ROBINSON TOWNSHIP PLANNING COMMISSION
January 24, 2023

The regular meeting of the Robinson Township Planning Commission was called to order at 7:00 PM at the Robinson Township Hall.

Present	Absent
Shawn Martinie	Anne Goede
Bill Maschewske	
Travis Vugteveen	
Michelle Gillespie	
Lydia Brown	
Steve Young	

Also present were Supervisor Frank Johnson, Township Attorney Ron Bultje, Zoning Administrator Linda Lovelace, Philip Johnson of Resource Planning and Design representing the MME and Clark Farm Earth Change Sites, Mark Sloothaak, owner of the Clark Farm and MME Earth Change Sites, Nate Koella of Lakeshore Environmental representing the Clark Farm Earth Change Site, and one additional member of the public. The attendance sheet is attached.

Approval of Agenda

A motion was made by Travis Vugteveen and seconded by Lydia Brown to approve the meeting agenda as written. The motion carried unanimously with one member absent.

Adopting of Previous Minutes

A motion was made by Travis Vugteveen and seconded by Michelle Gillespie to approve as written the minutes of the January 10, 2023 Planning Commission meeting.
The motion carried unanimously with one member absent.

Non-Commission member Inquiries and Questions

Supervisor Johnson stated that Shawn Martinie was re-appointed to the Planning Commission and welcomed him.

Reports and Communications

Travis Vugteveen reported from the Township Board that Shawn Martinie was re-appointed for a three year term.

Announcements – None

New Business

An introduction was given by Chairperson Martinie to the public hearing scheduled for Zoning Ordinance Amendments and additions. The public hearing notice was read by Secretary Bill Maschewske. Chairperson Martinie briefly reviewed the rules of procedure for the conduct of the public hearing and the public hearing was declared open.

Chairperson Martinie inquired if any member of the public was here for the public hearing. No one present was in attendance for the public hearing.

Chairperson Martinie called for comments from the public or the Planning Commission regarding the Zoning Ordinance amendments and additions. There were no comments or questions.

Chairperson Martinie inquired of Township Attorney Bultje if the amendments and additions should be recommended for adoption individually or as a group. Attorney Bultje responded that they should be recommended as a group unless someone opposed one of the amendments or additions.

Once again, comments and questions were requested from the public and the Planning Commission and there were none.

A motion was made by Travis Vugteveen and seconded by Steve Young to close the public hearing at 7:12 PM.
The motion carried unanimously with one member absent.

A motion was made by Michelle Gillespie and seconded by Lydia Brown to recommend to the Township Board approval of the proposed Zoning Ordinance amendments to Section 4.2, Building, Accessory, Section 3.3 definition of Accessory Building or Structure, Section 4.9 B(D) Private Roads, Section 4.19A(3)(j) Housing Standards, Section 30.3 Table of Principal and Accessory Building Regulations, and the addition of Chapter 22, Off-street Parking and Loading.

A roll call vote was taken.
Michelle Gillespie – Yes
Lydia Brown – Yes
Bill Maschewske – Yes
Shawn Martinie – Yes
Steve Young – Yes
Travis Vugteveen – Yes
The motion carried unanimously with one member absent.

Bill Maschewske – Inquired of Township Attorney Bultje if the Planning Commission should write a separate report on Accessory Buildings. The subject of Accessory Buildings on residential parcels without a principal dwelling was requested by directive of the Township Board to be reviewed by the Planning Commission.

Township Attorney Bultje – The issue would only be Accessory Buildings on residential parcels without dwellings, therefore, the recommended amendment regarding Accessory Buildings should proceed to the Township Board. The Planning Commission, through meeting minutes, has already reported to the Township Board on the issue of Accessory Buildings on residential parcels without dwellings.

Supervisor Frank Johnson – Requested a separate report with more detail to better explain the recommendation.

Bill Maschewske is to draft a report to the Township Board for review at the next regular Planning Commission meeting.

Old Business

Phil Johnson of Resource Planning and Design, LLC made a presentation of changes made to the amended Clark Farm Earth Change Application to expand the lake on the MME site into the Clark Farm Site and increase the size of the lake from 12.5 acres to 276.5 acres. An index of graphics was distributed at the meeting. Mr. Johnson stated the plan is to complete mining the MME site tomorrow. As weather and seasons permit, the site will be seeded for reclamation and available for the required inspection by a Registered Professional Engineer and approval in writing by the Township.

Chairperson Martinie noted that the current application describes the requested activity as an expansion of the MME Site rather than an amendment to the Clark Farm Site.

Philip Johnson – It is an expansion of the MME lake, not the MME application. Mr. Johnson then reviewed the documents that had been updated since the last meeting on November 22, 2022.

Nate Koella of Lakeshore Environmental was present to describe the updated mining cross-sections which were revised to show no mining into the clay layer.

Chairperson Martinie distributed a report from Planning Commissioner Steve Young regarding his review of the Hydrogeological Report submitted with the amended Clark Farm Application.

Steve Young – Noted that every hydrogeological study has limitations. He would have liked to have seen a discussion of the limitations and more text regarding the range of drawdown with an error analysis. See attached report from Steve Young. He suspects the water level impact of the proposed lake will be similar to the impact of the existing 12.5 acre lake at the MME site.

Chairperson Martinie – Inquired about the tunnel under North Cedar St. and if it is intended to be a water link to the Grand River.

Mark Sloothaak – The depression in front of the tunnel is elevation 597 ft., which is about 10 ft. above the water level. Therefore, the tunnel will not be a link to the Grand River.

Bill Maschewske – Discussed the lake details that were contained in the original Clark Farm Earth Change application from 1979, which also requested a lake. It was noted that by 1987, the renewal application indicated that all mining was being done above the water table with thoughts to mine sub-aqueous at a later date. It appears the Township in 1979 had concerns with mining into the water table.

Phil Johnson – Noted they are anticipating a static water level in the lake of 587 ft. above sea level. The 597 ft. elevation at the entrance to the tunnel would preclude a connection to the Grand River.

Chairperson Martinie – What additional information do we need and do we understand what we have. He requested Phil Johnson to submit a revised plan. This plan could just be a mark-up of the existing application until such time that the Planning Commission requests no more changes.

Philip Johnson – Enumerated the updated documents to the Clark Farm application, including graphics showing no mining into the clay layer and stating that the MME Site will be closed. Mr. Johnson also stated that they will not intentionally mine into the clay layer but might hit it accidentally in determining its location.

Chairperson Martinie – The modification needs to be to the Clark Farm application. Most issues that have been identified to date have been addressed. He wants the 108th Ave. ingress/egress closed. You need to make it clear that the Clark Farm application is being amended for the enlarged lake. The amendment to the application is so large that this is like a new application. Additional comments were requested from the Planning Commission.

Travis Vugteveen – Referenced the August 23, 2022 Hydrogeological report, page 2. He noted that in 1979, there were 26 residences nearby and now there are 54. What assurance does nearby residents have if their wells go dry? He is also concerned about the evaporative losses from the lake.

Phil Johnson – Referred to another Earth Change application where they guaranteed wells.

Mark Sloothaak – Stated they agreed to use EGLE as a moderator for the MME site regarding wells.

Steve Young – What liability does the Township have?

Township Attorney Bultje – If the Township has done its job correctly, the Township has immunity. However, we need safeguards for the citizens.

Steve Young – Is it the homeowners responsibility to prove the well went dry because of the mining.

Township Attorney Bultje – The homeowner must show the details that it went dry. This amendment to the Earth Change application should be treated as a new application.

A discussion followed regarding the South Cedar Earth Change application which was amended recently to create a lake and was not considered a new application.

Phil Johnson – Reviewed acceptance by MME to address any wells that are negatively impacted.

Regarding Travis Vugteveen earlier question, Nate Koella stated that the evaporation loss from the completed lake is calculated to be 147 gallons per minute.

There was a discussion regarding the significance of the 147 gallons per minute loss.

Steve Young – Explained groundwater storage after excavation compared to before excavation of the lake.

Travis Vugteveen – Questioned the quality of the water after the lake is created, especially hardness and nitrates.

Nate Koella – The combination of oxidation and settling will result in lower nitrates and decreased hardness. Nitrates diminish from available oxygen and the iron will settle out in the lake.

Travis Vugteveen – What is the timeline for the completion of the lake?

Mark Sloothaak – It will be market dependent, but they estimate it will take about 25 years to complete the lake.

Philip Johnson – Noted the plan is to mine the lake to depth as they complete each cell unit.

Steve Young – Will any surfactants be used to keep dust down on the internal roads?

Philip Johnson – No, just water.

Township Attorney Bultje – Should we get input on the impact of the lake from the County, in particular Paul Sachs, Director of Strategic Impact?

Chairperson Martinie – It would be good.

Township Attorney Bultje – When we have a complete application, we should send a copy to Paul Sachs at Ottawa County.

Philip Johnson – Noted they are currently working with EGLE on the permitting for the lake.

Chairperson Martinie – Requested Zoning Administrator Lovelace send a copy of the application when complete to Paul Sachs.

Steve Young – Noted that the transpiration from the trees in a woodlot would be greater than the evaporative losses from an equivalent sized lake.

At this time the Clark Farm Earth Change application dated November 2022 was reviewed in detail. Section numbers and letters reference the Robinson Township Earth Change Ordinance.

Article IV, Section 1

(a)(1) through (e)(4) – Satisfactory

(e)(5) – The updated attachments answer this issue.

(f) The old cell configuration is Exhibit K. The new cell configuration is Exhibit D.

(g) It was noted that the referenced Exhibit M is not a Truck Route. The Truck Route is Exhibit N and this needs correction.

(h) Acceptable

(i) Per Township Attorney Bultje, the amendment is so significant that the amendment should be treated as a new application.

(j) Per page 4 of the Hydrogeological Report, this should state 28 years per elsewhere in the application.

(k) The Planning Commission will need to be specific in the approval regarding hours of operation. It was stated the backup alarms are necessary since they never got approval for the alternative flashing lights.

(l) Acceptable.

Article IV, Section 2

(a) See above.

(b)(1) Exhibit E
(2) through (4) Complete
(5) New ground water study supplied.
(6) Covered.
(7) Illustrated landscape plan supplied.
(8) through (10) Acceptable
(11) None required
(12). In 1979 EIS

(c)(1) through (4) Acceptable
(5) The processing plant will be centralized. Egress to 108th Ave. needs to be closed. A statement regarding the closure needs to be included in the application.
(6) Acceptable
(7) None

(8) Include closure of 108th Ave. access
(d)(1) Acceptable
(2)None
(3) Applicant needs to estimate a schedule and timeframe. At a minimum, the project duration of 28 years should be stated.

It was noted that the numbering system in the Clark Farm Earth Change Application does not follow the Earth Change Ordinance. The applicant should correct this.

This concluded specific review of the Clark Farm Application.

Steve Young – Noted there is no K value given for the Clark Farm in the Hydrogeological Study.

Nate Koella – It is included in Table 3 Summary.

Pay Bills

A motion was made by Travis Vugteveen and seconded by Michelle Gillespie to pay salaries for the Planning Commission for the January 24, 2023 meeting (six members present, one absent). The motion carried unanimously with one member absent.

Any and All Other Business That May Come Before the Board

Per the Planning Commission bylaws, the Annual Election of Officers is held at the first regular Planning Commission meeting of the year.

A motion was made by Travis Vugteveen and seconded by Michelle Gillespie to re-elect the current officers (Shawn Martinie Chairperson, Steve Young Vice-Chairperson, and Bill Maschewske Secretary).

A roll call vote was taken.
Michelle Gillespie – Yes
Lydia Brown – Yes
Bill Maschewske – Yes
Shawn Martinie – Yes
Steve Young – Yes
Travis Vugteveen – Yes
The motion carried unanimously with one member absent.

Steve Young – Is the Township's liability increased by the technical report he submitted without answers from the applicant?

Township Attorney Bultje – Yes, the applicants should answer the questions for the record.

Zoning Administrator Lovelace will request answers to the Steve Young technical report from the applicants.

Adjournment

A motion was made by Lydia Brown and seconded by Travis Vugteveen to adjourn the Planning Commission meeting at 9:40 PM.
The motion carried unanimously with one member absent.

Respectfully submitted,

Bill Maschewske, Secretary
Robinson Township Planning Commission

Attachments: Sign In Sheet for Planning Commission January 24, 2023 meeting.
Technical Report by Steve Young titled "Review Notes – Hydrogeologic Study Clark Farm, S &M Gravel 1/17/23

SIGN IN SHEET
Regular Meeting of the Planning Commission
January 24, 2023 at 7:00 pm

PRINT NAME	SIGNATURE
Frank Johnson	
Mark Sloothaak	
Phil Johnson	
Nate Kaella	

Review Notes - Hydrologic Study Clark Farm, S&M Gravel 1/17/23

Sample collection methods are important to get an understanding of actual subsurface conditions. Some collection methods are better than others because they preserve layering, structure, etc. The subsurface structure has a huge impact on permeability values because it affects how water flows through local subsurface material. For this reason, hyrdogeological assessments conducted for USEPA and EGLE require discrete sampling methods. This involves driving a sampler ahead of the hollow stem augers fitted with a plastic sheath and basket with fingers in the sampler tip. This method preserves a core from undisturbed material and prevents fine-grained material from leaking out below the water table.

This study did not use discrete sampling methods. Instead, samples were collected from material twisted up on the outside of the auger flights. This is an inexact method of sample collection because material is mixed from the tip of the auger to the ground surface and fine grained material is washed out by water. The exact sample interval must be estimated and fine grained material is lost below the water table. Samples collected from cuttings will be coarser than undisturbed material resulting in higher apparent hydraulic conductivity or permeability values (K). This will be important when calculating expected drawdowns.

Drawdown calculations rely on obtaining accurate hydraulic conductivity (k) and Transmissivity (T) information. The best methods of determining K and T values must incorporate actual subsurface variation, layering and boundary conditions (recharge and discharge areas). The only test method capable of evaluating actual site conditions is a long-term pump test with multiple observation wells. The second best method would be multiple single well response tests, which are capable of testing the immediate area around properly installed wells. A third potential method would be multiple laboratory permeability tests conducted on cores obtained by discrete samplers.

This hydrogeological study did not rely on any of the above methods presumably due to cost. Instead book permeability values were used from samples collected from auger flights. Hazen's Formula was developed in 1911 to compare properties of uniform filter media. It has been used to approximate permeability from geologic material samples because it is less expensive than conducting laboratory or field tests. Since the formula was not intended to be used for natural in-situ highly variable heterogeneous materials, it has limitations. Hazen and others have provided means to evaluate the formula's application to material based on particle size test results.

Below is a summary of information from the well logs and test results. D10 is called the effective grain size and is read from the test result particle size distribution curve. D10 represents the diameter of the grain size (mm) that is the lower 10% fraction. In other words, 90% of the sample is coarser. Hazen's formula may be used if D10 is between 0.1 and 3.0 mm. All samples meet this criteria but note that the sample collection method resulted in loss of fine grained material. D60/D10 is the Uniformity Coefficient, Hazen's Formula should not be applied to samples where D60/D10 > 5. The Uniformity Coefficient exceeds 5 for all samples in this data set. Based on the Uniformity Coefficients, Hazen's formula should not be applied to this data.

Well	Depth	k (Ft/Day)	D60	D30	D10	D60/D10
1S	9-10'	57	2.25	0.47	0.18	12.50
1D	11-12'	147	15.00	6.00	0.31	48.39
2	8-9'	67	1.20	0.42	0.20	6.00
3	8-9'		0.35	0.19	0.10	
4	38-39'	44	1.20	0.42	0.20	6.00
5	20-21'	94	1.70	0.40	0.20	8.50

6	21-22'	70	1.40	0.36	0.19	7.37
7	16-17'	67	1.00	0.40	0.19	5.26
8	10-11'	94	1.90	0.31	0.18	10.56
9	17-18'	131	6.00	1.00	0.29	20.69
10	16-19'	114	4.50	0.95	0.40	11.25
AVG		88.5				

Hazen's formula where k = hydraulic conductivity and C = Correlation Factor that may vary from 0.007 to 0.014 (200%) but is commonly taken as 0.01. The 200% variation illustrates why is using this method is an approximation at best.

$$\text{Hazen's Formula:} \quad k = C(D_{10})^2$$

My conclusion is that questionable sampling methods and questionable methods to determine the hydraulic conductivity or permeability (k) were used for this study. The resulting calculations using the k value need to be looked at with some skepticism and should have been presented as a range and not an absolute value.

Lakeshore used a corrected Theis equation to calculate expected drawdowns with the k value determined using Hazen's Formula.

$$\text{Theis Equation:} \quad S' = 114.6QW/T$$

Where T (Transmissivity) = hydraulic conductivity (k) * thickness of the aquifer

Note that hydraulic conductivity or permeability (k) is in the denominator of the Theis equation which was used to calculate drawdowns for this study. Since k is in the denominator, a larger value of k results in a smaller calculated drawdown. Remember that the samples were most likely coarser than test results because of sampling method losing fine grained material which should have resulted in higher k values. The Hazen Formula probably should not have been used based on the Uniformity Coefficient exceeding 5 for all samples in addition to other limitations inherent in the application of this method including a potential 200% error.

The calculations also assume that the site is isolated from all outside influences, i.e., no effect from the Grand River, other ponds, lakes or streams, wells, dry or wet periods, etc., which is the simplest possible approach.

In summary, the calculated drawdowns for this hydrogeological study were provided as fact or evidence that the project would not have deleterious effects on water levels. The results should have been provided as a range using the highest and lowest k values plus or minus the expected error in the values based on limitations of the sampling methods and application of Hazen's Formula. There was no discussion of the limitations or error in the methods used, which are substantial. The status of the conveyor tunnel constructed in 1974 under North Cedar should be evaluated. The tunnel may have included underdrains and the structure could serve as a rapid hydraulic connection to the Grand River. If the proposed lake has a hydraulic connection to the tunnel, the result could be rapid equilibration of lake levels to Grand River water levels. Despite myriad technical issues with this hydrogeological study, as long as the applicant and their consultant are responsible for damages from any deleterious effects caused by mining operations, approval may proceed. The lack of problems to date with the MME operation should be considered when evaluating potential adverse effects of the proposed Clark Farm operation, the status of the conveyor tunnel, notwithstanding.