

ORDINANCE NUMBER 859-18

**AN ORDINANCE ESTABLISHING POST-CONSTRUCTION BEST
MANAGEMENT PRACTICES FOR PERMANENT STORMWATER
CONTROL STRUCTURES
FOR THE CITY OF HELENA, ALABAMA**

STORMWATER MANAGEMENT POST-CONSTRUCTION ORDINANCE

WHEREAS, the City of Helena operates under the requirements of the Alabama Department of Environmental Management (ADEM) National Pollutant Discharge Elimination System (NPDES) Permit; and

WHEREAS, this permit authorizes stormwater discharges from regulated small municipal separate storm sewer systems (MS4); and

WHEREAS, the City of Helena must be compliant with the ADEM NPDES Permit by developing, implementing, and enforcing a program to address post- construction stormwater management; and

WHEREAS, the City of Helena finds it necessary to enact an ordinance to address and enforce post-construction stormwater management standards on Qualifying Sites to prevent or minimize water quality impacts and ensure that the volume and velocity of pre-construction stormwater runoff is not significantly exceeded for the life of the property's use to the maximum extent practical (MEP).

**NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE
CITY OF HELENA, ALABAMA, AS FOLLOWS:**

Section 1 DEFINITIONS

For the purposes of this ordinance, the following words and terms shall have the meaning assigned to them in this section:

Best Management Practices - (herein abbreviated as "BMP") - activities, prohibitions of practices, maintenance procedures and management practices designed to prevent or reduce the pollution of waters to the MS4. Best Management Practices also include treatment requirements, operating procedures and practices to control facility site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage and construction sites.

Green Infrastructure – a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services.

Hydrology – Hydrology refers to the physical characteristics of storm water discharge, including the magnitude, duration, frequency, rate of change, and timing of discharge.

Low Impact Development – Low Impact Development (LID) emphasizes conservation and use of on-site natural features and other features to protect water quality and reduce stormwater runoff. This approach minimizes the project's impervious surface and loss of natural open space and implements engineered, small-scale hydrologic controls aiming to replicate the pre-development hydrologic regime of watersheds through infiltration, filtering, storing, evaporating, and detaining stormwater runoff close to its source.

Non-structural BMPs - Non-structural BMPs may include but not be limited to the following: preservation of open spaces and vegetation, establishment of conservation easements, establishment of buffers along streams and other waters, maintenance of vegetation, BMP inspection and maintenance, planning for future development or redevelopment.

Qualifying Site - Qualifying Site is any new development site or redevelopment site that results in a total land disturbance of one or more acres and sites that disturb less than one acre but are a part of a larger common development or sale that would disturb one or more acres.

Structural BMPs - Structural BMPs may include, but not be limited to the following: detention/retention devices, check dams, drainage swales, lined ditches, infiltration basins, porous pavement, outlet protection, velocity dissipation devices, slope protection, constructed wetlands, rain gardens, catch basin inserts, vegetated filter strips, and rain barrels.

Section 2 ADMINISTRATION

The City's Stormwater Manager or his or her duly authorized representative who is a qualified credentialed professional or who has had sufficient experience dealing with BMP design to enable them to enforce the provisions of this ordinance, including any individual or agency contracted to provide such service, shall be responsible, on behalf of the City, to enforce the provisions of this ordinance.

Section 3
POST-CONSTRUCTION BMP DESIGN

Section 3.1 Design Intent and Standards

- (a) The post-construction BMPs for qualifying sites, which may include a combination of structural BMPs and/or non-structural BMPs including low impact development and green infrastructure practices, must be designed to reduce the discharge of pollutants and ensure that the volume and velocity of pre-construction stormwater runoff is not significantly exceeded and water quality is not adversely affected, to the maximum extent practicable, over the life of the property's use. These BMPs may include, but not be limited to:
- i. Minimize the amount of impervious surfaces and/or increase the use of more pervious surfaces such as permeable pavers, permeable pavements, reinforced turf, etc.;
 - ii. Preserve and protect ecologically sensitive areas that provide water quality benefits;
 - iii. Provide vegetated buffers along waterways and reduce discharges to surface waters from pervious surfaces such as parking lots;
 - iv. Implement policies to protect trees, native soils and other vegetation; and
 - v. Minimize topsoil stripping and compacted soils where feasible.
- (b) Landowners and developers are encouraged to incorporate the use of low impact development (LID) and green infrastructure where feasible. Refer to Section 3.2 for references on low impact development.
- (c) Landowners and developers must develop and maintain best management practices to ensure, to the maximum extent practicable, that post-construction runoff mimics pre-construction hydrology of the site. A 1.1 inch rainfall over a 24-hour period preceded by a 72-hour antecedent dry period shall be the basis for the design and implementation of post-construction water quality BMPs.
- (d) For controlling and minimizing runoff volume, peak flow rate and outlet velocity, two criteria shall be checked:
1. The post-development flows must be equal or less than the pre-development flows at the outfall point of the development.
 2. No more than a 1% increase in flows will be allowed at a point downstream where the site area is approximately 10% of the drainage basin area (i.e. 10% downstream analysis). The 10% analysis point shall be the point downstream where the site drainage area is approximately 10% of the overall drainage basin area. If the outfall point of the development is approximately 10% or less of the overall drainage basin area, then the outfall point of the development will be the 10% analysis point.

For the 10% downstream analysis, the design engineer shall:

- a. Identify all affected existing structures between lower limit of site and 10% percent analysis point and determine the impacts to these existing structures;
- b. Provide an overall pre-development vs. post-development description and analysis;
- c. Describe and show on a topographic map all existing culverts, obstructions or improvements, existing and potential erosion problems, and any known existing drainage complaints between the downstream property line and the 10% analysis point;

- d. Provide pre-development vs. post-development hydrograph comparisons for the one-, two-, five-, ten-, 25-, 50- and 100-year storms for 10% analysis point;
 - e. Provide a detailed written description of the first 500 feet downstream of the site including at least one photograph looking downstream with some object included in the photograph for scale;
 - f. If the 10% downstream analysis indicates that adverse impacts are expected, provide storm water detention/retention in basin(s) for the one-, two-, five-, ten-, 25-, 50- and 100-year storm event. A 1-percent increase may be allowable if no existing adverse conditions exist.
- (e) Where detention or retention ponds are used to reduce peak flows and/or velocities, these ponds shall have the following design criteria:
1. The base design storm for detention pond design shall be the 25-year, 24-hour storm. The two-, five-, ten-, 50- and 100-year storm events shall also be checked to determine if there are any adverse impacts for these storms.
 2. All ponds must have at least 12 inches of freeboard based on the 100-year storm.
 3. The emergency spillway shall be designed to convey the 100-year storm. The overflow spillway shall be sodded, paved or riprapped as required to prevent erosion. In lieu of a spillway, an overflow, designed to convey the 100-year storm, may be incorporated into the outlet control structure.
 4. All designs should consider the ultimate saturation of the development and tributary.
 5. A low flow ditch/swale with a minimum slope of 1% for grass or 0.5% if paved shall be included in the bottom of the pond to the outfall structure.
 6. The outlet control structure shall have a trash rack(s) with a maximum opening of four inches.
 7. If the height of the sides of the pond/dam are above 10', additional stability analysis may be required.
 8. The City may require that ponds be enclosed with a minimum five-foot-tall black, vinyl coated chain link fence with at least one four-foot wide access gate and one 10' wide gate for maintenance vehicle access. Factors in determining the need for fencing may include the size of the pond, the depth of the water in the pond, the location of the pond on the site, type and density of adjacent development (residential, commercial, institutional, etc.). In areas highly visible from public right-of-way, the City may require that the pond be screened from view with landscape planting. The developer or engineer should coordinate with the City to determine the need for fencing or landscaping around detention ponds.
 9. The design engineer shall submit a no-adverse impacts letter.
 10. Any requests for deviations from these detention pond requirements shall be filed with the City Building Official in the form of a variance request and shall be accompanied by technical engineering data concerning the unusual conditions, hardships, and proposed deviations.
- (f) Downstream watercourses and receiving conveyances shall be analyzed to determine post-construction 25-year flow channel velocities and stability of the channel bottom and sides. If the stability of the existing channel bottom and/or sides are not stable, detention, channel improvements/protection or other best management practices (BMPs) may be required. The design engineer shall submit calculations showing peak flows, flow depths, flow velocity, channel stability and existing and/or proposed channel cross section and channel lining for review in the storm water management/drainage design

report submitted as part of the plan review process.

Section 3.2 Design References

- (a) By reference in this Section, the City adopts the following as design references to meet the design standards:
1. The latest version of the *Alabama Handbook for Erosion Control, Sedimentation Control and Stormwater Management on Construction Sites and Urban Areas, Volumes 1 and 2.*
 2. The latest version of the *Low Impact Development Handbook for the State of Alabama.*
 3. Any storm water design manual approved by the City that meets the design requirement of this ordinance.

Section 4 APPLICATION REQUIREMENTS

As part of the Storm Water Discharge Permit application, all Qualifying Sites shall include the following components:

Section 4.1 Post-Construction BMP Design and Construction

- (a) Procedures and strategies of the structural BMPs and/or non-structural BMPs that meet the design standards for Qualifying Sites found in Section 3 of this ordinance will be submitted to the City for review and approval. A post-construction BMP plan shall be part of the construction plans for Qualifying Sites and submitted to the City for review and approval as an integral part of the site-plan approval process.
- (b) The person or entity that will be responsible for the long-term operation and maintenance of the post-construction BMPs shall be shown in the post-construction BMP plans and in a note on the subdivision or development plat.
- (c) Submittal to the City of a certified as-built of the BMPs and a letter of substantial compliance from the design engineer are required prior to approval of the final subdivision plat or within 30 days after completion of construction, whichever is sooner.

Section 4.2 Post-Construction BMP Inspection Plan

- (a) The developer/owner/operator of the post-construction BMPs noted in Section 4.1(b) shall perform an inspection by the BMPs at least once per year to ensure that design standards are being met. Inspection reports including corrective actions for poorly functioning BMPs and routine maintenance records for BMPs shall be submitted to the City on an annual basis prior to September 30. The City will make these inspections available to ADEM upon request. The minimum documentation requirements for inspections are as follows:
1. Site name, location, and address
 2. Site owner and responsible party/operator information (name, address, phone number, fax, and email)
 3. Inspection date(s)
 4. Facility type
 5. Description of the type and location of the BMPs that must be inspected and the condition of BMP's needed to ensure proper functioning. Description of the existing storm water BMP condition may include the quality of: vegetation and

soils, inlet and outlet channels and structures, embankments, slopes, and safety benches; permeable paving; spillways, weirs, and other control structures; and sediment and debris accumulation in storage and forebay areas as well as in and around inlet and outlet structures;

6. Photographic documentation of all critical storm water BMP components;
7. Specific maintenance items or corrective actions needed by the owner/operator of the storm water control or BMP;
8. Name and signature of qualified inspector
9. Maintenance agreements for long-term BMP operations and maintenance.

Section 4.3 Post-Construction BMP Operation and Maintenance Plan

- (a) The landowner or developer shall develop a Post-Construction BMP Operation and Maintenance Plan which shall be submitted to the City for review and approval as part of the as-built plans submittal and approval process. The plan shall identify the necessary recurring maintenance and operational activities and schedule of those activities necessary to ensure that the BMPs continue to meet the original design intent and standards of this ordinance. The Operation and Maintenance Plan shall also designate the party that is responsible and funding mechanism necessary to carry out the Plan.
- (b) One or more of the following shall be required (as determined by the City) to establish the responsible party for long-term operation and maintenance. The document(s) shall be provided to the City for review. Upon approval, an executed copy shall be put on file in the Building, Planning and Development Department:
 1. The developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party.
 2. Written conditions in the sales or lease agreement that require the buyer or lessee/tenant to assume responsibility for maintenance.
 3. Written conditions in project conditions, covenants, and restrictions for residential properties assigning maintenance responsibilities to a home/property owner's association or other appropriate group, for maintenance of structural and treatment control management practices.
 4. Any other legally enforceable agreement that assigns permanent responsibility for maintenance of structural or treatment control management practices to a person or entity.

Section 5 ENFORCEMENT AND ABATEMENT

In the event that the BMPs do not meet the design, operation, or maintenance standards required by this ordinance, the City shall notify, in writing, the party responsible for the operation and maintenance of the BMPs. Upon receipt of that notice, the responsible party shall have 14 calendar days, or such additional time as the City shall determine to be reasonably necessary to complete the action, to make to address deficiencies, perform maintenance and repairs of the BMPs in an approved manner. In the event that corrective action is not undertaken within that time, the City may correct the violation of the design standards, operation, or maintenance by performing all necessary work to place the BMPs in proper working condition. The cost of any corrective action by the City under this Section shall be billed to the responsible party. If the responsible party refuses to pay the bill, the City is entitled to bring an action against the responsible party to pay, file a lien against the property, or both. Costs shall include interest, collection fees, and reasonable attorney fees.

The City shall also have the authority to issue a Stop Work Order on any other components of the development to ensure that the BMPs are properly installed and maintained.

Section 6 MISCELLANEOUS

Section 6.1 Notices.

- (a) Whenever the City is required or permitted to give a notice to any party, such notice must be in writing. Such notice or document may be delivered by personal delivery, certified mail (return receipt requested), registered mail (return receipt requested) or a generally recognized carrier, to the address of such party which is in the records of the City or is otherwise known to the City.

Section 6.2 References.

- (a) Whenever a Section is referred to in this ordinance, unless the context clearly indicates the contrary, such reference shall be to a section of this ordinance.

Section 6.3 Severability.

- (a) The provisions of this ordinance are severable. If any part of this ordinance is determined by a court of law to be invalid, unenforceable or unconstitutional, such determination shall not affect any other part of this ordinance.

Section 6.4 Captions.

- (a) The captions of Sections and sections are for the purpose of reference only, and such captions shall not affect the meaning of any provision of this ordinance.

Section 6.5 Ultimate Responsibility.

- (a) The standards set forth herein and promulgated pursuant to this ordinance are minimum standards. Therefore, this ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

Section 6.6 Effective Date.

This Ordinance Number 859-18 shall be published/posted as required by Alabama Law and shall become effective on October 1, 2018.

ORDINANCE 859-18 DONE, ORDERED, ADOPTED and APPROVED this the 24th day of September, 2018.

[SEAL]



ATTEST:

Amanda C Traywick
Amanda C. Traywick, City Clerk

[Signature]
Mark R. Hall, Mayor

[Signature]
Leigh Hulsey, Council Member

absent
Mike Jones, Council Member

Alice Lobell
Alice Lobell, Council Member

absent
Laura Joseph, Council Member

[Signature]
Harold Woodman, Council Member