

## CHAPTER 55: FLOODPLAIN AND STORMWATER REQUIREMENTS

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**55.01 STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE, AND OBJECTIVES.**

(A) *Statutory Authorization.* The Indiana Legislature has in IC 36-7-4 and IC 14-28-4 granted the power to local government units to control land use within their jurisdictions. Therefore, the Common Council of the City of Valparaiso does hereby adopt the following floodplain management regulations.

(B) *Findings of Fact.*

- (1) The flood hazard areas of the City of Valparaiso are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- (2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, flood-proofed, or otherwise unprotected from flood damages.

(C) *Statement of Purpose.* It is the purpose of this ordinance to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, which result in damaging increases in erosion or in flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters;
- (4) Control filling, grading, dredging, and other development which may increase erosion or flood damage;
- (5) Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and,
- (6) Make federally subsidized flood insurance available for structures and their contents in the City of Valparaiso by fulfilling the requirements of the National Flood Insurance Program.

(D) *Objectives.* The objectives of this ordinance are:

- (1) To protect human life and health;
- (2) To minimize expenditure of public money for costly flood control projects;
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) To minimize prolonged business interruptions;
- (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone, and sewer lines, streets, and bridges located in floodplains;

- (6) To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize flood blight areas, and;
- (7) To ensure that potential homebuyers are notified that property is in a flood area.

## 55.02 Definitions.

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

**A zone** means portions of the SFHA in which the principal source of flooding is runoff from rainfall, snowmelt, or a combination of both. In A zones, floodwaters may move slowly or rapidly, but waves are usually not a significant threat to buildings. These areas are labeled as Zone A, Zone AE, Zones A1-A30, Zone AO, Zone AH, Zone AR and Zone A99 on a FIRM or FHBM. The definitions are presented below:

Zone A: Areas subject to inundation by the one-percent annual chance flood event. Because detailed hydraulic analyses have not been performed, no base flood elevation or depths are shown. Mandatory flood insurance purchase requirements apply.

Zone AE and A1-A30: Areas subject to inundation by the one-percent annual chance flood event determined by detailed methods. Base flood elevations are shown within these zones. Mandatory flood insurance purchase requirements apply. (Zone AE is on new and revised maps in place of Zones A1-A30.)

Zone AO: Areas subject to inundation by one-percent annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone AH: Areas subject to inundation by one-percent annual chance shallow flooding (usually areas of ponding) where average depths are 1-3 feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone AR: Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection. Mandatory flood insurance purchase requirements apply.

Zone A99: Areas subject to inundation by the one-percent annual chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Zone A99 may only be used when the flood protection system has reached specified statutory progress toward completion. No base flood elevations or depths are shown. Mandatory flood insurance purchase requirements apply.

**Accessory structure** (appurtenant structure) means a structure that is located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Accessory structures should constitute a minimal initial investment, may not be used for human habitation, and be designed to have minimal flood damage potential. Examples of accessory structures are detached garages, carports, storage sheds, pole barns, and hay sheds.

**Addition** (to an existing structure) means any walled and roofed expansion to the perimeter of a structure in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by independent perimeter load-bearing walls, is new construction.

**Appeal** means a request for a review of the floodplain administrator's interpretation of any provision of this ordinance or a request for a variance.

**Area of shallow flooding** means a designated AO or AH Zone on the community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

**Base Flood Elevation (BFE)** means the elevation of the one-percent annual chance flood.

**Basement** means that portion of a structure having its floor sub-grade (below ground level) on all sides.

**Building** - see "Structure."

**Community** means a political entity that has the authority to adopt and enforce floodplain ordinances for the area under its jurisdiction.

**Community Rating System (CRS)** means a program developed by the Federal Insurance Administration to provide incentives for those communities in the Regular Program that have gone beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding.

**Critical facility** means a facility for which even a slight chance of flooding might be too great. Critical facilities include, but are not limited to, schools, nursing homes, hospitals, police, fire, and emergency response installations, installations which produce, use or store hazardous materials or hazardous waste.

**Development** means any man-made change to improved or unimproved real estate including but not limited to:

- (1) construction, reconstruction, or placement of a structure or any addition to a structure;
- (2) installing a manufactured home on a site, preparing a site for a manufactured home or installing recreational vehicle on a site for more than 180 days;
- (3) installing utilities, erection of walls and fences, construction of roads, or similar projects;
- (4) construction of flood control structures such as levees, dikes, dams, channel improvements, etc.;
- (5) mining, dredging, filling, grading, excavation, or drilling operations;
- (6) construction and/or reconstruction of bridges or culverts;
- (7) storage of materials; or
- (8) any other activity that might change the direction, height, or velocity of flood or surface waters.

"Development" does not include activities such as the maintenance of existing structures and facilities such as painting, re-roofing; resurfacing roads; or gardening, plowing, and similar agricultural practices that do not involve filling, grading, excavation, or the construction of permanent structures.

**Elevated structure** means a non-basement structure built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, or columns (posts and piers).

**Elevation Certificate** is a certified statement that verifies a structure's elevation information.

**Emergency Program** means the first phase under which a community participates in the NFIP. It is intended to provide a first layer amount of insurance at subsidized rates on all insurable structures in that community before the effective date of the initial FIRM.

**Encroachment** means the advance or infringement of uses, fill, excavation, buildings, permanent structures or development into a floodplain, which may impede or alter the flow capacity of a floodplain.

**Existing Construction** means any structure for which the “start of construction” commenced before the effective date of the community’s first floodplain ordinance.

**Existing manufactured home park or subdivision** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the community’s first floodplain ordinance.

**Expansion to an existing manufactured home park or subdivision** means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

**FEMA** means the Federal Emergency Management Agency.

**Five-hundred year flood (500-year flood)** means the flood that has a 0.2 percent chance of being equaled or exceeded in any year.

**Flood** means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow, the unusual and rapid accumulation, or the runoff of surface waters from any source.

**Flood Boundary and Floodway Map (FBFM)** means an official map on which the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration (FIA) has delineated the areas of flood hazards and regulatory floodway.

**Flood Hazard Boundary Map (FHBM)** means an official map of a community, issued by FEMA, where the boundaries of the areas of special flood hazard have been identified as Zone A.

**Flood Insurance Rate Map (FIRM)** means an official map of a community, on which FEMA has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

**Flood Insurance Study (FIS)** is the official hydraulic and hydrologic report provided by FEMA. The report contains flood profiles, as well as the FIRM, FBFM (where applicable), and the water surface elevation of the base flood.

**Floodplain** means the channel proper and the areas adjoining any wetland, lake or watercourse which have been or hereafter may be covered by the regulatory flood. The floodplain includes both the floodway and the fringe districts.

**Floodplain management** means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including but not limited to emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

**Floodplain management regulations** means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power which control development in flood-prone areas. This term describes federal, state, or local regulations in any combination thereof, which provide standards for preventing and reducing flood loss

and damage. Floodplain management regulations are also referred to as floodplain regulations, floodplain ordinance, flood damage prevention ordinance, and floodplain management requirements.

**Flood Protection Grade (FPG)** is the elevation of the regulatory flood plus two feet at any given location in the SFHA. (see "Freeboard")

**Floodproofing (dry floodproofing)** is a method of protecting a structure that ensures that the structure, together with attendant utilities and sanitary facilities, is watertight to the floodproofed design elevation with walls that are substantially impermeable to the passage of water. All structural components of these walls are capable of resisting hydrostatic and hydrodynamic flood forces, including the effects of buoyancy, and anticipated debris impact forces.

**Floodproofing certificate** is a form used to certify compliance for non-residential structures as an alternative to elevating structures to or above the FPG. This certification must be by a Registered Professional Engineer or Architect.

**Floodway** is the channel of a river or stream and those portions of the floodplains adjoining the channel which are reasonably required to efficiently carry and discharge the peak flood flow of the regulatory flood of any river or stream.

**Freeboard** means a factor of safety, usually expressed in feet above the BFE, which is applied for the purposes of floodplain management. It is used to compensate for the many unknown factors that could contribute to flood heights greater than those calculated for the base flood.

**Fringe** is those portions of the floodplain lying outside the floodway.

**Functionally dependent facility** means a facility which cannot be used for its intended purpose unless it is located or carried out in close proximity to water, such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, ship repair, or seafood processing facilities. The term does not include long-term storage, manufacture, sales, or service facilities.

**Hardship** (as related to variances of this ordinance) means the exceptional hardship that would result from a failure to grant the requested variance. The Common Council requires that the variance is exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is NOT exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

**Highest adjacent grade** means the highest natural elevation of the ground surface, prior to the start of construction, next to the proposed walls of a structure.

**Historic structure** means any structure individually listed on the National Register of Historic Places or the Indiana State Register of Historic Sites and Structures.

**Increased Cost of Compliance (ICC)** means the cost to repair a substantially damaged structure that exceeds the minimal repair cost and that is required to bring a substantially damaged structure into compliance with the local flood damage prevention ordinance. Acceptable mitigation measures are elevation, relocation, demolition, or any combination thereof. All renewal and new business flood insurance policies with effective dates on or after June 1, 1997, will include ICC coverage.

**Letter of Map Amendment (LOMA)** means an amendment to the currently effective FEMA map that establishes that a property is not located in a SFHA. A LOMA is only issued by FEMA.

**Letter of Map Revision (LOMR)** means an official revision to the currently effective FEMA map. It is issued by FEMA and changes flood zones, delineations, and elevations.

**Letter of Map Revision Based on Fill (LOMR-F)** means an official revision by letter to an effective NFIP map. A LOMR-F provides FEMA's determination concerning whether a structure or parcel has been elevated on fill above the BFE and excluded from the SFHA.

**Lowest adjacent grade** means the lowest elevation, after completion of construction, of the ground, sidewalk, patio, deck support, or basement entryway immediately next to the structure.

**Lowest floor** means the lowest of the following:

- (1) the top of the lowest level of the structure;
- (2) the top of the basement floor;
- (3) the top of the garage floor, if the garage is the lowest level of the structure;
- (4) the top of the first floor of a structure elevated on pilings or pillars;
- (5) the top of the first floor of a structure constructed with a crawl space, provided that the lowest point of the interior grade is at or above the BFE and construction meets requirements of 55. a.; or
- (6) the top of the floor level of any enclosure, other than a basement, below an elevated structure where the walls of the enclosure provide any resistance to the flow of flood waters unless:
  - a). the walls are designed to automatically equalize the hydrostatic flood forces on the walls by allowing for the entry and exit of flood waters, by providing a minimum of two openings (in addition to doorways and windows) having a total net area of one (1) square inch for every one square foot of enclosed area. The bottom of all such openings shall be no higher than one (1) foot above grade; and,
  - b). such enclosed space shall be usable solely for the parking of vehicles and building access.

**Manufactured home** means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

**Manufactured home park or subdivision** means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

**Map amendment** means a change to an effective NFIP map that results in the exclusion from the SFHA of an individual structure or a legally described parcel of land that has been inadvertently included in the SFHA (i.e., no alterations of topography have occurred since the date of the first NFIP map that showed the structure or parcel to be within the SFHA).

**Map panel number** is the four-digit number followed by a letter suffix assigned by FEMA on a flood map. The first four digits represent the map panel, and the letter suffix represents the number of times the map panel has been revised. (The letter "A" is not used by FEMA, the letter "B" is the first revision.)

**Market value** means the building value, excluding the land (as agreed to between a willing buyer and seller), as established by what the local real estate market will bear. Market value can be established by independent certified appraisal, replacement cost depreciated by age of building (actual cash value), or adjusted assessed values.

**Mitigation** means sustained actions taken to reduce or eliminate long-term risk to people and property from hazards and their effects. The purpose of mitigation is two fold: to protect people and structures, and to minimize the cost of disaster response and recovery.



**National Flood Insurance Program (NFIP)** is the federal program that makes flood insurance available to owners of property in participating communities nationwide through the cooperative efforts of the Federal Government and the private insurance industry.

**National Geodetic Vertical Datum of 1929 (NGVD)** as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

**New construction** means any structure for which the “start of construction” commenced after the effective date of the community’s first floodplain ordinance.

**New manufactured home park or subdivision** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the community’s first floodplain ordinance.

**North American Vertical Datum of 1988 (NAVD 88)** as adopted in 1993 is a vertical control datum used as a reference for establishing varying elevations within the floodplain.

**Obstruction** includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, canalization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation, or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water; or due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

**One-hundred year flood (100-year flood)** is the flood that has a one percent (1%) chance of being equaled or exceeded in any given year. Any flood zone that begins with the letter A is subject to the one-percent annual chance flood. See “Regulatory Flood”.

**One-percent annual chance flood** is the flood that has a one percent (1%) chance of being equaled or exceeded in any given year. Any flood zone that begins with the letter A is subject to the one-percent annual chance flood. See “Regulatory Flood”.

**Participating community** is any community that voluntarily elects to participate in the NFIP by adopting and enforcing floodplain management regulations that are consistent with the standards of the NFIP.

**Physical Map Revision (PMR)** is an official republication of a community’s FEMA map to effect changes to base (1-percent annual chance) flood elevations, floodplain boundary delineations, regulatory floodways, and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas, or correction to base flood elevations or SFHAs.

**Post-FIRM construction** means construction or substantial improvement that started on or after the effective date of the initial FIRM of the community or after December 31, 1974, whichever is later.

**Pre-FIRM construction** means construction or substantial improvement, which started on or before December 31, 1974, or before the effective date of the initial FIRM of the community, whichever is later.

**Probation** is a means of formally notifying participating communities of violations and deficiencies in the administration and enforcement of the local floodplain management regulations.

**Public safety and nuisance**, anything which is injurious to the safety or health of an entire community, neighborhood or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

**Recreational vehicle** means a vehicle which is (1) built on a single chassis; (2) 400 square feet or less when measured at the largest horizontal projections; (3) designed to be self-propelled or permanently

towable by a light duty truck; and (4) designed primarily not for use as a permanent dwelling, but as quarters for recreational camping, travel, or seasonal use.

**Regular program** means the phase of the community's participation in the NFIP where more comprehensive floodplain management requirements are imposed and higher amounts of insurance are available based upon risk zones and elevations determined in a FIS.

**Regulatory flood** means the flood having a one percent (1%) chance of being equaled or exceeded in any given year, as calculated by a method and procedure that is acceptable to and approved by the Indiana Department of Natural Resources and the Federal Emergency Management Agency. The regulatory flood elevation at any location is as defined in Section 55.03(B) of this ordinance. The "Regulatory Flood" is also known by the term "Base Flood", "One-Percent Annual Chance Flood", and "100-Year Flood".

**Repetitive loss** means flood-related damages sustained by a structure on two separate occasions during a 10-year period ending on the date of the event for which the second claim is made, in which the cost of repairing the flood damage, on the average, equaled or exceeded 25% of the market value of the structure at the time of each such flood event.

**Section 1316** is that section of the National Flood Insurance Act of 1968, as amended, which states that no new flood insurance coverage shall be provided for any property that the Administrator finds has been declared by a duly constituted state or local zoning authority or other authorized public body to be in violation of state or local laws, regulations, or ordinances that intended to discourage or otherwise restrict land development or occupancy in flood-prone areas.

**Special Flood Hazard Area (SFHA)** means those lands within the jurisdictions of the City of Valparaiso subject to inundation by the regulatory flood. The SFHAs of the City of Valparaiso are generally identified as such on the Flood Insurance Rate Map of the City of Valparaiso dated January 6, 1983, as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date. The SFHAs of those parts of unincorporated Porter County that are within the extraterritorial jurisdiction of the City of Valparaiso or that may be annexed into the City of Valparaiso are generally identified as such on the Flood Insurance Rate Map prepared for Porter County by the Federal Emergency Management Agency and dated April 1, 1982, as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date. (These areas are shown on a FHBM or FIRM as Zone A, AE, A1- A30, AH, AR, A99, or AO).

**Start of construction** includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit date. The actual start means the first placement or permanent construction of a structure (including a manufactured home) on a site, such as the pouring of slabs or footing, installation of piles, construction of columns, or any work beyond the stage of excavation for placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, foundations, or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

**Structure** means a structure that is principally above ground and is enclosed by walls and a roof. The term includes a gas or liquid storage tank, a manufactured home, or a prefabricated building. The term also includes recreational vehicles to be installed on a site for more than 180 days.

**Substantial damage** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

**Substantial improvement** means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures that have incurred "repetitive loss" or "substantial damage" regardless of the actual repair work performed. The term does not include improvements of structures to correct existing violations of state or local health, sanitary, or safety code requirements or any alteration of a "historic structure", provided that the alteration will not preclude the structures continued designation as a "historic structure".

**Suspension** means the removal of a participating community from the NFIP because the community has not enacted and/or enforced the proper floodplain management regulations required for participation in the NFIP.

**Variance** is a grant of relief from the requirements of this ordinance, which permits construction in a manner otherwise prohibited by this ordinance where specific enforcement would result in unnecessary hardship.

**Violation** means the failure of a structure or other development to be fully compliant with this ordinance. A structure or other development without the elevation, other certification, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

**Watercourse** means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

**Water surface elevation** means the height, in relation to the North American Vertical Datum of 1988 (NAVD 88), or National Geodetic Vertical Datum of 1929 (NGVD) (other datum where specified) of floods of various magnitudes and frequencies in the floodplains of riverine areas.

**X zone** means the area where the flood hazard is less than that in the SFHA. Shaded X zones shown on recent FIRMs (B zones on older FIRMs) designate areas subject to inundation by the flood with a 0.2 percent chance of being equaled or exceeded (the 500-year flood). Unshaded X zones (C zones on older FIRMs) designate areas where the annual exceedance probability of flooding is less than 0.2 percent.

**Zone** means a geographical area shown on a FHBM or FIRM that reflects the severity or type of flooding in the area.

**Zone A** (see definition for A zone)

**Zone B, C, and X** means areas identified in the community as areas of moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Flood insurance is available in participating communities but is not required by regulation in these zones. (Zone X is used on new and revised maps in place of Zones B and C.)

### **55.03 General Provisions.**

*(A) Lands to Which This Ordinance Applies.* This ordinance shall apply to all SFHAs within the jurisdiction of the City of Valparaiso.

*(B) Basis for Establishing Regulatory Flood Data.* This ordinance's protection standard is the regulatory flood. The best available regulatory flood data is listed below. Whenever a party disagrees with the

best available data, the party submitting the detailed engineering study needs to replace existing data with better data and submit it to the Indiana Department of Natural Resources for review and approval.

- (1) The regulatory flood elevation, floodway, and fringe limits for the studied SFHAs of Salt Creek shall be as delineated on the 100 year flood profiles in the Flood Insurance Study of the City of Valparaiso dated July 6, 1982 and the corresponding Flood Boundary Floodway Map dated January 6, 1983, as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date.
- (2) The regulatory flood elevation, floodway, and fringe limits for each of the remaining SFHAs delineated as an "A Zone" on the FIRM of the City of Valparaiso shall be according to the best data available as provided by the Indiana Department of Natural Resources.
- (3) For the SFHAs of those parts of unincorporated Porter County that are within the extraterritorial jurisdiction of the City of Valparaiso or that may be annexed into the City of Valparaiso:
  - a). The regulatory flood elevation, floodway, and fringe limits of studied SFHAs shall be as delineated on the 100 year flood profiles in the Flood Insurance Study of Porter County dated October 1, 1981 and the corresponding Flood Boundary Floodway Map dated April 1, 1982, as well as any future updates, amendments, or revisions, prepared by the Federal Emergency Management Agency with the most recent date.
  - b). If the SFHA is delineated as "Zone A" on the County Flood Insurance Rate Map, the regulatory flood elevation, floodway, and fringe limits shall be according to the best data available as provided by the Indiana Department of Natural Resources.

*(C) Establishment of Floodplain Development Permit.* A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities in areas of special flood hazard.

*(D) Compliance.* No structure shall hereafter be located, extended, converted or structurally altered within the SFHA without full compliance with the terms of this ordinance and other applicable regulations. No land or stream within the SFHA shall hereafter be altered without full compliance with the terms of this ordinance and other applicable regulations.

*(E) Abrogation and Greater Restrictions.* This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

*(F) Discrepancy between Mapped Floodplain and Actual Ground Elevations.*

- (1) In cases where there is a discrepancy between the mapped floodplain (SFHA) on the FIRM and the actual ground elevations, the elevation provided on the profiles shall govern.
- (2) If the elevation of the site in question is below the base flood elevation, that site shall be included in the SFHA and regulated accordingly.
- (3) If the elevation (natural grade) of the site in question is above the base flood elevation, that site shall be considered outside the SFHA and the floodplain regulations will not be applied. The property owner should be advised to apply for a LOMA.

*(G) Interpretation.* In the interpretation and application of this ordinance all provisions shall be:

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the governing body; and,
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

*(H) Warning and Disclaimer of Liability.* The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on available information derived from engineering and scientific methods of study. Larger floods can and will occur on rare occasions. Therefore, this ordinance does not create any liability on the part of the City of Valparaiso, the Indiana Department of Natural Resources, or the State of Indiana, for any flood damage that results from reliance on this ordinance or any administrative decision made lawfully thereunder.

*(I) Penalties for Violation.* Failure to obtain a Floodplain Development Permit in the SFHA or failure to comply with the requirements of a Floodplain Development Permit or conditions of a variance shall be deemed to be a violation of this ordinance. All violations shall be considered a common nuisance and be treated as such in accordance with the provisions of the Municipal Code for the City of Valparaiso.

The City's Floodplain Administrator may, for any violation of this ordinance, levy a fine against the violator(s) of up to the maximum amount allowed by "*Chapter 37, Ordinance Violation Bureau*" in the Municipal Code for each occurrence. The City Floodplain Administrator shall notify the violator(s) of such fine, in writing, on a form approved by the Board. The violator shall pay the fine through the Local Ordinance Violations Bureau. The City Floodplain Administrator may levy a fine for each and every day the violation is continued.

- (1) A separate offense shall be deemed to occur for each day the violation continues to exist.
- (2) The City of Valparaiso Planning Commission shall inform the owner that any such violation is considered a willful act to increase flood damages and therefore may cause coverage by a Standard Flood Insurance Policy to be suspended.
- (3) Nothing herein shall prevent the City of Valparaiso from taking such other lawful action to prevent or remedy any violations. All costs connected therewith shall accrue to the person or persons responsible.

#### **55.04 Administration**

*(A) Designation of Administrator.* The Common Council of the City of Valparaiso hereby appoints the city Stormwater Engineer to administer and implement the provisions of this ordinance and is herein referred to as the Floodplain Administrator.

*(B) Permit Procedures.* Application for a Floodplain Development Permit shall be made to the Floodplain Administrator on forms furnished by him or her prior to any development activities, and may include, but not be limited to, the following plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, earthen fill, storage of materials or equipment, drainage facilities, and the location of the foregoing. Specifically the following information is required:

- (1) Application stage.
  - a). A description of the proposed development;
  - b). Location of the proposed development sufficient to accurately locate property and structure in relation to existing roads and streams;
  - c). A legal description of the property site;
  - d). A site development plan showing existing and proposed development locations and existing and proposed land grades;
  - e). Elevation of the top of the lowest floor (including basement) of all proposed buildings. Elevation should be in NAVD 88 or NGVD;

- f). Elevation (in NAVD 88 or NGVD) to which any non-residential structure will be floodproofed;
- g). Description of the extent to which any watercourse will be altered or related as a result of proposed development, and;

(2) Construction stage.

Upon placement of the lowest floor; or floodproofing, it shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the NAVD 88 or NGVD elevation of the lowest floor or floodproofed elevation, as built. Said certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by the same. When floodproofing is utilized for a particular structure said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holders' risk. (The Floodplain Administrator shall review the lowest floor and floodproofing elevation survey data submitted.) The permit holder shall correct deficiencies detected by such review before any further work is allowed to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

*(C) Duties and Responsibilities of the Floodplain Administrator.* The Floodplain Administrator and/or designated staff is hereby authorized and directed to enforce the provisions of this ordinance. The administrator is further authorized to render interpretations of this ordinance, which are consistent with its spirit and purpose.

Duties and Responsibilities of the Floodplain Administrator shall include, but not be limited to:

- (1) Review all floodplain development permits to assure that the permit requirements of this ordinance have been satisfied;
- (2) Inspect and inventory damaged structures in SFHA and complete substantial damage determinations;
- (3) Ensure that construction authorization has been granted by the Indiana Department of Natural Resources for all development projects subject to Section 55.05(E) and (G)(1) of this ordinance, and maintain a record of such authorization (either copy of actual permit or floodplain analysis/regulatory assessment.)
- (4) Ensure that all necessary federal or state permits have been received prior to issuance of the local floodplain development permit. Copies of such permits are to be maintained on file with the floodplain development permit;
- (5) Notify adjacent communities and the State Floodplain Coordinator prior to any alteration or relocation of a watercourse, and submit copies of such notifications to FEMA;
- (6) Maintain for public inspection and furnish upon request local permit documents, damaged structure inventories, substantial damage determinations, regulatory flood data, SFHA maps, Letters of Map Amendment (LOMA), Letters of Map Revision (LOMR), copies of DNR permits and floodplain analysis and regulatory assessments (letters of recommendation), federal permit documents, and "as-built" elevation and floodproofing data for all buildings constructed subject to this ordinance.
- (7) Utilize and enforce all Letters of Map Revision (LOMR) or Physical Map Revisions (PMR) issued by FEMA for the currently effective SFHA maps of the community.
- (8) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished;

- (9) Verify and record the actual elevation of the lowest floor (including basement) of all new or substantially improved structures, in accordance with Section 55.04(B);
- (10) Verify and record the actual elevation to which any new or substantially improved structures have been floodproofed, in accordance with Section 55.04(B);
- (11) Review certified plans and specifications for compliance.
- (12) Stop Work Orders
  - a). Upon notice from the floodplain administrator, work on any building, structure or premises that is being done contrary to the provisions of this ordinance shall immediately cease.
  - b). Such notice shall be in writing and shall be given to the owner of the property, or to his agent, or to the person doing the work, and shall state the conditions under which work may be resumed.
- (13) Revocation of Permits
  - a). The floodplain administrator may revoke a permit or approval, issued under the provisions of the ordinance, in cases where there has been any false statement or misrepresentation as to the material fact in the application or plans on which the permit or approval was based.
  - b). The floodplain administrator may revoke a permit upon determination by the floodplain administrator that the construction, erection, alteration, repair, moving, demolition, installation, or replacement of the structure for which the permit was issued is in violation of, or not in conformity with, the provisions of this ordinance.

#### **55.05 Provisions for Flood Hazard Reduction.**

(A) *General Standards.* In all SFHAs the following provisions are required:

- (1) New construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure;
- (2) Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces;
- (3) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage below the FPG;
- (4) New construction and substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (5) Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;

- (6) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (7) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (8) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding;
- (9) Any alteration, repair, reconstruction or improvements to a structure that is in compliance with the provisions of this ordinance shall meet the requirements of "new construction" as contained in this ordinance; and,
- (10) Any alteration, repair, reconstruction or improvement to a structure that is not in compliance with the provisions of this ordinance, shall be undertaken only if said non-conformity is not further, extended, or replaced.
- (11) Whenever any portion of the SFHA is authorized for use, the volume of space which will be occupied by the authorized fill or structure below the BFE shall be compensated for and balanced by an equivalent volume of excavation taken below the BFE. The excavation volume shall be at least equal to the volume of storage lost (replacement ratio of 1 to 1) due to the fill or structure.
  - a). The excavation shall take place in the floodplain and in the same immediate watershed in which the authorized fill or structure is located;
  - b). Under certain circumstances, the excavation may be allowed to take place outside of but adjacent to the floodplain provided that the excavated volume will be below the regulatory flood elevation, will be in the same immediate watershed in which the authorized fill or structure is located, will be accessible to the regulatory flood water, will not be subject to ponding when not inundated by flood water, and that it shall not be refilled;
  - c). The fill or structure shall not obstruct a drainage way leading to the floodplain;
  - d). The fill or structure shall be of a material deemed stable enough to remain firm and in place during periods of flooding and shall include provisions to protect adjacent property owners against any increased runoff or drainage resulting from its placement; and,
  - e). Plans depicting the areas to be excavated and filled shall be submitted prior to the actual start of construction or any site work; once site work is complete, but before the actual start of construction, the applicant shall provide to the Floodplain Administrator a certified survey of the excavation and fill sites demonstrating the fill and excavation comply with this article.

(B) *Specific Standards.* In all SFHAs, the following provisions are required:

- (1) In addition to the requirements of Section 55.05(A), all structures to be located in the SFHA shall be protected from flood damage below the FPG. This building protection requirement applies to the following situations:
  - a). Construction or placement of any new structure having a floor area greater than 400 square feet.
  - b). Addition or improvement made to any existing structure:
    - (i) where the cost of the addition or improvement equals or exceeds 50% of the value of the existing structure (excluding the value of the land);



- (ii) with a previous addition or improvement constructed since the community's first floodplain ordinance.
  - c). Reconstruction or repairs made to a damaged structure where the costs of restoring the structure to its before damaged condition equals or exceeds 50% of the market value of the structure (excluding the value of the land) before damage occurred.
  - d). Installing a travel trailer or recreational vehicle on a site for more than 180 days.
  - e). Installing a manufactured home on a new site or a new manufactured home on an existing site. This ordinance does not apply to returning the existing manufactured home to the same site it lawfully occupied before it was removed to avoid flood damage; and
  - f). Reconstruction or repairs made to a repetitive loss structure.
- (2) **Residential Construction.** New construction or substantial improvement of any residential structure (or manufactured home) shall have the lowest floor; including basement, at or above the FPG (two feet above the base flood elevation). Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with the standards of Section 55.05(B)(4).
- (3) **Non-Residential Construction.** New construction or substantial improvement of any commercial, industrial, or non-residential structure (or manufactured) shall have the lowest floor, including basement, elevated to or above the FPG (two feet above the base flood elevation). Structures located in all "A Zones" may be floodproofed in lieu of being elevated if done in accordance with the following:
- a). A Registered Professional Engineer or Architect shall certify that the structure has been designed so that below the FPG, the structure and attendant utility facilities are watertight and capable of resisting the effects of the regulatory flood. The structure design shall take into account flood velocities, duration, rate of rise, hydrostatic pressures, and impacts from debris or ice. Such certification shall be provided to the official as set forth in Section 55.04(C)(10)
  - b). Floodproofing measures shall be operable without human intervention and without an outside source of electricity.
- (4) **Elevated Structures.** New construction or substantial improvements of elevated structures that include fully enclosed areas formed by foundation and other exterior walls below the base flood elevations shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.
- a). Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
    - (i) provide a minimum of two openings having a total net area of not less than one square inch for every one square foot of enclosed area; and
    - (ii) the bottom of all openings shall be no higher than one foot above foundation interior grade (which must be equal to in elevation or higher than the exterior foundation grade); and
    - (iii) openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.
    - (iv) access to the enclosed area shall be the minimum necessary to allow for parking for vehicles (garage door) or limited storage of maintenance equipment used in connection

with the premises (standard exterior door) or entry to the living area (stairway or elevator); and

- (v) the interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
- (vi) portions of the building below the flood protection grade must be constructed with materials resistant to flood damage.
- (vii) where elevation requirements exceed 6 feet above the highest adjacent grade, a copy of the legally recorded deed restriction prohibiting the conversion of the area below the lowest floor to a use or dimension contrary to the structure's originally approved design, shall be presented as a condition of issuance of the final Certificate of Occupancy.

(5) **Structures Constructed on Fill.** A residential or nonresidential structure may be constructed on a permanent land fill in accordance with the following:

- a). The fill shall be placed in layers no greater than 1 foot deep before compacting to 95% of the maximum density obtainable with the Standard Proctor Test method.
- b). The fill should extend at least ten feet beyond the foundation of the structure before sloping below the FPG.
- c). The fill shall be protected against erosion and scour during flooding by vegetative cover, riprap, or bulkheading. If vegetative cover is used, the slopes shall be no steeper than 3 horizontal to 1 vertical.
- d). The fill shall not adversely affect the flow of surface drainage from or onto neighboring properties.
- e). The top of the lowest floor including basements shall be at or above the FPG.

(6) **Standards for Structures Constructed with a Crawlspace.** A residential or nonresidential structure may be constructed with a crawlspace located below the flood protection grade provided that the following conditions are met:

- a). The building must be designed and adequately anchored to resist flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy; and
- b). Any enclosed area below the flood protection grade shall have openings that equalize hydrostatic pressures by allowing for the automatic entry and exit of floodwaters. Provide a minimum of two openings having a total net area of not less than one square inch for every one square foot of enclosed area. The bottom of the openings shall be no more than one foot above grade; and
- c). The interior grade of the crawlspace must be at or above the base flood elevation; and
- d). The interior height of the crawlspace measured from the interior grade of the crawlspace to the top of the foundation wall must not exceed four feet at any point; and
- e). An adequate drainage system must be installed to remove floodwaters from the interior area of the crawlspace within a reasonable period of time after a flood event; and
- f). Portions of the building below the flood protection grade must be constructed with materials resistant to flood damage; and

g). Utility systems within the crawlspace must be elevated above the flood protection grade.

(7) **Standards for Manufactured Homes and Recreational Vehicles.** Manufactured homes and recreational vehicles to be installed or substantially improved on a site for more than 180 days must meet one of the following requirements:

a). The manufactured home shall be elevated on a permanent foundation such that the lowest floor shall be at or above the FPG and securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. This requirement applies to all manufactured homes to be placed on a site;

(i) outside a manufactured home park or subdivision;

(ii) in a new manufactured home park or subdivision;

(iii) in an expansion to an existing manufactured home park or subdivision; or

(iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood.

b). The manufactured home shall be elevated so that the lowest floor of the manufactured home chassis is supported by reinforced piers or other foundation elevations that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. This requirement applies to all manufactured homes to be placed on a site in an existing manufactured home park or subdivision that has not been substantially damaged by a flood.

c). Recreational vehicles placed on a site shall either:

(i) be on site for less than 180 days; and,

(ii) be fully licensed and ready for highway use (defined as being on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions); or

(iii) meet the requirements for "manufactured homes" as stated earlier in this section.

*(C) Standards for Subdivision Proposals.*

(1) All subdivision proposals shall be consistent with the need to minimize flood damage;

(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;

(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards, and;

(4) Base flood elevation data shall be provided for subdivision proposals and other proposed development (including manufactured home parks and subdivisions), which is greater than the lesser of fifty lots or five acres.

*(D) Critical Facility.* Construction of new critical facilities shall be, to the extent possible, located outside the limits of the SFHA. Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated to or above the FPG at the site. Floodproofing and sealing measures must be taken to

ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the FPG shall be provided to all critical facilities to the extent possible.

*(E) Standards for Identified Floodways.* Located within SFHAs, established in Section 55.03(B) are areas designated as floodways. The floodway is an extremely hazardous area due to the velocity of floodwaters, which carry debris, potential projectiles, and has erosion potential. If the site is in an identified floodway, the Floodplain Administrator shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources and apply for a permit for construction in a floodway. Under the provisions of IC 14-28-1, a permit for construction in a floodway from the Indiana Department of Natural Resources is required prior to the issuance of a local building permit for any excavation, deposit, construction or obstruction activity located in the floodway. This includes land preparation activities such as filling, grading, clearing and paving etc. undertaken before the actual start of construction of the structure. However, it does exclude non-substantial additions/improvements to existing (lawful) residences in a non-boundary river floodway. (IC 14-28-1-26 allows construction of non-substantial additions/ improvements to residences in a non-boundary river floodway without obtaining a permit for construction in a floodway from the Indiana Department of Natural Resources. Please note that if fill is needed to elevate an addition above the existing grade, prior approval (construction in a floodway permit) for the fill is required from the Indiana Department of Natural Resources.)

No action shall be taken by the Floodplain Administrator until a permit (when applicable) has been issued by the Indiana Department of Natural Resources granting approval for construction in a floodway. Once a permit for construction in a floodway has been issued by the Indiana Department of Natural Resources, the Floodplain Administrator may issue the local Floodplain Development Permit, provided the provisions contained in Section 55.05 of this ordinance have been met. The Floodplain Development Permit cannot be less restrictive than the permit for construction in a floodway issued by the Indiana Department of Natural Resources. However, a community's more restrictive regulations (if any) shall take precedence.

No development shall be allowed which acting alone or in combination with existing or future development, will increase the regulatory flood more than 0.14 of one foot; and

For all projects involving channel modifications or fill (including levees) the City of Valparaiso shall submit the data and request that the Federal Emergency Management Agency revise the regulatory flood data.

*(F) Standards for Identified Fringe.* If the site is located in an identified fringe, then the Floodplain Administrator may issue the local Floodplain Development Permit provided the provisions contained in Section 55.05 of this ordinance have been met. The key provision is that the top of the lowest floor of any new or substantially improved structure shall be at or above the FPG.

*(G) Standards for SFHAs Without Established Base Flood Elevation and/or Floodways/Fringes.*

(1) Drainage area upstream of the site is greater than one square mile:

If the site is in an identified floodplain where the limits of the floodway and fringe have not yet been determined, and the drainage area upstream of the site is greater than one square mile, the Floodplain Administrator shall require the applicant to forward the application, along with all pertinent plans and specifications, to the Indiana Department of Natural Resources for review and comment.

No action shall be taken by the Floodplain Administrator until either a permit for construction in the floodway or a floodplain analysis/regulatory assessment citing the 100 year flood elevation and the recommended Flood Protection Grade has been received from the Indiana Department of Natural Resources.

Once the Floodplain Administrator has received the proper construction in a floodway permit or floodplain analysis/regulatory assessment approving the proposed development, a Floodplain Development Permit may be issued provided the conditions of the Floodplain Development Permit

are not less restrictive than the conditions received from the Indiana Department of Natural Resources and the provisions contained in Section 55.05 of this ordinance have been met.

- (2) Drainage area upstream of the site is less than one square mile:

If the site is in an identified floodplain where the limits of the floodway and fringe have not yet been determined and the drainage area upstream of the site is less than one square mile, the Floodplain Administrator shall require the applicant to provide an engineering analysis showing the limits of the floodway, fringe and 100 year flood elevation for the site.

Upon receipt, the Floodplain Administrator may issue the local Floodplain Development Permit, provided the provisions contained in Section 55.05 of this ordinance have been met.

- (3) The total cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the regulatory flood more than 0.14 of one foot and will not increase flood damages or potential flood damages.

#### **55.06 Variance Procedures.**

*(A) Designation of Variance and Appeals Board.* The Board of Public Works and Safety as established by Common Council of the City of Valparaiso shall hear and decide appeals and requests for variances from requirements of this ordinance.

*(B) Duties of Variance and Appeals Board.* The board shall hear and decide appeals when it is alleged an error in any requirement, decision, or determination is made by the Floodplain Administrator in the enforcement or administration of this ordinance. Any person aggrieved by the decision of the board may appeal such decision as provided in IC 36-7-4, et. seq., as amended.

*(C) Variance Procedures.* In passing upon such applications, the Board of Public Works and Safety shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and;

- (1) The danger of life and property due to flooding or erosion damage;
- (2) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- (3) The importance of the services provided by the proposed facility to the community;
- (4) The necessity to the facility of a waterfront location, where applicable;
- (5) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
- (6) The compatibility of the proposed use with existing and anticipated development;
- (7) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
- (8) The safety of access to the property in times of flood for ordinary and emergency vehicles;
- (9) The expected height, velocity, duration, rate of rise, and sediment of transport of the floodwaters at the site; and,

- (10) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

*(D) Conditions for Variances.*

- (1) Variances shall only be issued when there is:
  - a). A showing of good and sufficient cause;
  - b). A determination that failure to grant the variance would result in exceptional hardship; and,
  - c). A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud or victimization of the public, or conflict with existing laws or ordinances.
- (2) No variance for a residential use within a floodway subject to Section 55.05 (E) and (G)(1) of this ordinance may be granted.
- (3) Any variance granted in a floodway subject to Section 55.05 (E) and (G)(1) of this ordinance will require a permit from the Indiana Department of Natural Resources.
- (4) Variances to the Provisions for Flood Hazard Reduction of Section 55.05(B), may be granted only when a new structure is to be located on a lot of one-half acre or less in size, contiguous to and surrounded by lots with existing structures constructed below the flood protection grade.
- (5) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- (6) Variances may be granted for the reconstruction or restoration of any structure individually listed on the National Register of Historic Places or the Indiana State Register of Historic Sites and Structures.
- (7) Any application to which a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation to which the lowest floor is to be built and stating that the cost of the flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation (See (E) below).
- (8) The Floodplain Administrator shall maintain the records of appeal actions and report any variances to the Federal Emergency Management Agency or the Indiana Department of Natural Resources upon request (See (E) below).

*(E) Variance Notification.* Any applicant to whom a variance is granted shall be given written notice over the signature of a community official that:

- (1) The issuance of a variance to construct a structure below the base flood elevation will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage; and;
- (2) Such construction below the base flood level increases risks to life and property. A copy of the notice shall be recorded by the Floodplain Administrator in the Office of the County Recorder and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

The Floodplain Administrator will maintain a record of all variance actions, including justification for their issuance, and report such variances issued in the community's biennial report submission to the Federal Emergency Management Agency.

(F) *Historic Structure*. Variances may be issued for the repair or rehabilitation of “historic structures” upon a determination that the proposed repair or rehabilitation will not preclude the structure’s continued designation as an “historic structure” and the variance is the minimum to preserve the historic character and design of the structure.

(G) *Special Conditions*. Upon the consideration of the factors listed in Section 55.06, and the purposes of this ordinance, the Board of Public Works and Safety may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

## **55.07 Severability.**

If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

## **Storm Water Runoff Control**

### **55.08 General**

The purpose to this section is to provide for the adequate control of storm water runoff so that certain natural resources are preserved and the quality of the water and the health, safety and welfare of the residents is not compromised.

Any new development, or construction, addition or renovation requiring a building permit from the City, shall provide storm water runoff controls as provided herein. Appropriate reference shall be made to the latest revision of the “Specifications and Standards for Acceptance of Municipal Improvements” for specific requirements.

**55.09 Definitions:** For purposes of this article, the following words and phrases shall have the meanings indicate below:

- A. Board - The Board of Public Works and Safety of the City of Valparaiso.
- B. By-pass - a channel formed in the topography of the surface of the earth to carry storm water runoff through or around a specific area.
- C. City Engineer - The City Engineer of the City of Valparaiso or his authorized representative.
- D. Commission - The Planning Commission of the City of Valparaiso.
- E. Common swale or ditch - A swale or ditch that conveys runoff from sties with multiple ownerships.
- F. Detention Basin - A structure or area of land that is configured to temporarily store a portion of the runoff from a site. The basin has a discharge control structure that allows all of the stored runoff to drain away to a drainage course.
- G. Detention Basin, dry bottom - A detention basin that is designed to drain completely dry.
- H. Detention Basin, wet bottom - A detention basin that is designed to permanently contain a volume of water below the storage volume.
- I. Discharge - The water released from a detention basin, drainage course or pump.
- J. Discharge Control Structure - A structure that, by virtue of its size and/or its configuration, controls or regulates the rate of flow through it.
- K. Discharge Rate - The flow rate of the water released from a detention basin, drainage course or pump.
- L. Drainage Calculations - The mathematical calculation and supporting data required for the analysis and/or design of drainage course and/or detention basins.
- M. Drainage Control Measure - The combinations of grading, swales, ditches, sewers, detention basins, etc. that are proposed to be used to control the runoff from and/or through a site.
- N. Drainage Course - A sewer, swale or ditch that conveys runoff.
- O. Drainage Plan - A drawing showing the drainage control measure to be provided on a site. The drainage calculations, when required, shall be included as a part of the drainage plan.
- P. Groundwater Recharge - The process of returning water to the aquifer underlying the site.
- Q. Pass Through Runoff - The runoff that enters the site from other locations in the tributary watershed.
- R. Retention Basin - A structure or area of land that is designed to store a portion of the runoff from a site, has no discharge control structure, and relies on evaporation, transpiration and percolation to remove the stored runoff.

- S. Runoff - That portion of rainfall or pump discharge that is not taken up by vegetation, absorbed into the ground, or evaporated.
- T. Standards - The latest revision of the City of Valparaiso's "Specifications and Standards for Acceptance of Municipal Improvements."
- U. Storage Volume - The volume of storage provided in a detention or retention basin.
- V. Tributary Watershed - The entire area that contributes runoff to a point.

**55.10 Drainage Plans Required:**

Drainage plans are required for all activities covered under paragraph 601 above. 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 the runoff relate problem.

A. Individual One and Two Unit Residential Sites:

By virtue of applying for a building permit the applicant acknowledges that he is familiar with the characteristics of the site and the lands adjacent and that the stormwater control measures proposed are appropriate for those characteristics and the proposed house.

Drainage plans may be shown on a sketch prepared by the applicant. It should be drawn as accurately as possible and clearly show all the stormwater control measures proposed for the site. Arrows may be used to show the direction of surface flow. Locations of swales, downspouts and sump pump discharges should be shown with their direction of flow. Specific elevations are not required.

B. Multiple Units Residential, Commercial, and Industrial Sites:

Drainage plans and drainage calculations shall be prepared by a Registered Professional Engineer, Land Surveyor, Architect or Landscape Architect licensed to practice in the State of Indiana. Drainage plans and drainage calculations for sites over three (3) acres in size, or with unique and/or sensitive drainage issues shall be prepared by a Registered Professional Engineer or Land Surveyor licensed to practice in the State of Indiana. The designer of the drainage plan shall be liable for any shortcomings or inadequacies in the plan that may reveal themselves after construction.

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, and other items that might impact drainage. 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 ordinance or other ordinances of the City.

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.

C. Subdivisions, condominium developments, and Planned Unit Developments (PUD):

Reference should be made to the appropriate sections of this ordinance or other appropriate ordinances of the City.

Drainage plans shall comply with the requirements of paragraph B above. The drainage plan shall be presented in concept at the pre-preliminary review stage of the City's approvals process. If the concept is approved the drainage plan shall be presented in sufficient detail at the Primary Plat stage to be able to make sound judgments concerning the adequacy of the proposed system. The drainage plan shall be presented in final form prior to the Secondary Plat (or equivalent) 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.

**55.11 Regulations:**

General requirements for drainage follow. More specific requirements are per the Standards.



A. Two systems provided

Whenever drainage control measures are proposed or considered, two systems shall be provided, the Minor System and the Major System.

1. 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 ten (10) year frequency of recurrence. The system shall consist of swales, inlets, sewers and ditches.

2. 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 hundred (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.

B. Pass Through Runoff

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.

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 interval. When this is required the discharge structure and overflow shall be designed to accommodate the pass through runoff.

C. Exit Characteristics

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.

It may be necessary to improve the drainage course downstream from a site so that it is capable of conveying the increase runoff from the development. This maybe be necessary to handle either the rate of discharge or the duration of discharge.

D. Public and Private Systems

During the course of the planning and design of the runoff control measures it shall be determined and documented whether the measures are to be public or private.

1. Public Systems - The public system 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 - The private systems shall be privately maintained. Generally private systems shall be those in and under private streets and private sites. Rear year swales, ditches that convey the runoff from individual sites, or development detention basins constructed as runoff control measure for a development, shall be private systems.

Provisions shall be made for the maintenance of private systems. On an individual site the owner shall maintain the system. In a development a property owners association, or some other vehicle, shall be established to provide for said maintenance. Documentation of the provisions for maintenance shall be provided to the City Engineer and accepted by him if, in his opinion they are appropriate.

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 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:

1. 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, and/or

2. Levy a fine against the owner of the property of up to \$50.00 for each violation and/or occurrence, each day constituting a separate occurrence. The City Engineer shall provide written notification of the alleged violation and fine to the owner(s) of the property. The notice shall be delivered in person to the owner or his representative, or sent by registered mail. The administration of the procedure shall be through the City's "Local Ordinance Violations Bureau." The Board may levy a fine for each and every day that the violation is continued.

Recorded easements shall be provided over all components of public and private systems. The easements shall run to the Public and the City of Valparaiso for purposes of maintaining the facilities located in said easements. 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. The cost of said emergency repairs may be billed to the entity responsible for the maintenance of the system.

D. Individual Sites

On individual sites 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.

The location and configuration of downspouts and/or sump pump discharges shall be such that the runoff does not damage or inconvenience adjacent properties. 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. In no event shall downspouts, sump pumps, footing tiles, or any other surface or ground water source be discharged into the sanitary sewer system.

E. Controlled Discharge Required.

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.

Single and duplex residential construction shall be exempt from the strict requirements of this paragraph. However, the runoff from said construction shall be controlled in a manner that minimized problems to adjacent properties.

F. Storm Sewers, Structures, Ditches, Swales, and Culverts

All storm sewers, structures, ditches, swales, and culverts shall be designed and constructed according to the requirements of the Standards and sound engineering practice. They shall be designed to safely convey the appropriate designed flows and to minimize maintenance and repair needs.

G. Retention Basins

Because of the predominant soil characteristics in the City of Valparaiso, retention basins are not allowed.

H. Detention Basins

Detention basins shall be required for any site proposed for development except individual single and duplex residential construction. The requirements for detention maybe waived by the City Engineer if provisions are made in the overall development for appropriate runoff management.

1. General

Detention basins shall be designed with a consideration for the welfare of the residents who live in the vicinity and the safety of those who might be attracted to the facility. Basins and their appurtenances shall be designed to require minimum maintenance. Slopes should be flat enough for safe walking and mowing. The areas designed for detention basins shall be designed to be used for

other purposes such as recreation, man-made wetlands, open space, or other uses. The use of fences shall be kept to a minimum.

The designer is encouraged to make the facility as aesthetically pleasing as possible. Slopes should vary. Straight lines should be avoided. Long sweeping curves should be used to make the facility appear natural and part of the overall landscape. Basins should be landscaped with trees and shrubs appropriate to that location.

## 2. Storage Volume and Discharge Rate

Detention basins shall provide a storage volume adequate to contain the runoff from the developed site that results from a storm event with a 100-year frequency of recurrence. The discharge rate through the discharge control structure shall not exceed the runoff rate from the undeveloped site that results from a storm with a two (2)-year frequency of recurrence.

## 3. Dry Bottom Basins

Dry bottom basins shall be designed with adequate bottom slopes to minimize standing water after the stored runoff has been discharged. Underdrains may be required to provide additional drainage, particularly in the vicinity of the discharge control structure.

## 4. Wet Bottom Basins

Wet bottom basins shall be designed to provide a permanent water depth adequate to retard weed growth and to sustain aquatic life. They shall incorporate provisions for walkways around the perimeter of the pool to allow for recreational use and for 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.

The design of this type of basin shall consider the need for shoreline bank protection from wave action and the need for a supplemental water supply for use during periods of low rainfall. 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.

## 5. Paved Area Basins

Paved areas such as parking lots may be used for detention basins where appropriate. 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 if possible.

## 6. Underground Basins

Underground detention basins are permitted but should be used only when no other options are available. 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.

## 7. 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. Wherever possible 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)."

# I. 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 building permit are proposed for these locations the applicant shall also provide reasonable drainage control measures appropriate for the site.

J. Erosion and Siltation

Wherever possible drainage control measure shall be designed to help control erosion and situation. Pass through runoff shall be diverted around the site to the greatest extent 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.

**55.12 Waiver from Requirements:**

The Commission or the Board may grant waivers from the requirements of this Section, if, in their opinion, the granting of the waiver will not jeopardize public health, safety or welfare.

**55.13 Appeal Process:**

Any person or firm affected by the exercise of any discretionary authority delegated by this Ordinance to any official of the City of Valparaiso, Indiana, and who objects to the decision made or action taken by such official shall be entitled to a hearing before the Board of Public Works and Safety upon such objection.

The person or firm desiring such hearing shall file a written statement of his/her objections with the City Clerk-Treasurer. The person or firm making the objections shall be given notice of the time, place and date of said hearing at least ten (10) days before the hearing time. The person or firm objecting may waive the ten (10) day notice provision to facilitate the hearing process.

After hearing testimony of the objector and the official who made the decision or took the action objected to, the Board may confirm, revise, or modify and confirm as revised, or modify the decision or action of the official in any manner consistent with the discretionary authority herein delegated by this Ordinance to that official.

**55.14 Effective Date.**

This ordinance shall take effect upon its passage by the Common Council.