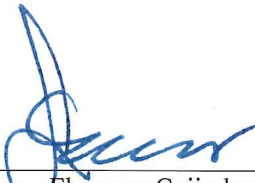


CITY OF CHARLOTTE & MECKLENBURG COUNTY
SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE

Policies and Procedures

Note: All proposed changes in City or County policies or procedures will be presented to the Storm Water Advisory Committee for review and comment. The City and County Engineer will approve all changes to the "Policies and Procedures" as defined in Section 8(a) of the Mecklenburg County Soil Erosion and Sedimentation Control Ordinance and Section 17-33.1 of the City of Charlotte Soil Erosion and Sedimentation Control Ordinance. Staff responsible for administering the Soil Erosion and Sedimentation Control Ordinance may deviate from these standard guidelines when justified by existing conditions or circumstances.

Approved By:



Name: Ebenezer Gujjarlapudi, P.E.
Title: County Engineer

7.26.2018

Date



Name: Mike Davis, P.E.
Title: City Engineer

7/24/18

Date

Section(s)
in Ordinances:
City Section.
County Section

- 17- 3.** **Definition of Off-site**
3 Means area outside of the tract as tract is defined in the ordinance.
- 17-3(c).** **Standards for Erosion Control**
3(c) Standard erosion control practices are illustrated in the Charlotte Land Development Standards Manual and Mecklenburg County Land Development Standards Manual and the State of North Carolina Erosion and Sediment Control Planning and Design Manual. The more restrictive of State and Local standards is to be used.
- 17-3(x).** **Clearing Trees**
3(x) Any disturbance of the ground cover is considered clearing, grading or land-disturbing activity, including tree cutting (except as regulated under the Forest Practice Guidelines). Farming exclusions are detailed in Section 18-24, 18-4.
- 17-3(ee).** **Contractors' Responsibility for Land-disturbing Activity**
3(ee) It is the responsibility of the owner or financially-responsible party to control the sediment on their property. However, there may be cases when penalties are assessed against other parties involved with the land-disturbing activity or a combination of parties involved. For instance, a grading contractor may be penalized for disturbing over an acre of land if an erosion control plan was not approved or a pre-construction conference was not held.
- 17-4(b)** **Logging as a Forestry Operation**
4(b) If land development plans are initiated within two years of logging, the logging event may be investigated as a possible violation of the Erosion and Sedimentation Control Ordinance.
- 17-3(nn) &** **Single-family Lots**
17.31. Consistent with the State of North Carolina's interpretation, a tract is anything within the boundaries of a project that is developed or may be developed as a unit regardless of ownership. A subdivision is considered a tract and therefore would require a plan prior to any lot development.
3(nn) &
6
1. In subdivisions where mass grading occurs and the control measures are installed, financial responsibility and the portion of the approved plan applicable to lot development shall be transferred from the developer to the homebuilder with lot sales.

2. In subdivisions where roads and infrastructure are to be built initially and lots are sold to homebuilders, the developer or the homebuilders must submit and obtain approval of an amended plan or a new plan with the financial responsibility form prior to conducting any Land Disturbing Activity on any lots.

17-32, 17-34. For residential subdivisions, the proposed grades (topographic contours) and erosion control measures for the building lots must be shown on the first submitted erosion control plan if the lots have 50 feet or less of street frontage. Proposed grades, sufficient to determine drainage and erosion control measures, also need to be shown at first submittal for lots being graded at the same time as the roads.

7 & 9

Deviation in final grades will be allowed on the lots so long as the drainage pattern is not changed and the erosion control measures shown on the plan are adequate. The plan should show phasing of erosion control to accommodate the different stages of construction. For example, an erosion control plan may need to be phased to show different erosion control measures for the rough grading stage, street construction stage, and house construction stage. Phasing for rough and fine grading is not required on the erosion control plans when sediment basins can be placed out of the way of other construction activity and function during all stages of construction. On 2:1 slopes greater than 10 to 12 feet tall, terracing and slope drains may be required to control storm water runoff. Details for terracing and slope drains are in the Charlotte-Mecklenburg Land Development Standards Manual.

At the completion of the grading for the infrastructure, the developer may:

1. Seed the disturbed area, closing the grading permit, and require the homebuilder to obtain a separate permit(s) for grading the lots,
2. Transfer financial responsibility for the erosion control plan & permit to the homebuilder pursuant to the City/County Transfer Form, or
3. Retain financial responsibility for the project.

Home Construction Grading: When a homebuilder is either building in a subdivision that was permitted for infrastructure only or will be disturbing an acre or more of land, the homebuilder will be required to submit an erosion control plan and obtain an erosion control permit if the area to be disturbed was not shown on the erosion control plan approved for the overall subdivision. The plan should show lot drainage and the grading/padding of the lots. While it is the homebuilder's option to decide how grades on lots are accomplished, a revised erosion control plan will be required if the grading significantly changes drainage patterns from the approved erosion control plan. When the lot grading plan results in

significant cut to a fill slope area, the lot-grading plan must address the drainage changes caused by the changes in grade.

Multiple Builders: In subdivisions with multiple homebuilders and all the lots were permitted, the developer may transfer financial responsibility for portions of the subdivision to individual homebuilders.

17-32(a). Enhanced Erosion Control Requirement

7(a)

Enhanced erosion control measures are to be installed in the areas identified in Attachment 1. These areas include, Goose Creek and McDowell Creek Watershed Areas, Critical & Protected Watershed Districts, the Town of Matthews town limits and ETJ, and land within 500' of listed 303d streams. These enhanced measures include:

1. Surface water draw down devices (flashboard risers or skimmers) shall be installed in all sediment basins. Rock coffer forebays shall be used in conjunction with all sediment basins. The basin shall also have a volume twenty-five (25) percent greater than 1800 cubic feet per drainage acre, when possible.
2. The amount of uncovered area at any one time shall be limited to no more than 20 acres, without special approval from the jurisdictional authority*.
3. Polyacrylamides (PAM) shall be used to reduce turbidity and suspended solids whenever a sediment trap, basin, pit, hole or building foundation is being pumped out to remove sediment laden water. This activity must be inspected and approved by the City/County erosion control inspector.
4. Polyacrylamides may be required on site, as determined by the City/County erosion control inspector.
5. Double row of high hazard silt fence with wire backing and stone shall be used along wetlands, streams, lakes or other surface water bodies, as well as adjacent to all S.W.I.M. or other Water Quality Buffers. Single row of silt fence with wire backing and stone may be required on all other areas, as determined by the jurisdictional authority* or City/County erosion control inspector.
6. A 10-foot undisturbed buffer shall be provided around the outside edge of intermittent and perennial streams, ponds and wetlands. Incidental drainage improvements or repairs will be permitted within the buffer as approved by city/county staff. These would include any allowances stated in the SWIM Buffer and/or PCCO Ordinances, if applicable.
7. A ground cover sufficient to restrain accelerated erosion must be provided within 7 calendar days of the date of last land-disturbing activity on any portion of the project.

8. All diversion ditches and interior basin slopes must be matted.
9. Sufficient access for construction and maintenance must be provided at the toe of all retaining walls that are 4' or higher. The minimum access width should be no less than six feet.
10. All basin spillways shall be sized to pass the 25-yr storm event.
11. Fill slope steepness shall be limited to 2:1. Slopes steeper than 3:1 must be terraced or otherwise provide an approved engineered solution. Slopes 3:1 or flatter must be designed as set forth in the NC Soil Erosion & Sediment Planning & Design Manual, Standard 6.02a.
12. All plans will carry a "performance reservation".
13. All self-inspection log book entries will be electronically sent to the area inspector, within 2 working days of a qualifying rain event or weekly (whichever is shorter).
14. For erosion control basins with a drainage area greater than 10 acres, turbidity measurements may be required at the discretion of the jurisdictional authority*, to measure clarity of basin effluent and any potential impact to receiving waters at the time of rainfall-triggered inspections. Readings must be collected at the basin outfall (to measure clarity of basin effluent), upstream of the discharge point (to measure baseline conditions) and downstream of the discharge point (to measure stream impacts of basin effluent) when possible. The results must be logged in the inspection reports.

*Jurisdictional authority refers to the City of Charlotte Engineer for projects within Charlotte city limits and its ETJ, the County Engineer for projects within the towns and unincorporated County, and the Town of Matthews Engineer for projects within Matthews town limits and ETJ

17-31(b) & Initiating Grading Activities before Plan Approval

17-33(d-e), 6(b) & 8(d-e) No land-disturbing activity is to be initiated without a permit when the activity is part of a larger activity for which an approved plan and pre-construction conference are required. Permits are issued only after (1) a plan has been approved and the review fee paid, (2) the pre-construction meeting on the property has taken place, and (3) the erosion control devices have been installed and passed inspection.

17-3(bb) & Performance Reservation

17-35(b), 3(bb) & 10(b) When the City or County approves a Plan with Performance Reservation(s), a violation associated with the measure(s) invoking the Performance Reservation may result in an immediate civil penalty and/or cause a penalty assessment to be increased to the maximum allowable amount.

17-33(a).
8(a)

Required Measures for Wetland Protection

Erosion control measures shall not be located in wetlands. The following erosion control measures shall be applied to protect wetlands:

1. All slopes to wetlands shall be terraced as illustrated in the Charlotte-Mecklenburg Land Development Standards Manual or per alternative design approved by City/County Engineer;
2. Sediment basins storage volume shall be sized for the drainage area, not just the disturbed area, unless off site water will be passed through or around the site in some manner so as it remains free of sediment;
3. All silt fences adjacent to a wetland shall be placed with wire backing and washed stone on the toe of the fence.
4. Orange tree protection fence shall be required at the limits of all wetlands within 100 feet of disturbed areas that are within the tract.

17-33(a).
8(a)

Additional Measures for Wetland Protection

The following erosion control measures may be required to provide the necessary additional protection to the wetlands:

1. A 10' undisturbed buffer may be required at the edge of a wetland;
2. Temporary seeding may be required below any terrace as fill slopes are brought up in height;
3. Sediment basins may be designed for the 25-year storm rather than the 10-year storm. At a minimum, basin surface area shall be sized per the NC Sediment Control Planning and Design Manual Sec. 6.6 ($A = 0.01q$ where A = surface area in a sediment basin and q = peak inflow in cfs).
4. Silt fence baffles, chemical flocculants, or other techniques as approved by the City/County Engineer may be utilized.
5. A double row of silt fence may be required.

**17-33(e) &
17-35(a.4).**
*8(e) &
10(a.4)*

NPDES Permits

When applicable, the City or County inspector will issue the 'NPDES Storm Water Discharge Permit for Construction Activities' to the representative of the financially-responsible party at the pre-construction conference. The representative of the financially-responsible party shall sign for receipt of the NPDES permit.

17-33(f). **Monitoring Reports**
8(f) The inspection reports shall be consistent with the NPDES format or comparable reporting format.

17-33(f). **Person Doing Monitoring**
8(f) The financially-responsible party must assign a certified and technically competent, knowledgeable person to keep the self-inspection log and identify this individual at the pre-construction meeting. The record shall be maintained by an individual that has obtained and maintained in good standing an approved certification by the City/County Engineer. The City/County will offer appropriate training and certification courses. Charlotte-Mecklenburg Certified Site Inspectors (CMCSI), Certified Professional in Erosion and Sediment Control (CPESC), and licensed design professionals are recognized as approved certifications.

17-33(f.1). **On-site Plans and Inspection Log**
8(f.1) A contractor, builder, or financially-responsible party who does not have a field office may have his or her approved erosion control plan and self-inspection log in a vehicle, on-site, or on their person. The log book must be provided to the City/County Engineer within 24 hours of request.

17-34(d). **Additional Measures**
9(d) The inspector shall document in writing all additional measures that are required and communicate the need for these additional measures to the financially-responsible party either orally or in writing. A copy of these requirements shall be available to the financially-responsible party or given to the financially-responsible party and field supervisor.

17-34(e). **Maximum Non-Erosive Velocity**
9(e) Persons shall design and conduct land-disturbing activity so that the post construction velocity of the 10-year storm runoff in the receiving watercourse to the discharge point does not exceed the greater of:

1. The velocity established by the table below; or
2. The velocity of the 10-year storm runoff in the receiving watercourse prior to development.

If conditions (1) or (2) of this paragraph cannot be met, then the receiving watercourse to and including the discharge point shall be designed and constructed to withstand the expected velocity anywhere the velocity exceeds the "prior to development" velocity by 10%.

Maximum permissible velocities

<u>Material</u>	F.P.S. (feet per sec.)	M.P.S. (meters per sec.)
Fine sand (noncolloidal)	2.5	.8
Sandy loam (noncolloidal)	2.5	.8
Silt loam (noncolloidal)	3.0	.9
Ordinary firm loam	3.5	1.1
Fine gravel	5.0	1.5
Stiff clay (very colloidal)	5.0	1.5
Graded, loam to cobbles (noncolloidal)	5.0	1.5
Graded, silt to cobbles (colloidal)	5.5	1.7
Alluvial silts (noncolloidal)	3.5	1.1
Alluvial silts (colloidal)	5.0	1.5
Coarse gravel (noncolloidal)	6.0	1.8
Cobbles and shingles	5.5	1.7
Shales and hard pans	6.0	1.8

For Mecklenburg County, 3.5 fps is typically the maximum permissible velocity when the soil material is unknown or not listed.

** This is currently under committee review and is subject to change.*

Source - Adapted from recommendations by Special Committee on Irrigation Research, American Society of Civil Engineers, 1926, for channels with straight alignment. For sinuous channels, multiply allowable velocity by 0.95 for slightly sinuous, by 0.9 for moderately sinuous channels, and by 0.8 for highly sinuous channels.

17-34(f).
9(f)

Waste, Borrow and Fill Areas in Other Jurisdictions

Waste, borrow or fill areas located outside the City or County may require a grading permit from the appropriate agency.

17-35.
10

Annexation and Expanding ETJs

In the case of annexation or expanding extra-territorial jurisdiction (ETJ), the plan approved by the County, or other authority prior to annexation or ETJ expansion, will remain the approved plan.

17-35(a.4) & 17-35(a.6).

Environmental Permit Contacts
Plans and environmental documents required for erosion and sediment control plan approval may include, but are not limited to, the following:

10(a.4) &
10(a.6)

- **Floodplain Development Permit**
Contact: Melonee Brock
Mecklenburg County
Water & Land Resources
(704) 336-3728

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**17-35(a.4) &
17-35(a.6).**
10(a.4) &
10(a.6)

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- Floodplain Development Permit
Contact: Melonee Brock
Mecklenburg County
Water & Land Resources
(704) 336-3728

- Wetlands 404 Nationwide Permit
Contact: Amanda Jones
U.S. Army Corps of Engineer
(828) 271-7980 x231
AMANDA.D.JONES@USACE.ARMY.MIL
- Wetlands 401 State Certification
Contact: Alan Johnson
NCDENR
(704) 663-1699

17-35(c).
10(c)

Expanding the Allowed Limits of Disturbance

Before conducting a land-disturbing activity beyond what is permitted on an approved plan, a revised plan may be required. It is not the intent to require revised plans for minor deviations from the approved plan. To be considered a minor deviation, drainage patterns and protected areas, such as wetlands, buffers or tree protection areas, must not be impacted and must be approved by the field inspector before commencing activity. All minor deviations must be approved by the City/County Erosion Control Inspector.

When a permit is required for additional areas, only the additional area covered by an application for an amendment shall not be uncovered until permitted. Work may continue on the already permitted area, which is not affected by the amendment.

**17-35 (b) &
17-36.**
*10(b) &
11*

Expiration of Plan or Permit

A permit is void:

1. One year after a plan is approved, but not paid for;
2. Three years after a plan is approved and paid for, but no activity has occurred;

17-66(c).
12(c)

Deadline for Compliance

Violations of the nature described in Section 17-66 (f) of the City ordinance, or *Section 12(f)* of the County ordinance, are subject to an immediate penalty and no deadline for compliance need be given.

For all other violations, the notice of violation (NOV) will identify the nature of the violation and set forth the measures necessary to achieve compliance and typically allow three (3) working days to correct the violations prior to the responsible party receiving a continuing notice of violation (CNOV). On individual single-family lots, typically two (2) working days will be given to correct violations prior to receiving a CNOV.

The issuance of a continuing notice of violation (CNOV) means the responsible party can expect a fine. It is the violator's responsibility to notify the inspector when the violation has been corrected. Violation compliance times and penalties assessed may be adjusted up or down by the City/County Engineer depending on:

1. The amount of work to be done,
2. The violation history of the responsible party,
3. The severity of the violation,
4. The responsiveness of the violator, and
5. The method of notification.

17-66(e). **Determining 10-Year Storm Events**
12(e). If there is a dispute about whether a storm was a ten-year event, data from USGS and other area sources may be used to determine the storm intensity in the vicinity of the project location.

17-66(i). **Stabilization at Project Final**
12(i) For the purposes of a Certificate of Occupancy or subdivision final, seed and mulch are to be placed per approved plan, but grass need not be up. When individual structures are a part of a larger parcel, Certificates of Occupancy will be issued to each structure individually with the last certificate requiring site stabilization and the completion of storm water detention, if required by the approved plan.
Even after the Certificate of Occupancy is issued, sedimentation must be controlled. Temporary erosion and sedimentation measures may be reduced, but not removed, until permanent ground cover has been established. Grass must be up an inch and ruts reseeded before measures may be removed.

17-69. **Restoration of Damaged Property**
15 Restoration may be required where there is no clear reason for failure of particular approved erosion control measures. In such cases the City or County may or may not issue a notice of violation for non-maintenance or failure of the measure. Failure to comply with the restoration order may result in the issuance of a Notice of Violation.

In determining the degree of restoration, consideration will be given to whether restoration will:

1. Cause further damage to wildlife habitats on site and downstream;
2. Cause flooding or change in any way to the watercourse;
3. The willingness of the affected property owner to have the restoration done.

In the event that restoration is not completed within the time frame required, the City or County may require a bond as surety. The value of the bond shall be determined by an acceptable, independent restoration specialist and approved by the City or County. The value of the bond may take into consideration the cost of restoration, damage to wildlife habitat and potential administrative and legal expenses. The City or County may require construction to cease and/or hold certificates of occupancy until the surety is in place.

17-31(d) &
17-69.

6(d) & 15

Pre-evaluation for Pond or Lake Restoration

With requisite approval, an upstream developer may be required to have accurate depth measurements, a bathymetric survey, coring or similar survey, taken throughout the first pond or cove within 2500 feet of the project site. This requirement will be based on the direct impact the construction site may have on the waterbody. Recorded results are to be submitted to the City or County Engineer prior to preconstruction meeting. This data shall be collected by a Registered Land Surveyor or person with adequate experience, using methods generally accepted in the industry as being accurate and reliable and should accurately portray pre-construction conditions in the receiving water body of concern. If signs of sedimentation in the pond or cove occur during the project construction, data will be collected post construction for comparison with pre-evaluation data. If analysis of the data indicates an unacceptable accumulation of sediment beyond natural sedimentation, the financial responsible party may be required to restore the waterbody to its predevelopment depth.

17-35(a.4) &

17-69.

10(a.4) &
15

Stream Impacts

Stream impacts will be reported to the NCDENR Department of Water Quality for permits for restoration/mitigation if damage exceeds 150' of channel impacted. If damage exceeds permitted stream impacts or one-tenth of an acre of wetlands, the impacts will be reported to the US Army Corps of Engineers. Stream and wetland restorations may require restoration by stream and wetland professionals, and monitoring for some period of time thereafter.

17-67 &

17-70.

13 & 16

Negotiation in Lieu of Appeals

City and County Engineering staff may negotiate a change in penalty from the time an assessment notice is delivered to the date of an appeal hearing. The appeal hearing may be canceled if the City or County and the financially-responsible party agree to a settlement.

Attachment 1: Enhanced Erosion Control Requirement Areas

