

**INITIAL COMMENTARY ON AMENDMENT TO ZONING ORDINANCE®
(DATA CENTER ORDINANCE)**

TO: Mr. Robert Ellick, Solon Township Supervisor
Cc: Solon Township Board of Trustees
FROM: Joseph Berlin¹, PE
DATE: August 31, 2026
RE: Commentary on Solon Township Data Center Ordinance

The purpose of this commentary of the Zoning Ordinance for Solon Township related to data centers (Ordinance²) is to provide select initial comments and technical detail. All affected parties, namely Township officials, local residents and the general public, have expressed a desire for the Ordinance to be rigorous and protective of the Township and its residents. Overall, the current Ordinance is quite rigorous and provides an excellent framework to address concerns identified by Township officials and local residents.

This commentary is provided on a pro bono basis as a private citizen with no agenda other than to ensure that the final version of the proposed Ordinance is sufficiently rigorous and detailed to protect the Township and its residents, while equally providing a level of fairness to property owner(s) and developer(s). That is the prism through which this assessment was conducted.

Although the current Ordinance version is a very good starting point, additional detail is necessary to ensure adequate specificity is provided and mechanisms for compliance and enforcement are defined. The Ordinance comments are developed to add that level of detail and ensure that the Township has adequate resources for compliance, inspection and enforcement. Additionally, providing adequate specificity also helps ensure that the Developer, and potential subsequent owners/operators of the data center property, can ascertain development and operating requirements, timelines and the associated costs.

¹ Technical assistance was also provided by BLDI, LLC., Grand Rapids, MI.

² Draft #5 as Recommended by the SubCommittee for Planning Commission on May 27, 2026

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COMMENTARY ON ORDINANCE - To Date

The following comments are provided:

1. Moratorium

- As the following commentary indicates, a substantial amount of technical detail is necessary to provide a rigorous and relevant Ordinance that protects the Township and its residents but is also fair to the property owner and developer
- Actionable step(s):
 - To ensure that these goals are met, an update to Draft #5 of the Ordinance must be diligently undertaken

2. General

- Data centers are commonly planned for a 30-year lifespan. In practice, this timeline is optimistic, with several key component lifespans (e.g. IT/networking gear, UPS batteries, cooling equipment) being a fraction of this timeframe. For a modern data center, an appropriate strategic planning horizon is 3 to 5 years, with a 10 to 15-year facility lifecycle.
- Publications indicate that data center down time is estimated to cost \$9,000 per minute. Some loss of service events have affected stock values up to 2% of value for a four-hour outage
- Closed-loop cooling systems for data centers are reportedly a relatively new technology with few systems with a significant operational history
- Additional definitions will be necessary in Section B for a Draft 6 of the Ordinance, including thresholds for defining the scale of a data center (e.g., hyper-scale v. other)
- Transparency in the approval process is a major issue for local residents
 - Suggest that document submittal to the Township, including, but not limited to, Site Plan, reports, workplans, monitoring results and noise levels, be posted to a publicly available website within a specified time from submittal to the Township
 - Require a truthfulness and accuracy statement from the document author. Many such documents will be identified as requiring a signature by a Professional Engineer currently licensed in the State of Michigan
 - Require real-time environmental monitoring where applicable, including posting of data to a publicly available website
- Ensure use and release of escrow funds to Township are fully defined and consistent with standard practice
- Ensure that transactions related to the property are incorporated into the structure of Ordinance, including the impact of the sale of the development as a whole or part of the development on outstanding fees, penalties or escrows. Further, definition of the

compliance responsibilities for lessee, lessor and varied ownership structures should be assessed

- If through failure of the Developer to maintain compliance with Township ordinance, define actions available to Township considering the potential significant financial impacts of operational downtime
- The Ordinance does require insurance for the Developer. Such insurance would generally provide financial protections for the Developer for various situations, including coverage for legal claims by local residents and business interruption. The Developer could be required to have a duty to defend the Township if sued related to the data center. The Township could also require being an additional named insured
- Dedicated onsite fossil fuel power plants are common and can be a major source of air particulates and noise. Suggest on-site power generation, except renewable energy power, other than limited operation of emergency generators, be strictly prohibited
- Robots are reported to be a new resource for data center security. The safety and reliability of such robots remains to be demonstrated
- Select data centers are reported to monitor nearby properties (including on-site cameras pointed toward nearby residential properties)
- Attestations of truthfulness, accuracy and limitations for document preparers, including relevant experience and licensing, can be required for documents submitted to governmental agencies, including the Township
- Actionable step(s):
 - Suggest continuous real-time data generation for several items, including noise monitoring and select groundwater conditions, to address operational transparency issues
 - Such real-time data collection should be collected on a continuous real-time basis and posted in real time to a public website
 - Such real-time data should be available in such a manner that data reduction and analysis can be easily conducted (e.g., compliance) with raw data downloadable for public use
 - Consider a requirement that Site Plans and supporting documents be uploaded by Applicant within a specified timeframe of submittal to Township to an identified website available to the public, including notices of document availability on social media platforms (e.g., Facebook)
 - Define ultimate legal action for long-term non-compliance
 - Assess Applicant insurance coverage for the Township
 - Consideration should be given to strictly prohibit dedicated onsite power plants. Further, the Ordinance should detail the Township remedy if dedicated on-site power plants are constructed contrary to Township Ordinance

- Prohibit on-site power generation, except for limited emergency power generation and monthly maintenance operations
- Consider including a provision for privacy of off-site nearby properties, including security camera alignment

3. Summary of Documentation in Support of Site Plan

- It is suggested that, due to the complexity and potential for negative outcomes related to Data Center construction and operation, the following documents are suggested and discussed in sections below:
 - Noise/Sound Monitoring and Mitigation Plan, including certification and signoff by a currently licensed Michigan professional engineer (PE certification)
 - Decommissioning Plan and cost estimate, including updates every two years (PE certification)
 - Environmental Assessment with suggested format and content consistent with National Environmental Protection Act (NEPA)
 - Environmental Impact Study, as defined in NEPA, may also be necessary
 - Hydrogeological Investigation, including a groundwater monitoring workplan in support of on-going groundwater monitoring
 - Dewatering plan as part of Hydrogeological Investigation document or as a supplementary document, if dewatering is to be conducted
 - Incident Action Plan related to firefighting
 - Stormwater Management Plan (PE certification)
 - Waste Management Plan, including e-Waste (PE certification)
 - Water Feasibility and Management Study (PE certification)

All supporting documents for Site Plan review incorporates review and approval by Township. Identified deficiencies in the listed documents must be fully addressed by Applicant before the Site Plan is considered for approval by Township.

4. Noise

Ordinance reference section(s): H.1, MM.3.a, MM.3.f

- The current Ordinance version limits noise to no more than 45 decibels.
 - Further review of this proposed limit is on-going. A limit of 45 decibels may be impracticable (i.e., too low) considering local highways and road use.
 - A separate noise limit and monitoring program during construction may be applicable
 - Comments by Stop Solon Township Data Center (Stop Solon) suggest a 55 dB limit. The location for noise measurement was not identified but suggest monitoring locations minimally influenced by other nearby sources of noise

- Major sources of data center noise are reported to include: construction activities, cooling systems, and power generation. Cooling systems utilize large numbers of chiller fans that generate both broadband noise and low-frequency hum and drone (i.e., infrasound). In both cases, conventional noise control and mitigation methods may reduce cooling efficiency and increase power consumption
- Monitoring of low-frequency noise can be challenging with standard noise level meters commonly unable to fully measure such low-frequency noise levels
- Detail on noise monitoring via a noise monitoring program for the development would provide significant detail, including noise sensor type and location, use of noise mitigation protocols, monitoring equipment maintenance, repair and calibration, recordkeeping, corrective actions for noise limit exceedances, and identification of the required notices to Township of any exceedances or data gaps
- Actionable step(s):
 - Require a Noise/Sound Monitoring and Mitigation Plan submittal to the Township
 - A reference standard should be provided for potential inclusion in Ordinance to define required contents of noise monitoring program (e.g., ISO 1996-1:2016)
 - Ensure that monitoring and limits on noise in the audible and non-audible (i.e., hum and drone) are clearly identified, including monitoring locations
 - Detail on measurement methods in both the audible and non-audible spectrum should be added. (See: Attachment A below)
 - Suggest continuous real-time noise/sound monitoring at defined locations around the development upon startup of operations with this data posted in real-time to a website available to the general public
 - Noise/sound monitoring would initiate at start up of operation through completion of decommissioning, including a period of pre-construction baseline monitoring
 - Initial and on-going noise/sound monitoring equipment inspection and calibration be certified by independent third-party with review and approval by Township.
 - Associated Township costs to be paid by the Developer
 - Monitoring locations and equipment proposed in noise monitoring program as approved by Township
 - Additional monitoring locations may be required by Township

5. PFAS³

Ordinance reference section: None

- The issue of PFAS impact to local groundwater has been identified as a concern several times during the public comment period at Township Board of Trustees and Planning

³ PFAS is used as a general descriptor for the thousands of Per- and polyfluoroalkyl human-made compounds

Commission meetings in 2026. Concern with PFAS impact to groundwater has also been expressed by Township officials

- The current Ordinance does not comment on this item. However, assessment and investigation for the presence of PFAS in groundwater would be addressed by implementation of the Hydrogeologic Investigation and long-term groundwater monitoring program discussed in Section 8 below
- Stop Solon has identified PFAS as a concern and suggested sampling and monitoring of local wells. One technical article indicated, “Data centers primarily use PFAS to cool their servers and to suppress fires. Direct PFAS pollution from data centers is difficult to ascertain and likely limited because cooling systems generally run as closed loops.”⁴ Sampling of local private wells is generally impractical and would likely not provide data to adequately characterize local hydrogeological conditions
- Actionable step(s):
 - Additional research is required regarding potential data center operations as a source of PFAS and potential impact to the environment
 - If necessary, discussion in the Ordinance could be added to Section D - Environmental Assessment
 - Sampling and analysis of the closed loop cooling water for potential compounds, including PFAS, may be a prudent added requirement
 - Consider requiring the Developer to provide Township an opportunity to review Safety Data Sheets (SDSs) for the facility, including a requirement for SDSs and supplementary product information to include information on the presence of PFAS
 - The influence of the changes in groundwater conditions due to construction and operation of a large development (e.g., data center) on PFAS groundwater plumes in the area should be included in a hydrogeological investigation. To provide data to protect both residents and Developer from potential existing or future PFAS impact, a hydrogeological investigation is suggested (see: Section 9 and Attachment B below)

6. Decommissioning

Ordinance reference section(s): I, MM.6

- The Decommissioning section provides detail on decommissioning of the facility as a whole. Long-term idling of portions of the development is addressed to a limited degree
- A defined threshold for implementation of decommissioning, in whole or part, is apparently not defined
- Specifics on the decommissioning plan components and supporting documentation are not provided

⁴ Source: <https://www.eesi.org/articles/view/data-centers-are-contributing-to-pfas-forever-chemical-pollution>

- The stipulated escrow is set at 125% of a decommissioning estimate provided by the Developer (section MM.6)
- Actionable step(s):
 - Suggest language defining thresholds (e.g., below a set percent of average annual electrical usage) that requires decommissioning to commence, in whole or part
 - Suggest language on partial idling or shutdown of portions of the facility and such impact under the decommissioning section may be prudent
 - A fee for Township review of the decommissioning plan, including the required biennial plan updates, is suggested. An additional fee would be incurred for incomplete submittals requiring additional review resources
 - Provide a reference to industry standards for decommissioning
 - Define specifics on decommissioning including at least the following:
 - The removal should be to a depth specified by ordinance (typically three to four feet) unless the landowner desires otherwise.
 - A description of how the soil, vegetation, and previously disturbed earth will be restored to a state where it can readily be used for farmland, or other use as desired by the Developer, consistent with regulations
 - The length of time needed to complete decommissioning and the consequences for failing to meet that schedule
 - A statement that the owner/operator will notify the local government in advance of the planned decommissioning of a facility, the required timing of the notice, and the means by which the notice will be provided
 - A means for declaring the facility abandoned that will then trigger the decommissioning process (e.g., after 1 year of limited electricity usage)
 - Provision establishing for any transfer of ownership, all agreements and obligations made by the prior owner/operator shall be assumed by any subsequent owner/operator
 - The decommissioning estimate is stipulated to be updated every two years. Consider adding a specified date (e.g., January 1 of even numbered years) for submittal and penalties for late or incomplete submittals.
 - Approval of the estimate and associated required escrow by Township, a timeframe for Township review, acceptance or comments, and a timeline for the Developer to address comments by a stipulated date (e.g., March 1 of even numbered years) and escrow amount updated (e.g., April 15 of even numbered years)
 - Consider adding a specified minimum decommissioning escrow amount (e.g., \$2,000,000)
 - Ensure that the release of funds is adequately described for access by Township for the required reviews, coordination, meetings, outside resources (e.g., legal,

engineering), monitoring and inspections and, if necessary, undertaking decommissioning

7. Environmental Assessment

Ordinance reference section: D

- Consider changing the current title of this section from Environmental and Impact Assessment section (Section D.) to Environmental Assessment (EA) with EA as defined in the federal National Environmental Protection Act (NEPA). Although the NEPA EA process may not specifically be required by regulation for development as a data center, the Ordinance can use compliance with NEPA as a referenced standard
- As relates to the environmental impacts related to data center construction and operation, the EA section is of critical importance. Much of this commentary relates to Section D of the Ordinance, directly or indirectly
- NEPA requires assessment of at least the following items: air and water quality, land use and geology, wildlife and endangered species, cultural and historical resources, human health and socioeconomics, environmental justice communities, wetlands, floodplains or near adverse impacts such as landfills, railroads, above ground or underground storage tanks, and freeways
- Specific additional requirements include: light pollution, electromagnetic field (EMF), waste management and planning
- If the NEPA standard is not adopted by reference, further detail in the EA section (currently Section D-Environmental and Impact Assessments) will be required to define specific data and information reviews, analysis, reporting and impacts mitigation
- Compliance with NEPA standards places requirements on the rigor, format and outcome of the assessment. Requirements beyond the specified NEPA topics can then be included as currently provided in Section D of the Ordinance
- NEPA steps, in general, include:
 - Completion of the EA
 - If the EA concludes that the impacts of the development are not significant, the reviewing agency (i.e., Township) can concur with a Finding of No Significant Impact (FONSI)
 - If impacts are significant, the process escalates to a full NEPA Environmental Impact Study (EIS). Based on the scale and operation of the proposed data center development, an EIS will likely be required
 - Completion of Environmental Impact Statement
 - The developer completes the EIS per NEPA standards, including means to mitigate significant impacts
 - Although the federal NEPA standard requires public participation, the specified process would be inapplicable for the Township. The Ordinance would need to define a means for public input

- Ordinance Section D.5. specifies noise, vibration, dust and dirt, litter, smoke, odor, light and glare be addressed.
 - Analysis of a majority of these items would be included in the NEPA EA/EIS. Some additional detail on measurement standards, limits and mitigation may be required
- Electromagnetic fields (EMF)
 - Additional review on standards and limits is necessary. EMF is included in NEPA but data centers differ significantly from the property uses anticipated under NEPA
- Environmental compliance inspections will require multiple environmental disciplines
- Actionable step(s):
 - Recommend use of the NEPA process as a means to define the requirements of environmental impact. Select additional components for inclusion beyond the specified NEPA topics will likely be identified beyond those already listed in Section D of the Ordinance
 - Suggest periodic environmental compliance inspections be conducted by Township
 - Suggest, at minimum, annual compliance inspections
 - Such inspections can either incur a fee to be paid by Developer or paid out of a Legal and Administrative escrow (see: Section 13 below)

8. Farmland Preservation

Ordinance reference section(s): None identified

- Township officials and residents have identified the importance of the rural nature of Solon Township. The proposed hyperscale data center is proposed to be located in Solon and Algoma township and totaling up to 800 acres
- Actionable step(s):
 - *Suggest* a donation or fee requirement by the Applicant to a Solon Township Farmland Preservation Trust upon approval of Site Plan
 - *Suggest* that such a donation or fee be a minimum of \$15 million as a means to mitigate the substantial impact on the rural nature of the Township. Donation by Applicant to be made within specified period of approval of Site Plan by Township

9. Groundwater

Ordinance reference section(s): Section 16.04-Special Land Use -Specific Requirements
Section MM.3.e and Section MM.8.l

- The use of groundwater for cooling is apparently prohibited under the Ordinance as stated, “Private wells shall not be used for general cooling or processing purposes.”
 - This prohibition could be more clearly stated and also include a prohibition on use of surface water (i.e., Cedar Creek) as a source of cooling or process water
- Dewatering is prohibited (Section MM3.l), except as approved by the Planning Commission
- Groundwater extraction via drinking or process water wells or dewatering, can influence overall hydrogeologic conditions, including potentially influencing existing groundwater impact (i.e., exacerbation). Legal liability for exacerbation of contamination exists in federal and state regulation
- Groundwater conditions and potential changes associated with the development have been identified as concerns
- Actionable step(s):
 - The prohibition on groundwater use for cooling and operations should be more clearly stated and also include a prohibition on the use of surface water (i.e., Cedar Creek). Further, require that a groundwater use restriction be placed on the property deed
 - *Suggest* that data to establish baseline groundwater conditions be developed (see Attachment B below for additional detail) via a hydrogeological investigation with review and approval by Township. Identified investigation deficiencies must be addressed before Site Plan is considered for approval by Township
 - *Suggest* that select real-time groundwater data (e.g., temperature, dissolved oxygen), including Cedar Creek surface water conditions, be collected and automatically posted to a publicly available website (see Attachment B below for additional detail)
 - *Suggest* that a quarterly groundwater monitoring program be included with the hydrogeological investigation document. Such monitoring would begin in the first quarter after Site Plan approval and continue at least until decommissioning is complete and approved by Township (see Attachment B for additional detail)
 - If dewatering is to be undertaken, evaluation of the potential impacts of such in a submittal to the Township as either part of the baseline Hydrogeological Investigation or as a supplementary document should be required. Demonstration that such dewatering would have no impact on local hydrogeologic conditions, including potential exacerbation, should be required or, if found to be detrimental, an action plan to mitigate any potential harm submitted as part of the dewatering proposal

10. Cedar Creek

- Multiple concerns regarding Cedar Creek, including its status as a cold-water trout stream, have been identified by Township officials and residents. Based on the current draft Ordinance (Rev. 5), it appears that some discussion may have taken place with the Developer regarding a buffer zone and habitat enhancement for Cedar Creek. However, more detail and increased vegetated zones should be considered
- Changes to the land conditions via buildings and pavement can also impact peak stormwater flows in Cedar Creek and potentially cause downstream flooding in Algoma Township
- Application of surface water resource protection and preservation may also be applicable more generally than just Cedar Creek
- Actionable step(s):
 - Some language on maintenance of the buffer zones is recommended. Consideration of increasing the setback, including a prohibition on disturbance of existing vegetation, except as part of an approved habitat enhancement project
 - Suggest that the area near Cedar Creek, within 500 feet, be included in a conservation easement
 - Suggest that a Habitat Improvement Trust for Solon Township natural areas, including along Cedar Creek, be established. An amount of at least \$5 million is suggested
 - The impact caused by peak stormwater flows to Cedar Creek should be assessed and mitigated in the Stormwater Management Plan

11. Electricity

Ordinance reference section(s): Section H.9 and H.10

- Electrical utilities in Michigan are governed by the Michigan Public Service Commission
- This section provides a requirement for the Applicant to demonstrate that sufficient power is currently available and the operation of the data center will not adversely affect electrical rates and reliability of electric supply
- This section also prohibits on-site power generation for operational usage. However, a provision to allow on-site renewable power (e.g., solar) should be considered
- Consideration should be given for on-site power generation using renewable energy
- Stop Solon has commented that residents should not face increased rates or decreased service related to a data center, including a proposed penalty of \$75,000. Such a one-time and relatively small penalty would be unlikely to influence data center electrical power usage and management
- Electrical usage can be used as a threshold for data center scale and defining operational status possibly triggering decommissioning
- Actionable step(s):

- Ensure that confirmation of power supply is addressed for all phases of development, including validation by a Professional Engineer on behalf of power supplier (i.e., PE stamped documents)
- Consideration should be given to allow on-site power generation using renewable energy
- Consider a requirement that electrical usage by building be uploaded to a publicly available website

12. Waste Management

Ordinance reference section(s): H.4

- This section is currently titled Hazardous Materials. A more general title for this section may be applicable for broader application beyond just “Hazardous Materials”, as the waste stream from the data center will include non-hazardous waste streams such as liquid industrial waste, universal waste, and sanitary sewer discharge
- A general Waste Management Plan would encompass all waste generated at the property, including storage, sampling, characterization, transportation and disposal methods
- Cooling water (interior closed loop) changeout is reported to be conducted approximately every six to twelve months. It is estimated that cooling water changeout will generate well over 100,000 gallons per building that will require proper disposal. Such cooling water will likely contain biocides, anti-scale agents and other unspecified materials. The presence of PFAS in data center cooling systems has been reported by some⁵ with new regulations for PFAS for cooling becoming effective as early as 2027
- E-waste is any discarded electrical or electronic device that is no longer wanted, broken, or obsolete
 - E-waste contains toxic substances like lead, mercury, and cadmium
- Actionable step(s):
 - Suggest that a Waste Management Plan be submitted with the Site Plan for approval, including certification by a Professional Engineer
 - Ensure that cooling water changeout waste management practices are included in the Waste Management Plan
 - Address E-waste as part of the Waste Management Plan

13. Power Supplies - Secondary and Emergency Power Supplies

Ordinance reference section(s): Section 1604, 8.h

- To ensure emergency generators are available during loss of power it is common that such generators are operated ½ to 1 hour per month for testing and validation purposes. However, it is reported that many data centers utilize on-site power generation (e.g., emergency generators) on an on-going basis

⁵[Link](#): PFAS phase-out and liquid cooling, Schneider Electric Blog, May 22, 2026

- The emissions and noise related to on-site power generation, especially when utilizing diesel generators, is a common concern voiced by residents near operating data centers
- Actionable step(s):
 - Consider an escalating penalty structure (i.e., penalty increases for each specified period of operation per generating unit) for operation of emergency generators as on-site power generation in excess of that necessary for monthly operational verification (e.g., one hour per month)
 - Penalty is incurred regardless of federal, state or local directive to operate on-site power generation
 - Require recordkeeping for hour meters from each unit. Violations or falsification of recordkeeping having stipulated penalties and potential referral to law enforcement

14. Stormwater

Ordinance reference section(s): C.1, H.6

- Kent County stormwater management guidance recommends that storm water be managed on-site
- Stormwater management practices can influence groundwater and nearby surface water conditions
- Changes to the land conditions via buildings and pavement can also impact peak stormwater flows in Cedar Creek and potentially cause downstream flooding
- Actionable step(s):
 - Suggest that a Stormwater Management Plan be required as part of Site Plan submittal, including certification by a Professional Engineer
 - Recommend that stormwater be managed on-site with no surface discharge to Cedar Creek
 - Recommend that no stormwater detention/retention pond or other stormwater management structure be located within 500 feet of Cedar Creek
 - Recommend, as part of the groundwater monitoring program, monitoring of groundwater conditions in stormwater detention/retention basins or other stormwater management areas, as identified by Township
 - The impact of peak stormwater flows to Cedar Creek should be evaluated and mitigated in the Stormwater Management Plan

15. Fees, Penalties, Escrows and Donations

Ordinance reference section(s): Various

- Fees:

- Fees sufficient to ensure that the Township does not incur potentially significant costs associated with data centers development are recommended. Such fees would be used to retain legal, engineering, inspection, environmental and planning services, as well as offset any potentially significant direct Township costs (e.g., inspection, public hearings).
- Township fee collection protocols for the various fees may vary, including direct upfront payment or payment from an established escrow
- An example of such fees could include:
 - Site Plan submittal, initial submittal: \$100,000
 - Additional fees for additional Site Plan reviews
 - Hydrogeological investigation and groundwater monitoring plan review fee: \$25,000
 - Additional fee if a Dewatering Plan is included
 - NEPA Environmental Assessment: TBD
 - NEPA Environmental Impact Study (EIS), if necessary: TBD
 - Annual environmental inspection fee: TBD
 - Periodic firefighting inspection fees: to be determined (TBD)
 - Noise/Sound Monitoring and Mitigation Program Review: TBD
 - Decommissioning Plan Review: TBD
 - Biennial Decommissioning Plan Review (every two years): TBD
 - Stormwater Management Plan: TBD
 - Waste Management Plan: TBD
 - Emergency non-compliance inspection: TBD
 - Quarterly groundwater monitoring report review: TBD
- Penalties
 - Penalties for non-compliance can help incent compliance. Penalties for non-compliance can also provide Township resources for additional monitoring and enforcement, as necessary
 - Collection of penalties for non-compliance should be ensured with a minimum of effort by the Township
 - An example of penalties can include:
 - Exceedance of noise standard during operation (as measured at property line):
 - First non-compliance noise exceedance event:
 - First hour: \$1,000
 - Hour 2 up to hour 24: \$2,500 per hour
 - Hour 24 hour through hour 72: \$10,000 per hour
 - Beyond hour 72: \$25,000 per hour
 - Subsequent non-compliance noise exceedance events

- Event #2: multiply values above by two
 - Event #3: multiply values above by three
 - Event #4: multiply values above by four
- Escrows
 - Escrows are recommended to enable the Township to have funds available up front to retain legal, engineering and other resources without incurring non-reimbursed expenses from the Developer
 - The decommissioning escrow is already included in the Ordinance
- Actionable step(s):
 - Consider adding the following escrows:
 - Site Plan review escrow: \$1,000,000
 - Established to ensure Township has sufficient resources in case of prolonged and protracted Site Plan reviews and potential legal actions
 - Escrow replenished by Developer within 30 days of this escrow balance below \$500,000
 - This escrow could be released upon approval of a site plan and establishment of General administrative and legal escrow
 - General administrative and legal escrow: \$2,000,000
 - This escrow could be used for Township expenses (e.g., inspections, outside legal, engineering)
 - This escrow could be established upon approval of the Site Plan, extending through completion and approval of decommissioning
 - Escrow replenished by Developer within 30 days of a balance below \$1,000,000
 - These escrows would be separate from the decommissioning escrow
 - Ensure there is a definitive action by Township in case escrow is not replenished in the specified period
- Donations
 - Large developments are often required to make donations to the local unit of government to help mitigate the impact and cost of the development. Development of 800 acres for a data center would appear to meet such a definition
- Actionable step(s):

- Habitat Improvement Trust (Section 10 above): suggest that a habitat improvement trust for Solon Township to enhance natural areas, including along Cedar Creek, be established. An amount of at least \$5million is suggested.
- Farmland Preservation Trust (see Section 8 above): suggest a donation requirement of \$15million by the Developer to a Solon Township farmland preservation trust upon approval of Site Plan

16. Recordkeeping

Ordinance Reference Section(s): Not specified

- There does not appear to be an overall recordkeeping section
- Recordkeeping is a key means to document operational status and ensure compliance
 - Such recordkeeping should include specifics on the items to be measured or recorded, the means of data collection, manner of recordkeeping and record availability to Township and residents
- Actionable step(s):
 - Develop a recordkeeping section with references to other applicable Ordinance sections, including penalties for lack of incomplete or missing records. Ensure specific penalties for falsified records
 - As discussed elsewhere in this commentary, record access by the public in a real-time or short turnaround to a publicly available website is suggested

17. Insurance

Ordinance Reference Section(s): MM.8.n

- The insurance section is somewhat limited in the description of the coverage, including any reliance such insurance provides the Township
 - Limits are set at \$50 million per occurrence and \$100 million in the aggregate
 - The Stop Solon markup indicates a recommendation of \$50 million per occurrence and \$500 million in the aggregate
- Actionable step(s):
 - Additional research on applicable insurance products the Applicant may be required to have in place, including timing of such insurance products (e.g., legal and environmental coverage, business interruption)
 - Consider Township identified as additional named insured on applicable Applicant insurance policies
 - Ensure Township is properly notified by Insurer of changes in policy or coverage
 - Ensure that the impacts of facility shutdowns for non-compliance are addressed

18. Construction

Ordinance Reference Section(s): MM.4

- Township officials and residents have expressed concern regarding the significant scope of the construction activities and the length of time such activities will take place
- Concerns have been expressed, at minimum, regarding noise, heavy equipment traffic, dust and particulates, mud and dirt tracked on roads
- Current Township ordinance may be applicable to mitigate all or select identified concerns
- The scope, size and length of this development will require regular inspection for various items and phases of construction. The level of Township inspection and monitoring is not specified
- Actionable step(s):
 - Township should review current ordinances to identify gaps and means to mitigate identified concerns (see above bullet points), including penalty structure for violation of Township ordinance
 - Township may wish to identify the level of inspection and monitoring resources necessary during construction, including the inspection resources needed for the various phases of construction (e.g., clearing, earthmoving, storm water structures, sanitary sewer, public water supply, and electrical)
 - Specific noise monitoring and noise limits during construction may be specified for a project of this scope and length, unless otherwise specified in Township ordinance
 - Consider changing the limitations on hours of construction activities, including heavy equipment engine operation, daily site cleanup, from the current Ordinance version of 6am to 8pm to 7am to 7pm
 - Consider a requirement that sound attenuation berms be completed within specified number of days of start of construction, if used for noise/sound mitigation, but not before noise monitoring and mitigation program is reviewed and approved by Township and initial noise monitoring is completed
 - Soil disturbance during construction and the associated storm water runoff needs to be addressed in the storm water management plan as required by regulation

19. Firefighting

Ordinance Reference Section(s): H.13 - Safety

- Data centers present a unique set of potential exposures related to firefighting and potential exposures for nearby residents and the general public
- Energy storage devices (e.g., batteries) are often used at data centers to ensure a stable and reliable source of electricity to the servers. Data centers are reported to use large banks of batteries to accomplish this need. In some cases, it has been reported that batteries, including lithium-ion batteries, have been placed underground

- Emergency generators are often powered by diesel fuel. Tanks and associated piping for the storage and supply of diesel fuel to the generators can either be aboveground or underground. Underground placement of tanks and piping does not allow for regular visual inspection
- Per standard practice, periodic facility inspections are conducted by the Fire Department
- Aboveground storage tanks (ASTs) are subject to the requirement of the flammable and combustible liquids code requirements promulgated by the State of Michigan
- Actionable step(s):
 - Resources for the Fire Department to develop a site-specific firefighting plan (i.e., Incident Action Plan (IAP)) consistent with current regulations (e.g., NFPA 1700) should be added as a requirement
 - Consideration should be given to a prohibition on underground (any portion beneath the ground surface) burial of energy storage devices (e.g., batteries), including underground storage tanks (USTs) to store fuel for on-site emergency generators
 - Consider a specified fee for Fire Department inspections of medium and hyperscale data centers
 - Consider a required donation to Solon Township for development of the IAP, firefighting equipment and training of at least \$2 million upon approval of the Site Plan

20. On-site building and equipment cleaning, including waste handling

Ordinance Reference Section(s): None specified

- Various equipment will require cleaning, maintenance and repair (e.g., filters, vents)
- Actionable step(s):
 - Require that all on-site cleaning (e.g., filters, vents) be conducted indoors, if possible, in an area where all generated solids and liquids can be fully contained for proper sampling, handling, storage and disposal
 -
 - Handle, store, characterize, transport and dispose of such materials per the Waste Management Plan

21. Data Center Heat Island Effect

Ordinance Reference Section(s): None specified

- A data center heat island effect (or digital heat island) is a localized microclimate created by the massive thermal exhaust of continuously operating server facilities

- There is limited reliable peer-reviewed data on the heat island effect associated with data centers. However, the limited reliable information available⁶ indicates that localized temperature can increase up to 2°Celsius (3.6°F). Consideration of the nature of the development as a hyperscale data center may significantly increase localized temperatures
- Actionable step(s):
 - Conduct further assessment of the potential data center heat island effect

22. Light pollution

Ordinance Reference Section(s): None specified

- Light pollution is the excessive or inappropriate use of artificial outdoor light which can brighten the night sky, including lighting the sky on adjacent properties
- Actionable step(s):
 - Conduct further assessment of the potential effect of light pollution

23. Robots

Ordinance Reference Section(s): None specified

- Robots for security usage are coming online (e.g., robot dogs). The concern related to the reliability and safety for local residents from such robots has been presented in some online sources
- Actionable step(s):
 - A prohibition on such robots may be considered

24. Privacy

Ordinance Reference Section(s): None specified

- Some data centers have monitored off-site properties, including residential properties, using cameras and other means
- Actionable step(s):
 - A prohibition on off-site monitoring from the development is recommended. Such a prohibition should specifically state that no cameras are to monitor or collect images, sound or data from off-site properties

⁶ Data Center Waste Heat as an Emerging Urban Thermal Hazard: First Field Measurements of Neighborhood-Scale Air Temperature Impacts, ASME Digital Collection, May 18, 2026 ([link: asme digital collection](#))

25. Select Referenced Documents

- An Ordinance to Amend The Zoning Ordinance of the Township of Solon - Data Center and Digital Mining ([link](#))
- USEPA NEPA Implementation Guide ([link](#))
- Data Centers are Contributing PFAS Forever Chemical Pollution, Environment and Energy Study Initiative
(<https://www.eesi.org/articles/view/data-centers-are-contributing-to-pfas-forever-chemical-pollution>)
- PFAS phase-out and liquid cooling, Schneider Electric Blog, May 22, 2026
- Stop Solon Township Data Center - Data Center Zoning Ordinance in Solon Township
([link](#))
<https://stopsolontownshipdatacenter.com/data-center-zoning-ordinance-solon-township/>
- Stop Solon Township Data Center - Township Ordinance redline markup ([link](#))
- Stop Solon Township Data Center - 48 Revision Requests for the Zoning Ordinance
([link](#))
- Data Center Waste Heat as an Emerging Urban Thermal Hazard: First Field Measurements of Neighborhood-Scale Air Temperature Impacts, ASME Digital Collection, May 18, 2026
- PFAS Sampling Guidance, Michigan PFAS Action Response Team
(<https://www.michigan.gov/pfasresponse/investigations/sampling-guidance>)
- Michigan Department of Environment, Great Lakes and Energy, PFAS Minimum Laboratory Analyte List
(<https://www.michigan.gov/pfasresponse/investigations/sampling-guidance/analyte-list>)

ATTACHMENT A: Sound/Noise Monitoring

1. General

- The United States National Institute for Occupational Safety and Health (NIOSH) sets a Recommended Exposure Limit (REL) of 85 dBA for an 8-hour workday. Noise levels above 85 dBA for workers are considered hazardous and require the implementation of a Hearing Conservation Program.
- Data centers that use closed-loop cooling systems, rather than water cooling, tend to be noisier.

2. Sound/noise monitoring equipment specifications for operations that generate broad spectrum sound/noise can generally be described:

- Sound Level Meter (SLM) with Octave Band Filtration.
- An SLM by itself detects a wide range of frequencies and integrates them into a single measurement value, in decibels.
- The Octave Band filter breaks the sound into its constituent frequency bands, usually 11 bands or 33 bands.
- Multiple bands measured at the same time may require more sophisticated units

3. Real-time sound/noise monitoring

- Continuous real-time noise monitoring at multiple locations around the property with such data posted in real-time to a website available to the general public.
- Noise/sound monitoring would initiate at start up of operation through completion of decommissioning.
- An initial noise/sound monitoring program may be necessary during construction
- A noise monitoring plan submitted with Site Plan, including a maintenance and repair schedule
- Monitoring locations would be as approved by Township, including sensor height, inclement weather operations
- Additional monitoring locations may be required by Township
- Periodic sensor validation may be conducted by Township

ATTACHMENT B: Hydrogeological Investigation and Groundwater Monitoring

1. Hydrogeological Investigation - Groundwater Assessment

- Township officials and residents have identified concerns related to potential impact to groundwater from data center construction and operation. A baseline hydrogeological investigation can identify initial groundwater conditions with on-going quarterly monitoring providing data on potential changes associated with a data center.
- Hydrogeologic investigations are a very common component of purchaser due diligence and can provide protection from environmental liability under federal and state regulation.
- A hydrogeologic investigation to establish baseline groundwater characteristics is recommended to be included with the Site Plan documents submitted to the Planning Commission. Select description of components of a hydrogeological investigation⁷:
 - Monitoring wells placed to determine groundwater flow direction. Special emphasis should be placed on the groundwater characteristics near Cedar Creek.
 - Although suggested by some of the public, sampling local off-site drinking water wells is generally not part of purchaser due diligence and generally cannot develop good investigative data as potable water well installation methods, depths and well age provide significant variables in the data.
 - Analytical parameters should include, but not limited to, volatile organic compounds (VOCs), semi-VOCs (SVOCs), Michigan 10 metals, select PFAS and related compounds⁸ (e.g., PFOS PFOA), temperature, dissolved oxygen (DO), pH, oxidation-reduction potential (ORP/eH)
- The hydrogeological investigation requirements appear to fit into Section D of the Ordinance

2. Groundwater Monitoring

- To complement the hydrogeological investigation discussed above, on-going quarterly groundwater monitoring program is also recommended. A groundwater monitoring program would indicate the potential impact to surface water (Cedar Creek) and local groundwater.

⁷ Note: submittal of a hydrogeological investigation work plan and review by Township may be requested by the Developer. It is not uncommon for there to be multiple phases of hydrogeological investigation activities (e.g., soil borings, well installation, soil/groundwater sampling)

⁸ Michigan Department of Environment, Great Lakes and Energy, PFAS Minimum Laboratory Analyte List ([Link](#))

- It should be noted that changes in storm water characteristics and land application of precipitation from the development may impact nearby surface water and could also impact groundwater.
- The groundwater monitoring plan submitted as part of the Hydrogeologic Investigation and Groundwater Monitoring Workplan is recommended to be reviewed by a qualified Michigan environmental consultant. Review by a Township-retained third-party reviewer may provide program deficiencies requiring groundwater monitoring program amendment. Select components of a groundwater monitoring program:
 - Measure groundwater and Cedar Creek elevations to determine groundwater flow direction over time and the gaining/losing nature of the creek
 - Measure select field parameters (e.g., dissolved oxygen, redox)
 - Collect groundwater samples per standard practice and, at a minimum, submit to a fixed-based laboratory for analysis for the presence of the following: VOCs, SVOCs, Michigan 10 metals, select PFAS and related compounds, temperature, DO, pH, ORP/eH
 - Continuous, real-time, online monitoring of select monitoring well locations and parameters is also recommended. Parameters should include, but not limited to, temperature, DO, pH
- The groundwater monitoring requirements would appear to fit into Ordinance Section D