

Chapter 4

STORM WATER MANAGEMENT

8-4-1: TITLE; PURPOSE:

A. Title: These regulations shall be known as the *STORM WATER MANAGEMENT ORDINANCE*.

B. Purpose: The purpose of these regulations shall be to require implementation of storm water management techniques ~~which rely upon natural onsite treatment and recycling of storm water~~ **comply with the Best Management Practices approved by the Idaho Department of Environmental Quality** as opposed to collection and conveyance of untreated storm water into ground water sources or into surface bodies of water. The underlying purposes to be achieved by implementation of such regulations are the protection of ground water quality through pretreatment of storm water prior to infiltration, and protection of surface water resources from the effects of contaminants, sedimentation, and erosion. (Ord. 2007-1, 2-5-2007)

8-4-2: DEFINITIONS:

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this chapter, shall have the meanings hereinafter designated:

AS BUILT DRAWINGS: Design plans which have been revised to reflect all changes to the plans which occurred during construction. These plans shall be signed and stamped by the responsible qualified, licensed professional.

BEST MANAGEMENT PRACTICE (BMP): Physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollution of water.

BMP MANUAL: The current version of the Catalog of Stormwater Best Management Practices for Idaho Cities and Counties, hereby incorporated as the standard (or “BMP Manual”) for this Code.

CLEARING: The removal of vegetation, trees, structures, pavement, etc., by manual, mechanical, or chemical methods.

CONVEYANCE: A mechanism for transporting water from one point to another, including pipes, ditches, and channels.

CONVEYANCE SYSTEM: The drainage facilities, both natural and manmade, which collect, contain, and provide for the flow of surface water.

CRITICAL STORM: A specific storm event of Intensity, Duration (i.e. 2, 5, 12, and 24 hour), and Frequency that produces a peak discharge or maximum detention volume requirement as calculated in the developed condition.

DESIGN STORM: A rainfall event of specific return frequency and duration that is used to calculate the **critical storm** runoff volume and peak discharge rate.

DETENTION: A temporary storage of storm runoff in a BMP, which is used to control the peak discharge rates, and which provides for gravity settling of pollutants and sediments.

EROSION: The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

EROSION/SEDIMENT CONTROL: Any temporary or permanent measures taken to reduce erosion, control siltation and sedimentation.

~~**GRASSY INFILTRATION AREA (GIA):** A low slope, open conveyance channel lined with grass that allows the passage of water through the soil surface into the ground.~~

GROUND WATER: Water in a saturated zone or stratum beneath the land surface or a surface water body.

IMPERVIOUS SURFACE: A hard surface area which either prevents or retards the entry of water into the soil mantle, and/or which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development.

INFILTRATION: The downward movement of water through the soil. Infiltration capacity is expressed in terms of inches/hour.

INTERMITTENT STREAM: A stream or portion of a stream that flows only seasonally. Typically it is dry for several months of a year.

LAND DISTURBING ACTIVITY: Any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing topography. Land disturbing activities include, but are not limited to, demolition, construction, clearing, grading, filling, and excavation.

NUTRIENTS: Essential chemicals needed by plants or animals for growth. Excessive amounts of nutrients can lead to degradation of water quality and algae blooms. Some nutrients can be toxic at high concentrations.

PEAK DISCHARGE RATE: The calculated maximum design storm discharge rate allowed, usually based on a pre-developed condition.

QUALIFIED, LICENSED PROFESSIONAL: A registered civil engineer or registered landscape architect, licensed in the state of Idaho.

RECONSTRUCTION: Any modification of the cross section or sub grade. Paving or repaving shall not be considered reconstruction.

RETENTION: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

RUNOFF: Rainfall or snow melt that does not infiltrate into the soil, but remains on the surface and travels overland to either natural or manmade collection facilities.

SECURITY: A surety bond, cash deposit or escrow account, assignment of savings, irrevocable letter of credit or other means acceptable to or required by the permit authority to guarantee that work is completed in compliance with the project's drainage plan and in compliance with all local government requirements.

SEDIMENT: Material that originates from weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

SEDIMENTATION: The deposition of sediment usually in basins or watercourses.

STORM DURATION: The theoretical time of a rainfall event of any given storm frequency, typically a range from five (5) minutes to twenty-four (24) hours.

STORM FREQUENCY: The time interval between storms of predetermined intensity, e.g., a 2-year, 15-year, or 100-year storm.

STORM INTENSITY: The theoretical rainfall amount expressed in inches-per-hour (in/hr).

STORM WATER RUNOFF: Runoff generated by storms.

STREET TREE: Organized public way tree planting, having a tree size of greater than two(2) inch caliper, six inches up from the base.

SWALE: A shallow drainage conveyance or infiltration area with relatively gentle side slopes.

TREATMENT BMP: A BMP that is intended to remove pollutants from storm water. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration swales, and constructed wetlands. (Ord. 2007-1, 2-5-2007)

8-4-3: APPLICABILITY:

Unless otherwise exempted under this chapter, this chapter shall apply to all development activities for which grading, site development, parking lot paving, construction, street improvement, or building permits are required, pursuant to the codes, laws, and regulations of the city or the state of Idaho. (Ord. 2007-1, 2-5-2007)

8-4-4: GENERAL REQUIREMENTS:

Unless relief from the standards set forth in this chapter is granted by properly approved variance, all development to which this chapter is applicable shall comply with the following requirements and methods for storm water management control:

A. Comprehensive Storm Wwater Management Plan:

1. Required: Any activity applicable to this chapter shall require the development of a comprehensive storm water management plan which addresses and complies with the requirements and standards established by this chapter and the plan criteria, design standards, and BMPs adopted pursuant to this chapter.
2. Preparation And Review: Storm water management plans shall be prepared by a qualified, Idaho licensed professional civil engineer or landscape architect and submitted for review to the city engineer. ~~However, storm water management plans for individual site development for multi-family residential, educational, commercial and industrial, and parks may be prepared and stamped by a qualified, licensed landscape architect. The city engineer may require any plan to be signed by a registered civil engineer when off site drainage or adjacent property rights are affected.~~

B. Additional Requirements: Each storm water management plan created in accordance with this chapter shall also establish:

1. Assurance of adequate funding;
2. The necessary maintenance system, including an acceptable plan for sustained functioning of the collection and treatment system; and
3. The easements necessary to provide continued maintenance of the system.

C. Individual Building Sites: Storm water management plans will not be necessary for individual building sites if runoff from the site has been accommodated by an approved storm water management plan for the subdivision in which the site is located and development of the site conforms to the assumptions made in the

approved plan. However, detailed erosion control plans may still be required. A storm water management plan will not be required for new residential structures or additions to existing residential structures if the requirements of this chapter can be met by proposed or existing site landscaping.

D. Commercial And Industrial Buildings And Sites: Runoff from commercial and industrial buildings and sites shall ~~be discharged into a grassed infiltration area (GIA);~~ **meet the treatment and peak-runoff requirements of the city;** except, when the increase in impervious surface, resulting from new construction or a onetime addition to existing structures, is less than three thousand (3,000) square feet, runoff may be discharged directly into the existing storm water conveyance system.

E. Runoff Of Storm Or Surface Waters:

1. All activities subject to the requirements of this chapter shall be carried out such that the runoff of storm or other surface waters shall not be accelerated, concentrated, or otherwise conveyed beyond the exterior property lines or project boundaries of the project in question except in compliance with the provisions of BMPs adopted pursuant to this chapter, or as allowed through joint management of storm water with adjoining property owners pursuant to agreement approved, in writing, by the city. Drainage shall not be diverted and/or released to a downstream property which had not received drainage prior to development. Flow may not be concentrated onto downstream properties where sheet flow previously existed.
2. The quality of surface runoff shall be protected by strict compliance with the design standards and BMPs adopted pursuant to this chapter or by implementation of measures shown by a qualified, licensed professional **Engineer** to have an effective design capability which exceeds the BMPs adopted hereby.

F. Compliance Required; Permit Authority: This chapter shall be applied in a manner consistent with the procedures set forth in this title and titles 7 and 9 of this code, and such other ordinances as the city may enact to regulate the use and development of land within the city pursuant to authority granted by Idaho Code title 65, chapter 67. For purposes of application of the design standards and other related documents and standards, the city shall be designated as the "permit authority".

- G. Existing Streets: When existing streets are widened or otherwise improved, runoff from the new impervious surface may be directed into existing storm drain facilities.
- H. ~~GIAs~~ **Stormwater Treatment Facilities**: Where ~~GIAs~~ **Stormwater Treatment Facilities** will be located between curb and sidewalk, both curb and sidewalk shall be considered an integral part of the stormwater management system and shall be installed with the ~~GIA~~ **Stormwater Treatment Facility**. (Ord. 2007-1, 2-5-2007)
- I. Any land disturbing activity not otherwise subject to requirements of a stormwater management plan shall be subject to an erosion control land disturbance notice permit. (Pursuant to PCC 9-5B-5) Administrative exceptions to this section may be granted by the planning director as determined by site specific conditions, or for projects under the purview of other regulatory agencies, following a sketch consultation with the city planning department.

8-4-5: STORM WATER MANAGEMENT PLAN:

- A. General Requirements: All storm water management plans shall conform to the following general requirements:
1. Clearly identify all storm water facilities including, but not limited to, pipes, inlets, catch basins, ~~grassed infiltration~~ **stormwater treatment** areas (~~GIAs~~), basins, and swales.
 2. Plans shall be stamped and signed by a qualified, licensed professional **engineer**.
 3. Plans shall provide a recordable document assuring the city of future maintenance.
- B. Plan Requirements: Storm water management plans shall have the following parts:
1. Project summary narrative with supporting design calculations;
 2. Site plan;
 3. Erosion and sediment control plan; and
 4. Operation and maintenance plan.

C. Project Summary And Design Calculations:

1. The project summary shall present an overview of the proposed project and all pertinent details supporting the design calculations.
2. The plan shall present all pertinent calculations necessary to determine the required size of elements of the system. These elements include, but are not limited to, off site drainage onto the property, pre- and post development runoff, ~~grassed infiltration~~ **stormwater treatment** areas, detention and/or retention facilities, pipes, swales, culverts, ditches, and catch basins.

D. Site Plan: The site plan shall include the following:

1. Property boundaries and all existing natural and manmade features and facilities within fifty feet (50') of the site (**where accessible**), including streets, utilities, easements, topography, structures, and drainage channels.
2. Final contours.
3. Location of all proposed improvements, including paving, structures, utilities, landscaped areas, flatwork, and storm water control facilities.
4. Proposed drainage patterns including ridgelines and tributary drainage areas.
5. Storm water control facilities, including invert elevations, slopes, length, cross sections, and sizes. Construction details shall be shown for ~~grassed infiltration~~ **stormwater treatment** areas, and/or detention/retention facilities.
6. Existing and proposed drainage/storm water easements.

E. Erosion Control:

1. An erosion control plan shall be submitted and approved by the planning director prior to initiation of any site clearing, excavation, grading or other development activity. Both temporary and permanent erosion control measures shall be included. The plan shall represent the minimum requirements for the site. Additional measures may be required by the city in the event of unexpected storm occurrences, repair or maintenance of existing systems, or replacement of nonfunctioning systems.
2. The plan shall identify those entities or individuals responsible for maintenance and

upkeep of both temporary and permanent erosion control measures.

- F. Operation And Maintenance: The storm water management plan shall identify the entities or individuals responsible for the long term maintenance of the storm water facilities. Maintenance activities shall include, but not be limited to, watering, mowing and fertilizing of GIAs stormwater treatment areas, sod renovation of GIAs stormwater treatment areas, sediment and debris removal from detention/retention basin, debris removal and cleaning of all inlets, piping, outlet structures, slope protection, etc. (Ord. 2007-1, 2-5-2007)

8-4-6: DESIGN STANDARDS:

A. General: All storm water facilities shall incorporate the following design standards:

1. All facilities shall be designed to accommodate a 25-year critical storm event..
2. When on site facilities must accommodate drainage from off site, such facilities shall be designed to accommodate a 50-year critical storm event.
3. Peak flows shall may be calculated by the rational method for areas ten (10) acres or less. Peak flows shall be calculated by the soil conservation service (SCS) spreadsheet method (TR-55) or by a computer program (TR-20), for areas greater than ten (10) acres. Other methods may be approved by the city engineer.
4. The intensity/duration curves from the Idaho transportation department shall be used for the rational method.
5. All runoff shall be directed into existing drainage facilities following treatment and retention or detention.
6. Innovative stormwater treatment designs incorporating low impact development practices or cooperation between adjacent sites are encouraged and subject to the discretion of the city engineer.
7. Any required on-site treatment, retention or detention facilities may be considered satisfied by payment of an in lieu of retention stormwater facility fee, if established for a given drainage basin by resolution of the city council for regional municipal stormwater treatment facilities.

B. ~~Grassed Infiltration Areas~~ **Volume-Based Stormwater Treatment Facilities:** All GIAs Stormwater Treatment Facilities that are volume-based be designed per the BMP

Manual recommendations. shall incorporate the following design standards:

1. GIAs shall be designed to retain a volume equal to the first one-half inch ($\frac{1}{2}$ ") of runoff over the tributary impervious area.
2. GIAs shall be a maximum of eight inches (8") deep in commercial and industrial areas and six inches (6") in all others. Depth shall be the difference between the lowest point of the swale and the inlet of the overflow structure.
3. Where swale depths greater than six inches (6") are allowed, the city engineer may require soil tests to ensure that the soil is capable of percolating the runoff at an acceptable rate.
4. a. GIAs that have reached the end of their service life shall be renovated. Service life will be considered to have ended when water remains standing in the GIA for more than seventy two (72) hours following a runoff event, or when the vegetative cover dies.
b. When infiltration fails, renovation may be accomplished by any technique which maintains the viability of the vegetative cover.
c. When the vegetative cover dies, the sod and six inches (6") of soil shall be removed and disposed of at an approved site. The soil shall be replaced and a new cover established. If it can be shown that vegetative cover died for reasons other than the expiration of the GIA's service life, a partial renovation is appropriate which restores the viability of the vegetative cover.
5. GIAs shall contain inlets, or an equivalent approved by the city engineer, to accommodate overflow.
6. GIA side slopes shall not exceed three to one (3:1) horizontal to vertical. (Ord. 2007-1, 2-5-2007)

C. Flow-Based Treatment Standards: Flow-based facilities shall be designed to incorporate the standards of the BMP Manual.

D. Stormwater Detention Standards: Stormwater detention of the design storm shall meet the requirements of the BMP Manual.

8-4-7: COMPONENT MAINTENANCE AND FUNDING:

The city may establish a department of city government or contract for maintenance in order that drainage system components can be maintained. Establishment of a supportive funding mechanism is hereby authorized. (Ord. 2007-1, 2-5-2007)

8-4-8: PERFORMANCE STANDARDS:

The following performance standards shall be applicable to all design, construction, implementation, and maintenance of storm water management systems pursuant to this chapter:

A. Increase In Peak Rate: There shall be no measurable increase in the peak rate of runoff from the site after development when compared with the runoff rate in the undeveloped state for a 25-year **critical storm event**. For purposes of this chapter, "undeveloped state" shall mean the natural soils and vegetation in place prior to the start of any construction or clearing activity on the site. Sufficient ~~retention~~ **stormwater controls capacity** shall be constructed within project boundaries to **retain or** detain the on site surface flow to meet the performance standard established by this section. Existing and/or proposed off site public street drainage shall be ~~detained~~ **controlled** separately from the on site drainage.

B. Channels:

1. Channels which collect or concentrate storm water shall be protected against erosion and contain energy dissipation measures to prevent further erosion on adjoining lands. Existing unprotected channels shall be protected against further erosion in the course of site development. Any site development or construction shall preserve the existing storm water management improvements.
2. Sediment resulting from erosion of disturbed soils shall be detained on site. Sediment shall either be stabilized on site or removed in an approved manner.

C. Collected Stormw Water: Any and all collected storm water shall be directed to ~~grassed infiltration areas (GIAs) or to an approved alternative~~ storm water management system **meeting the requirements of the BMP Manual**. ~~Infiltration areas shall be established with grass and/or other approved plant materials. Grass infiltration areas or their acceptable alternatives shall be sized to hold and treat the first one-half inch (1/2") of~~ **Approved treatment systems must treat** storm water runoff from all impervious surfaces, ~~including~~ **excluding** roofs. **Stormwater detention systems must detain peak runoff rates to pre-developed levels or less**. The ~~overall~~ storm water ~~disposal~~ **conveyance** systems shall have a capacity to handle a 25-year storm **peak runoff** event without damage to the storm water management system or adjacent land and improvements.

D. ~~Grass Infiltration Areas Or Other Approved Treatment Methods: Grass infiltration~~

areas or other approved treatment methods should be designed to achieve the following levels of contaminant removal. GIAs constructed in accordance with this chapter shall be deemed to have met these criteria:

Total suspended solids	95 percent
Total dissolved solids	50 percent
Nutrients: Nitrate	20-50 percent
Total nitrogen	80 percent
Phosphorus	90 percent
Metals	80 percent plus
Organic chemicals	60 percent plus
Bacteria	99 percent

If the proposed development exceeds site limitations adopted by resolution of the city council for grass infiltration methods, then an acceptable alternative storm water collection, treatment, and disposal system shall be implemented in accordance with an approved storm water management plan, subject to review by the city. Said grass infiltration areas or other approved alternative on site storm water collection and treatment systems may be approved in either nodal or dispersed form, subject to specific approval by the city during the development review process. (Ord. 2007-1, 2-5-2007)

8-4-9: GUARANTEE OF INSTALLATION:

No building permit, final plat approval, or other discretionary approval shall be granted until the storm water management plan has been approved by the city engineer.

- A. For new subdivisions, except as allowed by this title, no building permit will be issued until the storm water management system, including GIAs, curb and sidewalks, has been constructed for the developed portion and will accept the flow of storm water as designed. For all other cases, no certificate of occupancy will be issued until the storm water management system has been installed and will accept the flow of storm water as designed.

- B. If, in the judgment of the city engineer or his designee, project occupancy can be achieved without harm to the environment or potential occupants, occupancy may proceed upon receipt of an acceptable guarantee of financial surety, pursuant to this title, to complete installation when weather conditions or other variables allow. In no case shall such guarantee be allowed if the incomplete improvements would result in

increased erosion, sedimentation, or other damage to the development, public improvements, subsurface or surface waters, the proposed storm water management system or otherwise endanger the public health or safety.

- C. At any time, the city may stop work on the installation of subdivision improvements, withhold further issuance of building permits in a development, stop work on any individual building or development of any individual building site, or otherwise take steps necessary to protect the waters of the state from damage as a result of development. (Ord. 2007-1, 2-5-2007)

8-4-10: ADOPTION OF SUPPORTING DOCUMENTATION:

The city may, by resolution, adopt additional design standards, definitions of terminology, administrative procedures, etc., intended to implement the general requirements and performance standards set forth in this chapter. Changes in the design standards may be accomplished by subsequently adopted resolution. Such design standards may be complied with in alternative ways that will contribute to rational achievement of the general requirements and performance standards set forth in this chapter. (Ord. 2007-1, 2-5-2007)

8-4-11: PROPERTY OWNER'S MAINTENANCE RESPONSIBILITY:

Unless other provisions are made in the process of development review and approval, responsibility for maintenance of storm water system elements remains with the property owner, and violation of these maintenance requirements shall constitute a violation of this chapter. (Ord. 2007-1, 2-5-2007)

8-4-12: PROHIBITED CONDUCT:

No person shall damage, harm, fail to install, complete, or maintain, or otherwise impair the ~~grassed infiltration areas or approved methods of transmission of~~ storm water **treatment, detention, or disposal facilities** ~~to grassed infiltration areas~~ or any portion of a storm water management system installed pursuant to this chapter. (Ord. 2007-1, 2-5-2007)

8-4-13: ENFORCEMENT:

Provisions of this chapter may be enforced in one or more of the following manners:

A. Penalty:

1. Misdemeanor: Any person violating any of the provisions or failing to comply with any of the mandatory requirements of this chapter is guilty of a misdemeanor and

shall be subject to penalty as provided in section 1-2-1 of this code. (Ord. 2007-1, 2-5-2007; 2008 Code)

2. Separate Offense: Each such person is guilty of a separate offense for each and every day during which any violation of any provision of this chapter is committed, continued, or permitted by any such person, and he shall be punished accordingly.

B. Civil Action: By civil action to compel performance and completion of, or maintenance of, facilities installed pursuant to this chapter.

C. Denying, Revoking Or Suspending Permits Or Certificates: Denying, revoking, or suspending building permits or certificates of occupancy, as the case may be.

D. Occupancy Without Certificate: Occupancy of dwelling or building without an approved certificate of occupancy shall constitute a violation of this chapter in addition to any building or zoning ordinance from which the occupancy requirement derives.

E. Additional Remedies: By any other method or remedy allowed by law. (Ord. 2007-1, 2-5-2007)

8-4-14: PERMIT REQUIREMENTS:

A. Permit Required: Each applicant requiring the preparation of a stormwater management plan shall apply for a stormwater management permit.

B. Permit Fee: There shall be a fee for each permit application. The fee shall be as set by resolution of the city council. (Ord. 2007-1, 2-5-2007)

8-4-15: VARIANCE:

A variance from the requirements of this chapter or from the design standards adopted pursuant to this chapter may be granted only upon a showing of undue hardship due to unique site characteristics. Said variance may only be granted by the city council in such circumstances if the approval of the variance would not otherwise impair

achievement of the standards or purposes of this chapter, would not impose an additional burden upon adjoining or downstream lands or landowners, or otherwise disrupt the scheme of storm water management in the community. It shall be incumbent upon anyone requesting a variance to provide data showing that alternative methods of storm water handling proposed will produce comparable efficacy of the storm water management measures required by this chapter. No variance shall be issued unless all elements of this section are met. (Ord. 2007-1, 2-5-2007)

