

AGENDA

Stormwater Appeals and Advisory Board
August 7, 2023 @ 6:00 p.m.

- Call Meeting to Order
- Determine Quorum.
- Approve Minutes: August 12, 2019 Meeting.
- Public Comment Period.

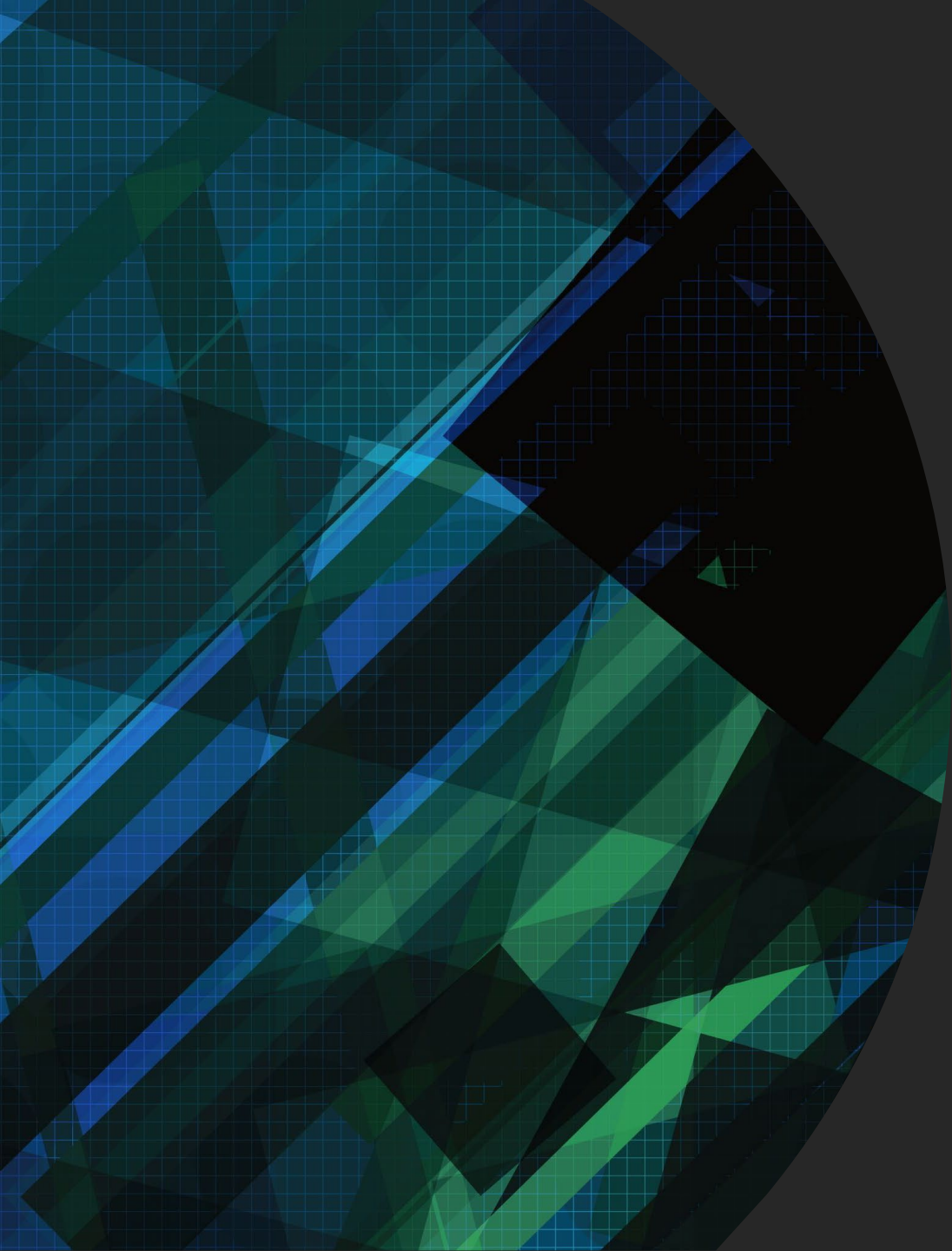
OTHER BUSINESS

1. Motion to Nominate and Elect a Chairman for a One Year Term.
2. Motion to Nominate and Elect a Vice-Chairman for a One Year Term.

NEW BUSINESS

3. Review Stormwater Program Annual Report.
4. Recommendation to the Board of Mayor and Aldermen - Amendments to the Stormwater Management Ordinance.
5. Approve Variance - Pinnacle Point Flooding Issue.

ADJOURN



*Stormwater
Annual Report
July 1, 2022 –
June 30, 2023*

Alex Thompson





Who am I?

- Alex Thompson
- Stormwater Coordinator since 2020
- Manage the La Vergne MS4 Permit
- Degree in Marine Biology and Environmental Science



*Municipal
Separate
Storm
Sewer
System
(MS4)
Permit*

A new Small MS4 permit was issued in September of 2022.

Six minimum measures for compliance have remained the same but there are many changes within them.

- Education and Outreach
- Participation and involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control Program
- Post Construction/Permanent Storm Water Runoff
- Pollution Prevention and Good Housekeeping.

MS4 Annual Report Review

- Annual Report is required by September 1st of each year
- Submitted to the Tennessee Department of Environment of Conservation (TDEC), Division of Water Resources
- Required to review our program for deficiencies and successes.
 - *Internal review*
 - *Sharing results of that review with the board*

Education and Outreach



Public

Employees

Development
and Engineering
Community

Education and Outreach - Public

4.2.1.1. Public

Management Measure:

Conduct activities as described in the PIE plan targeted to address the following issues:

- a. General awareness of the impacts on water quality;
- b. Awareness of the importance of maintenance activities for operators of permanent Best Management Practices (BMPs)/Stormwater Control Measures (SCMs);
- c. Awareness of the proper storage, use, and disposal of pesticides, herbicides, fertilizers oil and other automotive-related fluids; and
- d. Awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.

| Measurable Goals | | Annual Report Requirement |
|--|---|--|
| Permittees must conduct and/or sponsor a minimum number of activities (as identified below) that address each of issues identified under "management measures" every reporting year. | | - Total Number of activities conducted |
| MS4 Population at NOI submittal | Minimum Number of activities conducted | Provide the details of each activity including: description; date; management measures addressed; specifically targeted audience and; approximate number of that audience that was reached. |
| Population ≤10,000 | Per 5 year permit term 2 | |
| 10,001 ≤ Population ≤25,000 | Per each reporting year 1 | For sponsored activities only: Identify if the event sponsored monetarily or as a donation in kind |
| 25,001 ≤ Population ≤ 50,000 | Per each reporting year 3 | |
| Population greater than or equal to 50,001 | Per each reporting year 6 | |

Public Education and Outreach

4.2.1.1. Public

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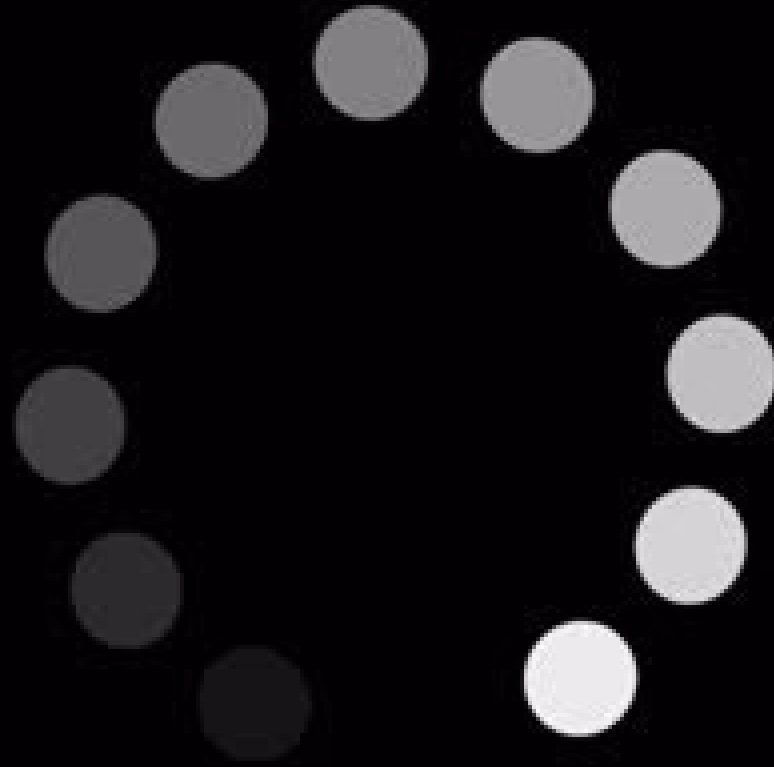
Tabling Events (Earth Day, Old Timer's Day Festival)



Stream Clean-ups



*Education
and Outreach
– Employee
Training*



LOADING..

*Education
and Outreach
- Engineering
and
Development*



Public Involvement



Public



Commercial and
Development
Community

Public Involvement – General

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|--|--|--|
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Public Involvement – General

Illicit Discharge

**Anything besides rainwater going down the storm drain
can be classified as Illicit Discharge**

Illicit Discharge

There are a few exceptions:

- (i) Water line flushing or other potable water sources,*
- (ii) Landscape irrigation or lawn watering with potable water,*
- (iii) Diverted stream flows,*
- (iv) Rising ground water,*
- (v) Groundwater infiltration to storm drains,*
- (vi) Pumped groundwater,*
- (vii) Foundation or footing drains,*
- (viii) Crawl space pumps,*
- (ix) Air conditioning condensation,*
- (x) Springs,*
- (xi) Non-commercial washing of vehicles,*
- (xii) Natural riparian habitat or wet-land flows,*
- (xiii) Swimming pools (if dechlorinated),*
- (xiv) Fire fighting activities*

What illicit discharges can you be on the lookout for?

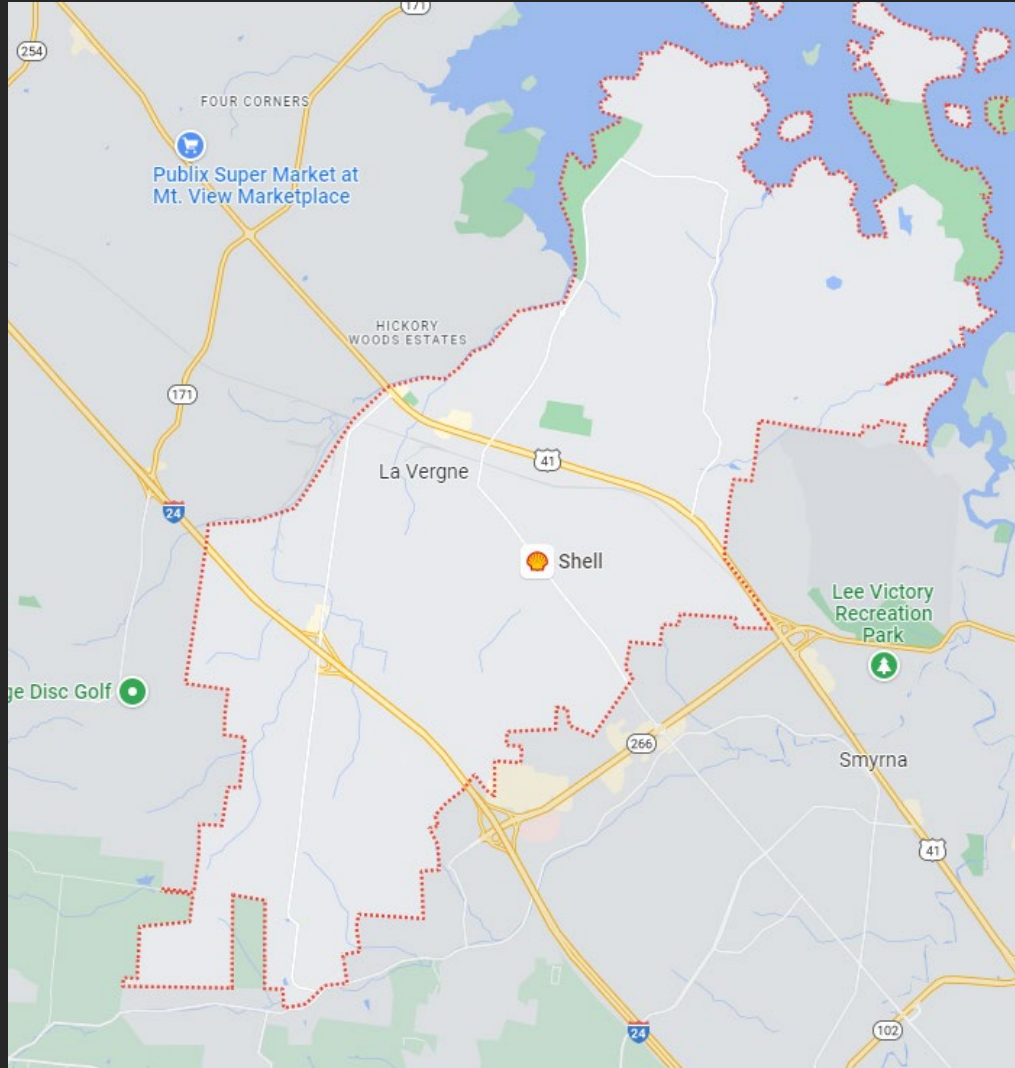
Sewage leaks

Oil or other automotive liquids on the ground

Garbage dumping

Excessive dirt or sediment

Any pipes that are dumping into a stormdrain

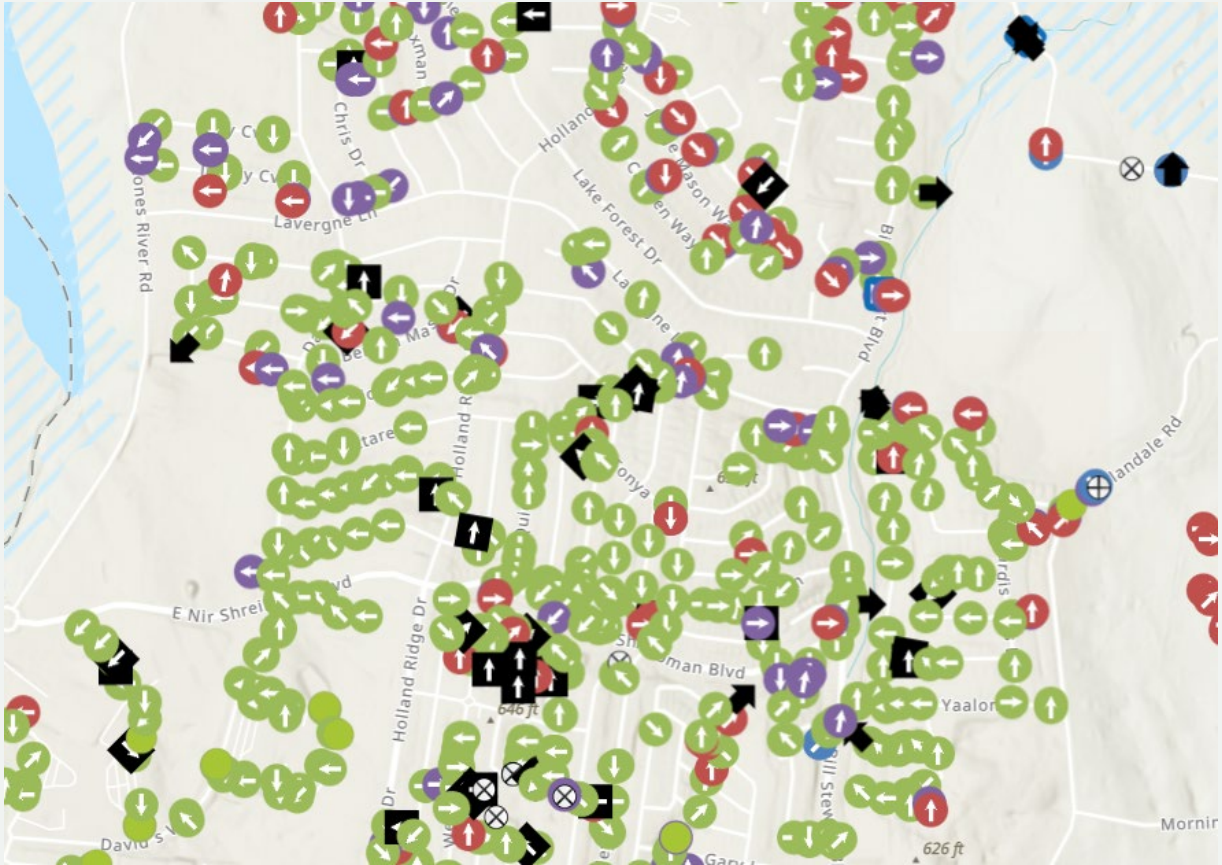


Effect of Illicit Discharge

- Excessive sediment can suffocate wildlife
- It takes very little oil to pollute a large amount of water – 1 gallon of oil can pollute 1 million gallons of water.
- This effects our drinking and recreational water!
- Our drinking water is pulled from Percy Priest Lake and we recreate on Percy Preist Lake

Illicit Discharge

| Management Measure | Measurable Goals | Annual Report Requirement |
|--|--|--|
| Storm sewer map that contains all required data elements found in subpart 4.2.3.1 | Continue to update mapping as new elements are identified. | Provide location for Spatial Rest Service Outfall Map Layer Or Submit the geodatabase/shapefile Or submit a copy of the system map |
| Identify and investigate the categories of non-stormwater discharges or flows (as indicated in subpart 4.2.3) only if the permittee identifies them as a significant contributor of pollutants to the MS4. | Maintain an inventory of non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4. | - # of non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 - Total # of non-stormwater discharges or flows investigated |
| | Investigate as an illicit discharge all non-stormwater discharges or flows (as indicated in subpart 4.2.3) that the permittee identified as a significant contributor of pollutants to the MS4 | - Yes/No Were all non-stormwater discharges or flows identified as a significant contributor of pollutants to the MS4 investigated? |



(1 of 2)

Stormwater Structures

| | |
|----------------------------|-----------------|
| StructureType | Inlet |
| Receiving Stream | Hurricane Creek |
| Current Status | Excellent |
| Illicit Discharge Risk | Low |
| Illicit Discharge Presence | No |
| Degree of Rotation | South |

Attachments:

[Photo 1.jpg](#)

Edited on 3/7/23 at 1:44 PM


[Zoom to](#) [Edit](#) [Get Directions](#)

Illicit Discharge

| Management Measure | Measurable Goals | Annual Report Requirement |
|--|--|---|
| Illicit discharge reporting and investigations | - track all potential illicit discharges reported, categorized by reporting source | - The number of potential illicit discharges reported by the public |
| | | - The number of potential illicit discharges reported by internal personnel |
| | - Initiate 100% of all potential Illicit discharges investigations within 7 days of the receipt of the complaint. | - Total number of potential Illicit discharges reported (from any source) that are under investigation at the time of the annual report |
| | | -Yes/No Were all potential illicit discharges investigated within 7 days of receipt? |
| | - 100% of all Initial enforcement actions shall be taken within seven (7) calendar days of the investigation on confirmed illicit discharges | -# of identified illicit discharges |
| | - Yes/No Were all initial enforcement actions on confirmed illicit discharges taken within seven (7) calendar days of the investigation? | |
| - 100% of all corrective action plans are reviewed in accordance with procedures | - # of corrective actions plans received for confirmed illicit discharges. | |

| Date | Reportee | Address | Letter?/ Door Hanger | Situation | Illicit Discharge? | Resolved Date |
|-----------|----------|---|----------------------|---|------------------------|---------------|
| 1/23/2023 | Becky | 803 Keith Dr. | Letter | Becky let me know that there was a property that had removed a driveway and needed to stabilize the area. I gave them 7 days to correct the problem. 1/31 he came in with the letter and let me know he was repairing it. | Illicit Discharge | 1/31/2023 |
| 1/23/2023 | Becky | 629 Holland Ridge | Letter | Becky let me know that there was a property that was driving in and out of a muddy yard and needed to stabilize the area. I gave them 7 days to correct the problem. | Illicit Discharge | 2/14/2023 |
| 1/26/2023 | Doug | 318 Sand Hill Rd. | Verbal | Doug (Streets) reported that there was a lot of truck washing happening on Sand Hill Road. Clint (codes) and I investigate and found that the run off was coming from 318 Sand Hill Rd. We met with them and let them know that they could no longer wash trucks back there like that until they got connected to sanitary sewer with a truck washing station. Spoke with owner (Scott Ritter) and he let me know that they will no longer be truck washing and are working on a truck washing station. | Illicit Discharge | 1/26/2023 |
| 2/1/2023 | Resident | 3056, 3058 Ace Wintermeyer 998 Tom Hailey | Door hanger | Left door hangers letting them know that they would need to clear the ditchline or debris and tall grass. Spoke with Tom Hailey and let them know that they were responsible and the debris would need to be removed. | | |
| 2/2/2023 | Becky | 125 Rocky Tock | Verbal | Visited 125 Rocky Tock, clearing and grading had been done. Called Smyrna Ready Mix to speak with Mike Hollingshead (owner) about obtaining permits and controls. He was not in the office but Candy said she would try to find more information and get back to me. 2/2/2023 i spoke with Ryan and he let me know that they were planning on converting to a gravel parking lot. I told them that they will have to talk with Planning and that if they were planning on doing any more grading work that they would need to get a permit and whatever disturbed soil that they do have will need to be stabilized. 2/2/2023 Bo left him a voicemail saying that the property is zoned residential so they were not able to put a parking lot in and left his phone number. Visited on 5/30/2023 and the exposed soil had been stabilized. | Clearing and grading w | 5/30/2023 |

*If you see illicit
discharge... call
the stormwater office!
615-287-8658*



Construction Stormwater Runoff Control

- We currently have 22 active construction sites (many of which are subdivisions with many different lots)
- Scott Warrick is our full-time inspector
- He issues over 700 re-inspections for incorrectly installed erosion control measure this reporting year
- Each site is visited monthly and after large rain event.



Permanent Stormwater Management-Stormwater Control Measures

- Stormwater Control Measures (SCMs): permanent stormwater devices that are installed with the purpose of reducing pollutants
 - *Retention and Detention Ponds*
 - *Bioretention Ponds*
 - *Constructed Wetlands*
 - *Permeable Pavement*
 - *Oil and Gas Separators*



Changes to Permanent Stormwater Program

- Create an inventory of all SCMs

Type of SCM

Date constructed

Inspection Records

Owner information

Photographs

- *All SCMs constructed after the creation of the new Stormwater Management ordinance will be required:*

To submit a long-term maintenance plan

Sign a long-term maintenance agreement that is recorded at the County Registrar and will transfer to any new owners

Conduct annual inspections of the structure with results submitted to the COL

Conduct 5-year comprehensive inspections with results submitted to the COL

*Pollution
Prevention/
Good
Housekeeping*

Street Sweeper


Road side litter collection

X-Stream Squad Monthly
Clean Ups

Quarterly inspection of Public
Works Facility



Priorities for 2023-2024

- Employee Education Video and distribution
 - Complete illicit discharge mapping
 - Create a Permanent Stormwater Structures inventory list
 - Operation and Maintenance plans for our new Public Works Building
- 

QUESTIONS?
615-287-8658
athompson@lavergnetrn.gov

Thank you!

Revised Stormwater Management Ordinance

REVISION OF MUNICIPAL CODE, TITLE 14,
CHAPTER 6

REMOVAL OF MUNICIPAL CODE, TITLE
14, CHAPTER 3



REMOVAL OF MUNICIPAL CODE, TITLE 14, CHAPTER 3

- Chapter 3 'grading, soil erosion, and sediment control' and chapter 6 'stormwater management ordinance' are redundant and frequently disagree.
- Chapter 3 will be removed in its entirety and chapter 6 will include all requirements for both.

REMOVED

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-602 (11)

'Critical service road' definition has been added as follows:

Any road or street which serves as a primary egress route for 150 or more residential units, 150,000 SF or more of office building space, 40,000 SF or more of retail building space, or 300,000 SF or more of industrial building space. Or any combination of the above which adds up to 1500 trips per day (TPD) calculated as follows: 10 TPD per residential unit; 10 TPD per 1,000 SF office space; 38 TPD per 1,000 SF retail space; and 5 TPD per 1,000 SF industrial space.

This is important because critical service roads must maintain at least 8' clear with less than 1" of water at the deepest point within the 8' during the 25-year, 24-hour design storm and not be inundated by more than 3" of water over an 8' width during the 100-year, 24-hour design storm.




Stormwater Department

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-603 (4)(D)


The following table was added in the water quality design section

| Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm | | |
|---|---|---|
| SCM Treatment Type | WQTV | Notes |
| infiltration, evaporation, transpiration, and/or reuse | Runoff generated from the first 1 inch of the design storm | Examples include, but are not limited to bioretention, stormwater wetlands, and infiltration systems |
| Biologically active filtration, with an underdrain | Runoff generated from the first 1.25 inches of the design storm | To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage. |
| Sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds | Runoff generated from the first 2.5 inches of the design storm or the first seventy-five percent (75%) of the design storm, whichever is less | Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional detention ponds are not subject to the forebay requirement. |
| Hydrodynamic separation, baffle box settling, other <u>manufactured</u> treatment devices (MTDs), and treatment trains using MTDs | Maximum runoff generated from the entire design storm | flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction |

A black corrugated metal culvert pipe is shown discharging water into a grassy area. The water is splashing and creating white foam as it exits the pipe. The surrounding area is filled with tall green grass and some yellow flowers. The background is slightly blurred, showing more vegetation.

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-603 (5)(A)

The design storm for sizing all culverts, pipes and channels is changed from the 10-year storm to the 25-year storm matching surrounding cities and towns



CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-602 (11)

Critical service roads must maintain at least 8' clear with less than 1" of water at the deepest point within the 8' during the 25-year, 24-hour design storm and not be inundated by more than 3" of water over an 8' width during the 100-year, 24-hour design storm.

Other new roads shall be designed to have no more than six inches (6") of road overtopping at the 25-year, 24-hour design storm event.

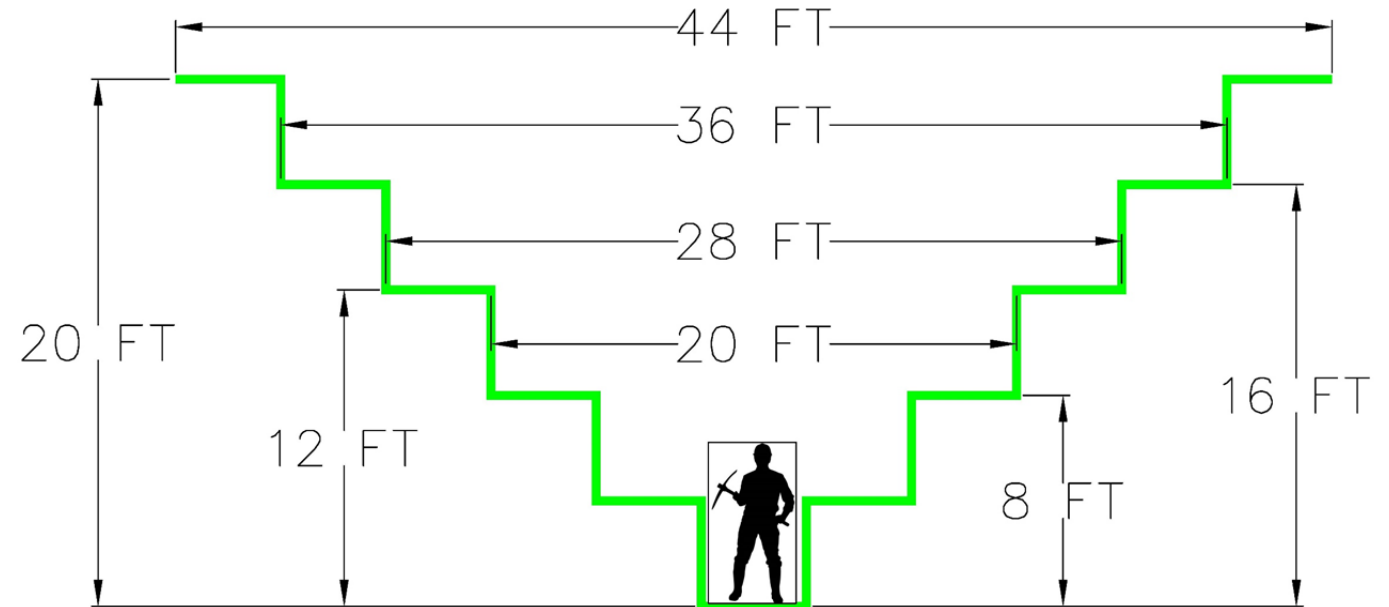
**CHANGES TO
STORMWATER
MANAGEMENT
ORDINANCE:
CHAPTER 6,
SECTION 14-
603 (5)(C)**

More detailed requirements have been provided for engineers regarding the minimum design calculations required to be submitted

- (ii) For Subdivision Construction Drawings:
 - (A) Curb capacity calculations for the 25-year, 24-hour storm (TDOT methodology)
 - (B) Curb inlet capacity calculations for the 25-year, 24-hour design storm including calculations showing bypass-flow (TDOT methodology)
 - (C) Pipe capacity calculations for the 25-year, 24-hour design storm (whether pipe is inlet-, outlet-, or pipe-controlled must be clearly stated) (TDOT methodology)
 - (D) Velocity calculations in all open channels and ditches (worst case slopes shall be used) which supports that the surface treatment proposed for the channel or ditch can handle the velocities (TDOT methodology)

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14- 603 (5)(N)

- For City employee safety, drainage easement width varies with depth of pipe



CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-605 (3)

All developments with permanent Stormwater Control Measures (SCMs) will be required to:

1. Submit a long-term maintenance plan and maintenance agreement during the plans review process
2. Submit the city approved maintenance agreement to the County Registrar to be recorded

***THIS IS FOR DEVELOPMENTS
APPROVED AFTER THE ADOPTION
OF THIS ORDINANCE**

The background image shows a residential street with houses and a stormwater management area. The area in the foreground is filled with lush green plants and orange flowers, with a pile of large, light-colored rocks in the center. The street and houses are visible in the background, with a clear sky and trees.

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-607 (1)

All developments with permanent Stormwater Control Measures (SCMs) will also be required to:

1. Conduct annual inspections of the SCMs in perpetuity
2. Submit annual inspection reports in perpetuity
3. Hire a registered construction professional (Engineer or Landscape Architect) to conduct a Comprehensive evaluation of the SCM's every five years

***THIS IS FOR DEVELOPMENTS APPROVED
AFTER THE ADOPTION OF THIS
ORDINANCE**

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-605 (4): WATER QUALITY RIPARIAN BUFFERS

The following activities are permitted within 30' to 60' from the top of bank:

- Public greenways, biking trails, and walking trails
- Private walking and biking trails can also be approved by the City Engineer upon review
- Infiltration based SCMs such as infiltration trenches and biofiltration basins on a case-by-case basis
- Road and utility crossings
- Linear utilities
- The City Engineer may determine that other limited uses are in the best interest of the overall water quality of the City of La Vergne

*ECONOMICS OR CONSTRUCTABILITY OF A DEVELOPMENT CANNOT BE USED AS CRITERIA FOR ALLOWING SUCH USE TO BE PLACED IN THE BUFFER

CHANGES TO STORMWATER MANAGEMENT ORDINANCE: CHAPTER 6, SECTION 14-605 (4): WATER QUALITY RIPARIAN BUFFERS

If a stream is identified by the State of Tennessee as having unavailable parameters for siltation/sedimentation or as being an Exceptional Tennessee Water, the activities listed above are permitted no closer than 30' from the top of bank.

Additionally, there must be an average of sixty feet (60') of water quality riparian buffer through the development.

The riparian buffer must be measured to the interior edge of the activity listed above.



**CHANGES TO
STORMWATER
MANAGEMENT
ORDINANCE:
CHAPTER 6,
SECTION 14-608
(4)**

- Any person responsible for a property or premises, which is, or may be, the source of illicit discharge, will be required to implement, at the persons expense, the SCMs necessary to prevent the further discharge of pollutants to the municipal storm sewer system
- Discharges from existing SCMs that have not been maintained and/or inspected in accordance with this ordinance (or the requirements at the time the Stormwater Control Measure (SCM) was constructed) shall be regarded as illicit



THANK YOU!



QUESTIONS?

TITLE 14

ZONING AND LAND USE CONTROL

CHAPTER

1. MUNICIPAL PLANNING COMMISSION.
2. ZONING ORDINANCE.
3. DELETED. (Previously Grading and Drainage)
4. RIGHT-OF-WAY MANAGEMENT.
5. BOARD OF ZONING APPEALS.
6. STORMWATER MANAGEMENT ORDINANCE.
7. STORMWATER USER FEE. (No Change)
8. STORMWATER APPEALS AND ADVISORY BOARD.

CHAPTER 3

DELETED

CHAPTER 6

STORMWATER MANAGEMENT ORDINANCE

SECTION

- 14-601. General provisions.
- 14-602. Definitions.
- 14-603. Stormwater system design: construction and permanent stormwater management; performance standards.
- 14-604. Land disturbance permits.
- 14-605. Permanent stormwater management: operation, maintenance, and inspection.
- 14-606. Existing locations and ongoing developments.
- 14-607. Inspections.
- 14-608. Illicit discharges.
- 14-609. Enforcement.
- 14-610. Penalties.
- 14-611. Appeals.
- 14-612. Severability.

14-601. General provisions. (1) Title. This chapter shall be known as the "Stormwater Management Ordinance" for the City of La Vergne, Tennessee.

(2) Applicability and jurisdiction. The stormwater management ordinance shall govern all properties within the limits of the City of La Vergne, Tennessee.

(3) Purpose. It is the purpose of this ordinance to:

(a) Protect, maintain, and enhance the environment of the City of La Vergne and the public health, safety, and the general welfare of the citizens of the city, by controlling discharges of pollutants to the stormwater system and to maintain and improve the quality of the receiving waters into which the stormwater outfalls flow, including, without limitation, lakes, rivers, streams, ponds, wetlands, and groundwater of the city.

(b) Enable the City of La Vergne to comply with the National Pollution Discharge Elimination System permit (NPDES) and applicable regulations, 40 C.F.R. § 122.26 for stormwater discharges.

(c) Allow the City of La Vergne to exercise the powers granted in Tennessee Code Annotated, § 68-221-1105 or as amended by the State of Tennessee, which provides that, among other powers cities have with respect to stormwater facilities, is the power by ordinance or resolution to:

- (i) Exercise general regulation over the planning, location, construction, and operation and maintenance of stormwater facilities in the city, whether or not owned and operated by the city;
- (ii) Adopt any rules and regulations deemed necessary to accomplish the purposes of this statute, including the adoption of a system of fees for services and permits;
- (iii) Establish standards to regulate the quantity of stormwater discharged and to regulate stormwater contaminants as may be necessary to protect water quality;
- (iv) Review and approve plans and plats for stormwater management in proposed subdivisions or commercial developments;
- (v) Suspend or revoke permits when it is determined that the permittee has violated any applicable ordinance, resolution, or condition of the permit;
- (vi) Regulate and prohibit discharges into stormwater facilities of sanitary, industrial, or commercial sewage or waters that have otherwise been contaminated; and
- (vii) Expend funds to remediate or mitigate the detrimental effects of contaminated land or other sources of stormwater contamination, where public or private.

(4) Authority. (a) The City of La Vergne shall have right-of-entry upon the property subject to this ordinance and any permit or document issued hereunder. The City of La Vergne shall be provided ready access to all parts of the premises for the purposes of inspection, monitoring, sampling, inventory, records examination and copying, and the performance of any other duties necessary to determine compliance with this ordinance.

(b) Where a property, site or facility has security measures in place that require proper identification and clearance before entry into its premises, the person shall make necessary arrangements with its security personnel so that, upon presentation of suitable identification, the City of La Vergne will be permitted to enter without delay for the purposes of performing specific responsibilities.

(c) The City of La Vergne shall have the right to operate and maintain on the person's property such devices as are necessary to conduct sampling and metering of the person's stormwater operations or discharges.

(d) Any temporary or permanent obstruction to safe and easy access to the areas to be inspected and/or monitored shall be removed promptly by the person at the written or verbal request of the City of La Vergne. The costs of clearing such access shall be borne by the person.

(e) The City of La Vergne may reserve the right to determine and impose inspection schedules necessary to enforce the provisions of

this ordinance.

(5) Duty to provide information.

(a) The owner/operator shall furnish to the City of La Vergne any information that is requested to determine compliance with this ordinance or other information.

(6) Exemptions. The following activities are exempt from the provisions of this chapter and requirements of providing stormwater management:

(a) Agricultural land management activities;

(b) Any emergency activity that is immediately necessary for the protection of life, property, or natural resources; and

(c) Developments that do not disturb more than one (1) acre of land. This exception does not apply to sites that disturb less than one (1) acre but are part of a common plan of development or sale that comprises of at least one (1) acre of cumulative land disturbance. This exemption does not apply to any discharge of sediment or other form of water pollution that may leave a small site, or if in the discretion of the City of La Vergne, the land disturbance activity poses a threat to water, public health, or safety.

(7) Savings provision. This ordinance shall not be construed as altering, modifying, vacating, or nullifying any action now impending or any rights of obligations obtained by any person, firm or corporation through approval of a preliminary plat by the City of La Vergne Planning Commission or through the approval of any land disturbance permit or any other lawful action of the city prior to the adoption of this ordinance.

14-602. Definitions. For the purpose of this ordinance, the following definitions shall apply: Words used in the singular shall include the plural, and the plural shall include the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined in this section shall be construed to have the meaning given by common and ordinary use.

(1) "Agricultural land management activities." The practice of cultivating the soil, producing crops, and raising livestock for the preparation and marketing of the resulting products.

(2) "As-built drawing." See record drawing.

(3) "Best Management Practices (BMPs)." Schedules of activities, prohibitions of practices, maintenance procedures, structural and non-structural practices, and other management practices to prevent or reduce the discharge of pollutants to waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage, leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include source control practices (non-structural BMPs) and engineered structures designed to treat runoff.

(4) "Buffer" see Water Quality Riparian Buffer

(5) "Building permit." A general permit issues authorizing any owner, authorized agent, or contractor to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to perform any or to cause any such work to be done.

(6) "City Inspector." Means a person that has successfully completed (has a valid certification from) the "Fundamentals of Erosion Prevention and Sediment Control Level I" course:

(a) This person performs inspections on behalf of the city to check compliance with the city's requirements and performs enforcement activities.

(b) This person does not do the functions of an "Inspector" defined herein.

(7) "Clearing." Refers to removal of vegetation and disturbance of soil prior to grading or excavation in anticipation of construction activities. Clearing may also refer to wide area land disturbance in anticipation of non-construction activities. Clearing, grading, and excavation do not refer to clearing of vegetation along existing or new roadways, highways, dams or power lines for sight distance or other maintenance and/or safety concerns, or cold planning, milling, and/or removal of concrete and/or bituminous asphalt roadway pavement surfaces. The clearing of land for agricultural purposes is exempt from federal stormwater NPDES permitting in accordance with Section 401(1)(1) of the 1987 Water Quality Act and state stormwater NPDES permitting in accordance with the Tennessee Water Quality Control Act of 1977 (T.C.A. 69-3-101 et seq.).

(8) "Common plan of development or sale." Broadly defined as any announcement or documentation (including a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, computer design) or physical demarcation (including boundary signs, lot stakes, surveyor markings) indicating construction activities may occur on a specific plot. A common plan of development or sale identifies a situation in which multiple areas of disturbance are occurring on contiguous areas. This applies because the activities may take place at different times, on difference schedules, by different operators.

(9) "Construction Site Operator." Means any person associated with a construction project that meets either of the following two criteria:

(a) This person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project and is considered the primary permittee.

(b) This person has day-today operational control of those activities at a project which are necessary to implement compliance with a SWPPP for the site or other permit conditions. This person is typically

a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

It is anticipated that at different phases of a construction project, different types of parties may satisfy the definition of the “construction site operator.”

(10) “Control Measure.” Refers to any Best Management Practice (BMP) or other method used to prevent or reduce the discharge of pollutants to waters of the state.

(11) “Critical Service Road.” Any road or street which serves as a primary egress route for 150 or more residential units, 150,000 SF or more of office building space, 40,000 SF or more of retail building space, or 300,000 SF or more of industrial building space. Or any combination of the above which adds up to 1500 trips per day (TPD) calculated as follows: 10 TPD per residential unit; 10 TPD per 1,000 SF office space; 38 TPD per 1,000 SF retail space; and 5 TPD per 1,000 SF industrial space.

(12) “CWA or The Act.” Means Clean Water Act of 1972, amended in 1977 or the Federal Water Pollution Control Act (33 U.S.C. 1251, et seq.).

(13) “Design storm” is the estimated design rainfall amounts, for any return period interval (i.e., 1-yr, 2-yr, 5-yr, 25-yr, etc.) in terms of either 24-hour depths, or intensities for any duration, as defined by Precipitation-Frequency Atlas of the United States. Atlas 14. Volume 2. Version 3.0 U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Springs, Maryland or its digital product equivalent.

(14) “Director.” Means the director, or authorized representative, of the Division of Water Resources of the State of Tennessee Department of Environment & Conservation.

(15) “Discharge” or “Discharge of a Pollutant.” Refers to the addition of pollutants to waters from a source.

(16) “Discharge of stormwater associated with construction activity.” Refers to stormwater point source discharges from areas where soil disturbing activities (e.g., clearing, grading, excavation), or construction materials or equipment storage or maintenance (e.g., earth fill piles, fueling, waste material) are located.

(17) “Disturbed area.” Means the total area presented as part of the development (and/or of a larger common plan of development) subject to being cleared, graded, or excavated during the life of the development. The area cannot be limited to only the portion of the total area that the site-wide owner/developer initially disturbs through the process of various land clearing activities or in the construction of roadways, sewers and water utilities, stormwater drainage structures, etc., to make the property marketable.

(18) “Division.” Means the Division of Water Resources of the State of Tennessee Department of Environment and Conservation.

(19) “Easement.” An acquired privilege or right of use or enjoyment that

a person, party, firm, corporation, City of La Vergne or other legal entity has in the land of another.

(20) "Enforcement Response Plan (ERP)." Is a set of procedures which present the permittee's potential responses to violations and address repeat violations through progressive enforcement as needed to achieve compliance. These enforcement responses should be commensurate with the nature of the violation and must include enforcement responses progressing up to the maximum civil and criminal penalties as described in T.C.A. 69-3-101, et seq. the enforcement response procedures or methods must address all violations of prohibitions and requirements applicable to this permit that are contained in the permittee's statutes, codes or other control mechanisms as well as other violations of the permit. The enforcement response procedures or methods documentation must be referenced by or included in the permittee's statutes, codes or other control mechanisms. The enforcement responses may include actions such as written notices, citations with administrative penalties, stop work orders, withholding of plans approvals or other authorizations, or any other administrative judicial action.

(21) "Erosion." The removal of soil particles by the action of water, wind, ice, or other geological agents, whether naturally occurring or acting in conjunction with or promoted by anthropogenic activities or effects.

(22) "Erosion and sediment control plan." A written plan (including drawings or other graphic representations) that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

(23) "Exceptional Tennessee Waters." Surface waters designated by the Division as having the characteristics set forth at Tennessee Rules, Chapter 0400-40-03-.06(4). Characteristics include waters within parks or refuges, scenic rivers, waters with threatened or endangered species, waters that provide specialized recreational opportunities, waters within areas designated as lands, waters with naturally reproducing trout, waters with exceptional biological diversity and other waters with outstanding ecological or recreational value.

(24) "Illicit connections." means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

(25) "Illicit discharge." is defined at 40 CFR § 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from firefighting activities.

(26) "Improved Sinkhole." A natural surface depression that has been altered in order to direct fluids into the hole opening. Improved sinkhole is a type of injection Well regulated under the Underground Injection Control (UIC) program. Underground injection constitutes an intentional disposal of waste waters in natural depressions, open fractures, and crevices, such as those commonly associated with weathering of limestone.

- (27) "Inspector." A person with one of the following qualifications:
- (a) a valid certification for the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
 - (b) a licensed professional engineer or landscape architect,
 - (c) a Certified Professional in Erosion and Sediment Control (CPESC), or
 - (d) successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

An inspector performs and documents the required inspections, paying particular attention to time-sensitive permit requirements such as stabilization and maintenance activities. An inspector may also have the following responsibilities:

- (a) Oversee the requirements of other construction-related permits, such as an Aquatic Resources Alteration Permit (ARAP) or Corps of Engineers permit for construction activities in or around waters of the state.
- (b) Update field SWPPPs.
- (c) Conduct pre-construction inspection to verify that undisturbed areas have been properly marked and initial measures have been installed.
- (d) Inform the permit holder of activities that may be necessary to gain or remain in compliance with the Tennessee Department of Environment and Conservation (TDEC) Construction General Permit (CGP) and other environmental permits.

(28) "Linear project." A land disturbing activity as conducted by an underground/overhead utility or highway department, including, but not limited to, any cable line or wire for the transmission of electrical energy; any conveyance pipeline for transportation of gaseous or liquid substance; any cable line or wire for communications; or any other energy resource transmission ROW or utility infrastructure, e.g., roads and highways. Activities include the construction and installation of these utilities within a corridor. Linear project activities also include the construction of access roads, staging areas and borrow/spoil sites associated with the linear project. Land disturbance specific to the development of residential and commercial subdivisions or high-rise structures is not considered a linear project.

(29) "Land disturbing activity." Any activity on property that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land-disturbing activities include, but are not limited to, development, re-development, demolition, construction, reconstruction, clearing, grading, filling, and excavation.

(30) "Maintenance." Any activity that is necessary to keep a stormwater facility in good working order so as to function as designed. Maintenance shall include complete reconstruction of a stormwater facility if reconstruction is needed in order to restore the facility to its original operational design parameters. Maintenance shall also include the correction of any problem on the

site property that may directly impair the functions of the stormwater facility.

(31) "Maintenance agreement." A document recorded in the land records that acts as a property deed restriction, and which provides for long-term maintenance of stormwater control measures.

(32) "Monitoring." Refers to tracking or measuring activities, progress, results, etc., and can refer to non-analytical monitoring for pollutants by means other than 40 CFR § 136 (and other than state- or federally established protocols in the case of biological monitoring and assessments), such as visually or by qualitative tools that provide comparative values or rough estimates.

(33) "Municipal Separate Storm Sewer System (MS4)." Defined in 40 CFR § 122.26(b)(8) to mean a conveyance or system of conveyances (e.g., roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

(a) owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribal organization or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(b) designed or used for collecting or conveying stormwater;

(c) not a combined sewer; and

(d) not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR § 122.2.

(34) "Notice of Intent or NOI." Intent to be covered by the Construction General Permit

(35) "Operator." Any person who owns, leases, operates, controls, or supervises a source.

(36) "Ordinary high-water mark or top of bank." The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. Both of these terms are of a highly technical nature and the division realizes that, in practice, a certain degree of best professional judgement will be used to establish buffer boundaries.

(37) "Peak flow." The maximum instantaneous rate of flow of water at a particular point resulting from a storm event.

(38) "Permanent Stabilization." All soil disturbing activities at the site have been completed and one of the three following criteria is met:

(a) A perennial, preferably native, vegetative cover with a

uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion.

(b) Equivalent permanent stabilization measures such as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets or Reno mattresses have been employed.

(c) For construction projects on land used for agricultural or silvicultural purposes, permanent stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.

(39) "Person." Any and all persons, natural or artificial, including any individual, firm or association and any municipal or private corporation organized or existing under the laws of this or any other state or country.

(40) "Point Source or Outfall." Means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include introduction of pollutants from non-point source agricultural or silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, forest lands or return flows from irrigated agriculture or agricultural stormwater runoff. In short, outfall is a point where runoff leaves the site as a concentrated flow in a discrete conveyance.

(41) "Priority area." An area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

(42) "Priority construction activity." Shall be at a minimum, those construction activities discharging directly into, or immediately upstream of, waters of the state recognized as unavailable parameters for siltation or Exceptional Tennessee Waters.

(43) "Record drawings" Means drawings depicting conditions as they were actually constructed.

(44) "Redevelopment." Means the alteration of developed land that disturbs one acre or more, or less than an acre if part of a larger common plan of development.

(45) "Registered Engineer" and "Registered Landscape Architect" An engineer or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code Annotated, to practice in Tennessee.

(46) "Runoff." Means that portion of the precipitation on a drainage area that is discharged from the area into the municipal separate stormwater system.

(47) "Sediment." Solid material, both inorganic (mineral) and organic, that is in suspension, is being transported, or has been moved from its site of origin by wind, water, gravity, or ice as a product of erosion.

(48) "Sediment basin." A temporary best management practice consisting of an embankment constructed across a wet weather conveyance, an excavation that creates a basin or by a combination of both.

(49) "Sedimentation." Means the action or process of forming or depositing sediment.

(50) "Significant Contributor." Defined as a source of pollutants where the volume, concentration, or mass of a pollutant in a stormwater discharge can cause or threaten to cause pollution, contamination, or nuisance that adversely impact human health or the environment and cause or contribute to a violation of any applicable water quality standards for receiving water.

(51) "Sinkhole". means a depression or cavity in the ground providing a route for surface water to flow subsurface.

(52) "Steep slope." Means a natural or created slope of 35% grade or greater. Designers of sites with steep slopes must pay attention to stormwater management in the SWPPP to engineer runoff around or over a steep slope so as not to erode the slope. In addition, site managers should focus on erosion prevention of the slopes and stabilize the slopes as soon as practicable to prevent slope failure or sediment discharges from the project.

(53) "Stormwater." Means rainfall runoff, snow melt runoff, and surface runoff and drainage.

(54) "Stormwater Appeals and Advisory Board." The body which has been delegated the authority by the Board of Mayor and Alderman of the City of La Vergne to hear appeals concerning decisions made by the city administrator or his designee as to the interpretation of the meaning of this code.

(55) "Stormwater Control Measures (SCMs)." Permanent practices and measures designed to reduce the discharge of pollutants from new development projects or redevelopment projects.

(56) "Stormwater discharge-related activities." Means activities that cause, contribute to or result in point source stormwater pollutant discharges. These activities may include excavation, site development, grading and other surface disturbance activities; and activities to control stormwater including the siting, construction and operation of best management practices (BMPs).

(57) "Stormwater management facilities." The drainage structures, conduits, ditches and all device appurtenances by means of which stormwater is collected, transported, pumped, treated or disposed of.

(58) "Stormwater management plan." A written compilation of the elements of the Stormwater Management Program. It is considered a single document, even though it actually consists of separate, stand-alone components.

(59) "Stormwater Management Program." A comprehensive program

to manage the quality of stormwater discharged from the municipal separate storm sewer system.

(60) “Stormwater Pollution Prevention Plan (SWPPP)” A written site-specific plan required that includes a narrative pollution prevention plan and graphical erosion and sediment control plan. In its basic form, the plan contains a site map, a description of construction activities that could introduce pollutants to stormwater runoff, a description of measures or practices to control these pollutants, and erosion and sediment control plans and specifications. It must be prepared and submitted before construction begins. In order to effectively reduce erosion and sedimentation impacts, Best Management Practices (BMPs) must be designed, installed, and maintained during land disturbing activities. The SWPPP shall be prepared in accordance with the Tennessee Erosion and Sediment Control Handbook

(61) “Stream.” A surface water that is not a wet weather conveyance. Includes lakes, wetlands, and other non-linear surface waters.

(62) “Temporary stabilization.” Achieved when vegetation or non-erodible surface has been established on the area of disturbance and construction activity has temporarily ceased. Under certain conditions, temporary stabilization is required when construction activities temporarily cease. However, if future construction activity is planned, permit coverage continues.

(63) “Top of bank.” See ordinary high-water mark.

(64) “Total maximum daily load.” (TMDL) means the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background (40 CFR 130.2(I)). TMDL is a study that quantifies the amount of a pollutant in a stream, identifies the sources of the pollutant and recommends regulatory or other actions that may need to be taken in order for the stream to cease being polluted. TMDLs can also be described by the following equation:

$$\text{TMDL} = \text{sum of non-point sources (LA)} + \text{sum of point sources (WLA)} \\ + \text{margin of safety}$$

(65) “Water Quality Riparian Buffer.” A permanent strip of natural perennial vegetation adjacent to a stream, and river, wetland, pond, or lake that contains dense vegetation made up of grass, shrubs, and/or trees. The purposed of a water quality riparian buffer is to maintain existing water quality by minimizing the risk of any potential sediments, nutrients, or other pollutants reaching adjacent surface waters and to further prevent negative water quality impacts by providing canopy over adjacent waters.

(66) “Waters of the State or Waters.” Means any and all water, public or private, on or beneath the surface of the ground, which are contained within, flow through or border upon Tennessee or any portion thereof, except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters.

(67) "Waters with Unavailable Parameters." Any segment of surface waters that has been identified by the Division as failing to support one or more classified uses. Unavailable parameters exist where water quality is at, or fails to meet, the levels specified in water quality criteria in Rule 0400-40-03-.03, even if caused by natural conditions. In the case of a criterion that is a single response variable or is derived from measurement of multiple response variables, the unavailable parameters shall be the agents causing water quality to be at or failing to meet the levels specified in criteria. Resources to be using in making this determination include biennial compilations of impaired waters, databases of assessment information, updated GIS coverages, and the results of recent field surveys.

(68) "Watershed." All the land area that contributes runoff to a particular point along a waterway.

(69) "Wasteload Allocation (WLA)." The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution (40 CFR §130.2(h)).

(70) "Wet Weather Conveyance." Man-made or natural watercourses, including natural watercourses that have been modified by channelization, that meet the following:

(a) The conveyance carries flow only in direct response to precipitation runoff in its immediate locality.

(b) The conveyance's channels are at all times above the groundwater table.

(c) That flow carried by the conveyance is not suitable for drinking water supplies.

(d) Hydrological and biological analyses indicate that, due to naturally occurring ephemeral or low flow under normal weather conditions, there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months (Tennessee Rules, Chapter 0400-40-3-.04(3)).

14-603. Stormwater system design: construction and permanent stormwater management; performance standards. (1) Objectives. The objectives of this ordinance are:

(a) To protect human life and health.

(b) To minimize the need for rescue and relief efforts associated with flooding.

(c) To eliminate any non-allowable discharges to the City of La Vergne's Municipal Separate Storm Sewer System (MS4) that impact water quality.

(d) To help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to maximize beneficial use without increasing flood hazard potential or diminishing the quality of the natural stormwater resources.

(e) To minimize prolonged business interruptions.

(f) To minimize damage to public facilities and utilities such as water and gas mains; electric, telephone, and sewer lines; and streets and bridges located in flood plains.

(g) To ensure a functional public and private stormwater quantity and quality management system that will not result in excessive maintenance costs.

(h) To encourage the use of natural and aesthetically pleasing design that maximizes preservation of natural areas.

(i) To guide the construction of stormwater management facilities by developing comprehensive master plans to address stormwater quantity and quality.

(j) To encourage preservation of floodplains, floodways, and open spaces to protect and benefit the community's quality of life and natural resources.

(k) To encourage community stewardship of the City of La Vergne's water resources and their impacts on the community character and quality of life.

(2) Applicability. This section shall be applicable to all land development, including, but not limited to, site plan applications, subdivision applications, land disturbance application, and grading applications. In the event of a discrepancy between the required calculations listed within the document and any similar requirements listed within another City of La Vergne documents (such as the Subdivision Regulation or the Zoning Ordinance), the required calculations listed herein shall prevail. The requirements in this section shall apply to any new development or redevelopment site that meets one or more of the following criteria:

(a) New development or redevelopment that involves land disturbance activity of one (1) acre or more;

(b) New development or redevelopment that involves land disturbance activity of less than one (1) acre but part of a common plan of development or sale that is one (1) acre or more;

(c) New development or redevelopment less than one acre of total land disturbance may also be required to obtain authorization under this ordinance if:

(i) the city engineer has determined that the stormwater discharge from a site is causing, contributing to, or is likely to contribute to a violation of a state water quality standard;

(ii) the city engineer has determined that the stormwater discharge is, or is likely to be a significant contributor of pollutants to waters of the state; or

(iii) any new development or redevelopment, regardless of size, that is defined by the administrator to be a priority

construction site.

(d) Other options:

(i) Change in elevation of property.

(ii) Any land disturbance that requires coverage under a TDEC CGP.

(iii) Any disturbance that requires coverage under a TDEC ARAP.

(3) General requirements. Stormwater at applicable development and redevelopment shall be managed in accordance with the requirements contained within this section.

(a) Any discharge of stormwater or other fluid to an improved sinkhole or other injection well, as defined, must be authorized by permit or rule as a Class V underground injection well under the provisions of Tennessee Department of Environment and Conservation (TDEC) Rules, Chapter 1200-4-6.

(b) Stormwater design or BMP manuals

(i) Adoption. The city adopts as its MS4 stormwater design and Best Management Practices (BMP) manuals for stormwater management, construction and permanent, the following publications, which are incorporated by reference in this ordinance as if fully set out herein:

(A) Tennessee Erosion and Sediment Control Handbook; most current edition.

(B) Tennessee Permanent Stormwater Management and Design Guidance Manual; most current edition.

(C) Tennessee Guide to the Selection and Design of Stormwater Best Management Practices (BMPs)

(D) Metro Nashville Stormwater Management Manual Volume 5, Low Impact Development; most current edition.

(E) And/or a collection of city-approved BMP(s) and SCM(s).

(ii) The publications listed above include a list of acceptable BMPs and SCMs, including the specific design criteria and operation and maintenance requirements.

(4) Stormwater quality. To implement the objectives of this ordinance, the following general stormwater quality policy statements shall apply:

(a) There shall be no distinctly visible floating scum, oil, or other matter contained in the stormwater discharge.

(b) The stormwater discharge must not cause an objectionable color contrast in the receiving stream.

(c) The design storm for water quality treatment design shall

be the 1-year, 24-hour design storm event.

(d) The water quality treatment volume (WQTV) is the portion of the runoff generated from impervious surfaces at a new development or redevelopment project from the design storm. SCMs must be designed, at a minimum to achieve an overall treatment efficiency of eighty percent (80%) TSS removal from the WQTV. The quantity of the WQTV that must be provided from a new development or redevelopment depends on the type of treatment provided, as established in the following table:

| Water Quality Treatment Volume and the Corresponding SCM Treatment Type for the 1-year, 24-hour design storm | | |
|--|---|---|
| SCM Treatment Type | WQTV | Notes |
| infiltration, evaporation, transpiration, and/or reuse | Runoff generated from the first 1 inch of the design storm | Examples include, but are not limited to bioretention, stormwater wetlands, and infiltration systems |
| Biologically active filtration, with an underdrain | Runoff generated from the first 1.25 inches of the design storm | To achieve biologically active filtration, SCMs must provide minimum of 12 inches of internal water storage. |
| Sand or gravel filtration, settling ponds, extended detention ponds, and wet ponds | Runoff generated from the first 2.5 inches of the design storm or the first seventy-five percent (75%) of the design storm, whichever is less | Examples include, but are not limited to, sand filters, permeable pavers, and underground gravel detention systems. Ponds must provide forebays comprising a minimum of 10% of the total design volume. Existing regional detention ponds are not subject to the forebay requirement. |
| Hydrodynamic separation, baffle box settling, other manufactured treatment devices (MTDs), and treatment trains using MTDs | Maximum runoff generated from the entire design storm | flow-through MTDs must provide an overall treatment efficiency of at least 80% TSS reduction |

(e) Treatment trains using MTDs shall use the following calculation:

$$R = A + B - (A \times B) / 100$$

Where:

R = total TSS percent removal from application of both SCMs

A = the TSS percent removal rate applicable to the first SCM

B = the TSS percent removal rate applicable to the second SCM

TSS removal rates for MTD must be evaluated using industry-wide standards

TSS removal rates for other SCMs must be from published reference literature

(f) Treatment trains using infiltration, evaporation, transpiration, reuse, or biologically active filtration followed by sand or gravel filtration, settling ponds, extended detention ponds or wet ponds may subtract the treated WQTV of the upstream SCMS from the WQTV of the downstream SCMs.

(g) SCMs must be designed to provide full treatment capacity within 72 hours following the end of the preceding rain event for the life of the new development or redevelopment project.

(h) Calculations demonstrating compliance with this section must be submitted with the Concept Plan for subdivisions and planned developments. They must be submitted with the Site Plan for all other developments.

(i) Incentive standard: The following types of development or redevelopment shall receive a twenty percent (20%) reduction in the water quality treatment volume for any one of the following conditions:

(i) Redevelopment projects (including, but not limited to, brownfield redevelopment); and

(ii) Vertical density (floor to area ratio of at least 2, or at least 18 units per acre)

(5) Stormwater quantity. To implement the objectives of this ordinance, the following general stormwater quantity policy statements shall apply:

(a) New development shall meet a stormwater quantity level of service defined by:

(i) Designing road catch basins and connecting culverts to convey the 25-year, 24-hour design storm runoff.

(ii) Designing bridges, culverts, channels, and cross drains to pass the 25-year, 24-hour design storm runoff.

Calculations shall also be provided for the 100-year, 24-hour design storm.

(iii) Stormwater infrastructure shall be designed in a way that:

(A) Critical service roads must maintain at least

8' clear with less than 1" of water at the deepest point within the 8' during the 25-year, 24-hour design storm and not be inundated by more than 3" of water over an 8' width during the 100-year, 24-hour design storm.

(B) Other new roads shall be designed to have no more than six inches (6") of road overtopping at the 25-year, 24-hour design storm event.

(b) Re-development activities will be required to follow stormwater quantity requirements.

(c) The following hydraulic calculations are required to be submitted:

(i) For Concept Plans:

(A) Detention methodology and sizing

(B) Outlet Control structure design calculations

(C) TR-55 method is the City standard, but other methods may be accepted with pre-approval from the City Engineer.

(D) Soil Type Analysis (including map)

(E) Curve Number Calculations (including map)

(F) Time of Concentration Calculations
(including map)

(G) Pre-development (existing conditions), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, 100-year, 24-hour design storms (including hydrographs)

(H) Post-development (proposed conditions WITHOUT detention or other means of peak flow reduction), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms (including hydrographs)

(I) Post-development (proposed conditions WITH detention or other means of peak flow reduction), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, 100-year, 24-hour design storms (including hydrographs)

(J) Provide a table comparing the peak flow rates resulting from the above three hydrograph calculations

(ii) For Subdivision Construction Drawings:

(A) Curb capacity calculations for the 25-year, 24-hour storm (TDOT methodology)

(B) Curb inlet capacity calculations for the 25-year, 24-hour design storm including calculations showing

bypass-flow (TDOT methodology)

(C) Pipe capacity calculations for the 25-year, 24-hour design storm (whether pipe is inlet-, outlet-, or pipe-controlled must be clearly stated) (TDOT methodology)

(D) Velocity calculations in all open channels and ditches (worst case slopes shall be used) which supports that the surface treatment proposed for the channel or ditch can handle the velocities (TDOT methodology)

(iii) For Site Plans:

(A) Detention methodology and sizing

(B) Outlet control structure design calculations

(C) TR-55 method is the City standard but other methods may be accepted with pre-approval from the City Engineer

(D) Soil Type Analysis (including map)

(E) Curve Number Calculations (including map)

(F) Time of concentration calculations (including map)

(G) Pre-development (existing conditions), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, 100-year, 24-hour design storms (including hydrographs)

(H) Post-development (proposed conditions WITHOUT detention or other means of peak flow reduction), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms (including hydrographs)

(I) Post-development (proposed conditions WITH detention or other means of peak flow reduction), hydrograph-based peak flow calculations for the 2-, 5-, 10-, 25-, 50-, 100-year, 24-hour design storms (including hydrographs)

(J) Provide a table comparing the peak flow rates resulting from the above three hydrograph calculations

(K) Pipe capacity calculations for the 25-year, 24-hour design storm (whether pipe is inlet-, outlet- or pipe-controlled must be clearly stated) (TDOT methodology)

(L) Open channels and ditches must be sized to handle the 25-year, 24-hour storm

(M) Velocity calculations in all open channels and ditches (worst cast slopes shall be used) which supports that the surface treatment proposed for the channel or ditch can handle the velocities (TDOT methodology)

(d) No land disturbance activities, whether by private or public action, shall be performed in a manner that will negatively impact stormwater quantity whether by flow restrictions, increased runoff, or by diminishing channel or floodplain storage capacity.

(e) All site designs shall control the post-development peak, flow rates of stormwater discharge associated with 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms to the pre-development peak flow rates. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

(f) Hydrologic and hydraulic design calculations for the predevelopment and post-development conditions for the 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour design storms shall be provided to the City of La Vergne. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this ordinance.

(g) If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the City of La Vergne may impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.

(h) To protect stream channels from degradation, specific channel protection criteria shall be provided.

(i) At the discretion of the City of La Vergne, stormwater discharges may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.

(j) Prior to or during the site design process, applicants for land disturbance permits shall consult with the City of La Vergne to determine if they are subject to additional stormwater design requirements.

(k) Bare soil channels and ditches will not be allowed unless the channel is excavated into rock up to 6 inches deeper than the 10-year, 24-hour design peak flow depth. In all channels or ditches, sod or seeding with erosion control mat will be the minimum requirement up to 6 inches deeper than the 10-year, 24-hour design peak flow depth. In the event that flow velocities for the 5-year, 24-hour design storm exceed

4.5 feet/second, a liner (e.g., riprap, bioengineered liner, or concrete) will be required.

(l) All pipe or control structure outlets where the headwater depth divided by the pipe diameter at the inlet is greater than 1.5 must have a riprap apron at the outlet. A concrete energy- dissipating headwall will not be sufficient on their own.

(m) Catch basins, curb inlets, stormwater junction boxes and other confined spaces into which city personnel may need to enter in the future for maintenance activities shall not be more than ten feet in depth from top of casting to invert out.

(n) For drainage easements which contain pipes or culverts, the width of the required drainage easement shall be based on the following table:

| Depth of Pipe (Feet to bottom of outside of pipe) | Width of Easement |
|---|-------------------|
| 0 feet to 8 feet | 20 feet |
| 8.1 feet to 12 feet | 28 feet |
| 12.1 feet to 16 feet | 36 feet |
| Deeper than 16.1 feet | 50 feet |

(o) For drainage easements which contain open channels, the minimum width of the required easement will be the width of flow in the channel calculated for the 100-year/24-hour storm.

14-604. Land disturbance permit. (1) General. The land disturbance permit is to be obtained by the owner(s) or owner(s) designee(s) for a development or redevelopment of over one (1) acre, or less than one (1) acre if part of a larger plan of common development or sale that comprises of at least one (1) acre of cumulative land disturbance. The land disturbance permit is designed to track all applicable land disturbance activities and ensure they are monitored for compliance for erosion prevention and sediment controls, the absence of illicit discharges leaving the site, and compliance with the city's TDEC NPDES MS4 general permit along with any applicable TDEC construction general permits, TDEC Aquatic Resources Alteration Permits (ARAP), and any other relevant permits. Tracking of these activities allows inspection, and in cases of non-compliance, enforcement actions to be taken.

(2) Land disturbance permit application. (a) Application for a land disturbance permit shall require the following be submitted to the city engineer for review and approval:

(i) The Notice of Intent (NOI) required by TDEC for coverage under the "Tennessee General Permit for Stormwater Discharges from Construction Activities."

(ii) The Notice of Coverage (NOC) proving coverage under the "Tennessee General Permit for Stormwater

Discharges from Construction Activities.”

- (iii) Stormwater Pollution Prevention Plan (SWPPP)
- (iv) Separate sheets, at a scale not to exceed one inch (1”) equal to fifty feet (50’), for pre-construction, construction, and post-construction stormwater BMPs. For site disturbances less than or equal to five (5) acres, at least two (2) separate EPSC plan sheets shall be developed. At least two (2) stages shall be identified, with associated EPSC measures addressed. The plan stages shall be addressed separately in plan sheets, with each reflecting the conditions and EPSC measures necessary to manage stormwater runoff, erosion, and sediment during the initial land disturbance (initial grading) and the conditions and EPSC measures necessary to manage stormwater, erosion and sediment at final grading. For site disturbances more than five (5) acres at least three (3) separate EPSC sheets shall be developed. Three (3) stages shall be identified. The first plan sheet should reflect the conditions and EPSC measures necessary to manage stormwater runoff during the initial land disturbance (initial grading). The second plan sheet shall reflect the conditions the EPSC measures necessary to manage stormwater runoff from interim land disturbance activities. The third plan sheet shall reflect the conditions and EPSC measures necessary to manage stormwater runoff erosion, and sediment at final grading.
- (v) Name of applicant.
- (vi) Business or residence address of applicant.
- (vii) Name, address and telephone number of the owner of the property of record in the office of the assessor of property.
- (viii) Address and legal description of subject property including the tax reference number and parcel number of the subject property.
- (ix) Name, address, and telephone number of the contractor and any subcontractor(s) who shall perform the land disturbing activity and who shall implement the erosion and sediment control plan.
- (x) A statement indicating the nature, extent, and purpose of the land disturbing activities including the size of the area for which the permit shall be applicable and a schedule for the starting and completion dates for the land disturbing activity.
- (xi) Construction sequencing including a statement that indicates only disturbance necessary to install the initial erosion and sediment control measures per the approved plans shall be completed prior to initial inspection by the city.

(xii) Where the property has drainage or modification of a sinkhole, the applicant shall obtain the appropriate permit(s) from the Tennessee Department of Environment and Conservation.

(xiii) The applicant shall obtain from any other state or federal agency any other appropriate environmental permits that pertain to the property. However, the inclusion of those permits in the application shall not foreclose the City of La Vergne from imposing additional development requirements and conditions, commensurate with this chapter on the development of the property covered by those permits.

(xiv) Additional information and calculations as deemed necessary by the city engineer.

(3) Review and approval of land disturbance permit application. The city engineer will review each application for a land disturbance permit to determine its conformance with the provisions of this chapter. No development plans will be released until the land disturbance permit has been approved. The city engineer shall provide one (1) of the following responses in writing:

(a) Approval of the permit application;

(b) Pre-construction meeting needed prior to approval of the permit application;

(c) Approval of the permit application, subject to such reasonable conditions as may be necessary to secure substantially the objectives of this ordinance, and issue the permit subject to these conditions; or

(i) If the city engineer has granted conditional approval of the permit, the applicant shall submit a revised plan that conforms to the conditions established by the city engineer. However, the applicant shall be allowed to proceed with his land disturbing activity so long as it conforms to conditions established by the city engineer.

(d) Denial of the permit application, indicating the reason(s) for the denial.

(4) Permit duration. Every land disturbance permit shall expire and become null and void if substantial work authorized by such permit has not commenced within one hundred eighty (180) calendar days of issuance or is not complete within eighteen (18) months from the date of the commencement of construction.

(5) Performance bonds. (a) The City of La Vergne shall require the submittal of a performance security or performance bond prior to issuance of a permit in order to ensure that the stormwater practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security or performance bond shall be

the total estimated construction cost of the SCM(s) approved under the permit. The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan. The applicant shall provide an itemized construction cost estimate complete with unit prices which shall be subject to acceptance, amendment, or rejection by the City of La Vergne. Alternatively, the City of La Vergne shall have the right to estimate the cost of construction.

(b) The performance security or performance bond shall be released in full only upon submission of record drawings and written certification by a registered professional engineer licensed to practice in Tennessee that the SCM(s) has been installed in accordance with the approved plan and other applicable provisions of this chapter. The city engineer or city inspector will make a final inspection of the SCM(s) to ensure that it is in compliance with the approved plan and the provisions of this chapter. Provisions for a partial pro-rata release of the performance security or performance bond based on the completion of various development stages can be made at the discretion of the city engineer.

(6) Land disturbance permit fees. The land disturbance permit fees shall be as set forth in the fee schedule adopted with the annual budget.

(7) Inspection and enforcement. The requirements of this chapter shall be enforced by the city engineer or his designee who shall inspect all the work, land disturbance or construction involved.

(a) If the designee finds any person, firm, or entity engaged in land disturbing activities without having obtained a required land disturbance permit, he shall issue a stop order. In addition, if anyone is found conducting or to have conducted land disturbing activities in violation of this chapter or any approved plan, the city inspector may require compliance or refuse to approve further work and/or issue a stop order pending a hearing before the Stormwater Appeals and Advisory Board.

(b) If the city engineer or his designee determines that significant erosion or related problems are occurring on a graded site despite approved protective practices, he shall require the permit holder to take additional corrective actions to protect the adversely affected area. The specifications of the additional measures shall be part of the amended erosion and sediment control plan.

(c) If it is determined that the permit holder has failed to comply with the approved plan, the city inspector shall immediately serve upon the owner, developer, or contractor, a correction notice setting forth the measures needed to come into compliance and specifying a time for such compliance. Failure to comply within the time specified shall subject permittee to revocation of the permit, and he shall be deemed in violation of the chapter requirements and subject to the

penalties provided therein.

(d) Stormwater discharges coming from a permitted site with an objectionable color contrast to receiving waters are also in violation of this Chapter of the municipal code.

(8) General criteria. The following general criteria are minimum requirement for controlling erosion and sedimentation from land-disturbing activities and should be satisfied in each approved erosion prevention and sediment control plan. No permit issued using the general criteria is intended to restrict the use of other innovative practices or modifications to the specified practices if such practices are thoroughly described and detailed and approved given as part of a supplement to the approved plan prior to installation.

(a) The design, inspection, and maintenance of BMPs as described in the Stormwater Pollution Prevention Plan (SWPPP) must be prepared in accordance with good engineering practices and at a minimum, shall be consistent with the requirements and recommendations contained in the current edition of the Tennessee Erosion and Sediment Control Handbook. In addition, all control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications (where applicable). All control measures selected must be able to slow runoff so that rill and gully formation is prevented.

(b) The construction phase erosion prevention and sediment controls shall be designed to eliminate (or minimize if complete elimination is not possible) the dislodging and suspension of soil in water. Sediment controls shall be designed to retain mobilized sediment on site to the maximum extent practicable.

(c) Construction site operators must control wastes such as discarded building materials, concrete truck washouts, chemicals, litter, and sanitary waste at the constructions site to avoid adverse impacts to water quality.

(d) Establishment of permanent vegetation. A permanent vegetative cover shall be established on disturbed areas not otherwise permanently stabilized. If it is determined by the city engineer that the vegetation will not withstand seasonal weather conditions, the release of unobligated monies or bonds shall be determined by the boards of adjustment and appeals.

(e) Protection of adjacent properties. Properties adjacent to the site of the land disturbance shall be protected from sediment deposition. This may be accomplished by preserving a well vegetated buffer strip around the lower perimeter of the land disturbance, by installing perimeter controls such as sediment barriers, filters, sediment traps, or sediment basins, or by a combination of such measures. Vegetated buffer strips may not be used alone.

(f) Cut and fill slopes. Cut and fill slopes must be designed and

constructed in a manner which will minimize erosion. Consideration must be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions, and other applicable factors. Slopes which are found to be eroding excessively within one (1) year of the construction completion must be provided with additional slope stabilizing measures until the problem is corrected. The following guidelines are provided to aid site planners and plan reviewer in developing an adequate design.

(i) Topsoil for the area should be stockpiled and then used for replacement on the graded area.

(ii) Roughened soil surfaces are generally preferred to smooth surface slopes.

(iii) Diversions should be constructed at the top of long steep slopes which have significant drainage areas above the slope. Diversions or terraces may also be used to reduce the slope length.

(iv) Concentrated stormwater should not be allowed to flow down or out of fill slopes unless contained within an adequate temporary or permanent channel, flume, or slope drain structure.

(v) Wherever a slope face crosses a water seepage plane which endangers the stability of the slope, adequate drainage or other protection should be provided.

(g) Protection of stormwater inlets. All stormwater inlets which are made operable during construction shall be protected.

(h) Work in stream channel. A permit must be obtained from TDEC for work in a stream. Work must be conducted in accordance with permit requirements.

(i) Underground utility construction. The construction of underground utility lines shall be subject to the following criteria:

(i) No more than five hundred feet (500') of open trench shall be allowed at one time.

(ii) Where consistent with safety and space considerations, excavated materials are to be placed on the uphill side of trenches.

(iii) Trench dewatering devices shall discharge in a manner which will not adversely affect flowing streams, drainage systems, or offsite properties.

(j) Construction access routes. Off-site vehicle tracking of sediments and the generation of dust shall be minimized. A stabilized construction access (a point of entrance/exit to a construction site) shall be described and implemented to reduce the tracking of mud and dirt onto roads by construction vehicles. Where sediment is transported onto a public or private road surface, the roads, shall be cleaned thoroughly at the end of each day or more often if deemed necessary. Sediment shall

be removed from the roads by shoveling or sweeping and be transported to a sediment-controlled disposal area. Street washing shall be allowed only after sediment is removed in this manner.

(k) Disposition of temporary measures. All temporary erosion prevention and sediment control measures shall be disposed of within thirty (30) days after permanent site stabilization is achieved or after the temporary measures are no longer needed, unless otherwise authorized by the city engineer or his designee. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.

(l) Maintenance. All temporary and permanent erosion prevention and sediment control measures shall be maintained and repaired as needed by the property owner or contractor to ensure continued performance of their intended function, as determined by the city engineer or his designee.

(m) Off-site sediment. If sediment escapes the permitted area, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to maximize off-site impacts (e.g., fugitive sediment that has escaped the construction site and has collected in a street must be removed so that it is not subsequently washed into storm drains and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). A land disturbance permit does not authorize access to private property. Arrangements concerning the removal of sediment on adjoining property must be settled by the permittee with the adjoining landowner.

(n) Sediment removal. Sediment should be removed from sediment traps, silt fences, sediment basins, and other sediment controls as recommended in the Tennessee Erosion and Sediment Control Handbook and must be removed when design capacity has been reduced by fifty percent (50%).

(o) Removal of vegetation. Pre-construction vegetative ground cover shall not be destroyed, removed, or disturbed more than fourteen (14) days prior to grading or earth moving unless the area is seeded and/or mulched or temporary cover is installed.

(p) Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Existing vegetation at the site should be preserved to the maximum extent practicable.

(q) Erosion prevention and sediment control measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the workday but must be replaced at the end of the workday.

(r) Temporary stabilization. Stabilization measures shall be

initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site must be completed no later than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased (seven (7) days for slopes of thirty-five percent (35%) or steeper). In the following situations temporary stabilization measures are not required:

(i) Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable; or

(ii) Where construction activity on a portion of the site is temporary ceased and earth disturbing activities will be resumed with fourteen (14) days or seven (7) days for slopes of thirty-five percent (35%) or steeper.

(s) Design of erosion and sediment control measures. Erosion prevention and sediment control measures shall be designed to minimize erosion and maximize sediment removal resulting from a 2-year, 24-hour design storm, as a minimum. When clay and other fine particles are present at the construction site, chemical treatment may be used to minimize the amount of sediment being discharged. For construction sites discharging into a water with unavailable parameters due to siltation/sedimentation or Exceptional Tennessee Waters shall be designed to minimize erosion and maximized sediment removal resulting from a 5-year, 24-hour design storm.

(t) Sediment basins. For an on-site outfall which receives drainage from ten (10) or more acres, a sediment basin that will provide treatment for a calculated volume of runoff from a 2-year, 24-hour design storm and runoff from each acre drainage or equivalent control measures as specified in the Tennessee Erosion and Sediment Control Handbook, shall be provided until final stabilization of the site. For construction sites discharging into a water with unavailable parameters due to siltation/sedimentation or Exceptional Tennessee Waters, a sediment basin shall be provided for drainage areas of five (5) acres or more acres that will provide treatment for a calculated volume of runoff from a 5-year, 24-hour design storm and runoff from each acre drainage or equivalent measures as specified in the Tennessee Erosion and Sediment Control Handbook. The design drainage area includes both disturbed and undisturbed portions of the site or areas adjacent to the site, all draining through a common outfall.

(u) Sediment traps. For construction sites discharging into a water with unavailable parameters due to siltation/sedimentation or Exceptional Tennessee Waters, a sediment trap shall be provided for drainage areas of 3.5 to 4.9 acres that will provide treatment for a

calculated volume of runoff from a 5-year, 24-hour design storm and runoff from each acre drainage or equivalent measures as specified in the Tennessee Erosion and Sediment Control Handbook.

(v) **Dewatering.** Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered or chemically treated prior to its discharge into surface waters. Water must be discharged through a pipe, well-grassed or lined channel or other equivalent means so that the discharge does not cause erosion and sedimentation. Discharged water must not cause an objectionable color contrast with the receiving stream.

14-605. Permanent stormwater management: operation, maintenance, and inspection. (1) Record drawings. All applicants are required to submit record drawings for any stormwater management structures located on-site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be sealed by a registered professional engineer licensed to practice in Tennessee.

(2) Landscaping and stabilization requirements. (a) Any area of land from which the natural vegetative cover has been either partially or wholly cleared by development activities shall stabilize. Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site (or a phase of the project must be completed not later than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased. In the following situations, temporary stabilization measures are not required:

(i) Where the initiation of stabilization measures is precluded by snow cover or frozen ground conditions or adverse soggy ground conditions, stabilization measures shall be initiated as soon as practicable; or

(ii) Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within fourteen (14) days.

(b) Permanent stabilization means that all soil disturbing activities at the site have been completed and one of three following criteria is met:

(i) A perennial, preferably native, vegetative cover with a uniform (i.e., evenly distributed, without large bare areas) density of at least 70 percent has been established on all unpaved areas and areas not covered by permanent structures, and all slopes and channels have been permanently stabilized against erosion.

(ii) Equivalent permanent stabilization measures such

as the use of riprap; permanent geotextiles; hardened surface materials including concrete, asphalt, gabion baskets, or reno mattresses have been employed.

(iii) For construction projects on land used for agricultural or silvicultural purposes, permanent stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural or silvicultural use.

(c) In addition to the above requirements, a landscaping plan must be submitted with the final design describing the vegetative stabilization and management techniques to be used at a site after construction is completed. This plan will explain not only how the site will be stabilized after construction, but who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved.

(3) Stormwater system long-term operation and maintenance. (a) The maintenance responsibilities for all permanent stormwater runoff control facilities shall be responsibility of the owner.

(b) An engineer shall provide a stormwater infrastructure long-term operation and maintenance plan with an opinion of probable costs and schedule, subject to approval by the City Engineer for all permanent stormwater structures. The long-term operation and maintenance plan shall be in writing, shall be in recordable form, and shall, in addition to any other terms deemed necessary by the city engineer, contain a provision permitting inspection at any reasonable time by the city engineer or his designee of the facilities deemed critical to the public welfare and be recorded with the County registrar.

(c) The long-term maintenance plan and agreement will be submitted to the City Engineer during the plans review process.

(d) For a subdivision, the long-term maintenance agreement shall be submitted to the County registrar and recorded by the Developer prior to the recording of the Final Plat.

(e) For a Site Plan, the long-term maintenance agreement shall be submitted to the County registrar and recorded prior to the issuance of a Certificate of Occupancy.

(f) The City of La Vergne will have the authority to maintain facilities not properly maintained and to recover costs associated with the maintenance from the owner.

(g) Upon approval of the stormwater management facilities by the city engineer, the facility owner shall demonstrate the ability to garner and apply the financial resources necessary for long-term maintenance requirements. The funding mechanism shall be in a form approved by the City of La Vergne. The city will only approve funding mechanism(s) for long-term maintenance responsibilities that can be demonstrated to be permanent or transferable to another entity with

equivalent longevity.

(h) If a responsible party fails or refuses to meet the design or maintenance standards required for stormwater facilities under this ordinance, the City of La Vergne, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the City of La Vergne shall notify in writing the party responsible for maintenance of the stormwater management facility. Upon receipt of that notice, the responsible person shall have ten (10) days to effect maintenance and repair of the facility in an approved manner. In the event that corrective action is not undertaken within that time, the City of La Vergne may take necessary corrective action. The cost of any action by the City of La Vergne under this section shall be charged to the responsible party.

(4) Water Quality Riparian Buffers. The goal of the water quality riparian buffer is to preserve undisturbed vegetation that is native to the streamside habitat in the area of the project. Vegetated, preferably native, water quality riparian buffers protect water bodies by providing structural integrity and canopy cover, as well as stormwater infiltration, filtration, and evapotranspiration.

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

(i) The water quality riparian buffer shall be defined as the area contained within a boundary established sixty feet (60') measured perpendicular from the top of bank; around the perimeter of a stream, pond or lake measured perpendicular to the contour at which normal pool is located around; and around the perimeter of a wetland.

(ii) Stormwater discharges should enter the water quality riparian buffer as sheet flow, not as concentrated flow, where site conditions allow.

(iii) Activities allowed between 30' to 60' from the top of bank:

- a. For waterways that are NOT identified by the State of Tennessee either as having unavailable parameters for siltation/ sedimentation or as being an Exceptional Tennessee Water:

(A) Public greenways, biking trails, and walking trails;

(B) Private walking and biking trails can also be approved by the City Engineer upon

review of a study demonstrating the vegetation protection methods to be used for the trails, the hydraulic measures required to pass water through the trail without violating any requirements of this ordinance, the long-term maintenance plan for the trail, and demonstrating the value to the community of the path. The ability to tie a path to the present or planned public greenway system will be considered as a significant criteria for approval;

(C) Infiltration-based SCMs such as infiltration trenches and biofiltration basins may be allowed on a case-by-case basis if approved in writing by the City Engineer. This can only be approved if such SCMs improve the biodiversity or aesthetic appearance of the buffer areas. Economics or constructability of a development cannot be used as criteria for allowing an SCM to be place in the buffer;

(D) Road and utilities crossings. Private drives and private utility crossings may also be approved by the City Engineer upon review of a complete submittal demonstrating that there is no feasible alternate route;

(E) Linear utilities; and

(F) The City Engineer may determine that other limited uses are in the best interest of the overall water quality of the City of La Vergne.

(G) Economics or constructability of a development cannot be used as a criteria for allowing such a use to be placed in the buffer.

- b. In the event that a stream IS identified by the State of Tennessee either as having unavailable parameters for siltation/ sedimentation or as being an Exceptional Tennessee Water, the activities listed above are permitted no closer than 30 feet from the top of bank. However, there must be an average of sixty feet (60') of water quality riparian buffer through the development. The riparian buffer must be measured to the interior edge of the activity listed above. If the construction encompasses both sides of a stream,

buffer averaging can be applied to both sides, but each side must average the sixty feet (60') criterion independently.

(iv) Water quality riparian buffers shall be protected during development activities. The water quality riparian buffers shall be clearly marked during construction activities.

(v) Water quality riparian buffers shall be recorded on the plat. Site development plans and plats prepared for recording shall:

(A) Define the boundaries of the water quality riparian buffer on the subject property.

(B) Provide a note stating: "There shall be no clearing, grading, construction, or disturbance of vegetation in the water quality riparian buffer except as permitted by the City of La Vergne."

(C) Provide a note to reference any protective covenants governing water quality riparian buffers stating: "Water quality riparian buffers shown hereon are subject to protective covenants which may be found in the land records, and which restrict disturbance and use of these area."

(5) Sinkhole/Injection Well Policy. (a) A TDEC injection well permit is required for any use or modification of a /injection well.

(b) Drainage calculations shall be submitted for any development in or around sinkholes.

(c) Post-developed flows and volume shall not exceed pre-developed flow and volumes entering into a sinkhole for a development or redevelopment.

(d) Any "capping" of a sinkhole shall be done under the direction and approval of the City Engineering Department. Drainage formerly entering the capped sinkhole shall be accounted by providing stormwater calculations showing equal conveyance capacity by an alternative outfall.

(e) Any alternative stormwater management measure requested in lieu of the sinkhole/injection well policy requirements shall be presented to the La Vergne Stormwater Appeals Board.

14-606. Existing locations and ongoing developments. (1) Requirements for existing locations and developments. The following requirements shall apply to all locations and development at which land disturbing activities have occurred previous to the enactment of this ordinance:

(a) Denuded areas shall be vegetated or covered using guidelines specified in the manuals adopted in this chapter and on a schedule acceptable to the city engineer.

- (b) Trash, junk, rubbish, etc. shall be cleared from streams, ditches, and other stormwater conveyances.
- (c) Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters. Such control measures may include, but are not limited to, the following:
 - (i) Ponds;
 - (ii) Constructed wetlands;
 - (iii) Infiltration systems;
 - (iv) Filtering systems;
 - (v) Open channel.

(2) Requirements for existing problem locations. Based upon the regulations in place at the time SCMs were constructed, the city engineer shall in writing notify the owners of existing locations and developments of specific drainage, erosion or sediment problem affecting such locations and developments, and the specific actions required to correct those problems. The notice shall also specify a reasonable time for compliance.

Inspection of existing facilities. The City of La Vergne may, to the extent authorized by state and federal law, establish inspection programs to verify that all stormwater management facilities, including those built before the adoption of this ordinance, are functioning within design limits. These inspection programs may be established on any reasonable basis, including but not limited to: routine inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other BMPs.

14-607. Inspections. Inspections shall be performed to ensure that vegetation, erosion and sediment control measures and other protective measures identified in the site plan are kept in good and effective operating condition.

- (1) Inspections by the owner or responsible party.
 - (a) Inspections as required by the CGP.
 - (b) Submission of inspection documentation upon request by the city engineer.
 - (c) Construction stormwater management BMPs must be inspected and certified that the BMPs are in accordance with the

approved plans, prior to granting building permit on sites requiring a land disturbance permit.

(d) Post-construction SCMs must be inspected and certified that the SCMs are in accordance with the approved plans prior to release of surety.

(e) Routine inspections of all SCMs built after the adoption of this ordinance shall be conducted on an annual basis at a minimum by the responsible party. These inspections shall be conducted by a person familiar with the control measures implemented on site. Owners or operators shall maintain documentation of these inspections and submit annually to the city engineer.

(f) Comprehensive inspection of all stormwater management facilities and practices built or implemented after the adoption of this ordinance shall be conducted once every five (5) years at a minimum by the responsible party. Such inspections must be conducted by either a professional engineer or landscape architect, licensed in the State of Tennessee and submitted to the city engineer. Complete inspection reports for these five (5) year inspections shall include:

- (i) Facility type,
- (ii) Inspection date,
- (iii) Latitude and longitude and nearest street address,
- (iv) SCM owner information (e.g. name, address, phone number, and email)
- (v) A description of current SCM conditions including, but not limited to: green infrastructure practices, grassy areas, forested areas, buffer areas, growing vegetation and soil properties; inlet and outlet channels and structures; embankments, slopes, and safety benches; spillways, weirs, and other control structures; and any sediment and debris accumulation,
- (vi) Photographic documentation of SCMs, and
- (vii) Specific maintenance items or violations that need to be corrected by the SCM owner along with deadlines and reinspection dates.

(2) City of La Vergne inspections. City inspections may include, but are not limited to, the following:

- (a) An initial erosion prevention and sediment control inspection to verify initial BMP measures have been installed per the approved plan set prior to grading activities;
- (b) A bury inspection prior to burial of any underground drainage structure that is intended to be submitted by the Developer for acceptance from the City;
- (c) Erosion prevention and sediment control inspections as necessary to ensure effective control of erosion and sedimentation;

- (d) A final inspection to verify work has been completed and create punch list of tasks to be completed prior to final inspection;
- (e) An acceptance inspection when all work, including installation of SCMs, has been completed; and
- (f) Periodic inspections to ensure SCMs are being maintained.

14-608. Illicit discharges. (1) Prohibition of illicit discharges. (a) Pursuant to the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) program administered by the TDEC illicit discharges to the MS4 are being defined as illegal. This is accomplished by identifying allowable non-stormwater discharges into the MS4 in the best interest of the City of La Vergne, Tennessee.

(b) Non-stormwater discharge means any discharge to the municipal separate storm sewer system except as permitted by subsection (2).

(c) Except as hereinafter provided, all non-stormwater discharges into the municipal separate storm sewer system are prohibited and declared to be unlawful.

(2) Allowable stormwater discharges. (a) Unless the City of La Vergne, TDEC, EPA or other regulatory agency has identified them as a source of pollutants to the "Waters of the State of Tennessee," the following non-stormwater discharges into the MS4 are lawful:

- (i) Water line flushing or other potable water sources;
- (ii) Landscape irrigation or lawn watering with potable water;
- (iii) Diverted stream flows;
- (iv) Rising ground water;
- (v) Groundwater infiltration to storm drains;
- (vi) Pumped groundwater;
- (vii) Foundation or footing drains;
- (viii) Crawl space pumps;
- (ix) Air conditioning condensation;
- (x) Springs;
- (xi) Non-commercial washing of vehicles;
- (xii) Natural riparian habitat or wet-land flows;
- (xiii) Swimming pools (if dechlorinated – typically less than one (1) PPM chlorine);
- (xiv) Firefighting activities;
- (xv) Any other uncontaminated water source;
- (xvi) Discharges specified in writing by the City of La Vergne as being necessary to protect public health and safety; and
- (xvii) Dye testing as an allowable discharge if the City of La Vergne has so specified in writing.

(b) Discharges authorized by the CGP, which comply with section 1.2.3 of the same:

- (i) Dewatering of collected stormwater and groundwater discharged in accordance with Section 4.1.3 of the CGP (filtering or chemical treatment may be necessary prior to discharge);
- (ii) Waters used to wash vehicles (of dust and soil, not process materials such as oils, asphalt or concrete) where detergents are not used and detention and/or filtering is provided before the water leaves site;
- (iii) Water used to control dust in accordance with CGP section 5.5.3.7;
- (iv) Potable water sources, including waterline flushings, from which chlorine has been removed to the maximum extent practicable;
- (v) Routine external building washdown that does not use detergents or other chemicals;
- (vi) Uncontaminated, non-turbid groundwater or spring water;
- (vii) Foundation or footing drains where flows are not contaminated with pollutants (process materials such as solvents heavy metals, etc.);
- (viii) Fire hydrant flushings; and
- (ix) Pavement wash waters, provided spills or leaks or other toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used.

(3) Prohibition of illicit connections. The construction, use, maintenance or continued existence of illicit connections to the municipal separate storm sewer system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(4) Reduction of stormwater pollutants by the use of stormwater control measures. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge, will be required to implement, at the person's expense, the SCMs necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed in compliance with the provisions of this section. Discharges from existing SCMs that have not been maintained and/or inspected in accordance with this ordinance shall be regarded as illicit.

(5) Notification of spills. Notwithstanding other requirements of law,

as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging into stormwater, the municipal separate storm sewer system, the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, the person shall notify the city engineer or his designee in person, email, or by telephone no later than the next business day. Notifications in person, email or by telephone shall be confirmed by written notice addressed and emailed, mailed, or faxed to the city engineer or his designee within three (3) business days of the notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three (3) years.

(6) No illegal dumping allowed. No person shall dump or otherwise deposit outside an authorized landfill, convenience center or other authorized garbage or trash collection point, any trash or garbage of any kind or description on any private or public property, occupied or unoccupied, inside the city.

(7) Priority areas. The administrator is authorized to regulate priority areas. Upon written notification by the administrator, the property owner or designated facility manager of a priority area shall, at their expense, implement necessary controls and/or best management practices to prevent discharge of contaminated stormwater to municipal separate storm sewer system. The administrator may require the facility to maintain inspection logs or other records to document compliance with this paragraph.

14-609. Enforcement. (1) Enforcement authority. The city engineer or his designee shall have the authority to issue notices of violation and citations, and to impose the civil penalties provided in this section guided by the Enforcement Response Plan (ERP).

(2) Notification of violation. (a) Written notice. Whenever the city engineer or other appropriate city official finds that any permittee or any other person discharging stormwater has violated or is violating this ordinance or a permit or order issued hereunder, the city engineer or his designee may serve upon such person written notice of the violation. Within ten (10) days of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the city engineer. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

(b) Consent orders. The City of La Vergne is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to subsections (d) and (e) below.

(c) Show cause hearing. The City of La Vergne may order any person who violates this ordinance or permit or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the person specifying the time and place for the meeting, the proposed enforcement action and the reasons for such action should not be taken. The notice of the meeting shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days prior to the hearing.

(d) Compliance order. When the city engineer or his designee finds that any person has violated or continues to violate this ordinance or a permit or order issued hereunder, the city engineer or his designee may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including the construction of appropriate structures, installation of devices, self-monitoring, and management practices.

(e) Cease and desist orders. When the city engineer or his designee finds that any person has violated or continues to violate this ordinance or any permit or order issued hereunder, the city engineer or his designee may issue an order to cease and desist all such violations and direct those persons in noncompliance to:

- (i) Comply forthwith; or
- (ii) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

(iii) Conflicting standards. Whenever there is a conflict between any standard contained in this ordinance and in the BMP manual adopted by the City of La Vergne under this ordinance, the strictest standard shall prevail.

14-610. Penalties. (1) Violations. Any person who shall commit any act declared unlawful under this ordinance, who violates any provision of this ordinance, who violates the provisions of any permit issued pursuant to this ordinance, or who fails or refuses to comply with any lawful communication or

notice to abate or take corrective action by the City of La Vergne, shall be guilty of a civil offense.

(2) Penalties. Under the authority provided in Tennessee Code Annotated, § 68-221-1106, the City of La Vergne declares that any person violating the provisions of this ordinance may be assessed a civil penalty by the City of La Vergne of not less than fifty dollars (\$50.00) and not more than five thousand dollars (\$5,000.00) per day for each day of violation. Each day of violation shall constitute a separate violation.

(3) Measuring civil penalties. In assessing a civil penalty, the City of La Vergne may consider:

- (a) The harm done to the public health or the environment;
- (b) Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;
- (c) The economic benefit gained by the violator;
- (d) The amount of effort put forth by the violator to remedy this violation;
- (e) Any unusual or extraordinary enforcement costs incurred by the City of La Vergne;
- (f) The amount of penalty established by ordinance or resolution for specific categories of violations; and
- (g) Any equities of the situation which outweigh the benefit of imposing any penalty or damage assessment.

(4) Recovery of damages and costs. In addition to the civil penalty in § 14-610(2), the City of La Vergne may recover:

- (a) All damages proximately caused by the violator to the City of La Vergne, which may include but not be limited to any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation including attorney's fees.
- (b) The costs of the City of La Vergne's maintenance of stormwater facilities when the user of such facilities fails to maintain them as required by this ordinance.

(5) Other remedies. The City of La Vergne may bring legal action to enjoin the continuing violation of this ordinance, and the existence of any other remedy, at law or equity, shall be no defense to any such actions.

(6) Remedies cumulative. The remedies set forth in this section shall be cumulative, not exclusive, and it shall not be a defense to any action, civil or criminal, that one (1) or more of the remedies set forth herein has been sought or granted.

(7) False reports. False reporting of stormwater issues to the City of La Vergne is a violation. In the event that three false reports (whether in the same location or varied locations) are made to the city by or on behalf of the same individual, that individual will be subject to a \$500 fine. For each false

report after the third, the fine will be \$500 per additional false report. A report will be determined to be false if a field inspection is made by the City of La Vergne officials and the report is found to be either non-existent or exaggerated.

14-611. Appeals. Pursuant to Tennessee Code Annotated, § 68-221-1106(d), any person aggrieved by the imposition of a civil penalty, decision or damage assessment as provided by this ordinance may appeal said penalty, decision or damage assessment to the City of La Vergne's Stormwater Administrative Board.

(1) Appeals to be in writing. The appeal shall be in writing and filed with the City of La Vergne clerk within fifteen (15) days after the civil penalty and/or damage assessment is served in any manner authorized by law.

(2) Public hearing. Upon receipt of an appeal, the City of La Vergne's Stormwater Administrative Board shall hold a public hearing within thirty (30) days. Ten (10) days prior notice of the time, date, and location of said hearing shall be published in a daily newspaper of general circulation. Ten (10) days notice by registered mail shall also be provided to the aggrieved party, such notice to be sent to the address provided by the aggrieved party at the time of appeal. The decision of the City of La Vergne's Stormwater Administrative Board shall be final.

(3) Appealing decisions of the City of La Vergne. Any alleged violator may appeal a decision of the City of La Vergne's Stormwater Administrative Board pursuant to the provisions of Tennessee Code Annotated, title 27, chapter 8.

14-612. Severability. Should any article, section, subsection or provision of this Comprehensive Stormwater Management Ordinance be declared by a court of competent jurisdiction to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole or any part thereof other than the part declared to be unconstitutional or invalid, each article, section, clause and provision being declared severable. If any provisions of this ordinance and any other provisions of law impose overlapping or contradictory regulations or contain any restrictions covering any of the same subject matter, that provision which is more restrictive or imposes higher standards or requirements shall govern.

CHAPTER 7

STORMWATER USER FEE

(No changes – provided for information only)

SECTION

14-701. Definitions.

14-702. Stormwater user fee.

14-703. Stormwater user fee collection.

14-704. Stormwater user fee determination.

14-701. Definitions. For the purpose of this chapter, the following definitions shall apply; words used in the singular shall include the plural, and the plural, the singular; words used in the present tense shall include the future tense. The word "shall" is mandatory and not discretionary. The word "may" is permissive. Words not defined herein shall be construed to have the meaning given by common and ordinary use as defined in the latest edition of Webster's Dictionary.

(1) "Billing period" means the period identified from the first day of the month to the last day of the month. All bills rendered during a month are for the period beginning on the first day of the same month and are valid for that entire month unless otherwise identified. When city water service is discontinued during a month, the drainage fee due for that account shall be the pro rata portion of the month for which water services were active. When a developed property that does not receive city water service changes ownership during a billing period, the account existing on the first day of the billing period shall be liable for the pro rata portion of the drainage fee for that billing period from the first day of the billing period until the day the deed conveying the real property is executed.

(2) "Bonds" means revenue bonds, notes, loans or any other debt obligations issued or incurred to finance the costs of construction.

(3) "Calendar year" means a twelve (12) month period commencing on the first day of January of any year.

(4) "City engineer" means the city engineer, or his designee.

(5) "Costs of construction" means reasonable costs incurred in connection with providing capital improvements to the system or any portion thereof, including, but not limited to, the costs of:

(a) Acquisition of all property, real or personal, and all interests in connection therewith including all rights-of-way and easements therefor,

(b) Physical construction, installation and testing, including the costs of labor, services, materials, supplies and construction services used in connection therewith,

(c) Architectural, engineering, legal and other professional services,

(d) Insurance premiums taken out and maintained during construction, to the extent not paid for by a contractor for construction and installation,

(e) Any taxes or other charges which become due during construction,

(f) Expenses incurred by the city or on its behalf with its approval in seeking to enforce any remedy against any contractor or bus-contractor in respect of any default under a contract relating to construction,

(g) Principal of and interest of any bonds, and

(h) Miscellaneous expenses incidental thereto.

(6) "Debt service" means, with respect to any particular calendar year and any particular series of bonds, an amount equal to the sum of (i) all interest payable on such bonds during such calendar year, plus (ii) any principal installments of such bonds during such calendar year.

(7) "Developed property" means real property other than undisturbed property and vacant improved property.

(8) "Dwelling unit" means a singular unit or apartment providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

(9) "Equivalent Residential Unit" or "ERU" means the average impervious area of residential developed property per dwelling unit located within the city and as established by the board of mayor and aldermen.

(10) "ERU rate" means a utility fee charged on each ERU as established by the board of mayor and aldermen.

(11) "Exempt property" means property owned and/or operated by the City of La Vergne, public rights-of-way, public streets, public alleys, and public sidewalks.

(12) "Extension and replacement" means costs of extensions, additions and capital improvements to, or the renewal and replacement of capital assets of, or purchasing and installing new equipment for, the system, or land acquisitions for the System and any related costs thereto, or paying extraordinary maintenance and repair, including the costs of construction, or any other expenses which are not costs of operation and maintenance or debt service.

(13) "Impervious area" means the number of square feet of hard surfaced areas which either prevent or retard the entry of water into soil mantle, as it entered under natural conditions as undisturbed property, and/or causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions as undisturbed property, including, but not limited to, roofs, roof extensions, patios, porches, driveway, sidewalks, pavement and athletic courts.

(14) "Nonresidential developed property" means developed property that is not utilized for dwelling units within the city.

(15) "Operating budget" means the annual operating budget adopted by the city for the succeeding fiscal year.

(16) "Operations and maintenance" means the current expenses, paid or accrued, of operation, maintenance and current repair of the system, as calculated in accordance with sound accounting practice, and includes, without limiting the generality of the foregoing, insurance premiums, administrative expenses, labor, executive compensation, and cost of materials and supplies used for current operations, and charges for the accumulation of appropriate reserves for current expenses not annually incurred, but which are such as may reasonably be expected to be incurred in accordance with sound accounting practice.

(17) "Revenues" mean all rates, fees, assessments, rentals or other charges or other income received by the stormwater user fee fund, in connection with the management and operation of the system, including amounts received from the investment or deposit of moneys in any fund or account and any amounts contributed by the city, all as calculated in accordance with sound accounting practice.

(18) "Stormwater management system" or "system" means the existing stormwater management of the city and all improvements thereto which by this chapter are constituted as the property and responsibility of the city, to be operated as an enterprise fund to, among other things, conserve water, control discharges necessitated by rainfall events, incorporate methods to collect, convey, store, absorb, inhibit, treat, use or reuse water to prevent or reduce flooding, over-drainage, environmental degradation and water pollution or otherwise affect the quality and quantity of discharge from such system.

(19) "Stormwater user fee" means a fee authorized by ordinance(s) established to pay operations and maintenance, extension and replacement and debt service.

(20) "Stormwater user fee fund" means the enterprise fund created by this chapter to operate, maintain and improve the system and for such other purposes as stated in this chapter.

(21) "Undisturbed property" means real property which has not been altered from its natural state by grading, dredging, filling, removal of trees and vegetation or other activities which have disturbed or altered the topography or soils on the property.

(22) "User fee district" means the area or property within the corporate limits of the City of La Vergne.

(23) "Vacant improved property" means vacant property which is, or could reasonably be, served by any subdivision improvements that allow egress. (Ord. #2005-08, June 2005, as amended by Ord. #2009-27, Oct. 2009)

14-702. Stormwater user fee. Subject to the provisions of this chapter, each and every residential developed property, nonresidential developed property and vacant improved property, other than exempt property, within the

corporate limits of the city, and the owners and non-owner users thereof, have imposed upon them a stormwater user fee. In the event the owner and non-owner users of a particular property are not the same, the liability for each the owner and non-owner user for the user fee attributable to that property shall be joint and several. The stormwater user fee shall be a monthly or a regular interval service charge and shall be determined by the provisions of this chapter and the ERU and ERU rate which shall be established and changed from time to time by the board of mayor and aldermen. (Ord. #2005-08, June 2005)

14-703. Stormwater user fee collection. The stormwater user fee for metered property shall be billed and collected monthly with the monthly city's services utility bill for those properties within the corporate limits of the city utilizing the city utilities and billed and collected separately as stormwater user fees for those properties not utilizing other city utilities. All such bills for stormwater user fees shall be rendered monthly by the City of La Vergne. The stormwater user fee for those properties utilizing city utilities is part of a consolidated statement for utility customers which is generally paid by a single payment. In the event that a partial payment is received, the payment shall be applied pro-rata to each account billed on the consolidated statement in the proportion that an individual account bears to the total consolidated statement of all current charges for all accounts. The stormwater user fee for unmetered property shall be billed at regular intervals. All bills for stormwater user fees shall become due and payable in accordance with the rules and regulations of the City of La Vergne pertaining to the collection of the stormwater user fees. (Ord. #2005-08, June 2005)

14-704. Stormwater user fee determination. There is hereby established the following uniform schedule of rates for the services and use of facilities of the stormwater management system by the owner, tenant, or occupant of the premises using the services and facilities of said system:

(1) The board of mayor and aldermen, upon recommendation of the city engineer, shall, by resolution, establish reasonable rates for stormwater management systems for each single family residence: Each single family residence shall be billed at a flat fee established by the board of mayor and aldermen for an equivalent residential unit. An equivalent residential unit is hereby defined as the statistical average horizontal impervious area of detached single family residential units in the City of La Vergne.

(2) Parcels which are undeveloped shall be assessed a stormwater user fee. The bill shall be determined by dividing the total land area of the property, in square feet, by the area of an equivalent residential unit times a correction factor. The correction factor shall be based on the relative volume of runoff from an undeveloped property and that of a typical single family residence, under typical hydrologic conditions.

(3) For all nonresidential properties, that is enterprise, business establishment, building, or other occupancy not covered by subsections (1) and (2) of this section, the rate shall be computed based on the total impervious area of the property divided by the average impervious area of an equivalent residential unit times the rate established for an equivalent residential unit. The billing amount shall be updated by the city engineer based on any additions to the impervious areas as approved through the building permit process. (Ord. #2005-08, June 2005, modified)

CHAPTER 8

STORMWATER APPEALS AND ADVISORY BOARD

(No changes – provided for information only)

SECTION

- 14-801. Creation and membership of the stormwater appeals and advisory board.
- 14-802. Terms and vacancies.
- 14-803. General administration.
- 14-804. Duties of the board.
- 14-805. Appeals to the board.
- 14-806. Public hearing.
- 14-807. Appealing decisions of the board.

14-801. Creation and membership of the stormwater appeals and advisory board. Pursuant to Tennessee Code Annotated, § 68-221-1106, the City of La Vergne hereby creates a board to hear and decide appeals of the stormwater management ordinance and to make recommendations to the board of mayor and aldermen regarding the stormwater management ordinance. This board shall be called the "stormwater appeals and advisory board" (hereinafter referred to as "the board"). The board shall consist of seven (7) members, appointed by the mayor, subject to confirmation by the board of mayor and aldermen. Every effort shall be made to appoint six (6) members from the following general constituencies: one (1) member shall be from the profession of building contractors; one (1) member shall be from the profession of engineering; one (1) member shall be from the profession of agriculture; one (1) member shall be from the residential / commercial development community; one (1) member shall be a member of an environmental association; and one (1) member shall be a resident of the City of La Vergne without regard to the location of the member's residence. One (1) member shall be appointed by the mayor from the board of aldermen, subject to the confirmation by the board of mayor and aldermen. Members of the board shall serve without compensation, but may be reimbursed for reasonable and necessary expenses. Every effort shall be made to appoint residents of the City of La Vergne to the board. (Ord. #2005-28, Nov. 2005)

14-802. Terms and vacancies. Members shall be appointed for four (4) year terms. Members shall be eligible for re-appointment. Members may be removed by the board of mayor and aldermen at the request of the chairman of the board or committee and the city engineer, if the member is absent from two (2) or more scheduled meetings in a row. Vacancies shall be filled by an appointment by the mayor, subject to confirmation by the board of mayor and aldermen to serve out the remainder of the vacating member's term. The alderman appointed to the board shall vacate his/her position by resignation,

upon departure from the board of mayor and aldermen, or by removal by the board of mayor and aldermen. (Ord. #2005-28, Nov. 2005, as replaced by Ord. #2011-26, Oct. 2011)

14-803. General administration. The board shall meet as needed. The board shall be empowered to adopt bylaws to govern the order of proceedings as well as a method for electing officers and keeping records. The city recorder or his designee shall be present at all meetings of the board, and shall keep a full and accurate record of all business transacted by the board to be preserved in permanent form. The board shall not have any authority over employees of the city, the stormwater management budget or property of the city, but shall act solely as an appeals and advisory board. The city engineer or his designee shall provide the necessary staff support for the work of the board and shall act as the liaison to the board of mayor and aldermen on the behalf of the board. (Ord. #2005-28, Nov. 2005)

14-804. Duties of the board. (1) The board is hereby authorized to hear and decide appeals of any order, decision or ruling of the city engineer or director of codes or their designee issued pursuant to the stormwater management ordinance. Following the hearing on an application for appeal, the board may affirm, reverse, modify or remand for more information, the order, decision or ruling of the city engineer or director of codes or their designee. In no event shall the board issue a decision that in any way conflicts or contradicts the stormwater management ordinance or any other federal, state or local laws or regulations relating to stormwater, wastewater, zoning or planning.

(2) The board shall also be authorized to hear and decide applications for a variance to the water quality riparian buffer policy.

(3) The board shall also act as the advisory board for the planning of the stormwater management program for the City of La Vergne. The board shall make recommendations to the board of mayor and aldermen regarding the stormwater management ordinance. (Ord. #2005-28, Nov. 2005, as amended by Ord. #2007-18, June 2006)

14-805. Appeals to the board. (1) Pursuant to Tennessee Code Annotated, § 68-221-1106(d), any person aggrieved by the imposition of a civil penalty or damage assessment as provided by these regulations may appeal said penalty or damage assessment to the board, created pursuant to the stormwater management ordinance. The appeal shall be in writing and filed with the city recorder within fifteen (15) days after the civil penalty and/or damage assessment is served in any manner authorized by law.

(2) Any person who applies for a variance to the water quality riparian buffer policy must file an application with the city recorder. A fee of one hundred dollars (\$100.00) payable to the City of La Vergne shall be charged to cover

partial review and processing of each application. (Ord. #2005-28, Nov. 2005, as amended by Ord. #2007-18, June 2006)

14-806. Public hearing. Upon receipt of an appeal or an application for a variance, the board shall hold a public hearing within thirty (30) days. Ten (10) days prior notice of the time, date, and location of said hearing shall be published in a newspaper of general circulation. Ten (10) days notice by registered mail shall also be provided to the appellant, such notice to be sent to the address provided by the appellant on the notice of appeal. The decision of the board shall be final. (Ord. #2005-28, Nov. 2005, as amended by Ord. #2007-18, June 2006)

14-807. Appealing decisions of the board. Any alleged violator may appeal a decision of the board pursuant to the provisions of Tennessee Code Annotated, title 27, chapter 8. (Ord. #2005-28, Nov. 2005)



DRAINAGE OPTIONS ANALYSIS AND VARIANCE REQUEST

4401 BENJAMIN FRANKLIN DRIVE



PURPOSE AND NOTE

THE HOME AT 4401 BENJAMIN FRANKLIN DRIVE PRESENTLY HAS FLOODING ISSUES.

THE PURPOSE OF THIS VARIANCE REQUEST PRESENTATION IS TO DETERMINE IF THE CITY OF LA VERGNE STORMWATER ADVISORY WILL GRANT A VARIANCE TO CITY CODE 14-603(3)(c) [WATER QUALITY] AND 14-603(4)(e) [WATER QUANTITY]. WITHOUT SUCH A VARIANCE, THERE IS NO REASON FOR THE STAKEHOLDERS TO EXPEND THE EXTENSIVE ENGINEERING COSTS ASSOCIATED WITH PURSUING THE OPTIONS PRESENTED HEREIN.

THIS PRESENTATION IS BASED ON A VERY PRELIMINARY AND SCHEMATIC REVIEW OF THE SITUATION. NO DETAILED SURVEYING OR ENGINEERING HAS BEEN DONE. THEREFORE, ANY NUMBERS OR ELEVATIONS QUOTED SHOULD BE CONSIDERED PRELIMINARY AND SUBJECT TO CHANGE.



EXISTING SITUATION

DRAINAGE AREAS



AREA A =
200 ACRES +/-

AREA B =
60 ACRES +/-

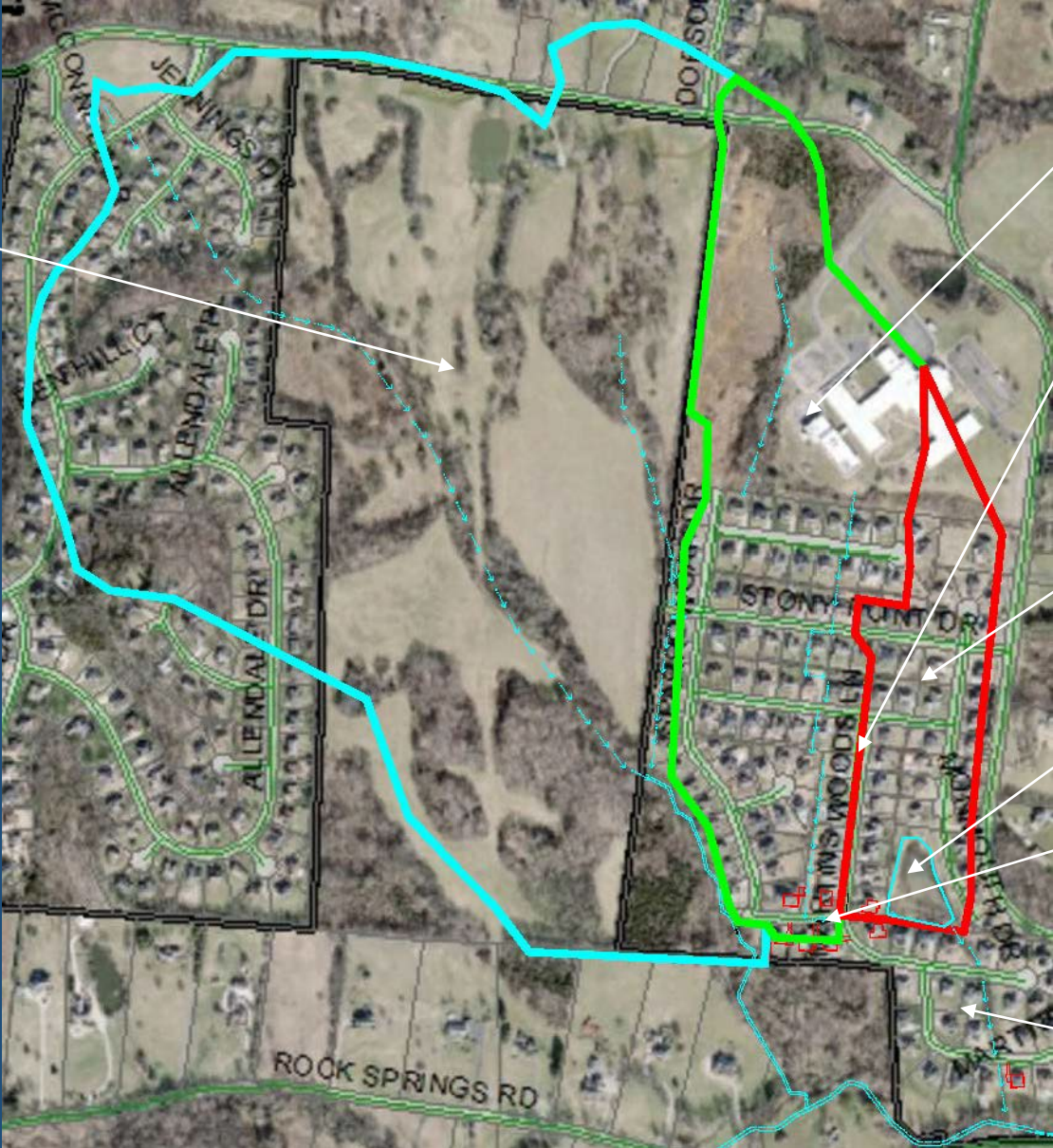
PINNACLE POINT
SUBDIVISION

AREA C =
20 ACRES +/-

POND

4401 BENJAMIN
FRANKLIN

THE WOODS AT
MARTINS BEND
SUBDIVISION





DRAINAGE BYPASSING PINNACLE POINT

AREA A =
200 ACRES +/-

AREA B =
60 ACRES +/-

PINNACLE POINT
SUBDIVISION

AREA C =
20 ACRES +/-

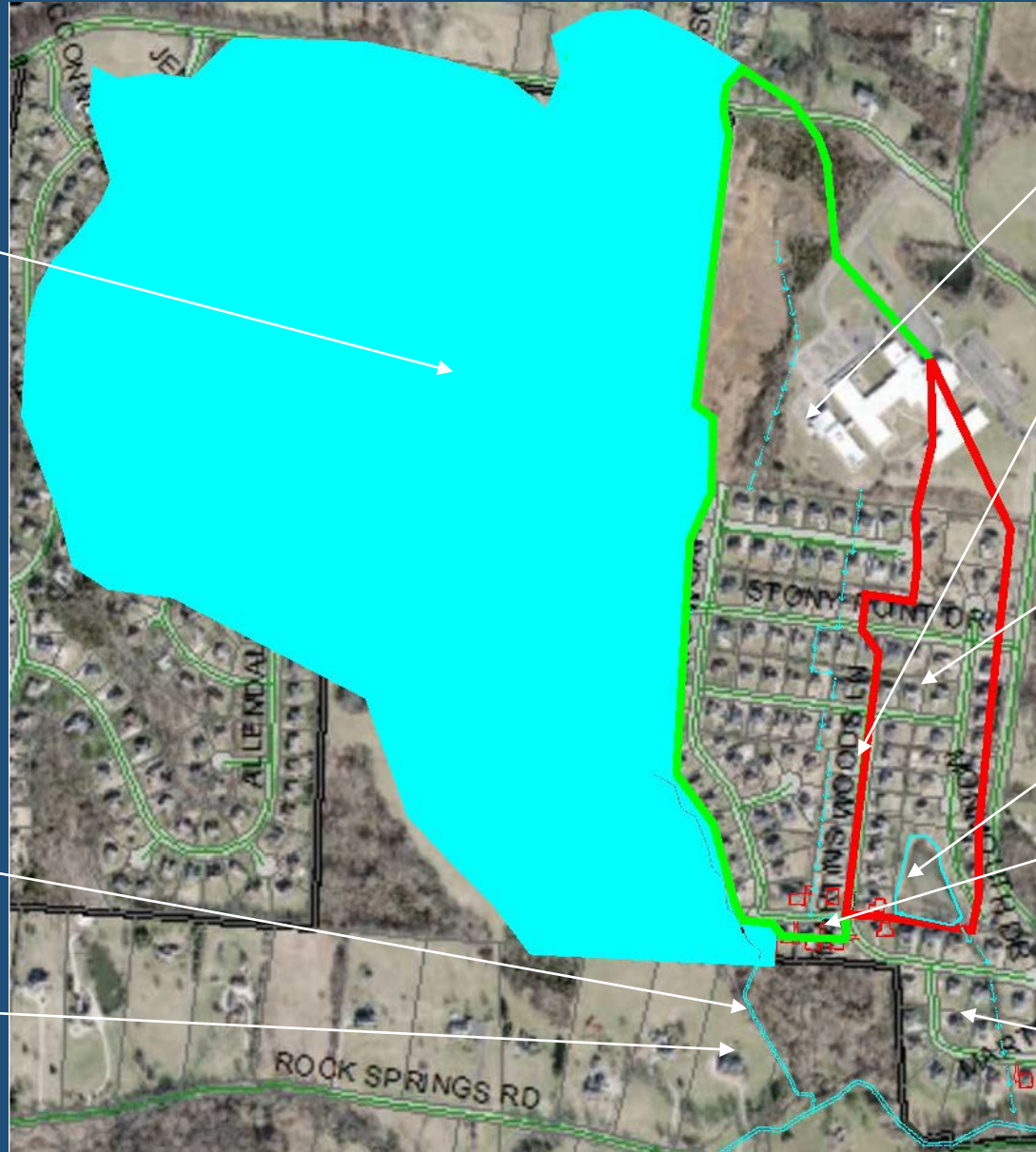
POND

4401 BENJAMIN
FRANKLIN

THE WOODS AT
MARTINS BEND
SUBDIVISION

750' OF STREAM
THROUGH
SMYRNA

5074 ROCK
SPRINGS ROAD,
SMYRNA





DRAINAGE INTO PINNACLE POINT POND

AREA A =
200 ACRES +/-



AREA B =
60 ACRES +/-

PINNACLE POINT
SUBDIVISION

AREA C =
20 ACRES +/-

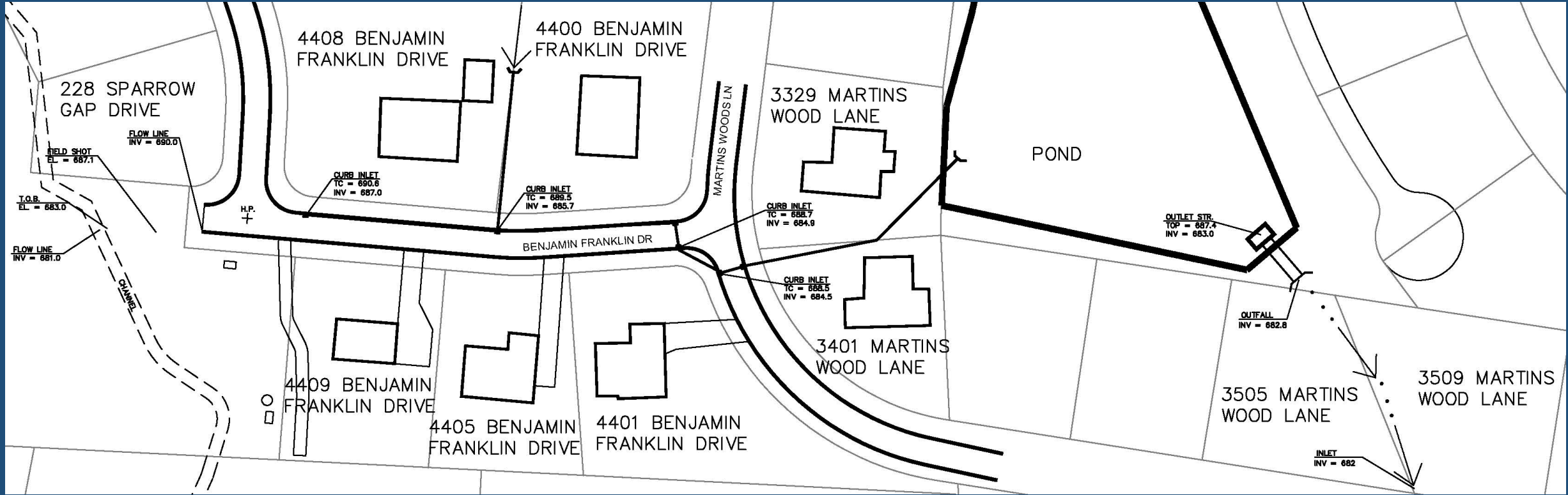
POND

4401 BENJAMIN
FRANKLIN

THE WOODS AT
MARTINS BEND
SUBDIVISION

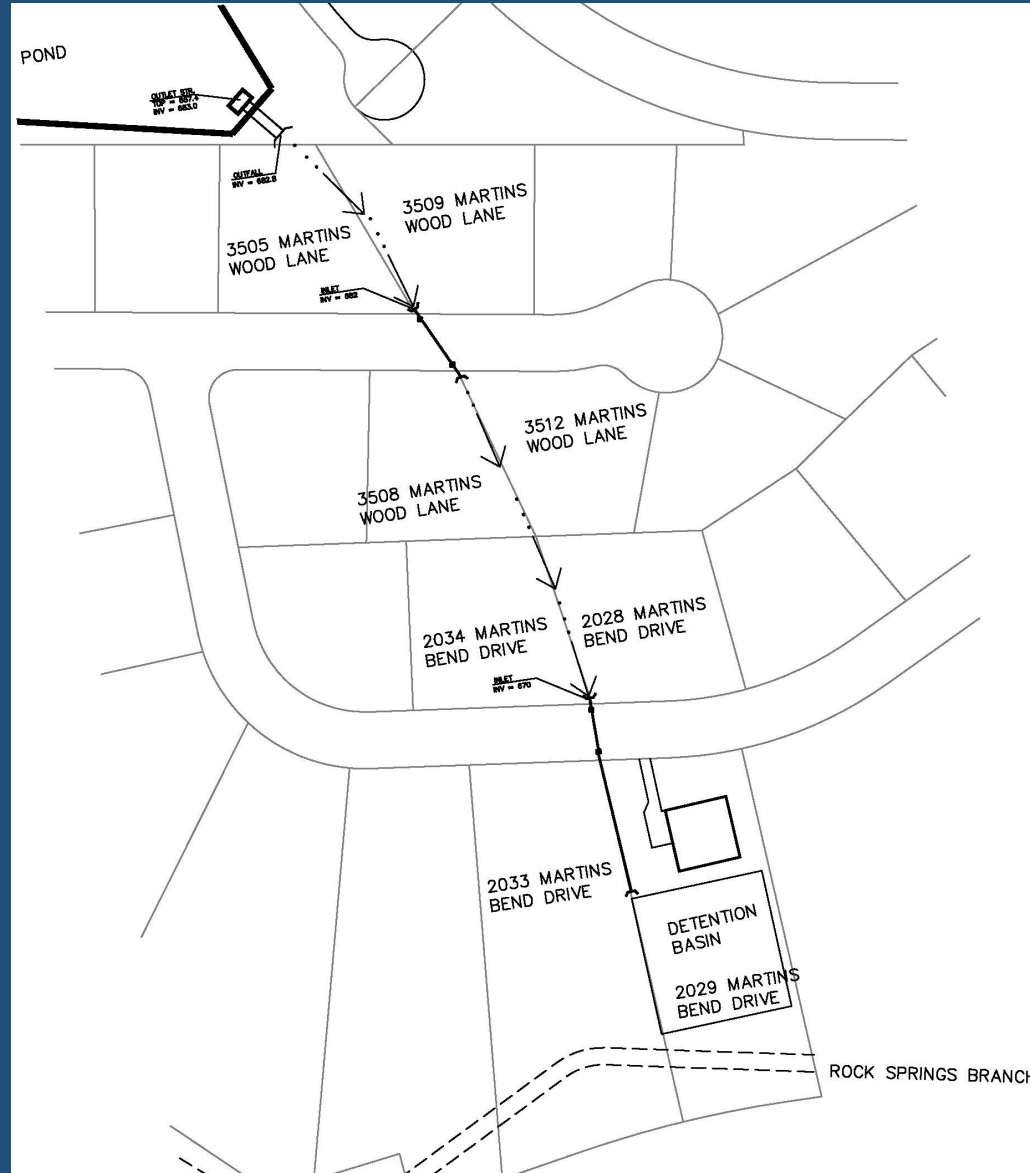


BENJAMIN FRANKLIN DRIVE





DRAINAGE FROM POND THROUGH THE WOODS AT MARTINS BEND



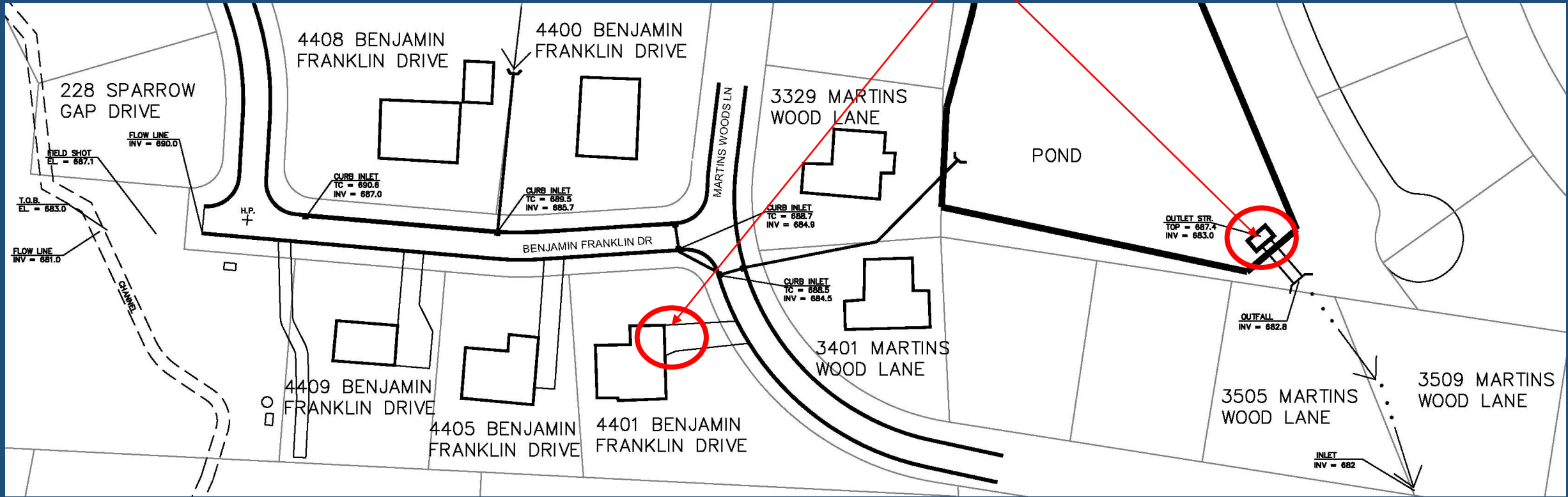


THE PRIMARY CHALLENGE



THE PRIMARY CHALLENGE

THE PRIMARY ISSUE IS THE LACK OF ELEVATION DIFFERENCE BETWEEN THE FLOOR ELEVATION OF 4401 BENJAMIN FRANKLIN AND THE TOP OF THE OUTFALL STRUCTURE





THE PRIMARY CHALLENGE

THE PRIMARY ISSUE IS THE LACK OF ELEVATION DIFFERENCE BETWEEN THE FLOOR ELEVATION OF 4401 BENJAMIN FRANKLIN AND THE TOP OF THE OUTFALL STRUCTURE



POND OUTFALL STRUCTURE



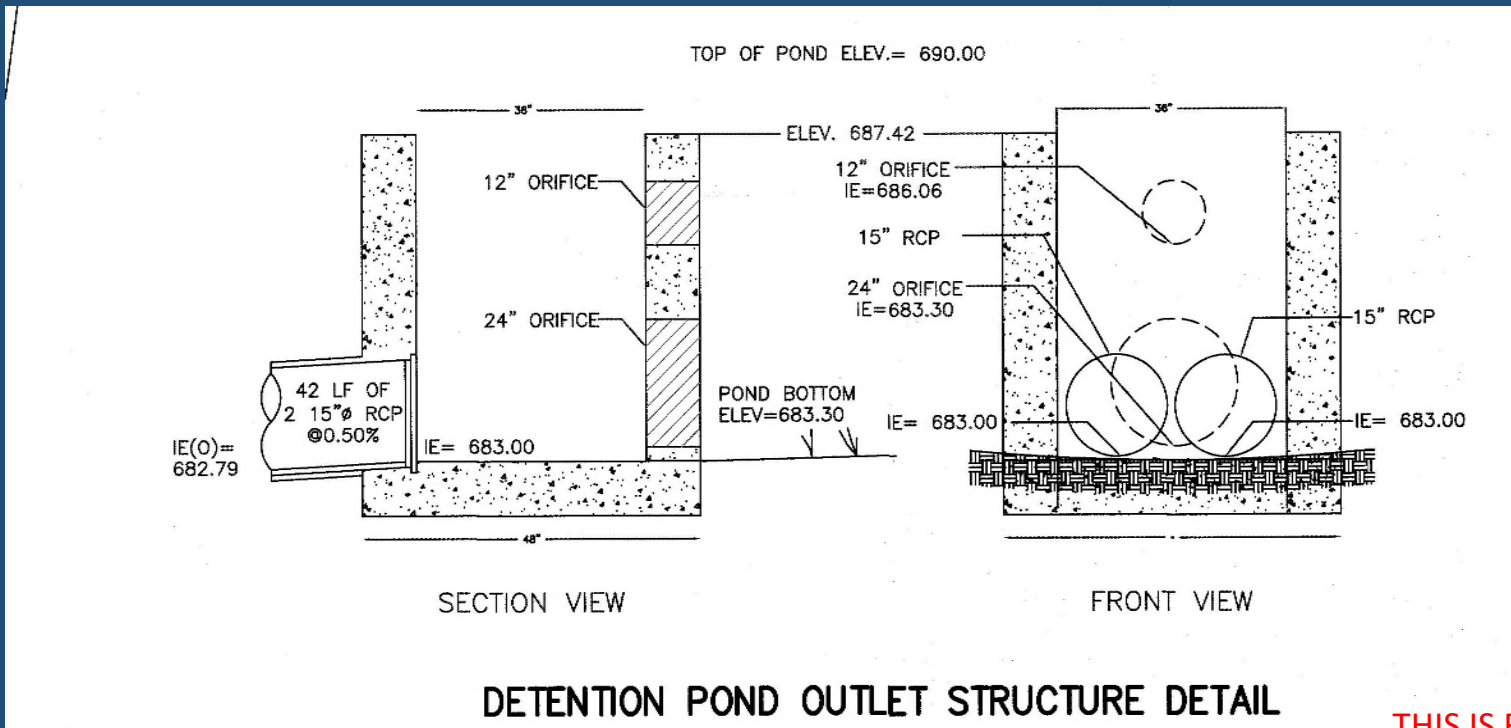
4401 BENJAMIN FRANKLIN DRIVE



THE PRIMARY CHALLENGE

THE ELEVATION SHOWN IN THE TABLE BELOW FOR THE 50-YEAR STORM IS EQUAL TO THE STREET ELEVATION IN FRONT OF 4401 BENJAMIN FRANKLIN.

THE ELEVATION SHOWN IN THE TABLE BELOW FOR THE 100-YEAR STORM IS ROUGHLY EQUAL TO THE FLOOR ELEVATION OF 4401 BENJAMIN FRANKLIN.



POND VOLUME

| POND ELEV. | 2018 DESIGN | VOLUME CURRENT 2021 | VOLUME PROPOSED 2021 | VOLUME AS BUILT 2022 |
|------------|-------------|---------------------|----------------------|----------------------|
| 684 | 48,563 | 41,684 | 43,952 | 44,112 |
| 686 | 196,813 | 177,996 | 193,224 | 193,273 |
| 688 | 359,276 | 330,276 | 356,844 | 357,390 |
| 690 | 538,313 | 501,524 | 538,352 | 539,107 |
| | | | | |
| | | | | |
| | | | | |

POND ELEVATIONS

| POND ELEV. | 2018 | CURRENT AVG. 2021 | PROPOSED AVG. 2021 | BASED AS BUILT 2022 |
|------------|--------|-------------------|--------------------|---------------------|
| 2 YR | 683.89 | 683.99 | 683.92 | 683.92 |
| 5 YR | 684.79 | 684.98 | 684.82 | 684.82 |
| 10 YR | 685.81 | 686.08 | 685.84 | 685.84 |
| 25 YR | 687.75 | 688.09 | 687.74 | 687.74 |
| 50 YR | 688.96 | 689.20 | 688.47 | 688.47 |
| 100 YR | 689.51 | 689.88 | 688.95 | 688.95 |
| | | | | |
| | | | | |

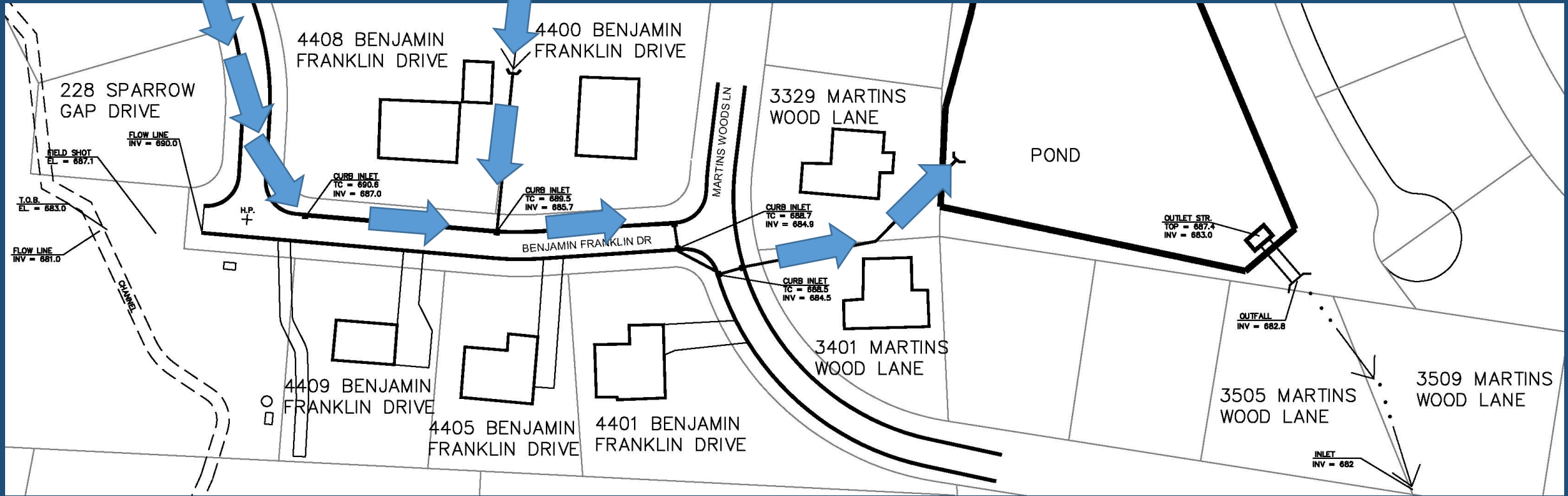
THIS IS ROUGHLY THE ELEVATION OF THE GARAGE AT 4401 BENJAMIN FRANKLIN

THIS IS ROUGHLY THE ELEVATION OF THE FLOOR AT 4401 BENJAMIN FRANKLIN



THE PRIMARY CHALLENGE

STORMWATER FROM DRAINAGE AREA B (80 ACRES+/-)



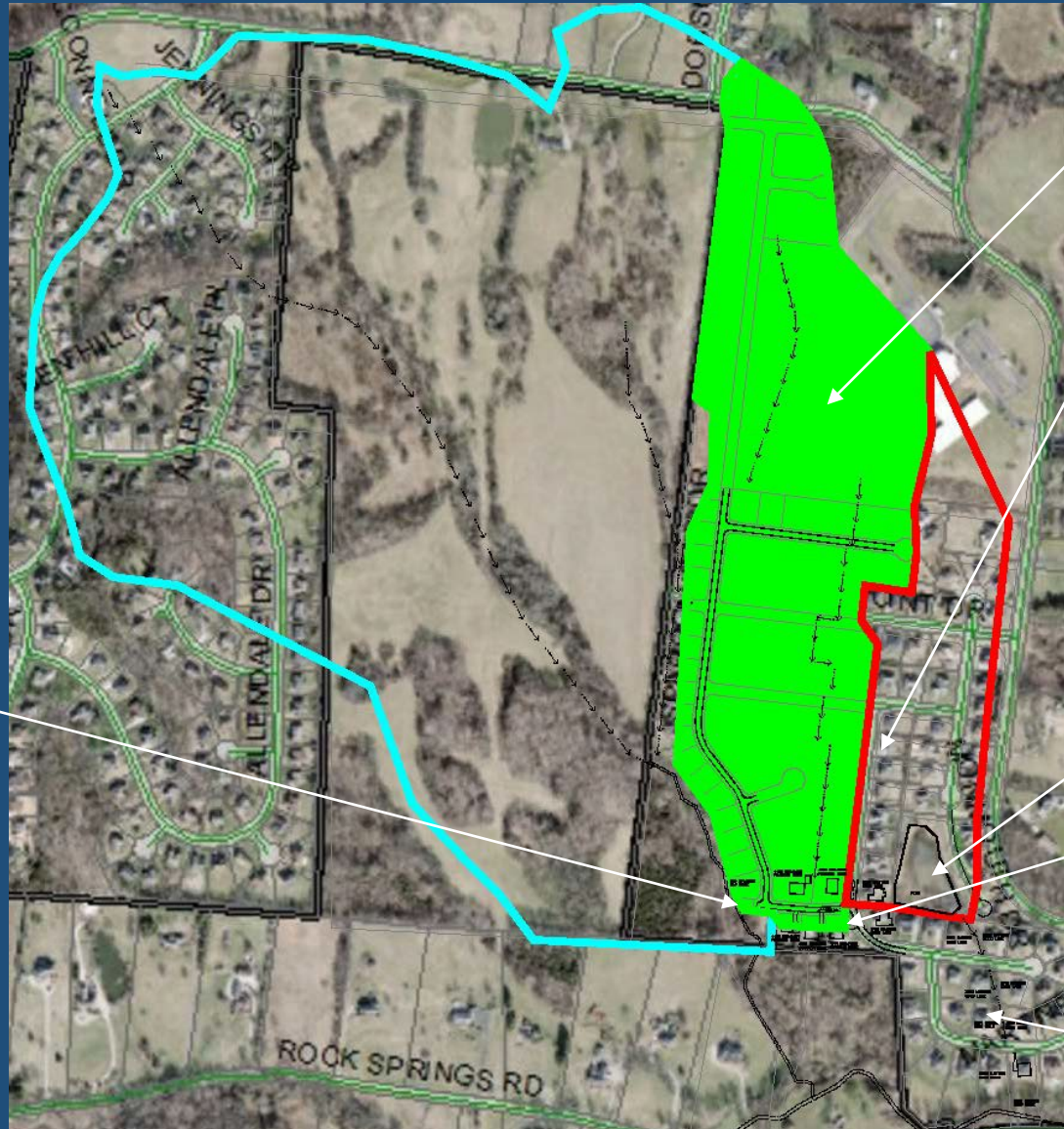


OPTION 1

REROUTE STORMWATER AWAY
FROM THE POND



REROUTE AREA B (60 ACRES) DIRECTLY INTO STREAM TO SOUTHWEST



AREA B =
60 ACRES +/-

PINNACLE POINT
SUBDIVISION

POND

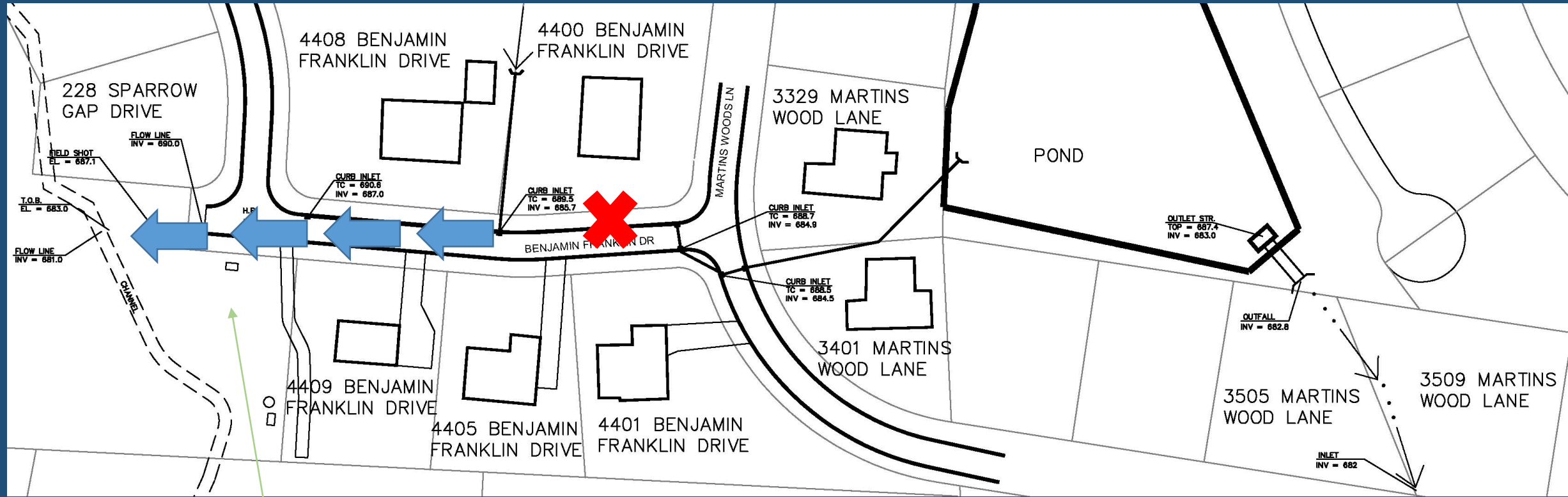
4401 BENJAMIN
FRANKLIN

THE WOODS AT
MARTINS BEND
SUBDIVISION

STREAM TO
SOUTHWEST



REROUTE AREA B TO DIRECTLY TO STREAM TO THE SOUTHWEST



THERE IS NOT SUFFICIENT SPACE HERE TO PROVIDE DETENTION MEETING ORDINANCE REQUIREMENTS



VARIANCE REQUIRED

THIS WILL NOT MEET REQUIREMENTS OF THE
STORMWATER MANAGEMENT ORDINANCE FOR
QUALITY [14-603(3)(c)] OR QUANTITY [14-
603(4)(e)]

(c) Development will be required to minimize the impact to stormwater quality by applying structural and/or nonstructural management practices selected to address site-specific conditions. The goal for water quality treatment shall be 80% removal of total suspended solids from the first flush, defined by land use characteristics or at least 0.5-inches where not defined.

(e) All site designs shall control the post-development peak flow rates of stormwater discharge associated with 2-, 10-, 25-, 50-, and 100-year, 24-hour design storms to the pre-development peak flow rates. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

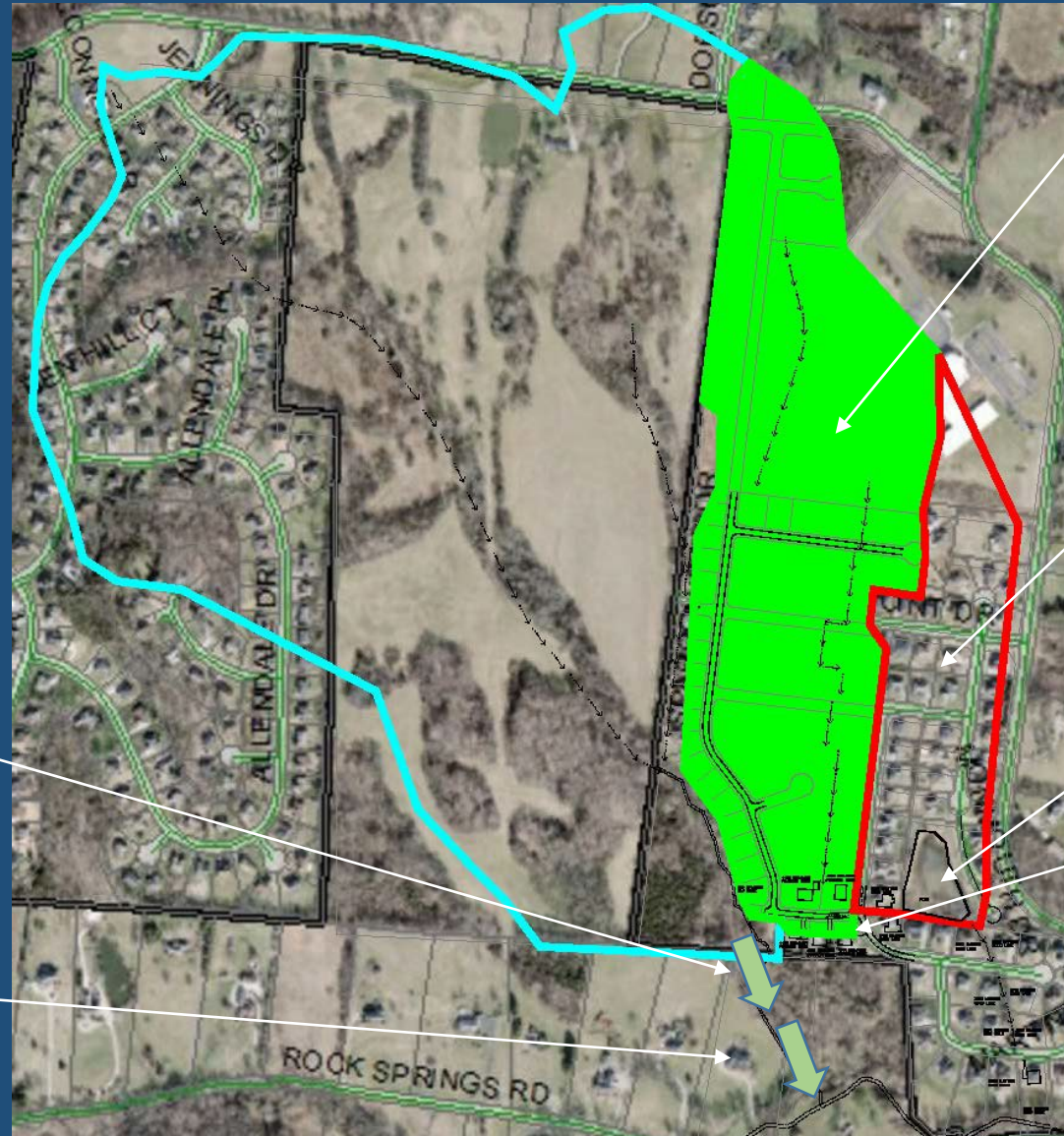


OTHER DRAWBACKS

1. 100-YEAR FLOOD ELEVATIONS WILL BE RAISED IN THE STREAM FOR 750 FEET THROUGH SMYRNA WILL BE RAISED AT LEAST ½ FOOT. THIS COULD IMPACT HOME AT 5074 ROCK SPRINGS ROAD WHICH IS ABOUT 5 FEET ABOVE BOTTOM OF CHANNEL
2. 80 ACRES PRESENTLY DRAINS INTO THE PINNACLE POINT POND. THIS WOULD REDUCE THAT TO 20 ACRES WHICH WOULD SIGNIFICANTLY AFFECT THE AMOUNT OF WATER FEEDING THE POND
3. SIGNIFICANT RELOCATIONS OF UTILITIES UNDER BENJAMIN FRANKLIN WILL BE COSTLY
4. LARGE CULVERTS UNDER BENJAMIN FRANKLIN WILL BE COSTLY



DRAWBACKS



60 ACRES NO LONGER FEEDS POND

20 ACRES STILL FEEDS POND

POND

4401 BENJAMIN FRANKLIN

STREAM TO SOUTH THROUGH SMYRNA 100-YEAR FLOOD DEPTH RAISED BY 1/2 FOOT OR MORE

5074 ROCK SPRINGS ROAD

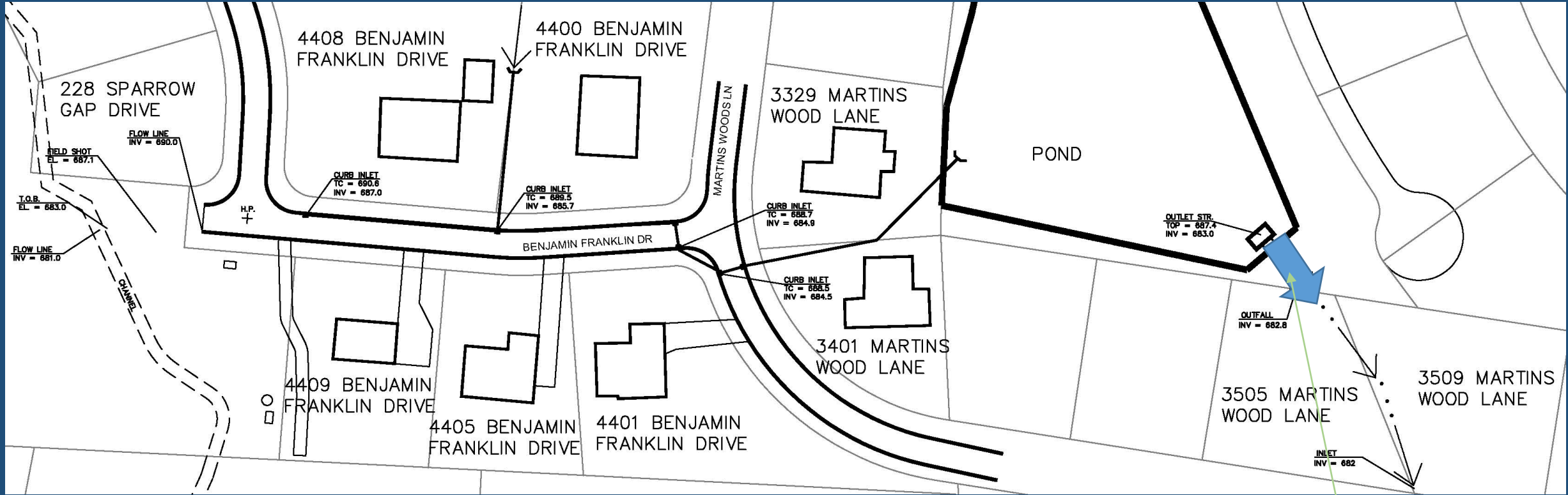


OPTION 2

LET MORE WATER OUT OF POND



LET MORE WATER OUT OF THE POND DURING A STORM



REMOVE TWIN 15" PIPES AND REPLACE WITH MUCH LARGER PIPE.



VARIANCE REQUIRED

THIS WILL NOT MEET REQUIREMENTS OF THE
STORMWATER MANAGEMENT ORDINANCE FOR
QUANTITY [14-603(4)(e)]

(e) All site designs shall control the post-development peak flow rates of stormwater discharge associated with 2-, 10-, 25-, 50-, and 100-year, 24-hour design storms to the pre-development peak flow rates. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.



OTHER DRAWBACKS

1. 100-YEAR FLOOD ELEVATIONS AND WATER VELOCITIES WILL BE INCREASED SIGNIFICANTLY DOWNSTREAM THROUGH THE WOODS AT MARTINS BEND.
2. UPSIZING OF CULVERTS LIKELY REQUIRED AT MARTIN WOODS LANE AND MARTINS BEND DRIVE
3. HOMES AT 2029 AND 2033 MARTIN BEND DRIVE AT RISK IF CULVERT UNDER MARTINS BEND DRIVE OVERTOPS THE ROAD.
4. DETENTION BASIN BEHIND 2029 MARTIN BEND DRIVE NOT DESIGNED FOR THE HIGHER PEAKS

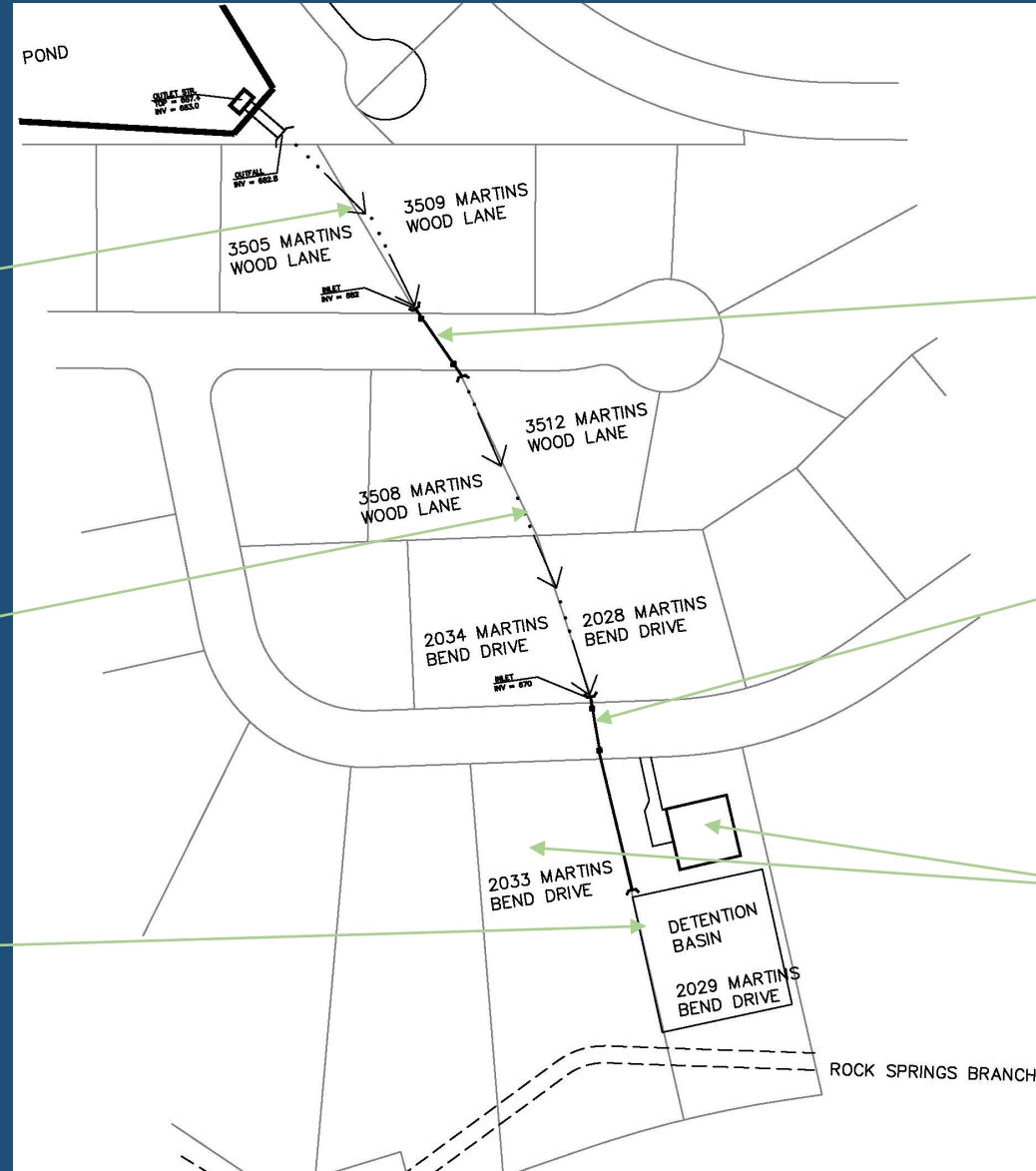


DRAWBACKS

INCREASED VELOCITY AND EROSION POTENTIAL IN WATERWAY

INCREASED VELOCITY AND EROSION POTENTIAL IN WATERWAY

INCREASED VELOCITY AND EROSION POTENTIAL AT OUTFALL



UPSIZING OF CULVERT LIKELY

UPSIZING OF CULVERT LIKELY

HOUSES AT 2029 AND 2033 MARTINS BEND DRIVE AT RISK FOR FLOODING IF CULVERT IN MARTINS BEND DRIVE OVERTOPS



VARIANCE REQUEST

IT IS REQUESTED THAT THE CITY OF LA VERGNE STORMWATER ADVISORY BOARD GRANT A VARIANCE FROM CITY CODE 14-603(3)(c) AND 14-603 (4)(e) TO PINNACLE POINT SUBDIVISION HOMEOWNERS ASSOCIATION FOR THE SOLE PURPOSE OF PROVIDING RELIEF TO FLOODING AT 4401 BENJAMIN FRANKLIN DRIVE. THE FINAL DETERMINATION REGARDING WHETHER ANY PROPOSED RELIEF MEASURE QUALIFIES FOR THIS VARIANCE WILL BE AT THE DISCRETION OF THE CITY OF LA VERGNE CITY ENGINEER.



DISCUSSION OF IMPACTS AND PRECEDENTS OF GRANTING THIS VARIANCE

ALEXANDRA THOMPSON
STORMWATER COORDINATOR



QUESTIONS AND DISCUSSION