

Chapter 3-13

POST-CONSTRUCTION STORMWATER CONTROL

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Section 3-13-1 Findings of Fact

1. The U.S. EPA's National Pollutant Discharge Eliminations System ("NPDES") permit program ("Program") administered by the Iowa Department of Natural Resources ("IDNR") requires that cities meeting certain demographic and environmental impact criteria obtain from the IDNR an NPDES permit for the discharge of stormwater from a Municipal Separate Storm Sewer System ("MS4") ("MS4 Permit"). The City of Storm Lake is subject to the Program and is required to obtain, and has obtained, an MS4 Permit; the City's MS4 permit is on file at the office of the City Clerk and is available for public inspection during regular office hours.
2. As a condition of the City's MS4 Permit, the City is obliged to adopt and enforce a POST-CONSTRUCTION STORMWATER CONTROL ordinance.
3. No state or Federal funds have been made available to assist the City in administering and enforcing the Program. Accordingly, the City shall fund its operations under this chapter entirely by charges imposed on the owners or developers of properties which are made subject to the Program by virtue of State and Federal law, and/or other sources of funding established by a separate ordinance.
4. Land development and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition; this stormwater runoff contributes to increased quantities of water-borne pollutants; and stormwater runoff, soil erosion, and non-point source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites.
5. Therefore, the City of Storm Lake establishes this set of City stormwater requirements to provide reasonable guidance for the regulation of stormwater runoff for the purpose of protecting local water resources from degradation. It is determined that the regulation of stormwater runoff discharges from land development and other construction activities in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion, stream channel erosion, and non-point source pollution

associated with stormwater runoff is in the public interest and will prevent threats to public health, safety, and property damage.

6. The "Iowa Stormwater Management Manual" published collaboratively by the Iowa Department of Natural Resources and The Center for Transportation Research and Education at Iowa State University establishes guidelines consisting of unified sizing criteria, stormwater management designs and specifications and Best Management Practices (BMP). City hereby finds and declares that the guidelines provided for in the Iowa Stormwater Management Manual, and in future editions thereof, should be and are hereby adopted as the stormwater management standards of the City. Any BMP installation that complies with the provisions of the Iowa Stormwater Management Manual, or future editions thereof, at the time of installation shall be deemed to have been installed in accordance with this ordinance. (Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-2 Purpose

The purpose of this chapter is to adopt as the City's standards and sizing criteria and BMPs to address said standards the Guidelines, Sizing Criteria, and BMPs proposed by the Iowa Stormwater Management Manual and as specifically identified above (hereinafter collectively "City stormwater requirements") in order to protect and safeguard the general health, safety, and welfare of the public within this jurisdiction. This chapter seeks to meet that purpose through the following objectives:

1. Minimize increases in stormwater runoff from development within the City limits and fringe area in order to reduce flooding, siltation, increases in stream temperature, and stream bank erosion and maintain the integrity of stream channels;
2. Minimize increases in non-point source pollution caused by stormwater runoff from development which would otherwise degrade local water quality;
3. Minimize the total annual volume of surface water runoff which flows from any specific development project site after completion to not exceed the pre-development hydrologic regime to the maximum extent practicable; and
4. Reduce stormwater runoff rates and volumes, soil erosion, and non-point source pollution, wherever possible, through establishment of appropriate minimum stormwater management standards and BMPs and to ensure that BMPs are properly maintained and pose no threat to public safety.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-3 Applicability

1. This chapter is applicable to all subdivision or site plan applications meeting the Minimum square foot applicability criteria of item 2 of this section, unless eligible for an exemption or granted a waiver by the City under Section 3-13-7 of this chapter. This chapter also applies to land disturbance activities that are smaller than the minimum square foot applicability criteria specified in subsection 2 if such activities are part of a larger common plan of development that meets the minimum square foot applicability criteria specified in subsection 2, even though multiple separate and distinct land development activities may take place at different times on different schedules. In addition, all plans must also be reviewed by City of Storm Lake officials to ensure that established water quality standards will be maintained during and after development of the site and that post-construction runoff levels are consistent with any local and regional watershed plans.

2. City stormwater requirements must be met for development to be approved. City stormwater requirements apply to any development disturbing one acre (43,560 square feet) or more of land, and to any development disturbing less than one acre if the amount of impervious cover created exceeds 5,000 square feet. The following activities are exempt from this chapter:

A. Any logging and agricultural activity which is consistent with an approved soil conservation plan or a timber management plan prepared or approved by the appropriate agency, as applicable.

B. Additions or modifications to existing single-family structures.

C. Developments that do not disturb more than one acre of land provided they are not part of a larger common development plan.

D. Repairs to any stormwater BMPs deemed necessary by City.

3. When a site development plan is submitted that qualifies as a development, as defined in this chapter, decisions on permitting any appropriate on-site BMPs shall be guided by the Iowa Stormwater Management Manual. Issuance of a Construction Site Runoff Permit (CSR Permit) will be granted to development or redevelopment projects after review and approval of the site development plan by the City.

4. The site shall be designed using the Better Site Design process. Better Site Design involves techniques applied early in the design process to preserve natural areas, reduce impervious cover, distribute runoff and use pervious areas to more effectively treat stormwater runoff. Site design should address open space protection, impervious cover minimization, and runoff distribution and minimization, and runoff utilization through considerations such as:

A. Open space protection and restoration

(1) Conservation of existing natural areas (upland and wetland)

(2) Reforestation

(3) Re-establishment of prairies

(4) Restoration of wetlands

(5) Establishment or protection of stream, shoreline and wetland buffers

(6) Re-establishment of native vegetation into the landscape

B. Reduction of impervious cover

(1) Reduce new impervious through redevelopment of existing sites and use of existing roadways, trails etc.

(2) Minimize street width, parking space size, driveway length, sidewalk width

(3) Reduce impervious surface footprint (e.g. two story buildings, parking ramp)

C. Distribution and minimization of runoff

- (1) Utilize vegetated areas for stormwater treatment (e.g. parking lot islands, vegetated areas along property boundaries, front and rear yards, building landscaping)
- (2) Direct impervious surface runoff to vegetated areas or to designed treatment areas (roofs, parking, driveways drain to pervious areas, not directly to stormsewer or other conveyances)
- (3) Encourage infiltration and soil storage of runoff through grass channels, soil compost amendment, vegetated swales, raingardens, etc.
- (4) Plant vegetation that does not require irrigation beyond natural rainfall and runoff from the site

D. Runoff utilization

- (1) Capture and store runoff for use for irrigation in areas where irrigation is necessary

Information on the Better Site Design Process is available at www.cwp.org.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-4 Compatibility with Other Requirements

1. It is intended that this chapter be construed to be consistent with existing City Code.
2. The requirements of this chapter should be considered minimum requirements, and where any provision of this chapter imposes restrictions different from those imposed by any other chapter, rule or regulations, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-5 Permit Procedures and Requirements

1. Permit Required. No landowner or developer shall receive any of the building, grading, or other land development permits required for land disturbance activities without first meeting the requirements of this chapter prior to commencing the proposed activity.

2. Pre-application Meeting

A. Prior to the development of plans, the applicant shall request a pre-application meeting which will be facilitated by the City between the applicant, City staff, and staff of partner agencies as applicable. The meeting shall be **mandatory** prior to submission of a permit application. The purposes of the meeting are: to understand the general parameters of the proposed project; and to convey the requirement of meeting the provisions of this and other applicable ordinances.

3. Application Requirements.

- A. Unless specifically exempted by this chapter, any landowner or developer desiring a permit

for a land disturbance activity shall submit to the City a permit application on a form provided for that purpose.

B. Unless otherwise exempted by this chapter, a permit application must be accompanied by the following in order that the permit application be considered:

- (1) A copy of the stormwater management concept plan;
- (2) A copy of the maintenance agreement; and
- (3) A non-refundable permit review fee.

Materials shall be submitted in pdf format for ease of distribution and review.

C. The stormwater management concept plan and maintenance agreement shall be prepared to meet the requirement of this chapter, and fees shall be those established by the City by separate resolution.

4. Application Procedure.

A. Applications for land disturbance activity permits must be filed for review with the office of the Building and Planning Department on any regular business day.

B. The City shall make a determination regarding the completeness of a permit application within ten (10) business days of the receipt of the application and notify the applicant in writing if the application is not complete include the reasons the application was deemed incomplete.

C. Within fifteen (15) business days of the receipt of a complete permit application, including all documents as required by this chapter, City shall inform the applicant whether the application, plan, and maintenance agreement are approved or disapproved by the enforcement officer.

D. If the permit application, stormwater management concept plan, or maintenance agreement are disapproved, the applicant may revise the stormwater management concept plan or agreement. If additional information is submitted, the City shall have 15 business days from the date the additional information is received to inform the applicant that the stormwater management concept plan and maintenance agreement are either approved or disapproved.

E. If the permit application, stormwater management final plan, and maintenance agreement are approved by City, all appropriate land disturbance activity permits shall be issued.

5. Permit Duration. Permits issued under this section shall be valid from the date of issuance through the date City notifies the permit holder that all stormwater BMPs have passed the final inspection required under permit conditions.

6. Application Review Fees. The fee for review of any land development application shall be based on the amount of land to be disturbed at the site; the fee structure shall be established by City, and said fees shall be paid prior to the issuance of any applicable City permits. All such revenue shall be credited to a City budgetary category to support the administration of this chapter.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-6 Stormwater Standards

1. The following general criteria shall be incorporated into the site design for stormwater runoff to protect surface and ground water and other natural resources and other private and public property:

- A. Reduce impacts on water
- B. Decrease runoff volume
- C. Increase infiltration (groundwater recharge)
- D. Decrease flow frequency, duration, and peak runoff rates
- E. Reduce time to peak flows by increasing the time of concentration to and through storm sewers
- F. Store stormwater runoff on-site
- G. Maintain existing flow patterns
- H. Avoid natural channel and steep slope erosion as well as protect in stream habitats and channels
- I. Decrease erosion and sedimentation
- J. Preserve vegetation
- K. Preserve and replace existing topsoil in an uncompacted manner

2. The site design shall provide on-site treatment during construction and post-construction to ensure no increase in offsite peak discharge for the 1-year, 24-hour storm event (2.61 inches), the 5-year, 24-hour storm event (7.81 inches).

3. The site design shall provide on-site water quality treatment for the runoff resulting from a rainfall depth of 1.25 inches over the post-construction site area in order to reduce average annual post-development total suspended solids loadings by at least 80%.

4. The site design shall retain on-site for recharge, a portion of the water quality treatment volume calculated as a soil specific recharge factor multiplied by the volumetric runoff coefficient multiplied by the area and all divided by 12. The soil specific recharge factor is given as 0.51 for Hydrologic Soil Group (HSG) A soils, 0.34 for HSG B soils, 0.17 for HSG C soils, and 0.08 for HSG D Soils. The volumetric runoff coefficient is calculated as $0.05 + 0.009$ multiplied by the site impervious percentage. See the Iowa Stormwater Management Manual for additional clarification on the calculation.

5. Applicant shall fully attempt to comply with the standards in one through three above. For areas of the site where there is no feasible way to achieve the recharge requirement, other options may be considered by the City. Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site. If full compliance is not possible, the following flexible treatment options shall be used:

- A. Applicant shall document the flexible treatment options sequence starting with Alternative #1. If Alternative #1 cannot be met, then Alternative #2 shall be analyzed. If Alternative #2

cannot be met than Alternative #3 shall be met. When all of the conditions are fulfilled within an alternative, this sequence is completed.

B. Recharge techniques considered shall include infiltration, reuse & rainwater harvesting, and canopy interception & evapotranspiration and/or additional techniques included in the Iowa Stormwater Management Manual.

C. Higher priority shall be given to BMPs that include volume reduction. Secondary preference is to employ filtration techniques, followed by rate control BMPs.

D. Factors to be considered for each alternative will include:

- (1) Shallow bedrock
- (2) High groundwater
- (3) Hotspots or contaminated soils
- (4) Poor soils (infiltration rates that are too low or too high, problematic urban soils)
- (5) Excessive cost

E. Alternative #1: Applicant attempts to comply with the following conditions:

- (1) Achieve at least 0.625" volume reduction, and
- (2) Remove 75% of the annual TP (Total Phosphorous) load, and
- (3) Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

F. Alternative #2: Applicant attempts to comply with the following conditions:

- (1) Achieve volume reduction to the maximum extent practicable, and
- (2) Remove 60% of the annual TP load, and
- (3) Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

G. Alternative #3: Off-site Treatment. Off-site mitigation, as outlined in Section 3-13-7 Waivers, of the required treatment volume that cannot be provided onsite can be used to protect receiving waters.

6. To protect channels, the site shall be designed to infiltrate or provide 24 hour extended detention of the channel protection volume, defined as the 1 year, 24 hour storm per NOAA Atlas 14.

7. The site shall be designed to prevent the post development rate of runoff from exceeding the pre-development rate of runoff for a five year to 100 year storm, 24 hour storm to not exceed runoff rates equivalent to the five year predevelopment storm event per NOAA Atlas 14.

8. The site shall be designed to provide an emergency spillway and designated overflow route for the 100 year, 24 hour storm as defined by the Iowa Stormwater Management Manual. The spillway and overflow route must be able to safely pass overflows through the structure without creating damaging conditions downstream of the facility.

9. Existing topsoil must be preserved on site to be uniformly applied in an uncompacted manner to a minimum depth of four inches.

10. The site shall be designed to provide vegetated buffers for water quality protection adjacent to receiving channels and waters. Buffers shall commence at the "ordinary high water mark", or at the delineated boundary of the waterbody. Buffer widths are based on a 0-10% slope* between the activity and the water body as determined by land use and are as follows;

Residential	35 feet
Industrial	50 feet
Mid/High Density Residential & Commercial	50 feet

*Buffer width shall increase 2 feet for each percent increase in slope above 10%.

- A. Access shall be provided on each side of the buffer for maintenance.
- B. The applicant shall maintain the buffer for the first year after completion of the project.
- C. Impervious surfaces shall not be allowed in the buffer area.
- D. Fences and structures shall not be allowed in the buffer area.

E. Where land disturbing construction activity occurs within a buffer area, and where no impervious surface is present, adequate approved native vegetative cover of 70% shall be established and maintained. The native vegetative cover shall be sufficient to provide for bank stability from upslope overland flow areas under sheet flow conditions. Non-vegetative materials such as rock riprap, may be employed on the bank as necessary to prevent erosion. Such as on steep slopes of where high velocity flows occur.

F. BMP's such as filter strips, swales, or wet detention basins may be located in the buffer area.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-7 Waivers

Every applicant shall provide for stormwater management as required by this chapter, unless a written request is filed to waive implementation of BMPs, in whole or in part, and such waiver is granted. Requests to waive implementation of BMPs in whole or in part shall be submitted to City for approval.

1. A waiver of BMPs required by this chapter may be granted provided that at least one of the following conditions is established by the applicant based on authoritative written evidence satisfactory to City:

- A. The proposed development is not likely to impair attainment of the objectives of this chapter.
- B. Alternative minimum requirements for on-site management of stormwater have been

established in a stormwater management final plan that has been approved by City and fully implemented.

C. Provisions are made to manage stormwater by an off-site facility within the same watershed. The off-site facility is required to be in place, to be designed and adequately sized to provide a level of stormwater control that is equal to or greater than that which would be afforded by on-site practices, and there is, in the City's sole judgment, a responsible entity legally obligated to monitor the performance of and maintain the efficiency of stormwater BMPs in accordance with a written and recorded maintenance agreement.

D. In instances where one of the above conditions is established, the applicant must further establish by authoritative written evidence satisfactory to City that the partial waiver will not result in any of the following impacts to downstream waterways:

- (1) Deterioration of existing culverts, bridges, dams, and other structures; or
- (2) Degradation of biological functions or habitat; or
- (3) Accelerated stream bank or streambed erosion or siltation; or
- (4) Increased threat of flood damage to public health, life, property.

2. If the City finds that a waiver is appropriate because implementation of on-site stormwater BMPs is not feasible due to the natural or existing physical characteristics of a site, or that one of the conditions specified in subsection 1 above cannot be established to a certainty, or that any averted, the applicant shall execute a binding written agreement to accomplish one or more of the following mitigation measures selected by City:

A. The purchase and donation of privately owned lands, or the grant of an easement to be dedicated for preservation and/or reconstruction of native ecosystems of lands strategically located in the watershed consistent with the purposes of this chapter, of a sufficient quantity to enable City or others to achieve City stormwater requirements with respect to a number of cubic feet of annual stormwater equivalent to the estimated number of cubic feet of annual stormwater that will not achieve City stormwater requirements as a consequence of the waiver.

B. The creation of one or more stormwater BMPs on previously developed properties, public or private, that currently lack stormwater BMPs, having a capacity to achieve City stormwater requirements with respect to a number of cubic feet of annual stormwater equivalent to the estimated number of cubic feet of annual stormwater that will not achieve City stormwater requirements as a consequence of the waiver.

C. Monetary contributions (fee in lieu) to fund stormwater management activities as identified in the City of Storm Lake's Comprehensive Stormwater Management Plan such as research and studies (e.g., regional wetland delineation studies, stream monitoring studies for water quality and macroinvertebrates, stream flow monitoring, threatened and endangered species studies, hydrologic studies, monitoring of stormwater BMPs, and stream corridor stabilization practices). The monetary contribution required shall be in accordance with a fee schedule (unless the developer and the City agree on a greater alternate contribution) established by City, based on the estimated cost savings to the developer resulting from the waiver and the estimated future costs to City to achieve City stormwater requirements with respect to a number of cubic feet of annual stormwater equivalent to the estimated number of cubic feet of annual stormwater that will not achieve City stormwater requirements as a consequence of the waiver. All of the monetary contributions shall be credited to an appropriate capital

improvements program project, and shall be made by the developer prior to the issuance of any building permit for the development.

D. Dedication of land or granting of an easement by the applicant of a value equivalent to the cost to City of the construction of an off-site stormwater management facility sufficient to achieve City stormwater requirements with respect to a number of cubic feet of annual stormwater equivalent to the estimated number of cubic feet of annual stormwater that will not achieve City stormwater requirements as a consequence of the waiver. The agreement shall be entered into by the applicant and City prior to the recording of plats or, if no record plat is required, prior to the issuance of the building permit.

E. Factors that may generate waivers:

- (1) Shallow Bedrock
- (2) High Groundwater
- (3) Hotspots or contaminated soils
- (4) Excessive Cost

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-8 Approval of Stormwater Management Concept Plan

No application for development will be accepted unless it includes a stormwater management concept plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. The stormwater management concept plan shall:

1. Be prepared by a licensed professional engineer or landscape architect or individual credentialed in a manner satisfactory to the City.
2. Indicate whether stormwater will be managed on site or off site and, if on site, the general location and type of practices, with clear citations to the Iowa Stormwater Management Manual.
3. Include a signed and dated certification under penalty of perjury by the preparer of the stormwater management concept plan that it complies with all requirements of this chapter, meets the design requirements outlined in the Iowa Stormwater Management Manual and is designed to achieve City stormwater requirements, and that the City is entitled to rely upon the certification as due diligence on the part of City.
4. Include sufficient information (e.g., maps, hydrologic calculations, etc.) to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the stormwater BMPs proposed for managing stormwater generated at the project site. The intent of this conceptual planning process is to determine the type of stormwater BMPs necessary for the proposed project, and ensure adequate planning for management of stormwater runoff from future development. To accomplish this goal, the following information shall also be included in the stormwater management concept plan.

A. A USDA soils map identifying soil types, hydrologic soil groups and hydric soils. Soil

borings will be required where infiltration practices are proposed.

B. A map (or maps) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural stormwater management and sediment and erosion BMPs. The map(s) will also clearly show proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads, and easements; and the limits of clearing and grading. A written description of the site plan and justification of proposed changes in natural conditions may also be required. A copy of the current SWPPP may satisfy this requirement.

C. Sufficient engineering analysis to show that the proposed BMPs are capable of achieving City stormwater requirements for the site in compliance with this chapter.

D. A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project and a description of the watershed and its relation to the project site. This description should include a discussion of forest cover, topography, wetlands, and other native vegetative areas on the site. Particular attention should be paid to environmentally sensitive areas that provide particular opportunities or constraints for development.

E. A written description of the required maintenance burden for any proposed BMPs.

F. The City may also require a concept plan to consider the maximum development potential of a site under existing zoning, regardless of whether the applicant presently intends to develop the site to its maximum potential.

G. For development occurring on a previously developed site, an applicant shall be required to include within the stormwater management concept plan BMPs for controlling existing stormwater runoff discharges from the site in accordance with this chapter.

5. The stormwater management concept plan shall be referred for comment to all other interested agencies, and any comments must be addressed in a stormwater management final plan.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-9 Approval of Stormwater Management Final Plan

No building, grading, or sediment control permit shall be issued until a satisfactory stormwater management final plan (or a waiver thereof) shall have undergone a review and been approved by the City after determining that the plan or waiver is consistent with the requirements of this chapter. After review of the stormwater management concept plan, and modifications to that plan as deemed necessary by City, a stormwater management final plan must be submitted to the City for approval. The stormwater management final plan, in addition to the information included in the stormwater management concept plan, shall:

1. Be prepared by a licensed professional engineer or landscape architect or individual credentialed in a manner satisfactory to the City.

2. Indicate whether stormwater will be managed on site or off site and, if on site, the general location and type of practices, with clear citations to the Iowa Stormwater Management Manual.

3. Include a signed and dated certification under penalty of perjury by the preparer of the

stormwater management final plan that it complies with all requirements of this chapter and the Iowa Stormwater Management Manual, meets the submittal requirements outlined in the Iowa Stormwater Management Manual designed to achieve City stormwater requirements, and that City is entitled to rely upon the certification as due diligence on the part of City.

4. The stormwater management final plan shall also include:

A. A detailed summary of how and why the stormwater management final plan differs, if at all, from the stormwater management concept plan previously submitted.

B. Contact information, including but not limited to the name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected.

C. Topographic base map, consisting of a 1"= 200' topographic base map, of the site which extends a minimum of 300 feet beyond the limits of the proposed development and indicates existing surface water drainage including streams, ponds, culverts, ditches, and wetlands; current land use including all existing structures; locations of utilities, roads, and easements; and significant natural and manmade features not otherwise shown.

D. Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in the Iowa Stormwater Management Manual. Such calculations shall include:

- (1) description of the design storm frequency, intensity and duration;
- (2) time of concentration;
- (3) soil curve numbers or runoff coefficients;
- (4) peak runoff rates and total runoff volumes for each watershed area;
- (5) infiltration rates, where applicable;
- (6) culvert capacities;
- (7) flow velocities;
- (8) data on the increase in rate and volume of runoff for the design storms referenced as referenced in the NOAA Atlas 14, Volumes 8 and 9 (April 2013); and
- (9) documentation of sources for all computation methods and field test results.

E. If a stormwater BMP depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles. The number and location of required soil borings or soil sites shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the BMP. Borings shall be a minimum of 5' below the subgrade of the practice for small practices and 20' below the subgrade of large infiltration basins.

F. A maintenance and repair plan for all stormwater BMPs including detailed maintenance and

repair procedures to ensure their continued efficient function. These plans will identify the parts or components of a stormwater BMP that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan.

G. A detailed landscaping plan for management of vegetation at the site after construction is finished, including who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. This plan must be prepared by a registered landscape architect, landscape designer, or by an individual credentialed in a manner satisfactory to the City.

H. Proof of permanent recorded maintenance easements that will ensure access to all stormwater BMPs at the site for the purpose of inspection and repair. These easements will be recorded with the stormwater management final plan and will remain in effect even with transfer of title to the property.

I. Proof of a recorded maintenance agreement binding on all subsequent owners of land served by stormwater BMPs to ensure maintenance and repair in accordance with the specifications of this chapter.

J. Copies of all existing Stormwater Pollution Prevention Plans (SWPPP's) current as of the date of submission of the stormwater management final plan for all construction activities related to implementing any on-site stormwater BMPs.

K. Proof that the applicant has acquired all other applicable environmental permits for the site, or that no other such permits are required, prior to submission of the stormwater management final plan to the City.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-10 Performance Security or Bond

1. The City shall require the submittal of an installation performance security or bond prior to issuance of a permit in order to ensure that the stormwater BMPs are installed by the permit holder as required by the approved stormwater management final plan.

2. The amount of the installation performance security or bond shall be the total estimated construction cost of the stormwater BMPs approved under the permit, plus 25%. The installation performance security or bond shall contain forfeiture provisions for failure to complete work specified in the stormwater management final plan.

3. The installation performance security or bond shall be released in full only upon submission of "as-built plans" of all stormwater BMPs specified in the stormwater management final plan and written certification by a professional engineer that the stormwater BMPs have been installed in accordance with the approved stormwater management final plan and other applicable provisions of this chapter. The City will make a final inspection of stormwater BMPs to ensure compliance with the approved stormwater management final plan and the provisions of this chapter. Provisions for a partial pro rata release of the installation performance security or bond based on the completion of various development stages can be made at the discretion of City.

4. The installation performance security or bond shall inure only to the benefit of the City for purposes of completing, modifying, or correcting the stormwater BMPs to comply with this chapter.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-11 Construction Inspection

1. The applicant must notify the City in advance before the commencement of construction. Regular inspections of construction of the stormwater BMPs shall be conducted by City of City's designated representative. Inspections will be conducted before any land disturbing activity begins, at the time of footing inspections, at the completion of the project; and prior to the release of financial securities. All inspections shall be documented and written reports prepared that contain the following information:

- A. The date and location of the inspection; and
- B. Whether construction is in compliance with the approved stormwater management concept plan; and
- C. Variations, if any, from the approved stormwater management concept plan.

2. If any violations are found, the applicant shall be notified in writing of the nature of the violation and the required corrective actions. No additional work shall proceed until any violations are corrected and all work previously completed has received approval by City.

3. After construction is completed, applicants are required to submit actual "as-built" drawings satisfactory to City for any stormwater BMPs located on site. The drawings must show the final design specifications for all stormwater BMPs and must be certified by a professional engineer. A final inspection by City is required before the release of the installation performance security or bond can occur.

4. Landscaping and stabilization shall be accomplished to prevent violation of City stormwater requirements or impairment of BMPs. In addition, a landscaping plan must be submitted with the final as-built drawings describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. This plan must be prepared by a registered landscape architect, landscape designer, or by an individual credentialed in a manner acceptable to the City.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-12 Maintenance and Repair of Stormwater BMPS

The applicant or owner of every site or an assignee qualified pursuant to Section 3-13-11 shall be responsible for providing as built drawings at the completion of the project and maintaining as-built stormwater BMPs in an effective state as determined in the sole judgment of City for 10 years from and after completion of construction.

1. Maintenance and Repair Easement. Prior to the issuance of any permit for development involving any stormwater BMP, the applicant or owner of the site must execute a maintenance and repair easement agreement that shall be binding on all subsequent owners of land served by the stormwater BMP. The agreement shall provide for access to the BMP and the land it served at reasonable times for periodic inspection by City or City's designee and for regular or special assessments of property owners to ensure that the BMP is maintained in proper working condition to meet City stormwater requirements.

The easement agreement shall be recorded by City at the expense of the permit holder or property owners.

2. Maintenance Covenants.

A. Maintenance of all stormwater BMPs shall be ensured through the creation of a formal maintenance covenant that must be approved by the City and recorded prior to the stormwater management final plan approval. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the stormwater BMPs. The covenant shall also include plans for periodic inspections to ensure proper performance of the BMPs between scheduled cleanouts.

B. The City, in lieu of a maintenance covenant, may at its discretion, accept dedication of any existing or future stormwater BMP to include City responsibility for maintenance and repair, provided that: the maintenance and repair of such element will not impose an undue burden on other City taxpayers who enjoy little if any benefit from the BMP; the BMP meets all the requirements of this chapter; and the dedication includes adequate and perpetual access and sufficient area, by easement or otherwise, of inspection and regular maintenance.

3. Requirements for Maintenance Covenants. All stormwater BMPs must undergo, at the minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this chapter and accomplishment of its purposes. These needs may include (but are not limited to) removal of sediment build up, litter, and other debris from all stormwater treatment and conveyance facilities including ponds, infiltration basins, raingardens, catch basins, inlets, and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance or repair needs detected must be corrected by the developer or entity responsible under a written maintenance agreement in a timely manner, as determined by City, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater BMPs.

4. Inspection of Stormwater BMPs. Inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants, inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of State or Federal water or sediment quality standards or the NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in stormwater BMPs, and evaluating the condition of stormwater BMPs.

5. Right of Entry for Inspection. When any new stormwater BMP is installed on private property, or when any new connection is made between private property and a public stormwater management facility, sanitary sewer or combined sewer, the property owner shall grant to City the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when City has a reasonable basis to believe that a violation of this chapter is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this chapter.

6. Records of Installation and Maintenance and Repair Activities. Parties responsible for the operation and maintenance of stormwater BMPs shall submit to the City Engineer an annual maintenance and inspection report including all records of the installation and of all maintenance and repairs

conducted. At the completion of the 5th year, an updated as built drawing will be required. The responsible parties shall retain the records for at least five (5) years or longer if the City Inspector deems it necessary. These records shall be made available to City during inspection of the facility and at other reasonable times upon request.

7. Failure to Maintain Stormwater BMPs. If a responsible party fails or refuses to meet the requirements of the maintenance covenant or any provision of this chapter, the City, after reasonable notice, may correct a violation by performing all necessary work to place the BMP in proper working condition. In the event that the stormwater BMP becomes a danger to public safety or public health, the City shall notify the party responsible for maintenance of the stormwater BMP in writing. Upon receipt of that notice, the responsible person shall have thirty (30) days to effect maintenance and repair of the stormwater BMP in an approved manner. After proper notice, the City may assess, jointly and severally, the owners of the stormwater BMP or the property owners or the parties responsible for maintenance under any applicable written agreement for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes.

The applicant or owner of every site or an assignee qualified pursuant to Section 3-13-12 shall be responsible for providing as built drawings at the completion of the project and maintaining as-built stormwater BMPs in an effective state as determined in the sole judgment of City for 10 years from and after completion of construction.

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B. The City, in lieu of a maintenance covenant, may at its discretion, accept dedication of any existing or future stormwater BMP to include City responsibility for maintenance and repair, provided that: the maintenance and repair of such element will not impose an undue burden on other City taxpayers who enjoy little if any benefit from the BMP; the BMP meets all the requirements of this chapter; and the dedication includes adequate and perpetual access and sufficient area, by easement or otherwise, of inspection and regular maintenance.

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pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance or repair needs detected must be corrected by the developer or entity responsible under a written maintenance agreement in a timely manner, as determined by City, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater BMPs.

4. **Inspection of Stormwater BMPs.** Inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants, inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of State or Federal water or sediment quality standards or the NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in stormwater BMPs, and evaluating the condition of stormwater BMPs.

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6. **Records of Installation and Maintenance and Repair Activities.** Parties responsible for the operation and maintenance of stormwater BMPs shall submit to the City Engineer an annual maintenance and inspection report including all records of the installation and of all maintenance and repairs conducted. At the completion of the 5th year, an updated as built drawing will be required. The responsible parties shall retain the records for at least five (5) years or longer if the City Inspector deems it necessary. These records shall be made available to City during inspection of the facility and at other reasonable times upon request.

7. **Failure to Maintain Stormwater BMPs.** If a responsible party fails or refuses to meet the requirements of the maintenance covenant or any provision of this chapter, the City, after reasonable notice, may correct a violation by performing all necessary work to place the BMP in proper working condition. In the event that the stormwater BMP becomes a danger to public safety or public health, the City shall notify the party responsible for maintenance of the stormwater BMP in writing. Upon receipt of that notice, the responsible person shall have thirty (30) days to effect maintenance and repair of the stormwater BMP in an approved manner. After proper notice, the City may assess, jointly and severally, the owners of the stormwater BMP or the property owners or the parties responsible for maintenance under any applicable written agreement for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes.

(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-13 Enforcement and Penalties

1. Violation of any provision of this chapter may be enforced by civil action including an action for injunctive relief. In any civil enforcement action, administrative or judicial, the City shall be entitled to recover its attorneys' fees and costs from a person who is determined by a court of competent jurisdiction

to have violated this chapter.

2. The City may issue a stop work order for violation of any provision of this chapter. The stop work order shall remain in effect until the violation is corrected and a subsequent inspection completed.
3. Violation of any provision of this chapter may also be enforced as a municipal infraction within the meaning of Section 364.22 of the Code of Iowa, pursuant to Chapter 4 of this Code of Ordinances.
4. Enforcement pursuant to this section shall be undertaken by City upon the advice and consent of the City Attorney or other counsel employed by City.
5. Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the City may take necessary corrective action, the cost of which shall become a lien upon the property until paid.
6. Occupancy permits shall not be granted until all stormwater BMPs have been inspected and approved by City.
(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-14Appeal

Administrative decisions by City staff and enforcement actions may be appealed by the developer or property owner to the City Council pursuant to the following rules:

1. The appeal must be filed in writing with the City Clerk within five (5) business days of the decision or enforcement action.
2. The written appeal shall specify in detail the action appealed from, the errors allegedly made by the enforcement officer giving rise to the appeal, a written summary of all oral and written testimony the applicant intends to introduce at the hearing, including the names and addresses of all witnesses the applicant intends to call, copies of all documents the applicant intends to introduce at the hearing, and the relief requested.
3. The enforcement officer shall specify in writing the reasons for the enforcement action, a written summary of all oral and written testimony the enforcement officer intends to introduce at the hearing, including the names and addresses of all witnesses the enforcement officer intends to call, and copies of all documents the enforcement officer intends to introduce at the hearing.
4. The City Clerk shall notify the applicant and the enforcement officer by ordinary mail and shall give public notice, in accordance with Chapter 21 of the Code of Iowa, of the date, time, and place for the regular or special meeting of the City Council at which the hearing on the appeal shall occur. The hearing shall be scheduled for a date not less than four (4) or more than twenty (20) days after the filing of the appeal. The rules of evidence and procedure and the standard of proof to be applied shall be the same as provided by Chapter 17A, Code of Iowa. The applicant may be represented by counsel at the applicant's expense. The enforcement officer may be represented by the City Attorney or by an attorney designated by the City Council at City expense.
5. The decision of the City Council shall be rendered in writing and may be appealed to the Iowa District Court.
(Ord. 13-O-2013-2014, Add, 07/21/2014)

Section 3-13-15 Definitions

Terms in this chapter, other than those defined below, shall have the meanings set out in the Iowa Stormwater Management manual.

1. "Applicant" means a property owner or agent of a property owner who has filed an application for a stormwater management permit.
2. "Best Management Practice (BMP)" is a technique, measure, or structural control that is used for a given set of conditions to manage the quantity and improve the quality of stormwater runoff in the most cost-effective manner. BMPs can be either Non Structural (planning, watershed management, practice design, etc.) or Structural (Engineered and constructed) systems that are used to treat the stormwater.
3. "Buffer" is a vegetative area, including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake, or reservoir area. Alteration of the natural area is strictly limited.
4. "Building" means any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.
5. "City stormwater requirements" means the standards, sizing criteria, BMPs and other requirements established in this chapter.
6. "Dedication" means the deliberate appropriation of property by its owner for general public use.
7. "Developer" means a person, persons, or entity who undertakes land disturbance activities.
8. "Development or "Redevelopment means either:
 - A. Land disturbance activity exceeding one acre (43,560 square feet) on land previously vacant of buildings or largely free of previous land disturbance activity other than traditional agricultural activities; or
 - B. Land disturbance activity exceeding one acre (43,560 square feet) in areas where existing land use is high density commercial, industrial, institutional or multi-family residential (a.k.a. "redevelopment").
9. "Drainage easement" means a legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes. Public easements shall be maintained by the City of Storm Lake. Private easements shall be maintained by the private owners of the project.
10. "Enforcement officer" means that person designated by the City having responsibility for administration and enforcement of this chapter.
11. "Excessive Cost" means Practice cost greater than an amount as set by resolution of the City Council per impervious acre.
12. "Fee in lieu" means a payment of money in place of achieving or exceeding all or part of City stormwater requirements.

13. Infiltration Based Practices means that at a minimum the water quality volume moves through the soil media to provide filtration.

14. "Iowa Stormwater Management manual" means the current Iowa Stormwater Management Manual publication, by whatever name, as amended from time to time by Iowa Department of Natural Resources in collaboration with Iowa Stormwater Education Program and other partners that recommends Stormwater Management Guidelines and Uniform Sizing Criteria and BMPs designed to address said Guidelines.

15. "Land disturbance activity" means any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

16. "Landowner" means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

17. "Maintenance agreement" means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater BMPs.

18. "Native Vegetation" refers to vegetation originating naturally in this region of the state. Native vegetation is not to be confused with all existing vegetation.

19. "Predevelopment Condition" shall be considered the greater of the rainfall at which direct runoff begins using the curve number for a meadow in good condition, or the 1-year, 24-hour storm event per the Iowa Stormwater Management Manual.

20. "Stormwater management" means the use of BMPs that are designed in accordance with City stormwater requirements to reduce stormwater runoff pollutant loads, discharge volumes, peak flow discharge rates, and detrimental changes in stream temperature that affect water quality and habitat.

21. "Stormwater Pollution Prevention Plan" (SWPPP) means a plan that is designed to minimize the accelerated erosion, sediment, and other pollutant runoff at a site during construction activities.

22. "TP (Total Phosphorous) means the total concentration of all forms of phosphorus found in a water sample.

(Ord. 13-O-2013-2014, Add, 07/21/2014)