

ARTICLE 15**NATURAL FEATURES PRESERVATION**

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SECTION 15.01 INTENT

10 A. These natural features preservation regulations are intended to provide for a balance
between reasonable and responsible use of the land and protection of Township natural
resources and features. These regulations are further intended to advance environmental
stewardship goals identified in Township-wide, watershed-wide, and regional planning
efforts such as, but not limited to, the Highland Township Master Plan, the
Shiawassee/Huron Headwaters Resource Preservation Project, the Kent Lake/Upper
Huron River Watershed Management Plan and similar applicable watershed plans, and
15 the Highland Township Green Infrastructure Plan.

20 This ordinance encourages and promotes the conservation and preservation of significant
and sensitive natural features on properties within Highland Township. Significant and
sensitive natural features shall include but not be limited to; lakes, streams, wetlands,
flood plains, natural drainage courses, significant woodlands and lands containing
significant trees and vegetation, lands with steep slopes and significantly varying
topography habitat of rare or endangered animal or plant species and other significant
existing natural land features.

25 This ordinance is further intended to promote low impact development design principles
that encourage responsible stewardship of natural resources and which result in facilities
that are visually complementary to a natural setting. This Ordinance provides the
flexibility to allow functionally equivalent alternatives for street design, stormwater
management, and similar site elements, provided that the resultant design minimizes the
30 detrimental impacts associated with development and mitigates those impacts where
feasible, thus securing the benefits of natural areas for the community. The Low Impact
Development Manual for Michigan published by the Southeast Michigan Council of
Governments (SEMCOG) provides guidelines and examples of best management
practices for consideration of designers and developers.

35 The process through which the Planning Commission shall evaluate site plans to ensure
that the design furthers the objectives described above includes:

- 40 a) *identification* of natural features and *documentation* through the Natural
Resources Inventory and Stewardship Plan
b) *evaluation* of impacts on natural systems through review of the Natural
Resources Inventory and Stewardship Plan
c) *consideration* of alternative design approaches to reduce or mitigate
detrimental impacts

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SECTION 15.02 NATURAL FEATURES INVENTORY AND STEWARDSHIP PLAN

5 **A. Where Required and Applicability.** This ordinance applies and is required for all parcels of land and developments subject to site plan review.

10 **B. Submission Requirements.** The petitioner shall provide a natural features inventory and stewardship plan which identifies, locates and inventories all significant natural features. The scope and content of the plan shall be appropriate for the scale and complexity of the proposal and its potential impact on natural features (e.g. it is sufficient to illustrate the overall tree canopy outline where development is limited to non-wooded areas of the site, whereas individual specimen trees shall be identified where development encroaches on a mature woodlot). The Planning Commission shall have the authority to waive or modify specific inventory requirements, provided the site plan, plat or plot plan shall include, at
15 minimum, indications of the various natural areas on the site, including overall tree canopy, wetlands limits, steep slopes and floodplain areas, as well as a written statement explaining how each natural area functions in relation to other natural features on or near the site.

20 The applicant is encouraged to consult with a recognized land conservancy during preparation of the plan. The plan should note which, if any, land conservancies were consulted, and show locations and conditions of any conservation easements that have been executed or are contemplated.

25 **C. Plan Content.** The Natural Resources Inventory and Stewardship Plan shall include the following information:

30 1. The inventory/plan shall be presented on a base map drawn to the same scale as other pages of the site plan submittal. An aerial photograph should be utilized as the base map.

35 2. The plan shall include a delineation of wetlands, ponds, streams, lakes or other water bodies and an indication of which areas are protected under Part 303 of Public Act 451 of 1994, the Natural Resources and Environmental Protection Act, as well as an estimate of the area (in square feet), and a description of the wetlands quality and function.

40 3. The plan shall indicate boundaries of floodplain areas as identified in the Flood Insurance Study, Highland Township, prepared by the Federal Emergency Management Agency (FEMA).

45 4. The plan shall indicate general soils classifications across the site from the soil survey of Oakland County, Michigan, published by the United States Department of Agriculture (USDA), or onsite soils tests. The plan shall indicate areas of poor permeability, high erosion potential or other characteristics relevant to an

understanding of the function of natural systems across the site.

5. The inventory shall provide location of all trees affected by the proposed development which are six (6) inches or greater diameter at breast height (DBH), including off-site trees within twenty-five (25) feet of the property lines, and trees located within adjacent rights-of-way or in off-site utility easements. The inventory shall list the common and botanical names of each tree, with their size in inches at DBH and general condition. For areas of the site that will not be disturbed by construction activity, an overall tree canopy outline shall suffice.
6. Any tree exceeding eighteen (18) inches DBH shall be numbered with non-corrosive tags bearing that number attached to each respective tree.
7. Clearing limits for tree masses must be shown on the plan, as well as the proposed treatment of isolated trees six (6) inches or greater (remove, relocate or remain) located outside a tree mass.
8. Grading limits must be shown on the plan, including cross-sections across any areas to be retained by walls. The stewardship plan should also identify areas where topsoil will be stored during construction, or any areas to be cleared and used for stockpile of materials during construction.
9. If existing trees are to be relocated, the proposed location for such trees shall be shown, with a statement as to how such trees are to be protected and/or stored during land clearance and construction and how they are to be maintained after construction.
10. The plan shall disclose the presence of any threatened or endangered species observed on site.

D. Approval Process and Review Criteria. The Planning Commission shall review all site plans in consideration of Section 5.04, Standards For Site Plan Approval. For sites which are required to submit a Natural Features Inventory and Stewardship Plan, the Planning Commission shall further consider the impact of proposed design elements, and the value of conserving or preserving existing significant natural features or sensitive features as per the intent and purpose of this ordinance. Such consideration shall include:

1. Woodlands and significance of trees and vegetation by reason of quantity, location, size and species.
2. Lakes, streams, wetlands, flood plains and natural drainage courses.

- 3. Habitat of animals and plants and impacts upon wildlife and plant habitat.
- 4. Topography, existing slopes, hills, prairies, etc.
- 5. Visual impact of existing natural features and the preservation and promotion of natural vistas and views harmonious with the rural character of Highland Township.
- 6. Other existing natural features that are significant and unique to a particular parcel of land.
- 7. Comparison to the natural features inventory study (MNFI) and the Highland Green Infrastructure Plan using these as general guidelines for evaluation.

SECTION 15.03 STORMWATER MANAGEMENT

A. **Purpose.** The purpose of this Ordinance is to encourage the use of structural, vegetative or managerial practices, commonly referred to as best management practices (BMP’s), designed to treat, prevent, or reduce degradation of water quality due to storm water runoff. All development projects subject to site plan review shall be designed, constructed, and maintained using best management practices (BMP’s) to prevent flooding, protect water quality, reduce soil erosion, maintain and improve wildlife habitat, and contribute to the aesthetic values of the project. The particular facilities and measures required onsite shall reflect and incorporate existing grade, natural features, wetlands and watercourses on the site to the maximum extent feasible.

B. **Stormwater Management.** All stormwater management plans shall meet the Engineering Design Standards adopted by the Township, and shall utilize nonstructural control techniques to the maximum extent feasible, including, but not limited to:

- 1. limitation of land disturbance and grading;
- 2. maintenance of vegetated buffers and natural vegetation;
- 3. minimization of impervious surfaces;
- 4. use of terraces, contoured landscapes, runoff spreaders, grass or rock-lined swales
- 5. use of infiltration devices.

C. **General Standards.**

- 1. Sites shall be designed and managed utilizing Low Impact Development techniques to emulate the natural water cycle, and maintain local and regional

hydrologic patterns. The Low Impact Development Manual for Michigan, published by the Southeast Michigan Council of Governments (SEMCOG) provides guidance for the designer and developer.

5 2. Stormwater management systems shall be designed to prevent flooding and the degradation of water quality related to stormwater runoff and soil erosion from proposed development.

10 3. All new development and redevelopment of properties shall include on-site storage of stormwater. Facilities shall be designed to provide a volume of storage and discharge rate which meets the standards of the Township. A project may be exempted from the onsite storage requirement upon finding that an acceptable natural drainage outlet is available or storage capacity has been provided offsite and that all necessary drainage easements have been acquired.

15 4. Priority shall be placed on site design which maintains natural drainage patterns and watercourses. Alternations to natural drainage patterns shall not create flooding or degradation of water quality for adjacent or downstream property owners.

20 5. The use of swales and buffer strips vegetated with desirable native materials is encouraged as a method of stormwater conveyance so as to decrease runoff velocity, allow for bio-filtration, allow suspended sediment particles to settle and to remove pollutants. Tolerance for water saturation, sunlight, pesticides, metals, and salts shall be required in determining appropriate plantings in these areas.

25 6. Where large amounts of grease and oil may accumulate, as in the case of commercial/industrial developments and large areas of impervious surfaces for parking, oil separators shall be required.

30 7. For sites that store or use chemicals, a spill response plan shall be submitted and approved by the Township.

35 D. **Use of Wetlands.** Wetlands may be used for stormwater management if all the following conditions are met:

40 1. Wetlands shall be protected from impairment due to the discharges of stormwater. Measures shall be taken to reduce erosive velocities of stormwater and to remove sediment and other pollutants prior to discharge to a wetland.

45 2. Wildlife, fish or other beneficial aquatic organisms and their habitat within the wetland will not be impaired.

 3. The wetland has sufficient holding capacity for stormwater, based upon calculations prepared by the proprietor and reviewed and approved by the

Township.

4. On-site erosion control shall be provided to protect the natural functioning of the wetland.

5. Provisions approved by the Township shall be established so as to insure that the wetland is not disturbed or impaired in the future relative to the needed storage capacity.

6. Applicable permits shall be obtained from the Michigan Department of Environmental Quality or appropriate federal agency.

E. **Maintenance.** For stormwater management systems serving more than one office, commercial or industrial structure and for systems serving more than one residential unit, a maintenance agreement shall bind the owners of all lots, parcels and condominium units with access to the stormwater management system, including their successors and assigns. The maintenance agreement must include the following minimum information.

1. A restrictive covenant shall be included in the maintenance agreement establishing the responsibility for operating and maintaining the stormwater management system on all lots and parcels to be serviced by the system. Such restrictive covenant shall further grant to Highland Township an easement for the purpose of providing for the installation, operation, inspection, and maintenance or stormwater management systems. The agreement shall grant to Highland Township the right, but not the obligation, to inspect and repair said stormwater management system at the expense of the owners of property served by the system. The Township shall have the sole discretion whether to create a special assessment district under the agreement. If the Township elects to repair a private stormwater management system, the agreement shall provide for the establishment of a special assessment district to defray all costs incurred in repairing the system. The agreement shall provide that all current and future owners agree that they are waiving all rights to challenge all aspects of the special assessment district. In addition, the owners and all future owners agree that the maintenance agreement shall be deemed a petition or an adjunct to a petition by the property owners for a special assessment district, if such a petition is legally required.

2. A provision for an incorporated association of co-owners served by the stormwater management system, which shall be responsible to collect fees and to maintain the sanitary sewer system.

3. A feasible and practical method for financing the repair, improvement, and maintenance of the stormwater management system in compliance with this ordinance. The maintenance agreement shall include an explicit clause advising all current and future parties to said agreement that neither Highland Township

nor any other public agency is obligated to perform regular inspections of the easement area or provide repairs, improvements or maintenance to the private system.

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