

MORRISTOWN REGIONAL PLANNING COMMISSION

Agenda

February 9, 2016

Call to Order

I. Approval of the **January 12, 2016** minutes.

II. *Old Business:*

III. *New Business:*

A. Annexations:

B. Zoning Issues:

C. Subdivisions/Site Plans:

D. Bond Reviews:

E. Right-of-Ways:

F. Ordinance Reviews:

Public Hearing:

Subdivision Regulations Amendments

Chapter 22 -- Municipal Floodplain Zoning Ordinance Amendments

IV. *Departmental Reports:*

Minor Subdivision(s) Approved:

MISD 1631-2015: Lochmere S/D Phase II (resubdivision of Lots 13,14,15 & 16, HCTM 24N, Group D, into 2 lots)

MISD 1632-2015: Dollar General (combination plat of Parcel 29 & portion of Parcels 23 & 28, HCTM 51, into 1 lot, UGB)

Adjournment:

Morristown Regional Planning Commission
Minutes
January 12, 2016

Members Present

Chairman Jim Beelaert
Vice-Chairman Jack Kennerly
Secretary Rose Parella
Mayor Gary Chesney
Councilmember Robert (Bob) Garrett
Commissioner Bill Thompson
Commissioner Doug Beier

Members Absent

Commissioner Wayne NeSmith

Others Present

Alan Hartman, Development Director
Lori Matthews, Senior Planner
Logan Engle, Planner
Eual Noah, Fire Marshal
Kat Morilak, Development Services
Ralph "Buddy" Fielder, Asst. City Admr.
Greg Ellison, Chief Building Official

Joseph Greenler
Sandie Greenler

Mr. W. Terry Ball resigned from the Morristown Regional Planning Commission on January 12, 2016. (letter attached)

Chairman Beelaert called the meeting to order and invited anyone who wishes to join the Commission in an Invocation and the Pledge of Allegiance to do so.

I. Chairman Beelaert called for the approval of the December 8, 2015 minutes.

Commissioner Thompson made a motion for approval of the December 8, 2015 minutes; seconded by Mayor Chesney. Upon voice vote all Ayes.

II. ROWC 1651-2016: Right of Way Closure: Vantage View

Mr. Hartman explained this is a request coming from the city and it a request to abandon right-of-way that is left over property from the reconstruction of Vantage View at the intersection of Walters Drive. This property is no longer needed by the city and inside the packets there are photographs of the actual location there to the north the little flat piece of grassy area to the north of Vantage View at that intersection. The property has been surveyed and it amounts to .06 acres, 2,877 square feet. It is my understanding, the homeowners in Windridge and Vantage View area would like to place a subdivision sign at that location. In order for that to occur, the city must abandon that right-of-way and it goes back to the adjoining property owner. The homeowners association will negotiate with that property owner to purchase or lease to accomplish that goal.

Vice-Chairman Kennerly explained there is a smaller remnant across the drainage way on the north side of the drainage way, are you going to leave that as is? Mr. Fielder explained yes, we are going to keep that so we can have access to the box culvert for maintenance in that area.

Vice-Chairman Kennerly explained to Commissioner Parella we are abandoning it and anything further would be a negotiation between these people and the neighbor. Mr. Hartman explained to help answer that question to, the white signage you see posted there is most likely in the right-of-way any development on private property would be just beyond that.

Vice-Chairman Kennerly made a motion to recommend the Right-of-Way Closure of Vantage View (.06 acres, 2,877 square feet) to City Council; seconded by Commissioner Beier. Voting Results: 7 yes, 0 no. Voting yes were Councilmember Garrett, Chairman Beelaert, Commissioner Thompson, Vice-Chairman Kennerly, Commissioner Beier, Mayor Chesney and Secretary Parella.

The meeting was adjourned.

Respectfully submitted,

Rose Parella
Secretary

RP/sk



Department of Community Development
100 West 1st North Street
Morristown, TN 37814
(423)585-4620

TO: Morristown Regional Planning Commission
FROM: Lori Matthews, Senior Planner
DATE: February 9th, 2016
SUBJECT: Revisions to current Subdivision Regulations

Due to changes enacted by the Tennessee Department of Environment and Conservation to Municipal Separate Storm Sewer System regulations (MS4) and its permitting, the City of Morristown will be revising its own stormwater regulations. As this type of infrastructure plays an important role in development, revisions are needed for both the City's Zoning Ordinance and Subdivision Regulations to ensure all documents coincide one with the other.

Listed below are those revisions needed in order to maintain compliance and to mirror other City Code with regard to stormwater and development. To summarize, those passages specific to stormwater design and methodology were omitted though the headings were kept, with a reference footnote following each directing the reader to the City's Stormwater Program Ordinance for information. That portion of the subdivision regulations regarding stormwater surety requirements was omitted completely as it is fully contained in the new Ordinance. (areas highlighted in yellow signify additions made; wording which shows a 'strike though' will be deleted)

2.1 DEFINITIONS

~~WATER QUALITY MANAGEMENT FACILITY~~ Swales, ditches, ponds, proprietary systems, storm drains, and/or other infrastructure required by the Water Quality Management Plan (WQMP).

~~WATER QUALITY MANAGEMENT PLAN (WQMP)~~ A plan for managing stormwater at a development during and after construction as required by the City's Post Construction Water Quality Management Ordinance

3.7 "AS-BUILT" ENGINEERING DRAWINGS CONTENT

*For all stormwater related as-built requirements, please refer to the City of Morristown Stormwater Program Ordinance.

5.2 GRADING PLANS

*For grade work not subject to the City of Morristown Stormwater Program Ordinance, the following minimum standards shall apply.

5.3 EROSION & SEDIMENT CONTROL

*For all stormwater related erosion and sediment control requirements, please refer to the City of Morristown Stormwater Program Ordinance.

~~Erosion and sediment control plan(s) shall be prepared in accordance with the Land Disturbance Ordinance of the City of Morristown.~~

5.8 STORM DRAINAGE & TREATMENT SYSTEMS

*For all storm drainage and treatment system requirements, please refer to the City of Morristown Stormwater Program Ordinance.

5.20 INSTALLATION OF IMPROVEMENTS

A. Earth Work

7. Contractor is to refer to the Tennessee Department of Environment and Conservation

Division of Water Pollution Control **City of Morristown Stormwater Program Ordinance** for details on installing and maintaining the erosion control devices called for in this plan.

A. Adequate Drainage Systems

- ~~1. Adequate drainage systems shall have the hydraulic capacity to accommodate the maximum expected storm water discharge, as described in the following sections, for a specified tributary drainage area and precipitation duration and intensity. Adequate drainage systems shall be designed to accomplish the following:
 - ~~a) Account for both offsite and onsite storm water.~~
 - ~~b) Maintain natural drainage divides.~~
 - ~~c) Convey storm water to a stream, channel, natural drainage way, or other existing facility.~~
 - ~~d) Discharge storm water into the natural drainage way by connecting the drainage way at natural elevations, or by discharging the storm water into an existing facility of sufficient capacity to receive it, or by discharging into an approved (drainage well) sinkhole.~~~~
- ~~2. Determination of the size and capacity of an adequate drainage system shall take into account the future development of the affected portion of the watershed. The design must not adversely affect adjacent or neighboring properties.~~
- ~~3. Concrete curb and gutter with storm water drainage systems are required on all public ways.~~
- ~~4. It is the responsibility of the developer or property owner to pick up or acceptably handle the runoff as it flows onto his property from the watershed above, and transport it through his property to an adequate outfall. The outfall must be sufficient to receive the runoff without deterioration of the downstream drainage way.~~
- ~~5. The Soil Conservation Service (SCS) Method, as presented in TR 55, is the required method for determining runoff and designing stormwater management systems within the City of Morristown and its urban growth boundary. The Rational Method or any other reputable, established method can be used for determining peak flows for sizing drainage channels and piping systems.~~
- ~~6. In areas where there are known drainage problems, no future land use changes which will impact the runoff peak rate, timing, and volume will be allowed until it is convincingly established that no adverse onsite and offsite impacts will result.~~
- ~~7. A combination of storage and controlled release of storm water runoff shall be required for all development located in areas where there are inadequate man-made and/or natural drainage channels to accommodate the projected runoff. Alternative methods or proposals for accommodating the projected runoff may be submitted to the City Engineer and/or County Road Superintendent for review and approval.~~
- ~~8. The peak release rate of storm water from any development shall not exceed the storm water runoff rate from the area in its existing state for the 2, 5, 10, and 25 (and 100 year if applicable) year return period storms. The carrying capacities of the channels/ storm drainage systems immediately downstream shall be considered in determining the amount of the release. In watersheds with recognized drainage problems, release rates may be required to be limited to less than what was calculated for the pre-developed rate. Refer to the Post-Construction Water Quality Management Ordinance for specific requirements.~~
- ~~9. The City of Morristown encourages the preservation and conservation of wetlands as a means~~

of reducing adverse impacts from storm drainage and sedimentation. Furthermore, any proposed development involving wetlands shall comply with the provisions of Section 404 of the Clean Water Act, and the Corps of Engineers Regulations 33CFR330 and 33CFR323, and/or any Tennessee Department of Environment and Conservation regulations.

10. Storm sewers shall be piped completely from the street to the nearest natural drainage ditch with appropriate easements provided. However, open ditches or swales along the side property lines may be permitted if the hydraulic calculations show that a proposed ditch lining will prevent ponding or erosion in channel. Beginning at the rear lot setback limits open swales or ditches for conveying street drainage to a natural drainage ditch are acceptable. The design consultant shall submit two (2) copies of an impact report, which outlines the downstream path and impact that the drainage will have on projects as located outside the area of development. Rip rap will not generally be permitted except as approved by the City Engineer.
11. Water quality management facilities must be installed and maintained as described in the approved Water Quality Management Plan (WQMP). Permanent easements must be provided as required by the Post Construction Water Quality Management Ordinance.

B. Storm Drainage Plan(s)

Storm drainage plan(s) shall include, at a minimum, the following:

1. A complete plan of the proposed development at a scale no less than one inch equals fifty feet (1" = 50'). This plan is to include existing and proposed contours at intervals no greater than 2' (two feet) (SCM to be used exclusively). Contours shall extend to the centerline of all roads bordering the site. Where drainage ultimately enters the groundwater via a sinkhole or injection well, the drainage area tributary to the sinkhole or injection well shall be delineated.
2. Existing and proposed buildings on the property.
3. Existing and proposed impervious surfaces. The number of ERU's (Equivalent Residential Units) shall be calculated as 1 ERU = 2,400 SF of impervious surface and noted on the plans. Impervious area is defined in the Stormwater Utility Service Charges Ordinance and includes pavement, concrete, gravel, roofs, patios, decks, areas of unvegetated soils, and all other areas covered with impervious materials.
4. Proposed and existing drainage structures, including inlets, catch basins, junction boxes, culverts, cross drains, headwalls, and outlet facilities, with size, type, slope, invert elevations, and quantity indicated.
5. Existing and proposed water quality management facilities as described in the approved Water Quality Management Plan, along with required easements.
6. Hydrologic and hydraulic calculations for appropriate design conditions and facilities.
7. Detention pond control structure details. If the pond is overtopped by 100-year storm, include the emergency overflow.
8. Any proposed swale ditches, channel changes, or improvements, with typical section, proposed lining, and length of change indicated.
9. Any high water or flood lines, either calculated or observed in the vicinity of the proposed development, and the source of said line or elevation indicated. If no high water or flood lines are present at the property, include a statement of this effect on the plans.

- ~~10. All fill areas indicated as such, with the limits and elevation indicated.~~
 - ~~11. At least one benchmark located, with the proper elevation indicated (SCM to be used exclusively).~~
 - ~~12. The location and size of the two drainage structures immediately downstream of the proposed development. This may be shown on a location map with a scale no less than one inch equals two thousand feet (1" = 2000').~~
 - ~~13. Drainage arrows indicating the existing and proposed direction of runoff throughout the plan.~~
 - ~~14. Invert and top of grate elevations on all catch basins and inlets in addition to flow line elevations, stations, and percent grades of all cross drains and pipe between inlets and catch basins.~~
 - ~~15. Floodplain areas require the following information: existing and proposed flood plain and floodway boundaries along with flood plain elevations, cut and fill cross sections with quantity calculations, and lowest floor elevations for buildings in the flood plain. Hydraulic calculations should be submitted, as appropriate.~~
 - ~~16. Temporary erosion and sediment control measures to be implemented during construction as required by the Land Disturbance Ordinance.~~
 - ~~17. Final stabilization measures proposed for all disturbed areas on the property. Areas with slopes 3:1 or greater shall be stabilized with sod, soil erosion control blanket, riprap per manufacturer's specifications, or by other methods approved by the City. The plan shall show stabilization measures for each ditch.~~
 - ~~18. Where special structures such as box culverts, bridges, or junction boxes are proposed, detail plans showing dimensions, reinforcement, spacing, sections, elevations, and other pertinent information shall be submitted.~~
 - ~~19. Plans and calculations shall be designed and sealed by a registered engineer, and/or land surveyor as per Tennessee State Law. All plans requiring engineering calculations shall be signed and sealed by a registered engineer.~~
- ~~—Omission of any of the above requirements for detailed plans and calculations shall render the application incomplete, and it will be returned to the applicant, or his engineer, for additional information.~~

G. Minor Systems (Non-regulated Waterways)

- ~~1. The design of the minor storm drainage system shall be based on a storm frequency of 25 years. This criterion shall be applied to both closed conduit and open channel systems. However, if the 25 year design flow for an open channel system is greater than 100 cubic feet per second (cfs), then the open or closed system shall be capable of passing the 100-year design flow within the drainage easement. Systems relying on sinkholes or injection wells for discharge shall be capable of passing the 100 year design flow within the drainage easement.~~
- ~~2. The following general guidelines shall be observed in the design of the minor system:
 - a) Design surface runoff across lots shall not have erosive velocities.
 - b) Quantities of surface runoff greater than 4 cfs that flow through lots shall be collected and~~

- conveyed in a system of open channels, closed conduits, or a combination of both.
- e) ~~Lots should generally be graded in such a manner that surface runoff does not cross more than three lots before it is collected in a system of open channels, closed conduits, or a combination of both.~~

~~Design flows shall be determined by the methods identified in this manual. Calculations shall be sealed by an Engineer and submitted with the drainage plan.~~

~~D. Major Systems (Local, State and/or Federally Regulated Waterways)~~

- ~~1. Wherever possible, natural waterways serving the major system should remain undisturbed, with proposed development situated wisely accordingly. However, due to the insufficient capacity of most natural drains, improvements to the channel may be necessary to properly utilize the adjacent property. Improvements to natural open channels that are to function primarily as the major system shall be designed to pass the 100-year design flow without damage to the channel. Man-made channels designed to function as the major system (trunk line system) shall be capable of carrying a 100-year design flow. Where man-made channels are necessary, the channels should be located as far away from buildings or structures as possible and preferably in established greenbelts.~~
- ~~2. The onsite major storm drainage system for most developments is the natural backup system and consists of the less obvious drainage ways. Ideally, this major system should provide drainage relief such that no building will be flooded with a 100-year design flow even if the minor system capacity is exceeded. The 100-year frequency storm shall be used to compute runoff for the design of the onsite major drainage system. This system shall be designed to provide relief for flow in excess of the 25-year design flow.~~
- ~~3. The following guidelines pertain to design of the onsite major drainage system:
 - a) ~~Areas should be graded in such a manner or buildings located or constructed in such a manner that if the capacity of the minor system is exceeded, no building will be flooded by the design flow.~~
 - b) ~~Critical areas to consider are sumps, relatively flat areas, and areas where buildings are located below street or parking lots.~~
 - c) ~~The 100-year frequency storm shall be used to compute runoff for the major drainage system.~~
 - d) ~~In general, the minor storm drainage system should not be oversized as a basis for providing major system capacity. However, the minor system, overland relief swales, or surface storage should be designed so that no building will be damaged by flooding.~~
 - e) ~~The major drainage system should be in the form of area grading or the location and construction of buildings in such a manner that overland relief swales or surface storage will provide adequate flood protection.~~~~
- ~~4. The major drainage system should be evident on the drainage plan, including overland relief swales and areas that may be affected by surface storage for a 100-year design storm. Calculations performed for major system design should be sealed by an Engineer and submitted with the drainage plan.~~

~~E. Municipal Flood Plain~~

~~Subdivisions shall be reviewed to determine whether the development will be reasonably safe from flooding. If a subdivision is in a flood-prone area, it shall be reviewed subject to "Floodway Regulations of the Zoning Ordinance.~~

F. Open Channels

1. Channel Capacity:

Open channel capacity shall be determined by Mannings's equation. Appropriate Manning's *n* values as found in a classic text such as Open Channel Hydraulics by Chow shall be utilized for design and are subject to approval by the City of Morristown.

2. Lined Channels:

- a) Open channels shall be designed to limit the flow velocity to the maximum allowable velocity for the selected lining. Acceptable lining materials must be placed in accordance with applicable subdivision regulations. Approval of lining materials is subject to review by the City of Morristown.
- b) Channel lining shall be required when the design velocity exceeds the allowable, non-erosive velocity for a given channel reach and no other erosion control measures provide adequate protection. Allowable, non-erosive velocities for various soil types are presented in Table 5.9-G1.
- c) In general, riprap will not be allowed within the right of way unless specifically approved by the City Engineer.

G. Grassed Channels

The design of grassed channels shall consider the variable degree of retardant generated by different types of cover (See Table 5.9-G2). Temporary erosion control shall be utilized during non-growing seasons and during grass cover establishment. The engineer shall note on the drawings or in the specifications that "All grassed channels must be in a well-stabilized condition and show no sign of erosion at the time of final acceptance by the maintaining authority."

Table 5.9-G1
MAXIMUM VELOCITIES FOR
COMPARING LINING MATERIALS

MAXIMUM VELOCITY MATERIAL:	FEET/SECOND
Bare soil	
Silt or fine sand	1.50
Sandy loam	1.75
Siltloam	2.00
Stiff clay	3.75
Sod	4.0
Lapped sod	5.5
Vegetation	Use Table 5.9-G2
Rigid	10

Higher velocities may be acceptable for rigid linings if appropriate protection is provided.

Table 5.9-G2

MAXIMUM VELOCITIES FOR VEGETATIVE CHANNEL LININGS

Vegetation	Slope	Maximum: Velocity

Type	Range (%)	(feet per second)
Bermuda grass	0-5	6
	5-10	5
Kentucky bluegrass	0-5	5
Buffalo grass	5-10	4
Grass mixture	0-5	4
	5-10	3
Lespedeza sericea	0-5	2.5
Alfalfa		
Annuals	0-5	2.5

Based on erosive soils
Reference: USDA, TP-61 (1947)

H. Easement Width

All open channels shall be located within the right-of-way of a drainage easement. Minimum easement width shall be determined from Table 5.9 H1. Easements must remain free of fences or any other structures in order to provide access for maintenance.

Table 5.9 H1

MINIMUM EASEMENT WIDTH FOR OPEN CHANNELS

Top Width of Channel	Easement Width
Less than 10 feet	15 feet greater than the top width of channel, with minimum of 10 feet on one side
10 - 20 feet	20 feet greater than top width of channel, with minimum of 15 feet on one side
Greater than 20 feet	25 feet greater than top width of channel, with minimum of 20 feet on one side

I. Storm Drains

Roadway drainage systems are to be designed to accommodate a storm with a twenty-five (25) year return frequency. Conduit materials shall be gasketed concrete pipe when proposed within the right-of-way. The gasketed concrete pipe shall extend from the right-of-way to the first storm structure at the site. The minimum size pipe shall be eighteen (18) inches in diameter unless approved in writing by the City Engineer or the County Road Superintendent.

1. Conduit Capacity:

Closed conduits shall be designed for the total flow intercepted by the inlets during the design storm event.

2. Pressure Flow:

Storm drain systems should generally be designed as non-pressure systems. However, pressure

flow systems if coordinated with the County Road Superintendent and/or the City Engineer during the preliminary design phase, may be allowed. The hydraulic gradient for pressure flow systems shall not exceed the following criteria:

- a) An elevation greater than one foot below the established ground surface, or
- b) More than five feet above the crown of the conduit.

3. ~~Easement Width:~~

Minimum allowable easement width for storm drains shall be determined from Table 5.9 I 1 or as required by the City of Morristown.

Table 5.9 I 1

MINIMUM EASEMENT WIDTH FOR STORM DRAINS

<u>Pipe Size</u> <u>(Maximum)</u>	<u>Depth</u> <u>To Invert</u>	<u>Width of Drainage</u> <u>Easement</u>
18 inches	3.5 feet	15 feet
24 inches	5.0 feet	20 feet
36 inches	6.0 feet	24 feet
54 inches	7.0 feet	30 feet
72 inches	9.0 feet	36 feet

- NOTES: 1. For depths greater than shown, add two feet (2.0') for each additional foot to the invert.
 2. For larger pipe sizes and/or multiple lines of pipe — easement width shall be as determined by the City Engineer and/or County Road Superintendent.

4. ~~Inlets:~~

TDOT standard drawings D-PB-1, D-MH-4, and D-CB-# (for pre-cast structures only) should be specified for construction of drainage structures and piping. Any other proposed inlets must be approved in writing by the City Engineer.

5. ~~Culverts:~~

The design flow for culverts shall be based on the following return frequencies:

- a) 50-year for residential collector and commercial road crossings or as directed by the City Engineer or the County Road Superintendent.
- b) 25-year for residential roads and crossings.

Note: In addition, building elevations shall be checked for flooding caused by the 100-year, 24-hour storm.

6. ~~Outlet Protection:~~

~~The design discharge at the outlet of drainage systems shall not result in velocities that equal or exceed the erosive velocity of the receiving channel, unless energy dissipation and erosion protection measures are placed at the outlet. Energy dissipation and erosion control devices shall have no overfall at the terminal end and shall discharge onto a stable section. The terminal section shall be considered stable if the terminal section design velocity is less than the erosive velocity.~~

7. ~~Bridges:~~

~~All bridges with spans of 20 feet or greater shall be designed for the 100-year, 24-hour storm event. The design flow shall consider runoff from the total tributary area and will require appropriate calculations. Bridges may require additional approval from TDEC, TVA, US Army Corps of Engineers, FEMA, and/or other regulatory agencies.~~

8. ~~Stormwater Detention/Retention:~~

~~Storm water detention is mandated for all new subdivision developments unless waived in writing by the City Engineer or County Road Superintendent. All hydrologic and hydraulic computations utilized in the design of storm water detention facilities must be prepared and sealed by a registered engineer proficient in the field of hydrology and hydraulics and licensed in the State of Tennessee. The required hydrologic and hydraulic computations shall be in accordance with the procedures outlined in the United States Department of Agriculture, Soil Conservation Service Technical Release No. 55 entitled "Urban Hydrology for Small Watersheds", and all subsequent revisions thereto, as modified by the City of Morristown to represent local conditions. Other computational procedures may be employed if approved by the City Engineer.~~

a) ~~Release Rate:~~

~~— The release rate from any detention facility should be less than or equal to that existing of the site prior to the proposed development for the 2, 5, 10, and 25-year storms, with emergency overflow capable of handling the 100-year discharge except where waived or altered by the Morristown Engineering Department. Adequate alternate drainage must be provided to accommodate major storm flows. Detention systems must be constructed during the first phase of major developments to eliminate damage to adjacent properties during construction. If siltation has occurred, detention systems must be restored to their design dimensions after construction is complete and certified as part of the as-built submittal.~~

b) ~~Detention/ Retention Volume:~~

~~— The required detention volume shall be that volume necessary to attenuate the post-development peak discharge to a level not to exceed the pre-development peak discharge. This volume may be minimized by careful attention to outlet structure design. Outlet control structures shall be designed to limit the outflow to the pre-developed peak for each of the return storms up to and including the design storm (25 years unless the pond is located on a major drainage channel, in which case the design would be for a 100-year storm).~~

- ~~i. In most cases, this will require multiple outlets or the use of some type of variable opening(s) such as multi-staged discharge outlet control box(es), or "V-notched" weir.~~
- ~~ii. A minimum pipe size of eighteen (18) inches shall exit the outlet control box to the~~

desired outfall point.

- iii. All detention ponds shall have an emergency spillway designed to pass the 100-year runoff if the storage capacity is exceeded; larger ponds which fall under the purview of the Safe Dams Act must comply with those regulations. Emergency spillways shall be constructed in virgin soil material or may be incorporated into the outlet control structure's principal spillway.
- iv. All detention ponds with over 1.0 acre-foot storage capacity shall have a minimum of one (1) foot of "freeboard".
- v. Detention ponds shall have side slopes of 2:1 or flatter; for ponds in areas accessible to small children and more than five (5) feet in depth, consideration should be given toward security fencing.
- vi. Any subdivider/developer who uses the parking area for detention storage capacity shall clearly identify the limits and depth of expected detention pool.
- vii. The discharge from any stormwater control facility shall be directed into the natural surface watercourse or drainageway that existed prior to development. Stormwater drainage may not be redirected from one natural watershed to another, nor shall stormwater flows be discharged into a natural depression or sinkhole without written approval by the City Engineer and/or County Road Superintendent and TDEC.

e) ~~Retention Ponds:~~

~~As a minimum, these shall provide the required storage capacity to accommodate the differential volume of runoff caused by the development and shall have an emergency spillway capable of passing the 100-year flood. Slope, security and maintenance requirements are the same as for detention ponds.~~

d) ~~Drawdown:~~

~~Detention storage volume shall be drained within 72 hours. This requirement includes that volume above permanent pool in retention systems. Drawdown may be accomplished by a small orifice or notched weir. Other methods may be approved subject to the City Engineer and/or County Road Superintendent review.~~

e) ~~Maintenance:~~

~~Care must be taken to ensure that any required detention facilities do not become nuisances or health hazards. Detention facilities should be designed to require minimal maintenance, and maintenance responsibility must be clearly stated on the plans.~~

~~All detention facilities located in residential developments shall be within storm drainage easements and shall be maintained by the property owner or home owners' association. Detention facilities located in condominium developments, apartment or townhouse complexes, single family PUDs, industrial, commercial, or institutional developments shall be within public storm drainage easements and maintained by the property owner or homeowners association. A maintenance agreement must be executed before the Final Plat is approved. Refer to City of Morristown's Stormwater Management/BMP Facilities Maintenance Agreement~~

J. ~~Sinkholes and Injection Wells~~

- 1. ~~All drainage systems discharging to sinkholes or injection wells shall be designed using the 100-year storm for the critical duration of the watershed tributary to the sinkhole or injection well. A geologic investigation and report is required, along with a demonstration that development will not occur within the area flooded by the 100-year storm and that all state and federal~~

permitting requirements are complied with.

- ~~2. An erosion control plan shall identify the erosion control practices and sediment trapping facilities which are appropriate for the site conditions in question. In addition, the appropriate schedule of implementation shall be identified. Particular attention is required for concentrated storm water flows. Either concentrated storm water flows shall be avoided or the conveyance system shall be protected sufficiently to prevent significant erosion. Sediment trapping devices are generally required at all points where storm water leaves a site laden with sediment. The plan shall identify permanent storm water conveyance structures, final stabilized conditions of the site, provision for removing temporary control measures stabilization of the site where temporary measures are removed, and maintenance requirements for any permanent measures.~~
- ~~3. The following Sinkhole and Injection Well Plan information or approval from the appropriate regulating agency must be provided prior to the alteration or increase of the natural drainage for watershed discharging to such features as sinkholes and injection wells.
 - ~~a) Proposed onsite and offsite drainage channels that are tributary to a sinkhole throat or injection well inlet shall be delineated, along with appropriate hydraulic calculations to define the existing and altered (if appropriate) 100 year flood plain and to confirm that offsite flooding will not be increased.~~
 - ~~b) Detailed contours are to be shown for all sinkholes that are to receive storm water runoff from the site. These contours are to have a maximum interval of 2 feet and are to be verified by field surveys.~~
 - ~~c) A geologic investigation of all sinkholes receiving storm water runoff from the site shall be performed. The report from this investigation shall be signed and sealed by a registered professional, licensed in the State of Tennessee and experienced in geology and groundwater hydrology and shall contain the following:
 - ~~i. Location and nature of aquifers.~~
 - ~~ii. Potential for siltation problems.~~
 - ~~iii. Foundation problems that may be expected around sinkholes.~~
 - ~~iv. Details of drainage structures to be built in sinkholes.~~
 - ~~v. Any other factors relevant to the design of drainage from sinkholes.~~
 - ~~vi. Plans showing the 100 year flood plain. This flood plain shall be designated as a drainage easement on the final subdivision plat.~~
 - ~~viii. Details of plan for grading and clearing of vegetation within the 100 year flood plain.~~~~~~
- ~~3. Compliance with any and all conditions that may be required by the federal government or the State of Tennessee shall be documented.~~
- ~~4. The Tennessee Division of Ground Water is the primary regulatory agency for sinkholes and injection wells. Drainage into a sinkhole may require a permit for a Class V well under rules for Underground Injection Control (UIC).~~
- ~~5. Demonstration that development will not occur within the area flooded by the 100 year flood. The 100 year elevation may be lowered by construction of a detention pond. Calculations that document a lowering of the 100 year flood elevation shall be based on the 100 year, 24 hour storm using an appropriate safety factor for discharge into the sinkhole.~~

K. Erosion Protection and Sediment Control

Erosion protection and sediment control measures shall be installed and maintained during and after construction in accordance with the approved site plan and the City's Land Disturbance Ordinance.

L. Cut and Fill Slopes

Cut and fill slopes shall 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. As a minimum, all slopes greater than 3 to 1 shall be stabilized with sod, erosion control blanket, riprap per manufacturer's specifications, or other method approved by the Engineering and/or the County Highway Departments.

5.9 DRIVEWAY CULVERTS

*For all driveway culvert requirements, please refer to the Morristown Stormwater Program Ordinance.

Driveway culverts shall be a minimum of eighteen (18) inches Inside Diameter (ID) and a minimum length of twenty (20) feet or as indicated on the Driveway Permit required for connection to a public street and shall be made of the materials indicated on said permit issued by the City. Polyvinyl Chloride (PVC), High Density Polyethylene (HDPE) or any other plastic pipe shall not be used as a driveway culvert. Driveway culvert material shall be Reinforced Concrete Pipe (RCP), Corrugated Metal Pipe (CMP), or other material approved by the City Engineer.

Headwalls shall be required at both ends of the pipe in all cases. On arterial streets and Tennessee State designated roads, safety end walls (TDOT D-PE-6 series) are required.

5.9 STORM DRAINS IN CITY RIGHT-OF-WAY

*For all storm drains within a City right-of-way, please refer to the City of Morristown Stormwater Program Ordinance.

- A. All cross drains shall be a minimum of eighteen (18) inches ID unless approved in writing by the City Engineer or County Road Superintendent, as applicable, and shall consist of gasketed Reinforced Concrete Pipe (RCP), as approved by TDOT. All RCP pipe shall be installed to the minimum standards of the Morristown Engineering or Hamblen County Highway Departments.
- B. Corrugated Metal, Steel, PVC, HDPE or Plastic pipe shall not be used without the written approval of the City Engineer or the County Road Superintendent.
- C. Pipes that are smaller than forty eight (48) inches in diameter shall require a minimum cover of one (1) foot, exclusive of base and paving from top of the pipe to finished subgrade. A minimum cover of two (2) feet is required for pipes forty eight (48) inches and larger. All pipes shall be built on straight line and grade and shall be laid with the spigot end pointing in the direction of the flow, with the ends fitted with a butyl sealant or mortar and matched to provide tight joints and a smooth uniform invert.
- D. Pipes shall be bedded on a six inch (6") thickness of Class "B" materials and backfilled. Recesses shall be dug in the bedding materials to accommodate the bell. Class "B" bedding shall be Size No. 57 or 67, as shown in Section 903, latest edition of the Standard Specifications for Road and Bridge Construction, Tennessee Department of Transportation. Culverts and storm drains in existing roadways shall be backfilled to the depth of the cut or as directed by the City Engineer and/or the County Road Superintendent. Headwalls shall be required at both ends of the pipe. On arterial streets and Tennessee State designated roadways, safety end walls approved by TDOT are required.

5.23 REQUIRED BONDS

~~As per the City's Land Disturbance Ordinance and Post-Construction Water Quality Management Ordinance, a performance bond or other surety as accepted by the City of Morristown will be required equal to 1.5 times the estimated construction costs of the work related to erosion control and stormwater management to insure proper construction. Work to be bonded includes erosion control measures, storm pipes, detention ponds and outlet control structures, stormwater quality treatment devices and practices, and any other components of the approved Water Quality Management Plan. Specific requirements for the bond and allowances for releasing the bonds are provided in the following sections:~~

Staff would ask that the Planning Commission approve the revisions to the current Subdivision Regulations as shown above.

PLANNING COMMISSION OPTIONS:

- 1.) Approve Staff recommended revisions to the existing Subdivision Regulations.
- 2.) Approve Staff recommended revisions to the existing Subdivision Regulations with changes.
- 3.) Table the request.
- 4.) Vote to not approve Staff recommended revisions to the existing Subdivision Regulations.



Department of Community Development
100 West 1st North Street
Morristown, TN 37814
(423) 585-4620

TO: Morristown Regional Planning Commission
FROM: Lori Matthews, Senior Planner
DATE: February 9th, 2016
SUBJECT: Amendments to Zoning Ordinance
Chapter 22 Municipal Floodplain Zoning Ordinance

Due to changes enacted by the Tennessee Department of Environment and Conservation to Municipal Separate Storm Sewer System regulations (MS4) and its permitting, the City of Morristown will be revising its own stormwater regulations. As this type of infrastructure plays an important role in development, revisions are needed for the City's Zoning Ordinance and Subdivision Regulations to ensure all documents coincide one with the other.

Fortunately, the revisions needed within our Zoning text to comply with these new Stormwater standards are minimal and, simply put, serve only to clarify existing verbiage. No additional restrictions or regulations are included.

Listed below are the affected passages: (areas highlighted in yellow signify additions made; wording which shows a 'strike though' will be deleted)

ARTICLE II. DEFINITIONS

"Watercourse" means any watercourse that has been previously mapped and shown on the community FIRM, or any watercourse for which a Conditional Letter of Map Revision or Letter of Map Revision for a specific alteration, relocation, or correction has previously been obtained."

ARTICLE IV. ADMINISTRATION

Section A. Designation of Ordinance Administrator

The ~~City Engineer~~ City Administrator or his/her designee is hereby appointed as the Administrator to implement the provisions of this Ordinance.

Section C. Duties and Responsibilities of the Administrator

3. Notify ~~adjacent~~ affected adjacent communities and the Tennessee Department of Economic and Community Development, Local Planning Assistance Office, prior to any alteration or relocation of a watercourse and submit evidence of such notification to FEMA.

ARTICLE V. PROVISIONS FOR FLOOD HAZARD REDUCTIONS

Section C. Standards for Special Flood Hazard Areas with Established Base Flood Elevations and With Floodways Designated

2. Notwithstanding any other provisions of Article V Section C.1., the community may permit encroachments in the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first applies for a conditional FIRM and floodway revision, fulfills the requirements for such revisions as established under the provisions of the National Flood Insurance Program and stated in 44 CFR Part 65.12, and receives the approval of the Federal Insurance Administrator. The cost of study, engineering, maps, completion of application, design, or any other cost associated with the encroachment and/or revision is the responsibility of the developer, property owner, or other party initiating the work. Unless otherwise stated in the ordinance the City Administrator or his/her designee shall approve any encroachment and/or revision.

Staff would ask that the Planning Commission forward the amendments to Chapter 22 Municipal Flood Zoning Ordinance as shown above to City Council for their approval.

PLANNING COMMISSION OPTIONS:

- 1.) Recommend forwarding zoning amendments to City Council for approval.
- 2.) Recommend forwarding zoning amendments with changes to City Council for approval.
- 3.) Recommend forwarding zoning amendments to City Council to deny.
- 4.) Recommend tabling of zoning amendment request.