

Memo

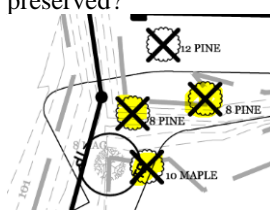
To: Charlie Cazier
From: Pat O’Mahony, Associate Planner; 910-341-0189
CC: File;
Date: 4/27/2021
Re: Raleigh Street Storage Rev. 1

The following is a list of comments for review from planning regarding the project. Please provide your corrections as listed below. A staff summary of comments:

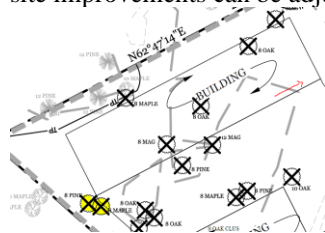
Staff	Department	Notes
Pat O’Mahony	Planning, Plan Review	Comments Attached
Richard Christensen	Engineering	Comments Attached
Chris Walker	Fire	Comments Attached
Mitesh Baxi	Traffic Engineering	Comments Attached
Bill McDow	Transportation	Comments Attached
Anna Reh-Gingerich	Stormwater Services	Comments Attached

Pat O’Mahony- Planning – Attached

- Minimum required side and rear yard setbacks are 0’. Plans show required as 15’.
- Required parking should be calculated per the mini-warehousing standards in Article 9: 1 space per 400 sq ft of office space and 1 per 5,000 sq ft of additional indoor area. When calculating required parking for single-story mini-warehousing, internal drive aisles adjacent to units with exterior access may be included
- Show streetyard frontage (minus driveway width) and multiplier (25 for IND zoning).
- Provide tree inventory table showing size and species of each tree proposed to be removed and retained on site.
- Tree save opportunities are possible:
 - The 8” magnolia is being preserved, can any of the other highlighted trees also be preserved?



- Can this building be adjusted to the north to preserve the highlighted trees? The essential site improvements can be adjusted so as not to impact these trees.



Engineering has reviewed the plans for the Raleigh Street Storage project submitted March 23, 2021 for TRC review and have the following comments:

Stormwater Narrative

1. Please remove information pertaining the City SW permit 2007023. That permit has expired and has no bearing on the submitted project. At a minimum, add language to the narrative stating the City permit expired and the existing State SW permit is being renewed and transferred to the new property owner.

Stormwater Management Permit Application Form

2. I. General Information; #2: Please update the street address of the project. Per Michelle Hutchinson, City GIS Analyst, the street number is 304-A Raleigh Street.
3. II. Permit Information; #2: Delete the City permit number since it has expired.

Supplement and O&M Agreement

4. Note Only: Because the permit SW permit will stay with the State, the Supplement and O&M Agreement are not required as part of the City review.

Calculations

5. A soils map was not provided, but the site appears to have sandy soils with no signs of clay. A runoff coefficient of 0.25 is too high for Woodlands in sandy soils with flat slopes (0-2%) in the pre-development condition. Tech standards allow a minimum of 0.10 and a maximum of 0.15. Please revise the runoff coefficient.
6. Provide detailed weighted runoff coefficient calculations for the post-developed condition to demonstrate how 0.80 was achieved.
7. Provide the 50-year routing analysis and the 50-year analysis with the principle spillway blocked.
8. The contour area for the 100-foot contour in the routing calculations appears to be incorrect.
9. The runoff coefficient of 0.80 for DI's #1-#5 appears to be too low. The Drainage Area Map shows these drainage areas to consist of only rooftops and pavement which would allow for a runoff coefficient of 0.95 per the City's Technical Standards (Chart E-1, page 5-10).
10. There is a minor discrepancy for the diameter of pipe between DI #4 and DI #5. Calcs have it as an 18" pipe, the plans list it as a 15" pipe.
11. Provide the 50-year HGL calcs.
12. Verify that the 24-inch culvert system is compliant with any technical standards found in Section F (Pipe System Design); 3 (Culvert Design).
13. Drainage Area Map:
 - a. Minor revision-The legend refers to the wet pond as an *offsite* wet detention basin?
 - b. The drainage area for the area within the right-of-way appears to drain to the southeast. The spot grades for the sidewalk and driveway apron found on sheet C-1 appear to keep the area from doing that. Verify that there won't be any ponding of runoff within the right-of-way.

Plans

14. C-1:
 - a. The sidewalk needs to be placed along the right-of-way line per the technical standards. Should the sidewalk need to be realigned away from the right-of-way line, verify with Bill McDow the suggested vertical recovery distance between the edge of pavement and the front edge of the public sidewalk.
 - b. There doesn't appear to be any top of berm width along the back side of the wet pond. It appears to 'peak' at elevation 100'. The emergency spillway detail on C-3 shows a 6-foot top of berm width. Should the 100-year water surface elevation with the spillway blocked reach 99.70', then the pond berm could breach and cause issues. Please verify.

- c. Swale #1 does not appear to have a discernible back slope where the swale can provide the necessary depth to contain the 10-year design storm.
 - d. Rip rap aprons need to extend down to natural grade, specifically the emergency spillway and the entrance to the existing ditch.
 - e. The 10' maintenance access is shown but it does not appear that the emergency spillway could be accessed if maintenance was needed.
15. Landscape Plan: It appears that trees have been proposed over or in really close proximity to the 24" pipe system that is proposed in the existing ditch. I would suggest pushing the pipes out and away from the pipes so that the root systems will not cause problems in the future.

Please call or email if there are any questions. Thank you.

Project Name: **Raleigh Street Storage**

Formal TRC Date: April 29, 2021

Reviewer Name: Chris Walker

Reviewer Department/Division: Fire

Please address the following comments:

- Please call out the Emergency Vehicle Turnaround located near the end of the site. If that 30' X 30' area is to be used it will also have to be well marked with striping and signage.

*Project Name: **RALEIGH STREET STORAGE***

*Formal TRC Date: **04.29.2021***

*Reviewer Name: **Mitesh Baxi***

*Reviewer Department/Division: **PDT/Traffic Engineering***

TECHNICAL STANDARDS:

1. All off street parking areas shall be arranged so that ingress and egress is by forward motion of vehicles. [\[Sec.18-526 CofW LDC\]](#) Please provide a turnaround prior to gate in case a vehicle must. Show the turning movement for the vehicle requiring turnaround prior entering the gates.

Please let me know if you have any questions or if I can be of further assistance.

Project Name: **RALEIGH STREET STORAGE**

TRC Date: **04.29.2021**

Reviewer Name: **BILL McDow**

Reviewer Department/Division: **PDT/Transportation Planning**

TECHNICAL STANDARDS:

1. The land use code shown on the site plans, (LUC 150 Warehouse) is incorrect for this use, Mini-Warehouse (Self Storage buildings). The ITE Trip Generation Manual uses Land Use 151 for Self-Storage buildings.
2. Please change the land use code to 151 and resubmit the estimated Trip Generation Numbers according to the ITE (Institute of Transportation Engineers) Trip Generation Manual, 10th Edition and the 10th Edition Supplement, for Total AM Peak Hour Trips, Total PM Peak Hour Trips, and Total 24 HR Trips.
3. The site plans do not show an office or parking for employees or handicap persons.
4. The site does not have a sidewalk connection from the proposed public sidewalk to the site.

Please let me know if you have any questions regarding the comments.

Project: Raleigh Street Storage
TRC Meeting Date: 4/29/2021
Reviewer: Anna Reh-Gingerich
Department: Stormwater Services

To Whom It May Concern:

The Raleigh Street Storage project falls within the Barnards Creek Watershed. Any additional stormwater capture on-site would help reduce the amount of stormwater runoff and pollution that could enter Barnards Creek and, eventually, the Cape Fear River.

My comments:

1. Incorporate more tree save into the site. It looks like there are some trees near borders that may be able to be saved with a little flexibility.
2. Although allowed by ordinance, the proposed wet pond is not recommended for approval. With recent incidents of anatoxin-A and other bacteria associated with blue-green algae in wet ponds, as well as recent and on-going research by NC State University, UNC-Wilmington and NCDEMLR concerning the efficacy and overall public health and safety and water quality performance of wet ponds, we recommend alternative stormwater control measures, depending on the soils and ground water conditions. These could include bio-retention, constructed stormwater wetlands, and infiltration practices, using the NCDEMLR Stormwater MDC Design Manual. MDCs for Stormwater Wetlands:
 - There is an MDC that describes how to incorporate floating wetlands for more treatment.
 - <https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Stormwater/BMP%20Manual/C-4--Stormwater-Wetland-11-20-2020.pdf>
3. Incorporate native plants wherever possible. Native plants require less maintenance than non-native plants to grow successfully since they are already acclimated to local conditions.
 - There are great options of plants native to coastal NC in this booklet, including trees, flowers, shrubs, and groundcovers: <https://ncwildflower.org/handouts/Coastal-Landscaping-Guide-Book.pdf>
 - The North Carolina Extension Gardener Plant Toolbox is also a great resource. This link leads to a search of native, flowering, coastal shrubs alternatives (besides the dwarf yaupon holly which is a great native shrub!): https://plants.ces.ncsu.edu/find_a_plant/?plant_type_id=17&nc_region_id=1&flower_value_to_gardener_id=1&landscape_theme_id=7
 - Native Azalea species: <https://www.trianglegardener.com/wp-content/uploads/2018/12/Native-Azalea-Chart.pdf>, <https://www.trianglegardener.com/native-azaleas/>
 - Consider native tree alternatives to the proposed Trident Maples and Allee Elms. Alternatives include native species such as serviceberry, American persimmon, American hophornbeam, redbuds, dogwoods, Carolina cherry laurel, varieties of *Magnolia grandiflora*, red maple (*Acer rubrum*), or cherrybark oak (*Quercus pagoda*), to name a few. A full list is available here, but keep space and height in mind when selecting: https://plants.ces.ncsu.edu/find_a_plant/?plant_type_id=11&plant_type_id=18&nc_region_id=1

Thank you for the opportunity to review! Please do not hesitate to reach out to me if you have any other questions or would like to explore other ways to improve infiltration on-site.

Thank you,

Anna Reh-Gingerich

Interim Watershed Coordinator - Heal Our Waterways
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