Individual Residential Lot (LDIRL) Plan Checklist

CLT Development Center | 600 East 4th Street | Charlotte, NC 28202

General Items

The following are general items to be clearly shown and labeled on the plot plan

- ☐ Property Address and Parcel Identification Number
- ☐ Property lines including existing public street right-of-way lines, dimensioned and labeled
- ☐ Existing easements and structures on the property
- ☐ Area of property by square footage or acreage
- ☐ Proposed construction on the property with dimensions
- ☐ Proposed Land Disturbance (acreage or square foot)

Storm Drainage (Unified Development Ordinance Article 24.3)

- ☐ Minor (surface) drainage routing through the property will need to clearly show how drainage will be handled. At a minimum, GIS topography and flow arrows can be used to show direction of flow. Show no obstruction of drainage from neighboring properties, and no concentration of drainage that may cause flooding.
- ☐ Major drainage routing (storm drainage infrastructure required) requires sealed calculations and detailed grading/drainage plans from an appropriate licensed professional. This is typically drainage from half an acre or more but is left to the discretion of the stormwater engineer reviewer based on site topography and constraints. See Stormwater Services Engineering Site Checklist for storm drainage checklist. **City of Charlotte Land Development Review Site Checklist**
- ☐ Show location of all existing and proposed drainage structures, drainage pipe, curblines, and driveways. Locate centerline of storm drainage features and clearly show and label on plans.
- ☐ Include driveway pipe design calculations and specs on plan as needed on existing ditch-type streets.
- ☐ Buildings, additions, accessory structures, swimming pools, retaining walls, and brick screening walls shall not be allowed:
  - Within 7.5 feet of the centerline of storm drainage pipes that convey runoff from a public street. For large pipes or deep pipes, this distance may be larger.
  - Within 10 feet of the centerline of a storm drainage ditch, swale or channel that conveys runoff from a public street.

- ☐ New or modified storm drainage that conveys runoff from a publicly-maintained street shall comply with the City's requirements, per current edition of the Charlotte Land Development Standards Manual (CLDSM) and the Charlotte-Mecklenburg Storm Water Services Design Manual (CMSWDM) or other designs reviewed and approved by the Stormwater Administrator.
- ☐ Existing Stormwater Protection Elevation/Flood Protection Elevation (SWPE/FPE) recorded for the property - _____ft. Will need to provide grading plan showing structure is outside of the Stormwater Elevation Line/Building Restriction Flood Line (SWEL/BRFL), and pad graded to exceed the SWPE/FPE. Proposed fill within SWEL/BRFL will require new sealed flood study to establish new flood elevations for the property and show no negative impacts to the surrounding properties.
- ☐ Properties Subject to Flooding where there are no recorded SWPE/FPE– lots with storm drainage features receiving 50 cubic feet per second flowrate in the 100-year storm require Stormwater Protection (flood) study to be completed by a licensed Professional Engineer to establish flood elevations for the property. Sealed design calculations and detailed site and grading plans are required. See Storm Water Services Engineering Site Checklist for flood study checklist. **City of Charlotte Land Development Review Site Checklist**
- ☐ Add note to plans for projects with existing or new SWPE/FPE; "Prior to Occupancy Condition release, sealed as-built verifying the final lowest adjacent grade after construction must be submitted to Land Development Stormwater for review and approval."
- ☐ Add note to plans for projects requiring a new flood study: "Prior to Occupancy condition release, a revised plat must be submitted via Accela to City of Charlotte Land Development for review and approval. Once approved, the revised plat must be recorded at the Register of Deeds. A Copy of the recorded revised plat must be provided prior to the release of City Storm Water occupancy conditions." Items required to be shown on the plat can be found under the100+1 Stormwater Protection elevation section of the final plat checklist for Stormwater **Charlotte-Mecklenburg Final Plat Checklist**

Stream Buffers (PCSR, UDO Article 25 and SWIM Buffers, Article 26)

- ☐ Show and label centerline of the stream/channel, and field-located top of banks
- ☐ Show and label stream buffers. Stream buffers can be found on **Mecklenburg County GIS, Polaris 3g**, or **City of Charlotte GIS, Charlotte explorer**.
- ☐ Disturbance of stream buffers must be approved by Ron Eubanks. Please contact Ron at **Perry.Eubanks@mecklenburgcountync.gov**
- ☐ 100' stream buffers in floodway may require additional stream buffer considerations. Contact Ron Eubanks to determine additional stream buffer applicability.

- ☐ Stream Buffers within Water Supply Watershed Protection Areas increase in width for high density development. Contact Ron Eubanks to determine additional stream buffer applicability.

Post Construction Stormwater Regulations (PCSR, UDO Article 25) and Water Supply Watershed Protection (Article 23) Built Upon Area (BUA)

The following are general items to be shown on plans to determine applicability of PCSR and Water Supply Watershed Protection Regulations.

- ☐ If property currently subject to PCSR/Water Supply Watershed with max BUA, provide current max BUA recorded for the property _____square feet
- ☐ Clearly show total BUA by square footage on the plans. **BUA guidance document** for what is considered BUA.
- ☐ Include completed **PCSR Summary**
- ☐ Provide BUA density Calculation. See **SCM Design Manual Chapter 2** for BUA density calculation examples.

PCSR Applicability

- ☐ Properties are exempt from PCSR if they meet either of the following items below:
  - Proposing less than 5,000 sqft of BUA or more and disturbing less than one acre of land. Proposed BUA and land disturbance is cumulative and includes all proposed BUA and land disturbance since June 1, 2023.
  - Project is on an individual lot recorded prior to July 1, 2008 and less than 20,000 square feet (lot shall have been described by metes and bounds and cannot be part of a larger common plan of development or redevelopment).
- ☐ PCSR low/high-density BUA thresholds:
  - Western Catawba 12%
  - Central Catawba 24%
  - Yadkin/Southeast Catawba including Six Mile10%

Water Supply Watershed Protection Applicability

- ☐ Any lot recorded prior to the dates specified below that has not been developed may be developed as a single-family dwelling subject only to the applicable water quality buffer requirements of Article 23, unless it is part of a larger common plan of development.
  - For the purposes of this section, a lot previously recorded is a lot that:
    1. Is part of an approved subdivision; or
    2. ii. Has a plat which has been recorded in the Office of the Register of Deeds; or

3. iii. Is described by metes and bounds, the description of which has been recorded in the Office of the Register of Deeds.

- The effective dates of a lot's applicable watershed regulations are:
  1. For Lower Lake Wylie Watershed: July 1, 2001 (approved by the Charlotte City Council).
  2. For Lake Wylie Watershed: June 21, 1993 (approved by the Charlotte City Council).
  3. For Mountain Island Watershed: June 21, 1993 (approved by the Mecklenburg Board of County Commissioners).

Water Supply Watershed Areas are determined by proximity to the drinking water resource. Regulated Water Supply Watershed can be found by turning on the "Regulated Drinking Watersheds" layer under Environment on Polaris **Polaris** or by turning on the Overlay Watershed layer under Planning on Charlotte Explorer **Charlotte Explorer**.

- ☐ Water Supply Watershed Protection Low-Density Max and High-Density Max for residential
  - Lower Lake Wylie Protected Area Low-Density Max = 24%, High-Density Max = 70%
  - Lower Lake Wylie Critical Area Low-Density Max = 20%, High-Density Max = 50%
  - Lake Wylie Protected Area Low-Density Max = 24%, High-Density Max = 70%
  - Lake Wylie Critical Area Low-Density Max = 24%, High-Density Max = 50%
  - Mountain Island Lake Protected Area Low-Density Max = 24%, High-Density Max = 50%
  - Mountain Island Lake Critical Area 1 Low-Density Max 6%, cannot exceed 6% (Cannot exceed low-density maximum using GSI for BUA credit)
  - Mountain Island Lake Critical Area 4 Low-Density Max 24%, cannot exceed 24% (Cannot exceed low-density maximum using GSI for BUA credit)

PCSR and Water Supply Watershed Protection Compliance

The following are items to be shown on plans addressing compliance with PCSR and Water Supply Watershed Protection Regulations

- ☐ Low-density projects require controlled impervious area by enforceable restriction (plat, deed, CC&R)
  - Specify Maximum BUA as applicable (PCSR low density, Water Supply Watershed requirements)

- Include notes on plans for required documents prior to Occupancy Condition release:
  1. Sealed BUA As-built Survey is required to be submitted for review and approval
  2. This project requires an enforceable restriction on property usage that runs with the land to ensure that the property owner maintains the site in a manner consistent with the approved project plans. This can be done with a plat, a Covenant, Condition & Restriction (CC&R) or amendment to existing CC&R's, or a Deed restriction note to be added to the Deed to the property. The restriction must be recorded prior to issuance of Certificate of Occupancy. Restriction must include maximum BUA for the property.

☐ High-density projects require on-site stormwater management per UDO Article 23.5 and/or 25.3.

☐ Projects may include Green Stormwater Infrastructure (GSI) measures to obtain BUA credit to reduce the total proposed BUA to below the ordinance applicability threshold or the low/high-density threshold. Except in Mountain Island Lake Critical Area 1 and 4 does not allow GSI to be used for BUA credit to be below the low-density maximum.

- Disconnected Impervious Surfaces (DIS), Rainwater Harvesting (RWH), and Permeable Pavement (PP) are approved Green Stormwater Infrastructure measures. See **SCM Design Manual** for design requirements.
- GSI measures are to be designed in accordance with the Stormwater Control Measure (SCM) Design Manual and design-professional-sealed detailed site and grading plans as well as supporting calculations must be submitted for review and approval.

☐ Maximum BUA Tabulations

- Max % BUA (based on %BUA calculation)
- Pre-Ordinance BUA to Remain
- BUA Credit from RWH/DIS/PP
- Total Max BUA (= Max % BUA + Pre-Ordinance BUA to Remain + BUA Credit from RWH/DIS/PP).

Individual Residential Lot (LDIRL) Plan Checklist

CLT Development Center | 600 East 4th Street | Charlotte, NC 28202

Land Development Stormwater Reviewers

- ☐ Grant Salois: **Grant.Salois@charlottenc.gov**, 980-420-2978
- ☐ Jeanette Jarvis: **Jeanette.Jarvis@charlottenc.gov**, 980-475-4013
- ☐ Charlie Knack: **Charlie.Knack@charlottenc.gov**, 980-214-7637
- ☐ Emily Chien: **Emily.Chien@charlottenc.gov**, 704-579-9611
- ☐ Keith Schell: **Keith.Schell@charlottenc.gov**, 704-579-3758
- ☐ Eduardo Regalado: **Eduardo.Regalado@charlottenc.gov**, 980-408-1001
- ☐ Kelsey Jack: **Kelsey.Jack@charlottenc.gov**, 704-620-1854
- ☐ Jack Fulghum: **Jack.Fulghum@charlottenc.gov**, 704-317-9994
- ☐ Christopher Jain: **Christopher.Jain@charlottenc.gov**, 704-607-7108
- ☐ Jeu Moua: **Jeu.Moua@charlottenc.gov**, 704-579-9629
- ☐ Brendan Smith: **Brendan.Smith@charlottenc.gov**, 704-579-9605

Individual Residential Lot (LDIRL) Plan Checklist

CLT Development Center | 600 East 4th Street | Charlotte, NC 28202

Disconnected Impervious Area (DIS) for BUA Credit

DIS for BUA credit is only allowed for individual residential lot projects with project area less than 1 acre. See Chapter 4.10 of the SCM Design Manual for design requirements.

The following are to be shown in the sealed calculations

- ☐ Show Vegetated Receiving Area (VRA) calculations in accordance with the SCM Design Manual.
- ☐ BUA credit is 50% for area of impervious that is disconnected to VRA.

The following are items to be shown on the sealed site and grading plans

- ☐ VRA clearly labeled with dimensions.
- ☐ VRA should be relatively flat where drainage would sheet flow through it.
- ☐ Roof drainage area clearly identified including square footage and roof leader location and splash pad for rooftop DIS.
- ☐ Pavement Area clearly identified including square footage for pavement DIS.
- ☐ Must show pavement area sheet flows to adjacent VRA for pavement DIS design.
- ☐ Include Vegetated Receiving Area Specification Notes on plans:
    1. Vegetated receiving areas shall have a uniform transverse slope of 8 percent or less, except in Hydrologic Soil Group A soils where slope shall be 15 percent or less;
    2. The pH, compaction, and other attributes of the first eight inches of the soil shall be adjusted if necessary to promote plant establishment and growth;
    3. The vegetated receiving area shall be planted with a non-clumping, deep-rooted grass species; and
    4. Soils shall be stabilized with temporary means such as straw or matting until the permanent vegetative cover has taken root or the runoff shall be directed elsewhere until vegetation has established
- ☐ Include Occupancy Condition Release notes from SCM Design Manual Chapter 4.10:
    - When installed, the designer shall submit a report showing the system has been installed and is functioning as designed. This report shall be signed and sealed.

- This project requires an enforceable restriction on property usage that runs with the land to ensure that the property owner maintains the site in a manner consistent with the approved project plans. This can be done with a plat, a Covenant, Condition & Restriction (CC&R) or amendment to existing CC&R's, or a Deed restriction note to be added to the Deed to the property. The restriction must be recorded prior to issuance of Certificate of Occupancy. Restriction must include the following information:
- The areas indicated as a disconnected impervious surface are required to remain as designed for Built-Upon-Area (BUA) Credit for compliance with the Charlotte UDO Article 25, Post-Construction Stormwater Regulations.
  1. The approved disconnected impervious surface system provides a BUA credit of _____ square feet.
  2. Any modifications to the disconnected impervious surface must be approved by the City of Charlotte.
  3. Property owner is responsible for continued maintenance of the Disconnected Impervious Surface:
     A. Not to regrade the receiving areas or cover them with impervious surfaces.
     B. Not to stockpile soil, sand, mulch, or other materials on the vegetated receiving area
     C. Immediately repair any areas that are eroding or where vegetation has died.
     D. Immediately remove sediment and debris from contributing impervious surfaces.
     E. The roof area must be maintained to reduce the debris and sediment load to the system.

Rainwater Harvesting (RWH) for BUA Credit

RWH for BUA credit is only allowed individual residential lot projects with project area less than 1 acre. See Chapter 4.7 of the SCM Design Manual for design requirements.

The following are to be shown in the sealed calculations

- ☐ Appropriate program used for design must be specified and all input data and output must be included.
- ☐ Calculation must show 85% of the Water Quality volume is captured.
- ☐ BUA Credit is 100% for impervious area treated by RWH

Individual Residential Lot (LDIRL) Plan Checklist

CLT Development Center | 600 East 4th Street | Charlotte, NC 28202

The following are items to be shown on the sealed site and grading plans

- ☐ Drainage area clearly marked showing roof leader or drainage piping leading to cistern.
- ☐ Cistern clearly labeled
- ☐ Clearly show provided overflow (and passive release if used) discharge
- ☐ Include Occupancy Condition Release notes from Chapter 4.7 of the SCM Design Manual:
  - When installed, the designer shall submit a report showing the system has been installed and is functioning as designed. This report shall be signed and sealed.
  - This project requires an enforceable restriction on property usage that runs with the land to ensure that the property owner maintains the site in a manner consistent with the approved project plans. This can be done with a plat revision, a Covenant, Condition & Restriction (CC&R) or amendment to existing CC&R's, or a Deed restriction note to be added to the Deed to the property. The restriction must be recorded prior to issuance of Certificate of Occupancy. Restriction must include the following information:
    1. The areas indicated as the location of the Rainwater Harvesting System storage are required to be used as designed for Built-upon-area (BUA) Credit for compliance with the Charlotte UDO Article 25 Post-Construction Stormwater Regulations.
    2. The approved rainwater harvesting system provides a BUA credit of _____ square feet.
    3. Any modifications to the Rainwater Harvesting System must be approved by the City of Charlotte.
    4. Property owner is responsible for continued maintenance of the Rainwater Harvesting System as outlined by the designer (design professional to provide O&M items from approved plan but should include at a minimum):
       A. The roof area shall be maintained to reduce the debris and sediment load to the system.
       B. The screening component shall be periodically cleaned and cleared of debris.
       C. The system components shall be repaired or replaced whenever they fail to function properly.
       D. The homeowner should inspect the systems monthly to ensure proper compliance.

Individual Residential Lot (LDIRL) Plan Checklist

CLT Development Center | 600 East 4th Street | Charlotte, NC 28202

Permeable Pavement (PP) for BUA Credit

This checklist is only for permeable pavement designed for BUA credit for individual residential lots. All other projects will need to review Chapter 4.5 of the SCM Design Manual for design requirements.

The following are to be shown in the calculations

- ☐ Need to provide at minimum NRCS reports specifying SHWT elevations as well as infiltration rates.
- ☐ SHWT must be minimum 2' below the invert of the system.
- ☐ Need to provide water quality and minimum depth of stone calculations in accordance with the SCM Design Manual.
- ☐ BUA Credit is 100% for area of Permeable Pavement and any screened rooftop that drains to it.

The following are items to be shown on the sealed site and grading plans

- ☐ Limits of permeable pavement area shown and labeled with square footage.
- ☐ Indicate the type of permeable pavement (pavers/pervious concrete/porous asphalt) with appropriate details.
- ☐ Show soil subgrade surface has a slope of less than or equal to 2%. Terraces and baffles or graded berms may be used to achieve this.
  - For designs that use terraces and baffles, plans must show locations and top elevations of baffles separating zones within the stone bed under pavement/pavers.
  - Subsurface (subgrade) grading plan (or profile) required if design uses baffles, berms, or terraces. Invert elevation at each baffle/berm/terrace must be indicated.
- ☐ The aggregate shall be washed and have 2% or less passing the ASTM No. 200 sieve.
- ☐ Depth of aggregate. Need to ensure it is consistent with the calculations.
- ☐ The surface of the permeable pavement should have a slope of <= 6%.
- ☐ Show no runoff from adjacent pervious area to the Permeable Pavement surface.
- ☐ Observation wells:
  - A minimum of one observation well placed at the low point in the system. If the subgrade is terraced, then there shall be one observation well for each terrace.
  - Location(s) shown on plan view.
  - Detail drawing included.
  - Bottom of observation well must extend below the subgrade surface elevation.

- Observation wells must be capped.
- One observation well is required at each low point in the system if multiple low points exist.
- A minimum of one well per 10,000 SF of permeable pavement is required.

☐ Edge restraints shall be provided around the perimeter of permeable interlocking concrete pavers (PICP) and grid pavers

☐ Note on plans: "The soil subgrade for infiltrating permeable pavement shall be graded when there is no precipitation."

☐ Note on plans: "Soil subgrade shall not be compacted."

☐ Include Occupancy Condition Release notes from Chapter 4.7:

- When installed, the designer shall submit a report showing the system has been installed and is functioning as designed. This report shall be signed and sealed.
- This project requires an enforceable restriction on property usage that runs with the land to ensure that the property owner maintains the site in a manner consistent with the approved project plans. This can be done with a plat revision, a Covenant, Condition & Restriction (CC&R) or amendment to existing CC&R's, or a Deed restriction note to be added to the Deed to the property. The restriction must be recorded prior to issuance of Certificate of Occupancy. Restriction must include the following information:

1. The areas indicated as Permeable Pavement are required to infiltrate rainfall for Built-upon-area (BUA) Credit for compliance with the Charlotte UDO Article 25 Post-Construction Stormwater Regulations.
2. The approved permeable paver system provides a BUA credit of _____ square feet.
3. Any modifications to the Permeable Pavement must be approved by the City of Charlotte.
4. Property owner is responsible for continued maintenance of the Permeable Pavement SCM:
   A. Avoid sealing or repaving with impervious materials. Never use asphalt or other tar-type sealers.
   B. Visually inspect permeable pavement area to ensure that it is clean of debris, de-waters between storms, and is clean of sediments.
   C. Maintain upland and adjacent grassy areas. Seed upland and adjacent bare areas.
   D. Keep the permeable pavement surface free of sediment by blowing, sweeping, or vacuuming.
   E. Excessive water flow carrying debris toward the pavement should be diverted.
   F. Inspect the permeable pavement surface for deterioration or spalling.