



**WORK SESSION
ACTION AGENDA
KANNAPOLIS CITY HALL
401 LAUREATE WAY, KANNAPOLIS, NC
JULY 14, 2025
4:30 PM**

Please Turn off Cell Phones or Place on Silent Mode.

APPROVED MINUTES

- A. July 14, 2025 Approved Minutes ()

CALL TO ORDER AND WELCOME

MOMENT OF SILENT PRAYER AND PLEDGE OF ALLEGIANCE

ADOPTION OF AGENDA - Motion to Adopt Agenda or make revisions

BOARD AND COMMISSION UPDATES

- A. **REPORT** - Agendas and Activities for City Appointed or City Represented Boards and Commissions (Mike Legg, City Manager)

CONSENT AGENDA - Motion to Adopt Consent Agenda or make revisions

- A. **VOLUNTARY ANNEXATION** - (A-2025-07) 0.26 +/- acres of noncontiguous property located at 5911 Charleston Avenue **APPROVED** (Richard Smith, Planning Director)
- B. **APPROVAL** - FY 2026 Pay and Classification Plan **APPROVED** (Heather James, Human Resources Director)
- C. **REPORT** - Monthly Wastewater Allocations (Alex Anderson, Director of Water Resources, Elizabeth Hassenfritz, Director of Engineering)
- D. **RESOLUTION** - Supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization Transportation Alternatives Program to fund the Midlake Sidewalk **APPROVED** (Wilmer Melton, Assistant City Manager, Richard Smith, Planning Director)
- E. **RESOLUTION** - Supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization Surface Transportation Block Grant Program to fund the Bakers Creek Greenway HAWK Signal **APPROVED** (Wilmer Melton, Assistant City Manager, Richard Smith, Planning Director)

F. **MINUTES** - June 23, 2025 Business Meeting **APPROVED** (Pam Scaggs, City Clerk)

G. **MINUTES** - June 9, 2025 Closed Session **APPROVED** (Pam Scaggs, City Clerk)

BUSINESS AGENDA

A. **REPORT** - Local Assistance for Stormwater Infrastructure Improvements (LASII) **APPROVED** (Elizabeth Hassenfritz, Director of Engineering, Michael Rattler, Director of Transportation & Environmental Services)

B. **APPROVAL** - Lease amendment for City-owned property located at 461 N Cannon Blvd. **APPROVED** (Irene Wong, Economic & Community Development Director)

CLOSED SESSION

A. **MOTION** - To enter into closed session in accordance with G.S. 143-318.11 (a) (3) to consult with an attorney in order to preserve the attorney-client privilege (Mayor Pro tem Berry)

MOTION TO ADJOURN

ADA Notice

In accordance with Title II of the Americans with Disabilities Act (ADA), any person requiring an accommodation to participate in a function or program of the City of Kannapolis should contact Daniel Jenkins, Assistant Human Resources Director & ADA Coordinator by phone at 704-920-4312, email adacoordinator@kannapolisnc.gov, or in person at Kannapolis City Hall as soon as possible, but not later than forty-eight (48) hours prior.

**CITY OF KANNAPOLIS
CITY COUNCIL
WORK SESSION MINUTES
July 14, 2025**

A work session of City Council of the City of Kannapolis, North Carolina was held on Monday, July 14, 2025, at 6:00 P.M., at Kannapolis City Hall located at 401 Laureate Way, Kannapolis, NC.

CITY COUNCIL MEMBERS PRESENT:

Council Members: Doug Wilson
Jeanne Dixon
Dianne Berry, Mayor Pro tem
Tom Kincaid
Darrell Jackson
Ryan Dayvault

Council Members Absent: Darrell Hinnant, Mayor

City Manager: Mike Legg

Deputy City Manager: Eddie Smith

Assistant City Manager: Tina Cline

Assistant City Manager: Wilmer Melton

City Attorney: Andrew Kelly

City Clerk: Pam Scaggs

Staff Present:	Alex Anderson	Greg Summitt
	Michael Rattler	Carson Purvis
	Richard Smith	Kirk Beard
	Irene Wong	Daniel Jenkins
	Sherry Gordon	Samantha Monahan
	Betsy Barnette	Beth Hassenfritz
	Brett Mann	Brian Smith
	Heather James	Chris Fisher

Visitors Present:	Zach Erwin	Jayne Williams
	Sophie Williams	Jamie Richardson
	Phil Goodman	Alicia Awling
	Pam Smith	Joe Hatley
	Baylen Hudson	Paisley Martinez

CALL TO ORDER AND WELCOME

Mayor Pro tem Berry called the meeting to order and welcomed all in attendance. She led a moment of silent prayer, followed by the Pledge of Allegiance by Councilmember Kincaid.

1 **ADOPTION OF AGENDA**

2 Mayor Pro tem Berry called for a motion regarding the Agenda. Councilmember Dixon made the
3 motion to approve, second by Councilmember Dayvault and the motion was unanimously approved.
4

5 **BOARD AND COMMISSION UPDATES**

6 City Manager, Mike Legg, provided updates regarding City appointed or City represented Boards and
7 Commissions stating that several Boards did not meet in either June or July. Mr. Legg noted that the
8 Water and Sewer Authority of Cabarrus County (WSACC) continues to discuss long-term wastewater
9 capacity planning for the County and added that staff is preparing discussion items for Council on
10 this topic for a future meeting.
11

12 **CONSENT AGENDA**

13 Mayor Pro tem Berry called for a motion on the Consent Agenda. Councilmember Kincaid made the
14 motion to approve, second by Councilmember Jackson and the motion unanimously approved.
15

16 Voluntary Annexation (A-2025-07) 026 +/- acres of noncontiguous property located at 5911
17 Charleston Avenue (Richard Smith, Planning Director) (Copy included as Exhibit A).
18

19 Approval – FY 2026 Pay and Classification Plan (Heather James, Human Resources Director) (Copy
20 included as Exhibit B).
21

22 Report – Monthly Wastewater Allocations (Alex Anderson, Director of Water Resources; Elizabeth
23 Hassenfritz, Director of Engineering) (Copy included as Exhibit C).
24

25 Resolution supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization
26 Transportation Alternatives Program to fund the Midlake Sidewalk Project (Wilmer Melton, Assistant
27 City Manager; Richard Smith, Planning Director) (Copy included as Exhibit D).
28

29 Resolution supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization
30 Transportation Alternatives Program to fund the Bakers Creek Greenway HAWK Signal (Wilmer
31 Melton, Assistant City Manager; Richard Smith, Planning Director) (Copy included as Exhibit E)
32

33 Minutes: June 23, 2025 Business Meeting Minutes (Pam Scaggs, City Clerk) (Copy included as
34 Exhibit F)
35

36 Minutes: June 9, 2025 Closed Session (Pam Scaggs, City Clerk) (Copy included as Exhibit G)
37

38 **BUSINESS AGENDA**

39 **Report – Local Assistance for Stormwater Infrastructure Improvements (LASII) (Elizabeth**
40 **Hassenfritz, Director of Engineering; Michael Rattler, Director of Transportation &**
41 **Environmental Services) (Copy included as Exhibit H).**

42 Beth Hassenfritz, Director of Engineering, presented the findings of a residential drainage improvement
43 study funded by a \$225,000 grant awarded in 2023 through the Local Assistance for Stormwater
44 Infrastructure Improvements (LASII) Program. The study focused on three primary areas: Peach Street,
45 Marie Avenue, and Breckenridge Road. Engineering firm Withers Ravenel was selected to conduct the
46 study, which included surveying existing infrastructure, modeling current conditions, evaluating
47 solutions, and providing cost estimates for design and construction.
48

1 The finding included:
2

- 3 1. Peach Street was found to have insufficient capacity for even a 2-year storm event.
4 Recommendations included replacing open ditches with a closed pipe system and regrading.
5 Estimated cost: \$4.5 million.
- 6 2. Marie Avenue drainage failed at the 10-year storm event level. Proposed improvements
7 included replacing open channels with closed pipes, rerouting flows, and increasing downstream
8 pipe sizes. Estimated cost: \$729,000.
- 9 3. Breckenridge Road was split into two projects:
 - 10 a. Kansas Street showed failure at the 2-year event; a dual-pipe system and re-grading were
11 recommended. Estimated cost: \$872,000.
 - 12 b. Breckenridge Road proper also failed at the 2-year level; recommendations included
13 larger pipe networks and channel re-grading. Estimated cost: \$782,000.

14
15 The study also included recommendations for updates to the City's stormwater management program
16 and a proposed 10-year capital improvement plan. Mrs. Hassenfritz requested that Council formally
17 acknowledge receipt of the study, clarifying that no funding approval is required at this time. She noted
18 the City's intent to apply for Hazard Mitigation Grant Program funds for potential implementation of
19 two to three of the proposed projects.
20

21 Councilmember Dixon asked whether the studied areas represented the most significant flooding issues
22 in the city. Mrs. Hassenfritz responded that while she was not involved in the initial grant application,
23 the areas were selected based on a high volume of documented complaints and reports of residential
24 flooding. Councilmember Dayvault asked whether the projects involved only public right-of-way, or if
25 private drainage areas were included. Michael Rattler, Director of Transportation and Environmental
26 Services, clarified that the study includes some private property concerns, such as backyard ditches,
27 which had contributed to delays in addressing the issues.
28

29 Councilmember Wilson asked whether the Cripple Creek area, which has known flooding concerns,
30 had been considered for the study. Mr. Rattler confirmed it was not included, noting that while other
31 areas of the City also have issues, the selected locations were prioritized based on public concern at the
32 time.
33

34 Mr. Legg reminded Council that capital funding is currently available for use, which has carried over
35 from the last two budget cycles. While this funding is flexible, he emphasized the advantage of using
36 it to match future grants for maximum impact.
37

38 Councilmember Dayvault made a motion to approve receipt of the final LASII reports, second by
39 Councilmember Jackson and unanimously approved.
40

41 **Approval – Lease amendment for City-owned property located at 461 North Cannon Boulevard**
42 **(Irene Wong, Economic & Community Development Director) (Copy included as Exhibit I).**

43 Irene Wong, Economic & Community Development Director, provided an update on the College
44 Station property. Ms. Wong noted that earlier in the year, City Council was asked for direction
45 regarding whether to retain or sell the property and advised staff to explore potential interest from the
46 community college [Rowan-Cabarrus Community College]. Those discussions revealed that while
47 the college has no immediate use for the property, they may consider it in the future pending funding

1 support from one of the counties. As a result, staff plans to revisit the matter in a future budget cycle.
2 In the meantime, they have continued to consider interest from potential tenants and prospective
3 buyers.

4
5 One such inquiry resulted in a lease agreement with a chiropractor for 461 North Cannon Boulevard
6 (the former western wear store). Due to the time required for a 30-day public notice and Council
7 approval, a one-year lease was executed to expedite occupancy. Staff now seeks Council approval to
8 extend the lease to a five-year term with a five-year renewal option. The lease includes market-rate
9 rent with 3% annual increases.

10
11 Councilmember Jackson asked about square footage. Ms. Wong responded that the space was 1600
12 square feet and that the tenant is responsible for upfit costs.

13
14 Councilmember Dayvault asked about the status of the Dollar General lease, particularly in light of
15 previous complaints regarding noise and violations from an adjacent tenant. Ms. Wong noted there
16 have been no recent updates from Dollar General, whose lease expires in March 2026.
17 Councilmember Jackson suggested that the upcoming opening of Zaxby's could increase visibility
18 and traffic in the area, potentially improving tenant retention.

19
20 Council Member Dixon requested that future public notices, including those for lease advertisements,
21 be published not only in the *Independent Tribune* but also in the *Salisbury Post*, citing its broader
22 reach among area residents. Councilmember Dayvault agreed that this approach should be applied
23 consistently to all public notifications.

24
25 Councilmember Dayvault made motion to approve the lease amendment, second by Councilmember
26 Wilson and unanimously approved.

27
28 **CLOSED SESSION**

29 Mayor Pro tem Berry called for a motion to enter into closed session in accordance with G.S. 143-
30 318.11 (a) (3) to consult with an attorney in order to preserve the attorney-client privilege. Motion
31 was made by Councilmember Dixon, second by Councilmember Wilson and unanimously approved.

32
33 Council went into Closed Session at 4:53 PM

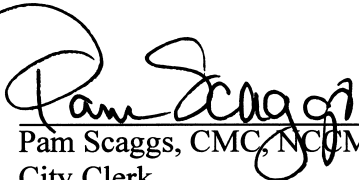
34
35 **MOTION TO ADJOURN**

36 There being no further business, Councilmember Dixon made motion to adjourn, second by
37 Councilmember Dayvault, and unanimously approved.

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39 The meeting adjourned at 6:09 PM on Monday, July 14, 2025.

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M. Darrell Hinnant, Mayor
City of Kannapolis


Pam Scaggs, CMC, NCCMC
City Clerk



BOARD OF ADJUSTMENT AGENDA

**Kannapolis City Hall
Laureate Center - Kannapolis, N.C.**

**Tuesday, July 1, 2025
6:00 PM**

- 1. Call to Order**
- 2. Oath of Office – Ronald Flanders**
- 3. Roll Call and Recognition of Quorum**
- 4. Approval of Agenda**
- 5. Approval of Minutes – May 6, 2025 and June 3, 2025**
- 6. Swearing In for Testimony**
- 7. Public Hearing:**

a. BOA-2025-08 – Special Use Permit – 9170 Davidson Highway

The public hearing for this request was closed at the May 6, 2025, meeting. The request is for a Special Use Permit (SUP) to allow a self-service storage facility in the General Commercial (GC) zoning district on an approximately 2.20 ± acre portion of a 4.13 ± acre property located at 9170 Davidson Highway, further identified as Cabarrus County Parcel Identification Number 46824023240000.

Note: This agenda item was continued from the May 6th meeting at the request of the Board, which asked the applicant to provide additional information regarding off-site building visibility and lighting. The applicant subsequently requested a continuance at the June 3rd meeting to allow more time to gather the requested information.

b. BOA-2025-10 – Special Use Permit – 403 Alpine Street

Public hearing to consider a request for a Special Use Permit (SUP) to allow a 27-unit pocket neighborhood development on property located at 403 Alpine Street. Pursuant to Table 4.2.B(5) of the Kannapolis Development Ordinance (KDO), a Special Use Permit is required for a pocket neighborhood development in the Residential 8 (R8) zoning district when the number of dwelling units exceeds twelve (12). The subject property is approximately 4.67 ± acres and is identified as Rowan County Parcel Identification Number 159 117.

- 8. Planning Director Updates**
- 9. Other Business**
- 10. Adjourn**



**CITY OF KANNAPOLIS
PLANNING & ZONING COMMISSION MEETING**

July 15, 2025, at 6:00 pm

Agenda

- 1. Call to Order**
- 2. Roll Call and Recognition of Quorum**
- 3. Approval of Agenda**
- 4. Approval of Minutes:** June 17, 2025
- 5. Public Hearing**
 - a. **Z-2025-05 – Zoning Map Amendment – 310 N. Little Texas Road**
Public Hearing to consider a request to rezone property located at 310 N. Little Texas Road from City of Kannapolis Residential 4 (R4) to City of Kannapolis Residential 6 (R6) for a proposed duplex. The subject property is approximately 0.36 +/- acres and furthered identified as Cabarrus County Parcel Identification Number 56233813740000.
- 6. Recommendation to City Council**
 - a. **Text Amendment – TA-2025-05 – Vehicle sales and services uses in the Dale Earnhardt Boulevard Subdistrict of the Thoroughfare Protection Overlay (TPO) District**
Consider a recommendation to City Council on an amendment to Section 3.8.F(4)b.3 of the Kannapolis Development Ordinance regarding allowing Vehicle Sales and Service uses within the Dale Earnhardt Boulevard Subdistrict of the Thoroughfare Protection Overlay (TPO) District if the site has frontage on an arterial highway and is within 500 feet of an intersection of two or more major arterial highways, provided that no vehicles shall be stored on site.
- 7. Planning Director Update**
- 8. Other Business**
- 9. Adjourn**



Concord Kannapolis Area Transit Commission

June 26th, 2025 – 8:30AM

Rider Transit Center

45 Transit Court NW, Concord, NC

Agenda

1) Call to Order & Quorum

Chair Dusch

- Quorum & Introduction of Guests - Changes or Additions to Agenda
- Public Comments from the Floor – 3 minutes per speaker

2) Approval of the 4/23/25 Meeting Minutes

Chair Dusch

3) Bus Stop Solar Lighting Replacement

Rider Staff

Information: Presentation of the RFP process, bids received, and firm recommended for award.

Recommendation/Action: Review and consider approval of staff recommendation for award.

4) Reallocation of FFY22 Concord UZA 5339 FTA funding

Rider Staff

Information: Discussion of 5339 FTA lapsing funds being reallocated from Cabarrus County Transportation Services (CCTS) to Concord Kannapolis Area Transit in the amount of \$22,231 to avoid returning of Federal Funds.

Recommendation/Action: Review and consider approval for Rider Transit to accept a reallocation of FFY22 5339 FTA funding from CCTS in the amount of \$22,231.

5) Public Transportation Agency Safety Plan (PTASP)

Rider Staff

Information: Annual review of the Rider Transit Public Transportation Agency Safety Plan, required by the Federal Transit Administration of all public transit agencies.

Recommendation/Action: Review and consider approval of annual update of Public Transportation Agency Safety Plan.

Reports / Other Business

Rider Staff

- Connecting Cabarrus Project Update
- Rider Transit Projects Update
- Ridership Update – 8 Millionth Passenger in May
- Other business
- Next CKTC meeting – Thursday, 8/28/25, 8:30am, Rider Transit Center



**WATER & SEWER AUTHORITY
OF CABARRUS COUNTY
REGULAR MEETING**

**July 16, 2025
5:00 P.M.**

**CALL TO ORDER BY THE CHAIRMAN
ITEMS OF THE AGENDA**

ADOPTION OF THE AGENDA

1. Request for Adoption of the July 16, 2025 Board Meeting Agenda

OATH OF OFFICE

1. Oath of Office – Bob Ritchie – [administered by Shannon Kincaid](#)

SPECIAL RECOGNITION

1. Recognition of the 28th Consecutive Certificate of Achievement for Excellence in Financial Reporting – [Wendi Heglar](#)

UNFINISHED BUSINESS

1. Request for Approval of the Minutes of June 18, 2025

WORK SESSION

1. Discussion as Necessary on the Wastewater Treatment Expansion Alternatives from the WSACC Facilities Plan

GENERAL DISCUSSION

1. Updates from the Executive Director – [Chad VonCannon](#)

PUBLIC COMMENTS

CLOSED SESSION

1. **Closed Session - G.S.143-318.11 (a)(1) - to prevent the disclosure of information that is privileged or confidential pursuant to the law of this State or of the United States, or not considered a public record within the meaning of Chapter 132 of the General Statutes.**

ADJOURN

(The next regular meeting will be held on Wednesday, August 20, 2025, at 5:00 p.m.)

Please note that anyone needing reasonable accommodation to participate in the meeting should contact the Secretary to the Board at (704) 786-1783, extension 234, at least twenty-four (24) hours before the meeting.



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Richard Smith, Planning Director
Subject: **VOLUNTARY ANNEXATION - (A-2025-07) 0.26 +/- acres of noncontiguous property located at 5911 Charleston Avenue **APPROVED****

Recommended Action Requested by City Council

1. Motion to adopt a Resolution Directing the Clerk to Investigate an Intent to Annex and to Certify the Sufficiency of the Petition to Annex; and
2. Motion to adopt a Resolution of Intent to Annex and Fix Date of Public Hearing for Monday, July 28, 2025

Required Votes to Pass Required Action

Majority Present at Meeting

Background

The applicant, Conon Investments, LLC., has submitted an application for voluntary annexation of approximately 0.26 +/- acres of noncontiguous property located at 5911 Charleston Avenue. The property is further identified as Cabarrus County Parcel Identification Number 56035917630000.

Fiscal Implications

None.

Alternate Courses of Action

1. **Motion to approve the Resolution Directing the Clerk to Investigate an Intent to Annex under 160A-58 et seq., and to Certify the Sufficiency of the Petition to Annex (Recommended); and**
2. **Motion to approve the Resolution of Intent to Annex and Fix Date of Public Hearing for Monday, July 28, 2025 (Recommended).**
3. Table actions to a future meeting.
4. Take no action.

Attachments

1. 5911 CHARLESTON AVE - Non-Contiguous Annexation Application
2. Black and White A-2025-07
3. Vicinity A-2025-07
4. Vicinity Color A-2025-07
5. CERTIFICATE OF SUFFICIENCY A-2025-07 -5911 Charleston Ave
6. 2025-53 Resolution Directing Clerk to Investigate Intent to Annex A-2025-07 - 5911 Charleston Avenue
7. 2025-54 Resolution of Intent to Annex and Fix Date of Public Hearing A-2025-07 - 5911

Charleston Avenue



Planning Department
401 Laureate Way
Kannapolis, NC 28081
704.920.4350

Petition for Non-Contiguous Annexation

So that we may efficiently review your request in a timely manner, it is important that all required documents are submitted with your application. Submit digitals and 1 hard copy of applications and accompanying documents to the Planning Department at the address above.

ANNEXATION REQUEST

Approval authority – City Council.

Property Address: 5911 Charleston Ave Kannapolis NC 28081
Applicant: Conon INVESTMENTS, LLC
Address: 677 Shellback Dr City: Concord State: NC Zip: 28025
Contact number: 704-491-7989 Email: ian@ianleonardch.com

SUBMITTAL CHECKLIST

- ☒ Pre-Application Meeting – send an email to planreviewappointment@kannapolisnc.gov
- ☒ Annexation Checklist and Application – Complete with all required property owner signatures
- ☐ Stamped, signed black and white 18 x 24" survey of subject property prepared by a registered engineer or surveyor (not preliminary)
- ☐ Metes and Bounds description of subject property

PROCESS INFORMATION

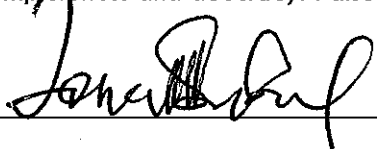
Annexation involves two (2) separate City Council meetings:

First meeting: The City Clerk will certify the sufficiency of the annexation and City Council will set a date for the public meeting.

Second meeting: City Council will review the petition and either approve or decline the annexation request:

1. Newspaper notification at least ten (10) days prior to the second Council meeting
2. Notification to the County or municipality from which the subject property is being annexed
3. Public Hearing
4. State recordation of the Resolution to Extend the Corporate City Limits, the signed/stamped 18X24" survey (can not be stamped as preliminary) and the Metes and Bounds Description.

By signing below, I acknowledge that I have reviewed the Submittal Checklist and have included the required submittal items and reviewed them for completeness and accuracy. I also acknowledge that my application will be rejected if incomplete.

Applicant's Signature:  Date: 5/7/25



Planning Department
401 Laureate Way
Kannapolis, NC 28081
704.920.4350

PETITION REQUESTING A NON-CONTIGUOUS ANNEXATION

Approval authority – City of Kannapolis City Council

DATE: 5-7-2025

To the City Council of the City of Kannapolis, North Carolina:

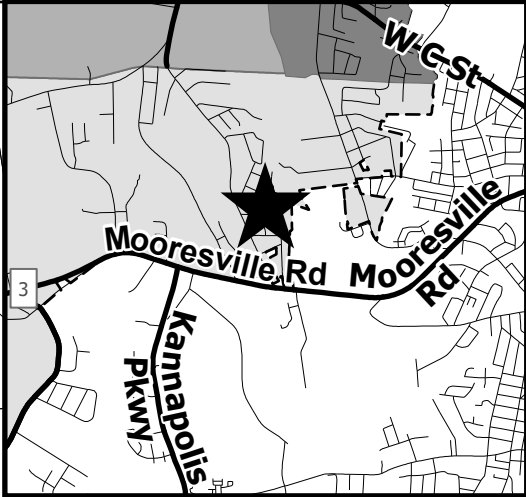
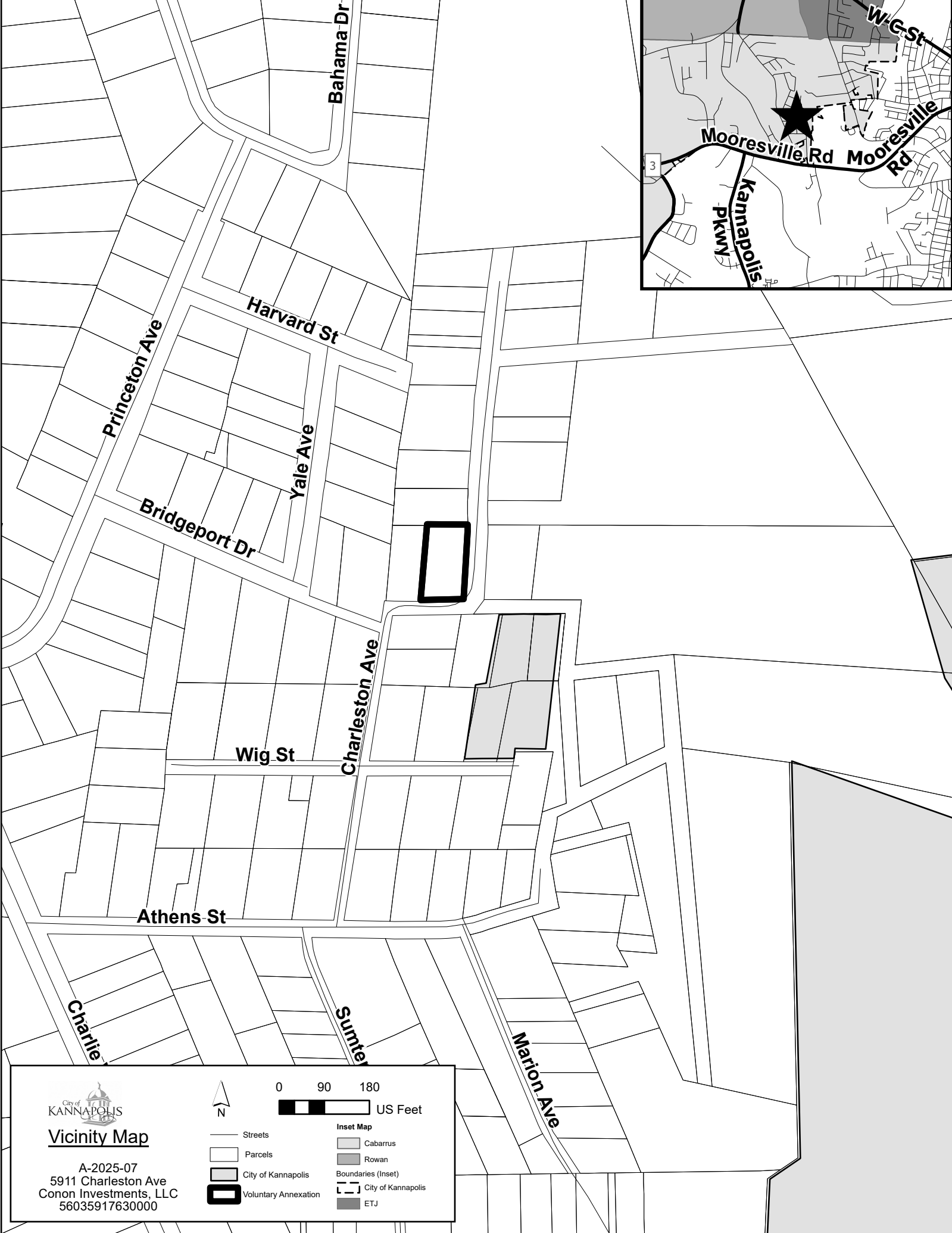
1. We, the undersigned owners of real property respectfully request that the area described in paragraph 2 below be annexed to the City of Kannapolis.
2. The area to be annexed, located at 5911 Charleston Ave, further identified as _____ County Parcel Identification Number 5603691760000, is non-contiguous to the primary limits of the City of Kannapolis, is approximately .26 acres, and the boundaries of such territory are as follows:

See Attached Signed, Stamped Survey Map and Metes and Bounds Description

3. This petition is signed by all property owners of the area to be annexed.
4. ☒ The undersigned owners acknowledge that the following City service(s) is (are) not presently available for immediate taps upon annexation: water ☒ sewer ☒ and, subsequently agree that the City shall not provide water and sewer service to the area to be annexed except in accordance with the City's standard water and sewer policy.
5. Please check ONE box below:
☐ The undersigned owners declare that zoning vested rights have been established on the area to be annexed under G.S. 160D-108 or G.S. 160D-108.1 and provide proof of such rights by attachment hereto.
☒ The undersigned owners hereby declare that no such vested rights have been established and that any vested rights previously acquired are hereby terminated.

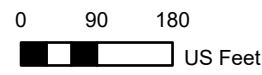
<u>Name</u> (print or type)	<u>Address</u>	<u>Signature*</u>
1. <u>Jonathan Ejim</u>	<u>677 Shellbark dr.</u>	<u>Jonathan Ejim</u>
2. _____	<u>Concord NC 28025</u>	_____
3. _____	_____	_____
4. _____	_____	_____

*Family members (e.g., husbands and wives) need to sign separately. Signatures for corporations, institutions, etc., are by those with the authority to sign legal documents.



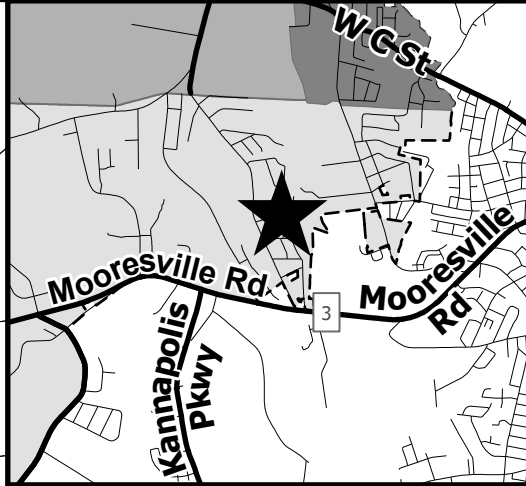
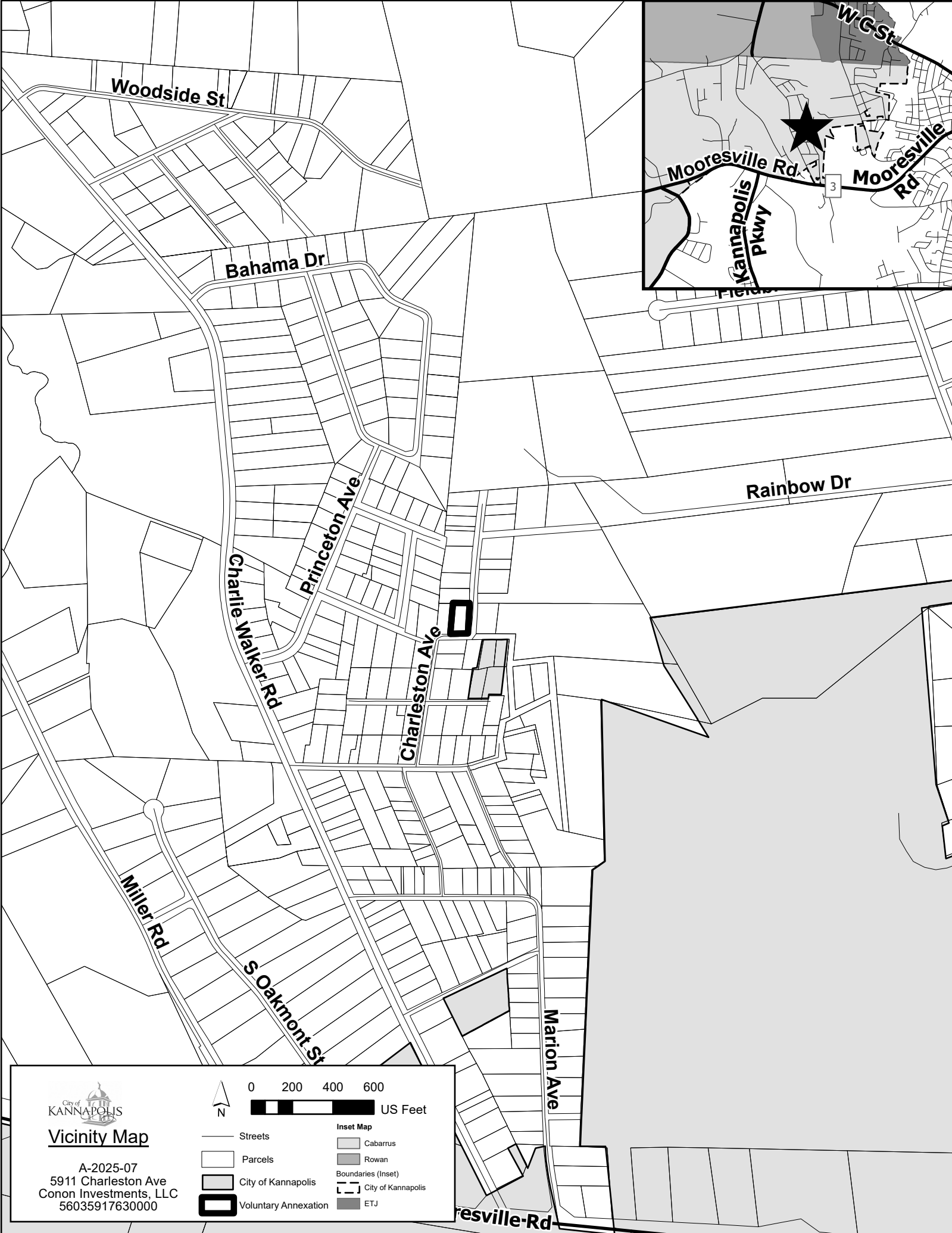
Vicinity Map

A-2025-07
5911 Charleston Ave
Conon Investments, LLC
56035917630000



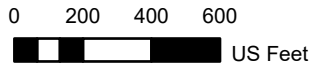
- Streets
- Parcels
- City of Kannapolis
- Voluntary Annexation

- Inset Map**
- Cabarrus
 - Rowan
 - Boundaries (Inset)
 - City of Kannapolis
 - ETJ



Vicinity Map

A-2025-07
5911 Charleston Ave
Conon Investments, LLC
56035917630000



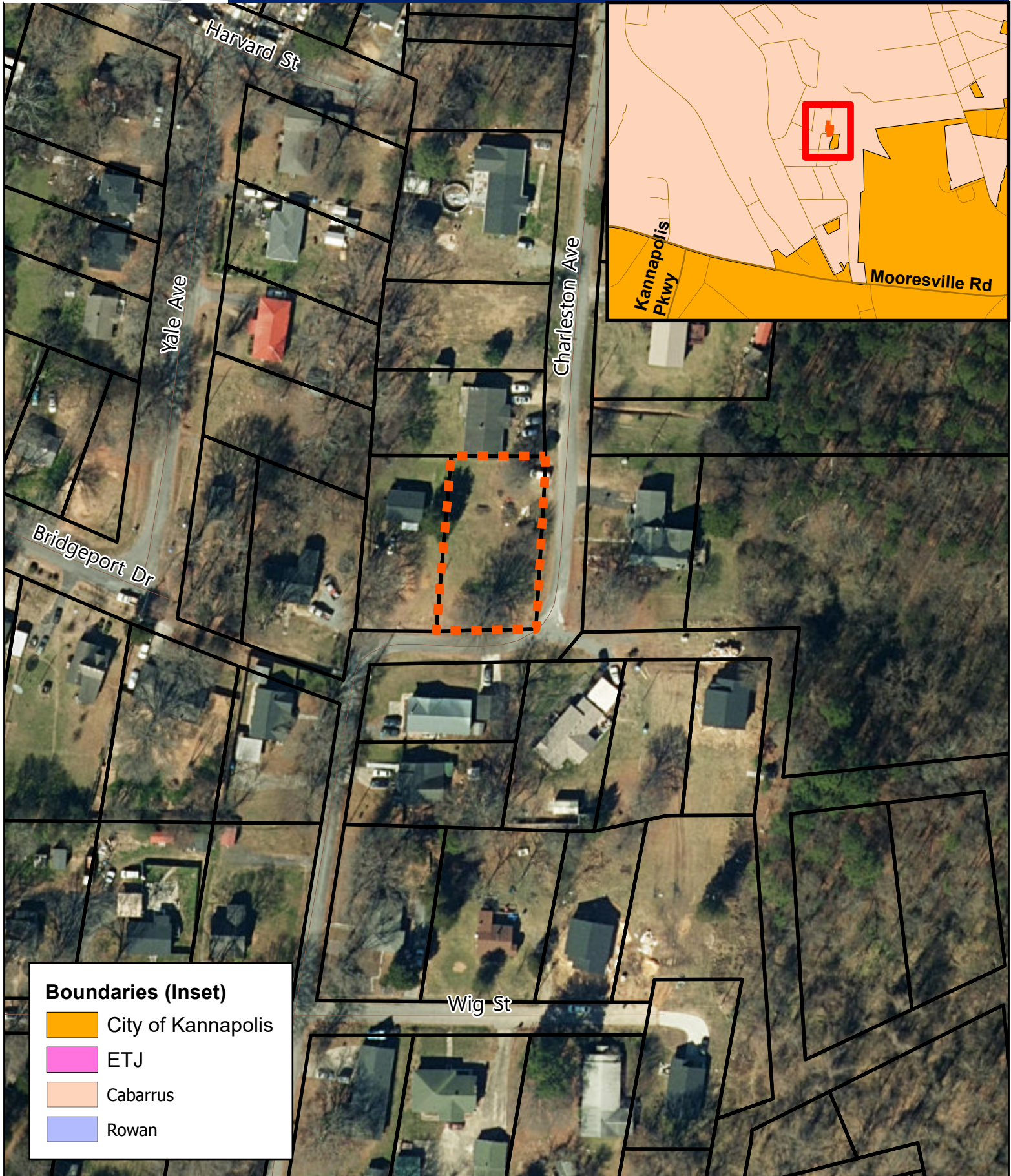
- Streets
- Parcels
- City of Kannapolis
- Voluntary Annexation

Inset Map

- Cabarrus
- Rowan
- Boundaries (Inset)
- City of Kannapolis
- ETJ

Vicinity Map

5911 Charleston Ave
Conon Investments, LLC
56035917630000

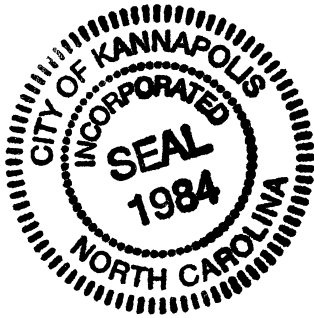


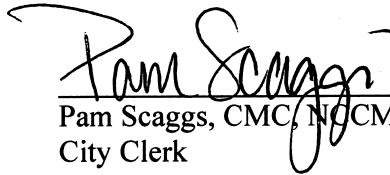
CERTIFICATE OF SUFFICIENCY
A-2025-07 – 5911 Charleston Avenue

To City Council of the City of Kannapolis, North Carolina.

I, Pam Scaggs, City Clerk, do hereby certify that pursuant to NCGS Chapter 160A-58 *et seq.*, I have investigated the petition attached hereto and have found as a fact that said petition is signed by all owners of real property lying in the area described therein.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the City of Kannapolis, North Carolina, this the 14th day of July 2025.

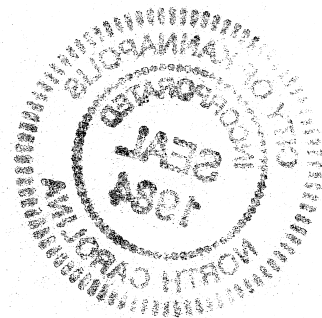



Pam Scaggs, CMC, NCCMC
City Clerk

THE UNIVERSITY OF CHICAGO
LIBRARY

TO THE UNIVERSITY OF CHICAGO
FROM THE UNIVERSITY OF CHICAGO
LIBRARY

THE UNIVERSITY OF CHICAGO
LIBRARY



**RESOLUTION DIRECTING THE CLERK TO
INVESTIGATE AN INTENT TO ANNEX
A-2025-07 – 5911 CHARLESTON AVENUE**

WHEREAS, City Council may initiate annexation of noncontiguous property owned by the petitioners by adopting a resolution stating its intent to annex the property of the area described herein; and

WHEREAS, N.C.G.S Chapter 160A-58 *et seq*, provide that the sufficiency of the petition shall be investigated by the City Clerk of the City of Kannapolis, North Carolina before further annexation proceedings consistent within the intent to annex can take place; and

WHEREAS, City Council of the City of Kannapolis, North Carolina deems it advisable to direct the City Clerk to investigate the sufficiency of the intent to annex.

NOW, THEREFORE, BE IT RESOLVED by City Council of the City of Kannapolis, North Carolina that:

The City Clerk is hereby directed to investigate the sufficiency of the above-described intent to annex under N.C.G.S. Chapter 160A-58 *et seq* and to certify as soon as possible to the City Council the result of the investigation.

ADOPTED this the 14th day of July 2025.


M. Darrell Hinnant, Mayor
City of Kannapolis

ATTEST:


Pam Scaggs, CMC/NCCMC
City Clerk

**RESOLUTION OF INTENT TO ANNEX AND
FIX DATE OF PUBLIC HEARING ON QUESTION OF ANNEXATION
A-2025-07 – 5911 CHARLESTON AVENUE**

WHEREAS, pursuant to N.C.G.S Chapter 160A-58 *et seq.*, City Council may initiate annexation of real property noncontiguous to the City's boundary pursuant to a Petition for Annexation by all property owners located therein by adopting a Resolution stating its intent to annex the property described.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Kannapolis, North Carolina that:

- Section 1. A public hearing on the question of annexation of the area described herein will be held at the Laureate Center, 401 Laureate Way, Kannapolis, NC at 6:00 PM on the 28th day of July 2025.
- Section 2. The area proposed for annexation is described as follows:
- See attached Metes and Bounds Description and Annexation Survey.
- Section 3. Notice of public hearing shall be published in the Independent Tribune on Thursday, July 17 and Thursday, July 24, 2025

ADOPTED this the 14th day of July 2025.



M. Darrell Hinnant, Mayor
City of Kannapolis

ATTEST:



Pam Scaggs, CMC, NCCMC
City Clerk

METES AND BOUNDS DESCRIPTION

A 0.26 ACRES TRACT OF LAND:

CONON INVESTMENTS, LLC

5911 Charleston Avenue, Kannapolis, NC 28081

Deed Book 17394, Page 36 (PIN: 5603-59-1763; Real ID: 04-005-0048.00)

Lying and being in the No. 4 Township, Cabarrus County, North Carolina, and being a portion of the "Bertie Lee Thompson" lot (Map Book 9, Page 47) and being the same tract of land described in Deed Book 17394, Page 36 as recorded in the Cabarrus County Register of Deeds; and being more particularly described as follows:

0.26 Acres Tract of Land

Beginning at a new IRON SET along the west side Public Right of Way of Charleston Avenue (variable width) at the north easterly corner of Deed Book 17394, Page 36 (PIN: 5603-59-1763; Real ID: 04-005-0048.00) said new IRON SET being further described as having NC (NAD 83/2011) Grid Coordinates of N: 639,810.37, E: 1,505,217.09 and being the POINT OF BEGINNING (POB) of the 0.26 Acres Tract being described herein; thence leaving the POINT OF BEGINNING (POB) and running along the west side of said Public Right of Way of Charleston Avenue

1. South 06°49'20" West 150.00 feet to a new IRON SET in the pavement of Charleston Avenue, said IRON SET being further described as being the south easterly corner of the 0.26 Acres Tract being described herein; thence continuing along the Public Right of Way of Charleston Avenue
2. North 87°54'37" West 75.00 feet to a new IRON SET at a common corner of the property of Dennis G. Brawley and wife, Pamela A. Brawley (now or formerly) Deed Book 6951 Page 72 (PIN:5603-59-0793; Real ID: 04-005-0047.00) said IRON SET being further described as being situated near the existing northerly edge of pavement of Charleston Avenue, being the south easterly corner to Lot 18 of Jack Parks land (unrecorded plat) and also being situated South 87°54'37" East 75.00 feet from an existing PIPE FOUND at the south westerly corner of said Lot 18; thence running along the common line of said Lot 18 (PIN:5603-59-0793; Real ID: 04-005-0047.00) and the 0.26 Acres Tract being described herein (PIN: 5603-59-1763; Real ID: 04-005-0048.00)
3. North 06°49'23" East 150.00 feet to a new IRON SET at the northerly common corner of said Lot 18 (PIN:5603-59-0793; Real ID: 04-005-0047.00) and the 0.26 Acres Tract being described herein (PIN: 5603-59-1763; Real ID: 04-005-0048.00) said IRON SET being further described as being situated in the southerly lot line of LOT 1 of HUBERT BOST PROPERTY (Map Book 9 Page 47) and also being situated South 05°12'59" West 3.55 feet from an existing IRON FOUND within said LOT 1; thence running along the southerly lot line of said LOT 1
4. South 86°54'37" East 75.00 feet to the Point of Beginning and containing 11,212 square feet or 0.26 acres of land, more or less.

MINIMUM ZONING REQUIREMENTS (LDR)

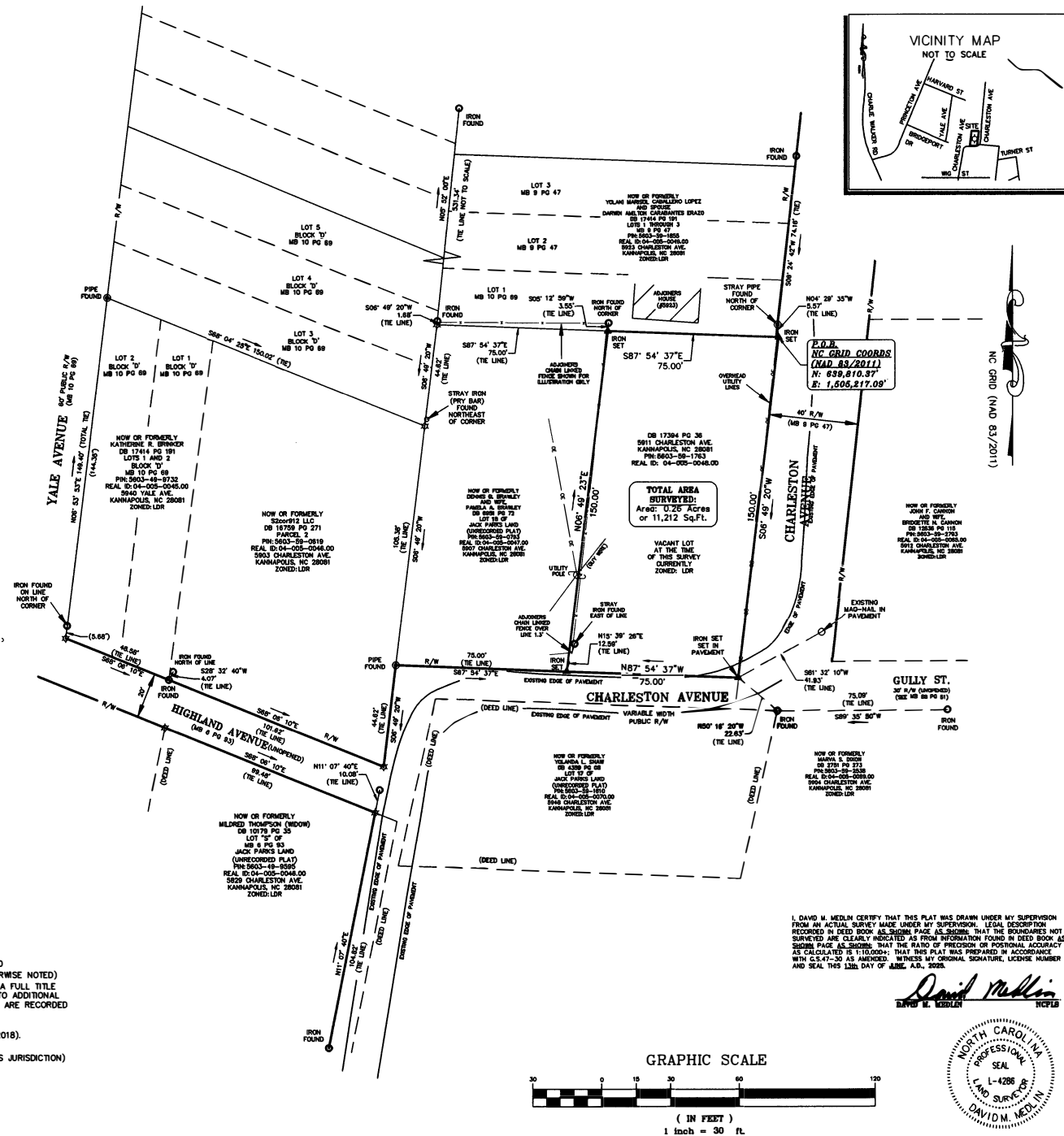
MIN. FRONT SETBACK:	50 ft.
SIDE YARD:	20 ft.
REAR YARD:	30 ft.

LEGEND:

R/W	RIGHT OF WAY
---	EXISTING PROPERTY LINES
---	--- LINES NOT SURVEYED (OR AS NOTED)
---	EXISTING RIGHT OF WAY LINE
---	EXISTING OVERHEAD UTILITY LINES
○	EXISTING IRON FOUND
○	EXISTING PIPE FOUND
☆	COMPUTED POINT (NO POINT SET)
▲	NEW CORNER SET (AS SHOWN)

NOTES:

- BOUNDARY SURVEY MADE USING:
DEED BOOK: PAGE:
17394 36
MAP BOOK: PAGE:
9 47
10 69
6 93
AND OTHERS AS SHOWN AND RECORDED WITHIN THE CABARRUS COUNTY REGISTER OF DEEDS OFFICE.
- TAX PARCEL: 5603-59-1763; REAL ID: 04-005-0048.00
- IRON PINS ESTABLISHED AT ALL CORNERS (UNLESS OTHERWISE NOTED)
- THIS SURVEY WAS CONDUCTED WITHOUT THE BENEFIT OF A FULL TITLE SEARCH. THE PROPERTIES SURVEYED MAY BE SUBJECT TO ADDITIONAL EASEMENTS AND RIGHTS OF WAY, NOT SHOWN, BUT THAT ARE RECORDED IN THE CABARRUS COUNTY REGISTER OF DEEDS OFFICE.
- SUBJECT PROPERTY LIES WITHIN FEMA AREA "X" (FEMA MAP # 3710560300K - EFFECTIVE DATE 11/16/2018).
- AREA BY COORDINATE GEOMETRY METHOD
- SUBJECT PROPERTY IS ZONED: LDR (CITY OF KANNAPOLIS JURISDICTION)



MEDLIN
SURVEYING CO.

2915 STALLINGS RD.
HARRISBURG, NC 28075
Cell: 704-201-4332
EMAIL: MEDLINSURVEY@YAHOO.COM

Revisions:

Scale: 1"=30'

Date: 06/13/2025

Drawn By: DML

Checked By: DML

Surveyed By: DML

5911 CHARLESTON AVE.

ANNEXATION PLAT:

PHYSICAL SURVEY OF THE PROPERTY OWNED BY:

CONDON INVESTMENTS, LLC

5911 CHARLESTON AVE. KANNAPOLIS, NC 28081

No. 4 TOWNSHIP OF CABARRUS COUNTY



To: Mayor and City Council
From: Heather James, Human Resources Director
Subject: **APPROVAL - FY 2026 Pay and Classification Plan APPROVED**

Recommended Action Requested by City Council

Motion to approve the FY2026 Compensation Plan

Required Votes to Pass Required Action

Majority Present at Meeting

Background

Generally, at the beginning of each FY year, administrative changes to the Pay and Classification Plan are made, which include job classes added, removed, title changes and reclassifications. There are no new positions added this year.

The following changes were made to the Plan:

Job Classes Removed (no longer in use):

- 1817 Evidence and Property Control Technician
- 5400 Park Manager
- 1935 Grounds Manager
- Facilities Maintenance Technician I
- Lead Service Line Inventory Technician

Title Changes:

- Police Detective changed to Police Investigator
- All titles with "Building" have been changed to "Facilities"
- Park Manager II changed to Park Manager (now encompasses Grounds Manager and Park Manager I)

Reclass:

- Assistant HR Director grade 80 to grade 81
- Grounds Manager / Park Manager I grade 70 to 72

New job classes:

- Firefighter Trainee
- Firefighter Recruit
- Firefighter II
- Senior Firefighter
- Police Officer Recruit
- Police Officer II
- Master Telecommunicator

- Master Police Officer
- Senior Fire Captain

Fiscal Implications

None

Alternate Courses of Action

1. **Motion to approve the FY2026 Pay and Classification Plan (Recommended)**
2. Table to a future meeting.
3. Take no action.

Attachments

1. Copy of FY26 Pay and Classification Plan - Final

CITY OF KANNAPOLIS

PAY & CLASSIFICATION PLAN

EFFECTIVE 07/14/2025

Job Class	FLSA Status	Budget Location	Job Classification	Grade				
					Hiring Range		Midpoint to Maximum	
					Minimum	15%	Midpoint	Maximum
				52	\$20,955	\$24,099	\$26,719	\$32,481
				53	\$22,004	\$25,304	\$28,329	\$34,105
				54	\$23,103	\$26,569	\$29,457	\$35,810
				55	\$24,262	\$27,901	\$30,933	\$37,605
				56	\$25,473	\$29,294	\$32,478	\$39,484
				57	\$26,745	\$30,757	\$34,100	\$41,456
1900	NE	Parks & Recreation	Concession Worker	58	\$29,487	\$32,941	\$36,523	\$44,400
				59	\$29,487	\$33,910	\$37,596	\$45,704
1901	NE	Parks & Recreation	Hospitality Assistant	60	\$30,961	\$35,606	\$39,475	\$47,990
1905	NE	Parks & Recreation	Park Attendant					
				61	\$32,509	\$37,386	\$41,449	\$50,389
1918	NE	Parks and Recreation	Hospitality Specialist	62	\$34,136	\$39,257	\$43,524	\$52,911
1915	NE	Parks & Recreation	Park Operations Specialist					
				63	\$35,842	\$41,218	\$45,699	\$55,555
1300	NE	Customer Service	Customer Service Advocate	64	\$37,634	\$43,278	\$47,982	\$58,331
1910	NE	Parks & Recreation	Park Maintenance Technician I					
5215	NE	General Services	Facilities Maintenance Technician II	65	\$39,515	\$45,443	\$50,383	\$61,249
1920	NE	Parks & Recreation	Park Maintenance Technician II					
1310	NE	Customer Service	Senior Customer Service Advocate					

Job Class	FLSA Status	Budget Location	Job Classification	Grade				
					Hiring Range		Midpoint to Maximum	
					Minimum	15%	Midpoint	Maximum
5210	NE	General Services	Facilities Maintenance Techncian III	66	\$41,490	\$47,714	\$52,901	\$64,310
1405	NE	Global	Construction Maintenance Worker					
1330	NE	Customer Service	Customer Care Representative					
1445	NE	Water & Sewer Distribution	Meter Service Technician					
1925	NE	Parks & Recreation	Park Maintenance Technician III					
1818	NE	Police	Park Ranger					
1800	NE	Police	Police Records Specialist					
1210	NE	Finance	Accounting Technician I	67	\$43,566	\$50,101	\$55,546	\$67,527
1345	NE	Customer Service	Customer Service Revenue Specialist					
5220	NE	General Services	Facilities Maintenance Technician IV					
1708	NE	Fire	Firefighter Trainee P/T					
1926	NE	Parks & Recreation	Park Maintenance Technician IV					
1010	NE	Global	Senior Administrative Support Specialist					
1450	NE	Water & Sewer Distribution	Warehouse Assistant					
1952	NE	Parks & Recreation	Assistant Coordinator	68	\$45,742	\$52,604	\$58,321	\$70,901
1934	NE	Parks & Recreation	Concessions Manager					
1422	NE	Global	Construction Maintenance Technician					
1798	NE	Fire	Firefighter Recruit					
1408	NE	Global	Heavy Equipment Operator					
1457	NE	Water Resources	Lead Service Line Inventory Technician					
1930	NE	General Services	Event Specialist					
1810	NE	Police	Telecommunicator					
1320	NE	Customer Service	Utility Billing Specialist					
1470/1471	NE	Water Treatment Plant	Water Treatment Plant Operator I / PT WTP I					
1220	NE	Finance	Accounting Technician II	69	\$48,032	\$55,237	\$61,242	\$74,450
1020	NE	Global	Administrative Assistant					
1705/1700	NE	Fire	Firefighter I					
1423	NE	Water & Sewer Distribution	Locator					
4025	NE	Planning	Planning Technician					
1715	NE	Fire	Quality Assurance Coordinator					
1340	NE	Customer Service	Senior Utility Billing Specialist					
1813	NE	Police	Telecommunicator II					
1460	NE	Water Treatment Plant	Water Quality Technician					
1465	NE	Water Treatment Plant	Water Treatment Plant Maintnenance Worker					

Job Class								
					Hiring Range		Midpoint to Maximum	
Code	FLSA Status	Budget Location	Job Classification	Grade	Minimum	15%	Midpoint	Maximum
4030	NE	Planning	Code Enforcement Officer	70	\$50,430	\$57,994	\$64,298	\$78,166
1707	NE	Fire	Firefighter II					
1600	NE	Human Resources	Human Resources Technician					
1814	NE	Police	Master Telecommunicator					
1825	NE	Police	Police Officer Recruit					
1815	NE	Police	Telecommunicator Shift Supervisor					
1409	NE	Water Resources	Equipment Operator					
1166	NE	Global	Senior Administrative Assistant					
1455	NE	Water & Sewer Distribution	Warehouse Manager					
1475	NE	Water Treatment Plant	Water Treatment Plant Operator II					
1349	NE	Customer Service	Billing and Collections Manager	71	\$52,953	\$60,896	\$67,516	\$82,077
1467	NE	Water Treatment Plant	Water Treatment Plant Chief Operator					
1425/1426	NE	Global	Crew Chief					
1348	NE	Customer Service	Customer Service Manager					
1720	NE	Fire	Fire Engineer					
1461	NE	Water Resources	Lab Analyst					
1850	NE	Police	Police Investigator					
1820	NE	Police	Police Officer / Police Officer I					
1805	NE	Police	Records Supervisor					
1840	NE	Police	School Resource Officer (SRO)					
1712	NE	Fire	Senior Firefighter					
1865	NE	Police	Training Coordinator					
1230	NE	Finance	Accountant	72	\$55,600	\$63,941	\$70,890	\$86,181
1490	NE	Engineering	Engineering Technician					
1489	NE	Engineering	Environmental Compliance Coordinator					
1350	NE	Fire	Office Manager					
1940	NE	Parks & Recreation	Park Manager II					
1255	NE	Finance	Payroll Administrator					
1816	NE	Police	Police Accreditation Manager					
1822	NE	Police	Police Officer II					
1610	NE	Human Resources	Human Resources Analyst I					
1721	NE	Fire	Senior Engineer					
1430	NE	Global	Crew Supervisor	73	\$58,382	\$67,139	\$74,437	\$90,491
1725	NE	Fire	Fire Inspector					
1824	NE	Police	Master Police Officer (MPO)					
4020	NE	Planning	Planner					
1435	NE	Public Works	Planner/Scheduler					
1950	NE	Parks & Recreation	Parks & Recreation Coordinator					

Job Class								
					Hiring Range		Midpoint to Maximum	
Code	FLSA Status	Budget Location	Job Classification	Grade	Minimum	15%	Midpoint	Maximum
1729	NE	Fire	Assistant Fire Marshal	74	\$61,299	\$70,494	\$78,157	\$95,014
Not in use	NE	City Manager	Communications Multimedia Specialist					
1154 /1730	NE	City Manager / Fire	Community Engagement Specialist					
1882	NE	Police	Crime Anaylst / Video Specialist					
1498	NE	Engineering	Engineering Technician II					
6005	NE	IT	Technical Support Specialist					
4015	NE	Planning	GIS Specialist					
1630	NE	Human Resources	Human Resources Analyst II					
1245	NE	Finance	Purchasing Specialist P/T					
1614	NE	Human Resources	Risk and Safety Coordinator					
4031	NE	Planning	Senior Code Enforcement Officer					
1265	NE	Finance	Budget Analyst	75	\$64,364	\$74,019	\$82,064	\$99,765
5200	NE	General Services	Facility Manager					
1735	NE	Fire	Fire Captain					
1731	NE	Fire	Fire Vehicle Mechanic					
1739	NE	Fire	Safety and Logistics Officer					
1260/1262	NE	Finance	Senior Accountant / Sr Accountant P/T					
1860	NE	Police	Sergeant					
1861	NE	Police	Sergeant/Recruitment Officer					
1640	NE	Human Resources	Benefits Manager					
1480	NE	Water Treatment Plant	Water Treatment Plant Supervisor					
1120	E	City Manager	City Clerk	76	\$67,584	\$77,721	\$86,169	\$104,754
1491	E	Engineering	Civil Engineer I					
1250	NE	Finance	Purchasing Manager					
1615	E	Human Resources	Risk Manager					
6004	NE	Information Technology	Software Support Specialist					
1713	NE	Fire	Senior Fire Captain					
1130	E	City Manager	Community Development Program Administrator	77	\$70,963	\$81,607	\$90,477	\$109,992
6003	NE	Information Technology	Information Technology Analyst					
1494	E	Engineering	Engineer Technician Manager					
1275	NE	Finance	Accounting Operations Manager					
1235	NE	Finance	Purchasing Manager					
4010	NE	Planning	Senior Planner					
1740	NE	Fire	Battalion Chief					
1492	NE	Engineering	Engineering Project Coordinator	78	\$74,511	\$85,687	\$95,001	\$115,490
1738	NE	Fire / Human Resources	Health and Wellness Manager					
1728	NE	Fire	Fire Marshal					
1495	E	Global	Operations Manager					
1870	NE	Police	Police Lieutenant					
1811	NE	Police	Telecommunications Center Manager					
1737	NE	Fire	Training Manager					
1485	E	Water Treatment Plant	Water Treatment Plant Manager					

Job Class	FLSA Status	Budget Location	Job Classification	Grade				
					Hiring Range		Midpoint to Maximum	
					Minimum	15%	Midpoint	Maximum
6002	E	Information Technology	Network Administrator	79	\$78,237	\$89,972	\$99,751	\$121,268
1140	E	Customer Service	Director of Customer Service	80	\$82,147	\$94,469	\$104,738	\$127,328
1619	E	Human Resources	Assistant Human Resources Director	81	\$86,255	\$99,193	\$109,977	\$133,697
1754	E	Fire	Assistant Fire Chief					
1956	E	Fire	Assistant Parks and Recreation Director					
4005	E	Planning	Assistant Planning Director					
1155	E	City Manager	Communications and Marketing Director					
1270	E	Finance	Deputy Finance Director					
1880	E	Police	Police Captain					
1161	E	City Manager	Budget and Strategy Director	82	\$90,569	\$104,154	\$115,475	\$140,381
1488	E	Engineering	Civil Engineer II					
6001	E	Information Technology	Senior Network Administrator					
5000	E	General Services	General Services Director	83	\$95,095	\$109,360	\$121,247	\$147,397

Job Class	FLSA Status	Budget Location	Job Classification	Grade				
					Hiring Range		Midpoint to Maximum	
					Minimum	15%	Midpoint	Maximum
Code								
1497	E	Engineering	Assistant Director of Engineering	84	\$99,851	\$114,828	\$127,310	\$154,769
1885	E	Police	Deputy Chief of Police					
1755	E	Fire	Deputy Fire Chief					
1150	E	City Manager	Director of Economic & Community Development					
1620	E	Human Resources	Human Resources Director					
1955	E	Parks & Recreation	Parks & Recreation & Recreation Director	85	\$104,844	\$120,570	\$133,675	\$162,507
1501	E	Storm Water	Director of Transportation and Environmental Services					
1502	E	Water Treatment Plant	Director of Water Resources					
4000	E	Planning	Planning Director					
1280	E	Finance	Finance Director	86	\$110,085	\$126,598	\$140,358	\$170,633
6000	E	Information Technology	Information Technology Director					
1496	E	Public Works	Director of Engineering	87	\$115,592	\$132,931	\$147,379	\$179,167
1890	E	Police	Chief of Police	88	\$121,370	\$139,575	\$154,746	\$188,123
1760	E	Fire	Fire Chief					
				89	\$127,439	\$146,554	\$162,485	\$197,531
1162	E	City Manager	Assistant City Manager	90	\$133,812	\$153,883	\$170,609	\$207,407
				91	\$140,501	\$161,576	\$179,138	\$217,776
				92	\$147,526	\$169,655	\$188,095	\$228,665
1160	E	City Manager	Deputy City Manager	93	\$154,902	\$178,137	\$197,500	\$240,098
				95	\$170,391	\$195,950	\$217,158	\$264,108
1050	E	Legal	City Attorney Emeritus	96	\$178,910	\$205,747	\$228,112	\$277,313
				97	\$187,855	\$216,034	\$239,516	\$291,177

Not Assigned to a Pay Grade

Intern - Flat rate position

City Attorney

City Manager

Finance Management Fellowship - Flat rate position

Reserve Police Officer - Flat rate position



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Alex Anderson, Director of Water Resources, Elizabeth Hassenfritz, Director of Engineering
Subject: **REPORT** - Monthly Wastewater Allocations

Recommended Action Requested by City Council

No action. Update only.

Required Votes to Pass Required Action

Presentation Only. No Action Required

Background

This monthly wastewater allocations update is in response to several City Council members' request regarding an update on projects and current wastewater capacity. This update also captures all known and allocated projects through our 2027 projected allocation and captures wastewater allocation for all approved development agreements.

Fiscal Implications

None, update only.

Alternate Courses of Action

No action. Update only.

Attachments

1. 2025 07 Update

**City of Kannapolis
Monthly Wastewater Allocations Update
July 2025**

Summary of Available WSACC Sewer Allocation for Kannapolis: 950,514

Total Restricted and Previously Committed Reserves: 926,942

WSACC Distributions this month: None

Pending Projects Approved by Policy: None

Remaining Non-Restricted Reserves: 965,627

Summary Remaining for post-2027 Sewer Allocation: 63,000 (approximately)

Pending Projects under Review:

- Irvin Farms has been determined to not be eligible for community enhancement allocation as there is currently no available capacity designated in that category. This project may request to be added to the waitlist.
 - A commercial project at Odell School Road and HWY 73 submitted for wastewater allocation during the last non-residential in-fill call for projects. Staff has previously completed the preliminary review and deemed this project to be within the requirements of the policy. Staff will begin to create the development agreement with the developer for future council consideration. This project will likely be built in two phases with an initial allocation of 5,000 GPD and second phase of 5,000 to 10,000 GPD.
-

Update Summary:

1. Passage of DA #2025-10 results in removal of Stanley Drive Industrial Reserves at 10,300 GPD and 9,200 GPD in non-residential infill from the remaining non-restricted amount. The total for the DA was 19,200 GPD, and is now in the restricted account.
2. Emergency allocation for a failed septic system resulted in a reduction of strategic reserve from 75,000 GPD to 70,260 GPD.
3. Staff intend to present an updated Exhibit A for City Council review and adoption in August or September 2025.
4. Staff are preparing to transfer up to 12,500 GPD from Reserves to Wyrick Property as a Priority 1 Project with prior City Commitment. This transfer was always planned but did not

occur in the most recent Exhibit A in 2024 as the project timing was not yet finalized. This action will not reduce the post-2027 sewer allocation total.

5. Staff are preparing to propose a reduction in 2027 Affordable Housing and Plant 4 site reserves of a combined 42,000 GPD to restore Concrescere Business Park to 42,000 GPD. This action will not reduce the post-2027 sewer allocation total. City Council authorization will be requested to amend Exhibit A.

Exhibits and Appendices

All figures are shown in GPD

Executive Summary Calculations

Summary of Available WSACC Sewer Allocation for Kannapolis (current):	950,514
Previous WSACC Distribution #12:	43,485
Projected WSACC 2027 distribution:	962,000
Total Restricted and Previously Committed Reserves:	(926,942)
Remaining Non-Restricted Reserves:	(965,627)
WSACC Distributions this month: None	0
Pending Projects Approved by Policy: None Current	0
Summary Remaining for post-2027 Sewer Allocation (approximate):	~63,000

General Tracking Based on Adopted Exhibit A

Previously Approved or Otherwise Committed Projects 2024-2025 (as shown in Exhibit A):

Lowes Foods - Kellswater Commons	9,698
Summerlyn Village Subdivision (2024)	12,900
Summerlyn Village Subdivision (2024)	30,600
Summerlyn Village Subdivision (2027)	30,600
Cannon Manor Subdivision	7,650
Emerson Glen Subdivision	12,900
Pace (Medical)	5,000
Coldwater Ridge Phase II apartments	9,100
Trinity Corners	10,125
85 Exchange (Industrial)	24,500
McDonalds – Kellswater Commons	1,280
Bakers Creek Subdivision (2024)	28,125
Bakers Creek Subdivision	28,125
Kannapolis Crossing – Development Agreement	316,000
Kannapolis Gateway Business Park	~5,000
Afton – Childers Cline Building III	~5,000
Downtown Reserves	225,305
• Market at Millstone (16,655)	
• Millstone Village (48,500)	
• Crest Field (50,400)	
• Bainbridge Kannapolis (52,975)	
• Towns at Millstone (30,375)	
• Dale Earnhardt Blvd Partners (26,400)	
Loop Yard Phase 1	36,225
Residential In-Fill (2024)	11,213
Hedgecliff Towns	28,856
Evolve-Hawthorne	41,925
Greenview Apartments	14,175
Stanley Drive (existing building) & Phase 2	27,900
Failed Septic System Emergency	4,740
Total Restricted and Previously Committed Reserve	926,942

Non-Restricted Reserves (between 2024 and 2027 distributions) Total (as shown in Exhibit A):

Block 5 (Mixed Use/Apartments)	16,150
Block 5 (Commercial Reserves)	36,000
Block 6 (Mixed Use/Apartments)	56,250
Afton Ridge Reserves (remaining)	7,000
Lakeshore Reserves	18,000
Kannapolis Crossings Reserves	100,000
Downtown Reserves (remaining)	92,067
Additional Downtown Set-Aside Reserves	100,000
Loop Yard Phase 2 (lift station improvements)	95,000
Non-Residential In-Fill	90,800
Affordable Housing (2024)	21,600
Affordable Housing (2027)	20,000
Metro 63	18,000
85 Exchange Industrial Reserves	28,000
Kannapolis Parkway and Rogers Lake Road Reserves	28,000
Concord Lake Road and Roxie Street Reserves	12,000
Glen Afton and Kannapolis PKWY (Motely Industrial)	42,000
Plant 4 Site	94,500
Concrescere Business Park	0
Community Enhancement (schools and infrastructure)	20,000
Strategic Buffer	70,260
 Total Non-Restricted and Previously Committed Reserve	 965,627

Waitlist Projects (No current allocation available) (as shown in Exhibit A):

Blue Ridge Apartments	44,100
The Farm at Riverpointe Phases 3B, 5, 6	59,588
Riverpointe at Davidson	131,250
Bridges of Cabarrus II	31,500
Abberly (885 Kannapolis Pkwy)	52,650
Lane St Townhomes W of Royce St	42,075
Cavallaro Ridge (Windy Hill Farm) at Boy Scout Camp/Isenhour	20,250
Kannapolis Pkwy Townhomes North of Redwood Apartments	26,100
Stonehaven	2,025
Sudbury Rd Subdivision	18,900
Camp Cabarrus at Kannapolis Pkwy & Dovefield Ln	54,900
Trinity Church Rd Apartments at Northwest Cabarrus High School	21,300
Orphanage Rd Apartments north side	8,100

Exhibit Tracking Calculations:

- Stanley Drive = 19,000 + 8,700 = 27,200 (not to exceed 8,700 GPD total for Building 1)
- Afton Ridge Reserves = 12,000 – ~5,000 = 7,000
- Wyrick (Maple Ridge Calculations) = Twelve 1-bedroom, forty-six 2-bedroom, twelve 3-bedroom and up to 2,000 GPD amenity/clubhouse. Total not to exceed 12,500.
- Downtown Reserves:

Current Reserve	317,372
• Market at Millstone	(16,655)
• Millstone Village	(48,500)
• Crest Field	(50,400)
• Bainbridge Kannapolis	(52,975)
• Towns at Millstone	(30,375)
• Dale Earnhardt Blvd Partners	(26,400)
Remaining Original Downtown Reserves	92,067

Sewer Capacity as of December 1, 2024 Calculations:

○ Start	1,054,306
○ Approved	(123,518)
○ Restricted	(846,002)
○ Unrestricted	(941,267)
○ Strategic Buffer	(75,000)
○ Anticipated by policy	(~11,000)
○ WSACC Dist #12	43,485
○ 2027 Addition	<u>962,000</u>

Exhibit A Remaining Capacity in Post 2027: **~63,000 (within 1%)**



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Wilmer Melton, Assistant City Manager, Richard Smith, Planning Director
Subject: **RESOLUTION** - Supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization Transportation Alternatives Program to fund the Midlake Sidewalk **APPROVED**

Recommended Action Requested by City Council

Motion to approve Resolution supporting reapplication to the Cabarrus-Rowan Metropolitan Planning Organization Surface Transportation Block Grant Program for the Midlake Avenue Sidewalk project

Required Votes to Pass Required Action

Requires 2/3's vote or 5 votes

Background

The City previously sought and received Council approval, under Resolution 2025-28 (April 2025), to apply for the Transportation Alternatives Program Grant. The proposed funds were designated for the construction of safe and accessible pedestrian facilities along Midlake Avenue, serving over 4,000 residents in surrounding communities. Although the application was submitted, available funding was insufficient to meet all project requests across the Cabarrus-Rowan MPO (CRMPO) region.

The CRMPO has recently released another call for projects under the Surface Transportation Block Grant Program (STBG), and the City is requesting approval to reapply with the same project intent to improve pedestrian safety and accessibility on Midlake Avenue.

There are four bus stops along Midlake Avenue, but riders must currently walk on the shoulder to reach them. Building a sidewalk will improve walkability, encourage transit use, and connect nearby neighborhoods to the future Eastside Park. This project supports Kannapolis's "Discover a Healthy Life" vision by promoting safe access, healthier lifestyles, and better health outcomes for residents.

Fiscal Implications

If the grant is awarded, it will cover 80% of project costs. The City will be responsible for the remaining 20% of the total project cost.

Alternate Courses of Action

1. **Motion to approve the Resolution Supporting a Grant Application for the Midlake Avenue Sidewalk (Recommended).**
2. Table the action to a future meeting.
3. Take no action.

Attachments

1. 2025-28 Resolution supporting application for funding from Transportation Alternatives

Program

2. 2025-55 Resolution supporting grant application to CRMPO Midlake Sidewalk

**Resolution In Support of the City of Kannapolis, NC
to Apply for funding from the
Transportation Alternatives Program
through the Cabarrus-Rowan Metropolitan Planning Organization**

WHEREAS, The Transportation Alternatives (TA) Program was initially authorized by the Federal Transportation Funding Act - the Moving Ahead for Progress in the 21st Century Act (MAP-21) that was signed into law on July 6, 2012 and has continued in subsequent reauthorizations including the Infrastructure Investment and Jobs Act (IIJA). The Transportation Alternatives Program redefines the former Transportation Enhancements (TE) activities and consolidates these eligibilities with the Safe Routes to School and Recreational Trails Programs. The TE program was originally authorized in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and continued through two successive laws TEA-21 and SAFETEA-LU. The Transportation Alternatives Program builds upon the legacy of the TE program by expanding travel choices, strengthening the local economy, improving the quality of life, and protecting the environment.

WHEREAS, The City of Kannapolis, herein referred to as the "City" has need for and intends to construct and design transportation projects which meet the eligibility requirements associated with the Transportation Alternatives Program.

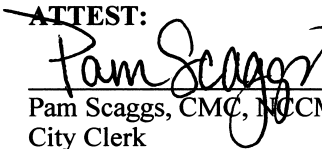
WHEREAS, The City of Kannapolis intends to request State loan and/or grant assistance for the projects,

NOW THEREFORE BE IT RESOLVED, by the City Council of Kannapolis, North Carolina that:

1. The City of Kannapolis Council supports City Staff in the endeavor to seek funding through the Transportation Alternatives Program for the Midlake Sidewalk Project consistent with adopted transportation and community plans.
2. The City will arrange financing for all remaining costs of the project, if approved for a grant award.
3. The City will adopt and place into effect on or before completion of the project a schedule of fees and charges and other available funds which will provide adequate funds for proper operation, maintenance, and administration of the system and the repayment of all principal and interest on the debt.
4. The City will provide for efficient operation and maintenance of the project on completion of construction thereof.
5. The City Planning Director, Richard Smith, the Authorized Official, and successors so titled, is hereby authorized to execute and file an application on behalf of the City with the Cabarrus-Rowan Metropolitan Planning Organization for a loan and/or grant to aid in the study of or construction of the project described above.
6. The City Planning Director, and successors so titled, is hereby authorized and directed to furnish such information as the appropriate agency may request in connection with such application or the project: to make the assurances as contained above; and to execute such other documents as may be required in connection with the application.
7. The City has substantially complied or will substantially comply with all Federal, State, and local laws, rules, regulations, and ordinances applicable to the project and to Federal and State grants and loans pertaining thereto.

ADOPTED this 14th day of April, 2025


Milton D. Hinnant, Mayor
City of Kannapolis

ATTEST:

Pam Scaggs, CMC, NCCMC
City Clerk

**RESOLUTION SUPPORTING A GRANT APPLICATION TO THE
CABARRUS-ROWAN METROPOLITAN PLANNING ORGANIZATION
TRANSPORTATION ALTERNATIVES PROGRAM
TO FUND THE MIDLAKE SIDEWALK**

WHEREAS, On December 4, 2025, the President signed the Fixing America's Surface Transportation (FAST) Act into law. The FAST Act changed the Surface Transportation Program (STP) name to the Surface Transportation Block Grant Program (STBGP) and amended the provisions contained in 23 U.S.C. 133. From the STBGP funds apportioned to each state for the state's entire Federal-aid system, a portion the FAST Act allocates STBGP funds directly to any Metropolitan Planning Organization (MPO) that is designated as a Transportation Management Area (TMA). STBGP funds have broad latitude for use on metropolitan transportation planning and projects and in support of the Federal-aid system per 23 U.S.C. 133.

WHEREAS, The City of Kannapolis, herein referred to as the "City" has need for and intends to construct and design transportation projects which meet the eligibility requirements associated with Surface Transportation Block Grant Program according to 23 U.S.C. 133.

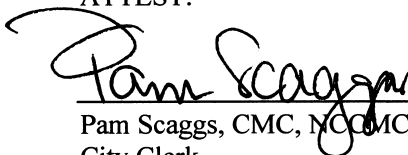
WHEREAS, The City of Kannapolis intends to request grant assistance for the project,

NOW THEREFORE BE IT RESOLVED, BY THE KANNAPOLIS CITY COUNCIL:

1. That the Kannapolis City Council supports City Staff in the endeavor to seek funding through the Surface Transportation Block Grant Program for the Midlake Sidewalk Project consistent with adopted transportation and community plans.
2. That the City will arrange financing for all remaining costs of the project, if approved for a grant award.
3. That the City will adopt and place into effect on or before completion of the project a schedule of fees and charges and other available funds which will provide adequate funds for proper operation, maintenance, and administration of the system and the repayment of all principal and interest on the debt.
4. That the City will provide for efficient operation and maintenance of the project on completion of construction thereof.
5. That City Planning Director, Richard Smith, the Authorized Official, and successors so titled, is hereby authorized to execute and file an application on behalf of the City with the Cabarrus-Rowan Metropolitan Planning Organization for a loan and/or grant to aid in the study of or construction of the project described above.
6. That the City Planning Director, and successors so titled, is hereby authorized and directed to furnish such information as the appropriate agency may request in connection with such application or the project; to make assurances as contained above; and to execute such other documents as may be required in connection with the application.
7. That the City has substantially complied or will substantially comply with all Federal, State, and local laws, rules, regulations, and ordinances applicable to the project and to Federal and State grants and loans pertaining thereto.

Adopted this the 14th day of July 2025

ATTEST:


Pam Scaggs, CMC, NCCMC
City Clerk


M. Darrell Hinnant, Mayor
City of Kannapolis



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Wilmer Melton, Assistant City Manager, Richard Smith, Planning Director
Subject: **RESOLUTION** - Supporting reapplication to the Cabarrus Rowan Metropolitan Planning Organization Surface Transportation Block Grant Program to fund the Bakers Creek Greenway HAWK Signal **APPROVED**

Recommended Action Requested by City Council

Motion to approve Resolution supporting reapplication to the Cabarrus-Rowan Metropolitan Planning Organization Surface Transportation Block Grant Program for the Bakers Creek Greenway HAWK Signal

Required Votes to Pass Required Action

Majority Present at Meeting

Background

The City previously sought and received Council approval, under Resolution 2025-31 (April 2025), to apply for a Carbon Reduction program grant. The proposed funds were designated for the installation of a High-Intensity Activated Crosswalk (HAWK) signal on Loop Road North between Biotechnology Drive and Forest Avenue, where the Bakers Creek Greenway has existing access from Loop Road North. Although the application was submitted, available funding was insufficient to meet all project requests across the region.

The CRMPO has recently released another call for projects under the Surface Transportation Block Grant Program (STBG), and the City is requesting approval to reapply with the same project intent to improve pedestrian safety and accessibility on Loop Road North.

Fiscal Implications

If the grant is awarded, it will cover 80% of project costs. The City will be responsible for the remaining 20% of the total project cost.

Alternate Courses of Action

1. **Motion to approve the Resolution Supporting a Grant Application for the Bakers Creek Greenway Hawk Signal (Recommended)**
2. Table the action to a future meeting.
3. Take no action.

Attachments

1. 2025-56 Resolution supporting grant application to CRMPO Bakers Creek Greenway HAWK Signal

**RESOLUTION SUPPORTING A GRANT APPLICATION TO THE
CABARRUS-ROWAN METROPOLITAN PLANNING ORGANIZATION
SURFACE TRANSPORTATION BLOCK GRANT PROGRAM
TO FUND THE BAKER'S CREEK GREENWAY HAWK SIGNAL**

WHEREAS, On December 4, 2025, the President signed the Fixing America's Surface Transportation (FAST) Act into law. The FAST Act changed the Surface Transportation Program (STP) name to the Surface Transportation Block Grant Program (STBGP) and amended the provisions contained in 23 U.S.C. 133. From the STBGP funds apportioned to each state for the state's entire Federal-aid system, a portion the FAST Act allocates STBGP funds directly to any Metropolitan Planning Organization (MPO) that is designated as a Transportation Management Area (TMA). STBGP funds have broad latitude for use on metropolitan transportation planning and projects and in support of the Federal-aid system per 23 U.S.C. 133.

WHEREAS, The City of Kannapolis, herein referred to as the "City" has need for and intends to construct and design transportation projects which meet the eligibility requirements associated with Surface Transportation Block Grant Program according to 23 U.S.C. 133.

WHEREAS, The City of Kannapolis intends to request grant assistance for the project,

NOW THEREFORE BE IT RESOLVED, BY THE KANNAPOLIS CITY COUNCIL:

1. That the Kannapolis City Council supports City Staff in the endeavor to seek funding through the Surface Transportation Block Grant Program for the Baker's Creek Greenway Hawk Signal consistent with adopted transportation and community plans.
2. That the City will arrange financing for all remaining costs of the project, if approved for a grant award.
3. That the City will adopt and place into effect on or before completion of the project a schedule of fees and charges and other available funds which will provide adequate funds for proper operation, maintenance, and administration of the system and the repayment of all principal and interest on the debt.
4. That the City will provide for efficient operation and maintenance of the project on completion of construction thereof.
5. That City Planning Director, Richard Smith, the Authorized Official, and successors so titled, is hereby authorized to execute and file an application on behalf of the City with the Cabarrus-Rowan Metropolitan Planning Organization for a loan and/or grant to aid in the study of or construction of the project described above.
6. That the City Planning Director, and successors so titled, is hereby authorized and directed to furnish such information as the appropriate agency may request in connection with such application or the project; to make assurances as contained above; and to execute such other documents as may be required in connection with the application.
7. That the City has substantially complied or will substantially comply with all Federal, State, and local laws, rules, regulations, and ordinances applicable to the project and to Federal and State grants and loans pertaining thereto.

Adopted this the 14th day of July 2025

ATTEST:


Pam Scaggs, CMC, NCCMC
City Clerk


M. Darrell Hinnant, Mayor
City of Kannapolis



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Pam Scaggs, City Clerk
Subject: **MINUTES - June 23, 2025 Business Meeting APPROVED**

Recommended Action Requested by City Council

Motion to approve the June 23, 2025 Business Meeting minutes.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

Fiscal Implications

Alternate Courses of Action

Attachments

1. 2025.06.23 Business Meeting Minutes 1

**CITY OF KANNAPOLIS
CITY COUNCIL
BUSINESS MEETING MINUTES
June 23, 2025**

A business meeting of City Council of the City of Kannapolis, North Carolina was held on Monday, June 23, 2025, at 6:00 P.M., at Kannapolis City Hall located at 401 Laureate Way, Kannapolis, NC.

CITY COUNCIL MEMBERS PRESENT:

Mayor: Milton D. Hinnant

Council Members: Doug Wilson
Jeanne Dixon
Dianne Berry, Mayor Pro tem
Tom Kincaid
Darrell Jackson
Ryan Dayvault

Council Members Absent: None

City Manager: Mike Legg

Deputy City Manager: Eddie Smith

Assistant City Manager: Tina Cline

Assistant City Manager: Wilmer Melton

City Attorney: Andrew Kelly

City Clerk: Pam Scaggs

Staff Present:	Richard Smith	Albaro Reyes-Martinez
	Kirk Beard	Carson Purvis
	Kristin Jones	Chris Hill
	Sherry Gordon	Terry Spry
	Elizabeth McCarty	TJ Cook
	Alex Anderson	Irene Wong
	Gary Mills	

Visitors Present:	Phil Goodman	Bridgett Grant
	Joe Hatley	Brooks Burleson
	Jayne Williams	Bruce Bauman
	Kevin Randall	Johnna Randall
	Joe Battinelli	Ramona Williams
	Tom Goodman	Haskel Troutman
	Ethel Sterling	Jenny Ryerson
	Mark Spitzer	Carmela Lyn

Patricia Moretti	Zach Lyn
Clint Trenkelbach	Pam Swartz
Tom Richardson	Jamie Richardson
Isaiah Payne	Lesa Bynum
Doug Bynum	Timothy Cox
Sophia Wilkerson	Kate Battinelli
Ken Lingafelt	Laura Heggins
Sulnena Collins Brawley	Payton Currie
Teesha Mudliar	Ansika Lakshmi Singineddy
Vishwanjeet Mudlinv	Chris Haley
Baylen Hudson	Jamier Kirkley
Naomi Hatchell	Debbie Vavra
Chuck Vavra	Jeanette Hyman

CALL TO ORDER AND WELCOME

Mayor Hinnant called the meeting to order and welcomed all in attendance. He led a moment of silent meditation, followed by the Pledge of Allegiance by Mayor Pro tem Berry.

RECOGNITIONS

Police Chief Terry Spry introduced Captain Chris Hill who recognized the graduates from the 2025 Police Department Citizen's Academy. Captain Hill reported the successful completion of the Academy's tenth session, providing a brief overview of the program and its objectives to build community engagement and foster understanding of police operations. He then presented certificates of completion to the following participants: April Anthony, Deonna Bobbitt, Tiffany Carroll, Dylan Fortson, Joshua Matute, Samantha Merchak, Bel Ray, John Reeves, Theron Smoutherson, Jim Stavros, Elisabeth Strillacci, Beryl Torrence, and Meaghan Wade.

Ms. Strillacci spoke on behalf of the graduating class, expressing their appreciation for the program. She also presented commemorative coffee cups to members of City Council and staff as a token of gratitude.

ADOPTION OF AGENDA

Mayor Hinnant called for a motion regarding the Agenda. Councilmember Wilson made the motion to approve, second by Councilmember Jackson and the motion was unanimously approved.

CONSENT AGENDA

Mayor Hinnant called for a motion on the Consent Agenda. Mayor Pro tem Berry made the motion to approve, second by Councilmember Dayvault and the motion unanimously approved.

Budget Amendment #25-46 appropriating funds from NC Amateur Sports for youth athletic equipment (Gary Mills, Parks and Recreation Director) (Copy included as Exhibit A).

Budget Amendment #25-45 appropriating funds from the Water and Sewer Fund to be used for the Forrestbrook Lift Station Improvements (Alex Anderson, Director of Water Resources; Brian Roberts, Finance Director) (Copy included as Exhibit B).

1 Budget Amendment #25-47 appropriating funds balance for the FY25 Year-end administrative
2 adjustments (Brian Robers, Director of Finance) (Copy included as Exhibit C).

3
4 Resolution to consider withdrawal from dedication a portion of right-of-way known as Charles
5 Babbage Lane (Richard Smith, Planning Director) (Copy included as Exhibit D).

6
7 Resolution for acceptance of streets for Powell Bill allocations FY2025-2026 (Elizabeth Hassenfritz,
8 Director of Engineering) (Copy included as Exhibit E)

9
10 Minutes: June 9, 2025 Business Meeting Minutes (Pam Scaggs, City Clerk) (Copy included as Exhibit
11 F)

12 13 **BUSINESS AGENDA**

14 **Public Hearing – Conditional Rezoning Case #CZ-2025-01 – 3397 Camp Julia Road (Elizabeth** 15 **McCarty, Assistant Planning Director) (Copy included as Exhibit G).**

16 Assistant Planning Director, Elizabeth McCarty presented details for Case #CZ-2025-01, a
17 conditional rezoning request submitted by QTR Development Partners, LLC for a 53.18-acre parcel
18 located at 3397 Camp Julia Road, bordered by Brantley Road, Patterson Road, and Camp Julia Road.
19 Ms. McCarty noted that 50.57 acres of the parcel were annexed into the city in February and are
20 currently zoned Cabarrus County Low Density Residential (LDR), while the remaining 2.6 acres are
21 currently located within city limits and zoned Residential 4 (R4).

22
23 Using maps, the submitted site plan, and drone footage, Ms. McCarty explained that the applicant is
24 requesting to rezone the entire parcel to Residential 8 (R8) Conditional Zoning to allow for a 317-
25 unit townhouse development. The proposal includes a clubhouse, pool, sidewalks, three access points,
26 and over 40% open space, exceeding the 20% requirement. She further explained that the proposed
27 density of 5.96 units per acre aligns with the city's 2030 Comprehensive Plan, specifically within the
28 Complete Neighborhood 1 and 2 character areas where the property is located and townhomes are a
29 primary use. While the Planning and Zoning Commission voted 4 to 1 in April to deny the request,
30 citing inconsistency with the comprehensive plan, incompatibility with adjacent neighborhoods, and
31 concerns over roadway infrastructure, staff continues to recommend approval with conditions. These
32 include adherence to R8 zoning standards, a maximum of 317 units, an 8-foot landscape buffer along
33 residential borders, a traffic impact analysis to be updated upon sewer allocation, and submission of
34 a final site plan meeting all city development standards. Ms. McCarty added that the applicant revised
35 the plan following comments at a neighborhood meeting and staff feedback, incorporating increased
36 buffers, fencing, on-street parking, and reducing the total units from 324 to 317. She also noted that
37 the project currently lacks wastewater allocation, which will delay its progression.

38
39 Ms. McCarty concluded by reminding Council of the requested actions and made herself available
40 for questions.

41
42 Several questions and concerns were raised by council members regarding the proposed 317-unit
43 townhouse development. Mayor Pro tem Berry inquired about the specifics of the required 8-foot
44 landscape buffer, asking whether it would consist of trees or fencing. Ms. McCarty clarified that the
45 Kannapolis Development Ordinance requires a semi-opaque buffer with a mix of canopy trees,
46 understory trees, and shrubs spaced according to ordinance standards. In response to a question about
47 project timing, she noted that due to the lack of sewer allocation, the development likely could not

1 begin until after 2028. It was confirmed that the existing house with the pond on the property is
2 currently occupied by the property owner.

3
4 Councilmember Dixon inquired whether neighborhood concerns had been addressed and if residents
5 had been contacted. Ms. McCarty confirmed that the applicant held the required neighborhood
6 meeting, conducted additional outreach, and revised the plan in response to community feedback. She
7 noted that one key revision includes an expanded perimeter buffer that exceeds minimum
8 requirements along areas adjacent to existing residential properties.

9
10 Councilmember Dayvault asked about the difference in allowable units between R4 and R8 zoning.
11 Ms. McCarty responded that R4 would permit roughly 200 units (4 units per acre), while R8 allows
12 over 400 units (8 units per acre), with the current proposal falling in between at 317 units.
13 Councilmember Jackson raised a question about fire service coverage, and staff confirmed the area
14 would be served by the city's Fire Station #1. Councilmember Dixon expressed additional concern
15 over the narrowness of Patterson Road and whether improvements would be made. Ms. McCarty
16 noted that a traffic impact analysis is being coordinated with NCDOT, though it has not yet been
17 completed.

18
19 Given the current limitations on sewer capacity, Councilmember Wilson questioned the rationale
20 behind annexing the property without a clear path forward for development. Ms. McCarty
21 acknowledged that while annexation brought the property into the city, the 60-day window to apply
22 city zoning has passed, and the applicant is aware of the sewer situation.

23
24 Bridgett Grant, representing QTR Development Partners, presented the proposed conditional
25 rezoning for a 53.18-acre site on Camp Julia Road, highlighting its alignment with the City of
26 Kannapolis' long-term land use goals and future growth area. She emphasized that, although the R8
27 zoning district allows up to eight units per acre, the development is voluntarily limited to 317
28 townhomes, resulting in a density of 5.9 units per acre, well within the range supported by the city's
29 Comprehensive Plan. She explained that the development is intended as a proactive, long-term
30 investment despite the current delay in sewer allocation, which will likely push construction beyond
31 2028. The site features three access points and includes over 40% open space, with a clubhouse, pond,
32 and pocket parks integrated throughout.

33
34 Ms. Grant detailed several revisions made in response to community and staff feedback. These
35 included reducing the unit count by seven, expanding buffers, particularly along Harmon Place, from
36 20 to 36 feet and upgrading from a type A to type B buffer with fencing, and committing to over two
37 miles of internal sidewalks to discourage pedestrian spillover into neighboring streets. In response to
38 a complaint regarding littering, Ms. Grant stated that the developer offered to partner with the HOA
39 to adopt sections of nearby roads for litter control. While broader road widening isn't planned,
40 necessary improvements such as turn lanes at development entrances will be made. She addressed
41 speeding concerns on Camp Julia Road, noting that increased density could naturally calm traffic.
42 Ms. Grant stated that a traffic impact analysis (TIA) is underway and will evaluate and mitigate
43 changes across six intersections to maintain current levels of service.

44
45 In closing, Ms. Grant reiterated the development team's efforts to exceed ordinance requirements
46 through enhanced buffers, open space, defined site layout, and detailed planning. She expressed

1 appreciation for staff's recognition of the proposal's consistency with city planning goals and
2 confirmed the team's commitment to making their enhancements binding through conditional zoning.
3

4 Mayor Pro tem Berry asked about the expected price point for the townhomes, but Ms. Grant
5 explained that due to the project's delayed timeline, likely three years or more, it would be difficult
6 to predict pricing at this time. Councilmember Dayvault inquired whether the developer would
7 consider building now using septic systems with fewer units. Ms. Grant responded that the developer
8 does not build detached homes and that the site's environmental constraints make it more appropriate
9 to wait for sewer capacity.
10

11 Councilmember Dixon asked whether the townhomes would be for sale or for rent, and Ms. Grant
12 responded that the decision hasn't been made yet. The final determination will depend on market
13 conditions at the time of development, particularly in light of local housing shortages in both
14 categories. Councilmember Kincaid suggested the inclusion of playground equipment, especially
15 considering the site's remote location. Ms. Grant confirmed that a play area is planned near the
16 amenity center, along with smaller pocket parks for added accessibility. When Councilmember
17 Jackson asked about the distance to the City's proposed park, it was clarified that the planned park is
18 approximately two miles away from the proposed development site.
19

20 There being no questions or comments, Mayor Hinnant opened the public hearing.
21

22 Lesa Bynum, adjacent property owner to the proposed development, spoke in opposition to the
23 rezoning request. She expressed appreciation for Councilmember Dixon's response to her emailed
24 concerns but emphasized that the area's infrastructure is insufficient to support such a high-density
25 project. She cited concerns about added strain on sewage systems, roads, schools, and the resulting
26 tax burden on Kannapolis residents. Ms. Bynum also warned that approving this project would set a
27 precedent for further high-density development in an area currently characterized by large-acreage,
28 low-density properties, ultimately changing the rural character of the community. Additionally, she
29 pointed out that traffic impacts are difficult to fully assess because the nearby Metro 63 industrial site
30 is not yet operational, meaning its future traffic contribution remains unknown. She closed by
31 thanking the council for the opportunity to speak.
32

33 Jenny Ryerson, a 25-year resident of Harmon Place, opposed the rezoning request, citing concerns
34 about traffic, infrastructure, and safety. She emphasized that 317 townhomes could add over 600
35 vehicles to already narrow, unimproved roads, increasing risks in an area already prone to speeding
36 and accidents. Ms. Ryerson also raised concerns about flooding, deforestation, school capacity, and
37 the loss of the area's rural character. She criticized the lack of planning for road improvements, traffic
38 signals, and school resources, arguing that development decisions were made without addressing
39 necessary infrastructure needs, calling it "putting the cart before the horse."
40

41 Kate Battinelli, a resident of Camp Julia Road whose property borders the proposed development,
42 spoke in opposition to the rezoning. Ms. Battinelli raised concerns about roads from the new
43 neighborhood ending directly at existing property lines without cul-de-sacs or buffers, increasing
44 privacy and safety issues, including the risk of trespassing. She highlighted existing road conditions,
45 narrow, unmarked, lacking sidewalks or shoulders, and noted multiple traffic fatalities on Camp Julia
46 Road. Ms. Battinelli also pointed out that the proposed 675 parking spaces do not account for delivery
47 or service vehicles, which would further strain local roads. Additionally, she argued that the current

1 buffer plan is incorrect and does not meet the required Type C buffer standards outlined in the city's
2 development ordinance. She commented that previous concerns raised at the April Planning and
3 Zoning meeting remain unaddressed and urged Council to enforce ordinance requirements and
4 prioritize safety and respect for existing homeowners.
5

6 Joe Battinelli strongly opposed the proposed rezoning, emphasizing that the area has always been a
7 low-density, single-family neighborhood and that approving this plan would break trust with longtime
8 residents. Mr. Battinelli noted that although the parcel is 53 acres, much of it is unbuildable due to a
9 stream, meaning the 317 units are effectively being concentrated on just nine acres, resulting in a
10 density of approximately 35 units per acre, far exceeding what's permitted in the city's
11 Comprehensive Plan. He argued the proposal is completely out of scale with the surrounding area,
12 which consists entirely of single-family homes and churches, with no similar townhouse
13 developments within a 2.5-mile radius. Mr. Battinelli also highlighted infrastructure concerns, such
14 as the lack of sidewalks and the danger to pedestrians. He accused the developer of prioritizing profit
15 over community impact and urged Council to support growth that is lawful, respectful, and consistent
16 with the area's character, suggesting R4 zoning as a more appropriate alternative.
17

18 Jeanette Hyman spoke against the proposed development, citing serious traffic concerns near her
19 home, especially in the afternoons when the road "feels like a racetrack". Ms. Hyman mentioned past
20 fatal accidents on Camp Julia Road due to speeding, particularly by motorcyclists, and said she
21 doesn't allow her great-grandchildren to ride bikes in the front yard because it's too dangerous. She
22 described the neighborhood as a quiet, rural community without sidewalks, stores, or walkable
23 amenities, making it an ill-suited location for high-density townhomes. She urged Council to preserve
24 the character of the area.
25

26 There being no further comment, Mayor Hinnant closed the public hearing.
27

28 Councilmember Dayvault asked for clarification regarding buffer requirements and road stub-outs
29 related to the proposed development. Planning Director, Richard Smith, explained that the buffers
30 shown in the plan, Types A and B, are correct per ordinance, noting a common misunderstanding
31 between requirements for multi-family versus single-family attached housing. Regarding roads
32 ending at neighboring parcels, Mr. Smith confirmed that the plan includes stub-outs without buffers,
33 which is standard and allowed under the ordinance. He added that challenges with this approach in
34 other developments in the City have resulted in having to require performance guarantees to ensure
35 future completion.
36

37 There being no further questions or comments, Mayor Hinnant called for a motion regarding the
38 Statement of Consistency. Councilmember Wilson made the motion to approve, second by
39 Councilmember Kincaid. The motion passed with a 5 to 2 vote, with Mayor Pro tem Berry and
40 Councilmember Dayvault dissenting.
41

42 Mayor Hinnant called for a motion regarding the Resolution to Zone. Councilmember Dixon made the
43 motion to approve, second by Councilmember Jackson. The motion passed with a 5 to 2 vote, with
44 Mayor Pro tem Berry and Councilmember Dayvault dissenting.
45
46

1 **Public Hearing & Resolution – Development Agreement #2025-10 – PX MPC Concord, LLC**
2 **(Richard Smith, Planning Director) (Copy included as Exhibit H).**

3 Mr. Smith presented the details for a Development Agreement, case #DA-2025-10 for property
4 located on Stanley Drive. He stated that the purchaser of the former Stanley Black & Decker building
5 has acquired the three adjacent parcels, totaling approximately 73 acres, with plans to develop an
6 industrial economic project. Mr. Smith noted that the agreement is primarily to secure wastewater
7 allocation for the project and that the developer was present and available to answer any questions
8 from Council.
9

10 Councilmember Jackson asked if sewer allocation had already been approved. Mr. Smith responded
11 that is what is being considered as a component of the Development Agreement. He added that the
12 request is for just under 20,000 gallons per day.
13

14 There being no further comments or questions for staff, Mayor Hinnant opened the Public Hearing,
15 which was closed without comment.
16

17 Mayor Hinnant called for a motion approving the Resolution adopting the Ordinance to execute the
18 Development Agreement. Motion to approve was made by Councilmember Wilson, second by
19 Councilmember Dayvault and the motion was unanimously approved.
20

21 **Public Hearing – Voluntary Annexation (#A-2025-08) of approximately 0.26 +/- acres located**
22 **at 5056 Wig Street, further identified as Cabarrus County Parcel Identification Number**
23 **56034954710000, and consider a motion to extend the Corporate Limits of the City of**
24 **Kannapolis (Richard Smith, Planning Director) (Copy included as Exhibit I).**

25 Mr. Smith presented Case #A-2025-08, a voluntary annexation request submitted by Melissa Walter
26 for a 0.26-acre non-contiguous parcel on Wig Street. He explained that the applicant recently
27 purchased the property with the intention of building a new home and is requesting annexation into
28 the city. The parcel is adjacent to other properties already within city limits and lies within the city's
29 designated future growth area. Mr. Smith provided a map and survey for reference and noted that a
30 separate annexation request in the same area is anticipated next month.
31

32 In response to questions from Councilmember Dixon, Mr. Smith confirmed that water and sewer
33 services are already available and that a previously existing single-wide mobile home has been
34 removed in preparation for new residential construction.
35

36 With no public comments, Mayor Hinnant opened and closed the Public Hearing and called for a
37 motion. Councilmember Dixon made the motion to approve the Ordinance to Extend the Corporate
38 Limits of the City for Case #A-2025-08. The motion was seconded by Councilmember Dayvault and
39 unanimously approved.
40

41 **Public Hearing – Use of FY 2025-26 CDBG & HOME funds (Sherry Gordon, Community**
42 **Development Program Administrator).**

43 Community Development Program Administrator, Sherry Gordon presented the City's annual action
44 plan, as required by HUD, detailing the proposed use of Community Development Block Grant
45 (CDBG) and HOME funds. This year's plan includes a new five-year strategy and was duly
46 advertised, with a 30-day public comment period open through July 7th with the final submission to
47 HUD due by July 12th. The City anticipates receiving \$380,894 in CDBG funds, with \$248,716

1 proposed for housing repairs, including urgent repairs and work on properties acquired through public
2 program income to be used as transitional housing. An additional \$56,000 is allocated for nonprofit
3 grants, with 23 applications under review by the Community Improvement Commission, which will
4 provide funding recommendations in July. Another \$76,178 is designated for program administration
5 and fair housing education and outreach. For HOME funds, \$170,748 is proposed for two full home
6 rehabilitations, \$20,000 for new construction in partnership with nonprofits such as Habitat for
7 Humanity, and \$11,445 for administrative costs.

8
9 There being no further comments or questions for staff, Mayor Hinnant opened the Public Hearing,
10 which was closed without comment. He then called for a motion regarding the proposed use of funds
11 as outlined by Ms. Gordon. Motion to approve was made by Councilmember Dixon, second by
12 Councilmember Kincaid and the motion was unanimously approved.

13
14 **Ordinance – Motion to approve the FY 2025-2026 Budget (Mike Legg, City Manager) (Copy**
15 **included as Exhibit J).**

16 City Manager, Mike Legg, presented the final Budget Ordinance, noting that it remains unchanged
17 from the version shared during the public hearing, as no amendments were proposed. The ordinance
18 includes revenues and expenditures for the General Fund, Water and Sewer Fund, Stormwater Fund,
19 Environmental Fund, Separation Fund, Transit Fund, and the Insurance and Risk Fund. It maintains
20 the current property tax rate of \$0.5595 per \$100 valuation, based on a total estimated city valuation
21 of \$9.2 billion, and funds 448 full-time positions.

22
23 Mr. Legg added that future council actions will be required for implementation of various items,
24 including: YMCA funding (yearly contract that can be revised at contract renewal); support for the
25 North Carolina Hall of Fame (possibly contingent on event negotiations); Federal lobbyist funding
26 (to be discussed in July); recycling and waste services for schools (will continue); street paving versus
27 sidewalk repair (understood the emphasized priority on paving); the public art master plan (not in the
28 FY2026 budget but can discuss at a later date) and City facility rental fees (opportunities to discuss
29 in more detail at future meetings).

30
31 Councilmember Kincaid noted that Mr. Legg had not mentioned funding for Downtown Kannapolis
32 Inc. (DKI). Mr. Legg responded that DKI funding is included in the proposed budget, but Council
33 will have additional opportunities to discuss it, both through an operating agreement to be presented
34 at a July meeting, and potential capital fund balance transfers. While Councilmember Kincaid
35 disagreed with some items in the budget, he expressed appreciation for staff's work and made the
36 motion to approve the Budget Ordinance.

37
38 Mayor Pro Tem Berry expressed regret that Council did not meet earlier in the budget process (in
39 February) to review and discuss the proposal collaboratively. She would have preferred to explore
40 lowering the property tax rate, opposed the sewer and environmental fee increases, and advocated for
41 removing funding for the public art consultant. She requested more collaboration in the development
42 of next year's budget.

43
44 Councilmember Wilson raised concerns about low bus ridership and emphasized the importance of
45 employee compensation. He supported DKI funding but urged caution in its allocation.

1 Councilmember Dayvault reiterated his request for information on the impact of pausing the recycling
2 program, particularly in relation to increased trash dumping fees. He also raised concerns about the
3 employee assessment review process, stressing the need for transparency and Council involvement
4 due to its broad impact on staff.

5
6 In response to Ms. Berry's comment about collaboration, Councilmember Kincaid acknowledged Mr.
7 Legg's repeated efforts to schedule collaborative meetings and noted the logistical challenges in
8 coordinating among all Council members.

9
10 Addressing Councilmember Wilson's remarks on public transportation, Councilmember Jackson
11 stated that he serves on the Transit Board, where ridership is reviewed quarterly and emphasized the
12 city's responsibility to maintain public transit. He expressed interest in making the system more
13 economically sustainable. He also supported continued DKI funding but stressed the importance of
14 representing all downtown businesses and welcomed the review of alternative plans if presented.

15
16 Councilmember Dixon shared her personal experience with utilizing the public transit system and
17 affirmed the importance of providing reliable transportation for residents without access to a vehicle.
18 She commended Mr. Legg for his leadership, particularly in maintaining a stable tax rate and
19 demonstrating a forward-thinking approach.

20
21 Councilmember Dayvault agreed with Councilmember Jackson on the importance of addressing
22 public transportation needs and supported stronger collaboration with Concord, including the
23 possibility of a joint meeting. He advocated for adjustments to the system to make it more efficient
24 and cost-effective, while expressing frustration with the perceived longstanding resistance to change.

25
26 Mayor Hinnant noted that in 2024, the transit system recorded 445,000 fare-paying rides, highlighting
27 the continued need for public transportation. While endorsing efforts to improve efficiency and
28 service delivery, he emphasized the importance of not neglecting those who rely on the system to
29 reach their jobs. He agreed with Councilmember Dayvault and expressed openness to collaborative,
30 forward-thinking solutions that enhance and expand service.

31
32 Mayor Hinnant reminded Council that Councilmember Kincaid had made a motion to approve the
33 Budget Ordinance, which was then seconded by Councilmember Wilson. The motion passed with a
34 6 to 1 vote, with Mayor Pro tem Berry dissenting.

35
36 **Fee Schedule – Establishing fees and charges for Fiscal Year 2025-2026 (Mike Legg, City**
37 **Manager and Brian Roberts, Finance Director) (Copy included as Exhibit K).**

38 Mr. Legg presented the fee schedule, noting that most fee changes will be brought back to Council in
39 July or August, as they do not need to be adopted by June 30th which will include a city-wide rental
40 fee analysis. He added that current fee schedule changes focus solely on the water and sewer rate
41 increases that were included in the approved budget.

42
43 Motion to approve the FY2026 fee schedule was made by Councilmember Jackson, second by
44 Councilmember Kincaid, and approved with a 5 to 2 vote, with Councilmember Dayvault and Mayor
45 Pro tem Berry dissenting.

Appointments – Parks and Recreation Commission (Gary Mills, Parks & Recreation Director)
(Copy included as Exhibit L).

Parks and Recreation Director, Gary Mills reported that the Parks and Rec Commission will have three openings due to expiring terms. Mr. Mills recommended the reappointment of current Commission members: Michael Whitney, Eric Purvis and EB Lentz to new three-year terms.

Mayor Pro tem Berry made the motion to reappoint as recommended by Mr. Mills, second by Councilmember Wilson and unanimously approved.

Mayor Hinnant acknowledged the recent passing of Barry Lentz, a longtime community member known for his dedication to local sports, particularly with the Dixie Youth League. He requested that Mr. Mills ask the Parks and Recreation Commission to consider naming the former Dixie Youth field in Mr. Lentz's honor. Mayor Hinnant added that if the Commission supports the proposal, it can be brought to Council for further discussion and a final decision.

Appointments – Planning and Zoning Commission (P&Z) (Richard Smith, Planning Director)
(Copy included as Exhibit M).

Mr. Smith reported that the Planning and Zoning Commission has two vacancies due to expiring terms. He recommended the reappointment of current member Jamie Richardson to a new three-year term, and the appointment of Nytsa Saayfan to fill the seat previously held by Scott Trott. Mr. Smith noted that Mr. Trott has completed three full terms and, in accordance with policy, is ineligible for reappointment for one year.

A motion to approve the recommendations was made by Councilmember Dixon, second by Councilmember Kincaid, and unanimously approved.

Appointments – Board of Adjustment (Richard Smith, Planning Director) (Copy included as Exhibit N).

Mr. Smith reported that the Board of Adjustment (BOA) has a vacancy for the alternate position and recommended the appointment of Ronald Flanders.

Councilmember Dayvault asked if the Board still has an ETJ (Extra-territorial Jurisdiction) vacancy. Mr. Smith confirmed it does but added that he was made aware of someone interested and is waiting on the application submittal.

A motion to approve the recommendations was made by Councilmember Wilson, second by Councilmember Dixon, and unanimously approved.

Appointments – Community Improvement Commission (CIC) (Sherry Gordon, Community Development Program Administrator) (Copy included as Exhibit O).

Ms. Gordon reported that that the Community Improvement Commission (CIC) has four openings, three due to expired terms and one resulting from a member stepping down. Staff and the CIC recommend the reappointment of Theron Smoutherson, Yolanda Thompson, and Mark Goodnight as well as the appointment of Gloria Talbert to complete Patricia Ware's unexpired term.

Councilmember Dayvault made the motion to approve the appointments as recommended, second by Councilmember Jackson, and unanimously approved.

1 **SPEAKERS FROM THE FLOOR**

2 Phil Goodman expressed concern over the Mayor's recent presentation on affordable housing. He
3 questioned whether it was within any individual Council member's authority to initiate housing
4 inspections or negotiate property deals without full Council approval. Mr. Goodman suggested such
5 actions appeared inappropriate or borderline unethical. Additionally, he voiced concern over the focus
6 on housing for first responders and teachers, noting that many others in the community with lower-
7 paying jobs also need access to affordable housing. Mr. Goodman concluded by urging Council to
8 prioritize public service over political or personal gain, emphasizing that elected officials are in place
9 to serve the entire community.

10
11 Mark Spitzer thanked Assistant City Manager Wilmer Melton for his efforts to improve parking near
12 City Hall, particularly enhancements to handicapped accessibility, as well as for addressing parking
13 challenges across from the ballpark. He also expressed appreciation to Police Chief Terry Spry for
14 his assistance in resolving an issue within the parking deck. Mr. Spitzer acknowledged Council's
15 recent recognition of Leonard Williams, praising his outstanding research contributions at the North
16 Carolina Research Campus. He also noted that Fred Pilkington has been appointed Executive
17 Research Director at NC Central and continues to be actively engaged in the community. Lastly, Mr.
18 Spitzer commended Kannapolis resident Donna Taylor for her compassionate work in helping a
19 homeless senior citizen with a dog find housing. He highlighted her GoFundMe campaign, which has
20 raised nearly \$37,000, and emphasized that while the issue of homeless individuals with pets is
21 complex, it is important and deserving of the Council's continued attention.

22
23 Debbie Vavra, a resident of Oakwood Avenue, requested increased police patrols to address excessive
24 speeding along the stretch of Oakwood Avenue between Rogers Lake Road and Orphanage Road,
25 where the 45 mph speed limit is frequently exceeded. Ms. Vavra cited safety concerns due to
26 tailgating, passing, and a dangerous curve near Forest Glen, as well as risks to pedestrians, cyclists,
27 and pets. She asked the City to enforce the speed limit and consider a traffic study to evaluate lowering
28 it to 35 mph, consistent with the section north of Rogers Lake Road.

29
30 **CITY MANAGER REPORT**

31 Mr. Legg announced the City has been awarded a \$500,000 State Accessible Parks Grant to help fund
32 the replacement of the aging concession/restaurant building at Bakers Creek Park. The City has three
33 years to use the funds, allowing flexibility in aligning the project with future budgets.

34
35 Regarding televising Council meetings, Mr. Legg stated that staff will conduct several test runs using
36 different camera angles and setups, beginning with the July 28th Council meeting. The goal is to
37 launch the first live broadcast at the final Council meeting in August.

38
39 In response to Councilmember Dayvault's earlier comment about recycling, Mr. Legg explained that
40 no changes were included in the current budget due to the City's existing contractual obligation to
41 continue providing recycling services. He added that a full analysis will be conducted in the coming
42 months to explore potential adjustments for the future.

43
44 Mr. Legg provided Council with a handout and a preliminary cost analysis related to exploring
45 affordable single-family housing options. He emphasized three main approaches:

- 46
47 1. New construction on a flat, ready lot (with water/sewer): approximately \$291,000 per home.

2. Relocating the existing Chestnut Avenue mill homes (with water/sewer): approximately \$261,000 per home.
3. Purchasing existing homes is the most cost-effective, at around \$200,000, with renovations.

Mr. Legg noted the limited availability of buildable lots, which makes acquiring and renovating existing homes a more feasible option. He encouraged Council to review the material and engage in follow-up discussions. A decision on the Chestnut mill home relocation must be made by the end of July to proceed.

Councilmember Kincaid asked about the number of bedrooms in the new construction homes. Mr. Legg responded that they would mostly like be three-bedroom homes, ranging from approximately 1,200 to 1,500 square feet.

CITY COUNCIL COMMENTS

Councilmember Wilson asked about several projects, included honoring the late State Representative, Linda Johnson; repairs to the spillway [Highway 73 dam]; completion of Vida II and the Rogers Lake “flyover” bridge. Council discussed the naming of local infrastructure in honor of Linda Johnson. Originally, there was debate about renaming the Martin Luther King Jr. (MLK) bridge, but it was decided to leave that name in place due to concerns over confusion and past controversy. Alternative options were considered, including naming the Rogers Lake Road bridge or the interchange near the MLK bridge after Linda Johnson. Another idea was renaming Watson Creek, the road leading into the campus. Assistant City Manager, Wilmer Melton noted that the General Assembly had recently suggested naming the downtown interchange off Highway 29 after Linda Johnson, and that the city would need to complete the necessary paperwork and decide whether to support moving forward with naming the downtown interchange in her honor.

Mr. Melton stated that the spillway repair project is still underway, with bids scheduled to open on August 1st. The Vida II project is progressing, with completion expected in late fall or early winter, though timelines have shifted previously. Regarding the Rogers Lake Road bridge, it was noted that girders placed over Ridge Avenue were recently removed with speculation that they were incorrectly sized and did not properly span the required distance, possibly requiring remanufacturing. Mr. Melton acknowledged that he was unsure of the exact reason but will investigate the issue further and provide an update to Council.

Mayor Pro tem Berry inquired about a tenant for Metro 63. Mayor Hinnant confirmed there is an interested tenant, but due to confidentiality agreements, the company’s name cannot be disclosed until they are ready for a formal announcement and assured Council that the deal is secure. Irene Wong, Director of Economic & Community Development, who has been in direct contact with the party, also confirmed this.

Councilmember Dixon expressed gratitude on behalf of the Juneteenth Committee for the city's collaboration with various partners, including DKI, Rowan Cabarrus Community College, and the Cabarrus Health Alliance, to make the event a success. She also thanked the police chief and the Cabarrus County Deputy Sheriffs for their support and presence at the event. She acknowledged the role of Parks and Recreation and other city departments in making the event memorable. Additionally,

1 Ms. Dixon echoed Mark Spitzer's comments about Velvet Berlin [homeless senior helped by resident
2 Donna Taylor], noting that media coverage of her situation had garnered significant community
3 support, and thanked Renaldo McCray for bringing Council's attention to it.
4

5 Councilmember Dayvault expressed his support for recognizing Barry Lentz, calling it a well-
6 deserved honor and hoping the Parks and Recreation Commission could expedite the decision. He
7 also took a moment to reflect on the passing of David Murdock, acknowledging his crucial role in the
8 city's revitalization. Mr. Dayvault credited Mr. Murdock's demolition of the mill as a key turning
9 point that enabled the redevelopment of the city's center, a feat few others would have had the vision
10 or courage to undertake.
11

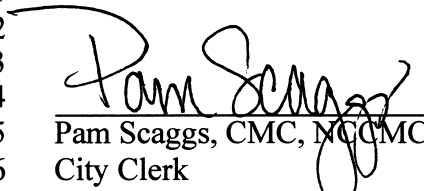
12 **MOTION TO ADJOURN**

13 There being no further business, Councilmember Wilson made motion to adjourn, second by
14 Councilmember Dayvault, and the motion was unanimously approved.
15

16 The meeting adjourned at 8:06 PM on Monday, June 23, 2025.
17
18
19
20

21
22
23
24
25
26


M. Darrell Hinnant, Mayor
City of Kannapolis


Pam Scaggs, CMC, MCCMC
City Clerk



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Pam Scaggs, City Clerk
Subject: **MINUTES - June 9, 2025 Closed Session APPROVED**

Recommended Action Requested by City Council

Motion to approve June 9, 2025 Closed Session Meeting minutes.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

Fiscal Implications

Alternate Courses of Action

Attachments

None



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council

From: Elizabeth Hassenfritz, Director of Engineering, Michael Rattler, Director of Transportation & Environmental Services

Subject: **REPORT** - Local Assistance for Stormwater Infrastructure Improvements (LASII)
APPROVED

Recommended Action Requested by City Council

Motion to approve the attached final reports produced with the American Rescue Plan Act (ARPA) Grant through the North Carolina Department of Environmental Quality's (NCDEQ) Local Assistance for Stormwater Infrastructure Improvements (LASII) Program.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

In August of 2023, the city accepted an American Rescue Plan Act (ARPA) Grant in the amount of \$225,000 through the North Carolina Department of Environmental Quality's (NCDEQ) Local Assistance for Stormwater Infrastructure Improvements (LASII) Program. The funds were to be used to investigate and evaluate the city's existing stormwater infrastructure system in selected residential areas prone to flooding. There were five (5) essential categories and deliverables that were used to produce the final report: Hydraulic Analysis and Preliminary Design, Stormwater System Mapping, Capital Improvement Plan, Stormwater Assessment Report, and an Updated Stormwater Management Report.

Staff identified three (3) study areas that produced conceptual level improvements to four (4) proposed project areas known as Peach Street, Marie Avenue, Kansas Street, and Breckenridge Road.

The final step in the grant funding process is to have City Council approve the final report that has been previously approved by NCDEQ's Division of Water Infrastructure.

Fiscal Implications

While Table 12 of the Capital Improvement Plan includes an approach to funding the identified stormwater system improvements, there are no fiscal commitments involved in accepting the final report.

However, accepting the final report, may increase the chances for additional grant funding to complete the proposed designs and construct the proposed improvements.

Alternate Courses of Action

1. **Motion to approve the attached final reports produced with the American Rescue Plan Act (ARPA) Grant through the North Carolina Department of Environmental Quality's**

**(NCDEQ) Local Assistance for Stormwater Infrastructure Improvements (LASII)
Program. (Recommended)**

2. Do not approve the attached final report.
3. Table to a future meeting.

Attachments

1. FINAL Stormwater Assessment Report Signed
2. Kannapolis MS4 SWMP Recommendation FINAL



WithersRavenel
Our People. Your Success.



Stormwater Assessment Report

LASII Residential Drainage Improvements Study

City of Kannapolis

Prepared For:

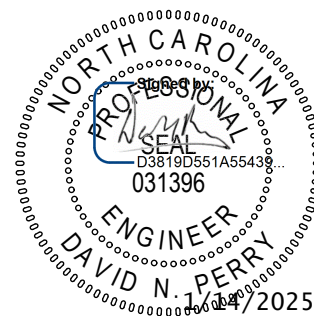
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WithersRavenel Project No. 23-0607-001

January 13, 2025



David Perry, PE, CFM
Alisha Goldstein, PE
Haley Valdez, PE, CFM

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Appendix A: Proposed Concepts & Preliminary Cost Opinion for Conceptual Level Improvements

- ◆ Concept #1 - Peach Street
- ◆ Opinion of Probable Cost – Peach Street
- ◆ Concept #2 - Marie Avenue
- ◆ Opinion of Probable Cost – Marie Avenue
- ◆ Concept #3 – Kansas Street
- ◆ Opinion of Probable Cost – Kansas Street
- ◆ Concept #4 – Breckenridge Road
- ◆ Opinion of Probable Cost – Breckenridge Road

Appendix B: Reference Materials

- ◆ FEMA Floodplain Map
- ◆ Rainfall Data
- ◆ Soils Data
- ◆ Land Use Map
- ◆ Subcatchment Maps
- ◆ Building Maps
- ◆ SWMM Input Parameters

Appendix C: Existing Conditions Capacity Analysis

- ◆ Study Area #1 – Peach Street
- ◆ Study Area #2 – Marie Avenue
- ◆ Study Area #3 – Breckenridge Road

Appendix D: Photo Log

Glossary

CROSS-SECTION- a graphical depiction of the stream and the floodplain at a particular point along the stream

CULVERT- a structure carrying a stream or open drain under a road or railroad

DRAINAGE AREA- an area of land where all flowing surface water converges to a single point,

FLOOD- a general and temporary condition of partial or complete inundation of normally dry land areas

FLOODPLAIN- an area of low-lying ground adjacent to a river, formed mainly of river sediments and subject to flooding

HYDRAULICS- the science of dealing with fluids in motion that is used to determine how a quantity of water will flow through a channel or floodplain

HYDROLOGY- the science of dealing with the distribution and circulation of water in the atmosphere, on land surfaces, and underground that is used to determine flood flow frequencies

IMPERVIOUS SURFACE- a hard surface that prevents water from infiltrating into the ground

INUNDATION- an area over which flood waters extend

INVERT- vertical elevation of specified point; for pipes, interior bottom elevation

LAND USE- the characterization of land surface based on what it is being used for or will be used for in the future

MANNING'S N- a coefficient which represents the roughness or friction applied to the flow based on the surface characteristics

OVERBANK- the point on either side of a channel at which flow exceeds the capacity of the channel and goes into the floodplain

OVERLAND FLOW- water that travels across normally dry land

RAINFALL DEPTH- the quantity of rain falling within a storm of a specific duration distributed uniformly over the watershed area

RIVERINE- relating to or situated on a river or riverbank

STORMWATER- water that originates from precipitation, including heavy rain and meltwater

TOPOGRAPHY- a detailed description or representation on a map of the natural and artificial features of an area

TRIBUTARY- a river or stream flowing into a larger river or lake.

WATERSHED- an overflowing of a large amount of water beyond its normal confines, especially over what is normally dry land

WEIR- a low barrier hydraulic control structure

X-YEAR STORM- flood recurrence interval based on the probability of the storm event occurring in a given year

1. Executive Summary

The City of Kannapolis (City) identified three residential study areas in the City prone to flooding during storms due to either inadequate infrastructure or a lack of stormwater infrastructure. The study areas were in the general vicinity of Peach Street and Cadillac Street, Marie Avenue and Lane Street, and Breckenridge Road and Kansas Avenue.

The purpose of this assessment was to provide planning-level evaluation of the closed system and open channel within the three study areas. This study included the survey of existing infrastructure, the development of an existing conditions model, an alternatives analysis to evaluate solutions to mitigate the impacts of storm events, and costs for the preferred alternatives. Additionally, a separate report providing recommendations to the City's existing stormwater management plan (SWMP) was developed for the City.

The design storms evaluated were the 2-year, 10-year, 25-year, 50-year, and 100-year 6-hour storm events. Potential areas of concern were identified from a capacity analysis in which the structures, pipes, and open channels exceeding capacity for each design storm were determined. Exceeding capacity refers to the overtopping of open channel banks, the maximum hydraulic grade line exceeding the rim elevation of a catch basin, or having full capacity in closed pipes.

Conceptual level improvements for four proposed project areas were developed within the three study areas and designed to meet the targeted level of service as set forth in the City's Land Development Standards Manual Chapter 3 regarding Storm Drainage. A summary of these priority project areas and engineer probable project cost opinions are:

- **Project Area 1- Peach Street:** Improvements focused on increasing system capacity starting along Charles Street and Cadillac Street north of Peach St, the open channel behind 505 Cook Street and 507 Cook Street, and along Cook Street between Cadillac Street and Charles Street.
Probable Cost Opinion: \$4,484,000
- **Project Area 2- Marie Avenue:** Improvements focused on flood reduction in the open channel behind homes from Ruth Avenue to Marie Avenue, the open channel behind homes from Marie Avenue to Brantley Road, and capacity of the stormwater network along Brantley Road near Jean Avenue.
Probable Cost Opinion: \$720,000
- **Project Area 3- Kansas Street:** Improvements focused on increasing system capacity along Kansas St starting east of the intersection with Breckenridge Road and extending west to the outfall north of 511 Kansas Street.
Probable Cost Opinion: \$872,000
- **Project Area 4- Breckenridge Road:** Improvements focused on increasing system capacity for the stormwater network starting at 616 Breckenridge Road and extending west to the outfall behind 603 Breckenridge Road.
Probable Cost Opinion: \$782,000

Fact sheets and costs for each proposed project area be found in **APPENDIX A: PROPOSED CONCEPTS & ENGINEER PROBABLE COST OPINIONS FOR CONCEPTUAL LEVEL IMPROVEMENTS.**

2. Introduction

There are residential areas in the City of Kannapolis that are prone to flooding during storms due to either inadequate infrastructure or a lack of stormwater infrastructure. The flooding that occurs in these areas directly impacts the residents of the City by flooding the streets and preventing safe travel, as well as risking flood damage to houses.

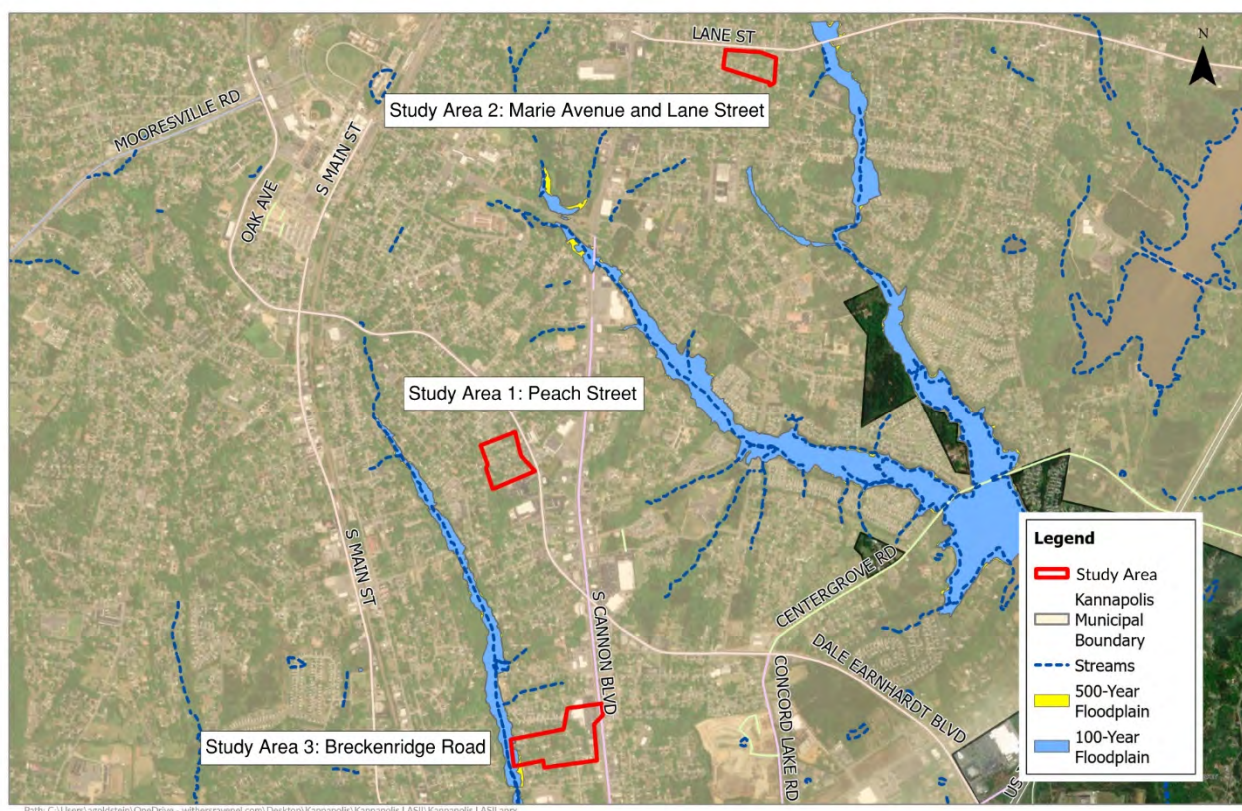
The specific study areas are:

- 1) Peach Street, specifically the system between Dale Earnhardt Blvd and Charles Street, and between Charles Street and Cook Street inclusive of Charles and Cook Streets
- 2) Marie Avenue and Lane Street extending from west side of Ruth Avenue to Grace Street and extending from the south side of Lane Street to the north side Brantley Road.
- 3) Breckenridge Road initiating from the Market Square commercial development on South Cannon Blvd to the cul-de-sac, and also the system on Kansas Street originating near South Canon Blvd to an open channel behind homes on the north sides of Kansas Street.

All three study areas drain into an open channel downstream. The Breckenridge Road Study Area drains directly into Threemile Branch on its western boundary. Threemile Branch stream has a FEMA mapped floodplain as shown in FIRM Map 3710561200K and included in **APPENDIX B**.

The study extents can be seen in **Figure 1** below.

Figure 1 – Site Map



The development of the City of Kannapolis's Stormwater Assessment Study consisted of four major components:

- Stormwater GIS Inventory Mapping
- Existing Hydrologic and Hydraulic Analysis
- Proposed Conceptual Development
- Capital Improvement Plan

3. Stormwater GIS Inventory Updates

A survey was conducted of the drainage infrastructure and outfalls within the three study areas. The information collected in the survey was compiled into an inventory that included the locations of pipes and structures and structure attributes such as invert elevation, pipe diameter, and pipe material. Additionally, an approach photo of the structure and a 360-degree photo inside the structure when possible were taken and linked to the attributes within a GIS database.

A field visit by staff engineers followed the survey to verify drainage connectivity and collect information on roadside ditches. Discrepancies between the survey and what was identified in the field were flagged. A survey crew was sent out again to collect data at any structure flagged as part of the verification field visit or identified by GIS as having questionable values. In total, there were approximately 6,697 linear feet of storm pipe including culverts, approximately 4,829 linear feet of open channel, and 106 structures surveyed within an area of approximately 42.5 acres. The GIS data was provided to the City to update their inventory.

One stormwater system connectivity assumption was made in the Breckenridge study area at the rear of the Market Square commercial development for modeling purposes. A blind junction downstream of structure SWDI0022 was assumed to connect to storm pipe SWGM0005 at another blind junction. The parking lot inlet and pipe direction were observed but no outlet was detected. It was assumed that the rear pavement area of the commercial complex all drained to the open area to the southwest.

4. Existing Hydrologic and Hydraulic Analysis

4.1. Precipitation Data

Total precipitation depths for the 2-, 10-, 25-, 50-, and 100-year 6-hour storms were defined based on NOAA Atlas 14 precipitation data. The precipitation distribution for the study location follows the NRCS Type-II Synthetic 24-hour Rainfall Distributions (Hershfield, 1961). For NOAA Atlas 14 precipitation data and cumulative rainfall depths for the five design storms, see **Table 1** and **APPENDIX B: RAINFALL DATA**.

Table 1. Rainfall depths for select design storms (6-hour)

Return Period (year)	Precipitation Depth (Inch)
2	2.44
10	3.52
25	4.16
50	4.67
100	5.18

4.2. Subcatchment Characteristics

Subcatchments were delineated using survey informed drainage network and the 2016 QL1 LiDAR DEM, retrieved from the North Carolina Spatial Data Download. The subcatchments define the contributing drainage areas to drainage features within the study areas. The area was derived from the horizontal projection of the area within the boundaries of the subcatchment, calculated in acres. The projected coordinate system used in all applications was NAD 1983 (2011) State Plane North Carolina FIPS 3200 (US Foot).

The subcatchment parameters were set based on guidance in the *Storm Water Management Model User's Manual Version 5.2*. The Curve Number (CN) infiltration method was used, and the methodology followed the *Storm Water Management Model Reference Manual Volume I - Hydrology (Revised)*, Section 3.10.2, Pg.82 to approximate the SCS Curve number method within PCSWMM. A composite CN was determined for each subcatchment by combining the Hydrologic Soil Group (HSG) data obtained from the NRCS SSURGO (Soil Survey Geographic Database), and the existing land use. The existing land use was determined by comparing the City's existing zoning to aerial imagery, as defined in the NRCS TR-55 Method. Based on the methodology referenced above, the following subcatchment parameters were applied to each subcatchment:

- Percent Impervious Area= 0
- Pervious Area Depression Storage= Initial Abstraction depth from SCS method
- Pervious Area Roughness= 0.1 for Marie model to account for increased infiltration due to open space
- Pervious Area Roughness=0.0 for Peach and Breckenridge models to reflect reduced infiltration due to limited open space

For the HSG report and soils map, see [APPENDIX B: SOILS DATA](#). For the existing land use map, see [APPENDIX B: LAND USE MAP](#). For the delineated subcatchments, see the subcatchment maps in [APPENDIX B: SUBCATCHMENT MAPS](#).

Subcatchment width was calculated by drawing representative longest overland flow paths for the subcatchments and dividing the subcatchment area by the length of the longest flow path. Subcatchment slopes were determined based on the average surface slope across the digital elevation model (DEM). For all subcatchment associated input parameters used, see [APPENDIX B: SWMM INPUT PARAMETERS](#).

4.3. SWMM 1D Model

PC SWMM, which is based on the EPA's Storm Water Management Model (SWMM) version 5.2.3, was used to build a combined hydrologic/hydraulic model to assess the three study areas. Hydraulic flow routing was performed using the Dynamic Wave approach. The conveyance system (i.e., open channels, pipes, and culverts) was defined based on surveyed stormwater GIS inventory and supplemented with LiDAR. The following elements were used to create the 1D hydraulic models:

CLOSED NETWORK The 1-dimensional hydraulic model was created using the following model objects to represent the closed system: 1) conduits, 2) junctions, 3) outfalls, and 4) storage

nodes. Conduits, junctions, and outfalls were imported into SWMM from the updated stormwater GIS inventory. Storage nodes with a depth-area storage curve were added to account for surface water storage and determined through GIS analysis of topographical data and survey points. Systems were modeled assuming that they were in good condition. There were some exceptions for pipes which were identified as being partially clogged during the field assessment. These pipes were modeled with reduced capacity.

Based on the 25-Year, 6-hour design storm scenario, conduits were added to flooded junctions to simulate overland flow of water bypassing a structure. Cross-sections for these conduits differed between swales and streets. Swale cross-sections were assigned based on topography if there wasn't any field collected information. Street cross-sections were assigned based on aerial imagery, differing in width between full versus half street geometry. In addition, a ponded area was assigned to nodes located in sags. Flooded areas were iteratively determined based on assumed flood depth and topographic contour area. No inlet restrictions were applied in this model.

For all input parameters used for conduits and junctions, see **APPENDIX B: SWMM INPUT PARAMETERS**.

OPEN CHANNELS For open channel reaches, the channel geometry was based on surveyed cross-sections and checked against 2016 QL1 LiDAR DEM. For all roadside swales, channel geometry was determined from field measurements. The Manning's N values for open channels and roadside swales were determined from field observations of the land use.

4.4. Boundary Conditions

Normal depth boundary conditions were used at the terminal outfalls in the hydraulic models of the three study areas.

4.5. Data Assumptions

For junctions with no invert data, if the node was at the inlet or outlet of a culvert, spot elevations from the DEM were used. An assumed invert was used in networks with drastic elevation changes to prevent unreasonable pipe slopes. Inverts were interpolated along a network segment based on the surrounding network slope.

4.6. Model Results Validation

Ideally, a hydraulic model is calibrated with respect to real-world conditions using available resources such as USGS gauge data and anecdotal evidence, such as high-water marks for a major rainfall event. As there are no USGS gauges within the study area, anecdotal evidence provided by the City and FEMA flood hazard data was used to check model results.

FEMA preliminary flood hazard data, specifically the 1% annual chance flood elevation (100-year peak water surface elevation [WSE]) at defined cross-sections, was utilized as a best comparison to validate model results. This data was retrieved from the Effective Flood Insurance Study (FIS) report for Cabarrus County, NC (FIS Study Number: 37025CV000B). FEMA FIS reports are typically based on 1D, steady-state models using the U.S. Army Corps of Engineers' HEC-RAS

software. Major differences in model components between the FEMA preliminary model and the city models are outlined below in **Table 2** and **Table 3**.

Table 2. Differences in Model Components between FEMA Effective and City Models

Major Model Components	Variations between Models	
	FEMA Preliminary Model	City Models
Software/Computational Engine	HEC-RAS	SWMM
Study Type	1D Steady	1D Unsteady
Drainage Area Resolution	Typically > 0.5 sq mi (320 acres) for Urban Areas	Mean drainage area between 0.5-1 acres

Table 3. Comparison of WSE between FEMA Cross-Sections and Equivalent SWMM Nodes

FEMA Cross-Section	Equivalent SWMM Node	FEMA 100-YR WSE (ft)	SWMM 100-YR WSE (ft)	Difference (ft) (SWMM-FEMA)
362	J12	702	700.8	1.2

The water surface elevation for the SWMM model was approximately 1.2 feet below the FEMA estimated water surface elevation. The SWMM model water surface elevation only accounted for flows from the study area. The existing open channel flow within Threemile Branch was not included in the model. It was expected that the SWMM value would be lower than the FEMA value. Additionally, the SWMM model does not account for any backwater effect from open channel flow.

5. Existing Stormwater System Capacity Analysis Criteria

After model validation, results were analyzed for the three study areas. The focus of the analysis was to identify junctions, pipes, and open channels that exceeded capacity for a given design storm event. Exceeding capacity refers to the overtopping of open channel banks, the maximum hydraulic grade line (HGL) exceeding the rim elevation of a junction (i.e. catch basin), or having full capacity in closed pipes. Capacity maps were developed utilizing model information and illustrated to identify infrastructure at full capacity. Junctions, conduits, and open channels were assigned specific colors in the mapping based on the results from each design storm. For the capacity maps, see **APPENDIX C: EXISTING CONDITIONS CAPACITY ANALYSIS**.

Full capacity for the pipes and culverts was determined based on those conditions in which the maximum depth to full depth reaches a ratio of 1.00. This criterion meant that some culverts or pipes under inlet control were not meeting the condition even though they would likely be at full capacity if not for inlet control. Inlet control denotes that flow is controlled at the entrance by the headwater depth, cross-sectional area of the opening, and type of inlet. Pipes or culverts under inlet control typically flow partially full because water can flow through faster than it can enter. A criterion was added for assessing pipe and culvert capacity based on the number of

hours in which the upstream end of the conduit was surcharged. If the upstream end of the conduit was surcharged greater than 0.01 hours, it was considered to be at full capacity. The pipes and culvert at or near capacity should be considered when looking at possible improvements needed to enhance the stormwater system capacity.

The structure and conduits in the capacity maps were color-coded to reflect the design storm at which they reached full capacity. If the structure or conduit reached full capacity at the 2-year storm, it was also reaching capacity for any larger storm (i.e. 10-year storm, 25-year storm). In locations where inlets had predicted HGLs exceeding the rim elevations or channels overtopped banks, the models were reviewed with respect to the height of the HGL relative to the topography to determine the spread of flow. This evaluation led to the determination of secondary surface flow paths through yards or overtopping roads which are shown on the capacity maps.

These maps were used to identify potential areas of concern. Potential areas of concern were areas where the results demonstrated roadway overtopping, areas with a concentrated number of flooded junctions and pipe capacity issues, or surface ponding issues primarily in residential yards. The identified Potential Areas of Concern for infrastructure were reviewed by the City and considered as project areas for proposed conceptual improvement designs.

6. Target Level of Service

The proposed concepts for the selected areas of concern are designed to ensure the assets meet the desired level of service (LOS). The LOS was based on the City's Land Development Standards Manual Chapter 3 entitled "Storm Drainage" The selected LOS criteria were:

Closed Pipe System: 10-Year, 6-hour storm event contained within structures of the closed pipe system, with the hydraulic grade line (HGL) a minimum of six inches (6") below the rim elevation, pipe sizes a minimum of fifteen inch (15") internal diameter, and minimum pipe slope is 0.5% or that which produces a velocity of 2.5 fps when flowing full.

Open Channels: 10-Year, 6-hour storm event conveyed through open channels without overtopping

Driveway Culverts: Convey the 10-Year, 6-hour storm event with no freeboard, and headwater depth limited to 1.2 times the opening height, $\frac{HW}{D} \leq 1.2$

Culverts for Local Roads: Convey the 25-Year, 6-hour storm event with no freeboard, and headwater depth limited to 1.2 times the opening height, $\frac{HW}{D} \leq 1.2$

Culverts for Thoroughfare Roads: Convey the 50-Year, 6-hour storm event with no freeboard, and headwater depth limited to 1.2 times the opening height, $\frac{HW}{D} \leq 1.2$

In addition, designs were reviewed to consider reduction of risk for inhabited structures in the 100-Year, 6-hour storm event. Modeled water surfaces were compared with known finished floor elevations and surrounding terrain where the surface flows appear to be affected by pipes or culverts

For development of the proposed concepts, the existing conditions model was used as the base for this analysis. A proposed concept model was created by duplicating the existing conditions model and adjusting the hydraulic network and hydrologic parameters. Fact sheets and planning level cost opinions for each concept area can be found in **APPENDIX A: PROPOSED CONCEPTS AND PRELIMINARY COST OPINIONS FOR CONCEPTUAL LEVEL IMPROVEMENTS**.

7. Project Area Assessment

The project assessment presented all the potential areas of concern, relayed the concept design for the priority project areas, and explained the benefits from implementing the proposed designs. The concept design may address multiple potential areas of concern in one project. Improvements in an upstream area of the drainage area could have downstream impact resulting in additional improvements downstream. The LOS criteria informed the conceptual improvements for each of the four selected project areas. These conceptual improvements met the criteria to the maximum extent possible while taking into account topographic limitations and constructability restraints such as minimum pipe cover. The four project areas selected from within the three study areas were

- **Project Area 1- Peach Street:** Improvements focused on increasing system capacity starting along Charles Street and Cadillac Street north of Peach St, the open channel behind 505 Cook Street and 507 Cook Street, and along Cook Street between Cadillac Street and Charles Street.
- **Project Area 2 - Marie Avenue:** Improvements focused on flood reduction in the open channel behind homes from Ruth Avenue to Marie Avenue, the open channel behind homes from Marie Avenue to Brantley Road, and capacity of the stormwater network along Brantley Road near Jean Avenue.
- **Project Area 3- Kansas Street:** Improvements focused on increasing system capacity along Kansas St starting east of the intersection with Breckenridge Road and extending west to the outfall north of 511 Kansas Street.
- **Project Area 4- Breckenridge Road:** Improvements focused on increasing system capacity for the stormwater network starting at 616 Breckenridge Road and extending west to the outfall behind 603 Breckenridge Road.

The conceptual designs met the selected design criteria for the four project areas – Peach Street, Marie Avenue, Kansas Street, and Breckenridge Road. The project areas presented a challenge due to the minimal grade and required cover which limited the pipe size. Therefore, box culverts had to be utilized in some areas instead of dual pipe systems to provide sufficient capacity. Closed pipe networks were preferred to expanding the open ditch network because larger ditches could present roadway safety issues and would affect residential yards in densely developed areas.

Conflicts with utilities and potential adjustments will need to be addressed during detailed design. During the detailed design, inlet sizing and spacing and riprap aprons at the outfalls will

be evaluated. It is also recommended that additional investigation be completed to analyze the potential downstream impacts resulting from upgrading the stormwater network in each project area.

7.1. Concept Project #1 – Peach Street

7.1.1 Existing Conditions

The three areas of concern in the Peach Street neighborhood were:

- A. Charles Street and Cadillac Street
- B. Open Channel behind 505 Cook Street and 507 Cook Street
- C. Cook Street

Charles Street and Cadillac Street

The stormwater system beginning on Charles Street and flowing west to Cadillac Street, south on Cadillac Street to Peach Street and west on Peach Street to the cross-street pipe was found to have insufficient capacity during the 2-year storm event. Most of this system consists of combination inlets and closed pipes or culverts. When the inlets along Charles Street and Cadillac Street reach capacity, water was modeled to flow down the roadway. The open channel on the north side of Peach from Cadillac Street to the pipe below Peach Street was found to have insufficient capacity starting in the 2-year event and the model indicated yard flooding would occur at 505 Peach Street and 507 Peach Street. During the 25-year storm event, the runoff would overtop the crown of Peach Street. This result indicated that both lanes of Peach Street were likely to become inundated in that modeled storm.

Open Channel behind 505 Cook Street and 507 Cook Street

The open channel behind 505 Cook Street and 507 Cook Street was found to reach capacity during a 2-year event resulting in a secondary flow path between the two residences south to Cook Street. These two homes were found to be likely to experience surface ponding on at least two sides of their homes during a 2-year storm that would be exacerbated by larger storm events.

Cook Street

The stormwater system on the north and south side of Cook Street from about 100 feet east of the intersection with Cadillac Street to Charles Street was found to reach capacity during the 10-year storm event. This system is a series of ditches, pipes, and culverts. Two short sections of ditches on the north side of Cook Street reach capacity during the 2-year storm. When the open channels along the north side of Cook Street reach capacity, available topographic data indicated that yard flooding occurred with possible structure impacts to 509, 511 and 601 Cook Street. Due to the flow in this area, runoff was modeled to overtop the north side of Cadillac Street where it intersects Cook Street and overtop Cook Street at Charles Street based on the topography.

7.1.2 Proposed Conceptual Project

The conceptual design for Peach Street reroutes flow, replaces and upsizes existing infrastructure, and introduces new infrastructure. Considerations for design included increased capacity, removing negative slopes, and providing sufficient cover within the right-of-way. Along Charles Street, flow will be collected in separate systems along the northern and southern sides of the street. These separated systems extend south along Cadillac Street and west on Peach Street where the systems diverge. The stormwater network on the north side of Peach Street extends south on the east side of Charles Street to where it outfalls into the existing channel south of Cook Street. The stormwater system on the south side of Peach Street is directed into the existing network alignment between 502 and 504 Peach St. This new configuration results in the elimination of several cross pipes including across Charles Street, Cadillac Street, and Peach Street. By separating the flow on opposite sides of the street, the flow volume can be distributed through two different networks.

To provide sufficient capacity while meeting the LOS criteria, many of the open ditches would be replaced with a piped network. The network beginning on the northern side of Charles is designed with dual 24" RCP pipes that transition to a box culvert system. The southern system consists of 15", 18", and 24" RCP pipes. The system south of Peach Street is dual 15" RCP pipes. Channel grading is proposed in the channel behind 505 and 507 Cook Street to provide additional depth and capacity and to tie into the elevations of the proposed network. The driveway culvert at 505 Cook Street will be upgraded to dual 24" RCP and minor ditch grading is proposed to the south before the flow is directed into a proposed box culvert that will tie into the proposed box culverts along Charles Street.

In locations where roadside ditches are replaced with closed system, there will be a slight depression to direct road runoff into the proposed inlets. The grading will be developed during the design when detailed surveys are obtained. The grading may result in some inlets not meeting the LOS criterion such that the hydraulic grade line (HGL) is a minimum of six inches (6") below the rim elevation.

Improvements along Cook Street, starting east of the intersection with Cadillac Street, include increasing the size of the existing network along the south side of the roadway and regrading of the open ditches along the north side to provide positive drainage. Two driveway culverts and two sidewalk culverts will be replaced in addition to the grading.

Due to the flat nature of the topography in the area, cover over the system is limited especially on the east side of Cadillac Street, the south side of Peach Street, and the intersection of Charles Street and Cook Street. This limitation results in the use of box culverts to achieve higher capacity than pipes would have provided. The conceptual design reduces roadway inundation along the entire system and channel overtopping in the open channel behind 505 and 507 Cook Street. Yard inundation and driveway overtopping is reduced along Cook Street.

Downstream impacts of increasing the capacity of this system would need to be reviewed as part of detailed design. By improving the efficiency of flow through the neighborhood the downstream channel will receive higher peak flow. Additional evaluation, that was not included as part of this scope, should be completed prior to upgrading the storm water network. Additionally, further analysis could be conducted to consider rerouting flow from the

contributing drainage area north of Charles Street away from the study area to an existing channel behind the homes on Chrysler Street. By reducing the incoming flow to the Peach Street system, this would lead to a reduction in the necessary size of the proposed system and downstream impacts would be split and likely easier to manage.

It is also possible that the downstream channel south of Cook Street could be modified to allow for a lower system outfall that might allow more system cover and smaller pipes, although this is unlikely. Investigation of the downstream channel was not included in the scope of this study.

The estimated opinion of probable costs based on today's dollars for all proposed improvements within the Peach Street system is summarized in **Table 4**. A detailed breakdown of the cost is included in **APPENDIX A**.

Table 4. Peach Street Opinion of Probable Cost

	Opinion of Probable Cost
Construction Cost (includes Materials)	\$3,720,000
Engineering and Administration	\$764,000
Total	\$4,484,000

7.1.3 Benefit

The conceptual design reduces roadway inundation along the entire system from Charles Street and Cadillac Street to the outfall south of Cook Street and along Cook Street from Cadillac Street to the outfall south of Cook Street. The proposed design increases system capacity and also diverts water to a new system that conveys water from the north side of Peach Street to the west side of Charles Street discharging into the existing outfall. This diversion mitigates the channel overtopping in the open channel behind 505 and 507 Cook St that was predicted to flow in between those homes. The improvements also lessen yard inundation and driveway overtopping along Cook Street and road overtopping on the north side of the Cook Street and Cadillac Street intersection.

A concern is that the downstream channel will receive greater peak flow and additional evaluation, that was not included as part of this scope, should be conducted prior to upgrading the storm water network.

7.2. Concept Project #2 - Marie Avenue

7.2.1 Existing Conditions

There are three areas of concern in the Marie Avenue neighborhood which are:

- A. Open Channel behind homes from Ruth Avenue to Marie Avenue
- B. Open Channel behind homes from Marie Avenue to Brantley Road
- C. Brantley Road and Jean Avenue

Open Channel behind homes from Ruth Avenue to Marie Avenue

An open channel began on the east side of Ruth Avenue south of Lane Street and flowed east behind the homes on Lane Street to a driveway culvert of 501 Marie Avenue. As the open channel approached Marie Avenue, its capacity diminished. The section of the channel on the north side of the structure at 501 Marie Street was modeled to reach its maximum capacity during the 2-year storm. Although the culvert had sufficient capacity for the 25-year storm, modeling indicated ponding behind the culvert during the 10-year storm. There was no recent topographic data in this area since the homes were constructed and the channel rerouted. It was difficult to conclude that the ponding was leading to yard inundation at 501 Marie Avenue without current topographic information.

Open Channel behind homes from Marie Avenue to Brantley Road

There was another open channel that began north of 1401 Brantley Road east of Marie Street and flowed east behind the homes on Brantley Road. This open channel merged with an open channel from the north and flowed between 1407 Brantley Road and 1409 Brantley Road towards an open channel on Brantley Road. The open channel segment behind the Brantley Road homes was modeled to be at capacity during the 2-year storm. At the merge of the two open channels, the channel reached capacity during the 10-year storm event and excess runoff would flow into the back yards of 1407 Brantley Road, 1409 Brantley Road, and 501 Grace Avenue.

Brantley Road and Jean Avenue

The last area of concern was along Brantley Road at Jean Avenue, which was also the location where the channel beginning at Marie Avenue discharges into Brantley Road. The structure at 1407 Brantley Road had a roadside ditch in front that was modeled to reach capacity at 2-year storm and likely results in yard inundation. The ditch flowed into a driveway culvert that reached capacity in the 10-year storm. At the downstream end of the driveway culvert, the flow combined with the open channel flow in a ditch before entering a pipe system. Due to inlet control, runoff was found to pond behind this pipe and stormwater overtopped Brantley Road towards the open channel on the south side of Brantley Road.

7.2.2 Proposed Conceptual Projects

The conceptual design for Marie Street replaces the stormwater network beginning at 501 Marie Street, extending south on Marie Street, and east along Brantley Road to the outfall on the south side of Brantley Road with a complete closed pipe network. Minor channel grading is proposed between 501 and 505 Marie Street to increase capacity. The stormwater network would begin with a new headwall on the north side of the 501 Marie Street driveway. Existing open ditches and driveway culverts would be replaced with a combination of 24" and 36" RCP pipes. A slight depression would be graded within the right-of-way to direct road runoff into the proposed inlets. New inlets are proposed along Marie Avenue and Brantley Road to capture flow.

The existing culvert across Marie Ave in front of 1321 Brantley Road will be removed to reduce the flow directed into the open channel located behind the houses on the north side of Brantley Road. Channel grading is proposed between 1407 and 1409 Brantley Road to reduce the

frequency of channel overtopping. A new headwall and pipe will connect the channel to the proposed network along Brantley Road.

By re-routing the flow down Marie Avenue and away from the channel located behind the houses on Brantley Road, yard inundation from channel overtopping is reduced up to the 25-year event. Channel overtopping is also reduced in the channel between 501 and 505 Marie Avenue due to the increase in the capacity of the downstream network.

The estimated opinion of probable costs based on today's dollars for all proposed improvements within the Marie Street system is summarized in **Table 5**. A detailed breakdown of the cost is included in **APPENDIX A**.

Table 5. Marie Avenue Opinion of Probable Cost

	Opinion of Probable Cost
Construction Cost (includes Materials)	\$468,000
Engineering and Administration	\$261,000
Total	\$729,000

7.2.3 Benefits

The primary benefit from the Marie Avenue project is flood reduction in the open channel behind homes from Ruth Avenue to Marie Avenue, the open channel behind homes from Marie Avenue to Brantley Road, and capacity of the stormwater network along Brantley Road near Jean Avenue. By reducing open channel overtopping, yard inundation and potential inundation risk to homes is reduced. The proposed design eliminates the culvert on Marie Avenue north of Brantley Road and reroutes the stormwater that would flow into the open channel towards a closed pipe system on Brantley Road. The benefit from this design is reducing channel overtopping in that open channel from the 2-year event to the 25-year event. The open channel between the homes at 1407 Brantley Road and 1409 Brantley Road may still experience channel overtopping during the 10-year event. Channel overtopping is also reduced in the channel between 501 and 505 Marie Ave due to the increase in the capacity of the downstream network reducing risks of impacts to homes.

7.3. Concept Project #3 – Kansas Street

7.3.1 Existing Conditions

This area of concern focused on the stormwater system alongside Kansas Street west of S Cannon Boulevard to outfall into Three Mile Branch. The system on the north side of Kansas Street was modeled to exceed capacity in its open channels and culverts during the 2-year storm. The conveyance system on the south side of Kansas Street beginning at the Market Square driveway was found to be at capacity during the 10-year event. The inlets close to the Breckenridge Road intersection on both the north and south side of the street exceeded capacity during the 2-year storm. At this intersection, the cross-pipe did not contain all the flow such that runoff likely overtopped Breckenridge Road on the south side of the street.

The conveyance network of open channels and pipes on the north side of Kansas Street west of Breckenridge Road exceeded capacity during the 2-year storm. When the channel in front of

519 Kansas Street was modeled to overtop, inundation in the front yard was possible. The inlets in front of 517 Kansas have a very shallow inlet opening and the model indicated that the HGL exceeded the rim elevation for the 2-year storm event. There was likely a secondary surface flow path across Kansas Street with the two-lane roadway becoming inundated above where the cross-pipe connected the southern side conveyance to the north side conveyance of Kansas Street. The secondary surface flow would continue diagonally across the yard to the pipe discharge point behind the house at 511 Kansas Street.

7.3.2 Proposed Conceptual Projects

The conceptual design for Kansas Street network extends from Highway 29/South Cannon Boulevard west to outfall into the open channel on the north side of Kansas Street. Along the north side of Kansas Street, the design proposes grading of the open ditches and the replacement of existing pipes to a dual pipe system to achieve the required capacity while maintaining sufficient cover. The dual pipes are 24" RCP pipes initially and transition to 36" RCP pipes. On the south side of Kansas Street, the stormwater network is re-routed across Carolina Avenue to keep the flow on the south side of Kansas street. The existing alignment is maintained in the vicinity of 515 Kansas St and the system is upgraded from a 30" RCP pipe to a 42" RCP pipe.

The benefit of the conceptual design redistributes flow on both the north and south side of Kansas Street. This redistribution helps to manage flow due to limited cover available on the north side of Kansas Street. By increasing the size of the stormwater network and grading the roadside ditches to provide additional depth, there is increased system capacity and roadway inundation is reduced up to the 25-year event.

The estimated opinion of probable costs based on today's dollars for all proposed improvements within the Kansas Street system is summarized in **Table 6**. A detailed breakdown of the cost is included in **APPENDIX A**.

Table 6. Kansas Street Opinion of Probable Cost

	Opinion of Probable Cost
Construction Cost (includes Materials)	\$542,000
Engineering and Administration	\$330,000
Total	\$872,000

7.3.3 Benefits

The benefit of the Kansas Street conceptual design is to increase system capacity from the 2-year storm event to the 10-year storm event at minimum within the pipes and 25-year event for structure capacity. The system of concern is along Kansas St starting east of the intersection with Breckenridge Road and extending west to the outfall north of 511 Kansas Street. The design redistributes flow on both the north and south side of Kansas Street. This redistribution helps to manage flow due to limited cover available on the north side of Kansas Street. By increasing the size of the stormwater network and grading the roadside ditches to provide additional depth, there is increased system capacity and reduced roadway inundation.

7.4. Concept Project #4 - Breckenridge Road

7.4.1 Existing Conditions

There are two areas of concern in the Breckenridge Road neighborhood which are:

- A. Market Square Shopping Area
- B. Breckenridge Road

Market Square

The Market Square Shopping Area parking lot drained southwest to a depressed area that acted similarly to a level spreader. The flow was distributed over a riprap weir and into a riprap-lined channel. The closed pipe system in the parking lot was modeled to reach capacity either during the 2-year or 10-year storm. The yard inlet in the rear of the parking lot behind the Food Lion was found to exceed capacity during the 2-year storm and likely resulted in surface ponding. There appeared to be some ponding and backwater effects at the downstream end of the channel when it was conveyed into the closed pipe system along Breckenridge Road. There was no recent topographic data in this area since the home at 618 Breckenridge was constructed and the channel rerouted. It was difficult to assert if the ponding was leading to yard inundation at 618 Breckenridge Road.

Breckenridge Road

The Breckenridge Road pipe system beginning at the inlet north of 611 Breckenridge Road and flowing west to the discharge into Threemile Branch was modeled to be at capacity during the 2-year storm. Additionally, all the catch basins were found to have a Hydraulic Grade Line (HGL) exceeding the rim elevations during the 2-year storm which would likely result in surface ponding along the road. At the end of the cul-de-sac, the runoff was modeled to overtop the rim elevation and resulted in a secondary surface flow path between 601 Breckenridge and 603 Breckenridge.

7.4.2 Proposed Conceptual Projects

The conceptual design for Breckenridge Road increases the size of the stormwater network starting at 616 Breckenridge Road to the outfall behind 603 Breckenridge Road. The pipes along this alignment would increase from 30" RCP to 36" RCP pipes. Minor channel grading is proposed between 616 and 618 Breckenridge Road to tie into the invert of the proposed network.

By increasing the capacity of the stormwater network, roadway inundation is reduced with structures containing stormwater up to the 50-year event.

The estimated opinion of probable costs based on today's dollars for proposed improvements within the Breckenridge Road system is summarized in **Table 7**. A detailed breakdown of the cost is included in **APPENDIX A**.

Table 7. Breckenridge Road Opinion of Probable Cost

	Opinion of Probable Cost
Construction Cost (includes Materials)	\$501,000
Engineering and Administration	\$281,000
Total	\$782,000

7.4.3 Benefits

The Breckenridge Road project provides increased capacity of the stormwater network reducing roadway inundation. Structures along Breckenridge Road contain stormwater up to the 50-year event from the 2-year storm event. The pipe capacity increases from the 2-year storm event to the 10-year storm event. These improvements focus on the stormwater network starting at 616 Breckenridge Road and extending west to the outfall behind 603 Breckenridge Road.

8. Evaluation of Proposed Conceptual Projects

The proposed conceptual projects were scored and ranked for the purpose of prioritizing potential improvement projects according to impact and effectiveness. Nine criteria were selected and assigned a score of 0, 1, 3 or 5 points based on identified thresholds. The level of service (LOS), used for designing the proposed conceptual projects, was the basis for determining impacts. The impacts were qualified for each storm event based on the characteristics of the infrastructure being analyzed. The LOS are described in the previously provided Conceptual Stormwater Improvements Report. The scoring thresholds, along with the subsequent project prioritization rankings and summary are provided below in **Tables 8, 9, and 10**.

8.1. Prioritization Criteria

8.1.1 Age of Infrastructure

The age of infrastructure scoring was determined based on the age of the surrounding buildings in the project area with consideration of historic records of development and known drainage improvement projects. Building age information was determined using the 2010 Statewide Building Footprint data acquired from the NC Emergency Management GIS Section, Spatial Data Download site. Each project area was categorized based on the average time-frame in which the drainage infrastructure was constructed. The three categories for age of infrastructure were selected to underscore areas with priority needs for infrastructure upgrades. Reinforced concrete pipe (RCP) is shown to be durable for 100 years. Higher values were assigned to older infrastructure based on the assumption that older infrastructure may have a higher likelihood of failure requiring future repair if no work is completed. Building maps indicating the age of the buildings within the project area are provided in **APPENDIX B**.

- <1930 5 points
- 1930-1979 3 points
- 1980-Present 1 point

8.1.2 Traffic Flows

Project areas were assigned a traffic flow score to capture the level of traffic impacted by the existing drainage issues and the type of roadway affected by the proposed project. A higher score was given to projects in which the proposed design results in improvements to high average daily traffic roadways which would improve conditions for a larger number of drivers. The types roadways were rated using City of Kannapolis roadway classifications described in Appendix A of the Land Development Standards Manual:

- Thoroughfare 5 points
- Collector 3 points
- Alley or Local 1 point

8.1.3 Building Access

Building access was evaluated based on potential flooding in the adjacent roadway that could inhibit vehicular traffic to commercial or residential buildings. The assessment was based on locations where closed network storm drainage systems, driveway culverts, or open channel capacity was exceeded during the 10-year storm in existing conditions resulting in roadway impacts. A higher score was given in areas with increased limitations to building access due to roadway flooding.

- No Roadway Access (Roadway closure, both lanes flooded) 5 points
- Restricted Roadway Access (Partial roadway flooding, single lane) 3 points
- Full Roadway Access (No impact, no roadway flooding) 1 point

8.1.4 Road Impacts

The road impact scoring was assessed at locations within the project areas where a culvert is present below the roadway and the capacity of that culvert is exceeded resulting in water overtopping the roadway. The point assignment was based on the design storm at which roadway overtopping occurs in the existing condition model. Storms with a higher probability of occurring, such as the 10-year storm event, received the largest amount of points. If no qualified road impacts were modeled, a score of 0 was assigned for this criterion.

- 10-year storm 5 points
- 25-year storm 3 points
- 50-year storm 1 point

8.1.5 Essential Service

Project areas were evaluated for the presence of essential service facilities and were given a score based on the number that would be impacted by flooding during the 10-year storm event. Essential service facilities include but are not limited to: emergency operations (i.e. fire/hospital/police), emergency shelters (i.e. community centers/schools), and utility centers (water, electrical, wastewater). Impacts included access limitations due to flooding along roadways leading to the facility as well as flooding on the property. If no emergency services were impacted, a score of 0 was assigned for this criterion.

- >3 Essential services 5 points
- 2 to 3 Essential services 3 points
- 1 Essential service 1 point

8.1.6 Potential Private Property Easement Acquisition

The potential private property easement acquisition scoring is based on the number of properties that would require an easement to complete the proposed improvement. Projects that would require higher numbers of private property easement were given lower scores due to the potential increased cost and owner coordination that would impact the feasibility of the project. If no easements were anticipated, a score of 0 was assigned for this criterion.

- <5 easements 5 points
- 5 to 15 easements 3 points
- >15 easements 1 point

8.1.7 Effect of Proposed Design Improvements

Project areas were assigned a score to capture the overall effect of the proposed improvements relative to existing conditions. Effects were characterized based on the type of drainage issues present in existing conditions, the level of resolution achieved, and the number of properties with positive impact due to the proposed design.

Personal property impacts refers to access restrictions and potential property (building and yard) flooding due to overflow from systems at capacity. Depth of flooding was not considered by could vary. Potential building flooding was not limited to first floor elevation such that basement flooding was considered a potential impact. The type of drainage issues was based on the severity and frequency of flooding. Frequent flooding was considered to be drainage structures and conveyance channels in existing conditions that have runoff overland flows for design storms less than their expected LOS. For example, closed networks that reached capacity during the 2-year event. Nuisance flooding was considered to be drainage structures and conveyance channels in existing conditions that experienced runoff at their LOS. For example, closed networks that showed flooding during the 10-year event.

- Resolution of potential major personal property impacts and frequent flooding throughout project area; Drainage issues resolved for more than 5 properties 5 points
- Partial resolution of potential major personal property impacts and frequent or nuisance flooding; Drainage issues resolved for 3-5 properties 3 points
- Resolution of potential minor personal property impacts and nuisance flooding; Drainage issues resolved for 1-2 properties 1 point

8.1.8 Drainage Maintenance

Project areas were assigned a score based on the number of city staff labor hours spent providing maintenance for drainage issues within the project area. The hours were calculated from work orders within the last 10 years as provided by the City of Kannapolis. Drainage maintenance may indicate a persistent problem due to failing infrastructure that will continue to require city resources. Higher scores were given to areas that required more city staff labor hours as recorded in the work orders.

- > 80 hrs 5 points
- 40 to 80 hrs 3 points
- 0 to 40 hrs 1 point

8.1.9 Project Cost

A score was given based on the estimated project construction cost for the proposed improvement design. Projects that would require a lower cost to construct were given a higher score.

- <\$500,000 5 points
- \$500,000 to \$1,500,000 3 points
- >\$1,500,000 1 point

The scoring matrix in **Table 8** summarizes the prioritization criteria and the points available for each criterion based on the level of impact of the project.

Table 8. Prioritization Scoring Criteria Matrix

Criteria	1 point	3 point	5 point
Age of Infrastructure			
The age of the associated infrastructure to be replaced based on surrounding private property	1980-Present	1930-1980	<1930
Traffic Flows			
Road Classification	Local	Collector	Thoroughfare
Residence Access			
Impact of roadway flooding to surrounding occupied buildings during design storm event	Full Roadway Access (No impact)	2 to Restricted Roadway Access (Partial roadway flooding)	No Roadway Access (Roadway closure)
Road Impacts			
Frequency of Road Overtopping	50-year storm	25-year storm	10-year storm
Essential Services			
Road access to/from essential service facilities* impacted by flooding in 10-year storm event	1	2 to 3	>3
Potential Private Property Easement Acquisition			
Number of private properties that may require an easement	>15	5 to 15	<5
Effect of Proposed Design Improvements			
Evaluates positive impact of project	Resolution of potential minor personal property impacts and nuisance flooding	Partial resolution of potential major personal property impacts and frequent or nuisance flooding	Resolution of potential major personal property impacts and frequent flooding throughout project area
	Drainage issues resolved for 1-2 properties	Drainage issues resolved for 3-5 properties	Drainage issues resolved for more than 5 properties
Drainage Maintenance			
Number of city staff labor hours resulting from work orders for stormwater infrastructure within the last 10 years	0 to < 40	40 to 80	> 80
Project Cost			
Project Construction Cost Estimate	>\$1,500,000	\$500,000 to \$1,500,000	<\$500,000

*Essential service facilities include but are not limited to: emergency operations (i.e. fire/hospital/police), emergency shelters (i.e. community centers/schools), and utility centers (water, electrical, wastewater)

8.2. Prioritization of Proposed Conceptual Projects

The following tables summarize the scoring for each project per the scoring criteria described above and rank the projects based on the resultant score.

Table 9. Project Prioritization Ratings

	Age of Infrastructure		Traffic Flows		Residence Access		Road Impacts		Essential Services		Potential Private Property Easement Acquisition		Effect of Proposed Design Improvements		Drainage Maintenance		Project Cost		Score
Concept	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	
Concept Project 1- Peach St	1980-Present	1	Local	1	No Roadway Access (Roadway closure)	5	10-year storm	5	0	0	21	1	>5 properties with issues resolved; Frequent yard flooding adjacent to homes resolved	5	263 hrs	5	\$4,484,000	1	24
Concept Project 2- Marie Ave	1930-1979	3	Collector	3	No Roadway Access (Roadway closure)	5	No culverts overtop	0	0	0	9	3	3-5 properties with issues resolved, Nuisance channel flooding adjacent to homes resolved	3	23 hrs	1	\$729,000	2	20
Concept Project 3- Kansas St	1980-Present	1	Local	1	No Roadway Access (Roadway closure)	5	No culverts	0	0	0	14	3	>5 properties with issues resolved; Frequent yard flooding adjacent to homes and roadway overtopping resolved	5	12 hrs	1	\$872,000	2	18
Concept Project 4- Breckenridge Rd	1980-Present	1	Local	1	No Roadway Access (Roadway closure)	5	No culverts	0	0	0	5	3	>5 properties with issues resolved; Frequent roadway flooding restricting access resolved	5	19.5 hrs	1	\$782,000	2	18

Table 10. Project Prioritization Summary

Rank	Concept	Score
1	Concept Project 1- Peach St	24
2	Concept Project 2- Marie Ave	20
3	Concept Project 4- Breckenridge Rd*	18
4	Concept Project 3- Kansas St	18

*Concept Project 4 was ranked above Concept Project 3 based on it having a lower Proposed Project Cost

9. Capital Improvement Plan for Infrastructure

The City’s current budget does not allocate funds for capital improvement projects with the exception of shared costs with NCDOT for specific projects. The amount of money allocated for stormwater maintenance of the citywide stormwater drainage system was \$1,652,415 for Fiscal Year 2024. This allocated amount accounts for personnel costs, equipment, materials, and any contracted services to complete field work. The City has a stormwater utility fee, paid by city residents, to fund the stormwater management program.

The proposed Capital Improvement Plan (CIP) reflects the City’s planned staffing, equipment, maintenance, and capital improvements for the next ten years, beginning in Fiscal Year 2026 and ending through Fiscal Year 2036. This CIP is focused on the infrastructure capital improvements within the three study areas. The four potential projects, identified and ranked above, were incorporated into the CIP analysis. The projects were staggered from highest to lowest priority across the 10-Year CIP. A 3% cost escalation factor per year was applied to account for inflation through the 10-Year CIP. The total funding amount proposed in the CIP is \$6.86 million for flood mitigation projects and \$20.9 million for stormwater drainage maintenance over the next 10 years as shown in **Table 12**.

The CIP proposed is provided for consideration by the City of Kannapolis as one possible approach to addressing identified stormwater system concerns.

9.1. Preliminary Cost Opinions for Conceptual Projects

Preliminary opinions of probable project costs were developed for each conceptual project as part of the Conceptual Stormwater Improvements Report. The following is a summary of each project costs, full project costs are included in **APPENDIX A**.

Table 11. General Cost Opinions

	Concept Project 1- Peach St	Concept Project 2- Marie Ave	Concept Project 3- Breckenridge Rd	Concept Project 4- Kansas St
Construction Cost (includes Materials)	\$3,720,000	\$468,000	\$542,000	\$501,000
Engineering and Administration	\$764,000	\$261,000	\$330,000	\$281,000
TOTAL	\$4,484,000	\$729,000	\$872,000	\$782,000

9.2. Estimated Timeline of Major Project Expenditures

The developed opinions of probable project cost were incorporated into an estimated timeline of major project expenditures in order of priority with a 3% cost escalation rate per year as shown in **Table 12**.

Stormwater Assessment Report

LASII Residential Drainage Improvements Study

Table 12. Estimated Timeline

Project	Cumulative Costs	Budget FY 2026	Budget FY 2027	Budget FY 2028	Budget FY 2029	Budget FY 2030	Budget FY 2031	Budget FY 2032	Budget FY 2033	Budget FY 2034	Budget FY 2035	Budget FY 2036+
		% Cost Escalation Factor										
		0%	3%	6%	9%	12%	15%	18%	21%	24%	27%	30%
Concept Project 1- Peach St	\$4,651,400	\$764,000	\$1,915,800	\$1,971,600								
Concept Project 2- Marie Ave	\$808,650				\$284,490	\$524,160						
Concept Project 4- Breckenridge Rd	\$890,870					\$314,720	\$576,150					
Concept Project 3- Kansas St	\$1,019,060						\$379,500	\$639,560				
Citywide Stormwater Drainage Maintenance	\$20,903,050	\$1,652,415	\$1,701,987	\$1,751,560	\$1,801,132	\$1,850,705	\$1,900,277	\$1,949,850	\$1,999,422	\$2,048,995	\$2,098,567	\$2,148,140
TOTAL	\$28,273,030	\$2,416,415	\$3,617,787	\$3,723,160	\$2,085,622	\$2,689,585	\$2,855,927	\$2,589,410	\$1,999,422	\$2,048,995	\$2,098,567	\$2,148,140

9.3. Maintenance Plan

The stormwater drainage systems evaluated in this project are composed of a series of closed drainage systems, open channels, and culverts. These systems must be maintained to function as designed. The following maintenance activities are anticipated from the proposed projects:

- Clear sediment and debris from catch basins and reseed as necessary;
- Mow grass swales;
- Remove debris from open channels;
- Street sweeping;
- Inspect outfall for defects and downstream channel for any impacts;
- Revegetate swales if areas become eroded.

This list presents a sample of maintenance activities required for stormwater management but should not be considered an exhaustive list. Based on annual inspections of storm drainage system components, additional maintenance activities including repair or replacement may be required.

Maintenance guidance and inspection reports for catch basins, outfalls, and storm drain systems are referenced in the City of Kannapolis's Water Quality Protection Guidelines and Standard Operating Procedures dated April 2013. Additional storm drainage maintenance instructions for ditch restoration are referenced in the Stormwater Division Standard Operating Procedures rev.2 dated October 13, 2020.

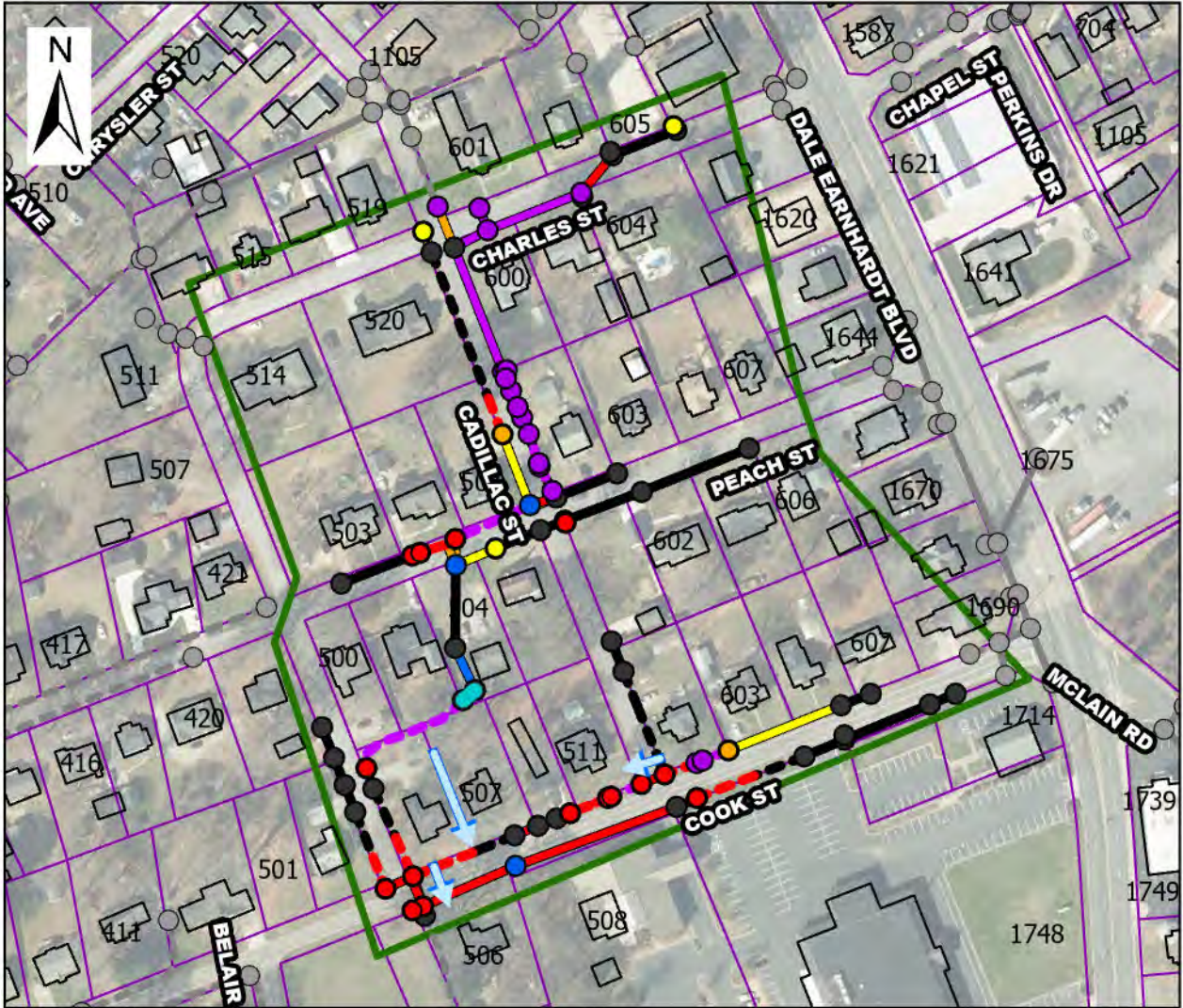
10. References

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<https://www.kannapolisnc.gov/Government-Departments/Engineering/Land-Development-Standards-Manual>
- EPA. (2015). *Storm Water Management Model User's Manual, Version 5.1*. US Environmental Protection Agency. Water Supply and Water Resource Division
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- NRCS. (2010). *National Engineering Handbook, Part 630 Hydrology, Chapter 15 Time of Concentration*. US Department of Agriculture. National Resources Conservation.

Appendix A: Proposed Concepts & Preliminary Cost Opinion for Conceptual Level Improvements

- ◆ Concept #1 - Peach Street
- ◆ Opinion of Probable Cost – Peach Street
- ◆ Concept #2 - Marie Avenue
- ◆ Opinion of Probable Cost – Marie Avenue
- ◆ Concept #3 – Kansas Street
- ◆ Opinion of Probable Cost – Kansas Street
- ◆ Concept #4 – Breckenridge Road
- ◆ Opinion of Probable Cost – Breckenridge Road

EXISTING CONDITIONS



NC CGIA, Maxar, Microsoft

PROBLEM

The following stormwater systems were modeled to have insufficient capacity during the 2-year storm event:

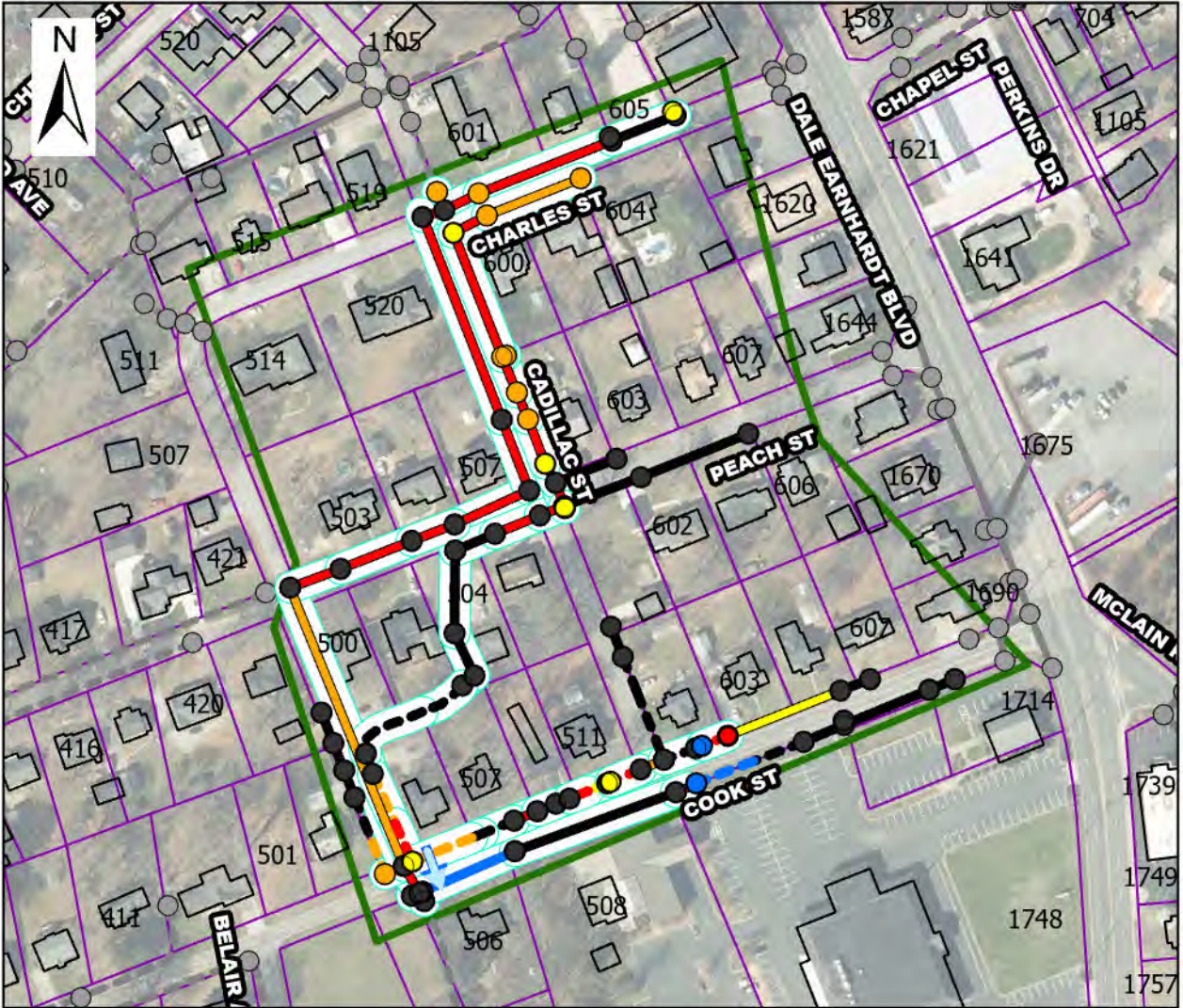
- Charles Street to Cadillac Street and west on Peach Street
- Open channel behind 505 Peach Street and 507 Cook Street
- Cook Street between Cadillac Street and Charles Street

Secondary flow paths were identified between 505 and 507 Peach Street on the north side of Cadillac Street across Cook Street and on Cook Street at Charles Street.

SOLUTION

The proposed solution replaces open ditches with a closed pipe network and reroutes stormwater flow along Peach Street down Charles Street. There will be a slight depression to direct road runoff into the proposed inlets. The channel behind 505 and 507 Cook Street would be regraded. Improvements along Cook St include increasing the size of the existing network and regading of the open ditches.

PROPOSED CONDITIONS



LEGEND

Junctions

- Flooded - 2 Year Events
- Flooded - 10 Year Events
- Flooded - 25 Year Events
- Flooded - 50 Year Events
- Flooded - 100 Year Events
- Not-Flooded

Conduits

- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Open Channels

- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Context

- Structures
- 100-year FEMA Floodplain
- 500-year FEMA Floodplain
- Project Area
- Secondary Flow Paths
- 305 Street Address
- City Infrastructure
- Proposed Pipes and Structures



BENEFITS

The conceptual design reduces roadway inundation along the entire system and channel overtopping in the open channel behind 505 and 507 Cook St. Yard inundation and driveway overtopping is reduced along Cook St.

A concern is that the downstream channel will receive greater peak flow and additional evaluation, that was not included as part of this scope, should be conducted prior to upgrading the storm water network.

OPINION OF PROBABLE PROJECT COST

Construction (includes Materials):	\$3,720,000
Engineering and Administration:	\$764,000
TOTAL:	\$4,484,000

Project Name: Residential Drainage Improvements Study
City/State: Kannapolis, North Carolina

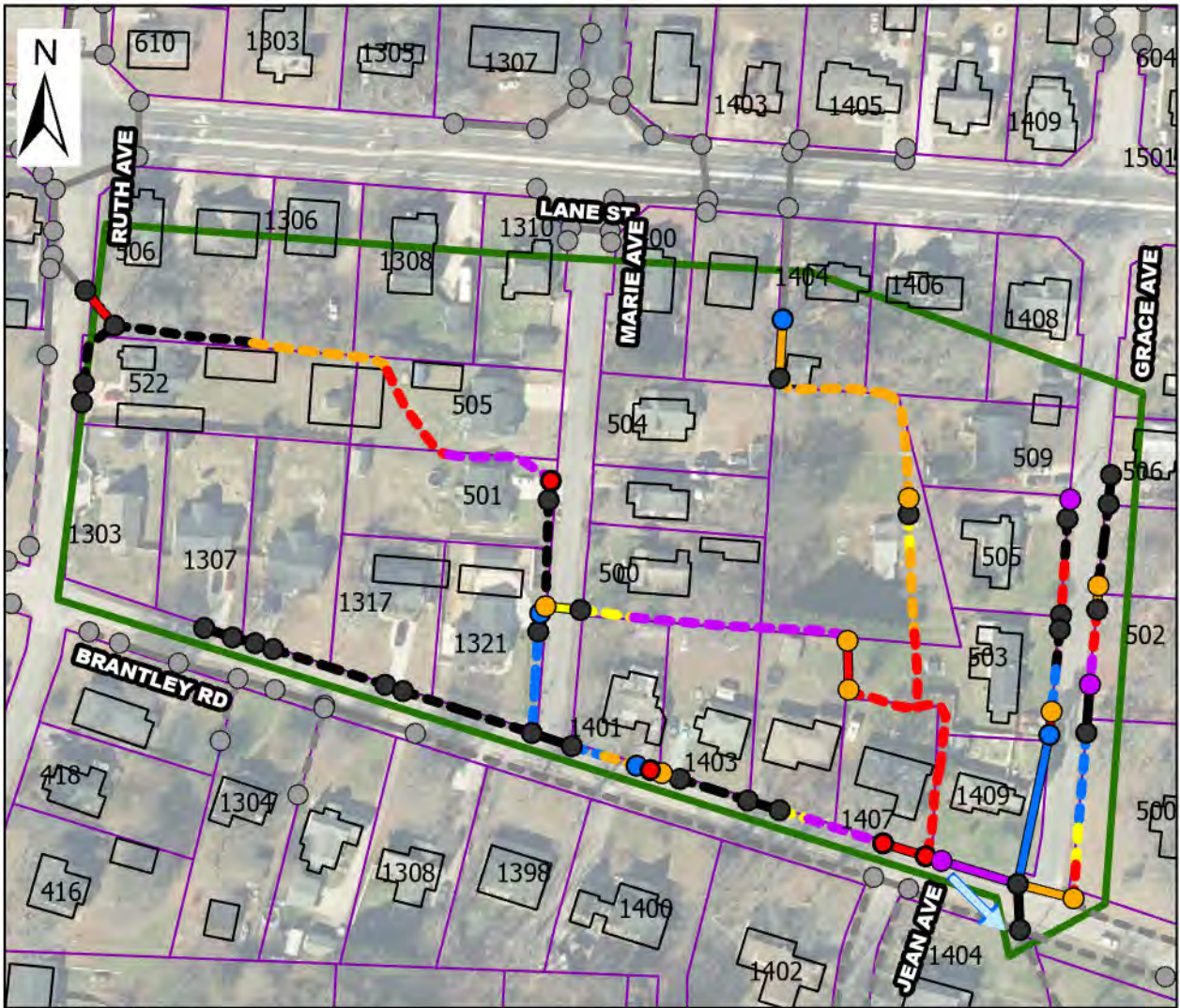
Project #: 23-0607-001
Date: 8/27/2024

Area 1: Peach St - Drainage Improvements

<u>Proposed Improvements</u>				
<u>MATERIAL COST</u>				
Structure	Quantity*	Unit	Unit Price	Total
15" RCP Class III	267	LF	\$ 100	\$ 27,000
18" RCP Class III	227	LF	\$ 150	\$ 35,000
24" RCP Class III	1161	LF	\$ 150	\$ 175,000
30" RCP Class III	11	LF	\$ 225	\$ 3,000
2' x 4' Box Culvert	92	LF	\$ 1,300	\$ 120,000
2' x 5' Box Culvert	266	LF	\$ 1,450	\$ 386,000
2' x 6' Box Culvert	703	LF	\$ 1,550	\$ 1,090,000
2' x 8' Box Culvert	45	LF	\$ 1,700	\$ 77,000
Inlets/Manholes	17	EA	\$ 4,000	\$ 68,000
End Sections	11	EA	\$ 2,500	\$ 28,000
Dual Headwall/Endwall	3	EA	\$ 7,000	\$ 21,000
Headwall/Endwall	1	EA	\$ 4,000	\$ 4,000
Custom Structure	16	EA	\$ 7,500	\$ 120,000
Channel Improvement	642	LF	\$ 350	\$ 225,000
Roadway Restoration	650	SY	\$ 100	\$ 65,000
MATERIALS SUBTOTAL			\$	2,444,000
<u>CONSTRUCTION COST</u>				
Based on % of Materials Cost				
Mobilization	5%		\$	123,000
Erosion Control	3%		\$	74,000
Construction Survey	2%		\$	49,000
Traffic Control	LS		\$	35,000
Utility Conflicts	LS		\$	30,000
SUBTOTAL 1 (INCLUDES MATERIAL COST)			\$	2,755,000
Based on % of Subtotal 1				
Contingency	35%		\$	965,000
CONSTRUCTION SUBTOTAL			\$	3,720,000
<u>ENGINEERING AND ADMINISTRATION COST</u>				
Based on % of Construction Cost				
Site Characterization	3%		\$	112,000
Design and Permitting	7%		\$	261,000
Construction Administration	10%		\$	372,000
Closeout	1%		\$	19,000
ENGINEERING & ADMINISTRATION SUBTOTAL			\$	764,000
PROJECT TOTAL			\$	4,484,000

This estimate of probable cost is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed condition, labor rate changes, or other factors beyond the control of the estimators.

EXISTING CONDITIONS



NC CGIA, Maxar, Microsoft

PROBLEM

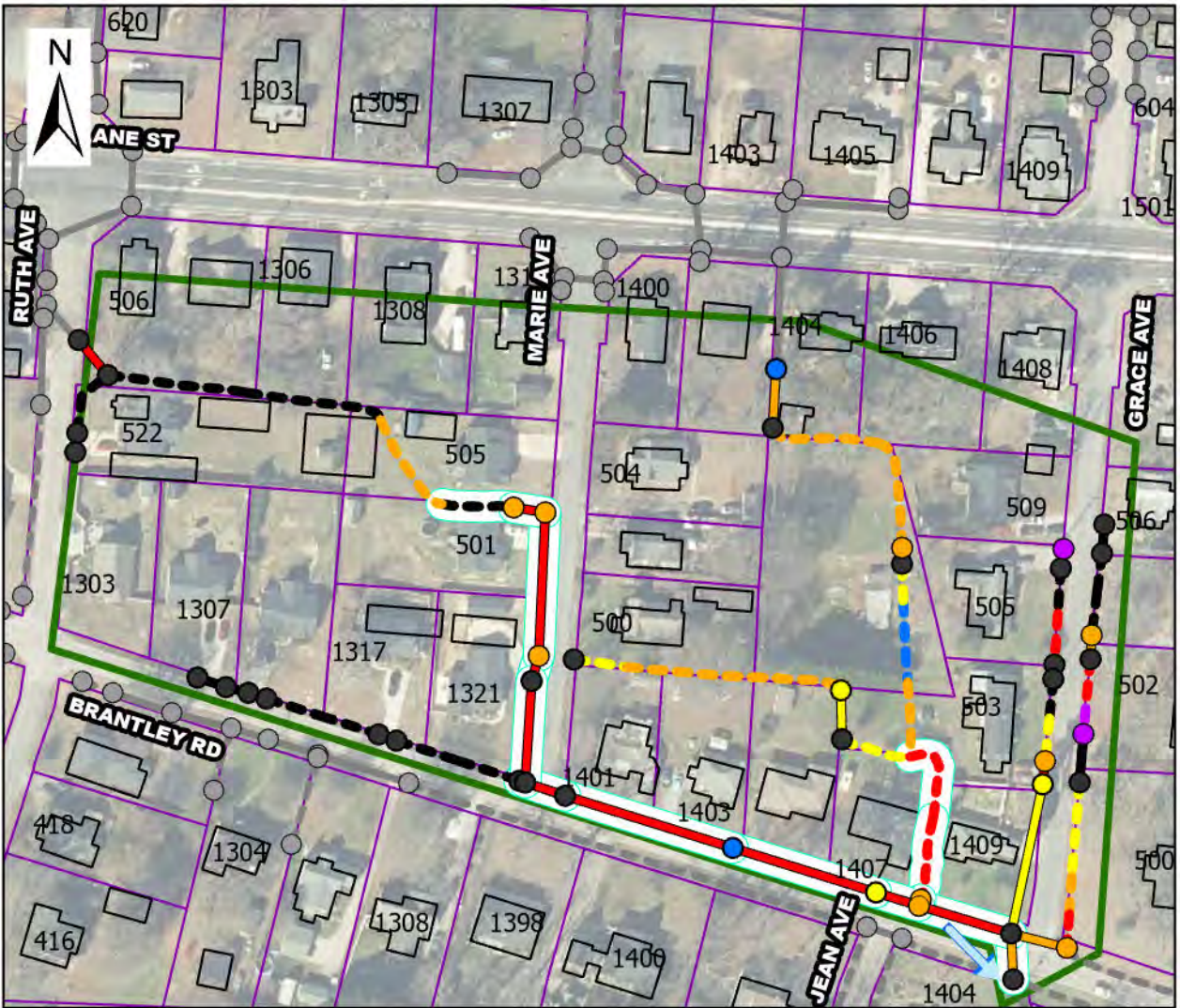
The following stormwater systems had sections that were modeled to be at or above capacity during the 10-year storm:

- Open channel behind homes from Ruth Avenue to Marie Avenue
- Open channel behind homes from Marie Avenue to Brantley Road
- Closed System along Brantley Road.

SOLUTION

The stormwater network beginning at 501 Marie Street, extending south on Marie Street, and east along Brantley Road to the outfall on the south side of Brantley Road will be replaced from an open ditch and driveway culvert system to a closed pipe network. The proposed system is a combination of 24" and 36" RCP pipes with new inlets along Marie Avenue and Brantley Road. There will be a slight depression to direct road runoff into the proposed inlets within the right-of-way. This system re-routes the flow down Marie Ave and away from the channel located behind the houses on Brantley Road.

PROPOSED CONDITIONS



LEGEND

- Junctions**
- Flooded - 2 Year Events
 - Flooded - 10 Year Events
 - Flooded - 25 Year Events
 - Flooded - 50 Year Events
 - Flooded - 100 Year Events
 - Not-Flooded
- Conduits**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Open Channels**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Context**
- Structures
 - 100-year FEMA Floodplain
 - 500-year FEMA Floodplain
 - Project Area
 - Secondary Flow Paths
 - 305 Street Address
 - City Infrastructure
 - Proposed Pipes and Structures
- 0 150 300
1 Inch = 150 Feet

BENEFITS

The proposed work would reduce yard inundation resulting from open channel overtopping for the homes behind Brantley Road up to the 25-year event. Channel overtopping is also reduced in the channel between 501 and 505 Marie Ave due to the increase in the capacity of the downstream network reducing risks of impacts to homes.

OPINION OF PROBABLE PROJECT COST

Construction (includes Materials):	\$468,000
Engineering and Administration:	\$261,000
TOTAL:	\$729,000

Project Name: Residential Drainage Improvements Study
 City/State: Kannapolis, North Carolina

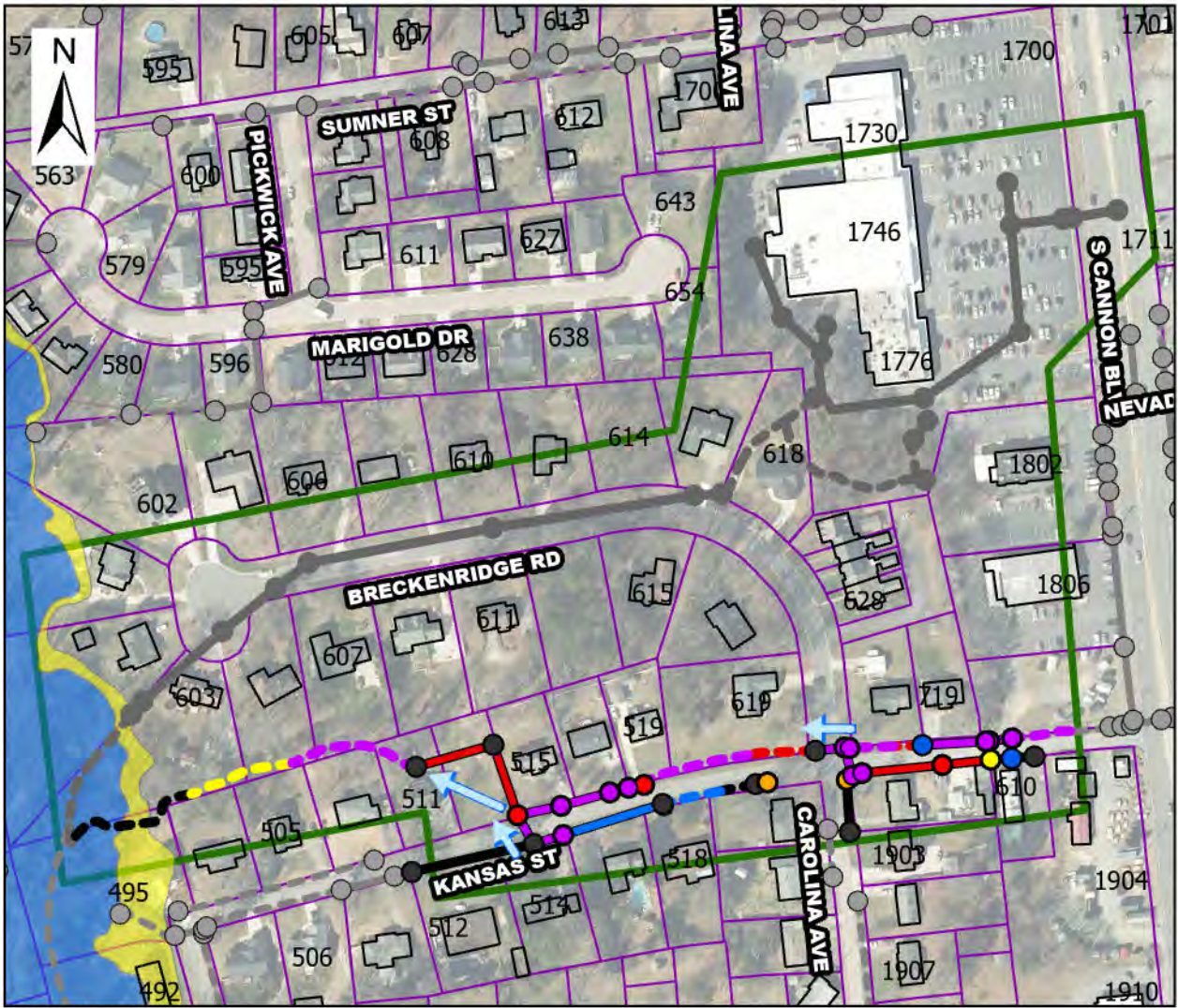
Project #: 23-0607-001
 Date: 8/27/2024

Area 2: Marie Avenue - Drainage Improvements

Proposed Improvements				
MATERIAL COST				
Structure	Quantity*	Unit	Unit Price	Total
15" RCP Class III	5	LF	\$ 100	\$ 1,000
24" RCP Class III	253	LF	\$ 150	\$ 38,000
30" RCP Class III	349	LF	\$ 225	\$ 79,000
36" RCP Class III	118	LF	\$ 300	\$ 36,000
Headwall/Endwall	2	EA	\$ 4,000	\$ 8,000
Inlets/Manholes	9	EA	\$ 4,000	\$ 36,000
End Sections	2	EA	\$ 2,500	\$ 5,000
Channel Improvement	203	LF	\$ 350	\$ 72,000
Roadway Restoration	20	SY	\$ 100	\$ 2,000
Driveway Restoration	39	SY	\$ 100	\$ 4,000
MATERIALS SUBTOTAL			\$	281,000
CONSTRUCTION COST				
Based on % of Materials Cost				
Mobilization	5%		\$	15,000
Erosion Control	3%		\$	9,000
Construction Survey	2%		\$	6,000
Traffic Control	LS		\$	20,000
Utility Conflicts	LS		\$	15,000
SUBTOTAL 1 (INCLUDES MATERIAL COST)			\$	346,000
Based on % of Subtotal 1				
Contingency	35%		\$	122,000
CONSTRUCTION SUBTOTAL			\$	468,000
ENGINEERING AND ADMINISTRATION COST				
Based on % of Construction Cost				
Site Characterization	10%		\$	47,000
Design and Permitting	20%		\$	94,000
Construction Administration	25%		\$	117,000
Closeout	1%		\$	3,000
ENGINEERING & ADMINISTRATION SUBTOTAL			\$	261,000
PROJECT TOTAL			\$	729,000

This estimate of probable cost is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed condition, labor rate changes, or other factors beyond the control of the estimators.

EXISTING CONDITIONS



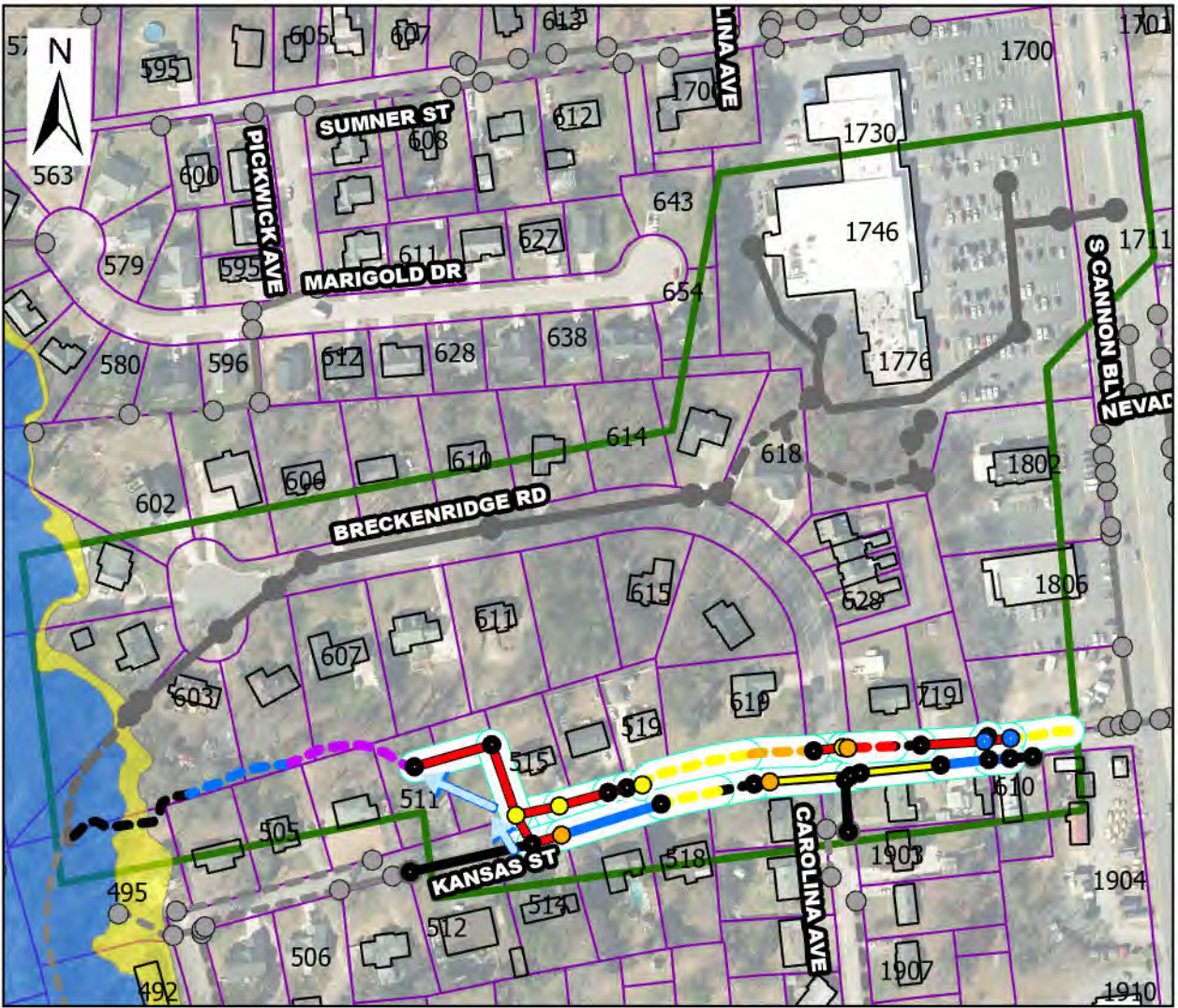
PROBLEM

The stormwater system along Kansas St starting east of the intersection with Breckenridge Road and extending west to the outfall north of 511 Kansas Street had sections that reach capacity during the 2-year storm event.

SOLUTION

The conceptual design for the north side of Kansas Street proposes grading of the open ditches and the replacement of existing pipes to a dual pipe system to achieve the required capacity while maintaining sufficient cover. On the south side of Kansas Street, the stormwater network is re-routed across Carolina Avenue. In the vicinity of 515 Kansas St and the pipe capacity is increased.

PROPOSED CONDITIONS



BENEFITS

The benefit of the conceptual design redistributes flow on both the north and south side of Kansas Street. This redistribution helps to manage flow due to limited cover available on the north side of Kansas Street. By increasing the size of the stormwater network and grading the roadside ditches to provide additional depth, there is increased system capacity and roadway inundation is reduced up to the 25-year event.

OPINION OF PROBABLE PROJECT COST

Construction (includes Materials):	\$542,000
Engineering and Administration:	\$330,000
TOTAL:	\$872,000

LEGEND

- Junctions**
- Flooded - 2 Year Events
 - Flooded - 10 Year Events
 - Flooded - 25 Year Events
 - Flooded - 50 Year Events
 - Flooded - 100 Year Events
 - Not-Flooded
- Conduits**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Open Channels**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Context**
- Structures
 - 100-year FEMA Floodplain
 - 500-year FEMA Floodplain
 - Project Area
 - Secondary Flow Paths
 - 305 Street Address
 - City Infrastructure
 - Proposed Pipes
- 0 250 500
1 Inch = 250 Feet

Project Name: Residential Drainage Improvements Study
City/State: Kannapolis, North Carolina

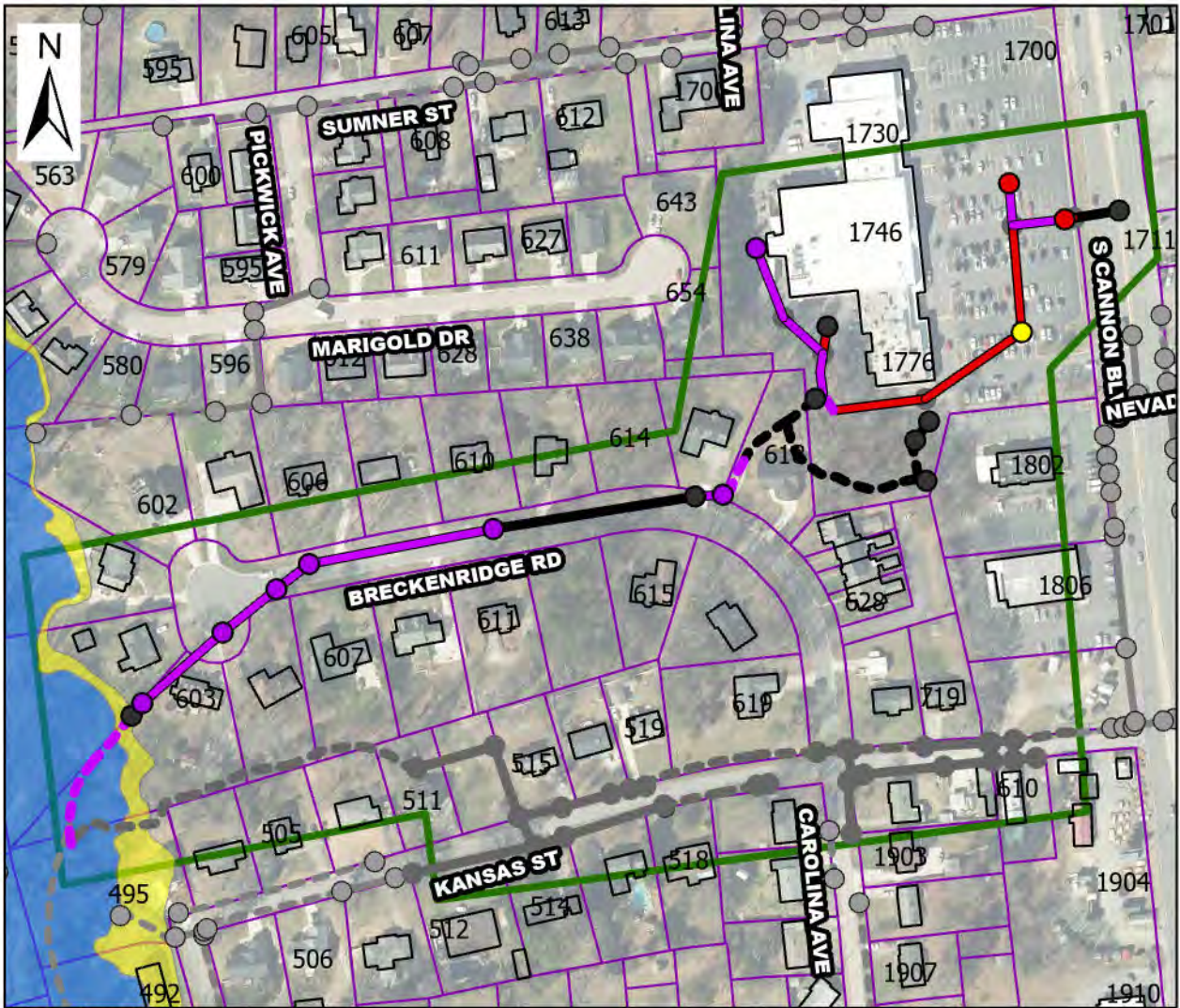
Project #: 23-0607-001
Date: 8/27/2024

Area 3: Kansas St- Drainage Improvements

Proposed Improvements				
MATERIAL COST				
Structure	Quantity	Unit	Unit Price	Total
15" RCP Class III	188	LF	\$ 100	\$ 19,000
24" RCP Class III	381	LF	\$ 150	\$ 58,000
30" RCP Class III	89	LF	\$ 225	\$ 21,000
36" RCP Class III	159	LF	\$ 300	\$ 48,000
42" RCP Class III	215	LF	\$ 400	\$ 86,000
Headwall/Endwall	10	EA	\$ 4,000	\$ 40,000
Inlets/Manholes	13	EA	\$ 4,000	\$ 52,000
End Sections	2	EA	\$ 2,500	\$ 5,000
Roadway Restoration	25	SY	\$ 100	\$ 3,000
Driveway Restoration	39	SY	\$ 100	\$ 4,000
MATERIALS SUBTOTAL			\$	336,000
CONSTRUCTION COST				
Based on % of Materials Cost				
Mobilization	5%		\$	17,000
Erosion Control	3%		\$	11,000
Construction Survey	2%		\$	7,000
Traffic Control	LS		\$	15,000
Utility Conflicts	LS		\$	15,000
SUBTOTAL 1 (INCLUDES MATERIAL COST)			\$	401,000
Based on % of Subtotal 1				
Contingency	35%		\$	141,000
CONSTRUCTION SUBTOTAL			\$	542,000
ENGINEERING AND ADMINISTRATION COST				
Based on % of Construction Cost				
Site Characterization	10%		\$	55,000
Design and Permitting	25%		\$	136,000
Construction Administration	25%		\$	136,000
Closeout	1%		\$	3,000
ENGINEERING & ADMINISTRATION SUBTOTAL			\$	330,000
PROJECT TOTAL			\$	872,000

This estimate of probable cost is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed condition, labor rate changes, or other factors beyond the control of the estimators.

EXISTING CONDITIONS



NC CGIA, Maxar, Microsoft

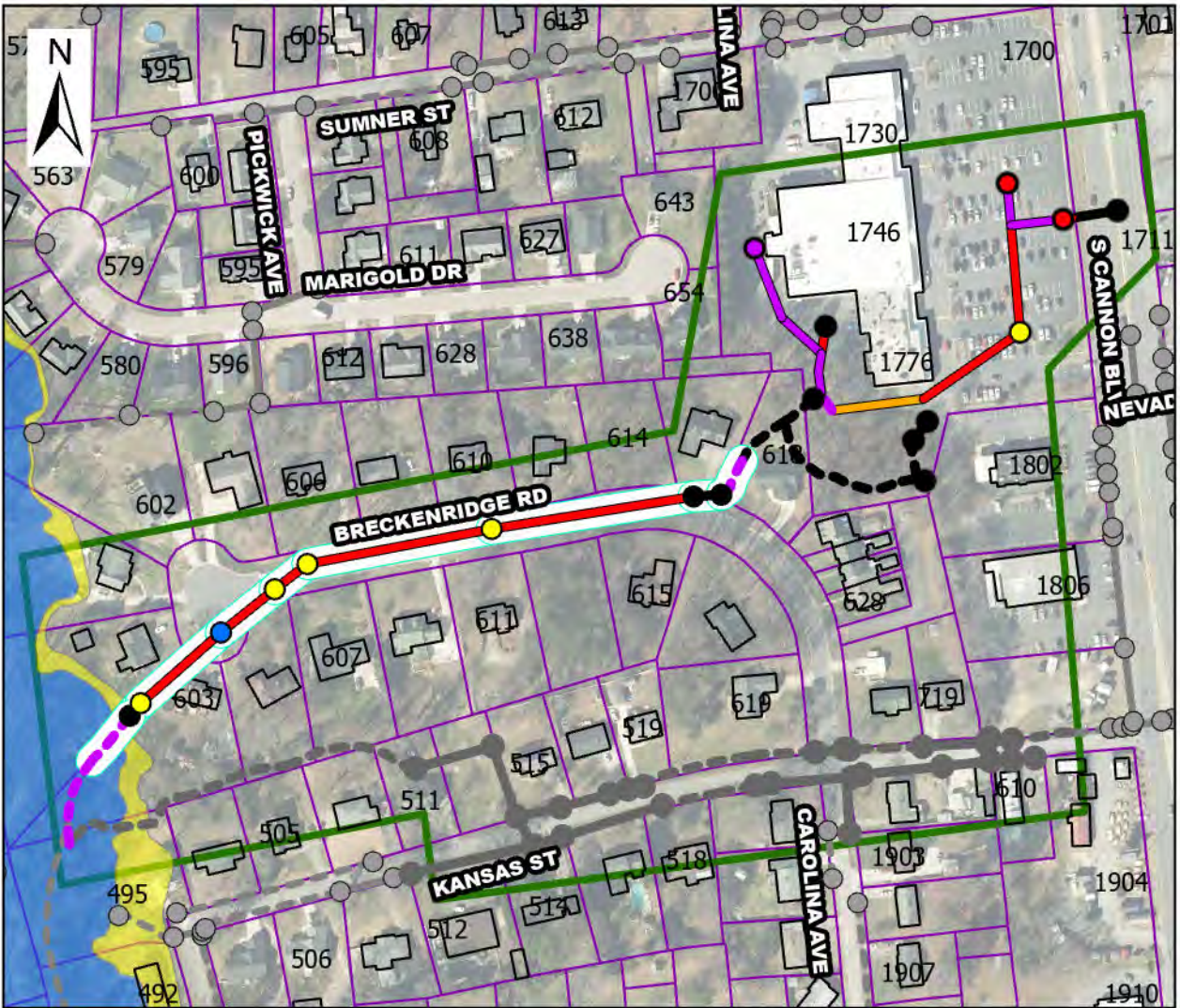
PROBLEM

The stormwater network starting at 616 Breckenridge Road and extending west to the outfall behind 603 Breckenridge Road was modeled to be at or above capacity during the 2-year storm. Additionally, all the catch basins were found to have a Hydraulic Grade Line (HGL) exceeding the rim elevations during the 2-year storm which would likely result in surface ponding along the road.

SOLUTION

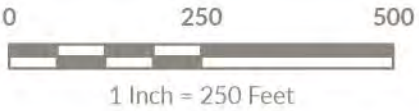
The conceptual design for Breckenridge Road increases the size of the stormwater network starting at 616 Breckenridge Road to the outfall behind 603 Breckenridge Road. The pipes along this alignment would increase from 30" RCP to 36" RCP pipes. Minor channel grading is proposed between 616 and 618 Breckenridge Road to tie into the invert of the proposed network and at the downstream discharge into the open channel.

PROPOSED CONDITIONS



LEGEND

- Junctions**
- Flooded - 2 Year Events
 - Flooded - 10 Year Events
 - Flooded - 25 Year Events
 - Flooded - 50 Year Events
 - Flooded - 100 Year Events
 - Not-Flooded
- Conduits**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Open Channels**
- Full Capacity - 2 Year Events
 - Full Capacity - 10 Year Events
 - Full Capacity - 25 Year Events
 - Full Capacity - 50 Year Events
 - Full Capacity - 100 Year Events
 - Not at Full Capacity
- Context**
- Structures
 - 100-year FEMA Floodplain
 - 500-year FEMA Floodplain
 - Project Area
 - Secondary Flow Paths
 - 305 Street Address
 - City Infrastructure
 - Proposed Pipes and Structures



BENEFITS

By increasing the capacity of the stormwater network, roadway inundation is reduced with structures containing stormwater up to the 50-year event.

OPINION OF PROBABLE PROJECT COST

Construction (includes Materials):	\$501,000
Engineering and Administration:	\$281,000
TOTAL:	\$782,000

Project Name: Residential Drainage Improvements Study
City/State: Kannapolis, North Carolina

Project #: 23-0607-001
Date: 8/27/2024

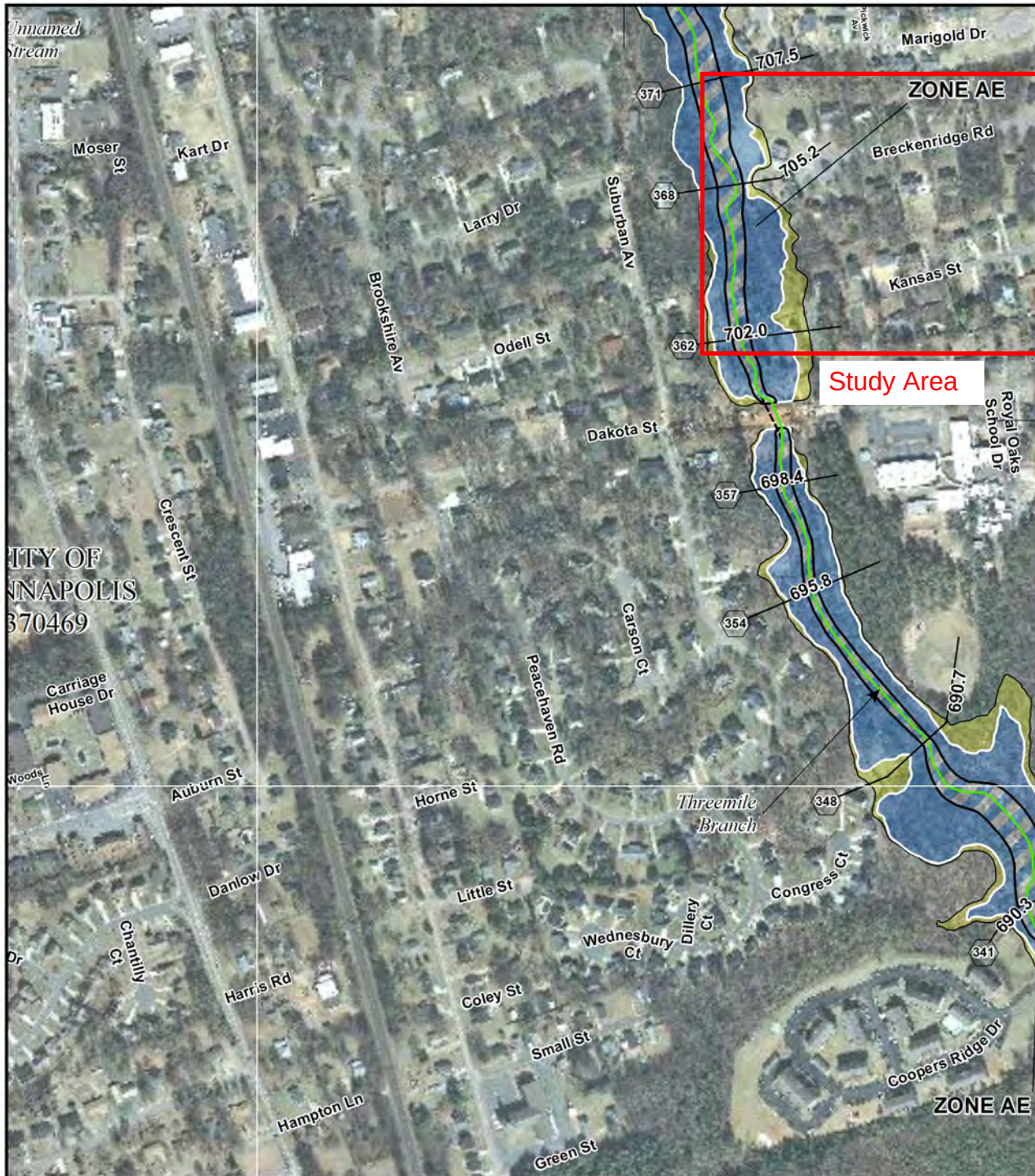
Area 4: Breckenridge Road- Drainage Improvements

Proposed Improvements				
MATERIAL COST				
Structure	Quantity	Unit	Unit Price	Total
30" RCP Class III	628	LF	\$ 225	\$ 142,000
36" RCP Class III	301	LF	\$ 300	\$ 91,000
Headwall/Endwall	2	EA	\$ 4,000	\$ 8,000
Inlets/Manholes	6	EA	\$ 4,000	\$ 24,000
Roadway Restoration	110	SY	\$ 100	\$ 11,000
Driveway Restoration	17	SY	\$ 100	\$ 2,000
MATERIALS SUBTOTAL				\$ 278,000
CONSTRUCTION COST				
Based on % of Materials Cost				
Mobilization	12%		\$	34,000
Erosion Control	8%		\$	23,000
Construction Survey	2%		\$	6,000
Traffic Control	LS		\$	15,000
Utility Conflicts	LS		\$	15,000
SUBTOTAL 1 (INCLUDES MATERIAL COST)				\$ 371,000
Based on % of Subtotal 1				
Contingency	35%		\$	130,000
CONSTRUCTION SUBTOTAL				\$ 501,000
ENGINEERING AND ADMINISTRATION COST				
Based on % of Construction Cost				
Site Characterization	10%		\$	51,000
Design and Permitting	20%		\$	101,000
Construction Administration	25%		\$	126,000
Closeout	1%		\$	3,000
ENGINEERING & ADMINISTRATION SUBTOTAL				\$ 281,000
PROJECT TOTAL				\$ 782,000

This estimate of probable cost is approximate. Actual construction bids may vary significantly from this statement of probable costs due to timing of construction, changed condition, labor rate changes, or other factors beyond the control of the estimators.

Appendix B: Reference Materials

- ◆ FEMA Floodplain Map
- ◆ Rainfall Data
- ◆ Soils Data
- ◆ Land Use Map
- ◆ Subcatchment Maps
- ◆ Building Maps
- ◆ SWMM Input Parameters



SCALE



Map Projection:
North Carolina State Plane Projection Feet
Datum: NAD 1983 (Horizontal), NAVD 1983

1 inch = 500 feet

FEMA National Flood Insurance Program



NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 5612



FEMA

Panel Contains:

COMMUNITY	CID	PANEL	SUFFIX
CONCORD, CITY OF	370037	5612	K
KANNAPOLIS, CITY OF	370469	5612	K



VERSION NUMBER

2.3.3.2

MAP NUMBER

3710561200K

MAP REVISED

November 16, 2018

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



NOAA Atlas 14, Volume 2, Version 3
Location name: Kannapolis, North Carolina, USA*
Latitude: 35.4754°, Longitude: -80.6097°
Elevation: 763 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M. Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.396 (0.365-0.429)	0.468 (0.432-0.509)	0.545 (0.502-0.592)	0.600 (0.550-0.650)	0.662 (0.604-0.716)	0.704 (0.639-0.762)	0.742 (0.671-0.804)	0.775 (0.697-0.841)	0.812 (0.723-0.884)	0.838 (0.739-0.914)
10-min	0.632 (0.583-0.686)	0.748 (0.690-0.814)	0.873 (0.803-0.949)	0.959 (0.880-1.04)	1.05 (0.963-1.14)	1.12 (1.02-1.21)	1.18 (1.07-1.28)	1.23 (1.10-1.33)	1.28 (1.14-1.40)	1.32 (1.16-1.44)
15-min	0.790 (0.728-0.857)	0.941 (0.868-1.02)	1.10 (1.02-1.20)	1.21 (1.11-1.32)	1.34 (1.22-1.45)	1.42 (1.29-1.54)	1.49 (1.35-1.61)	1.55 (1.39-1.68)	1.62 (1.44-1.76)	1.66 (1.46-1.81)
30-min	1.08 (0.998-1.18)	1.30 (1.20-1.41)	1.57 (1.44-1.70)	1.76 (1.61-1.90)	1.98 (1.81-2.14)	2.14 (1.94-2.32)	2.28 (2.06-2.47)	2.41 (2.17-2.62)	2.57 (2.29-2.80)	2.68 (2.37-2.92)
60-min	1.35 (1.24-1.46)	1.63 (1.50-1.77)	2.01 (1.85-2.19)	2.29 (2.10-2.48)	2.64 (2.41-2.85)	2.90 (2.63-3.14)	3.14 (2.84-3.41)	3.39 (3.04-3.67)	3.69 (3.29-4.02)	3.92 (3.45-4.27)
2-hr	1.56 (1.43-1.70)	1.89 (1.74-2.07)	2.35 (2.15-2.56)	2.69 (2.46-2.93)	3.14 (2.85-3.42)	3.48 (3.14-3.78)	3.81 (3.42-4.15)	4.14 (3.69-4.51)	4.57 (4.03-4.99)	4.89 (4.27-5.36)
3-hr	1.67 (1.53-1.82)	2.02 (1.85-2.21)	2.52 (2.31-2.75)	2.90 (2.65-3.16)	3.42 (3.10-3.72)	3.82 (3.45-4.15)	4.22 (3.78-4.59)	4.63 (4.11-5.04)	5.18 (4.54-5.65)	5.62 (4.87-6.14)
6-hr	2.03 (1.86-2.21)	2.44 (2.25-2.67)	3.05 (2.80-3.33)	3.52 (3.22-3.84)	4.16 (3.78-4.52)	4.67 (4.21-5.07)	5.18 (4.64-5.63)	5.70 (5.06-6.20)	6.42 (5.62-6.99)	6.98 (6.03-7.61)
12-hr	2.40 (2.22-2.62)	2.90 (2.68-3.17)	3.64 (3.35-3.97)	4.23 (3.87-4.60)	5.03 (4.57-5.46)	5.67 (5.11-6.14)	6.34 (5.66-6.85)	7.02 (6.21-7.59)	7.98 (6.94-8.61)	8.75 (7.49-9.45)
24-hr	2.85 (2.65-3.07)	3.44 (3.21-3.71)	4.33 (4.03-4.66)	5.02 (4.66-5.40)	5.96 (5.52-6.41)	6.71 (6.21-7.21)	7.48 (6.90-8.04)	8.27 (7.60-8.89)	9.36 (8.56-10.1)	10.2 (9.31-11.0)
2-day	3.34 (3.11-3.58)	4.02 (3.75-4.33)	5.02 (4.67-5.39)	5.80 (5.39-6.22)	6.86 (6.35-7.34)	7.70 (7.12-8.25)	8.56 (7.89-9.17)	9.44 (8.68-10.1)	10.7 (9.75-11.4)	11.6 (10.6-12.5)
3-day	3.55 (3.31-3.80)	4.27 (3.98-4.57)	5.29 (4.93-5.67)	6.10 (5.67-6.53)	7.20 (6.67-7.70)	8.07 (7.46-8.64)	8.96 (8.26-9.60)	9.88 (9.09-10.6)	11.1 (10.2-12.0)	12.1 (11.1-13.1)
4-day	3.76 (3.51-4.01)	4.51 (4.21-4.82)	5.56 (5.19-5.94)	6.40 (5.95-6.84)	7.54 (6.98-8.06)	8.44 (7.81-9.04)	9.37 (8.64-10.0)	10.3 (9.50-11.1)	11.6 (10.7-12.5)	12.7 (11.6-13.6)
7-day	4.33 (4.06-4.61)	5.16 (4.85-5.50)	6.28 (5.90-6.69)	7.18 (6.73-7.64)	8.40 (7.86-8.94)	9.38 (8.75-9.99)	10.4 (9.65-11.1)	11.4 (10.6-12.2)	12.8 (11.8-13.7)	13.9 (12.8-14.9)
10-day	4.95 (4.67-5.26)	5.89 (5.54-6.26)	7.08 (6.66-7.52)	8.02 (7.53-8.52)	9.27 (8.67-9.85)	10.3 (9.58-10.9)	11.3 (10.5-12.0)	12.3 (11.4-13.1)	13.6 (12.6-14.5)	14.7 (13.6-15.7)
20-day	6.64 (6.31-7.00)	7.85 (7.44-8.26)	9.26 (8.78-9.74)	10.4 (9.83-10.9)	11.9 (11.2-12.5)	13.1 (12.3-13.8)	14.2 (13.4-15.0)	15.4 (14.5-16.3)	17.1 (15.9-18.0)	18.3 (17.1-19.4)
30-day	8.17 (7.78-8.58)	9.62 (9.15-10.1)	11.2 (10.6-11.7)	12.4 (11.8-13.0)	14.0 (13.2-14.7)	15.2 (14.4-16.0)	16.4 (15.5-17.2)	17.6 (16.6-18.5)	19.2 (18.0-20.2)	20.4 (19.1-21.6)
45-day	10.3 (9.87-10.8)	12.1 (11.5-12.6)	13.8 (13.2-14.4)	15.1 (14.4-15.7)	16.8 (16.0-17.5)	18.1 (17.2-18.9)	19.3 (18.4-20.2)	20.6 (19.5-21.5)	22.2 (21.0-23.2)	23.4 (22.1-24.5)
60-day	12.3 (11.8-12.8)	14.3 (13.8-14.9)	16.2 (15.5-16.8)	17.6 (16.9-18.3)	19.5 (18.6-20.2)	20.9 (19.9-21.7)	22.2 (21.2-23.1)	23.5 (22.4-24.5)	25.2 (23.9-26.3)	26.5 (25.1-27.6)

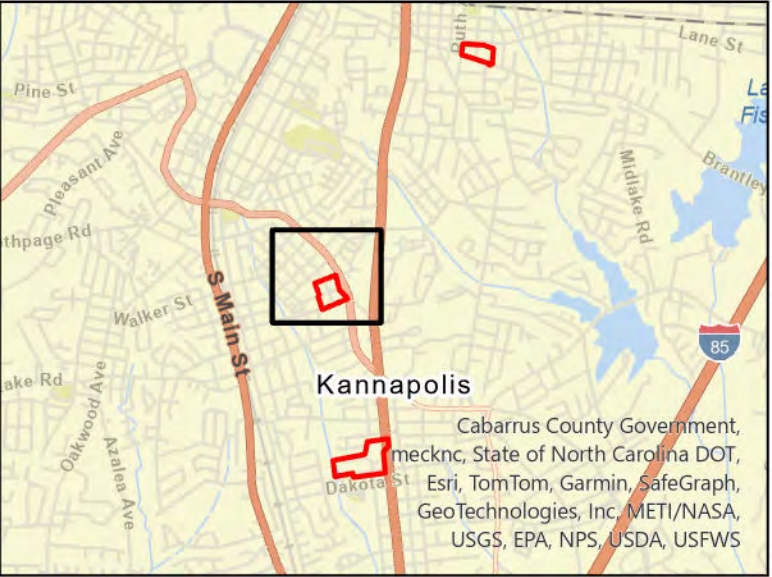
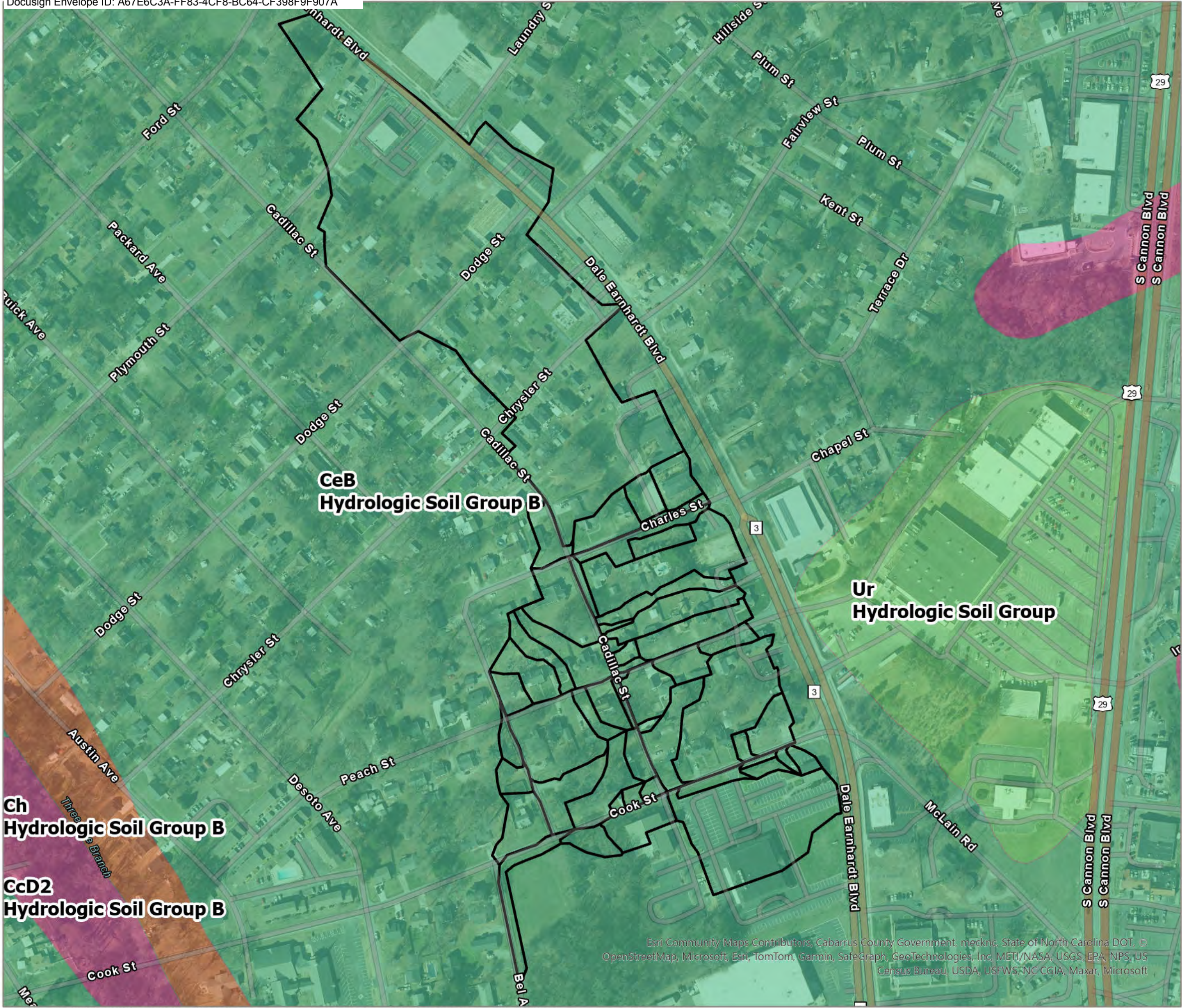
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical



Legend

 Subcatchments



1 inch = 250 ft.



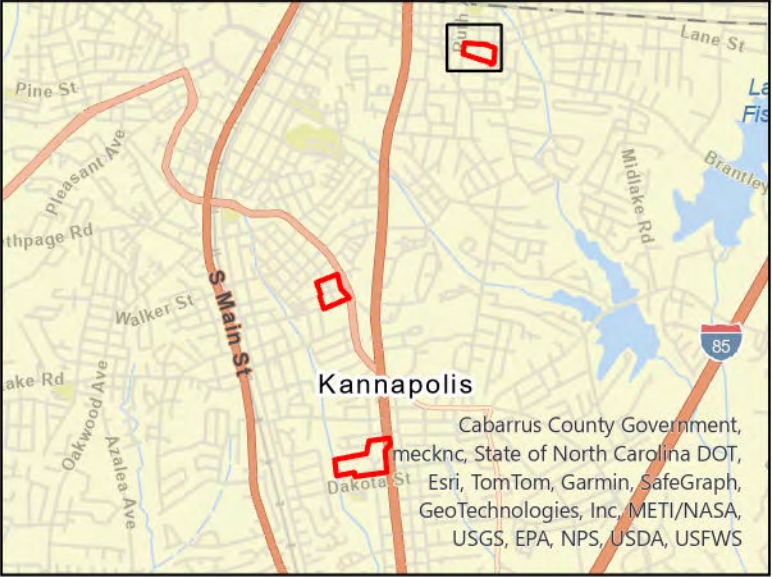
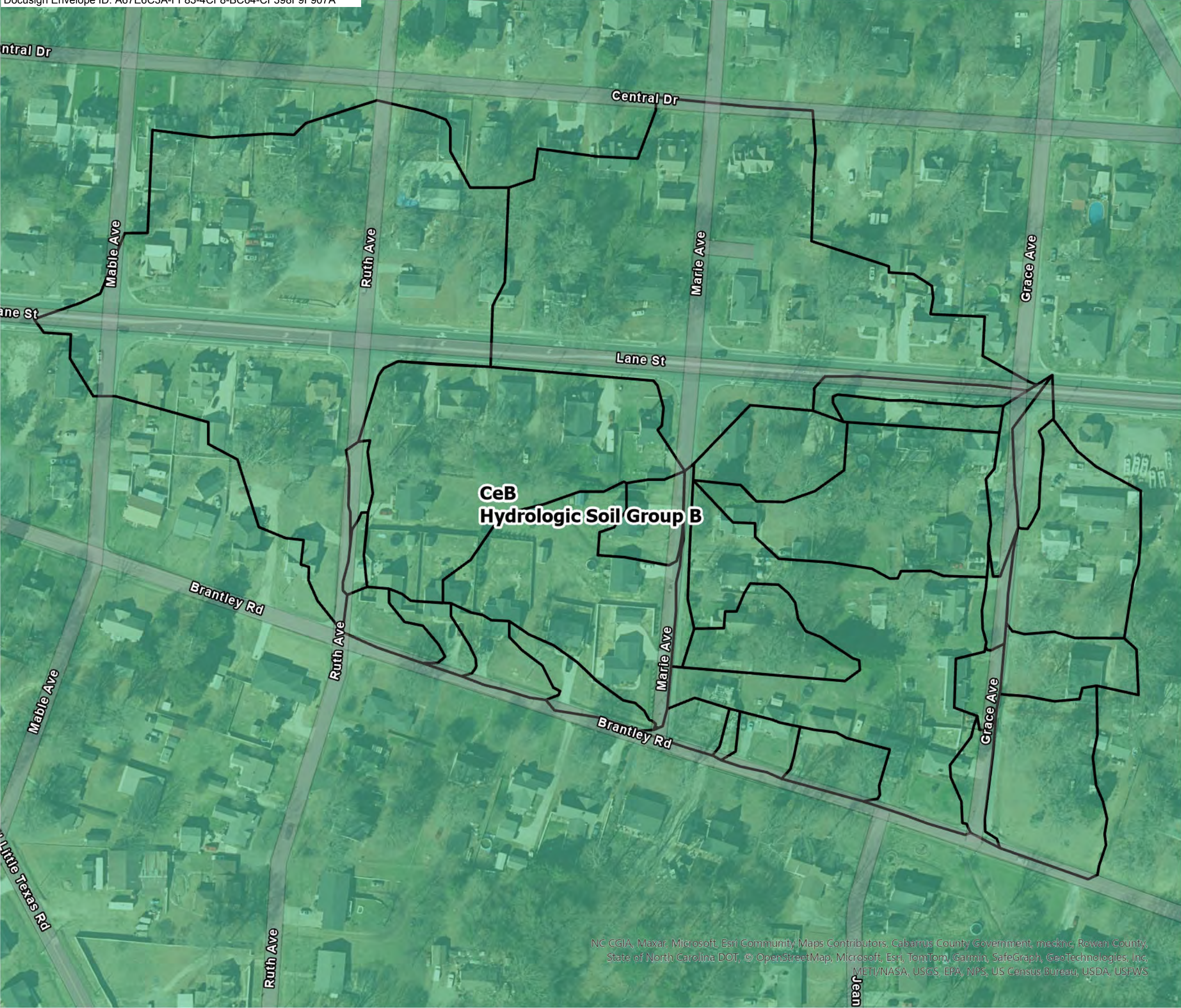
Study Area 1: Peach Street Soil Map



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Legend

Subcatchments



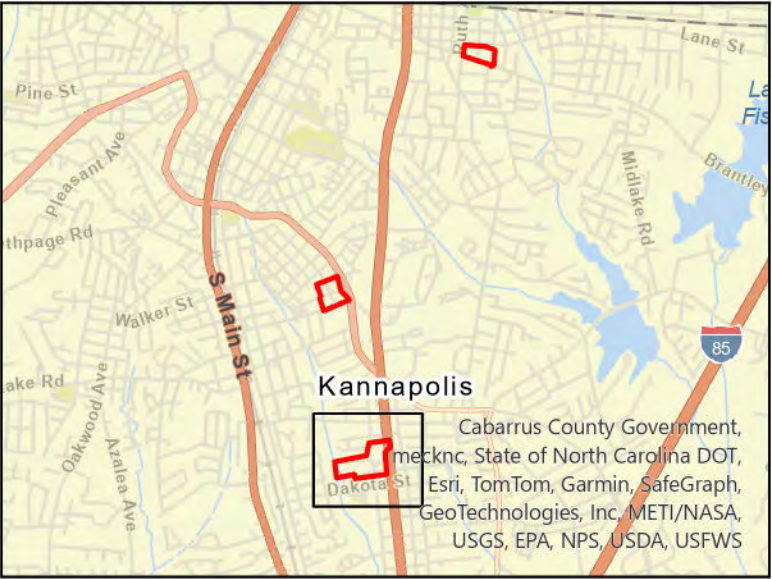
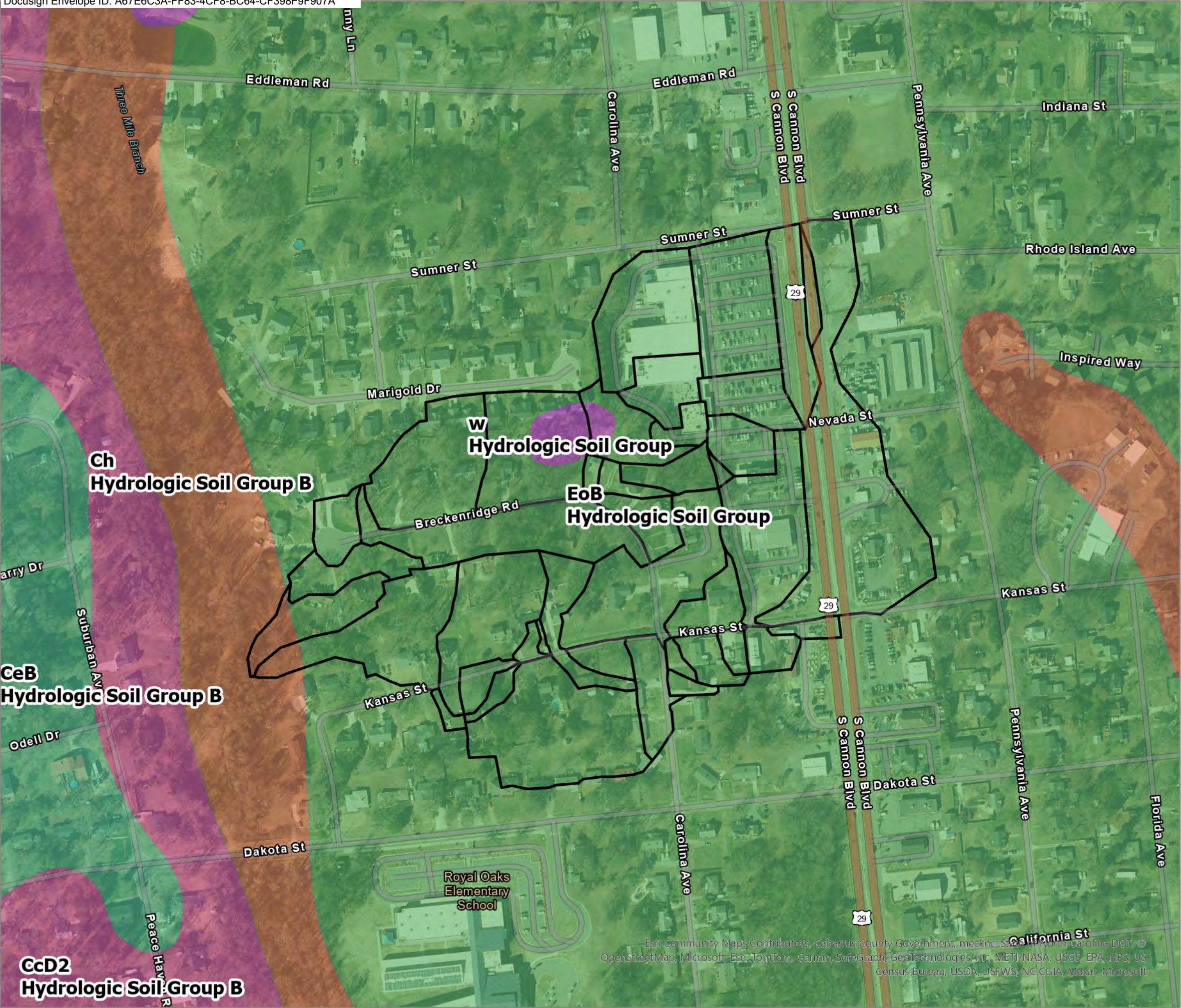
Study Area 2: Marie Avenue & Lane Street Soil Map



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Legend

 Subcatchments



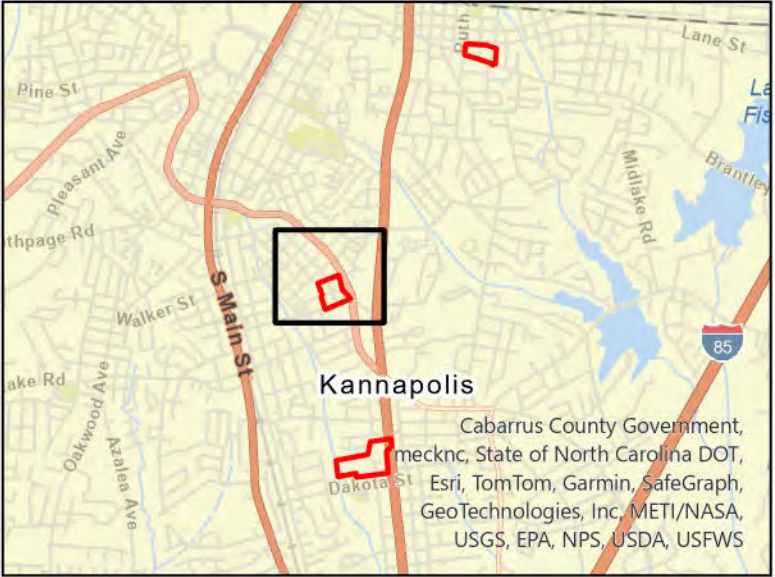
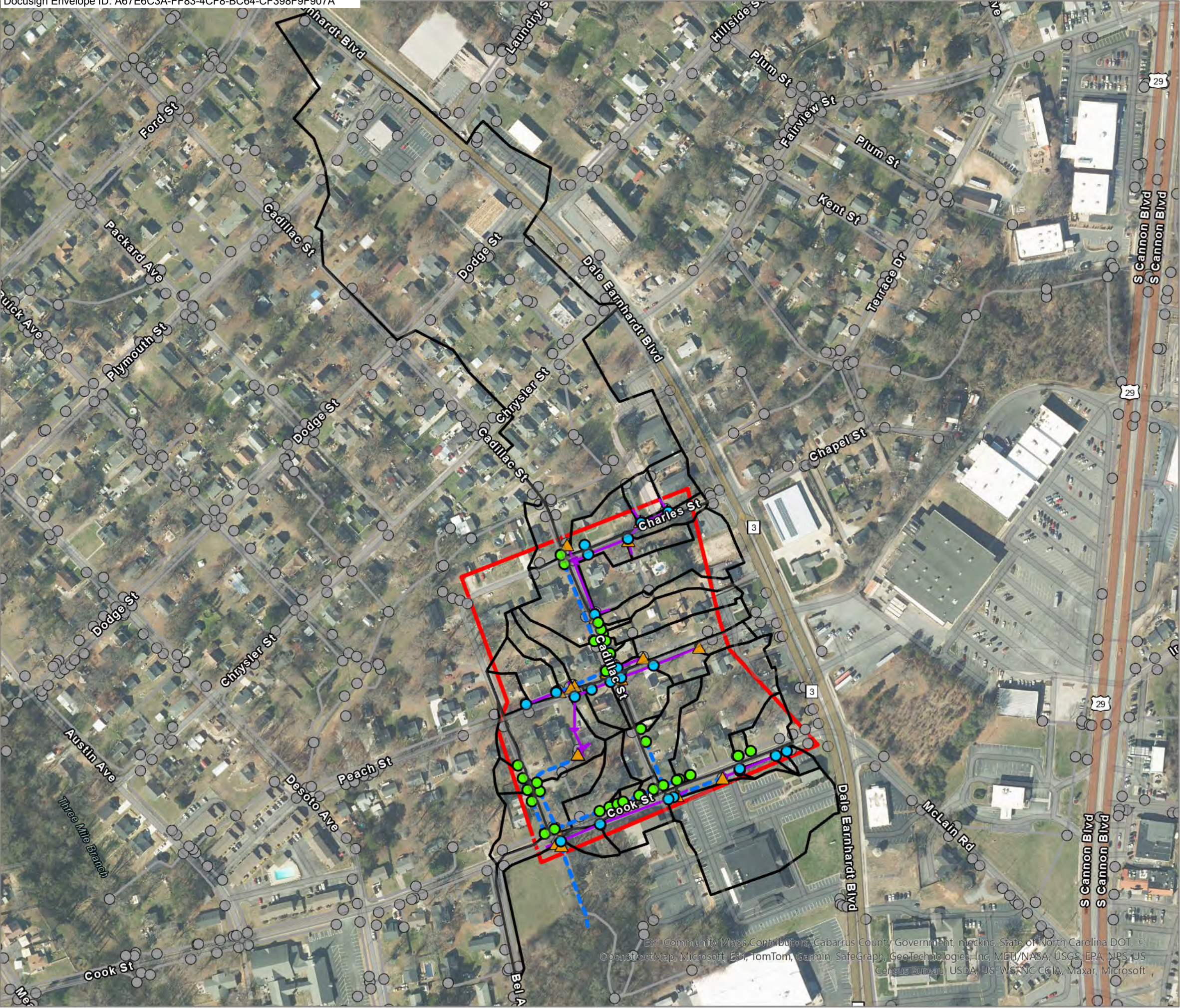
Study Area 3:
Breckenridge Road
Soil Map



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Legend

	Study Area		Pipes
	Storm Inlets		Culvert
	Culvert End Points		Open Channel
	Storm Manholes		Subcatchments
	Storm Discharge Points		

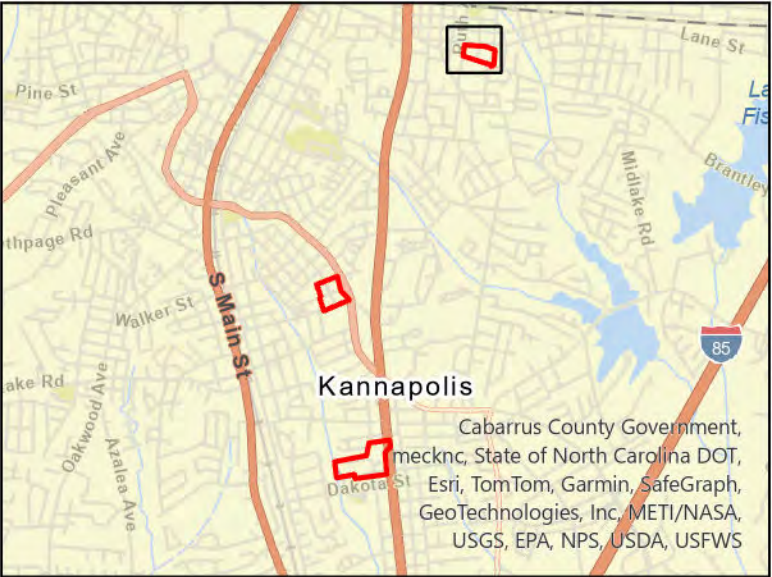
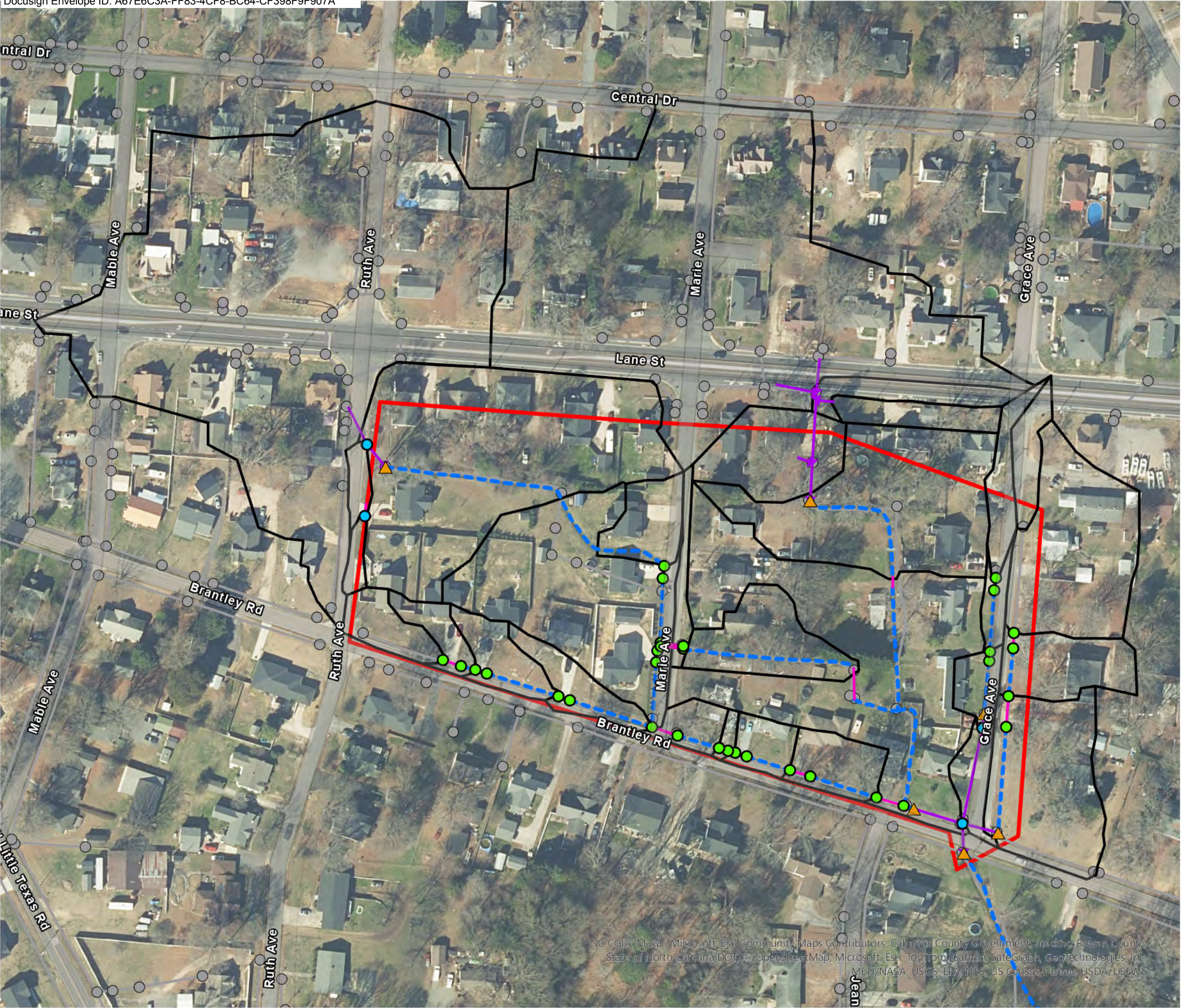
0 250 500 750
1 inch = 250 ft.

**Study Area 1:
Peach Street
Subcatchment Map**

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Legend

- Study Area
- Storm Inlets
- Culvert End Points
- Storm Manholes
- Storm Discharge Points
- Pipes
- Culvert
- Open Channel
- Subcatchments



Study Area 2:
Marie Avenue & Lane Street
Subcatchment Map

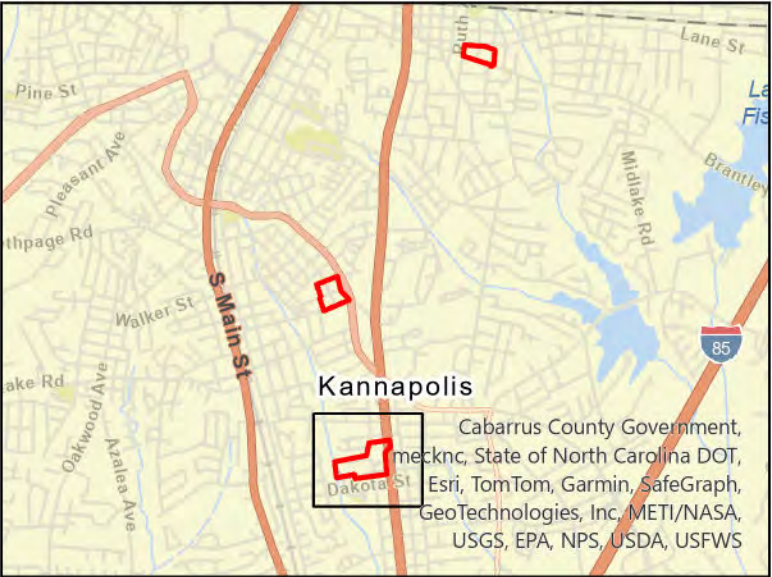
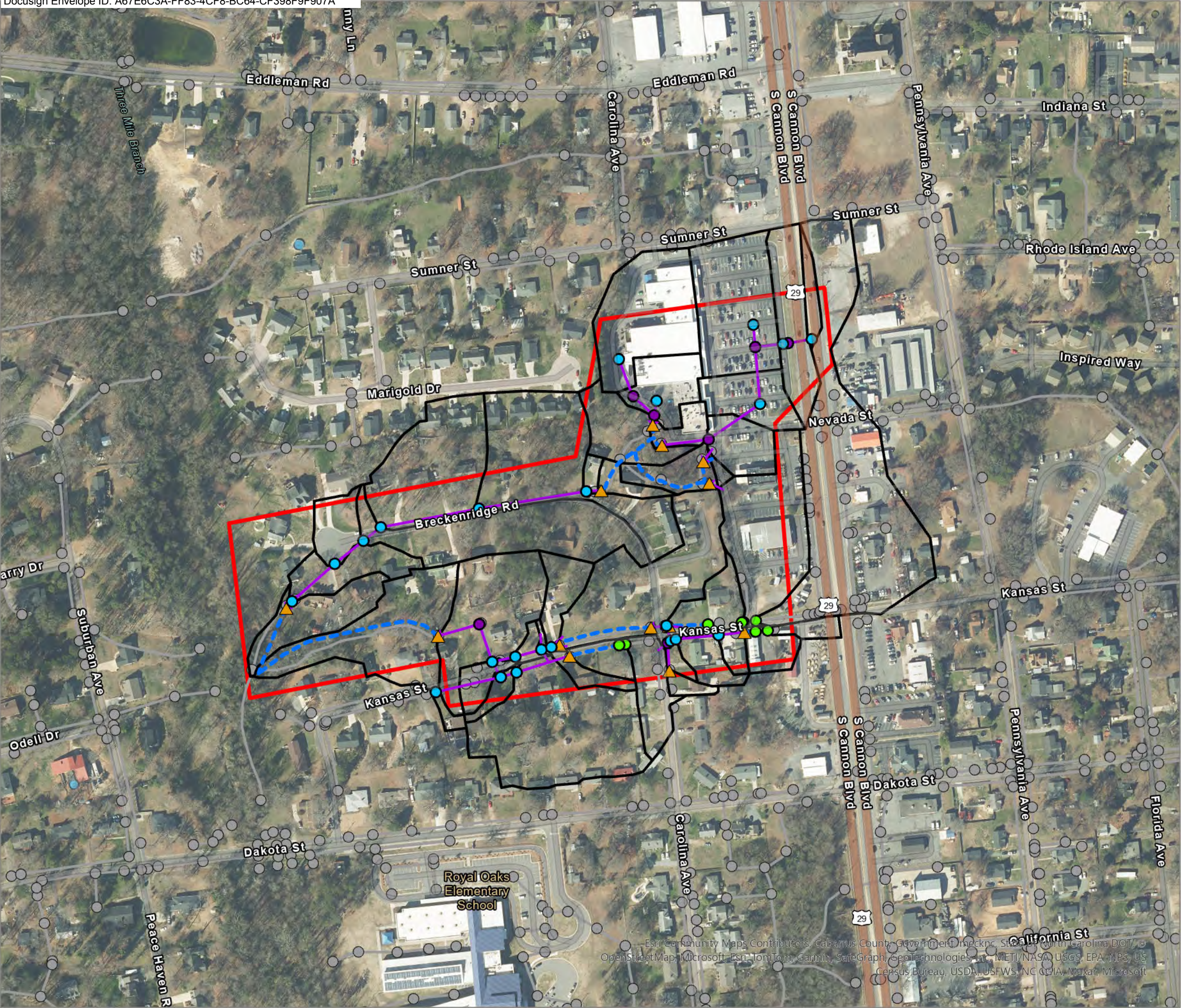


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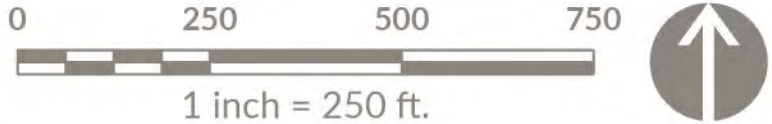
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- Legend**
- | | | | |
|--|------------------------|--|---------------|
| | Study Area | | Culvert |
| | Storm Inlets | | Storm Pipes |
| | Culvert End Points | | Open Channel |
| | Storm Manholes | | Subcatchments |
| | Storm Discharge Points | | |

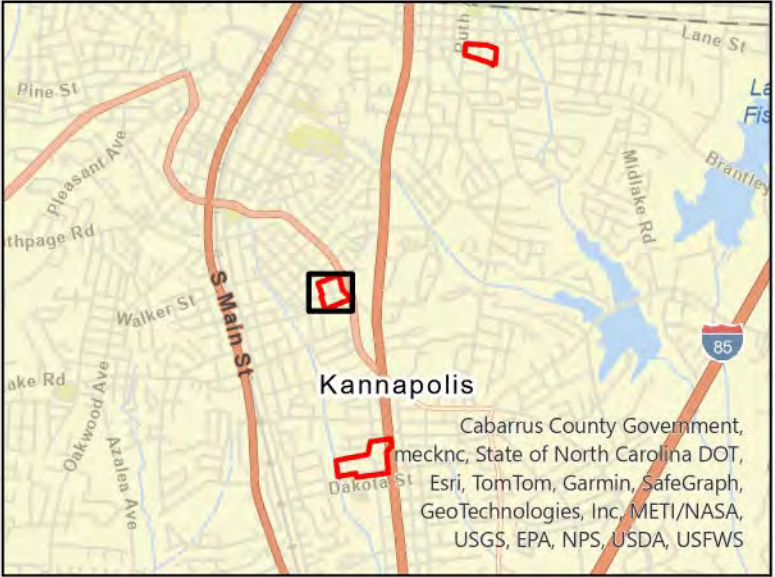
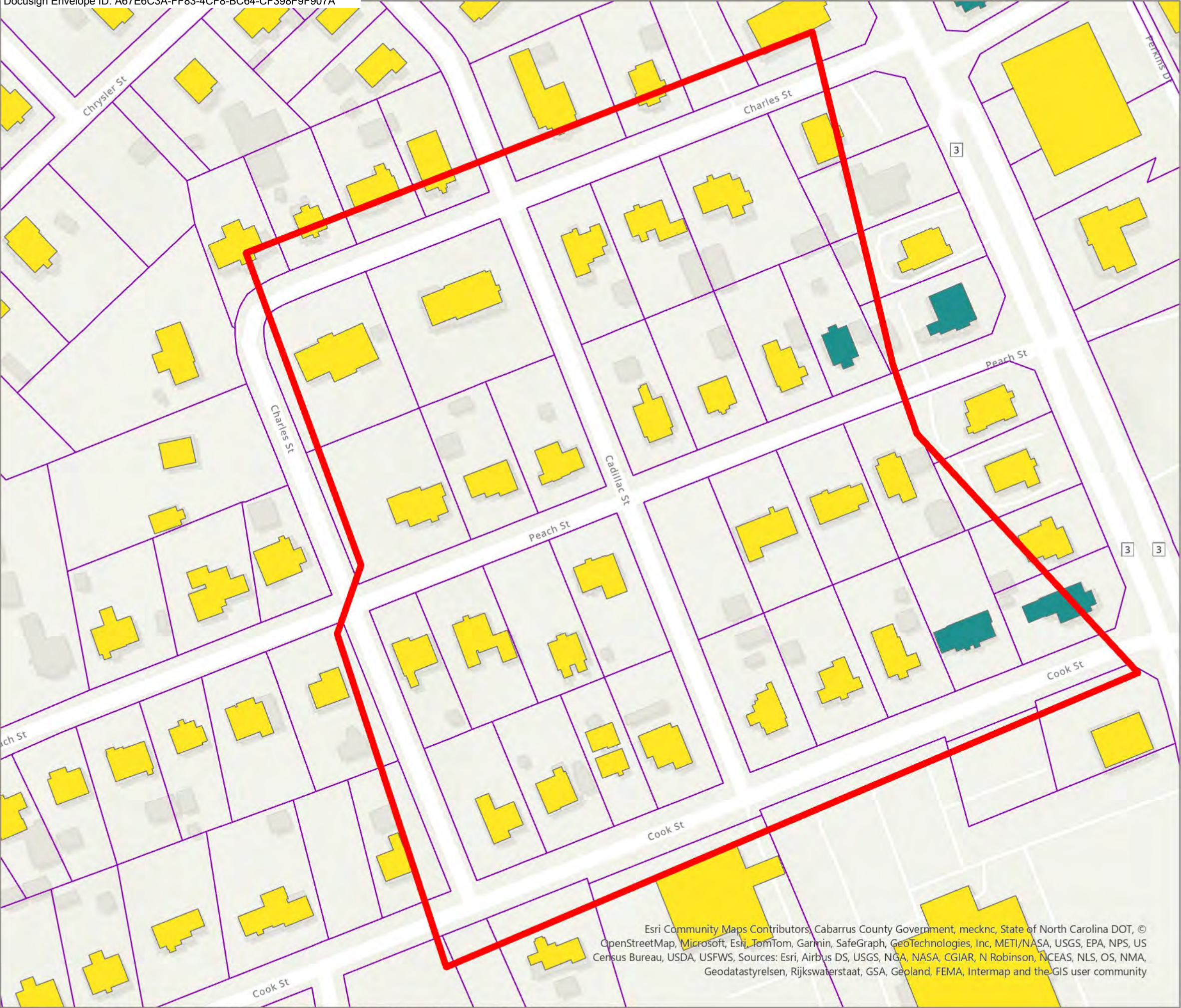


Study Area 3: Breckenridge Road Subcatchment Map


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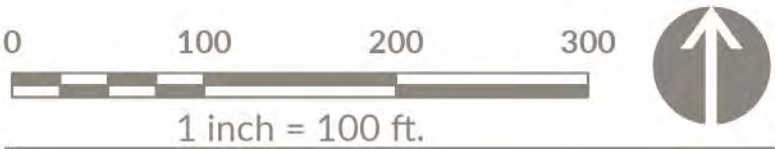
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Legend

- EffectiveYearBuilt**
- 1981 - 2023
 - 1900 - 1930
 - 1931 - 1980
- Study Area**
- Study Area
 - Parcels



Study Area 1:
Peach Street

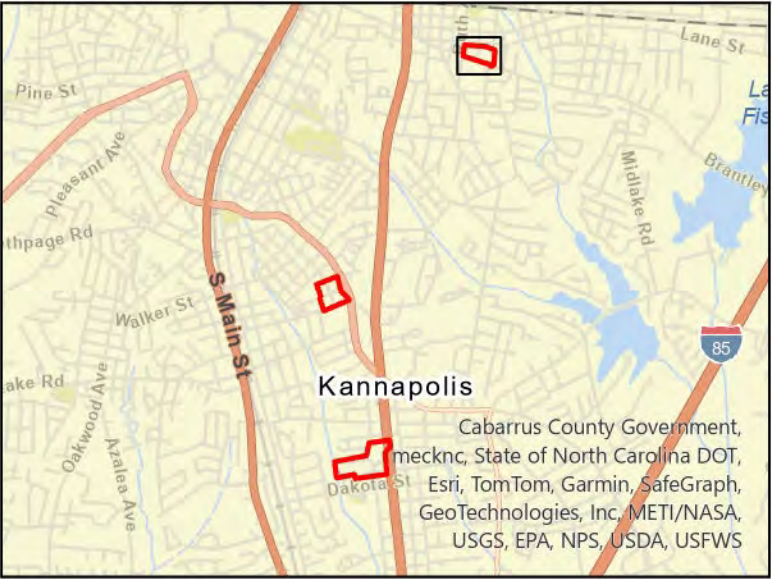
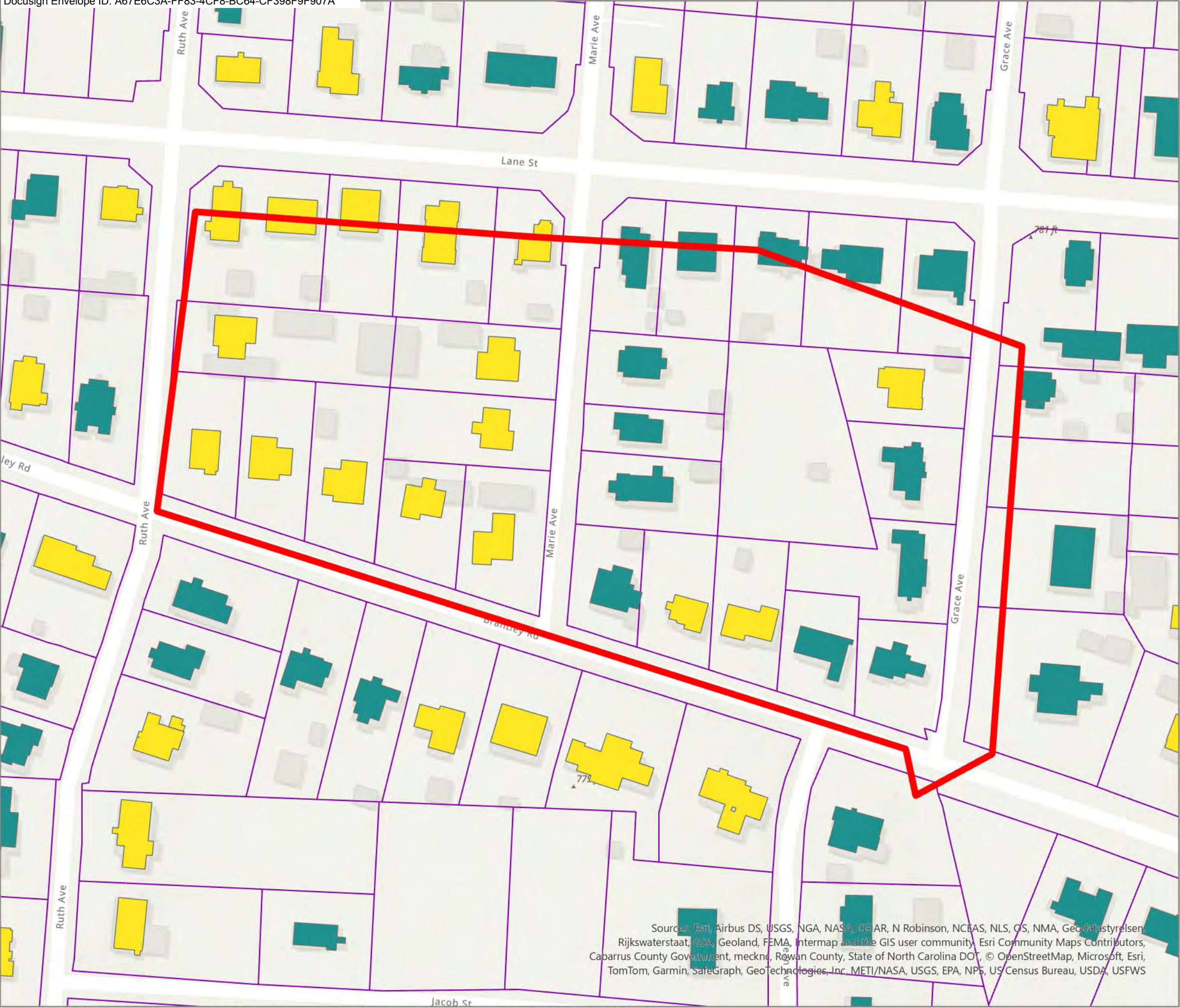


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Legend

- EffectiveYearBuilt**
- 1980 - 2023
 - 1900 - 1929
 - 1930 - 1979
- Study Area**
- Parcels



Study Area 2:
Marie Avenue & Lane Street

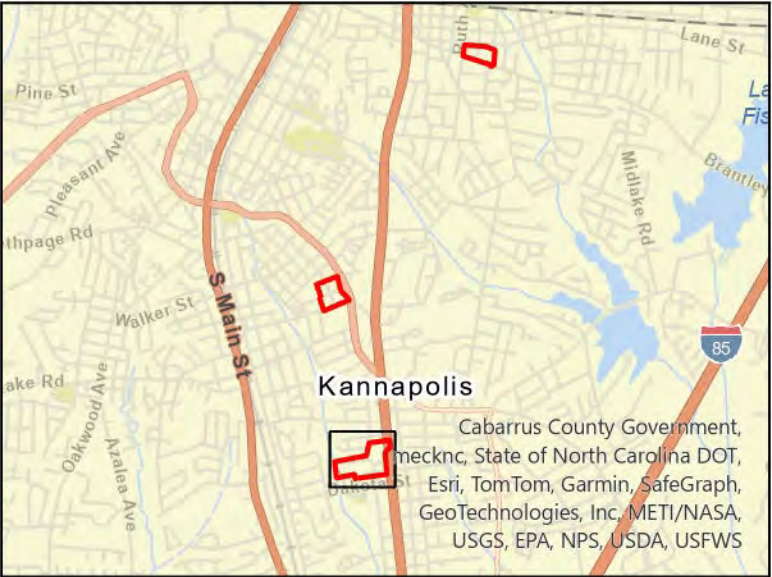
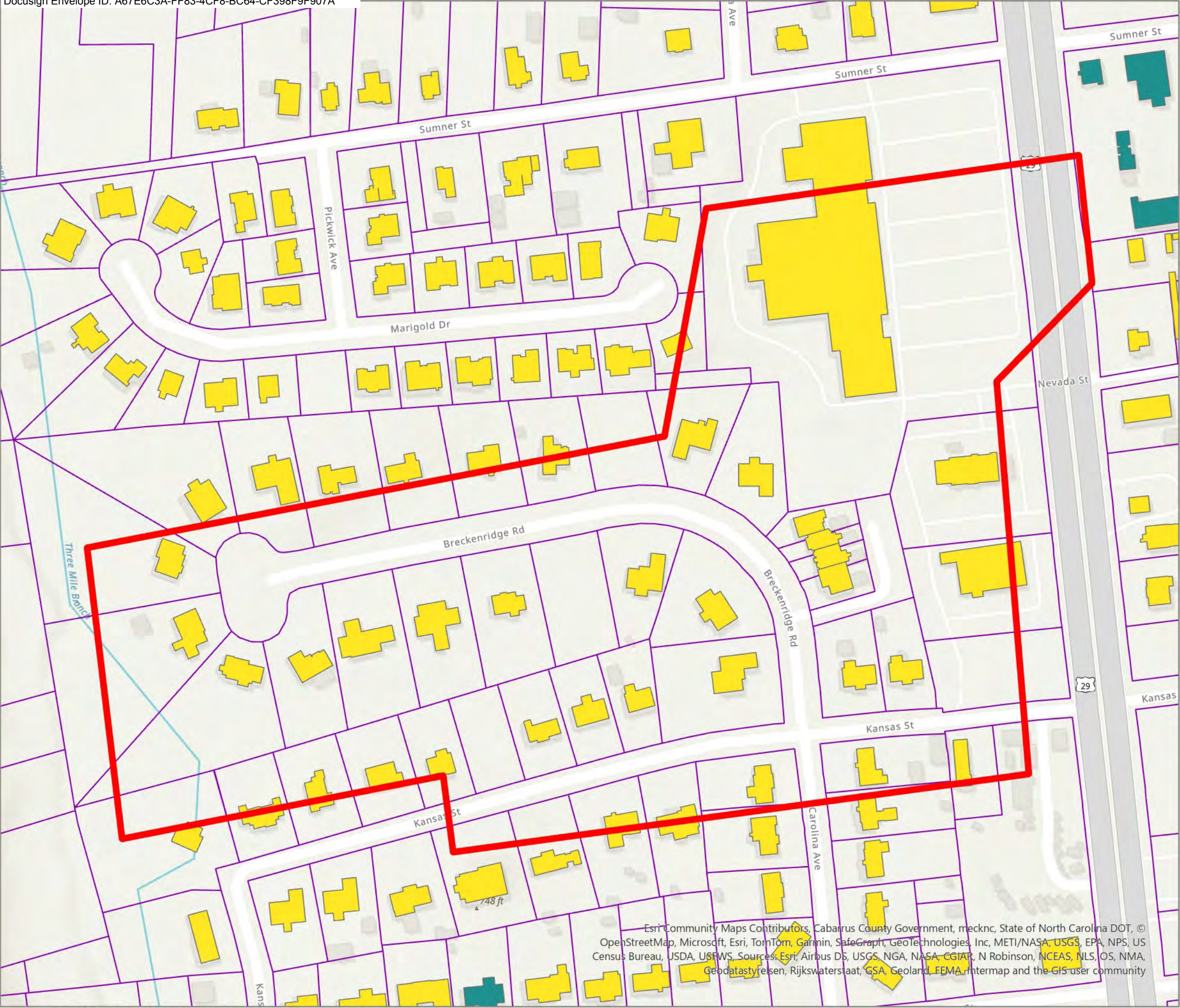


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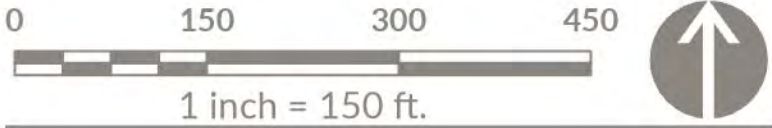
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Legend

- EffectiveYearBuilt**
- 1900 - 1929
 - 1930 - 1979
 - 1980 - 2023
- Study Area**
- Parcels



Study Area 3:
Breckenridge Road



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Marie														
Subcatchments														
Name	Outlet	Area (ac)	Width (ft)	Flow Length (ft)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Dstore Imperv (in)	Dstore Perv (in)	Zero Imperv (%)	Subarea Routing	Percent Routed (%)	Curve Number
S1	CP0076	0.3671	103.243	154.886	3.419	0	0	0.1	0	0.469	0	OUTLET	100	82
S10	SWDI0064	4.7399	1358.472	151.987	2.048	0	0	0.1	0	0.553	0	OUTLET	100	79
S100	SWDI0029	0.1273	53.266	104.104	5.176	0	0	0.1	0	0.475	0	OUTLET	100	82
S101_1	J7	0.4386	139.949	136.517	4.627	0	0	0.1	0	0.708	0	OUTLET	100	75
S101_2	J7	0.2636	84.11	136.517	4.627	0	0	0.1	0	0.708	0	OUTLET	100	75
S104	J16	0.3196	76.851	181.153	2.898	0	0	0.1	0	0.615	0	OUTLET	100	77
S11	J19	0.2336	49.699	204.745	2.954	0	0	0.1	0	0.495	0	OUTLET	100	81
S2	CP0045	0.1867	129.225	62.934	4.338	0	0	0.1	0	0.566	0	OUTLET	100	79
S3	J8	0.182	83.081	95.424	2.617	0	0	0.1	0	0.724	0	OUTLET	100	74
S4	J12	0.5103	107.126	207.5	1.015	0	0	0.1	0	0.682	0	OUTLET	100	75
S5	J13	0.3945	87.156	197.169	3.607	0	0	0.1	0	0.747	0	OUTLET	100	73
S6	J14	0.2733	66.174	179.904	3.365	0	0	0.1	0	0.768	0	OUTLET	100	73
S7	SWDI0068	4.7642	1319.032	157.334	3.899	0	0	0.1	0	0.459	0	OUTLET	100	82
S77	J15	1.8601	432.014	187.554	4.678	0	0	0.1	0	0.739	0	OUTLET	100	73
S79	CP0086	0.0493	20.268	105.956	4.69	0	0	0.1	0	0.372	0	OUTLET	100	85
S8	J22	0.1299	56.626	99.927	4.135	0	0	0.1	0	0.575	0	OUTLET	100	78
S80	CP0004	0.1621	49.52	142.59	4.771	0	0	0.1	0	0.512	0	OUTLET	100	80
S81	CP0005	0.1179	35.975	142.758	4.501	0	0	0.1	0	0.608	0	OUTLET	100	77
S82	J2	0.1854	65.434	123.422	4.812	0	0	0.1	0	0.633	0	OUTLET	100	77
S83	J3	0.1858	44.637	181.317	3.817	0	0	0.1	0	0.564	0	OUTLET	100	79
S85	J4	0.1119	77.781	62.668	1.809	0	0	0.1	0	0.482	0	OUTLET	100	81
S86	CP0075	0.0273	30.969	38.399	3.813	0	0	0.1	0	0.556	0	OUTLET	100	79
S87	J5	0.1242	68.433	79.058	0.56	0	0	0.1	0	0.558	0	OUTLET	100	79
S88	J6	0.2022	99.972	88.103	1.809	0	0	0.1	0	0.578	0	OUTLET	100	78
S9	CP0035	0.915	136.503	291.989	2.733	0	0	0.1	0	0.679	0	OUTLET	100	75
S90	CP0081	0.3723	164.372	98.663	4.92	0	0	0.1	0	0.673	0	OUTLET	100	75
S93	J11	1.1111	210.392	230.044	4.379	0	0	0.1	0	0.73	0	OUTLET	100	73
S94	CP0001	0.156	42.103	161.398	2.551	0	0	0.1	0	0.381	0	OUTLET	100	85
S96_2	J21	0.694468	147.095	205.656	3.477	0	0	0.1	0	0.653	0	OUTLET	100	76
S97	J8	0.3072	78.967	169.459	4.654	0	0	0.1	0	0.715	0	OUTLET	100	74
S98	J10	0.0756	33.937	97.037	3.71	0	0	0.1	0	0.391	0	OUTLET	100	84
S99	J9	0.1162	89.693	56.433	1.692	0	0	0.1	0	0.585	0	OUTLET	100	78
S99	J9	0.1162	89.693	56.433	1.692	0	0	0.1	0	0.585	0	OUTLET	100	78

Marie						
Junctions						
Name	Tag	Invert Elev. (ft)	Rim Elev. (ft)	Depth (ft)	Surcharge Depth (ft)	Contributing Area (ac)
CP0001	Very_Poor	772.463	773.463	1	0.4	0.156
CP0002	Very_Poor	769.308	770.408	1.1	0	0.232
CP0003	Very_Poor	768.938	770.038	1.1	0	0.232
CP0004	Fair	776.714	777.914	1.2	0	0.162
CP0005	Good	775.972	777.372	1.4	0	0.28
CP0006	Fair	775.224	776.624	1.4	0	0.28
CP0007	Poor	774.502	776.102	1.6	0	0.28
CP0008	Good	771.697	772.997	1.3	0	0.465
CP0009	Good	771.09	772.49	1.4	0	0.465
CP0010	Very_Good	769.541	770.941	1.4	0	6.993
CP0013	Very_Poor	766.045	767.745	1.7	0	1.417
CP0016	Very_Poor	771.786	772.786	1	0	0.156
CP0024	Good	769.028	770.728	1.7	0	1.417
CP0027	Poor	770.217	771.317	1.1	0	0.928
CP0028	Poor	770.688	771.688	1	0.3	0.928
CP0031	Very_Good	768.98	770.48	1.5	0	6.993
CP0034	Poor	767.683	768.883	1.2	0	8.038
CP0035	Very_Good	768.116	769.316	1.2	0	1.045
CP0036	Very_Good	768.122	769.422	1.3	0	0.13
CP0037	Good	768.269	769.669	1.4	0	0.651
CP0038	Good	767.714	769.214	1.5	0	0.651
CP0039	Very_Good	767.093	768.67	1.577	0	0.763
CP0040	Poor	767.106	768.189	1.083	0	0.79
CP0041	Good	766.775	767.775	1	0	0.79
CP0042	Poor	765.384	766.384	1	0	0.915
CP0043	Very_Good	764.899	765.899	1	0	0.915
CP0044	Poor	763.458	765.05	1.592	0	1.117
CP0045	Good	762.875	764.875	2	1.19	17.11
CP0075	Good	766.594	767.594	1.4	0	0.79
CP0076	Very_Good	767.042	768.342	1.3	0	8.405
CP0081	Good	765.44	767.266	1.826	1.775	8.778
CP0082	Good	765.036	766.786	1.75	0	8.778
CP0083	Very_Good	766.723	768.973	2.25	0	5.851
CP0084	Very_Good	766.962	769.262	2.3	1.263	5.851
CP0085	Good	776.835	778.285	1.45	0	0.049
CP0086	Good	777.261	778.761	1.5	0	0.049
J1		770.857	772.5	1.643	0	6.674
J10		770.621	772.142	1.521	0	0.232
J11		767.984	769.329	1.345	0	5.851
J12		764.419	766.7	2.281	0	15.807
J13		765.31	766.453	1.143	0	6.519
J14		766.279	769.22	2.941	0	6.124
J15		771.708	773.078	1.37	0	6.674
J16		770.208	771.4	1.192	0	6.993
J17		768.194	769.544	1.35	0	0.13
J18		763.649	764.649	1	0	15.807
J19		773.171	774.671	1.5	0	0.234
J2		773.13	774.584	1.454	0	0.465
J20		772.13	773.63	1.5	0	0.234
J21		771.441	772.702	1.261	0	0.928
J22		768.21	770.617	2.407	0	0.13
J23		764.14	765.16	1.02	0	0
J24		762.545	765.5	2.955	0	2.119
J25		766.727	768.13	1.403	0	8.405
J26		763.35	764.9	1.55	0	17.11
J3		769.72	771.12	1.4	0	0.651
J4		767.406	768.81	1.402	0	0.763
J5		766.101	767.001	0.9	0	0.915
J6		764.505	766.2	1.695	0	1.117
J7		763.534	765.578	2.044	0	2.119
J8		769.437	771.028	1.591	0	1.417
J9		768.059	769.111	1.052	0	0.348
SWD00029	Good	760.828	764.028	3.2	0	19.705
SWD00062	Poor	766.685	767.785	1.1	0	0.348
SWD00064	Fair	769.227	772.127	2.9	0	4.74
SWD00068	Fair	772.891	775.691	2.8	0	4.764
SWDP00019	Fair	761.64	763.34	1.7	0	2.119
SWDP00036	Fair	767.098	768.098	1	0	0.348
SWDP00045	Good	762.474	763.774	1.3	0	17.11
SWDP00047	Very_Good	759.452	762.052	2.6	0	19.705
SWDP00048	Good	768.977	771.227	2.25	0	4.74
SWDP00051	Fair	772.553	774.853	2.3	0	4.813

Marie																	
Conduits																	
Name	Inlet Node	Outlet Node	Tag	Length (ft)	Roughness	Inlet Elev. (ft)	Outlet Elev. (ft)	Entry Loss Coeff.	Exit Loss Coeff.	Cross-Section	Geom1 (ft)	Geom2 (ft)	Geom3 (ft)	Geom4 (ft)	Barrels	Slope (ft/ft)	Contributing Area (ac)
C1	CP0085	SWDP0051	Ditch	58.963	0.03	776.835	772.553	0	0	IRREGULAR	0	0	0	0	1	0.07281	0.049
C10	SWDP0045	SWDP0029	Overland	70.787	0.01	765	764.028	0	0	IRREGULAR	0	0	0	0	1	0.01373	17.11
C11	SWDP0029	SWDP0047	RCP	38.236	0.013	760.828	759.452	0	0	CIRCULAR	2	0	0	0	1	0.03601	19.705
C12	CP0034	CP0076	Overland	33.719	0.01	769.2	769.042	0	0	IRREGULAR	0	0	0	0	1	0.00469	8.038
C13	CP0024	CP0013	Overland	40.33	0.01	770.728	767.745	0	0	IRREGULAR	0	0	0	0	1	0.07417	1.417
C13.1	SWDP0045	J26	Overland	33.993	0.016	765	763.35	0	0	IRREGULAR	0	0	0	0	1	0.0486	17.11
C13.2	J26	SWDP0047	Overland	80.078	0.022	763.35	762.052	0	0	IRREGULAR	0	0	0	0	1	0.01621	17.11
C14	SWDP0047	OF1	OpenChannel	3.192	0.035	759.452	759.4	0	0	IRREGULAR	0	0	0	0	1	0.01629	19.705
C15	J23	SWDP0019	OpenChannel	14.718	0.01	764.14	761.64	0	0	IRREGULAR	0	0	0	0	1	0.17236	0
C16	SWDP0036	SWDP0062	Overland	19.394	0.01	768.35	767.785	0	0	IRREGULAR	0	0	0	0	1	0.02915	0.348
C17	CP0039	CP0075	Overland	12.095	0.01	768.67	768.5	0	0	IRREGULAR	0	0	0	0	1	0.01406	0.763
C2	J19	J20	RCP	24.196	0.013	773.171	772.13	0.5	1	CIRCULAR	1.25	0	0	0	1	0.04306	0.234
C3	CP0040	CP0041	Overland	21.571	0.016	768.3	767.675	0	0	IRREGULAR	0	0	0	0	1	0.02899	0.79
C3.1	J20	J21	Ditch	32.722	0.03	772.13	771.441	0	0	TRAPEZOIDAL	0.75	1.83	2.67	2.67	1	0.02106	0.234
C3.2	J21	CP0028	Ditch	35.767	0.03	771.441	770.688	0	0	IRREGULAR	0	0	0	0	1	0.02106	0.928
C37	CP0086	CP0085	RCP	15.934	0.013	777.261	776.835	0.5	1	CIRCULAR	1.25	0	0	0	1	0.02674	0.049
C38	CP0084	CP0083	RCP	13.331	0.013	766.962	766.723	0.5	1	CIRCULAR	2	0	0	0	1	0.01793	5.851
C39	CP0081	CP0082	RCP	40.734	0.013	765.44	765.036	0.5	1	CIRCULAR	1.5	0	0	0	1	0.00992	8.778
C4	CP0010	CP0031	Overland	19.667	0.01	770.941	770.6	0	0	IRREGULAR	0	0	0	0	1	0.01734	6.993
C40.1	J1	J16	Ditch	89.054	0.0277	770.857	770.208	0	0	IRREGULAR	0	0	0	0	1	0.00729	6.674
C40.3	SWDP0051	J15	Ditch	115.984	0.0277	772.553	771.788	0	0	IRREGULAR	0	0	0	0	1	0.00729	4.813
C40.4	J16	J1	Ditch	116.858	0.0277	771.708	770.857	0	0	IRREGULAR	0	0	0	0	1	0.00728	6.674
C40.5	J15	CP0010	Ditch	91.561	0.0277	770.208	769.541	0	0	IRREGULAR	0	0	0	0	1	0.00728	6.993
C41.1	SWDP0048	J11	Ditch	91.551	0.022	768.977	767.984	0	0	IRREGULAR	0	0	0	0	1	0.01085	4.74
C41.2	J11	CP0084	Ditch	94.306	0.022	767.984	766.962	0	0	IRREGULAR	0	0	0	0	1	0.01084	5.851
C42.2	J13	J12	Ditch	62.203	0.022	765.31	764.419	0	1	IRREGULAR	0	0	0	0	1	0.01433	6.519
C42.3	CP0083	J14	Ditch	31.013	0.022	766.723	766.279	0	0	IRREGULAR	0	0	0	0	1	0.01432	5.851
C42.4	J14	J13	Ditch	67.631	0.022	766.279	765.31	0	0	IRREGULAR	0	0	0	0	1	0.01433	6.124
C43.1	CP0076	J25	Ditch	44.426	0.022	767.042	766.727	0	0	IRREGULAR	0	0	0	0	1	0.00709	8.405
C43.2	J25	CP0081	Ditch	181.192	0.022	766.727	765.44	0	0	IRREGULAR	0	0	0	0	1	0.0071	8.405
C44	CP0082	J12	Ditch	59.169	0.022	765.036	764.419	0	0	IRREGULAR	0	0	0	0	1	0.01043	8.778
C45.1	J12	J18	Ditch	73.844	0.022	764.419	763.649	0	0	IRREGULAR	0	0	0	0	1	0.01043	15.807
C45.2	J18	CP0045	Ditch	74.234	0.022	763.649	762.875	0	0	IRREGULAR	0	0	0	0	1	0.01043	15.807
C47	SWDP0068	SWDP0051	RCP	37.892	0.013	772.891	772.553	0	0.7	CIRCULAR	2	0	0	0	1	0.00892	4.764
C5	CP0001	CP0016	Overland	19.326	0.01	773.75	772.786	0	0	IRREGULAR	0	0	0	0	1	0.04964	0.156
C54	SWDP0064	SWDP0048	RCP	48.937	0.013	769.227	768.977	0	0.7	CIRCULAR	2	0	0	0	1	0.00511	4.74
C6	CP0028	CP0027	Overland	26.08	0.016	771.688	771.317	0	0	IRREGULAR	0	0	0	0	1	0.01423	0.928
C7	CP0042	CP0043	Overland	31.847	0.01	765.384	764.899	0	0	IRREGULAR	0	0	0	0	1	0.01523	0.915
C8	CP0044	J26	Overland	60.565	0.01	765.34	763.35	0	0	IRREGULAR	0	0	0	0	1	0.03288	1.117
C9	CP0081	CP0082	Overland	41.627	0.01	767.75	766	0	0	IRREGULAR	0	0	0	0	1	0.04208	8.778
CULV0008	CP0028	CP0027	RCP	20.082	0.013	770.688	770.217	0.5	1	CIRCULAR	1	0	0	0	1	0.02346	0.928
CULV0009	CP0024	CP0013	RCP	40.33	0.013	770.728	766.045	0.5	1	CIRCULAR	1.25	0	0	0	1	0.11691	1.417
CULV0010	CP0039	CP0075	RCP	12.095	0.013	767.093	766.594	0.5	1	CIRCULAR	1.25	0	0	0	1	0.04129	0.763
CULV0011	CP0040	CP0041	RCP	15.704	0.013	767.106	766.775	0.5	1	CIRCULAR	1	0	0	0	1	0.02108	0.79
CULV0012	CP0042	CP0043	RCP	27.712	0.013	765.384	764.899	0.5	1	CIRCULAR	1	0	0	0	1	0.0375	0.915
CULV0014	CP0010	CP0031	RCP	16.169	0.013	769.541	768.98	0.5	1	CIRCULAR	1.25	0	0	0	1	0.03472	6.993
CULV0015	CP0034	CP0076	RCP	29.271	0.013	767.683	767.042	0.5	1	CIRCULAR	1.25	0	0	0	2	0.0219	8.038
CULV0017	CP0036	CP0035	RCP	15.115	0.013	768.122	768.116	0.5	1	CIRCULAR	1.25	0	0	0	1	0.0004	0.13
CULV0018	CP0037	CP0038	RCP	34.998	0.013	768.269	767.714	0.5	1	CIRCULAR	1.25	0	0	0	1	0.01586	0.651
CULV0019	CP0008	CP0009	RCP	15.778	0.013	771.697	771.09	0.5	1	CIRCULAR	1.25	0	0	0	1	0.0385	0.465
CULV0020	CP0006	CP0007	RCP	15.762	0.013	775.224	774.502	0.5	1	CIRCULAR	1.25	0	0	0	1	0.04585	0.28
CULV0021	CP0004	CP0005	RCP	24.925	0.013	776.714	775.972	0.5	1	CIRCULAR	1	0	0	0	1	0.02978	0.162
CULV0035	CP0002	CP0003	RCP	12.047	0.013	769.308	768.938	0.5	1	CIRCULAR	1	0	0	0	1	0.03073	0.232
CULV0036	CP0001	CP0016	RCP	16.283	0.013	772.463	771.786	0.5	1	FILLED CIRCULAR	1	0.75	0	0	1	0.04161	0.156
CULV0037	CP0044	CP0045	RCP	37.062	0.013	763.458	762.875	0.5	1	CIRCULAR	1	0	0	0	1	0.01573	1.117
SWGM0055	SWDP0062	SWDP0029	CPP	127	0.02	766.685	760.828	0	0.42	CIRCULAR	0.667	0	0	0	1	0.04617	0.348
SWGM0075	SWDP0019	SWDP0029	RCP	47.951	0.013	761.64	760.928	0	1	CIRCULAR	1.25	0	0	0	1	0.01485	2.119
SWGM0077	SWDP0045	SWDP0029	CPP	66.284	0.02	762.474	760.928	0	1	CIRCULAR	1.25	0	0	0	1	0.02333	17.11
SWGM0108	SWDP0036	SWDP0062	CPP	19.394	0.02	767.098	766.785	0.5	0	CIRCULAR	0.667	0	0	0	1	0.01614	0.348
SWOD0037	CP0045	SWDP0045	Ditch	13.74	0.04	762.875	762.474	0	0	IRREGULAR	0	0	0	0	1	0.0292	17.11
SWOD0038.1	CP0043	J6	Ditch	24.738	0.022	764.899	764.505	0	0	IRREGULAR	0	0	0	0	1	0.01593	0.915
SWOD0038.2	J6	CP0044	Ditch	65.729	0.022	764.505	763.458	0	0	IRREGULAR	0	0	0	0	1	0.01593	1.117
SWOD0039.1	CP0041	J5	Ditch	28.713	0.03	766.775	766.101	0	0	TRAPEZOIDAL	0.833	1.1	5	5	1	0.02348	0.79
SWOD0039.2	J5	CP0042	Ditch	30.51	0.03	766.101	765.384	0	0	IRREGULAR	0	0	0	0	1	0.02351	0.915
SWOD0041.1	CP0013	J7	Ditch	78.818	0.022	766.045	763.534	0	0	IRREGULAR	0	0	0	0	1	0.03187	1.417
SWOD0041.3	J7	J24	Ditch	31.016	0.019	763.534	762.545	0	0	IRREGULAR	0	0	0	0	1	0.0319	2.119
SWOD0041.4	J24	SWDP0019	Ditch	28.398	0.019	762.545	761.64	0	0	IRREGULAR	0	0	0	0	1	0.03188	2.119
SWOD0042.1	CP0003	J9	Ditch	32.827	0.022	768.938	768.059	0	0	IRREGULAR	0	0	0	0	1	0.02679	0.232
SWOD0042.2	J9	SWDP0036	Ditch	35.876	0.022	768.059	767.098	0	0	IRREGULAR	0	0	0	0	1	0.0268	0.348
SWOD0043.1	CP0027	J8	Ditch	41.059	0.022	770.217	769.437	0									

Breckenridge														
Subcatchments														
Name	Outlet	Area (ac)	Width (ft)	Flow Length (ft)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Dstore Imperv (in)	Dstore Perv (in)	Zero Imperv (%)	Subarea Routing	Percent Routed (%)	Curve Number
S1	J13	4.3274	537.504	350.698	1.472	0	0	0	0	0.143	0	OUTLET	100	93
S10	CP0029	0.5894	111.636	229.982	0.87	0	0	0	0	0.342	0	OUTLET	100	86
S11	SWDI0063	0.6442	108.593	258.408	3.295	0	0	0	0	0.444	0	OUTLET	100	82
S12	SWDI0019	0.1075	38.13	122.809	6.769	0	0	0	0	0.319	0	OUTLET	100	87
S13	SWDI0018	0.2479	73.845	146.232	7.928	0	0	0	0	0.325	0	OUTLET	100	87
S14	SWDI0047	0.0863	33.773	111.309	3.537	0	0	0	0	0.477	0	OUTLET	100	81
S15	SWDP0003	0.1214	75.41	70.126	3.922	0	0	0	0	0.404	0	OUTLET	100	84
S16	SWDI0015	0.6099	78.17	339.865	4.128	0	0	0	0	0.449	0	OUTLET	100	82
S17	SWDI0013	1.876	193.221	422.928	6.744	0	0	0	0	0.434	0	OUTLET	100	83
S18	SWDI0012	1.8264	186.411	426.788	5.99	0	0	0	0	0.393	0	OUTLET	100	84
S19	SWDI0011	2.2849	203.468	489.169	5.043	0	0	0	0	0.386	0	OUTLET	100	85
S2	SWDI0067	0.535	134.359	173.45	1.784	0	0	0	0	0.13	0	OUTLET	100	94
S20	J4	2.0004	249.443	349.328	2.676	0	0	0	0	0.351	0	OUTLET	100	85
S21	SWDI0002	0.1023	37.216	119.738	4.489	0	0	0	0	0.394	0	OUTLET	100	84
S22	SWDI0003	0.3396	80.173	184.513	3.049	0	0	0	0	0.44	0	OUTLET	100	82
S23	SU2	0.2665	53.004	219.016	1.413	0	0	0	0	0.13	0	OUTLET	100	94
S24	SWDI0004	0.1668	61.746	117.673	3.718	0	0	0	0	0.41	0	OUTLET	100	83
S25	CP0018	0.3163	89.399	154.118	2.393	0	0	0	0	0.13	0	OUTLET	100	94
S26	SWDI0005	0.6498	216.353	130.829	1.918	0	0	0	0	0.13	0	OUTLET	100	94
S27	SWDI0022	1.652	286.49	251.182	4.689	0	0	0	0	0.149	0	OUTLET	100	93
S28	J3	0.28	93.526	130.411	5.296	0	0	0	0	0.369	0	OUTLET	100	85
S29	CP0021	1.7764	172.37	448.918	3.294	0	0	0	0	0.13	0	OUTLET	100	94
S3	SWDI0006	0.6686	279.893	104.055	2.339	0	0	0	0	0.13	0	OUTLET	100	94
S30	SWDP0010	1.6025	219.018	318.718	6.323	0	0	0	0	0.51	0	OUTLET	100	80
S31	J8	1.7997	224.955	348.492	6.385	0	0	0	0	0.468	0	OUTLET	100	81
S32	J9	0.825	116.168	309.354	4.395	0	0	0	0	0.476	0	OUTLET	100	81
S33	CP0019	0.1749	59.212	128.667	2.462	0	0	0	0	0.13	0	OUTLET	100	94
S34	J10	0.4371	124.351	153.116	7.328	0	0	0	0	0.202	0	OUTLET	100	91
S35	J7	0.7299	159.81	198.952	9.302	0	0	0	0	0.341	0	OUTLET	100	86
S36	SWDI0010	0.0927	50.461	80.022	4.295	0	0	0	0	0.438	0	OUTLET	100	82
S37	J5	0.5328	116.044	200	2.5	0	0	0	0	0.346	0	OUTLET	100	86
S38	SWDI0014	0.4346	92.358	204.976	6.112	0	0	0	0	0.27	0	OUTLET	100	89
S39	SWDI0020	0.0359	18.425	84.874	3.277	0	0	0	0	0.334	0	OUTLET	100	86
S4	SWDI0007	1.6598	344.287	210.002	2.239	0	0	0	0	0.13	0	OUTLET	100	94
S40	J11	0.0538	44.846	52.257	6.458	0	0	0	0	0.13	0	OUTLET	100	94
S5	SWDI0008	0.9278	80.246	503.638	1.241	0	0	0	0	0.13	0	OUTLET	100	94
S6	SWDI0009	0.1978	31.123	276.842	1.4	0	0	0	0	0.13	0	OUTLET	100	94
S7	SWDI0017	0.157	60.255	113.5	4.505	0	0	0	0	0.434	0	OUTLET	100	82
S8	SWDI0016	2.5186	224.246	489.24	2.466	0	0	0	0	0.46	0	OUTLET	100	81
S9	SWDP0007	0.1987	80.309	107.776	5.433	0	0	0	0	0.437	0	OUTLET	100	82

Breckenridge						
Junctions						
Name	Tag	Invert Elev. (ft)	Rim Elev. (ft)	Depth (ft)	Surcharge Depth (ft)	Contributing Area (ac)
CP0018	Other	740.689	741.889	1.2	0	0.491
CP0019	Bell	741.666	742.966	1.3	0	0.175
CP0020	Bell	740.188	741.938	1.75	0	4.327
CP0021	Other	738.956	740.656	1.7	0	6.104
CP0022	Other	737.556	739.206	1.65	0	6.104
CP0023	Cut	738.604	741	2.396	0	6.104
CP0029	Other	732.786	734.116	1.35	0	1.811
CP0030	Other	732.051	733.451	1.4	0	1.811
J1	blind junction, engineer assumed elevations	747.55	752.25	4.7	0	1.652
J10		742.882	745.882	3	0	1.026
J11	engineer assumed elevations	748	750.844	2.844	0	0.054
J12		698.381	700.681	2.3	0	33.854
J13		742.938	742.938	0	0	4.327
J14		725.064	726	0.936	0	4.853
J15		704.671	707.489	2.818	0	17.927
J16		733.466	735.987	2.521	0	7.778
J2	blind junction, engineer assumed elevations	747.485	752.781	5.296	0	2.302
J3		730.267	731.782	1.515	0	2.091
J4		731.282	732.955	1.673	0	9.858
J5		736.459	738.128	1.669	0	6.637
J6		743.774	747	3.226	0	0.589
J7		737.25	739.956	2.706	0	7.778
J8		707.9	712.528	4.628	0	17.927
J9		701.188	703.488	2.3	0	15.926
SWDI0001	Grate Inlet	734.511	736.661	2.15	0	7.858
SWDI0002	Grate Inlet	736.147	738.297	2.15	0	1.221
SWDI0003	Grate Inlet	737.275	738.375	1.1	0	0.998
SWDI0004	Grate Inlet	738.956	740.406	1.45	0	0.658
SWDI0005	Grate Inlet	748.524	751.824	3.3	0	0.65
SWDI0006	Grate Inlet	748.128	753.878	5.75	0	3.454
SWDI0007	Grate Inlet	750.48	753.78	3.3	0	1.66
SWDI0008	Grate Inlet	750.691	754.091	3.4	0	1.126
SWDI0009	Grate Inlet	756.998	758.848	1.85	0	0.198
SWDI0010	Grate Inlet	729.921	732.121	2.2	0	8.069
SWDI0011	Combo Inlet	720.661	724.061	3.4	0	10.354
SWDI0012	Combo Inlet	712.616	716.816	4.2	0	12.181
SWDI0013	Combo Inlet	712.288	715.488	3.2	0	14.057
SWDI0014	Combo Inlet	709.738	712.638	2.9	0	14.491
SWDI0015	Grate Inlet	703.835	707.035	3.2	0	15.101
SWDI0016	Grate Inlet	721.939	724.239	2.3	0	4.609
SWDI0017	Grate Inlet	720.522	724.422	3.9	0	4.853
SWDI0018	Grate Inlet	719.208	723.308	4.1	0	14.525
SWDI0019	Grate Inlet	721.247	724.947	3.7	0	10.646
SWDI0020	Yard Inlet	722.732	727.732	5	0	10.538
SWDI0022	Grate Inlet	747.641	750.991	3.35	0	1.652
SWDI0047	Grate Inlet	726.153	727.653	1.5	0	0.086
SWDI0063	Yard Inlet	726.177	728.927	2.75	0.25	10.502
SWDI0067	Grate Inlet	748.132	752.732	4.6	0	0.535
SWDP0001	Cut	734.746	736.446	1.7	0	6.637
SWDP0002	Other	733.962	735.712	1.75	0	7.858
SWDP0003	Cut	740.014	740.861	0.86	0	0.121
SWDP0004	Cut	740.503	741.703	1.2	0	0.491
SWDP0007	FES	730.858	733.25	2.392	0	7.977
SWDP0008	Other	703.089	705.389	2.3	0	15.101
SWDP0009	Bell	727.382	729.092	1.7	0	2.091
SWDP0010	FES	715.134	718.334	3.2	0	16.128
SWDP0011	Bell	726.94	729.1	2.16	0.5	9.858
SWDP0049	Cut	746.612	748.112	1.5	0	0.535
SWDP0050	Cut	744.186	745.686	1.5	0	0.054
SWMH0001	OTH, engineer assumed elevations	736.59	738.969	2.379	0.5	0.121
SWMH0002	STD	746.691	753.741	7.05	0.5	3.454
SWMH0003	STD	750.014	754.014	4	0	2.785
SWMH0004	OTH, engineer assumed elevations	751.777	754.83	3.053	0.5	0.198
SWMH0005	OTH, engineer assumed elevations	717.454	723.5	6.046	0	14.525
Weir0001	Earthen	742.3	743.3	1	0	6.022

Breckenridge															
Conduits															
Name	Inlet Node	Outlet Node	Tag	Length (ft)	Roughness	Inlet Elev. (ft)	Outlet Elev. (ft)	Entry Loss Coeff.	Exit Loss Coeff.	Cross-Section	Geom1 (ft)	Geom2 (ft)	Barrels	Slope (ft/ft)	Contributing Area (ac)
C1	J13	CP0020	OpenChannel	81.905	0.03	742.938	740.188	0	0	IRREGULAR	0	0	1	0.03359	4.327
C1_1	J6	J10	OpenChannel	31.522	0.035	743.774	742.882	0	0	IRREGULAR	0	0	1	0.02631	0.569
C1_2	J10	J7	OpenChannel	199.134	0.035	742.882	737.25	0	0	IRREGULAR	0	0	1	0.02829	1.026
C10	SWD0020	SWD0019	overland	78.561	0.018	727.732	724.947	0	0	IRREGULAR	0	0	1	0.03547	10.538
C11	SWD0011	SWD0012	overland	260.213	0.016	724.061	716.816	0	0	STREET	0	0	1	0.02785	10.354
C12	SWDP0007	SWD0011	overland	320	0.016	733.25	724.061	0	0	STREET	0	0	1	0.02873	7.977
C13	SWD0001	SWDP0002	overland	40.881	0.016	737.4	735.712	0	0	IRREGULAR	0	0	1	0.04133	7.858
C14	SWD0002	CP0029	overland	117.996	0.02	738.7	732.786	0	0	IRREGULAR	0	0	1	0.05035	1.221
C15	SWD0003	SWD0002	overland	15.098	0.018	738.375	738.297	0	0	IRREGULAR	0	0	1	0.00517	0.988
C16	SWD0004	SWD0003	overland	112.101	0.018	740.406	738.375	0	0	IRREGULAR	0	0	1	0.01812	0.658
C17	SWDP0001	SWD0001	overland	6.799	0.018	736.445	736.661	0	0	IRREGULAR	0	0	1	-0.03179	6.637
C18	SWD0015	SWDP0008	overland	35.395	0.022	707.035	705.389	0	0	IRREGULAR	0	0	1	0.04655	15.101
C19	SWD0012	SWD0013	overland	61.09	0.016	716.816	715.488	0	0	STREET	0	0	1	0.02174	12.181
C2	CP0020	CP0021	overland	32.173	0.02	742.4	741.3	0	0	IRREGULAR	0	0	1	0.03421	4.327
C20	SWD0013	SWD0014	overland	98.867	0.016	715.488	712.638	0	0	STREET	0	0	1	0.02884	14.057
C21	SWD0019	SWD0018	overland	61.72	0.01	724.947	723.308	0	0	IRREGULAR	0	0	1	0.02656	10.646
C22	SWD0016	J14	overland	1	0.01	725.064	725.064	0	0	IRREGULAR	0	0	1	0	4.609
C22.1	SWD0017	J14	overland	1	0.01	725.5	725.064	0	0	IRREGULAR	0	0	1	0.48447	4.853
C22.2	J14	SWD0018	overland	20	0.01	725.064	723.308	0	0	IRREGULAR	0	0	1	0.08814	4.853
C23	SWD0018	SWDP0010	overland	163.803	0.01	723.308	718.334	0	0	IRREGULAR	0	0	1	0.03038	14.525
C24	SWD0014	SWD0015	overland	148.358	0.027	713	707.035	0	0	IRREGULAR	0	0	1	0.04024	14.491
C25	SU1	SU2	weir	5	0.045	743.7	743.7	0	0	IRREGULAR	0	0	1	0	3.454
C26	SU2	Weir0001	weir	5	0.01	743	743	0	0	IRREGULAR	0	0	1	0	6.022
C27	CP0029	CP0030	overland	16.369	0.016	734.3	733.451	0	0	IRREGULAR	0	0	1	0.05194	1.811
C3	SWDP0049	J6	OpenChannel	56.558	0.035	746.612	743.774	0	0	IRREGULAR	0	0	1	0.05024	0.535
C4	CP0023	CP0022	overland	88.459	0.025	741.6	739.206	0	0	IRREGULAR	0	0	1	0.02707	6.104
C5	SWDP0050	J6	OpenChannel	14.317	0.025	744.186	743.774	0	0	IRREGULAR	0	0	1	0.02879	0.054
C6	SWD0067	SWDP0049	CMP	32.576	0.024	748.132	746.612	0.5	1	CIRCULAR	1.5	0	1	0.04671	0.535
C7	J11	SWDP0050	CMP	20.758	0.024	748	744.186	0.5	1	CIRCULAR	1.5	0	1	0.18692	0.054
C8	J1	J2		74.555	0.013	747.55	747.485	0.5	0.83	CIRCULAR	1.25	0	1	0.00067	1.652
C9	SWDP0011	SWD0020	overland	60.691	0.018	729.1	727.732	0	0	IRREGULAR	0	0	1	0.02255	9.858
CULV0001	CP0019	CP0018	RCP	31.858	0.013	741.666	740.689	0.5	1	CIRCULAR	1	0	1	0.03068	0.175
CULV0003	CP0029	CP0030	RCP	16.369	0.013	732.786	732.051	0.7	1	FILLED CIRCULAR	1	0.25	1	0.04372	1.811
CULV0004	CP0023	CP0022	CPP	88.459	0.02	736.604	737.556	0.7	1	CIRCULAR	1.5	0	1	0.01185	6.104
CULV0005	CP0020	CP0021	RCP	32.173	0.013	740.188	738.956	0.5	1	CIRCULAR	1.5	0	1	0.03832	4.327
SWGMD003	SWD0004	SWD0003	CPP	112.101	0.02	738.956	737.275	0.5	0.42	CIRCULAR	1	0	1	0.015	0.658
SWGMD004	SWDP0004	SWD0004	RCP	67.609	0.013	740.503	739.056	0.5	0.42	CIRCULAR	1	0	1	0.02141	0.491
SWGMD005_1	SWD0005	J2	RCP	37.384	0.013	748.524	747.485	0.5	0.42	CIRCULAR	1.25	0	1	0.0278	0.65
SWGMD005_2	J2	SU2	engineer assume	26.158	0.013	747.485	746.469	0.5	1	CIRCULAR	1.25	0	1	0.03887	2.302
SWGMD006	SWMH0002	SU1	RCP	122.617	0.013	746.691	745.908	0.5	1	CIRCULAR	2	0	1	0.00639	3.454
SWGMD007	SWD0006	SWMH0002	RCP	162.852	0.013	748.128	747.091	0.5	0.7	CIRCULAR	2	0	1	0.00637	3.454
SWGMD008	SWMH0003	SWD0006	RCP	148.749	0.013	750.014	749.328	0.5	1	CIRCULAR	2	0	1	0.00461	2.785
SWGMD009	SWD0007	SWMH0003	RCP	58.602	0.013	750.48	750.114	0.5	0.42	CIRCULAR	1.25	0	1	0.00625	1.66
SWGMD010	SWD0008	SWMH0003	RCP	72.706	0.013	750.691	750.414	0.5	1	CIRCULAR	1.25	0	1	0.00381	1.126
SWGMD011	SWMH0004	RCP	13.142	0.013	751.777	750.991	0.5	0.42	CIRCULAR	1.25	0	1	0.05992	0.198	
SWGMD012	SWD0009	SWMH0004	RCP	63.168	0.013	756.998	751.777	0.5	0.42	CIRCULAR	1.5	0	1	0.08234	0.198
SWGMD013	SWDP0007	SWD0010	CPP	36.658	0.02	730.858	730.071	0.5	0.42	CIRCULAR	1.25	0	1	0.02036	7.977
SWGMD014	SWD0010	SWD0011	RCP	283.515	0.013	729.921	721.061	0.5	0.42	CIRCULAR	1.25	0	1	0.03127	8.069
SWGMD015	SWD0011	SWD0012	RCP	260.213	0.013	720.661	712.616	0.5	0.7	CIRCULAR	1.25	0	1	0.03093	10.354
SWGMD016	SWD0012	SWD0013	RCP	57.206	0.013	712.716	712.488	0.5	0.42	CIRCULAR	2	0	1	0.00399	12.181
SWGMD017	SWD0013	SWD0014	RCP	95.805	0.013	712.288	709.738	0.5	0.42	CIRCULAR	2	0	1	0.02683	14.057
SWGMD018	SWD0014	SWD0015	RCP	148.358	0.013	709.938	703.835	0.5	0.42	CIRCULAR	2	0	1	0.04117	14.491
SWGMD019	SWDP0009	SWD0016	RCP	144.894	0.013	727.392	722.189	0.7	0.42	CIRCULAR	1.25	0	1	0.03593	2.091
SWGMD020a	SWMH0005	SWDP0010	CPP	111.676	0.02	717.454	715.134	0.5	1	CIRCULAR	3	0	1	0.02078	14.525
SWGMD020b	SWD0018	SWMH0005	CPP	103.666	0.02	719.608	717.454	0.5	1	CIRCULAR	3	0	1	0.02078	14.525
SWGMD021	SWD0022	J1	RCP	103.135	0.013	747.641	747.55	0.5	0.7	CIRCULAR	1.25	0	1	0.00088	1.652
SWGMD031	SWD0015	SWDP0008	RCP	22.984	0.013	703.835	703.089	0.5	1	CIRCULAR	2	0	1	0.03246	15.101
SWGMD058	SWD0002	SWD0001	CMP	40.784	0.024	736.147	734.561	0.5	1	CIRCULAR	1.25	0	1	0.03892	1.221
SWGMD059	SWD0001	SWDP0002	RCP	40.881	0.013	734.511	733.962	0.5	1	CIRCULAR	1.5	0	1	0.01343	7.858
SWGMD060	SWDP0003	SWMH0001	RCP	72.293	0.013	740.011	736.59	0.5	0.83	CIRCULAR	0.833	0	1	0.04737	0.121
SWGMD061	SWD0003	SWD0002	RCP	14.259	0.013	737.275	736.497	0.5	1	CIRCULAR	1	0	1	0.05464	0.998
SWGMD062	SWD0016	SWD0017	RCP	42.894	0.013	721.939	720.722	0.5	1	CIRCULAR	1.25	0	1	0.02838	4.609
SWGMD063	SWD0047	SWD0017	RCP	173.699	0.013	726.153	721.472	0.5	1	CIRCULAR	1	0	1	0.02696	0.086
SWGMD064	SWD0017	SWD0018	RCP	45.702	0.013	720.522	719.208	0.5	0.42	CIRCULAR	2	0	1	0.02876	4.853
SWGMD065	SWD0019	SWD0018	CPP	61.72	0.02	721.247	719.208	0.5	1	CIRCULAR	2	0	1	0.03305	10.646
SWGMD066	SWD0020	SWD0019	CPP	70.324	0.02	722.732	721.697	0.5	0.42	CIRCULAR	1.5	0	1	0.01472	10.538
SWGMD067	SWDP0011	SWD0063	RCP	21.973	0.013	726.84	726.177	0.5	1	CIRCULAR	1.25	0	1	0.03475	9.858
SWGMD068	SWDP0011	SWD0063	RCP	22.532	0.013	726.977	726.527	0.5	1	CIRCULAR	1.25	0	1	0.01998	9.858
SWGMD069	SWD0063	SWD0020	CPP	28.552	0.02	726.177	724.482	0.5	1	CIRCULAR	1.25	0	1	0.05947	10.502
SWGMD070	SWD0063	SWD0020	RCP	30.393	0.013	726.177	724.482	0.5	1	CIRCULAR	1.25	0	1	0.05586	10.502
SWGMD110	SWDP0001	SWD0001	RCP	6.799	0.013	734.745	734.561	0.9	0.42	CIRCULAR	1.5	0	1	0.02767	6.837
SWGMD111	SWMH0001	SWD0002	RCP	9.362	0.013	736.59	736.447	0.5	1	CIRCULAR	0.833	0	1	0.01528	0.121
SWD0003.1	SWDP0008	J9	OpenChannel	82.31	0.01	703.089	701.188	0	0	IRREGULAR	0	0	1	0.0231	15.101
SWD0003.3	J9	J12	OpenChannel	121.555	0.01	701.188	698.381	0	0	IRREGULAR	0	0	1	0.0231	15.926
SWD0003.4	J12	Out	OpenChannel	3.077	0.01	698.38									

Peach														
Subcatchments														
Name	Outlet	Area (ac)	Width (ft)	Flow Length (ft)	Slope (%)	Imperv. (%)	N Imperv	N Perv	Dstore Imperv (in)	Dstore Perv (in)	Zero Imperv (%)	Subarea Routing	Percent Routed (%)	Curve Number
S1	CP0080	1.3682	148.424	401.544	2.327	0	0	0	0	0.535	0	OUTLET	100	79.58
S10	SWDP0016	0.517	103.887	216.779	2.842	0	0	0	0	0.605	0	OUTLET	100	77.21
S10_2	J10	0.7628	158.952	209.042	2.975	0	0	0	0	0.595	0	OUTLET	100	77.55
S11	CP0011	0.117	59.139	86.179	2.428	0	0	0	0	0.496	0	OUTLET	100	81.29
S12	J12	0.1488	71.543	90.599	3.553	0	0	0	0	0.675	0	OUTLET	100	75.48
S13	J11	0.3793	135.251	122.16	2.332	0	0	0	0	0.651	0	OUTLET	100	76.99
S15	J6	0.429	110.917	168.479	4.224	0	0	0	0	0.592	0	OUTLET	100	77.65
S16	SWDP0026	0.626	73.856	369.213	2.675	0	0	0	0	0.503	0	OUTLET	100	80.73
S17	SWDI0042	0.1994	47.684	182.155	3.637	0	0	0	0	0.283	0	OUTLET	100	88.39
S18	J13	0.0586	45.873	55.645	2.471	0	0	0	0	0.478	0	OUTLET	100	81.55
S19	CP0061	0.0359	57.824	27.044	8.436	0	0	0	0	0.39	0	OUTLET	100	84.53
S2	SWDI0054	0.2287	83.919	118.712	2.869	0	0	0	0	0.598	0	OUTLET	100	77.46
S20	CP0079	0.0677	47.829	61.657	1.774	0	0	0	0	0.539	0	OUTLET	100	79.47
S21	CP0077	0.293	71.619	178.208	1.982	0	0	0	0	0.522	0	OUTLET	100	80.03
S22	SWDI0048	0.0865	36.779	102.448	3.843	0	0	0	0	0.173	0	OUTLET	100	91.90
S23	SWDI0049	0.0442	27.302	70.521	2.659	0	0	0	0	0.179	0	OUTLET	100	91.70
S24	SWDI0051	0.034	14.727	100.566	2.455	0	0	0	0	0.2	0	OUTLET	100	91.00
S25	SWDI0050	0.0843	31.888	115.156	3.121	0	0	0	0	0.177	0	OUTLET	100	91.76
S26	SWDI0025	0.3643	107.066	148.216	3.821	0	0	0	0	0.178	0	OUTLET	100	91.73
S27	SWDI0026	0.1789	54.974	141.756	5.265	0	0	0	0	0.544	0	OUTLET	100	79.73
S28	SWDP0014	0.2925	28.902	440.845	0.758	0	0	0	0	0.499	0	OUTLET	100	82.77
S29	SWDP0044	0.2892	72.879	172.856	2.296	0	0	0	0	0.17	0	OUTLET	100	92.00
S3	J2	0.4535	136.652	144.56	2.118	0	0	0	0	0.601	0	OUTLET	100	77.33
S30	SWDP0034	0.2013	58.096	150.933	1.47	0	0	0	0	0.24	0	OUTLET	100	89.62
S31	SWDI0044	0.7898	104.893	327.988	1.345	0	0	0	0	0.489	0	OUTLET	100	81.37
S32	CP0067	0.2534	66.572	165.807	2.507	0	0	0	0	0.505	0	OUTLET	100	80.61
S33	SWDI0055	0.0503	21.593	101.471	3.018	0	0	0	0	0.196	0	OUTLET	100	91.15
S34	SWDI0041	0.0316	3.16	435.6	3.093	0	0	0	0	0.198	0	OUTLET	100	91.06
S35_2	SWDI0043	0.1432	54.658	114.124	1.451	0	0	0	0	0.529	0	OUTLET	100	79.80
S36	SWDP0035	0.1851	44.41	181.557	3.288	0	0	0	0	0.696	0	OUTLET	100	75.20
S37	SWDP0025	0.9093	91.973	430.66	2.003	0	0	0	0	0.584	0	OUTLET	100	78.33
S38	SWDI0061	0.0736	32.114	99.832	1.002	0	0	0	0	0.278	0	OUTLET	100	88.35
S4	SWDP0028	0.351	102.179	149.635	2.861	0	0	0	0	0.596	0	OUTLET	100	77.53
S40	CP0066	0.2246	57.877	169.041	1.091	0	0	0	0	0.466	0	OUTLET	100	81.95
S42	SWDP0043	0.1485	47.299	136.761	2.308	0	0	0	0	0.354	0	OUTLET	100	85.76
S43	SWDI0054	0.038	19.498	84.895	2.908	0	0	0	0	0.227	0	OUTLET	100	90.08
S44	SWDP0042	0.4743	78.032	264.77	2.594	0	0	0	0	0.446	0	OUTLET	100	82.64
S45	J8	0.071	38.545	80.238	3.272	0	0	0	0	0.611	0	OUTLET	100	77.02
S46	CP0053	0.0311	37.684	35.94	4.834	0	0	0	0	0.529	0	OUTLET	100	79.81
S47	SWDI0060	0.1734	61.228	123.364	2.432	0	0	0	0	0.661	0	OUTLET	100	76.32
S48	SWDI0059	0.334	70.294	206.974	2.687	0	0	0	0	0.785	0	OUTLET	100	72.26
S49	J4	0.0563	38.255	64.107	2.681	0	0	0	0	0.563	0	OUTLET	100	78.63
S5	CP0069	0.0316	22.415	61.41	1.883	0	0	0	0	0.565	0	OUTLET	100	78.56
S50	J3	0.5992	99.68	261.849	2.267	0	0	0	0	0.663	0	OUTLET	100	75.69
S51	J1	0.6011	137.986	189.758	2.14	0	0	0	0	0.703	0	OUTLET	100	74.83
S52_1	J17	12.4076	1338.333	403.842	2.17	0	0	0	0	0.488	0	OUTLET	100	81.77
S52_2	J19	0.1619	87.981	80.158	3.892	0	0	0	0	0.622	0	OUTLET	100	77.19
S53	J5	0.1276	64.705	85.901	3.347	0	0	0	0	0.188	0	OUTLET	100	91.41
S54_1	SWDI0023	2.0523	244.65	365.413	1.673	0	0	0	0	0.17	0	OUTLET	100	92.00
S54_2	SWDI0024	0.0411	27.355	65.447	2.435	0	0	0	0	0.18	0	OUTLET	100	91.67
S55_2	CP0054	0.2423	93.851	112.461	4.13	0	0	0	0	0.65	0	OUTLET	100	75.67
S6	SWDI0052	0.0103	43.375	10.344	6.347	0	0	0	0	0.248	0	OUTLET	100	89.35
S7	SWDI0056	0.0519	31.594	71.557	1.922	0	0	0	0	0.203	0	OUTLET	100	90.90
S8	SWDI0057	0.2044	56.099	158.713	1.831	0	0	0	0	0.612	0	OUTLET	100	76.97
S9	SWDI0058	0.141	36.829	166.77	1.593	0	0	0	0	0.626	0	OUTLET	100	76.51

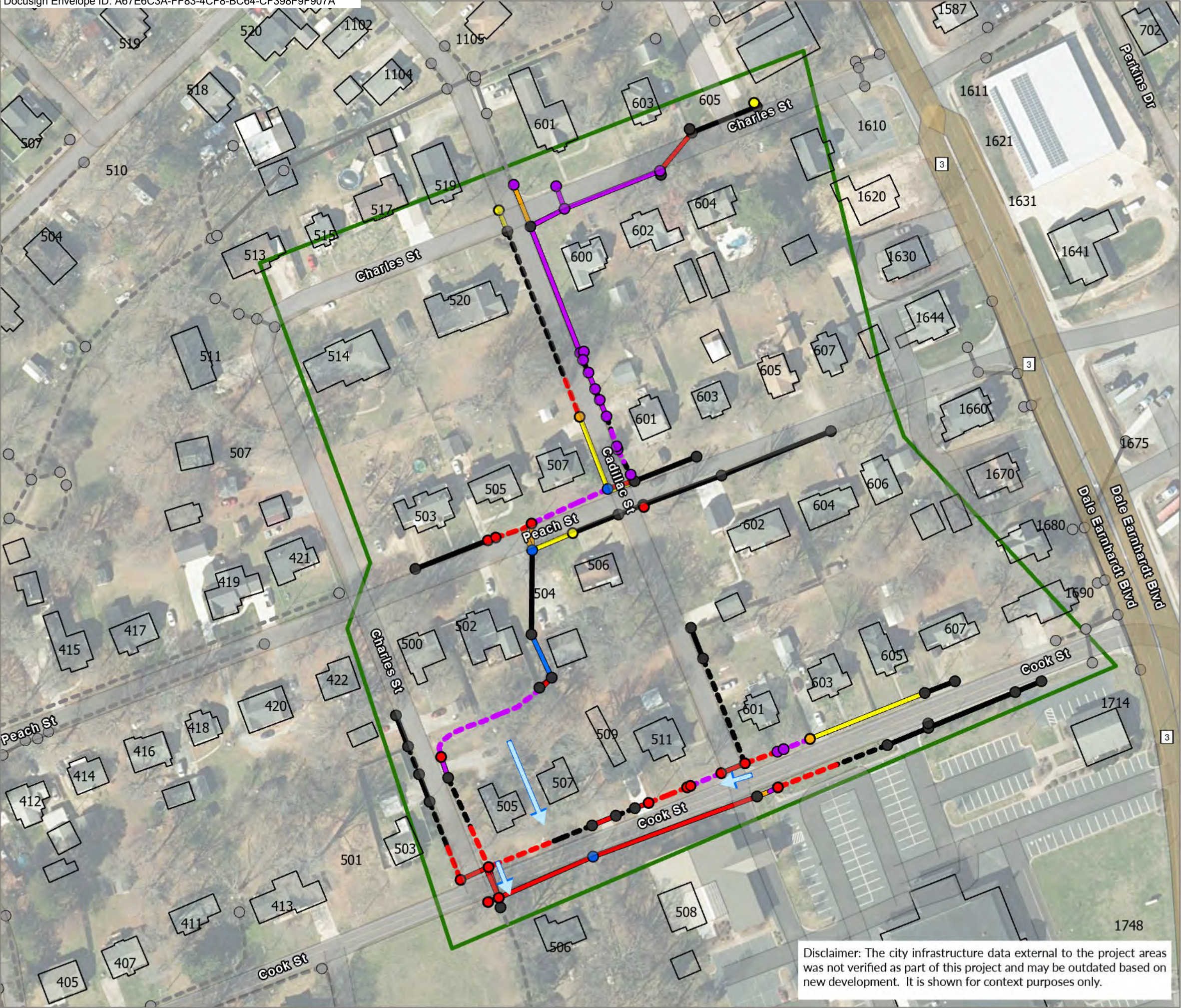
Peach						
Junctions						
Name	Tag	Invert Elev. (ft)	Rim Elev. (ft)	Depth (ft)	Surcharge Depth (ft)	Contributing Area (ac)
CP0011	Bell	762.49	763.69	1.2	0	0.117
CP0012	Cut	761.242	762.542	1.3	0	0.117
CP0014	Bell	759.822	761.422	1.6	0	0.266
CP0015	Other	758.538	760.238	1.7	0	0.266
CP0017	Bell	759.092	760.792	1.7	0	20.841
CP0026	Bell	757.472	758.672	1.2	0	0.645
CP0046	Other	759.691	760.891	1.2	0	2.533
CP0047	Cut	761.277	762.977	1.7	0	16.342
CP0048	Bell	761.712	763.4	1.688	0	16.342
CP0049	Cut	763.514	765.014	1.5	0	16.311
CP0050	Bell	763.441	765.041	1.6	0	16.068
CP0053	Other	763.228	764.828	1.6	0	16.342
CP0054	Other	763.346	764.946	1.6	0	16.311
CP0057	Other	758.739	760.339	1.6	0	20.841
CP0060	Cut	761.298	764.36	3.062	0	18.008
CP0061	Bell	759.945	762	2.055	0	2.533
CP0062	Other	761.754	763.154	1.4	0	2.497
CP0063	Bell	762.339	763.639	1.3	0	2.497
CP0064	Other	761.886	763.186	1.3	0	2.439
CP0065	Bell	761.395	763.295	1.9	0	2.439
CP0066	Other	761.981	763.781	1.8	0	2.439
CP0067	Bell	766.611	768.011	1.4	0	12.823
CP0068	Cut	763.923	765.023	1.1	0	0.032
CP0069	Cut	765.356	766.456	1.1	0	0.032
CP0070	Bell	762.681	764.381	1.7	0	2.214
CP0071	Cut	762.528	764.028	1.5	0	1.729
CP0072	Cut	763.24	764.49	1.25	0	1.729
CP0073	Other	765.95	767.15	1.2	0	12.823
CP0074	Cut	762.808	764.408	1.6	0	13.424
CP0077	FES	766.892	768.392	1.5	0	0.293
CP0079	Bell	766.269	767.669	1.4	0	0.361
CP0080	Other	763.662	764.862	1.2	0	1.729
J1		763.49	765.29	1.8	0	13.424
J10		759.341	761.243	1.902	0	20.841
J11		757.914	759.322	1.408	0	0.645
J12		760.546	761.993	1.447	0	0.266
J13		762.113	764.113	2	0	2.497
J14		767.3	767.7	0.4	0	14.459
J15		768.562	770.5	1.938	0	12.408
J16		767	768.8	1.8	0	12.408
J17		769.13	771	1.87	0	12.408
J19		766.5	768.5	2	0	12.57
J2		764.5	765.3	0.8	0	0.485
J21		758.391	759.967	1.596	0	23.803
J22		767.5	768.5	1	0	12.57
J23		760.116	760.529	0.413	0	20.841
J24		759.75	760.229	0.479	0	20.841
J3		761.333	763.835	2.502	0	18.607
J4		761.711	763.9	2.189	0	0.564
J5		764.258	765.97	1.712	0	0.377
J6		758.728	760.113	1.385	0	2.962
J7		757.514	759.226	1.712	0	20.841
J8		762.286	765.296	3	0	16.413
J9		762.497	764.697	2.2	0.5	16.342
SWDI0024	Grate Inlet	761.523	765.123	3.6	0	2.47
SWDI0025	Combo Inlet	757.936	762.136	4.2	0	2.834
SWDI0026	Grate Inlet	756.087	758.687	2.6	0	28.271
SWDI0041	Combo Inlet	766.029	768.829	2.8	0	0.572
SWDI0042	Combo Inlet	763.924	766.524	2.6	0	0.957
SWDI0043	Combo Inlet	764.942	766.442	1.5	0	14.459
SWDI0044	Combo Inlet	764.551	766.551	2	0	13.359
SWDI0048	Grate Inlet	769.469	771.169	1.7	0	0.086
SWDI0049	Grate Inlet	768.774	770.874	2.1	0	0.131
SWDI0050	Grate Inlet	766.316	768.316	2	0	0.249
SWDI0051	Combo Inlet	766.4	768.1	1.7	0	0.034
SWDI0052	Grate Inlet	763.161	764.961	1.8	0	0.51
SWDI0053	Grate Inlet	765.225	767.625	2.4	0	0.148
SWDI0054	Grate Inlet	762.08	765.18	3.1	0	17.154
SWDI0055	Combo Inlet	769.274	771.174	1.9	0	0.34
SWDI0056	Other	762.546	764.446	1.9	0	0.562
SWDI0057	Grate Inlet	762.182	763.782	1.6	0	0.766
SWDI0058	Grate Inlet	761.666	763.666	2	0	20.078
SWDI0059	Grate Inlet	761.912	763.612	1.7	0	0.507
SWDI0060	Grate Inlet	764.499	765.799	1.3	0	0.173
SWDI0061	Combo Inlet	763.742	765.442	1.7	0.5	15.442
SWDP0013	Bell	763.509	765.6	2.091	0.5	0.377
SWDP0014	Cut	756.542	759	2.458	0	0.938
SWDP0015	Cut	755.43	757.58	2.15	0	28.271
SWDP0016	Bell	756.558	758.2	1.642	0	24.965
SWDP0020	FES	764.918	766.818	1.9	0	0.249
SWDP0021	Other	762.063	763.163	1.1	0	0.507
SWDP0024	Bell	763.38	764.88	1.5	0	16.413
SWDP0025	Cut	763.066	764.966	1.9	1	0.909
SWDP0026	Cut	763.08	764.78	1.7	0.5	16.068
SWDP0027	Bell	765.455	767.055	1.6	0	12.57
SWDP0028	Cut	762.948	764.048	1.1	0	0.351
SWDP0031	Bell	761.384	763.5	2.116	0	19.171
SWDP0034	Cut	767.765	768.665	0.9	0	0.201
SWDP0035	Cut	766.676	767.676	1	0	0.185
SWDP0042	Bell	765.152	766.752	1.6	0	0.474
SWDP0043	Bell	770.25	771.25	1	0	0.148
SWDP0044	Cut	769.544	770.444	0.9	0	0.289
SWDP0053	Bell	759.496	761.523	2.027	0	20.078
SWMH0006	STD	764.396	767.496	3.1	0	14.459
SWMH0007	OTH	759.931	762.847	2.916	0	20.078
SWMH0008	OTH	760.559	763.582	3.023	0	20.078

Peach																	
Conduits																	
Name	Inlet Node	Outlet Node	Tag	Length (ft)	Roughness	Inlet Elev. (ft)	Outlet Elev. (ft)	Entry Loss Coeff.	Exit Loss Coeff.	Cross-Section	Geom1 (ft)	Geom2 (ft)	Geom3 (ft)	Geom4 (ft)	Slope (ft/ft)	Contributing Area (ac)	
C1	J15	J16		44.226	0.013	768.562	767	0.5	1	CIRCULAR	1.25	0	0	0	1	0.03534	12.408
C10	SWDP0027	SWDI0044	overland	62.997	0.016	767.055	766.551	0	0	STREET	0	0	0	0	1	0.008	12.57
C11	CP0050	CP0054	overland	19.331	0.02	665.5	764.946	0	0	IRREGULAR	0	0	0	0	1	-999	16.068
C12	SWDI0061	SWDP0026	overland	8.323	0.016	765.442	764.78	0	0	IRREGULAR	0	0	0	0	1	0.07979	15.442
C13	CP0049	CP0053	overland	19.346	0.02	665.45	764.828	0	0	IRREGULAR	0	0	0	0	1	-999	16.311
C14	SWDP0016	SWDI0026	overland	20	0.016	659.4	758.687	0	0	IRREGULAR	0	0	0	0	1	-999	24.965
C15	CP0026	SWDP0014	overland	38.367	0.036	759.3	759	0	0	IRREGULAR	0	0	0	0	1	0.00782	0.645
C16	SWDI0026	SWDP0015	overland	5	0.035	759	755.43	0	0	IRREGULAR	0	0	0	0	1	1.01579	28.271
C17	SWDP0015	J20	Open_Channel	26.04	0.01	755.43	755.2	0	0	IRREGULAR	0	0	0	0	1	0.00863	28.271
C18	CP0072	CP0071	overland	9.405	0.018	764.49	764.028	0	0	IRREGULAR	0	0	0	0	1	0.04918	1.729
C19	SWDI0025	SWDI0026	Open_Channel	111.736	0.018	762.136	758.687	0	0	IRREGULAR	0	0	0	0	1	0.03086	2.834
C2	J17	J15	Open_Channel	37.265	0.03	769.13	768.562	0	0	IRREGULAR	0	0	0	0	1	0.01524	12.408
C20	J10	J23	overland	15	0.03	760.5	760.116	0	0	IRREGULAR	0	0	0	0	1	0.02561	20.841
C20.1	CP0017	CP0057	overland	23.87	0.03	760.792	760.339	0	0	IRREGULAR	0	0	0	0	1	0.01896	20.841
C20.3	J23	J24	overland	64.424	0.03	760.116	759.75	0	0	IRREGULAR	0	0	0	0	1	0.00568	20.841
C20.4	J24	J21	overland	51.795	0.03	759.75	758.5	0	0	IRREGULAR	0	0	0	0	1	0.02414	20.841
C21	SWDP0031	SWDI0058	overland	45.584	0.016	763.6	763.6	0	0	IRREGULAR	0	0	0	0	1	0	19.171
C22	J15	J16	overland	58.086	0.016	770.4	768.5	0	0	IRREGULAR	0	0	0	0	1	0.03273	12.408
C23	SWDI0054	CP0060	overland	20	0.036	765.5	764.36	0	0	IRREGULAR	0	0	0	0	1	0.05709	17.154
C24	SWDI0059	SWDP0021	overland	9.011	0.016	763.612	763.163	0	0	IRREGULAR	0	0	0	0	1	0.04969	0.507
C25	CP0074	CP0073	Open_Channel	84.062	0.01	765	764.36	0	0	IRREGULAR	0	0	0	0	1	0.00765	13.434
C26	SWDI0023	SWDI0024	overland	13	0.022	765.6	765.123	0	0	IRREGULAR	0	0	0	0	1	0.03672	2.429
C27	CP0070	CP0066	overland	46.541	0.01	764.661	764	0	0	IRREGULAR	0	0	0	0	1	0.01463	2.214
C28	CP0065	CP0064	overland	3.964	0.02	763.295	763.686	0	0	IRREGULAR	0	0	0	0	1	-0.09912	2.439
C29	SWDI0043	J14	overland	44.897	0.01	766.442	767.3	0	0	STREET	0	0	0	0	1	-0.01911	14.459
C29.1	SWDP0027	J14	overland	47.895	0.01	767.5	767.3	0	0	STREET	0	0	0	0	1	0.00418	12.57
C29.2	J14	SWDI0061	overland	151.443	0.01	767.3	765.442	0	0	STREET	0	0	0	0	1	0.01227	14.459
C3	J15	J18		30.368	0.013	768.76	768.46	0.5	1	CIRCULAR	1.5	0	0	0	1	0.00988	12.408
C30	SWDI0044	SWDI0043	overland	10	0.01	767	766.442	0	0	IRREGULAR	0	0	0	0	1	0.05589	13.359
C31	J22	CP0067	Open_Channel	72.071	0.01	767.5	766.611	0	0	IRREGULAR	0	0	0	0	1	0.01234	12.57
C32	J19	J22	Overland	1	0.036	768.5	768.4	0	0	IRREGULAR	0	0	0	0	1	0.1005	12.57
C4	CP0048	CP0047	overland	10.224	0.036	763.412	762.577	0	0	IRREGULAR	0	0	0	0	1	0.04259	16.342
C4.1	J16	J19	Open_Channel	63.379	0.03	767	768.5	0	0	IRREGULAR	0	0	0	0	1	0.02838	12.408
C4.2	J19	SWDP0027	Open_Channel	51.962	0.03	765.5	765.455	0	0	IRREGULAR	0	0	0	0	1	0.02011	12.57
C5	SWMH0007	SWDP0053	RCP	17.173	0.013	759.931	759.723	0.5	1	CIRCULAR	1.5	0	0	0	1	0.01211	20.078
C6	SWMH0007	SWDP0053	RCP	17.25	0.013	759.931	759.496	0.5	1	CIRCULAR	1.5	0	0	0	1	0.02523	20.078
C7	SWDI0058	SWMH0008	RCP	91.48	0.013	761.666	760.559	0.5	0.7	CIRCULAR	2.5	0	0	0	1	0.0121	20.078
C8	SWMH0008	SWMH0007	RCP	51.858	0.013	760.559	759.931	0.5	1	CIRCULAR	2.5	0	0	0	1	0.01211	20.078
C9	SWDI0042	SWDI0043	overland	111.644	0.016	766.524	766.442	0	0	STREET	0	0	0	0	1	0.00073	0.967
CULV0002	CP0026	SWDP0016	RCP	27.899	0.013	757.472	756.807	0.5	1	CIRCULAR	1	0	0	0	1	0.02384	0.645
CULV0006	CP0079	CP0080	RCP	134.281	0.013	766.269	763.662	0.5	1	CIRCULAR	1	0	0	0	1	0.01942	0.361
CULV0007	CP0077	CP0079	RCP	34.295	0.013	766.892	766.342	0.5	1	CIRCULAR	1	0	0	0	1	0.01604	0.293
CULV0013	CP0017	CP0057	RCP	23.87	0.013	759.092	758.739	0.5	1	CIRCULAR	1.5	0	0	0	1	0.01479	20.841
CULV0022	CP0074	CP0060	CMP	84.062	0.024	762.808	762.81	0.9	1	CIRCULAR	1.5	0	0	0	1	-0.00002	13.424
CULV0023	CP0048	CP0047	RCP	3.632	0.013	761.712	761.277	0.5	1	CIRCULAR	1.5	0	0	0	1	0.12064	16.342
CULV0024	CP0049	CP0053	CPP	19.346	0.02	763.514	763.228	0.9	1	CIRCULAR	1.5	0	0	0	1	0.01479	16.311
CULV0025	CP0050	CP0054	RCP	19.331	0.013	763.441	763.346	0.5	1	CIRCULAR	1.5	0	0	0	1	0.00491	16.068
CULV0026	CP0072	CP0071	RCP	7.245	0.013	763.24	762.528	0.5	1	CIRCULAR	1	0	0	0	1	0.09875	1.729
CULV0027	CP0070	CP0066	RCP, partially cld	27.836	0.013	762.661	761.961	0.5	1	FILLED_CIRCULAR	1.25	0.625	0	0	1	0.02516	2.214
CULV0028	CP0069	CP0068	PVC	35.899	0.011	765.356	763.923	0.5	1	CIRCULAR	1	0	0	0	1	0.03995	0.032
CULV0029	CP0067	CP0073	RCP	24.616	0.013	766.611	765.95	0.5	1	CIRCULAR	1	0	0	0	1	0.02686	12.823
CULV0030	CP0065	CP0064	RCP, partially cld	3.964	0.013	761.395	761.886	0.5	1	FILLED_CIRCULAR	1.25	0.312	0	0	1	-0.12483	2.439
CULV0031	CP0061	CP0046	RCP	27.902	0.013	759.945	759.691	0.5	1	CIRCULAR	1.25	0	0	0	1	0.0091	2.533
CULV0032	CP0063	CP0062	RCP	15.888	0.013	762.339	761.754	0.5	1	CIRCULAR	1.25	0	0	0	1	0.03685	2.497
CULV0033	CP0014	CP0015	RCP, partially cld	31.864	0.013	759.822	758.538	0.5	1	FILLED_CIRCULAR	1.5	0.75	0	0	1	0.04033	0.266
CULV0034	CP0011	CP0012	RCP	36.165	0.013	762.49	761.242	0.2	1	CIRCULAR	1	0	0	0	1	0.03453	0.117
SWGM0023	SWDI0023	SWDI0024	RCP	14.599	0.013	762.997	763.223	0.5	0.42	CIRCULAR	1.25	0	0	0	1	-0.01548	2.429
SWGM0024	SWDI0024	SWDI0025	RCP	189.792	0.013	761.523	758.036	0.5	0.42	CIRCULAR	1.5	0	0	0	1	0.01838	2.47
SWGM0027	SWDI0048	SWDI0049	RCP	90.733	0.013	769.469	768.674	0.5	0.42	CIRCULAR	1.25	0	0	0	1	0.01936	0.086
SWGM0028	SWDI0049	SWDI0050	RCP	102.193	0.013	768.774	766.416	0.5	0.42	CIRCULAR	1.25	0	0	0	1	0.02308	0.131
SWGM0029	SWDI0051	SWDI0050	RCP	4.865	0.013	766.4	766.416	0.5	1	CIRCULAR	1.5	0	0	0	1	-0.00329	0.034
SWGM0030	SWDI0050	SWDP0020	RCP	48.182	0.013	766.316	764.918	0.5	1	CIRCULAR	1.5	0	0	0	1	0.02903	0.249
SWGM0032	SWDP0013	SWDI0023	RCP	10.102	0.013	763.509	763.197	0.5	0.42	CIRCULAR	1.25	0	0	0	1	0.0309	0.377
SWGM0046	SWDP0043	SWDI0053	RCP	128.173	0.013	770.25	765.925	0.5	0.42	CIRCULAR	1.5	0	0	0	1	0.03376	1.048
SWGM0047	SWDI0053	SWDI0052	RCP	90.811	0.013	765.225	763.361	0.5	0.42	CIRCULAR	1.5	0	0	0	1	0.02053	0.148
SWGM0048	SWDI0052	SWDI0056	RCP	28.901	0.013	763.161	762.746	0.5	0.42	CIRCULAR	1.5	0	0	0	1	0.01436	0.51
SWGM0049	SWDI0056	SWDI															

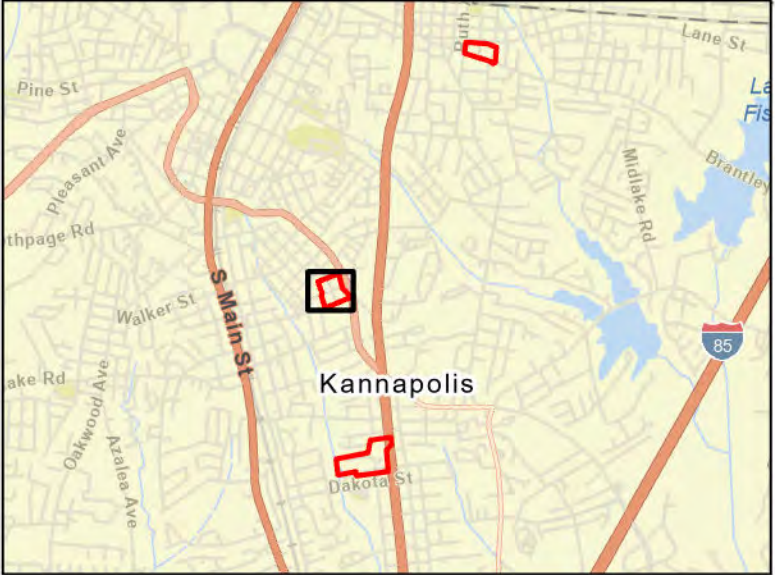
Peach																	
Conduits																	
Name	Inlet Node	Outlet Node	Tag	Length (ft)	Roughness	Inlet Elev. (ft)	Outlet Elev. (ft)	Entry Loss Coeff.	Exit Loss Coeff.	Cross-Section	Geom1 (ft)	Geom2 (ft)	Geom3 (ft)	Geom4 (ft)	Barrets	Slope (ft/ft)	Contributing Area (ac)
SWOD0029_1	CP0060	J3	Open_Channel	38.344	0.017	761.298	761.333	0	0	IRREGULAR	0	0	0	0	1	-0.001	18.008
SWOD0029_2	J3	SWDP0031	Open_Channel	54.907	0.017	761.333	761.384	0	0	IRREGULAR	0	0	0	0	1	-0.001	18.607
SWOD0032_1	CP0073	J1	Open_Channel	173.402	0.022	765.95	763.49	0	0	IRREGULAR	0	0	0	0	1	0.014	12.823
SWOD0032_2	J1	CP0074	Open_Channel	42.798	0.035	763.49	762.808	0	0	IRREGULAR	0	0	0	0	1	0.016	13.424
SWOD0033_1	CP0047	J8	Open_Channel	14.878	0.03	761.277	762.296	0	0	IRREGULAR	0	0	0	0	1	-0.069	16.342
SWOD0033_2	J8	SWDP0024	Open_Channel	15.823	0.03	762.296	763.38	0	0	IRREGULAR	0	0	0	0	1	-0.069	16.413
SWOD0034_1	CP0053	J9	Open_Channel	16.555	0.03	763.228	762.497	0	0	IRREGULAR	0	0	0	0	1	0.044	16.342
SWOD0034_2	J9	CP0048	Open_Channel	17.77	0.03	762.497	761.712	0	0	IRREGULAR	0	0	0	0	1	0.044	16.342
SWOD0035	CP0054	CP0049	Open_Channel	12.846	0.03	763.346	763.514	0	0	TRAPEZOIDAL	1.9	2.5	0.92	0.92	1	-0.013	16.311
SWOD0036	SWDP0026	CP0050	Open_Channel	14.898	0.03	763.08	763.441	0	0	TRAPEZOIDAL	2	2.5	0.88	0.88	1	-0.024	16.068

Appendix C: Existing Conditions Capacity Analysis

- ◆ Study Area #1 – Peach Street
- ◆ Study Area #2 – Marie Avenue
- ◆ Study Area #3 – Breckenridge Road



Disclaimer: The city infrastructure data external to the project areas was not verified as part of this project and may be outdated based on new development. It is shown for context purposes only.



Legend

Junctions

- Flooded - 2 Year Events
- Flooded - 10 Year Events
- Flooded - 25 Year Events
- Flooded - 50 Year Events
- Flooded - 100 Year Events
- Not-Flooded

Open Channels

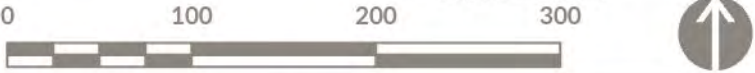
- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Conduits

- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Context

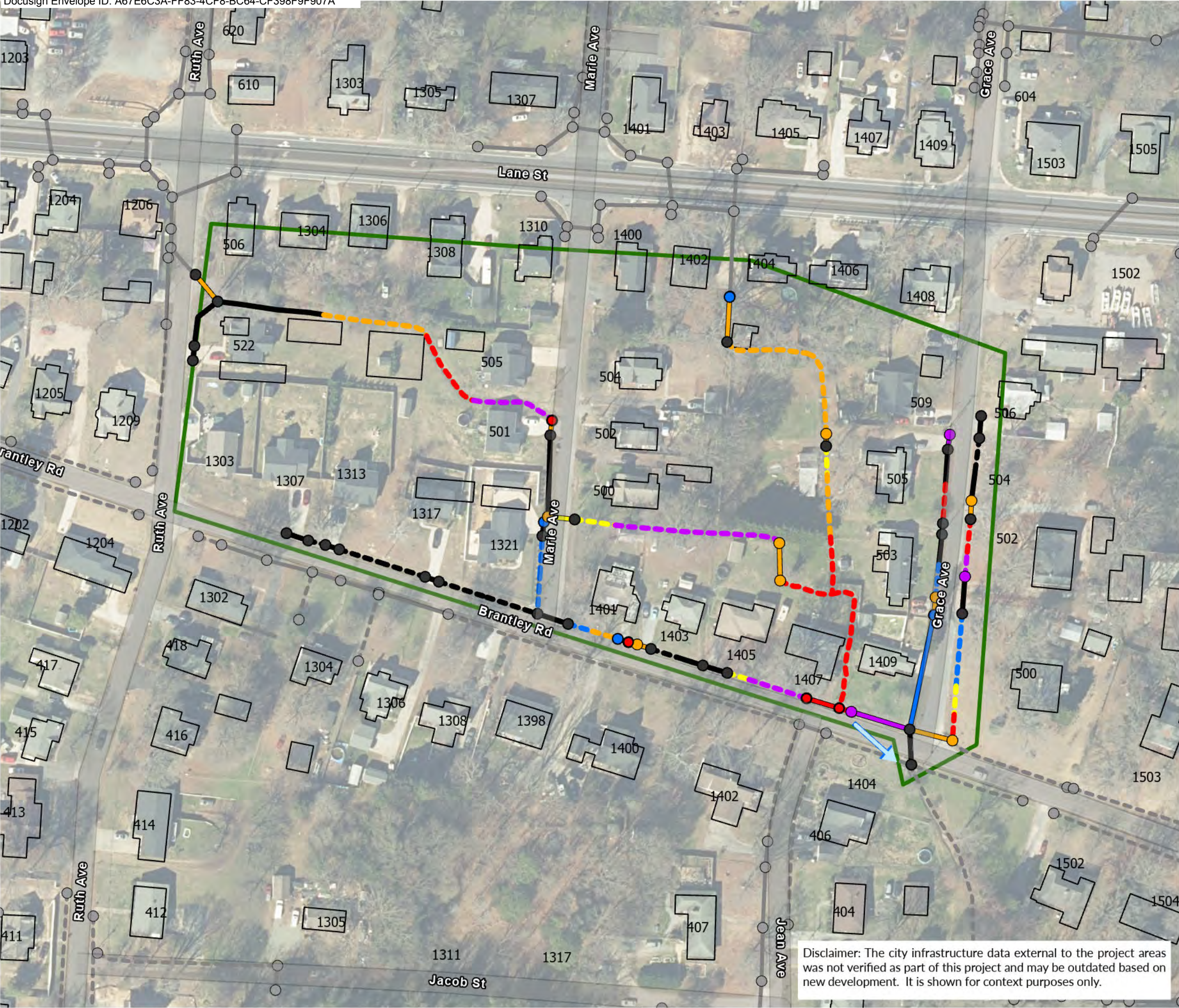
- Structures
- 100-year FEMA Floodplain
- 500-year FEMA Floodplain
- Study Area
- Secondary Flow Paths
- 305 Street Address
- City Infrastructure



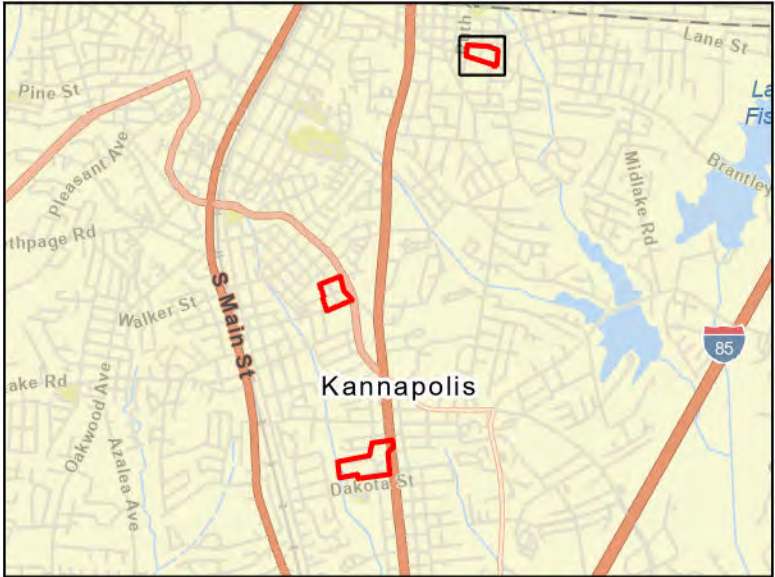
Study Area 1: Peach Street Capacity Analysis



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Disclaimer: The city infrastructure data external to the project areas was not verified as part of this project and may be outdated based on new development. It is shown for context purposes only.



Legend

Junctions

- Flooded - 2 Year Events
- Flooded - 10 Year Events
- Flooded - 25 Year Events
- Flooded - 50 Year Events
- Flooded - 100 Year Events
- Not-Flooded

Open Channels

- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Conduits

- Full Capacity - 2 Year Events
- Full Capacity - 10 Year Events
- Full Capacity - 25 Year Events
- Full Capacity - 50 Year Events
- Full Capacity - 100 Year Events
- Not at Full Capacity

Context

- Structures
- 100-year FEMA Floodplain
- 500-year FEMA Floodplain
- Study Area
- Secondary Flow Path
- 305 Street Address
- City Infrastructure



Study Area 2: Marie Avenue & Lane Street Capacity Analysis



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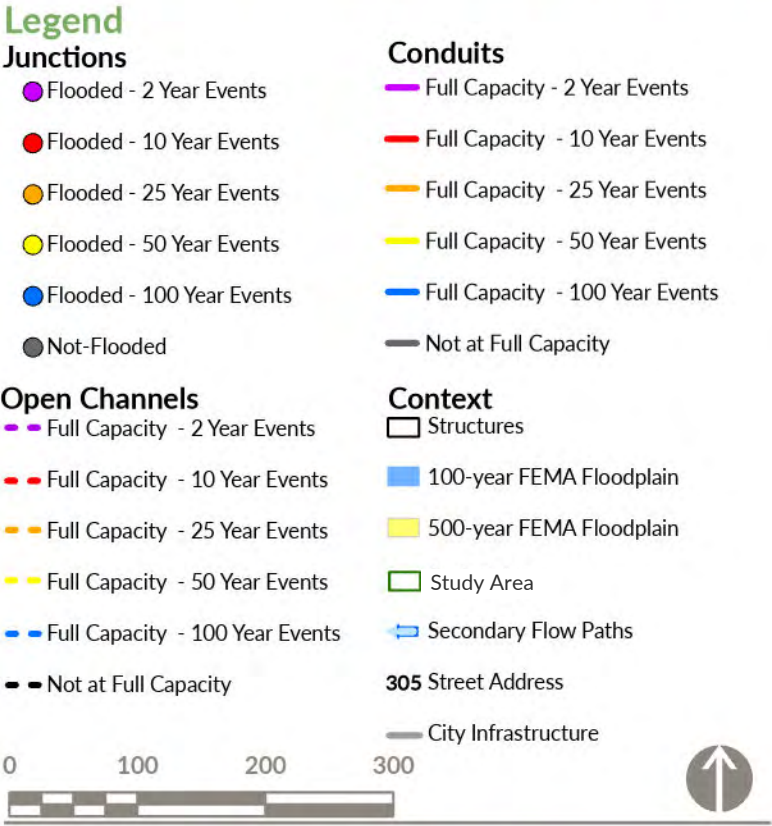
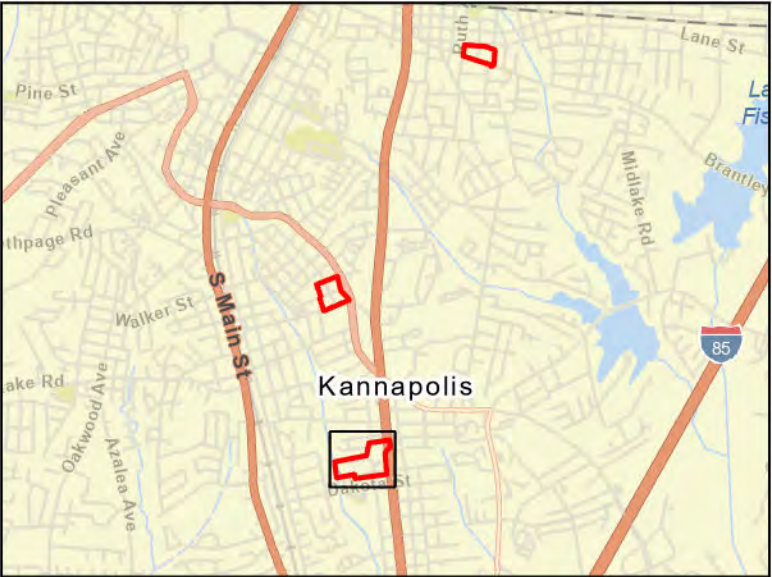
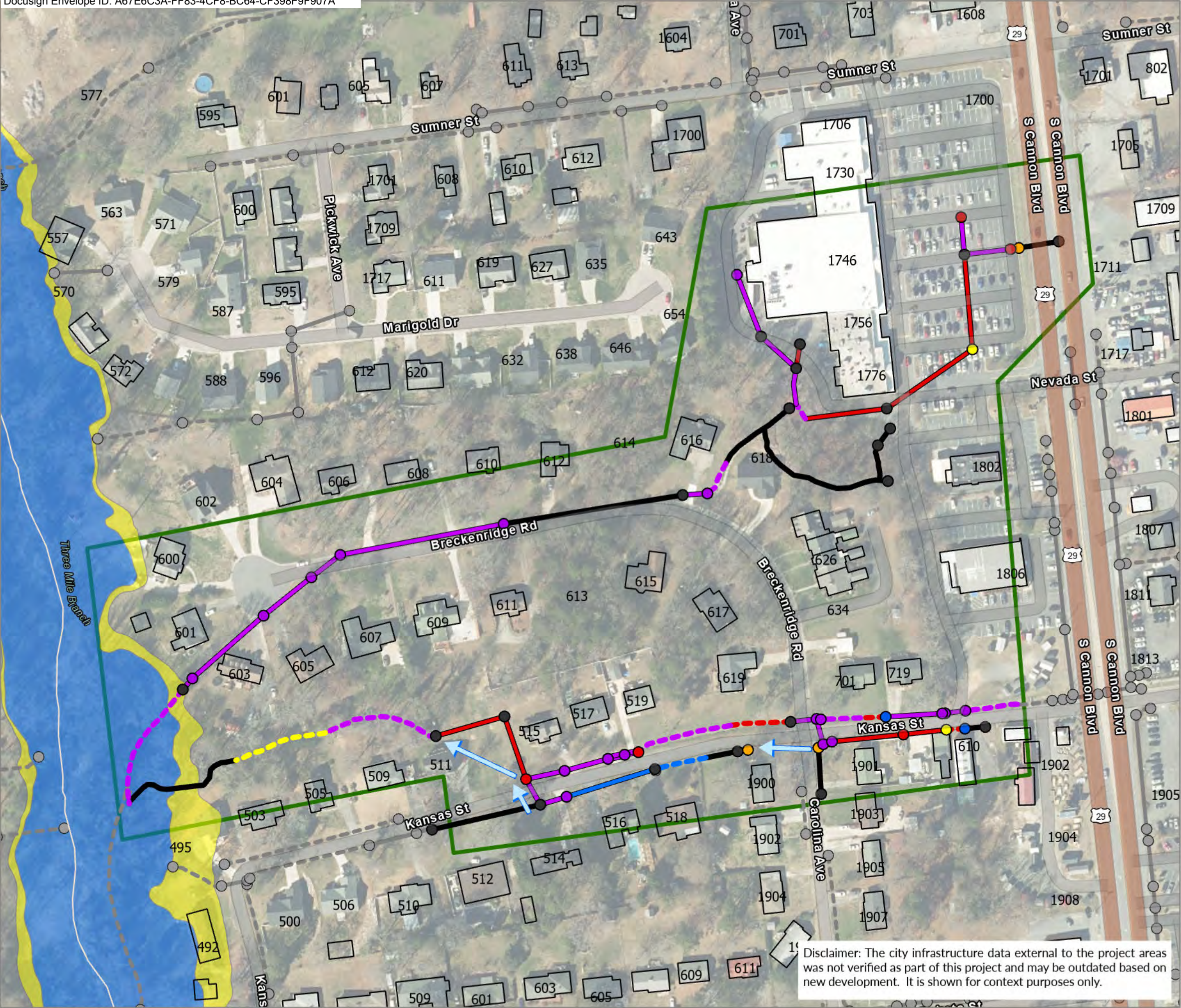
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Study Area 3: Breckenridge Road Capacity Analysis

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Appendix D: Photo Log

Marie Avenue Photo Locations



Marie Avenue Photo Log - June 15, 2024



Photo 1: North side of Brantley Road looking west towards Grace Ave



Photo 2: Looking north from Brantley Road



Photo 3: Looking west on north side of Brantley Road - Pipe under driveway at 1401 Brantley Road



Photo 4: Looking east on Brantley - Pipe under driveway at 1307 Brantley Road



Photo 5: West side of Grace Avenue looking North – Clogged pipe under driveway at 505 Grace Avenue full



Photo 6: West side of Marie Avenue looking east – Ponding at double barrel outlet



Photo 7: West side of Marie Avenue looking northeast – Ponding at double barrel inlet



Photo 8: East side of Ruth Avenue looking east – Ditch between houses



Photo 9: South side of Brantley Road looking south – Downstream outlet from Marie Avenue stormwater system

Peach Street Photo Locations



Peach Street Photo Log – June 15, 2024



Photo 1: N East side of Cadillac Street looking north



Photo 2: Looking north from south side of Cook Street – System outlet



Photo 3: East side of Charles Street looking east – Ditch behind 505 Cook Street



Photo 4: Looking east behind 505 Cook Street – Double barrel outlet into ditch

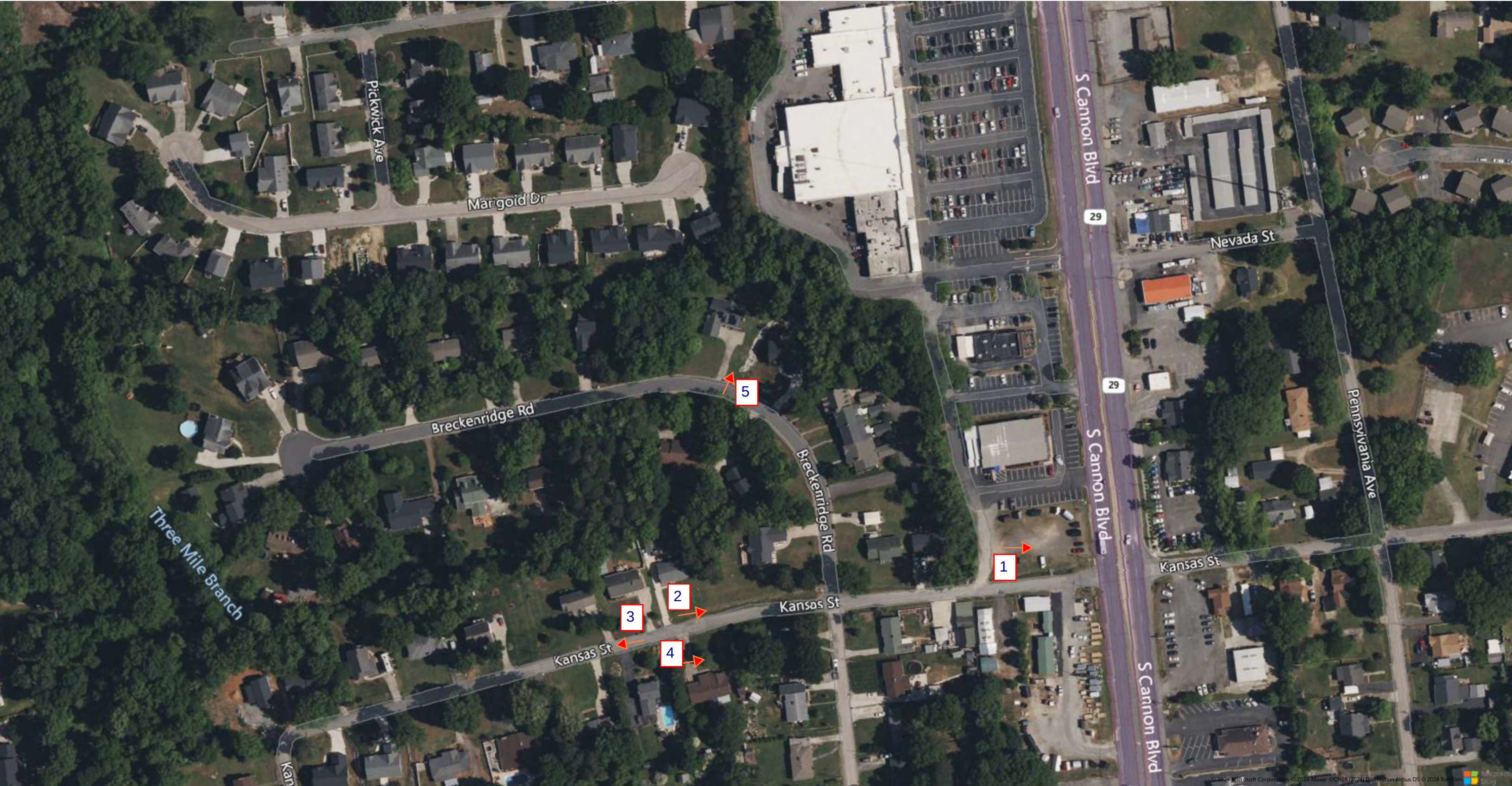


Photo 5: Southwest corner of Cook Street and Cadillac Street – Clogged outlet pipe



Photo 6: North side of Cook Street looking east – Clogged outlet pipe

Breckenridge Road Photo Locations



Breckenridge Road Photo Log – June 15, 2024



Photo 1: North side of Kansas Ave looking east



Photo 2: North side of Kansas street looking east toward Breckenridge Road



Photo 3: Slaptop inlets on north side of Kansas Street looking west



Photo 4: Looking east behind 505 Cook Street – Double barrel outlet into ditch



Photo 5: Rock lined channel adjacent to 618 Breckenridge Road



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MS4 Stormwater Management Program Recommended Updates

LASII Residential Drainage Improvements Study

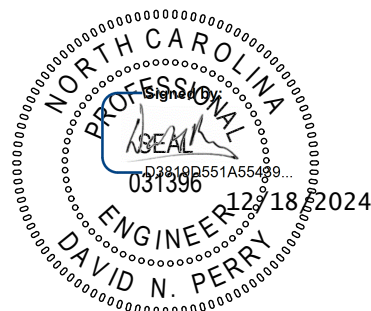
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WithersRavenel Project No. 23-0607-001

December 18, 2024



David Perry, PE, CFM
Alisha Goldstein, PE

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Appendix A

- Table 1 – Guidance for Condition Assessment Rating
- Table 2 – Critical Structures List
- Table 3 – Structures Replaced per CIP Projects

1. Municipal Separate Storm Sewer System (MS4) Program

1.1. Stormwater Management Plan (SWMP)

The City of Kannapolis (City) has implemented a Stormwater Management Plan (SWMP) per compliance with its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit number NCS000413. The NPDES MS4 program is a federally mandated program for reducing pollutants in stormwater runoff with the program origin in the Clean Water Act. A SWMP outlines best management practices (BMP) and goals for the following six control measures:

- Public Education & Outreach
- Public Involvement & Participation
- Illicit Discharge Detection & Elimination
- Construction Site Runoff Controls
- Post-Construction Site Runoff Controls
- Pollution Prevention & Good Housekeeping for Municipal Operations

The pollution prevention and good housekeeping program requires an MS4 Operation and Maintenance Program to comply with permit reference 3.7.3. The BMP goals for this program include training staff on stormwater awareness and pollution prevention, perform MS4 inspections, maintain the collection system, and establish frequencies, schedules, and standard documentation. As presented in the City's SWMP, BMP #35 requires the development of a Standard Operations Procedure (SOP) for MS4 System Maintenance and the identification of "hot spot" locations for system maintenance.

2.2. System Maintenance Standard Operating Procedure (SOP)

The City's Stormwater Division has a Standard Operating Procedures (SOP) "living" document that can be updated based on operational needs. The most recent SOP is rev.2 dated October 13, 2020. It serves as a day-to-day guide for operations that outlines internal policy, performance measures, inspection lists, and other administrative guidance. Additionally, the City has a Water Quality Protection Guidelines and Standard Operating Procedures document dated April 2013. This Water Quality SOP contains maintenance guidance and inspection reports for catch basins, outfalls, and storm drain systems. These two documents document the maintenance practices and inspection schedules for the City's MS4 system.

The Stormwater Division SOP includes a critical pipe inspection list for those pipes identified with a poor or fair condition. Per the SOP, critical pipes are to be inspected quarterly or after every rain event of 1 inch or more. The only pipe within the LASII Residential Drainage Improvements project area on the critical pipe list is the 15-inch RCP located at Marie Street and Brantley Road.

2. Recommendations

It is recommended that an update be made to the Stormwater Division's SOP to include critical lists for other stormwater components such as catchbasins, culvert inlet and outlets, manholes, and discharge points. As part of the survey completed for the LASII stormwater study, a condition rating of excellent, good, fair, poor, and very poor was assigned to each structure. The rating system for assessing physical condition and operation and maintenance issues is provided in Table 1 in Appendix A. The condition assessment for each structure and field notes are attributes fields in the GIS data. A comprehensive survey of the remaining stormwater infrastructure throughout the entire City is recommended so that it can be incorporated into the critical list and added to the Stormwater Division's SOP.

A critical structures list of assessed structures with poor or very poor condition has been provided in Table 2 in Appendix A for structures surveyed within the LASII stormwater study area. This list identifies the location, facility ID, type of structure, condition, and a checklist for other issues observed. The types of structures assessed are inlets, discharge points, and culvert end points. The culvert end pipes were identified if there was significant sediment accumulation, erosion, or a failure that could compromise the flow of runoff through the culvert.

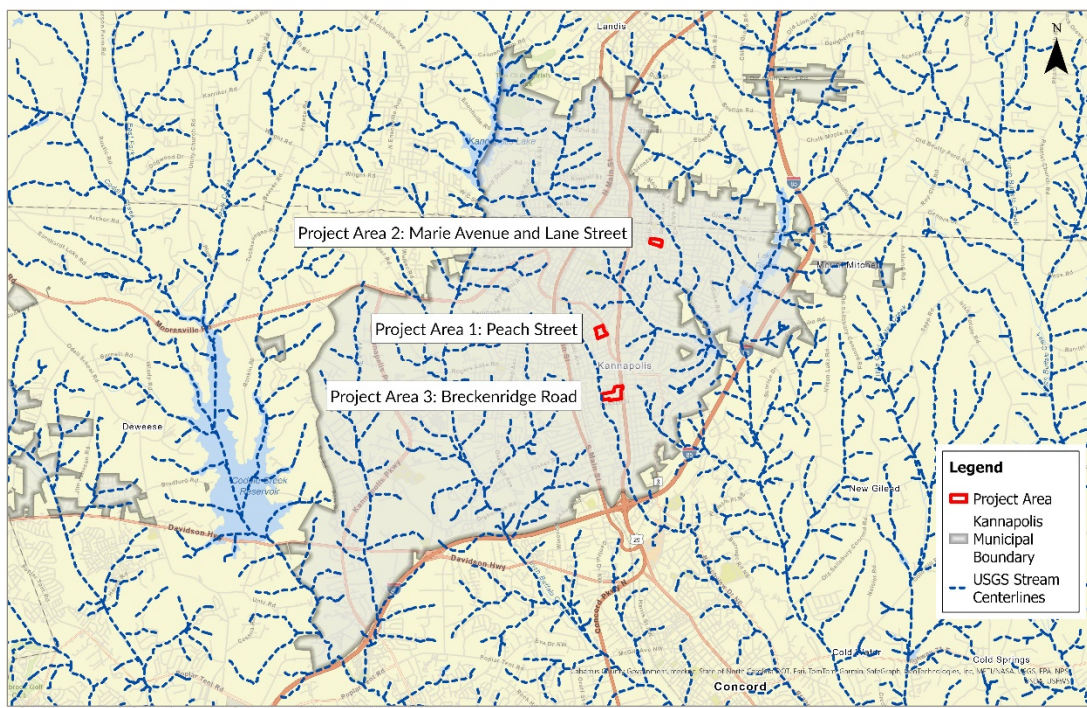
It is recommended to incorporate this critical structure list into the Stormwater Division's SOP to prioritize the identified structures for monitoring and maintenance. These critical structures will likely require replacement within five years. Until then, monitoring and maintenance should be addressed at a higher frequency than once a year to ensure free-flowing conditions especially for culverts with noticeable sediment accumulation.

Of note, the LASII stormwater study was limited to three project areas:

- 1) Peach Street, specifically the system between Dale Earnhardt Blvd and Charles Street, and between Charles Street and Cook Street inclusive of Charles and Cook Streets
- 2) Marie Avenue and Lane Street extending from west side of Ruth Avenue to Grace Street and extending from the backside of Lane Street to the north side Brantley Road.
- 3) Breckenridge Road from Market Square commercial development on S. Cannon Blvd to Three Mile Branch, and the system on Kansas Street originating near S Cannon Blvd discharging to Threemile Branch.

The project area extents relative to the City of Kannapolis municipal limits are shown in Figure 1.

Figure 1 - Site Map



The critical structures list should be reviewed and revised as structures are assessed with respect to their condition throughout the entire system and maintenance is undertaken. Of the sixty structures in the critical structures list, forty-one structures would be addressed through the four recommended Capital Improvement Projects (CIP) projects – Peach Street, Marie Street, Kansas St, and Breckenridge St – that were the outcome of the LASII Residential Drainage Improvements Study.

Appendix A

Table 1 – Guidance for Condition Assessment Rating

Table 2 – Critical Structures List

Table 3 – Structures Replaced per CIP Projects

December 18, 2024

WithersRavenel Project No. 23-0607-001

Table 2 – Guidance for Condition Assessment Rating

Structure Condition and Operation & Maintenance Issues		
Condition	Physical Condition	O&M Issues
Excellent	Structure is close to new condition and is performing as intended. Structure is completely intact and shows no cracks or visible signs of wear. The structure cover is completely intact and shows no visible cracks or damage.	The structure is completely free of debris or material build-up and is free of any blockages. There is no obvious evidence of inflow and infiltrations (I&I) through cracks, leaky pipe joints, connections failures, or deteriorated structure covers.
Good	Structure is intact and shows <u>very minor</u> to no signs of defect. Minor defects detected do not appear to impact manhole from performing as intended. The structure cover is intact but may show minor cracks or damage but overall appears to perform as intended.	There is <u>minor</u> evidence of I&I but impacts to performance appear to be very minor. There is little to no build-up of debris or material in the structure. There are little to no signs of blockages that affect it from functioning as intended.
Fair	There are some visible signs of damage including cracking, leaky pipe joints, minor connection failures but manhole appears to be mostly performing as intended. Structure cover has significant cracking and damage but appears to be mostly intact.	There is <u>some</u> evidence of I&I, but the structure still appears functional and intact. A problem with a connection would also cause a structure to be flagged as <i>fair</i> . The structure has minor buildup of debris or material but does not appear to show significant sign of blockages that affect it from functioning as intended.
Poor	There are significant cracks, joints leaking badly, or obvious connection failures should indicate the structure is in <i>poor</i> condition. The structure cover shows significant damage or cracking and appears intact but possibly close to failure.	There is <u>significant</u> I&I that is causing the manhole to not function as intended. Significant buildup of debris or material that show sign of blockages would also indicate that structure is not functioning as intended and would be a <i>poor</i> condition
Very Poor	There are major signs of cracking, major signs of damage and leaky connections. The structure is close to failing or has completely failed and is not performing as intended. Structure cover shows major cracking or damage or has completely failed.	There is <u>very high</u> I&I that is causing the structure to not function as intended. The structure is completely blocked with debris or material. The blockages are causing the structure to backup, overflow, and not perform as intended.

MS4 SWMP Recommended Updates

LASII Residential Drainage Improvements Study

Table 2 – Critical Structures List

Critical Structures: Issues					Date Inspected:				
					By:				
					Additional Issues: Check all that apply				
Number	Location	Facility ID	Type of Structure	Condition	Erosion	Sediment	Deterioration	Vegetation	Obstruction
1	Median of S Canon Blvd opposite Food Lion	SWDI0009	Inlet	Poor					
2	605 Breckenridge Rd	SWDI0014	Inlet	Poor					
3	514 Kansas St	SWDI0017	Inlet	Poor					
4	605 Charles St	SWDI0041	Inlet	Poor					
5	NE corner of Cadillac St and Peach St	SWDI0054	Inlet	Poor					
6	605 Charles St	SWDI0055	Inlet	Poor					
7	506 Peach St	SWDI0057	Inlet	Poor					
8	504 Peach St	SWDI0058	Inlet	Poor					
9	505 Peach St	SWDI0059	Inlet	Poor					
10	503 Peach St	SWDI0060	Inlet	Poor					
11	Inlet between 601 Peach St and 600 Charles St	SWDI0061	Inlet	Poor					
12	503 Grace Ave	SWDI0062	Inlet	Poor					
13	505 Peach St	SWDP0021	Discharge Point	Poor					
14	NW corner of Cadillac St and Peach St	SWDP0022	Discharge Point	Poor					
15	NW corner of Cadillac St and Peach St	SWDP0023	Discharge Point	Poor					
16	NE corner of Cadillac St and Peach St	SWDP0024	Discharge Point	Poor					
17	601 Cadillac St	SWDP0026	Discharge Point	Poor					
18	NE corner of Cadillac St and Charles St	SWDP0027	Discharge Point	Poor					
19	SE corner of Cadillac St and Peach St	SWDP0028	Discharge Point	Poor					
20	505 Peach St	SWDP0031	Discharge Point	Poor					
21	505 Peach St	SWDP0032	Discharge Point	Very Poor					
22	604 Peach St	SWDP0043	Discharge Point	Poor					
23	505 Grace Ave	CP0001	Culvert End Point	Very Poor					

December 18, 2024

WithersRavenel Project No. 23-0607-001

MS4 SWMP Recommended Updates

LASII Residential Drainage Improvements Study

24	503 Grace Ave	CP0002	Culvert End Point	Very Poor					
25	503 Grace Ave	CP0003	Culvert End Point	Very Poor					
26	1313 Brantley Rd	CP0007	Culvert End Point	Poor					
27	422 Charles St	CP0011	Culvert End Point	Very Poor					
28	422 Charles St	CP0012	Culvert End Point	Very Poor					
29	500 Grace Ave	CP0013	Culvert End Point	Very Poor					
30	503 Charles St	CP0014	Culvert End Point	Poor					
31	503 Charles St	CP0015	Culvert End Point	Very Poor					
32	505 Grace Ave	CP0016	Culvert End Point	Very Poor					
33	610 Kansas St	CP0018	Culvert End Point	Poor					
34	NE corner of Charles St and Cook St	CP0025	Culvert End Point	Poor					
35	502 Grace Ave	CP0027	Culvert End Point	Poor					
36	504 Grace Ave	CP0028	Culvert End Point	Poor					
37	1321 Marie Ave	CP0033	Culvert End Point	Poor					
38	1321 Marie Ave	CP0034	Culvert End Point	Poor					
39	1403 Brantley Rd	CP0040	Culvert End Point	Poor					
40	1403 Brantley Rd	CP0042	Culvert End Point	Poor					
41	1407 Brantley Rd	CP0044	Culvert End Point	Poor					
42	601 Cadillac St	CP0047	Culvert End Point	Poor					
43	601 Cadillac St	CP0048	Culvert End Point	Poor					
44	601 Cadillac St	CP0049	Culvert End Point	Poor					
45	601 Cadillac St	CP0050	Culvert End Point	Poor					
46	601 Cadillac St	CP0053	Culvert End Point	Poor					

December 18, 2024

WithersRavenel Project No. 23-0607-001

MS4 SWMP Recommended Updates**LASII Residential Drainage Improvements Study**

47	601 Cadillac St	CP0054	Culvert End Point	Poor					
48	NW corner of Cadillac St and Peach St	CP0060	Culvert End Point	Poor					
49	NW corner of Cadillac St and Cook St	CP0066	Culvert End Point	Very Poor					
50	NW corner of Cadillac St and Charles St	CP0067	Culvert End Point	Very Poor					
51	601 Cadillac St	CP0069	Culvert End Point	Poor					
52	NE corner of Cadillac St and Cook St	CP0070	Culvert End Point	Poor					
53	601 Cook St	CP0071	Culvert End Point	Very Poor					
54	601 Cook St	CP0072	Culvert End Point	Very Poor					
55	SW corner of Cadillac St and Charles St	CP0073	Culvert End Point	Very Poor					
56	507 Peach St	CP0074	Culvert End Point	Poor					
57	607 Cook St	CP0077	Culvert End Point	Poor					
58	605 Cook St	CP0078	Culvert End Point	Poor					
59	605 Cook St	CP0079	Culvert End Point	Poor					
60	603 Cook St	CP0080	Culvert End Point	Very Poor					

MS4 SWMP Recommended Updates

LASII Residential Drainage Improvements Study

Table 3 – Structures Replaced per CIP Projects

Facility ID	Location	Type of Structure	CIP Project
SWDI0014	605 Breckenridge Rd	Inlet	Breckenridge
SWDI0017	514 Kansas St	Inlet	Kansas
SWDI0041	605 Charles St	Inlet	Peach
SWDI0054	NE corner of Cadillac St and Peach St	Inlet	Peach
SWDI0055	605 Charles St	Inlet	Peach
SWDI0057	506 Peach St	Inlet	Peach
SWDI0058	504 Peach St	Inlet	Peach
SWDI0059	505 Peach St	Inlet	Peach
SWDI0060	503 Peach St	Inlet	Peach
SWDI0061	Inlet between 601 Peach St and 600 Charles St	Inlet	Peach
SWDP0021	505 Peach St	Discharge Point	Peach
SWDP0022	NW corner of Cadillac St and Peach St	Discharge Point	Peach
SWDP0023	NW corner of Cadillac St and Peach St	Discharge Point	Peach
SWDP0024	NE corner of Cadillac St and Peach St	Discharge Point	Peach
SWDP0026	601 Cadillac St	Discharge Point	Peach
SWDP0027	NE corner of Cadillac St and Charles St	Discharge Point	Peach
SWDP0028	SE corner of Cadillac St and Peach St	Discharge Point	Peach
SWDP0031	505 Peach St	Discharge Point	Peach
SWDP0032	505 Peach St	Discharge Point	Peach
CP0018	610 Kansas St	Culvert	Kansas
CP0025	NE corner of Charles St and Cook St	Culvert	Peach
CP0033	1321 Marie Ave	Culvert	Marie
CP0034	1321 Marie Ave	Culvert	Marie
CP0040	1403 Brantley Rd	Culvert	Marie
CP0042	1403 Brantley Rd	Culvert	Marie
CP0044	1407 Brantley Rd	Culvert	Marie
CP0047	601 Cadillac St	Culvert	Peach
CP0048	601 Cadillac St	Culvert	Peach
CP0049	601 Cadillac St	Culvert	Peach
CP0050	601 Cadillac St	Culvert	Peach
CP0053	601 Cadillac St	Culvert	Peach
CP0054	601 Cadillac St	Culvert	Peach
CP0060	NW corner of Cadillac St and Peach St	Culvert	Peach
CP0066	NW corner of Cadillac St and Cook St	Culvert	Peach
CP0067	NW corner of Cadillac St and Charles St	Culvert	Peach
CP0070	NE corner of Cadillac St and Cook St	Culvert	Peach
CP0071	601 Cook St	Culvert	Peach
CP0072	601 Cook St	Culvert	Peach
CP0073	SW corner of Cadillac St and Charles St	Culvert	Peach
CP0074	507 Peach St	Culvert	Peach
CP0080	603 Cook St	Culvert	Marie



Kannapolis
Agenda Staff Report
July 14, 2025

To: Mayor and City Council
From: Irene Wong, Economic & Community Development Director
Subject: **APPROVAL** - Lease amendment for City-owned property located at 461 N Cannon Blvd. **APPROVED**

Recommended Action Requested by City Council

Authorize City Manager to amend lease for 461 N Cannon Blvd.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

A prospective tenant is interested in leasing 461 N. Cannon Blvd in the College Station shopping center to open a chiropractic office. The tenant desired a five-year lease, which requires a 30-day public notice prior to City Council approval. To expedite the process, the City has previously executed a one-year lease with the tenant and is now amending the lease to be five years, which requires City Council action.

The tenant is responsible for the cost of building upfits.

Fiscal Implications

In consideration of the lease, Tenant will pay the City monthly triple net rent for the following years of the term equivalent to these amounts: Year 1: \$2,500.00, Year 2: \$2,575.00, Year 3: \$2,652.00, Year 4: \$2,732.00, Year 5: \$2,814.00. The lease agreement will also have an option for the Tenant to extend the lease an additional five years with the following monthly rents: Option Year 1: \$2,898.00, Option Year 2: \$2,985.00, Option Year 3: \$3,075.00, Option Year 4: \$3,167.00, Option Year 5: \$3,262.00.

Alternate Courses of Action

1. **Motion to authorize the City Manager to amend the lease for 461 N. Cannon Blvd (Recommended)**
2. Take no action.
3. Defer action to a future meeting.

Attachments

1. 461 N. Cannon Blvd. Lease Amendment Public Notice
2. 461 N. Cannon Blvd lease - Summit Chiropractic



**PUBLIC NOTICE
LEASE OF CITY PROPERTY**

The City Council of the City of Kannapolis will consider a lease amendment for the following city-owned property:

461 N. Cannon Blvd
Kannapolis, North Carolina

The City intends to amend the lease term of the property to Joseph Glick III (“Tenant”) to five years. In consideration of the lease, Tenant will pay the City base monthly rent for the following years of the term: Year 1: \$2,500.00, Year 2: \$2,575.00, Year 3: \$2,652.00, Year 4: \$2,732.00, Year 5: \$2,814.00. The lease agreement will also have an option for the Tenant to extend the lease an additional five years with the following monthly rents: Option Year 1: \$2,898.00, Option Year 2: \$2,985.00, Option Year 3: \$3,075.00, Option Year 4: \$3,167.00, Option Year 5: \$3,262.00.

All persons interested in this lease are invited to attend the meeting of the City Council to be held in the Council Chambers, City Hall, 401 Laureate Way, Kannapolis, North Carolina at 6:00 pm on Monday, July 28, 2025. At that time Council intends to authorize the amended lease of the property described above.

In accordance with Title II of the Americans with Disabilities Act (AD), any person requiring an accommodation to participate in a function or program of the City of Kannapolis, should contact Daniel Jenkins, Assistant Human Resource Director & ADA Coordinator, by phone at 704-920-4312, email adacoordinator@kannapolisnc.gov, or in person at Kannapolis City Hall as soon as possible but not later than 48 hours before the scheduled event.

ADVERTISING INSTRUCTIONS:

To be published as a Legal Ad in the Independent Tribune on Thursday, June 26, 2025.

If this date is not acceptable, or any problems please contact immediately:

Julie Long (704)-920-4371

jlong@kannapolisnc.gov

COLLEGE STATION LEASE AGREEMENT

Between

City of Kannapolis, Landlord,

and

Joseph Glick III, Tenant

Tenant _____

INDEX TO COLLEGE STATION LEASE

ARTICLE I.	<u>Definitions and Certain Basic Provisions</u>
ARTICLE II.	<u>Granting Clause</u>
ARTICLE III.	<u>Construction and Acceptance of Demised Premises</u>
ARTICLE IV.	<u>Monthly Payment</u>
ARTICLE V.	<u>Common Area</u>
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ARTICLE VII.	<u>Maintenance and Repair of Premises</u>
ARTICLE VIII.	<u>Alterations</u>
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ARTICLE XIX.	<u>Mechanics' Liens</u>
ARTICLE XX.	<u>Holding Over</u>
ARTICLE XXI.	<u>Subordination</u>
ARTICLE XXII.	<u>Merchant's Association</u>
ARTICLE XXIII.	<u>Notices</u>
ARTICLE XXIV.	<u>Late Charges</u>
ARTICLE XXV.	<u>Miscellaneous</u>
ARTICLE XXVI.	<u>Landlord's Lien</u>
ADDENDUM A	Hazardous Materials
ADDENDUM B	Additional Lease Provisions
EXHIBIT "A"	Shopping Center Site Plan Showing Premises
EXHIBIT "B"	Legal Description of Shopping Center
EXHIBIT "C"	Description of Tenant's Work
EXHIBIT "D"	Shopping Center Rules and Regulations
EXHIBIT "E"	Definition of Common Area Costs
EXHIBIT "F"	Landlord's Sign Criteria
EXHIBIT "G"	Guaranty of Lease

Tenant _____

STATE OF NORTH CAROLINA

COUNTY OF CABARRUS

This Lease Agreement ("Lease"), entered into this _____ day of July, 2025, by and between the Landlord and the Tenant hereinafter named.

ARTICLE 1. Definitions and Certain Basic Provisions.

1.1 The following terms, whenever capitalized and used in the Lease, shall have the meanings ascribed to them as set forth in this Section:

- a) Landlord: City of Kannapolis
- b) Landlord's Address: 401 Laureate Way, Kannapolis NC 28081
- c) Tenant: Joseph Glick III
- d) Tenant's mailing address: [ADDRESS]
- e) Tenant's trade name: The Summit Clinic of Chiropractic
- f) Tenant's address in Shopping Center: 461 N. Cannon Blvd, Kannapolis, NC
- g) Premises: approximately 1,400 square feet in Building (computed from measurements to the exterior of outside walls of the building and to the center of interior walls), such premises being shown and outlined within the cross-hatched area of the site plan attached hereto as Exhibit A, and being part of the Shopping Center situated upon the property described in Exhibit B attached hereto. "Shopping Center" shall refer to the property described in Exhibit B, together with such additions and other changes as Landlord may from time to time designate as included within the Shopping Center.
- h) Lease Term: Commencing on the "Commencement Date" as defined in Section 3.2 and ending twelve (12) months thereafter except that in the event the Commencement Date is a date other than the first day of a calendar month, said term shall extend for said number of months in addition to the remainder of the calendar month following the Commencement date and said Lease Term shall also include any and all option terms exercised in accordance with Section 2.2
- i) Intentionally Omitted
- j) Permitted Use: Chiropractic clinic and for no other purpose unless otherwise approved by Landlord in writing.
- k) Minimum Guaranteed Rent: Monthly base rent for the following prescribed periods of the Lease Term:
 - Lease Year 1: \$2,435.00;
 - [Initial Extended Term] Lease Year 2: \$2,508.00;
 - [Initial Extended Term] Lease Year 3: \$2,583.00;
 - [Initial Extended Term] Lease Year 4: \$2,661.00;
 - [Initial Extended Term] Lease Year 5: \$2,741.00;
 - [Second Extended Term] Lease Year 6: \$2,823.00;
 - [Second Extended Term] Lease Year 7: \$2,908.00;
 - [Second Extended Term] Lease Year 8: \$2,995.00;
 - [Second Extended Term] Lease Year 9: \$3,085.00;
 - [Second Extended Term] Lease Year 10: \$3,178.00.

Tenant _____

- l) Initial Common Area Maintenance Charge per month under Section 5.3: \$43.00 per month (\$0.37) per square foot per year).
- m) Initial Insurance Escrow Payment per month under Section 12.3: \$22.00 per month (\$0.19) per square foot per year).
- n) Initial Tax Escrow Payment per month under Section 17.2: \$0 per month (\$0.00 per square foot per year).
- o) Security Deposit: \$2,435.00

1.2 The following sums comprise the total monthly rent due during the Lease Term ("Monthly Payment"):

	Type of Rent / Charge	Year 1	Year 2-10
A	Initial Minimum Guaranteed Rent; and	\$2,435.00	Minimum Guaranteed Rent per Section 1.1(k)
B	Initial Common Area Maintenance Charge; and	\$43.00	Common Area Maintenance Charge per Section 5.3
C	Initial Insurance Escrow Payment; and	\$22.00	Insurance Escrow Payment per Section 12.3
D	Initial Tax Escrow Payment; and	\$0.00	Tax Escrow Payment per Section 17.2
	Initial Monthly Payment Total	\$2,500.00	Sum of rows A-D for the applicable Lease Year

1.3 Each of the foregoing definitions and basic provisions shall be construed in conjunction with and limited by references thereto in other provisions of this Lease.

ARTICLE II. Granting Clause. 2.1 In consideration of the obligation of Tenant to pay the Minimum Guaranteed Rent and other charges as herein provided and in consideration of the other terms, covenants and conditions hereof, Landlord hereby demises and leases to Tenant, and Tenant hereby leases from Landlord, the Premises for the Lease.

2.2 Option to Extend Term. Provided: (i) the City Council of the City of Kannapolis approves the lease of the Property to Tenant for a period of up to ten (10) years; (ii) Tenant has not at any time during the Term of the Lease been in default under any of the terms or provisions of the Lease and that Tenant is not in default on the first day of the extended term (unless Landlord, at Landlord's option [as Landlord elects in Landlord's sole and absolute discretion] and without waiving any other right or remedy Landlord may have as a result of such default, waives either such condition with respect to any such Tenant default as hereinabove provided in which event the extended term shall commence if exercised by Tenant as provided in (b) below); (iii) Tenant has not been late in the payment of rent and other charges as herein provided under the Lease more than three (3) times during the initial Term of the Lease; and (iv) Tenant herein has not assigned, subleased or otherwise transferred Tenant's interest in the Lease; Tenant shall have the right to extend the Term of the Lease in accordance with the following:

(a) For an initial extended term for one (1) period of five (5) years ("Initial Extended Term") and a second extended term for one (1) period of an additional five (5) years ("Second Extended Term").

(b) Tenant shall exercise such right to the Initial Extended Term by written notice to Landlord, not less than thirty days from the Commencement Date. Tenant shall exercise such right to the Second Extended Term by written

Tenant _____

notice to Landlord, not less than six (6) months nor more than twelve (12) months prior to the expiration of the Initial Extended Term.

(c) Such extended terms, excepting Minimum Guaranteed Rent, shall be subject to the same terms, covenants, and conditions as the original term of the Lease.

(d) The amount of the Minimum Guaranteed Rent during such extended terms is set forth in Paragraph 1.1.(k) of the Lease.

ARTICLE III. Construction and Acceptance of Demised Premises. 3.1 Tenant shall be permitted to construct improvements upon the Premises consistent with the "Description of Tenant's Work" in Exhibit C attached hereto, if any, with such minor variations as Landlord may deem advisable, provided that Tenant receives the prior written approval of the City (via its Economic Development Director, Irene Wong), before conducting any such work. Any alterations, additions, or improvements to the Premises by Tenant shall be made by Tenant at Tenant's sole cost and expense ("Tenant's Work"). Tenant acknowledges that he has had an opportunity to inspect the Premises prior to this Lease and that he accepts the same in as-is condition. By initiating work upon the Premises detailed on Exhibit C, Tenant shall be deemed to have accepted the Premises and to have acknowledged that the same fully comply with Landlord's covenants and obligations hereunder. Tenant further agrees that all work done by or on behalf of the tenant to the Premises shall be performed in a good and workmanlike manner by qualified personnel in compliance with all governmental requirements and in such a manner as to cause a minimum of interference with other tenants and the transaction of business in the Shopping Center. Any alterations, additions, or improvements to or of said Premises, including, but not limited to, wall coverings, paneling, and built-in cabinet work, but excepting movable furniture and other personal property, shall at once become a part of the realty and belong to Landlord and shall be surrendered with the Premises, unless otherwise expressly agreed by Landlord in writing.

3.2 The Effective Date of this Lease shall be the date of the last Party to execute this Lease. The Commencement Date of this Lease shall be the earlier of (i) the date Tenant opens for business or (ii) November 1, 2025. Tenant agrees to furnish to Landlord a Certificate of Occupancy prior to opening the Premises to the public. In consideration of the improvements expected to be made to the Premises by the Tenant, Tenant shall have the right to occupy the Premises upon the Effective Date of this Lease. Such occupancy of the Premises by Tenant prior to the Commencement Date shall be subjected to all of the terms and provisions of this Lease excepting only those requiring the payment of rent. Landlord and Tenant each agree that at the request of either they will, following the Commencement Date, execute and deliver a recordable short form lease containing the basic provisions of this Lease, acknowledging that Tenant has accepted possession, and reciting the exact Commencement Date and termination date of this Lease.

ARTICLE IV. Monthly Payment. 4.1. The Monthly Payment, as specified in Section 1.2 shall accrue hereunder from the Commencement Date, and shall be payable at the place designated for the delivery of notices to Landlord at Landlord's Address upon the first of the month, without demand and without set-off or deduction, for any reason whatsoever.

4.2 The first Minimum Guaranteed Rental payment shall be due and payable on or before the Commencement Date, and subsequent Minimum Guaranteed Rental payments shall be due and payable on or before the first day of each succeeding calendar month during the Lease Term; provided that if the Commencement Date is a date other than the first day of a calendar month, there shall be due and payable on or before such date as Minimum Guaranteed Rental for the balance of such calendar month a sum equal to that proportion of the rent specified for the first full calendar month as herein provided, which the number of days from the Commencement Date to the end of the calendar month during which the Commencement Date shall fall bears to the total number of days in such month.

ARTICLE V. Common Area. 5.1 The "Common Area" is the part of the Shopping Center designated by Landlord from time to time for the common use of all tenants, including among other facilities, parking area (both surface and structure/garage parking spaces), sidewalks, landscaping, curbs, loading areas, private streets and alleys, lighting facilities, hallways, malls, restrooms, and other areas and improvements provided by Landlord for the

Tenant _____

common use of all tenants, all of which shall be subject to Landlord's sole management and control and shall be operated and maintained in such manner as Landlord, in its discretion shall determine. Landlord reserves the right to change from time to time to the dimensions and location of the Common Area and to construct additional buildings or additional stories on existing buildings or other improvements in the Shopping Center, and to eliminate buildings from the plan. Tenant and its employees, customers, subtenants, licensees and concessionaires shall have the non-exclusive right and license to use the Common Area as constituted from time to time, such use to be permitted by Landlord to be in common with Landlord, other tenants of the Shopping Center and other persons permitted by Landlord to use the same. Tenant and Tenant's agents, employees and invitees will comply fully with all requirements of the rules and regulations which are attached hereto as Exhibit D, and made a part hereof as though fully set out herein. Landlord shall at all times have the right to change such rules and regulations or to promulgate other rules and regulations in such manner as may be deemed advisable for safety, care or cleanliness of the Shopping Center and for preservation of good order therein, all of which rules and regulations, changes and amendments will be forwarded to Tenant in writing and shall be carried out and observed by Tenant. Tenant shall further be responsible for the compliance with such rules and regulations by the employees, servants, agents, visitors and invitees of Tenant. Landlord may temporarily close any part of the Common Area for such periods of time as may be necessary to prevent the public from obtaining perspective rights or to make repairs or alterations.

5.2 Landlord shall maintain as part of the Common Area the hard surface parking area within the Shopping Center as shown on Exhibit B or in reasonable proximity thereto, it being expressly agreed, however, that in addition to the rights reserved to Landlord in Section 5.1 above, Landlord may from time to time substitute for any parking area shown on Exhibit A other areas or multi-level parking facilities reasonably accessible to the tenants of the Shopping Center.

5.3 Tenant agrees to pay as an additional charge each month its proportionate share of the cost of operation and maintenance of the Common Area (including, among other costs, those listed on Exhibit E which may be incurred by Landlord in its discretion, and including an allowance in the amount of fifteen percent (15%) of the total Common Area costs for Landlord's overhead and administrative costs. The proportionate share to be paid by Tenant of the cost of operation and maintenance of the Common Area shall be computed on the ratio that the total area of the Premises bears to the total number of square feet of leasable space within the Shopping Center. Such proportionate share shall be paid by Tenant in monthly installments in such amounts as are estimated and billed by Landlord at the beginning of each twelve (12) month period commencing and ending on dates designated by Landlord, each installment being due on the first day of each calendar month. If at any time during such twelve (12) month period it shall appear that Landlord has underestimated Tenant's proportionate share of Common Area costs for such twelve (12) month period, Landlord may re-estimate Tenant's proportionate share of Common Area costs and may bill Tenant for any deficiency which may have accrued during such twelve (12) month period and thereafter the monthly installment payable by Tenant shall also be adjusted. Within one hundred twenty (120) days or such reasonable time thereafter (in Landlord's determination) after the end of each such twelve (12) month period, Landlord shall deliver to Tenant a statement of Common Area costs for such twelve (12) month period and the monthly installments paid or payable shall be adjusted between Landlord and Tenant, and each party hereby agrees that Tenant shall pay Landlord or Landlord shall credit Tenant's account (or, if such adjustment is at the end of the term, pay Tenant), within thirty (30) days of receipt of such statement, the amount of any excess or deficiency in Tenant's proportionate share of Common Area costs paid by Tenant to Landlord during such twelve (12) month period. Failure of Landlord to provide the statement called for hereunder shall not relieve Tenant from its obligations hereunder. The initial Common Area Maintenance Charge subject to adjustment as provided herein, shall be that amount set out in Section 1.1 (l).

ARTICLE VI. Use and Care of Premises.

6.1 The Premises may be used only for the purpose or purposes specified in Section 1.1 (j) above, and for no other purpose or purposes without the prior written consent of Landlord. Tenant shall use in the transaction of business in the Premises the trade name specified in Section 1.1 (e) above and no other trade name without the prior written consent of Landlord. Tenant shall not at any time leave the Premises vacant, but shall in good faith continuously throughout the term of this Lease conduct and carry on in the entire Premises the type of business for which the Premises are leased. Tenant shall operate its business with a complete line of full selection and sufficient stock of first class merchandise of current style and type, attractive

Tenant _____

displays and in an efficient, high class and reputable manner so as to produce the maximum amount of sales from the Premises, and shall, except during reasonable periods for repairing, cleaning and decorating keep the Premises open to the public for business with adequate and competent personnel in attendance on all days and during all hours (including evenings) established by Landlord from time to time as store hours for the Shopping Center, and during any other days and hours extent Tenant may be prohibited from being open for business by applicable law, ordinance or government regulation.

6.2 Tenant shall not, without Landlord's prior written consent, keep anything within the Premises for any purpose which increases the insurance premium cost of invalidates any insurance policy carried on the Premises or other part of the Shopping Center. Tenant shall pay as additional rental, upon demand of Landlord, any such increased premium cost due to Tenant's use or occupation of the Premises. All property kept, stored or maintained within the Premises by Tenant shall be at Tenant's sole risk.

6.3 Tenant shall not conduct within the Premises any fire, auction or bankruptcy sales or operate within the Premises a "Wholesale" or "factory outlet" store, a cooperative store or a "second hand" store, a "surplus" store or a store commonly referred to as a "discount house". Tenant shall not (i) advertise that it sells products or services at "discount", "cut-price", or "cut-rate" prices, (ii) permit any objectionable or unpleasant odors to emanate from the Premises, (iii) place or permit any radio, television, loudspeaker or amplifier on the roof or outside the Premises or where the same can be seen or heard from outside the building or in the Common Area, (iv) place an antenna, awning or other projection on the exterior of the Premises; (v) distribute leaflets or other solicit advertising material in the Common Area; (vi) take any other action which in the exclusive judgement of Landlord would constitute a nuisance or would disturb or endanger other tenants of the Shopping Center or unreasonably interfere with their use of their respective premises, (vii) do anything which would tend to injure the reputation of the Shopping Center.

6.4 Tenant will take good care of the Premises and keep the same free from waste at all times. Tenant shall keep the Premises and sidewalks, service-ways and loading areas adjacent to the Premises neat, clean and free from dirt, rubbish, insects and pests at all times, and shall store all trash and garbage within the Premises, arranging for the regular pickup of such trash and garbage at Tenant's expense. Tenant will store all trash and garbage within the area designated by Landlord for such trash pickup and removal and only in receptacles of the size, design and color from time to time prescribed by Landlord. Receiving and delivery of goods and merchandise and removal of garbage and trash shall be made only in the manner and areas from time to time prescribed by Landlord. Landlord may, at its sole option, arrange for collection of all trash and garbage and, should Landlord exercise such election, Tenant's proportionate share of the cost thereof will be part of its Common Area Maintenance Charge. Tenant shall not operate an incinerator or burn trash or garbage within the Shopping Center.

6.5 Tenant shall maintain all display windows in a neat, attractive condition, and shall keep all display windows and exterior electric signs in front of the Premises lighted from dusk until 10:00 PM every day, including Sundays and holidays.

6.6 Tenant shall include the address and identity of its business activities in the Premises in all advertisements made by Tenant in which the address and identity of any similar local business activity of Tenant is mentioned.

6.7 Tenant shall procure, at its sole expense, any permits and licenses required for the transaction of business in the Premises and otherwise comply with all applicable laws, ordinances and governmental regulations.

ARTICLE VII. Maintenance and Repair of Premises. 7.1 Landlord shall keep the foundation, the exterior walls (except store fronts, plate glass windows, doors, door closure devices, window and door frames, molding, locks and hardware and painting or other treatment of interior and exterior walls) and roof of the Premises in good repair, ordinary wear and tear excepted. Any repairs required to be made by Landlord hereunder which are occasioned by the act or negligence of Tenant, its agents, employees, subtenants, licensees and concessionaires, shall be paid for by Tenant upon demand to the extent not covered by net insurance proceeds paid to Landlord therefore. In the event that the Premises should become in need of repairs required to be made by Landlord hereunder, Tenant shall give immediate written notice thereof to Landlord and Landlord shall not be responsible in

Tenant _____

any way for failure to make any such repairs until a reasonable time shall have elapsed after delivery of such written notice. Landlord's obligation hereunder is limited to repairs specified in this Section 7.1 only, and Landlord shall have no liability for any damages or injury arising out of any condition or occurrence causing a need for such repairs.

7.2 Tenant shall furnish, maintain and replace all electric light bulbs, tubes and tube casings.

7.3 Tenant shall keep the Premises in good, clean condition and shall, at its sole cost and expense, make all needed repairs and replacements, including replacement of cracked or broken glass, and shall keep all plumbing units, pipes and connections free from obstruction and protected against ice and freezing. If any repairs, replacements or maintenance required on the part of Tenant hereunder are not accomplished within ten (10) days after written notice to Tenant from Landlord, Landlord may, at its option, perform such repairs, replacements or maintenance without liability to Tenant for any loss or damage which may result to its stock or business by reasons thereof, and Tenant shall pay to Landlord immediately upon demand as additional rental hereunder the cost of such repairs, replacements or maintenance plus (15%) of such cost. At the expiration of this Lease, Tenant shall surrender the Premises in good condition, reasonable wear and tear and loss by fire or other casualty accepted and shall surrender all keys for the Premises to Landlord and shall inform Landlord of all combinations on locks, safes and vaults, if any, in the Premises. Upon move out by Tenant, should the Premises require any repairs which are the responsibility of Tenant hereunder, Landlord shall have the right to make such repairs at Tenant's sole cost.

7.4 Tenant acknowledges that the air conditioning and heating equipment (HVAC) is in proper working condition upon execution of this Lease. Repair and maintenance of the air conditioning and heating equipment shall be solely the responsibility of Tenant. Throughout the entire term of this Lease, Tenant shall at its own costs and expense, enter into a regularly scheduled preventative maintenance/service contract with a maintenance contractor for servicing all hot water, heating and air conditioning systems and equipment within the Premises. The maintenance contractor and the contract must be approved by Landlord. The service contract must include all services suggested by the equipment manufacturer within the operation/maintenance manual and must become effective (and a copy thereof delivered to Landlord) with thirty (30) days of the date Tenant takes possession of the Premises.

ARTICLE VIII Alterations. 8.1 Tenant shall not make any alterations, additions or improvements to the Premises without the prior written consent of Landlord, except for the installation of unattached, moveable trade fixtures which may be installed without drilling or cutting or otherwise defacing the Premises. All alterations, additions, improvements and fixtures (other than unattached, moveable trade fixtures) which may be made or installed by either party upon the Premises shall remain upon and be surrendered with the Premises and become the property of Landlord at the termination of this Lease, unless Landlord requests their removal in which event Tenant shall remove the same and restore the Premises to their original condition at Tenant's expense. Any linoleum, carpeting or other floor covering which may be cemented or otherwise affixed to the floor of the Premises is a permanent fixture and shall become the property of Landlord without credit or compensation to Tenant.

8.2 All construction work done by Tenant within the Premises, including without limitation Tenant's Work referred to in Section 3.1, shall be performed in a good and workmanlike manner, in compliance with all governmental requirements, and the requirements of any contract or deed of trust to which the Landlord may be a party and in such manner as to cause a minimum of interference with other construction in progress and with the transaction of business in the Shopping Center. Tenant agrees to indemnify Landlord and hold it harmless against any loss, liability or damage resulting from such work, and prior to commencement of any such work Tenant shall, if requested by Landlord, furnish bond or other security satisfactory to Landlord against any such loss, liability or damage.

8.3 Tenant agrees that all venting, opening, sealing, waterproofing or any altering of the roof shall be performed by Landlord's roofing contractor at Tenant's expense and that when completed Tenant shall furnish to Landlord a certificate from Landlord's roofing contractor that all such alterations approved by Landlord have been completed in accordance with the plans and specifications therefore approved by Landlord. Tenant agrees that all improvements, alterations, repairs or other work performed upon the Premises under any provisions of this lease shall be performed under the direction of a general contractor approved by Landlord. Tenant further agrees that plans and drawings for

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installation or revision of mechanical, electrical or plumbing systems shall be designed by an engineer approved by Landlord, such design work to be done at Tenant's expense.

ARTICLE IX. Landlord's Right of Access; Use of Roof. 9.1 Landlord shall have the right to enter upon the Premises at any reasonable time for the purpose of inspecting the same, or of making repairs to the Premises, or of making repairs, alterations or additions to adjacent premises, or of showing the Premises to prospective purchasers, lessees or lenders.

9.2 Use of the roof above the Premises is reserved to Landlord. Tenant shall not be allowed on the roof without Landlord's prior written consent.

ARTICLE X. Signs; Store Fronts. 10.1 Tenant shall not, without Landlord's prior written consent (a) make any changes to or paint the store front; or (b) install any exterior lighting, decorations or paintings or (c) erect or install any signs, banners, window or door lettering, placards, decorations or advertising media of any type which can be viewed from the exterior of the Premises, excepting only dignified displays of customary type for its display window. All signs, decorations and advertising media shall conform in all respects to Landlord's sign criteria attached hereto as Exhibit F. All signs shall be kept in good conditions and in proper operating order at all times. Landlord reserves the right to designate a uniform type of signs for the Shopping Center to be installed and paid for by Tenant.

10.2 Tenant agrees to have erected and/or installed and fully operative, at Tenant's expense, on or before the Commencement Date of this Lease all signs in accordance with Landlord's sign criteria. The Tenant, upon vacation of the Premises, or the removal or alteration of its sign for any reason, shall be responsible for the repair, painting, and/or replacement of the building fascia surface where signs are attached.

10.3 Tenant shall pay its prorated cost of electricity if Tenant maintains a sign on Landlord's pylon or monument sign (if any). Furthermore, Tenant waives any liability on the part of Landlord arising out of Tenant's use of the pylon or monument sign and agrees to hold Landlord harmless from and against any liability arising out of Tenant's use of such sign.

10.4 During the period that is six (6) months prior to the end of the Lease Term and at any time Tenant is in default hereunder and such default has remained uncured for at least thirty (30) days, Landlord shall have the right to erect on the Premises signs indicating that the Premises are available for lease.

ARTICLE XI. Utilities. 11.1 Landlord agrees to cause to be provided and maintained the necessary mains, conduits and other facilities necessary to supply water, electricity, gas (if applicable), telephone service and sewerage service to the Premises, subject to any special provisions contained in Exhibit C. Landlord shall not be responsible for providing any meters or other devices for the measurement of utilities supplied to the Premises. Tenant shall at Tenant's sole cost and expense make application and arrange for the installation of all such meters or other devices.

11.2 Tenant shall promptly pay all charges for electricity, water, gas, telephone service, sewage service, internet and other utilities furnished to the Premises and shall promptly pay any maintenance charges therefore Landlord may, if it so elects, furnish one or more utility services to Tenant, and in such event Tenant shall purchase such services as are tendered by Landlord, and shall pay on demand as additional retail the rates established therefore by Landlord which shall not exceed the rates which would be charged for the same services if furnished directly by the local public utility companies. Landlord may at any time discontinue furnishing any such service without obligation to Tenant other than to connect the Premises to the public utility, if any, furnishing such service.

11.3 Landlord shall not be liable for any interruption or failure whatsoever in utility services and Tenant shall comply with all terms and provisions of this Lease notwithstanding any such failure or interruption.

ARTICLE XII. Indemnity, Public Liability Insurance and Fire Extended Coverage Insurance.

Tenant _____

12.1 Landlord shall not be liable to Tenant or to Tenant's employees, agents or visitors, or to any person or entity whomsoever, for injury to person or damage to or loss of property on or about the Premises or the Common Area caused by the negligence or misconduct of Tenant, its officers, partners, employees, agents, subtenants, licensees, concessionaires, visitors or any other person entering the Shopping Center under the express or implied invitation of Tenant, or arising out of the use of the Premises by Tenant and the conduct of its business therein, ' or arising out of any breach or default by Tenant in the performance of its obligations hereunder or resulting from any other cause except Landlord's negligence. Tenant covenants to indemnify, protect, defend (with counsel reasonably acceptable to Landlord) and hold harmless Landlord and any person or persons in privity of estate with Landlord from and against any and all claims and demands of third persons (including, but not limited to, those for death, for personal injuries, or for loss of or damage to property) occurring in or arising, directly or indirectly, out of or in connection with the use and occupancy of the Premises, any breach of this Lease, Tenant's Work or alterations performed by Tenant in or to the Premises, the business conducted in the Premises, or (without limiting the foregoing) as a result of any acts, omissions or negligence of Tenant, or any concessionaire, or their respective contractors, licensees, agents, servants, employees or other persons in or about the Premises, and from and against all costs, expenses and liability occurring in or in connection with any such claim or proceeding brought thereon, unless due to the gross negligence or willful misconduct of Landlord.

12.2 Tenant shall procure and maintain throughout the term of this Lease, at its sole cost and expense, the following insurance coverage:

(i) Commercial General Liability. Insurance with a limit not less than \$1,000,000 per occurrence \$2,000,000 general aggregate on per occurrence form. The commercial general liability insurance requirement may be satisfied through a combination of primary commercial general liability and excess umbrella liability policies /aggregate;

(ii) Employers' Liability. \$500,000 each accident /\$500,000 disease each employee /\$500,000 disease policy limit;

(iii) Workers' Compensation. Insurance meeting the statutory requirements of the State of North Carolina and any applicable Federal laws and an Employers' Liability Insurance Policy with a \$500,000 per accident limit, \$500,000 disease per policy limit, and \$500,000 disease each employee limit;

(iv) Commercial automobile liability - a minimum combined single limit each accident of \$1,000,000 providing coverage for hired and non-owned vehicles utilized in the performance of services; and

(v) Professional Liability/Malpractice - \$1,000,000 per occurrence.

The insurance required by this Section shall name "City of Kannapolis, a North Carolina municipal corporation" as an additional insured to the Commercial General Liability and Automobile policies which shall be primary and not contributory to any other insurance that may be available to the City. The Tenant shall provide City with a certificate of such insurance evidencing the satisfaction of the requirements hereof and containing a provision that City be given thirty (30) days prior written notice of any intent to amend (where such amendment would cause the coverage to satisfy the aforementioned requirements) or terminate such policy(ies) by the Tenant or the insuring company. Furthermore, such policy(ies) shall name City as an additional insured and the same shall be evidenced by an additional insured endorsement. Tenant's failure to comply with the foregoing requirements relating to insurance shall constitute an event of default hereunder. In addition to the remedies provided in Article XII of this Lease, Landlord may, but is not obligated to, obtain such insurance and Tenant shall pay to Landlord upon demand as additional rental the premium cost thereof plus interest thereon at the rate equal to the lesser of the highest rate permitted by law or eighteen percent (18%) per annum from the date of payment by Landlord until repaid by Tenant.

12.3 Tenant agrees to pay its proportionate share of Landlord's cost of carrying fire and extended coverage insurance and liability insurance in such amounts as Landlord deems necessary or desirable Landlord ("Insurance") on the Shopping Center. During each month of the Lease Term, Tenant shall make a monthly escrow deposit with Landlord equal to 1/12 of its proportionate share of the Insurance on the Shopping Center which will be due and payable for that particular year. Tenant authorizes Landlord to use the funds deposited with Landlord under this

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section to pay the cost of Insurance. Each Insurance Escrow Payment shall be due and payable at the same time and manner of the payment of Minimum Guaranteed Rental as provided herein. The amount of the initial monthly Insurance Escrow Payment will be that amount set out in Section 1.1(m) above. The initial monthly Insurance Escrow Payment is based upon Tenant's proportionate share of the estimated Insurance on the Shopping Center for the year in question, and the monthly Insurance Escrow Payment is subject to increase or decrease as determined by Landlord to reflect and accurate monthly escrow of Tenant's estimate proportionate share of the Insurance. The Insurance Escrow Payment account of Tenant shall be reconciled annually. If Tenant's total Insurance Escrow Payment are less than Tenant's actual proportionate share of the Insurance on the Shopping Center, Tenant shall pay to Landlord upon demand the difference; if the total Insurance Escrow payments of Tenant are more than Tenant's actual proportionate share of the Insurance on the Shopping Center, Landlord shall retain such excess and credit it to Tenant's Insurance Escrow Payment account. Tenant's proportionate share of the cost of Insurance on the Shopping Center shall be computed by multiplying the cost of Insurance by a fraction, the numerator of which shall be the number of square feet of floor space in the Premises and the denominator of which shall be the number of square feet of all stories in the Shopping Center that are leasable on January 1, of the applicable year.

ARTICLE XIII. Non-Liability for Certain Damages 13.1 Landlord and Landlord's agents and employees shall not be liable to Tenant of any other person or entity whomsoever for any injury to person or damage to property caused by the Premises or other portions of the Shopping Center becoming out of repair or damaged or by defect in or failure of equipment, pipes or wiring, or broken glass, or by the backing up of drains or by glass, water, steam, electricity or oil leaking, escaping or flowing into the Premises. Landlord shall not be liable to Tenant or any other person or entity whomsoever for any loss or damage that may be occasioned by or through the acts or omissions of other tenants of the Shopping Center or of any other person or entities whomsoever, excepting only duly authorized employees and agents of Landlord. With respect to latent or patent defects in the Premises or in the building of which they form a part, a Landlord's liability shall not extend beyond one (1) year from the date of substantial completion of construction of the Premises, whether or not such defects are discovered within such one-year period.

ARTICLE XIV. Damage by Casualty. 14.1 Tenant shall give immediate written notice to Landlord of any damage caused to the Premises by fire or other casualty.

14.2 In the event that the Premises shall be damaged or destroyed by fire or other casualty insurable under standard fire and extended coverage insurance and Landlord does not elect to terminate this Lease as hereinafter provided, Landlord shall proceed with reasonable diligence and at its sole cost and expense to rebuild and rebuild and repair the Premises. If the building in which the Premises are located shall (i) be destroyed or substantially damaged by a casualty not covered by Landlord's insurance; or (ii) be destroyed or rendered untenable to an extent of fifty percent (50%) of the first floor area by a casualty covered by Landlord's insurance; or (iii) be damaged to such extent that the remaining term of this Lease is not sufficient to amortize the cost of reconstruction, then Landlord may elect to either terminate this Lease as hereinafter provide or to proceed to rebuild with reasonable diligence and at it sole cost and expense to rebuild and repair the Premises. Should Landlord elect to terminate this Lease it shall give written notice of such election to Tenant within ninety (90) days after the occurrence of such casualty. If Landlord should not elect to terminate this Lease, Landlord shall proceed with reasonable diligence and at its sole cost and expense to rebuild and repair the Premises. In the event of any damage or destruction to the Premises, Tenant shall, upon notice from Landlord, forthwith remove, at Tenant's sole cost and expense, such portion or all of Tenant's shelves, bins, machinery and other trade fixtures and all other property belonging to Tenant or Tenant's licensees from such portion or all of the Premises as Landlord shall request.

14.3 Landlord's obligation to rebuild and repair under this Article XIV shall in any event be limited to restoring Landlord's Work as described in Exhibit C to substantially the condition in which the same existed prior to the casualty, and all be further limited to the extent of the insurance proceeds available to Landlord for such restoration, and Tenant agrees that promptly after completion of such work by Landlord, it will proceed with reasonable diligence and at its sole cost and expense to rebuild, repair and restore its signs, fixtures and equipment and other items of Tenant's Work as described in Exhibit C.

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14.4 Tenant agrees that during any period of reconstruction or repair of the Premises it will continue the operation of its business within the Premises to the extent practicable. During the period from the occurrence of the causality until Landlord's repairs are completed, the Minimum Guaranteed Rental shall be reduced to such extent as may be fair and reasonable under the circumstances.

14.5 Notwithstanding anything herein to the contrary, in the event the holder of any indebtedness, secured by a mortgage or deed of trust covering the Premises requires that the insurance proceeds be applied to such indebtedness then Landlord shall have the right to terminate this Lease by delivering written notice of termination to Tenant within fifteen (15) days after such requirement is made by any such holder, whereupon all rights and obligations hereunder shall cease and terminate.

14.6 Each of Landlord and Tenant hereby releases the other from any and all liability or responsibility to the other or anyone claiming through or under them by way of subrogation or otherwise from any loss or damage to property. Caused by fire or any other perils insured in policies of insurance covering such property, even if such loss or other perils insured in policies of insurance covering such property, even if such loss or damage shall have been caused by the fault or negligence of the other party, or anyone for whom such party may be responsible, including any other tenants or occupants of the Shopping Center; provided, however, that this release shall be applicable and in force and effect only to the extent that such release shall be lawful at that time and in any event only with respect to loss or damage occurring during such times as the releasor's policies shall contain a clause or endorsement to the effect that any such release shall not adversely affect or impair said policies or prejudice the right of the releasor to recover thereunder and then only to the extent of the insurance proceeds payable under such policies. Each of Landlord and Tenant agrees that it will request its insurance carriers to include in its policies such a clause or endorsement. If extra cost shall be charged therefore, each party shall advise the other thereof and of the amount of the extra cost, and the other party fails to pay such extra costs, the release provisions of this section shall be inoperative against such other party to the extent necessary to avoid invalidation of such releasor's insurance.

ARTICLE XV. Eminent Domain.

15.1 If more than twenty percent (20%) of the floor area of the Premises should be taken for any public or quasi-public use under any governmental law, ordinance or regulation under any governmental law, ordinance or regulation or by right of eminent domain or by private purchase in lieu thereof this lease shall terminate and the rent shall be abated during the unexpired portion of this Lease, effective on the date physical possession is taken by the condemning authority.

15.2 If less than twenty percent (20%) of the floor area of the Premises should be taken as aforesaid, this Lease shall not terminate; however, the Minimum Guaranteed Rental payable hereunder during the unexpired portion of this Lease shall be reduced in proportion to the area taken, effective on the date physical possession is taken by the condemning authority. Following such partial taking, and receipt of condemnation proceeds. Landlord shall make all necessary repairs or alterations within the scope of Landlord's Work as described in Exhibit C necessary to make the Premises an architectural whole.

15.3 If any part of the Common Area shall be taken as aforesaid, this Lease shall not terminate nor shall the rental payable hereunder be reduced, except that either Landlord or Tenant may terminate this Lease if the area of the Common Area remaining following such taking plus any additional parking area provided by Landlord in reasonable proximity to the shopping center shall be less than seventy percent (70%) of the area of the Common Area immediately prior to the taking. Any election to terminate this Lease in accordance with this provision shall be evidenced by written notice of termination delivered to the other party within thirty (30) days after the date physical possession is taken by the condemning authority.

15.4 All compensation awarded for any taking (or the proceeds of private sale in lieu thereof) of the Premises or Common Area shall be the property of Landlord and Tenant hereby assigns its interest in an such award to Landlord; provided, however, Landlord shall have no interest in any award made to Tenant for loss of business or for the taking of Tenant's fixtures and other property if a separate award for such items is made to Tenant. Tenant shall in no event be entitled to any award for the value of the unexpired term of this Lease.

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ARTICLE XVI. Assignment and Subletting.

16.1 Tenant shall not assign or in any manner transfer this Lease or any estate or interest therein, or sublet the Premises or any part thereof, or grant any license, concession or other right to occupy any portion of the Premises without the prior written consent of Landlord. All cash or other proceeds of any assignment, such proceeds as exceed the rentals called for hereunder in the case of a subletting and all cash or other proceeds of any other transfer of Tenant's interest in this Lease shall be paid to Landlord as received by Tenant, whether such assignment, subletting or other transfer is contented to by Landlord or not, unless Landlord agrees to the contrary in writing, and Tenant hereby assigns all rights it might have or ever acquire in any such proceeds to Landlord. Consent by Landlord to one or more assignments or sublettings shall not operate as a waiver of Landlord's rights as to any subsequent assignments and sublettings. Notwithstanding any assignment or subletting, Tenant and any guarantor of Tenant's obligations under this Lease shall at all times remain fully and primarily responsible and liable for the payment of the rental herein specified and for compliance with all of its other obligations under this Lease. Upon any subletting or assignment by Tenant in accordance with the terms hereof, any renewal options, expansion options, right of first refusal and/or exclusive use provisions shall become null and void.

16.2 Tenant shall give Landlord at least sixty (60) days advance written notice of any proposed assignment or subletting, such notice to be accompanied by a copy of the proposed sublease or assignment. Landlord shall have the right to terminate this Lease effective as of the proposed effective date of the assignment or subletting by giving Tenant written notice thereof within thirty (30) days after Landlord's receipt of said notice from Tenant. Should Landlord not elect to so terminate this Lease in connection with any proposed subletting or assignment, Landlord shall continue to have the right to disapprove same.

16.3 Tenant shall not mortgage, pledge or otherwise encumber its interest in this Lease or in the Premises.

16.4 In the event of the transfer and assignment by Landlord of its interest in this Lease and in the building containing the Premises to a person expressly assuming Landlord's obligations under this Lease, Landlord shall hereby be released from any further obligations hereunder, and Tenant agrees to look solely to such successor in interest of the Landlord for performance of such obligations. Any security given by Tenant to secure performance of Tenant's obligations hereunder, may be assigned and transferred by Landlord to such successor in interest, and Landlord shall thereby be discharged of any further obligation relating thereto.

ARTICLE XVII. Property Taxes.

17.1 Tenant shall be liable for all taxes levied against personal property and trade fixtures placed by tenant in the Premises. If any such taxes are levied against Landlord or Landlord's property and if Landlord elects to pay the same or if the assessed value of Landlord's property is increased by inclusion of personal and trade fixtures placed by Tenant in the Premises and Landlord elects to pay the taxes based on such increase, Tenant shall pay to Landlord upon demand that part of such taxes for which Tenant is primarily liable hereunder.

17.2 Tenant agrees to pay its proportionate share of all taxes, assessments and governmental charges of any kind and nature whatsoever levied or assessed against the Shopping Center, any other charges, taxes and/or impositions now in existence or hereafter imposed by any governmental authority based upon the privilege of renting the Premises or upon the amount of rent collected therefore and any tax, fee, levy, assessment or charge which is imposed as the result of a transfer, either partial or total, of Landlord's interest in the Premises or which is added to a tax or charge hereinbefore included within the definition of real property tax by reason of such transfer (all of the foregoing being hereinafter referred to as the "Taxes"). During each month of the term of this Lease, Tenant shall make a monthly escrow deposit with Landlord equal to 1/12 of its proportionate share of the Taxes on the Shopping Center which will be due and payable for that particular year. Tenant authorizes Landlord to use the funds deposited with Landlord under this Section 17.2 to pay the Taxes levied or assessed against the Shopping Center. Each Tax Escrow Payment shall be due and payable at the same time and in the same manner as the time and manner of the payment of Minimum Guaranteed Rental as provided herein. The amount of the initial monthly Tax Escrow Payment will be that amount set out in Section 1.1(n) above. The initial monthly Tax Escrow Payment is based upon Tenant's proportionate share of the estimated taxes on the Shopping Center for the year in question, and the monthly Tax Escrow Payment is subject to increase or decrease as determined by Landlord to share of the Taxes.

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The Tax Escrow Payment account of Tenant shall be reconciled annually. If the Tenant's total Tax Escrow Payments are less than Tenant's actual pro rata share of the Taxes on the Shopping Center, Tenant shall pay to Landlord upon demand the difference; if the total Tax Escrow Payments of Tenant are more than Tenant's actual pro rata share of the Taxes on the Shopping Center, Landlord shall retain such excess and credit it to Tenant's Tax Escrow Payment account. Tenant's proportionate share of the Taxes on the Shopping Center shall be computed by multiplying the Taxes by a fraction, the numerator of which shall be the number of square feet of floor space in the Premises and the denominator of which shall be the number of square feet of all store in the Shopping Center that are leasable on January 1, of the applicable year.

17.3 The Landlord shall have the right to employ a tax consulting firm to attempt to assure a fair Tax burden on the Shopping Center.

17.4 Tenant may, alone or along with any other tenants of said building, at its or their sole cost and expense, in its or their own name(s) dispute and contest and Taxes by appropriate proceedings diligently conducted in good faith, but only after Tenant and all other tenants, if any, joining with Tenant in such contest have deposited with Landlord the amount so contested and unpaid, or their proportionate shares thereof as the case may be, which shall be held by Landlord without obligation for interest until the termination of the proceedings, at which the amount(s) deposited shall be applied by Landlord toward the payment of the items held valid (plus any court costs, interest, penalties and other liabilities associated with the proceedings), and Tenant's share of any excess shall be returned to Tenant. Tenant further agrees to pay to Landlord upon demand Tenant's share (as among all tenants who participate in the contest) of all court costs, interest, penalties and other liabilities relating to such proceedings. Tenant hereby indemnifies and agrees to hold Landlord harmless from and against any cost, damage or expense (including attorneys' fees) in connection with any such proceedings.

17.5 Any payment to be made pursuant to this Article XVII with respect to the real estate tax year in which this Lease commences or terminates shall bear the same ratio to the payment which would be required to be made for the full tax year as that part of such tax year covered by the term of this Lease bears to a full tax year.

ARTICLE XVIII. Default by Tenant and Remedies.
deemed to be events of default by Tenant under this Lease:

18.1 The following events shall be

- 1.) Tenant shall fail to pay an installment of rental or any other amount payable to Landlord as herein provided and such failure shall continue for a period of ten (10) days.
- 2.) Tenant shall fail to comply with any term, provisions or covenant of this Lease, other than the payment of rental of any other amount payable to Landlord and shall not cure such failure within ten (10) days after written notice thereof to Tenant.
- 3.) Tenant or any guarantor of Tenant's obligations under this Lease shall become insolvent, or shall make a transfer in fraud of creditors, or shall make an assignment for the benefit of creditors.
- 4.) Tenant or any guarantor of Tenant's obligations under this Lease shall file a petition under any section or chapter of the National Bankruptcy Act, as amended, or under any similar law or statute of the United States or any State thereof; or Tenant or any guarantor of Tenant's obligations under this Lease shall be adjudged bankrupt or insolvent in proceedings filed against Tenant or any guarantor of Tenant's obligations under this Lease shall be adjudged bankrupt or insolvent in proceedings filed against Tenant or any guarantor of Tenant's obligations under this Lease.
- 5.) A receiver or Trustee shall be appointed for all Premises or for all or substantially all of the assets of Tenant or any guarantor of Tenant's obligations under this Lease,
- 6.) Tenant shall desert or vacate any portion of the Premises.
- 7.) Tenant shall do or permit to be done anything which creates a lien upon the Premises.
- 8.) The business operated by Tenant shall be closed for failure to pay any State sales tax as required or for any other reason.

Upon the occurrence of any such event of default, Landlord shall have the option to pursue any one or more of the following remedies without any notice or demand whatsoever:

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- A. Terminate this Lease in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which Landlord may have for possession or arrearages in rental, enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying said premises or any part thereof, by force if necessary, without being liable for prosecution or any claim of damages thereof.
- B. Enter upon and take possession of the Premises and expel or remove Tenant and any other person who may be occupying said premises or any part thereof, by force if necessary, without being liable for prosecution or any claim for damages therefore with or without having terminated the Lease.
- C. Do whatever Tenant is obligated to do under the terms of this Lease (and enter upon the Premises in connection therewith if necessary) without being liable for prosecution or any claim for damages therefore, and Tenant agrees to reimburse Landlord on demand for any expenses which Landlord may incur in thus effecting compliance with Tenant's obligations under this Lease, and Tenant further agrees that Landlord shall not be liable for any damages resulting to the Tenant from such action.
- D. Alter all locks and other security devices at the Premises without terminating this Lease.

18.2 Exercise by Landlord of any one or more remedies hereunder granted or otherwise available shall not be deemed to be an acceptance of surrender of the Premises by Tenant, whether by agreement or by operation of law, it being understood that such surrender can be effected only by the written agreement of Landlord and Tenant. No such alteration of locks or other security devices and no removal or other exercise of dominion by Landlord over the property of Tenant or others at the Premises shall be deemed unauthorized or constitute a conversion, Tenant hereby consenting, after any event of default, to the aforesaid exercise of dominion over Tenant's property within the Premises. All claims for damages by reason of such re-entry and/or repossession and/or alteration of locks or other security devices are hereby waived, as are all claims for damages by reason of any distress warrant, forcible detainer proceedings sequestration proceedings or other legal process. Tenant agrees that any re-entry by Landlord may be pursuant to judgement obtained in forcible detainer proceedings or other legal proceedings or without the necessity for any legal proceedings, as Landlord may elect, and Landlord shall not be liable in trespass or otherwise.

18.3 In the event Landlord elects to terminate the Lease by reason of an event of default, then notwithstanding such termination, Tenant shall be liable for and shall pay to Landlord at the address specified for notice to Landlord herein the sum of all rental and other amounts payable to Landlord pursuant to the terms of this Lease which have accrued to date of such termination, plus, as damages, an amount equal to the total rental (Minimum Guaranteed plus Tenant's Common Area Maintenance Charge, Insurance Escrow Payment and Tax Escrow Payment hereunder for the remaining portion of the Lease Term (had such term not been terminated by Landlord prior to the date of expiration stated in Article 1).

18.4 In the event that Landlord elects to repossess the Premises without terminating the Lease, then Tenant shall be liable for and shall pay to Landlord at the address specified for notice to Landlord herein all rental and other amounts payable to Landlord pursuant to the terms of this Lease which have accrued to the date of such repossession, plus total rental (Minimum Guaranteed plus Tenant's Common Area Maintenance Charge, Insurance Escrow Payment and Tax Escrow Payment required to be paid by Tenant to Landlord during the remainder of the Lease Term until the date of expiration of the term as stated in Article 1, diminished by any net sums thereafter received by Landlord through reletting the Premises during said period (after deducting expenses incurred by Landlord as provided in Section 18.5 hereof). In no event shall Tenant be entitled to any excess of any rental obtained by reletting over and above the rental herein reserved. Actions to collect amounts due by Tenant to Landlord as provided in this Section 19.4 may be brought from time to time, on one or more occasions, without the necessity of Landlord's waiting until expiration of the Lease Term.

18.5 Landlord may, but need not, relet the Premises or any part thereof for such rent and upon such terms as Landlord, in its sole discretion, shall determine (including the right to relet the Premises for a greater or lesser term than that remaining under this Lease, the right to relet the Premises as a part of a larger area, and the right to change the character or use of the Premises). If Landlord elects to relet the Premises, it shall only be required to use the same efforts it then uses to lease other space or properties which it owns or manages, provided, however that Landlord may be leasing or have available and may place a suitable prospective tenant in any such available space regardless of when such alternative space becomes available, provided, further, the Landlord shall not be required to observe any instruction given by Tenant about such reletting or accept any tenant offered by Tenant unless such offered tenant has a creditworthiness acceptable to Landlord, leases the entire Premises, agrees to use the Premises

in a manner consistent with the lease and leases the Premises at the same rent, for no more than the current term and on the same terms and conditions as in this Lease without any expenditure by Landlord for tenant improvements

Tenant _____

or broker's commissions. In any such case, Landlord may, but shall not be required to, make repairs, alterations and additions in or to the Premises and redecorate the same to the extent Landlord deems necessary or desirable.

18.6 In the event Tenant is comprised of more than one person and/or entity, all such persons and/or entities shall be jointly and severally liable for all of the obligations and liabilities of Tenant under this Lease.

18.7 Upon receipt from Tenant of the sum stated in Section 1.1(o) above, such sum shall be held by Landlord without interest as security for the performance by Tenant of Tenant's covenants and obligations under this Lease, it being expressly understood that such deposit is not an advance payment of rental or a measure of Landlord's damages in case of default by Tenant. If at any time during the term of this Lease any of the rental herein reserved shall be overdue and unpaid, or any other sum payable by Tenant to Landlord hereunder shall be overdue and unpaid then Landlord may at its option apply any portion of said deposit to the payment of any such overdue rental or other sum. In the event of the failure of Tenant to keep and perform any of the other terms, covenants and conditions of this Lease to be kept and performed by Tenant, then the Landlord at its option may apply the security deposit, or so much thereof as may be necessary, to compensate the Landlord for loss, cost or damage sustained, incurred or suffered by Landlord due to such breach on the part of tenant. Should the security deposit, or any portion thereof be applied by Landlord as herein provided, Tenant shall, upon written demand of Landlord, remit to Landlord a sufficient amount in cash to restore the security deposit to the original sum deposited, and tenant's failure to do so within five days after receipt of such demand shall constitute a default under this Lease. Any remaining balance of such deposit shall be returned by Landlord to Tenant at such time after termination of this Lease that all tenant's obligations under this Lease have been fulfilled.

18.8 In the event of any default by Landlord, Tenant will give Landlord written notice specifying such default with particularity, and Landlord shall thereupon have thirty (30) days (or such longer period as may be required in the exercise of due diligence) in which to cure any such default. Unless and until Landlord fails to so cure any default after such notice, Tenant shall not have any remedy or cause of action by reason thereof. All obligations of Landlord hereunder will be construed as covenants, not conditions. The term "Landlord" shall mean only the owner, for the time being, of the Shopping Center, and in the event of the transfer by such owner of its interest in the Shopping Center, and in the event of the transfer by such owner of its interest in the Shopping Center, such owner shall thereupon be released and discharged from all covenants and obligations of the Landlord thereafter accruing, but such covenants and obligations shall be binding during the Lease Term upon each new owner for the duration of such owner's ownership. Notwithstanding any other provisions hereof, in the event of any breach or default by Landlord in any term or provision of this Lease, Tenant agrees to look solely to the equity or interest then owner by Landlord in the land and improvements which constitute the Shopping Center, however, in no event shall any deficiency judgment or any money judgment of any kind be sought or obtained against Landlord.

18.9 In the event that Landlord shall have taken possession of the Premises pursuant to the authority herein granted, then Landlord shall have the right to keep in place and use all of the furniture, fixtures and equipment at the Premises, including that which is owned by or leased to Tenant at all times prior to any foreclosure thereon by Landlord or repossession thereof by any lessor thereof or third party having a lien thereon. Landlord shall also have the right to remove from the Premises (without the necessity of obtaining a distress warrant, writ of sequestration or other legal process and without being liable for prosecution or any claim for damages therefore) all or any portion of such furniture, fixtures, equipment and other property located thereon and place same in storage at any place within the County in which the Premises is located; and in such event, Tenant shall be liable to Landlord for costs incurred by Landlord in connection with such removal and storage and shall indemnify and hold Landlord harmless from all loss, damage, cost, expense and liability in connection with such removal and storage. Landlord shall also have the right to relinquish possession of all or any portion of such furniture, fixtures, equipment and other property to any person ("Claimant") claiming to be entitled to possession thereof who presents to Landlord a copy of any instrument represented to Landlord by Claimant to have been executed by Tenant (or any predecessor of Tenant) granting Claimant the right under various circumstances to take possession of such furniture, fixtures, equipment or other property, without the necessity on the part of Landlord to inquire into the authenticity of said instrument and without the necessity of Landlord's making any nature of investigation or inquiry as to the validity of the factual or legal basis upon which Claimant purports to act' and Tenant agrees to indemnify and hold Landlord harmless from all cost, expense, loss, damage and liability incident to Landlord's relinquishment of possession of all or any portion of such furniture, fixtures, equipment or other property to Claimant.

18.10 The rights and remedies of Landlord herein stated shall be in addition to any and all other rights and remedies which Landlord has or may hereafter have at law or in equity; and Tenant stipulated and agrees that the rights herein granted Landlord are commercially reasonable.

Tenant _____

ARTICLE XIX. Mechanics' Liens. 19.1 Tenant shall have no authority, express or implied, to create or place any lien or encumbrance of any kind or nature whatsoever upon, or in any manner to bind, the interest of Landlord or Tenant in the Premises or to charge the rentals payable hereunder for any claim in favor of any person dealing with Tenant, including those who may furnish materials or perform labor for any construction or repairs. Tenant covenants and agrees that it will pay or cause to be paid all sums legally due and payable by it on account of any labor performed or materials furnished in connection with any work performed on the Premises on which any lien is or can be validly and legally asserted against its leasehold interest in the Premises or the improvements thereon and that it will save and hold Landlord harmless from any and all loss, cost or expense based on or arising out of asserted claims or liens against the leasehold estate or against the right, title and interest of the Landlord in the Premises or under the terms of this Lease, and shall discharge any such lien at Tenant's expense and Landlord's cost thereof, plus interest thereon at the lesser of the highest rate permitted by law or eighteen percent (18%) per annum, shall be reimbursed by Tenant upon demand as additional rental hereunder.

ARTICLE XX. Holding Over. 20.1 In the event Tenant remains in possession of the Premises after the expiration of this Lease with Landlord's written consent but without the execution of a new lease, it shall be deemed to be occupying said premises as a tenant from month to month at a rental equal to the rental (Minimum Guaranteed Rental) herein provided times 1.25 and otherwise subject to all the conditions provisions and obligations of this Lease insofar as the same are applicable to a month to month tenancy. The foregoing shall not constitute Landlord's consent for Tenant to holdover. In the event Tenant remains in possession of the Premises after the expiration of this Lease without Landlord's consent, Tenant shall also pay to Landlord all expiration of this Lease without Landlord's consent, Tenant shall also pay to Landlord all damages sustained by Landlord resulting from retention of possession by Tenant, including without limitation the loss of any proposed subsequent tenant for any portion of the Premises.

ARTICLE XXI. Subordination. 21.1 Tenant accepts this Lease subject and subordinate to any mortgage, deed of trust or other lien presently existing or hereafter created upon the Premises or the Shopping Center, and to any renewals and extensions thereof, but Tenant agrees that any such mortgagee shall have the right at any time to subordinate such mortgage, deed of trust or other lien to this Lease. Landlord is hereby irrevocably vested with full power and authority to subordinate this Lease to any mortgage, deed of trust or other lien hereafter placed upon the Premises or the Shopping Center, and Tenant agrees upon demand to execute such further instruments subordinating this Lease as Landlord may request, and, upon any failure of Tenant to do so, without limitation of Landlord's remedies, Landlord shall have the right to execute same as attorney-in-face for Tenant.

ARTICLE XXII. Merchant's Association. 22.1 In the event that Landlord shall organize a merchants association and/or marketing fund composed of tenants in the Shopping Center, Tenant agrees that it will join, actively participate and maintain current membership in such association, will pay such dues and assessments as may be fixed and determined from time to time by the association and will comply with such group advertising, reasonable bylaws, rules and regulations as may be adopted from time to time by the association.

ARTICLE XXIII. Notices. 23.1 Wherever any notice is required or permitted hereunder such notice shall be in writing. Any notice or document required or permitted to be delivered hereunder shall be deemed to be delivered whether actually received or not when deposited in the United States mail, postage prepaid, Certified or Registered Mail, Return Receipt Requested, addressed to the parties hereto at the respective addresses set out in Section 1.1 above, or at such other addresses as they may have hereafter specified by Written Notice.

23.2 If any when included within the term "Landlord" as used in this instrument there are more than one person, firm or corporation, all shall jointly arrange among themselves for their joint execution of such notice specifying some individual at some specific address for the receipt of notices and payments to Landlord; if and when included within the term "Tenant" as used in this instrument there are more than one person, firm or corporation, all shall jointly arrange among themselves for their joint execution of such a notice specifying some individual at some specific address for the receipt of notices and payments to Tenant. All parties included within the terms "Landlord" and "Tenant", respectively, shall be bound by notices and payments to Tenant. All parties included within the terms "Landlord" and "Tenant", respectively, shall be bound by notices and payments given in accordance with the provisions of this Article to the same effect as if each had received such notice or payment.

ARTICLE XXIV. Late Charges. 24.1 In the event Tenant fails to pay to Landlord when due any installment of rental or other sum to be paid to Landlord which may become due hereunder, Landlord will incur additional expenses in an amount not readily ascertainable and which has not been elsewhere provided for between Landlord and Tenant. If Tenant should fail to pay to Landlord when due any installment of rental or other sum to be paid hereunder, Tenant will pay Landlord when due any installment of rental or other sum to be paid hereunder,

Tenant _____

Tenant will pay Landlord on demand a late charge equal to the greater of (i) \$100.00 or (ii) ten percent (10%) of the past due amount. Failure to pay such late charge upon demand therefore shall be an event of default hereunder. Provisions for such late charge shall be in addition to all other rights and remedies available to Landlord hereunder or at law or in equity and shall not be construed as liquidated damages or limiting Landlord's remedies in any manner.

ARTICLE XXV. Miscellaneous. 25.1 Nothing herein contained shall be deemed or construed by the parties hereto, nor by any third party, as creating the relationship of principal and agent or of partnership or of joint venture between parties hereof, it being understood and agreed that neither the method of computation of rental, nor any other provisions contained herein, nor any acts of the parties hereto shall be deemed to create any relationship between the parties hereto other than the relationship of Landlord and Tenant. Whenever herein the singular number is used, the same shall include the plural, and words of any gender shall include each other gender.

25.2 The captions used herein are for convenience only and do not limit or amplify the provisions hereof.

25.3 Time is of the essence with respect to all provisions of this Lease, except that whenever a period of time herein prescribed for action to be taken by Landlord, Landlord shall not be liable or responsible for and there shall be excluded from the computation of any such period of time, any delays due to strikes, riots, acts of God, shortages of labor or materials, war, governmental laws, regulations or restrictions or any other cause of any kind whatsoever which are beyond the reasonable control of Landlord. At any time when there is outstanding a mortgage, deed of trust or similar security instrument covering Landlord's interest in the Premises, Tenant may not exercise any remedies for default by Landlord hereunder unless and until the holder of the indebtedness secured by such mortgage, deed of trust or similar security instrument shall have received written notice of such default and a reasonable time for curing such default shall thereafter have elapsed.

25.4 Landlord agrees that if Tenant shall perform all of the covenants and agreements, herein required to be performed by Tenant, Tenant shall, subject to the terms of this Lease, at all times during the continuance of this Lease have the peaceable and quiet enjoyment and possession of the Premises.

25.5 This Lease contains the entire agreement between the parties, and no agreement shall be effective to change, modify or terminate this Lease in whole or in part unless such agreement is in writing and duly signed by the party against whom enforcement of such change, modification or termination is sought.

25.6 Tenant warrants that it has had no dealing with any broker or agent in connection with the negotiation or execution of this Lease other than Premier Real Estate Team, Inc. Tenant agree to indemnify and hold Landlord harmless from and against any claims by any other broker, agent or other person claiming a commission or other form of compensation by virtue of having dealt with Tenant with regard to this leasing transaction.

25.7 Tenant agrees to furnish from time to time when requested by Landlord, the holder of any deed of trust or mortgage or the lessor under any ground lease covering all or any part of the Shopping Center or the improvements therein or the Premises or any interest of Landlord therein, a certificate signed by Tenant confirming and containing such factual certifications and representations deemed appropriate by Landlord, the holder of any deed of trust or mortgage or the lessor under any ground lease covering all or any part of the Shopping Center or the improvements therein or the Premises or any interest of Landlord therein, and Tenant shall, within ten (10) days following receipt of said certificate from Landlord, return a fully executed copy thereof to Landlord. In the event Tenant shall fail to return a fully executed copy of such certificate to Landlord within the foregoing ten-day period, then Tenant shall be deemed to have approved and confirmed all of the terms, certifications and representations contained in such certificate. Tenant hereby irrevocably appoints Landlord as attorney-in-fact for the Tenant with full power and authority to execute and deliver in the name of Tenant such certificate if Tenant fails to deliver the same with such ten (10) day period and such certificate as signed by Landlord shall be fully binding on Tenant.

25.8 The laws of the State in which the Premises is located shall govern the interpretation, validity, performance and enforcement of this Lease. If any provision of this Lease should be held to be invalid or unenforceable, the validity and enforceability of the remaining provisions of this Lease shall not be affected thereby, and it is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added as a part of this Lease a clause or provision as similar in terms to such illegal, invalid or unenforceable clause or provision as may be possible and be legal, valid and enforceable.

25.9 The terms, provisions and covenants contained in this Lease shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, successors in interest and legal representatives except as otherwise herein expressly provided.

Tenant _____

25.10 The person(s) executing this Lease on behalf of Tenant hereby represent and warrant to Landlord that such execution has been duly authorized by all requisite action of Tenant so that upon such execution this Lease will be binding upon and enforceable against Tenant in accordance with its terms. Tenant agrees to furnish to Landlord from time to time upon request such written proof of such authorization as Landlord may reasonably request.

ARTICLE XXVI. Landlord's Lien. Landlord shall have and Tenant hereby grants to Landlord a continuing security interest for all rentals and other sums of money becoming due hereunder from Tenant, upon all goods, wares, equipment, fixtures, furniture, inventory, accounts, contract rights, chattel paper and other personal property of Tenant situated on the Premises, and such property shall not be removed therefrom without the consent of Landlord until all arrearages in rent as well as any and all other sums of money then due to Landlord hereunder shall first have been paid and discharged. Products of collateral are also covered. In the event of a default under this Lease, Landlord shall have, in addition to any other remedies provided herein or by law, all rights and remedies under the Uniform Commercial Code, including without limitation the right to sell the property described in this paragraph at public or private sale upon five (5) days notice to Tenant. Tenant hereby agrees to execute such other instruments necessary or desirable in Landlord's discretion to perfect the security interest hereby created. Any statutory lien for rent is not hereby waived, the express contractual lien herein granted being in addition and supplementary hereto. Landlord and Tenant agree that this Lease and security agreement serves as a financing statement and that a copy or photographic or other reproduction of this portion of this Lease may be filed of record by Landlord and have the same force and effect as the original. This security agreement and financing statement also covers fixtures located at the Premises described in Exhibit A attached hereto, and may be filed for record in the real estate records. Tenant warrants that the collateral subject to the security interest granted herein is not purchased or used by Tenant for personal, family or household purposes.

Tenant _____

EXECUTED BY LANDLORD, this _____ day of _____, 20____.

LANDLORD:

By: _____

Its: _____

EXECUTED BY TENANT, this _____ day of _____, 20____.

TENANT:

By: _____

Its: _____

This Lease is subject to approval by the Kannapolis City Council, its City Manager, or its designee.

Tenant _____

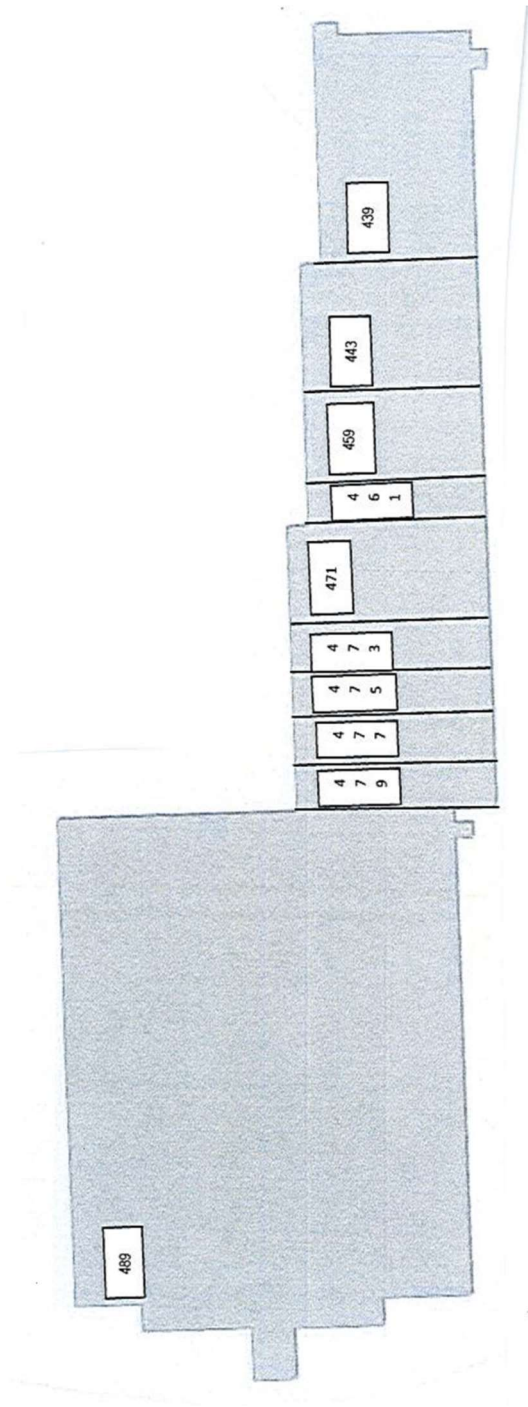
ADDENDUM "A"
HAZARDOUS MATERIALS

1. As used in this Rider, the term "Hazardous Materials" shall mean any element, compound, mixture, solution, particle or substance which is dangerous or harmful or potentially dangerous or harmful to the health or welfare of life or environment, including but not limited to explosives, petroleum, petroleum products, radioactive materials, hazardous wastes, hazardous substances, toxic substances or related materials, including, without limitation: (1) any substances defined as or included within the definition of "hazardous substances," "hazardous wastes," "hazardous materials," "toxic substances," "hazardous pollutants" or "toxic pollutants," or other similar terms, as those terms are used in the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, the Hazardous Materials Transportation Act, the Toxic Substances Control Act, the Clean Air Act and the Clean Water Act, or any amendments thereto, or any regulations promulgated thereunder, and any other law or regulation promulgated by any federal, municipal, state, county or other governmental or quasi governmental authority and/or agency or department thereof; (2) any "PCBs" or "PCB items" (as defined in 40 C.F.R. 4 761.3); or (3) any "asbestos" (as defined in 40 C.F.R. 4 763.63).
2. Tenant shall not use, generate, manufacture, produce, store, release, discharge or dispose of on, in, or under the demised Premises any Hazardous Materials (as defined in subparagraph 1 above), or allow any other person or entity to do so.
3. Tenant shall comply with all local, state and federal laws, ordinances and regulations relating to Hazardous Materials on, in, under or about the demised Premises.
4. Tenant shall promptly notify Landlord should Tenant receive notice of, or otherwise become aware of, any: (a) pending or threatened environmental regulatory action against Tenant or the Landlord or concerning the demised Premises in any way; (b) claims made or threatened by any third party relating to any loss or injury resulting from any Hazardous Material concerning the [refer to premises however described in lease] in any way; or (c) release or discharge, or threatened release or discharge, of any Hazardous Materials in, on, under or about the demised Premises.
5. Tenant agrees to indemnify, defend and hold Landlord, any property manager, and their respective agents and employees harmless from and against any and all liabilities, claims, demands, costs and expenses of every kind and nature (including attorneys' fees) directly or indirectly attributable to Tenant's failure to comply with this Rider, including, without limitation: (a) all consequential damages; (b) the costs of any required or necessary repair, remediation, testing, monitoring, cleanup or detoxification of any property, and (c) the preparation and implementation of any closure, remedial or other required plan. The indemnity contained in this Rider shall survive the termination or expiration of this Lease.

Tenant _____

EXHIBIT A

Shopping Center Site Plan Showing Premises



Tenant _____

EXHIBIT B: Legal Description

Plat Book 102, Page 17

Tenant _____

EXHIBIT C

Description of Tenant's Work

1. Tenant hereby accepts the Premises in as-is condition, and for any alterations submit approved plans and specification for all necessary building permits and to proceed diligently to finish Tenant's Work in a good and workmanlike manner.
2. Tenant shall apply for separate metering of applicable utilities in Tenant's own name and shall be responsible for all deposits.
3. Tenant shall apply for a Certificate of Occupancy (or equivalent document as may be issued by City or County) and shall deliver a copy of such to Landlord prior to the Commencement Date of Lease.
4. If Tenant desires to alter the interior of the Premises, Tenant shall supply Landlord with plans and specifications at Tenant's expense within thirty (30) days following execution of the Lease. Tenant's Work shall be subject to Landlord's approval and acceptance which shall not be unreasonably withheld or delayed. Landlord's approval will be deemed granted unless Tenant is notified otherwise, within five (5) business days following receipt of said plans and specifications.
5. All salvage carpeting, light fixtures, doors, closure devices, HVAC, leasehold improvements, etc. shall remain the property of Landlord at Landlord's option.
6. Tenant shall supply proof of insurance and executed lien waivers to Landlord prior to assuming occupancy of the Premises.
7. Any work that Tenant does in the premises, Tenant must receive from Landlord:
 - a. Approval of plans and specifications furnished by Tenant to Landlord within thirty (30) days following execution of the Lease;
 - b. Approval by Landlord of all Tenant's Work;
 - c. Receipt by Landlord from Tenant of a Certificate of Occupancy issued by the City or other municipal or governmental agency authorized to issue such Certificate for the Premises;
 - d. Receipt by Landlord from Tenant a release and waiver of liens, holding Landlord harmless from any obligation whatsoever which may be or may have been incurred by Tenant, or Tenant's contractors or subcontractors, during Tenant's Work within the Premises.
 - e. Fully executed Estoppel Certificate.

Tenant _____

EXHIBIT D

Rules and Regulations to Use of the Common Area

The use of the Common Area by Tenant and Tenant's agents, employees, servants, visitors and invitees shall be subject to the following rules and regulations:

1. Landlord shall have the right and authority to designate specific areas within the Shopping Center or in reasonable proximity thereto in which automobiles and other transportation vehicles owned by Tenant, Tenant's employees, servants, agents, licensees and concessionaires shall be parked. Tenant shall furnish to Landlord upon request a complete list of all license numbers of all automobiles and other transportation vehicles operated by Tenant, Tenant's employees, servants, agents, licensees or concessionaires.
2. All loading and unloading of goods shall be done only at such times, in the area and through the entrances as shall as designated from time to time for such purposes by Landlord.
3. The delivery or shipping of merchandise, supplies and fixtures to and from the Premises shall be subject to such rules and regulation as in the sole discretion of Landlord shall be necessary for the proper operation of the Shopping Center.
4. No person shall use any utility area, truck facility or other area reserved for use in connection with the conduct of business except for the specific purpose for which such area is designed.
5. Except as permitted in a Tenant's lease of the Premises or except as permitted by Landlord's prior written consent, no person shall within the Common Area:
 - a. Vend, peddle or solicit orders for sale or distribution of any merchandise, device, service, periodical, book, pamphlet or other matter whatsoever;
 - b. Exhibit any sign, placard, banner, notice or other written material;
 - c. Distribute any circular, booklet, handbill, placard or other materials;
 - d. Solicit membership in any organization, group or association or contribution for any purpose
 - e. Parade, patrol, picket, demonstrate or engage in any conduct that might tend to interfere with or impede the use of the Common Area by Landlord or any occupant or any employee, or invitee of any occupant of the Shopping Center, create a disturbance, attract attention or harass, annoy, disparage or be detrimental to the interests of any business establishments within the Shopping Center;
 - f. Use the Common Area for any purpose when none of the business establishment within the Shopping Center is open for business or employment
 - g. Throw, discard or deposit any paper, glass or extraneous matter of any kind, except in designated receptacles, or create litter or hazards of any kind (Tenant agrees to crush boxes and deposit in trash container);
 - h. Deface, damage or demolish any sign, light standard or fixture, landscaping material or other improvements within, or property situated within the Common Area of the Shopping Center, and;
 - i. Solicit any other business or display any merchandise.
6. The Common Area plumbing facilities shall not be used for any purpose other than that for which they are constructed, and no foreign substance of any kind shall be thrown therein, and the expense of any breakage, stoppage or damage resulting from a violation of this provision shall be borne by Tenant, who shall, or whose employees, agent or invitees shall have caused it.
7. All floor area, including vestibules, entrances and exits, doors, fixtures, windows and plate glass shall be maintained in a safe neat, and clean condition.
8. No portion of this Common Area or the Shopping Center shall be used for any lodging or illegal purposes.
9. The sidewalks, halls, passages, exits, entrances, elevators, shopping malls, escalators and stairways of the Common Area or the Shopping Center shall not be obstructed by any Tenant or used by and Tenant for any purpose other than for ingress and to egress from their respective Premises. The halls, passages, exits, entrances, elevators, shopping malls escalators, stairways are not for the use of the general public and Landlord shall at all cases retain the right to control and prevent access thereto of all persons whose presence in the judgement of Landlord shall be prejudicial to the safety, character, reputation and interest of the Shopping Center and its tenants, provided that nothing herein contained shall be construed to prevent such access to persons with whom any Tenant normally deals in the ordinary course of its business, unless such persons are engaged in illegal activities. No tenant and no employee or invitee of any Tenant shall go upon the roof or any building in the Shopping Center except for the sole purpose of servicing its air conditioning units or rooftop equipment.
10. In the case of any invasion, mob, riot, public excitement or other circumstances rendering such action advisable in Landlord's sole discretion, Landlord reserves the right to prevent access to the Common Area and Shopping

Tenant _____

Center during the continuance of the same by such action as Landlord may deem appropriate, including closing entrances to the Shopping Center and Common Area.

11. No Tenant shall place or permit any radio or television antenna, loudspeaker, amplifier or other device in the Common Area or where the same can be seen or heard in the Common Area without the prior written consent of Landlord.
12. No person shall use any part of Common Area for any purpose other than those for which the Common Area is intended.
13. No part of the Common Area shall be used for storing or maintaining any material or property, whether on a temporary basis or otherwise.
14. Any repairs, maintenance or replacements to the Common Area required to be made by Landlord which are occasioned by the act or negligence of any Tenant, its agents, employees, sub-tenants, licensees and concessionaires, shall be paid for by such Tenant upon demand to the extent not covered by insurance proceeds paid to Landlord therefore.
15. No Tenant shall make any alteration, addition or improvement to or remove any portion of the Common Area, and no Tenant shall make any changes to or paid any portion of the Common Area, or install any lighting decorations or paintings in or to the Common Area, or erect or install any signs, banners, placards, decorations or advertising media or any type in the Common Area
16. Landlord may waive any one or more of these rules and regulations for the benefit of any particular tenant or lessee, but no such waiver by Landlord shall be construed as a waiver of such rules and regulations in favor of any other tenant or lessee, nor prevent Landlord from thereafter enforcing any such rules and regulations against any or all of the tenants of the Shopping Center.

Landlord shall at all times have the right to change these rules and regulations or to promulgate other rules and regulations in such manner as may be deemed advisable for safety, care, or cleanliness of the Shopping Center, for preservation of good order therein, or for other purposes, all of which rules and regulations, changes and amendments shall be carried out and observed by Tenant. Tenant shall further be responsible for the compliance with these rules and regulations by the employees, servants, agents, visitors and invitees of Tenant. In the event any provisions of these rules and regulations shall conflict with any specific provisions of the Lease Agreement to which this Exhibit D is attached, the provisions of the Lease Agreement shall control.

Tenant _____

EXHIBIT E

Cost of Operation and Maintenance of the Common Area

The cost of operation and maintenance of the Common Area shall include by shall not be limited to, all cost and expenses incurred by Landlord in operating, maintaining, repairing, lighting, signing, cleaning, painting, stripping, insuring, equipping, staffing, heating and cooling, securing, and policing of the Common Area, including, among other costs, all costs and expenses for or associated with the following (which may be incurred by landlord in its sole discretion):

1. Alarm systems, alarm services, security personnel, security services, patrol services and fire protection;
2. Maintenance of sprinkler systems (both fire and irrigation) serving the Shopping Center and/or Common Area;
3. Insurance, including, without limitation, liability insurance for personal injury, death and property damage, insurance against fire, extended coverage, theft or other casualties, fidelity bonds for personnel, insurance against liability for assault and battery, defamation and claims of false arrest and plate glass insurance;
4. Regulation or direction of traffic;
5. Repair or replacement, cleaning, sweeping painting, striping and repaving of asphalt parking areas, concrete parking areas, all parking garage areas, curbs, walkways, pipe bollards, guardrails, bumpers, fences, screens, flagpoles, bicycle racks, signs and other markers, landscaping, drainage pipes, ducts, conduits and similar items and lighting facilities;
6. Planting, replanting and replacing flowers, trees, shrubbery, planters and other landscaping items and materials;
7. Any surcharges levied upon or assessed against parking spaces or areas payments toward mass transit or carpooling facilities or otherwise as required by federal, state or local governmental authorities;
8. Maintenance, repair and replacement of utility systems serving the Common Area, including, but not limited to, water, sanitary sewer and storm water lines and drainage systems, electrical, gas, telephone and lighting systems (including bulbs, poles and fixtures) and other utility lines, pipes and conduits, including utility charges in connection with any of the foregoing systems;
9. Maintaining and operating sewage treatment facilities, if any;
10. Maintenance, repair, replacement and substitution of and for all portions of the buildings in the Shopping Center (excluding the premises and premises (eased to other tenants), including walls, roofs and roof flashings, canopies, skylights, signs, planters, benches, fire exits, doors and hardware, window, glass and glazing;
11. All licenses and permit fees and surcharges that may result from any law, rule regulation, guideline or order;
12. Lighting and power to the Common Area;
13. Energy to heat, ventilate and air condition areas in which the Common Area is located;
14. Water services, if any, furnished by Landlord for the non-exclusive use of all tenants and their guests and invitees;
15. Operating and maintaining any public toilets and restrooms;
16. Removal of snow, ice, trash and debris;
17. Maintaining federal, state or local governmental ambient air and environmental standards;
18. Installing, renting, maintaining and operating signs of all types;
19. The installation, rental, maintenance, repair and replacement of music program services and loudspeaker systems, including furnishing electricity therefore;
20. Parcel pick-up and delivery services;
21. All materials, supplies and services purchased or hired in the operation of the Common Area or for the purposes set forth in this Exhibit;
22. Inspecting, maintenance, repair and acquisition costs (including depreciation) of any and all machinery and equipment used in the operation and maintenance of the Common Area or for any of the purposes set forth in this Exhibit E, including personal property taxes and other charges and taxes incurred in connection with such equipment;
23. Any and all personnel, including, without limitation, security and maintenance people, secretaries, bookkeepers and any other personnel related to the operation of the Common Area or for the purpose set forth in this Exhibit E (including within such costs and expenses for such personnel, without limitation, salaries, wages, leasing commissions, expenses and other compensation, including so-called fringe benefits, life, disability, medical and health insurance, pension plans, social security taxes, F.I.C.A., unemployment and other employment taxes, workmen's compensation, insurance and the like);

Tenant _____

24. Assessments levied against the Shopping Center by any community association or otherwise under any applicable restrictive covenants or the like covering the Shopping Center and other property within a development complex; and
25. Administrative costs attributable to the Common Area for on-site personnel and an overhead administrative cost allowance in the amount of 15% of the total Common Area costs.
26. Costs related to Shopping Center for promotional events, marketing, Shopping Center advertising, mass media platform creation and maintenance.

Provided there should be no duplication of costs in this **Exhibit E** with any costs Tenant is responsible to pay in other provisions of the Lease Agreement to which this Exhibit is attached.

Tenant _____

EXHIBIT F

Sign Criteria

Tenants are responsible for following the sign criteria. Any nonconforming or unapproved sign must be brought into conformance at the expense of the Tenant.

GENERAL REQUIREMENTS

- A. All signs shall comply with all state and local laws governing signage, electrical installations, location, and materials. All electric signs are to be UL listed.
- B. Tenant shall obtain written approval from Landlord for signage prior to manufacturing or installation. Tenant shall submit drawings showing design, color, size, and location of proposed sign.
- C. Tenant shall obtain any required permits prior to installation.
- D. The cost of fabrication, installation, illumination and maintenance of all signs shall be the sole responsibility of each Tenant.
- E. All signs and sign structures shall be kept in good repair. The Landlord reserves the right to cause the removal of any sign not so maintained or removed.
- F. Signs with flashing, blinking, rotating, moving, or animated lights are prohibited.
- G. Upon the termination of Tenant's lease, Tenant will remove the sign and repair, patch, or plug any damaged building façade material caused by the sign to a condition acceptable to the Landlord. All repairs to exterior materials must be performed by a contractor acceptable to the Landlord.
- H. All signs shall be in accordance with the following requirements:
 - 1. Signs, symbols and/or trademarks must have preliminary approval by the Landlord before shop drawings are made
 - 2. Tenant shall submit two (2) sets of shop drawings to the Landlord for approval. Drawings must show size of all letters, spacing, materials, mounting methods and overall sign dimensions in relation to lease area. Landlord approval is for design compliance only and it does not indicate approval of the technical portion of the sign or compliance with the city ordinance.
 - 3. Signs previously used by owners or sign contractors must conform to the conditions and limitations of this document. Re-use of an existing sign must be approved by the Landlord.

SPECIFIC REQUIREMENTS

A. STOREFRONT SIGN REQUIREMENTS

- 1. Tenant must install a storefront sign on the sign band. Only one sign is permitted for each Tenant, unless permitted in writing by Landlord.
- 2. Minimum length: 50% of storefront façade width; Maximum length: 75% of storefront façade width, but not more than 30 feet. Letters not to exceed 24" in height.
- 3. No exposed raceways, ballast boxes, or electrical transformers will be permitted. Sign company names or stamps must be concealed.
- 4. For illuminated signs, signs will be LED; returns and trim caps shall be painted Dark Bronze. If using a raceway, raceways must be surface mounted.

B. OTHER SIGNAGE

- 1. Temporary wall signs, pennants, over-roof signs, inflatable displays are not permitted.
- 2. Vinyl banners are permitted only with Landlord's written approval, and shall be used for a period not to exceed 30 days.
- 3. Signage on windows must comply with local regulations and requires Landlord's written approval. Paper signs and handmade signs are permitted only with Landlord's written approval.
- 4. Tenant must have storefront number displayed on or above the entryway. Size, type, and color of number shall be approved by the Landlord.

Tenant _____

EXHIBIT G

Guaranty of Lease

THIS GUARANTY given by (hereinafter called the "Guarantors," whether one or more) to (hereinafter called the "Landlord").

W I T N E S S E T H

In order to induce the Landlord to demise to Joseph Glick III (hereinafter with its successors and assigns referred to as the "Tenant"), certain premises in the Landlord's Shopping Center to be (or which has been) constructed on land situated at North Carolina and being described in the pursuant to a certain Lease Agreement dated _____, 20____, (which lease together with any and all modifications, amendments and extensions is hereinafter referred to as the "Lease"), the Guarantors agree as follows:

1. The Guarantors do hereby jointly and severally, unconditionally and absolutely guarantee to the Landlord the full, prompt and complete payment by the Tenant of the rent and all other sums which may be payable to the Tenant under the Lease and the full, prompt and complete performance by the Tenant of all and singular the terms, covenants, conditions and provisions in the Lease required to be performed by the Tenant without regard to any forbearance, delay, neglect or failure on the part of Landlord in enforcing same.
2. The Guarantors do hereby waive notice of acceptance hereof and any and all other notices which by law or under the terms and provisions of the Lease are required to be given to the Tenant, and also waive any demand for or notice of default of the payment of rent and other sums which may be payable by the Tenant under the Lease and the performance of all and singular the terms, covenants, conditions and provisions in the Lease required to be performed by the Tenant; and the Guarantors do further expressly hereby waive any legal obligation, duty or necessity for the Landlord to proceed first against the Tenant or to exhaust any remedy the Landlord may have against the Tenant, it being agreed that in the event of default or failure of performance in any respect by the Tenant under the Lease, the Landlord may proceed and have right of action solely against either the Guarantors (or any of them) or the Tenant or jointly against the Guarantors (or any of them) and the Tenant.
3. In the event of any bankruptcy, reorganization, winding up or similar proceedings with respect to Tenant, no limitation of Tenant's liability under the Lease which may now or hereafter be imposed by any federal, state or other statute, law or regulation applicable to such proceedings, shall in any way limit the obligation of Guarantors hereunder, which obligation is co-extensive with Tenant's liability as set forth in the Lease without regard to any such limitation.
4. The Guarantors shall not be entitled to make any defense against any claim asserted by the Landlord in any suit or action instituted by the Landlord to enforce this Guaranty or the Lease or to be excused from any liability hereunder which the Tenant could not make or invoke, and the Guarantors hereby expressly waive any defense in law or in equity which is not or would not be available to the Tenant, it being the intent hereof that the liability of the Guarantors hereunder is primary and unconditional.
5. In the event it shall be asserted that Tenant's obligations are void or voidable due to illegal or unauthorized acts by Tenant in the execution of the Lease, the Guarantors shall nevertheless be liable hereunder to the same extent as the Guarantors would have been if the obligations of the Tenant had been enforceable against the Tenant.
6. In the event suit or action be brought upon and in connection with the enforcement of this Guaranty, the Guarantors shall pay reasonable attorneys' fees and all court costs incurred by the Landlord.
7. This Guaranty shall remain in full force and effect as to any renewal, extension, modification or amendment of the Lease and as to any assigns of Tenant's interest under the Lease, and despite any subletting of all or any portion of the leased premises.
8. This Guaranty shall be binding upon the heirs, legal representatives, successors and assigns of the Guarantors, and shall inure to the benefit of the heirs, legal representatives, successors and assigns of the Landlord. Landlord's interest under this Guaranty may be assigned by it by way of security or otherwise.
9. This Guaranty shall remain in full force and effect regardless of whether or not Tenant continues to be owned in whole or in part by Guarantors.

Tenant _____

10. If the Guarantors, or any of them, are a corporation, then the undersigned officer of each such corporation personally represents and warrants that the Board of Director of each such corporation, in a duly held meeting, has determined that this Guaranty may reasonably be expected to benefit said Corporation.
11. The Guarantors agree that this contract is performable in, and waive the right to be sued elsewhere.

EXECUTED this the _____ day of _____, 20____

GUARANTOR:

WITNESS: _____

Address:

Tenant _____