



## HYDROLOGY REVIEW CHECKLIST

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Telephone: \_\_\_\_\_

**Address all items marked with an "X"**

### **Minimum Submittal Requirements**

1. Conceptual Review Approval
2. Stormwater Management Report/Hydrologic Analysis (2 copies).
3. Construction Plans bearing details of all stormwater management facilities and plans and profiles of proposed storm sewer. ( 4 sets ).

### **Stormwater Management Report Contents**

#### 1. Existing Conditions Analysis

A. Provide topographic map of existing conditions. Show the following on the map:

- i. Delineate drainage boundaries (including offsite areas draining onto site) and label/name each drainage area the same as each basin is labeled/named in calculations and tabulations appearing elsewhere in the report.
- ii. Indicate acreage of each delineated drainage area.
- iii. Indicate CN for each delineated drainage area.
- iv. Indicate  $t_c$  for each delineated drainage area.
- v. Indicate runoff travel path and correlate to calculations determining  $t_c$  for each drainage area.
- vi. Indicate land cover condition for each drainage area.

B. Provide a summary table of peak rates of runoff from each delineated drainage area for 1, 2, 5, 10, 25, and 100 year storm events. Include in summary table for each drainage area the following data: label/name of drainage area, acreage, CN,  $t_c$ , gross rainfall amount for each storm event, and peak flow rate for each storm event (cfs).

C. Provide time of concentration determination calculations for each drainage area.

#### 2. Post Development Conditions Analysis

A. Provide topographic map of developed conditions. Show the following on the map:

- i. Delineate drainage boundaries (including offsite areas draining onto site) and label/name each drainage area the same as each basin is labeled/named in calculations and tabulations appearing elsewhere in the report.
  - ii. Indicate acreage of each delineated drainage area.
  - iii. Indicate CN for each delineated drainage area.
  - iv. Indicate  $t_c$  for each delineated drainage area.
  - v. Indicate runoff travel path and correlate to calculations determining  $t_c$  for each drainage area.
  - vi. Indicate land cover condition for each drainage area.
  - vii. Delineate and label/name each stormwater management facility.
  - viii. Indicate all outflow locations for each stormwater management facility.
- B. Provide a summary table of peak rates of runoff from each delineated drainage area for 1, 2, 5, 10, 25, and 100 year storm events. Include in summary table for each drainage area the following data: label/name of drainage area, acreage, CN,  $t_c$ , gross rainfall amount for each storm event, and peak flow rate for each storm event (cfs).
  - C. Provide a summary table of developed peak rates of runoff vs. existing peak rates of runoff for each drainage area. Demonstrate no increase in peak rates of runoff for 1, 2, 5, 10, or 25 year events for each drainage area.
  - D. Provide tabular hydrograph output for drainage area(s) draining to each stormwater management facility for the 1, 2, 5, 10, 25, and 100 year events.
  - E. Provide tabular hydrograph output for outflow (routing) of each stormwater management facility for the 1, 2, 5, 10, 25, and 100 year events.
  - F. For any bypass area hydrograph that is combined with a stormwater management facility outflow hydrograph, provide the tabular hydrograph output for the bypass area for the 1, 2, 5, 10, 25, and 100 year events. Provide the tabular hydrograph output for each combined hydrograph.
  - G. Provide time of concentration determination calculations for each drainage area.
  - H. For each stormwater management facility provide Stage/Storage/Outflow tabulation and outlet configuration data used for routing for each stormwater management facility.
  - I. Provide Water Quality Volume ( $WQ_v$ ) calculations in accordance with the Georgia Stormwater Management Manual (GSMM).
  - J. Provide Channel Protection Volume ( $CP_v$ ) calculations in accordance with the Georgia Stormwater Management Manual (GSMM).
  - K. Provide extended detention orifice sizing calculation.
  - L. Provide details for outlet control structures/devices for each stormwater management facility on plans and in stormwater management report. Ensure details on plans agree with details in report. Label structures so plans and details in report and on plan can be easily correlated.

### 3. Post Development Downstream Analysis

- A. Provide analysis of downstream conditions at each point or area along project boundary at which runoff will exit the property.
- B. Extend analysis of downstream conditions to include all portions of the downstream conveyances between the site and the point where the site area is 10 percent of the total basin area.

C. Compare capacity vs. designed flows for each downstream conveyance between site and 10% point.

4. Minimum Hydrology Design Parameters

A. Existing condition, pervious vegetated areas maximum CN = 55.

B. Existing condition time of concentration determination shall be in accordance with Section 2.1.5.6 in the Georgia Stormwater Management Manual (GSMM). Sheet/Overland flow lengths less than 100 feet used in GSMM equation 2.1.9 shall be justified in stormwater management report. Use of existing time of concentrations greater than calculated in accordance with GSMM 2.1.5.6 is acceptable.

C. Minimum freeboard for above ground earthen stormwater management facility dams is 2 feet.

D. Minimum freeboard for concrete stormwater management containment facility is 1 foot.

**Other Hydrology and Drainage Items**

1. Show a 20ft, graded (max 16% slope) and stabilized access easement to all stormwater management facilities from a location of public vehicle access.
2. Provide a 20ft landscape strip as required by the City Arborist around the exterior of all detention areas adjacent to and outside the required 10ft access easement.
3. Show a six foot high security fence with a 10ft access gate outside of the ten foot access easement around each detention pond. Show the location of the access gate.
4. Provide Standard 908 Detail for Earth Fill for Detention Ponds or other detail that meets the minimum standards inherent in standard 908.
5. State the Water Quality Volume, the Channel Protection Volume, the 25-year Volume, and the 100-year volume on the plans. State the Water Quality elevation, the Channel Protection elevation, the 25-year Elevation and the 100 year elevation on the plans.
6. Eliminate proposed concentrated discharge from site where existing condition is sheet flow.
7. When serving more than three lots, detention ponds shall be located on a separate parcel where no home can be constructed.
8. Provide design professional seal and signature on plans and report.

**Inspection and Maintenance Agreement** (Sandy Springs Code of Ordinances Chp 14, Art 5, 3.d)

1. An Inspection and Maintenance Agreement for all stormwater management facilities must be approved by the Community Development Department before permitting.
2. State name or official title of person(s) responsible for carrying out inspection and maintenance.
3. Responsibility shall remain with property owner and shall pass to any successor owner.
4. Include schedule for when and how often routine inspection and maintenance will occur.
5. Include plans for annual inspections and include remedies for default.
6. Agreement shall be recorded before final plat approval for residential developments, and before certificate of occupancy for other developments.