

City of Valparaiso
Unified Development Ordinance

ARTICLE 7 STORM WATER MANAGEMENT

DIVISION 7.100 PURPOSE AND APPLICABILITY

Sec. 7.101 Purpose Authority and Title

The purpose of this Article is to establish storm water management standards that protect water quality, reduce erosion, and reduce the impacts of runoff on properties that are adjacent to parcels proposed for development.

A. **Authority.** This Ordinance **Article of the UDO** is adopted in accordance with statutory authority granted to the City of Valparaiso under its “Home Rule” authority, as well as in accordance with the “Indiana Drainage Code”, and further is required by **Indiana Code (IC) 36-9-28.5; Indiana Code (IC) 36-9-27-69.5**; Phase II of the National Pollution Discharge Elimination System (NPDES) program (FR Doc. 99-29181) authorized by the 1972 amendments to the Clean Water Act; the Indiana Department of Environment Management’s Rule 13 (327 IAC 15-13); and the Indiana Department of Environmental Management’s Rule 5 (327 IAC 15-5). Based on this authority and these requirements, this Ordinance **Article** regulates:

1. Discharges of prohibited non-stormwater flows into the stormwater drainage system;
2. Stormwater drainage improvements related to development of lands located within the City of Valparaiso, Indiana;
3. Drainage control systems installed during new construction and grading of lots and other parcels of land;
4. Erosion and sediment control systems installed during new construction and grading of lots and other parcels of land;
5. The design, construction, and maintenance of stormwater drainage facilities and systems;
6. The design, construction, and maintenance of stormwater quality facilities and systems;
and
7. Land disturbing activities affecting wetlands.

B. **Title.** This Ordinance **Article** shall be known and may be cited as the City of Valparaiso Stormwater Management Ordinance.

Sec. 7.102 Applicability

~~Any new development, or construction, addition or renovation requiring a permit from the City, shall provide storm water runoff controls as provided in this Article. Appropriate reference shall be made to the latest revision(s) of the Standards Manual.~~

- A. **Applicability.** This OrdinanceArticle shall regulate all development and redevelopment occurring within the City of Valparaiso, Indiana, falling under the jurisdiction of the City of Valparaiso government and any significant discharge into the City's stormwater conveyance facilities.
- B. **Required Compliance.** In addition to the requirements of this OrdinanceArticle, compliance with the requirements set forth in other articles of this the Unified Development Ordinance UDO are also necessary. Compliance with all applicable ordinances of the City, of Valparaiso as well as with all applicable Federal or State of Indiana statutes and regulations shall also be required. Unless otherwise stated, all other specifications referred to in this OrdinanceArticle shall be the most recent edition available.
- C. **Applicable to City.** The City's of Valparaiso government public works projects are expected to meet all applicable technical requirements of this OrdinanceArticle and the City's of Valparaiso Stormwater Technical Standards Manual.
- D. **Determination of Applicability.** A pre-application conference submittal meeting (see Sec. [15.302](#), *Pre-Application Conference*), with the City Engineer may be requested by the applicant to discuss the applicability of various provisions of the OrdinanceArticle and its associated technical standards document with regards to unique or unusual circumstances relating to a project. However, any initial determination of such applicability shall not be binding on future determinations of the City Engineer that may be based on the review of more detailed information and plans.

Sec. 7.103 Background

On December 8, 1999, Phase II of the National Pollutant Discharge Elimination System (NPDES) stormwater permit program, was published in the Federal Register. The NPDES program, as authorized by the 1972 amendments to the Clean Water Act, controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Phase II of NPDES stormwater program requires permit coverage for stormwater discharges from regulated small municipal separate storm sewer systems (MS4s) and for small construction activity that results in the disturbance of one to five acres. This Federal regulation went into effect March 10, 2003. In response to Phase II of NPDES, the Indiana Department of Environmental Management (IDEM) enacted Rule 13 ([327 IAC 15-13](#)) to meet the Federal guidelines set for MS4s, and revised Rule 5 ([327 IAC 15-5](#)) to cover all construction sites one acre or more. Under State and Federal regulations, the City of Valparaiso is required to establish a regulatory mechanism for regulating stormwater quality management.

Sec. 7.104 Findings

The City of Valparaiso City Council finds that:

- A. **Flooding.** Water bodies, roadways, structures, and other property within, and downstream of the City of Valparaiso are at times subjected to flooding;
- B. **Flooding Danger.** Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of the region;
- C. **Development Impact.** Land development alters the hydrologic response of watersheds, resulting in increased stormwater runoff rates and volumes, increased flooding, increased stream channel erosion, and increased sediment transport and deposition;

- D. **Erosion Impact.** Soil erosion resulting from land-disturbing activities causes a significant amount of sediment and other pollutants to be transported off-site and deposited in ditches, streams, wetlands, lakes, and reservoirs;
- E. **Adverse Affects.** Increased stormwater runoff rates and volumes, and the sediments and pollutants associated with stormwater runoff from future development projects within the City of Valparaiso will, absent reasonable regulation and control, adversely affect the City's of Valparaiso's water bodies and water resources;
- F. **Pollutant Impact.** Pollutant contributions from illicit discharges within the City of Valparaiso will, absent reasonable regulation, monitoring, and enforcement, adversely affect the City's of Valparaiso's water bodies and water resources;
- G. **Control Measures.** Stormwater runoff, soil erosion, non-point source pollution, and illicit sources of pollution can be controlled and minimized by the regulation of stormwater management;
- H. **Affect of this Article.** Adopting the standards, criteria, and procedures contained and referenced in this OrdinanceArticle and implementing the same will address many of the deleterious effects of stormwater runoff and illicit discharges; and
- I. **Necessity.** Adopting this OrdinanceArticle is necessary for:
 - 1. The preservation of the public health, safety, and welfare;
 - 2. The conservation of our natural resources; and
 - 3. Compliance with State and Federal regulations.

Sec. 7.105 Purpose and Objectives

- A. **Purpose.** The purpose of this OrdinanceArticle is to provide for the health, safety, and general welfare of the citizens of the City of Valparaiso through the regulation of stormwater and non-stormwater discharges to the storm drainage system and to protect, conserve, and promote the coordinated development of land and water resources within the City of Valparaiso. This OrdinanceArticle establishes methods for managing the quantity and quality of stormwater entering into the stormwater drainage system in order to comply with State and Federal requirements.
 - B. **Objectives.** The objectives of this OrdinanceArticle are to:
 - 1. Reduce the hazard to public health and safety caused by excessive stormwater runoff;
 - 2. Regulate the contribution of pollutants to the stormwater drainage system from construction site runoff;
 - 3. Regulate the contribution of pollutants to the stormwater drainage system and public waters from runoff from new development and redevelopment;
 - 4. Prohibit illicit discharges into the stormwater drainage system; and
 - 5. Establish legal authority to carry out all inspection, monitoring, and enforcement procedures necessary to ensure compliance with this ordinanceArticle.
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Sec. 7.106 Responsibility for Administration

The City of Valparaiso City Engineer shall administer, implement, and enforce the provisions of this OrdinanceArticle through the Engineering Department, Board of Public Works and Safety, Valparaiso City Utilities Board, and Plan Commission, as set out in Sec. 14.803. City Engineer, as well as Article 17. Enforcement, Interpretation, and Repealer.

Sec. 7.107 Conflicting Ordinances and Requirements

The provisions of this OrdinanceArticle shall be deemed as additional requirements to the minimum standards required by other City of Valparaiso ordinances, and as supplemental requirements to Indiana's Rule 5 regarding Stormwater Discharge Associated with Construction Activity (327 IAC 15-5), and Indiana's Rule 13 regarding Stormwater Runoff Associated with Municipal Separate Storm Sewer System (MS4) conveyances (327 IAC 15-13). In case of conflicting requirements, the most restrictive shall apply.

Sec. 7.108 Severability

The provisions of this OrdinanceArticle are hereby declared severable, as set out in Sec. 17.301, Severabilityand if any court of competent jurisdiction should declare any part or provision of this Ordinance invalid or unenforceable, such invalidity or unenforceability shall not affect any other part or provision of the ordinance.

Sec. 7.109 Disclaimer of Liability

The degree of protection required by this OrdinanceArticle is considered reasonable for regulatory purposes and is based on historical records, engineering, and scientific methods of study. Larger storms may occur or stormwater runoff amounts and/or stormwater quality may be altered by man-made or natural causes. This OrdinanceArticle does not imply that land uses permitted will be free from stormwater damage. This OrdinanceArticleshall not create liability on the part of the City of Valparaiso City Council, City of Valparaiso Valparaiso City Utilities Board, the City of Valparaiso Plan Commission, the City Engineer, or any officer, representative, or employee thereof, for any damage which may result from reliance on this OrdinanceArticle or on any administrative decision lawfully made in accordance with this Article there under.

DIVISION 7.200 PROHIBITED DISCHARGES AND CONNECTIONS ~~PLAN~~ REQUIREMENTS BY TYPE OF DEVELOPMENT

Sec. 7.201 ~~General Drainage Plan Requirements~~.Reference

- A. **Plans Required.** ~~Drainage plans may be required for any development. All drainage plans must be approved by the City Engineer before permits are issued or formal approvals granted. Said approval by the City Engineer shall mean that the plan appears to meet the requirements of the City and shall not be interpreted to provide any guarantee or warranty against damage or inconvenience by flooding or runoff related problem. All drainage plans shall be drawn by an Indiana registered Professional Engineer or Public Land Surveyor.~~

B. Drainage Plan Contents.

1. ~~Drainage plans shall address the rates, volumes, and quality of runoff.~~
2. ~~The drainage plan shall be of sufficient detail to serve as construction drawings, and may be incorporated with the site plans required under other sections of this UDO or other City ordinances.~~
3. ~~Drainage plans shall show topographic features, utilities, and locations and existing and proposed elevations of the ground, pavements, drainage course, drainage structures, detention basins, finished floors, green roofs, containment tanks, and other items that might impact drainage. Said features, utilities, etc. to be shown on the plan shall include those on adjacent properties so that possible impacts to those properties may be sufficiently addressed.~~

C. Drainage Calculations. ~~Drainage calculations shall be provided for the analysis of existing drainage courses and/or the design of any proposed drainage course and/or detention basin and discharge control structures. The calculations shall be in a form and shall use methods as required by the City Engineer and as spelled out in the Standards. The drainage plan and calculations shall be thorough enough to allow a complete analysis of the expected impacts on the site and the areas downstream.~~

Refer to the City of Valparaiso, Indiana Code of Ordinances, [Chapter 54, Illicit / Illegal Discharges and/or Connections to Storm Drainage System](#), for this Division.

Sec. 7.202 Plan Requirements by Type of Development

A. Individual Single- and Two-Family Residential Lots.

1. ~~By virtue of applying for a site permit, the applicant acknowledges:~~
 - a. ~~Familiarity with the characteristics of the site and the lands adjacent; and~~
 - b. ~~That the stormwater control measures proposed are appropriate for those characteristics and the proposed residential building.~~
2. ~~If the pervious surface of the lot is greater than or equal to the minimum pervious surface ratio in **Table 7.202.A., General Pervious Surface Requirements**, then drainage plans may be shown on a sketch plan prepared by the applicant. It shall be drawn as accurately as possible and shall clearly show all the stormwater control measures proposed for the site. Arrows may be used to indicate the direction of surface flow. Locations of swales, downspouts and sump pump discharges shall be shown with their direction of flow. However, specific elevations are not required.~~
3. ~~If the pervious surface of the lot is less than the minimum pervious surface ratio in **Table 7.202.A., General Pervious Surface Requirements**, then complete drainage plans shall be required for single- and two-family development on individual lots.~~

Table 7.202.A.: General Pervious Surface Requirements	
District	General Pervious Surface Requirement
RU	85%
ER	75%
SR	55%
GR, UR	40%

B. Multifamily Residential, Mixed-Use, Commercial, and Industrial Sites.

1. Drainage plans and calculations shall be prepared by the professional licensed as specified in **Table 7.202.B., Standard Plan Requirements.**

Table 7.202.B.: Standard Plan Requirements	
Parcel Size or Characteristics	Indiana Professional License Required
Three acres or less; no unusual drainage circumstances	Registered Professional Engineer; Registered Land Surveyor; Architect; or Landscape Architect
More than three acres; or unusual drainage circumstances	Registered Professional Engineer or Registered Land Surveyor

2. The designer of the drainage plan shall be liable for any shortcomings or inadequacies in the plan that may reveal themselves after construction.

C. Subdivisions, Master Plans, and Planned Unit Developments.

1. Drainage plans and drainage calculations shall comply with the requirements of subsection B., above. The drainage plan shall be presented in concept at the technical review stage of the approval process, as specified in **Division 15.800, Subdivision Plat Procedures; Division 15.400, Procedures and Administration for Development Plan Approval; or Division 15.500, Procedures and Administration for Planned Unit Development Approval.**
2. If the concept is approved, the drainage plan shall be presented in sufficient detail at the Primary Plat or PUD approval stage to allow for sound judgments by the City concerning the adequacy of the proposed system.
3. The drainage plan shall be presented in final form prior to the Secondary Plat or PUD approval stage. The drainage plan and drainage calculations must be approved by the City Engineer prior to, or simultaneous with, the approval of any construction plans.

DIVISION 7.300 DRAINAGE SYSTEM STANDARDS STORMWATER QUANTITY MANAGEMENT

Sec. 7.301 Minor and Major Drainage Systems Applicability and Exemptions

- A. **Generally.** Whenever drainage control measures are proposed or considered, two systems shall be provided, the Minor System and the Major System.
- B. **Minor System.** The minor system shall be designed to convey the runoff from the more frequently experienced rainfall events. Generally this system is designed for the storm with the 10-year frequency of recurrence. The system shall consist of swales, inlets, sewers and ditches.
- C. **Major System.** The major system shall be designed to convey and manage the runoff from the least frequently experienced rainfall events. This system shall be designed for the storm with the 100-year frequency of recurrence. The system shall consist of swales, inlets, sewers, ditches, and streets. It shall be designed to safely convey and manage the runoff and to minimize property damage.

The storage and controlled release rate of excess stormwater runoff shall be required for all new business, commercial, and industrial developments; residential subdivisions; **planned development**; rural estate subdivisions; and any redevelopment or other new construction located within the City of Valparaiso **set out in Division 2.200, Uses by District**. The City Engineer, after thorough investigation and evaluation, may waive or reduce the requirement of controlled runoff for developments. Additional exemptions regarding the detention requirements are **set out in provided** under Sec. ~~7.302.A.v~~**7.302, Policy on Stormwater Quantity Management, Subsection A.5, Direct Release Provisions**, below.

Sec. 7.302 ~~Pass-Through Runoff~~ Policy on Stormwater Quantity Management

A. Drainage from Tributary Locations. ~~All drainage plans shall accommodate the runoff that enters the site from other locations in the tributary watershed. The runoff may be diverted around the site or accommodated directly in the design of the site storm runoff control measures. In no event shall off site drainage be blocked or restricted by the proposed development.~~

B. Detention. ~~When appropriate, and at the request of the City Engineer, the pass-through runoff shall be directed through the site detention basins to provide downstream protection from the storms with the more frequent recurrence intervals. When this is required, the discharge structure and overflow shall be designed to accommodate the pass-through runoff.~~

A. **Detention Policy.** It is recognized that most streams and drainage channels serving the City of Valparaiso do not have sufficient capacity to receive and convey stormwater runoff resulting from continued urbanization. Accordingly, except for situations provided in **Subsection 5, Direct Release Provisions**, (PLEASE VERIFY REFERENCE) below, the storage and controlled release of excess stormwater runoff shall be required for all developments and redevelopments located within the City of Valparaiso.

1. **i. General Release Rates** In general, the post development release rates for developments up to and including the 100-year return period storm may not exceed 0.5 cfs per acre of development. For sites where the pre-development area has more than one (1) outlet, the release rate should be computed based on pre-development discharge to each outlet point. The computed release rate for each outlet point shall not be exceeded at the respective outlet point even if the post development conditions would involve a different arrangement of outlet points.
2. **ii. Site-Specific Release Rates for Sites with Depressional Storage** For sites where depressional storage exists, the general release rates provided above may have to be further reduced. If depressional storage exists at the site, site-specific release rates must be calculated according to methodology described in the City's of Valparaiso Stormwater Technical Standards Manual, accounting for the depressional storage by modeling it as a pond whose outlet is a weir at an elevation that stormwater can currently overflow the depressional storage area. Post development release rate for sites with depressional storage shall be the two-year pre-development peak runoff rate for the post-development 100-year storm. In no case shall the calculated site-specific release rates be larger than general release rates provided above. Also, note that for determining the post-development peak runoff rate, the depressional storage must be assumed to be filled unless the City Engineer can be assured, through dedicated easement, that the noted storage will be preserved in perpetuity.
3. **iii. Management of Off-Site Runoff** Runoff from all upstream tributary areas (off-site land areas) may be bypassed around the detention/retention facility without attenuation. Such runoff may also be bypassed through the detention/retention facility without attenuation, provided that a separate outlet system or channel is incorporated for the safe passage of

such flows, i.e., not through the primary outlet of a detention facility. Unless the pond is being designed as a regional detention facility, the primary outlet structure shall be sized and the invert elevation of the emergency overflow weir determined according to the on-site runoff only. Once the size and location of primary outlet structure and the invert elevation of the emergency overflow weir are determined by considering on-site runoff, the 100-year pond elevation is determined by routing the entire inflow, on-site and off-site, through the pond. Note that the efficiency of the detention/retention facility in controlling the on-site runoff may be severely affected if the off-site area is considerably larger than the on-site area. As general guidance, on-line detention may not be effective in controlling on-site runoff where the ratio of off-site area to on-site area is larger than 5:1. Additional detention (above and beyond that required for the on-site area) may be required by the City Engineer when the ratio of off-site area to on-site area is larger than 5:1.

4. ~~iv-Downstream Restrictions~~. In the event the downstream receiving channel or storm sewer system is inadequate to accommodate the post-development release rate provided above, then the allowable release rate shall be reduced to that rate permitted by the capacity of the receiving downstream channel or storm sewer system. Additional detention, as determined by the City Engineer, shall be required to store that portion of the runoff exceeding the capacity of the receiving storm sewers or watercourses. When such downstream restrictions are suspected, the City Engineer may require additional analysis to determine the receiving system's limiting downstream capacity. If the proposed development makes up only a portion of the undeveloped watershed upstream of the limiting restriction, the allowable release rate for the development shall be in direct proportion to the ratio of its drainage area to the drainage area of the entire watershed upstream of the restriction.
5. ~~v-Direct Release Provisions~~. Due to unknowns regarding the future development patterns and the associated proposed stormwater quantity and quality management systems within a watershed, it is the policy of the City of Valparaiso discourage direct release of runoff from a new development or redevelopment without providing detention. However, in rare circumstances, where a comprehensive watershed-wide hydrologic study or watershed plan of a major stream adopted by the City Engineer (not a "beat the peak" analysis) substantiates the benefits of (or allows for) direct release for a proposed development located adjacent to a major stream, the detention requirements set in this Ordinance **Article** may be waived. Other special circumstances when such a waiver may be considered by the City Engineer include situations where the design of a regional pond has already taken into account the provision of direct release in certain areas in the watershed or when the subject development is immediately next to a major stream that has a larger than 100 square miles drainage area.

- B. **Grading and Building Pad Elevations.** Maximum yard slopes are 3:1 where soil has been disturbed during construction processes. Finished floor elevation must be no less than one foot above finished grade and a minimum of 18 inches above an adjacent road elevation unless a written variance is granted by the City Engineer. For all structures located in the Special Flood Hazards Area (SFHA) as shown on the FEMA maps, the lowest floor elevations of all residential, commercial, or industrial buildings, shall be such that lowest floor elevation, including basement, shall be at the flood protection grade and therefore, have two feet of freeboard above the 100-year flood elevation. The lowest adjacent grade for residential, commercial, or industrial buildings outside a FEMA or IDNR designated floodplain shall have two feet of freeboard above the flooding source's 100-year flood elevation under proposed conditions, unless the flooding source is a rear-yard swale. When the flooding source is a rear-yard swale, the lowest adjacent grade for residential, commercial, or industrial buildings shall have two feet of freeboard above the 100-year flood elevation under proposed conditions. For areas outside a

FEMA or IDNR designated floodplain, the lowest adjacent grade (including walkout basement floor elevation) for all residential, commercial, or industrial buildings adjacent to ponds shall be set a minimum of two feet above the 100-year pond elevation or two feet above the emergency overflow weir elevation, whichever is higher. In addition to the lowest adjacent grade requirements, any basement floor must be at least one foot above the permanent water level (normal pool elevation). The 100-year overflow paths throughout the development, whether shown on FEMA maps or not, must be shown as hatched area on the plans and 30 feet along the centerline of the flow path contained within permanent drainage easements. A statement shall be added to the plat that would refer the viewer to the construction plans to see the entire extent of overflow path as hatched areas. No fences or landscaping can be constructed within the easement areas that may impede the free flow of stormwater. These areas are to be maintained by the property owners or be designated as common areas that are to be maintained by the homeowners association. The lowest adjacent grade for all residential, commercial, or industrial buildings shall be set a minimum of one foot above the noted overflow path/ponding elevation, calculated based on all contributing drainage areas, on-site and off-site, in their proposed or reasonably anticipated land use and with storm pipe system assumed completely plugged. It shall be the property owners' responsibility to maintain the natural features on their lots and to take preventive measures against any and all erosion and/or deterioration of natural or manmade features on their lots.

- C. **Acceptable Outlet and Adjoining Property Impact Policies.** Design and construction of the stormwater facility shall provide for the discharge of the stormwater runoff from off-site land areas as well as the stormwater from the area being developed (on-site land areas) to an acceptable outlet(s) (as determined by the City Engineer) having capacity to receive upstream (off-site) and on-site drainage. The flow path from the development outfall(s) to a regulated drain or natural watercourse (as determined by the City Engineer) shall be provided on an exhibit that includes topographic information. Any existing field tile encountered during the construction shall also be incorporated into the proposed stormwater drainage system or tied to an acceptable outlet. In addition, no activities conducted as part of the development shall be allowed to obstruct the free flow of flood waters from an upstream property. Where the outfall from the stormwater drainage system of any development flows through real estate owned by others prior to reaching a regulated drain or watercourse, no acceptance shall be granted for such drainage system until all owners of real estate and/or tenants crossed by the outfall consent, in writing, to the use of their real estate through a recorded easement. If an adequate outlet is not located on site, then off-site drainage improvements may be required. Those improvements may include, but are not limited to, extending storm sewers, clearing, dredging, and/or removal of obstructions to open drains or natural watercourses, and the removal or replacement of undersized culvert pipes as required by the City Engineer.

Sec. 7.303 ~~Exit Characteristics Calculations and Design Standards and Specifications~~

A. ~~Discharge.~~ ~~The characteristics of the runoff exiting a site shall not differ substantially after development from those that existed before development. Any runoff concentrated through the course of development into a sewer, culvert, swale or ditch shall only be discharged into a defined and established drainage course.~~

B. ~~Improvements.~~ ~~The City Engineer may require the applicant to improve the drainage course downstream from a lot or parcel proposed for development so that it is capable of conveying the increase in runoff that results from the proposed development. The requirement may be imposed in order to address either the rate of discharge or the duration of discharge~~

The calculation methods, as well as the type, sizing, and placement of all stormwater facilities shall meet the design criteria, standards, and specifications outlined in the City's of Valparaiso Stormwater Technical Standards Manual. The methods and procedures in the Stormwater Technical Standards Manual are consistent with the policy stated in Sec. 7.302, Policy on Stormwater Quantity Management, above.

Sec. 7.304 Public and Private Systems Drainage Easement Requirements

- A. **Determination.** During the course of the planning and design of runoff control measures, it shall be determined and documented whether the measures are to be public or private.
1. ~~Public systems shall be maintained by the City of Valparaiso after their acceptance by the City. Generally, public systems shall be those in and/or under public streets, or those conveying the runoff from large areas of the City.~~
 2. ~~Private systems.~~
 - a. ~~Private systems shall be privately maintained. Generally, private systems shall be those in and under private streets and private sites. Rear yard swales, ditches that convey the runoff from individual sites, or development detention basins constructed as a runoff control measure for a development, shall be private systems.~~
 - b. ~~Provisions shall be made for the maintenance of private systems. On an individual site, the landowner shall maintain the system. In a development, a property owners association or some other entity shall be established to provide for said maintenance. Enforceable documentation of the provisions for maintenance shall be provided to the City Engineer and accepted by him if, in his opinion they are appropriate.~~
 - c. ~~If the system is not maintained so that it functions in the manner that it was designed and constructed, and thereby threatens to affect or damage properties owned by others, or is otherwise not in compliance with any agreement between the owner and the City, the Board may, after notice by registered mail to the owner of the property, cause the necessary repairs to be completed. The cost of said repairs may be assessed to the property owner(s) through the City's assessment process. The City may also pursue any other remedies that are available pursuant to **Division 17.200, Enforcement**, or state law.~~
- B. **Easements Required.**
1. ~~Recorded easements shall be provided over all components of public and private systems, and when the development requires platting, shall be shown and annotated on the recorded plat.~~
 2. ~~Easements shall run to the benefit of properties benefitted by the drainage system, and to the City of Valparaiso for purposes of construction, operation, repair and maintenance of the facilities located in said easements.~~
 3. ~~However, the establishment of said easements shall in no manner obligate the City to maintain private systems but shall, in the event of an emergency, allow the City to enter and make temporary emergency repairs to the system.~~
 4. ~~The cost of said emergency repairs may be billed to the entity responsible for the maintenance of the system.~~

There shall be no trees or shrubs planted, nor any structures or fences erected, in any drainage easement, unless otherwise accepted in writing by the City Engineer. The following specific areas shall be included in a petition:

A. Subdivisions

1. i. All new channels, drain tiles equal to or greater than 12 inches in diameter (no drain tiles shall be less than 12 inches in diameter), inlet and outlet structures of detention and retention ponds, and appurtenances thereto as required by this Division, that are installed in subdivisions requiring a site permit (see Sec. 15.202, *Administrative Permits*) from the City of Valparaiso shall be contained within a minimum 20 feet of drainage easement. New drain tiles refer to all sub-surface stormwater piping, tubing, tiles, manholes, inlets, catch basins, risers, etc.
2. ii. New drain tile, 12 inches or larger in diameter, shall be placed in a 20-foot easement (10 feet from centerline on each side) and shall be designated on the record plat as "20-foot drainage easement." Wider easements may be required by the City Engineer when the depth of pipe is greater than six to 10 feet, depending on the pipe size.
3. iii. A minimum of 25 feet from top of the bank on each side of a new channel shall be designated on the record plat as a drainage easement.
4. iv. Rear-yard swales and emergency overflow paths associated with detention ponds shall be contained within a minimum of 20 feet width (10 feet from centerline on each side) of drainage easement.
5. v. A minimum of 25 feet beyond the actual footprint (top of the bank) of stormwater detention facilities shall be designated as drainage easement. A minimum 25-foot wide easement shall also be required as an access easement from a public right-of-way to the facility, unless the pond is immediately next to a public right-of-way.
6. vi. The statutory 75-foot (each side) drainage easement for regulated drains already within the Porter County Regulated Drainage system may be reduced if the drain is reclassified by the County Surveyor as an urban drain.
7. vii. Any crossing and/or encroachment of a regulated drainage easement requires application and acceptance from the Porter County Surveyor's office.

B. Non-Subdivisions. Where the City Engineer is responsible for maintenance of the drainage system, regulated drainage easements of 75 feet from the top of bank on each side of the channel or each side of the tile centerline must be dedicated to the City of Valparaiso.

C. Municipalities and Schools. All new channels, swales, drain tiles, inlet and outlet structures of detention and retention ponds, and appurtenances thereto, as required by this Division, that are installed on the municipal or school property will be maintained, repaired, and constructed by the entity. The design must meet the standards of **this Article** the City's of Valparaiso Stormwater Management Ordinance and the City Engineer for sizing and installation. Any off-site portion of the drainage system must be within easements and have clearly defined maintenance agreements.

Sec. 7.305 Individual Lots Placement of Utilities

No utility company may disturb existing storm management facilities without the consent of the City Engineer. All existing drainage facilities shall have senior rights. (QUESTION TERM "SENIOR

RIGHTS") and Damage to said facilities shall result in penalties as set out prescribed in [Article 17, Enforcement, Interpretation, and Repealer](#) of the city UDO.

- A. **Adequacy of Control Measures.** ~~On individual lots that are proposed for development, the runoff control measures shall specifically provide for adequate surface slopes away from all building structures. They shall also provide for the appropriate elevation of said structure as it may relate to ground water elevations and/or flood elevations from adjacent streams, ponds, detention basins, or street low points.~~
- B. **Discharge.** ~~The location and configuration of downspouts and/or sump pump discharges shall be such that the runoff does not damage or inconvenience adjacent properties.~~
 - 1. ~~In general, downspouts and sump pump discharge shall be directed towards the front or rear of the site and not at the adjacent site property lines.~~
 - 2. ~~In no event shall downspouts, sump pumps, footing tiles, or any other surface or ground water source be discharged into the sanitary sewer system.~~
- C. **Grading for Proper Surface Runoff.** ~~Any building requiring yard space shall be located at such an elevation that a sloping grade shall be maintained to cause the flow of surface water to run away from the walls of the building. A sloping grade shall be maintained and established from the finished ground level line at the front of the building to the center of the front lot line at the sidewalk level. However, this shall not prevent the grading of a yard space to provide sunken or terraced areas, provided proper means are constructed and maintained to prevent the runoff of surface water from flowing onto the adjacent properties except as provided by natural drainage course or drainage easements.~~
- D. **Existing Established Grade.** ~~When a new building is constructed on a vacant lot between two existing buildings, or adjacent to an existing building, the existing established grade shall be used in determining the ground elevation around the new building. The yard around the new building shall be graded as far as possible, in such a manner as to meet existing grades and not to permit runoff surface water to flow into the adjacent properties, except as provided by natural drainage course or allowed by drainage easements.~~

Sec. 7.306 **Controlled Discharge Required Structures Near County Regulated Drains**

- A. **Applicability.** ~~The runoff from any combined roof and pavement area over 5,000 square feet, or pavement area alone over 3,500 square feet, shall be controlled and managed in some manner, approved by the City Engineer, before it discharges to the City street or sewer system. In this respect, green roofs are encourage.~~
- B. **Single- and Two-Family Dwellings Exempted.** ~~Single- and two-family dwellings are exempt from the strict requirements of this Section. However, the runoff from said construction shall be controlled in a manner that minimizes impacts on adjacent properties.~~

For **regulated drains** not located in platted subdivisions, no permanent structure (including fences) shall be constructed within ~~75~~seventy-five feet measured at right angles from the:

- A. a) Existing top edge of each bank of a regulated open drain; or
- B. b) Centerline of a tiled regulated drain, unless otherwise accepted by the Porter County Drainage Board. The Indiana Drainage Code may be consulted for further detail.

Sec. 7.307 Inspection, Maintenance, Record Keeping, and Reporting Storm-Sewers, Structures, Ditches, Swales, and Culverts

After the approval of the stormwater management plan by the City Engineer and the commencement of construction activities, representatives from Valparaiso City Utilities and the City Engineer have the authority to conduct inspections of the work being done to insure full compliance with the provisions of this division, the Stormwater Technical Standards Manual, and the terms and conditions of the approved plan.

The City Engineer and the Valparaiso City Utilities also have the authority to perform long-term, post-construction inspection of all public or privately owned stormwater quantity facilities. The inspection will cover physical conditions, available storage capacity, and the operational condition of key facility elements. A performance bond is required for 100% of the cost of improvements for all stormwater infrastructure, improvements, seeding of right-of-ways, etc. If deficiencies are found during the inspection, the owner of the facility will be notified by the City Engineer and will be required to take all necessary measures to correct such deficiencies.

All storm sewers, structures, ditches, swales, culverts, and stormwater quality best management practices shall be designed and constructed according to the requirements of the latest revision(s) of the design and construction standards provided by the City Engineer and sound engineering practice. They shall be designed to safely convey the appropriate design flows, provide the required water quality benefits, and to minimize maintenance and repair needs.

Sec. 7.308 Retention Basins Prohibited

Because of the predominant soil characteristics in the City of Valparaiso, retention basins are prohibited.

Sec. 7.309 Detention Basins

- A. **Where Required.** Generally, detention basins are required for all parcels proposed for development except:
1. Individual single- and two-family residential lots;
 2. Within the CBD district; or
 3. Where waived by the City Engineer because provisions are committed or already in place that are appropriate for runoff management.
- B. **General Design Requirements.**
1. Detention basins shall be designed with consideration for:
 - a. The welfare of the residents who live in the vicinity; and
 - b. The safety of those who might be attracted to the facility;
 2. Basins and their appurtenances shall be designed to:
 - a. Require minimum maintenance;
 - b. Include slopes that are flat enough for safe walking and mowing; and
 - c. Accommodate uses other than detention, such as recreation, man-made wetlands, open space, or other similar uses.

3. ~~The use of fences shall be kept to the minimum necessary to:~~
 - a. ~~Provide for public safety; or~~
 - b. ~~Address a demonstrated security need.~~
 4. ~~The basin shall be attractively designed, to include the following attributes:~~
 - a. ~~Varying slopes;~~
 - b. ~~Avoidance of straight lines;~~
 - c. ~~Inclusion of long sweeping curves that make the facility appear to be natural and part of the overall landscape; and~~
 - d. ~~Landscaping with trees and shrubs appropriate to the location and hydrology.~~
 5. ~~Forebays shall be included to capture solids before they enter the basin.~~
 6. ~~The slope of the banks of detention basins shall not exceed one foot of rise to each four feet of run.~~
- C. **Storage Volume and Discharge Rate.** ~~Detention basins shall provide a storage volume that is adequate to contain the runoff from the developed site that results from a storm event that has a 100-year frequency of recurrence. The discharge control structure shall be designed as a multi-staged facility, reducing the discharges from rainfall events ranging from the highest frequency of recurrence to the lowest. Under no circumstances shall the discharge rate resulting from an event with a 100-year frequency of recurrence exceed the runoff from the undeveloped site that results from a storm with a 2-year frequency of recurrence.~~
- D. **Dry Bottom Basins.**
1. ~~Dry bottom basins shall be designed so that the runoff from the rain events with the highest frequency of recurrence ("first flush") are captured with detention times appropriate for the greatest water quality benefits.~~
 2. ~~Paved low flow channels are prohibited.~~
- E. **Wet Bottom Basins.** ~~Wet bottom basins generally present more difficult maintenance requirements than do the dry bottom basins. These requirements include, but are not limited to, weed control, algae control, possible wildlife management, erosion control at the shore line, and maintenance of the supplemental water supply equipment. The developer shall make adequate provision for these items.~~
1. ~~Wet bottom basins shall be designed to provide a permanent water depth that is adequate to:~~
 - a. ~~Retard weed growth; and~~
 - b. ~~Sustain aquatic life.~~
 2. ~~Provision shall be made for walkways around the perimeter of the pool, to allow for recreational use and access for weed control and emergency response. The ground slopes below pool level shall be sufficiently flat to allow an individual who falls in to recover and walk from the water without great difficulty.~~
 3. ~~The need for shoreline bank protection from wave action shall be addressed in the basin's design. Techniques for shoreline bank protection include:~~

- a. ~~The use of a vegetated buffer at the water's edge that extends into the water; or, if it is demonstrated to the City Engineer that such design is impracticable,~~
 - b. ~~Hardscape.~~
4. ~~The need for supplemental water supply for extended periods without rainfall should also be considered in the design of a wet bottom basin.~~
- F. **Paved Area Basins.** ~~Paved areas such as parking lots may be used for detention basins where the City Engineer determines that they contribute to the function of the overall storm water management system for the parcel proposed for development, and there is no practicable alternative to their use. The basins shall be designed so that the maximum stored water depth is not likely to cause damage to vehicles or adjacent property. Generally, the basin(s) should be located in the more remote areas of the lot and/or in the service drives.~~
- G. **Underground Basins.** ~~Underground detention basins are permitted, but should be used only when no other options are available (including paved area basins that comply with subsection E., above). Underground basins shall be designed using vaults, pipe networks, or other means that allow access for inspection, cleaning, and/or maintenance. Storage of runoff in the voids of aggregate beds shall be avoided.~~
- H. **Discharge Control Structure and Overflow.** ~~Discharge control structures shall be designed to be safe, simple, and easily maintained. Their design shall be such that they are not subject to clogging with debris. They shall not rely on manual operation of valves or gates. They shall be designed to provide storage from the runoff generated by storm events with the greater frequencies of recurrence, as well as the "major storms(s)."~~

Sec. 7.310 Renovation of Existing Developed Sites

~~There are certain sites in the City that were developed without providing appropriate drainage control measures. If any renovations or additions that require a site and/or building permit are proposed for these locations, the applicant shall also provide reasonable drainage control measures that are appropriate for the site.~~

Sec. 7.311 Erosion and Siltation

~~Wherever possible, drainage control measures shall be designed to help control erosion and siltation. Pass-through runoff shall be diverted around the site to the greatest extent that is practical. Detention basins shall be undercut to provide sediment traps during the construction phase of the development. After the development is completed, the basins shall be cleaned and the ground surfaces brought to final grade.~~

DIVISION 7.400 EROSION CONTROLS ON SITES WITH LAND CONSTRUCTION DISTURBING ACTIVITIES STORMWATER POLLUTION PREVENTION FOR

Sec. 7.401 ~~Purpose and Applicability and Exemptions~~

A. **Purpose.**

1. ~~The Common Council of the City of Valparaiso, Indiana finds that soil erosion resulting from land disturbing activities can cause a significant amount of sediment and other pollutants to be transported to locations including watercourses, wetlands, lakes and reservoirs. The purpose of this ordinance is to preserve certain natural resources; to protect the quality of air and water, and to protect and promote the health safety and welfare of our citizens, to the extent practical by minimizing the amount of sediment and other pollutants resulting from soil erosion that is a result of land disturbing activities, from being transported to adjacent lands, watercourses, wetlands, lakes and reservoirs.~~
2. The objective of this Division is to control of wind borne and/or water borne soil erosion and the resulting sedimentation that is accelerated by land disturbing activities. Measures taken to control erosion and sedimentation should assure that sediment is not transported to improper locations by wind or water. The intent of this ordinance is to require practices that will control soil erosion and thereby minimize the amount of soil and sediment leaving sites where the vegetative cover has been disturbed.
3. This Division is adopted under the authority granted by Indiana Code 36-1-4-11, 36-7-4, and all acts supplemental and amendatory thereto. This authority provides for the administration, enforcement and amendment of this ordinance for controlling soil erosion in the City of Valparaiso, Indiana.

B. **Applicability.** This Division applies to land disturbing activities, including those associated with agricultural, commercial, industrial, institutional, residential and highway development, except for the following:

1. Land disturbing activities that involve less than 3,000 square feet of land, unless:
 - a. Those sites are immediately adjacent to a storm sewer inlet, ditch, stream, wetland or other watercourse; or
 - b. Those sites are on ground with a slope of six percent or greater.
2. Land disturbing activities specifically exempted in writing by the Board of Public Works and Safety, or its authorized representative, because of conditions unique to the parcel proposed for development or lot that make the use of soil erosion controls unnecessary.

A. **Required Stormwater Pollution Prevention Plan (SWPPP).** The City Engineer will require a Stormwater Pollution Prevention Plan (SWPPP), which includes erosion and sediment control measures and materials handling procedures, to be submitted as part of the construction plans and specifications.

B. **Applicability.** Any project located within the City of Valparaiso that includes clearing, grading, excavation, and other land disturbing activities, resulting in the disturbance of or impact on one acre or more of total land area, ~~without regard for the applicable zoning district~~, is subject to

the requirements of this Division, **which** This includes both new development and redevelopment. This Division also applies to:

1. Disturbances of less than one acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more land, **without regard for the applicable zoning district**, within the MS4 area; and
 2. Land disturbing activities that involve land disturbance or impact of less than one acre but equal and greater than 3,000 square feet, **without regard for the applicable zoning district**, and/or any disturbing activities with sites immediately adjacent to a storm sewer inlet, ditch, stream, wetland or other watercourses, and any sites which are located on ground with a slope of six percent or greater. **Set out in Sec. 7.403, Calculations and Design Standards and Specifications**, of this division provides **are** guidelines for calculating land disturbance.
- C. **Coverage Requirements.** Projects meeting the coverage requirements of [327 IAC 15-5](#) (Rule 5) shall also be in compliance with [327 IAC 15-5](#).
- D. **Exemptions.** The requirements underof this Division do not apply to the land disturbing activities specifically exempted in writing by the Board of Public Works and Safety, or its authorized representative, because of conditions unique to the parcel proposed for development or lot that make the use of soil erosion and sediment controls unnecessary.
- E. **Not Applicable, Generally.** The requirements under this Division do not apply to the following activities:
1. a. Agricultural land disturbing activities; or
 2. b. Forest harvesting activities.
- F. **Not Applicable if Subject to Applicable State Permits.** The requirements under of this Division do not apply to the following activities, provided other applicable State permits contain provisions requiring immediate implementation of soil erosion control measures:
1. Landfills that have been issued a certification of closure under [329 IAC 10](#);
 2. Coal mining activities permitted under IC 14-34; and
 3. Municipal solid waste landfills that are accepting waste pursuant to a permit issued by the Indiana Department of Environmental Management under 329 IAC 10 that contains equivalent stormwater requirements, including the expansion of landfill boundaries and construction of new cells either within or outside the original solid waste permit boundary.
- G. **Lots within a Larger Permitted Project Site.** An individual lot with land disturbance or impact less than one acre, located within a larger permitted project site, is considered part of the larger permitted project site, and the individual lot operator must comply with the terms and conditions of the site permit approved for the larger project site. The site permit application for the larger project site must include detailed erosion and sediment control measures for individual lots. In addition, these individual lots are required to obtain a site permit for each lot. Details of the permitting process are contained in Division 7.800.
- H. **Site Owner / Permit Holder Responsibilities.** It will be the responsibility of the project site owner to complete a site permit application and ensure that a sufficient construction plan is completed and submitted to the City Engineer in accordance with **Sec. 15.305, Stormwater Management Plans**~~Division 7.800~~ of this Ordinance. It will be the responsibility of the project site owner and/or permit holder to ensure compliance with this Ordinance**Article** during the construction activity and implementation of the construction plan, and in following and

implementing all best management practices. However, all persons engaging in construction and land disturbing activities on a permitted project site meeting the applicability requirements must comply with the requirements of this Division and Article this Ordinance.

Sec. 7.402 General Design Principles Policy on Stormwater Pollution Prevention

- A. **Design Principles.** The following principles apply to all land disturbing activities within the City, and shall be considered when preparing construction plans and/or submissions required under this UDO:
1. To minimize the potential for soil erosion, development should fit the topography and soils of the site. Areas with steep slopes where deep cuts and fill would be required should be avoided.
 2. Natural vegetation should be maintained and protected wherever and whenever possible. Areas immediately adjacent to watercourses, wetlands and lakes should be left undisturbed wherever possible.
 3. The selection of soil erosion and sedimentation control measures should be based on the size of the project, the frequency of climatic events likely to accelerate erosion, the season during which the project is being constructed, and the potential for damage should erosion and sedimentation occur.
 4. In the design of erosion and sedimentation control measures the requirements for proper maintenance should be considered.
 5. Provision should be made to accommodate the increased runoff caused by changed surface and soil conditions both during and after development. Drainageways should be designed so that their final gradients and resultant velocities will not cause erosion.
 6. Provision should be made for the proper transport of soil from the site without tracking or spilling soil along the transport route.
- B. **Sequencing of Activities and Improvements.**
1. All construction activities on a site should be conducted in a logical sequence so that the smallest practical area of land will be exposed for the shortest practical period of time during development.
 2. Sediment basins, silt traps and filters should be installed prior to the beginning of construction to remove as much sediment as possible from runoff leaving the site or entering watercourses, wetlands, lakes or reservoirs.
 3. Permanent vegetation and erosion control structures shall be installed and temporary structures shall removed prior to the issuance of final occupancy permits.
- C. **Generally.** Effective stormwater pollution prevention on construction sites is dependent on a combination of the following:
1. Preventing movement of soil from its original position (erosion control);
 2. Intercepting displaced soil prior to entering a waterbody (sediment control); and
 3. Proper on-site materials handling.
- D. **SWPPP Required.** The developer must submit to the City Engineer, a Stormwater Pollution Prevention Plan (SWPPP) with detailed erosion and sediment control plans, as well as a

narrative describing materials type and specification, handling and storage, and construction sequencing.

E. **Plan Principles.** The following principles apply to all land-disturbing activities and should be considered in the preparation of a Stormwater Pollution Prevention Plan (SWPPP) within the City of Valparaiso:

1. Minimize the potential for soil erosion by designing development that fits the topography and soils of the site. Deep cuts and fills in areas with steep slopes should be avoided wherever possible, and natural contours should be followed as closely as possible.
2. Existing natural vegetation should be retained and protected wherever possible. Areas immediately adjacent (within 35 feet of top of bank) to watercourses and lakes also should be left undisturbed wherever possible. Unvegetated or vegetated areas with less than 70 percent cover that are scheduled or likely to be left inactive for 15 days or more must be temporarily or permanently stabilized with measures appropriate for the season to reduce erosion potential. Alternative measures to site stabilization may be acceptable if the project site owner or their representative can demonstrate they have implemented and maintained erosion and sediment control measures adequate to prevent sediment discharge from the inactive area.
3. All activities on a site should be conducted in a logical sequence so that the smallest practical area of land will be exposed for the shortest practical period of time during development.
4. The length and steepness of designed slopes should be minimized to reduce erosion potential. Drainage channels and swales must be designed and adequately protected so that their final gradients and resultant velocities will not cause erosion in the receiving channel or at the outlet. Methods for determining acceptable velocities are included in the City's Stormwater Technical Standards Manual.
5. Sediment-laden water which otherwise would flow from the project site shall be treated by erosion and sediment control measures appropriate to minimize sedimentation. A stable and erosion resistant construction site access point (i.e., crushed stone, slag, aggregate, etc.) shall be provided at all points of construction traffic ingress and egress to the project site. Crushed stone, slag, and or aggregate shall be at least six inches deep from the surface elevation and such material shall be between three and five inches in diameter.
6. Appropriate measures shall be implemented to prevent wastes or unused building materials, including, garbage, debris, packaging materials, fuels and petroleum products, hazardous materials or wastes, cleaning wastes, wastewater, concrete truck washout, and other substances from being carried from a project site by runoff or wind. Identification of the area where concrete truck washout is permissible must be clearly posted on the site. Only one washout location shall be allowed for each building site. Wastes and unused building materials shall be managed and disposed of in accordance with all applicable State statutes and regulations. Proper storage and handling of materials such as fuels or hazardous wastes, and spill prevention and cleanup measures shall be implemented to minimize the potential for pollutants to contaminate surface or ground water or degrade soil quality.
7. Public or private roadways shall be kept cleared of accumulated sediment that is a result of runoff or tracking. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be redistributed or disposed of in a manner that is in accordance with all applicable statutes and regulations.

8. Collected runoff leaving a project site must be either discharged directly into a well-defined, stable receiving channel, or diffused and released to adjacent property without causing an erosion or pollutant problem to the adjacent property owner.
9. Natural features, including wetlands, shall be protected from pollutants associated with stormwater runoff.

Sec. 7.403 Calculations and Design Criteria, Standards, and Specifications

- A. **Determining Total Area of Land Disturbance.** In calculating the total area of land disturbance, for the purposes of determining applicability of this Article division to the project, the following guidelines should be used:
1. Off-site construction activities that provide services (for example, road extensions, sewer, water, and other utilities) to a land disturbing project site, must be considered as a part of the total land disturbance calculation for the project site, when the activity is under the control of the project site owner.
 2. Strip developments will be considered as one (1) project site and must comply with this Article division unless the total combined disturbance on all individual lots is less than one (1) acre, **without regard for the applicable zoning district**, and is not part of a larger common plan of development or sale.
 3. To determine if multi-lot project sites are regulated by **Subsection 2, above**, this rule, the area of land disturbance shall be calculated by adding the total area of land disturbance for improvements, such as, roads, utilities, or common areas, and the expected total disturbance on each individual lot, as determined by the following:
 - a. **i.** For a single-family residential project site where the lots are one-half (0.5) acre or more, **without regard for the applicable zoning district**, one-half (0.5) acre of land disturbance must be used as the expected lot disturbance.
 - b. **ii.** For a single-family residential project site where the lots are less than one half (0.5) acre in size, the total lot must be calculated as being disturbed.
 - c. **iii.** To calculate lot disturbance on all other types of projects sites, such as industrial and commercial projects project sites, a minimum of one (1) acre of land disturbance must be used as the expected lot disturbance, unless the lots are less than one (1) acre in size, in which case the total lot must be calculated as being disturbed.
- B. **Required Compliance.** The calculation methods, as well as the type, sizing, and placement of all stormwater pollution prevention measures for construction sites shall meet the design criteria, standards, and specifications **set out** outlined in the "Indiana Stormwater Quality Manual" or the City's of Valparaiso Stormwater Technical Standards Manual. The methods and procedures included in these two references **manuals** are in keeping with the above stated policy and meet the requirements of IDEM's Rule 5.

~~All erosion control measures, including, but not limited to those required to comply with this ordinance, shall meet the design criteria, standards and specifications as adopted by the Board of Public Works and Safety, and those listed in the *Indiana Handbook for Erosion Control in Developing Areas*, as may be amended from time to time.~~

Sec. 7.404 **Specific Requirements Inspection, Maintenance, Record Keeping, and Reporting**

- A. **Authority to Inspect.** Following approval of the site permit, representatives of the City Engineer and Valparaiso City Utilities have the authority to conduct inspections of the site to ensure full compliance with the provisions of this division **Article**, the Indiana Stormwater Quality Manual, and the terms and conditions of the approved permit.
- B. **Monitoring.** For all the construction sites except the ones **those** that involve less than one (1) acre of land and are not located within larger permitted project sites, a self-monitoring program must be implemented by the project site owner and/or permit holder to ensure the stormwater pollution prevention plan is working effectively. A trained individual, acceptable to the City Engineer, shall perform a written evaluation of the project site by the end of the next business day following each measurable storm event. There shall be one designated on-site person to complete such evaluations, maintain a storm log, and to be contacted in the event of any concerns. An alternate should be identified in the event that the designated monitor is unavailable. If there are no measurable storm events within a given week, the site should be monitored at least once in that week. Weekly inspections by the trained individual shall continue until the entire site has been stabilized and a Notice of Termination has been issued. The trained individual should look at the maintenance of existing stormwater pollution prevention measures, including erosion and sediment control measures, drainage structures, and construction materials storage/containment facilities, to ensure they are functioning properly. The trained individual should also identify additional measures, beyond those originally identified in the stormwater pollution prevention plan, necessary to remain in compliance with all applicable statutes and regulations.
- C. **Evaluation Reports.** The resulting evaluation reports must include:
1. The name of the individual performing the evaluation;
 2. The date of the evaluation;
 3. Problems identified at the project site; and
 4. Details of maintenance, additional measures, and corrective actions recommended and completed.
- D. **Adequacy.** The stormwater pollution prevention plan shall serve as a guideline for stormwater quality, but should not be interpreted to be the only basis for implementation of stormwater quality measures for a project site. The project site owner and/or permit holder is responsible for implementing, in accordance with this division **Article**, all measures necessary to adequately prevent polluted stormwater runoff. Recommendations by the trained individual for modified stormwater quality measures should be implemented.
- E. **Right to Request Records.** Although self-monitoring reports do not need to be submitted to the City Engineer, the City Engineer has the right to request complete records of maintenance and monitoring activities involving stormwater pollution prevention measures. **Upon request**, all evaluation reports for the project site must be made available to the City Engineer, in an organized fashion, within forty-eight (48) hours upon request.
- F. **Generally.** The applicant shall control erosion and sediment through the entire duration of the land disturbing activity.
- G. **Specific Requirements.** The following measures shall be utilized where required to provide the necessary control:

1. Runoff from off-site, flowing through the lot or parcel proposed for development, shall be diverted around the land disturbing activity by means of swales, channels, ditches, culverts or storm sewers. The diversion may be a temporary installation, utilized only until the land disturbing activity is complete, or it may be a permanent part of the proposed improvement on the land. Such diversion shall not be such that it causes drainage or erosion problems down stream.
2. Any proposed detention basin shall be utilized during construction as a sediment basin to trap as much soil as possible during the land disturbing activity. Such basins shall be designed for this purpose, utilizing over excavation for temporary sediment storage, temporary perforated standpipes and or stone filters as required by proper engineering design. ~~The City Engineer may waive this requirement if it is demonstrated that an alternative strategy for trapping sediment will perform better.~~
3. Temporary sediment traps may be required in areas where runoff exits the lot or parcel proposed for development, and is likely to carry sediment from eroded soils. The temporary traps shall be sized proportionately with the expected flow rate from the site.
4. Ingress and egress to the lot or parcel proposed for development shall be by way of coarse stone drive(s) of sufficient length to cause soil picked up by the tires of vehicles to be dropped before the vehicle enters the roadway. Drives shall be designed and situated so that they provide maximum protection against tracking of soil or mud onto the street. For single family and duplex home sites, the stone drive should coincide with the final location of the drive to the residence.
5. Drain inlets and entrances to culverts shall be protected with an installation of silt fence.
6. All disturbed ground left inactive for a period of 21 days shall be seeded, sodded or stabilized with mulch or equivalent. Between the dates of October 1 and the release of the frost law in the following year, the disturbed ground shall be stabilized with the use of silt fence or approved equivalent.
7. Storage piles of soil left for longer than three days shall be completely encircled with silt fence. If left inactive or unused for longer than 21 days the pile shall be seeded, sodded, or covered with a mulching fabric or tarpaulins.
8. Stone check dams shall be used in open drainage courses to slow velocities of the runoff and allow sediment to drop out of the runoff.
9. Silt fence shall be installed along the down slope edges of all disturbed areas on the site. In general, silt fence shall be installed at the edges of pavements, adjoining properties and open water courses whenever the adjacent ground slopes towards that street, adjoining property or watercourse.

~~Sec. 7.405 Maintenance of Erosion Control Measures~~

~~All erosion control measures shall be maintained throughout the course of the construction or until the growth of vegetation has made them unnecessary. If silt fence is temporarily removed to allow access to a portion of the site, it shall be re-installed at the end of the work day. The applicant is responsible for the maintenance of all erosion control measures.~~

~~Sec. 7.406 Erosion Control Plan~~

- A. **~~Generally.~~** ~~An erosion control plan, (the plan) shall be submitted with each application for an Erosion Control Permit. The Board of Public Works and Safety shall have the authority to waive any of the requirements for the plan if the requirement is not necessary to control erosion due~~

to the nature of the lot or parcel proposed for development or the type of development proposed.

- B. **Single-Family, Two-Family, and Three-Family Home Sites.** The erosion control plan for single-, two- and three-family home sites shall be made a part of the sketch provided with the application for a building permit. It shall be prepared by the applicant and shall show, as a minimum, the direction of surface slopes (arrows), any watercourses on the lot, and the location of the silt fence and/or other erosion control installations proposed.
- C. **Attached Single-Family or Multiplex with More than Four Units; Multifamily; and Nonresidential Sites.** The Erosion Control Plan for attached single-family or multiplex with more than four units, multi-family, and all non-residential sites shall conform to the following:
1. The plan shall be prepared by an Indiana Licensed Professional Land Surveyor, Engineer, Architect or Landscape Architect.
 2. The plan shall be drawn to a scale adequate to clearly show the site and the required information. In no case shall the plan be drawn to a scale less than 1 inch = 100 feet.
 3. The plan may incorporate one or more sheets as necessary to clearly convey its intent. The plan may also incorporate text to explain any specifics, cover the specifications for the materials required, or explain development phasing.
 4. At a minimum, the plan shall show all existing and proposed:
 - a. Site boundaries, lots, etc.
 - b. Watercourses (with sizes), ponds, lakes, wetlands.
 - c. Apparent floodplains, floodway fringes, and floodways.
 - d. Soil types and their erodability. The information provided in the Soil Survey of Porter County, Indiana, as published by the U.S. Dept. of Agriculture, Soil Conservation Service, is appropriate.
 - e. Vegetative cover such as crops, grass, weeds, and/or trees.
 - f. Utilities, structures, road pavements and other improvements.
 - g. Existing contours at an interval not greater than two feet. An adequate number of spot elevations may be provided in lieu of the contours.
 - h. Locations and dimensions (where applicable) of all proposed erosion control measures.
 - i. Provisions for maintenance of the erosion control measures during the course of the project.
 - j. Provisions for removal of the temporary measures when final vegetation and control structures are established.

DIVISION 7.500 STORMWATER QUALITY MANAGEMENT FOR POST-CONSTRUCTION

Sec. 7.501 Applicability and Exemptions

- A. **Applicability.** Any project located within the City of Valparaiso that includes clearing, grading, excavation, and other land disturbing activities, resulting in the disturbance of or impact on

one acre or more of total land area, is subject to the requirements of this division Article, which This includes both new development and redevelopment, and disturbances of less than one (1) acre of land that are part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) or more acres of land, within the MS4 area.

- B. **Post Construction.** In addition to the requirements of [Division 7.400. Stormwater Pollution Prevention for Construction Sites](#), the stormwater pollution prevention plan, which is to be submitted to the City Engineer as part of the site permit application, must also include post-construction stormwater quality measures. These measures are incorporated as a permanent feature into the site plan and are left in place following completion of construction activities to continuously treat stormwater runoff from the stabilized site.
- C. **Exemptions.** The requirements under of this division Article do not apply to the following activities:
1. Agricultural land disturbing activities; or
 2. Forest harvesting activities; or
 3. Construction activities associated with a single family residential dwelling disturbing less than five 5 acres, when the dwelling is not part of a larger common plan of development or sale; or
 4. Single family residential developments consisting of four or fewer less lots; or
 5. A single-family residential strip development where the developer offers for sale or lease without land improvements and the project is not part of a larger common plan of development of sale; or
 6. Individual building lots within a larger permitted project.
- D. **Not Applicable If Subject to Applicable State Permits.** The requirements under of this division Article do not apply to the following activities, provided other applicable State permits contain provisions requiring immediate implementation of soil erosion control measures:
1. Landfills that have been issued a certification of closure under 329 IAC 10;
 2. Coal mining activities permitted under IC 14-34; and
 3. Municipal solid waste landfills that are accepting waste pursuant to a permit issued by the Indiana Department of Environmental Management under 329 IAC 10 that contains equivalent stormwater requirements, including the expansion of landfill boundaries and construction of new cells either within or outside the original solid waste permit boundary.
- E. **Site Owner / Permit Holder Responsibilities.** It will be the responsibility of the project site owner to complete a site permit application and ensure that a sufficient construction plan is completed and submitted to the City Engineer in accordance with [Sec. 15.300, Stormwater Management Plans](#) ~~Division 7.800~~ of this Ordinance. It will be the responsibility of the project site owner and/or permit holder to ensure proper construction and installation of all stormwater best management practices in compliance with this Ordinance Article and with the approved site permit, and to notify the City Engineer with a sufficient notice of termination letter upon completion of the project and stabilization of the site. However, all eventual property owners of stormwater quality management facilities meeting the applicability requirements must comply with the requirements of this division Article and this Ordinance UDO.

7.502 Policy on Stormwater Quality Management

- A. **Generally.** It is recognized that developed areas, as compared to undeveloped areas, generally have increased imperviousness, decreased infiltration rates, increased runoff rates, and increased concentrations of pollutants such as fertilizers, herbicides, greases, oil, salts and other pollutants. As new development and redevelopment continues in the City of Valparaiso, measures must be taken to intercept and filter pollutants from stormwater runoff prior to reaching regional creeks, streams, and rivers. Through the use of Best Management Practices (BMP), stormwater runoff will be filtered and harmful amounts of sediment, nutrients, and contaminants will be removed. The City of Valparaiso has established a minimum standard that the measurement of the effectiveness of the control of stormwater quality will be based on the management of Total Suspended Solids (TSS).
- B. **Best Management Practices.** The project site owner must submit to the City Engineer, a Stormwater Pollution Prevention Plan (SWPPP) that would show placement of appropriate best management practices (BMPs) from a pre-approved list of BMPs specified in the City's of Valparaiso Stormwater Technical Standards Manual. The noted BMPs must be designed, constructed, and maintained according to guidelines provided or referenced in the City's of Valparaiso Stormwater Technical Standards manual. Practices other than those specified in the pre-approved list may be utilized; however, the burden of proof as to whether the performance (minimum 80 percent TSS removal) and ease of maintenance of such practices will be according to the guidelines provided in the City's of Valparaiso Stormwater Technical Standards Manual, would be placed with the applicant. Details regarding the procedures and criteria for consideration of acceptance of such BMPs are provided in the City of Valparaiso Stormwater Technical Standards manual.
- C. **Special Practices for Highly Sensitive Uses.** Gasoline outlets and refueling areas must install appropriate practices to reduce lead, copper, zinc, and hydrocarbons in stormwater runoff. These requirements will apply to all new facilities and existing facilities that replace their tanks.

Sec. 7.503 Calculations and Design Standards and Specifications

- A. **Means of Calculation.** Calculation of land disturbance should follow the guidelines set out discussed in Sec. 7.403, Calculations and Design Standards and Specifications.
- B. **Required Compliance.** The calculation methods as well as the type, sizing, and placement of all stormwater quality management measures, or BMPs shall meet the design criteria, standards, and specifications outlined in the Indiana Stormwater Quality Manual or the City's of Valparaiso Stormwater Technical Standards Manual. The methods and procedures included in these two manuals references are in keeping with the abovestated policy of this Article and meet the requirements of IDEM's Rule 13.

Sec. 7.504 Easement Requirements

All stormwater quality management systems, including detention or retention basins, filter strips, pocket wetlands, in-line filters, infiltration systems, conveyance systems, structures and appurtenances located outside of the right-of-way shall be incorporated into permanent easements. For the purposes of monitoring, inspection, and general maintenance activities, a 30-foot wide perimeter beyond the actual footprint of the stormwater quality management facility, as well as a 30-foot wide access easement from a public right-of-way to each BMP, shall be provided.

Sec. 7.505 Inspection, Maintenance, Record Keeping, and Reporting

- A. **Authority to Inspect.** After the approval of the site permit by the City Engineer and the commencement of construction activities, representatives of the City Engineer and the Valparaiso City Utilities have the authority to conduct inspections of the work being done to ensure full compliance with the provisions of this divisionArticle, the City's Stormwater Technical Standards Manual, and the terms and conditions of the approved permit.
- B. **Required Operation and Maintenance.** Stormwater quality management facilities shall be maintained in good condition, in accordance with the operation and maintenance procedures and schedules listed in the *Indiana Stormwater Quality Manual* or the City's of Valparaiso Stormwater Technical Standards Manual, and the terms and conditions of the approved site permit. Such facilities andshall not be subsequently altered, revised, or replaced except in accordance with the approved site permit, or in accordance with approved amendments or revisions in the permit.
- C. **Long-Term Responsibility.** Following construction completion, maintenance of stormwater quality facilities shall be the long-term responsibility of the facility's owner.
- D. **Inspections.** The City Engineer has the authority to perform long-term, post construction inspection of all public or privately owned stormwater quality facilities. The inspections will follow the operation and maintenance procedures included in the City's Stormwater Technical Standards Manual and/or permit application for each specific best management practice (BMP). The inspection will cover physical conditions, available water quality storage capacity, and the operational condition of key facility elements. Noted deficiencies and recommended corrective action will be included in an inspection report. If deficiencies are found during the inspection, the owner of the facility will be notified by the City Engineer and will be required to take all necessary measures to correct such deficiencies. If the owner fails to correct the deficiencies within the allowed time period, as specified in the notification letter, the Valparaiso City Utilities Board will undertake the work and collect from the owner using lien rights if necessary.

DIVISION 7.600 DEVELOPMENT IN WETLANDS REGULATIONS

Sec. 7.601 Applicability and Exemptions

- A. **Applicability.** This Division shall apply to all land-disturbing activities regulated by this OrdinanceArticle. No site permit shall be issued and no land disturbance started for any construction in a development identified as containing wetlands until the owner thereofhas obtained all required state and federal permits or releases related to the dredging or filling of wetlands. As a pre-condition to receiving a building or land disturbance permit for a development identified as containing wetlands where the applicant for the permit does not intend to fill a wetland, such unaffected wetland must be identified in one of the methods enumerated in Sec. 7.603. *Wetlands Identification*, of this division, shown on the proposed development plans, and submitted to the City Engineer along with plans to protect and avoid any disturbance to such unaffected wetland.
- B. **Exemptions.** The requirements underof this Division do not apply to the following:
 - 1. For the purpose of City's regulations, Artificially-constructed ponds, drainage ditches, stormwater retention/detention basins, and treatment lagoons that exist at the site and that may appear to display wetland-like properties. However, the applicant would need to

independently contact IDEM or the U.S. Army Corps of Engineers (USACE) for appropriate Federal and State requirements;

2. Wetlands or portions thereof for which Federal or State permits for fill were issued prior to the enactment of this Division; or
3. Any area or use excluded from local planning and zoning jurisdiction by Federal or State law.

- C. **Responsibility of Site Owner.** It will be the responsibility of the project site owner to complete a site permit application and ensure that all wetlands identified to be present at the project site are sufficiently protected and preserved as set out forth in this Division.

Sec. 7.602 Policy on Wetlands Disturbance Prevention

It is the public policy of the City of Valparaiso to preserve, protect, and conserve freshwater wetlands, and the benefits derived wherefrom, to prevent the despoliation and destruction of freshwater wetlands, and to regulate use and development of such wetlands to secure the natural benefits of freshwater wetlands, consistent with the general welfare and beneficial to economic, social, and agricultural development of the City of Valparaiso.

Sec. 7.603 Wetlands Identification

- A. **Means for Identification, Delineation and Existence of Wetlands.** In implementing the terms of this Division, any of the following materials shall be prima facia evidence which may be relied upon by the City Engineer for the identification, delineation, and existence of a wetland:

1. National Wetlands Inventory (NWI) maps produced or maintained by the United States Fish and Wildlife Service (USFWS);
2. Maps produced, or maintained and utilized, by the United States Army Corps of Engineers (USACE) for identification and/or delineation of wetlands;
3. Maps produced, or maintained and utilized, by the United States Natural Resources Conservation Service (NRCS) for the identification and/or delineation of wetlands;
4. USDA - NRCS Soil Survey of the City of Valparaiso hydric soils list; or
5. Field investigations performed by the United States Army Corps of Engineers (USACE) or private consultants recognized by the Corps as authorities in wetland identification and delineation.

- B. **Notes:**

1. **National Wetlands Inventory (NWI)** maps are intended to identify potential wetlands. Due to the lack of field verification, NWI classified wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands, as established by USFWS, are different from those currently used by the U.S. Army Corps of Engineers. NWI maps best serve as an indicator of potential jurisdictional wetlands.
2. Likewise, Soil survey maps were developed from actual field investigations by soil scientists from the NRCS but they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions.

3. It is recommended that all sites be field reviewed by a qualified person with experience in wetland identification in order to determine the presence or absence of wetlands.