

ARTICLE XX

ENVIRONMENTAL

§ ##.05 - INTENT & PURPOSE

The intent and purpose of this Article is to:

- (A) Promote a safe and healthy environment within the Township;
- (B) Protect the Township's natural resources and sensitive ecosystems;
- (C) Protect the integrity and quality of the Township's land, water, and air;
- (D) Preserve the short-term and long-term environmental health, safety, and quality of the Township; and
- (E) Ensure adequate drainage that does not negatively impact adjacent properties or waterbodies.

§ ##.10 - PERFORMANCE STANDARDS

All uses and structures shall be used and occupied in a manner to prevent any dangerous, injurious, noxious, or otherwise objectionable element or condition and shall meet the following performance standards.

- (A) **Sound:** Activities shall not create measurable sound levels that are unreasonably loud, that unreasonably interfere with the peace and enjoyment of others, or that exceed the maximum sound level outlined in this Section.
- (1) *Measurement Method:* The measuring equipment and methods shall conform to the latest American National Standards Institute specifications. The A-weighted filter shall be used when making measurements.
 - (2) *Measurement Location:* Measurements shall be made at lot lines, rights-of-way, and the ordinary high-water mark. When there are residential and nonresidential uses on a property site, the residential sound level shall be measured at the residentially-used portion of the property.
 - (3) *Maximum Sound Levels:* Sound levels shall not exceed the limits set forth in the following table, except as noted otherwise in this Section.

Table x.10(A)(3)- Maximum Sound Levels

Use of Receiving Property	Time	Sound Level
a. Residential	7:00 am to 7:00 pm	65 db(A)
	7:00 pm to 10:00 pm	60 db(A)
	10:00 pm to 7:00 am	55 db(A)
b. Nonresidential	7:00 am to 10:00 pm	70 db(A)
	10:00 pm to 7:00 am	60 db(A)

- (4) *Background Noise:* When the background noise level exceeds the maximum sound level, the maximum sound level may exceed the above standards but shall not exceed the background sound level.
- (5) *Intermittent or Other Unreasonable Sounds:* Intermittent sounds or sounds characterized by a pure tone shall be prohibited when found to unreasonably interfere with the peace and comfort of others, even if the sound does not exceed the maximum sound level. The following shall be considered when determining if an intermittent or pure tone sound is excessive:
- a. *Sleeping Facilities:* The proximity of the sound to sleeping quarters;
 - b. *Nature of Sound:* The nature of the activity from which the sound is generated and the area where the sound is received;
 - c. *Time:* The time when the sound occurs; and
 - d. *Duration:* The duration of the sound.
- (6) *Exemptions:* The maximum sound levels shall not apply to the following activities when they occur in a legally-accepted manner:
- a. *Construction:* Construction activity between the hours of 7:00 am and 8:00 pm, unless greater hours are authorized in a development agreement;
 - b. *Emergency Work:* The performance of emergency work, including, but not limited to, snow and tree removal;
 - b.c. *Emergency Generators:* The use of emergency generators during a power outage or during required exercising;
 - e.d. *Warning Devices:* Warning devices necessary for public safety, including, but not limited to, police, fire, and ambulance sirens and tornado and civil warning devices;
 - d.e. *Lawn Care:* Lawn care and yard maintenance between the hours of 8:00 am and 9:00 pm.
Places of Worship: The operation of any organ, bell, chime, speaker, or other similar means of announcing religious services at a place of worship between the hours of 8:00 am and 9:00 pm no more than five (5) times per day with a maximum duration of two (2) minutes each time;
 - e.f. *Shooting Ranges:* Established, private shooting ranges;
 - f.g. *Human Voice:* The unamplified human voice; and
 - g.h. *Public Work:* Public works maintenance, repair, or improvement projects conducted by or on behalf of a public agency.
- (B) *Vibrations:* Vibrations that can be detected without the aid of instruments on adjacent lots or rights-of-way shall be prohibited. ~~This shall not apply to public works projects conducted by or on behalf of a public agency.~~
- (C) *Smoke:* The discharge of smoke from any source ~~in a density greater than that allowed by state or federal law,~~ in a manner that causes injury, detriment, or nuisance to the public; or in a manner that causes injury or damage to property shall be prohibited.
- (D) *Odor:* The ~~creation or~~ release of any odor of such an intensity and character that it is detrimental to the health and welfare of the public or that it interferes with the reasonable comfort of the public shall be prohibited. This shall not apply to commercial agriculture operations that comply with the applicable Generally Accepted Agricultural Management Practices.

(E) **Gasses:** The release of any gas that is injurious, destructive, or harmful to people or property or explosive shall be prohibited.

(F) **Radiation:** Activities shall not emit dangerous radioactivity at any time.

~~(F)(G)~~ **Electrical Disturbances:** ~~Activities shall not emit~~ unreasonable electrical disturbances at any time.

~~(G)(H)~~ **Glare & Heat:** Activities shall not create glare or heat that is visible or can be felt from any adjacent property or any right-of-way.

~~(H)(I)~~ **Fire & Safety:** Any activity that involves the use or storage of flammable or explosive materials shall be protected by adequate firefighting and fire suppression equipment and by safety devices that are normally used in the handling of the material. The flammable or explosive material shall be kept from adjacent activities, lot lines, and public spaces a distance that is compatible with the potential danger.

~~(I)(J)~~ **Hazardous Substances:** The storage, handling, or use of non-household hazardous materials shall meet state and federal requirements for storage, spill prevention, record keeping, emergency response, transportation, and disposal. ~~the following standards.~~

~~(1) **Containment:** Hazardous substance storage or areas in which hazardous substances are used shall be designed to prevent spills and discharges to the air, soil, groundwater, waterbodies, and wetlands.~~

~~(2) **Secondary Containment:** When hazardous substances are stored or used above ground, a secondary containment shall be provided of sufficient size to store the substance for the amount of time necessary to recover the substance.~~

~~(3) **State & Federal:** State and federal requirements for storage, spill prevention, record keeping, emergency response, transportation, and disposal of hazardous substances shall be met.~~

§ ##.15 - POTABLE WATER

Any building, structure, area, or use constructed, altered, or maintained for human occupancy, use, or assembly shall be provided with adequate facilities for potable water provided by an individual well, community well, or municipal water system.

(A) **Individual Wells:** Individual wells for potable water supply ~~shall not be located within an area covered by a municipal water or community well system and~~ shall be reviewed and approved by the Environmental Health Department for compliance with applicable laws and regulations.

(B) **Community Wells:** Community wells for potable water supply ~~shall not be located within an area covered by a municipal water system and~~ shall be reviewed and approved by the Environmental Health Department for compliance with applicable laws and regulations.

(1) **Ownership:** Community wells shall be owned by a limited liability ~~corporation~~ entity controlled by the home owners' association, property owner, or a municipal water system following completion of construction.

(2) **Operation:** Community wells shall be maintained and operated by a licensed operator.

(3) **Maintenance Agreement:** Approval of a community well shall require a maintenance agreement in a form approved by the Township and recorded with the Register of Deeds.

a. **System Details:** The maintenance agreement shall outline details for the operation, maintenance, monitoring, and replacement of the community well.

- b. *Approval:* The maintenance agreement shall be approved by the Township Board.
 - c. *Expenses:* The maintenance agreement shall outline the financial responsibilities for the operation, maintenance, and replacement of the community well and for any damages or losses resulting ~~for from~~ a system failure.
 - d. *Maintenance Fund:* A maintenance fund shall be created to pay for the anticipated operation, maintenance, and replacement costs of the community well.
 - e. *Notice:* The maintenance agreement shall be provided as part of the purchase disclosure.
 - f. *Amendment:* The maintenance agreement shall only be amended with the Township's approval.
- (4) *Special Assessment District:* A special assessment district shall be created before construction to allow the Township to collect money for the operation, maintenance, or replacement of the community well if the responsible entity fails to do so.

~~(C) *Municipal Water System:* Properties located within an area covered by a municipal water system shall be connected to that municipal water system.~~

§ ##.20 - SEWAGE

Any building, structure, area, or use constructed, altered, or maintained for human occupancy, use, or assembly shall be provided with safe and sanitary collection, treatment, and disposal of human excreta together with all liquid and solid wastes that could hazard the public health or create objectionable nuisance conditions by an individual septic system, community sewage system, or municipal sewer system.

- (A) *Individual Septic Systems:* Individual septic systems ~~shall not be located within an area covered by a municipal or community sewage system and~~ shall be reviewed and approved by the Environmental Health Department for compliance with applicable laws and regulations.
- (B) *Community Sewage Systems:* Community sewage systems shall only be located in areas where individual septic systems are not possible due to soil characteristics and ~~outside of areas within a municipal sewer system coverage area. They~~ shall be reviewed and approved by the Environmental Health Department for compliance with applicable laws and regulations.
 - (1) *Setbacks:* All above-ground components of a community sewage system, except for control boxes, shall be at least three hundred (300) feet from nonparticipating lot lines, dwelling units, and street rights-of-way.
 - (2) *Screening:* All above ground components of a community sewage system, except for control boxes, shall be secured by fencing and screened by landscaping.
 - (3) *Open Space:* The drain field and reserve drain field shall not be ~~considered counted towards any~~ open space area bonus ~~and shall not be used for park land, recreation areas, or other purposes.~~
 - (4) *Ownership:* Community sewage systems shall be owned by a limited liability corporation controlled by the home owners' association, property owner, or a municipal sewage system following completion of construction.
 - (5) *Operation:* Community sewage systems shall be maintained and operated by a licensed operator.
 - (6) *Maintenance Agreement:* Approval of a community sewage system shall require a maintenance agreement in a form approved by the Township and recorded with the Register of Deeds.

- a. *System Details:* The maintenance agreement shall outline details for the operation, maintenance, monitoring, and replacement of the community sewage system.
 - b. *Approval:* The maintenance agreement shall be approved by the Township Board.
 - c. *Expenses:* The maintenance agreement shall outline the financial responsibilities for the operation, maintenance, and replacement of the community sewage system and for any damages or losses resulting ~~for~~ from a system failure.
 - d. *Maintenance Fund:* A maintenance fund shall be created to pay for the anticipated operation, maintenance, and replacement costs of the community sewage system.
 - e. *Notice:* The maintenance agreement shall be provided as part of the purchase disclosure.
 - f. *Amendment:* The maintenance agreement shall only be amended with the Township's approval.
- (7) *Special Assessment District:* A special assessment district shall be created before construction to allow the Township to collect money for operation, maintenance, or replacement of the sewage system if the responsible entity fails to do so.

~~(C) *Municipal Sewage System:* Properties located within an area covered by a municipal sewer system shall be connected to that municipal sewer system.~~

§ ##.25 - GRADING & CLEARING

Grading and clearing shall meet the following standards in order to protect soil resources, adjacent properties, streets, and waterbodies and to provide for adequate drainage of surface water.

- (A) *Topographical Alteration:* Cutting, filling, and grading shall be minimized, and the natural topography of the site shall be preserved to the maximum extent practicable. This shall not be intended to prevent alterations for landscaping or grading to direct stormwater from structures.
- (B) *Flow Restrictions:* All structures shall be constructed at an elevation that provides for the final grade adjacent to the structure to slope away from the structure, draining stormwater away to a natural or established drainage course in a manner that avoids increased flow onto adjacent properties or streets, the erosion or filling of a ditch, the blockage of a public watercourse, or the creation of standing water over any sewage drainage field.
- (C) *Construction Drainage:* Adjacent properties shall not be burdened with drainage from a property on which construction is taking place. (OR §x.40 Water Quality and Quantity or §x.45 Stormwater)
- ~~(D) *Elevation Changes:* Increasing the elevation of a property to an elevation above the established grade of adjacent, developed property shall be prohibited without the express, written approval of the Water Resources Commissioner and Planning Commission approval.~~
- ~~(E)~~ (D) *Yard Slopes:* All required yards shall be maintained at a slope to cause the flow of surface waters to existing drainage systems without causing any ponding or flooding upon adjacent lands resulting from any change in elevation. This shall not prevent the grading of a yard into landscaped depressions or terraced areas where adequate and safe means for the disposal of surface waters are installed and maintained.
- ~~(E)~~ (E) *New Construction Elevation Changes:* ~~When a new structure is constructed on a vacant lot adjacent to any lot with an existing building, the yard Yards around the new structure~~ shall be graded to meet the existing grades along lot lines and allow surface water drainage without encroachment

onto adjacent properties, except for runoff that follows existing drainage patterns. The grade along lot lines may be adjusted with written consent of all affected property owners.

~~(G)~~ **Grade Approval:** Final grades shall be determined and approved by the Director of Planning and Zoning, Township Engineer, or Township Planning Commission.

~~(H)~~ ~~(F)~~ **Clearing of a Site:** Striping and removal of topsoil from a site shall be prohibited before the completion of all necessary mitigation measures to prevent erosion and sedimentation.

~~(H)~~ ~~(G)~~ **Performance Guarantee:** The Township may require a developer, contractor, or property owner to deposit a performance guarantee to cover the anticipated cost of grading.

~~(J)~~ ~~(H)~~ **Final Certificate of Zoning Compliance:** A final certificate of zoning compliance shall not be issued until the final grading is completed and stabilized or a performance guarantee has been ~~given~~ submitted to the Township to cover the anticipated cost of grading.

§ ##.30 - WETLANDS

The following standards are intended to protect wetlands and ensure they continue to benefit Township residents and the environment.

(A) Identification: The wetland map for Washtenaw County, as prepared by the Department of Environmental Quality using information from the National Wetland Inventory, land cover, and soils, shall serve as the base for the extent of wetlands.

(B) Delineation: If there is disagreement over the extent of wetlands, an applicant may submit a wetland delineation prepared by the Department of Environmental Quality Wetland Identification Program or by an experienced wetland consultant. The delineation shall be at the applicant's expense.

(C) Setbacks: All buildings shall be at least twenty-five (25) feet from wetlands. All other structures, except for boardwalks, shall be at least 10 feet from wetlands. Driveways may be located closer if a wetland permit has been issued by the Department of Environmental Quality.

(D) Vegetative Strip: A vegetative strip at least ten (10) feet wide shall be maintained around wetlands.

(E) Construction Protection: Wetlands shall be protected from stormwater runoff and sedimentation during construction.

(F) Stormwater: Wetlands shall only be used for stormwater retention if the stormwater is pretreated by a sediment trap or basin to remove sediments and pollutants and if the stormwater will not modify existing water levels. The trap shall be constructed and stabilized before other site grading may take place.

(G) Mitigation: Mitigation shall be required whenever alterations are made to or wetland area is reduced by five hundred (500) or more square feet from what originally existed. Mitigation shall only be considered when no feasible and prudent alternative exists to avoid the impacts to it is not possible to avoid or alteration of an existing wetland and the applicant has used all practical means to minimize impacts to existing wetlands.

(1) Location: Mitigation shall be provided on-site, where practical and beneficial. If it is not possible on-site, the mitigation shall be in the immediate vicinity, within the same watershed.

(2) Ratio: Mitigation shall be at a ratio of at least one point five (1.5) new acres to one (1) lost acre.

(3) Restoration: The restoration of previously existing wetlands is preferred and may be done at a ratio of one (1) restored acre to one (1) acre lost.

~~(2)~~(4) State-Required Mitigation: Any mitigation or restoration required by the state shall count towards the mitigation or restoration required by this Ordinance.

§ ##.35 - SOIL EROSION & SEDIMENTATION CONTROL

The following soil erosion and sedimentation control standards shall be met, in addition to other standards enforced by the Soil Erosion Control Officer, in order to protect ~~the~~ property, streets, waterbodies, and wetlands.

- (A) **Off-site Sedimentation:** All development and earth changes shall be conducted in a manner to prevent erosion and the discharge of sedimentation from the site.
- (B) **Disturbed Area Duration:** All development and earth changes shall be designed, constructed, and completed so that the exposed area of any disturbed land is limited to the shortest possible period of time.
- (C) **Waterbodies & Wetlands:** Appropriate measures shall be taken to prevent erosion and sedimentation into waterbodies and wetlands.
- (D) **Soil Erosion & Sedimentation Control Standards:** All development and earth changes shall comply with the soil erosion and sedimentation control standards enforced by the Soil Erosion Control Officer.

§ ##.40 - WATER QUALITY & QUANTITY

The following standards are intended to protect existing water features from negative impacts of polluted or excessive stormwater.

- (A) **Existing Features:** Existing water features shall be protected from damaging modifications and adverse changes in stormwater runoff quality and quantity associated with development or improvements.
- (B) **Special Significance:** Water features of special significance, including, but not limited to, forested wetlands, 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 water features shall not modify the existing water levels or flows.
- (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.
- (E) **Construction:** Any stormwater treatment facilities shall be installed as soon as possible during construction.
- (F) **Impacts:** Any proposed impacts to water features shall be permitted by and adhere to applicable regulations of the Department of Environmental Quality or Water Resources Commissioner.

§ ##.45 - STORMWATER MANAGEMENT

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

(A) **General Provisions:** All properties shall comply ~~to~~with the following standards for stormwater.

- (1) *Onsite Detention:* All sites shall retain stormwater onsite or shall detain it to allow discharge without a negative impact on adjacent properties, waterbodies, or wetlands.
- (2) *Natural Drainage Patterns:* Alterations to natural drainage patterns shall not increase runoff, create flooding, or contribute water pollution to adjacent or downstream lands.
- (3) *Adverse Impacts:* Stormwater shall be managed in a manner to prevent flood hazards and water pollution related to runoff, soil erosion, and channel erosion.
- (4) *Pretreatment:* Stormwater shall not be discharged directly into a waterbody or wetland without some form of pretreatment to remove sediments and other pollutants.
- (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.
- (6) *Increased Volume:* Any increase volume of runoff shall not create adverse impacts to adjacent properties, roads, waterbodies, or wetlands.
- (7) *Swales:* Stormwater shall be conveyed through swales and vegetated buffer strips, to the greatest extent practicable, in order to decrease velocity, allow for natural infiltration, encourage passive storage, allow suspended sediment particles to settle, and to remove pollutants.

(B) **Plot Plans:** In addition to the general provisions above, the following standards shall apply to all plot plans that have an impervious coverage of twenty (20) percent or more, unless they are part of an overall site plan with an overall stormwater management system.

- (1) *Stormwater Management Plan:* A stormwater management plan shall be submitted and shall include the following:
 - a. *Application Form:* A signed and completed application form;
 - b. *Fee or Deposit:* An application fee or deposit, as outlined in the adopted fee schedule;
 - c. *Calculations:* Calculations showing the current and proposed impervious coverage, calculations for the volume of stormwater created during a **one (1) inch rain event**, and calculations for the stormwater storage volume calculations;
 - d. *Plan:* A plan showing the flow of water on the site and the location of gutters, downspouts, swales, pipes, cleanouts, and water storage areas;
 - e. *Maintenance Plan:* A plan describing the maintenance of the stormwater system;
 - f. *Additional Materials:* Any additional information determined necessary by the Director of Planning and Zoning; and
 - g. *Complete and Accurate:* Submission of an application constitutes a representation that all the information is complete and accurate.
- (2) *Capacity:* Stormwater systems shall be designed, installed, and maintained to capture and treat at least the first **one (1) inch of stormwater runoff** from all existing and proposed impervious surfaces. A greater volume may be required if the proposed land use, slope, or underlying soil types are expected to increase the runoff discharge from the site.

- (3) *Performance Guarantee:* Before review of a stormwater management plan, the Township may require submission of a performance guarantee, as outlined in Article XX.
 - (4) *Review:* The stormwater management plan shall be reviewed and approved by the Director of Planning and Zoning and the Township Engineer.
 - (5) *Zoning Permit/Preliminary Certificate of Zoning Compliance:* The stormwater management plan shall be approved before issuance of any zoning permit or preliminary certificate of zoning compliance.
 - (6) *Construction & Inspection:* All required stormwater management systems shall be constructed and installed consistent with the approved plans. It shall be the applicant's responsibility to contact the Township to arrange for inspections.
 - (7) *Maintenance:* All required stormwater management systems shall be properly maintained to ensure they function as designed.
 - (8) *Final Certificate of Zoning Compliance:* The stormwater management system shall be installed and shall be approved by the Township Engineer before the final certificate of zoning compliance may be issued.
- (C) *Site Plans:* In addition to the general provisions above, all site plans shall meet or exceed the Water Resources Commissioner's design standards.

§ ##.50 - HAZARDOUS MATERIALS & FUEL STORAGE

Hazardous material and fuel storage shall meet the following standards.

- (A) *Above-Ground Storage Tanks:* Above-ground storage tanks shall have a maximum capacity of three hundred (300) gallons, shall be located at least seventy-five (75) feet from any lot line or occupied building, and shall be mounted on a solid concrete slab. An impervious surface large enough to contain any liquids and prevent it from contaminating groundwater shall be provided.
- (B) *Under-Ground Storage Tanks:* Under-ground storage tanks shall meet the minimum separation distances to wells that are outlined in the Department of Environmental Quality Remediation Division Underground-Storage Tank Regulations and shall be enclosed by an impervious envelope adequate to prevent liquid from the tank from contaminating groundwater.
- ~~(C)~~ *Hazardous Materials Ponds:* here???
- ~~(D)~~(C) *Secondary Containment:* Uses that use, store, or handle a hazardous material shall provide secondary containment facilities and documentation of compliance with applicable state and federal regulations.
- ~~(E)~~(D) *Pollution Incident Prevention Plan:* Uses that use, store, or handle a hazardous material shall provide a pollution incident prevention plan, with the following information:
 - (1) *Discharge:* A description of any discharge of any type of water into any surface water body or groundwater;
 - (2) *Storage:* A description of storage of any hazardous materials, including its common name, name of chemical components, material safety data sheet, location, maximum quantity expected on-site, type of storage containers or base material, and anticipated procedures for use and handling;

- (3) *Disposal*: A description of the transportation, on-site treatment, storage, or disposal of hazardous waste generated in quantities of at least two hundred fifty (250) gallons or two thousand two hundred (2,200) pounds per month;
- (4) *Secondary Containment*: A description of any secondary containment measures, including design, construction materials and specifications, volume, and security measures;
- (5) *Contacts*: The name and contact information of the individual responsible for materials that will be available twenty-four (24) hours a day and updated in a timely manner; and
- (6) *Other Information*: Other information determined necessary by the Director of Planning and Zoning to ensure the hazardous materials will not pose a negative impact on the health, safety, or welfare of residents and the environment.

End of Article xx.

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