and appurtenances.

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Staff comments: Data processing is methods or operations performed on data that transforms and analyzes it into a format for further use. The above definition should read 'Data Processing Facility'. As written, the definition is incorrect.

**TOWNSHIP PLANNING COMMISSION RECOMMENDATION: DISAPPROVAL.** The proposed definition was denied at the September 23, 2025, public hearing on the proposed amendment.

**RECOMMENDATION:** The definition is incorrect as noted in staff comments. The Planning Commission should consider the error as stated in staff comments and offer their recommendation to the Howell Township Board.