NON-RESIDENTIAL SITE PLAN CHECKLIST

STORMWATER HYDROLOGIC & HYDRAULIC REPORT CHECKLIST – ENVIRONMENTAL MANAGEMENT DEPARTMENT

1. The report should include a brief narrative outlining the project goals and location, as well as location information with this element of the report.

Existing Conditions Hydrologic Analysis

The existing conditions hydrologic analysis should provide the reader with a comprehensive evaluation of the site conditions prior to development of the project. The designer should provide the following information with this element of the report:

General Existing Conditions Information

2. Is a regulated floodplain (either FEMA Floodplain or Fayette County's Future Conditions Floodplain) located on the Property?

3. Are any existing detention ponds located on the Property?

4. A written description of the existing conditions found at the site should be provided. Additionally, the narrative should describe the methodologies, assumptions and other pertinent discussions of how the existing conditions were analyzed by the designer.

Existing Conditions Map(s)

The map should provide a clear understanding of the various drainage patterns located throughout the site as well as drainage onto the site from upstream areas. Additionally, the map should provide a clear view of the natural features of the site that may impact development. An existing conditions map should be provided with the report including but not limited to following:

5. Drainage basin delineations showing the location of each drainage sub-basin

6. Existing stormwater conveyances and structural control facilities

7. Direction of flow and discharge points from the site including sheet flow areas

8. Any area of significant depression storage

Existing Conditions Tables

A table listing the land cover characteristics, hydrologic soil group, curve number, and acreage for each sub-basin

9. A set of tables should be included in the report that will allow the reader to understand how various parameters utilized in modeling the existing conditions were developed. Additionally, tables should be included documenting the results of the modeling.

10. A table listing the total acreage, composite curve number and time of concentration for each sub-basin.

11. A table listing the peak runoff rates for each discharge point from the property or site

12. A table listing the peak runoff rates and maximum water surface elevations for all detention facilities studied as part of the existing conditions analysis

Existing Conditions Model Diagram

13. A diagram of the hydrologic model should be provided with the report showing how the model was developed and each node is connected.

Post-Development Hydrologic Analysis

The proposed conditions hydrologic analysis should provide the reader with a comprehensive evaluation of the site conditions following the development of the project. The designer should provide the following information with this element of the report:

General Post-Development Conditions Information

14. Will any existing streams, lakes or wetlands be disturbed by this project?

15. Will any existing detention ponds or other drainage features of the property be modified?

16. Will a state or local stream buffer be required for this project?

17. Will any federal permits related to water resources (i.e. streams, lakes, wetlands, etc.) be required for this project?

18. Will any development occur within a FEMA or locally regulated floodplains occur as a result of this project?

19. Will any drainage basin discharging from the property be changed by the lesser of 10% of the total drainage area or 1 acre?

20. A written description of the proposed conditions to be found at the site after construction should be provided. Additionally, the narrative should describe the methodologies, assumptions and other pertinent discussions of how the proposed conditions were analyzed by the designer.

Proposed Conditions Map

The map should provide a clear understanding for the various drainage patterns located throughout the site as well as drainage onto the site from upstream areas. Additionally, the map should provide a clear view of the natural features of the site that will be impacted development as well as features that will not be impacted. A proposed conditions map should be provided with the report including but not limited to following:

21. Drainage basin delineations showing the location of each drainage sub-basin

22. Proposed stormwater conveyances and structural control facilities

23. Direction of flow and discharge points from the site including sheet flow areas

24. Location and boundaries of proposed natural feature protection areas

Proposed Conditions Tables

A set of tables should be included in the report that will allow the reader to understand how various parameters utilized in modeling the propose conditions were developed. Additionally, tables should be included documenting the results of the modeling.

25. A table listing the land cover characteristics, hydrologic soil group, curve number, and acreage for each sub-basin.

26. A table listing the total acreage, composite curve number and time of concentration for each sub-basin.

27. A table listing the peak runoff rates for each discharge point from the property or site along with the allowable discharge rate from the Existing Conditions Analysis

28. A table listing the peak runoff rates and maximum water surface elevations for all detention facilities studied as part of the existing conditions analysis

29. A diagram of the hydrologic model should be provided with the report showing how the model was developed and each node is connected.

Downstream Analysis

The downstream analysis should provide the reader with a comprehensive picture of the downstream areas and their capacity to accommodate stormwater runoff from the proposed development.

General Post-Development Conditions Information

30. Did the downstream analysis incorporate the 10% rule? If not, please explain briefly in the notes below.

31. Were there any detention ponds, ponds, or lakes within the limits of your downstream analysis

32. A written description of the downstream conditions should be provided including any special considerations that should be noted. If the downstream conditions does not incorporate the 10% rule as defined in the GSMM due to allowances made in this LDM, this should be pointed out in the narrative. Additionally, the narrative should describe the methodologies, assumptions and other pertinent

33. Drainage basin delineations showing the point at which the contributing area of the project represents the total drainage basin area required to be studied in the analysis

34. Identify culverts, channels and other structural stormwater controls that the stormwater runoff

35. A table listing the land cover characteristics, hydrologic soil group, curve number, and acreage for each sub-basin

36. A table listing the total acreage, composite curve number and time of concentration for each sub-

37. A table listing the peak runoff rates for each analysis point in the downstream analysis demonstrating the discharge rates for the existing conditions along with the discharge rates for the post-development conditions.

38. A table listing the peak runoff rates and maximum water surface elevations for all detention ponds or lakes studied as part of the downstream analysis. If a detention pond, pond, or lake was not studied, then mark N/A and note why the pond or lake was not studied or note that no ponds or lakes existed in the downstream reach.

39. A diagram of the hydrologic model should be provided with the report showing how the model was developed and each node is connected.

Stormwater Management System Design

Stormwater Management System Map

The stormwater management system map should document the various structural components of how stormwater runoff will be moved around the site.

General Contact Information

40. Location of all non-structural stormwater controls

41. Location of all existing stormwater controls to remain after development

43. Location of all proposed impoundment type controls (i.e. detention pond, stormwater ponds,

44. Location of all conveyance structures and any applicable associated easements

All impoundment type controls should be labeled with the following information:

45. Maximum water surface elevation

46. Depth and storage volumes for the design storm

47. Anti-seep collar for earthen impoundments

48. Depth and storage volumes maximum water surface if the design storm event is exceeded (i.e. Top

All inlets to conveyance structures should be labeled with the following information:

49. Maximum design water surface elevation

50. Maximum potential water surface elevation before bypass occurs

Plan view map illustrating all pipes labeled with:

51. Upstream & Downstream Structure ID

52. Length

53. Material

54. Slope

Profiles of all pipes labeled with:

55. Upstream & Downstream Structure ID

56. Length

57. Material

58. Slope

59. Hydraulic grade line for appropriate design storm

60. Map showing all contributing drainage areas/sub-basin delineations for each detention pond / BMP

Map showing all contributing drainage areas/sub-basin delineations for each Inlet including:

61. Inlet ID

62. Drainage Area

64. c-Factor / Curve Number

The narratives and calculations section should outline and describe the means by which the design will meet the various requirements for design of a stormwater management in unincorporated Fayette County.

65. Narrative describing that appropriate and effective structural stormwater controls have been selected

66. Design calculations and elevations for all existing and proposed stormwater conveyance elements including stormwater drains, pipes, culverts, catch basins, channels, swales and areas of overland flow

67. Design calculations checking buoyancy for all stormwater outlet control structures associated with stormwater / detention ponds

68. Water Balance calculations (if applicable) for all stormwater wet ponds

69. Design calculations for sizing of channel protection outlets if applicable

70. Design calculations and elevations for all structural water quality BMPs to be utilized for water quality improvement

71. Design calculations showing that design meets the requirements of the water quality improvements. The County encourages the designer to utilize the site design tool provided by the North Georgia Water Planning District to meet this requirement. The tool can be acquired from the following website: http://www.northgeorgia water.com/.

72. If the design of the stormwater management system includes best management practices that utilize vegetation as part of the treatment process, please include a copy of the planting plan outlining the types, numbers, and locations of the various plantings required by the design.

Operations & Maintenance Plan

73. A narrative of what maintenance tasks will be required for the stormwater controls specified for the site as well as the responsible parties. Additionally, the report will need to identify access and safety issues for the site. The designer is directed to specific maintenance requirements for best management practices outlined in Section 4 of the GSMM (Volume 2) and Volume 3 of the GSMM.

PLANNING AND ZONING

1. Provide County, land district, and land lot.

2. Indicate date of site plan preparation; provide scale of drawing, stated and shown graphically.

3. Provide north arrow and vicinity map.

4. Provide name, address, and telephone number of owner and/or developer.

5. Provide name, address, and telephone number, registration number, seal and signature of the project's engineer or architect. The design profession must be licensed in the State of Georgia.

6. Provide signature blocks for County approval: County Engineer, Fire Marshal, Environmental Health, Environmental Management, and Zoning Administrator.

7. Provide a legend for all abbreviations.

8. Provide an index of sheets if more than one sheet is provided.

9. Show property lines with bearings and distances of subject property.

10. Within the general notes, indicate the zoning district; minimum lot sizes; front, side and rear setbacks; and buffer as applicable.

11. Show all land lot lines; land district lines; land section lines; and city and county boundaries intersecting or adjacent to the property.

12. Provide total acreage of subject property to the 1/100th acre.

13. Provide acreage of Lot Coverage Limit (Structures and parking areas) to the 1/100th acre.

15. Provide rezoning information, including petition number, date of approval and exact wording of any rezoning conditions as applicable.

16. Provide variances information including petition number, date of approval and exact wording of any variance conditions as applicable.

17. Provide Information regarding the preliminary plat, including date of approval by the Planning Commission and exact wording of any related conditions of approval as applicable.

18. Provide Information regarding the final plat or minor subdivision plat, including date of approval by the Planning Commission and exact wording of any related conditions of approval as if applicable.

19. Provide zoning and property owner name and/or subdivision name of all adjacent properties.

20. Identify all existing structures and features and label as “to remain” or “to be removed”. Structures to remain must be shown and meet all applicable zoning requirements. “Features” include railroads, sewers, bridges, culverts, drain pipes, water mains, cemeteries, etc. Provide a note if there are no existing structures or features on the property.

21. Provide locations and dimensions of all proposed structures including, proposed use(s), distances between buildings, number of stories, number of units per structure, square footage per unit, and total number of units.

22. Provide location of refuse collection area(s), outside storage and/or service areas, off-street loading areas and how such areas will be screened.

23. Indicate how subject property will be served by water and sewage disposal.

24. Provide location of existing and proposed water lines and fire hydrants.

25. Provide location of septic system, initial and replacement drain fields and/or sanitary sewer lines as applicable.

26. Show location, purpose, and width of any easements of record. Provide a note if there are no existing easements associated with the property.

27. Indicate how number of parking spaces was determined.

ENGINEERING DEPARTMENT

1. Show all existing and proposed streets on and adjacent to property. Label ROW widths; provide acreage of any right-of way proposed for dedication to the 1/100th acre, as needed.

2. Show parking layout, including handicapped parking, and typical dimensions.

3. Show exit/entrances and internal circulation pattern including traffic lanes, fire lanes, acceleration/deceleration lanes and typical dimensions.

4. Existing and finished topography at two (2) foot contour intervals.

ENVIRONMENTAL MANAGEMENT DEPARTMENT

1. Provide name and location of the development (including land lot and district). Include Subdivision name on recorded plat as applicable.

2. Provide name, address, and telephone number of developer/owner and applicant.

3. Provide name, address, telephone number, and professional seal of person preparing plan.

4. Show locations and dimensions of all existing and proposed structures (principal and accessory).

5. Delineate FEMA Area of Special Flood Hazard (ASFH) and identify source used for delineation. Reference the correct September 26, 2008 FIRM Panel. The MFFE must be at least 3 ft above the base flood elevation or 1 ft above the future conditions flood elevation whichever is greater. Indicate whether the development parcel shares a common property line with another parcel containing an ASFH.

6. Delineate all watershed protection buffers and setbacks outlines in the Development Regulations, Section VII, Watershed Protection Ordinance.

7. Pavement edges, centerlines of roadways, and all easements.

8. Show parking layout, including landscaping.

9. Provide Landscape Plan. (Article V).

10. Provide Tree Protection Plan. (Article VI).

11. Delineate drainage basins across the site. Show offsite drainage areas for both previous and post developed conditions. Include drainage areas, CN values, and Tc estimates.

12. Provide Stormwater Management Plan as required in Sec. 104-561 (b).

13. Identify the project receiving waters and describe adjacent areas – neighboring areas such as streams, lakes, residential areas, etc., which might be affected.

14. Provide location on-site with footprint of system and all pipes that are to be part of system. Note approval from health department required.

15. Provide construction details or standards for drainage structures.

16. Note if project in Groundwater Recharge Area. If not add note stating it is not.

17. Show 100-yr backwater limits of all yard inlets and culverts.

18. Show ditch or channel x-section with min. depth of flow needed.

19. Ditches must be designed to 100-yr capacity & 25-yr velocity protection. Outlet velocity should be less than or equal to 4.0 ft./sec. or provide energy dissipater.

20. Provide the flow rate (cfs) and velocity (fps) for all pipes and outlets.

21. Show catch basin and pipe invert and top elevations.

22. Show existing and proposed ground surface over centerline of pipe.

23. Graphically show 25/100-year Hydraulic Grade Line (HGL) on profiles.

24. Show all impoundment details.

25. Provide control structure details (weirs, retrofits, etc.).

26. Show drainage structure details (headwalls, yard drains, lateral subdrains, etc.).

27. Provide pipe construction details (bedding class, pipe gage, etc.).

28. Provide unified stormwater sizing criteria (water quality, channel protection, overbank flood protection, and extreme flood protection).

29. Provide a completed GSWMM Site review tool. (All sites must remove 80% of TSS per the review tool).

LANDSCAPING & TREE PROTECTION

1. Parcels Zoning and Surrounding Parcels Zoning.

2. Note if the project requires a State Route/Overlay Zone. If not add note stating it does not.

3. Landscape plans shall be prepared by a professional landscape architect, or other licensed professional of similar design discipline.

4. Provide name and telephone number of person preparing plan.

5. Show the boundary lines of all buffer and landscape areas.

6. Show locations of existing plant materials to be retained and/or new plant materials to be installed, with all details drawn at a scale of one (1) inch to 100 feet or greater

7. Provide a plant material list, which shall include:

Common and/or botanical names of all proposed plants.

Plant quantities.

Size and condition of plants (Example: 1 ½ caliper, 8-foot height, balled and burlapped.)

Spacing

Remarks as necessary to proper plant selection upon installation.

8. Show groundcovers, flowers, stones, and mulch utilized as needed to meet coverage requirements.

9. Show grass coverage not exceeding 25 percent (25%) of required street frontage, parking lot, and side yard landscape areas.

10. Provide islands at the ends of interior parking aisles and one island per each 150 feet of continuous aisle length. (10 ft by 20 ft min)

11. Note required plant heights listed in Landscape and Buffer Requirements shall be height at time of planting.

12. Show applicable Street Frontage, Parking Lot and Side Yard landscape requirements.

13. Show Zoning Buffer when required by Zoning District Regulations.

14. Note buffers and landscape areas fronting on County maintained roads are measured from the right-of-way. (*please specify if located in overlay area per zoning ordinance)

15. Provide trees with a minimum caliper of two and one-half inches (2 ½) at time of planting.

16. All disturbed areas not otherwise addressed in the Ordinance shall have a vegetative ground cover for erosion control purposes.

17. Allow at least 200 sq ft of contiguous soil space per over story tree.

18. No parking space shall be more than 40 feet from a tree.

19. Plants with vigorous root systems shall not be planted within the drip line area of said plant next to any nitrification field, sanitary sewer, or public water easement including but not limited to the Eastern Cottonwood, Willow, and Lombardy Poplar.

TREE PROTECTION

20. Show locations of all-existing trees and specimen trees which will be retained to fulfill density requirements and their size, dripline area and species. Note: With the exception of specimen trees, five or more trees whose dripline combine into one tree protection area may be outlined as a group and their number, size and species listed in a summary table. If construction is limited to streets, drainage easements and utilities the TPP only needs to show all specimen trees located within 100 feet of the centerline of any right-of-way, or drainage/utility easements.

21. Summary table listing DBH and species name of each RDU and EDU tree used to obtain SDU.

22. The location of all new replacement trees to be planted to fulfill density requirements and their species. (Note replacement trees. New trees are given a credit of one (1) TDU per inch of trunk diameter measure at six (6) inches from the ground.)

23. The replacement tree requirements listed in Sec. 104-153 (3) have been satisfied.

24. The location of any specimen tree designated for removal during construction must be shown along with the tree size (DBH) and species name (common name).

25. "Written justification for specimen tree designated for removal meets the conditions outlined in Sec. 104-153 (2) d of the Fayette County Tree Protection and Replacement Ordinance. Note: The County may require additional information including, but not limited to, a certified arborist's appraisal of the tree's viability and anticipated life span."

26. "Specimen Tree Note" included if necessary.

27. Location, depth and height of all existing and proposed utility lines that could impact any trees.

28. "Property is greater than or equal to 3.0 acres has or exceeds an average existing tree density of 100 TDU's per acre OR is less than 3 acres has or exceeds an average existing tree density of 50 TDU's per acre."

29. "Existing trees are given credit toward this requirement at the rate of one (1) TDU per inch DBH."

30. At least fifty percent (50%) of the TDU's per acre are located outside of any zoning or watershed buffers.

31. Note: "No land disturbance, construction processes, or storage of equipment or materials shall take place within a designated tree protection area in order to prevent direct physical root damage that occurs during site clearing and grading and can cause transport or feeder roots to be cut, torn, or removed; indirect root damage caused from grade changes; and trunk and crown damage caused by direct contact with land clearing machinery or galling of adjacent trees."

FIRE MARSHAL

1. Indicate and label the location of all fire hydrants (existing or proposed) on the site and all fire hydrants (existing or proposed) on existing streets adjacent to the development. 01.05 Fire Hydrant placement required at 400 feet intervals for non-residential subdivision development.

WATER SYSTEM

1. Indicate and label the location of all water lines.