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DATE: June 19, 2018
TO: Planning Commission
FROM: Zach Michels, Director of Planning & Zoning
RE: Zoning Ordinance Review- Water Quality & Quantity

Zoning Ordinance – Water Quality & Quantity

The Planning Commission forwarded a draft zoning ordinance to the Township Board on August 22, 2017, with a favorable recommendation. The Township Board has been reviewing the draft document since that time.

In early 2018, the Township Board has decided to remand several sections of the draft document back to the Planning Commission for further attention. The Planning commission has reviewed and provided guidance on those other sections, starting in March 2018, but it never discussed or took any action on §17.40: Water Quality and Quantity.

This report provides basic information about the applicable standards in the current Zoning ordinances, the standards that were forwarded as part of the draft zoning ordinance, and any changes that the Township Board has made. It also includes attachments of the actual text and other useful information.

Water Quality and Quantity

The current Zoning Ordinance includes some standards related to water quality. These standards are included in Article 24: Environmental Standards. However, these standards are scattered in several sections of that Article and do not always provide clear guidance for applicants or staff, nor do they do a particularly good job of protecting water quality in all conditions.

Before beginning work on the new zoning ordinance, planning staff reviewed and consulted the adopted Master Plan. There was tremendous support from the community for protection of wetlands and water. Of the survey responses, 78.2% stated that protection surface water quality of lakes and rivers was a high priority; 81.8% stated that protection of groundwater quality was a high priority; and 42.6% stated that storm water runoff was a high priority. The groundwater and surface water quality received the most support of all of the 16 items included in the community survey.



The above responses make sense, as all the potable drinking water within the Township is supplied by on-site or community wells and a large percentage of the population lives on or makes use of the waterbodies. Poor water quality could also have a negative impact on the use and enjoyment of the Township's waterbodies and the value of properties in the Township.

§17.40: Water Quality and Quantity was added to the draft zoning ordinance to address gaps in the current Zoning Ordinance language and the priorities identified in the adopted Master Plan. Many of these concerns are addressed in a community's engineering standards. Dexter Township, however, has not adopted engineering standards.

The Township Board voted *"to send §17.30 and §17.40 to the Planning Commission for further review, and deliberation in consideration of the memorandum submitted by Gajewski, and report back to the Township Board."*

The Planning Commission should prepare and provide a report back to the Township Board concerning this section.

The following materials are attached to this report for wetlands and water quality and quantity:

Article 24: Environmental Standards (*current Zoning Ordinance*);

§17.40: Water Quality and Quantity (*compiled August 7, 2017, as forwarded to the Township Board*);

Gajewski memorandi concerning wetlands and water quality and quantity.

Article 24

ENVIRONMENTAL STANDARDS

Section 24.01: PURPOSE

The purpose of this Article is to promote a healthy environment in Dexter Township as it relates to the Township's natural resources, sensitive ecosystems, the integrity of the Township's land, water, and air, and the quality of the Township's visual environment, including the management of outdoor lighting and its impact upon traffic safety, adjacent land uses and the night sky. All provisions of this Article apply to all structures and uses unless otherwise noted.

Section 24.02: NATURAL RESOURCES

A. Compliance with Local, County, State, and Federal Regulations: All land uses and construction activities shall conform with the provisions of this Ordinance and all county, state and federal regulations including, but not limited to, the following:

1. Published surface water drainage standards of the Washtenaw County Road Commission and Washtenaw County Drain Commissioner, except where not required by law and not determined to be applicable to the specific project during site plan review proceedings.
2. Applicable fire safety and emergency vehicle access requirements of the State Building Code, State Fire Marshall and Local Fire Code.
3. Soil erosion and sedimentation requirements of the Washtenaw County Drain Commissioner.
4. Requirements of the Michigan Department of Public Health and the Washtenaw County Health Department.
5. Michigan Department of Environmental Quality requirements for air or water quality protection, wetlands, stream crossings, fills in or near water bodies or in flood plains, and for waste disposal.
6. All local, county, state and federal regulations related to loading/unloading, transport, storage, use and/or disposal of hazardous substances.
7. Applicable rules and regulations of the Federal Communications Commission.

B. Discharges

1. No dust, fumes, or noxious, odorous matter shall be discernible at or beyond the property line except in the case of agricultural operations complying with the Michigan Commission on Agriculture's Generally Accepted Agricultural Management Practices. Any atmospheric discharge requiring a permit from the Michigan Department of Natural Resources or federal government shall have said permit(s) as a condition of approval for any use in this district. The escape of or emission of any gas which is injurious or destructive or explosive is prohibited.
2. It shall be unlawful to discharge at any point any materials in such a way or of such nature or temperature as can contaminate any surface waters, land or aquifers, or otherwise cause the emission of dangerous or objectionable elements, except in accord with standards approved by the Michigan Department of Natural Resources.
3. Radioactive emissions shall not exceed quantities or levels established as safe by state or federal regulations.

C. Sensitive Lands

1. Where a portion of a parcel is characterized by wetlands, hydric soils, flood plains, or steep slopes, new development on the parcel shall only occur on those portions of the parcel void of such sensitive resources where reasonably feasible.
2. The Township shall not approve any land use which requires a county, state, or federal permit, until such permit has been obtained and satisfactory evidence has been submitted verifying the acquisition of the necessary permits, or satisfactory evidence has been submitted to the approving body verifying the acquisition of such permit is not necessary.
3. The Township may require mitigation measures be taken to replace those resources disturbed or destroyed by a land use, or to otherwise lessen the impact of a new land use upon natural resources and sensitive areas.

D. Clearing, Grading, and Filling: In order to protect soil resources, adjacent properties, public roads, public watercourses, and to provide for adequate drainage of surface water, the following rules shall apply to all construction activities requiring permits pursuant to this Ordinance.

1. **Clearing of a Site:** Stripping and removal of topsoil from the site is prohibited prior to the completion of all approved site improvements and the seeding, sodding, and landscaping of all disturbed areas. "Disturbed areas," as applied to this section, shall be interpreted to mean any area of a lot which is altered by grading or other construction activities and which area is not proposed to be paved or otherwise built upon.
2. **Flow Restrictions:** The final grade surface of ground areas surrounding a building or structure shall be designed and landscaped such that surface water flow away from the building or structure and is managed in a manner which avoids increased flow onto adjacent properties or public roads, the erosion or filling of a roadside ditch, the blockage of a public watercourse or the creation of standing water over a private sewage disposal drainage field.
3. **Elevation Restrictions:** Filling a parcel of land to an elevation above the established grade of adjacent developed land is prohibited without the expressed written approval of the County Drain Commissioner, and approval by the Planning Commission.

Section 24.03: POTABLE WATER and SEWAGE DISPOSAL

Any structure for human occupancy and used for dwelling, businesses, industrial, recreational, institutional, mercantile or storage purposes shall not be erected, altered, used or moved upon any premises after the effective date of this Ordinance unless said structure shall be provided with a potable water supply and waste water disposal system that ensures a safe and effective means of collection, treatment, and disposal of human, commercial, and industrial wastes. All on-site sewage disposal and potable water facilities shall be constructed and maintained in accordance with the requirements and standards of the Washtenaw County Environmental Health Department as well as those of other applicable local, county, state, or federal agencies.

Section 24.04: LIGHTING

- A. For the purposes of this Section, the following terms and phrases shall be defined as follows:
 - 1. **Cut Off Angle:** An angle measured upward from nadir at the lowest point of the light source, beyond which no light, or only a limited amount of light, is permitted to penetrate. For example purposes, a cut off angle of ninety (90) degrees would create a horizontal plane at a height equal to the bottom of the light source, while a cut off angle of forty-five (45) degrees would extend from the ground directly below the light source, at nadir, to an angle midway between nadir and a cut off angle of ninety (90) degrees.
 - 2. **Light Source:** The primary source of a lighting fixture from which light is emanated, such as a light bulb or similar source.
 - 3. **Lighting Fixture:** All electrical, structural, and accessory parts of a device intended to cast light upon an outdoor area.
 - 4. **Nadir:** An imaginary vertical line extending from ground level to the bottom of the light source.
- B. No lighting shall in any way impair the safe movement of traffic on any street or highway.
- C. Screening shall be erected to prevent headlight glare from commercial or industrial land uses from shining onto adjacent residential property. No screening shall in any way impair safe vertical or horizontal sight distance for any moving vehicles, or be closer than thirty (30) feet to any street right of way line.
- D. In addition to 24.04(A) and (B) above, outdoor lighting or lighting designed to be seen from the exterior shall comply with the following standards except as provided for in Section 24.04(E) below:
 - 1. Lighting shall be designed and constructed to insure that direct and reflected light, unless part of a street lighting or access road lighting program, is confined to the lot or parcel upon which the light source is located.
 - 2. Lighting shall be so installed that the surface of the source of light shall be hooded or louvered so that the light source shall not be visible and shall be so arranged as far as practical to reflect light away from any residential use, and in no case shall more than one foot candle power of light cross a lot line five (5) feet above the ground in a residential district.
 - 3. Lighting fixtures shall have a one hundred (100) percent cut off angle above the horizontal plane at the lowest part of the light source so that light rays shall not be emitted by the fixture at any angle above this horizontal plane, as may be certified by photometric tests. The intensity of light at any angle above a cut off angle of seventy-five (75) degrees shall be less than ten (10) percent of the peak candle power for the light fixture.
 - 4. No light source shall exceed the height of the tallest structure on the lot or parcel, and in no case shall a light source exceed a height of twenty-five (25) feet, measured from the ground or pavement closest to the light source.
 - 5. All illuminated signage or any lighting associated with a sign shall be turned off between the hours of 10 p.m. and 5 a.m. If a non-residential use is open to patrons or members any time between the hours of 10 p.m. and 5 a.m., illuminated signage or any lighting associated with a sign may be kept on so long as such illumination meets the standards of the Township Ordinances and so long as such illumination is turned off during the hours the use is closed to patrons and members.
- E. Outdoor lighting which need not comply with the standards of Section 24.04(D) above shall be limited to:
 - 1. Residential lawn, dock, and decorative lighting provided the light source is less than six (6) feet in height from the closest ground or pavement.
 - 2. Seasonal lighting associated with holidays, such as Christmas and Halloween.
 - 3. Outdoor recreation and amusement areas, provided the light sources are mounted at a sufficient height, designed with baffling and glare guards to assure that no more than one foot candle power of light shall cross a lot line five (5) feet above the ground in a residential district, and turned off during hours the facility is closed to the public.
 - 4. Neon lighting for non-residential uses, provided it is turned off between the hours of 10 p.m. and 5 a.m. If a non-residential use is open to patrons or members any time between the hours of 10 p.m. and 5 a.m., neon lighting may be kept on so long as such illumination meets the standards of the Township Ordinances and so long as such illumination is turned off during the hours the use is closed to patrons and members.

Section 24.05: COMMERCIAL and INDUSTRIAL USES

All land uses and structures within commercial or industrial zoning districts shall conform to the following standards:

- A. No major repairs or refinishing shall be done outside of the principal structure.
- B. The intensity level of sounds shall not exceed the following decibel levels when adjacent to the following types of uses:

Decibels (dba)	Adjacent Use	Where Measured
55	Residential Dwellings	Common Lot Line
65	Commercial	Common Lot Line
70	Industrial and Other	Common Lot Line

Objectionable noises due to intermittence, beat frequency, or shrillness, shall be muffled so as not to become a nuisance to adjacent uses.

- C. All machinery shall be so mounted and operated as to prevent transmission of ground vibration exceeding a displacement of .003 of one inch measured by any lot line of its source.
- D. Any operation producing intense glare or heat shall be performed within an enclosure so as to completely obscure and shield such operation from direct view from any point along the lot line except during the period of construction of the facilities to be used and occupied.

Section 24.06: STORM WATER MANAGEMENT

- A. **On-Site Detention:** All lots shall retain storm water runoff on-site, or detain it so as to allow discharge without any impact on adjacent lands or surface water bodies. No land uses shall be permitted which will increase the rate of runoff discharge from a lot or parcel or otherwise cause erosion or direct sedimentation upon abutting properties including an abutting street or surface water body. No land uses shall be permitted which will reduce the level of service currently being provided by existing storm water management infrastructure or existing drainage patterns. Direct discharging of untreated storm water to a water body is prohibited.
- B. **Storm Water Standards for Plot Plans:** A storm water management plan shall be required for all plot plans that either do not comply with Section 24.06(A) or have impervious surface areas that exceed twenty percent (20%) of the lot.
 - 1. **Capacity:** All required storm water management systems shall be designed, installed, and maintained to capture and treat the first one (1) inch of storm water runoff from all existing and proposed impervious surfaces. For example purposes only, if a subject parcel has a lot coverage of 1,000 square feet and an impervious patio of 200 square feet, the site must have a storm water management system that can retain on-site or detain at least 100 cubic feet of storm water and allow the storm water to naturally permeate into the soil. The approving authority may require a more voluminous storm water management system if the proposed land use, slope, or underlying soil types are expected to increase the rate of runoff discharge from the parcel.
 - 2. **Storm Water Management Plan:** In addition to the data required for Plot Plans in Section 6.03(A), all required storm water management plans shall include the following data on the Plot Plan:
 - a) Current and proposed impervious surface area calculations.
 - b) Current and proposed storm water calculations. The amount of storm water created during a one (1) inch rain event shall be calculated. This volume is calculated by dividing impervious surface area by twelve (12).
 - c) Current and proposed locations of gutters, downspouts, and points of discharge.
 - d) Current storm water runoff patterns and flows, and any existing storm water management system(s) on the site. If the Township Engineer deems the existing storm water management system to be functional, the owner may deduct the amount of storm water that the existing system captures and treats in a one-inch rain event from the total required capacity.
 - e) Storm water volume calculations pursuant to Section 24.06(B)(1). The volume calculations shall use proposed void ratios of selected backfill material, if applicable.
 - f) Design, installation, and maintenance guidelines of proposed storm water management system. This system shall include one (1) or more of the Best Management Practices (BMPs) described in the “Low Impact Development Manual for Michigan: A Design Guide for Implementers and Reviewers,” published by the Southeast Michigan Council of Governments (<http://www.semcog.org>), or similar publication.
 - g) A maintenance schedule.
 - 3. **Performance Guarantee:** Prior to Dexter Township’s review of the storm water management plan, the applicant shall submit a performance guarantee (cash, certified check, irrevocable bank letter of credit, surety bond, or similar instrument acceptable to the Township Clerk) to Dexter Township per Section 3.05 of this ordinance. The amount of this performance guarantee shall be established by the Township Board of Trustees and shall be sufficient for Dexter Township to cover the plan review fees and subsequent field inspection fees of the Township Engineer in the event that the applicant fails to reimburse Dexter Township for them.
 - 4. **Review:** The storm water management plan shall be reviewed for compliance by the Zoning Administrator and the Township Engineer prior to issuance of a Zoning Permit. The property owner shall reimburse Dexter Township for the cost of the Township Engineer’s review(s).
 - 5. **Construction and Inspection:** All required storm water management systems shall be constructed in accordance with the approved plans. After all work has been completed, the storm water management system shall be inspected for compliance by the Zoning Administrator and the Township Engineer prior to final approval of the Zoning Permit. The property owner shall reimburse Dexter Township for the cost of the Township Engineer’s inspection(s).
 - 6. **Maintenance:** All storm water management systems required under this section shall be properly maintained so as to comply with the requirements herein. Prior to final approval of the Zoning Permit, the property owner shall sign and record with the Washtenaw County Register of Deeds a Storm Water Management Practices Maintenance Agreement on a form provided by Dexter Township. This Agreement shall also be binding on future property owners. Any proposed changes by the property owner to the storm water management system or the Agreement shall be reviewed and decided by Dexter Township in the same manner as a new application under the storm water management standards at the time the change is proposed.

End of Article 24

§17.40 - WATER QUALITY & QUANTITY

The following standards are intended to protect existing waterbodies and wetlands from negative impacts of polluted or excessive stormwater.

- (A) **Existing Features:** Existing waterbodies and wetlands shall be protected from damaging modifications and adverse changes in stormwater runoff quality and quantity associated with development or improvements.
- (B) **Special Significance:** Waterbodies and wetlands of special significance, including, but not limited to, forested wetlands, fens, wetlands associated with watercourses, and watercourses with intact native plant ecosystems shall be protected from development and the effects of development.
- (C) **Stormwater:** Stormwater discharge into existing waterbodies and wetlands shall not modify the existing water levels or flow rate.
- (D) **Direct Discharge:** Direct discharge of untreated stormwater into a waterbody or wetland shall be prohibited. Stormwater may only be discharged into a waterbody or wetland if it has been designed for that and will be pretreated by a sedimentation trap, sump, or basin to remove sediments and other pollutants. The sediment trap shall be constructed and stabilized before other site grading may take place.
- (E) **Construction:** Stormwater treatment facilities shall be installed as soon as possible during construction.
- (F) **Impacts:** Any proposed impacts to waterbodies and wetlands shall be permitted by and adhere to applicable regulations of the Department of Environmental Quality or Water Resources Commissioner.

§17.45 - STORMWATER MANAGEMENT

The following standards apply whenever there is an increase in impervious coverage on a property in order to protect the quality of waterbodies and wetlands and the general environment in the Township.

- (A) **General Provisions:** All properties shall comply with the following standards for stormwater.
 - (1) **Pretreatment:** Stormwater shall not be discharged directly into a waterbody or wetland without some form of pretreatment to remove sediments and other pollutants, as outlined in §17.40(D): Direct Discharge.
 - (2) **On-site Detention:** All sites shall retain stormwater onsite or shall detain it to allow discharge without a negative impact on adjacent properties, streets, waterbodies, or wetlands.
 - (3) **Natural Drainage Patterns:** Alterations to natural drainage patterns shall not increase runoff, create flooding, or contribute water pollution to adjacent or downstream lands.
 - (4) **Adverse Impacts:** Stormwater shall be managed in a manner to prevent flood hazards and water pollution related to runoff, soil erosion, and channel erosion.
 - (5) **Level of Service:** Land shall not be altered in a manner that will reduce the level of service currently being provided by an existing storm water system or the natural drainage patterns.

Memo from Bill Gajewski
Hills to Die On:

I move to change section 17.40 WATER QUALITY & QUANTITY (A) thru (F) to read as follows:

Section 17.40 – WATER QUALITY:

(A) **Existing Features:** Existing waterbodies shall be protected from damaging modifications and adverse changes in stormwater runoff quality associated with development or improvements. (period – delete the rest)

DISCUSSION: The proposed draft adds NEW regulations & contains falsehoods.

Environmental Regulation 17.40(B) Special Significance states: “Wetlands of **Special Significance** include **Forested Wetlands.**”

Forested wetlands are NOT of *Special Significance*. They are the *most common wetland* type in Southern Michigan ... a Calcareous Fen Wetland is in fact a rare wetland type of “Special Significance.”

That begs the question: Is this distortion an attempt to micromanage even the *most common wetland* type by elevating its importance?

17.40 (D) Direct Discharge:

- Supreme Court ruled that surface waters include permanent, flowing lakes, rivers, streams & oceans ... NOT wetlands that are intermittent & ephemeral i.e. short lived.
- Wetlands are not Surface Waters.
- There are NO *Water Quality Standards* for wetlands
- Wetlands ARE nutrient sinks & sponges.
- 17.40(D) Direct Discharge: All wetlands are “designed for that.” Wetlands ARE nutrient sinks & sponges as Little Portage Lake wetlands that are used for tertiary treatment of sewage effluent.
- Direct discharge of up to 240,000 gallons per day into Little Portage Lake wetlands for tertiary sewage treatment also destroyed wetland biodiversity creating a cattail monoculture.
- MDEQ allowed Direct Discharge into the Little Portage Lake Wetlands, that includes a rare calcareous fen wetland. MDEQ said that’s absolutely allowed because ... there is **no water quality standards** for wetlands & wetlands are **not Surface Waters**. Therefore **Federal CWA section 402** allows *direct discharge* into those wetlands. NO NPDES permit is therefore required. Wetlands are nutrient sinks.

That begs the question: How will Zach’s wetland water quality regulation & setbacks help the wetlands of Little Portage Lake?? Restrictions on Little Portage Lake Wetlands are simply NOT REASONABLE. It does not benefit the ENTIRE COMMUNITY & there is NO NEED or PURPOSE & as required by Law. Zach is not following proper legal protocol in his effort for excessive Environmental Protectionism.

17.40 (E) Construction: ... not needed ... it’s the purview of CACA – Soil Erosion & Sedimentation.

17.40 (F) Impacts: Another regulatory bureaucracy not needed.