

# Stormwater Control Ordinance, Administrative Manual Update Project

June 7, 2021



- Reorganization and minor updates to Stormwater Control Ordinance
- Updates to Administrative Manual
  - Limit narrative, focus on technical guidance and instructions
  - Remove contradictions with Ordinance
  - Add information regarding enforcement process and penalties
  - Clarify City review process and expectations of developers
- Evaluate funding mechanisms for City accepting functional maintenance of residential SCMs



- Consider amending ordinance Sec. 23-38 to remove the option for City ownership/functional maintenance of newly-permitted residential SCMs and provide a 2-yr 'sunset' clause for permitted residential SCMs that have failed to be converted due to developer inaction.
- If the City continues allowing the SCM option, amend the ordinance to establish a stormwater fee surcharge for residential ratepayers who benefit from the program and set the surcharge at \$121 per home per year.

- October 2020: Meeting with City Manager's Office and City Attorney's office.
- November 2020: SWAB Meeting
- November 2020: Stormwater Sub-Committee Meeting
- March 2021: Stormwater Sub-Committee Meeting
- June 2021: SWAB Meeting



# Stormwater Control Ordinance





| Current Ordinance Section   | Revised Ordinance Section  | Comments and Key Revisions   |
|---|--|--|
| Sec. 23-21. - Definitions.  | Sec. 23-26. Definitions.   | added, deleted, and edited definitions to align with usage in Administrative Manual and Ordinance  |
| Sec. 23-25. - Scope of stormwater design plans.   | Sec. 23-22. Stormwater Administrative Manual.                                  | - Sec. 23-26 (j) Administrative Manual moved to Administrative Manual<br>- Added "No decision by the city manager within the required timeframe shall constitute an approval."<br>- Updated number of final plans required to be submitted (from three to four)<br>- Edited "Following approval of stormwater design plans and the issuance of an infrastructure permit, an owner shall have a vested right to develop the property in accordance with the conditions of approval for two years. ..."<br>- removed (c) and (f)   |
| Sec. 23-26. - Stormwater design plans and approval process.<br>Sec. 23-27 through Sec 23-40. - Plan requirements. | Sec. 23-27. Stormwater Design Plans and Approval Process.                      | moved to Administrative Manual<br>Updated "All structural stormwater treatment systems used to meet these requirements shall be designed to have a minimum of 85 percent average annual removal for Total Suspended Solids (TSS)" to "All structural stormwater treatment systems used to meet these requirements shall be designated as a Primary SCM (when 100% sized) or a Secondary SCM in series with a Primary SCM."   |
| Sec. 23-32. - Minimum stormwater quality control requirements.  | Sec. 23-29. Minimum Stormwater Quality Control Requirements.                   |  |
| Sec. 23-33. - Approval and permit requirements.   | Sec. 23-30. Final Approval Requirements.                                       | - (a) "If an infrastructure permit is required under the scope of this Article, no final site plan or subdivision plan approval shall be issued or modified without the following items...<br>- (b) No final certificate of occupancy permit shall be issued pursuant to Chapter 7 of this Code of Ordinances or final plat approved without the following:<br>2. Receipt of <u>approved</u> record drawings as outlined in section 23-31;...<br>Added text: "All items required for final site plan, subdivision plan, or certificate of occupancy approval must meet applicable requirements in this article and the administrative manual." |
| Sec. 23-34. - Building permit or street plan approval suspension and revocation.                                  | Sec. 23-43. Building Permit or Street Plan Approval Suspension and Revocation. | Sec 23-27 (f) detailing record drawing requirements moved to Admin Manual<br>Added "The record drawings meet all applicable requirements of this article and the administrative manual."   |
| Sec. 23-38. - Ownership and maintenance of stormwater management facilities.                                      | Sec. 23-33. Ownership and Maintenance of SCMs.                                 | removed reference to city ownership and maintenance, replaced with "functional maintenance"<br>Details of O&M Agreement requirements moved to Administrative Manual  |
| Sec. 23-39. - Operation and maintenance agreement.  | Sec. 23-34. Operation and Maintenance Agreement.                               | Added text: "Requirements. All operation and maintenance agreements executed under this article shall comply with the requirements of this article and the administrative manual."<br>- Letter of credit removed as option<br>- Performance guarantee amount updated to 125 percent for both commercial and single family residential developments.<br>- Added text related to exemptions  |
| Sec. 23-41. - Performance guarantee for installation.   | Sec. 23-35. Performance Guarantee for Installation.                            |  |
| Sec. 23-42. - Notice to owners; deed recordation and indications on plat.   |  | moved to new Section 23-33 (c)   |
| Sec. 23-44. - Variances from requirements.  | Sec. 23-39. Variances from Requirements.                                       | New reference to process outlined in Administrative Manual   |
| Sec. 23-45. - Appeals.  | Sec. 23-40 Appeals.  | New reference to process outlined in Administrative Manual   |
|   | Sec. 23-38. Maintenance Easement.  | Section added; refers to administrative manual for details on easements  |

## General Organization

- Moved **Sec. 23-21 Definitions** below other general information:
  - **Sec. 23-47 Relationship to other laws, regulations, and private agreements**
  - **Sec. 23-48 Severability**
  - **Sec. 23-49 Effective date**
- Moved **Sec. 23-23. Powers of the department** under **Sec. 23-46 Enforcement**
- Moved **Sec. 23-24 Exemptions from requirements** under **Sec. 23-22 Scope of article**
- Added Stormwater Administrative Manual Section
  - Includes information from **Sec. 23-26 (j) *Administrative Manual***
- Moved **Sec. 23-42. Notice to owners; deed recordation and indications on plat.** Under **Sec. 23-39. Operation and maintenance agreement.**

## Sec. 23-26. Stormwater Design Plans and Approval Process.

**Removed** Sec. 23-26 (c) *Consultation Meeting*

Sec. 23-26 (d)

- Added No decision by the city manager within the required timeframe shall constitute an approval.
- Updated number of final plans required to be submitted (from three to four)

**Removed** Sec. 23-26 (f)

- Should any stormwater design plan involve any stormwater management facilities or land to be dedicated to public use, the same information shall also be submitted for review and approval to the department having jurisdiction over the land or other appropriate departments or agencies identified by the city engineer for review and approval. This stormwater design plan shall serve as the basis for all subsequent construction.

Sec. 23-26 (h)

- Following approval of stormwater design plans and the issuance of an infrastructure permit, an owner shall have a vested right to develop the property in accordance with the conditions of approval for two years. ...



- **Removed**; Moved to Administrative Manual
  - **Sec. 23-27 Plan requirements**
  - **Sec. 23-28 Plan hydrologic criteria**
  - **Sec. 23-29 Plan land use conditions criteria**
  - **Sec. 23-30 Plan wetlands criteria**

*Added text to Sec. 23-26:*

(b) *Plan requirements.* Stormwater design plans submitted to the city shall comply with all requirements described in the administrative manual, including but not limited to hydrologic, land use, easements, watersheds, and wetlands requirements.

## **Sec. 23-32. Minimum stormwater quality control requirements.**

### *Sec. 23-32 (c) Development standards for high-density projects.*

- Updated (3)
  - “All structural stormwater treatment systems used to meet these requirements shall be designed to have a minimum of 85 percent average annual removal for Total Suspended Solids (TSS). “
- to
  - “All structural stormwater treatment systems used to meet these requirements shall be designated as a Primary SCM (when 100% sized) or a Secondary SCM in series with a Primary SCM.”



## **Sec. 23-33. Approval and permit requirements.**

### **Sec. 23-33 (a)**

- If an infrastructure permit is required under the scope of this Article, no final site plan or subdivision plan approval shall be issued or modified without the following items...

### **Sec. 23-33 (b)**

- No final certificate of occupancy permit shall be issued pursuant to Chapter 7 of this Code of Ordinances or final plat approved without the following:
  1. All final inspection requirements per section 23-31 are met;
  2. Receipt of approved record drawings as outlined in section 23-31;
  3. An executed and recorded operation and maintenance agreement, if required, in accordance with section 23-33;
  4. The posting of an installation performance guarantee, if required, in accordance with section 23-34; and
  5. A recorded maintenance easement for every SCM to allow sufficient access for adequate maintenance, in accordance with section 23-37.
- Added All items required for final site plan, subdivision plan, or certificate of occupancy approval must meet applicable requirements in this article and the administrative manual.

## **Sec. 23-37. Construction and Inspection.**

### Sec. 23-37 (e)

- The permittee shall provide record drawings signed and sealed by a registered professional (as outlined in section 23-27) to be submitted upon completion of the stormwater systems included in the stormwater design plan. The record drawings shall be referenced to North Carolina State Plane Coordinates and shall be provided in hard copy form as well as a digital file which is compatible with the city's software. The registered professional shall state on the record drawings that:
  - The systems have been constructed as shown on the record drawings;
  - The systems meet the approved stormwater design plan and specifications; and
  - The record drawings meet all applicable requirements of this article and the administrative manual.
- Sec 23-27 (f) detailing record drawing requirements moved to Admin Manual

## **Sec. 23-38. - Ownership and maintenance of stormwater management facilities.**

### Sec. 23-38 (a)

- All ~~stormwater management facilities~~ SCMs shall be privately owned and maintained unless the city accepts the facility for ~~city ownership~~ and functional maintenance. The owner thereof shall grant to the city a right of entry which allows for inspection and emergency repair, in accordance with the terms of the operation and maintenance agreement set forth in section 23-37, hereof.





## **Sec. 23-39. - Operation and maintenance agreement.**

- Details of O&M Agreement requirements moved to Administrative Manual

*Added text:*

Requirements. All operation and maintenance agreements executed under this article shall comply with the requirements of this article and the administrative manual.



## Sec. 23-41 Performance guarantee for installation

### Sec. 23-41 (a) *Commercial Developments*

- (1) *Shall be required.* The city shall require the submittal of a performance guarantee or bond with surety, cash escrow, ~~letter of credit~~ or other acceptable legal arrangement prior to issuance of a permit in order to ensure that the ~~stormwater management facilities~~ SCMs are installed by the permit holder as required by the approved stormwater design plan.
- (2) *Amount.* The amount of an installation performance guarantee shall be equal to at least ~~75-~~125 percent of the total estimated construction cost of the ~~stormwater management facilities~~ SCMs approved under the permit. The installation performance guarantee shall remain in place until at least one year after final approval.

## Sec. 23-41 Performance guarantee for installation

### Sec. 23-41 (b) *Single-family residential subdivisions*

- (1) *Shall be required.* The city shall require the submittal of a performance guarantee or bond with surety, cash escrow, ~~letter of credit~~ or other acceptable legal arrangement prior to approval of a final plat in order to ensure that the ~~stormwater management facilities~~ SCMs are installed by the permit holder as required by the approved stormwater design plan.
- (2) *Amount.* The amount of an installation performance guarantee shall be equal to at least ~~100~~ 125 percent of the total estimated construction cost of the ~~stormwater management facilities~~ SCMs approved under the permit. The installation performance guarantee shall remain in place until at least one year after the facility starts to function as a ~~stormwater management facility~~ SCM.

## Sec. 23-41 Performance guarantee for installation

*Added Text, from Administrative Manual:*

Exemption. Public entities are not required to obtain performance guarantees for the installation of water quality SCMs provided a letter signed by the manager or director of the project provides suitable assurances that the necessary improvements will be installed and maintained in accordance with ordinance requirements. Public entities shall include but not be limited to Cumberland County Schools, City of Fayetteville, Fayetteville Public Works Commission, Fayetteville Stormwater Services, Cumberland County, Fayetteville State University, and the State and Federal government.



- Added Divisions
  - **Division 1 - General Provisions**
  - **Division 2 – Plans**
  - **Division 3 – Construction**
  - **Division 4 – Post-Construction**
  - **Division 5 – Variances and Appeals**
- Additions, Deletions, and Revisions to Definitions section (Sec. 23-21)
- Added Maintenance Easement section (new Sec. 23-37)
- Variances and Appeals sections (Sec. 23-44, 23-45) reference process outlined in Administrative Manual
- General updates to terminology throughout
  - “Stormwater permit” to “infrastructure permit”
  - “Stormwater management facilities” to “SCM”
  - “City Engineer” to “City Manager”





# Functional Maintenance of Residential Subdivision SCMs



## November 2020 Council Meeting:

|  | Does the utility maintain residential SCMs? | Funding Source         | Type of Maintenance   |
|--|---|------------------------|-----------------------|
| Charlotte-Mecklenburg Storm Water Services (City of Charlotte, NC) | By Petition                                 | Stormwater utility fee | Functional            |
| City of Austin (TX)  | Yes   | Stormwater utility fee | Functional, aesthetic |
| City of Durham (NC)  | No  | N/A                    | N/A                   |
| City of Raleigh (NC)   | No  | N/A                    | N/A                   |
| City of Greenville (NC)  | No  | N/A                    | N/A                   |
| El Paso Water (TX)   | Yes   | Stormwater utility fee | Functional            |
| Lexington-Fayette Urban County Government (KY)                     | Yes   | Stormwater utility fee | Functional            |
| Metro Government of Nashville & Davidson County (TN)               | No  | N/A                    | N/A                   |
| New Hanover County (NC)  | No  | N/A                    | N/A                   |
| Sanitation District No. 1 of Northern Kentucky (KY)                | Yes   | Stormwater utility fee | Functional            |

## November 2020 Council Meeting:



# Costs and Risks

- SCM maintenance - \$400,000 per year
- SCM replacement - \$4,000,000 to rebuild



| SCM                               | Year Built | PV Construction    | Conversion Estimate | Bond Amt.          | Pond Lot (acre) | Est. Ann. Maintenance |
|-----------------------------------|------------|--------------------|---------------------|--------------------|-----------------|-----------------------|
| Arran's Cove                      | 2015       | 57,790             | 40,532              | 24,294             | 1.45            | 10,075                |
| Bluffs at Treyburn                | 2015       | 101,531            | 65,863              | 113,804            | 2.04            | 14,174                |
| Colinwood Park                    | 2012       | 64,519             | 64,772              | 60,720             | 1.95            | 13,549                |
| Heathcliff at Westpoint - Basin 1 | 2011       | 241,867            | 59,828              | 159,800            | 1.66            | 11,534                |
| Heathcliff at Westpoint - Basin 2 | 2011       | 0                  | 68,156              |                    | 1.83            | 12,715                |
| Highcroft - Phase I               | 2012       | 182,575            | 92,618              | 49,945             | 2.26            | 15,702                |
| Highcroft Phase II                | 2017       | 106,107            | 141,252             | 10,598             | 1.14            | 7,921                 |
| Highland Pointe - Basin 1         | 2011       | 80,617             | 39,967              | 71,576             | 1.03            | 7,156                 |
| Highland Pointe - Basin 2         | 2011       | 73,034             | 41,882              | 64,843             | 0.68            | 4,725                 |
| Knolls Pond - Basin 1             | 2011       | 148,397            | 27,070              | 22,184             | 0.67            | 4,655                 |
| Knolls Pond - Basin 2             | 2011       | 141,025            | 39,847              | 21,464             | 2.47            | 17,162                |
| Knolls Pond - Basin 3             | 2011       | 136,333            | 39,311              | 21,410             |                 | 0                     |
| Liberty Hills                     | 2016       | 158,643            | 123,674             | 94,695             | 2.72            | 18,899                |
| Northridge Park                   | 2017       | 51,095             | 120,058             | 48,695             | 3.70            | 25,708                |
| Old Buncle Road                   | 2011       | 58,093             | 121,133             | 51,578             | 0.96            | 6,670                 |
| Palms at Summer Grove             | 2014       | 192,957            | 45,670              | 32,507             | 0.96            | 6,670                 |
| Patriot Park Village - Basin 1    | 2016       | 39,312             | 68,178              | 46,708             | 1.94            | 13,479                |
| Patriot Park Village - Basin 2    | 2016       | 38,240             | 154,845             | 45,435             | 1.36            | 9,449                 |
| Summer Grove                      | 2012       | 32,012             | 50,166              | 45,192             | 0.83            | 5,767                 |
| Summer Grove Phase II - Basin 1   | 2010       | 159,887            | 39,116              | 133,920            | 1.85            | 12,854                |
| Summer Grove Phase II - Basin 2   | 2010       | 125,978            | 31,190              | 21,987             |                 | 0                     |
| Westhaven - Basin A               | 2014       | 178,733            | 20,865              | 22,300             | 1.90            | 13,201                |
| <b>Totals</b>                     |            | <b>\$2,368,745</b> | <b>\$1,495,991</b>  | <b>\$1,163,653</b> |                 | <b>\$232,063</b>      |
| <b>Averages</b>                   |            | <b>\$112,797</b>   | <b>\$71,238</b>     |                    |                 | <b>\$11,603</b>       |





## November 2020 Council Meeting:



- SCM maintenance
- SCM replacement



## Recommendation

- Amend current Ordinance Sec. 23-38 to remove option for City ownership/maintenance of newly permitted residential SCMs
- Establish a sunset clause for previously permitted SCMs that are eligible for conversion from sediment basin but have not yet been converted – 2 years
- Continue maintenance of those SCMs the City has accepted, and for those converted by the sunset date

| SCM                               | Year Built | PV Construction    | Conversion Estimate |
|-----------------------------------|------------|--------------------|---------------------|
| Arran's Cove                      | 2015       | 57,790             | 40,532              |
| Bluffs at Treyburn                | 2015       | 101,531            | 65,863              |
| Colinwood Park                    | 2012       | 64,519             | 64,772              |
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| Knolls Pond - Basin 1             | 2011       | 148,397            | 27,070              |
| Knolls Pond - Basin 2             | 2011       | 141,025            | 39,847              |
| Knolls Pond - Basin 3             | 2011       | 136,333            | 39,311              |
| Liberty Hills                     | 2016       | 158,643            | 123,674             |
| Northridge Park                   | 2017       | 51,095             | 120,058             |
| Old Bunce Road                    | 2011       | 58,093             | 121,133             |
| Palms at Summer Grove             | 2014       | 192,957            | 45,670              |
| Patriot Park Village - Basin 1    | 2016       | 39,312             | 68,178              |
| Patriot Park Village - Basin 2    | 2016       | 38,240             | 154,845             |
| Summer Grove                      | 2012       | 32,012             | 50,166              |
| Summer Grove Phase II - Basin 1   | 2010       | 159,887            | 39,116              |
| Summer Grove Phase II - Basin 2   | 2010       | 125,978            | 31,190              |
| Westhaven - Basin A               | 2014       | 178,733            | 20,865              |
| <b>Totals</b>                     |            | <b>\$2,368,745</b> | <b>\$1,495,991</b>  |
| <b>Averages</b>                   |            | <b>\$112,797</b>   | <b>\$71,238</b>     |

22,300

1.90

13,201

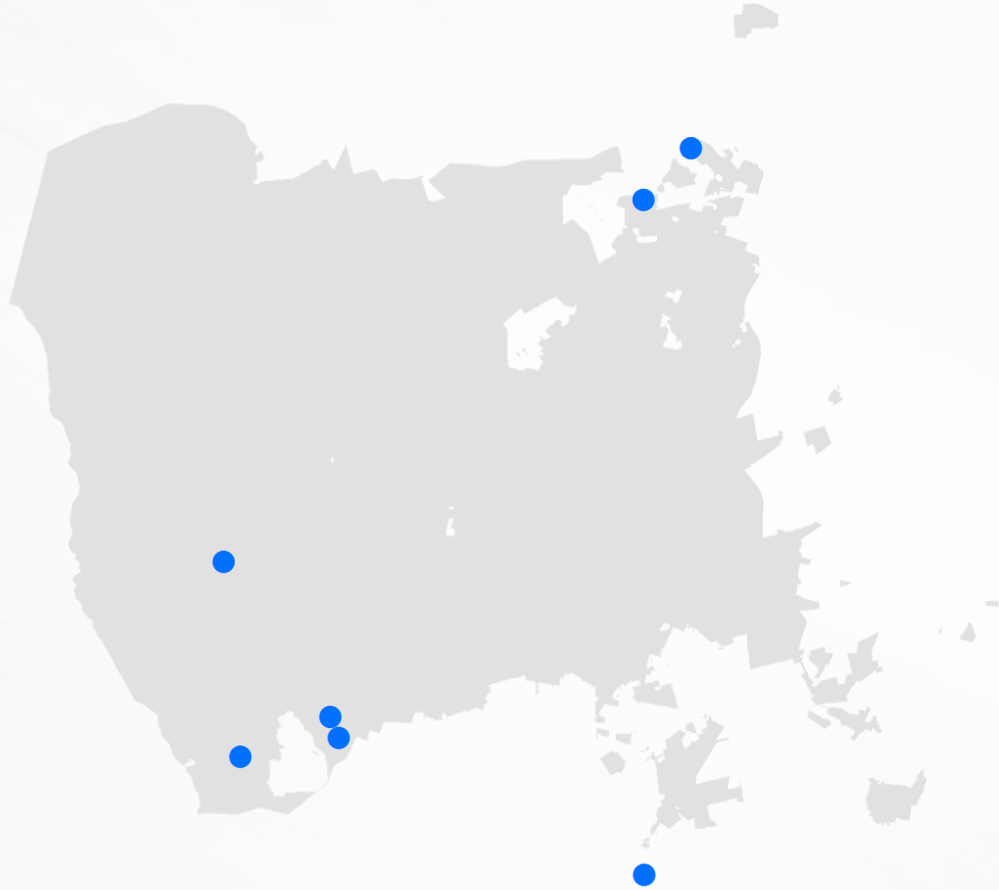
\$232,063

\$11,603

- If the City continues to take over functional maintenance of residential stormwater control measures (SCMs)...
- how much might functional maintenance and periodic reconstruction efforts cost over the long haul?
- how might these costs be recovered and what would the charges be?



# Approach for Analysis



- Representative sample of neighborhoods where required data exists
  - Summergrove
  - Little River Farms
  - Patriot Park
  - Arran's Cove
  - Oakridge Estates
  - Colinwood
  - Fairfield Farms



## Four Cost Estimating Approaches

- Developer-provided annual maintenance costs
- NSCU Extension maintenance estimates
- Peer NC city maintenance estimates
- WERF SCM maintenance estimation tools



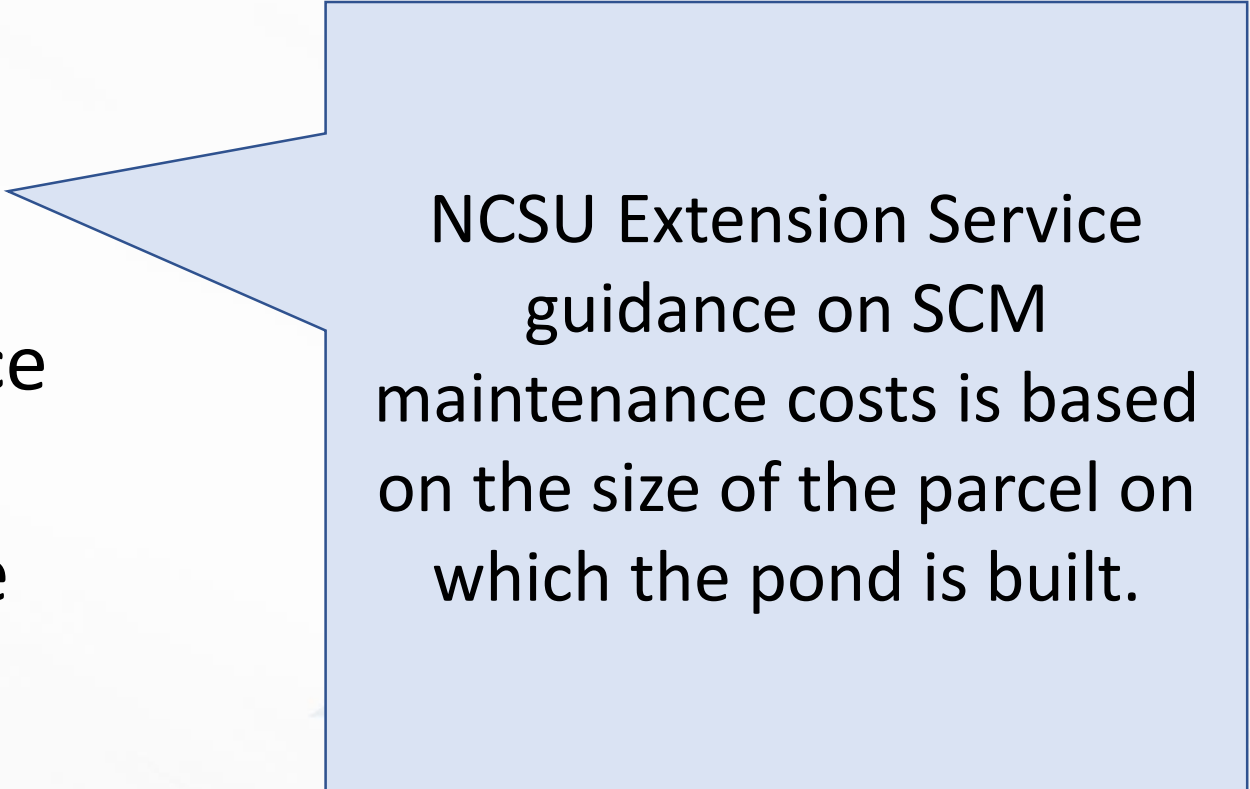
## Four Cost Estimating Approaches

- Developer-provided annual maintenance costs
- NSCU Extension maintenance estimates
- Peer NC city maintenance estimates
- WERF SCM maintenance estimation tools

Developers have provided annual maintenance cost estimates for some SCMs. There is no guidance from the City on provision of these estimates.

## Four Cost Estimating Approaches

- Developer-provided annual maintenance costs
- **NCSU Extension maintenance estimates**
- Peer NC city maintenance estimates
- WERF SCM maintenance estimation tools



NCSU Extension Service guidance on SCM maintenance costs is based on the size of the parcel on which the pond is built.

## Four Cost Estimating Approaches

- Developer-provided annual maintenance costs
- NSCU Extension maintenance estimates
- **Peer NC city maintenance estimates**
- WERF SCM maintenance estimation tools

Peer city is Durham. Their SCM maintenance cost estimation guidance is based on the surface area of the pond.



## Four Cost Estimating Approaches

- Developer-provided annual maintenance costs
- NSCU Extension maintenance estimates
- Peer NC city maintenance estimates
- **WERF SCM maintenance estimation tools**

The Water Research Foundation guidance on SCM maintenance cost is based on the impervious area that drains to the pond.

## Four Funding Approaches

- Special Assessment Districts for benefitting residential ad valorem taxpayers
- Stormwater Fee Surcharges for benefitting residential ratepayers
- Citywide tax increase
- Citywide stormwater fee increase



## Four Funding Approaches

- Special Assessment Districts for benefitting residential ad valorem taxpayers
- Stormwater Fee Surcharges for benefitting residential ratepayers
- Citywide tax increase
- Citywide stormwater fee increase

One special assessment district per neighborhood with SCMs maintained by the City. These would be established over time. Properties pay varying amounts based on tax value, but together would generate the required revenues.

## Four Funding Approaches

- Special Assessment Districts for benefitting residential ad valorem taxpayers
- **Stormwater Fee Surcharges for benefitting residential ratepayers**
- Citywide tax increase
- Citywide stormwater fee increase

A stormwater fee surcharge above and beyond the current stormwater charge (currently at \$72 per year) would be applied to each residential ratepayer in neighborhoods with SCMs maintained by the City

## Four Funding Approaches

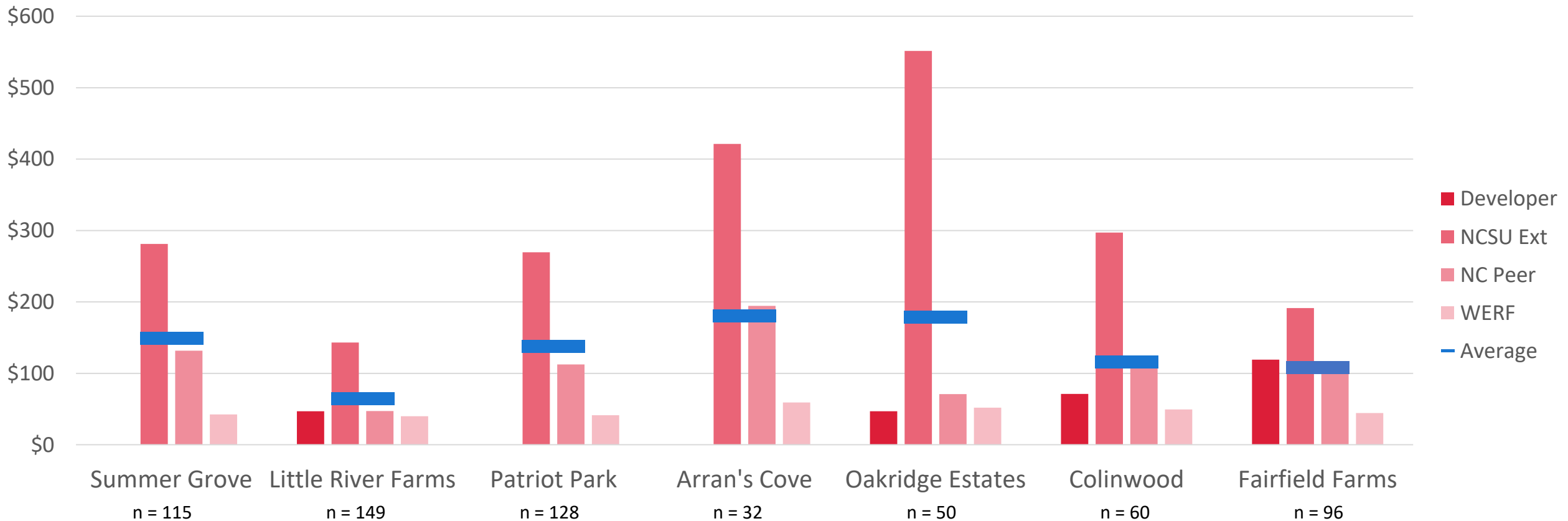
- Special Assessment Districts for benefitting residential ad valorem taxpayers
- Stormwater Fee Surcharges for benefitting residential ratepayers
- Citywide tax increase
- Citywide stormwater fee increase

Because functional maintenance for SCMs would be taken over by the City over a long period of time, Citywide increases would need to occur over and over, not all at once. This was not modeled in our current analysis.



- Periodic reconstruction occurs on average every 25 years
- Reconstruction costs are assumed to be 50% of original construction costs
- Inflation is 3% per year
- Revenue generation from taxes or fees increases 3% per year
- Amount developers will have contributed to maintenance fund is accounted for in estimated revenue requirements

## Comparison of Annual Maintenance + Periodic Replacement Cost Estimate Methodologies (Cost per Home)



- Per home revenue needed varies significantly by method and neighborhood
  - This is because estimation approaches vary
- Average annual revenue needed is \$121 per house draining to an SCM
- Average tax value of homes in these seven neighborhoods is \$232,000 (varies from \$96,000 to \$348,000)
  - 5.2c special assessment district tax will generate \$121 per house on average
- Stormwater fee surcharge of \$121 per house per year will generate needed revenue

- Consider amending ordinance Sec. 23-38 to remove the option for City ownership/functional maintenance of newly-permitted residential SCMs and provide a 2-yr 'sunset' clause for permitted residential SCMs that have failed to be converted due to developer inaction.
- If the City continues allowing the SCM option, amend the ordinance to establish a stormwater fee surcharge for residential ratepayers who benefit from the program and set the surcharge at \$121 per home per year.



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