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## TOWN OF CARRBORO



### STORMWATER ADVISORY COMMISSION - SUMMARY

Remote Meeting on March 11<sup>th</sup>, 2021, 6:30 pm (Zoom)

Commission Members		Candidates	Staff
John Cox (vice-chair)	Jeanette O'Connor (chair)	Margot Lester	Randy Dodd
Robert Dickson	Michael Paul	Satya Kallepalli (absent)	Heather Holley
Jacquelyn Gist (Council Liaison, absent)	Lauren Joca (absent)	Sarah Bloesch	Emily Cochran
			Patricia McGuire

#### **Guests**

W. Jordan Brewer - Kimley-Horn  
Derek Jones - Perkins & Will  
Allen Pratt - Perkins & Will

#### **Administrative Matters**

The SWAC approved the February minutes unanimously.

#### **203 Project Review**

##### **In summary, the SWAC:**

- emphasizes that the Town should take this opportunity to lead by example and exceed minimum standards, align with climate resilience goals as well as help mitigate the Town's historic flooding problems
- commends the designers for their attention to stormwater control and notes that the design exceeds minimum requirements in several areas, but asks if there can be additional peak runoff control and specifically asks the Town to consider supplemental financing to allow designers to go even further beyond minimum requirements.
- requests that the designers consider the following additional technologies:
  - Silva cells
  - Additional bioretention areas where possible
  - Various alternative roof configurations such as a green/blue roof over the entirety of the primary structure or a blue roof set back over part of the parking deck
  - Placement of a cistern, perhaps taking up one or two parking spaces on the 2<sup>nd</sup> and 3<sup>rd</sup> floors of the parking garage
  - encourages the use of native plants over non-natives in the design, and specifically requests that *Liriope* be replaced with another ground cover plant
- notes that projected estimates for the precipitation "IDF" values (intensity, duration, frequency) used for stormwater design show a steep increase within the next 20 years, and ask that the Town consider projected storm events in planning for stormwater design rather than use the standard of NOAA Atlas 14 estimates

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## Details of Discussion

Randy Dodd provided a brief presentation regarding the 203 site, specifically pointing out that the land use is almost entirely impervious surface, and the current Land Use Ordinance provisions does not require treatment for preexisting impervious surfaces. He also showed the existing stormwater infrastructure, noting that water flows south and daylight at a stream off of S. Greensboro St. and Old Pittsboro Rd, and pointed out the location via Google Maps, with emphasis on the fact that there is a large volume of water that exits at this point and has provided issues for neighbors along Old Pittsboro Rd.

Trish McGuire added that the building will house two Orange County social services-related programs (OC Skills and Development, Library), and the Town of Carrboro will also have staff and programming in the building as part of the Recreation, Parks and Cultural Resources Department.

Derek Jones, shared a presentation regarding the project's design. Allen Pratt, landscape architect, described the plants that are planned throughout the exterior for stormwater control and visual appeal. Jeanette asked if a native plant could replace the *Liriope* that is planned as a groundcover; Allen agreed that it could. Allen also provided an overview of the bioretention cells that are planned along the sidewalk.

Jeanette asked who would be responsible for the maintenance of bioretention cells, green roofs, and other landscaping on the sites. Randy explained that the Town is looking into contracting with a State certified firm for SCM maintenance. Derek explained that there can also be a one-year (or longer) maintenance program as part of construction.

Jeanette asked if the vegetated planters could be wider (currently 7' wide), but Derek replied that the planters make up the remaining available space after satisfying street and sidewalk width requirements. Jeanette and Allen clarified the purpose and choices of various other plants that are planned on the site.

Jordan Brewer described the stormwater control plan for the site. There are 3 bioretention cells planned for treatment of roof drainage and at-grade runoff. Drained stormwater will flow beneath the sidewalk on the west side of the property, then connect with existing stormwater infrastructure in the southwest corner. Jordan showed results from the NCDEQ HyperTool and SNAP Tool to show volume reduction and nutrient reductions. The result will be that the first 1.5" of rain will be completely infiltrated within the bioretention areas.

Jeanette asked if the Town could require the project to control stormwater above and beyond requirements in the Land Use Ordinance. Randy said that the project is currently meeting the requirements of the ordinance, as well as providing additional annual stormwater volume control. Jordan stated that the stormwater control measures' greatest impact will be in annual volume reduction. Randy added that treating the first 1.5" of rainfall is also beyond the minimum requirements (1").

Mike asked if the site was designed with projected increases in rainfall intensity in mind. Jordan stated that the design was completed with current data that is available, not future projections. Mike asked if there are any additional measures we can take to maximize stormwater control, given the Town's historic stormwater issues, and if the Town relaxed other requirements, how far could the designers go to impact annual volume reduction.

Jeanette echoed Mike's question about whether or not the Stormwater Enterprise Fund could be used to subsidize stormwater control measures in projects. The design team offered that space constraints were important in considering additional treatment. Trish clarified that the width of Maple Avenue is already being reduced by 50% to accommodate the building footprint, but closing the street completely is not an available option at this time.

John Cox introduced the idea of Silva Cell installments with pipes running through it, though these areas do have considerable constraints. Allen said there is an area that may be appropriate for Silva Cells, along the south side of the property, however the cost may be a significant constraint. Jordan added that the Silva Cells could achieve a higher level of peak flow reduction.

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Jeanette asked if it would be possible to place a green roof over the entirety of the primary structure, and place the solar panels over the parking deck. Trish and Derek said that they're still exploring possibilities for the roof infrastructure, including the idea of a blue roof with a green roof on top of it. Derek and Allen discussed the need for depth in constructing a blue roof rather than a green roof, which affects multiple parts of the construction.

Robert asked if it would be possible to put a partial blue roof over the parking deck, which is already built to withstand substantial weight. Derek said that the height for the parking deck is at the maximum per LUO provisions as it is, so adding an additional roof would push beyond the limit.

Randy asked if the stormwater analysis was completed with the green roof in mind; Jordan said that the green roof was not included in the calculation, and he anticipates that analysis with refined measurements will show further stormwater control. Randy also asked if there are any possibilities for underground detention; Jordan said that they are constrained by rock on the north side, and seasonal high water table on the south side of the site.

Jeanette asked about the potential of stormwater features within the courtyard. Derek explained that initial plans included an underground storage tank and fourth bioretention area in the courtyard, but these plans were not feasible due to the seasonal high water table. John mentioned the availability of elevated planter box-style bioretention areas that could be above grade. Allen also mentioned that the area is quite confined so there is a need to keep the area as open as possible for movement, but that a Silva Cell could be a possibility in this area.

Mike asked how much irrigation is required with this landscaping; Allen said he hasn't done a calculation for irrigation. Mike asked if we could place a very large cistern for additional volume control that could also be used for irrigating the ground-level landscaping. Allen and Jordan said that they have studied this idea, specifically for the green roof, and found that it was a feasible idea but it is constrained by space and is still being studied.

Jeanette asked if the courtyard needs to be a paved plaza, or if it could be a garden with sitting areas and a walkway. Allen said that the required hardscaping space takes up most of the space anyway, and additional planted areas probably wouldn't add much in terms of stormwater control. Derek added that the area is also required to be open due to egress areas, and pointed out the three less obvious doors in the area that require means of egress.

Mike reiterated that he will send projected IDF curves to Randy and others. Jeanette thanked the designers for putting so much thought into stormwater control for this project.

The SWAC discussed options for allowing the developers to make additional improvements, such as requesting that the height limits not include solar cells or blue/green roof depth. Jeanette asked if this option could be placed on a future agenda. Trish stated that there are provisions for equipment on roofs, which are not structural, but blue/green roofs are closer to a structure on a building. However, there is some legislative leverage for making changes. She also stated that the SWAC can emphasize the preference for using Silva Cells and/or altering the height requirements for the site in its recommendation to Council.

Mike suggested placing a cistern on the first and second floors of the garage in one parking spot. The SWAC discussed the possibility of using stored rainwater for toilet flushing, but there may be constraints to doing so.

Randy and Heather reiterated that a major goal of Town-managed stormwater infrastructure is to use native plants in an attractive way to encourage the use of natives in stormwater control, as well as plants that are beneficial to pollinators and otherwise locally adapted and beneficial.

### **Adjourn**

The meeting was adjourned at 8:31 pm.