

Definitions—to be added to Chapter 85 of the Story County Land Development Regulations

“Best Management Practices” (BMPs) means structural or non-structural practices taken to keep soil and other pollutants out of streams and lakes, ~~designed~~ to protect water quality, and to prevent new pollution.

“Best Management Practices, Erosion Control” means BMPs that are designed to intercept precipitation and prevent movement of soil particles including temporary measures and permanent measures after the development is completed. Practices that prevent erosion include construction staging, protection of existing vegetation. Temporary measures to prevent movement of soil particles include, but are not limited to, straw, wood fiber blanket, wood chips, vegetation, mulch, and rolled erosion control products. Permanent measures to prevent movement of soil particles include, but are not limited to, sodding, seeding, and planting vegetative material including native turf grass and lawn.

“Best Management Practices, Infiltration-Based” means a natural or constructed feature (bed, trench, basin, well, etc.) that captures, temporarily stores and infiltrates the design volume of water.

“Best Management Practices, Non-Structural” means stormwater runoff treatment techniques that use natural measures to reduce pollution levels and do not involve the construction or installation of devices.

“Best Management Practices, Sediment Control” mean BMPs that are designed to capture soil particles after they have been dislodged and are carried from the site. Products designed for this include silt fences, filter socks, check dams and sedimentation ponds

“Best Management Practices, Stormwater Management” means the use of BMPs that are designed to reduce stormwater runoff, runoff pollutant loads, discharge volumes, and peak flow discharge rates that affect water quality and habitat.

“Buffer” means an area of land and/or a vegetative area of desirable trees, shrubs and herbaceous plants that exists and/or is established to separate different land uses or mitigate a risk associated with land use or structure.

“Channel Protection Volume” means the volume of runoff generated by a 1-year, 24-hour duration storm event to prevent habitat degradation and erosion that may cause downstream enlargement and incision due to increased frequency of bank-full and near-bank-full flows. See the Iowa Stormwater Management Manual for details on calculating the channel protection volume.

“Common Development Plan” means a contiguous area where multiple separate and/or distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities may occur or are proposed.

“**Compaction**” means the process by which the soil grains are rearranged to decrease void space and bring the grains into closer contact with one another and thereby increase the weight of solid material per cubic foot and decrease permeability.

“**Concentrated Flow**” means flow that gains speed and increases depth, forming small channels. There are two types of concentrated flow: shallow concentrated flow and channelized flow. Shallow concentrated flow forms small channels of water, from several inches to a foot in width. As these small rills of water come together, they form streams and eventually rivers; this is channelized flow.

“**Curve Number (CN)**” means an index that represents the runoff potential from a storm event for a specific land area for use in runoff prediction models. Curve numbers range from 0 to 100, with a smaller curve number representing low runoff potential and a higher curve number representing high runoff potential. The factors combined to determine the curve number include Hydrologic Soil Group (HSG); cover type, such as pavement, grass, bare soil, etc.; treatment or a modification of cover type based on the management of the cover, such as contouring of agricultural lands, or mowing of urban parks; and hydrologic condition, representing the condition of cover type, including the density of plantings or degree of surface roughness.

“Development” means any manmade change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

“**Development, Cumulative**” means development that occurs at different intervals of time on the same site or development that occurs different intervals of time or the same time on adjacent sites that are part of a common development plan.

“**Disturbance Activity, Land**” means any 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.

“**Downstream Hydrologic Analysis**” means an analysis performed to determine if there are any additional impacts in terms of peak flow increase or downstream flooding while meeting overbank and extreme flooding design. Such an analysis is recommended for larger sites (i.e., greater than 50 acres) to size facilities in the context of a larger watershed. The analysis is performed at the outlet(s) of the site, and downstream at each tributary junction to the point(s) in the conveyance system where the area of the portion of the site draining into the system is less than or equal to 10% of the total drainage area and in accordance with the Iowa Stormwater Management Manual.

“**Extreme Flood Protection**” means managing the effects of the 100-year, 24-hour storm event on the stormwater management system, boundaries of the 100-year floodplain, and adjacent property by controlling the peak discharge rate to pre-settlement rate. See the Iowa Stormwater Management Manual for details on the calculation of the rate.

“**Hotspot**” means areas where land use or activities generate highly contaminated runoff, with concentrations of pollutants such as trace metals or hydrocarbons in excess of those typically

found in stormwater. Examples of hotspots include gas stations, vehicle service and maintenance areas, salvage yards, material storage sites, garbage transfer facilities, and commercial parking lots with high-intensity use.

“**Hydrologic Soil Group**” means a Natural Resource Conservation Service designation given to different soil types to reflect their relative surface permeability and infiltrative capability. Designations consist of four classifications (A, B, C, and D) grouped according to soil infiltration rates from high infiltration rates in Group A to very low infiltration rates in Group D.

“**Infiltration, Stormwater**” means the process by which rainfall and stormwater runoff flows from the land surface into and through the subsurface soil. Stormwater infiltration occurs when rainfall lands on pervious surfaces, when runoff flows across pervious surfaces, and when runoff is collected and directed to a stormwater infiltration Best Management Practice (BMP).

“**Low-Impact Development (LID)**” means practices that mimic or preserve natural drainage processes to manage stormwater through infiltration, evapotranspiration, or storage and reuse. These practices include, but are not limited to, protection, restoration, and/or reestablishment of open space and natural resources areas, minimizing soil compaction, reduction of impervious cover, distributing and minimizing runoff by utilizing vegetated areas for stormwater treatment, capturing and storing runoff for irrigation, and encouraging infiltration and soil storage of runoff through grass channels, bioswales, bioretention cells and rain gardens.

“**Overbank Flood Protection**” means providing on-site stormwater detention to limit runoff peak flow rates from the 5-year, 24-hour storm event to pre-settlement rates to prevent downstream surcharge of conveyance systems and reduce overbank flooding. See the Iowa Stormwater Management Manual for details on the calculation.

“**Peak Discharge Rate**” means the maximum rate of stormwater flow at a particular location following a storm event, as measured at a given point and time in cubic feet per second (CFS).

“**Post-development condition**” means the extent and distribution of land cover types anticipated to occur after development activities are completed that impact runoff and infiltration.

“**Pre-settlement condition**” means, for stormwater design calculations, assuming the pre-development condition is a natural, undisturbed condition and the corresponding curve number is for a meadow in good condition for a site’s hydrologic soil group. A smaller curve number represents low runoff potential and a higher curve number represents high runoff potential Table 85-3 contains the curve numbers for a meadow in good condition for a given hydrologic soil group.

Table 85-3	
Hydrologic Soil Group (HSG)	Meadow
A	30
B	58
C	72
D	78

“Staging” means stabilizing one part of the site before beginning development on another to minimize the time and amount of soil exposed and therefore the movement of soil.

“Stormwater” means storm runoff, snowmelt runoff, and surface runoff and drainage.

“Runoff” means that portion of the precipitation on a drainage area that is discharged from the area by flowing over the ground surface.

“Time of Concentration” means the time needed for water to flow from the most remote point in a watershed to the point of interest within the watershed. It is a function of topography, geology and land use within the watershed and is computed by summing all the travel times for consecutive components of the drainage conveyance system.

“Recharge Volume” means a portion of the water quality volume recharged to maintain existing groundwater recharge rates at development sites to preserve existing water table elevations, thereby maintaining the hydrology of streams and wetlands during dry weather. The volume of recharge that occurs on a site depends on slope, soil type, vegetative cover, precipitation, and evapotranspiration. See the Iowa Stormwater Management Manual for details on the calculation.

“Topsoil” means the upper layer of soil, the A-horizon, and for the purposes of restoration, shall meet standards for Soil Quality Management and Restoration in the Iowa Stormwater Management Manual.

“Watercourse” means any natural or improved stream, river, creek, ditch, channel, canal, conduit, gutter, culvert, drain, gully, or swale in which waters flow either continuously or intermittently.

“Water Quality Volume” means the runoff resulting from a rainfall depth of 1.25” (90% of the rainfall events in Iowa are of this depth or less) that is required to be captured and treated. By managing these storms, the majority of water volume will be treated and many of the “first flush” pollutants of concern will be effectively managed on-site. See the Iowa Stormwater Management Manual for details on the calculation.

Amendments to Chapter 88.05 of the Story County Land Development Regulations

4. Construction Site Erosion and Sediment Control. Sedimentation and erosion pollutes water, degrades land, causes the loss of native vegetation and habitats, and impairs drainage. Development activities cause land to become susceptible to erosion and sedimentation by wind and water. The following requirements shall apply to development in Story County to mitigate the impacts of erosion and sedimentation, protect public and private property, and to protect natural resources and preserve their functions. Erosion control. Any development that will “disturb” an area of one or more acres is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for its storm water discharge.

A. Any development that disturbs one or more acres is required to obtain a National Pollutant Discharge Elimination System (NPDES) Permit from the Iowa Department of Natural Resources and submit the plans, specifications and supporting materials previously submitted to the IDNR in support of the NPDES, the authorizations issued pursuant to the NPDES Permit, and the Stormwater Pollution Prevention Plan (SWPPP) to Story County.

B. A. Any development that is not required to obtain an NPDES permit shall submit an Erosion and Sediment Control Plan in addition to other applicable development permit applications or, if no development permits are applicable, a grading permit and Erosion and Sediment Control Plan prior to commencing development activities. Stormwater discharge permit shall provide temporary sediment barriers to filter runoff so sediment stays on the site. As soon as vegetation is removed by construction activity, sediment barriers shall be used extensively in drainage ditches, waterways, and on the contour. The sediment barrier must be maintained until the project is completed and placed back into a vegetative state. Sediment barriers shall be spaced in accordance with Table 88-3. The following are acceptable materials for sediment barriers:

(1) Silt Fence. A silt fence shall be designed to allow water to pass through while retaining the sediment on the site. The maximum drainage area flow to a silt fence should not exceed one fourth acre per 100 feet of fence. Silt fences should be placed as close as possible to the undisturbed soil and shall use steel posts.

(2) Compost Filter Tubes. The particle size shall be selected in light of the soil gradations that are to be retained by the device. These devices should be installed along the contour, as with silt fences. Compost tubes shall not be placed on slopes in excess of a 10 percent grade. Spacing shall be determined to allow the bottom of the next higher tube to be seen from the one being installed below, and shall be placed at least five feet from the toe of a slope to provide for the formation of a sediment basin. The tubes shall be staked and additional compost placed in front of each tube to enhance the ability to collect sediment.

(3) Wattles. Wattle locations shall be established in the same manner as compost tubes, but installed in shallow trenches (two to four inches deep). Excavated materials shall be placed on the upstream side of the wattle to initiate sediment collection. The wattles shall be staked with wooden stakes and left in place during the establishment of vegetation on the slope.

Table 88-3 Maximum Sediment Barrier Spacing

SILT FENCE SPACING ON SLOPES	
Slope	Placement Interval (feet)
3:1 (33%)	40
4:1 (25%)	50
5:1 (20%)	60
10:1 (10%)	100
< 50:1 (2%)	150
3:1 (33%)	40
4:1 (25%)	50
5:1 (20%)	60

SILT FENCE SPACING IN DITCHES	
Ditch Grade (%)	Approximate Spacing (feet)
1-2	150
2-4	75
4-6	40
>6	25

COMPOST TUBE SPACING	
Slope	Approximate Spacing (feet)
10:1 (10%) – 20:1 (5%)	30
20:1 (5%) – 50:1 (2%)	50
< 50:1 (2%)	75

WATTLE SPACING	
Slope	Approximate Spacing (feet)
> 2:1 (50%)	10
2:1 (50%) – 4:1 (25%)	15
< 4:1 (25%)	20

C. Erosion and Sediment Control Plan Requirements.

- (1) The plan shall illustrate that the selected erosion and sediment control Best Management Practices (BMPs) address the applicable Criteria for Erosion and Sediment Control in this chapter and follow the Iowa Statewide Urban Design and Specifications (SUDAS), the Iowa Stormwater Management Manual, or other professionally accepted design criteria.
- (2) The plan shall include a narrative, construction/grading schedule, site plan, location, and schedule of each proposed erosion and sediment control practice as it corresponds with the provided construction/grading schedule.
- (3) The plan shall include the maintenance procedures required for each erosion and sediment control practice, responsible party, and contact information. Such maintenance procedures shall keep the erosion and sediment control practices functioning in an effective manner

D. Criteria for Erosion and Sediment Control.

(1) Limit Disturbed Area.

- a. The size of the area to be developed and limits of the development including all land disturbing activities shall be identified in the Erosion and Sediment Control Plan and delineated/flagged/fenced in the field to protect areas that are not proposed to be disturbed.
- b. The smallest practical area of land shall be exposed at any given time during development or work.
- c. Natural plant covering shall be retained and protected so far as is reasonable and consistent with developing the site.
- d. Staging and equipment storage areas shall be marked on-site to protect areas that are not proposed to be disturbed.

(2) Limit Exposure Time.

- a. The amount of area disturbed at one time shall be limited through staging of development activities where possible.
- b. All areas, including stockpiles, shall have temporary erosion control stabilization within fourteen (14) days after the area is no longer actively being worked.
- c. Work proposed shall take into consideration the seasonal limitations on construction scheduling such as wind, drought, winter thaw, snowmelt, and rainfall.

(3) Minimize Soil Compaction and Provide Soil Quality Restoration.

- a. Practices shall be implemented including, but not limited to, reducing passes made over an area with heavy equipment, confining grading, stockpiling, and other construction activities, and not using heavy equipment when soil is wet.
- b. Topsoil shall not be removed unless required for the function of the proposed project.
- c. Topsoil that is removed but may be used for restoration after development activities cease shall be preserved on-site where possible.
- d. Topsoil shall be respread or restored to create a healthy soil profile a minimum of eight inches in depth following the methods for Soil Quality Management and Restoration in the Iowa Stormwater Management Manual, Iowa SUDAS, or other professionally-accepted methods.

(4) Protect neighboring properties.

- a. A construction site entrance shall be designed to minimize tracking of sediment or other debris off the site and shall be installed prior to land disturbing activities.
- b. Perimeter control measures shall be in place prior to disturbing activities when the disturbed areas slope to site borders. Additional up gradient controls may be necessary if perimeter controls are overloaded.
- c. The timing and/or installation of the perimeter control installations may be adjusted to accommodate short-term activities such as the passage of vehicles.

(5) Protect watercourses.

- a. All exposed soil areas that slope to a watercourse shall have temporary erosion control stabilization within seven (7) days after the area is no longer actively being worked.
- b. Development in the floodplain is discouraged. Any proposed development in the floodplain shall be done in accordance with the adopted Floodplain Management Ordinance (codified in Chapter 80 of this Code of Ordinances) or other State or Federal requirements.

- c. An undisturbed buffer zone shall be provided in accordance with the following minimum buffer sizes measured from the edge of a watercourse/feature unless reasons for encroachments are provided and all potential impacts/mitigation steps are documented. Requests for encroachments shall be reviewed by County Departments and approved administratively. See Protection/Restoration map published as part of the Story County Watershed Assessment for feature identification.
 - i. Priority Streams – 75 feet
 - ii. Secondary Streams – 50 feet
 - iii. Other Streams – 25 feet
 - iv. Priority Wetlands – 100 feet
 - v. Environmentally sensitive areas and other water resources – 50 feet
- d. Perimeter controls shall be installed prior to work on or near streambanks or lakeshores.

(6) Divert Runoff from Disturbed Areas and Prevent Concentrated Flow

- a. For sites where flow will occur over the disturbed area, temporary flow diversion measures such as temporary earth diversion structures, temporary pipe slope drains, filter berms, or filter socks shall be constructed and/or installed prior to land disturbing activities and maintained until final erosion control stabilization measures are established.
- b. Diversion measures shall be stabilized through vegetation, riprap or other BMPs before receiving runoff.
- c. Diverted runoff shall be discharged to a stable outlet and rock outlet protection such as gabion or riprap material or other BMPs shall be provided to dissipate energy and prevent scour at the outlet.
- d. Disturbed slope lengths shall be broken up into several smaller slopes by installing silt fence, filter berms, filter socks, and wattles as needed. In ditches and channels, check dams may be used.

(7) Concrete Waste Management.

- a. Washout facility(s) must be served by a stabilized construction entrance and located on private property.
- b. Concrete waste must be contained in washout areas.
- c. Saw-cut slurry must be vacuumed or shoveled and removed from the site or disposed of in a concrete washout area.
- d. Washout areas must be removed and/or cleaned, dry waste concrete must be disposed of properly, and the ground stabilized not longer than fourteen (14) days after concrete work is completed.

(8) Final Site Stabilization.

- a. Within seven (7) days of achieving final grade, exposed soils shall be stabilized with a vegetative cover with a uniform density (e.g. evenly distributed, without large bare areas) of at least 70% or by equivalent means to prevent soil failure. Temporary erosion control may be used if not feasible to establish permanent cover within the seven days.

E. Inspections and Responsibility.

- (1) In no instance shall acceptance of the Erosion and Sediment Control Plan and approval of the grading permit by Story County be construed as approval of the design, construction, or concurrence by Story County that all criteria have been satisfied. Story County shall not be liable for any damages resulting from erosion and sedimentation.
- (2) An inspection for compliance with submitted erosion and sediment control plans and requirements of this chapter shall be conducted by Planning and Development Staff as part of the required foundation location inspection for a zoning permit or, if no zoning permit is required, after controls, as specified in the plan, have been installed but prior to the commencement of development activities.
- (3) Temporary erosion and sediment controls shall not be removed until the Planning and Development Staff have determined that the site has been permanently stabilized through a final inspection for a zoning permit, or if no zoning permit is required, an inspection once final stabilization is completed.
- (4) Any amendments or changes to a submitted Grading Permit or Erosion and Sediment Control Plan shall be communicated to the Planning and Development Department and submitted as part of an amended plan prior to their implementation on-site. All amendments shall comply with the requirements for Erosion and Sediment Control in this chapter.

- F. Exemptions. The following exemptions to the Erosion and Sediment Control requirements may apply; however, such uses shall not be exempt from adopted Floodplain Management Ordinance (codified in Chapter 80 of this Code of Ordinances) or other State or Federal requirements.
- (1) Agricultural. Except to the extent required to implement Section 335.2, Code of Iowa, the grading permit application and Erosion and Sediment Control plan requirement shall not apply to development that is primarily adapted, by reason of nature or area, for use for agricultural purposes, while so used.
 - (2) County Engineer. The grading permit application and erosion and sediment control plan requirement shall not apply to development that is for the maintenance and/or construction of public roads and public road right-of-way, completed by the Story County Engineer or their designee.
5. Post-Construction Stormwater Management and Water Quality. Stormwater runoff increases nonpoint source pollution, flooding, siltation, stream temperatures, and streambank erosion. The following requirements shall apply to development in Story County to ensure site design minimizes the generation of stormwater runoff and maximizes pervious areas, provide a single, consistent set of performance goals that apply to all developments, protect functional values of all types of natural waterbodies (e.g. rivers, streams, wetlands, lakes, seasonal ponds), and sustain or enhance biodiversity (native plant and animal habitat), protect life and property from dangers associated with flooding, maintain existing flow patterns, and promote infiltration and recharge of groundwater.
- A. Development that meets any of the following thresholds shall be required to submit a Stormwater Management Plan, in addition to other applicable development permit applications, prior to commencing development activities:
- (1) Development or cumulative development, including land disturbance, of one-acre or greater in size.
 - (2) Development that will result in the division of land involving a major subdivision plat.
- B. Criteria for Stormwater Management. Developments required to submit a Stormwater Management Plan shall meet the following design criteria. See the Iowa Stormwater Management Manual for details on the calculation of the criteria, as applicable.
- (1) All developments requiring a Stormwater Management Plan shall be designed, constructed, and maintained to prevent flooding, minimize stream channel impacts, protect water quality, and achieve the purposes of this Ordinance, as stated above.
 - (2) All developments requiring a Stormwater Management Plan shall implement a set of practices collectively known as low impact development (LID) to the fullest extent possible including the preservation of natural areas and protection of open spaces, reducing impervious cover and site grading, and distributing runoff and

using pervious areas and the sites natural topography to more effectively treat stormwater runoff.

- (3) The preferred conveyance strategy is to transport, wherever possible, untreated and treated runoff in conveyance facilities open to the atmosphere (e.g. swales, vegetated buffer strips, energy-dissipating structures, etc.), rather than through enclosed pipes, so as to decrease runoff velocity, allow for natural infiltration, allow suspended sediment particles to settle, and to remove pollutants.
- (4) All development required to submit a Stormwater Management Plan that develops or disturbs an area of one-acre to five acres shall meet the following criteria:
 - a. The site shall be designed to manage the water quality volume of a rainfall depth of 1.25 inches and corresponding recharge volume through infiltration-based BMPs or LID practices.
 - b. To protect stream channels, the site shall be designed to provide 24-hours of extended detention of the channel protection volume determined for the 1 year, 24-hour storm.
- (5) All development required to submit a Stormwater Management Plan that develops an area of five acres or more shall meet the following criteria:
 - a. The criteria required for development of one to five acres, as detailed in 88.05(5)(B)(4).
 - b. The peak discharge rate from all storms up to the 100-year, 24-hour event shall not be greater than pre-settlement discharge rates to protect from overbank and extreme flooding.
6. Contents of the Stormwater Management Plan. The Stormwater Management Plan shall include a site plan, narrative, and other attachments necessary to illustrate how runoff and associated water quality impacts resulting from the development is proposed to be managed meeting the requirements of this chapter and following the Iowa Stormwater Management Manual or other professionally accepted Best Management Practices (BMPs) and/or through LID practices. It shall also:
 - (1) Be prepared by a licensed professional engineer (PE) or landscape architect.
 - (2) Identify pre-development and post-development land use, including off-site features that may be impacted or impact the overall requirements for the development. Features may include:
 - a. Proposed and existing site improvements including lot divisions, building footprints, and other impervious surfaces.
 - b. Existing soil conditions and areas of land disturbance.

- c. Existing and proposed easements and right-of-way.
 - d. Existing site topography with contours at two-foot intervals. Light Detection and Ranging (LIDAR) contour maps may be requested from the Story County Planning and Development Department or a survey of the site's topography may be completed and submitted to determine slopes.
 - e. The drainage boundary of the proposed development and its relationship with existing drainage patterns.
 - f. Boundaries of any off-site drainage area contributing flow to the development.
 - g. Natural and artificial watercourses, wetlands and wetland boundaries, environmental feature boundaries, floodplains, lakes, bays, existing stormwater storage facilities, conveyance swales (natural or artificial).
 - h. Woodlands and native vegetation.
 - i. Proposed and existing drinking water wells and septic systems/drain fields, public wellheads, Wellhead Protection Areas (WHPAs), hotspots, or shallow bedrock.
- (3) Identify the proposed stormwater management BMPs or LID practices selected for the site, their location, their landscaping, and their sizing/calculations including preliminary estimates of runoff volume captured by BMPs, with clear citations to the Iowa Stormwater Management Manual, or other professionally accepted BMPs, and County Criteria for Stormwater Management in Section 88.05(5)(B).
- (4) Describe the maintenance procedures required for each selected practice, responsible party, and contact information. Such maintenance procedures shall keep the stormwater management BMPs or LID practices functioning in an effective manner.

7. Inspections and Responsibility.

- (1) In no instance shall the acceptance the Stormwater Management Plan by Story County be construed as approval of the design, design methods, design calculations, detention facilities plan, construction, or concurrence by Story County that all design criteria have been satisfied. Story County shall not be liable for damages resulting from stormwater runoff or discharge of stormwater detention facilities.
- (2) An inspection for compliance with submitted stormwater management plans and requirements of this chapter shall be conducted by Planning and Development Staff as part of the required final inspection for a zoning permit or, if no zoning permit is required, after best management practices have been installed.

- (3) Any amendments or changes to a Stormwater Management Plan shall be communicated to the Planning and Development and submitted as part of an amended plan to prior to their implementation on-site. All amendments shall comply with the requirements of the Stormwater Management Plan Criteria in this chapter.
8. Exemptions. The following exemptions to the Stormwater Management Plan requirement may apply; however, such uses shall not be exempt from adopted Floodplain Management Ordinance (codified in Chapter 80 of this Code of Ordinances) or other State or Federal requirements.
 - (1) Agricultural. Except to the extent required to implement Section 335.2, Code of Iowa, the Stormwater Management Plan requirement shall not apply to development that is primarily adapted, by reason of nature or area, for use for agricultural purposes, while so used.
 - (2) County Engineer. The Stormwater Management Plan shall not apply to development that is for maintenance and/or construction of public roads and public road right-of-way, completed by the Story County Engineer or their designee.
 - (3) Maintenance of Legally Established Development. The maintenance of development that has legally occurred prior to the adoption of this Ordinance (Ord. 27x), shall not be counted towards the one-acre threshold or cumulative one-acre threshold if the footprint of the maintenance work is within or the same as that previously developed.
 - (4) Infiltration of Water Quality Volume. When infiltration is infeasible due to the natural or existing physical characteristics of a site such as the size of the drainage area, shallow bedrock or shallow soil depth to groundwater (less than two feet), being within 250 feet of a private well or 1,000 feet of a municipal well, being within 50 feet up-gradient or 10 feet down-gradient of basement foundations, being within 50 feet of septic systems/drain fields, being within NRCS Group D (with a minimum infiltration rate less than .52 inch/hour), or where hotspots or contaminated soil make infiltration-oriented BMPs hazardous, the recharge volume shall be achieved to the maximum extent practicable and the site shall be designed to remove 80 percent of Total Suspended Solids from the stormwater runoff through a combination of BMPs. The site limitations shall be identified in the Stormwater Management Plan along with the selected BMPs and their sizing/calculations in accordance with the Iowa Stormwater Management Manual.
 - (5) The overbank and extreme flooding criteria shall be waived if it is demonstrated through the Downstream Hydrologic Assessment that there will be no increase in the total peak discharge from the developed site during the storm events up to the 100-year, 24-hour event.
 - (6) The overbank and extreme flooding criteria shall be waived if it is demonstrated

through a Downstream Hydrologic Assessment that the structural controls required to meet these criterion increase the peak flows at the outlet or tributary junctions.

J. Stormwater Credits for Onsite Stormwater Management. The use of LID practices are encouraged as they provide a quantitative stormwater benefit. LID practices include minimizing the area developed, protecting existing natural resources, minimizing soil compaction, and completing soil restoration, native revegetation, and riparian buffer restoration. When LID practices are used, credits to reduce the post-development curve number and total site area and volume managed shall be provided in accordance with the following criteria:

- (1) The area(s) of protected/undisturbed natural resources, including, but not limited to, surface waters, floodplains, riparian areas, wetlands, woodlands, natural drainage ways, and slopes over 15%, and special habitat areas shall be subtracted from the total site area when determining the disturbed area to be managed. The protected areas shall have the limits of disturbance clearly shown on the Stormwater Management Plan, all construction drawings, and delineated/flagged/fenced in the field. A conservation easement or other acceptable instrument shall be provided for the area to ensure perpetual protection from disturbance and shall include a maintenance plan.
- (2) The volume reduction achieved through LID practices or infiltration-based BMPs can be deducted from the channel protection volume.
- (3) The areas where no disturbance occurs or soil restoration is used, in accordance with the following criteria, shall be assigned a Curve Number (CN) reflecting a “good” condition. See the Iowa Stormwater Management Manual for curve numbers.

a. Criteria to Receive Credits for No Disturbance and Soil Restoration.

- i. The areas are protected by having the limits of disturbance clearly shown on the Stormwater Management Plan, all construction drawings, and delineated/flagged/fenced in the field.
- ii. For areas where no disturbance is to occur, the areas shall not be subject to grading or movement of existing soils. Invasive vegetation may be removed. Pruning or other required maintenance of vegetation is permitted. Additional planting with native plants is permitted.
- iii. For soil restoration, tilling the soil is required if subsoil is compacted. Use of soil amendments and additional topsoil is permitted in areas being disturbed for soil restoration purposes. Topsoil shall be respread or restored to create a healthy soil profile a minimum of eight inches in depth following the

methods for Soil Quality Management and Restoration in the Iowa Stormwater Management Manual, Iowa SUDAS, or other professionally-accepted methods. Lawn and turf grass are acceptable uses. Planted meadow is an encouraged use.

(4) Trees protected can be assigned a Curve Number (CN) reflecting woods in “good” condition for an area of 800 square feet per tree or the entire area of the protected tree canopy, whichever is greater. See the Iowa Stormwater Management Manual for curve numbers.

a. Criteria to Receive Credits for Tree Protection.

- i. The criteria for protection of significant trees in section 88.05 shall be met.
- ii. The trees are protected by identification on the Stormwater Management Plan, all construction drawings, and delineated/flagged/fenced in the field.
- iii. For every inch of diameter of the trunk, an area of 1.5 feet away from the trunk or directly beneath the tree’s entire canopy shall be protected from disturbance, whichever is greater. Stockpiling excavated soil around the tree shall be avoided.

(5) Trees and shrubs to be planted for revegetation or riparian buffer restoration can be assigned a Curve Number (CN) reflecting woods in “good” condition for an area of 200 square feet per tree or the estimated size of the protected tree canopy, whichever is greater. For shrubs, an area of 25 square feet per shrub can be assigned a Curve Number (CN) reflecting woods in “good” condition. See the Iowa Stormwater Management Manual for curve numbers.

a. Criteria to Receive Credits for Revegetation and Riparian Buffer Restoration

- i. The revegetated or buffer areas area protected by identification on the Stormwater Management Plan, all construction drawings, and delineated/flagged/fenced in the field.
- ii. Native trees or native vegetation shall be used appropriate for the area and methods for Native Landscaping in the Iowa Stormwater Management Manual, Iowa SUDAS, or other professionally-accepted methods shall be used.
- iii. The areas have a maintenance plan that includes weeding and watering requirements from initial installation through ongoing maintenance.

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