City of Gallatin

Post-Construction/ Permanent Stormwater Program Plan



ENGINEERING - STORMWATER CLEAN WATER | HEALTHY COMMUNITIES

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Developed November 2022

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I. Introduction

The City of Gallatin has developed a post-construction/ permanent stormwater program plan to satisfy requirements for the State of Tennessee's National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4), TNS000000 (Permit), Section 4.2.5. This plan was developed with the goal to reduce pollutants in stormwater discharges through management practices, control techniques, and systems, design, and engineering practices implemented to the maximum extent practicable (MEP).

The program is applicable to all new development and redevelopment projects within the City's MS4 that disturb either one acre or more of land or less than once acre if part of a larger common plan of development.

II. Post-Construction / Permanent Stormwater Program Requirements

The State of Tennessee's NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4), effective September 2022, states that the MS4 Permittees shall implement a post-construction/ permanent stormwater program. The program must focus on developing and implementing a program that includes plan review, site inspections, and a means to ensure that permanent stormwater control measures (SCMs) are adequately operated and maintained.

The Permit requires the City of Gallatin to develop a post-construction/ Permanent Stormwater Plan within 90 days of permit coverage. This plan shall outline a Permanent Stormwater Program.

The program must include the following:

- a. The permanent stormwater management program shall include plans review, site inspections, and a means to ensure that permanent stormwater control measures (SCMs) are adequately operated and maintained.
- b. An ordinance or other regulatory mechanism to address permanent stormwater management at new development and redevelopment projects.
- c. Procedures for conducting and tracking site inspections.
- d. SCM operation and maintenance policies.
- e. Timeline to develop and implement the program.

III. Summary of Post Construction Activities in the City of Gallatin

In accordance with section 4.2.5.1, each section describes how the City plans to maintain compliance throughout the current permit cycle.

Codes and Ordinance Development and Implementation

The City of Gallatin has addressed Post-Construction requirements in Chapter 18 of the Gallatin Municipal Code. The City meets the requirements set forth by Rule 0400-40-10-.04 with one Exception, Section 4.2.5.4. The City plans to update the ordinance to include the provisions set forth specifically for Exceptional Tennessee Waters (ETWs) and waters with unavailable parameters for siltation or habitat alteration by August 1st, 2024. See **Appendix B** for the existing language.

Procedures for Plans Review and Criteria for Approval

The City Stormwater Utility Manager or Stormwater Project Manager will review plans to ensure compliance with Section 4.2.5 of the Permit.

- Initial submittal of plans.
- Plans review by Department of Engineering staff
 - Verification of 80% TSS Removal or acceptable use of Reduction Runoff Method.
 - Verify that Stormwater Control Measures (SCM's) are designed in accordance with the Tennessee Permanent Stormwater Design Manual.
- Approval of permanent Stormwater plans and documents.
- All reviewed and approved projects will be tracked by the Stormwater Group within Engineering using Excel spreadsheet or other equivalent tracking mechanism.
- Upon project completion, As-built plans, Stormwater Maintenance Agreements, and PE Certification of SCM installation will be required within 90 days of the permanent SCM installation.
- City staff will conduct a site inspection the verify installation of Permanent SCM's as shown on the approved construction plans or equivalent approved planning Final Master Development/Site Plan. Inspections will be tracked via spreadsheet or similar tracking mechanism.
- Prior to release of the Land Disturbance Surety, the City will require documentation of the recorded Permanent Stormwater Inspection and Maintenance Plan.

Procedures for Conducting and Tracking Site Inspections

The City of Gallatin will track each reviewed and approved SCM and track all associated inspections. The City uses and will continue to use an Excel spreadsheet or other similar tracking mechanism.

SCM Operations and Maintenance Policies

The City reviews City-owned SCM's annually. An inspection held by Stormwater staff from within the Engineering Department will inspect each City-owned SCM annually. Additionally, there are Standard Operating Procedure (SOP) manuals for each City owned facility.

Public Works regularly maintains Right of Ways (ROW), road crossings, City infrastructure, and City-owned SCM's.

Additionally, each department maintains their own facilities while complying with recommendations made by the Stormwater Utility Manager or Stormwater personnel assigned on an annual basis.

Timeline for implementation

City staff estimate it will take approximately 24 months (Sept 2022 – August 2024) to implement the required changes. Three milestones have been identified and shown in the table below.

| Overall Goal: Compliance with Permanent Stormwater MCM | | | | | |
|--|-----------|--|--|--|--|
| Milestone 1: Finalize Draft Ordinance | 8/30/2023 | | | | |
| Milestone 2: Complete Process Updates and Guidance Document Preparation | 1/31/2024 | | | | |
| Milestone 3: Ordinance Approval and Program Implementation | 8/31/2024 | | | | |

APPENDIX A

Private SCM's Tracked – Excerpt

| Site | Address | Facilities |
|---|---|--|
| 879 Greenlea (Old Perkins Drugs) | 879 GreenLea | bioretention |
| | | |
| | | |
| AA Mini Storage Addition | 184 Factory Street | Bioretention - not in yet |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| ABC Tech Expansion | 400 ABC Blvd | Underground Storage |
| · | | |
| Addition to Station Camp Middle School | 281 Big Station Camp | Detention Pond |
| | | permanent stream buffer, detention |
| Aintree Apartments | 270 Douglas Bend Rd | pond, 6 small bio ponds |
| | | |
| Airport Road Warehouse (537 Airport Road) | 537 Airport | bioretention and underground WQ filter |
| Airport Self Storage | 700 Airport Rd | Detention Pond |
| American Colors Inc. | 1385 Gateway Blvd | Detention Pond |
| | | |
| Archer Datacenters | Gateway Drive | Swale, detention ponds, level spreader |
| | , | |
| Axem Distributing Inc | 1424 Gateway Dr | Bioretention pond |
| | | |
| | 1468 Tulip Poplar | |
| Bakers Crossing | Drive | Bioretention/detention (combined?) |
| Developed Deinte 44 and 40 | Currente a rete a Cirele | 2 detention basing |
| Baywood Pointe 4A and 4B Beretta | Summerstar Circle 1399 Gateway Drive | 3 detention basins detention pond |
| | Blythe Ave (across | |
| Blessings Estates | from 709 Blythe) | 5 bioretention |
| Blue Grass Vet | 390 Devon Chase | bioretention |
| | | |
| | | |
| | 840 North Blue Jay | |
| Blue Jay Way Retail Center | Way | bioretention |
| Boise Cascade | 560 Airport Road | |
| Cairo Estates Phases I & II | Harper Dean Way | Tree Planting Area, Stream buffer |
| Carellton | Carellton Drive | 2 detention ponds and stream buffers |
| | | Constructed wetlands, detention pond, |
| | | level spreader, stream buffer, two level I |
| Carellton 4 | Carellton Drive | infiltration trench |
| Carellton 6 | Carellton Drive | Stream relocation |
| Carellton 7 | Carellton Drive | bioretention |

| Carellton Amenity Center | Ferdinand Drive | 2 bioretention ponds |
|---|---------------------|--|
| | | |
| | | |
| | | |
| Chandler Apartments Phase 1 | 299 Harris Ln | Detention and bioretention |
| Charles C Parks | 500 Belvedere Dr N | detention pond |
| | | |
| | | |
| | | |
| | | |
| | | |
| Cumberland Place North | Mesa Verde Place | Stream Buffers and an RSC behind 4.2 |
| | | 5 Bio, one detention/wet pond, wetland |
| Cumberland Point | 1142 HWY 25 West | |
| | | area |
| D&S Industries (Mohawk) | 1381 Gateway Drive | |
| | | |
| Doc Enterprises/GLB | 120 Goodview Way | 5 bioretentions and 2 detention ponds |
| Dollar General Airport Rd | 1789 Airport Rd | detention pond |
| | | |
| Dollar General Albert Gallatin | 142 Albert Gallatin | Bioretention Pond |
| | | |
| Dollar General GreenLea | 1620 Green Lea Blvd | |
| Double Dogs | 1620 Nashville Pike | bio retention |
| | | |
| Edison Apartments | 1137 GreenLea Blvd | Permeable Pavers, bioretention |
| | | |
| | | |
| | | |
| Elk Acres | 1030 Ryan Court | Detention Pond |
| Enoch Hills Phase 1 | Enoch Way | Detention Pond |
| Enoch Hills Phase 2 | Hutch Court | 2 bioretention |
| | | |
| Express Oil Change (Savannah Marketplace) | 2063 Nashville Pike | Bioretention |
| Facebook | 1432 Gateway Dr | |
| Fairway Farms 3_1C, 2_4 and 2_7 | Goodman Drive | Detention pond |
| First Baptist Church | 205 E Main | bioretention |
| | | |
| Foxland Crossing 12A | Percival Drive | Stream Buffer; Detention pond |
| Foxland Crossing 14 | Keeley Drive | |
| | , . | |
| | | |
| | | |
| | | Retention/wet Pond- Apartments- 1391 |
| Foxland Crossing, Phase 1 & 2 | 1391 Foxland Blvd | Foxland Blvd |
| | | |
| Freedom Church Santuary Addition | 1010 Freedom Church | detention pand |
| Freedom Church Santuary Addition | 1010 Freedom Church | detention pond |

| Gallatin Honda | 2109 Nashville Pike | 2 bioretention areas |
|--|--------------------------|---------------------------------------|
| Gallatin Subaru | 1395 Nashville Pike | bioretention/swale |
| | | |
| | | |
| Goddard School of Gallatin | 1059 Kennesaw | |
| Goodview Properties Lot 7 | 149 Goodview | 2 bioretention |
| | | |
| Guild School | 1018 S Water | Dry Pond |
| | | |
| Habitat for Humanity (Pafford Place) | 599 Eastland | detention pond |
| Holloman Warehousing (579 Airport Rd) | 579 Airport Rd | bioretention |
| | | |
| | | Bioretention, forebay and a detention |
| Holston Gases | 1209 Longleaf | basin |
| Hope Court Lot #4 | 473 Hope Court | bioretention |
| Humters Point (Lorts 3 &4) Beatty Blvd | Beatty Blvd | |
| Hunters Pointe (The Trails) | Beatty Blvd | |
| Infact Corporation | 1283 Gateway Dr | Filter Swale & Berm |
| | | |
| iStorage | 465 N Belvedere Dr N | Detention Pond |
| | | |
| Leaving a Deale | La deve en deve en Maria | |
| Jennings Park | Independence Way | bioretention |
| Kendra Place Apartments for Lot 3 of the Crossings | South Water | bioretention and WQ Device |
| Kenneaw Farms 6.2 | Payton Lane | detention pond and bio retention |
| | | |
| Kennesaw Farms 6.1 | Appaloosa Way | detention pond and 30' stream buffer |
| | | |
| Kennesaw Farms 6.3 | Payton Lane | water quality swale and bioretention |
| Kennesaw Farms Phase 7 | Thorne Boulevard | |
| Kensington Downs Phase 1 | GreenLea Blvd | riparian buffer |
| Kensington Downs Phase 2 | GreenLea Blvd | |
| Kensington Row | GreenLea Blvd | |
| Langford farms | 244 Old Douglas | |
| langley Estates | Coles Ferry | detention pond |
| Learning Zone | 350 N Belvedere | detention |
| Lenox Place | Devon Chase Hill | Detention Pond |
| Liberty Creek | Harris Lane | 2 bioretention |
| Lock 4 Rd (Restaurant & Retail - Panera & ATT) | 921 Nashville Pike | Detention Pond |
| Macon Bank and Trust | 683 Nashville Pike | UIC and bioretention |
| Mariners Cove | 1144 Lock 4 Road | bioretention |
| McCains Station Commercial | Provine Blvd | Stream Buffer (relocation), wetland |
| McCAins Station Residential | Clendening Drive | |
| | | |
| Meadow Glen at Fairway Farms Section 3&4 | North of Wassil Drive | Riparian Buffer |
| Meadow Glen at Fairway Farms, Section 1 | Grassy Glen Drive | bioretention |
| Miracle Ford Dealership | 1394 Nashville Pike | detention pond |
| NAR Steel | 1200 Longleaf | |

| NASTC | 2054 Nashville Pike | WQ Structure |
|---|----------------------------------|--|
| Newmans Crossing Commercial | 377 Big Station camp | 2 Bioretention ponds |
| | | 6 Bioretention and 2 detention and a |
| Newmans Crossing Residential | Breaking Pen Road | level spreader |
| | | |
| NHC Place Sumner Phase I & II PMDP/FMDP | 140 Thorne Blvd | WQ Swales |
| Nichols Place | 287 Nichols lane | |
| Noble Park Townhomes | 210 Coles Ferry | |
| O'Reillys Auto Parts Store | 447 E Broadway | 2 bioretention and 2 detention |
| Overlook Apartments | 311 Hancock | bioretention |
| Oxford Station | 114 Offit Drive | 2 bioretention |
| Paddock 1A, 2A, 3A, 4A | Kenneseaw Blvd at Thorne Blvd | 12 Bioretention and permanent stream buffer |
| Patriot Angels | 262 Harris Lane | 2 forebays, bioretention pond, detetion pond; protected wetland area |
| Patterson Farms | Westgate Dr | 4 detention, 4 bioretention |
| Pinnacle | 1534 Noah Lane | 2 Bioretention, Permeable Pavers |
| Platinum Storage | 1724 Nashville Pike | bioretention |
| Preston Park | Hardwick lane | 2 Detention, 4 bioretention |
| Race Trac | 1592 Nashville Pike | 2 bioretention |
| Ray Dorris Building | 1233 longleaf Dr | detention pond |
| Ray Estates | Odie Ray | Detention Ponds |
| Red River Housing Authority | Womack Circle | 2 bioretention, 2 detention |
| Revere at Hidden Creek | 2067 Springdale Lane | 2 Dry Ponds and mitigation area (riparian Buffer) |
| Revery Point at Foxland Harbor | Club View Drive | Underground Chamber system |
| Savannah Marketplace Day Care Center | 2063 Nashville Pike | Detention pond (for whole site?) |
| Second Generation Warehouse | 500 National Drive | detention Pond |
| Shoppes of Payne Phase 1 | 624 Davis Drive | Bioretention pond |
| Shoppes of Payne Phase 2 (GBT Properties) | 1115 Nashville Pike | |
| Shart Eusa Trusk | 744 Airport Dd | Detention Dond |
| Short Fuse Truck | 744 Airport Rd | Detention Pond |
| Sleep Inn | 983 Village Green | bioretention |
| St. Blaise Retreat Section 3 | Montrose Dr | Stream Buffer |
| St. Thomas MOB | | Bioretention |
| Stormaxx | | Bioretention |

| Stratford Park, Phase 2 | | Detention Pond |
|--|------------------------------|--|
| | 1845 Nashville Pike | |
| | (corner of Douglas | |
| Sudden Service | Bend) | suntree nutrient separating baffle box |
| Sumner County Admin Bldg | 355 N Belvedere | bioretention |
| Sumner County Courhouse | 155 E Main | Pavers and WQ Unit? |
| Sumner County Jail Pods | 117 W Smith Street | bioretention pond |
| | | |
| Sumner Gardens | 923 S Westland Ave, | 3 Bioretention Ponds |
| | 1710 Nashville Pike, | |
| Sumner Pediatric Dentistry | Suite 102 | Underground detention |
| Taco Bell Lot 3 Savannah marketplace | 807 Nashville Pike | bioretention |
| The Knoll at Farvue | 352 Madeira Place | 2 bioretention |
| The Reserve at Cambridge | 1009 Kirkwood lance | multiple bioretention and detention |
| The Residences | 199 Albright Farms Dr | 6 bioretention and WQ Detention |
| The Retreat at Fairvue, Phase 1, Section 1 | 230 Glennister Ct | Water Quality Area/wet pond |
| | HWY 31/Old Scottsville | |
| Tomkins Farm | Pike | |
| Toyota of Gallatin | 1435 Nashville Pike | Underground detention |
| Twice Daily | 1101 Long Hollow Pike | hioretention |
| | 1101 Long Hollow Pike | Enhanced Wetlands & |
| Twin Eagles 9B,11 12B | 503 Beck Place | Detention/Retention |
| | | |
| Twin Eagles 4.4, | Wildcat Run | Bioretention pond and detention pond |
| Twin Eagles14A&B, | Wildcat Run | 2 wetland areas |
| Twin Eagles 4.2 and 4.3 | Wildcat Run | Detention Pond |
| | 1256 Clear Lake | |
| United Church | Meadows | Detention Pond |
| | | |
| VA Clinic | 419 Steam Plant Rd | bioretention |
| Villas on the Green | 1689 Nashville Pike | Permeable pavers |
| | 120 Vintage Foxland Drive | 6 bioretention, one detention, one section of permeable pavers |
| Vintage Foxland Harbor | DIIVC | |
| Vintage Foxland Harbor Volunteer State Bank | 554 W Main St | bioretention and detention pond |

| Western Reflections | 261 Commerce Way | Bioretention Pond |
|--|----------------------|--|
| | Big Station Camp | |
| | across from Rogers | |
| Westfield | Quarry | multiple bioretention and detention |
| | | |
| Whitts BBQ | 604 Long Hollow Pike | Detention Pond |
| | | |
| Windsong Commercial | HWY 109/South Water | bioretentin , detention |
| | | 4 Bioretention, 4 detention, wetlands, |
| Windsong Residential | HWY 109/South Water | permanent stream buffer |
| | | 5 underground detention and pervious |
| Woods Common Restaurant Oscars bar & Grill - | 971 Memory Lane | concrete |
| | | |
| Workforce Essentials Inc | 1598 GreenLea | bioretention and detention pond |

APPENDIX B

<u>Stormwater Ordinance Chapter 18 Article 6 – Stormwater Management</u> <u>Performance Standards</u>

Article 6 Stormwater Management Performance Standards

(1) General

In order to address stormwater management for new development and redevelopment and to prevent or minimize water quality impacts, performance standards are set forth comprising of runoff reduction, pollutant removal, and runoff quantity requirements. Stormwater shall be managed such that post development hydrology does not exceed the pre-development hydrology at the site, in accordance with the performance standards contained in this section.

(2) Applicability

The following stormwater performance standards apply to all new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development.

(3) MS4 Stormwater Design and BMP Manuals

- (a) The City adopts as its MS4 stormwater design and best management practices (BMP) manuals the following publications, which are incorporated by reference in this ordinance as if fully set out herein:
 - (i) City of Gallatin Design and Construction Manual
 - (ii) City of Nashville Stormwater Management Manual
 - (iii)Tennessee Permanent Stormwater Management and Design Guidance Manual

(4) <u>Runoff Reduction Performance Criteria</u>

The following performance criteria shall be addressed for stormwater management at all applicable sites effective upon June 9, 2015 utilizing methods outlined in the BMP Manuals referenced above:

- (a) Site must, in combination or alone, implement management measures that are designed, built, and maintained to infiltrate, evapotranspire, harvest and/or use, at a minimum, the first inch of every rainfall event preceded by 72 hours of no measurable precipitation. This first inch of rainfall must be 100% managed with no discharge to surface waters. Any alternative to addressing this requirement shall be obtained as outlined in Article 4 of this ordinance, unless the project falls under the incentive standards for re-developed sites.
- (b) Incentive Standards for re-developed sites: a 10% reduction in the volume of rainfall to be managed by runoff reduction for any of the following types of development. Such credits are additive such that a maximum reduction of 50% of the standard in the paragraph above is possible for a project that meets all 5 criteria:
 - (i) Redevelopment;
 - (ii) Brownfield redevelopment;
 - (iii)High density (>7 units per acre);
 - (iv)Vertical Density, (Floor to Area Ratio (FAR) of 2 or >18 units per acre)
 - (v) Mixed use and Transit Oriented Development (within ½ mile of transit)
- (c) Limitations to the application of runoff reduction requirements include, but are not limited to:
 - (i) Where a potential for introducing pollutants into the groundwater exists, unless pretreatment is provided;

- (ii) Where pre-existing soil contamination is present in areas subject to contact with infiltrated runoff;
- (iii)Presence of sinkholes or other karst features.
- (d) Pre-development infiltrative capacity of soils at the site must be taken into account in selection of runoff reduction management measures.

(5) <u>Runoff Reduction Performance Criteria Alternative Options</u>

For projects that cannot meet 100% of the runoff reduction requirement, unless subject to the incentive standards, alternative stormwater management measures shall be obtained as outlined in Article 4. For consideration of alternative, the following options are available:

- (a) The remainder of the stipulated amount of rainfall must be treated prior to discharge with a technology documented to remove 80% total suspended solids (TSS). The treatment technology must be designed, installed and maintained to continue to meet this performance standard.
- (b) The Runoff reduction measures are installed off-site within the same USGS 12-digit hydrologic unit code (HUC) as the original project. Off-site mitigation must be a minimum of 1.5 times the amount of water not managed on site. The off-site mitigation location and runoff reduction measures must be approved by the Engineering Division. The mitigation location shall be in a priority area identified by the Engineering Division. Mitigation can be used for retrofit or redevelopment projects, but should be avoided in areas of new development.
- (c) For projects that cannot meet the 100% runoff reduction, 80% TSS, and cannot provide for off-site mitigation, the applicant can make payment into the City's Stormwater Management Fund. Payment must be a minimum of 1.5 times the estimated cost of onsite runoff reduction controls as estimated by the Engineering Division.

(6) Channel Protection Performance Criteria

- (a) To protect stream channels from degradation, specific channel protection criteria shall be provided, including meeting the Qcp requirement as prescribed in the City of Gallatin Design and Construction Manual. This standard requires that the runoff volume from the 1-year frequency, 24-hour storm be captured and discharged over no less than a 24-hour period. In the design of the channel protection control, the 24-hour release period shall be measured from the approximate center-of-mass of inflow to the approximated center-of-mass of outflow.
- (b) Downstream channel protection provided by an alternative approach may be considered in lieu of controlling the Qcp, provided that sufficient hydrologic and hydraulic analysis shows that the alternative approach will offer adequate channel protection from erosion. Downstream channel protection provided by an alternative approach must be approved by the City Engineer.

(7) Downstream Flooding Performance Criteria

- (a) To prevent downstream flooding, post development flow rates for the **2-year thru 10-year 24-hour storm events** must be controlled to release at rates less than that of predevelopment flows, with an emergency overflow capable of handling the 100-year discharge as prescribed in the City of Gallatin Design and Construction Manual.
- (b) Downstream flood protection provided by an alternative approach may be considered in

lieu of controlling the 2-year thru 10-year 24 hour storms; provided that sufficient hydrologic and hydraulic analysis shows that the alternative approach will offer adequate flooding protection for downstream properties. Flooding protection provided by an alternative approach must be approved by the City Engineer.

(8) General Performance Criteria

- (a) Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.
- (b) Stormwater discharges from hot spots may require the application of specific structural BMPs and pollution prevention practices.
- (c) If hydrologic or topographic conditions warrant greater control than that provided by these performance standards, the Engineering Division may impose any and all additional requirements deemed necessary to control the volume, timing, rate, and treatment of runoff.

(9) Water Quality Buffers

A permanent water quality buffer zone (setback measured from the top of water body bank) shall be required along all wetlands, streams, and sinkholes as defined in this ordinance, for new development and redevelopment projects as outlined below:

- (a) Drainage areas less than 1 square mile: Minimum of 30' width
- (b) Drainage areas greater than 1 square mile: Minimum of 60' width. The 60' width can be established on an average width basis at a project, as long as the minimum width of the buffer zone is more than 30' at any measured location
- (c) For redevelopment projects that have existing encroachments into the prescribed buffer, the portion of the existing encroachment that contains a footprint within the buffer is exempt, if no modification to the existing use of the encroachment is to occur and does not violate the objectives of Article 4 (2). If modification to the existing use of the encroachment is to occur, buffer widths outlined above shall apply.
- (d) If existing encroachment is to remain in use, the encroachment amount shall be factored into the average buffer width in determining the buffer width.
- (e) Work within the Water Quality Buffer is allowable for the following types of work:
 - (i) Work covered and approved by an ARAP or CGP permit approved by TDEC.
 - (ii) Construction/maintenance of greenways and parks.
- (f) Any alternative stormwater management measure requested in lieu of the water quality buffer requirements shall be presented to the Gallatin Stormwater Design Appeals Board as outlined in Article 4 (3) for their decision.

(10) <u>Sinkhole/Injection Well Policy</u>

- (a) A TDEC injection well permit is required for any use or modification of a sinkhole/injection well.
- (b) Drainage calculations shall be submitted for any development in or around sinkholes.
- (c) Minimum standards for flood management around sinkholes are based on the 100-year 24 hour design storm, assuming plugged conditions (zero cfs outflow) for the sinkhole.
- (d) A permanent water quality buffer of 30' shall be provided around the highest complete

contour around the sinkhole (also called the rim) and no structure or public infrastructure shall be built within 60' of the rim.

- (e) For any runoff draining to a sinkhole from a developed area, runoff reduction performance criteria must be met as outlined in this ordinance and the City of gallatin Design and Construction Manual.
- (f) Post developed flows and volume shall not exceed pre developed flows and volume entering into a sinkhole.
- (g) Any "capping" of a sinkhole shall be done under the direction and approval of the City Engineering Division. Drainage formerly entering the capped sinkhole shall be accounted for and meet the standards outlined in (10)c above.

Any alternative stormwater management measure requested in lieu of the sinkhole/injection well policy requirements shall be presented to the Gallatin Stormwater Design Appeals Board as outlined in Article 4 (3) for their decision

APPENDIX C

Stormwater Ordinance Chapter 18 Article 8 – Post Construction

Article 8 Post Construction

(1) General

To ensure the long term maintenance and effectiveness of stormwater facilities, a surety for completion, as-built plans, and maintenance and inspection programs are required for new and existing development.

(2) Surety

Depending on the type and size of the development, the City may hold a surety to insure the completion of the development to City Standards. The amount of the surety will be determined by the City Engineering Division based upon the cost to complete the stormwater facilities. All sureties must contain automatic renewal provisions in language satisfactory to the City Attorney. Before final release of the Surety; all stormwater, EPSC, and stabilization measures must be completed, stabilized, and functioning to the satisfaction of the City Engineer.

(3) As-Built Plans

Prior to release of the surety for completion of the stormwater facilities, As-Built Plans are to be submitted for any stormwater facilities after final construction is completed. The plan must show the final constructed facilities will function as approved to meet the performance standards outlined in this ordinance. Plans shall be stamped by a Tennessee licensed surveyor. Any discrepancy from the final constructed facilities and the approved design shall be noted on the As-Built Plan. Where required by the City Engineer, updated calculations stamped by a Tennessee licensed engineer shall be submitted and approved by the City Engineer, showing the as-constructed facilities will function adequately to meet the performance standards of the Stormwater Ordinance.

Both digital CAD and paper copies shall be provided in the Tennessee State Plane Coordinate system, NAD83, NAVD88. The following shall be shown in the plan:

- 1. Invert elevation, top of casting elevation, slope, location, and material of all pipes, drainage inlets/outlets, junctions, etc.
- 2. Size and material of all outlet dissipation pads.
- 3. Ditch size, slope, and materials.
- 4. Top of berm elevations on all drainage facilities.
- 5. Volume of all detention/retention facilities.
- **6.** Location and description of all permanent stormwater BMP's (i.e. rain garden, pervious pavement, buffer, etc.)

(4) New Stormwater Management Facilities Maintenance and Inspection

(a) Private Ownership: Prior to final approval of any site or subdivision subject to the performance standards outlined in Article 6 of this ordinance, an Inspection and Maintenance Agreement for Storm Water Facilities, which is available in the office of the City Engineer, must be executed between the City of Gallatin and owners of the property. Said agreement runs with the land, and operates as a deed restriction binding on the current property owners and all subsequent property owners and their lessees and assigns, including but not limited to homeowner associations or other groups or entities. Facilities

are subject to penalties as outlined in Article 12 of the Stormwater Ordinance.

(b) *Municipal Ownership:* The City shall be responsible for maintenance of all stormwater management facilities under Municipal Ownership as defined.

(5) Existing Stormwater Management Facilities Maintenance and Inspection

The City may, to the extent authorized by state and federal law, enter and inspect private property for the purpose of determining if there are illicit non-stormwater discharges and to verify that all stormwater management facilities are functioning within design limits. These inspections may be performed randomly or in response to complaints or violations. The ownership of the facilities will be made aware of any violations as outlined in the City's Enforcement Response Plan and are subject to penalties as outlined in Article 12 of the Stormwater Ordinance.

APPENDIX D

City-owned SCM Checklist



City of Gallatin (INTERNAL INSPECTION) Engineering Division Post Construction BMP Maintenance Checklist

| Site Name: | | |
|---|--|--|
| Site Address: | | |
| Date of Inspection: | | |
| Name of Inspector: | | |
| Site Contact Information (Email & Phone) | | |
| Description of Stormwater Quantity and Quality Facilities: | | |

Per Section 4.2.5.7 of the State of Tennessee NPDES General Permit of Discharges from Small Municpal Separate Storm Sewer System (MS4), owners/operators of stormwater management systems are to perform routine inspections to ensure they are properly functioning.

This checlist is to be submitted to the City of Gallatin Engineering Division annually by February 1st per the terms of the above referenced *Inspection and Maintenance Agreement for Storm Water Facilities*. Any items noted as unsatifactory shall be addressed by the following March 1, at which time an inspection by the Engineering Division will be performed to evaluate compliance.

<u>Satisfactory</u>: Item/Issue is is in good condition functioning as designed in the approved site approval plans <u>Unsatisfactory</u>: Item/Issue is not in good condition, not functioning, broken, and/or needs maintenance <u>Not Applicable</u>: This Item/Issue does not apply to this site

| Maintenance Item | Satisfactory | Unsatisfactory | Not Applicable | Comments/Action Required |
|---|--------------|----------------|----------------|--------------------------|
| | | | STI | RUCTURAL BMP'S |
| | | | | Dry Pond |
| Clear of trash and debris | | | | |
| Vegetation properly maintained | | | | |
| Clear of Erosion/Sedimentation | | | | |
| Inlet / outlet structures clear of sediment/debris, structurally sound, and functioning properly | | | | |
| Accumulated sediment less than 5% of pond design capacity | | | | |
| Spillway/Dam condition | | | | |
| Miscellaneous | | | | |
| | · | Wet | Pond | / Constructed Wetlands |
| Clear of trash and debris | | | | |
| Vegetation properly maintained | | | | |
| Clear of Erosion/Sedimentation | | | | |
| Inlet / outlet structures clear of sediment/debris, structurally sound, and functioning properly | | | | |
| Sediment forebay less than 50% full | | | | |
| Overflow structure condition | | | | |
| Permanent pool elevation at design elevation | | | | |
| Appearance of water (sheen, muddy, oily, alagae, etc.) | | | | |
| Miscellaneous | | | | |

| | I | | | | | |
|--|-------------------|----------------|----------------|---|--|--|
| Maintenance Item | Satisfactory | Unsatisfactory | Not Applicable | Comments/Action Required | | |
| Infiltration Facilities (Infiltra | tion tr | ench/ | basin, | bioretention, rain garden, enhanced swale, sand filter, etc.) | | |
| Clear of trash and debris | | | | | | |
| Vegetation properly maintained | | | | | | |
| Clear of Erosion/Sedimentation | | | | | | |
| Inlet / outlet structures clear of sediment/debris, structurally sound, and functioning properly Sediment forebay less than 50% full Overflow structure condition | | | | | | |
| Facility draining properly and no permanent water | | | | | | |
| standing | | | | | | |
| Appearance of water (sheen, muddy, oily, algae, | | | | | | |
| etc.) | | | | | | |
| Miscellaneous | | | | | | |
| | | | Wa | ter Re-use System | | |
| System functioning properly and regularly used | | | | | | |
| Miscellaneous | | | | | | |
| | Pervious Pavement | | | | | |
| Clear of trash and debris | | | | | | |
| Structurally sound (cracking, rutting, etc) | | | | | | |
| Surface infiltrating and draining properly | | | | | | |
| No evidence of clogging of pores | | | | | | |
| Miscellaneous | | | | | | |
| Proprietary or Manufactured Systems | | | | | | |
| Structurally sound | | | | | | |
| Cleaned regularly of debris/trash/sedment buildup | | | | | | |
| Inlet / outlet condition | | | | | | |
| Miscellaneous | | | NON | | | |
| NON-STRUCTURAL BMP'S Conservation Areas, Stream Buffers, Vegetated Channels, Overland Flow Filtration/Infiltration Zones | | | | | | |
| Conservation Areas, stre | | 11015, | vegel | | | |
| Vegetation properly maintained (Note buffer and conservation areas are to be left as "natural" as possible, so regular mowing, etc. is not allowed.) | | | | | | |