

## **Section 12.4 Storm Water Management**

**A. Construction Liability:** During the construction process, both the owner of the property involved and the contractor doing the work shall be jointly and severally responsible and liable for storm water runoff, flooding, or other water problems or damages to other properties or public roads caused by or attributable to such construction. The Zoning Administrator shall have the authority to suspend or revoke a zoning compliance permit should the requirements of this section be violated. No such suspended or revoked zoning compliance permit shall be reinstated until the property owner posts monetary security with the Township as determined by the Zoning Administrator. Once construction has been completed and thereafter, the owner of the property involved shall be responsible for ensuring that drainage and storm water from that property do not adversely impact adjoining properties, lakes, streams, or wetlands.

**B. Drainage Plans:** In the case of a use subject to site plan approval, the site plan submittal shall include a drainage and storm water runoff site plan for review by designated site plan review bodies. Such submittal shall be prepared and signed by a registered engineer and shall include the final contours and drainage patterns after the construction has been completed. The submittal shall indicate what site plan measures shall ensure compliance with this Ordinance including this Section. The site plan approving body may require changes to such drainage and storm water runoff site development plan prior to the approval of such drainage and storm water runoff site development plan and prior to the issuance of a zoning permit. The applicant shall reimburse the Township for any reasonable fees and cost incurred by the Township's reliance on a professional engineer or other qualified professional requested by the Township to review such plan. The landowner shall fully comply with any drainage and storm water runoff site plan as approved by the Township.

1. In the case of a use subject to plot plan approval according to Section 2.4, the Zoning Administrator may require a drainage plan where on-site or adjacent conditions, and the proposed modifications, raise reasonable concerns about adequately addressing storm water including erosion, flooding, and off-site impacts.

**C. General Standards:** Uses shall be designed, constructed, and maintained to prevent flooding, protect water quality, reduce soil erosion, maintain and improve wildlife habitat, and contribute to the aesthetic values of the project. In meeting these requirements, uses subject to site plan approval according to Article 14 shall comply with all of the following standards:

1. All storm water drainage and erosion control plans shall meet the rules and regulations of the County Drain Commissioner and any additional regulations as this or other ordinance may provide, including standards pertaining to discharge volumes and the design of retention and detention areas. Compliance with such standards shall, to the maximum extent feasible, utilize nonstructural control techniques such as limitation of land disturbance and grading; maintenance of vegetated buffers and natural vegetation; minimization of impervious surfaces; use of terraces, contoured landscapes, runoff spreaders, and grass or rock-lined swales; and use of infiltration devices.
2. The particular facilities and measures required on-site shall reflect and incorporate existing topographic conditions, natural features, wetlands, and watercourses on the site.
3. Storm water management systems shall be designed to prevent flooding and the degradation of water quality related to storm water runoff and soil erosion from proposed development for adjacent and downstream property owners.
4. Site development and storm water management systems shall maintain natural drainage patterns and watercourses.
5. The conveyance of storm water shall rely on swales and vegetated buffer strips to the greatest extent feasible and practical.
6. Drainage systems shall be designed to be visually attractive including the integration of storm water conveyance systems and retention and detention ponds into the overall landscape concept. Ponds shall be designed to be naturally contoured, rather than a square or rectangular design.
7. It shall be prohibited to increase the rate or quantity of runoff upon adjacent properties or public roads, to cause erosion or filling of a roadside ditch, stream or other water body, to block a public watercourse, or create standing water over a sewage disposal drainage field.
8. Whenever a landowner is required to provide on-site storm water retention and/or surface drainage to wetlands, or whenever other protective environmental measures including monitoring

devices are required, such measures or facilities shall be provided and maintained at the landowner's expense. The landowner shall provide satisfactory assurance to the Township, by written agreement, that the landowner shall bear the responsibility for providing and maintaining such measures or facilities.

9. Sand, dirt and similar materials shall not be used to build up or add to the natural grade of the land in connection with the installation, building, or expansion of a building or structure if such alteration would unreasonably increase water runoff or drainage onto one or more adjoining properties due to the amount, concentration, or flowage rate of runoff waters, or otherwise present a safety hazard to children or pedestrians. In the case of a use, building or structure subject to plot plan review according to Section 2.4(B), any party aggrieved by the decision of the Zoning Administrator under this section may appeal that determination to the Zoning Board of Appeals within the time limits and procedures specified in Article 16 of this Ordinance.

**D. Minimizing Storm Water Runoff**

1. Roads constructed as part of a subdivision or similar unified development shall be designed to minimize storm waste runoff such as limiting road paving to the minimum necessary width, including cul-de-sacs, while adequately addressing anticipated traffic levels, on-street parking, and emergency vehicle needs.
2. Roof-top runoff shall be directed to pervious areas such as lawns, open channels, or other vegetated areas.
3. Clearing and grading shall be limited to only those locations approved for such landscape alterations as delineated on the approved site plan.

**E. Use of Wetlands:** Wetlands may be used for storm water management if all the following conditions are met:

1. All runoff from the development will be pre-treated to remove sediment and other pollutants prior to discharge to a wetland. Such treatment facilities shall be constructed before property grading begins. Storm water runoff discharged to wetlands must be diffused to non-erosive velocities before it reaches the wetland. Direct discharge of untreated storm water to a natural wetland is prohibited.
2. Wildlife, fish, or other beneficial aquatic organisms and their habitat in the wetland shall not be impaired.
3. The wetland has sufficient holding capacity for storm water, based on calculations prepared by the applicant and approved by the township after consultation with an engineer of applicable expertise.
4. Adequate on-site erosion control is provided to protect the natural functioning of the wetland.
5. Adequate private restrictions are established, such as a conservation easement over the wetlands, to insure that the wetland is not disturbed or impaired in the future relative to the needed storage capacity.
6. Applicable permits from the Michigan Department of Environmental Quality and any other agency of jurisdiction are obtained.