



**CITY COUNCIL
AGENDA
KANNAPOLIS CITY HALL
401 LAUREATE WAY, KANNAPOLIS, NC
SEPTEMBER 14, 2026
6:00 PM**

Please Turn off Cell Phones or Place on Silent Mode.

CALL TO ORDER AND WELCOME

PLEDGE OF ALLEGIANCE

ADOPTION OF AGENDA - Motion to Adopt Agenda or make revisions

PROCLAMATIONS AND RECOGNITIONS

A. **PROCLAMATION** - Constitution Week (Naomi Hatchell, Council Member)

SPEAKERS FROM THE FLOOR

CONSENT AGENDA - Motion to Adopt Consent Agenda or make revisions

- A. **ORDINANCE** - Budget Amendment #26-40 Year End Adjustment for Transit (Kristin Jones, Assistant City Manager)
- B. **ORDINANCE** - Budget Amendment #27-14 Appropriating SBI Awarded Compensation Bonuses for Law Enforcement Officers (Kristin Jones, Assistant City Manager)
- C. **REPORT** - Monthly Wastewater Allocations Report (Alex Anderson, Director of Water Resources, Gerald Faulkner, Assistant Director of Water Resources)
- D. **VOLUNTARY ANNEXATION** - (A-2026-09) 1.0 +/- acres of non-contiguous property located at 3675 Shiloh Church Road (Richard Smith, Planning Director)
- E. **RESOLUTION** - Traffic Signal at NC 73 and Jim Johnson Rd (Wilmer Melton, City Manager)
- F. **FIRST READING TA-2026-03** - Kannapolis Development Ordinance - Coddle Creek Subdistrict of Thoroughfare Protection Overlay (TPO) District (Richard Smith, Planning Director)
- G. **RESOLUTION** - Authorizing City to Enter Into Sole Source Equipment Purchase with Motorola for the Communications Tower. (Kristin Jones, Assistant City Manager)
- H. **APPROVAL** - Personnel Policy 300.03 Grievance Process (Heather James, Human Resources Director)

- I. **MINUTES** - August 10, 2026 (open & closed); August 24, 2026 (open & closed)
(Pam Scaggs, City Clerk)

BUSINESS AGENDA

- A. **PUBLIC HEARING** - System Development Fee Analysis (Kristin Jones, Assistant City Manager)
- B. **PRESENTATION** - NCDOT Rail Division (6th Frequency Draft Report) (Richard Smith, Planning Director, Jason Myers, NCDOT Rail Director)

CITY MANAGER REPORT

CITY COUNCIL COMMENTS

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 Heather James, Human Resources Director & ADA Coordinator by phone at 704-920-4322, email adacoordinator@kannapolisnc.gov, or in person at Kannapolis City Hall as soon as possible, but not later than forty-eight (48) hours prior.



Office of the Mayor
KANNAPOLIS, NORTH CAROLINA
P R O C L A M A T I O N
“CONSTITUTION WEEK 2026”

WHEREAS, the Constitution of the United States established the framework of our nation’s government and remains the foundation of the rights, liberties, and responsibilities enjoyed by the American people; and

WHEREAS, the Constitution was signed on September 17, 1787, by delegates to the Constitutional Convention in Philadelphia, marking a historic moment in the establishment of the United States of America; and

WHEREAS, Constitution Week provides an opportunity for citizens to reflect upon the principles of representative government, individual liberty, equality under the law, and civic responsibility embodied in the United States Constitution; and

WHEREAS, understanding and appreciating the Constitution strengthens our commitment to the democratic principles upon which our nation was founded and encourages informed and engaged citizenship; and

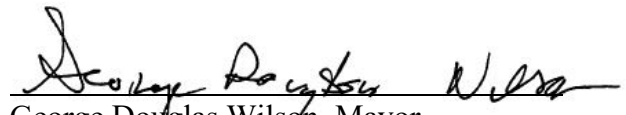
WHEREAS, the observance of Constitution Week offers an opportunity for schools, civic organizations, libraries, families, and communities to educate citizens about the history and significance of the Constitution and the enduring principles it represents; and

WHEREAS, we honor the generations of Americans who have worked to preserve, protect, and uphold the Constitution and recognize the continuing responsibility of each citizen to participate in and safeguard our constitutional form of government.

NOW, THEREFORE, the City Council of the City of Kannapolis, North Carolina does hereby proclaim September 17-23, 2026, as Constitution Week, and encourage all citizens to observe this week by learning about the Constitution of the United States, reflecting upon the freedoms and responsibilities it guarantees, and participating in activities that promote civic knowledge, appreciation, and engagement.

IN WITNESS WHEREOF, I, Mayor George Douglas Wilson, on behalf of the Kannapolis City Council, has caused the Great Seal of the City of Kannapolis to be affixed this 14th day of September 2026.




George Douglas Wilson, Mayor
City of Kannapolis



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Kristin Jones, Assistant City Manager
Subject: **ORDINANCE** - Budget Amendment #26-40 Year End Adjustment for Transit

Recommended Action Requested by City Council

Motion to approve Ordinance for Budget Amendment #26-40 to fund year-end adjustments for the Transit Fund.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

This budget amendment appropriates fund balance for a year-end adjustment needed in the Transit Fund. The budget amendment funds a \$54,000 increase in contracted services to cover the final year-end expenses invoiced by the City of Concord for fiscal year 2026. Some of these overages are from the long range master plan, operational costs other than service or fuel, FY 26 capital costs of contracting with the service provider, bus stop amenities, transit center CCTV replacement, bus stop lighting replacement and CAD/AVL implementation costs. A more detailed breakdown showing the budget to actuals is attached with the agenda item from the City of Concord. Some categories came in under budget while others came in over budget. There is \$35k in budget overages and \$19k in carry-forward and true-up costs related to OPEB (other post-employment benefits). The carry-over billed in Q1 relates to the FY25 OPEB expenses that were posted after the final billing due to receiving the actuary's report in early September 2025.

Fiscal Implications

A budget amendment is needed to appropriate fund balance for these year-end budget overages and true up costs/carry forward costs for fiscal year end 26.

Alternate Courses of Action

1. Take no action.
2. Table to a future meeting.

Attachments

1. BA 26-40 Budget Amendment for Transit
2. FY26 Kannapolis Exp Detail.cleaned

**ORDINANCE AMENDING BUDGET FOR THE
CITY OF KANNAPOLIS, NORTH CAROLINA
FOR THE FISCAL YEAR BEGINNING JULY 1, 2025, AND ENDING JUNE 30, 2026
Amendment # 26-40**

BE IT ORDAINED by the City Council of the City of Kannapolis, North Carolina meeting in open session this 14th day of September 2026, that the following amendment to the Budget Ordinance for the City of Kannapolis, North Carolina for the Fiscal Year beginning July 1, 2025, and ending June 30, 2026, is hereby adopted:

Description: This budget amendment appropriates fund balance for end of year contracted service transit expenses for \$54,000.

SECTION I – GENERAL FUND

Revenue:	Increase: Fund Balance Appropriated Revenue: 77500-39900	\$54,000
Expenditure:	Increase: Contracted Services Expenditure: 77500-48000	\$54,000

This ordinance is approved and adopted on this 14th day of September 2026.

George Douglas Wilson, Mayor
City of Kannapolis

ATTEST:

Pam Scaggs, CMC, NCCMC
City Clerk

	Budget
Operations 65/35	\$ 567,737.00
Operations 50/50	\$ 659,194.00
Planning 5303	\$ 5,357.00
Capital	\$ 169,175.00
Totals	\$ 1,401,463.00

Operations 65/35	Budget
Fuel	183,750.00
Service Provider	383,987.00
	567,737.00

Operations 50/50	
7650 - Operations other than service or fuel	627,602.00
Security Provider	31,592.00
	659,194.00

Planning 5303 50/50	
FY26 Planning	5,357.00
Long Range Master Plan	
	5,357.00

Capital 50/50	
FY26 5339	22,240.00
FY26 Service Provider Capital Cost of Contracting	119,135.00
Electronic Fare Payment Sys Implementation	20,000.00
Digital Display Bus Stop Signage	7,800.00
Bus Stop Ammenities	
Transit Center CCTV Replacement	
Bus Stop Lighting Replacement	
CAD AVL Implementation	
5339 Expenses	
	169,175.00

Actual
\$ 491,255.36
\$ 739,595.45
\$ 22,748.50
\$ 183,174.60
\$ 1,436,773.91

Variance
76,481.64
(80,401.45)
(17,391.50)
(13,999.60)
(35,310.91)

Actual
140,808.06
350,447.30
491,255.36

Variance
42,941.94
33,539.70
76,481.64

709,727.19 (82,125.19)
29,868.26 1,723.74
739,595.45 (80,401.45)

5,357.44 (0.44)
17,391.06 (17,391.06)
22,748.50 (17,391.50)

Project budgeted in previous FY

– 22,240.00
153,455.71 (34,320.71)
912.00 19,088.00
– 7,800.00
445.00 (445.00)
6,400.12 (6,400.12)
10,694.00 (10,694.00)
10,388.52 (10,388.52)
879.25 (879.25)
183,174.60 (13,999.60)

Project budgeted in previous FY
Project budgeted in previous FY
Project budgeted in previous FY
Project budgeted in previous FY
Project budgeted in previous FY



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Kristin Jones, Assistant City Manager
Subject: **ORDINANCE** - Budget Amendment #27-14 Appropriating SBI Awarded Compensation Bonuses for Law Enforcement Officers

Recommended Action Requested by City Council

Motion to adopt ORDINANCE - Budget Amendment #27-14 which appropriates SBI Awarded Compensation Bonuses for Law Enforcement Officers

Required Votes to Pass Required Action

Majority Present at Meeting

Background

SECTION 41.3.(a) For the 2026-2027 fiscal year, a sworn local law enforcement officer employed as an officer on June 30, 2026, is eligible to receive a compensation bonus in the amount of one thousand seven hundred fifty dollars (\$1,750), payable as close as is practicable to October 15, 2026.

SECTION 41.3.(b) The State Bureau of Investigation (SBI) shall award these local law enforcement compensation bonuses as provided by this section. The SBI shall report on the administration of the awards to the Fiscal Research Division by December 15, 2026.

SECTION 41.3.(c) The funds appropriated for bonuses in excess of the amounts required to implement these bonuses shall be reverted to the General Fund. The compensation bonuses awarded by this section are not compensation for the purposes of any retirement system administered by the State. The compensation bonuses awarded by this section are not part of annual salary and shall be paid out separately. The compensation bonus shall be awarded to eligible officers without regard to an officer's placement within the salary range, including employees at the top of the salary range. The compensation bonus shall be adjusted pro rata for permanent part-time employees.

Eligible Local Law Enforcement Officer:

For purposes of the Local Law Enforcement Officer Compensation Bonus Program, a Local Law Enforcement Officer is a sworn law enforcement officer employed by an eligible North Carolina local law enforcement agency who meets the eligibility requirements established in Section 41.3 of S.L. 2026-41.

For this program, the term generally refers to sworn officers employed by:

- A North Carolina county sheriff's office;
- A North Carolina municipal police department;
- Airport police departments authorized under North Carolina Law;
- Tribal law enforcement recognized under applicable law; or

- Local ABC law enforcement officers, where applicable.

Unless otherwise provided by law or program guidance, the term does not include civilian employees, detention officers who are not sworn deputy sheriffs, telecommunicators, reserve officers who are not employed, trainees or cadets who were not sworn officers on June 30, 2026, State agency law enforcement officers, university, college or community college police officers, company police officers, or private police officers.

Fiscal Implications

A budget amendment is needed to fund the SBI awarded amounts and the City's portion of benefits impacted.

Alternate Courses of Action

1. Take no action.
2. Table to a future meeting.

Attachments

1. BA 27-14 SBI Award for KPD

**ORDINANCE AMENDING BUDGET FOR THE
CITY OF KANNAPOLIS, NORTH CAROLINA
FOR THE FISCAL YEAR BEGINNING JULY 1, 2026, AND ENDING JUNE 30, 2027
Amendment # 27-14**

BE IT ORDAINED by the City Council of the City of Kannapolis, North Carolina meeting in open session this 14th day of September that the following amendment to the Budget Ordinance for the City of Kannapolis, North Carolina for the Fiscal Year beginning July 1, 2026, and ending June 30, 2027, is hereby adopted:

Description: This budget amendment appropriates the State Bureau of Investigation (SBI) awards for compensation bonuses for law enforcement officers.

SECTION I- GENERAL FUND

Revenue:	Increase: Police Admin: State Funds Revenue: 12010-34500	\$220,371
Revenue:	Increase: Fund Balance Appropriation Revenue: 19900-39900	\$21,895
Expenditure:	Increase: Admin: Bonus Pay Expenditure: 12010-41555	\$14,000
Expenditure:	Increase: Admin: FICA Expenditure: 12010-42000	\$203
Expenditure:	Increase: Admin: 401k Expenditure: 12010-42210	\$1,420
Expenditure:	Increase: Field Ops: Bonus Pay Expenditure: 12035-41555	\$66,500
Expenditure:	Increase: Field Ops: FICA Expenditure: 12035-42000	\$965
Expenditure:	Increase: Field Ops: 401k Expenditure: 12035-42210	\$6,650
Expenditure:	Increase: Support Ops: Bonus Pay Expenditure: 12030-41555	\$119,000
Expenditure:	Increase: Support Ops: FICA Expenditure: 12030-42000	\$173

Expenditure:	Increase: Support Ops: 401k Expenditure: 12030-42210	\$11,900
Expenditure:	Increase: Special Ops: Bonus Pay Expenditure: 12070-41555	\$19,250
Expenditure:	Increase: Special Ops: FICA Expenditure: 12070-42000	\$280
Expenditure:	Increase: Special Ops: 401k Expenditure: 12070-42210	\$1,925

This ordinance is approved and adopted on this 14th day of September.

George Douglas Wilson, Mayor
City of Kannapolis

ATTEST:

Pam Scaggs, CMC, NCCMC
City Clerk



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council

From: Alex Anderson, Director of Water Resources, Gerald Faulkner, Assistant Director of Water Resources

Subject: **REPORT** - Monthly Wastewater Allocations Report

Recommended Action Requested by City Council

Motion to recieve the report.

Required Votes to Pass Required Action

Majority Present at Meeting

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.

Alternate Courses of Action

1. Table to a future meeting.
2. Take no action.

Attachments

1. 2026-09 Update-1

City of Kannapolis
Monthly Wastewater Allocations Update
September 2026

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

Total Restricted and Previously Committed Reserves: 987,149

WSACC Distributions this month: 0

Pending Projects Approved by Policy: 0

Remaining Non-Restricted Reserves: 946,465

Summary Remaining for post-2027 Sewer Allocation: 280,000 (approximately)

Pending Projects under Review:

- The City has received WSACC distribution #15 notice and has it under review. Proposed Kannapolis release would be 58,284 GPD.
- The commercial project at HWY 73 and Odell School Road is under review and nearing submission of a Development Agreement for City Council Consideration.

Staff will issue a one-year reservation letter of sewer capacity, contingent of a final adopted Development Agreement. This future approval is solely at City Council's discretion, and this one-year reservation letter is non-binding.

- Cabarrus County Schools has informed staff that they are considering the construction of a new elementary school in the northwest service area. This school would need sewer capacity, which is likely to be between 10,000 and 15,000 GPD out of the 2027 allocation.
- Staff have finalized all reviews of submittals for the recent call for non-residential projects. All projects have been approved by the Wastewater Allocations Committee. Projects requiring a development agreement will be presenting the appropriate development agreement in the next few months.
 1. Trackhouse Racing (5,500 GPD) from 2024 Non-Residential Infill – pending development agreement
 2. Kellswater Plaza (4,700 GPD) from 2024 Parkway and Rogers Lake Road commercial and industrial reserves – pending development agreement
 3. Vertical Climbing and Fitness (12,748 GPD) with balance coming from Afton Ridge Reserves (~7,000 GPD) and balance from 2024 Non-Residential Infill – pending development agreement

4. Sona Mixed Use (40,950 GPD) from 2024 Non-Residential Infill – pending development agreement
- Staff have released the non-residential infill call for projects. This release will be closed October 16, 2026.
 - Economic Development Department is reviewing the most recent applications from the most recent affordable housing call for projects.
 - Staff have communicated with the top four waitlisted projects and are coordinating meetings to determine current status of projects.
-

Update Summary:

1. 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.
2. Staff are preparing to propose a reduction in Block 6 of 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.
3. Metro 63 reserves will be released in a future Exhibit A.
4. Waitlist spreadsheet updated below – removal of Sudbury Road S/D. This project will now be the new elementary school.
5. Waitlist will be updated in a future Exhibit A (the list below is not in any particular order):
 - Sides Road approximately 6,000 GPD residential
 - Dale Earnhardt Blvd Convenience Store approximately 5,000 GPD commercial
 - Lyla Avenue approximately 6,000 GPD residential
 - Camp Cabarrus at Kannapolis Pkwy & Dovefield Ln approximately 43,000 GPD residential
 - QTR Camp Julia Townhomes approximately 72,000 GPD residential
 - Irvin Farms approximately 75,000 GPD residential
 - Graces Reserve phase II approximately 49,000 GPD residential

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
Previous WSACC Distribution #13:	62,626
Current WSACC Distribution #14	195,511
Projected WSACC 2027 distribution:	962,000
Total Restricted and Previously Committed Reserves:	(987,149)
Remaining Non-Restricted Reserves:	(946,465)
WSACC Distributions this month: None	0
Pending Projects Approved by Policy:	0
Summary Remaining for post-2027 Sewer Allocation (approximate):	~280,522

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	196,355
• Market at Millstone (16,655) • Millstone Village (48,500) • Crest Field (50,400) • Towns at Millstone (30,375) • Dale Earnhardt Blvd Partners (26,400) • Block 10 (24,025)	
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
Blue Ridge Apartments	70,137
October Adjustment (Cannon Manor and Summerlyn)	17,345
Corriher Sewer (exempt plat)	675
Kellswater Outparcel #8	1,000
Total Restricted and Previously Committed Reserve	987,149

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)	145,042
Additional Downtown Set-Aside Reserves	29,863
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	27,000
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	69,585
Total Non-Restricted and Previously Committed Reserve	946,790

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

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
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

New Projects to be added to Waitlist in future Exhibit A update:

Graces Reserve Phase II
Irvin Farms
QTR Camp Julia THs
Lyla Avenue Single Family
Dale Earnhardt Blvd Convenience Store

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)
• Towns at Millstone	(30,375)
• Dale Earnhardt Blvd Partners	(26,400)
• Block 10	(24,025)
Remaining Original Downtown Reserves	<u>121,017</u>

- Kannapolis Crossing

Current Reserve	316,000
• Ashton Subdivision (tentative)	(77,775)
• Industrial Building 100 & 200	(12,000)
Remaining Original Kannapolis Crossing Reserve	<u>226,225</u>

- Kannapolis Parkway and Rogers Lake Road Reserve:

Current Reserve	28,000
• Kellswater Outparcel #8	(1,000)
Remaining Kannapolis Parkway and Rogers Lake Road	<u>27,000</u>



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Richard Smith, Planning Director
Subject: **VOLUNTARY ANNEXATION** - (A-2026-09) 1.0 +/- acres of non-contiguous property located at 3675 Shiloh Church Road

Recommended Action Requested by City Council

1. Motion to approve Resolution Directing the Clerk to investigate an Intent to Annex and to Certify the Sufficiency of the Petition to Annex; and
2. Motion to approve Resolution of Intent to Annex and Fix Date of Public Hearing for September 28, 2026.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

The applicants, Edmond Lamont McKnight and Jalin Edmond, have submitted an application for voluntary annexation of approximately 1.0 +/- acres of non-contiguous property located at 3675 Shiloh Church Road. The property is further identified as Cabarrus County Parcel Identification Number 46726854510000.

Fiscal Implications

None

Alternate Courses of Action

1. Table actions to a future meeting.
2. Take no action.

Attachments

1. 3675 Shiloh Church Rd - Annexation Application
2. 2675 shiloh ch rd metes and bounds
3. 2675 shiloh ch rd survey
4. Black and White A-2026-09 Shiloh Church Rd
5. Vicinity A-2026-09 Shiloh Church Rd
6. Vicinity Color A-2026-09 Shiloh Church Rd
7. A-2026-09 Resolution Directing the Clerk to investigate an intent to annex
8. A-2026-09 Resolution of Intent to Annex and to set a public hearing
9. A-2026-09 Certificate of Sufficiency



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: 3675 Shiloh Church Rd Davidson, NC 28036
Applicant: Edmond Lament McKnight and Jalin Edmond
Address: 3675 Shiloh Ch Rd. City: Davidson State: NC Zip: 28036
Contact number: _____ Email: josephd82@aol.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:

Jalin Edmond
Jalin Edmond

Date:

8-19-26

KANNAPOLIS

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: 8-7-2026

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 3675 Shiloh Church Rd ²⁸⁰³⁶, further identified as Cabarrus County Parcel Identification Number 46726854510000, is non-contiguous to the primary limits of the City of Kannapolis, is approximately 1 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.

Name (print or type)	Address	Signature*
1. <u>Edmond Lamont McKnight</u>	<u>10824 Earhardt Lake Rd</u> <u>Concord, NC 28036</u>	<u>[Signature]</u>
2. _____	_____	_____
3. <u>Jolin Edmond</u>	<u>3675 Shiloh Church Rd</u> <u>Davidson, NC 28036</u>	<u>[Signature]</u>
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.

ANNEXATION

2675 SHILOH CH RD. DAVIDSON N.C. 28036

EDMOND LAMONT MCKNIGHT

PIN#4672685451

Beginning at a new iron pin on the western right of way of Shiloh Church RD., being the south easterly most corner of the Edmond Lamont McKnight property (Db.18044 Pg.348); thence along the western right of way of Shiloh Church RD. S 09°59'17" W a distance of 177.44' to a new iron pin; thence N 67°23'03" W a distance of 224.56' to an existing iron pin ; thence N 10°35'16" E a distance of 172.06' to an existing iron pin ; thence S 68°38'36" E a distance of 221.68' to a new iron pin; which is the point of beginning, having an area of 38176.1 square feet, 0.876 acres according to a survey by Sparks Surveying PA dated 9/8/26.

SURVEYOR'S CERTIFICATION

I, Christopher S. Sparks certify that this map was drawn by me from an actual survey made by me deed description recorded in Book 18044 Page 348, etc.) (other); (that the ratio of precision as calculated by latitudes and departures is 1:10,000+, that the boundries not surveyed are shown as broken lines plotted from information found in Book 39 Page 109; that this map was prepared in accordance with G.S. 47-30, as amended.

Witness my hand and seal this 8TH day of SEPT., AD 2026

This plat is of another category, such as the recombination of existing parcels, a court ordered survey, or other exception to the definition of subdivision.



Professional Land Surveyor
Registration Number

STATE OF NORTH CAROLINA
CABARRUS COUNTY

I, _____ Review Officer of Cabarrus County certify that this map or plat to which this certification is affixed meets all statutory requirements for recording.

REVIEW OFFICER _____ DATE _____

FINAL PLAT APPROVAL
City Of Kannapolis

I hereby certify that this plat is exempt from the subdivision regulations of the City of Kannapolis due to its exclusion from the definition of a subdivision as established by NCGS 160d-802(a)

PLANNING DIRECTOR _____ DATE _____

- Notes:
1. Iron pins at all lot corners unless otherwise noted.
 2. Property may be subject to recorded or unrecorded rights-of-way or easements not observed.
 3. Property is not located within 2000' of a NCGS monument.
 4. Property is not located in a flood hazard area per FEMA Flood Insurance Rate Map 3710467200L, with an effective date of NOV., 16th 2018.
 5. This property is not located within a watershed.
 6. Total Site Acreage = 0.876 ACRES

LEGEND

- E.P. EDGE OF PAVEMENT
E.I.P. EXISTING IRON PIN
N.I.P. NEW IRON PIN
C.P. COMPUTED POINT
C.B. CATCH BASIN
E.P. EDGE OF PAVEMENT
R/W RIGHT OF WAY
W.M. WATER METER
R.C.P. REINFORCED CONCRETE PIPE

- SETBACKS
===== PROPERTY LINE
===== ADJOINERS PROPERTY LINES
----- RIGHT-OF-WAY

- ⊙ MANHOLE S.M.H.
● FIRE HYDRANT F.H.
⋈ WATER VALVE W.V.

PIN#4672682431
JAMES McKNIGHT
DB.1230 PG.285
ZONED: CR

PIN#4672682293
TTO PARTNERS LLC
DB.12300 PG.203
ZONED: CR

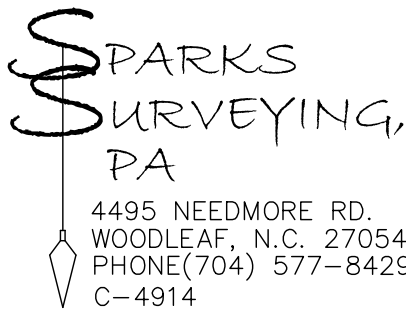
PIN#4672684139
TTO PARTNERS LLC
DB.12300 PG.203
ZONED: CR

PIN#4672685562
EDMOND LAMONT McKNIGHT
DB.18044 PG.348
ZONED: CR

PIN#46726851444
TTO PARTNERS LLC
DB.12300 PG.203
ZONED: CR

CURRENT OWNER

EDMOND LAMONT McKNIGHT
3675 SHILOH CHURCH RD.
DAVIDSON N.C. 28036

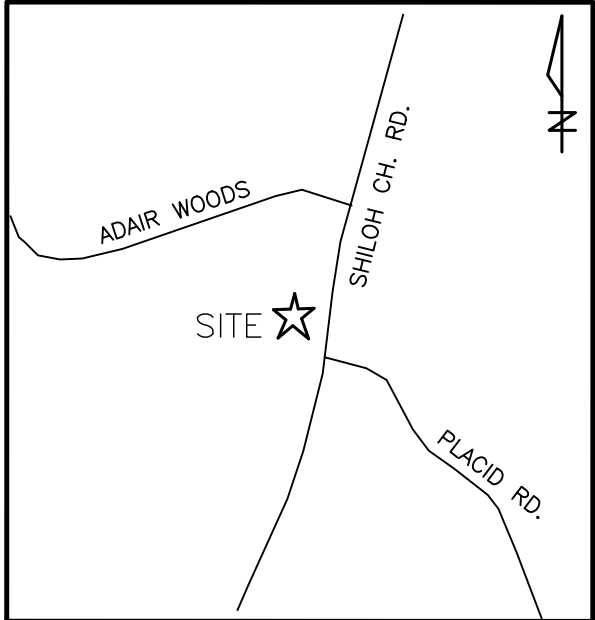


ANNEXATION PLAT
OF
2675 SHILOH CH. RD.
DAVIDSON, N.C. 28036

PIN #4672685451
DB 18044 PG 348
NUMBER 3 TOWNSHIP CABARRUS COUNTY

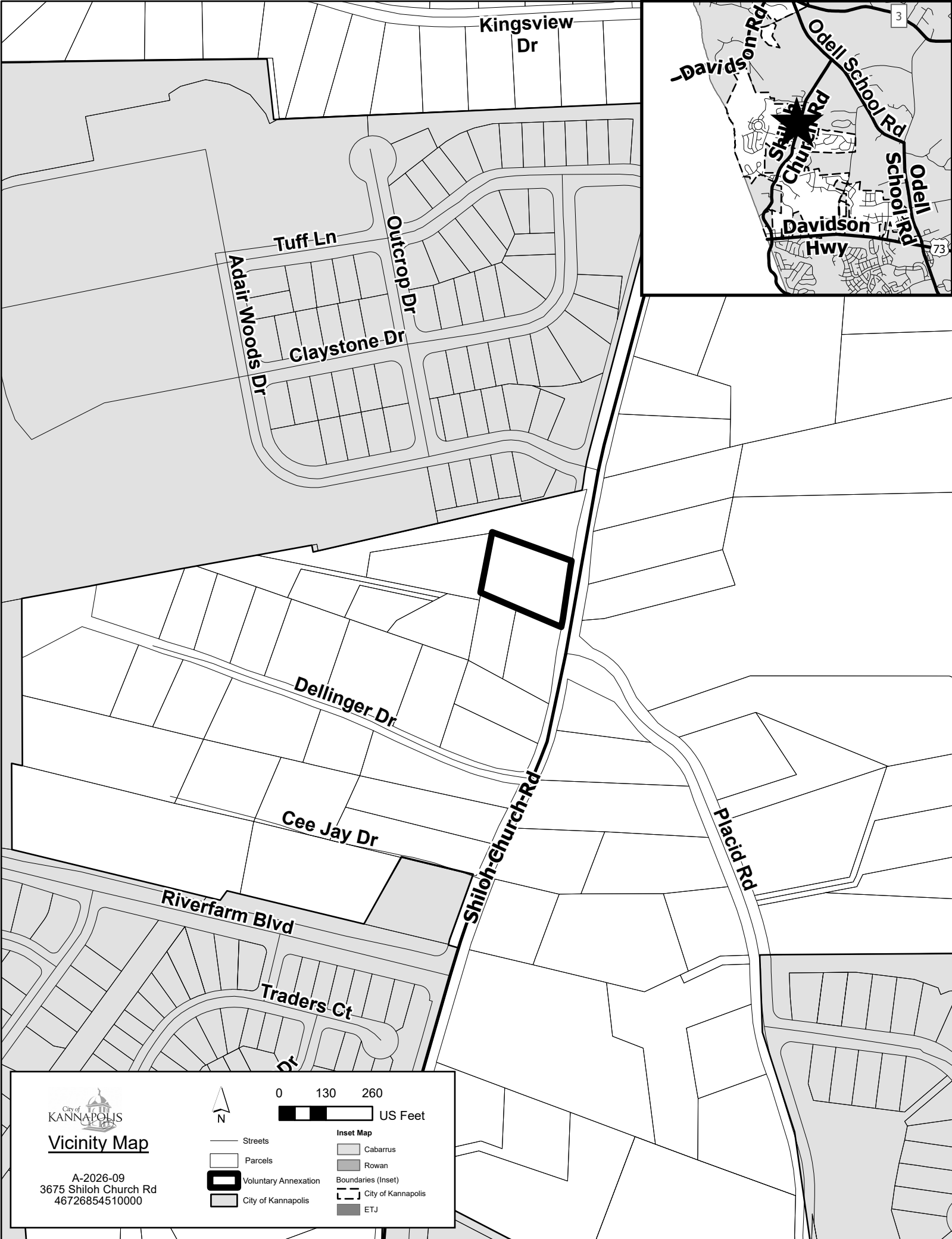
DESCRIPTION:
RECORD PLAT

Scale: 1" = 30' Date: 9/8/26



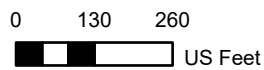
NTS VICINITY MAP





Vicinity Map

A-2026-09
3675 Shiloh Church Rd
46726854510000



- Streets
- Parcels
- Voluntary Annexation
- City of Kannapolis

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



Vicinity Map

A-2026-09
3675 Shiloh Church Rd
46726854510000

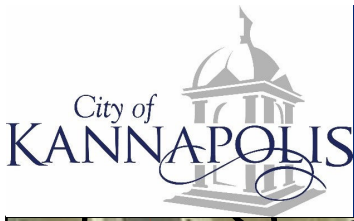


0 900 1,800 2,700
US Feet

- Streets
- Parcels
- Voluntary Annexation
- City of Kannapolis

Inset Map

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



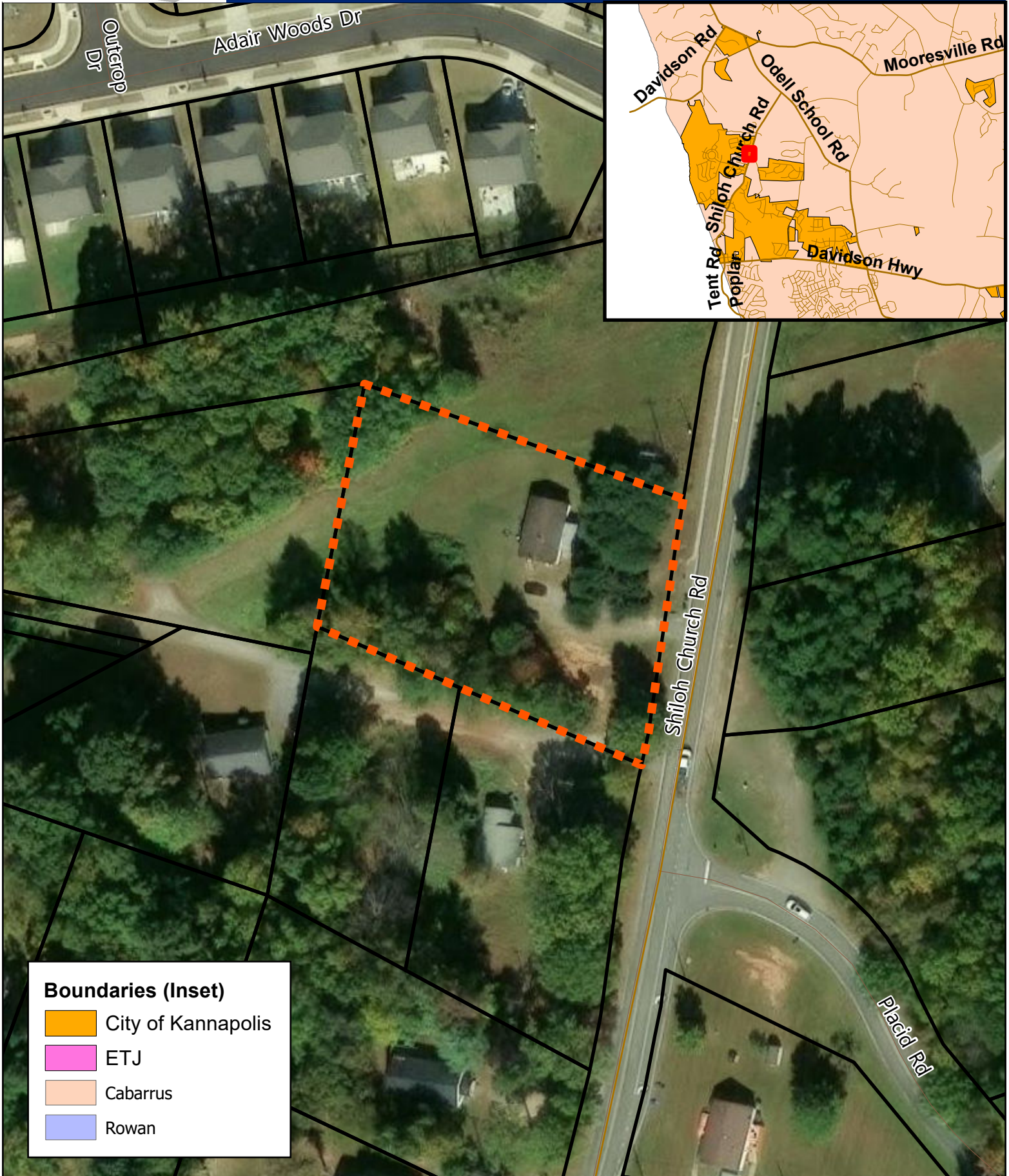
Vicinity Map

A-2026-09

3675 Shiloh Church Rd

46726854510000

N



Boundaries (Inset)

-  City of Kannapolis
-  ETJ
-  Cabarrus
-  Rowan

**RESOLUTION DIRECTING THE CLERK TO
INVESTIGATE AN INTENT TO ANNEX**

A-2026-09 – 3675 Shiloh Church Road

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*, provides 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 September 2026.

George Douglas Wilson, 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-2026-09 – 3675 Shiloh Church Road

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 September 2026.
- 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, September 17 and Thursday, September 24, 2026.

ADOPTED this the 14th day of September 2026.

George Douglas Wilson, Mayor
City of Kannapolis

ATTEST:

Pam Scaggs, CMC, NCCMC
City Clerk

CERTIFICATE OF SUFFICIENCY
A-2026-09 – 3675 Shiloh Church Road

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

I, Pam Scaggs, City Clerk, do hereby certify that pursuant to NCGS Chapter 160A-50 *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 September 2026.

Pam Scaggs, CMC, NCCMC
City Clerk



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Wilmer Melton, City Manager
Subject: **RESOLUTION** - Traffic Signal at NC 73 and Jim Johnson Rd

Recommended Action Requested by City Council

Motion to approve the Resolution supporting construction of a traffic signal at NC 73 and Jim Johnson Rd.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

Traffic conditions at the intersection of Jim Johnson Road and NC Highway 73 have changed as a result of increased development and population growth. The existing traffic volumes and turning movements have resulted in operational and safety concerns. City staff contacted NCDOT about these concerns and asked them to evaluate the intersection to determine if the intersection warrants the installation of a traffic signal. After their evaluation, NCDOT determined the intersection meets the warrants required by NCDOT and the Manual on Uniform Traffic Control Devices (MUTCD) for a signal.

The intersection currently operates under stop-sign controls and serves the Cannon Manor, Emerson Glen and Pelham Pointe neighborhoods within the surrounding area. The proposed traffic signal is intended to regulate traffic flow and reduce severe collision risks.

Fiscal Implications

None. NCDOT is funding the proposed traffic signal.

Alternate Courses of Action

1. Table action to a future meeting.
2. Take no action.

Attachments

1. Resolution for NC 73 and Jim Johnson

**RESOLUTION SUPPORTING THE CONSTRUCTION OF A TRAFFIC SIGNAL
BY THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
AT NORTH CAROLINA HIGHWAY 73 AND JIM JOHNSON ROAD**

WHEREAS, the safety and well-being of the citizens of the City of Kannapolis and the State of North Carolina are of paramount importance; and

WHEREAS, safe and efficient roadways are essential for the daily lives of residents, facilitating travel to work, school, healthcare, and other vital services; and

WHEREAS, traffic accidents and related incidents pose a significant risk to the lives of our citizens, causing injuries, fatalities, and economic burdens; and

WHEREAS, the estimated cost of the project is \$252,000 with 100% of the funding coming from North Carolina Department of Transportation (NCDOT); and

WHEREAS, these improvements may include, but are not limited to the construction of a traffic signal at the intersection of North Carolina highway 73 (NC 73) and Jim Johnson Road; and

WHEREAS, the City of Kannapolis recognizes the opportunity to leverage these funds to address critical infrastructure needs without additional burden to local taxpayers.

NOW, THEREFORE, BE IT RESOLVED, that the City of Kannapolis City Council hereby expresses its support for NCDOT to construct a traffic signal for traffic safety improvements outlined above; and

BE IT FURTHER RESOLVED that the City expresses its gratitude to the State of North Carolina Senate for its support enhancing roadway safety in the City of Kannapolis.

Adopted this 14th day of September 2026.

ATTEST:

George Douglas Wilson, Mayor
City of Kannapolis

Pam Scaggs CMC, NCCMC
City Clerk



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Richard Smith, Planning Director
Subject: **FIRST READING TA-2026-03** - Kannapolis Development Ordinance - Coddle Creek Subdistrict of Thoroughfare Protection Overlay (TPO) District

Recommended Action Requested by City Council

Motion to continue to the September 28, 2026 Council meeting for the Public Hearing of TA-2026-03.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

The applicant, Coddle Creek LLC, is requesting a text amendment to allow Vehicle Sales and Services uses within the Coddle Creek Subdistrict of the Thoroughfare Protection Overlay (TPO) District. The Coddle Creek Subdistrict of the TPO District is shown on the zoning map and includes certain segments along Davidson Highway, Trinity Church Road, Kannapolis Parkway, and Mooresville Road. The subdistrict boundaries extend 200 feet from one or both sides of the road right-of-way. Certain uses are prohibited within the Coddle Creek Subdistrict of the TPO District including kennels, amusement parks, prefabricated building sales, self-service storage, motor freight facilities, outdoor storage areas (as an accessory use) as well as uses in the vehicle sales and services category.

The applicant is requesting a text amendment to allow for vehicle sales and services uses within the Coddle Creek Subdistrict when the use is located on an arterial or major collector road and within 500 feet of one of the following six (*now seven) major intersections:

Mooresville Rd and Odell School Rd
Mooresville Rd and Davidson Rd
Davidson Hwy and Shiloh Church Rd
Kannapolis Pkwy and Rogers Lake Rd
Davidson Hwy and Kannapolis Pkwy
Davidson Hwy and Interstate 85

*Davidson Hwy and Odell School Road (*added due to a pending project that is proposed to include a convenience store as well)

Additionally, no vehicles shall be stored on a site. This text amendment request is associated with a proposal by the applicant for a vehicle fueling station at Mooresville Road and Odell School Road.

Five of the six intersections included in the proposed text amendment are within Primary Activity Centers as identified in the Move Kannapolis Forward 2030 Comprehensive Plan. Primary Activity Centers are located at the intersections of major or minor thoroughfares. As described in the Comprehensive Plan, these centers are easily accessible by car, accommodate multiple modes of

transportation, and have a mix of uses. In the Comprehensive Plan, the intersection of Davidson Highway and Kannapolis Parkway is considered a Secondary Activity Center. This intersection was included in the proposed text amendments to avoid creating a non-conforming use; there is an existing vehicle fueling station within 500 feet of the intersection.

The proposed text amendments to the KDO for the Coddle Creek Subdistrict of the TPO District are attached as Exhibit A. Proposed additions are shown as bold, green text and deletions are shown as bold, red text.

The Planning and Zoning Commission did not recommend approval of TA-2026-03 to City Council at their August 18, 2026, Commission meeting. Pursuant to Section 2.3.A(1)d of the KDO, City Council has final authority to review and make decisions on zoning text amendments.

As a result of feedback from the Planning and Zoning Commission, staff has further edited the text amendment request so that vehicle sales and towing services would not be permitted within these areas of the overlay. Further, staff added the intersection at Davidson Highway and Odell School Road as a result of a pending project at that site that also includes a vehicle services (convenience store) facility.

Fiscal Implications

None

Alternate Courses of Action

Table action to a future meeting.

Attachments

1. TA-2026-03 Application
2. TA-2026-03 Updated map
3. Exhibit A -Proposed Text Amendments CC



Zoning Text Amendment Checklist

So that we may efficiently review your project in a timely manner, it is important that all required documents and fees listed on the “Submittal Checklist” below are submitted with your application. Please either bring this application to the address above or email to emccarty@kannapolisnc.gov. The fees may also be paid online with a link provided by staff.

APPLICANT

Applicant: Coddle Creek LLC

SUBMITTAL CHECKLIST

- ☒ Pre-Application Meeting
- ☐ Zoning Text Amendment Checklist and Application – Complete with all required signatures
- ☒ Fee: \$400.00

PROCESS INFORMATION

Public Notification: This is a legislative process that requires a public hearing and public notification including newspaper notice, first-class mailed notice to adjacent property owners and a sign posted prominently on the property (Section 2.4.F of the KDO).

Review Process: All applications will be reviewed for compliance and then forwarded to the Planning and Zoning Commission for consideration at a public hearing which is held monthly on the third Tuesday at 6:00pm in City Hall Laureate Center. **The pre-application meeting, submittal of application, and payment of fees, must be completed prior to scheduling the public hearing. Please review Section 2.4.D. of the KDO.**

Action by Planning and Zoning Commission: The Commission shall consider the text amendment request and make a recommendation to City Council in accordance with Section 2.4.G. of the KDO.

Scope of Approval: City Council may approve or deny the request in accordance with Section 2.5.A(1).

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: Keith Wayne

Digitally signed by Keith Wayne
DN: cn=US, email=wayne@waynebrothers.com, o=Coddle Creek LLC
CN=Keith Wayne
Date: 2025.07.20 15:06:27 -0400

Date: 07/20/2026



Planning Department
401 Laureate Way
Kannapolis, NC 28081
704.920.4350

ZONING TEXT AMENDMENT APPLICATION

Approval authority – Planning and Zoning Commission

Applicant Contact Information

Name: Coddle Creek LLC
Address: 357 Concrescere Parkway
Davidson NC 28036

Phone: [REDACTED]

Email: [REDACTED]

In the space provided below, or on a separate sheet, present your requested text for the Ordinance provisions in question:

3.8.F(4): (1) MODIFICATION OF UNDERLYING USE PERMISSIONS

g. 3. (a) Sites that have frontage on an arterial highway or major collector and are within 500 feet of the following intersections shall be permitted if no vehicles are stored on site.

1. Mooresville Rd and Odell School Rd 2. Davidson Hwy and Shiloh Church Rd 3. Kannapolis Pkwy and Rogers Lake Rd
4. Davidson Hwy and Kannapolis Pkwy 5. Davidson Hwy and Interstate 85

State your reasons for amending the text of the Ordinance:

To enhance the citizen's benefit to frontage property adjacent to intersections of major arterial highway/major collectors in areas of projected growth.

I certify that all of the information presented in this application is accurate to the best of my knowledge, information, and belief.

Keith Wayne

Applicant Signature

Digitally signed by Keith Wayne
DN: C=US, E=keith.wayne@waynebrothers.com, O="Coddle Creek LLC",
CN="Keith Wayne"
Date: 2026.07.20 15:25:28-04'00'

07/20/2026

Date

Keith Wayne

Property Owner Signature

Digitally signed by Keith Wayne
DN: C=US, E=keith.wayne@waynebrothers.com, O="Coddle Creek LLC",
CN="Keith Wayne"
Date: 2026.07.20 15:25:39-04'00'

07/20/2026

Date

TA-2026-03

 500ft from intersection

0 4,800 US Feet



0 4,800 US Feet

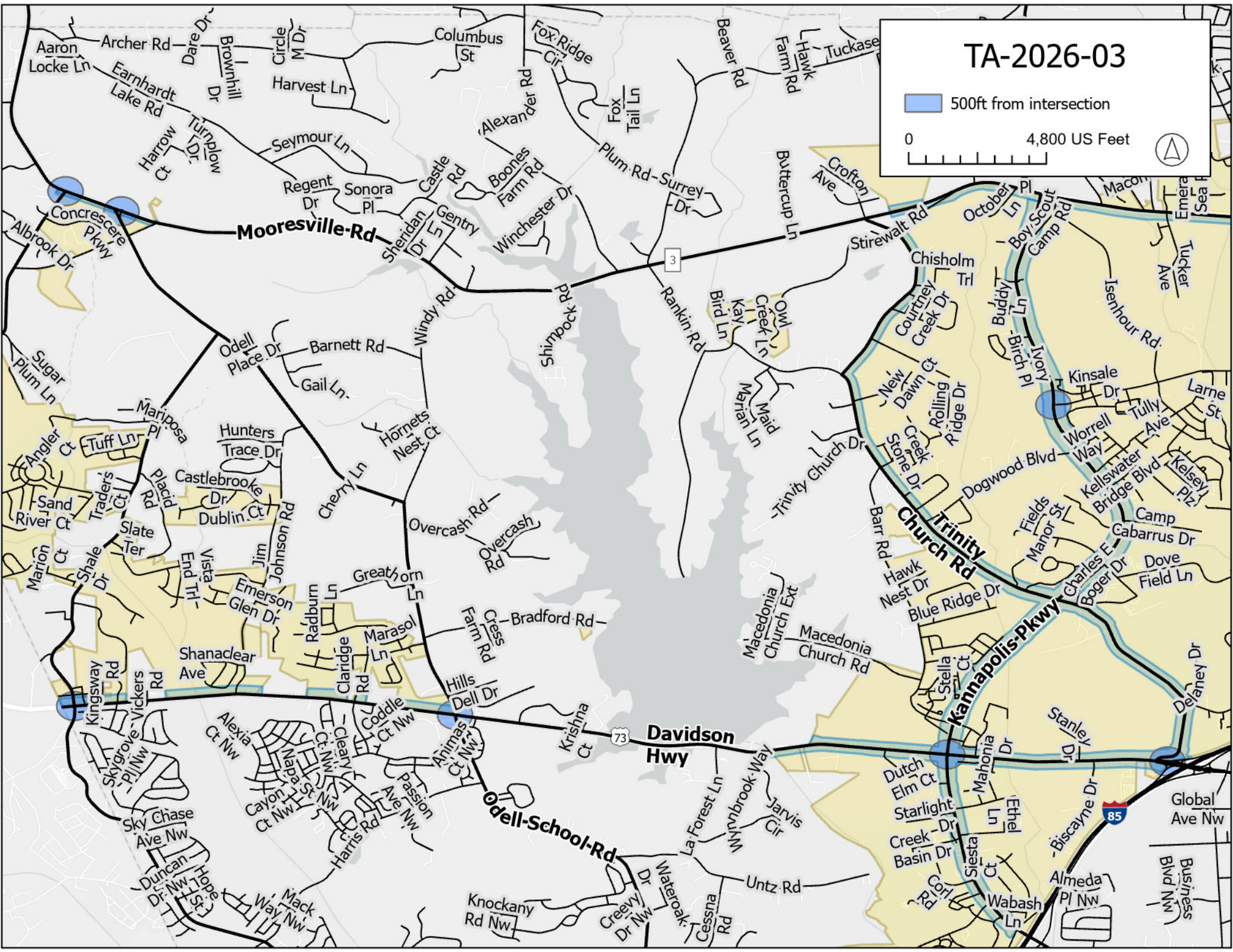


EXHIBIT A
PROPOSED TEXT AMENDMENT
TA-2026-03

Amend Section 3.8.F(4), Thoroughfare Protection Overlay District (TPO), Modification of Underlying Use Permissions within the Coddle Creek Subdistrict

(1) MODIFICATION OF UNDERLYING USE PERMISSIONS

Within the TPO District, use permissions shall be those that apply in the underlying zoning district, except as follows:

g. Within the Coddle Creek Subdistrict, the following uses are prohibited:

1. Kennels;
2. Amusement parks;
3. Uses in the Vehicle Sales and Services category; (no vehicle sales nor towing services will be permitted in these areas of the TPO)
 - (a) Sites that have frontage on an arterial highway or major collector and are within 500 feet of the following intersections ~~an intersection of two or more major arterial highways~~ shall be permitted if no vehicles are stored on site.
 1. Mooresville Rd and Odell School Rd
 2. Mooresville Rd and Davidson Rd
 3. Davidson Hwy and Shiloh Church Rd
 4. Kannapolis Pkwy and Rogers Lake Rd
 5. Davidson Hwy and Kannapolis Pkwy
 6. Davidson Hwy and Interstate 85
 7. Davidson Hwy and Odell School Road (added as a result of a future proposed project in this area)
4. Prefabricated building sales;
5. Self-service storage;
6. Motor freight facilities; and
7. Outdoor storage areas (as an accessory use).



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Kristin Jones, Assistant City Manager
Subject: **RESOLUTION** - Authorizing City to Enter Into Sole Source Equipment Purchase with Motorola for the Communications Tower.

Recommended Action Requested by City Council

Motion to Adopt a Resolution Authorizing City to Enter into Sole Source Equipment Purchase with Motorola for the Communications Tower.

Required Votes to Pass Required Action

Majority Present at Meeting

Background

At the most recent City Council retreat, Council decided to move forward with the Western Communications Tower project. It has been established that law enforcement, fire personnel and EMS first responders currently have limited (sometimes absent) radio communication when responding to emergency calls for service in north-west Cabarrus County. The lack of reliable communication creates delays and confusion for police, fire, and EMS personnel in the area.

As a reminder: A federal grant of \$963,000 has been secured and will be used to reduce the local costs for this project. This grant will be used to construct a new transmission tower estimated at approximately \$1 million. We also have funding received from Grant Campbell's office in the amount of \$83,000 and a contribution from Cabarrus County in the amount of \$250,000. The equipment for this communication tower is estimated at \$2.4m. This project is funded at \$3 million and will most likely need additional funding once the tower construction is bid for. We won't know final pricing until the project is bid.

In relation to the equipment, Motorola is the sole source of compatible products. Motorola is required because the radio equipment on this tower must integrate with the existing Charlotte UASI P25 regional network that Kannapolis Police and Fire already use, along with Concord, Cabarrus County, and neighboring agencies. Core tower-site equipment and nearly all the field radios on that network are Motorola ASTRO 25; other manufacturers' infrastructure is not a drop-in replacement, and mixing vendors creates interoperability, warranty, and support risk. The Charlotte UASI system is the shared 800 MHz P25 trunked radio network for public safety across Mecklenburg, Union, Cabarrus, Gaston, and Stanly Counties. Kannapolis PD and FD already operate on it (Cabarrus Simulcast). Officers and firefighters can talk to Concord, Cabarrus County, Charlotte-Mecklenburg, and the other partner agencies on the same network without flipping to a different system. That seamless mutual aid talk path is the reason the region built UASI in the first place. A new Kannapolis tower only works if the site electronics join that same Motorola ASTRO 25 core. If they do not, we create a coverage hole that our own people cannot use and that neighboring units cannot easily roam onto. Other P25 manufacturers exist (L3Harris, Tait, and others). They can make subscriber radios but they cannot furnish compatible core site infrastructure for this existing Motorola ASTRO 25 simulcast. Virtually all

the core tower-site equipment on this system is Motorola or sourced through them, most of the radios in the field are Motorola, and the other tower sites do not run non-Motorola sourced core equipment. The sole source part is the radio electronics that must talk to the rest of the network. If off-brand site gear is mixed in and anything fails — coverage, audio quality, site reliability — the vendor of record will almost always blame the non-branded equipment.

Therefore, the proposed purchase is in accordance with the provisions of the North Carolina General Statutes §143-129(e)(6), stated below, for the letting of public contracts, as a sole-source exception to the competitive requirements of the statute. The important result is that KPD can negotiate and acquire the necessary equipment, software and related support identified in the purchase agreement, directly from Motorola.

“NCGS 143-129(e)(6). Purchases of apparatus, supplies, materials, or equipment when: (i) performance or price competition for a product are not available; (ii) a needed product is available from only one source of supply; or (iii) standardization or compatibility is the overriding consideration. Notwithstanding any other provision of this section, the governing board of a political subdivision of the State shall approve the purchases listed in the preceding sentence prior to the award of the contract.”

Fiscal Implications

A budget amendment was approved at the July 13th meeting to fund \$3m for this project, including outside funding sources mentioned in the staff report. We may need additional funding once the construction of the tower is bid.

Alternate Courses of Action

1. Motion to amend Resolution and then adopt (must be in place by 9/30 to lock in pricing with Motorola).
2. Table Action to a Future Meeting (must be in place by 9/30 to lock in pricing with Motorola).

Attachments

1. Proposal - Kannapolis 7th Site - FINAL
2. Resolution - Authorizing City To Enter sole source purchase - motorola



MOTOROLA SOLUTIONS

Proposal

The City of Kannapolis, NC

Mooreville Road Tower

7th Remote Site Add to Cabarrus Simulcast

September 4, 2026

The design, technical, and price information furnished with this proposal is proprietary information of Motorola Solutions, Inc. (Motorola). Such information is submitted with the restriction that it is to be used only for the evaluation of the proposal, and is not to be disclosed publicly or in any manner to anyone other than those required to evaluate the proposal, without the express written permission of Motorola Solutions, Inc.

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PS-000234700

Motorola Solutions, Inc.
500 W. Monroe Street Suite 4400
Chicago, IL 60661

Captain Brent Rowland
The City of Kannapolis, NC
401 Laureate Way
Kannapolis, NC 28081

Subject: Mooresville Road Tower

Dear Captain Rowland,

Motorola Solutions, Inc. ("Motorola") is pleased to have the opportunity to provide The City of Kannapolis, NC with quality communications equipment and services. The Motorola project team has taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this solicitation, our solution includes a combination of hardware, software, and services. Specifically, this solution is for the Mooresville Road Tower and provides:

- One (1) 12-Channel P25 Remote Simulcast Site at Mooresville Road
RF Antenna System

- One (1) Microwave Site Link with SAR from Mooresville Road to Kannapolis FD Station 1

- One (1) Microwave Site Link from KFD Station 1 to Kannapolis Police Dispatch

- Optional for One (1) Microwave Site Link from Davidson Site to the new Mooresville Road Site

The products and services described in this proposal shall be provided under the terms stated in the Sourcewell Contract 020625-MOT. This proposal shall remain valid for a period of 60 days from the date of this cover letter. The City of Kannapolis, NC may accept the proposal by delivering to Motorola the MCA signed by Customer Contact Name. Alternatively, Motorola would be pleased to address any concerns you may have regarding the proposal. Any questions can be directed to your Motorola and Mobile Communications of America Account Executives, Terrence Pruitt at 919-815-3072 and Zach Fallon at 704-634-8262.

We thank you for the opportunity to furnish The City of Kannapolis, NC with "best in class" solutions and we hope to strengthen our relationship by implementing this project. Our goal is to provide you with the best products and services available in the communications industry.

Sincerely,

Motorola Solutions, Inc.
Kristin Donovan
Territory Vice President

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Use or disclosure of this proposal is subject to the restrictions on the cover page.  **MOTOROLA SOLUTIONS**

Motorola Solutions Confidential Restricted

PS-000234700

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Section 1

System Description

1.1 Radio Communication Infrastructure

1.1.1 Project Overview

In a request from the City of Kannapolis, Motorola Solutions is proposing a site development solution to support the addition of a P25 Simulcast site to the Cabarrus simulcast system. The proposed tower site is to be located at 35-29-20.64 N, 80-45-21.27 W in the northwest portion of Cabarrus County located at 10500 Mooresville Road, Davidson, NC. Motorola Solutions will coordinate this RF site add solution in accordance with the design assumptions and statement of work.

This proposal does not include the tower structure, site compound, equipment shelter, UPS, and generator as they are the responsibility of the City of Kannapolis, NC.

Interoperability is a key component of today's radio systems. Multiple public safety agencies need to be able to communicate with one another as the geographic areas of operation continue to expand. The City of Kannapolis and Cabarrus County P25 Communication system was established to help meet these needs for the users in this County and the surrounding region. Currently, the system is composed of a 6-site, 12-channel simulcast cell that ties into a Motorola Solutions Project 25 Core that resides in Matthews, NC. As the population of Cabarrus County has grown, there is a desire to increase the coverage in these areas.

In an effort to enhance the coverage in the northwestern parts of the County and parts of Mooresville Road, an addition of one (1) new simulcast remote site is proposed for the Cabarrus simulcast system. A site at 10500 Mooresville Road, Davidson, NC would make for the 7th site in the simulcast system and provide coverage to the northwest portion of the County. As part of the simulcast system expansion, a microwave backhaul solution is also proposed to incorporate the new site into the existing simulcast system with a connection to the tower at Kannapolis Fire Department (KFD) Station Station 1.

Traditionally, these areas have had coverage issues and a site will enhance the communication in these portions of the County and surrounding areas. In addition, since this site will provide coverage into surrounding counties, interoperable communication is increased into a larger geographic service area. With a greater geographic coverage footprint, this also provides a backup system for neighboring

Counties if their prime system were to fail. As with all the P25 sites in the Urban Area Security Initiative (UASI) network, the additional coverage gained would tremendously benefit all users in the entire region as users could potentially roam through these Counties seamlessly on the specified roaming talkgroups.

This solution provides the most cost-effective way to add coverage and interoperability into the Cabarrus simulcast system. The following section lists an overview of the equipment and a description of the design.

1.1.2 Equipment Overview

The additional site proposal would be part of the Cabarrus simulcast subsystem which currently has 6-sites with 12-channels at each location. The term “Simulcast” is used to describe the SIMULTaneous broadCAST of identical information on the same carrier frequency from multiple, geographically separated sites. With Motorola Solutions' Simulcast technology, the critical phase and amplitude of these signals will be held to strict tolerances for optimal performance. One of the important benefits of a simulcast solution is extended RF coverage. Simulcast is also beneficial in areas where available frequencies are scarce, and in areas where physical barriers (for example, mountains and buildings) can cause deficiencies in signal coverage. Simulcast is bandwidth efficient and enhances coverage.

After the addition, the Cabarrus Simulcast system will have the following RF sites shown below (new site in bold italics).

Cabarrus RF Sites

- Fire Station 3 (Prime/Co-located Remote Site)
- Pitt School Rd (Remote Site)
- KFD Station 1 (Remote Site)
- Mount Pleasant (Remote Site)
- Midland (Remote Site)
- Northeast (Remote Site)
- ***Mooresville Road (Remote Site)***

The simulcast fixed network equipment at each remote RF site is identical. The following major equipment would be located at the new simulcast RF site.

Mooresville Remote RF Site

- Redundant Site Routers (Juniper)
- One Motorola Solutions D-Series DBR M12 Rack
 - Twelve (12) Carriers (Base Radio Transceiver)
 - Two DC Powered Juniper SRX 345 Site Routers (powered from the D-Series rack)
 - Two (2) redundant DSC 8500 Site Processors with integrated GNSS (Global Navigation Satellite System) with Rubidium modules
- Two (2) Transmit (TX) Antennas networks
- One (1) Receive (RX) Antenna network
- One (1) RX Multicoupler System with Control Unit

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- One (1) Tower Top Amplifier (TTA)
- GPS Timing Equipment
- One (1) MC Edge Remote Terminal Unit
- Microwave Links as follows:
 - Mooresville Road to Kannapolis Tower
 - Optional microwave path Mooresville Road to Davidson Tower
- One (1) 7705 SAR Router to include Mooresville Road into the existing Cabarrus MPLS Mesh Network.

Kannapolis Police Department Dispatch Site

- Microwave Links as follows:
 - Kannapolis Police Dispatch (KPD) to Kannapolis Tower

Mooresville Remote RF Site

1.1.3 D-Series DBR M12

Mission-critical communications are paramount to Kannapolis' needs and modern radio sites are a key component to delivering on that need. The D-Series Base Radio (DBR) M12 Radio Site integrates the key ASTRO radio site components into a single, easy to deploy unit. Built on the flexibility of modern hardware and software architectures, the DBR M12 is designed to minimize downtime, and provide ease of operation while allowing for cybersecurity updates.

The DBR M12 contains the site processors, transceivers, RF distribution systems and DC power distribution for up to 12 carriers in a single rack. Multiple racks of up to three (3) can create a site with up to 28 site repeater carriers or 30 simulcast carriers. DBR M12 sites can support up to 12 carriers per transmit antenna and up to 30 carriers per receive antenna. In order to maximize resiliency and output power, this proposal includes two transmit antennas per DBR rack.

The DBR M12 is supported on ASTRO 25 Systems starting with the A2021.x release.

1.1.3.1 Improving Uptime

The DBR M12 is designed to minimize downtime from failure, maintenance or site updates. The DBR M12 can dynamically allocate resources across available hardware, thereby improving resiliency and overall uptime. Critical functions are deployed in pairs so that a redundant component can take over functions if needed. The major hardware components of the DBR M12 are hot swappable to ensure repairs cause minimum disruptions.

The multicarrier amplifier bank amplifies all channels simultaneously from a pool of amplifier resources. Upon a Power Amplifier (PA) module failure, the remaining PA modules can continue to service the channels. Depending on the configuration and transmit power requirements, this can be with no loss in channel capacity or no more than one (1) channel lost.

1.1.3.2 Simplifying Ownership

Offering up to 12 carriers per rack, the DBR M12 can reduce the impact on space-constrained sites and ease channel expansions within the capacity of the unit. The built-in Radio Frequency Distribution System (RFDS) of multicouplers, preselectors and filters connects the DBR M12 to the site antennas. With a narrow adjacent frequency spacing requirement of only 50 kHz, the DBR M12 offers greater flexibility than typical 150 kHz equipment, easing frequency acquisition where spectrum availability is an issue.

The DSC 8500 Site Processor provides a single point of connectivity for all of the DBR M12 components at the site. Configuration, fault management, and software upgrades are managed at the site level, rather than addressing each component individually. This provides a streamlined, intuitive user experience.

1.1.3.3 Modernizing Cybersecurity

The DBR M12 is designed to offer protection against an ever-evolving threat landscape following recommendations of the NIST Cybersecurity Framework guidelines to help identify and detect cyber-attacks, and then how to respond, prevent and recover from such events.

1.1.3.4 Key DBR M12 Components

DSC 8500 Site Processor – The site processor contains and runs the software used throughout the radio site, including the site controller and base radios. Connections to the base radio transceivers and PAs are provided via the integrated IP switch which has additional capacity for connecting external RF equipment at the site such as conventional stations. The DSC 8500 provides integrated Ethernet LAN switching eliminating the need for external switches at the simulcast sub-site and provides an integrated site reference. It provides site Ethernet switching, frequency reference, and GPS signal timing. The integrated time/frequency reference uses Global Navigation Satellite System (GNSS) receivers and a Rubidium module as a backup reference eliminating the need for a TRAK time and frequency reference. The site processor is equipped with integrated redundant GPS references for the ability to maintain timing for a minimum of four (4) hours without a GNSS signal. The rubidium module is included for extended holdover time of 72 hours. The redundant configuration provides two reference distribution modules. One unit acts as the active unit and the second is the standby unit.

Multicarrier Amplifier Bank – The DBR M12 pools PA resources into a multicarrier amplifier bank. PA resources within this bank can be sized to provide ample power for the active carriers as well as additional capacity to cover for a PA failure in many channel configurations. The bank dynamically amplifies all channels simultaneously. The multicarrier amplifier bank eliminates the need for traditional cavity combiners. The overall result is a small and power efficient system, resilient to failure without the need for periodic combiner tuning.

DC Power System – The DBR M12 offers integrated DC power as standard (+/- 48 VDC) throughout. Designed to be powered by a site DC power system, the DBR M12 rack includes multiple breakers to distribute power to the various components, ensuring a single breaker trip will not disable the entire site.

AC Power System – The AC power system is a modular design. Utilizing an N+1 redundancy scheme, the number of modules is sized to meet the power needs of each DBR M12 configuration. The loss of an AC circuit to the DBR M12 unit will not result in the loss of channel capacity.

Remote Site Router – The Juniper SRX routers provide a WAN interface to the Simulcast Prime site performing the following tasks:

- Carries all of the voice and network management traffic for the site.
- Provides IP traffic prioritization for packets departing the site.
- Interfaces between the RF Subsystem and Simulcast Prime Site.

This proposal includes two DC Juniper SRX routers that are powered via the integrated DBR M12 DC power system.

An optional, additional microwave path from the new Mooreville Rd simulcast remote site to the existing Mecklenburg County, Davidson site will provide additional microwave connectivity options to all of Cabarrus County. Today, the Cabarrus microwave ring connects to the Zone Midland RF site. With the Mooreville Rd to Davidson site microwave addition, the Cabarrus RF sites and dispatch centers have an alternate path to the Zone core via the Mecklenburg simulcast microwave network.

Also included in this proposal is a microwave path from Kannapolis Police Department (KPD) dispatch to KFD1 replacing the current microwave hardware.

1.1.4 System Coverage

Figure 1-1 titled “Existing Coverage” provides a graphical view of the existing portable on street 6-site Simulcast system.

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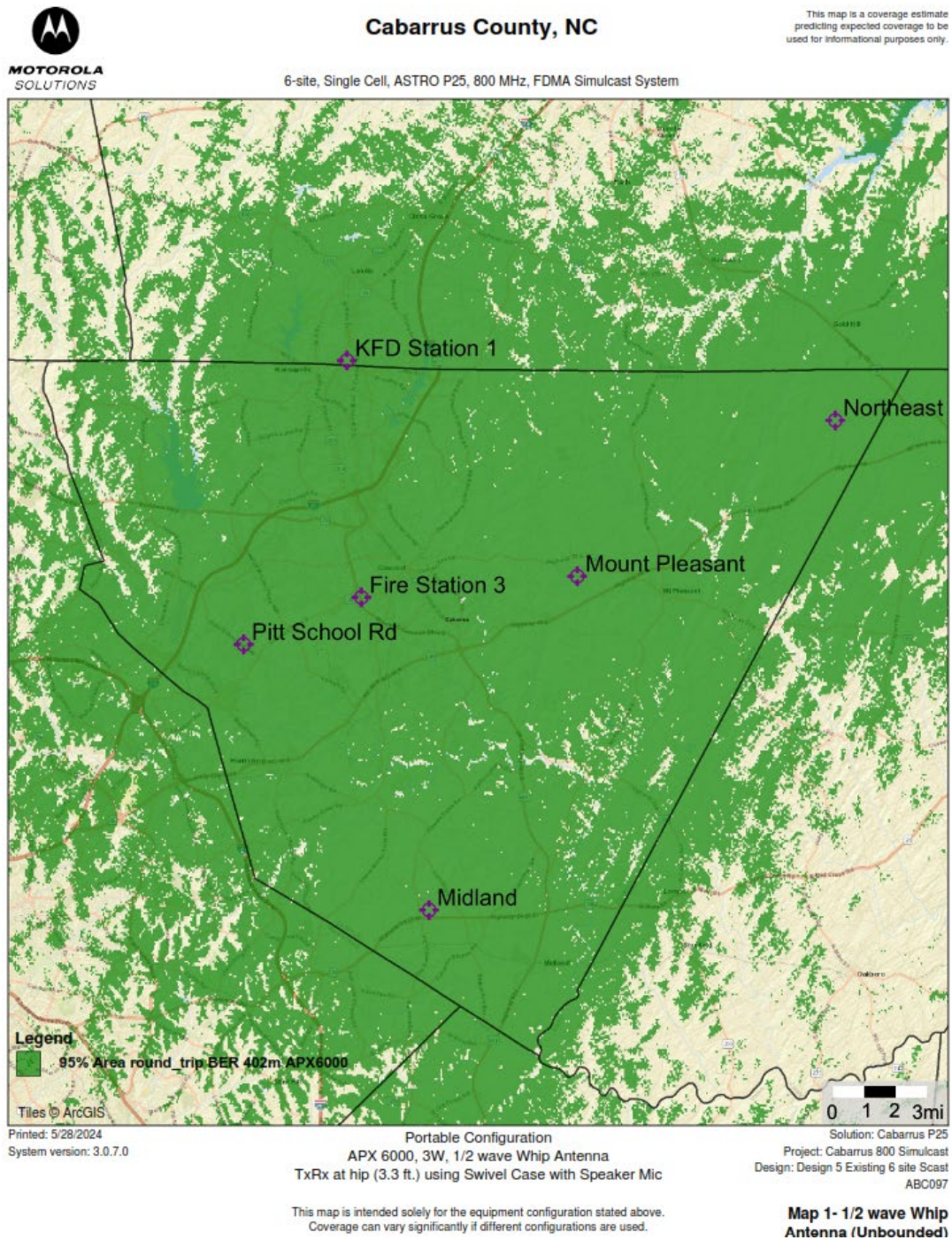


Figure 1-1: Existing Coverage – The existing portable on street coverage is provided for comparison to display coverage improvements.

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Figure 1-2 titled “System Coverage” provides a graphical view of the proposed portable on street 7-site Simulcast system.

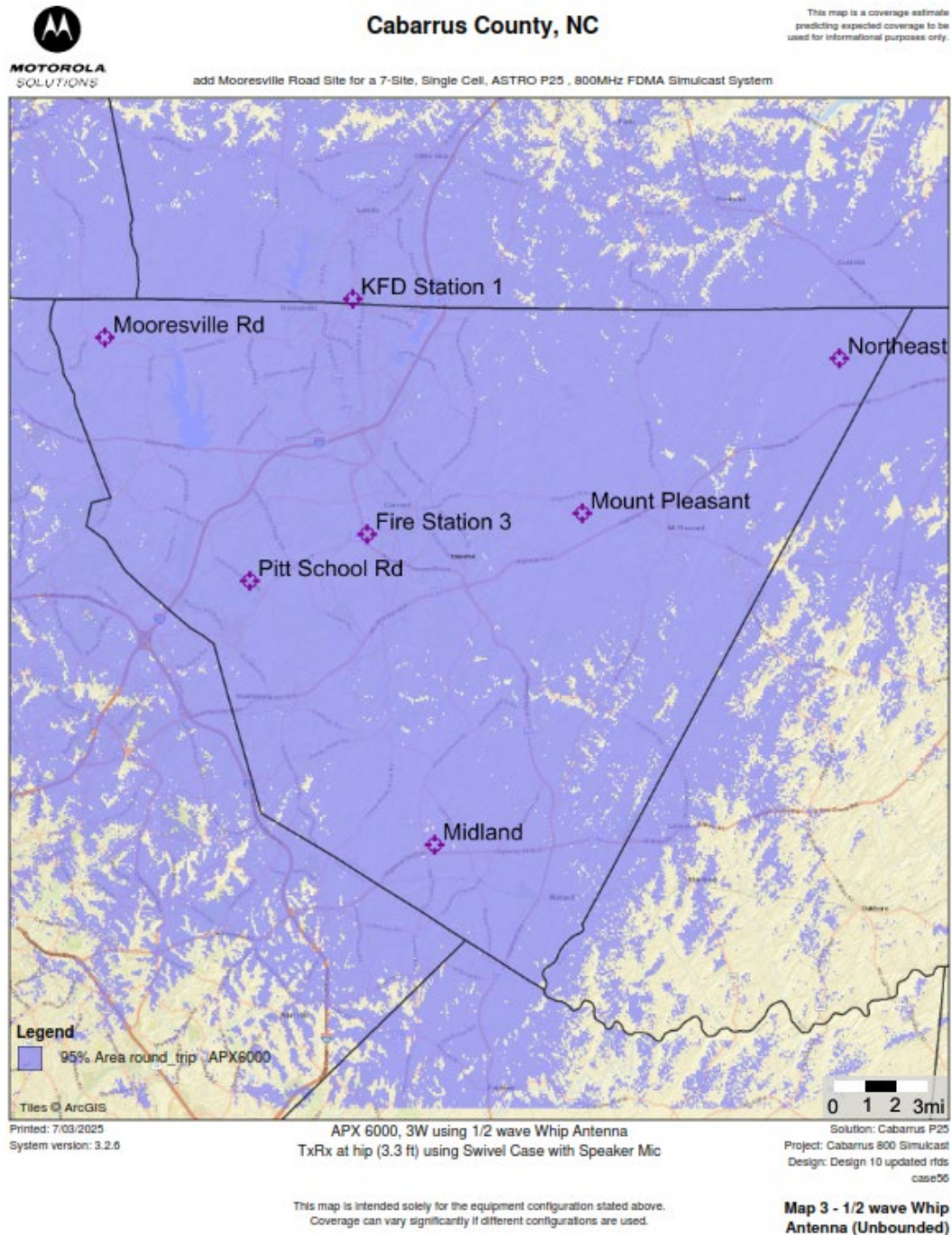


Figure 1-2: System Coverage – The proposed portable on street 7 site simulcast system design will provide reliable coverage required by the City of Kannapolis.

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1.1.5 Design Assumptions

In an effort to provide mission critical communications Motorola Solutions is proposing the addition of a new simulcast remote site off of Mooresville Road in Cabarrus County. This additional site will provide additional coverage to the northwest part of Cabarrus County. The system additions to make this all possible are based on the design assumptions listed below:

- The Cabarrus County Simulcast Cell is at system release A2022.x and migrating to AN2025.x in the September 2026 timeframe
- The City of Kannapolis will provide the following items for this additional RF site:
 - One (1) 300-foot Tower
 - One (1) 12x16 MSB (Motorola Standard Building) or equivalent including UPS and generator.
 - Fenced in compound to enclose the tower, shelter, and generator.
 - New Access Road from paved road surface
- Motorola Solutions will provide the following items for this additional RF site:
 - One new 12-channel P25 remote simulcast site included
 - Antenna and lines for the Simulcast Remote RF site
 - Two transmit and one receive antennas are included along with associated transmission lines
 - Microwave antenna, lines, and radios to connect this new location to the Kannapolis Fire Department (KFD) Floyd Street location
 - Microwave antenna, lines, and radios to connect this new location to the Davidson site (optional microwave path)
 - Microwave antenna, lines, and radios to connect the Kannapolis Police Department dispatch to the Kannapolis Fire Department (KFD1) Floyd Street location
 - Fixed Network Equipment for the simulcast remote RF site to integrate into the Cabarrus simulcast system
 - Two site links included with a SAR to include the new site into the existing MPLS network
- Includes new Nokia microwave and network equipment to incorporate this site into the microwave network.
- Assumes that a viable path exists between Mooresville Road and KFD Tower (**physical path survey required**).
- Assumes that a viable path exists between Mooresville Road and Davidson site (**physical path survey required**). (optional microwave path)
- Assumes that a viable path exists between KPD and KFD Tower (**physical path survey required**).
- The addition of this site will also include MPLS configuration as a ring from KFD and to Davidson sites.
- Assumes adequate microwave capacity in the existing network to bring the new site back to the Prime site at Fire Station 3.

- The City of Kannapolis or existing FCC licensee is responsible for all licensing and site coordination.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of the City of Kannapolis.
- Any required system interconnections not specifically outlined in this proposal will be provided by the City of Kannapolis. These may include dedicated phone circuits, microwave links, fiber, or other types of connectivity.
- The City provided equipment shelter will have adequate space, power, and backup power to support this simulcast remote RF site addition.
- All existing towers will have adequate space and size to support the antenna network requirements of the system described:
 - One (1) 800 MHz Omni Collinear Receive Antenna mounted at 280-feet.
 - One (1) 800 MHz Tower Top Amplifier mounted at 280-feet.
 - Two (2) 800 MHz Omni Collinear Transmit Antennas mounted at 260-feet.
 - Mooresville Road:
 - 6 GHz microwave path with 6 foot microwave antenna pointing to KFD Tower to be mounted at 270-feet.
 - Optional 11 GHz microwave path with 3 foot microwave antenna pointing to Davidson to be mounted at 120-feet.
 - ☐ Tower loading should account for this additional loading
 - KFD Tower:
 - 6 GHz microwave path with 6 foot microwave antenna pointing to Mooresville Rd Tower to be mounted at 120-feet.
 - 23 GHz microwave path with 2 foot microwave antenna pointing to KPD dispatch to be mounted at 160-feet.
 - Davidson Site
 - Optional 11 GHz microwave path with 3 foot microwave antenna pointing to Mooresville Rd Tower to be mounted at 150-feet.
 - Kannapolis Police Dispatch
 - 23 GHz microwave path with 1 foot microwave antenna pointing to KFD Tower to be mounted at 50-feet above ground level with a building mount.
- Motorola Solutions is not responsible for interference caused or received by the Motorola Solutions-provided equipment except for interference that is directly caused by the Motorola provided transmitter(s) to the Motorola Solutions-provided receiver(s). Should the City of Kannapolis or Cabarrus simulcast system experience interference, Motorola Solutions can be contracted to investigate the source and recommend solutions to mitigate the issue.
- No Coverage Guarantee is included in this proposal.

Section 2

Statement of Work

It describes the actual work involved in installation, identifies the installation standards to be followed, and clarifies the responsibilities for both Motorola and the Customer during the project implementation. Specifically, this SOW provides:

- A summary of the phases and tasks to be completed within the project lifecycle.
- A list of the deliverables associated with the project.
- A description of the responsibilities for both Motorola and the Customer.
- The qualifications and assumptions taken into consideration during the development of this project.

This SOW provides the most current understanding of the work required by both parties to ensure a successful project implementation. In particular, Motorola has made assumptions of the sites to be used for the new system. Should any of the sites change, a revision to the SOW and associated pricing will be required. It is understood that this SOW is a working document, and that it will be revised as needed to incorporate any changes associated with contract negotiations, Contract Design Review (CDR), and any other change orders that may occur during the execution of the project.

2.1 Contract

2.1.1 Contract Award (Milestone)

- The Customer and Motorola execute the contract and both parties receive all the necessary documentation.

2.1.2 Contract Administration

Motorola Responsibilities:

- Assign a Project Manager, as the single point of contact with authority to make project decisions.
- Assign resources necessary for project implementation.
- Set up the project in the Motorola information system.

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- Schedule the project kickoff meeting with the Customer.

Customer Responsibilities:

- Assign a Project Manager, as the single point of contact responsible for Customer-signed approvals.
- Assign other resources necessary to ensure completion of project tasks for which the Customer is responsible.

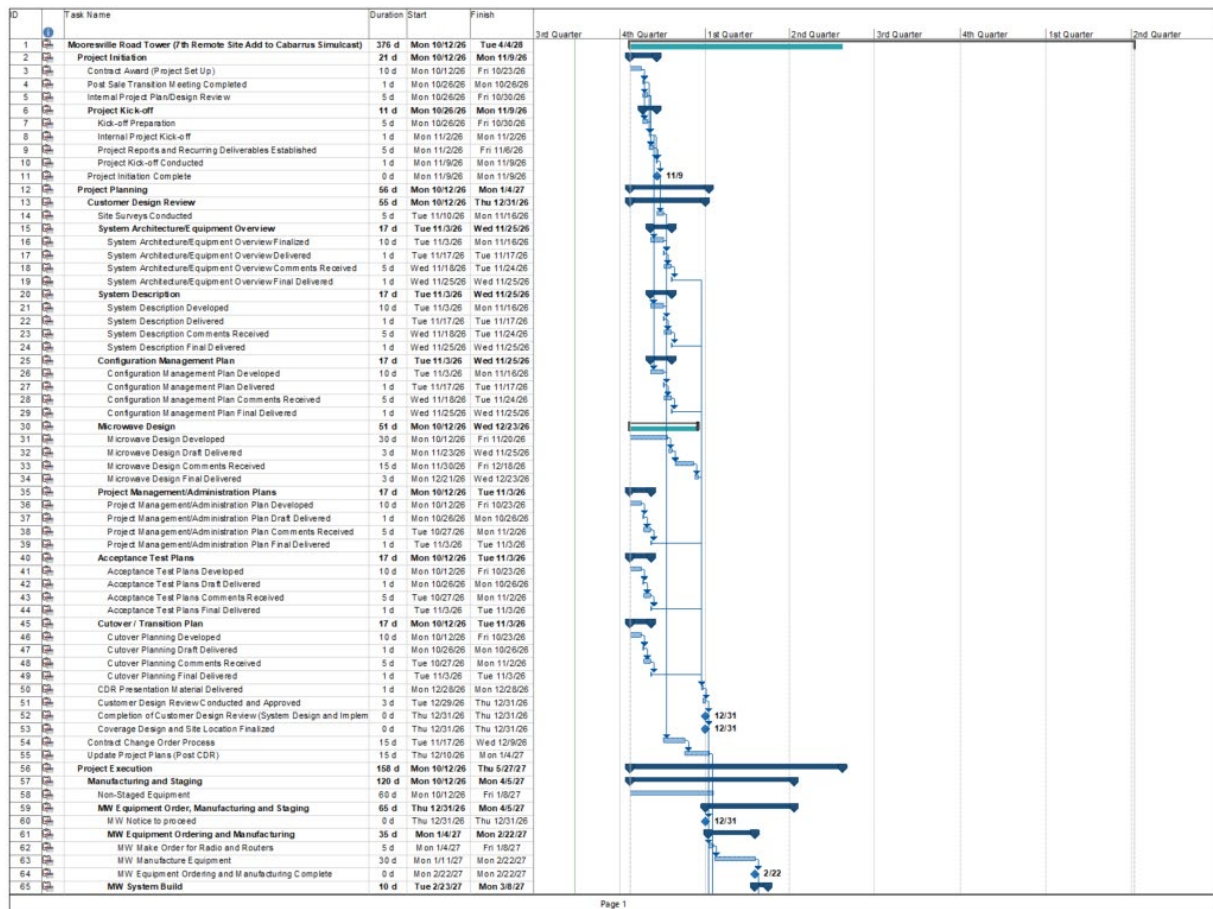
Completion Criteria:

- Motorola internal processes are set up for project management.
- Both Motorola and the Customer assign all required resources.
- Project kickoff meeting is scheduled.

2.1.3 Project Kickoff

Motorola Responsibilities:

- Conduct a project kickoff meeting during the Contract Design Review (CDR) phase of the project.
- Ensure key project team participants attend the meeting.
- Introduce all project participants attending the meeting.
- Review the roles of the project participants to identify communication flows and decision-making authority between project participants.
- Review the overall project scope and objectives with the Customer.
- Review the resource requirements with the Customer.
- Review preliminary implementation timing with the Customer to address upcoming milestones and/or events.
- Review the teams' interactions (Motorola and the Customer), meetings, reports, milestone acceptance, and the Customer's participation in particular phases.



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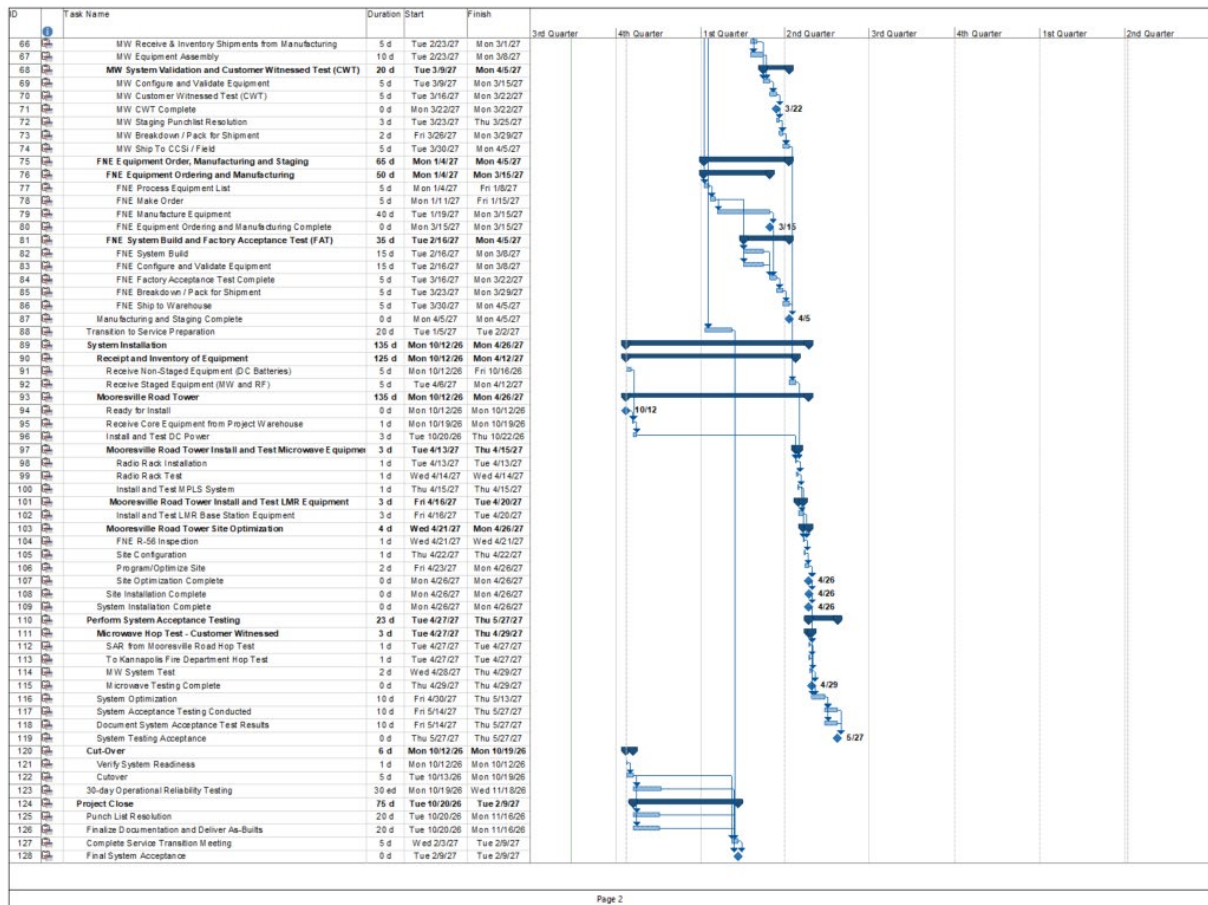


Figure 2-1: Preliminary Project Schedule - "Kannapolis, NC 7th Site_New site (tentative schedule) 2026 v4"

Customer Responsibilities:

- The Customer's key project team participants attend the meeting.
- Review Motorola and Customer responsibilities.

Completion Criteria:

- Project kickoff meeting completed.
- Meeting notes identify the next action items.

2.2 Contract Design Review

2.2.1 Review Contract Design

Motorola Responsibilities:

- Meet with the Customer project team.
- Review the operational requirements and the impact of those requirements on various equipment configurations.
- Establish a defined baseline for the system design and identify any special product requirements and their impact on system implementation.
- Review the system design and scope of work, and update the contract documents accordingly.
- Discuss the proposed Cutover Plan and methods to document a detailed procedure.
- Submit design documents to the Customer for approval. These documents form the basis of the system, which Motorola will manufacture, assemble, ship, and install.
- Prepare equipment layout plans for shipment to the field.

Customer Responsibilities:

- The Customer's key project team participants attend the meeting.
- Make timely decisions, according to the implementation tasks.
- Frequency Licensing and Interference:
 - As mandated by FCC, the Customer, as the licensee, has the ultimate responsibility for providing all required radio licensing or licensing modifications for the system prior to system shipment. This responsibility includes paying for FCC licensing and frequency coordination fees.
 - Provide the FCC "call sign" station identifier for each site prior to system shipment.

Completion Criteria:

- Complete Design Documentation, which may include updated system description, equipment list, system drawings, or other documents applicable to the project.
- Incorporate any deviations from the proposed system into the contract documents accordingly.
- The system design is "frozen" in preparation for subsequent project phases such as Order Processing and Manufacturing.
- A Change Order is executed in accordance with all material changes resulting from the Design Review to the contract.

2.2.2 Design Approval (Milestone)

- The Customer executes a Design Approval milestone document.

2.3 Order Processing

2.3.1 Process Equipment List

Motorola Responsibilities:

- Validate Equipment List by checking for valid model numbers, versions, compatible options to main equipment, and delivery data.
- Enter order into Motorola's Customer Order Fulfillment (COF) system.
- Create Ship Views, to confirm with the Customer the secure storage location(s) to which the equipment will ship. Ship Views are the mailing labels that carry complete equipment shipping information, which direct the timing, method of shipment, and ship path for ultimate destination receipt.
- Create equipment orders.
- Reconcile the equipment list(s) to the Contract.
- Procure third-party equipment if applicable.

Customer Responsibilities:

- Approve shipping location(s).
- Complete and provide Tax Certificate information verifying tax status of shipping location.

Completion Criteria:

- Verify that the Equipment List contains the correct model numbers, version, options, and delivery data.
- Trial validation completed.
- Bridge the equipment order to the manufacturing facility.

2.4 Manufacturing and Shipment

2.4.1 Manufacture Motorola Fixed Network Equipment

Motorola Responsibilities:

- Manufacture the Fixed Network Equipment (FNE) necessary for the system based on equipment order.

Customer Responsibilities:

- None.

Completion Criteria:

- FNE shipped to the field.

2.4.2 Manufacture Non-Motorola Equipment

Motorola Responsibilities:

- Procure non-Motorola equipment necessary for the system based on equipment order.

Customer Responsibilities:

- None.

Completion Criteria:

- Ship non-Motorola manufactured equipment to the field.

2.4.3 Ship Equipment to Field

Motorola Responsibilities:

- Pack system for shipment to final destination.
- Arrange for shipment to final destination.

Customer Responsibilities:

- See section 2.7 City of Kannapolis, NC Responsibilities

Completion Criteria:

- Equipment ready for shipment to final destination.

2.4.4 Ship Acceptance (Milestone)

- All equipment shipped to the field.

2.5 Site Development

Motorola is proposing to The City of Kannapolis the installation and configuration of the following equipment at the specified locations.

Site Name	Major Equipment
Mooresville Road Remote RF Site	☐ One (1) 12 Channel P25 Remote Simulcast Site. ☐ RF Antenna System with line for up to 320' on the tower provided by Kannapolis. ○ Two (2) Transmit; One (1) Receive w/ tower top amplifier ☐ One (1) Microwave Site Link with SAR: ○ Mooresville Road to Kannapolis Fire Department. ☐ OPTIONAL One (1) Microwave Site Link : ○ Mooresville Road to Davidson Site.
Davidson Remote RF Site (Mecklenburg County simulcast site)	☐ OPTIONAL One (1) Microwave Site Link : ○ Davidson Site to Mooresville Road

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Site Name	Major Equipment
Kannapolis Police Department Dispatch	☐ One (1) Microwave Site Link: ○ Kannapolis Police Dispatch to Kannapolis Fire Department

The document delineates the general responsibilities between Motorola and Kannapolis as agreed to by contract.

2.6 Motorola Responsibilities

Motorola's general responsibilities include the following:

- Perform the installation of the Motorola-supplied equipment described above.
- Schedule the implementation in agreement with the City of Kannapolis.
- Coordinate the activities of all Motorola subcontractors under this contract.
- Administer safe work procedures for installation.
- Provide the City of Kannapolis with the appropriate system interconnect specifications.

2.7 The City of Kannapolis Responsibilities

The City of Kannapolis will assume responsibility for the installation and performance of all other equipment and work necessary for completion of this project that is not provided by Motorola. General responsibilities for The City of Kannapolis include the following:

- Provide access to and provide all buildings, equipment shelters, and towers required for system installation.
- Tower Loading Studies will need to be performed at KFD to support the new microwave path to the Mooresville Road tower. Any site/location upgrades or modifications are the responsibility of the City of Kannapolis.
- The new tower at Mooresville Road will need to accommodate the simulcast RF site tower loading requirements to include microwave dish(es) for site backhaul connectivity. The tower should be sized for the initial RF site loading requirements as well as the ability to support additional future tower loads.
- OPTIONAL Tower Loading Studies will need to be performed at Davidson site to support the new microwave path to the new Cabarrus Simulcast Site at Mooresville Road. Any site/location upgrades or modifications are the responsibility of the City of Kannapolis.
- Tower Loading Studies will need to be performed at KPD to support the new microwave path to KFD. Any site/location upgrades or modifications are the responsibility of the City of Kannapolis.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of the City of Kannapolis.
- Any required system interconnections not specifically outlined in this proposal will be provided by the City of Kannapolis. These may include dedicated phone circuits, microwave links, fiber, or other types of connectivity.

- Ensure communications sites meet space, grounding, power, and connectivity requirements for the installation of all equipment.
- Obtain all licensing, site access, or permitting required for project implementation.
- Obtain frequencies for the project as required and the Latitude and Longitude of the proposed microwave sites and tower heights (if applicable).
- Provide information and arrange for surveyor access to the proposed microwave sites.
- Verify site elevations above sea level; site longitude and latitude.
- Provide new or existing tower description and information.
- Provide site layouts including towers with antennas at proposed center lines.
- Provide required system interconnections.
- The City of Kannapolis will provide a dedicated delivery point, such as a warehouse, for receipt, inventory, and storage of equipment prior to delivery to the site(s).
- Coordinate the activities of all The City of Kannapolis vendors or other contractors.

2.8 Assumptions

Motorola has made several assumptions in preparing this proposal, which are noted below. In order to provide a firm quote, Motorola will need to verify all assumptions or seek alternate solutions in the case of invalid assumptions.

- All existing sites or equipment locations will have sufficient space available for the system described as required/specified by R56.
- All existing sites or equipment locations will have adequate electrical power in the proper phase and voltage, and site grounding to support the requirements of the system described.
- All existing towers will have adequate space and size to support the antenna network requirements of the system described.
- Any site/location upgrades or modifications are the responsibility of The City of Kannapolis.
- Any tower stress analysis or tower upgrade requirements are the responsibility of The City of Kannapolis.
- Approved FCC licensing coordinated with the City of Kannapolis.
- Approved local, State, or Federal permits as may be required for the installation and operation of the proposed equipment are the responsibility of the City of Kannapolis.
- Any required system interconnections not specifically outlined here will be provided by The City of Kannapolis. These may include dedicated phone circuits, microwave links, or other types of connectivity.
- Special Equipment for installation is not included (i.e. cranes, helicopters, boom trucks etc.). Usage of this Equipment will be at additional cost to Customer and documented through a Subcontract Change Order prior to commencement of work.
- No coverage guarantee is included in this proposal.

- Motorola is not responsible for interference caused or received by the Motorola-provided equipment except for interference that is directly caused by the Motorola-provided transmitter(s) to the Motorola-provided receiver(s). Should the City of Kannapolis or Cabarrus simulcast system experience interference, Motorola can be contracted to investigate the source and recommend solutions to mitigate the issue.
- Due to significant market and tariff volatility, as well as fluctuations in the cost of energy and raw materials including, but not limited to, steel, copper, finished wood, and concrete, Motorola Solutions reserves the right to equitably adjust the contract price, completion schedule, and/or contract requirements. Additionally, Motorola Solutions reserves the right to apply a fuel surcharge to quoted freight rates based on the prevailing diesel cost at the time of shipment.

2.9 System Installation

2.9.1 Install Fixed Network Equipment

Motorola Responsibilities:

- Motorola will be responsible for the installation of all fixed equipment contained in the equipment list and outlined in the System Description based upon the agreed to floor plans, at the sites where the physical facility improvement is complete and the site is ready for installation. All equipment will be properly secured to the floor and installed in a neat and professional manner, employing a standard of workmanship consistent with its own R-56 installation standards and in compliance with applicable National Electrical Code (NEC), EIA, Federal Aviation Administration (FAA)/Transport Canada, and FCC standards and regulations/Industry Canada.
- For installation of the fixed equipment at the various sites, Motorola will furnish all cables for power, audio, control, and radio transmission to connect the Motorola supplied equipment to the power panels or receptacles and the audio/control line connection point.
- During field installation of the equipment, any required changes to the installation will be noted and assembled with the final 'as-built' documentation of the system.
- Will provide storage location for the Motorola-provided equipment, up to 90 days.
- Receive and inventory all equipment.
- Bond the supplied equipment to the site ground system in accordance with Motorola's R56 standards.
- Will interface with the following network connections:
- Microwave network.
- Will remove necessary existing equipment and relocate existing equipment to a location designated by the Customer.
- Will not dispose of existing equipment.

Customer Responsibilities:

- Provide Site Building, Power, Access, and all associated Civil Work to support the new ASTRO25 simulcast remote site.

Completion Criteria:

- Fixed Network Equipment installation completed and ready for optimization.

2.9.2 Fixed Network Equipment Installation Complete

- All fixed network equipment installed and accepted by the Customer.

2.9.3 Microwave Installation

To provide the required site connectivity for the Motorola P25 radio system, Motorola will provide and install a digital microwave system. This digital microwave system will operate in the FCC licensed 6 GHz, 11 GHz, and 23 GHz bands and will consist of the following links:

- Mooresville Rd Tower to Kannapolis FD Site utilizing 6 GHz band
- Optional Mooresville Rd Tower to Davidson Site utilizing 11 GHz band.
- Kannapolis Police Department Dispatch to Kannapolis FD Site utilizing 23 GHz band

The microwave installation will be completed on a site-by-site and hop-by-hop basis. The new ASTRO 25 radio site will be connected to the network at the completion of the microwave acceptance testing.

The path studies completed during the design phase of this project were calculated using the best tools and environmental data available. However, these path studies are limited by being only a mathematical prediction based on specific assumptions and cannot account for every environmental anomaly that may affect microwave path performance, such as unexpected tree growth and unaccounted terrain formations. To ensure the reliability of these proposed microwave links, a field path study will be performed following the Contract Award. The microwave design is not finalized until these field path studies are completed, and the results of the field studies may necessitate additional microwave equipment, such as longer cable runs.

The following considerations and assumptions are incorporated into the path calculations:

- An actual path survey must be conducted to verify the geographical coordinates and site elevations, path clearances, building obstructions, etc.
- All the calculations are generic in nature and cannot be used for final engineering purposes. An actual field path survey must be conducted to verify the following:
- Geographical coordinates and site elevations, path clearances, etc.
- Tower heights, establish placement of various types of antennas, lights, guys, etc. Antenna heights used in the study are all assumptions and cannot be used for final engineering design.
- Verify cable line lengths.
- Establish facts which may affect the design of the microwave system.
- All sites are assumed to be land-accessible and no special transportation such as helicopter and the like is required to gain site access.

Should the actual field path survey reveal an obstruction to a clear path for the microwave signal, Motorola will provide documentation detailing the obstructions and work with the County on a design modification.

Customer Responsibilities:

Completion Criteria:

- Microwave Equipment installation completed and ready for optimization.

2.9.4 System Installation Acceptance (Milestone)

All equipment installations are completed and accepted by the Customer.

2.10 System Optimization

2.10.1 Optimize System FNE

Motorola Responsibilities:

- Motorola and its subcontractors optimize each subsystem.
- Verify that all equipment is operating properly and that all electrical and signal levels are set accurately.
- Verify that all audio and data levels are at factory settings.
- Check forward and reflected power for all radio equipment, after connection to the antenna systems, to verify that power is within tolerances.
- Check audio and data levels to verify factory settings.
- Verify communication interfaces between devices for proper operation.
- Test features and functionality are in accordance with manufacturers' specifications and that they comply with the final configuration established during the CDR/system staging.
- Test and optimize the simulcast system.
- Install and integrate the RF sites with the system, then optimize and activate controller.
- Integrate the RF sites into the system to ensure proper operation.

Customer Responsibilities:

- Provide access/escort to the sites.

Completion Criteria:

- System FNE optimization is complete.

2.10.2 Link Verification

Motorola Responsibilities:

- Perform test to verify site link performance, prior to the interconnection of the Motorola-supplied equipment to the link equipment.

Customer Responsibilities:

- None.

System Description

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2.10.3 Completion Criteria:

- Link verification successfully completed.

2.10.4 Optimization Complete

- System optimization is completed. Motorola and the Customer agree that the equipment is ready for acceptance testing.

2.11 Audit and Acceptance Testing

2.11.1 Perform R56 Installation Audit

Motorola Responsibilities:

- Perform R56 site-installation quality audits, verifying proper physical installation and operational configurations.
- Create site evaluation report to verify site meets or exceeds requirements, as defined in Motorola's Standards and Guidelines for Communication Sites (R56).

Customer Responsibilities:

- Provide access/escort to the sites.
- Witness tests. (if desired)

Completion Criteria:

- All R56 audits completed successfully.

2.11.2 Perform Equipment Testing

Motorola Responsibilities:

- Test individual components of the system to verify compliance to the equipment specifications.
- Repeat any failed test(s) once Motorola (or the Customer) has completed the corrective action(s).
- Prepare documentation of component tests to be delivered as part of the final documentation package.

Customer Responsibilities:

- Witness tests if desired.

Completion Criteria:

- Successful completion of equipment testing.

2.11.3 Perform Functional Testing

Motorola Responsibilities:

- Verify the operational functionality and features of the individual subsystems and the system supplied by Motorola, as contracted.
- If any major task as contractually described fails, repeat that particular task after Motorola determines that corrective action has been taken.
- Document all issues that arise during the acceptance tests.
- Document the results of the acceptance tests and present to the Customer for review.
- Resolve any minor task failures before Final System Acceptance.

Customer Responsibilities:

- Witness the functional testing.

Completion Criteria:

- Successful completion of the functional testing.
- Customer approval of the functional testing.

2.11.4 Perform Coverage Benchmark Testing

Motorola Responsibilities:

- Motorola and the Customer determine the required number of test vehicles for simultaneous testing of the area around the new site.
- Perform coverage testing according to the coverage benchmark testing plan, Submit test reports within the agreed period.
- Document all issues that arise during the coverage testing.
- Submit final test reports, according to the agreed period.

Customer Responsibilities:

- Provide the required number of test vehicles, drivers, and resources to witness the coverage testing.
- Review the test results in a timely manner.

Completion Criteria:

- Successful completion of the coverage benchmark testing by Motorola and the Customer.

2.11.5 System Acceptance Test Procedures (Milestone)

- Customer acknowledges the completion of all the required benchmark tests.

2.12 Finalize

2.12.1 Cutover

Motorola Responsibilities:

- Motorola and the Customer a mutually agreed upon cutover plan based upon discussions held during the CDR.
- During cutover, follow the written plan and implement the defined contingencies, as required.
- Conduct cutover meeting(s) with user group representatives to address both how to mitigate technical and communication problem impact to the users during cutover and during the general operation of the system.

Customer Responsibilities:

- Attend cutover meetings and approve the cutover plan.
- Notify the user group(s) affected by the cutover (date and time).
- Conduct a roll call of all users working during the cutover, in an organized and methodical manner.

Completion Criteria:

- Successful integration of the additional site to the Cabarrus Simulcast cell.

2.12.2 Resolve Punch list

Motorola Responsibilities:

- Work with the Customer to resolve punch list items, documented during the Acceptance Testing phase, in order to meet all the criteria for final system acceptance.

Customer Responsibilities:

- Assist Motorola with resolution of identified punch list items by providing support, such as access to the sites, equipment and system, and approval of the resolved punch list item(s).

Completion Criteria:

- All punch list items resolved and approved by the Customer.

2.12.3 Transition to Service/Project Transition Certificate

Motorola Responsibilities:

- Review the items necessary for transitioning the project to warranty support and service.
- Provide a Customer Support Plan detailing the warranty and post-warranty support, if applicable, associated with the Contract equipment.

Customer Responsibilities:

- Participate in the Project Transition Certificate (PTC) process.

Completion Criteria:

- All service information has been delivered and approved by the Customer.

2.12.4 Finalize Documentation

Motorola Responsibilities:

- Provide an electronic as-built system manual on a Compact Disc (CD). The documentation will include the following:
 - Site Block Diagrams
 - Site Floor Plans
 - Site Equipment Rack Configurations
 - Antenna Network Drawings for RF Sites (where applicable)
 - ATP Test Checklists
 - Functional Acceptance Test Plan Test Sheets and Results
 - Equipment Inventory List
 - Maintenance Manuals (where applicable)
 - Technical Service Manuals (where applicable)

Customer Responsibilities:

- Receive and approve all documentation provided by Motorola.

Completion Criteria:

- All required documentation is provided and approved by the Customer.

2.12.5 Final Acceptance (Milestone)

- All deliverables completed, as contractually required.
- Final System Acceptance received from the Customer.

Section 3

Warranty & Service: Essential Services Statement of Work

Motorola Solutions' ASTRO® 25 Essential Services (Essential Services) provide an integrated and comprehensive sustainment program for fixed end network infrastructure equipment located at the network core, RF sites, and dispatch sites. Essential Services do not include maintenance for mobile devices, portable devices, or network backhaul equipment.

Essential Services consist of the following elements:

- Remote Technical Support.
- Network Hardware Repair.
- Security Update Service.

Each of these elements is summarized below and expanded upon in Section 3.3: [Essential Services Detailed Description](#). In the event of a conflict between the descriptions below and an individual subsection of Section 3.3: [Essential Services Detailed Description](#), the individual subsection prevails.

This Statement of Work (SOW), including all of its subsections and attachments is an integral part of the applicable agreement (Agreement) between Motorola Solutions, Inc. (Motorola Solutions) and the **City of Kannapolis, NC**, the customer (Customer).

In order to receive the services as defined within this SOW, the Customer is required to keep the system within a standard support period as described in Motorola Solutions' [Software Support Policy \(SwSP\)](#).

3.1.1.1.1 Remote Technical Support

Motorola Solutions will provide telephone consultation with specialists skilled at diagnosing and swiftly resolving infrastructure operational technical issues that require a high level of ASTRO 25 network experience and troubleshooting capabilities.

3.1.1.1.2 Network Hardware Repair

Motorola Solutions will repair Motorola Solutions-manufactured infrastructure equipment and select third-party manufactured infrastructure equipment supplied by Motorola Solutions. Motorola Solutions coordinates the equipment repair logistics process.

3.1.1.1.3 Security Update Service

Motorola Solutions will pre-test third-party security updates to verify they are compatible with the ASTRO 25 network. Once tested, Motorola Solutions posts the updates to a secured extranet website, along with any recommended configuration changes, warnings, or workarounds.

3.2 Motorola Solutions Service Delivery Ecosystem

Essential Services are delivered through a tailored combination of local field service personnel, centralized teams equipped with a sophisticated service delivery platform, product repair depots, and Customer Hub. These service entities will collaborate to swiftly analyze issues, accurately diagnose root causes, and promptly resolve issues to restore the Customer's network to normal operations.

3.2.1 Centralized Managed Support Operations

The cornerstone of Motorola Solutions' support process is the Centralized Managed Support Operations (CMSO) organization, which includes the Service Desk and technical support teams. The CMSO is staffed 24/7/365 by experienced personnel, including service desk specialists, security analysts, and operations managers.

The Service Desk provides a single point of contact for all service related items, including communications between the Customer, Motorola Solutions and third-party subcontractors. The Service Desk processes service requests, service incidents, change requests and dispatching, and communicates with stakeholders in accordance with pre-defined response times.

All incoming transactions through the Service Desk are recorded, tracked and updated through the Motorola Solutions Customer Relationship Management (CRM) system. The Service Desk also documents Customer inquiries, requests, concerns, and related tickets.

The CMSO coordinates with the field service organization that will serve the Customer locally.

3.2.2 Customer Support Manager

A Motorola Solutions Customer Support Manager (CSM) will be the Customer's key point of contact for defining and administering services. The CSM's initial responsibility is to create the Customer Support Plan (CSP) in collaboration with the Customer.

The CSP functions as an operating document that personalizes the services described in this document. The CSP contains Customer-specific information, such as site names, site access directions, key contact persons, incident handling instructions, and escalation paths for special issues.

The CSP also defines the division of responsibilities between the Customer and Motorola Solutions so response protocols are pre-defined and well understood when the need arises.

The CSP governs how the services will be performed and will be automatically integrated into this Statement of Work by this reference. The CSM and Customer will review and amend the CSP on a mutually agreed cadence so the CSP remains current and effective in governing the Essential Services.

3.2.3 Repair Depot

The Motorola Solutions Repair Depot provides the Customer with a central repair location, eliminating the need to send network equipment to multiple vendor locations for repair. All products sent to the Depot are tracked throughout the repair process, from inbound shipment to return, through a case management system that enables Customer representatives to see repair status.

3.2.4 Customer Hub

Supplementing the CSM and the Service Desk as the Customer points of contact, Customer Hub is a web-based platform that provides network maintenance and operations information. The portal is accessed from a desktop, laptop, tablet or smartphone web browser. The information available includes:

- **Remote Technical Support:** Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- **Network Hardware Repair:** Track return material authorizations (RMA) shipped to Motorola Solutions' repair depot and eliminate the need to call for status updates. In certain countries, customers will also have the ability to create new RMA requests online.
- **Security Update Service:** View available security updates. Access available security update downloads.
- **Orders and Contract Information:** View available information regarding orders, service contracts, and service coverage details.

The data presented in Customer Hub is provided to support the services described in the following sections, which define the terms of any service delivery commitments associated with this data.

3.3 Essential Services Detailed Description

Due to the interdependence between deliverables within the detailed sections, any changes to or any cancellation of any individual section may require a scope review and price revision.

3.3.1 Remote Technical Support

Motorola Solutions' Remote Technical Support service provides telephone consultation for technical issues that require a high level of ASTRO 25 network knowledge and troubleshooting capabilities. Remote Technical Support is delivered through the Motorola Solutions CMSO organization by a staff of

technical support specialists skilled in diagnosis and swift resolution of infrastructure performance and operational issues.

Motorola Solutions applies leading industry standards in recording, monitoring, escalating, and reporting for technical support calls from its contracted customers to provide the support needed to maintain mission-critical systems.

3.3.1.1 Description of Service

The CMSO organization's primary goal is Customer Issue Resolution (CIR), providing incident restoration and service request fulfillment for Motorola Solutions' currently supported infrastructure. This team of highly skilled, knowledgeable, and experienced specialists is an integral part of the support and technical issue resolution process. The CMSO supports the Customer remotely using a variety of tools, including fault diagnostics tools, simulation networks, and fault database search engines.

Calls requiring incidents or service requests will be logged in Motorola Solutions' CRM system, and Motorola Solutions will track the progress of each incident from initial capture to resolution. This helps ensure that technical issues are prioritized, updated, tracked, and escalated as necessary, until resolution. Motorola Solutions will advise and inform Customer of incident resolution progress and tasks that require further investigation and assistance from the Customer's technical resources.

The CMSO Operations Center classifies and responds to each technical support request in accordance with Section [Priority Level Definitions and Response Times](#).

This service requires the Customer to provide a suitably trained technical resource that delivers maintenance and support to the Customer's system, and who is familiar with the operation of that system. Motorola Solutions provides technical consultants to support the local resource in the timely closure of infrastructure, performance, and operational issues.

3.3.1.2 Scope

The CMSO Service Desk is available via telephone 24/7/365 to receive and log requests for technical support. Remote Technical Support service is provided in accordance with Section [Priority Level Definitions and Response Times](#).

3.3.1.3 Inclusions

Remote Technical Support service will be delivered for Motorola Solutions-provided infrastructure, including integrated third-party products.

3.3.1.4 Motorola Solutions Responsibilities

- Maintain availability of the Motorola Solutions CMSO Service Desk via telephone (800-MSI-HELP) 24/7/365 to receive, log, and classify Customer requests for support.
- Respond to incidents and technical service requests in accordance with Section [Priority Level Definitions and Response Times](#).

- Provide caller a plan of action outlining additional requirements, activities, or information required to achieve restoral/fulfillment.
- Maintain communication with the Customer in the field as needed until resolution of the incident.
- Coordinate technical resolutions with agreed upon third-party vendors, as needed.
- Escalate support issues to additional Motorola Solutions technical resources, as applicable.
- Determine, in its sole discretion, when an incident requires more than the Remote Technical Support services described in this SOW and notify the Customer of an alternative course of action.

3.3.1.5 Limitations and Exclusions

The following activities are outside the scope of the Remote Technical Support service:

- Emergency on-site visits required to resolve technical issues that cannot be resolved by the CMSO working remotely with the Customer's technical resource.
- Customer training.
- Remote Technical Support for network transport equipment or third-party products not sold by Motorola Solutions.
- Any maintenance and/or remediation required as a result of a virus or unwanted cyber intrusion.

3.3.1.6 Customer Responsibilities

- Prior to contract start date, provide Motorola Solutions with pre-defined information necessary to complete CSP.
- Submit timely changes in any information supplied in the CSP to the CSM.
- Contact the CMSO Service Desk to engage the Remote Technical Support service when needed, providing the necessary information for proper entitlement services. This information includes, but is not limited to, the name of contact, name of Customer, system ID number, site(s) in question and a brief description of the problem that contains pertinent information for initial issue classification.
- Maintain suitably trained technical resources familiar with the operation of the Customer's system to provide field maintenance and technical maintenance services for the system.
- Supply suitably skilled and trained on-site presence when requested.
- Validate issue resolution in a timely manner prior to close of the incident.
- Acknowledge that incidents will be addressed in accordance with Section [Priority Level Definitions and Response Times](#).
- Cooperate with Motorola Solutions, and perform all acts that are reasonable or necessary to enable Motorola Solutions to provide Remote Technical Support.
- In the event that Motorola Solutions agrees in writing to provide supplemental Remote Technical Support to third-party elements provided by the Customer, the Customer agrees to obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

3.3.2 Network Hardware Repair with Replacement

Motorola Solutions will provide hardware repair for Motorola Solutions and select third-party infrastructure equipment supplied by Motorola Solutions. A Motorola Solutions authorized repair depot manages and performs the repair of Motorola Solutions supplied equipment, and coordinates equipment repair logistics.

3.3.2.1 Description of Service

Infrastructure components are repaired at Motorola Solutions-authorized Infrastructure Depot Operations (IDO). At Motorola Solutions' discretion, select third-party infrastructure may be sent to the original equipment manufacturer or third-party vendor for repair.

Network Hardware Repair is also known as Infrastructure Repair.

3.3.2.2 Scope

Repair authorizations are obtained by contacting the CMSO organization Service Desk, which is available 24/7/365. Repair authorizations can also be obtained by contacting the CSM.

3.3.2.3 Inclusions

This service is available on Motorola Solutions-provided infrastructure components, including integrated third-party products. Motorola Solutions will make a commercially reasonable effort to repair Motorola Solutions manufactured infrastructure products after product cancellation. The post-cancellation support period of the product will be noted in the product's end-of-life (EOL) notification.

3.3.2.4 Motorola Solutions Responsibilities

- Provide the Customer access to the CMSO Service Desk, operational 24/7, to request repair service.
- Provide repair return authorization numbers when requested by the Customer.
- Receive malfunctioning infrastructure components from the Customer and document its arrival, repair, and return.
- Conduct the following services for Motorola Solutions infrastructure:
 - Perform an operational check on infrastructure components to determine the nature of the problem.
 - Replace malfunctioning components.
 - Verify that Motorola Solutions infrastructure components are returned to applicable Motorola Solutions factory specifications.
 - Perform a box unit test on serviced infrastructure components.
 - Perform a system test on select infrastructure components.
- Conduct the following services for select third-party infrastructure:

- When applicable, perform pre-diagnostic and repair services to confirm infrastructure component malfunctions and prevent sending infrastructure components with No Trouble Found (NTF) to third-party vendor for repair.
- When applicable, ship malfunctioning infrastructure components to the original equipment manufacturer or third-party vendor for repair service.
- Track infrastructure components sent to the original equipment manufacturer or third-party vendor for service.
- When applicable, perform a post-test after repair by original equipment manufacturer or third-party vendor to confirm malfunctioning infrastructure components have been repaired and function properly in a Motorola Solutions system configuration.
- Reprogram repaired infrastructure components to original operating parameters based on software and firmware provided by the Customer, as required in Section [Customer Responsibilities](#). If the Customer's software version and configuration are not provided, shipping will be delayed. If the repair depot determines that infrastructure components are malfunctioning due to a software defect, the repair depot reserves the right to reload these components with a different but equivalent software version.
- Properly package repaired infrastructure components.
- Ship repaired infrastructure components to Customer-specified address during normal operating hours of Monday through Friday from 7:00 a.m. to 7:00 p.m. Central Standard Time (CST), excluding holidays. Infrastructure component will be sent using two-day air shipping unless the Customer requests otherwise. Motorola Solutions will pay for shipping unless the Customer requests shipments outside of the above mentioned standard business hours or carrier programs, such as next flight out (NFO). In such cases, the Customer will be responsible for paying shipping and handling charges.

3.3.2.5 Limitations and Exclusions

Motorola Solutions may return infrastructure equipment that is no longer supported by Motorola Solutions, the original equipment manufacturer, or a third-party vendor without repairing or replacing it. The following items are excluded from this service:

- All Motorola Solutions infrastructure components over the post-cancellation support period.
- All third-party infrastructure components over the post-cancellation support period.
- All broadband infrastructure components over the post-cancellation support period.
- Physically damaged infrastructure components.
- Third-party equipment not shipped by Motorola Solutions.
- Consumable items including, but not limited to, batteries, connectors, cables, toner or ink cartridges, tower lighting, laptop computers, monitors, keyboards, and mouse.
- Video retrieval from digital in-car video equipment.
- RF infrastructure and backhaul components, including but not limited to, antennas, transmission lines, antenna dehydrators, microwave, line boosters, amplifiers (such as tower top amplifiers and bi-directional amplifiers), logging recorders, data talker wireless transmitters, short haul modems, combiners, multicouplers, duplexers, shelters, shelter HVAC, generators, UPSs, dropship non-standard items and test equipment.

- Racks, furniture, and cabinets.
- Non-standard configurations, customer-modified infrastructure, and certain third party infrastructure.
- Firmware or software upgrades.

3.3.2.6 Customer Responsibilities

- Contact or instruct servicer to contact the Motorola Solutions CMSO organization, and request a return authorization number prior to shipping malfunctioning infrastructure components.
- Provide model description, model number, serial number, type of system, software and firmware version, symptom of problem, and address of site location for spare infrastructure components.
- Indicate if Motorola Solutions or third-party infrastructure components being sent in for service were subjected to physical damage or lightning damage.
- Follow Motorola Solutions instructions regarding including or removing firmware and software applications on infrastructure components being sent in for service.
- In the event that the Customer requires repair of equipment that is not contracted under this service at the time of request, the Customer acknowledges that charges may apply to cover shipping, labor, and parts. Motorola Solutions and the Customer will collaborate to agree on payment vehicle that most efficiently facilitates the work, commensurate with the level of urgency that is needed to complete the repair.
- Properly package and ship the malfunctioning component, at the Customer's expense. The Customer is responsible for properly packaging the malfunctioning infrastructure component to ensure it is not damaged in-transit and arrives in repairable condition.
 - Clearly print the return authorization number on the outside of the packaging.
- Maintain versions and configurations for software, applications, and firmware to be installed on repaired equipment.
- Provide Motorola Solutions with proper software and firmware information to reprogram equipment after repair, unless current software has caused this malfunction.
- Cooperate with Motorola Solutions and perform reasonable or necessary acts to enable Motorola Solutions to provide hardware repair services to the Customer.
- At the Customer's cost, obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

3.3.2.7 Repair Process

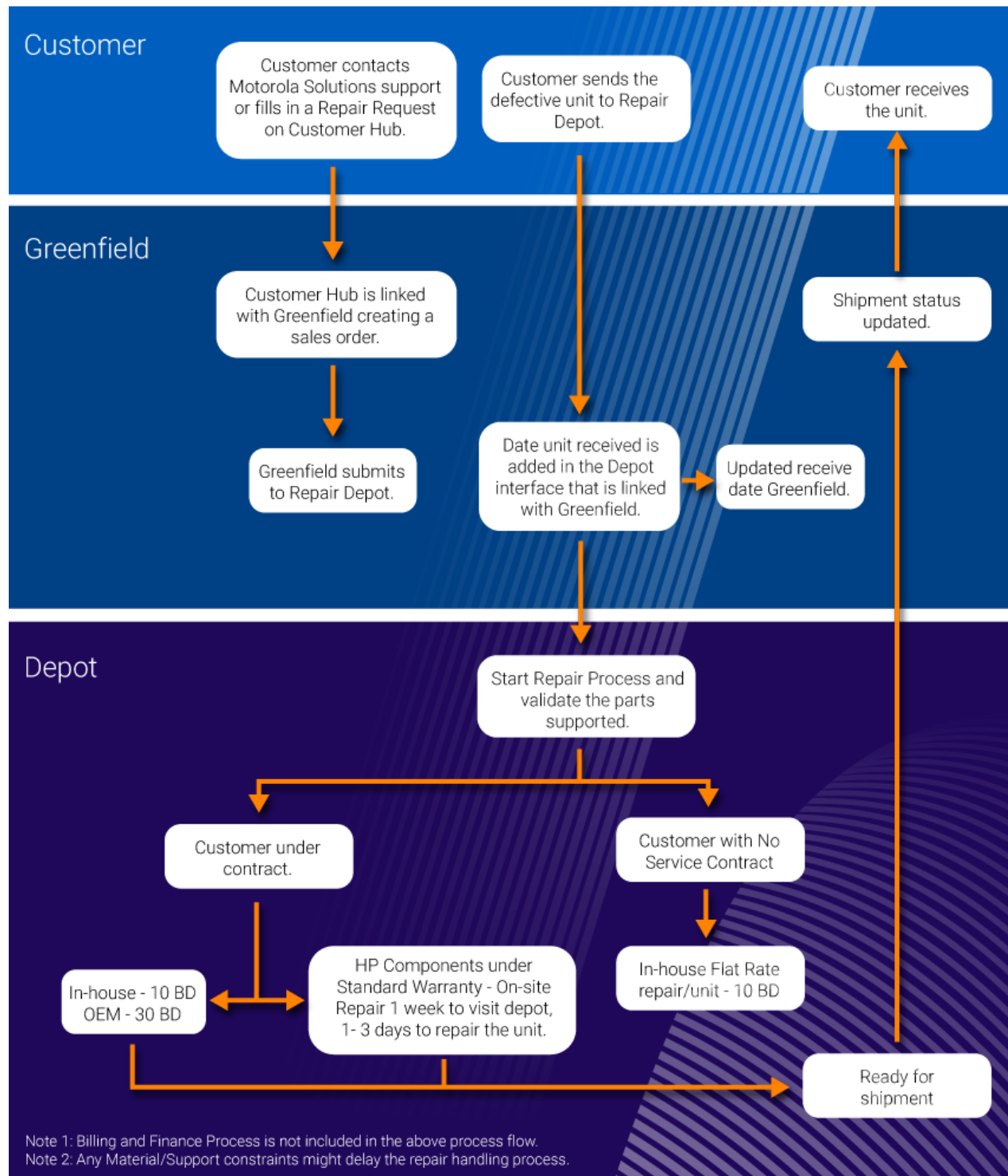


Figure 3-1: Repair Decision Process

3.3.3 Security Update Service

Motorola Solutions' ASTRO 25 Security Update Service (SUS) provides pretested security updates, minimizing cyber risk and software conflicts. These security updates contain operating system security patches and antivirus definitions that have been validated for compatibility with ASTRO 25 systems. Security update delivery is determined by the options included as part of this service. Section 3.3.3.10: [Inclusions](#) indicates if options are included as part of this service.

In order to receive the services as defined within this SOW, the Customer is required to keep the system within a standard support period as described in Motorola Solutions' [Software Support Policy \(SwSP\)](#).

3.3.3.1 Description of Service

Motorola Solutions uses a dedicated information assurance lab to test and validate security updates. Motorola Solutions deploys and tests security updates in the lab to check for and prevent potential service degradation.

Motorola Solutions releases tested, compatible security updates for download and installation. Once security updates are verified by the SUS team, Motorola Solutions uploads them to a secure website and sends a release notification email to the Customer contact to inform them that the security update release is available. If there are any recommended configuration changes, warnings, or workarounds, the SUS team will provide documentation with the security updates on the secure website.

With the base service, the Customer will be responsible for downloading security updates, installing them on applicable components, and rebooting updated components. Additional options are available for Motorola Solutions to deploy security updates, reboot servers and workstations, or both.

3.3.3.2 On-site Delivery

If On-site Delivery is included with SUS, Motorola Solutions provides trained technician(s) to install security updates at the Customer's location. The technician downloads and installs available security updates and coordinates any subsequent server and workstation reboots. On-site delivery is not available for the optional transport network updates for routers, firewalls and switches. If on-site transport network updates are required please discuss this with your Motorola Solutions Customer Support Manager.

3.3.3.3 Reboot Support

If Reboot Support is included with SUS, Motorola Solutions provides technician support to reboot impacted Microsoft Windows servers and workstations after operating system security patches have been installed.

3.3.3.4 Scope

SUS includes pretested security updates for the software listed in [Table 3-1: Update Cadence](#). This table also describes the release cadence for security updates.

Table 3-1: Update Cadence

Software	Update Release Cadence
Antivirus Definition Files	Weekly
Microsoft Windows	Monthly
Microsoft SQL Server	Quarterly
Microsoft Windows third party (i.e., Adobe Reader)	Monthly
Red Hat Linux (RHEL)	Quarterly
VMWare ESXi Hypervisor (A2024 or earlier only)	Quarterly
PostgreSQL	Quarterly
Antivirus Software Patch(es)	Quarterly
Server Firmware Updates	Quarterly
QNAP Firmware	Quarterly
Juniper Firewall Updates	Bi-Annually*
Juniper Firewall Updates	Bi-Annually*
Fortinet Firewall Updates	As required - no regular cadence*
Juniper Firewall Updates	As required - no regular cadence*
Aruba Switch Updates	As required - no regular cadence*

*To receive the updates for ASTRO Transport Network devices, the Customer is required to "Opt-In." Please see Section 3.3.3.6 below.

3.3.3.5 Transport Network Updates

Updates to the transport network devices, which includes routers, firewalls and switches, will be issued up to twice a year (subject to applicability of vendor updates). See Table 3.2.

These updates require customer specific network device configurations which can only be prepared by Motorola Solutions.

3.3.3.6 Opt-In

To receive configuration files for updating their transport network devices, customers must actively choose to "Opt-In."

If customers choose to perform these updates themselves, it will involve a certain level of interaction and shared responsibilities between the customer and Motorola Solutions.

The customer's decision and requirements for opting in are documented during the initial service onboarding process.

3.3.3.7 Configuration Files

When Customers "Opt-In", their assigned Motorola Solutions engineer will provide any network configuration file updates needed for Customers to self-deploy the new device software release.

3.3.3.8 Deployment Options

The download and installation of the transport network updates are the responsibility of the Customer, with remote support from Motorola to provide configuration file updates.

An alternative option available, should the Customer require Motorola Solutions to deploy the updates, is an onsite deployment service, which is quoted separately. Please discuss this with your CSM.

Note that transport network updates are not included in the ASTRO 25 Remote Security Update Service.

3.3.3.9 Change Management

Customers are required to notify Motorola Solutions prior to deploying the updates (by calling the service desk). Your assigned MSI engineer who is supporting you with configuration changes will also raise/close the necessary Change Requests using the Motorola Solutions Change Management process.

3.3.3.10 Inclusions

Supported ASTRO 25 core types and security update delivery methods are included in [Table 3-2: SUS Package](#). This table indicates if Motorola Solutions will provide any SUS optional services to the Customer. SUS supports the current Motorola Solutions ASTRO 25 system release and aligns with the established Software Support Policy (SwSP).

Motorola Solutions reserves the right to determine, which releases are supported as business conditions dictate. Additional charges may apply in the event of supporting older releases. Contact Motorola Solutions' assigned CSM for the latest supported releases.

Table 3-2: SUS Package

Service	ASTRO 25 Core Type	Included
Security Update Service Customer Self-installed	Standard Core Simplified Core	X
Security Update Service Customer Self-installed (Transport Network Updates)*	Standard Core Simplified Core	
Security Update Service with Reboot Support	Standard Core Simplified Core	
Security Update Service with On-site Delivery	Standard Core Simplified Core	

*To receive the updates for ASTRO Transport Network devices, the Customer is required to "Opt-In." Please see Section 3.3.3.6.

Responsibilities for downloading and installing security updates and rebooting applicable hardware are detailed in Section 3.3.3.14: [Installation and Reboot Responsibilities](#).

3.3.3.11 Motorola Solutions Responsibilities

- On the release schedule in Section 3.3.3.4: [Scope](#), review relevant and appropriate security patches released by Original Equipment Manufacturer (OEM) vendors.
- Release tested and verified security patches to Motorola Solutions' secure website.
- Publish documentation for installation, recommended configuration changes, any identified issue(s), and remediation instructions for each security update release.
- Send notifications by email when security updates are available to download from the secure website.
- For Customers who opt in to receive Transport Network Device Updates (Routers, Firewalls, Switches), Motorola Solutions shall:
 - Coordinate with the Customer to determine when Transport Network Configuration Tool (TNCT) files need to be updated.
 - Coordinate the retrieval of the current TNCT configurations from the Customer's system.
 - Update TNCT files (where applicable) to ensure compatibility with updated device software.
 - Coordinate the deposit of the updated configurations to the Customer's system (prior to the Customer's planned update deployment activity).

3.3.3.12 Limitations and Exclusions

- Systems with non-standard configurations that have not been certified by Motorola Solutions' Systems Integration and Test (SIT) team are specifically excluded from this service, unless otherwise agreed in writing by Motorola Solutions.
- Interim or unplanned releases outside the supported release cadence.
- Service does not include pretested intrusion detection system (IDS) signature updates for IDS solutions. However, select vendor IDS signature updates are made available via the secure website. The available vendors may change pursuant to Motorola Solutions' business decisions. The Customer is responsible for complying with all IDS licensing requirements and fees, if any.
- This service does not include releases for Motorola Solutions products that are not ASTRO 25 Standard and Simplified Core radio network infrastructure equipment. The following are examples of excluded products: WAVE PTX, Critical Connect, and VESTA solutions.
- K Core ASTRO 25 systems are excluded.
- Motorola Solutions product updates are not included in these services.
- Shared network infrastructure firmware, such as transport and firewall firmware, are not included in these services, unless the Customer has opted-in to deploy them and receive configuration support.
- Workstation firmware, BIOS and drivers are not included in these services.
- Motorola Solutions does not represent that it will identify, fully recognize, discover, or resolve all security events or threats, system vulnerabilities, malicious codes or data, backdoors, or other system threats or incompatibilities as part of the service, or that the agreed upon cadence/time of delivery will be sufficient to identify, mitigate or prevent any cyber incident.

3.3.3.13 Customer Responsibilities

- Provide Motorola Solutions with predefined information necessary to complete a Customer Support Plan (CSP) prior to the Agreement start date.
- Provide timely updates on changes of information supplied in the CSP to Motorola Solutions' assigned CSM.
- Update Motorola Solutions with any changes in contact information, specifically for authorized users of Motorola Solutions' secure website.
- Provide means for accessing Motorola Solutions' secure website to collect the pretested files.
- Download and apply only to the Customer's system as applicable, based on the Customer Agreement and the scope of the purchased service. Distribution to any other system or user other than the system/user contemplated by the Customer Agreement is not permitted.
- Implement Motorola Technical Notices (MTN) to keep the system current and patchable.
- Adhere closely to the Motorola Solutions CMSO troubleshooting guidelines provided upon system acquisition. Failure to follow CMSO guidelines may cause the Customer and Motorola Solutions unnecessary or overly burdensome remediation efforts. In such cases, Motorola Solutions reserves the right to charge an additional fee for the remediation effort.
- Upgrade system to a supported system release when needed to continue service. Contact Motorola Solutions' assigned CSM for the latest supported releases.
- For Customers who opt in to receive Transport Network Device Updates (Routers, Firewalls, Switches), the Customer shall:
 - Provide required information regarding the Customer's planned deployment schedule, including proposed update period.
 - Coordinate with Motorola Solutions engineers to provide current network configuration files.
 - Coordinate with Motorola Solutions to upload replacement configuration files (where applicable).
 - Provide the information necessary to raise a Change Request to cover the period of the transport network update activity prior to deployment of updates.
 - Notify Motorola Solutions when updates are completed.
- Comply with the terms of applicable license agreements between the Customer and non-Motorola Solutions software copyright owners.

3.3.3.14 Installation and Reboot Responsibilities

Installation and Reboot responsibilities are determined by the specific SUS package being purchased. [Table 3-3: Installation and Reboot Responsibilities Matrix](#) contains the breakdown of responsibilities. Section 3.3.3.10: [Inclusions](#) indicates which services are included.

Microsoft Windows servers and workstations often need to be rebooted before security updates take full effect and mitigate vulnerabilities.

Table 3-3: Installation and Reboot Responsibilities Matrix

SUS Package	Motorola Solutions Responsibilities	Customer Responsibilities
Security Update Service Customer Self-installed		▪ Deploy pretested files to the Customer's system as instructed in the "Read Me" text provided on Motorola Solutions' secure website. ▪ When a security update requires a reboot, reboot servers and workstations after security updates are installed.
Customer Self-installed with Transport Network Opt-In	▪ Update TNCT configurations for compatibility with device updates. ▪ Raise Change requests prior to deployment of updates ▪ Close Change requests on completion of updates.	▪ Deploy files to the Customer's system as instructed in the installation procedures provided on Motorola Solutions' secure website. ▪ Deploy updates and restart devices (where applicable).
Security Update Service with On-site Delivery	▪ Dispatch a technician to deploy pretested files to the Customer's system. ▪ When a security update requires a reboot, reboot servers and workstations after security updates are installed.	▪ Acknowledge Motorola Solutions will reboot servers and workstations, and agree to timing.
Security Update Service with Reboot Support	▪ When a security update requires a reboot, dispatch a technician to reboot servers and workstations after security updates are installed.	▪ Deploy pretested files to the Customer's system as instructed in the "Read Me" text provided on Motorola Solutions' secure website.

3.3.3.15 Disclaimer

This service tests OEM security updates. Delivering security updates for specific software depends on OEM support for that software. If an OEM removes support (e.g. end-of-life) from deployed software, Motorola Solutions may work with the OEM to reduce the impact, but may remove support for the affected software from this service without notice.

OEMs determine security update schedules, supportability, or release availability without consultation from Motorola Solutions. Motorola Solutions will obtain and test security updates when they are made available, and incorporate those security updates into the next appropriate release.

All security updates are important. This service is intended to balance the security and compatibility of tested updates with agreed upon time/cadence of delivery. Customer assumes the risk of this inherent tradeoff.

Motorola Solutions disclaims any warranty with respect to pretested database security updates, hypervisor patches, operating system software patches, intrusion detection sensor signature files, or

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other third-party files, express or implied. Further, Motorola Solutions disclaims any warranty concerning non-Motorola Solutions software and does not guarantee Customers' systems will be error-free or immune to security breaches as a result of these services.

Additionally, Customers who opt-in to receive configuration files for updating their transport network devices, and that elect to self-install those updates, understand and agree to accept responsibility for and the risks associated with self-installation, which may include service interruptions or system downtime.

3.4 Priority Level Definitions and Response Times

[Table 3-4: Priority Level Definitions and Response Times](#) describes the criteria Motorola Solutions CMSO uses to prioritize incidents and service requests, and lists the response times for those priority levels.

Table 3-4: Priority Level Definitions and Response Times

Incident Priority	Incident Definition	Initial Response Time
Critical P1	Core: Core server or core link failure. No redundant server or link available. Sites/Subsites: Primary site down. Two RF sites or more than 10% of RF sites down, whichever is greater. Consoles: More than 40% of a site's console positions down. Conventional Channels: Conventional Channel Gateways (CCGW) down without redundant gateways available. Security Features: Security is non-functional or degraded.	Response provided 24/7 until service restoration. Technical resource will acknowledge incident and respond within 1 hour of CMSO logging incident.
High P2	Core: Core server or link failures. Redundant server or link available. Consoles: Between 20% and 40% of a site's console positions down. Sites/Subsites: One RF site or up to 10% of RF sites down, whichever is greater. Conventional Channels: Up to 50% of CCGWs down. Redundant gateways available. Network Elements: Site router, site switch, or GPS server down. No redundant networking element available.	Response provided 24/7 until service restoration. Technical resource will acknowledge incident and respond within 4 hours of CMSO logging incident.

Incident Priority	Incident Definition	Initial Response Time
Medium P3	Consoles: Up to 20% of a site's console positions down. Conventional Channels: Single channel down. Redundant gateway available. Network Elements: Site router/switch or GPS server down. Redundant networking element available.	Response provided during normal business hours until service restoration. Technical resource will acknowledge incident and respond within 1 Business Day of CMSO logging incident.
Low P4	Service Requests: Minor events and warnings in the system. Preventative and planned maintenance activities (scheduled work).	Response provided during normal business hours. Motorola Solutions will acknowledge and respond within 1 Business Day.

3.5 Test Procedure Format

Each Functional Test Procedure consists of 3 basic components:

DESCRIPTION: It is not envisaged that all customers will have a complete understanding of all features and functions tested. A description of the feature / function under test is therefore given. This ensures both customers and test engineers have a clear understanding of the feature / function prior to commencing the test.

SET UP: The Set Up lists the specific components (e.g. MSs, Dispatchers) required to perform the test and may include the required settings to begin the test, (e.g. talkgroup selection). System level settings are given only where they differ from the default value.

TEST PROCEDURE: The test procedure gives a step by step guide through the test. This procedure is designed for engineers who are familiar with the system, although in most cases a test engineer / customer (with little system knowledge) could follow the test procedure

Exit Conditions: Are given where it is essential for elements to be returned to the original state before progressing to the next test.

3.6 System Inspections

Before testing begins, the system and its documentation are examined to ensure that the system is complete and ready for testing.

Equipment Check List: Verify each component is present, and the following aspects are satisfactory:

Aspect	Visual Inspection	Comment
Ground	All ground cabling is present and intact.	
Hazardous Voltages	There are no exposed hazardous voltages.	
Cabling	All cabling is secure and neat.	
Security	The equipment is securely fixed to rack cabinets.	
Indicators	All indicators are operating correctly.	
Labels	All labels are present and correct.	
Faults	No fault or alarm indications active.	

Documentation: Verify that the product documentation is available. Supporting documentation is listed in Section 3, Referenced Documentation. Individual product manuals are provided with the equipment.

3.7 Wide Area Trunking - FDMA Only Sites

3.7.1 Continuous Assignment Updating

DESCRIPTION

When a talkgroup is assigned a voice channel, the site controller continues to transmit the channel assignment on the control channel for the duration of the talkgroup call. Radios coming into use on the system are automatically sent to voice channels with conversations in progress involving their selected talkgroups.

SET UP

RADIO-1 - TG1
 RADIO-2 - TG1
 RADIO-3 - TG1

TEST PROCEDURE

Step 1 Turn OFF RADIO-1.

Step 2 Initiate a Talkgroup Call using RADIO-2 and verify RADIO-3 hears the audio.

Step 3 While the Talkgroup Call is in progress, turn ON RADIO-1.

Step 4 Observe RADIO-1, which was just brought back into service, joins the Talkgroup Call already in progress.

Step 5 End the talkgroup call.

Step 6 Switch RADIO-1 to another talkgroup.

Step 7 Initiate a Talkgroup Call from RADIO-2 to RADIO-3.

Step 8 While the Talkgroup Call is in progress, set RADIO-1 back to TG1.

Step 9 Observe that RADIO-1 joins the Talkgroup Call already in progress.

3.7.2 Talkgroup Call

DESCRIPTION

The Talkgroup is the primary level of organization for communications on a trunked radio system. Radios with Talkgroup call capability will be able to communicate with other members of the same Talkgroup. This provides the effect of a private channel down to the Talkgroup level. This test will demonstrate that a Talkgroup transmission initiated by a radio user will only be heard by system users, which have, the same Talkgroup selected. As with other types of calls, Talkgroup calls can take place from anywhere in the system.

SET UP

RADIO-1 - SITE1 - TG1
 RADIO-2 - SITE2 - TG1
 RADIO-3 - SITE1 - TG2
 RADIO-4 - SITE2 - TG2

TEST PROCEDURE

- Step 1** Initiate a Wide Area Call with RADIO-1 in TG1.
- Step 2** Observe that only RADIO-2 will be able to monitor and respond to the call.
- Step 3** Initiate a Wide Area Call with RADIO-3 in TG2.
- Step 4** Observe that only RADIO-4 will be able to monitor and respond the call.

3.8 System Reliability Features

3.8.1 Loss Network Connection of DBR MCPA at DBR M12 MultiCarrier Site on Single DSC Rack

DESCRIPTION

This test case will demonstrate Failure and Recovery of a MCPA Network Connection Failure on a DBR M12 MultiCarrier Site.

DBR M12 MultiCarrier Sites are equipped with new hardware in a Single DBR Rack with 12 pack Chassis (up to 12 XCVRs, up to 6 MCPA and 2 DSC Servers) that enable all of the Channels/ XCVRs/ MCPA (SRs) to communicate over an active LAN, Two modules ("DSC (site controller, switch)") are added to the Single DBR Rack to facilitate the redundant switching and time reference distribution functions at the DBR M12 MultiCarrier Site sites.

In addition, the expansion cabinets are equipped with two Expansion DSC for every additional 12 Pack.

A MCPA Network Connection Failure with DSC on a 12 pack DBR Rack will result in the Loss of Redundancy Fault Reported to the UEM. (See NOTE 1).

Recovery of the connection to the MCPA from the DSC which reported the Alarm shall result in Clearing of the Redundancy Fault to the UEM.

SET UP

Ensure ZoneWatch is set up to monitor the sites and the Unified Event Manager (UEM) is available for viewing faults. NOTE1: Channel Capacity will not be impacted as the RF Channel still is able to perform Key/Dekeys of the MCPA over Multicast across the secondary Network path.

TEST PROCEDURE

Step 1 Verify that the Site is Wide Trunking Operation on ZoneWatch with Assigned Control Channel.

Step 2 Verify UEM reports no Failures for MCPA and Channel Objects for the Given DBR M12 MultiCarrier Site.

Step 3 Remove one of the MCPA Network Connection cables from the DSC.

Step 4 Verify that the UEM reports the Redundancy failure of a MCPA.

Step 5 Verify that the Channel Capacity is maintained for the Site on ZoneWatch.

Step 6 Recover the MCPA Network Connection cable from the DSC where it was removed.

Step 7 Verify that the UEM reports the Clear of the Redundancy Fault for MCPA

3.8.2 Loss Network Connection of DBR XCVR at DBR M12 MultiCarrier Site on Single DSC Rack

DESCRIPTION

This test case will demonstrate Failure and Recovery of a XCVR Network Connection Failure on a DBR M12 MultiCarrier Site.

DBR M12 MultiCarrier Sites are equipped with new hardware in a Single DBR Rack with 12 pack Chassis (up to 12 XCVRs, up to 6 MCPA and 2 DSC Server) that enable all of the Channels/ XCVRs/ MCPA (SRs) to communicate over an active LAN,. Two modules ("DSC (site controller, switch)") are added to the Single DBR Rack to facilitate the redundant switching and time reference distribution functions at the DBR M12 MultiCarrier Site sites.

In addition, the expansion cabinets are equipped with two Expansion DSC for every additional 12 Pack.

A XCVR Network Connection Failure with DSC on a 12 pack DBR Rack will result in the Loss of Redundancy Fault Reported to the UEM. See (NOTE 1).

Recovery of the connection to the XCVR from the DSC which reported the Alarm shall result in Clearing of the Redundancy Fault to the UEM. Upon recovery the RF Channel will be reallocated back to the DSC from which the RF Channel was previously deallocated.

SET UP

Ensure ZoneWatch is set up to monitor the sites and the Unified Event Manager (UEM) is available for viewing faults.

NOTE 1: Loss of Network connection to XCVR will result in deallocation of the RF Channel container allocated to the XCVR from the DSC and reallocation of the RF Channel container on the Redundant DSC which has the redundant connection to the XCVR on the DBR 12 pack maintaining the Channel/XCVR Capacity for the Site.

NOTE 2: Look at the PCA Site Status Screen to Identify the DSC that is associated with the XCVR and the Channel.

TEST PROCEDURE

Step 1 Verify that the Site is Wide Trunking Operation on ZoneWatch with Assigned Control Channel.

Step 2 Verify UEM reports no Failures for XCVR and Channel Objects for the Given DBR M12 MultiCarrier Site.

Step 3 Follow (NOTE 2) to identify the XCVR whose Network Connection cables are to be removed from the Identified DSC.

Step 4 Verify that the UEM reports the Redundancy failure of a XCVR and loss of a Channel for a short period of time.

Step 5 Verify that the Channel will recover on the other DSC with redundant connection to the XCVR, and the Channel Capacity is maintained for the Site on Zone Watch.

Step 6 Recover the XCVR Network Connection cable from the DSC where it was removed from and wait for a short period of time. Verify Channel is gracefully reallocated to the DSC where the XCVR Network Connection cable is restored.

Step 7 Verify that the UEM reports the Clear of the Redundancy Fault for XCVR and the associated Channel.

3.8.3 Loss of DBR MCPA at DBR M12 MultiCarrier Site on Single DSC Rack

DESCRIPTION

DBR M12 MultiCarrier Site Sites are equipped with new hardware in a Single Rack with 12 pack Chassis (up to 12 DBR XCVRs, up to 6 DBR MCPA and 2 DSC Server) that enable all of the Channels/ XCVRs/ MCPA (SRs) to communicate over an active LAN. Two modules ("DSC (site controller, switch)") are added to the Single DBR Rack to facilitate the redundant switching and time reference distribution functions at the DBR M12 MultiCarrier Site sites.

In addition, the expansion cabinets are equipped with two Expansion DSC racks for every additional 12 Pack.

A MCPA failure on a 12 pack DBR Rack will result in the MAJOR Fault Reporting of the Failed MCPA (NOTE 1) to the UEM, also look at (NOTE 2). Channel Objects may also report a Failure if the Minimum Power requirements are not met for a corresponding Channel Recovery of the MCPA shall result in Clearing of the PA Fault and any Channel Object Failure that is impacted due to loss of the minimum Power required to operate to the UEM.

This test case will demonstrate Failure and Recovery of a MCPA on a DBR M12 MultiCarrier Site.

SET UP

Ensure ZoneWatch is set up to monitor the sites and the Unified Event Manager (UEM) is available for viewing faults.

NOTE 1: If the MCPA Capacity exceeds what is required for the # of Carriers it is possible that loss of a MCPA will not result in loss of a carrier (Depending on the # MCPAs, # of Carriers and the configured Tx power of the carriers).

NOTE 2: It is advised to DISABLE the MCPA, before removing the cable behind the MCPA face plate and then remove MCPA from the chassis. All RF cables connected to the MCPA must be removed only on the MCPA side - never remove the splitter side (black coax cable) or combiner side (red coax cable).

TEST PROCEDURE

Step 1 Verify that the Site is Wide Trunking Operation on ZoneWatch with Assigned Control Channel.

Step 2 Verify UEM reports no Failures for MCPA and Channel Objects for the Given DBR M12 MultiCarrier Site.

Step 3 Follow NOTE 2, for the removal of MCPA while no Calls are in Progress and not Transmitting.

Step 4 Verify that the UEM reports the failure of a MCPA and may be loss of a Channel if Power Budget is not met with remaining MCPAs.

Step 5 Recover the MCPA and place it back into the 12 pack Chassis with the Cable to the PMU and wait for a short period of time.

Step 6 Verify that the UEM reports the recovery and Clear of MCPA and the associated Channel Failure if any.

3.8.4 Loss of DBR XCVR at DBR M12 MultiCarrier Site on Single DSC Rack

DESCRIPTION

DBR M12 MultiCarrier Sites are equipped with new hardware in a Single Rack with 12 pack Chassis (up to 12 DBR XCVRs, up to 6 DBR MCPA and 2 DSC Servers) that enable all of the Channels/ XCVRs/ (SRs) to communicate over an active LAN.

Two modules ("DSC (site controller, switch)") are added to the Single DBR Rack to facilitate the redundant switching and time reference distribution functions at the DBR M12 MultiCarrier Site sites.

In addition, the expansion cabinets are equipped with two Expansion DSC for every additional 12 Pack. A XCVR failure on a 12 pack DBR Rack with the associated Channel will result in the MAJOR Fault Reporting of the FAILED XCVR and Channel to the UEM. Recovery of the XCVR shall result in Clearing of the Fault reported by XCVR and associated Channel Objects to the UEM.

This test case will demonstrate Failure and Recovery of a XCVR failure (NOTE 1) on a DBR M12 MultiCarrier Site.

SET UP

DBR M12 MultiCarrier Site with a 12 Pack Chassis and Single Transmit Bank with 4 XCVRs and 3 MCPA

Ensure ZoneWatch is set up to monitor the sites and the Unified Event Manager (UEM) is available for viewing faults.

NOTE 1: A XCVR failure can be simulated by Unplugging the 2 Network Cables, as the Power to the XCVR under test will be removed). Plugging the 2 Network Cables back to XCVR shall result in Failure recovery.

NOTE 2: If XCVR is being removed, first unplug the Cables from the XCVR. Replaced NEW XCVR will require to be inventoried again.

NOTE 3: To validate the XCVR and Channel that are assigned to a particular DSC, Check the PCA Site Status.

TEST PROCEDURE

Step 1 Verify that the Site is Wide Trunking Operation on ZoneWatch with Assigned Control Channel.

Step 2 Verify UEM reports no Failures for XCVRs and Channel Objects for the Given DBR M12 MultiCarrier Site.

Step 3 Unplugging the Network cables to one of the XCVRs (NOTE 1) which is IDLE and not Transmitting. Can check the Transmit LED on the XCVR to validate the XCVR is not Transmitting. Check (NOTE 3) to validate the Which Channel and DSC is the XCVR associated with.

Step 4 Verify that the UEM reports the failure of XCVR and the Associated Channel Object.

Step 5 If XCVR is removed, Recover the XCVR by placing the same removed XCVR into the 12 pack Chassis and restore the network cables irrespective, wait for a short period of time. Check (NOTE 2) for new XCVR.

Step 6 Verify that the UEM reports the recovery and Clear of XCVR and the associated Channel Failures.

3.8.5 Single DSC Failure at DBR M12 MultiCarrier Site

DESCRIPTION

A DBR M12 MultiCarrier Site consists of multiple DSC working in a redundant configuration. In case one DSC fails, another DSC will take over and carry on all DBR M12 MultiCarrier Site operations (site controller, switch). In a multiple DSC configuration in non-failure conditions, the Control Capable Channels are distributed across DSCs.

PCA – Provisioning and Configuration Agent

SET UP

A DBR M12 MultiCarrier Site with a minimum of 4 channels on Single DSC 12 pack Rack with 2 DSCs. At least 2 Channels are Control Channel capable (typically the first 4 channels). Follow (NOTE1) to understand what Channels are allocated to which DSC.

PCA is connected to DSC2 (since DSC1 will be powered off; Follow (NOTE2).

This test can be run on a non-Tsub site or a Tsub site (while in wide area trunking).

This test is not applicable to simulcast subsites.

RADIO-1 – TALKGROUP 1
 CONSOLE-1 - TALKGROUP 1
 RADIO-2 - TALKGROUP 2
 CONSOLE-2 - TALKGROUP 2

All Radios should be "Site Locked"

NOTE 1: To validate the XCVR and Channel that are assigned to a particular DSC, Check the PCA Site Status

NOTE 2: Site shall have redundant routers. If Site does not have redundant routers, the DSC that is not connected to the router should be the one that is powered off.

TEST PROCEDURE

Step 1 Verify the system is in Wide Trunking Mode with Channel-1 as the control channel and all channels are in service.

Step 2 Initiate a call from CONSOLE-1 and verify that RADIO-1 hears the audio (keep CONSOLE-1 keyed until Step (7). Verify a Channel (which will be on DSC2) is used via ZoneWatch. (Follow NOTE 1)

Step 3 Key CONSOLE-2 and verify that RADIO-2 hears the audio. Verify another Channel (which will be on DSC1) is used via ZoneWatch. (Follow NOTE 1)

Step 4 Power off DSC1 using the power button of the DSC (long push). Verify that reception of audio at RADIO-2 has ceased.

Step 5 Dekey CONSOLE-2. Verify that RADIO-1 continues to hear audio from CONSOLE-1 (call on DSC2). Verify that the site remains in wide trunking. Verify Fault Redundancy Fault Reported on XCVRs/PAs on DSC1.

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Step 6 After a short period of time, verify that all channels at the site are reallocated on DSC2 (with redundancy warning for XCVR/PAs). Initiate a call from CONSOLE-2 and verify that RADIO-2 hears the audio (call is now on DSC2).

Step 7 Dekey CONSOLE-1. Dekey CONSOLE-2.

Step 8 Power on DSC1 using the power button of the DSC. Observe that the site remains in wide trunking. After DSC1 boots up, verify all of the channels previously on DSC1 are reallocated and operational on DSC1 (and the redundancy Faults are cleared).

3.9 Sign-off

Contact:	Name:	Date:	Signature:
Witness1:			
Witness2:			
Witness3:			
Motorola Solutions Project Manager:			
Motorola Solutions System Engineer:			
Motorola Solutions Field Technical Representative:			
Tested by:			
Test Engineer:			

Section 4

Coverage Baseline Measurement Procedure

4.1 Overview

This procedure has been designed to baseline the system coverage performance after the addition of a simulcast site for Kannapolis NC as shown on Motorola Solutions' maps. It defines the method and procedure, the documentation that will be provided, and the responsibilities of both Motorola Solutions and Kannapolis, NC. No guarantee of a particular coverage performance level is being provided.

The procedure for performing these measurements is based upon a coverage prediction that accurately represents the implemented infrastructure. Subsequent sections define the system configuration and criteria used to perform the measurements.

4.2 Definitions

Several definitions are needed to accurately describe the performance measurement method and criteria. Where cited, these terms or methods are defined in TIA TSB-88.1-F¹ or TSB-88.3-F².

4.2.1 Defined Test Area

The defined measurement area is the geographical area in which communications will be provided that meet or exceed the specified Channel Performance Criterion (CPC) at the specified reliability for the specified equipment configuration(s). The defined measurement area(s) are listed in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary along with names of the corresponding

Motorola Solutions map(s) which show the defined test areas. Please see Figure Map 4 below showing the area for testing.

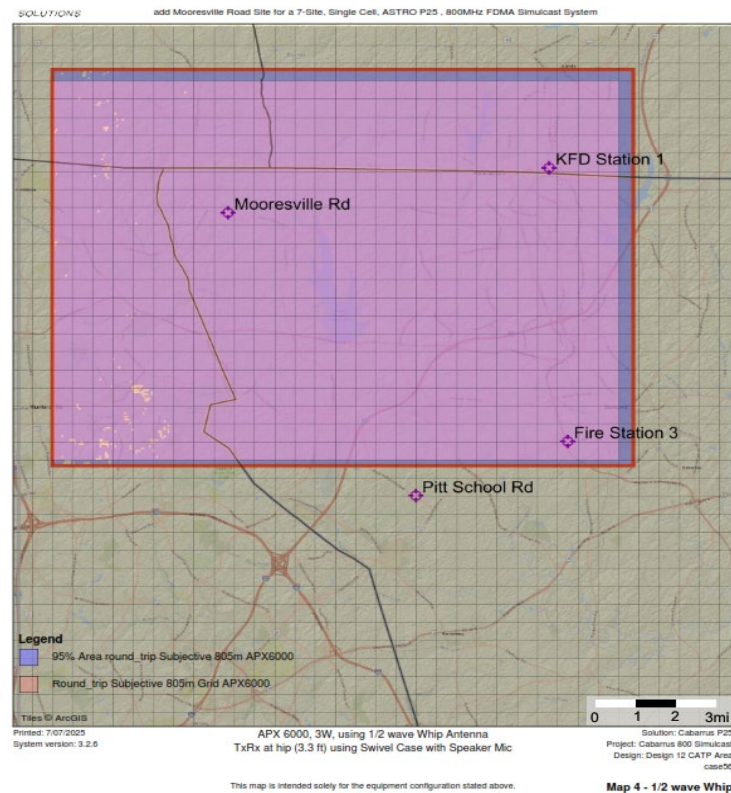
For all defined measurement areas (identified in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary), the coverage performance measurements will only be made on roads. The

¹ *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 1: Recommended Methods for Technology-Independent Narrowband Performance Modeling*, Technical Service Bulletin TSB-88.1-F, Telecommunications Industry Association (TIA), Arlington VA, April 2022.

² *Wireless Communications Systems --- Performance in Noise- and Interference-Limited Situations --- Part 3: Recommended Methods for Technology-Independent Narrowband Performance Verification*, Technical Service Bulletin TSB-88.3-F, Telecommunications Industry Association (TIA), Arlington VA, March 2022.

roads included are defined by the US Census Bureau TIGER streets that are accessible by 2-wheel drive vehicles.

For coverage performance measurements, each defined measurement area will be divided into a grid pattern by Motorola Solutions to produce at least the number of uniformly sized measurement locations (or tiles) required by the Estimate of Proportions formula. [TSB-88.3-F, §5.2.1, equation 2] The minimum number of tiles required varies, from a hundred to many thousands, depending on the size of the defined measurement area, desired confidence in results, type of coverage test, and the predicted reliability.



Warranty & Service: Essential Services Statement of Work

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Figure Map 4: Proposed Test Area Grid

4.2.2 Channel Performance Criterion (CPC)

The CPC is the specified minimum design performance level in a faded channel. [TSB-88.1-F, §5.2] For this system, the CPC is the Delivered Audio Quality (DAQ) as stated in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary. The DAQ definitions are provided in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary Definitions. [TSB-88.1-F, §5.4.2, Table 3].

Table 4-1: DAQ Definitions

DAQ	Subjective Performance Description
1	Unusable, speech present but unreadable.
2	Understandable with considerable effort. Frequent repetition due to noise/distortion.
3	Speech understandable with slight effort. Occasional repetition required due to noise/distortion.
3.4	Speech understandable with repetition only rarely required. Some noise/distortion.
4	Speech easily understood. Occasional noise/distortion.
4.5	Speech easily understood. Infrequent noise/distortion.
5	Speech easily understood.

The CPC threshold is the faded performance threshold, plus any adjustments for antenna performance, external noise, and in-building or in-vehicle losses. [TSB-88.1-F, §5.4.2, Figure 6] The faded performance threshold for the specified CPC is determined using the receiver's static reference sensitivity adjusted by the projected CPC parameters for the applicable Modulation Type and DAQ as listed in the current version of TSB-88.1, Annex A, Table A-1. For coverage testing of digital voice radio systems, the faded performance threshold is the applicable Bit Error Rate (BER) from the projected CPC parameters.

4.2.3 Reliability

The Covered Area reliability is the percentage of locations within the defined measurement area that are predicted to meet or exceed the specified CPC. The Motorola Solutions map(s) indicate the Covered Area(s) within which this system is predicted to provide at least the reliability of meeting or exceeding the CPC as stated in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary.

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For the defined measurement area(s), only the painted covered area on Motorola Solutions’ maps will be measured. No measurements will be performed in locations predicted on Motorola Solutions’ maps to be below the required Covered Area reliability.

After all accessible tiles in the defined test area have been measured, the Covered Area reliability will be determined by dividing the number of tiles tested that meet or exceed the CPC threshold by the total number of tiles tested. [TSB-88.3-F, §5.1, equation 1]

4.2.4 Direction(s) of Measurements

The direction(s) of the test in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary defines the direction(s) which will be tested for coverage benchmark testing. Round-Trip means both Outbound and Inbound will be measured in each tile.

4.2.5 Equipment Configurations

This section defines the equipment configurations and infrastructure design parameters upon which the coverage predictions and performance measurement procedure are based. The equipment configurations are defined in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary, and include user equipment, outdoor/in-building definition, defined measurement area, number of tiles to measure, reliability, CPC, CPC threshold, and direction(s) of test.

Coverage performance measurements will be conducted with equipment installed per the configurations in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary, and with the mobile antennas in unobstructed locations that are not adjacent to other large objects or metallic items which would distort the antenna patterns.

Table 4-2: Kannapolis NC Coverage Performance Measurement Summary

User Equipment	Outdoor / In-Building	Defined Test Area & Map Name	Number of Test Tiles	Reliability	CPC	CPC Pass/Fail	Direction (s) of Test
APX Portable at hip level for Tx and Rx	Outdoor on Street	Map 4 – CATP Grid	588 (0.5 mile tiles)	95%	DAQ-3.4	Subjective DAQ	Round Trip

4.2.6 CPC Threshold for a Measurement Tile

For each equipment configuration, the threshold for a measurement tile is stated in Table 4-2 Coverage Performance Measurement Summary.

Coverage for the portable in-building equipment configurations will be measured by attenuation of the test radio for DAQ tests. The attenuation will be the difference between the test radio’s antenna system and the additional loss used in Motorola Solutions’ coverage prediction to account for portable antenna performance and in-building penetration. The attenuator values are provided in Table 4.4: Attenuator Values to Evaluate Each Equipment Configuration.

This provides a method of verifying that the radio system provides the required DAQ for the specified CPC for each of the defined equipment configurations.

Below are the attenuator values required to evaluate each equipment configuration. The methodology to determine the attenuator value is demonstrated in TSB-88.1-F §5.4.2, Figure 6. The attenuator value includes the proper values for the equipment configuration requirement plus adjustments for the test equipment setup. Should the test equipment setup losses (e.g. cable length) vary, an adjustment to the attenuator value may be required to represent the required equipment configuration accurately.

Table 4.4: Attenuator Values to Evaluate Each Equipment Configuration

User Equipment	Outdoor / In-Building	Attenuator Value (dB)
Portable Outdoors	Outdoor	4.8

4.2.7 Required Number of Test Tiles in the Defined Test Area

The method used to measure coverage performance is a statistical sampling of the defined measurement area to verify that the CPC is met or exceeded at the predicted reliability for each of the defined equipment configurations. It is impossible to verify every point within a defined area, because there are infinite points; therefore, coverage reliability will be measured by sampling a statistically significant number of randomly selected locations, quasi-uniformly distributed throughout the defined measurement area. There is one sample taken per test tile, where a sample consists of multiple sub-samples.

Coverage performance measurements will be performed in the defined measurement area as indicated on Motorola Solutions-provided maps. The defined measurement area indicated on Motorola Solutions' maps will be divided into uniformly sized tiles, with at least the number of tiles indicated in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary. The number of tiles indicated in Table 4-2: Kannapolis NC Coverage Performance Measurement Summary is at least the minimum required by the Estimate of Proportions formula.

Per TSB-88.3-F, the stated minimum outdoor tile size is 100 by 100 wavelengths; however, the *practical* minimum size of tiles is typically about 400 by 400 meters (about 0.25 by 0.25 miles). The minimum practical tile size for any system is determined by the distance traveled at the speed of the test vehicle while sampling, GPS error margin, and availability of road access within very small tiles. A related consideration is the time, resources, and cost involved in testing very large numbers of very small tiles. For a given defined test area, all tiles must be of equal size. The maximum tile size is 2 by 2 km (1.24 by 1.24 miles) [TSB-88.3-F, §5.5.1]. In some wide-area systems, this constraint on maximum tile size may dictate a greater number of tiles than the minimum number required by the Estimate of Proportions formula.

No performance measurements will be performed in locations outside the defined measurement area as indicated on the Motorola Solutions-provided maps. Motorola Solutions and Kannapolis NC may agree to perform additional measurements in locations outside the defined measurement area. Any additional locations must be defined before starting the test and, if the added locations require significant additional time and resources to measure, a change order will be required and Motorola Solutions may charge Kannapolis NC on a time-and-materials basis.

4.2.8 Accessibility to Measurement Tiles

Prior to testing, Motorola Solutions and Kannapolis NC will plan the route for the vehicle(s) through the defined measurement area, to ensure that at least the minimum required number of tiles is measured. While planning the route (if possible) or during the measurements, Motorola Solutions and Kannapolis NC will identify any tiles that are inaccessible for measurements (due to lack of roads, restricted land, etc.). Inaccessible tiles will not be measured for performance. [TSB-88.3-F, §5.5.4]

4.2.9 Random Selection of a Test Location in Each Tile

The actual location within each test tile, where the performance measurement will be taken, will be randomly selected at an arbitrary point, with an arbitrary speed and direction.

4.2.10 CPC Measurements in Each Tile

In each test tile, a voice test exchange will be initiated using predetermined text typical of a common voice exchange between the fixed location and the test tile location. The person conducting the test at the portable will be moving at a typical speed for the surrounding conditions.

4.3 Responsibilities and Preparation

This section identifies the responsibilities of Kannapolis and Motorola Solutions regarding requirements for equipment, personnel, and time during the performance measurements.

Kannapolis will provide the following for the duration of the performance measurements:

- At least one test vehicle(s) that is representative of the vehicles to be installed with radios, and will provide the driver(s).
- Exclusive use of the channels required by Motorola Solutions during the performance measurements.
- One team, with three or more representatives designated by Kannapolis NC per team, to evaluate and record each subjective audio transmission. The required quantity of test participants shall be available a minimum of eight hours a day.
- Facility with one console(s) for the fixed end subjective audio test.

Motorola Solutions will provide the following for the duration of the performance measurements:

- One team each with 1 fewer Motorola Solutions representative per team than those designated by Kannapolis NC, to navigate and to operate Voyager, operate the portable radio, and to evaluate and record the result of each subjective audio transmission.
- One or more Motorola Solutions representatives to operate the fixed equipment, and to evaluate and record the result of each subjective audio transmission.
- At least one Motorola Solutions Voyager coverage testing tool.
- Provide two user radios for the test.

As required, Motorola Solutions will provide a receiver signal strength calibration file for the test radio(s) used with the Voyager coverage testing tool.

Before starting the test, Kannapolis NC and Motorola Solutions will agree upon the time frame for Motorola Solutions' submission of a report containing the performance measurement results.

4.4 Coverage Performance Measurement Procedures

A subjective listening measurement will be performed to evaluate talk-out and talk-in DAQ performance of the system.

The procedure for the subjective DAQ performance measurements will be as follows:

- To simulate a portable with the required losses of buildings, the indicated net attenuation in Table 4.4 is used with a portable and the mobile unity gain antenna mounted on the test vehicle in an unobstructed location that is not adjacent to other large objects or metallic items which would distort the antenna pattern.
- A fixed control point location will be established. Prior to performance measurements, Kannapolis NC and Motorola Solutions will agree upon a procedure to allow each audio transmission to be evaluated.
- To perform a statistically valid subjective DAQ evaluation, a large group of people is required to ensure high confidence in the results. However, obtaining a large group of people for a subjective listening evaluation is usually impractical; therefore, several (3 to 7) people in a car or van must be used for the test. Since a group this small cannot provide statistically significant results, it is very important that the personnel participating in the subjective evaluation be familiar with the sound of radio conversations.
- The participants will be divided into teams, each consisting of personnel from Kannapolis NC and Motorola Solutions. Each team will have members that operate a portable unit inside the vehicle and members that are stationed at the fixed control point location. An odd number of team members is required to avoid ties for the evaluation consensus of the test team.

The field unit will make a call and identify the tile by the current x-y tile or tile cell number location and repeat one of ten phonetically balanced phrases. The fixed location unit (console or control station) team will then determine if the voice meets or exceeds the DAQ criteria as defined by Table 3-1. The fixed location will then repeat 1 of the 10 phonetically balanced phrases and the field team will in turn determine if the voice meets or exceeds the DAQ criteria. The voice quality testing in both the outbound and inbound directions will be assessed.

4.5 Coverage Performance Documentation

Motorola Solutions will submit to Kannapolis NC a report detailing the performance measurement results. This report will include a document, which is to be signed by both Kannapolis NC and Motorola Solutions, indicating the measurements were performed in accordance with this procedure, and documenting the resulting system performance.

Section 5

Pricing Summary

Motorola is delighted to present two distinct pricing options for the City of Kannapolis, NC, detailing the requested equipment and associated services.

5.1 Equipment and Services

This pricing summary includes the following high level scope:

- 7th Simulcast Remote Site at Mooresville Rd
- Microwaves path for Mooresville Rd to KFD1 and KPD to KFD1
- Microwave path for Mooresville Rd to Davidson

Description	Price (\$)
Equipment	\$1,423,132.39
Implementation Services	\$1,231,531.26
Total System	\$2,654,663.65
Discount Incentive if Executed by September 30,2026	(\$213,469.84)
Total System After Discounts	\$2,441,193.81

Except for a payment that is due on the Effective Date, Customer will make payments to Motorola within thirty (30) days after the date of each invoice. Customer will make payments when due in the form of a check, cashier's check, or wire transfer drawn on a U.S. financial institution. If Customer has purchased additional Professional or Subscription services, payment will be in accordance with the applicable addenda. Payment for the System purchase will be in accordance with the following milestones.

System Purchase

1. 25% of the Contract Price due upon contract execution (due upon effective date);
2. 60% of the Contract Price due upon shipment of equipment from Staging;
3. 10% of the Contract Price due upon installation of equipment; and
4. 5% of the Contract Price due upon Final Acceptance.

Motorola shall make partial shipments of equipment and will request payment upon shipment of such equipment. In addition, Motorola shall invoice for installations completed on a site-by-site basis or when professional services are completed, when applicable. The value of the equipment shipped/services performed will be determined by the value shipped/services performed as a percentage of the total milestone value. Unless otherwise specified, contract discounts are based upon all items proposed and overall system package. For invoicing purposes only, discounts will be applied proportionately to the FNE and Subscriber equipment values to total contract price. Overdue invoices will bear simple interest at the maximum allowable rate by state law.

Pricing Summary

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Due to significant market and tariff volatility, as well as fluctuations in the cost of energy and raw materials including, but not limited to, steel, copper, finished wood, and concrete, Motorola Solutions reserves the right to equitably adjust the contract price, completion schedule, and/or contract requirements. Additionally, Motorola Solutions reserves the right to apply a fuel surcharge to quoted freight rates based on the prevailing diesel cost at the time of shipment.

Section 6

Contractual Documentation

The products and services described in this proposal shall be provided under the terms and conditions described in the Sourcewell Contract 020625-MOT.

Customer affirms they have signatory authority to execute this contract. The contract price of **\$2,441,193.81** is fully committed and identified, including all subsequent years of contracted services, if applicable. The Customer will pay all invoices as received from Motorola and any changes in scope will be subject to the change order process as described in this Agreement.

Motorola acknowledges the Customer may require the issuance(s) of a purchase order or notice to proceed as part of the Customer's procurement process. However, Customer agrees that the issuance or non-issuance of a purchase order or notice to proceed does not preclude the Customer from its contractual obligations as defined in this Agreement.

The Parties hereby enter into this Agreement as of the Effective Date.

Motorola Solutions, Inc

Name: _____

By: _____

Title: _____

Date: _____

The City of Kannapolis, NC

Name: _____

By: _____

Title: _____

Date: _____

**RESOLUTION AUTHORIZING THE CITY TO ENTER INTO
EQUIPMENT LEASE PURCHASE AGREEMENT**

WHEREAS, City Council has determined that moving forward with the Western Communications Tower project is necessary to address limited and, at times, absent radio communication for law enforcement, fire, and EMS personnel responding to emergency calls in the northwest area of the City; and

WHEREAS, unreliable communications create delays and confusion for emergency responders and present a public safety concern; and

WHEREAS, the project is supported by federal grant funding, a contribution from the office of State Representative Dr. Grant Campbell, and a contribution from Cabarrus County, with funding allocated for tower construction and communications equipment; and

WHEREAS, Motorola Solutions, Inc. is the sole source of equipment compatible with the City's existing communications system, making standardization and compatibility the overriding considerations; and

WHEREAS, North Carolina General Statutes §143-129(e)(6) permits the purchase of equipment without competitive bidding when a needed product is available from only one source or when standardization or compatibility is the overriding consideration.

NOW, THEREFORE, BE IT RESOLVED that the City Council:

1. Authorizes the City to proceed with the Western Communications Tower Project;
2. Authorizes the City Manager to execute the Purchasing Agreement with Motorola Solutions, Inc. for the purchase of the required communications equipment, software, and related support pursuant to the sole-source exception under N.C.G.S. §143-129(e)(6), and to proceed with the tower construction bidding process.
3. Acknowledges that additional funding may be required based on the final construction bids.

Adopted this the 14th day of September 2026

ATTEST:

George Douglas Wilson, Mayor
City of Kannapolis

Pam Scaggs, CMC, NCCMC
City Clerk



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Heather James, Human Resources Director
Subject: **APPROVAL** - Personnel Policy 300.03 Grievance Process

Recommended Action Requested by City Council

Motion to approve the amended Personnel Policy 300.03 Grievance Process

Required Votes to Pass Required Action

Majority Present at Meeting

Background

The current grievance process, 300.03, was adopted as part of the City's Personnel Policy in 1995. This updated policy clarifies the types of grievances that can be filed, clarifies the procedure of filing a grievance, and disbands the Personnel Advisory Committee (PAC).

Fiscal Implications

None

Alternate Courses of Action

1. Table action to a future meeting.
2. Take no action.

Attachments

1. Grievance Procedure

SUBJECT: GRIEVANCE PROCEDURE

General Purpose

The City of Kannapolis desires to resolve employee complaints and grievances in a fair and equitable manner.

Employees whose grievances result from work situations deserve and have the right to submit such grievances for orderly resolution with complete freedom from discrimination, coercion, recrimination, restraint, or reprisal including when appearing as a witness, or in seeking information in accordance with these procedures. Should these principles be violated, the facts should be brought to the attention of the Human Resources Director or City Manager by the appellant, the appellant's representative or the person affected so that the appropriate remedial action may be taken.

The resolution of grievances promotes more effective employer/employee relationships and is in the best mutual interests of all affected parties.

It is the responsibility of supervisors at all levels, consistent with the authority delegated to them, to consider and take appropriate action promptly and fairly on a grievance of any employee.

The purposes of the grievance procedure include, but are not limited to:

- Providing employees with a procedure by which their complaints can be considered promptly, fairly, and without reprisal;
- Encouraging employees to express themselves about the conditions of work which affect them as employees;
- Promoting better understanding of policies, practices, and procedures which affect employees;
- Increasing employees' confidence that personnel actions taken are in accordance with established, fair, and uniform policies and procedures;
- Increasing the sense of responsibility exercised by supervisors in dealing with their employees;
- Encouraging conflicts to be resolved between employees and supervisors who must maintain an effective future working relationship, and therefore, encouraging conflicts to be resolved at the lowest level possible of the chain of command; and
- Creating a work environment free of continuing conflicts, disagreements, and negative feelings about the City or its leaders, thus freeing up employee motivation, productivity, and creativity.

The City has established the following procedures for the administration and resolution of grievances.

Coverage

The provisions of this procedure shall apply to all City employees, except the City Manager and City Attorney.

Definition of a Grievance

Grievance shall be defined as a complaint or dispute by an employee relating to his/her employment, including but not limited to:

- Disciplinary or adverse actions involving dismissals, demotions, suspensions, reduction in pay, involuntary transfer, or lay off;
- An event or condition which affects the circumstances under which an employee works;
- Allegedly caused by misrepresentation, unfair application, or lack of established policy pertaining to employment conditions;
- Alleged safety or health hazards, unsatisfactory physical facilities, surroundings, materials or equipment;
- Alleged unfair or discriminatory supervisory or disciplinary practices, unjust treatment by fellow coworkers, unreasonable work quotas;
- Acts of reprisal as the result of utilizing the grievance procedure;
- Complaints of discrimination, harassment or retaliation; or
- Any other grievance relating to conditions of employment.

Employees are advised that the following items are not subject to the grievance procedure:

1. Conditions of employment, law, policy, wages, salaries, and fringe benefits established by City Council.
2. However, the application or interpretation of the items listed above are subject to the grievance procedure. If there is a question whether or not an employee's concern is clearly a grievance, the Human Resources Director will contact the City Attorney who has full and final authority to settle this question.

In addition, it is to be understood that the establishment of this procedure shall in no way remove the right of the City government to do the following, provided that none of these rights may be exercised in an arbitrary or capricious manner:

1. Direct the work of its employees.
2. Hire, promote, transfer and assign employees.
3. Demote or dismiss employees for cause.
4. Maintain the efficiency of governmental operations.
5. Relieve employees from duty because of a lack of work or for other legitimate reason.
6. Take actions necessary to carry out duties of an agency in emergencies.
7. Determine the methods, means and personnel necessary to carry out operations.
8. Establish department work rules.

Procedure

All grievable employment disputes will be administered in the specified manner and will ordinarily be processed within the stated time limits. Failure by the employee to process a complaint within the stated time limits, or agreed upon extension, shall constitute termination of the complaint.

Nothing in this grievance procedure is intended to create an expressed or implied agreement that alters the employment at-will relationship that exists between the City and the employee, nor does it provide or vest any employee with any due process or procedural rights prior to the imposition of disciplinary action or dismissal.

If an employee has any question as to which step of the procedure, he/she should initiate his/her grievance, he/she should contact Human Resources for direction.

In the case of an unlawful workplace harassment complaint involving a supervisor or leader in the employee's chain-of-command, the employee may skip any of these steps, reporting the matter directly to the Department Head or the Human Resources Director.

Informal Resolution: Prior to the submission of a formal grievance, the employee and supervisor are encouraged to meet to discuss the problem and seek to resolve it informally. Either the employee or the supervisor may involve the respective Department Head as a resource to help resolve the grievance. In addition, the employee or supervisor may request mediation support through Human Resources. Mediation may be used at any step in the process when mutually agreed upon by the employee and relevant City supervisor or Department Head. Mediation is the process where a neutral party assists the parties in conflict with identifying mutually agreeable solutions or understandings.

The response from the supervisor for each step in the formal grievance process outlined below shall be in writing and signed by the supervisor. The responder at each step shall send copies of the grievance and response to the Human Resources Director.

Step One: An employee who has a grievance should present the problem to his/her immediate supervisor in writing. The employee must present his/her initial grievance to his/her immediate supervisor within fifteen (15) calendar days of the complaint occurrence or of the time of learning of its occurrence. The immediate supervisor should and is encouraged to consult with any employee deemed necessary to reach a correct, impartial, and equitable determination and should respond to the employee in writing within fifteen (15) calendar days.

Step Two: If the employee is not satisfied with the response of the immediate supervisor from Step 1, or if the employee does not receive a response within the time frame specified, the employee may file, within ten (10) calendar days, a written grievance with his/her Department Head. The Department Head should respond to the employee within fifteen (15) calendar days after receiving the employee's written grievance. The Department Head may request additional information from the employee and/or schedule a meeting with the employee to obtain additional information related to the grievance.

Step Three: If the employee is not satisfied with the response of the Department Head, the employee may file, within fifteen (15) calendar days of receipt of the Department Head's response, a request for review by the City Manager. In this case, the City Manager shall hear the grievance and shall provide a written decision with regard to the grievance within fifteen (15) calendar days. The City Manager may postpone issuance of the decision for up to 30 additional days to further investigate, consult with the City Attorney, or seek advice from other responsible sources.

In providing the written decision to the grievant, the City Manager may seek the advice and consent of the City Attorney or other legal counsel to examine all ramifications and liabilities that may be associated with the decision. All decisions made by the City Manager are final.

In the case of a Department Head filing a grievance or a direct report of the City Manager, the City may wish to obtain a neutral outside party to act as a mediator to assist in resolving the conflict.

Role of the Human Resources Director

Throughout the grievance procedure, the roles of the Human Resources Director are as follows:

- To advise parties (including employees, supervisors, and City Manager) of their rights and responsibilities under this policy including interpreting the grievance and other policies for consistency of application;
- To be a clearinghouse for information and decisions in the matter including maintaining files of all grievance documents;
- To give notices to parties concerning timetables of the process, etc.;
- To facilitate the resolution of conflicts in the procedures or of the grievance at any step in the process; and
- To help locate mediation or other resources as needed.

Grievance and Adverse Action Appeal Procedure for Discrimination

When an employee, former employee, or applicant, believes that any employment action discriminates illegally (i.e. is based on age, sex, race, color, national origin, religion, creed, political affiliation, or non-disqualifying disability, genetic information, or veteran status except where specific age, sex, or physical requirements constitute a bona fide occupational qualification), he/she has the right to appeal such action using the grievance procedure. While such persons are encouraged to use the grievance procedure, they shall also have the right to appeal directly to the Human Resources Director or City Manager. Employment actions subject to appeal because of discrimination include promotion, training, classification, pay, disciplinary action, transfer, layoff, failure to hire, or termination of employment. An employee or applicant should appeal an alleged act of discrimination within thirty (30) calendar days of the alleged discriminatory action or within thirty (30) calendar days the date he/she should have become aware of it.

Other Remedies Preserved

The existence of the grievance procedure does not preclude any individual from pursuing any other remedies available under law.

No part of the above procedure shall be in conflict or violation of state or federal laws and regulations.

No punitive action shall be carried out against the employee for utilizing the grievance procedure outlined above.

Back Pay Awards

Back pay and benefits may be awarded to reinstated employees in suspension, demotion, dismissal, and discrimination cases.

**CITY OF KANNAPOLIS
CITY COUNCIL MEETING MINUTES
August 10, 2026**

A meeting of the Kannapolis City Council was held on Monday, August 10, 2026, at 6:00 PM, Kannapolis City Hall located at 401 Laureate Way, Kannapolis, NC.

CITY COUNCIL MEMBERS PRESENT:

Council Members: Doug Wilson, Mayor
Ryan Dayvault, Mayor Pro Tem
Darrell Jackson
Dianne Berry
Isaiah Payne
Jeanne Dixon
Naomi Hatchell

Council Members Absent: None

City Manager: Wilmer Melton

Deputy City Manager: Eddie Smith

Assistant City Manager: Kristin Jones

City Attorney: Andrew Kelly

Staff Present: Tony Eury David Jordon
Michael Dodge Kirk Beard
Terry Spry Alex Anderson
Mia Alvarez

Visitors Present: Demetra Grigley Corine Cannon
Robert Pinkston Don Gray
Sheila Pinkston Zach Erwin
Pam Smith Jim Beamfelt
EZ Smith Andrea Black
Connie Wells Debbie Wilkinson
Margaret Lunn James Lunn
Connie Leeper Kay Leeper McClorey
Kim Ballard Michele Hill
Cheryle Douglas Robin Ballard
Ben Ballard Betty Ritchie
Laura Heggins Heidi Green
Nancy Rutledge Tony Russell
Clorena Grier Don Shuman
Margie Shuman Bob Richardson
Melinda Richardson Jim Rutledge
Phil Goodman Anita Blakeney
Robert Mack Yvonne Herman

Joe Hatley	Donald Anthony
Marcus Tucker	Deidre Tucker
Vanessa Tillman	Teronda Maxwell
Larry Smith	Mark Spitzer
Kelvin Thompson	Violet Elaine Mitchell
Jackalon Thompson	Beverly Smith
Joanne Levy	Syliva Wynn
Bryant Alexander	Paula Robinson
Ken Chapman	Bill Ballard

CALL TO ORDER AND WELCOME

Mayor Wilson called the meeting to order and welcomed all in attendance.

PLEDGE OF ALLEGIANCE

Council Member Dixon led the Pledge of Allegiance.

ADOPTION OF AGENDA

Mayor Wilson called for a motion regarding the Agenda. Mayor Pro Tem Dayvault moved to approve, second by Council Member Berry and the motion unanimously approved.

RECOGNITION AND PROCLAMATIONS

A proclamation honoring the 100th birthday of Mrs. Betty Ritchie was read and presented by Council Member Berry. Ms. Ritchie was joined by her family as the proclamation was read.

After watching a short video showing the dedication of the Highway 3 roundabout in honor of longtime Kannapolis resident, Ms. Corine Cannon, Mayor Wilson and City Manager Wilmer Melton presented Ms. Cannon with a replica of the legacy garden signs associated with the Highway 3 roundabout. Nephew to Ms. Cannon, Reverend Donald Gray recognized Ms. Cannon's contributions to Kannapolis including being among the first black women to use an integrated restroom in the 1960s and the first black woman to work at Cannon Mills. Ms. Cannon expressed her appreciation, reflected on the changes she has witnessed in Kannapolis and her involvement in efforts to incorporate the City, and thanked God for His mercy and goodness. She also sang "Praise the Lord." Reverend Gray concluded by emphasizing that honor should be given where honor is due and noted that the roundabout was appropriately named in Ms. Cannon's honor.

SPEAKERS FROM THE FLOOR

Deborah Johnston addressed Council about the Eastside Park delays. She reminded them of the 33-acre purchase in 2017 and 2024 plans for trails, a playground, dog park, splash pad, paddle boats, and shelters. Despite a \$500,000 grant and construction set for 2025, no progress has been made. She urged action, highlighting that the east side remains without a park and suggested that 10,000 nearby residents are being negatively impacted.

Zach Erwin addressed Consent Agenda Item A regarding the proposed amendment to the Public Hearing and Public Comments Policy, which would prohibit residents from submitting speaker cards after the Speakers from the Floor section has begun. He argued that first-time attendees unfamiliar

1 with the process would be disenfranchised and urged Council to move the item from the consent
2 agenda to the business agenda for public discussion before adoption.

3
4 Nancy Rutledge urged Council not to approve a General Obligation (GO) Bond, asserting that
5 Eastside Park could be funded and delivered without a property tax rate increase.

6
7 Jim Rutledge echoed support for Eastside Park and opposition to the GO Bond tax increase. He spoke
8 positively about Kannapolis's downtown revitalization and encouraged leveraging the existing
9 \$500,000 grant to complete the park without additional taxation.

10
11 Violet Elaine Mitchell raised four issues: (1) she requested an update on the Little Texas Road
12 sidewalk project, citing conflicting information about right-of-way acquisition delays involving Duke
13 Power; (2) she reported faded lane markings at the Dale Earnhardt Boulevard and Concord Lake
14 Road/Highway 3 intersection as a traffic hazard; (3) she called for the resurfacing of Linda Street,
15 which she stated has not been paved since Mayor Bob Meisenhower's tenure and now suffers from
16 uneven pavement, standing water, and deteriorated asphalt; and (4) she raised concern about the need
17 for additional homeless shelter capacity in Kannapolis after observing a homeless individual near the
18 social services building.

19 20 **CONSENT AGENDA**

21 Mayor Wilson called for a motion regarding the Consent Agenda. Council Member Jackson made the
22 motion to approve the Consent Agenda. Council Member Berry requested that Item A, Policy
23 Amendment, be tabled until the next meeting to allow for additional discussion. Council Member
24 Jackson made the motion to amend the Consent Agenda to table Item A until the August 24, 2026
25 meeting, second by Mayor Pro Tem Dayvault. The amendment was unanimously approved. Council
26 Member Payne then made the motion to approve the amended Consent Agenda, second by Mayor Pro
27 Tem Dayvault, and the motion was unanimously approved.

28
29 **POLICY AMENDMENT** – Motion to approve the amended Public Hearing and Public
30 Comments Policy (Andrew Kelly, City Attorney) (Copy included as Agenda Item F.A.)

31
32 **ORDINANCE-** Budget Amendment #27-06 appropriating National Night Out Donations (Kristin
33 Jones, Assistant City Manager) (Copy included as Agenda Item. F.B.)

34
35 **ORDINANCE** – Budget Amendment #27-07 reappropriation of cash reserves to fund ongoing
36 projects, commitments from FY 26 to FY 27 (Kristin Jones, Assistant City Manager) (Copy
37 included as Agenda Item F.C.)

38
39 **VOLUNTARY ANNEXATION** - (A-2026-07) 1.025 +/- acres of contiguous property located at
40 115 Kidd Street (Richard Smith, Planning Director) (Copy included as Agenda Item F.D.)

41
42 **ORDINANCE** - – Budget Amendment #27-09 Little Texas Sidewalk (Kristin Jones, Assistant
43 City Manager) (Copy included as Agenda Item F.E.)

44
45 **VOLUNTARY ANNEXATION** - (A-2026-08) 0.2452 Acres located on Kidd Street identified as
46 parcel 145 0680000002 (Richard Smith, Planning Director) (Copy included as Agenda Item F.F.)
47

1 ORDINANCE - – Budget Amendment #27-10 appropriating KFD grant funds (Kristin Jones,
2 Assistant City Manager) (Copy included as Agenda Item F.G.)
3

4 ORDINANCE - – Budget Amendment #27-11 Appropriating Funds for Salary Study Revisions
5 (Kristin Jones, Assistant City Manager) (Copy included as Agenda Item F.H.)
6

7 AGREEMENT – Sub Grant Agreement between the City of Kannapolis and WSACC (Alex
8 Anderson, Director of Water Resources; Kring Jones, Assistant City Manager) (Copy included as
9 Agenda Item F.I.)
10

11 APPOINTMENTS – Personnel Advisory Committee (PAC) (Heather James, Human Resources
12 Director; Kristin Jones, Assistant City Manager) (Copy included as Agenda Item F.J.)
13

14 MINUTES – July 26, 2026 (Pam Scaggs, City Clerk) (Draft copy included)
15

16 BUSINESS AGENDA

17 **PRESENTATION – Cabarrus County Sports Hall of Fame (Harry Mills and EZ Smith) (Copy** 18 **included as Agenda Item G.A.)**

19 EZ Smith, Chair of the Cabarrus County Sports Hall of Fame, and Harry Mills, Executive Secretary,
20 presented an overview of the organization's history, current activities, and funding needs. The Hall of
21 Fame was established in 2010 and inducted 93 members and 5 state championship teams before going
22 dormant during the COVID-19 pandemic and following the passing of founder Tony McClain. The
23 organization was relaunched in early 2025 with new bylaws, secured 501(c)(3) status, and established
24 an exhibit at the Cabarrus Arena following a county commission resolution.
25

26 In May 2026, the organization awarded 24 scholarships totaling \$12,000 to student athletes across all
27 Cabarrus County high schools. Smith noted that approximately 80 of the Hall's 107 members are
28 alumni of A.L. Brown and J.W. Cannon high schools, and that 9 of 10 state championship teams
29 being inducted this year are from Kannapolis institutions.
30

31 They requested that the City of Kannapolis consider a \$5,000 municipal contribution to support
32 scholarships and community programming, framing the investment as a workforce and educational
33 development initiative. Council consensus expressed support for exploring at minimum the funding
34 of Kannapolis-specific scholarships distributed by the organization and directed City Manager Melton
35 and Assistant City Manager Jones to review what assistance might be possible.
36

37 Council Member Dixon expressed appreciation for the presentation and recognized Kannapolis
38 resident and community advocate, Demetra Grigley as a Hall of Fame member.
39

40 **PUBLIC HEARING AND RESOLUTION – Development Agreement Kellswater Commons** 41 **Outparcel 8 (Alex Anderson, Director of Water Resources; Mia Alvarez, Senior Planner) (Copy** 42 **included as Agenda Item G.B.)**

43 Mr. Anderson presented a Development Agreement for MPV Kellswater, LLC (DA-2026-01),
44 regarding a proposed medical office building on Outparcel 8 within Kellswater Commons, located at
45 the intersection of Rogers Lake Road and Kannapolis Parkway. The approximately four-physician
46 facility is expected to require 1,000 gallons per day of wastewater capacity and was submitted in
47 response to a call for non-residential projects. He reviewed the site plan and renderings with Council.

1 There being no questions or comments, Mayor Wilson opened the Public Hearing which was then
2 closed with no comment being made. He then called for a motion regarding the Resolution. Council
3 Member Jackson moved to approve the Resolution, second by Council Member Payne and
4 unanimously approved.
5

6 **CITY MANAGER REPORT**

7 Mr. Melton provided updates on the Linda P. Johnson and Roger D. Carter bridges, noting that both
8 projects have been approved and are scheduled to be presented at the next Board of Transportation
9 meeting.
10

11 Regarding the Little Texas Road sidewalk project, Mr. Melton reported that the right-of-way process
12 is underway, with approximately 35 properties impacted. Right-of-way acquisition is anticipated to
13 be completed during the third quarter of this year, with construction expected to be completed in 2027.
14 Bids for the project are anticipated to be opened following completion of the right-of-way process.
15 He also provided an update on the Bethpage Road project, noting that right-of-way acquisition is
16 expected to be completed by 2027, with utility work anticipated to begin in March 2027 and the
17 project targeted for completion in November 2027.
18

19 **CITY COUNCIL COMMENTS**

20 Mayor Pro Tem Dayvault referred to two issues raised earlier by Ms. Mitchell regarding the pavement
21 markings on Dale Earnhardt Boulevard and the need to repave Linda Avenue and requested that both
22 matters be addressed by the Transportation Department. He also reported that the City had received
23 notification from the North Carolina Highway Historical Marker Program that a new historical marker
24 honoring Dale Earnhardt will be placed downtown near the Dale Earnhardt plaza and read the marker
25 text. Mayor Pro Tem Dayvault thanked Coach Smith and Mr. Mills for their presentation and
26 reiterated his support for the organization.
27

28
29 Mayor Wilson asked Coach Smith about the number of members in the organization. Coach Smith
30 reported that there are 107 members and noted that individuals must be at least 30 years old to be
31 inducted.
32

33 Council Member Hatchell recognized the National Night Out event and thanked Police Chief Spry,
34 the Police Department, City staff, and community partners for their work in organizing the event. She
35 noted the importance of the event in building community connections and sharing personal stories.
36

37 Council Member Jackson thanked Parks Director Gary Mills and the Parks and Recreation
38 Department for a successful summer concert series and acknowledged the weather challenges
39 experienced during Saturday evening's event.
40

41 **CLOSED SESSION**

42 Mayor Pro Tem Dayvault made the motion to enter Closed Session pursuant to N.C.G.S. 143-318.11
43 (a) (3) to consult with an attorney in order to preserve the attorney client privilege and G.S. 143.318.11
44 (a) (6) for discussing personnel matters. Second was made by Council Member Payne and
45 unanimously approved.
46

47 Council entered Closed Session at 7:03 PM

1 There being no further business, Mayor Pro Tem Dayvault moved to come out of Closed Session,
2 second by Council Member Berry and unanimously approved. Council resumed open session at 7:57
3 PM

4
5 There was discussion regarding the proposed changes to the public comment policy, including
6 protecting resident addresses and requiring cards to be submitted before the Speakers from the Floor
7 portion begins. Council consensus emphasized the need for a more orderly and structured process.
8

9 **MOTION TO ADJOURN**

10 There being no further business, Mayor Pro Tem Dayvault moved to adjourn, second by Council
11 Member Payne and the motion was unanimously approved.
12

13 The meeting adjourned at 8:09 P.M. on Monday, August 10, 2026.
14
15
16
17

18 _____
19 George Douglas Wilson, Mayor
20 City of Kannapolis
21

22 _____
23 Pam Scaggs, CMC, NCCMC
City Clerk

CITY OF KANNAPOLIS
CITY COUNCIL MEETING MINUTES
August 24, 2026

A meeting of the Kannapolis City Council was held on Monday, August 24, 2026, at 6:00 PM, Kannapolis City Hall located at 401 Laureate Way, Kannapolis, NC.

CITY COUNCIL MEMBERS PRESENT:

Council Members: Doug Wilson, Mayor
Ryan Dayvault, Mayor Pro Tem
Darrell Jackson
Dianne Berry
Isaiah Payne
Jeanne Dixon
Naomi Hatchell

Council Members Absent: None

City Manager: Wilmer Melton

Assistant City Manager: Kristin Jones

City Attorney: Andrew Kelly

Staff Present:	Tony Eury	David Jordon
	Gary Mills	Michael Dodge
	Richard Smith	Greg Summit
	Kirk Beard	Sherry Gordon
	Irene Wong	Michael Rattler
	Gerald Faulkner	Terry Spry
	Annette Privette Keller	Besty Barnette
	Alex Anderson	

Visitors Present:	Phil Goodman	Joe Hatley
	Mark Spitzer	Zach Erwin
	Terri Stowers	Josh Teague
	Harold Hahn	Pam Smith
	Kelvin Thompson	Deidre Tucker
	Marcus Tucker	Philip Belfield
	Cindy Griggs	Alison Paladino
	Violet Elaine Mitchell	Scott Rogers
	Travis Rogers	Elizabeth Rodgers
	Grachy Rodgers	Caroline Rodgers
	Makenzie Rodgers	Kaleb Spry
	Rachel Spry	Meredith Spry
	Delinda Rodgers	

CALL TO ORDER AND WELCOME

Mayor Wilson called the meeting to order and welcomed all in attendance.

1 **PLEDGE OF ALLEGIANCE**

2 Council Member Hatchell led the Pledge of Allegiance.

3
4 **ADOPTION OF AGENDA**

5 Mayor Wilson called for a motion regarding the Agenda. Council Member Dixon moved to approve,
6 second by Council Member Berry and the motion unanimously approved.

7
8 **RECOGNITION AND PROCLAMATIONS**

9 City Council recognized the Rogers family for their long-standing service to Kannapolis City Schools,
10 its students, and the community, including their contribution of the land on which the Kannapolis
11 Middle School campus sits.

12
13 Mayor Pro Tem Dayvault moved to approve a resolution dedicating the Kannapolis Middle School
14 athletic campus in honor of the Rogers family. Council Member Payne seconded the motion, which
15 was unanimously approved.

16
17 Mayor Wilson and City Manager Wilmer Melton welcomed members of the Rogers family to the
18 front of the room and read the resolution. Several family members were recognized for their years of
19 dedication and service to Kannapolis students and the broader community.

20
21 **SPEAKERS FROM THE FLOOR**

22 Terri Stowers addressed Council regarding the upcoming parks bond referendum. He recounted the
23 public engagement process that led to the adoption of the 2024–2034 Parks and Recreation Master
24 Plan, and the Council's unanimous June 22nd vote to place a general obligation bond on the November
25 3rd ballot. He respectfully requested that the Council support city staff in informing and educating
26 the public about the bond referendum to the fullest extent permitted by North Carolina law.

27
28 Zach Erwin addressed proposed amendments to the Public Hearing and Public Comments Policy,
29 specifically the requirement that speaker cards be submitted prior to the start of the public comment
30 period. He cautioned that many attendees are unaware of this requirement and may be disenfranchised
31 and urged Council to either remove the amendment or ensure robust public notification at each
32 meeting. He also renewed a prior request to allow PowerPoint presentations during Speakers from
33 the Floor to improve accessibility for remote viewers and those with hearing impairments.

34
35 Cindy Griggs advocated for continued investment in Parks & Recreation programs, emphasizing their
36 importance to the City's growth, health and wellness, youth sports, and mental health initiatives. She
37 noted that parks and recreational opportunities are among the reasons people choose to move to
38 Kannapolis and stressed the urgent need for additional youth sports programs and facilities. She also
39 called the park dedication resolution meaningful and congratulated the Rodgers family.

40
41 Alison Paladino, President and CEO of the Cabarrus Regional Chamber of Commerce, invited city
42 leadership and local businesses to a free Kannapolis Connections kickoff event on September 2nd at
43 a Kannapolis Cannon Baller game. She announced the launch of a new monthly morning networking
44 group for Kannapolis businesses, open to all local businesses through the end of 2026 at no charge
45 and noted that approximately 100 Kannapolis businesses are currently active chamber members.

Violet Elaine Mitchell, reported that city staff had responded to her concerns about the deteriorated condition of Linda Street, and that work was scheduled to begin the following day. She congratulated the Rogers family and also shared that she had recently met with Governor Josh Stein and personally delivered a handwritten letter outlining issues and concerns on behalf of North Carolina citizens.

CONSENT AGENDA

Mayor Wilson called for a motion regarding the Consent Agenda. Council Member Payne moved to approve, second by Council Member Jackson and the motion carried unanimously.

ORDINANCE - Budget Amendment #27-12 appropriating Program Income for HOME Program (Sherry Gordon, Community Development Program Administrator, Kristin Jones, Assistant City Manager) (Copy included as Agenda Item F.A.)

ORDINANCE - Budget Amendment #27-13 appropriating Program Income for CDBG Program (Sherry Gordon, Community Development Program Administrator) (Copy included as Agenda Item. F.B.)

REPORT - Monthly Wastewater Allocations Report (Alex Anderson, Director of Water Resources, Gerald Faulkner, Assistant Director of Water Resources) (Copy included as Agenda Item F.C.)

APPOINTMENT - Personnel Advisory Committee (PAC) (Heather James, Human Resources Director, Kristin Jones, Assistant City Manager) (Copy included as Agenda Item F.D.)

APPOINTMENT - History Preservation Committee (Wilmer Melton, City Manager) (Copy included as Agenda Item F.E.)

RESOLUTION - Supporting NC General Assembly's Regulation of Marijuana (Wilmer Melton, City Manager) (Copy included as Agenda Item F.F.)

BUSINESS AGENDA

FUNDING RECOMMENDATIONS - FY2026-27 CDBG nonprofit grant (Sherry Gordon, Community Development Program Administrator) (Copy included as Agenda Item G.A.)

Ms. Gordon presented the FY2026-27 Community Development Block Grant (CDBG) public service funding recommendations on behalf of the Community Improvement Commission (CIC). A total of 24 completed applications were received and the CIC recommended funding 18 organizations. Ms. Gordon stated that the CIC elected to fund a greater number of organizations at smaller amounts given the limited availability of funds and stated that all grants are reimbursable but require submission of receipts and documentation prior to reimbursement. She provided detail on the recommendations which are shown on the attached as Appendix A.

Council Member Hatchell expressed appreciation for the CIC's thorough review process, acknowledging the difficulty of selecting among many deserving organizations given constrained funding.

1 Council Member Dixon moved to approve the recommendations as presented and recommended by
2 the CIC, second by Mayor Pro Tem Dayvault and unanimously approved.

3
4 **PUBLIC HEARING - (A-2026-07) 1.025 +/- acres of contiguous property located at 115 Kidd**
5 **Street (Richard Smith, Planning Director) (Copy included as Agenda Item G.B.)**

6 Mr. Smith presented annexation petition A-2026-07 on behalf of the petitioner, Bal Perazim Christian
7 Center II. He noted that the property is currently located within the City's former Extra-Territorial
8 Jurisdiction (ETJ), which is in the process of being dissolved. He directed Council's attention to maps
9 and the annexation survey to illustrate the property's location.

10
11 There being no questions or comments from Council, Mayor Wilson opened and closed the Public
12 Hearing without comment. Council Member Jackson moved to approve the voluntary annexation,
13 second by Mayor Pro Tem Dayvault and unanimously approved.

14
15 **PUBLIC HEARING - (A-2026-08) 0.2452 Acres located on Kidd Street identified as parcel 145**
16 **0680000002. (Richard Smith, Planning Director) (Copy included as Agenda Item G.C.)**

17 Mr. Smith stated that while this annexation is also on Kidd Street, it is unrelated to the previous
18 annexation request and identified the petitioner as Andrew Matthews. He directed Council's attention
19 to maps and the annexation survey to illustrate the property's location.

20
21 There being no questions or comments from Council, Mayor Wilson opened and closed the Public
22 Hearing without comment. Council Member Dixon moved to approve the voluntary annexation,
23 second by Council Member Berry and unanimously approved.

24
25 **POLICY AMENDMENT - Motion to approve the amended Public Hearing and Public**
26 **Comments Policy (Doug Wilson, Mayor) (Copy included as Agenda Item G.D.)**

27 Mayor Wilson provided context on the evolution of the public comment policy, noting that, in
28 response to public concerns, meeting times were previously moved from 4:30 PM to 6:00 PM to
29 encourage greater public attendance. The public comment period was also extended from three to
30 four minutes and is now offered at both monthly meetings. He added that meetings are now available
31 on YouTube.

32
33 Discussion focused on the proposed amendment requiring speaker cards to be submitted before the
34 public comment period begins, as well as ways to clearly communicate the requirement, including
35 signage at the entry table and a verbal announcement by the presiding officer at the start of each
36 meeting following adoption of the agenda. Mayor Pro Tem Dayvault also requested that additional
37 staff be assigned to manage the timer, allowing the City Clerk to focus on taking minutes.

38
39 Council Member Hatchell noted that other municipal bodies require speakers to sign up before the
40 meeting date and offer the opportunity only once. She thanked City Attorney Andrew Kelly for
41 incorporating the proposed changes, including removing the requirement for speakers to provide their
42 address at the podium since it is already included on the speaker card.

43
44 Council Member Hatchell moved to approve the amended policy, second by Council Member Jackson
45 and unanimously approved.

1 **PRESENTATION - Parks and Recreation Youth Athletics (Gary Mills, Parks & Recreation**
2 **Director, Carter Mazingo) (Copy Included as Agenda Item G.E.)**

3 Parks and Recreation Director Gary Mills introduced Athletic Coordinator Carter Mazingo, who
4 provided an overview of the City's youth athletics program. The program began in FY2020 with
5 basketball and has expanded to include soccer, flag football, baseball, and softball. Participation has
6 steadily increased and is nearing capacity.

7
8 The program utilizes multiple facilities, including City parks and school gyms, through a strong
9 partnership with Kannapolis City Schools. It also relies on volunteer coaches and local sponsors,
10 whose support has helped reduce program costs. Since 2020, participants have accumulated more
11 than 215,000 "healthy contact hours." Additional statistics are included in the attached related
12 presentation.

13
14 Mayor Pro Tem Dayvault commended the Parks and Recreation Department for the program's
15 success. He specifically recognized Mayor Wilson for his early and persistent advocacy for a city-run
16 youth sports program when it was not yet a broadly shared priority among the Council.

17
18 Council Member Hatchell inquired whether the participation numbers were leveling off, if there had
19 been any issues with waitlists, and asked about sponsorship promotions and ways to assist the
20 program. Mr. Mazingo responded that they have reached capacity in soccer, baseball, and softball,
21 but have not had to turn anyone away. He explained that they have revamped their efforts to see how
22 the changes can benefit the program, aiming for 20 sponsors per season instead of annually.

23
24 Council Member Berry asked about the identity of the youth athletic coaches and emphasized the
25 importance of recognizing these volunteers for their contributions. Mr. Mazingo replied that coaches
26 are currently recognized with plaques and pictures, but will look at ways to recognize them at future
27 Council meetings.

28
29 **CITY MANAGER REPORT**

30 Nothing to report

31
32 **CITY COUNCIL COMMENTS**

33 Mayor Pro Tem Dayvault recognized the Kannapolis Fire Department for locating an elderly man
34 with dementia who had gone missing over the weekend, crediting the department's efforts as
35 instrumental in safely returning him home.

36
37 **CLOSED SESSION**

38 Mayor Pro Tem Dayvault moved to enter Closed Session pursuant to N.C.G.S. 143-318.11 (a) (3) to
39 consult with an attorney in order to preserve the attorney client privilege and G.S. 143.318.11 (a) (4)
40 for discussing matters relating to the location or expansion of industries or businesses in the area.
41 Second was made by Council Member Dixon and unanimously approved.

42
43 Council entered Closed Session at 6:58 PM.

1 There being no further business, Council Member Dixon moved to come out of Closed Session,
2 second by Mayor Pro Tem Dayvault and unanimously approved. Council resumed open session at
3 8:20 PM
4

5 **MOTION TO ADJOURN**

6 There being no further business, Mayor Pro Tem Dayvault moved to adjourn, second by Council
7 Member Jackson and unanimously approved.
8

9 The meeting adjourned at 8:20 P.M. on Monday, August 24, 2026.
10
11
12
13

14 _____
15 George Douglas Wilson, Mayor
16 City of Kannapolis
17

18 _____
19 Pam Scaggs, CMC, NCCMC
City Clerk



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Kristin Jones, Assistant City Manager
Subject: **PUBLIC HEARING - System Development Fee Analysis**

Recommended Action Requested by City Council

1. Conduct a Public Hearing
2. Motion to approve the recommended SDF Fee's
3. Motion to amend the Fee Schedule

Required Votes to Pass Required Action

Presentation Only. No Action Required

Background

The City of Kannapolis (the "City") retained Willdan Financial Services (Willdan) to conduct a water and sewer System Development Fee (SDF) study. The primary objective of this study was to update the water and sewer SDFs to reflect the cost of providing service to new or expanded development within the City. The analysis calculates a cost-based capacity-related charge for new customers connecting to, or requesting additional capacity in, the City's water and/or sewer utility system.

SDFs are one-time charges that reflect the demands and costs on City facilities created by new development for additional capacity. The purpose of an SDF is to assign, to the practical extent possible, growth-related capital costs to those customers responsible for such additional costs. To the extent that new population growth imposes identifiable additional capital costs to municipal services, equity and prudent financial practice necessitate the assignment of such costs to those customers or system users responsible for the additional costs rather than the existing user base. This practice has been labeled as "growth paying for growth" without placing the full cost burden on existing users. The calculated fees are equitable and represent the proportionate share of capital costs from which new development will directly benefit.

The proposed SDF report has to be published on the city's website 45 days prior to adoption. After publishing requirements are met, a public hearing is required and then a vote on the new SDF rates, which will be included in the City's revised adopted fee schedule. The public hearing is scheduled for the Monday, September 14, 2026 City Council meeting.

Fiscal Implications

A budget amendment is not needed at this time.

Alternate Courses of Action

1. Table action to a future meeting.
2. Take no action.

Attachments

1. Kannapolis Water & Sewer SDF Study Draft Report

2. Kannapolis SDF Presentation
3. Revised Water and Sewer Tap & Connection Fees

City of Kannapolis, NC

Report

Water & Sewer System Development Fee Study



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DRAFT

Executive Summary

Introduction

The City of Kannapolis (the “City”) retained Willdan Financial Services (Willdan) to conduct a water and sewer System Development Fee (SDF) study. The primary objective of this study was to update the water and sewer SDFs to reflect the cost of providing service to new or expanded development within the City. The analysis developed herein calculates a cost-based capacity-related charge for new customers connecting to, or requesting additional capacity in, the City’s water and/or sewer utility system. This Report details the assumptions, methodologies, and calculations upon which the SDFs are developed. As documented in this Report, the calculated fees are equitable and represent the proportionate share of capital costs from which new development will directly benefit.

General

System Development Fees (SDF or SDFs) and other comparable charges are often referred to by various terms including impact fees, capacity fees, system expansion fees, availability fees, connection fees, capacity reservation charges, facility fees, capital connection charges or other such terminology. According to N.C.G.S. 162A-201(9) (2023), an SDF is a one-time charge imposed with respect to new development to fund costs of capital improvements necessitated by the development, to recoup costs of existing facilities which serve the new development, and to recoup costs to purchase capacity in the facilities of other local governments. Such capital costs include the construction of facilities as well as engineering, surveys, land, financing, professional fees, and administrative costs. It has become customary practice for water and sewer utility systems to implement SDFs (or other similar charges) to establish a source of funding for future capital projects. This practice helps to mitigate the need for existing customers to pay for system expansions entirely through increased user rates.

The objective of the SDF study was to calculate a cost-based fee for new customers connecting to, or requesting additional capacity to, the City’s water and sewer utility systems. By establishing a cost-based SDF, the City is attempting to have new customers pay their equitable share of the system, so that new growth pays its way, and doesn’t negatively impact existing customers.

Use of System Development Fee Revenues

Revenue from the SDFs for water and sewer facilities can be used to reimburse the City for prior infrastructure investments and to fund planned future capital projects.

The study is based on the best available information at the time of the report; however, the City cannot predict with certainty how and when development within the City will occur during the planning horizon assumed in this study, the City may need to update and revise the project lists funded by the fees documented in this study. Any substitute projects should be funded within the same system, and the substitute projects must still benefit and have a relationship to new development. The City could identify any changes to the projects funded by the fees when it updates the capital improvement plan (CIP). The fees could also be updated if significant changes to the projects funded by the fees are anticipated.

System Development Fee Summary

Both the water and sewer SDFs are based on the **combined cost** methodology since existing infrastructure has sufficient capacity to serve near-term future development but additional infrastructure is needed to add capacity to serve long-term development. The approaches used to determine the fees are discussed in detail in **Section 1.3** of the report.

The calculated water and sewer SDFs are provided in **Table 1**.

Table 1 – Calculated Water and Sewer SDFs

Description	Meter Factor ^[1]	Water System Development Fee	Sewer System Development Fee	WSACC ^[2]	Total
Meter Size:					
5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020

Notes:

[1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.

[2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

Section 1 – Introduction

1.1 Criteria for System Development Fees

SDFs are one-time charges that reflect the demands and costs on City facilities created by new development for additional capacity. The purpose of an SDF is to assign, to the practical extent possible, growth-related capital costs to those customers responsible for such additional costs. To the extent that new population growth imposes identifiable additional capital costs to municipal services, equity and prudent financial practice necessitate the assignment of such costs to those customers or system users responsible for the additional costs rather than the existing user base. This practice has been labeled as “growth paying for growth” without placing the full cost burden on existing users.

It is important to note that an SDF is different than an assessment or tax. A special assessment is predicated upon an estimated increment in value to the property assessed by virtue of the improvement being constructed in the vicinity of the property. Further, the assessment must be directly and reasonably related to the benefit of which the property receives. SDFs are not related to the value of the improvement to the property but rather to the usage of the facilities required by the property. Until the property is put to purpose (i.e., developed), there is no burden placed upon the servicing facilities and the land use may be entirely unrelated to the value of the assessment basis of the underlying land. With respect to a comparison to taxes, SDFs are distinguishable primarily in the direct relationship between the amount charged and the measurable quantity of public facilities required. In the case of taxation, there is no requirement that the payment be in proportion to the quantity of public services consumed, and funds received by a municipality from taxes can be expended for any legitimate public purpose.

1.2 Legal Considerations

Court Proceedings - General

Courts throughout the United States have found that capacity-related fees associated with new customer connections to utility systems are legal provided they meet a Rational Nexus Test. In accordance with common court rulings, the rational nexus test requires that certain conditions be met to incorporate a valid capacity-related fee. Typically, the court decisions have found that such fees are valid if the following standards are met:

1. The required payment should primarily benefit those who must pay it because they receive a special benefit or service because of improvements made with the proceeds.
2. Proceeds from the required SDF payments are dedicated solely to the capital improvement projects (i.e., proceeds are not placed in a general fund to be spent on ongoing expenses and maintenance, which characterizes a tax, but are set aside in a restricted reserve fund).

3. The revenue generated by the required payment should not exceed the cost of capital improvements to the system.
4. The required payments are imposed uniformly and equitably on all new customers based on their anticipated usage (i.e., a relationship between the fees paid and the benefits received).

In general, most courts have found that it is reasonable for utility systems to take steps to ensure that there are adequate funds for capital projects, and to set aside collected fees in a special account for that purpose. Additionally, new customers are treated alike in that all must pay a fee based on anticipated usage and/or potential demand. Finally, courts have reasoned that it is rational for a utility system to prepare to pay for future capital projects and, while imposing a capacity-related fee may not be the only way to raise such funds, it is a reasonable and legitimate method of accruing funds.

Court Proceedings – North Carolina

In 1990, a precedent was set in the State of North Carolina in a decision by the United States Court of Appeals, Fourth District for the case of *Shell Island Investment v. Town of Wrightsville Beach North Carolina* (900 F.2d 255), regarding the right of the Town of Wrightsville Beach to impose utility system impact fees to fund the expansion of the water and sewer facilities. The Court of Appeals upheld the decision of the United States District Court for the Eastern District of North Carolina that the Town of Wrightsville Beach had “authority to impose impact and tap fees under the Public Enterprise statute and that no specific enabling legislation is necessary.”

Pursuant to the ruling of the District Court and the Court of Appeals, it was concluded that “despite the absence of any express authorization in the Public Enterprise Statute for municipalities to establish or increase utility fees in order to offset future capital improvements to their sewer and water infrastructures, general authority to do so is implicit in relevant state law, limited only by the requirement that any discrimination among users be not based on arbitrary or unreasonable classifications.”

Court Proceedings – Town of Carthage Case

On April 8, 2016, in the case of *Quality Built Homes, Inc. v. Town of Carthage*, (766 S.E. 2d 897) the North Carolina Court of Appeals held that the Town of Carthage possessed authority to charge “impact fees” for water and sewer services. However, on August 16, 2016, the North Carolina Supreme Court reversed the North Carolina Court of Appeals’ decision and held that the Town did not possess authority to charge impact fees for water and sewer services. Although there were many distinct factors influencing this decision, the result generated a significant amount of confusion and concern for governmental utility systems within the State.

House Bill 436

The General Assembly of North Carolina recently enacted House Bill 436, which included a general statute under Section 1, Chapter 162A, Article 8 for the development of “System Development Fees” (herein referred to as “Chapter 162A”) that impacts all governmental entities in North Carolina who currently assess fees for the recovery of capital costs associated with new development and system growth. As defined in Chapter 162A, a system development fee is a charge or assessment for service imposed with respect to new development to fund costs of capital improvements necessitated by and attributable to such new development, to recoup costs of existing facilities which serve such new development, or a combination of those costs. Based on requirements of Chapter 162A, the calculation of the SDFs must employ generally accepted accounting, engineering, and planning methodologies. Defined methodologies include the buy-in method, incremental or marginal cost method, and combined cost method. A brief description of each of these methods as defined in American Water Works Association (AWWA) Manual M1 is provided below.

- **Buy-in Method:** Based on the value of the existing system’s capacity. Under this method, new development “buys” a proportionate share of capacity at the cost (value) of the existing facilities.
- **Incremental/Marginal Cost Method:** Based on the value or cost to expand the existing system’s capacity. This method assigns to new development the incremental cost of future system expansion needed to serve new development.
- **Combined Cost Method:** Based on blended value of both the existing and expanded system capacity. This method uses a combination of both the buy-in and incremental/marginal cost methods.

Chapter 162A allows a governmental unit to utilize any of the three methods described above depending on the availability of information from the governmental unit, i.e., a detailed listing of asset data (buy-in method) or a ten to twenty-year capital improvement plan (incremental method). The combined method includes both existing assets and future capital projects required to serve growth.

Chapter 162A states that an SDF shall be calculated based on a written analysis, which may constitute or be included in a capital plan, that:

1. Is prepared by a financial professional or a licensed professional engineer qualified by experience and training or education to employ generally accepted accounting, engineering, and planning methodologies to calculate system development fees for public water and sewer systems.
2. Documents in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.

- 3.** Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of this Article.
- 4.** Documents and demonstrates the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.
- 5.** Identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of conclusions reached.
- 6.** Calculates a final system development fee per service unit of new development and includes an equivalency or conversion table for use in determining the fees applicable for various categories of demand.
- 7.** Covers a planning horizon of not less than 5 years nor more than 20 years.
- 8.** Is adopted by resolution or ordinance of the local governmental unit in accordance with N.C.G.S. 162A-209.
- 9.** Uses the gallons per day per service unit that the local governmental unit applies to its water or sewer system engineering or planning purposes for water or sewer, as appropriate, in calculating the system development fee.
- 10.** Includes any purchased capacity in, or reserved capacity supplied by, capital improvements or facilities owned by another local government unit as part of the local government unit's overall capacity in capital improvements. (2017-138, S. L; 2018-34, s. 1(a); 2021-76, S. 2; S.L. 2023-55, § 2(b), eff. June 23, 2023.)

Further, Chapter 162A includes certain other minimum requirements as follows:

- 1.** A system development fee shall not exceed that calculated based on the system development fee analysis.
- 2.** Credits must be included no matter which methodology is used. A more detailed discussion on the applicable credits will be included in later sections of this Report.
- 3.** A construction or contribution credit shall be given with respect to new development such that the governmental unit will credit the value of costs in excess of a development's proportionate share of connecting facilities required to be oversized for the use of others outside the development.

As such, this Report is intended to assess SDFs that meet the legal requirements set forth above to develop fees in accordance with Chapter 162A. The development of the calculated SDFs and applicable analysis assumptions are described throughout the Report.

1.3 Calculation Methodologies

There are three basic methodologies that are used to calculate the various components of SDFs. The methodologies are used to determine the best measure of demand created by new development for each component of the SDFs. The methodologies can be classified as looking at the past, present, and future capacities of infrastructure. The three basic methodologies are described below:

Buy-In Methodology

The **buy-in** methodology considers infrastructure that has been built in advance of new development and excess capacity is available to serve new development. Under this methodology, new development reimburses the community for previous capacity investments via the SDF. The funds are then available for future expansion of the system. It is important to note that while this methodology is labeled as buy-in, payment of an SDF does not transfer any ownership of the assets to the customer. Rather, such payment provides access to capacity at a status equal to that of existing customers of the system.

Incremental/Marginal Cost Methodology

The **incremental/marginal cost** methodology considers the recovery of future asset costs, where the general concept is to assign to new development the incremental cost of future system expansion needed to serve the new development. When using this methodology, Chapter 162A requires a minimum 5-year and maximum 20-year capital improvements program (CIP) that identifies the costs associated with new capacity and the timing of the expenditures. Only projects that increase system capacity are included in the analysis, while costs associated with maintenance, repair, or replacement of existing facilities are excluded. It is also important to consider the planned funding sources for the projects identified in the CIP. For example, projects that are funded from grants or developer contributions are excluded from the SDF calculation as these are costs that are not incurred by the utility.

Combined (Hybrid) Cost Methodology

The **combined (hybrid) cost** methodology is used when there is available capacity in the existing system, but there are also future improvements that require additional upgrades or expansion to serve new development. This method assumes that the utility has capacity within the existing system sufficient to serve near-term growth but will require additional capacity to meet future growth needs. Using this method, new development pays an SDF that reflects the value of both (1) a proportionate share of the value of existing infrastructure and (2) the cost of future capital improvements necessary to provide additional capacity. This methodology provides a balanced and equitable allocation of costs by recognizing both past and future investments in system capacity.

Table 2 provided a comparison of the three basic SDF methodologies mentioned above.

Table 2 – Comparison of SDF Methodologies

Description	Buy-In Method	Incremental/Marginal Cost Methodology	Combined (Hybrid) Cost Methodology
Facility/Asset Focus	Existing Facilities	Future Growth-Related Capital Assets	Existing Facilities + Future Capital Assets
Best Used When	System has sufficient excess capacity to serve new connections	System is at or near capacity and requires expansion to serve growth	System has available capacity for near-term growth but requires future expansion
Calculation Basis	Replacement Cost New Less Depreciation (RCNLD) of existing facilities	Cost of planned growth-related capital projects	Weighted blend of buy-in and marginal costs
Cost per Gallon of Capacity	Existing recoverable assets / existing capacity	Future capital costs / future growth-related capacity	Combined existing + future facility costs / combined total capacity (existing + future)
Methodology	New users "buy into" the equity of existing facilities and available capacity	New users fund the expansion required to serve their demand	Allocates costs across both existing and future users

1.4 Existing System Development Fees

The City currently imposes SDFs on new customers requiring water and/or sewer utility service. The current fees and fee structure are based on the size of the water meter, are consistent with common industry SDF setting standards, and were developed and adopted in accordance with Chapter 162A requirements. The existing SDFs are provided in **Table 3**.

Table 3 – Existing Water and Sewer SDFs

Description	Water System Development Fee	Sewer System Development Fee	WSACC ^[1]	Total
Meter Size:				
5/8 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
3/4 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
1.0 Inch	\$ 3,000	\$ 1,625	\$ 4,947	\$ 9,572
1.5 Inch	\$ 6,000	\$ 3,250	\$ 9,893	\$ 19,143
2.0 Inch	\$ 9,600	\$ 5,200	\$ 15,829	\$ 30,629
3.0 Inch	\$ 18,000	\$ 9,750	\$ 31,659	\$ 59,409
4.0 Inch	\$ 30,000	\$ 16,250	\$ 49,467	\$ 95,717
6.0 Inch	\$ 60,000	\$ 32,500	\$ 98,933	\$ 191,433
8.0 Inch	\$ 96,000	\$ 52,000	\$ 158,293	\$ 306,293
10.0 Inch	\$ 138,000	\$ 74,000	\$ 415,520	\$ 627,520

Notes:

[1] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

Section 2 – Recoverable Facility Costs

2.1 Introduction

The analysis developed herein for calculation of the SDFs proposes the **combined cost** methodology as defined previously in **Section 1.3**. The combined cost methodology includes the cost/value of both the existing facilities currently providing service, as well as the planned facilities required to perpetuate or expand service. This methodology assumes that the utility currently has capacity within the existing system sufficient to serve near-term growth but will require additional capacity to meet future growth needs. The information and assumptions that went into the development of the recoverable facility costs resulting in the calculated water and sewer SDFs will be discussed, thoroughly, throughout the remainder of **Section 2**.

2.2 Buy-In System Value

The current value of the City's water and sewer assets were brought forward to present-day dollars using the Handy-Whitman Index of Public Utility Construction Costs for the South Atlantic Region. Using this index attempts to value the City's assets at an amount that represents what it would cost to purchase or construct those assets today. It is important to recognize, however, that these assets are not new and are not being purchased today, but rather have been depreciated over time. Therefore, the accumulated depreciation, which is also adjusted, is subtracted from the present-day value of the assets to determine what is referred to as the Replacement Cost New Less Depreciation (RCNLD) fixed asset value. This results in a replacement cost valuation that reflects the remaining depreciable life of the facilities.

In performing the RCNLD analysis, the City provided a detailed listing of the current water and sewer system facilities (the Asset Listing). The Asset Listing contained the original cost of each asset, along with the date placed in service, and the accumulated depreciation for each asset. The replacement cost of each asset is estimated by using the Handy-Whitman Index of Public Utility Construction Costs for the South Atlantic Region, which is used by regulatory bodies, operating entities, utility systems, service companies, valuation experts, and insurance companies. The Handy-Whitman Index values are widely used to trend earlier valuations and original cost records to estimate replacement costs at prices prevailing at a certain date or at the present. While other construction cost indices are available, the Handy-Whitman Index is used in this analysis because it is specifically tailored to the utility industry.

After the replacement cost is calculated for each individual asset item, the adjusted accumulated depreciation is deducted for each asset item, which results in the RCNLD. A summary of the fixed assets by asset classification is shown in **Table 4**. A full list of the City's fixed assets and applicable recoverable cost allocations can be found in **Appendix A**.

Table 4 – Current Asset Valuation

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,783,798	\$ 42,344,951	\$ (17,197,529)	\$ 25,147,422
CIP Projects	7,508,186	11,577,038	-	11,577,038
Distribution/Collection	74,966,609	266,496,966	(161,666,644)	104,830,322
Infrastructue	18,013,703	27,989,332	(3,191,440)	24,797,892
Land	473,895	473,895	-	473,895
Major Equipment	4,291,831	6,803,904	(5,558,215)	1,245,689
Total Existing Facilities	\$ 123,038,022	\$ 355,686,084	\$ (187,613,827)	\$ 168,072,257
Sewer Asset Category:				
Buildings	\$ 5,639,865	\$ 20,343,894	\$ (18,585,818)	\$ 1,758,076
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	48,261,318	141,382,222	(69,639,707)	71,742,515
Infrastructue	15,653,739	23,907,067	(2,485,843)	21,421,224
Land	365,171	365,171	-	365,171
Major Equipment	3,523,173	5,603,989	(4,404,632)	1,199,357
Total Existing Facilities	\$ 77,659,553	\$ 198,469,114	\$ (95,115,999)	\$ 103,353,115
Total Assets	\$ 200,697,574	\$ 554,155,198	\$ (282,729,826)	\$ 271,425,372

Since localized distribution and collection facilities are oftentimes contributed by developers or funded by other sources (i.e., assessments and direct customer payments), these facilities are not included for recovery through the SDFs. Also, any assets that were funded through grants are also excluded from the SDF calculation as these are costs that were not incurred by the utility. Additionally, a cost limit or threshold is set as a condition of inclusion of the asset items in the SDF calculation. Based on discussions with City staff, for the purposes of this analysis, the cost threshold is set at \$100,000. The cost threshold assumes that any asset item that costs less than the limit amount is not a major facility that provides a system-wide benefit and is therefore removed from the SDF calculation. A final adjustment is made to exclude certain asset items that were identified as projects that only restored existing capacity rather than provided system upgrades or additional system capacity (e.g., equipment and vehicles). The existing recoverable water and sewer capital costs included in the analysis are summarized in **Table 5**.

Table 5 – Recoverable Existing Facilities

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,675,683	\$ 41,736,724	\$ (16,685,172)	\$ 25,051,552
CIP Projects	7,413,806	11,459,685	-	11,459,685
Distribution/Collection	62,964,036	225,649,027	(139,956,738)	85,692,289
Infrastructue	9,510,376	15,801,015	(1,630,979)	14,170,036
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 97,563,900	\$ 294,646,451	\$ (158,272,889)	\$ 136,373,562
Sewer Asset Category:				
Buildings	\$ 5,601,007	\$ 19,852,770	\$ (18,098,443)	\$ 1,754,327
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	33,482,300	98,082,008	(50,668,455)	47,413,553
Infrastructue	7,149,249	11,710,351	(927,882)	10,782,469
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 50,448,843	\$ 136,511,902	\$ (69,694,780)	\$ 66,817,122
Total Recoverable Assets	\$ 148,012,742	\$ 431,158,352	\$ (227,967,668)	\$ 203,190,684

2.3 Incremental/Marginal Cost System Value

The City has developed a Capital Improvement Program (CIP), based on a recently conducted master planning study, that provides a listing of individual projects and anticipated construction costs from fiscal years (FY) 2025/26 through FY 2035/2036. Like the rationale for excluding certain existing assets from recovery through SDFs, the CIP project costs included for capital recovery in the analysis consist of only those projects associated with system-wide upgrades or expansions. As such, projects related to general maintenance (i.e., renewal and replacement of existing facilities) or localized facilities that benefit only certain customers are excluded from recovery through the SDFs. The full CIP included in the SDF analysis and the resulting identification of assumed growth-related projects (i.e., project costs recoverable from SDFs) are provided in **Appendix B**. The projected growth-related projects and capital costs included in the analysis are summarized in **Table 6**.

Table 6 – Summary of the CIP & Recoverable Capital Costs

Description	Water Capital	Sewer Capital	Total
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717

2.4 Recoverable Facility Costs

Since the analysis developed herein for calculation of the SDFs is based upon the **combined cost** methodology. Both existing facilities that are currently providing service (**Section 2.2**), as well as the planned facilities required to perpetuate or expand service (**Section 2.3**) are included in the total recoverable facility costs. The combined system costs included for recovery are summarized in **Table 7**.

Table 7 – Combined Recoverable Facility Costs

Description	Water System	Sewer System	Total
Existing Recoverable Assets			
Buildings	\$ 25,051,552	\$ 1,754,327	\$ 26,805,879
CIP Projects	11,459,685	6,866,773	18,326,458
Distribution/Collection	85,692,289	47,413,553	133,105,842
Infrastructure	14,170,036	10,782,469	24,952,505
Land	-	-	-
Major Equipment	-	-	-
Total Recoverable Existing Facilities	\$ 136,373,562	\$ 66,817,122	\$ 203,190,684
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401

2.5 SDF Credits Applied

It is customary practice for utilities to fund major capital improvements and expansion projects with debt (e.g., bond issues). Typically, debt service payments associated with bond issues are recovered through the monthly user rates and charges applied to all system customers, as well as from other available revenue sources (including SDFs). To mitigate the potential of new customers paying for capital facilities twice (i.e., paying an SDF for facilities that may have been debt funded, and then paying for debt service in their monthly user rates), the SDF analysis developed herein applies a debt service credit against the value of the existing facilities to account for assets with outstanding debt liabilities. The credit on the existing facilities is equal to the outstanding principal remaining on all utility-related debt. The debt service credit amount for the existing facilities is allocated between water and sewer based on information provided by staff related to the capital projects that were funded from proceeds of each individual debt instrument.

In addition to the credit on the existing facilities, the analysis developed herein applies a credit as required by statute to the planned future facilities provided in the CIP. The credit for the future facilities is no less than 25% of the recoverable CIP, which meets the requirements of Chapter 162A. The total debt service and CIP credit amounts are provided in **Table 8**.

Table 8 – SDF Credits Applied to Recoverable Facility Costs

Description	Water System	Sewer System	Total
Debt Service Credit			
Outstanding Principal on Existing Debt	\$ 36,880,966	\$ 23,809,764	\$ 60,690,730
Capital Improvement Program			
Growth-Related 25.00% CIP Adjustment	18,285,322	10,578,607	28,863,929
Total Credits Applied	\$ 55,166,288	\$ 34,388,371	\$ 89,554,659

2.6 Net Recoverable Facilities

Once the recoverable facility costs are developed (**Section 2.4**) along with the SDF credits to be applied to the total recoverable facility costs (**Section 2.5**), the net recoverable facility costs to be recovered from the SDFs can be determined. A summary of the combined recoverable capital facilities as adjusted for the applicable credits is provided in **Table 9**.

Table 9 – Net Recoverable Facility Costs

Description	Water System	Sewer System	Total
Existing Recoverable Assets			
Buildings	\$ 25,051,552	\$ 1,754,327	\$ 26,805,879
CIP Projects	11,459,685	6,866,773	18,326,458
Distribution/Collection	85,692,289	47,413,553	133,105,842
Infrastructure	14,170,036	10,782,469	24,952,505
Land	-	-	-
Major Equipment	-	-	-
Total Recoverable Existing Facilities	\$ 136,373,562	\$ 66,817,122	\$ 203,190,684
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401
Less Credits:			
Outstanding Principal on Existing Debt	\$ (36,880,966)	\$ (23,809,764)	\$ (60,690,730)
Growth-Related 25.00% CIP Adjustment	(18,285,322)	(10,578,607)	(28,863,929)
Total Credits Applied	\$ (55,166,288)	\$ (34,388,371)	\$ (89,554,659)
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179	\$ 229,091,742

Section 3 – System Capacities

3.1 Introduction

As previously addressed, the purpose of the SDF is to have new customers pay for their proportionate share of system capacity. This concept implies that the fee is based on a unit cost of capacity. To apply a fee based on the unit cost of capacity, it is necessary to identify the capacities of the facilities for which cost recovery is assigned. As such, the methodology applied herein relies upon identifying the existing and anticipated water and sewer facilities capacities. In developing the amount of capacity that each utility system can provide, the analysis relies on information provided by the City, as well as assumptions based on industry standards.

The City's water and sewer systems consist of numerous assets such as treatment facilities, source of supply, pumping, and transmission and conveyance. Each of these assets typically have a physical or regulatory permitted capacity. While treatment, supply, and disposal capacities are typically readily available and generally accepted to be the physical or regulatory permitted capacity of such assets, transmission system capacities are more difficult to quantify.

As such, it is common to define the capacity for all components (including transmission or conveyance facilities) based on the system's total treatment capacity, as was the approach used herein to determine the maximum capacities of the City's utility systems. The rationale behind this approach is that even if the transmission or conveyance capacities are larger than the maximum treatment capacity, the maximum capacity the system can offer to future connections is based on the total maximum treatment capacity.

3.2 Water System Capacity

The City currently owns and operates a water treatment plant with a maximum day design capacity of 15.000 MGD (million gallons per day). The City also has inter-local water purchase contracts with Salisbury, Albemarle (2.000 MGD) and Concord, although the Salisbury and Concord connections are for emergencies only and therefore have been excluded from available capacity in the fee calculation. Between the treatment plant and the purchase contracts, the City has a total water capacity of 17.000 MGD.

The City is also anticipating adding additional water capacity through planned capital projects as identified in the City's CIP. The City is anticipating adding a total of 4.500 MGD in additional capacity through the Water Treatment Plant Rehab, Phase 2 project (1.000 MGD) and the Summers Walk (0.500 MGD), Davidson Road (1.000 MGD), and Salisbury (2.000 MGD) interconnect projects. Bringing the total max treatment capacity to 21.50 MGD.

An adjustment is then made to the total treatment capacity (21.500 MGD) based on the assumed amount of unaccounted-for water (i.e., system flushing and backwashing, testing, line loss, etc.). The unaccounted-for water reduces the amount of capacity available to existing and future customers. The analysis performed herein assumes an average line-loss factor of 15.0% to adjust for the unaccounted-for water flows at the treatment plant. This adjustment results in an assumed max daily treatment plant capacity of 18.275 MGD (21.500 MGD x 85% capacity adjustment = 18.275 MGD of capacity).

3.3 Sewer System Capacity

The City currently has no wastewater treatment facilities. Rather, as a participating member and wholesale customer, the City discharges its sewer to the Water and Sewer Authority of Cabarrus County (WSACC) for treatment and disposal. As such, in developing the sewer SDFs calculated herein, the analysis only includes the recovery of the City's transmission facilities. WSACC applies its own SDFs to new customers for the recovery of wastewater treatment capacity costs.

Based on information provided by staff, the City currently has an available treatment capacity of 5.981 MGD from WSACC with another 0.950 MGD of capacity anticipated to become available to the City through WSACC's 2027 wastewater treatment plant expansion. The City is also anticipating adding a total of 1.117 MGD in additional capacity through the SRU Kannapolis Crossing LS Improvements project (0.317 MGD) and the Landis-Kannapolis WWTP project (0.800 MGD) identified in the City's CIP. Bringing the total system capacity to 8.048 MGD. The total available and anticipated treatment capacity available is adjusted for an infiltration and inflow (I&I) factor of 6.40%. As with the line loss in the water system, the sewer system is impacted by inflow and infiltration (I&I) into the sewer collection system. In essence, the impact of I&I reduces the level of capacity that is available for use by existing and future system customers. The resulting transmission capacity amount is 7.533 MGD (8.048 MGD x 93.60% capacity adjustment = 7.533 MGD of capacity).

Section 4 – Level of Service per ERU

4.1 Introduction

The analysis developed herein relies upon determining a standard Level of Service (LOS), which is typically defined as an Equivalent Residential Unit (ERU). The standard LOS per ERU forms the basis for applying the unit cost per gallon of capacity, further detailed in **Section 5**, to determine the applicable SDF per ERU. Clearly defined water and sewer LOS standards identify the amount of system capacity required to serve each ERU, which is essential for the determination of SDFs. This ensures that new development pays its proportionate share and promotes transparency in how the SDFs are derived.

4.2 Water System LOS per ERU

For purposes of applying the LOS, an ERU is representative of a single-family residential dwelling unit receiving water service from a 5/8-inch x 3/4-inch metered connection and discharging normal domestic-strength wastewater through a comparably sized sewer connection. Based on industry standards for the development and application of capacity-related charges, a typical residential water connection is widely assumed to require average service availability in the range of 350 to 450 gallons per day (gpd) of system capacity. The State of North Carolina (the State) has established flow standards for purposes of planning and engineering design. In accordance with daily water flow capacity design standards defined in the North Carolina Administrative Codes (15A NCAC 18C .0409), the LOS requirement for a residential connection is 400 gpd. In accordance with the City's existing planning methodology, it is assumed that one ERU requires a standard LOS of 400 gpd of water system capacity.

4.3 Sewer System LOS Development per ERU

Like the water system, the SDFs for sewer service are to be applied on an ERU basis such that one ERU is equal to the estimated capacity requirements for a typical single family residential customer receiving water service from a 5/8-inch x 3/4-inch metered connection and discharging normal domestic-strength wastewater through a comparably sized sewer connection. In accordance with the City's existing planning methodology, it is assumed that one ERU requires a standard LOS of 263 gpd of sewer system capacity. The City's LOS is consistent with wastewater flow design standards adopted by the State and defined by the North Carolina Administrative Codes (15A NCAC 02T .0114). While the LOS requirement provided in the State Codes is based on 120 gallons of capacity per day per bedroom for a residential home, the City is using a LOS of 75 gallons of capacity per day per bedroom for a residential home. Assuming an average of 3.5 bedrooms per new home constructed, applying the City's flow standard results in one ERU requiring a standard LOS of 263 gpd (75 gpd per bedroom x 3.5 bedrooms = 263 gpd per ERU) of sewer system capacity.

Since the City is currently experiencing an increase in bedrooms per home being built, it is assumed that the average household will have 3.5 bedrooms. Based on discussions with City staff, an average household of 3.5 bedrooms better reflects the mixture of residential construction currently being seen by the City and they expect the building of larger homes to continue in the future.

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Section 5 – System Development Fee Results

5.1 Development of SDFs

The methodology utilized herein for developing the water and wastewater SDFs relies upon the cost of existing and planned major system facilities as well as the existing and expanded system capacities to calculate an estimated cost per unit (gallon) of capacity. Based on this methodology, it is estimated that the water facility costs \$8.45 per gallon of water capacity. Additionally, it is estimated that the sewer facility costs \$9.92 per gallon of sewer capacity. The calculated costs per gallon of capacity are summarized in **Table 10**.

Table 10 – Cost per Gallon of Capacity

Description	Water System	Sewer System
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179
Estimated Capacity (MGD)	18.275	7.533
Cost per Gallon of Capacity	\$ 8.45	\$ 9.92

Applying the standard LOS amounts, previously identified in **Section 4** of the Report, to the estimated unit costs per gallon of capacity results in the calculated water and sewer SDFs of \$3,300 and \$2,600, respectively, as rounded down to the nearest hundred, for a typical single-family residential connection (i.e., per ERU). A summary of how the water and sewer SDFs were calculated is provided in **Table 11**. The detailed development of the water and sewer SDFs are provided in **Appendices C** and **D**, respectively.

Table 11 – SDF Calculation per ERU

Description	Water System	Sewer System
Cost per Gallon of Capacity	\$ 8.45	\$ 9.92
Level of Service per ERU (gpd)	400	263
Calculated SDF per ERU	\$ 3,378	\$ 2,604
Less Rounding Adjustment	(78)	(4)
Calculated SDF per ERU (Rounded)	\$ 3,300	\$ 2,600

A summary of the existing and calculated SDFs for a new residential connection is provided in **Table 12**.

Table 12 – Comparison of Fees per ERU

Description	Existing Fee	Calculated Fee	Difference
System Development Fees			
Water System	\$ 1,350	\$ 3,300	\$ 1,950
Sewer System	\$ 1,000	\$ 2,600	\$ 1,600
Total	\$ 2,350	\$ 5,900	\$ 3,550

5.2 Application of SDFs

For developing SDFs, the standard daily flow number is established as one ERU. An ERU provides a standard unit of measure such that fees for connections with larger than average demand requirements can be calculated on an equivalency basis. As previously addressed, one ERU is equal to the flow capacity for a single-family dwelling unit with a standard 5/8-inch x 3/4-inch water meter. New connections with larger water meters have the potential of placing more demand on the system (i.e., require more capacity) and are assessed ERU factors accordingly. The City's existing methodology for increasing the SDFs for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) pursuant to the size of the water meter. Utilizing the AWWA demand criteria, the applicable ERU factors for larger water meters are based on the incremental increase in potential demand as compared to the standard meter size. Since sewer flow is customarily a direct function of water flow, applying the water and sewer SDFs based upon the size of the water meter is equitable, administratively efficient, and consistent with industry standards. Maintaining this same structural methodology, the calculated water and sewer SDFs for the various water meter sizes are developed in **Appendix E** and provided in **Table 13**.

Table 13 – Meter-Based System Development Fees

Description	Meter Factor ^[1]	Water System Development Fee	Sewer System Development Fee	WSACC ^[2]	Total
Meter Size:					
5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020

Notes:

[1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.

[2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

In situations where the application of the meter-based fees will result in the collection of fees significantly different than the potential demand requirement of a new customer requesting service, a special calculation methodology may be applied by the City's Public Utilities Department. For such situations, it is important for the utility to have the flexibility to utilize an ERU methodology for individual accounts based on specific capacity requirements. This alternative methodology is to apply the calculated unit costs per gallon of capacity as provided in **Appendix E** times the capacity requirement for the customer. This type of situation will be uncommon and will typically only involve larger commercial and industrial connections. It is anticipated that, in such situations, the City will require certified engineering documentation defining the capacity utilization needs for the new customer.

Section 6 – Implementation & Review

6.1 Adoption and Periodic Review of SDF Analysis

Upon completion of the SDF analysis, Chapter 162A sets forth certain criteria regarding the adoption and periodic review of SDFs. These include the following:

1. For not less than 45 days prior to consideration for adoption of the SDF analysis, the governmental unit shall post the analysis on its website and solicit and furnish a means to submit written comments which shall be considered by the preparer for potential modifications or revisions to the analysis.
2. Following expiration of the 45-day posting period, the governing body shall conduct a public hearing prior to considering adopting the analysis with any modifications.
3. The governmental unit shall publish the SDFs in its annual budget, rate plan or ordinance. Further, the SDF analysis should be updated at least every five years.

Section 7 – Conclusions & Recommendations

7.1 General Assumptions & Considerations

In the preparation of this Report, certain information has been used and relied upon that was provided to Willdan by other entities. Such information includes, but is not limited to, audited financial statements, annual operating budgets, capital information, asset listings, cost data, system capacities, and other information provided during the study. While the sources and applicable information are believed to be reliable, no independent verification of the information has been made, and no assurances are offered with respect to the accuracy of the applicable information. To the extent that the information used to develop the assumptions applied in the Report differs from the actual results, the analyses developed herein could be impacted accordingly.

7.2 Conclusions

This study has found a need for the City to establish a mechanism for recovering the capital costs associated with system growth and expansion. Based on the reviews, analyses and assumptions provided herein, it is concluded that:

1. The application of capital recovery fees for new system connections is common for public utility systems in North Carolina. As growth continues to impact the region, and as state and federal funding programs are reduced or eliminated, it is prudent management practice to adopt mechanisms to recover capital costs incurred by the utility for making service available to future customers.
2. Through Chapter 162A, the North Carolina legislature has found that it is prudent to require new customers to bear a portion of the costs of current capacity and future expansions their presence will demand. It should be noted that Willdan is not attempting to issue a legal opinion regarding Chapter 162A or any court proceedings leading to the enactment of Chapter 162A. The summary discussion of the bill and any prior court rulings is intended for informational purposes only. Any questions regarding the legal consideration provided herein should be directed to the City's legal counsel.
3. The SDFs developed herein are equitable and provide for reasonable recovery of the capital costs associated with providing service to new customers.
4. The SDFs developed herein are calculated in accordance with the requirements of Chapter 162A and utilize methodologies that are consistent with industry standards.

5. The calculated SDFs are based on a listing of existing system assets as provided by the City, as well as the capital improvement plan adopted by the City. After considering the calculation options addressed herein, the City selected the **combined cost** methodology as explained in **Section 1.3** of this Report. The selected methodology is common for public utility systems in North Carolina and is consistent with common industry standards.
6. The water and sewer LOS standards proposed herein for establishing an ERU basis are based on the City's existing planning methodology and are consistent with common industry practice.
7. The City currently imposes service line installation charges and other related operational charges for new customer connections. Since these other charges are intended to recover operating costs for providing incident-specific services, the SDFs developed herein will have no impact on the level or application methodology for these other connection-related charges.

7.3 Recommendations

Based on the reviews, analyses and assumptions discussed herein, as well as the resulting conclusions provided above, it is respectfully recommended that the City:

- Adopt the calculated SDFs and application methodology as developed in this Report, or other such SDF amounts as determined appropriate by the City but not to exceed the fee amounts calculated herein.
- Enact the new SDFs to become effective on July 1, 2026, or other such date as determined appropriate by the City Council; and
- Readdress the SDF study at least within the next 5 years, or at such times as future capital budgets are developed and additional capital costs are incurred that may result in material adjustments to the SDF as adopted.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendices

A	Detailed Asset Data & Existing Recoverable Costs
B	Capital Improvement Plan & Growth-Related Capital Costs
C	Water System Development Fee Calculation
D	Sewer System Development Fee Calculation
E	Summary of Calculated System Development Fees

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix A

Detailed Asset Data & Existing
Recoverable Costs



WATER & SEWER SYSTEM

EXISTING CAPITAL COSTS RECOVERABLE FROM CAPACITY FEES

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
WATER ASSETS					
Total Assets by Category:					
1	Buildings	\$ 17,783,798	\$ 42,344,951	\$ (17,197,529)	\$ 25,147,422
2	CIP Projects	7,508,186	11,577,038	0	11,577,038
3	Distribution/Collection	74,966,609	266,496,966	(161,666,644)	104,830,322
4	Infrastructure	18,013,703	27,989,332	(3,191,440)	24,797,892
5	Land	473,895	473,895	0	473,895
6	Major Equipment	4,291,831	6,803,904	(5,558,215)	1,245,689
7	Total	\$ 123,038,022	\$ 355,686,084	\$ (187,613,827)	\$ 168,072,257
Adjusted Assets - Recoverable:					
8	Buildings	\$ 17,675,683	\$ 41,736,724	\$ (16,685,172)	\$ 25,051,552
9	CIP Projects	7,413,806	11,459,685	0	11,459,685
10	Distribution/Collection	62,964,036	225,649,027	(139,956,738)	85,692,289
11	Infrastructure	9,510,376	15,801,015	(1,630,979)	14,170,036
12	Land	0	0	0	0
13	Major Equipment	0	0	0	0
14	Total	\$ 97,563,900	\$ 294,646,451	\$ (158,272,889)	\$ 136,373,562
SEWER ASSETS					
Total Assets by Category:					
15	Buildings	\$ 5,639,865	\$ 20,343,894	\$ (18,585,818)	\$ 1,758,076
16	CIP Projects	4,216,287	6,866,773	0	6,866,773
17	Distribution/Collection	48,261,318	141,382,222	(69,639,707)	71,742,515
18	Infrastructure	15,653,739	23,907,067	(2,485,843)	21,421,224
19	Land	365,171	365,171	0	365,171
20	Major Equipment	3,523,173	5,603,989	(4,404,632)	1,199,357
21	Total	\$ 77,659,553	\$ 198,469,114	\$ (95,115,999)	\$ 103,353,115
Adjusted Assets - Recoverable:					
22	Buildings	\$ 5,601,007	\$ 19,852,770	\$ (18,098,443)	\$ 1,754,327
23	CIP Projects	4,216,287	6,866,773	0	6,866,773
24	Distribution/Collection	33,482,300	98,082,008	(50,668,455)	47,413,553
25	Infrastructure	7,149,249	11,710,351	(927,882)	10,782,469
26	Land	0	0	0	0
27	Major Equipment	0	0	0	0
28	Total	\$ 50,448,843	\$ 136,511,902	\$ (69,694,780)	\$ 66,817,122
COMBINED ASSETS					
Total Assets by Category:					
29	Buildings	\$ 23,423,663	\$ 62,688,844	\$ (35,783,346)	\$ 26,905,498
30	CIP Projects	11,724,473	18,443,811	0	18,443,811
31	Distribution/Collection	123,227,927	407,879,187	(231,306,351)	176,572,836
32	Infrastructure	33,667,442	51,896,398	(5,677,283)	46,219,115
33	Land	839,066	839,066	0	839,066
34	Major Equipment	7,815,004	12,407,892	(9,962,846)	2,445,046
35	Total	\$ 200,697,574	\$ 554,155,198	\$ (282,729,826)	\$ 271,425,372

WATER & SEWER SYSTEM

EXISTING CAPITAL COSTS RECOVERABLE FROM CAPACITY FEES

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Adjusted Assets - Recoverable:					
36	Buildings	\$ 23,276,689	\$ 61,589,493	\$ (34,783,614)	\$ 26,805,879
37	CIP Projects	11,630,093	18,326,458	0	18,326,458
38	Distribution/Collection	96,446,336	323,731,035	(190,625,193)	133,105,842
39	Infrastructure	16,659,625	27,511,366	(2,558,861)	24,952,505
40	Land	0	0	0	0
41	Major Equipment	0	0	0	0
42	Total	\$ 148,012,742	\$ 431,158,352	\$ (227,967,668)	\$ 203,190,684
System Allocation - Water (\$):					
43	Buildings			\$ 25,051,552	
44	CIP Projects			11,459,685	
45	Distribution/Collection			85,692,289	
46	Infrastructure			14,170,036	
47	Land			0	
48	Major Equipment			0	
49	Total			\$ 136,373,562	
System Allocation - Wastewater (\$):					
50	Buildings			\$ 1,754,327	
51	CIP Projects			6,866,773	
52	Distribution/Collection			47,413,553	
53	Infrastructure			10,782,469	
54	Land			0	
55	Major Equipment			0	
56	Total			\$ 66,817,122	
57	Grand Total Recoverable Assets			\$ 203,190,684	
COMPARISON TO TOTAL					
58	Total Utility Assets			\$ 271,425,372	
59	Combined Recoverable Assets			\$ 203,190,684	
Difference (Assets Excluded From Recovery):					
60	Excluded From Recovery (\$)			\$ 68,234,688	
61	Excluded From Recovery (%)			25.14%	
DEBT SERVICE CREDIT					
62	Outstanding Debt Principal			\$ 60,690,730	
Allocation Percentage:					
63	Water			60.77%	
64	Wastewater			39.23%	
Allocated Debt Service Credit:					
65	Water			\$ 36,880,966	
66	Wastewater			23,809,764	
67	Total			\$ 60,690,730	

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

APPENDIX A

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation	Water	Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted Dep	Include? Yes/No	Original Cost (\$ OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted Dep
\$ 100,000																		Cost Limit						
Buildings	Buildings	1955 ADDITIONS	1/1/1955	\$ 5,139	\$ 5,139	\$ 0	50.00%	50.00%	1955	Treatment Structures & Improvements	21.095	\$ 5,139	\$ 5,139	0.00%	\$ 0	\$ 108,407	\$ 0	Yes	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0
	Buildings	MAINTENANCE BUILDING	1/1/1973	11,488	11,488	0	50.00%	50.00%	1973	Treatment Structures & Improvements	8.860	11,488	11,488	0.00%	0	101,786	0	Yes	\$ 0	0	0.00%	0	0	0
	Buildings	1965 ADDITIONS	1/1/1965	30,885	30,885	0	50.00%	50.00%	1965	Treatment Structures & Improvements	15.544	30,885	30,885	0.00%	0	480,079	0	Yes	0	0	0.00%	0	0	0
	Buildings	1966 ADDITIONS	1/1/1966	12,565	12,565	0	50.00%	50.00%	1966	Treatment Structures & Improvements	15.077	12,565	12,565	0.00%	0	186,688	0	Yes	0	0	0.00%	0	0	0
	Buildings	1972 ADDITIONS	1/1/1972	10,030	10,030	0	50.00%	50.00%	1972	Treatment Structures & Improvements	9.527	10,030	10,030	0.00%	0	95,527	0	Yes	0	0	0.00%	0	0	0
	Buildings	PUBLIC WORKS OPERATION CENTER BUILDING	7/1/2001	2,300,000	1,104,000	1,196,000	50.00%	50.00%	2001	Treatment Structures & Improvements	2.777	2,300,000	1,104,000	52.00%	1,196,000	6,388,088	3,321,806	Yes	2,300,000	1,104,000	52.00%	1,196,000	6,388,088	3,321,806
	Buildings	STORAGE AREA PIPE & FITTINGS	6/30/2013	139,495	33,417	106,078	50.00%	50.00%	2013	Treatment Structures & Improvements	1.761	139,495	33,417	76.04%	106,078	245,711	186,848	Yes	139,495	33,417	76.04%	106,078	245,711	186,848
	Buildings	BULK STORAGE	8/5/2019	520,710	0	520,710	100.00%	0.00%	2019	Treatment Structures & Improvements	1.479	520,710	0	100.00%	520,710	770,199	770,199	Yes	520,710	0	100.00%	520,710	770,199	770,199
	Buildings	Small Capital 20x40x10	7/1/2001	7,286	7,286	0	50.00%	50.00%	2001	Treatment Structures & Improvements	1.624	7,286	7,286	0.00%	0	71,937	7,286	Yes	7,286	0	0.00%	0	7,286	7,286
	Buildings	WATER TREATMENT PLANT	6/30/2005	15,441,968	6,202,524	9,239,444	100.00%	0.00%	2005	Treatment Structures & Improvements	2.363	15,441,968	6,202,524	59.83%	9,239,444	36,484,223	21,829,727	Yes	15,441,968	6,202,524	59.83%	9,239,444	36,484,223	21,829,727
	Buildings	WATER TREATMENT PLANT	6/30/2005	493,257	198,125	295,132	100.00%	0.00%	2005	Treatment Structures & Improvements	2.363	493,257	198,125	59.83%	295,132	1,165,402	697,299	Yes	493,257	198,125	59.83%	295,132	1,165,402	697,299
	Buildings	ROD Replacement (WTP)	11/26/2014	69,257	14,775	54,483	100.00%	0.00%	2014	Treatment Structures & Improvements	1.691	69,257	14,775	78.67%	54,483	171,103	92,121	Yes	0	0	0.00%	0	16,535,870	16,535,870
	Buildings	WSAC BUILDING	7/1/1990	4,381,259	4,381,259	0	0.00%	100.00%	1990	Treatment Structures & Improvements	3.774	4,381,259	4,381,259	0.00%	0	16,535,870	0	Yes	4,381,259	4,381,259	0.00%	0	16,535,870	16,535,870
	Subtotal Buildings			\$ 23,423,663	\$ 12,004,436	\$ 11,419,226					\$ 23,423,663	\$ 12,004,436		\$ 11,419,226	\$ 62,680,844	\$ 26,905,498		\$ 23,423,663	\$ 11,919,335		\$ 11,357,364	\$ 61,589,493	\$ 26,905,498	
CIP Projects	CIP Projects	CIP HighBridge Waterline Works Contract 1	6/30/2023	\$ 94,380	\$ 0	\$ 94,380	100.00%	0.00%	2023	Collecting & Impounding Res.	1.243	\$ 94,380	0	100.00%	\$ 94,380	\$ 177,353	\$ 177,353	Yes	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0
	CIP Projects	CIP HighBridge Elevated Tank Contract 2	6/30/2023	1,919,136	0	1,919,136	100.00%	0.00%	2023	Collecting & Impounding Res.	1.243	1,919,136	0	100.00%	1,919,136	2,386,275	2,386,275	Yes	1,919,136	0	100.00%	1,919,136	2,386,275	2,386,275
	CIP Projects	CIP HighBridge Elevated Tank Contract 3	6/30/2023	1,919,136	0	1,919,136	100.00%	0.00%	2023	Collecting & Impounding Res.	1.243	1,919,136	0	100.00%	1,919,136	2,386,275	2,386,275	Yes	1,919,136	0	100.00%	1,919,136	2,386,275	2,386,275
	CIP Projects	PWOC- Renovations	10/16/2024	110,199	0	110,199	50.00%	50.00%	2024	Collecting & Impounding Res.	1.126	110,199	0	100.00%	110,199	124,128	124,128	Yes	110,199	0	100.00%	110,199	124,128	124,128
	CIP Projects	HIGH BRIDGE	2/22/2019	7,391,352	0	7,391,352	100.00%	0.00%	2019	Collecting & Impounding Res.	1.650	7,391,352	0	100.00%	7,391,352	12,197,252	12,197,252	Yes	7,391,352	0	100.00%	7,391,352	12,197,252	12,197,252
	CIP Projects	SPILLWAY CHUTE	8/27/2019	399,301	0	399,301	100.00%	0.00%	2019	Meters	2.151	399,301	0	100.00%	399,301	1,004,112	1,004,112	Yes	399,301	0	100.00%	399,301	1,004,112	1,004,112
	CIP Projects	DOWNTOWN SEWER OUTFALL	1/1/2020	343,697	0	343,697	100.00%	0.00%	2020	Collecting & Impounding Res.	1.634	343,697	0	100.00%	343,697	554,618	554,618	Yes	343,697	0	100.00%	343,697	554,618	554,618
	CIP Projects	CLEAR	6/30/2021	1,344,593	0	1,344,593	100.00%	0.00%	2021	Collecting & Impounding Res.	1.419	1,344,593	0	100.00%	1,344,593	1,908,608	1,908,608	Yes	1,344,593	0	100.00%	1,344,593	1,908,608	1,908,608
	Subtotal CIP Projects			\$ 11,724,473	\$ 0	\$ 11,724,473					\$ 11,724,473	\$ 0		\$ 11,724,473	\$ 16,443,831	\$ 16,443,831		\$ 11,724,473	\$ 0		\$ 16,443,831	\$ 16,443,831		
Distribution/Collection	Distribution/Collection	Highway 29 Sewer Rehab	6/30/2023	\$ 230,864	\$ 12,024	\$ 218,840	0.00%	100.00%	2023	Mains-Average All Types	1.114	\$ 230,864	\$ 12,024	94.79%	\$ 218,840	\$ 257,255	\$ 243,856	Yes	\$ 230,864	\$ 12,024	94.79%	\$ 218,840	\$ 257,255	\$ 243,856
	Distribution/Collection	1973 ADDITIONS	1/1/1973	61,887	61,887	0	50.00%	50.00%	1973	Mains-Average All Types	11.990	61,887	61,887	0.00%	0	742,023	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1988 ADDITIONS	1/1/1988	5,705	5,705	0	50.00%	50.00%	1988	Mains-Average All Types	4.620	5,705	5,705	0.00%	0	26,360	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1955 ADDITIONS	1/1/1955	15,030	15,030	0	50.00%	50.00%	1955	Mains-Average All Types	22.204	15,030	15,030	0.00%	0	33,971	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1972 ADDITIONS	1/1/1972	24,262	24,262	0	50.00%	50.00%	1972	Mains-Average All Types	12.071	24,262	24,262	0.00%	0	309,910	0	Yes	24,262	24,262	0.00%	0	3,099,100	3,099,100
	Distribution/Collection	1972 ADDITIONS	1/1/1972	7,356	7,356	0	50.00%	50.00%	1972	Mains-Average All Types	12.235	7,356	7,356	0.00%	0	89,334	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1973 ADDITIONS	1/1/1973	11,119	11,119	0	50.00%	50.00%	1973	Mains-Average All Types	11.990	11,119	11,119	0.00%	0	133,321	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1975 ADDITIONS	1/1/1975	19,956	19,956	0	50.00%	50.00%	1975	Mains-Average All Types	7.993	19,956	19,956	0.00%	0	159,516	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1977 ADDITIONS	1/1/1977	19,011	19,011	0	50.00%	50.00%	1977	Mains-Average All Types	7.311	19,011	19,011	0.00%	0	138,965	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1978 ADDITIONS	1/1/1978	11,855	11,855	0	50.00%	50.00%	1978	Mains-Average All Types	6.774	11,855	11,855	0.00%	0	80,308	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1979 ADDITIONS	1/1/1979	9,940	9,940	0	50.00%	50.00%	1979	Mains-Average All Types	6.344	9,940	9,940	0.00%	0	63,057	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1983 ADDITIONS	1/1/1983	23,581	23,581	0	50.00%	50.00%	1983	Mains-Average All Types	5.081	23,581	23,581	0.00%	0	119,802	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1985 ADDITIONS	1/1/1985	35,352	35,352	0	50.00%	50.00%	1985	Mains-Average All Types	4.975	35,352	35,352	0.00%	0	175,879	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1986 ADDITIONS	1/1/1986	9,728	9,728	0	50.00%	50.00%	1986	Mains-Average All Types	5.059	9,728	9,728	0.00%	0	49,215	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	1987 ADDITIONS	1/1/1987	48,510	48,510	0	50.00%	50.00%	1987	Mains-Average All Types	4.914	48,510	48,510	0.00%	0	238,374	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	ELEVATED WATER TANKS	1/1/1984	15,499	15,499	0	100.00%	0.00%	1984	Elevated Steel Tanks	10.550	15,499	15,499	0.00%	0	163,514	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	SEWER SYSTEM	1/1/1960	7,250	7,250	0	0.00%	100.00%	1960	Mains-Average All Types	17.632	7,250	7,250	0.00%	0	127,835	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	SEWER SYSTEM	1/1/1963	259,395	259,395	0	0.00%	100.00%	1963	Mains-Average All Types	16.203	259,395	259,395	0.00%	0	4,202,895	0	Yes	259,395	259,395	0.00%	0	4,202,895	4,202,895
	Distribution/Collection	WATER MAINS & VALVES	1/1/1955	79,616	79,616	0	100.00%	0.00%	1955	Mains-Average All Types	22.204	79,616	79,616	0.00%	0	1,767,777	0	Yes	0	0	0.00%	0	0	0
	Distribution/Collection	WATER MAINS & VALVES	1/1/1966	15,597	15,597	0	100.00%	0.00%	1966	Mains-Average All Types	15.776	15,597	15,597	0.00%	0	246,600	0	Yes	0					

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water	System Allocation Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2002	663,650	306,339	357,311	0.00%	100.00%	2002	Mains-Average All Types	3.496	663,650	306,339	53.83%	357,311	2,319,523	1,248,677	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WATER SUPPLY/ALTERNATIVES STUDY (SECOND)	6/30/2003	31,362	13,652	17,710	100.00%	0.00%	2003	Mains-Average All Types	3.547	31,362	13,652	55.83%	17,710	11,253	62,716	Yes	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2003	15,500	6,846	8,654	0.00%	100.00%	2003	Mains-Average All Types	3.547	15,500	6,846	55.83%	8,654	54,984	30,699	No	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER PROJECT (LINES)	6/30/2003	1,116,446	493,097	623,349	0.00%	100.00%	2003	Mains-Average All Types	3.547	1,116,446	493,097	55.83%	623,349	3,960,140	2,211,229	Yes	1,116,446	493,097	55.83%	623,349	3,960,140	2,211,229
Distribution/Collector	BOY SCOUT CAMP ROAD WATER PROJECT (LINES)	6/30/2003	1,275,626	563,401	712,224	100.00%	0.00%	2003	Mains-Average All Types	3.547	1,275,626	563,401	55.83%	712,224	4,525,074	2,526,500	Yes	1,275,626	563,401	55.83%	712,224	4,525,074	2,526,500
Distribution/Collector	18TH ST. SEWER PUMP STATION	6/30/2003	303,488	134,041	169,447	0.00%	100.00%	2003	Pumping Structures & Improvements	2.735	303,488	134,041	55.83%	169,447	829,908	463,365	Yes	303,488	134,041	55.83%	169,447	829,908	463,365
Distribution/Collector	CENTURY DRIVE WATER PROJECT (LINES)	6/30/2003	198,988	87,636	110,772	100.00%	0.00%	2003	Mains-Average All Types	3.547	198,988	87,636	55.83%	110,772	703,394	392,946	Yes	198,988	87,636	55.83%	110,772	703,394	392,946
Distribution/Collector	SOUTH RIDGE AVENUE WATER PROJECT LINES	6/30/2003	553,452	244,441	309,011	0.00%	100.00%	2003	Mains-Average All Types	3.547	553,452	244,441	55.83%	309,011	1,963,280	1,096,165	Yes	553,452	244,441	55.83%	309,011	1,963,280	1,096,165
Distribution/Collector	CHESTNUT ST. SEWER PROJECT (LINES)	6/30/2003	169,371	74,806	94,566	0.00%	100.00%	2003	Mains-Average All Types	3.547	169,371	74,806	55.83%	94,566	600,817	335,456	Yes	169,371	74,806	55.83%	94,566	600,817	335,456
Distribution/Collector	ROWAN SALISBURY WATER PROJECT LINES	6/30/2003	668,841	295,405	373,437	0.00%	100.00%	2003	Mains-Average All Types	3.547	668,841	295,405	55.83%	373,437	2,372,606	1,324,705	Yes	668,841	295,405	55.83%	373,437	2,372,606	1,324,705
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2004	187,336	100,000	87,336	100.00%	0.00%	2004	Mains-Average All Types	3.321	187,336	100,000	53.41%	87,336	1,232,343	705,200	No	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2004	332,880	140,364	192,516	0.00%	100.00%	2004	Mains-Average All Types	3.321	332,880	140,364	57.83%	192,516	1,105,024	639,408	No	0	0	0.00%	0	0	0
Distribution/Collector	WATER SUPPLY/ALTERNATIVES STUDY (SECOND)	10/30/2003	7,693	3,346	4,346	100.00%	0.00%	2003	Mains-Average All Types	3.547	7,693	3,346	56.50%	4,346	27,288	15,418	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WASHINGTON LAKE SEWER PUMP STATION	6/30/2004	337,561	142,338	195,223	0.00%	100.00%	2004	Pumping Structures & Improvements	2.496	337,561	142,338	57.83%	195,223	842,475	487,231	Yes	337,561	142,338	57.83%	195,223	842,475	487,231
Distribution/Collector	AFTON RUN SEWER PROJECT (LINES)	6/30/2004	246,425	103,909	142,516	0.00%	100.00%	2004	Mains-Average All Types	3.321	246,425	103,909	57.83%	142,516	818,459	473,342	Yes	246,425	103,909	57.83%	142,516	818,459	473,342
Distribution/Collector	BOY SCOUT CAMP ROAD WATER PROJECT LINES	6/30/2004	574,908	242,420	332,488	100.00%	0.00%	2004	Mains-Average All Types	3.321	574,908	242,420	57.83%	332,488	1,909,458	1,104,303	Yes	574,908	242,420	57.83%	332,488	1,909,458	1,104,303
Distribution/Collector	STREWLEARD RD. MOORESVILLE RD. WATER PROJ	6/30/2004	148,681	62,694	85,987	100.00%	0.00%	2004	Mains-Average All Types	3.321	148,681	62,694	57.83%	85,987	493,818	285,591	Yes	148,681	62,694	57.83%	85,987	493,818	285,591
Distribution/Collector	CLOVERLEAF PLAZA WATER PROJECT LINES	6/30/2004	177,502	74,847	102,655	100.00%	0.00%	2004	Mains-Average All Types	3.321	177,502	74,847	57.83%	102,655	589,543	340,952	Yes	177,502	74,847	57.83%	102,655	589,543	340,952
Distribution/Collector	POLO CREEK DRIVE WATER PROJECT LINES	6/30/2004	26,372	27,987	38,365	100.00%	0.00%	2004	Pumping Structures & Improvements	2.496	26,372	27,987	57.83%	38,365	165,649	95,800	Yes	0	0	0.00%	0	0	0
Distribution/Collector	PINE CREEK WATER IMPROVEMENTS LINES	6/30/2004	62,651	26,418	36,233	100.00%	0.00%	2004	Mains-Average All Types	3.321	62,651	26,418	57.83%	36,233	208,084	120,342	Yes	0	0	0.00%	0	0	0
Distribution/Collector	U20098 UTILITY WATER PROJECTS LINES	6/30/2004	13,108	5,527	7,581	100.00%	0.00%	2004	Mains-Average All Types	3.321	13,108	5,527	57.83%	7,581	43,536	25,778	Yes	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER LINES	6/30/2004	19,721	8,316	11,405	0.00%	100.00%	2004	Mains-Average All Types	3.321	19,721	8,316	57.83%	11,405	65,499	37,880	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH SUBDIVISIONS WATER PROJEC	6/30/2004	2,722	1,148	1,574	100.00%	0.00%	2004	Mains-Average All Types	3.321	2,722	1,148	57.83%	1,574	9,042	5,229	Yes	0	0	0.00%	0	0	0
Distribution/Collector	KANNAPOLIS PARKWAY WATER PROJECT LINES	6/30/2004	714,546	312,302	402,244	100.00%	0.00%	2004	Mains-Average All Types	3.321	714,546	312,302	57.83%	402,244	2,473,243	1,413,346	Yes	714,546	312,302	57.83%	413,346	2,473,243	1,372,524
Distribution/Collector	TRINITY CHURCH WATER PROJECT LINES	6/30/2004	741,703	312,751	428,951	100.00%	0.00%	2004	Mains-Average All Types	3.321	741,703	312,751	57.83%	428,951	2,463,440	1,424,689	Yes	741,703	312,751	57.83%	428,951	2,463,440	1,424,689
Distribution/Collector	BIARLIFF DRIVE WATER PROJECT LINES	6/30/2004	137,327	57,906	79,421	100.00%	0.00%	2004	Mains-Average All Types	3.321	137,327	57,906	57.83%	79,421	456,108	263,782	Yes	137,327	57,906	57.83%	79,421	456,108	263,782
Distribution/Collector	ENGLEWOOD DRIVE WATER PROJECT LINES	6/30/2004	2,322	99	1,343	100.00%	0.00%	2004	Mains-Average All Types	3.321	2,322	99	57.83%	1,343	7,712	4,460	Yes	0	0	0.00%	0	0	0
Distribution/Collector	CHESTNUT STREET SEWER PROJECT CT LINES	6/30/2004	68	28	99	100.00%	0.00%	2004	Mains-Average All Types	3.321	68	28	57.84%	39	226	138	Yes	0	0	0.00%	0	0	0
Distribution/Collector	ROWAN SALISBURY WATER PROJECT LINES	6/30/2004	46,032	26,622	19,410	100.00%	0.00%	2004	Mains-Average All Types	3.321	46,032	19,410	57.83%	19,410	152,887	88,420	Yes	0	0	0.00%	0	0	0
Distribution/Collector	FLOYD ST. TO 18TH ST. WATER PROJECT LINE	6/30/2004	594,431	250,652	343,779	100.00%	0.00%	2004	Mains-Average All Types	3.321	594,431	250,652	57.83%	343,779	1,974,302	1,141,805	Yes	594,431	250,652	57.83%	343,779	1,974,302	1,141,805
Distribution/Collector	TRINITY STATES WATER PROJECT LINES	6/30/2004	3,048	1,285	1,763	100.00%	0.00%	2004	Mains-Average All Types	3.321	3,048	1,285	57.83%	1,763	10,123	5,854	Yes	0	0	0.00%	0	0	0
Distribution/Collector	DOGWOOD BLVD. WATER PROJECT LINES	6/30/2004	248,986	104,989	143,997	100.00%	0.00%	2004	Mains-Average All Types	3.321	248,986	104,989	57.83%	143,997	826,966	478,205	Yes	248,986	104,989	57.83%	143,997	826,966	478,205
Distribution/Collector	WOLFCHUCK DRIVE SEWER PROJECT LINES	6/30/2004	42,268	19,091	23,177	100.00%	0.00%	2004	Mains-Average All Types	3.321	42,268	19,091	57.83%	23,177	140,387	81,191	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRANQUILITY WATER AND SEWER PROJECT LINE	6/30/2004	456,679	192,566	264,113	50.00%	50.00%	2004	Mains-Average All Types	3.321	456,679	192,566	57.83%	264,113	1,536,781	877,205	Yes	456,679	192,566	57.83%	264,113	1,536,781	877,205
Distribution/Collector	KGBP WATER & SEWER IMPROVEMENTS LINES	6/30/2004	18,164	7,659	10,505	50.00%	50.00%	2004	Mains-Average All Types	3.321	18,164	7,659	57.83%	10,505	60,328	34,890	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WATER LINES (DEVELOPERS)	6/30/2005	547,725	220,003	327,722	100.00%	0.00%	2005	Mains-Average All Types	3.035	547,725	220,003	59.83%	327,722	1,662,588	994,782	No	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2005	738,700	296,711	441,989	0.00%	100.00%	2005	Mains-Average All Types	3.035	738,700	296,711	59.83%	441,989	2,242,262	1,341,632	No	0	0	0.00%	0	0	0
Distribution/Collector	KCBP WATER & SEWER IMPROVEMENTS (LINES)	6/30/2005	6,102	2,451	3,651	50.00%	50.00%	2005	Mains-Average All Types	3.035	6,102	2,451	59.83%	3,651	18,523	11,083	Yes	0	0	0.00%	0	0	0
Distribution/Collector	JACOBS RIDGE WATER PROJECT LINES	6/30/2005	16,566	6,502	9,906	100.00%	0.00%	2005	Mains-Average All Types	3.035	16,566	6,502	59.83%	9,906	50,256	30,072	Yes	16,566	6,502	59.83%	9,906	50,256	30,072
Distribution/Collector	FARM HILL SUBDIVISION WATER PROJECT LINE	6/30/2005	21,580	84,985	126,596	100.00%	0.00%	2005	Mains-Average All Types	3.035	21,580	84,985	59.83%	126,596	642,240	384,274	Yes	21,580	84,985	59.83%	126,596	642,240	384,274
Distribution/Collector	STREWLEARD RD. MOORESVILLE RD. WATER PROJ	6/30/2005	18,654	7,493	11,161	100.00%	0.00%	2005	Mains-Average All Types	3.035	18,654	7,493	59.83%	11,161	56,622	33,879	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH RD. WATER PROJECT LINES	6/30/2005	57,017	20,768	36,249	100.00%	0.00%	2005	Mains-Average All Types	3.035	57,017	20,768	59.83%	36,249	158,646	93,966	Yes	57,017	20,768	59.83%	93,966	158,646	93,966
Distribution/Collector	BISCAYNE DRIVE WATER & SEWER PROJECT LIN	6/30/2005	330,802	132,872	197,930	50.00%	50.00%	2005	Mains-Average All Types	3.035	330,802	132,872	59.83%	197,930	1,004,132	600,806	Yes	330,802	132,872	59.83%	197,930	1,004,132	600,806
Distribution/Collector	SHILOH CHURCH ROAD WATER LINE	6/30/2005	535,003	214,893	320,110	100.00%	0.00%	2005	Mains-Average All Types	3.035	535,003	214,893	59.83%	320,110	1,623,970	971,675	Yes	535,003	214,893	59.83%	320,110	1,623,970	971,675
Distribution/Collector	PILOWTYS WTMP BYPASS SEWER	6/30/2005	257,052	103,249	153,803	0.00%	100.00%	2005	Mains-Average All Types	3.035	257,052	103,249	59.83%	153,803	780,268	466,860	Yes	257,052	103,249	59.83%	153,803	780,268	466,860
Distribution/Collector	HHW 13X SEWER	6/30/2005	1,500	603	898	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,500	603	59.83%	898	4,533	2,724	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH SUBDIVISIONS WATER PROJEC	6/30/2005	1,327	131	1,196	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,327	131	59.83%	1,196	5,545	3,318	Yes	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER	6/30/2005	1,827	734	1,093	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,827												

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water	Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	
Infrastructure	Infrastructure								Pumping Structures & Improvements	1268	\$ 620,348	\$ 111,146	82.08%	\$ 509,202	\$ 786,307	\$ 645,427	Yes	\$ 620,348	\$ 111,146	82.08%	\$ 509,202	\$ 786,307	\$ 645,427	
	Infrastructure	Booster Pump Station - Kannapolis	12/22/2021	\$ 620,348	\$ 111,146	\$ 509,202	100.00%	0.00%	2021	Mains-Average All Types	1000	3,166,743	5,278	99.83%	3,161,465	3,161,465	No	0	0	0.00%	0	0	0	
	Infrastructure	DONATED WATER AND SEWER FY 25	6/30/2025	3,166,743	5,278	3,161,465	50.00%	50.00%	2025	Mains-Average All Types	1776	17,675	16,452	77.05%	55,223	127,316	Yes	0	0	0.00%	0	0	0	
	Infrastructure	LADY'S FUNERAL HOME SEWER REHABILITATION	1/01/2014	71,675	16,452	55,223	0.00%	100.00%	2014	Mains-Average All Types	1776	191,570	41,281	78.45%	150,289	340,286	Yes	191,570	41,281	78.45%	150,289	340,286	266,959	
	Infrastructure	RELOCATION OF WATER LINES PROJ B-4808 RC	10/20/2014	191,570	41,281	150,289	100.00%	0.00%	2014	Mains-Average All Types	1776	191,570	41,281	78.45%	150,289	340,286	Yes	191,570	41,281	78.45%	150,289	340,286	266,959	
	Infrastructure	DONATED WATER & SEWER PVM FROM	6/30/2014	1,655,040	366,867	1,288,173	50.00%	50.00%	2014	Pumping Structures & Improvements	1681	1,655,040	366,867	77.83%	1,288,173	2,798,407	No	0	0	0.00%	0	0	0	
	Infrastructure	HWY 73 WATER LINE NC DOT UTILITY AGREEMENT	7/2/2014	146,115	0	146,115	0.00%	100.00%	2014	Mains-Average All Types	1776	146,115	0	100.00%	146,115	259,543	Yes	146,115	0	100.00%	146,115	259,543	259,543	
	Infrastructure	MOORESVILLE ROAD	9/24/2014	2,930,453	0	2,930,453	50.00%	50.00%	2014	Mains-Average All Types	1776	2,930,453	0	100.00%	2,930,453	5,205,352	Yes	2,930,453	0	100.00%	2,930,453	5,205,352	5,205,352	
	Infrastructure	DONATED WATER AND SEWER FY 15	6/30/2015	1,330,735	268,365	1,062,370	50.00%	50.00%	2015	Mains-Average All Types	1798	1,330,735	268,365	79.83%	1,062,370	2,392,131	Yes	0	0	0.00%	0	0	0	
	Infrastructure	ELVATED STORAGE TANK	12/22/2015	218,040	218,040	0	50.00%	50.00%	2015	Mains-Average All Types	1798	218,040	218,040	0	0.00%	1,758,958	1,758,958	No	0	0	0.00%	0	0	0
	Infrastructure	SUBURBY RD SEWER IMPROVEMENTS PROF SVC	7/27/2016	4,682,590	569,715	4,112,875	0.00%	100.00%	2016	Pumping Structures & Improvements	1629	4,682,590	569,715	87.83%	4,112,875	6,698,542	Yes	4,682,590	569,715	87.83%	4,112,875	6,698,542	6,698,542	
	Infrastructure	Containment System to S RIDGE AVE TANK	6/16/2017	165,547	26,763	138,784	100.00%	0.00%	2017	Elevated Steel Tanks	1817	165,547	26,763	83.83%	138,784	300,865	Yes	165,547	26,763	83.83%	138,784	300,865	252,225	
	Infrastructure	DONATED WATER AND SEWER FY 17	6/30/2017	1,115,755	180,380	935,375	50.00%	50.00%	2017	Mains-Average All Types	1706	1,115,755	180,380	83.83%	935,375	1,505,326	No	0	0	0.00%	0	0	0	
	Infrastructure	ELEVATED STORAGE TANK	1/30/2018	1,277,210	577,979	799,230	100.00%	0.00%	2018	Elevated Steel Tanks	1758	1,277,210	577,979	59.44%	799,230	2,245,760	Yes	1,277,210	577,979	59.44%	799,230	2,245,760	1,334,980	
	Infrastructure	CENTERGROVE RD WATER LINE	10/16/2017	399,915	61,356	338,558	100.00%	0.00%	2017	Mains-Average All Types	1706	399,915	61,356	84.66%	338,558	682,074	Yes	399,915	61,356	84.66%	338,558	682,074	577,428	
	Infrastructure	S WALNUT STREET WATER LINE	12/31/2017	60,263	9,140	51,123	100.00%	0.00%	2017	Mains-Average All Types	1706	60,263	9,140	84.83%	51,123	102,781	Yes	0	0	0.00%	0	0	0	
	Infrastructure	RCCC COSMETOLOGY WATER LINE	1/30/2018	615,172	89,572	525,600	100.00%	0.00%	2018	Mains-Average All Types	1638	615,172	89,572	85.44%	525,600	1,007,639	Yes	615,172	89,572	85.44%	525,600	1,007,639	860,921	
	Infrastructure	DONATED WATER AND SEWER FY 18	6/30/2018	1,653,470	234,242	1,419,228	50.00%	50.00%	2018	Pumping Structures & Improvements	1509	1,653,470	234,242	85.83%	1,419,228	2,495,697	No	0	0	0.00%	0	0	0	
	Infrastructure	LAM STREET WATER LINE	9/4/2018	3,768,298	0	3,768,298	100.00%	0.00%	2018	Mains-Average All Types	1638	3,768,298	0	100.00%	3,768,298	6,172,390	Yes	3,768,298	0	100.00%	3,768,298	6,172,390	6,172,390	
	Infrastructure	JOHN JOHNSON WATERLINE	4/10/2019	651,117	76,725	574,393	100.00%	0.00%	2019	Mains-Average All Types	1573	651,117	76,725	88.22%	574,393	1,024,527	Yes	651,117	76,725	88.22%	574,393	1,024,527	903,802	
	Infrastructure	SLUDGE LAGOON	6/5/2019	1,001,433	0	1,001,433	0.00%	100.00%	2019	Pumping Structures & Improvements	1479	1,001,433	0	100.00%	1,001,433	1,481,251	Yes	1,001,433	0	100.00%	1,001,433	1,481,251	1,481,251	
	Infrastructure	DONATED WATER AND SEWER FY 19	6/28/2019	1,152,708	140,246	1,012,462	50.00%	50.00%	2019	Pumping Structures & Improvements	1479	1,152,708	140,246	87.83%	1,012,462	1,705,007	Yes	0	0	0.00%	0	0	0	
	Infrastructure	DONATED WATER AND SEWER FY 20	6/30/2020	2,635,020	267,894	2,367,126	50.00%	50.00%	2020	Pumping Structures & Improvements	1438	2,635,020	267,894	89.83%	2,367,126	3,789,980	No	0	0	0.00%	0	0	0	
	Infrastructure	DONATED WATER AND SEWER FY 21	6/30/2021	2,940,970	270,079	2,670,891	50.00%	50.00%	2021	Pumping Structures & Improvements	1268	2,940,970	270,079	91.83%	2,700,799	3,727,155	Yes	0	0	0.00%	0	0	0	
	Infrastructure	Concrete Pad	9/10/2024	10,500	583	9,917	50.00%	50.00%	2024	Pumping Structures & Improvements	1016	10,500	583	94.44%	9,917	10,669	Yes	0	0	0.00%	0	0	0	
	Infrastructure	FILTER #1 UNDERDRAIN & FILTER REPLACEMENT	4/1/2014	209,857	47,218	162,639	100.00%	0.00%	2014	Filter Gallery Piping-Installed	1806	209,857	47,218	77.50%	162,639	378,948	Yes	209,857	47,218	77.50%	162,639	378,948	293,685	
Infrastructure	FILTER #2 DRAIN VALVE	6/18/2019	10,249	10,249	0	100.00%	0.00%	2019	Filter Gallery Piping-Installed	1574	10,249	10,249	0.00%	0	16,136	No	0	0	0.00%	0	0	0		
Subtotal Infrastructure											\$ 33,667,442	\$ 3,500,483	\$ 30,166,959		\$ 51,896,398	\$ 46,219,115		\$ 16,659,625	\$ 1,541,756	\$ 15,117,869	\$ 27,511,366	\$ 24,952,505		
Land	Land								Booke Value	1000	\$ 730,342	\$ 0	100.00%	\$ 730,342	\$ 730,342	\$ 730,342	No	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0	
	Land	PUBLIC WORKS CENTER LAND	7/1/1994	\$ 730,342	\$ 0	\$ 730,342	50.00%	50.00%	1994	Booke Value	1000	73,300	0	100.00%	73,300	73,300	Yes	73,300	0	100.00%	73,300	73,300	73,300	
	Land	NW SEWER DISTRICT LAND HWY 3	9/20/2017	73,300	0	73,300	100.00%	0.00%	2017	Booke Value	1000	73,300	0	100.00%	73,300	73,300	Yes	73,300	0	100.00%	73,300	73,300	73,300	
	Land	SHILCH CHURCH ROAD DAVIDSON	8/27/2017	75,424	55,424	20,000	100.00%	0.00%	2017	Booke Value	1000	75,424	0	100.00%	75,424	75,424	Yes	75,424	0	100.00%	75,424	75,424	75,424	
Subtotal Land											\$ 839,066	\$ 0	\$ 839,066		\$ 839,066	\$ 839,066		\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	
Major Equipment	Major Equipment								Mains-Average All Types	1638	\$ 25,600	\$ 25,600	0.00%	\$ 0	\$ 41,932	\$ 0	No	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0	
	Major Equipment	Cyworks and Northstar Server	6/19/2018	\$ 25,600	\$ 25,600	\$ 0	50.00%	50.00%	2018	Mains-Average All Types	1573	23,823	23,823	0.00%	0	37,494	No	0	0	0.00%	0	0	0	
	Major Equipment	CUSTOMERCONNECT - LICENSE	6/18/2019	23,823	23,823	0	50.00%	50.00%	2019	Mains-Average All Types	1497	11,037	103,634	6.67%	7,402	166,208	No	0	0	0.00%	0	0	0	
	Major Equipment	KIOSK - CUSTOMER SERVICE	11/30/2020	111,037	103,634	7,402	50.00%	50.00%	2020	Mains-Average All Types	1378	35,490	27,209	23.33%	8,281	48,911	No	0	0	0.00%	0	0	0	
	Major Equipment	W86 2021 Ford Escape Hybrid	9/20/2021	35,490	27,209	8,281	50.00%	50.00%	2021	Mains-Average All Types	1209	5,117	3,496	31.67%	1,620	6,184	Yes	0	0	0.00%	0	0	0	
	Major Equipment	Spare pump for South Ridge	2/11/2022	5,117	3,496	1,620	50.00%	50.00%	2022	Mains-Average All Types	1209	10,046	6,865	31.67%	1,620	6,184	Yes	0	0	0.00%	0	0	0	
	Major Equipment	PUSH CAMERA for NW Response truck	2/28/2022	10,046	6,865	3,181	50.00%	50.00%	2022	Mains-Average All Types	1213	10,046	6,865	31.67%	1,620	6,184	Yes	0	0	0.00%	0	0	0	
	Major Equipment	W8 2022 FORD F250 CREW CAB	6/30/2023	58,440	24,350	34,090	50.00%	50.00%	2023	Mains-Average All Types	1114	58,440	24,350	58.33%	34,090	65,121	No	0	0	0.00%	0	0	0	
	Major Equipment	Maggie Locator	6/30/2023	3,500	1,458	2,042	50.00%	50.00%	2023	Mains-Average All Types	1114	3,500	1,458	58.33%	2,042	3,900	No	0	0	0.00%	0	0	0	
	Major Equipment	W67 FORD CONNECT VAN	6/30/2023																					

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

APPENDIX A

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr
Major Equipment	W6-2033 GOWIN 10 DUMPEODY (FREIGHTLNR)	3/1/2013	79,174	79,174	0	50.00%	50.00%	2013	Mains-Average All Types	1.92	79,174	79,174	0.00%	0	151,403	0	No	0	0.00%	0	0	0
Major Equipment	VCAM-5 PUSH CAMERA SYSTEM	3/20/2014	10,049	10,049	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	10,049	10,049	0.00%	0	17,850	0	No	0	0.00%	0	0	0
Major Equipment	W29-E50 T4 2014. BOBCAT COMPACT EXCAVATO	9/22/2014	64,969	64,969	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	64,969	64,969	0.00%	0	115,403	0	No	0	0.00%	0	0	0
Major Equipment	W13-FORKLIFT FOR PW WAREHOUSE	12/16/2014	28,800	28,800	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	28,800	28,800	0.00%	0	51,577	0	No	0	0.00%	0	0	0
Major Equipment	W-28 SULLAIR IBSDRQ COMPRESSOR	12/31/2014	14,850	14,850	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	14,850	14,850	0.00%	0	26,378	0	No	0	0.00%	0	0	0
Major Equipment	W18-10206 KENWORTH 1370 DUMP TRUCK	7/27/2015	114,087	114,087	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	114,087	114,087	0.00%	0	225,083	0	No	0	0.00%	0	0	0
Major Equipment	W63-10206V PORTABLE GEN ONAN CUMMINS	7/31/2015	85,790	85,790	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	85,790	85,790	0.00%	0	154,716	0	No	0	0.00%	0	0	0
Major Equipment	DIESEL TANK UPGRADE	10/19/2015	65,633	65,633	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	65,633	65,633	0.00%	0	117,981	0	No	0	0.00%	0	0	0
Major Equipment	W64-F550 FORD	3/23/2016	107,286	107,286	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	107,286	107,286	0.00%	0	191,422	0	No	0	0.00%	0	0	0
Major Equipment	W-20 3ET VAC WESTERN STR CHASIS 2017	9/19/2016	380,000	380,000	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	380,000	380,000	0.00%	0	678,006	0	No	0	0.00%	0	0	0
Major Equipment	W-45 1801 T4 BOBCAT COMPACT EXCAV	9/26/2017	96,947	96,947	0	50.00%	50.00%	2017	Mains-Average All Types	1.784	96,947	96,947	0.00%	0	172,947	0	No	0	0.00%	0	0	0
Major Equipment	W17 Magnium/Generic MMG45, 30/36KW	11/28/2016	27,510	27,510	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	27,510	27,510	0.00%	0	49,084	0	No	0	0.00%	0	0	0
Major Equipment	Replacement of boring tool	3/31/2017	5,000	5,000	0	50.00%	50.00%	2017	Mains-Average All Types	1.706	5,000	5,000	0.00%	0	8,528	0	No	0	0.00%	0	0	0
Major Equipment	W12 2018 FORD F-150	1/29/2018	27,500	27,500	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	27,500	27,500	0.00%	0	45,044	0	No	0	0.00%	0	0	0
Major Equipment	W42 MOBILE ARIES PATHFINDER INSPECT SYS	2/19/2018	67,700	67,700	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	67,700	67,700	0.00%	0	110,891	0	No	0	0.00%	0	0	0
Major Equipment	W72 2018 FORD ESCAPE	1/19/2018	22,980	22,980	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	22,980	22,980	0.00%	0	37,641	0	No	0	0.00%	0	0	0
Major Equipment	W-52 2018 CHEVY COLORADO TRUCK	3/29/2018	25,907	25,907	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	25,907	25,907	0.00%	0	42,436	0	No	0	0.00%	0	0	0
Major Equipment	W-53 2018 CHEVY COLORADO TRUCK	3/29/2018	25,907	25,907	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	25,907	25,907	0.00%	0	42,436	0	No	0	0.00%	0	0	0
Major Equipment	W27 DOOSAN PORTABLE AIR COMPRESSOR	4/25/2018	20,336	20,336	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	20,336	20,336	0.00%	0	33,310	0	No	0	0.00%	0	0	0
Major Equipment	W81 S2C TRAC EASEMENT MACHINE	4/25/2018	108,928	108,928	0	50.00%	50.00%	2018	Mains-Average All Types	1.497	108,928	108,928	0.00%	0	210,794	0	No	0	0.00%	0	0	0
Major Equipment	W-37 HUDSON TRAILER	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W-66 HUDSON TRAILER	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W35 CATERPILLAR BACKHOE	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W5 2017 CHEVY SILVERADO 3500	8/22/2018	51,623	51,623	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	51,623	51,623	0.00%	0	84,558	0	No	0	0.00%	0	0	0
Major Equipment	AC200 PLUS KIT	10/19/2018	15,699	15,699	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	15,699	15,699	0.00%	0	25,715	0	No	0	0.00%	0	0	0
Major Equipment	LATERAL CAMERA SYSTEM	5/23/2019	6,335	5,581	754	50.00%	50.00%	2019	Mains-Average All Types	1.573	6,335	5,581	11.90%	754	9,968	1,187	No	0	0.00%	0	0	0
Major Equipment	BORING TOOL - GRUNDOMAT 65P	9/4/2019	5,076	5,076	0	50.00%	50.00%	2019	Mains-Average All Types	1.573	5,076	5,076	0.00%	0	7,987	0	No	0	0.00%	0	0	0
Major Equipment	BORING TOOL - GRUNDOMAT 103P	9/4/2019	11,171	11,171	0	50.00%	50.00%	2019	Mains-Average All Types	1.573	11,171	11,171	0.00%	0	17,577	0	No	0	0.00%	0	0	0
Major Equipment	AM METRIC SYSTEM	11/26/2019	122,079	122,079	29,171	100.00%	0.00%	2019	Mains-Average All Types	1.573	122,079	122,079	19.05%	29,171	243,180	45,901	No	0	0.00%	0	0	0
Major Equipment	W74 2019 FORD F550	2/25/2020	71,973	71,973	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	71,973	71,973	0.00%	0	125,975	0	No	0	0.00%	0	0	0
Major Equipment	2020 PETERBILT 348 DUMP TRUCK	3/26/2020	139,695	139,695	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	139,695	139,695	0.00%	0	209,107	0	No	0	0.00%	0	0	0
Major Equipment	ROMAC SEWER TAP MACHINE	4/10/2020	7,793	5,844	1,948	50.00%	50.00%	2020	Mains-Average All Types	1.497	7,793	5,844	25.00%	1,948	11,665	2,916	No	0	0.00%	0	0	0
Major Equipment	W79 BOBCAT ESS MINI EXCAVATOR	3/23/2020	67,649	67,649	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	67,649	67,649	0.00%	0	101,263	0	No	0	0.00%	0	0	0
Major Equipment	W75 BOBCAT TR70 SKIDSTEER	6/30/2020	163,028	163,028	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	163,028	163,028	0.00%	0	263,052	0	No	0	0.00%	0	0	0
Major Equipment	W78 2020 HUDSON PRO SERIES TRAILER	5/18/2020	19,437	14,347	5,091	50.00%	50.00%	2020	Mains-Average All Types	1.497	19,437	14,347	26.19%	5,091	29,095	7,620	No	0	0.00%	0	0	0
Major Equipment	W80 TORO GRANDSTAND	7/12/2020	7,756	7,756	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	7,756	7,756	0.00%	0	11,610	0	No	0	0.00%	0	0	0
Major Equipment	SUMBERSIBLE PUMP	8/28/2020	6,763	6,651	113	0.00%	100.00%	2020	Electric Pumping Equipment	1.425	6,763	6,651	1.67%	113	9,638	161	No	0	0.00%	0	0	0
Major Equipment	W84 2020 FORD F550	10/19/2020	78,554	74,626	3,928	50.00%	50.00%	2020	Mains-Average All Types	1.497	78,554	74,626	5.00%	3,928	117,586	5,879	No	0	0.00%	0	0	0
Major Equipment	W83 2019 FORD F550	10/19/2020	78,554	74,626	3,928	50.00%	50.00%	2020	Mains-Average All Types	1.497	78,554	74,626	5.00%	3,928	117,586	5,879	No	0	0.00%	0	0	0
Major Equipment	W77 2020 PETERBILT 348 DUMP TRUCK	12/1/2020	139,990	128,324	11,666	50.00%	50.00%	2020	Mains-Average All Types	1.497	139,990	128,324	8.33%	11,666	209,548	77,462	No	0	0.00%	0	0	0
Major Equipment	W85 Freightliner VAN-CON	3/1/2021	630,309	546,268	84,041	50.00%	50.00%	2021	Mains-Average All Types	1.378	630,309	546,268	13.33%	84,041	868,667	115,822	No	0	0.00%	0	0	0
Major Equipment	Hach DR6000 Spectrophotometer	7/28/2021	9,314	7,451	1,863	100.00%	0.00%	2021	Mains-Average All Types	1.378	9,314	7,451	20.00%	1,863	12,836	2,567	No	0	0.00%	0	0	0
Major Equipment	WTP-16 30KV VOLT	6/30/2021	36,812	16,338	20,474	50.00%	50.00%	2021	Mains-Average All Types	1.114	36,812	16,338	58.33%	20,474	51,028	21,673	No	0	0.00%	0	0	0
Major Equipment	WTP-16 Skid Steer	6/30/2021	58,482	24,368	34,115	50.00%	50.00%	2021	Mains-Average All Types	1.114	58,482	24,368	58.33%	34,115	65,168	38,015	No	0	0.00%	0	0	0
Major Equipment	Ditch Witch FX20 Vac LCCR Excav & Trailr	10/13/2021	39,669	13,884	25,785	50.00%	50.00%	2021	Mains-Average All Types	1.114	39,669	13,884	65.00%	25,785	44,204	28,733	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2023 Ford 350 XL Crew Cab	10/18/2021	77,365	27,078	50,287	50.00%	50.00%	2021	Mains-Average All Types	1.114	77,365	27,078	65.00%	50,287	86,209	56,036	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2023 Ford Maverick	10/19/2021	30,150	10,553	19,598	50.00%	50.00%	2021	Mains-Average All Types	1.114	30,150	10,553	65.00%	19,598	33,509	21,838	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2024 Diamond C Dump LPT	11/29/2021	5,983	1,967	4,016	50.00%	50.00%	2021	Mains-Average All Types	1.114	5,983	1,967	66.67%	4,016	7,967	2,027	No	0	0.00%	0	0	0
Major Equipment	WTP-17 ESS 25HP R2 BOBCAT	2/27/2024	46,361	9,383	36,979	50.00%	50.00%	2024	Mains-Average All Types	1.028	46,361	9,383	79.76%	36,979	47,673	38,025	No	0	0.00%	0	0	0
Major Equipment	WTP-27 Brushcutter	12/13/2024	5,841	681	5,159	50.00%	50.00%	2024	Mains-Average All Types	1.028	5,841	681	88.33%	5,159	6,006	5,305	No	0	0.00%	0	0	0
Major Equipment	WTP-2 2024 Ford F250 Longbed	1/16/2025	55,800	50,220	5,580	50.00%	50.00%	2025	Mains-Average All Types	1.000	55,800	5,580	90.00%	50,220	55,800	50,220	No	0	0.00%	0	0	0
Major Equipment	WTP-23 2024 Bobcat zero turn mower	12/16/2024	10,339	912	10,028	50.00%	50.00%	2024	Mains-Average All Types	1.028	10,339	912	91.67%	10,028	10,339	10,339	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	12/3/2024	10,138	1,183	8,955	50.00%	50.00%	2024	Treatment Structures & Improvements	1.016	10,138	1,183	88.33%	8,955	10,501	9,099	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	1/30/2025	10,638	1,064	9,574	50.00%	50.00%	2025	Treatment Structures & Improvements	1.000	10,638	1,064	90.00%	9,574	10,638	9,574	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	1/30/2025	10,343	1,034	9,309	50.00%	50.00%	2025	Treatment Structures & Improvements	1.000	10,343	1,034	90.00%	9,309	10,343	9,309	No	0	0.00%	0	0	0
Major Equipment	WTP-26 2025 Chevrolet Equinox	3/3/2025	31,880	2,125	29,755	50.00%	50.00%	2025	Mains-Average All Types													

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation		Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr
GROUP SUMMARY																							
Group			Cost Beginning	Depreciation Ending	Cost Ending						All Asset Costs	Total Depreciation		OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr		Original Cost (OC)	Total Depreciation		OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr
Buildings			\$ 23,423,663	\$ 12,004,436	\$ 11,419,226						\$ 23,423,663	\$ 12,004,436		\$ 11,419,226	\$ 62,688,844	\$ 26,905,498		\$ 23,276,689	\$ 11,919,325		\$ 11,357,364	\$ 61,589,493	\$ 26,805,879
CIP Projects			11,724,473	-	11,724,473						11,724,473	-		11,724,473	18,443,811	18,443,811		11,630,093	-		11,630,093	18,326,458	18,326,458
Distribution/Collection			123,227,927	48,992,850	74,235,077						123,227,927	48,992,850		74,235,077	407,879,187	176,572,836		96,647,860	37,798,476		323,731,035	133,105,842	
Infrastructure			33,667,442	3,500,483	30,166,959						33,667,442	3,500,483		30,166,959	51,896,398	46,210,115		16,659,825	1,541,756		15,117,869	27,511,366	24,952,505
Land			839,066	-	839,066						839,066	-		839,066	839,066	839,066		-	-		-	-	-
Major Equipment			7,815,004	5,550,282	2,264,722						7,815,004	5,550,282		2,264,722	12,407,892	2,445,046		-	-		-	-	-
Grand Total			\$ 200,697,574	\$ 70,048,051	\$ 130,649,523						\$ 200,697,574	\$ 70,048,051		\$ 130,649,523	\$ 554,155,198	\$ 271,425,372		\$ 148,012,742	\$ 51,259,557		\$ 96,753,186	\$ 431,158,352	\$ 203,190,684
Water																							
Buildings			\$ 17,783,798	\$ 7,019,301	\$ 10,764,497						\$ 17,783,798	\$ 7,019,301		\$ 10,764,497	\$ 42,344,951	\$ 25,147,422		\$ 17,675,683	\$ 6,969,357		\$ 10,706,325	\$ 41,736,724	\$ 25,051,552
CIP Projects			7,508,186	-	7,508,186						7,508,186	-		7,508,186	11,577,038	11,577,038		7,413,806	-		7,413,806	11,459,685	11,459,685
Distribution/Collection			74,966,609	29,412,615	45,553,994						74,966,609	29,412,615		45,553,994	266,496,966	104,830,322		62,964,036	24,169,618		38,794,418	225,649,027	85,692,289
Infrastructure			18,013,703	1,952,873	16,060,830						18,013,703	1,952,873		16,060,830	24,797,892	24,797,892		9,510,376	972,041		8,538,335	15,801,015	14,770,036
Land			473,895	-	473,895						473,895	-		473,895	473,895	473,895		-	-		-	-	-
Major Equipment			4,291,831	3,146,834	1,144,997						4,291,831	3,146,834		1,144,997	6,803,904	1,245,689		-	-		-	-	-
Total			\$ 123,038,022	\$ 41,531,623	\$ 81,506,399						\$ 123,038,022	\$ 41,531,623		\$ 81,506,399	\$ 355,686,084	\$ 168,072,257		\$ 97,563,900	\$ 32,111,016		\$ 65,452,884	\$ 294,646,451	\$ 136,373,562
SEWER																							
Buildings			\$ 5,639,865	\$ 4,985,136	\$ 654,729						\$ 5,639,865	\$ 4,985,136		\$ 654,729	\$ 20,343,894	\$ 1,758,076		\$ 5,601,007	\$ 4,949,968		\$ 651,039	\$ 19,852,770	\$ 1,754,327
CIP Projects			4,216,287	-	4,216,287						4,216,287	-		4,216,287	6,866,773	6,866,773		4,216,287	-		4,216,287	6,866,773	6,866,773
Distribution/Collection			48,261,318	19,580,235	28,681,083						48,261,318	19,580,235		28,681,083	141,382,222	71,742,515		33,482,300	13,628,858		19,853,443	98,082,008	47,413,553
Infrastructure			15,653,739	1,547,610	14,106,129						15,653,739	1,547,610		14,106,129	23,907,047	21,421,224		7,149,249	569,715		6,579,534	11,710,351	10,782,469
Land			365,171	-	365,171						365,171	-		365,171	365,171	365,171		-	-		-	-	-
Major Equipment			3,523,173	2,403,447	1,119,726						3,523,173	2,403,447		1,119,726	5,603,989	1,199,357		-	-		-	-	-
Total			\$ 77,659,553	\$ 28,516,429	\$ 49,143,124						\$ 77,659,553	\$ 28,516,429		\$ 49,143,124	\$ 198,469,114	\$ 103,353,115		\$ 50,448,843	\$ 19,148,541		\$ 31,300,302	\$ 136,511,902	\$ 66,817,122

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix B

Capital Improvement Plan &
Growth-Related Capital Costs



Line	Description	Include (Y/N)	Total	Fiscal Year Ending June 30											
				2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Assumed Inflation Rate				0.00%	5.00%	5.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Compound Inflation Rate				100.00%	105.00%	110.25%	113.56%	116.96%	120.47%	124.09%	127.81%	131.64%	135.59%	139.66%	
WATER															
1	Charlotte Water Interconnect - Summers Walk (0.5 MGD)	Yes	\$ 413,700	\$ 0	\$ 413,700	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	
2	Mountain Vine Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
3	Copper Creek Trail Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
4	Dovefield Lane Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
5	Jim Johnson Rd Waterline	Yes	1,023,437	0	0	0	0	1,023,437	0	0	0	0	0	0	
6	Canton Drive Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
7	16" Connection under Railroad Tracks Downtown	Yes	2,076,115	0	0	0	0	2,076,115	0	0	0	0	0	0	
8	Charlotte Water Connection - Davidson Rd (1.0 MGD)	Yes	8,012,320	0	0	0	0	0	0	8,012,320	0	0	0	0	
9	Crusader Way Water Connection at Gibraltar Street	No	0	0	0	0	0	0	0	0	0	0	0	0	
10	East of 85 Waterline Installtions, Phase 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
11	Glenn Ave Waterline - Segment 1 (24")	Yes	7,266,987	0	0	0	0	7,266,987	0	0	0	0	0	0	
12	Tucker Ave Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
13	3 Sisters Water Connection at Trinity Church Rd	No	0	0	0	0	0	0	0	0	0	0	0	0	
14	Biscayne Drive connection to Archdale, etc.	Yes	3,708,971	0	0	0	0	0	0	3,708,971	0	0	0	0	
15	Glenn Ave Waterline - Segment 2 (24")	No	0	0	0	0	0	0	0	0	0	0	0	0	
16	East of 85 Waterline Installtions, Phase 2	No	0	0	0	0	0	0	0	0	0	0	0	0	
17	Glenn Ave Waterline - Segment 3 (16")	No	0	0	0	0	0	0	0	0	0	0	0	0	
18	New Downtown Elevated Tank (north side, 1 MG)	Yes	15,204,913	0	0	0	0	0	0	0	0	15,204,913	0	0	
19	Spring Valley / Hardwood Lane FH Line	No	0	0	0	0	0	0	0	0	0	0	0	0	
20	Odell School Rd Watermain Extension	No	0	0	0	0	0	0	0	0	0	0	0	0	
21	Salisbury Connection (2 MGD)	Yes	28,339,061	0	0	0	0	0	0	0	0	0	28,339,061	0	
22	Shiloh BPS Upgrade, Phase 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
23	WTP Feed to Kannapolis Parkway, Option 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
24	WTP High Service Pump Upgrade	No	0	0	0	0	0	0	0	0	0	0	0	0	
25	Odell School Rd Activity Center Water Main Extension	No	0	0	0	0	0	0	0	0	0	0	0	0	
26	Shiloh BPS Upgrade, Phase 2	No	0	0	0	0	0	0	0	0	0	0	0	0	
27	Albemarle WTP Expansion (2 MGD)	No	0	0	0	0	0	0	0	0	0	0	0	0	
28	Northwest Service District Elevated Storage Tank	No	0	0	0	0	0	0	0	0	0	0	0	0	
29	Off-Stream Raw Water Storage from Coddle Creek Reservoir	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
30	WTP Rehab, Phase 1 - PFAS Removal	Yes	16,039,997	0	0	0	16,039,997	0	0	0	0	0	0	0	
31	WTP Rehab, Phase 2 - General (Part A)	Yes	1,623,872	0	0	0	1,623,872	0	0	0	0	0	0	0	
32	WTP Rehab, Phase 2 - General (Part B)	Yes	6,700,717	0	0	0	0	0	0	6,700,717	0	0	0	0	
33	WTP Rehab, Phase 2 - General (Part C)	Yes	5,830,525	0	0	0	0	0	0	0	0	0	5,830,525	0	
34	WTP Rehab, Phase 2 - General (Part D)	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
35	WTP Rehab, Phase 2 - General (Part E)	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
36	NCDOT Project BR-0181	Yes	526,339	0	0	0	0	526,339	0	0	0	0	0	0	
37	2-inch Water Main Replacement	Yes	29,650,094	0	525,000	1,102,500	1,135,575	3,508,927	3,614,195	3,722,620	3,834,299	3,949,328	4,067,808	4,189,842	
38	Total Water CIP		\$126,417,048	\$ 0	\$ 938,700	\$ 1,102,500	\$ 18,799,444	\$ 14,401,805	\$ 3,614,195	\$ 22,144,628	\$ 3,834,299	\$ 19,154,241	\$ 38,237,394	\$ 4,189,842	

Line	Description	Include (Y/N)	Total	Fiscal Year Ending June 30										
				2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
SEWER														
39	Forestbrook Force Main	Yes	\$ 275,000	\$ 275,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
40	Coldwater Creek Outfall	Yes	3,406,725	0	0	3,406,725	0	0	0	0	0	0	0	0
41	Edinburg Drive	Yes	2,530,238	0	0	2,530,238	0	0	0	0	0	0	0	0
42	Mallard Pointe Drive	No	0	0	0	0	0	0	0	0	0	0	0	0
43	Three Mile Branch Collector	No	0	0	0	0	0	0	0	0	0	0	0	0
44	Old Plank Road	No	0	0	0	0	0	0	0	0	0	0	0	0
45	Irish Buffalo Greenway Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
46	Mount Olivet Road	No	0	0	0	0	0	0	0	0	0	0	0	0
47	Upper Rocky River Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
48	Kentucky Street Local Collector	Yes	893,025	0	0	893,025	0	0	0	0	0	0	0	0
49	Brantley Road Force Main	No	0	0	0	0	0	0	0	0	0	0	0	0
50	Midlake Road Lift Station Expansion	No	0	0	0	0	0	0	0	0	0	0	0	0
51	Brantley Road Lift Station Expansion	No	0	0	0	0	0	0	0	0	0	0	0	0
52	Three Mile Branch Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
53	Summit Ridge Lane	No	0	0	0	0	0	0	0	0	0	0	0	0
54	Centergrove Road	No	0	0	0	0	0	0	0	0	0	0	0	0
55	New Gilead Extension	No	0	0	0	0	0	0	0	0	0	0	0	0
56	WSACC RRRWWTP 30 to 34 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
57	WSACC RRRWWTP 34 to 36 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
58	WSACC RRRWWTP 36 to 45 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
59	WSACC RRRWWTP 45 to 54 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
60	WSACC Interceptor Improvements - 2030	No	0	0	0	0	0	0	0	0	0	0	0	0
61	WSACC Interceptor Improvements - 2040	No	0	0	0	0	0	0	0	0	0	0	0	0
62	WSACC Interceptor Improvements - 2050	No	0	0	0	0	0	0	0	0	0	0	0	0
63	WSACC Interceptor Improvements - Watchlist	No	0	0	0	0	0	0	0	0	0	0	0	0
64	Landis-Kannapolis WWTP (.800 MGD)	Yes	29,150,100	0	0	29,150,100	0	0	0	0	0	0	0	0
65	SRU Kannapolis Crossing LS Improvements (.317 MGD)	Yes	6,059,340	0	0	6,059,340	0	0	0	0	0	0	0	0
66	Ongoing Lift Station Maintenance	Yes	1,597,374	0	0	82,688	170,336	175,446	180,710	186,131	191,715	197,466	203,390	209,492
67	Annual Sewer Inspection	Yes	2,128,079	0	0	209,475	215,759	222,232	228,899	235,766	242,839	250,124	257,628	265,357
68	Annual Sewer Rehabilitation	Yes	13,965,498	0	525,000	1,323,000	1,362,690	1,403,571	1,445,678	1,489,048	1,533,720	1,579,731	1,627,123	1,675,937
69	GIS Survey and Update	Yes	50,512	0	0	0	0	23,393	0	0	0	0	27,119	0
70	Public Works Operations Center	Yes	1,543,500	0	0	1,543,500	0	0	0	0	0	0	0	0
71	Total Sewer CIP		\$ 61,599,391	\$ 275,000	\$ 525,000	\$ 45,198,091	\$ 1,748,785	\$ 1,824,642	\$ 1,855,287	\$ 1,910,945	\$ 1,968,274	\$ 2,027,321	\$ 2,115,260	\$ 2,150,786
72	Total Water & Sewer System CIP		\$188,016,439	\$ 275,000	\$ 1,463,700	\$ 46,300,591	\$ 20,548,229	\$ 16,226,447	\$ 5,469,482	\$ 24,055,573	\$ 5,802,573	\$ 21,181,562	\$ 40,352,654	\$ 6,340,628

Line	Description	System Allocation		Total	Percentage Allocation ⁽¹⁾			Allocation Amount		
		System	Project Type		Capacity Expansion	R&R	Other	Capacity Expansion	R&R	Other
	SYSTEM PROJECTS									
Water										
1	Charlotte Water Interconnect - Summers Walk (0.5 MGD)	Water	Transmission	\$ 413,700	100.00%	0.00%	0.00%	\$ 413,700	\$ 0	\$ 0
2	Mountain Vine Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
3	Copper Creek Trail Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
4	Dovefield Lane Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
5	Jim Johnson Rd Waterline	Water	Transmission	1,023,437	100.00%	0.00%	0.00%	1,023,437	0	0
6	Canton Drive Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
7	16" Connection under Railroad Tracks Downtown	Water	Transmission	2,076,115	100.00%	0.00%	0.00%	2,076,115	0	0
8	Charlotte Water Connection - Davidson Rd (1.0 MGD)	Water	Transmission	8,012,320	100.00%	0.00%	0.00%	8,012,320	0	0
9	Crusader Way Water Connection at Gibraltar Street	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
10	East of 85 Waterline Installtions, Phase 1	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
11	Glenn Ave Waterline - Segment 1 (24")	Water	Transmission	7,266,987	100.00%	0.00%	0.00%	7,266,987	0	0
12	Tucker Ave Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
13	3 Sisters Water Connection at Trinity Church Rd	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
14	Biscayne Drive connection to Archdale, etc.	Water	Transmission	3,708,971	0.00%	0.00%	100.00%	0	0	3,708,971
15	Glenn Ave Waterline - Segment 2 (24")	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
16	East of 85 Waterline Installtions, Phase 2	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
17	Glenn Ave Waterline - Segment 3 (16")	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
18	New Downtown Elevated Tank (north side, 1 MG)	Water	Transmission	15,204,913	100.00%	0.00%	0.00%	15,204,913	0	0
19	Spring Valley / Hardwood Lane FH Line	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
20	Odell School Rd Watermain Extension	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
21	Salisbury Connection (2 MGD)	Water	Treatment	28,339,061	100.00%	0.00%	0.00%	28,339,061	0	0
22	Shiloh BPS Upgrade, Phase 1	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
23	WTP Feed to Kannapolis Parkway, Option 1	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
24	WTP High Service Pump Upgrade	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
25	Odell School Rd Activity Center Water Main Extension	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
26	Shiloh BPS Upgrade, Phase 2	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
27	Albemarle WTP Expansion (2 MGD)	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
28	Northwest Service District Elevated Storage Tank	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
29	Off-Stream Raw Water Storage from Coddle Creek Reservoir	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
30	WTP Rehab, Phase 1 - PFAS Removal	Water	Treatment	16,039,997	0.00%	100.00%	0.00%	0	16,039,997	0
31	WTP Rehab, Phase 2 - General (Part A)	Water	Treatment	1,623,872	100.00%	0.00%	0.00%	1,623,872	0	0
32	WTP Rehab, Phase 2 - General (Part B)	Water	Treatment	6,700,717	50.00%	50.00%	0.00%	3,350,359	3,350,358	0
33	WTP Rehab, Phase 2 - General (Part C)	Water	Treatment	5,830,525	100.00%	0.00%	0.00%	5,830,525	0	0
34	WTP Rehab, Phase 2 - General (Part D)	Water	Treatment	0	50.00%	50.00%	0.00%	0	0	0
35	WTP Rehab, Phase 2 - General (Part E)	Water	Treatment	0	50.00%	50.00%	0.00%	0	0	0
36	NCDOT Project BR-0181	Water	Transmission	526,339	0.00%	100.00%	0.00%	0	526,339	0
37	2-inch Water Main Replacement	Water	Transmission	29,650,094	0.00%	100.00%	0.00%	0	29,650,094	0
SEWER										
38	Forestbrook Force Main	Sewer	Collection	275,000	100.00%	0.00%	0.00%	275,000	0	0
39	Coldwater Creek Outfall	Sewer	Collection	3,406,725	100.00%	0.00%	0.00%	3,406,725	0	0
40	Edinburg Drive	Sewer	Collection	2,530,238	100.00%	0.00%	0.00%	2,530,238	0	0
41	Mallard Pointe Drive	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
42	Three Mile Branch Collector	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
43	Old Plank Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
44	Irish Buffalo Greenway Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
45	Mount Olivet Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
46	Upper Rocky River Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
47	Kentucky Street Local Collector	Sewer	Collection	893,025	100.00%	0.00%	0.00%	893,025	0	0
48	Brantley Road Force Main	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
49	Midlake Road Lift Station Expansion	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
50	Brantley Road Lift Station Expansion	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
51	Three Mile Branch Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
52	Summit Ridge Lane	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
53	Centergrove Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
54	New Gilead Extension	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
55	WSACC RRRWWTP 30 to 34 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
56	WSACC RRRWWTP 34 to 36 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
57	WSACC RRRWWTP 36 to 45 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
58	WSACC RRRWWTP 45 to 54 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
59	WSACC Interceptor Improvements - 2030	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
60	WSACC Interceptor Improvements - 2040	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
61	WSACC Interceptor Improvements - 2050	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
62	WSACC Interceptor Improvements - Watchlist	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
63	Landis-Kannapolis WWTP (.800 MGD)	Sewer	Treatment	29,150,100	100.00%	0.00%	0.00%	29,150,100	0	0
64	SRU Kannapolis Crossing LS Improvements (.317 MGD)	Sewer	Collection	6,059,340	100.00%	0.00%	0.00%	6,059,340	0	0
65	Ongoing Lift Station Maintenance	Sewer	Collection	1,597,374	0.00%	100.00%	0.00%	0	1,597,374	0
66	Annual Sewer Inspection	Sewer	Collection	2,128,079	0.00%	0.00%	100.00%	0	0	2,128,079
67	Annual Sewer Rehabilitation	Sewer	Collection	13,965,498	0.00%	100.00%	0.00%	0	13,965,498	0
68	GIS Survey and Update	Sewer	Collection	50,512	0.00%	100.00%	0.00%	0	50,512	0
69	Public Works Operations Center	Sewer	Collection	1,543,500	0.00%	0.00%	100.00%	0	0	1,543,500
70	Total - All Capital Projects			\$ 188,016,439				\$ 115,455,717	\$ 65,180,172	\$ 7,380,550

Line	Description	System Allocation		Total	Percentage Allocation ^[1]			Allocation Amount					
		System	Project Type		Capacity Expansion	R&R	Other	Capacity Expansion	R&R	Other			
	ALLOCATION OF PROJECTS												
Water													
71	Treatment Projects			\$	58,534,172			\$	39,143,817	\$	19,390,355	\$	0
72	Transmission Projects				67,882,876				33,997,472		30,176,433		3,708,971
73	Total			\$	126,417,048			\$	73,141,289	\$	49,566,788	\$	3,708,971
SEWER													
74	Treatment Projects			\$	29,150,100			\$	29,150,100	\$	0	\$	0
75	Collection Projects				32,449,291				13,164,328		15,613,384		3,671,579
76	Total			\$	61,599,391			\$	42,314,428	\$	15,613,384	\$	3,671,579
Combined													
77	Treatment Projects			\$	87,684,272			\$	68,293,917	\$	19,390,355	\$	0
78	Transmission Projects				67,882,876				33,997,472		30,176,433		3,708,971
79	Collection Projects				32,449,291				13,164,328		15,613,384		3,671,579
80	Grand Total			\$	188,016,439			\$	115,455,717	\$	65,180,172	\$	7,380,550

Notes:

[1] The capital costs are allocated in order to determine the costs that are recoverable from a capacity-related fee. The costs allocated as capacity expansion projects are assumed to be recoverable from such fees. All other capital costs are assumed to either be maintenance-related (R&R) projects or localized projects that do not provide system-wide capacity benefits.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix C

Water System Development Fee Calculation



WATER & SEWER SYSTEM

WATER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Recoverable Capital Facilities		
Existing Facilities		
1	Buildings	\$ 25,051,552
2	CIP Projects	11,459,685
3	Distribution/Collection	85,692,289
4	Infrastructure	14,170,036
5	Land	0
6	Major Equipment	0
7	Total Existing Facilities	\$ 136,373,562 ^[1]
8	Less Debt Service Principal	\$ (36,880,966) ^[2]
9	Total Recoverable Existing Assets	\$ 99,492,596
Capital Improvement Program		
10	Total Capital Projects	\$ 126,417,048
11	Unrecoverable Capital Projects	(53,275,759)
12	Total Growth Related Capital Projects	\$ 73,141,289 ^[3]
13	Less: 25.00% CIP Adjustment	(18,285,322) ^[3]
14	Recoverable Capital Projects	\$ 54,855,967
15	Total System Recoverable Assets	\$ 154,348,563
Available System Capacity (MGD)		
Existing Water Capacity (MGD)		
16	City's Water Treatment Plant	15.000 ^[4]
17	Interconnection With Albemarle	2.000 ^[4]
Anticipated Water Capacity (MGD)		
18	Charlotte Water Interconnect - Summers Walk	0.500 ^[4]
19	Charlotte Water Connection - Davidson Rd	1.000 ^[4]
20	Salisbury Connection	2.000 ^[4]
21	WTP Rehab, Phase 2	1.000 ^[4]
22	Total System Capacity (MGD)	21.500 ^[5]
Capacity Adjustment		
23	Water Loss Adjustment	15.0% ^[6]
24	Estimated Capacity (MGD)	18.275

WATER & SEWER SYSTEM

WATER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Total Estimated Capacity (ERUs)		
25	Assumed Standard Level of Service Per ERU (gpd)	400 ^[7]
26	Total ERU Capacity (Total System Capacity/LOS per ERU)	45,688
Calculation of System Development Fee per ERU		
27	Estimated Cost per Gallon of Capacity	\$ 8.45
28	Calculated SDF per ERU	\$ 3,378
29	Less Rounding Adjustment	(78)
30	Calculated SDF per ERU (Rounded)	\$ 3,300

Notes:

- [1] See **Appendix A** for the development of existing asset costs identified for capital recovery.
- [2] Based upon discussions with Utility staff, a portion of the facilities included for cost recovery in this analysis were funded with debt. In an effort to account for the facility costs that may be recovered from user rates as part of the normal budgetary process, a debt service credit is applied to the applicable fee calculation. The credit is equal to the outstanding principal amount on existing utility-related debt as provided by City staff. The principal balance is allocated between water and wastewater as provided in **Appendix A**.
- [3] See **Appendix B** for the development of growth-related capital improvement costs in accordance with the CIP and capital projects included for recovery. An additional CIP credit is applied equal to 25% of the growth-related capital improvements. This adjustment is made in accordance with House Bill 436, § 162A-207.
- [4] The available and anticipated maximum day water capacity amounts were provided by the City staff.
- [5] Reflects the total combined maximum day water capacity available to serve water customers, prior to limiting factor adjustments, as applicable.
- [6] An adjustment is made for assumed unaccounted-for water flows (i.e. line losses) in the system. For the purpose of this analysis, the line-loss factor is assumed to be 15.00% based on discussions with City staff.
- [7] The system development charges are to be applied on an equivalent residential unit (ERU) basis such that 1 ERU is equal to the estimated capacity requirements for a typical single family residential connection with a 5/8-inch X 3/4-inch water meter. In accordance with daily water flow requirements adopted by the State of North Carolina and defined the North Carolina Administrative Codes (15A NCAC 18C .0409), the level of service requirement for a residential connection is 400 gallons per day (gpd). Applying the NCAC flow standard, it is assumed that 1 ERU requires a standard level of service of 400 gpd.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix D

Sewer System Development Fee Calculation



WATER & SEWER SYSTEM

SEWER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Recoverable Capital Facilities		
Existing Facilities		
1	Buildings	\$ 1,754,327
2	CIP Projects	6,866,773
3	Distribution/Collection	47,413,553
4	Infrastructure	10,782,469
5	Land	0
6	Major Equipment	0
7	Total Existing Facilities	\$ 66,817,122 [1]
8	Less Debt Service Principal	\$ (23,809,764) [2]
9	Total Recoverable Existing Assets	\$ 43,007,358
Capital Improvement Program		
10	Total Capital Projects	\$ 61,599,391
11	Unrecoverable Capital Projects	(19,284,963)
12	Total Growth Related Capital Projects	\$ 42,314,428 [3]
13	Less: 25.00% CIP Adjustment	(10,578,607) [3]
14	Recoverable Capital Projects	\$ 31,735,821
15	Total System Recoverable Assets	\$ 74,743,179
Available System Capacity (MGD)		
Existing Sewer Capacity (MGD)		
16	Available Capacity From WSACC	4.290 [4]
17	Distribution 14	1.691 [4]
Anticipated Sewer Capacity (MGD)		
18	Kannapolis Portion of 2027 WSACC WWTP Expansion	0.950 [4]
19	Landis-Kannapolis WWTP (.800 MGD)	0.800 [4]
20	SRU Kannapolis Crossing LS Improvements (.317 MGD)	0.317 [4]
21	Total System Capacity (MGD)	8.048
Capacity Adjustment		
22	I&I Adjustment	6.40% [5]
23	Estimated Capacity (MGD)	7.533
Total Estimated Capacity (ERUs)		
24	Assumed Standard Level of Service Per ERU (gpd)	263 [6]
25	Total ERU Capacity (Total System Capacity/LOS per ERU)	28,643

WATER & SEWER SYSTEM

SEWER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Calculation of System Development Fee per ERU		
26	Estimated Cost per Gallon of Capacity	\$ 9.92
27	Calculated SDF per ERU	\$ 2,604
28	Less Rounding Adjustment	(4)
29	Calculated SDF per ERU (Rounded)	\$ 2,600

Notes:

- [1] See **Appendix A** for the development of existing asset costs identified for capital recovery.
- [2] Based upon discussions with Utility staff, a large portion of the facilities included for cost recovery in this analysis were funded with debt. In an effort to account for the facility costs that may be recovered from user rates as part of the normal budgetary process, a debt service credit is applied to the applicable fee calculation. The credit is equal to outstanding principal amount on existing utility-related debt as provided by City staff. The principal balance is allocated between water and wastewater as provided in **Appendix A**.
- [3] See **Appendix B** for the development of growth-related capital improvement costs in accordance with the CIP and capital projects included for recovery. An additional CIP credit is applied equal to 25% of the growth-related capital improvements. This adjustment is made in accordance with House Bill 436, § 162A-207.
- [4] As a member of the Water and Sewer Authority of Cabarrus County (WSACC), the City has wastewater treatment capacity as contracted. The available and anticipated capacity amounts were provided by the City staff.
- [5] For the purpose of this analysis, it is assumed that the wastewater system capacity is reduced by the impacts of system inflow and infiltration (I&I). The assumed I&I adjustment of 6.40% is based on discussions with City staff.
- [6] Similar to the water system, the system development charges for wastewater are to be applied on an equivalent residential unit (ERU) basis such that 1 ERU is equal to the estimated capacity requirements for a typical single family residential connection with a 5/8-inch X 3/4-inch water meter. In accordance with wastewater flow design standards adopted by the State of North Carolina and defined the North Carolina Administrative Codes (15A NCAC 02T .0114), the level of service (LOS) requirement is based on 75 gallons of capacity per day per bedroom for a residential home. The analysis provided herein utilizes the City's implied LOS standard. The City stated that their permitting requires 75 GPD per bedroom and that at least 50% of the new homes being built currently have 4 bedrooms. Due to the increase in bedrooms per home being built, it is assumed that the average household has 3.5 bedrooms, resulting in a LOS of 263 gpd. This better reflects the mix of residential construction currently being seen by the City and they expect the building of larger homes to continue in the future.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix E

Summary of Calculated
System Development Fees

WATER & SEWER SYSTEM

SUMMARY OF CALCULATED SYSTEM DEVELOPMENT FEES

Line	Description	Meter- Based ERU Factor	Fees by System			Combined Fee
			Water	Sewer	WSACC ^[2]	
	EXISTING FEES					
Meter Size:						
1	5/8 Inch		\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
2	3/4 Inch		\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
3	1.0 Inch		\$ 3,000	\$ 1,625	\$ 4,947	\$ 9,572
4	1.5 Inch		\$ 6,000	\$ 3,250	\$ 9,893	\$ 19,143
5	2.0 Inch		\$ 9,600	\$ 5,200	\$ 15,829	\$ 30,629
6	3.0 Inch		\$ 18,000	\$ 9,750	\$ 31,659	\$ 59,409
7	4.0 Inch		\$ 30,000	\$ 16,250	\$ 49,467	\$ 95,717
8	6.0 Inch		\$ 60,000	\$ 32,500	\$ 98,933	\$ 191,433
9	8.0 Inch		\$ 96,000	\$ 52,000	\$ 158,293	\$ 306,293
10	10.0 Inch		\$ 138,000	\$ 74,000	\$ 415,520	\$ 627,520
	CALCULATED FEES		^[1]			
Meter Size:						
11	5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
12	3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
13	1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
14	1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
15	2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
16	3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
17	4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
18	6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
19	8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
20	10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020
	OPTIONAL ACTUAL FLOW BASIS		^[3]			
21	Cost Per Gallon of Capacity (GPD)		\$ 8.45	\$ 9.92	N/A	\$ 18.37

Notes:

- [1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.
- [2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.
- [3] In situations where the application of the meter-based fees will result in the collection of fees significantly different than the potential demand requirement, a special fee calculation methodology may be applied based on the unit cost of capacity and the estimated daily capacity needs of the new service connection. The estimated capacity needs will be based on the amount determined by the utility's engineering staff to be appropriate.



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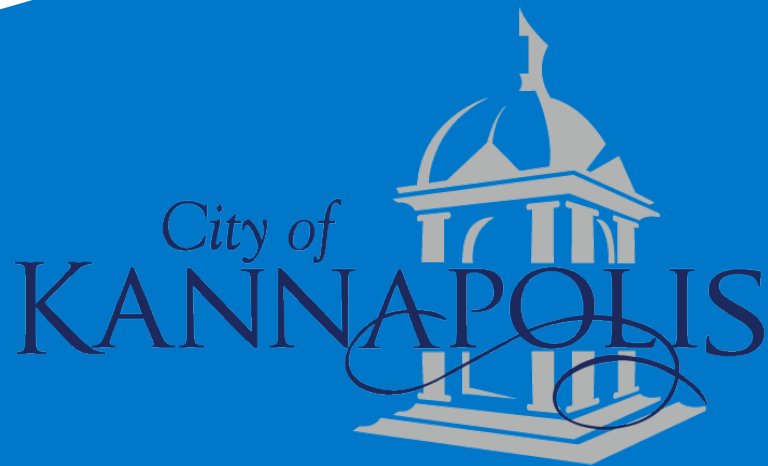
City of Kannapolis

Water & Sewer System Development Fee Study

September 14, 2026

Willdan Financial Services

- Daryll Parker, Vice President
- Michael Cronan, Senior Project Manager



North Carolina Governing Law

- Section 1, Chapter 162A, Article 8
- SDF Defined By 162A-201(9)
 - Imposed on new development
 - Fund costs of water/sewer improvements (existing and planned)
 - “Necessitated by and attributable to such new development”
 - United States Supreme Court has said growth is to pay for growth.

Fee Adoption Procedures

- Fee analysis prepared by a financial professional
- Must employ “generally accepted accounting, engineering, and planning methodologies”
- CIP planning horizon of 5-20 years (incremental cost)
- Posted online for at least 45 days (public comment)
- Public Hearing after 45-day posting period
- Modifications to fee analysis, if needed
- Adopt fee by resolution or ordinance
- Update Analysis at least every 5 years

Existing System Development Fees

Description	Water System Development Fee	Sewer System Development Fee	W SACC [1]	Total
Meter Size:				
5/8 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
3/4 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
1.0 Inch	\$ 3,000	\$ 1,625	\$ 4,947	\$ 9,572
1.5 Inch	\$ 6,000	\$ 3,250	\$ 9,893	\$ 19,143
2.0 Inch	\$ 9,600	\$ 5,200	\$ 15,829	\$ 30,629
3.0 Inch	\$ 18,000	\$ 9,750	\$ 31,659	\$ 59,409
4.0 Inch	\$ 30,000	\$ 16,250	\$ 49,467	\$ 95,717
6.0 Inch	\$ 60,000	\$ 32,500	\$ 98,933	\$ 191,433
8.0 Inch	\$ 96,000	\$ 52,000	\$ 158,293	\$ 306,293
10.0 Inch	\$ 138,000	\$ 74,000	\$ 415,520	\$ 627,520

Notes:

[1] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

City of Kannapolis

Water & Sewer Utility System Development Fee Study

Methodology & Fee Calculation

Capacity-Related Fee Calculation Methodology

- Method to calculate fee based on American Water Works Association (AWWA) M1 Manual and N.C.G.S. 162A-207
- **Buy-In:** Includes existing infrastructure that has been built and maintained
- **Incremental/Marginal Cost:** Includes new facilities (capital improvement program or “CIP”) to be built to serve new growth
- **Combined:** A blend of new and existing facilities

Existing Assets – Included for Recovery

Water System

- Water Supply Facilities
- Water Treatment Facilities
- Storage Facilities
- Major Transmission Lines
- Major Pumping Facilities

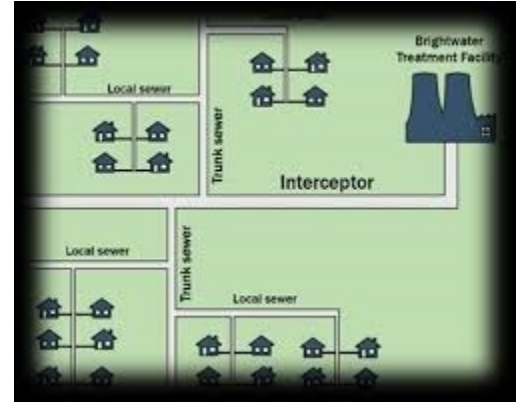
Sewer System

- Major Collection/Conveyance Lines & Force Mains
- Major Lift Stations
- Flow Equalization Facilities
- Wastewater Treatment Facilities
- Disposal Facilities

Existing Assets – Excluded from Recovery

Excluded Assets

- Small/Local Collection Lines
- Neighborhood-Specific Facilities
- Contributed Facilities
- Grant Funded Facilities



Total Existing Assets - RCNLD

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,783,798	\$ 42,344,951	\$ (17,197,529)	\$ 25,147,422
CIP Projects	7,508,186	11,577,038	-	11,577,038
Distribution/Collection	74,966,609	266,496,966	(16,666,644)	104,830,322
Infrastructure	18,013,703	27,989,332	(3,191,440)	24,797,892
Land	473,895	473,895	-	473,895
Major Equipment	4,291,831	6,803,904	(5,558,215)	1,245,689
Total Existing Facilities	\$ 123,038,022	\$ 355,686,084	\$ (187,613,827)	\$ 168,072,257
Sewer Asset Category:				
Buildings	\$ 5,639,865	\$ 20,343,894	\$ (18,585,818)	\$ 1,758,076
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	48,261,318	141,382,222	(69,639,707)	71,742,515
Infrastructure	15,653,739	23,907,067	(2,485,843)	21,421,224
Land	365,171	365,171	-	365,171
Major Equipment	3,523,173	5,603,989	(4,404,632)	1,199,357
Total Existing Facilities	\$ 77,659,553	\$ 198,469,114	\$ (95,115,999)	\$ 103,353,115
Total Existing Facilities	\$ 200,697,574	\$ 554,155,198	\$ (282,729,826)	\$ 271,425,372

Existing Recoverable Assets - RCNLD

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,675,683	\$ 41,736,724	\$ (16,685,172)	\$ 25,051,552
CIP Projects	7,413,806	11,459,685	-	11,459,685
Distribution/Collection	62,964,036	225,649,027	(139,956,738)	85,692,289
Infrastructure	9,510,376	15,801,015	(1,630,979)	14,170,036
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 97,563,900	\$ 294,646,451	\$ (158,272,889)	\$ 136,373,562
Sewer Asset Category:				
Buildings	\$ 5,601,007	\$ 19,852,770	\$ (18,098,443)	\$ 1,754,327
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	33,482,300	98,082,008	(50,668,455)	47,413,553
Infrastructure	7,149,249	11,710,351	(927,882)	10,782,469
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 50,448,843	\$ 136,511,902	\$ (69,694,780)	\$ 66,817,122
Total Recoverable Facilities	\$ 148,012,742	\$ 431,158,352	\$ (227,967,668)	\$ 203,190,684

Planned Capital Improvements (CIP)

Recoverable

- Capacity Expansion Projects
- Major System Upgrades:
 - Improved Operating Efficiency
 - Meeting Regulatory Requirements

Non-recoverable

- Renewal & Replacement (R&R):
 - Aged/Deteriorated Facilities
 - No Added Capacity
- Other Capital Items:
 - Vehicles & Equipment
 - Administrative Facilities
 - Grant/Developer Funded Projects

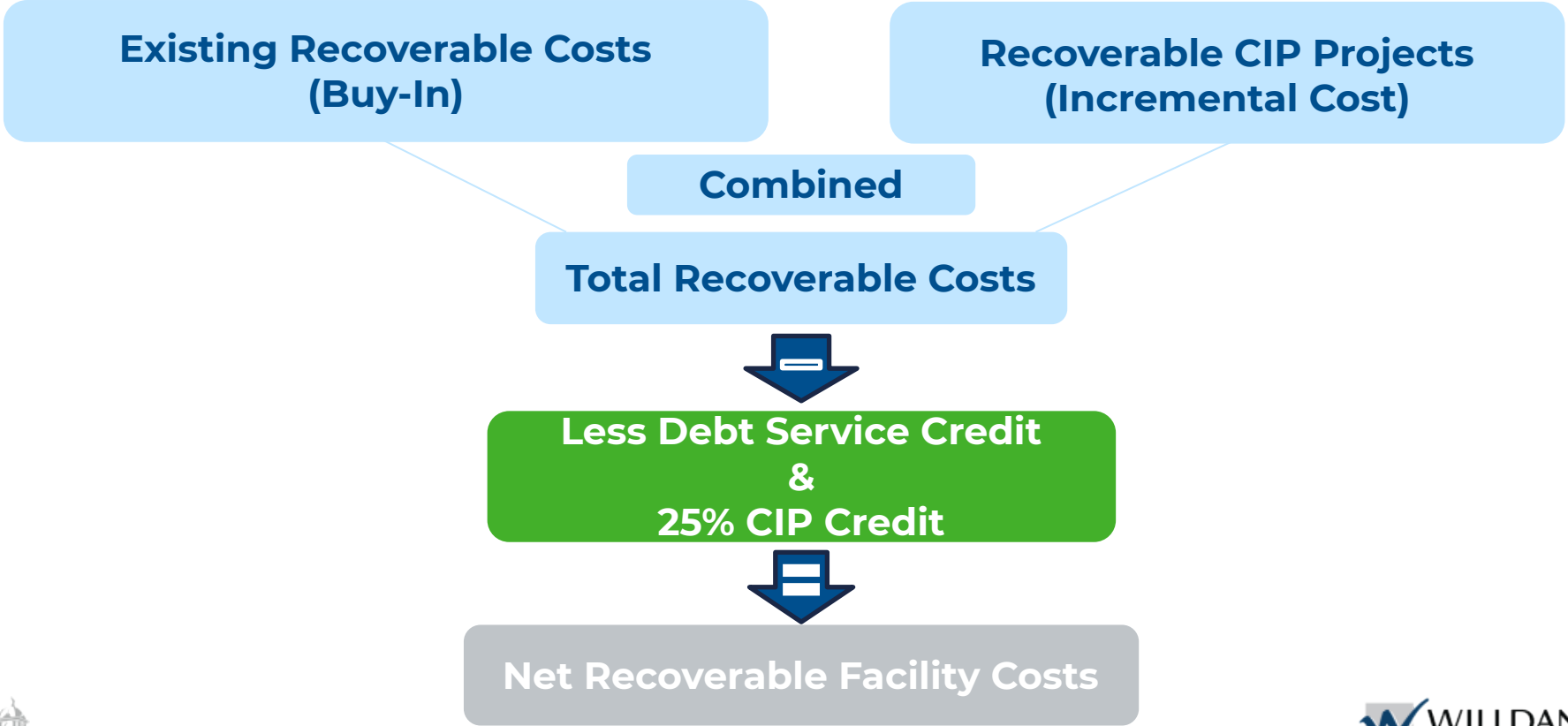
Capital Improvement Program (CIP)

Description	Water Capital	Sewer Capital	Total
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717

Total Recoverable Costs

Description	Water System	Sewer System	Total
Existing Recoverable Assets			
Buildings	\$ 25,051,552	\$ 1,754,327	\$ 26,805,879
CIP Projects	11,459,685	6,866,773	18,326,458
Distribution/Collection	85,692,289	47,413,553	133,105,842
Infrastructure	14,170,036	10,782,469	24,952,505
Land	-	-	-
Major Equipment	-	-	-
Total Recoverable Existing Facilities	\$ 136,373,562	\$ 66,817,122	\$ 203,190,684
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401

Combined Method – Recoverable Costs



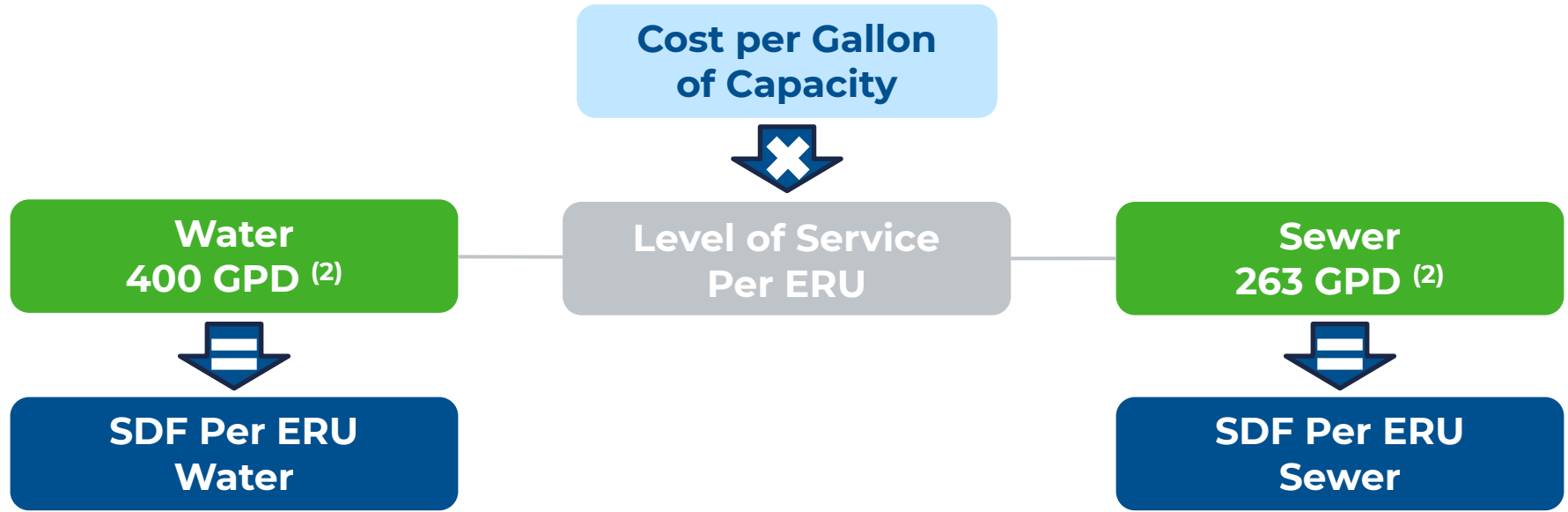
Net Recoverable Facility Costs

Description	Water System	Sewer System	Total
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401
Less Credits:			
Outstanding Principal on Existing Debt	\$ (36,880,966)	\$ (23,809,764)	\$ (60,690,730)
Growth-Related 25.00% CIP Adjustment	(18,285,322)	(10,578,607)	(28,863,929)
Total Credits Applied	\$ (55,166,288)	\$ (34,388,371)	\$ (89,554,659)
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179	\$ 229,091,742

Cost per Gallon of Capacity

Description	Water System	Sewer System
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179
Estimated Capacity (MGD)	18.275	7.533
Cost per Gallon of Capacity	\$ 8.45	\$ 9.92

Methodology – SDF Per ERU ⁽¹⁾



(1) Equivalent Residential Unit

(2) In accordance with the utility's existing planning methodology, it is assumed that 1 ERU requires a standard level of service of 400 gpd of water and 263 gpd sewer system capacity

Comparison of Fees per ERU

Description	Existing Fee	Calculated Fee ^[1]	Difference
System Development Fees			
Water System	\$ 1,350	\$ 3,300	\$ 1,950
Sewer System	1,000	2,600	1,600
Total	\$ 2,350	\$ 5,900	\$ 3,550

Notes:

[1] Calculated Fees are rounded down to the nearest hundred.

Calculated SDFs by Meter-Size

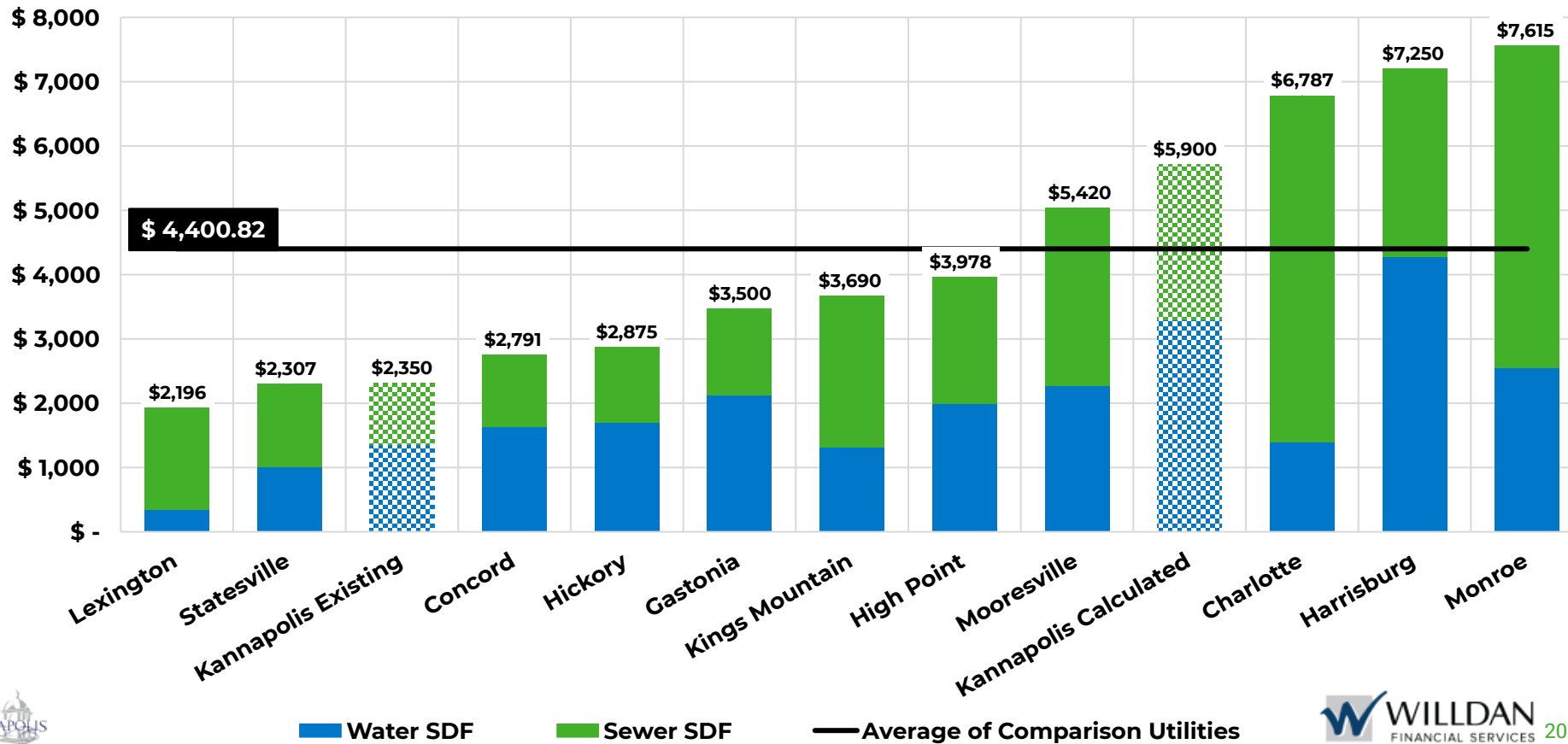
Description	Meter Factor ^[1]	Water System Development Fee	Sewer System Development Fee	W SACC ^[2]	Total
Meter Size:					
5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020

Notes:

[1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.

[2] Represents the existing FY2026 System Development Fees applied by W SACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of W SACC's fees and they are provided for informational purposes only.

Comparison With Other Utility Systems



City of Kannapolis
Water & Sewer Utility System Development Fee Study

Questions

Municipal Advisor Disclosure

Willdan Financial Services ("Willdan") is registered as a "municipal advisor" pursuant to Section 15B of the Securities Exchange Act and rules and regulations adopted by the United States Securities and Exchange Commission ("SEC") and the Municipal Securities Rulemaking Board ("MSRB"). The MSRB has made available on its website (www.msrb.org) a municipal advisory client brochure that describes the protections that may be provided by MSRB rules and how to file a complaint with the appropriate regulatory authority. As part of its SEC registration Willdan is required to disclose to the SEC information regarding criminal actions, regulatory actions, investigations, terminations, judgments, liens, civil judicial actions, customer complaints, arbitrations and civil litigation involving Willdan. Pursuant to MSRB Rule G-42, Willdan is required to disclose any legal or disciplinary event that is material to Client's evaluation of Willdan or the integrity of its management or advisory personnel. Willdan has determined that no such event exists. Copies of Willdan's filings with the United States Securities and Exchange Commission can currently be found by accessing the SEC's EDGAR system Company Search Page which is currently available at: <https://www.sec.gov/edgar/searchedgar/companysearch.html> and searching for either Willdan Financial Services or for our CIK number which is 0001782739.

For the avoidance of doubt and without limiting the foregoing, in connection with any revenue projections, cash-flow analyses, feasibility studies and/or other analyses Willdan may provide the municipality with respect to financial, economic or other matters relating to a prospective, new or existing issuance of municipal securities of the municipality, (A) any such projections, studies and analyses shall be based upon assumptions, opinions or views (including, without limitation, any assumptions related to revenue growth) established by the municipality, in conjunction with such of its municipal, financial, legal and other advisers as it deems appropriate; and (B) under no circumstances shall Willdan be asked to provide, nor shall it provide, any advice or recommendations or subjective assumptions, opinions or views with respect to the actual or proposed structure, terms, timing, pricing or other similar matters with respect to any municipal financial products or municipal securities issuances, unless formally engaged to provide such information.

Monthly service rate (6 inch)	\$63.60	\$76.32
Monthly service rate (8 inch)	\$71.60	\$85.92
Monthly service rate (10 inch)	\$89.60	\$107.52
Monthly service rate (12 inch)	\$120.60	\$144.72

Sewer Rates

Table 6.4 Individual Sewer Service

Size	Inside City	Outside City
* per 1,000 gallons water used	\$8.53	\$10.24
* base monthly charge	\$12.00	\$14.40
* monthly rate for unmetered service – residential only	\$71.71	\$86.05

Table 6.5 Private Sewer Systems (more than one user)

Size	Inside City	Outside City
* per 1,000 gallons based on master meter	\$8.53	\$10.24
* base monthly charge per user as determined by number of dwelling units or commercial spaces on site, occupied or vacant (Note 2)	\$12.00	\$14.40

Note 1: All City customers will pay the base charge in addition to the per 1,000-gallon charge. Master metered customers will pay the base charge times the number of units served in addition to the per 1,000-gallon charge. Residential water customers using metered service for irrigation purposes only, shall not (during periods when level II or higher water restrictions are in effect) be billed a minimum bill for zero (-0-) usage.

Note 2: Unmetered service is based upon an average of 7,000 gallons usage within a given month.

Water Tap & Connection Fees

Table 6.6 Individual Water Tap Fees

Size	Inside City	Outside City
3/4" service (installation by City)	\$3,250.00	\$3,250.00
1" service (installation by City)	\$3,450.00	\$3,450.00
1-1/2" service (installation by City)	\$3,750.00	\$3,750.00
2" service (installation by City)	\$4,050.00	\$4,050.00
Larger than 2" (installation by customer or City)	All Cost Borne By Customer	All Cost Borne By Customer

Individual Water connection fees: These fees were derived from meter factors as developed in the American Water Works Association Standards Manual. (See Note A)

Table 6.7 Water Meter Size

Size	Inside City	Outside City
* 3/4" service	\$ 3,300.00	\$ 3,300.00
* 1" service	\$ 8,250.00	\$ 8,250.00
* 1-1/2" service	\$ 16,500.00	\$ 16,500.00
* 2" service	\$ 26,400.00	\$ 26,400.00
* 3" service	\$ 49,500.00	\$ 49,500.00
* 4" service	\$ 82,500.00	\$ 82,500.00
* 6" service	\$ 165,000.00	\$ 165,000.00
* 8" service	\$ 264,000.00	\$ 264,000.00
* 10" service	\$ 379,500.00	\$ 379,500.00

(Note A)

- (1) Tap fee & connection fee shall be per lot or per unit to be served. Commercial Customers shall be all cost borne by customer & the tap fee is waived.
- (2) Master metered developments shall pay a connection fee for each lot or individual unit served or fee for meter size whichever is greater
- (3) Connection fee due from residential developers shall be paid before issuance of the zoning clearance permit. (Tap fees are waived where developer has installed water systems in accordance with City Ordinance.)
- (4) Connection fee is due from commercial & industrial developers before zoning permits can be issued by the City.
- (5) Connection fee for residential customers where a tap fee is also due shall be paid before tap is installed by the City.
- (6) Residential & commercial developers who have preliminary plats approved by the City before December 18, 2000 shall be exempt from paying the connection fee.
- (7) Commercial & industrial developers who are not required to obtain plat approval shall be exempt from paying the connection fee if zoning permits have been issued by the City prior to December 18, 2000. (Manufactured home parks & multi-family apartment complexes are included as commercial developers).
- (8) All applicable fees must be paid before receiving City water service.
- (9) All new or modified services in NCDOT owned rights-of-way shall be at cost, All Cost Borne By Customer.

SEWER TAP & CONNECTION FEES

Table 6.8 Individual Sewer Service Tap Fees

Size	Inside City	Outside City
* 4" service (installation by the City) (includes any size pumped by customer)	\$4,250.00	\$4,250
* 6" or larger or where utility encasement may be required (installation by customer or City)	All Cost Borne By Customer	All Cost Borne By Customer

Table 6.9 Tap on a New Sewer Line to Existing

Size	Inside City	Outside City
* All sizes (installation by the customer)	All Cost Borne By Customer	All Cost Borne By Customer

Individual Sewer Connection Fees: These fees were derived from meter factors as developed in the American Water Works Association Standards Manual. (See Notes below)

Table 6.10 Water Meter Size

Size	Inside City	Outside City
* 3/4" service	\$2,600.00	\$2,600.00
* 1" service	\$6,500.00	\$6,500.00
* 1-1/2" service	\$13,000.00	\$13,000.00
* 2" service	\$20,800.00	\$20,800.00
* 3" service	\$39,000.00	\$39,000.00
* 4" service	\$65,000.00	\$65,000.00
* 6" service	\$130,000.00	\$130,000.00
* 8" service	\$208,000.00	\$208,000.00
* 10" service	\$299,000.00	\$299,000.00

- (1) Tap fee and connection fee shall be per lot or per unit to be served. Commercial Customers shall be all cost borne by customer and the tap fee is waived.
- (2) Master metered developments shall pay a connection fee for each lot or individual unit served or fee for meter size whichever is greater.
- (3) Connection fee due from residential developers shall be paid before issuance of the zoning clearance permit. (Tap fees are waived where developer has installed sewer systems in accordance with City Ordinance.)
- (4) Connection fee is due from commercial and industrial developers at the time of application for service.
- (5) Connection fee for residential customers where a tap fee is also due shall be paid before tap is installed by the City.
- (6) Residential and commercial developers who have preliminary plats approved by the City before December 18, 2000, shall be exempt from paying the connection fee.
- (7) Commercial and industrial developers who are not required to obtain plat approval shall be exempt from paying the connection fee if zoning permits have been issued by the City prior to December 18, 2000. (Manufactured home parks and multi-family apartment complexes are included as commercial developers).
- (8) All applicable fees must be paid before receiving City sewer service.
- (9) All new or modified services in NCDOT owned rights-of-way shall be at cost, All Cost Borne By Customer
- (10) No new sewer only tap shall be sold or installed. Connection to City water is required for sewer service.



Kannapolis City Council

City Council Agenda Staff Report
September 14, 2026

To: Mayor and City Council
From: Richard Smith, Planning Director, Jason Myers, NCDOT Rail Director
Subject: **PRESENTATION** - NCDOT Rail Division (6th Frequency Draft Report)

Recommended Action Requested by City Council

Presentation Only. No Action Required

Required Votes to Pass Required Action

Presentation Only. No Action Required

Background

In 2025 the North Carolina Department of Transportation (NCDOT) Rail Division launched a public input website with an educational video and an online survey asking the public for input on the service on the Piedmont Corridor (Charlotte to Raleigh). This is in preparation for adding another round trip in the coming years. In addition to the online survey, NCDOT also held open house workshops in Burlington, High Point, Salisbury, and Kannapolis. These are communities where NCDOT has heard concerns about the schedule since the last service expansion in 2023. Responses emphasized the importance of convenience, frequency, and reliability, while also requesting faster travel times, enhanced amenities and better station access.

When the survey report was drafted, NCDOT reached out to these same communities to engage on the results. They have already presented at Council work sessions in Burlington, Salisbury, and High Point. Their goal is to finalize this report in the near future and they want stakeholders to have a chance to discuss it with them before it is finalized.

NCDOT Rail Director Jason Myers will make the presentation and answer questions regarding this draft report. This presentation will discuss the details from the public engagement series, marketing initiatives, and tentative plans for future expansion.

Fiscal Implications

None

Alternate Courses of Action

N/A

Attachments

1. PiedmontPI_DRAFT

Piedmont Corridor Public Involvement Summary Report

Draft | Fall 2025



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EXECUTIVE SUMMARY

BACKGROUND

NC By Train, the state's intercity passenger rail service, is operated by the North Carolina Department of Transportation in partnership with Amtrak.

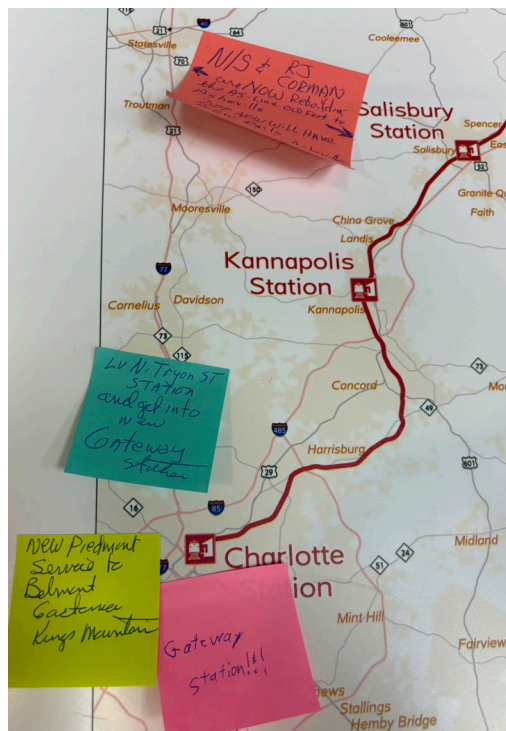
NC By Train ridership has reached record levels since 2022, showing the value of frequent, comfortable, and convenient intercity passenger rail service in North Carolina. service, with many riders providing constructive feedback for ongoing improvements.

2025 ENGAGEMENT EFFORTS

In May 2025, NCDOT Rail Division staff conducted public outreach via in person meetings and a survey to educate the public about NC By Train Service and ask what service improvements and expansions people would like in the future.

Participation in the 2025 NC By Train Piedmont Service Expansion survey and public meetings highlight appreciation and benefits of the service and opportunities for growth. People emphasized the importance of convenience, frequency, and reliability, while also requesting faster travel times, enhanced amenities, and better station access. The insights gained from this engagement demonstrates North Carolinians increasingly view intercity passenger rail as vital to the state's transportation network, while also recognizing its potential to connect more communities, compete with driving, and meet daily mobility needs.

By integrating this feedback into our service planning, NC By Train and its partners are better prepared to expand and enhance services, positioning us to increase access to communities statewide as future funding opportunities become available.



Our family loves taking the train, both for day trips and if we are going to see family. We have been to every train stop on the Piedmont corridor at least once.

- Survey Response



EXECUTIVE SUMMARY

2,109

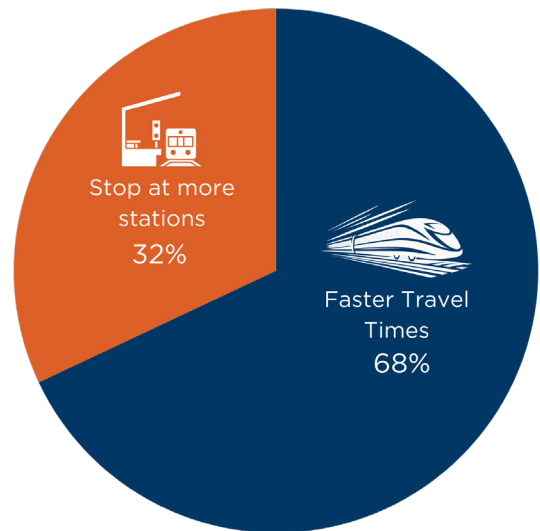
SURVEY RESPONSES

The *Piedmont* Service Expansion survey was available from May to July 2025 and input was received from both current riders (54%) and non-riders (46%).

WHAT DO PEOPLE WANT?

- WiFi ranked as the most important on-board amenity.
- Riders requested earlier morning trains from Raleigh and Charlotte to better align with work schedules.
- Riders want improved on-time performance and faster train service to make it more competitive with driving.
- Requests were made for better station access and connectivity, including last-mile links to transit, airport connections, and more consistent parking availability.

FASTER OR MORE STATIONS?



WHAT DO PEOPLE PREFER?

- Among current riders, convenience is the top factor influencing their decision to ride the train, followed by comfort and cost. Sustainability and speed are less influential.
- People indicated that they would ride the train if the current schedule met their needs and/or there was a station nearby.

WHEN AND WHERE DO PEOPLE RIDE?

- Raleigh is the most popular destination across the network for riders, with Charlotte and Durham also recognized as key destinations.
- Respondents clearly prefer departures in the morning and returns in the late afternoon or evening.
- The three most requested new station locations were Winston-Salem, Hillsborough, and Lexington.



Roughly twice a month when I take the train from Charlotte to Raleigh, it is a highlight of my week. I work in Charlotte but my coworkers are primarily in Raleigh, so I've been so grateful to be able to work on my commute when I visit them.

- Survey Response



WHAT IS NC BY TRAIN AND THE PIEDMONT CORRIDOR?

NC By Train, the state's intercity passenger rail service, is operated by the North Carolina Department of Transportation in partnership with Amtrak. NC By Train ridership has reached record levels since 2022, showing the value of frequent, comfortable, and convenient intercity passenger rail service in North Carolina.

The service operates two trains, the Piedmont and Carolinian, that provide five round trips daily between Charlotte and Raleigh on the Piedmont railroad corridor. NC By Train currently serves nine stops including Charlotte and Raleigh. Additionally, the Carolinian train continues outside North Carolina to destinations in Virginia, the District of Columbia, and New York.

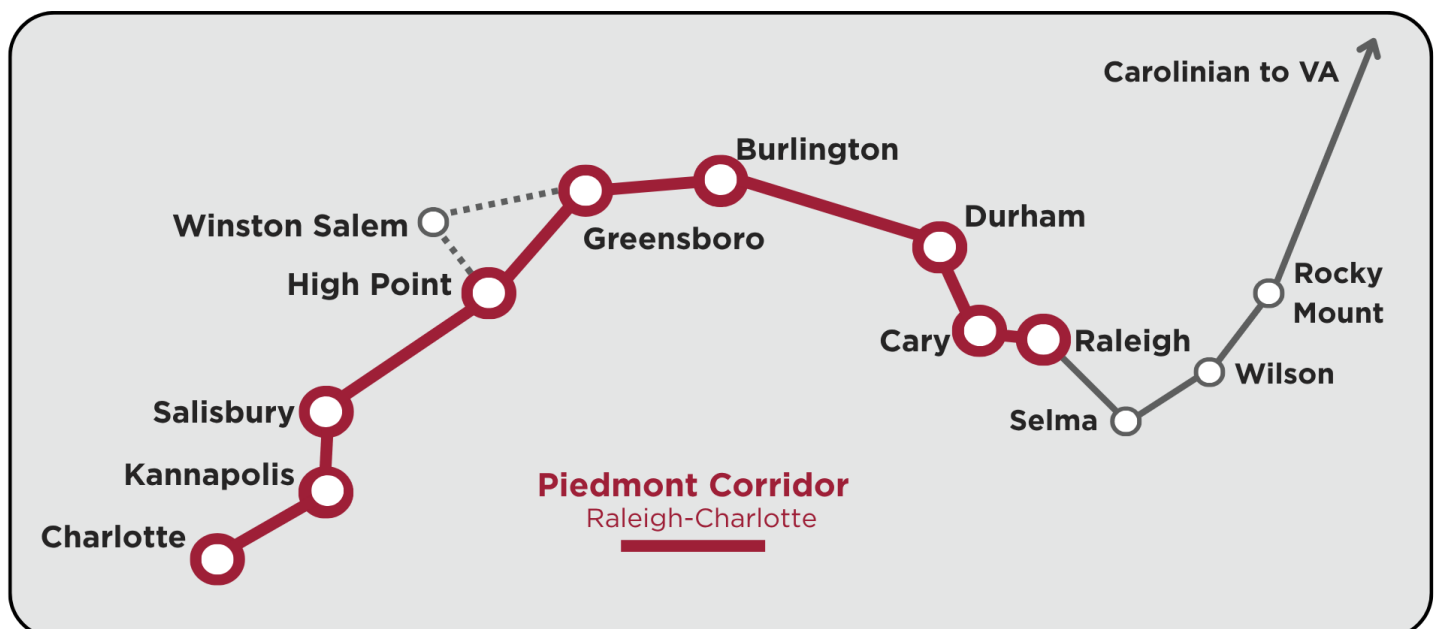
NC By Train services aim to maximize passenger miles traveled to enhance rider utility, decrease highway traffic, and improve cost efficiency. These trips are where intercity passenger rail is most competitive with other travel modes.

WHY CONDUCT PUBLIC ENGAGEMENT?

With record-breaking ridership in 2024 of over 720,000 passengers, marking a 12% ridership increase from 2023 and a 55% increase since 2019, demand for intercity passenger rail in the state continues to grow. In response, opportunities to expand service along the Piedmont corridor is being explored. While additional funding is required for implementation, public feedback is essential in shaping future schedules and service improvements.

The Piedmont Service Expansion survey was designed to understand current ridership patterns, motivations, and preferences. The survey, available in both English and Spanish, was conducted online from May 9 to July 1, 2025. Additionally, four open house meetings were held in Burlington, High Point, Salisbury, and Kannapolis, and were promoted extensively in stations, trains, through news outlets and on social media. A total of 2,109 responses were collected for this analysis. Response counts for individual questions may vary from the total number.

Figure 1: Piedmont Corridor Map



WHO ANSWERED THE SURVEY?

Several survey questions concentrated on train usage, such as identifying starting and ending stations. To ensure the survey effectively captured rider preferences to inform future planning, the analysis separately reviewed responses from current riders and non-riders. This resulted in a better understanding of each groups distinct viewpoints.

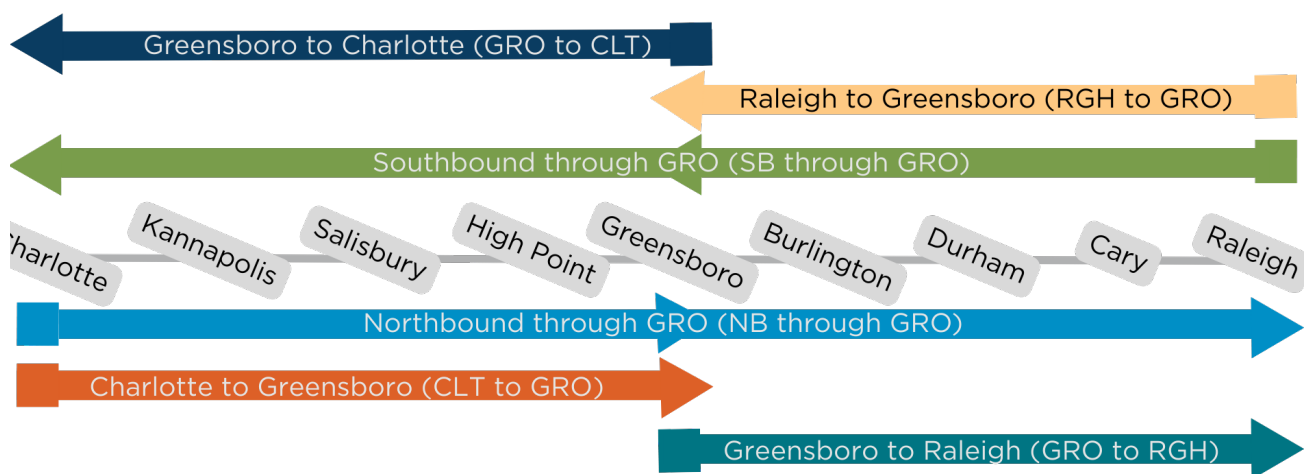
Table 1: Ridership Status

Current Train Rider?	Total Responses	Percent of Total
No	952	46%
Yes	1,116	54%
Grand Total	2,068	100%

WHAT ARE THE PIEDMONT TRAVEL MARKETS?

The travel markets along the Piedmont Corridor can be divided into six distinct segments for analysis, based on passenger origin-destination patterns relative to Greensboro, the midpoint of the route. The initial travel direction determines the market's orientation. For example, southbound segments are defined by trips heading toward Charlotte and northbound segments are defined by trips heading towards Raleigh. Shorter segments start and end on either side of Greensboro or involve Greensboro as an origin or destination. Longer segments start and end on either side of Greensboro or involve Greensboro as an origin or destination. Longer segments involve travel through Greensboro. Greensboro is the natural midpoint between Charlotte and Raleigh, and with the third-highest ridership, it stands out as the logical center of the market.

Figure 2: Market Segments



Each of the colored segments above illustrate a unique market segment based on passenger origin-destination patterns relative to Greensboro.

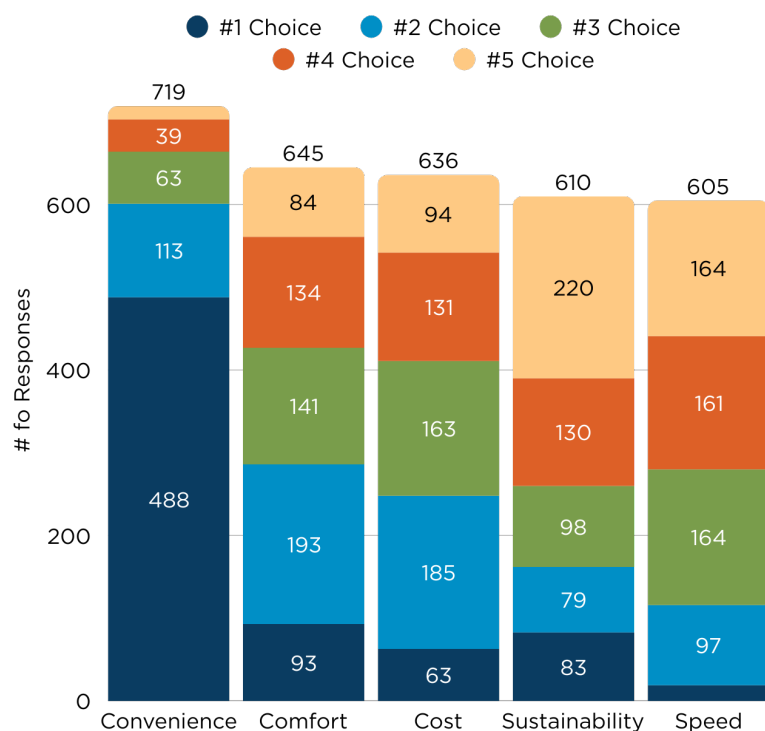
WHAT SERVICE PREFERENCES DID PEOPLE SHARE?

CURRENT RIDERS

Among current riders, convenience emerged as the most influential factor in decision-making. It received the highest number of first-choice votes (488) and had the lowest average ranking of 1.58, indicating that it was consistently prioritized over all other considerations.

Comfort also plays a significant role in the overall experience. Comfort had an average ranking of 2.88, and cost is just behind at 3.01, indicating riders appreciate a comfortable and affordable journey.

Figure 3: Riders Ranking of Influence



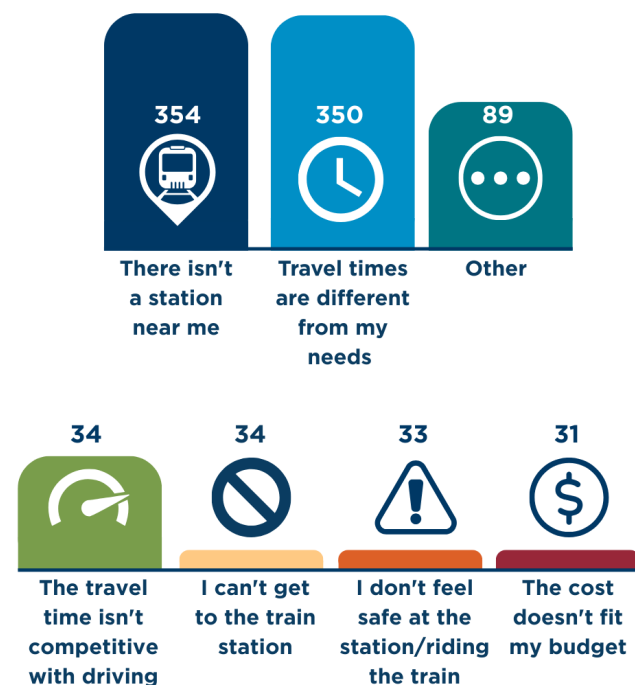
Non-Riders

860 survey respondents identified as non-riders and highlighted several key barriers to train use. The top two barriers, mentioned by over 350 respondents each, were:

- Train travel times don't align with their needs.
- There is no station near them.

Of the 278 respondents who stated there was no station nearby, 169 people do not live within 30 miles of the Piedmont corridor. This represents demand for intercity passenger rail expansion to additional destinations within the state.

Figure 4: Barriers to Riding



HOW FAR ARE PEOPLE RIDING?

13% of riders reported using NC By Train for short-haul trips, defined as trips of 35 miles or less. Most short haul activity occurs between Raleigh and Greensboro.

Conversely, 87% of riders were intercity travelers making longer distance trips more than 35 miles. Many of these intercity trips pass through Greensboro in both directions, but other applicable city pairs include Greensboro to Charlotte and Cary to Burlington.

Table 2: Market Trips By Traveler Type

Type of Traveler	Number of Responses	Percent of Total
Short haul (35 miles or less)	125	13%
Charlotte to Raleigh	3	2%
Greensboro to Raleigh	56	45%
Raleigh to Greensboro	64	51%
Greensboro to Charlotte	2	2%
Intercity (36 miles or more)	821	87%
Southbound through Greensboro	337	41%
Charlotte to Greensboro	37	5%
Greensboro to Raleigh	67	8%
Raleigh to Greensboro	106	13%
Greensboro to Charlotte	41	5%
Northbound through Greensboro	233	28%
Grand Total	946	100%

WHERE ARE PEOPLE TRAVELING?

Survey respondents' travel patterns identified three primary destinations: Raleigh, Charlotte, and Durham. Raleigh consistently ranks as the most popular destination, appearing in the top three for nearly every station and often accounting for the highest percentage of trips, such as 70% from Charlotte and 65% from Kannapolis.

Charlotte is another major destination, often ranking as the second or third most popular choice. It is the top destination for Raleigh (59%), Cary (66%), and Durham (44%). Durham, though less prominent, remains key for visitors from Greensboro, Burlington, and Salisbury.

Based on survey responses, Greensboro consistently ranks among the top three destinations from stations like Kannapolis, Cary, and Raleigh. Greensboro also serves as a transfer point for the long-distance Amtrak Crescent and several intercity bus services.

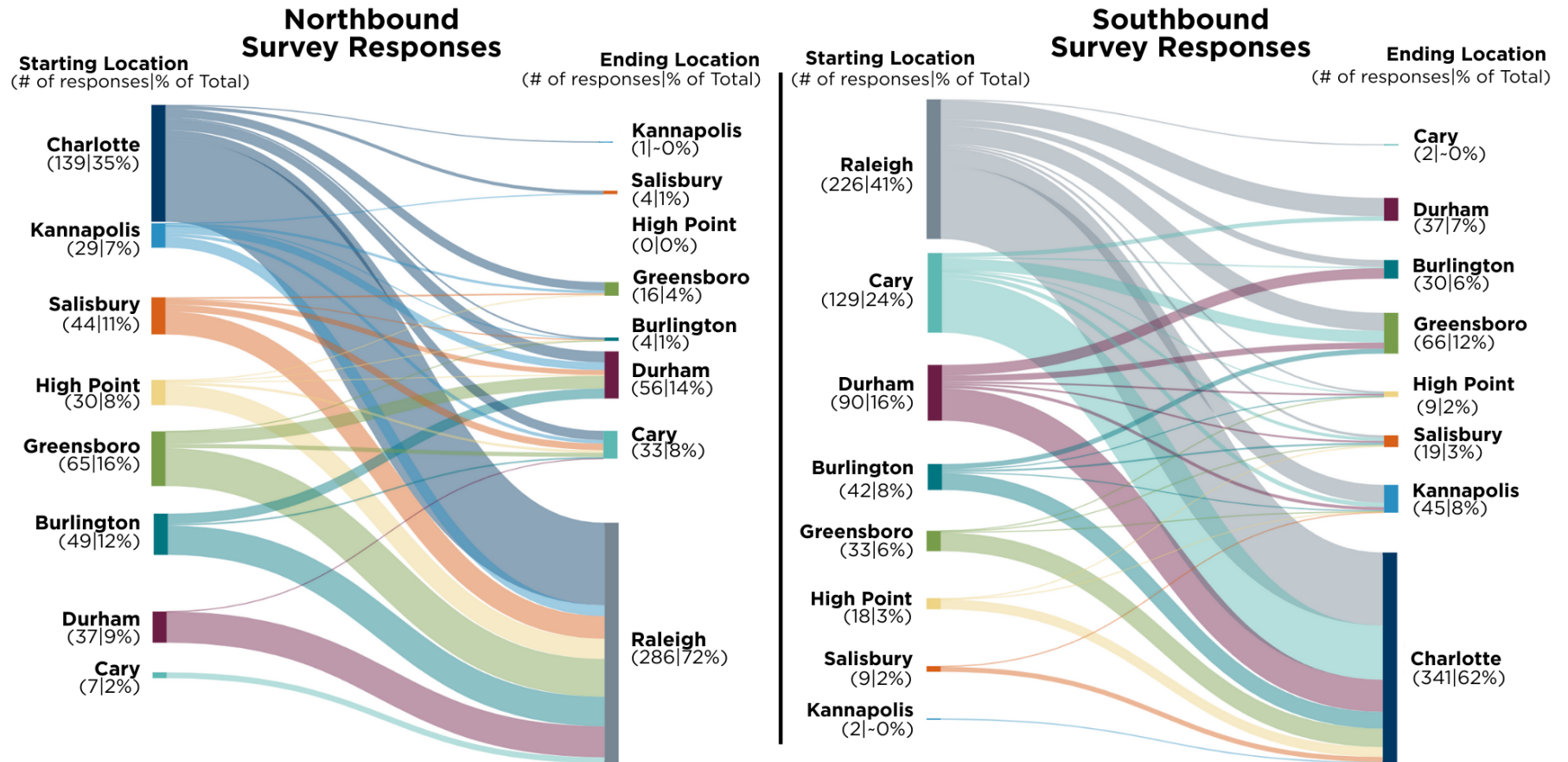


“A big reason I like the train from Durham to Charlotte is because I don’t have to drive on the interstate highway and endure heavy traffic and frequently delays.”

- Survey Response



Figure 5: Station Flow Graphs



The flow graphs above show where survey respondents began and finished their trips, organized by each station. The graphs are based on survey responses only and do not represent actual ridership density between station pairs. See Appendix A for more details on how survey responses compare to actual ridership.

ARE PEOPLE MORE INTERESTED IN TRAVELING QUICKLY OR STOPPING AT MORE STATIONS?

When riders were asked to choose between faster travel times and more frequent local station stops, a clear preference emerged for faster travel times. This indicates that, for most passengers, efficiency and speed are more important than having additional stops options along the route.

However, preferences varied among different market segments. Riders taking longer-distance or through corridor trips were especially likely to prioritize speed, highlighting the need to maintain competitive travel times for intercity routes. Notably, two segments, Charlotte to Greensboro (CLT-GRO) northbound and Raleigh to Greensboro (RGH-GRO) southbound, showed more balanced responses, indicating that riders in these areas may have more varied needs, with some valuing local access as much as speed.

Overall, the survey data show that while there is interest in expanded local service, most riders prefer faster, more direct travel options, especially on major intercity routes.

Figure 6: Faster or More Stations

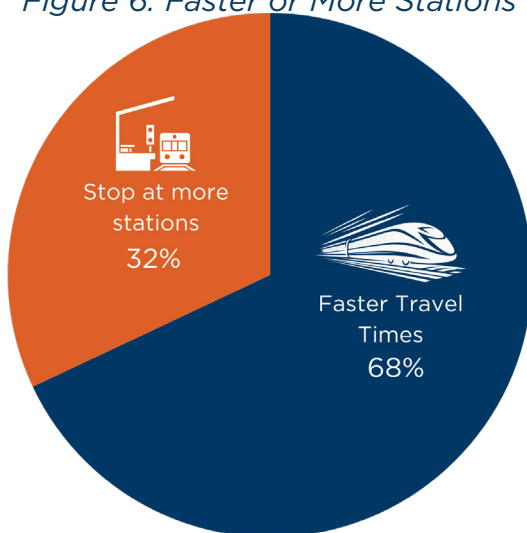
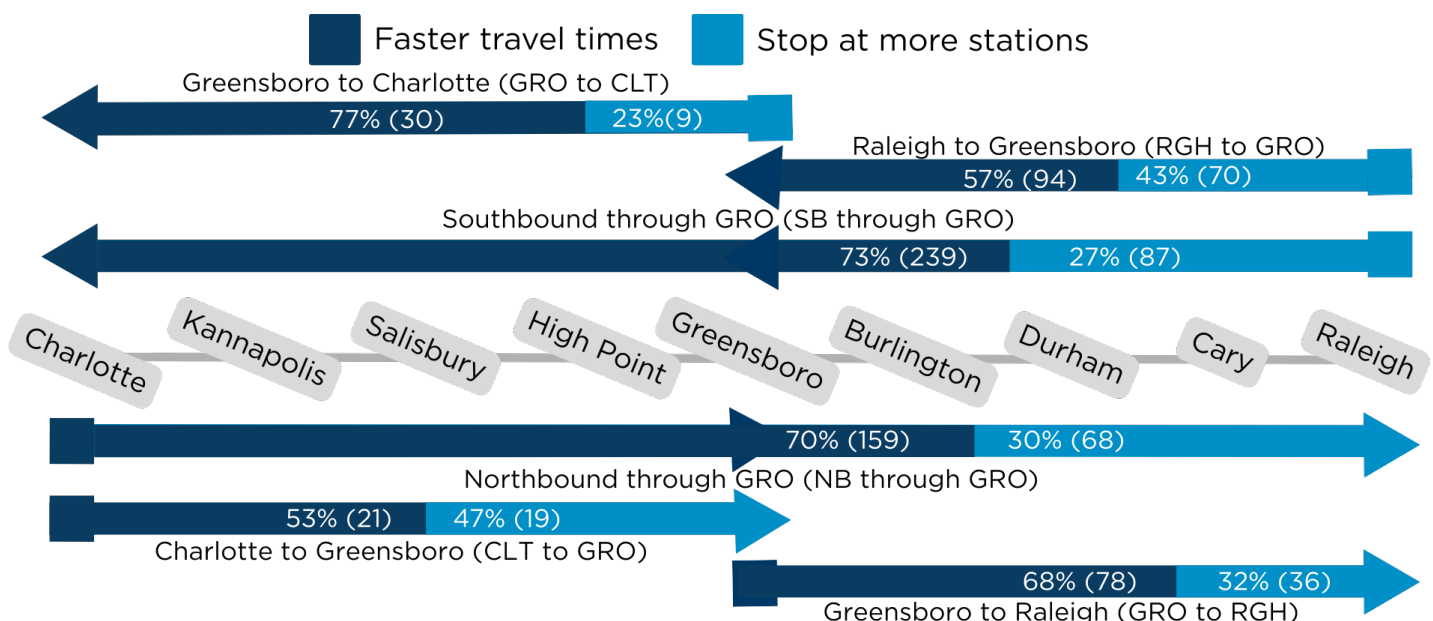


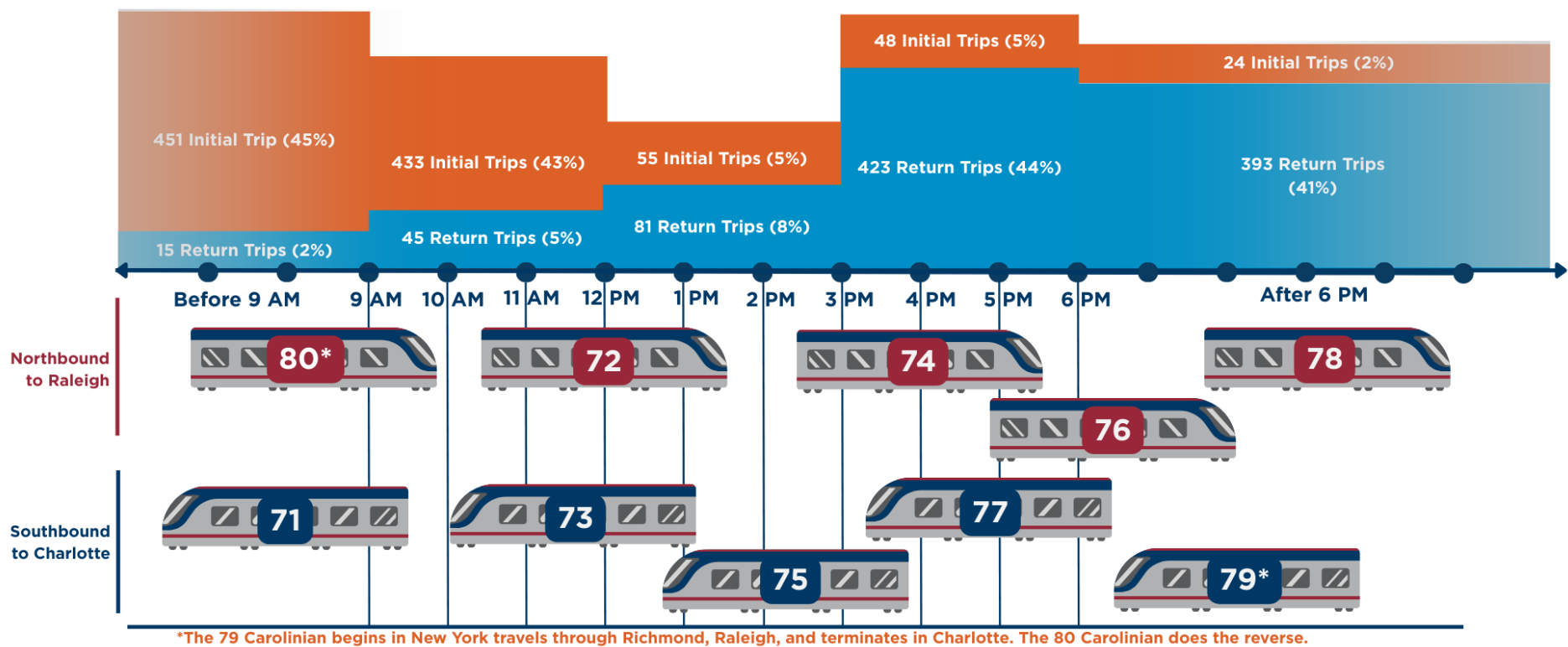
Figure 7: Preferences by Market Segment



WHEN DO PEOPLE WANT TO TRAVEL?

Most respondents prefer morning departures, with nearly 45% leaving before 9 AM and 43% between 9 AM and noon. Return trips typically happen later, with 44% returning between 3 PM and 6 PM and 41% after 6 PM. Few trips return before noon.

Figure 8: Travel Time Preferences for Survey Respondents



The figure above illustrates what time current riders typically want to ride Piedmont corridor trains. The orange time slots represent the initial trip while the blue time slots represent return trips. In addition, the graphic compares the current route schedule to the survey results.

WHERE ELSE DO PEOPLE WANT TO TAKE THE TRAIN?

The survey results show a strong interest in expanding NC By Train to multiple new regions, particularly in central North Carolina, as well as adding new stops along the Piedmont corridor. Table 3 highlights the most requested stops but not all ideas are shown.

The map on page nine highlights places mentioned more than ten times in survey comments. The top three requested locations along the Piedmont corridor were:

- Winston-Salem (171 requests)
- Hillsborough (133 requests)
- Lexington (112 requests)

These destinations include college towns, tourist spots, and growing communities that could benefit from better intercity passenger rail connections. This distribution highlights a variety of priorities, from urban centers and employment hubs to recreational and educational sites.

Table 3: Most Requested Additional Stops

Location	Total Requests
Winston-Salem*	171
Hillsborough**	133
Lexington**	112
Mebane	82
Chapel Hill	46
Asheville/Mountains*	45
Elon University	43
Wilmington/Beaches*	39
Concord	35
Research Triangle Park	33

* Planned Passenger Rail Expansion Corridor

**Currently funded in the State Transportation Improvement Program (STIP)



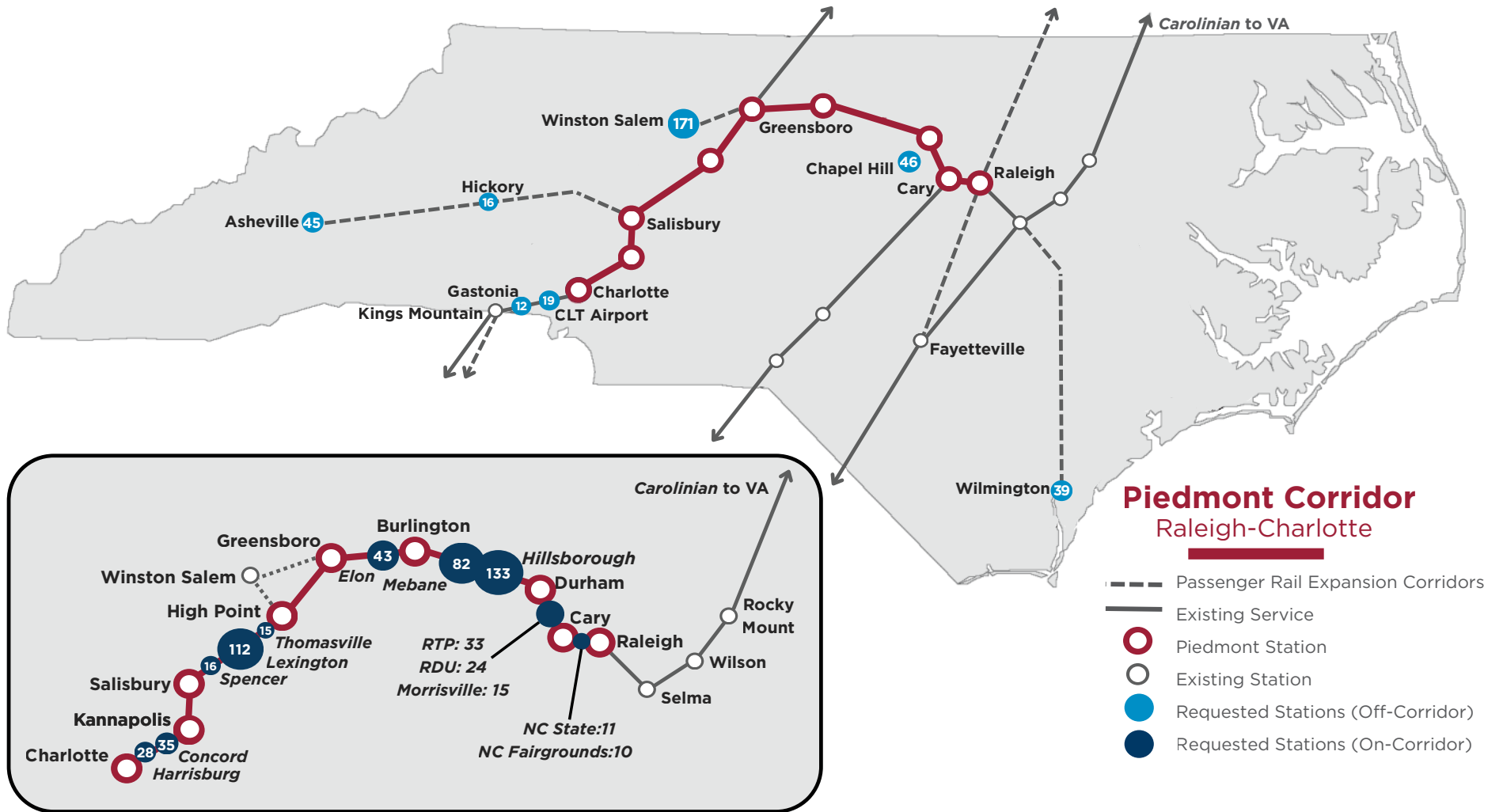
PASSENGER RAIL EXPANSION

The federal Corridor Identification Development (CID) Program supports the planning and development of intercity passenger rail corridors across the United States. In December 2023, North Carolina was awarded \$3.5 million in CID grants for seven corridors:

- Charlotte to Kings Mountain
- Charlotte to Washington, D.C.
- Fayetteville to Raleigh
- Salisbury to Asheville
- Wilmington to Raleigh
- Winston-Salem to Raleigh
- Atlanta to Charlotte

The Charlotte to Washington, D.C. route features the former CSX S-Line as a new connection from Raleigh to Richmond. The S-Line serves as the backbone of a regional multimodal transportation network and is essential for expanding North Carolina's passenger rail system.

Figure 9: Requested Stops (On and Off the Piedmont Corridor)

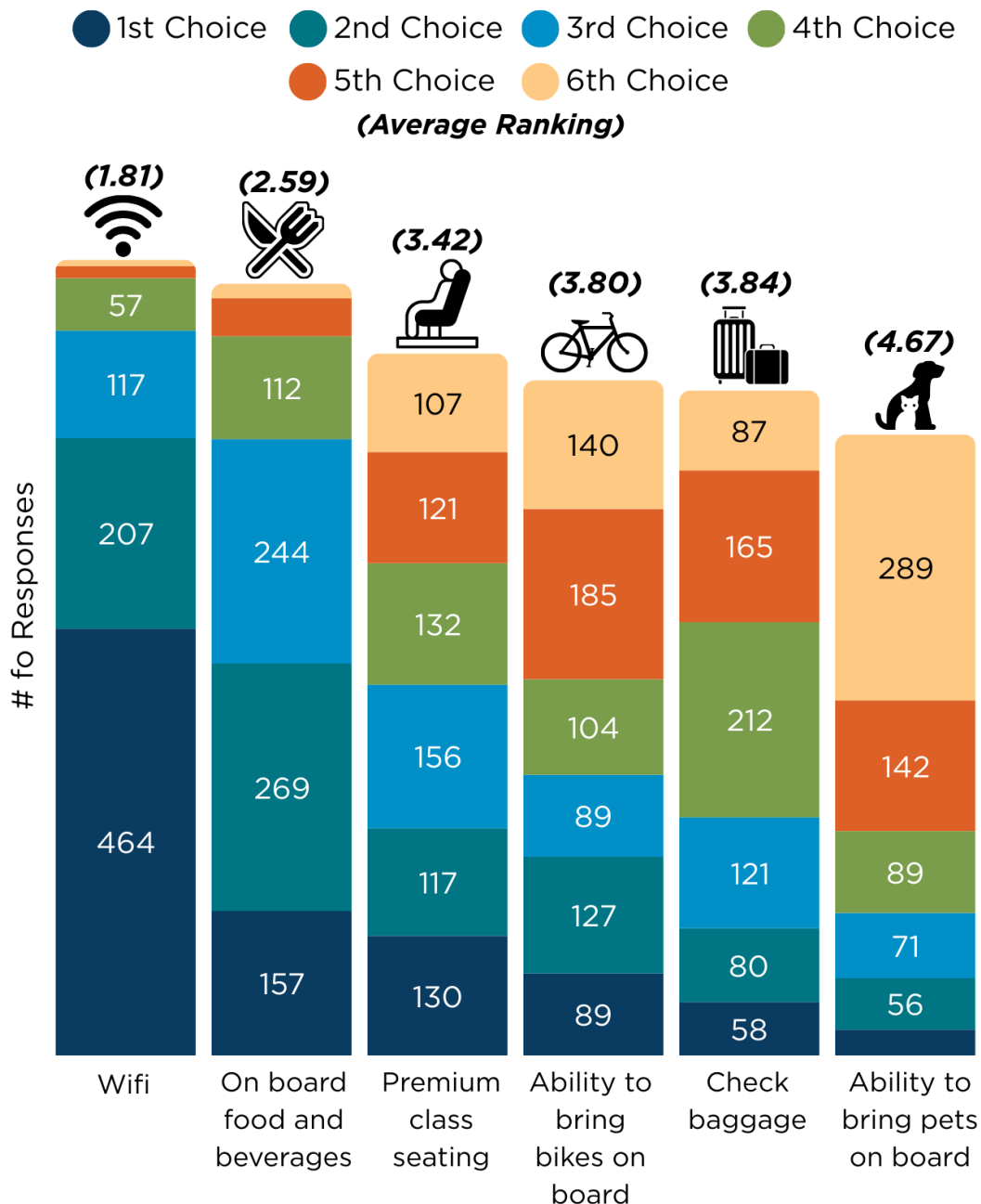


WHAT ON-BOARD AMENITIES DO PEOPLE LIKE?

When asked to rank various on-board amenities, WiFi was the top priority, earning the most first-choice votes (464) and the lowest average score (1.81). Amenities like premium class seating, bike access, and checked baggage were rated lower

on average, with scores ranging from 3.42 to 3.84, indicating they are valued but not essential for most passengers. The ability to bring pets on board received the fewest first-choice votes (28) and the highest average score (4.67).

Figure 10: Rider Ranking of Amenities



WHAT ELSE DO PEOPLE WANT?



Among the 870 open-ended comments requesting improvements, several themes emerged:

- Increase Train Frequency and Improve the Schedule
- Enhance Train Speed and Improve On-Time Performance
- Keep Prices Affordable
- Enhance Connectivity with Local Transit
- Stop at All Stations
- Build Charlotte Gateway Station

The following sections explores the themes listed above and more detail is available in Appendix B regarding comments people shared about recommended improvements.

INCREASE TRAIN FREQUENCY AND IMPROVE THE SCHEDULE

A combined 572 comments emphasized the need for more frequent (359 mentions) and better-timed train service (213 mentions). Riders asked for trains that leave Raleigh and Charlotte earlier in the morning and later in the evening. They emphasized the need to arrive on time for work or business meetings, with several specifically asking for a train that arrives in Raleigh by 8:00–8:30 AM, and leaves Raleigh later in the evening to return home after events.

Respondents also asked for more roundtrip options in the schedule and increased frequency throughout the day to enhance flexibility.

Figure 11: Frequency and Schedule Themes

Theme	Mentions	Selected Quote
 Add more Frequency	359	"More frequent service would help, as that is presently a limiting factor."
 Add Later Evening Trains	84	"More evening availability. I'd love to be able to catch a night Bulls game or a show at DPAC and be able to take the train back to Greensboro after."
 Earlier Morning Arrivals	38	"Like many, I travel for business on weekdays. I would take the train far more often if it arrived to Charlotte well before 9am."
 Rush Hour Service for Commuters	20	"Would love to see this service continue to expand with more trains at commute hours."
 Align Schedule with Events	12	"Later night trains for sporting events in Raleigh, Charlotte, and Durham!"

ENHANCE TRAIN SPEED AND IMPROVE ON-TIME PERFORMANCE

Speed—both overall and compared to driving—remains a top priority. Almost 120 respondents commented they would like to see investments that increase train speed, competitiveness, and reliability. The recommendation to explore express services was also mentioned.

The need for reliable, punctual train service along the Piedmont corridor had 95 mentions. These riders expressed that delays, cancellations, and current schedules limit their utility of using the service. Many respondents voiced support for NC By Train and noted that improved reliability would encourage them to ride more frequently

Figure 12: Train Speed and Performance Themes

Theme	Mentions	Selected Quote
 Faster Travel Time is a Top Priority	106	“Faster trains... there is no reason it should take as long by train as it does by car.”
 Express or Limited-Stop Service Desired	27	“If a train ran from Raleigh to CLT without stopping that would be perfect.”
 Delays Decrease Rider Confidence	18	“I have taken the Piedmont approximately 10 times in the last year, but only two trips didn’t experience delays.”
 Freight Conflicts and Single-Track Bottlenecks	12	“Too slow between Durham and Greensboro—too many delays due to freight and single track sections.”

KEEP PRICES AFFORDABLE

Sixty-two comments related to pricing highlight several themes that can inform NC By Train’s approach to affordability.

- Fourteen respondents requested discounts that are already available indicating a need for clearer communication and marketing of existing fare options.
- Eight respondents emphasized the importance of maintaining fares that are competitive with driving or flying to sustain and increase ridership.
- Sixteen comments expressed predictable and straightforward pricing structures, including off-peak discounts, commuter and monthly passes, and last-minute deals, to enhance convenience and encourage repeat use of the service.

ENHANCE CONNECTIVITY WITH LOCAL TRANSIT

The public feedback identified several key themes for improving local transit and connectivity from train stations. Across 91 comments, respondents pointed out gaps in last-mile connections, the need for better links to airports and downtown areas, and the need for expanded regional and statewide coverage.

STOP AT ALL STATIONS

Some riders traveling to or from Burlington, High Point, Salisbury, and Kannapolis commented that the train service does not stop at every station for every frequency. Over 80 respondents mentioned how this has impacted their ability to plan day trips, commute reliably, and attend events.

BUILD CHARLOTTE GATEWAY STATION

Many open-ended comments included feedback about the current Charlotte station and/or the proposed Charlotte Gateway Station. Out of the 72 total comments received about the proposed Charlotte Gateway Station, fewer than half, 31 comments (43%), came from individuals who identified Charlotte as their starting station. Most of the feedback, 57%, was submitted by passengers beginning their journeys in other cities, including Cary (19%), Raleigh (17%), and Greensboro (11%).

This shows that the majority of feedback comes from travelers visiting or passing through Charlotte, rather than those starting their trips there. It is clear that many passengers see Charlotte as a key destination or transfer point, and their input highlights the importance of Gateway Station in improving connectivity and the overall travel experience for riders across the system.

Figure 13: Connectivity Themes

Theme	Mentions	Selected Quote
 Improve First/Last Mile Connections	22	"Make transit to the train stations more accessible – so if I don't have access to a car, I can get to a train station and take the train."
 Airport Access is a High Priority	13	"Shuttle service to/from airports in Raleigh and Charlotte."
 Lack of Clarity on Connector Services	6	"Clearer information about the Amtrak Connector into Winston-Salem... your website uses 'direct route connections' language, but that does not appear to be the case."
 Coordination with Local Transit Systems	15	"Work with cities to get better (and frequent) public transit options at the stations would enable travel without needing to drive."



The Charlotte Gateway Station (CGS) will be a comprehensive multi-modal transportation facility in vibrant uptown Charlotte at the intersection of West Trade and Graham Streets.

Piedmont Corridor Public Involvement Summary Report Appendices

Draft | Fall 2025



Appendix A. Additional Data

How did responses from current riders compare to actual 2024 ridership data?

Among respondents who identified as current riders, the distribution of market segments in the survey generally aligns with actual 2024 ridership patterns, although some differences are noticeable. Of the six Piedmont market segments, four were underrepresented in the survey responses relative to their actual ridership share, while two were overrepresented. The total number of survey responses was 946, compared to a total ridership of 460,351. These differences show that, although the survey included a wide range of riders, certain groups, especially those from SB through GRO and RGH-GRO, were more prominently represented in the feedback.

Table A1: Market Segment of Survey Responses Compared to Ridership

Market Segment	# of Responses	Respondent %	2024 Ridership	% of Riders
CLT-GRO	40	4%	39,682	9%
GRO-RGH	123	13%	61,858	13%
NB through GRO	233	25%	128,421	28%
RGH-GRO	170	18%	60,171	13%
GRO-CLT	43	5%	40,693	9%
SB through GRO	337	35%	129,526	28%
Grand Total	946	100%	460,351	100%

Potential Sample Bias

There are notable differences between actual ridership data and survey responses for both northbound and southbound trips, revealing potential sample biases and gaps in how survey data mirrors real-world usage. The flow graphs below illustrate these discrepancies by showing the starting and ending locations of 2024 riders compared to survey respondents. These comparisons were also tested in comparison to ridership only for trains serving all stations. The results are similar, showing the same potential samples biases.

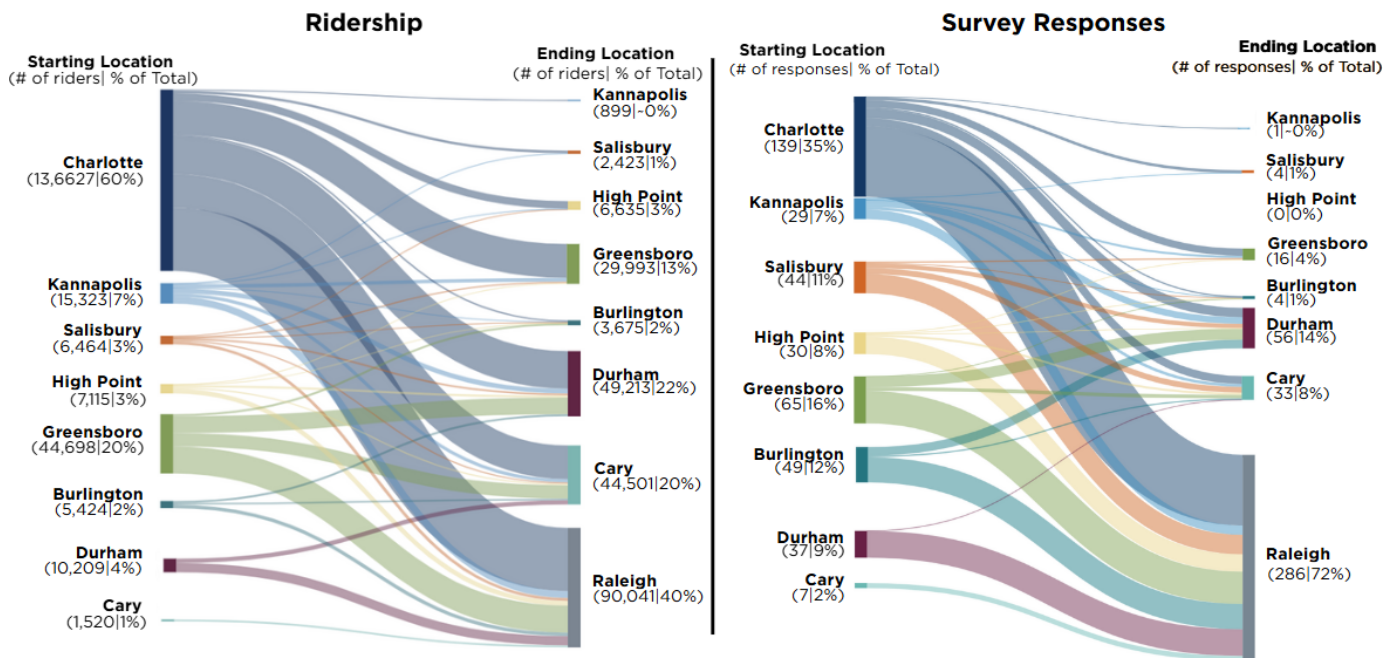
In the northbound direction, Charlotte accounts for 60% of actual ridership but only 35% of survey responses. This suggests underreporting or lower participation from riders starting their trips in Charlotte.

Conversely, Burlington is overrepresented in the survey, with only 3% of riders starting there compared to 12% of respondents surveyed. On the destination side, Raleigh is significantly overrepresented, with 40% of riders ending their trips there, but 72% of survey respondents report it as their destination. Meanwhile, High Point had 3% of riders ending there but received no survey responses for trips ending there at all.

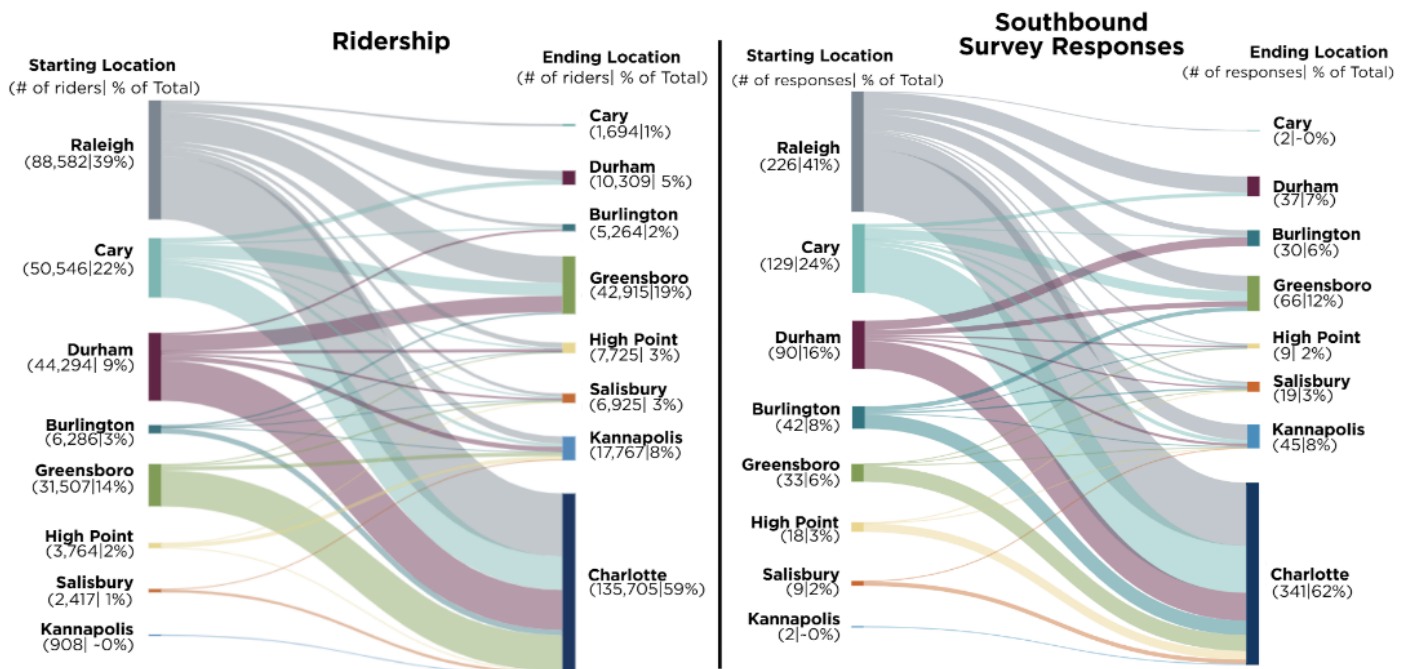
The southbound data appears to more accurately match observed ridership overall, though some discrepancies remain. For instance, Greensboro is underrepresented both as a starting and ending point. It accounts for 13% of southbound riders but only 6% of survey responses as a starting location, and 19% of riders end there compared to just 12% in the survey.

Figure A1. Ridership Compared to Survey Responses

Northbound Ridership Compared to Survey Data



Southbound Ridership Compared to Survey Data



Why don't non-riders ride NC By Train?

Among the 722 respondents who shared their starting station and reasons for not riding NC by train, the most common barrier was unsuitable travel times, reported by 47% of participants. This includes concerns about trains not running frequently enough or at convenient times of day. The second most common problem was the lack of a nearby station, affecting 37% of respondents.

Several station-specific insights stand out:

- Charlotte had the highest percentage (16%) of responses that stated, “I can’t get to the train station.” Additionally, 50% of respondents reported no nearby station, reinforcing the demand for the proposed Gateway Station.
- Three of the cities that are not served on every route had the highest percentages of those citing inconvenient travel times:
 - Kannapolis had the highest percentage of respondents (57%), indicating that train schedules do not meet their needs. This indicates a significant potential advantage from boosting service frequency or enhancing scheduling.
 - Burlington also expressed significant concern about departure times, with 54% saying current schedules don’t meet their needs.
 - Salisbury expressed similar concerns, with 49% of respondents reporting issues with departure times.
- In Durham, 47% of respondents mentioned travel time problems, and 42% said there isn't a nearby station, highlighting both scheduling and access issues.

Table A2: “Why don't you ride?” By Starting Station

Starting Station	Total Respondents	I can't get to the train station		I don't feel safe at the station/riding the train		Other (specify)		The cost doesn't fit my budget		The travel time isn't competitive with driving		There isn't a station near me		Travel times are different from my needs	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Raleigh	149	4	3%	3	2%	53	36%	11	7%	34	23%	48	32%	68	46%
Cary	63	3	5%	0	0%	22	35%	6	10%	17	27%	20	32%	25	40%
Durham	96	4	4%	3	3%	22	23%	10	10%	17	18%	40	42%	45	47%
Burlington	111	4	4%	3	3%	18	16%	9	8%	29	26%	35	32%	60	54%
Greensboro	90	3	3%	2	2%	21	23%	0	0%	18	20%	35	39%	40	44%
High Point	51	3	6%	1	2%	11	22%	4	8%	16	31%	24	47%	22	43%
Salisbury	57	1	2%	1	2%	9	16%	1	2%	9	16%	26	46%	28	49%
Kannapolis	37	0	0%	0	0%	10	27%	3	8%	9	24%	8	22%	21	57%
Charlotte	68	11	16%	10	15%	20	29%	3	4%	12	18%	34	50%	29	43%
Total	722	33	5%	23	3%	186	26%	47	6%	161	22%	270	37%	338	47%

Appendix B. Additional Comments

Out of the 870 open-ended comments requesting improvements, several common themes emerged, often with multiple themes in a single response.

Table B1 lists the key themes of requested improvements related to the user experience not specifically addressed in other survey questions.

Table B1: Frequency of mentions of open-ended comments

Comment	#
Increase Train Frequency	359
Improve Schedule	213
Unspecified Schedule Improvement	60
Later Evening Southbound Train	34
General Later Evening Offerings	35
Align Stop Times to Match pre-July 2023	27
Center Around Commuting Times	20
General Earlier Morning Offerings	19
Later Northbound Train	15
Early Morning Southbound Train	15
Add New Station	208
Enhance Train Speed	119
Improve On-Time Performance	95
Improve Station, Train, or Amenities	91
Food and Beverage	24
Train Upgrades	21
Parking	15
Cleanliness	14
Enhance Connectivity with Local Transit	91
Stop at All Stations	82
Upgrade Charlotte Station	72
Pricing	62

The following tables, organized by general themes, feature a selection of quotes shared by survey respondents throughout the survey.

Table B2. Comments on train amenities

Theme	Example Quotes
On-board Comfort & Cleanliness (34 mentions)	• <i>"Please work on the AC to ensure the cars aren't over 85 degrees in the summer heat."</i> • <i>"Make improvements. It's dirty. Seats are old and worn. Some smell."</i> • <i>"Keep bathrooms clean."</i>
Food & Beverage Options (24 mentions)	• <i>"Serve alcohol on the train. The Amtrak trains have this. Why not in-state trains?"</i> • <i>"Slightly better food and drink options would be awesome!"</i> • <i>"More food choices in vending machines."</i>
Wi-Fi & Work-Friendly Features (16 mentions)	• <i>"Better Wi-Fi! The unreliability is a major issue for me as I like to ride during work hours."</i> • <i>"Improve speed and reliability of on-board Wi-Fi... I've had some trips where I never get it to work at all."</i> • <i>"Wi-Fi needs to be more consistent. It did not work on my last trip."</i> • <i>"More reliable Wi-Fi. A large benefit of using the train is that I can work, as opposed to driving."</i> • <i>"More free/cafe spaces for commuters."</i>
Station Amenities & Experience (35 mentions)	• <i>"Yes! I'd take the train more often if the stations had amenities like there are in other states (Food, stores, art, alcohol, etc)."</i> • <i>"Fear of missing my train due to unclear or full parking keeps me from riding."</i> • <i>"Train stations should be a hub for activities and shopping just like in Japan and Europe."</i> • <i>"Better lighting at night at the HP station."</i>
Seating Options (21 mentions)	• <i>"I like how the Carolinian has a Business Class option. I would like to see a similar option on the Piedmont."</i> • <i>"An option to guarantee seat choice would be something I would pay extra for!"</i>
Accessibility and Bicycles (11 mentions)	• <i>"Remove the limit on bicycles... After that, use bungee cords and have passengers sign a damage waiver."</i> • <i>"Platform accessibility will be very important as I have difficulty climbing up and down from the train."</i> • <i>"Level boarding at all stops would be great."</i>

Table B3: Comments on frequency and schedule

Theme	Example Quotes
Add More Frequency (359 mentions)	Most common request. Riders want more flexibility throughout the day to enable spontaneous or same-day trips without overnight stays. • <i>"More trains per day would help with more options to leave and come back."</i> • <i>"More frequent service would help, as that is presently a limiting factor."</i> • <i>"Run like 2x the number of trains and make it so it's viable to use for commutes."</i>
Add Later Evening Trains (General Later Train: 34 mentions Late Northbound: 15 mentions Late Southbound: 35 mentions)	Riders overwhelmingly request later departures (7-10 PM range) from Raleigh, Charlotte, Durham, and Greensboro, primarily to attend evening events, dinner, or return home after work. • <i>"There needs to be a later Raleigh to Charlotte train than the Carolinian 79."</i> • <i>"Would love a later departing train from Durham/Raleigh or Charlotte areas back to Burlington."</i> • <i>"More evening availability. I'd love to be able to catch a night Bulls game or a show at DPAC and be able to take the train back to Greensboro after."</i> • <i>"I can't have dinner and see a play in Charlotte and come home to Cary."</i>
Earlier Morning Arrivals for Intercity Trips (General Earlier Train: 19 mentions Early Northbound: 15 mentions Early Southbound: 4 mentions)	Riders requested earlier arrivals particularly for work activities. • <i>"Currently, the first train runs too late to spend the full day in Raleigh,"</i> • <i>"Like many, I travel for business on weekdays. I would take the train far more often if it arrived to Charlotte well before 9am."</i> • <i>"Need to have an earlier train to get to Charlotte from Raleigh for business."</i> • <i>"Train needs to run earlier to make business meetings in Charlotte."</i>
Rush Hour Service for Commuters (20 mentions)	Requests for rush-hour service and commuter-friendly schedules were frequent, particularly for trips like Greensboro-Raleigh, Burlington-Durham, Charlotte-Kannapolis, and Durham-Raleigh. • <i>"Would love to see this service continue to expand with more trains at commute hours."</i> • <i>"I work in Cary but live in Raleigh. Would love to use the train as a commuter instead of driving."</i> • <i>"I ride from Raleigh to Durham for work and the only options are 6:30am or 10:00am -- something in between would be great."</i> • <i>"I live in Burlington and commute to Raleigh for work two to three times a week, but could travel daily. I would love to be in Raleigh before 10AM."</i>
Align Schedules with Events and Attractions (12 mentions)	Requests for train times that work with sports games, concerts, theaters, including Panthers/Hurricanes/college games. • <i>"More special events—Sunday Panthers trains for home games."</i> • <i>"Later night trains for sporting events in Raleigh, Charlotte, and Durham!"</i> • <i>"Add an evening train from Charlotte to Raleigh that is timed for NBA and MiLB games."</i>

Table B4: Comments on train speed

Theme	Example Quotes
Faster Travel Time is a Top Priority (106 mentions)	Many respondents ranked shorter travel times as their highest priority for improving the service, emphasizing that speed is necessary to compete with driving and increase ridership. • <i>"#1, shorter travel times."</i> • <i>"Faster and more dependable schedule. Too slow between Durham and Greensboro."</i> • <i>"Speed is incredibly important... given the ineffective wi-fi makes it impossible to multi-task while riding."</i> • <i>"Faster trains... there is no reason it should take as long by train as it does by car."</i>
Express or Limited-Stop Service Desired (27 mentions)	Many riders requested express trains with minimal stops between Raleigh and Charlotte (e.g., Greensboro only), saying this would cut travel time and make train travel more competitive. • <i>"Have at least 1 train per day that is direct Raleigh - Durham - Greensboro - Charlotte."</i> • <i>"If a train ran from Raleigh to CLT without stopping that would be perfect."</i> • <i>"Consider a bullet train option... I would take the train almost every weekend."</i> • <i>"Yes, would love to see a non-stop between Raleigh and CLT."</i>
Delays Decrease Rider Confidence (18 mentions)	Many passengers described frequent and unpredictable delays that have made them avoid the train for time-sensitive trips: • <i>"I have taken the Piedmont approximately 10 times in the last year, but only two trips didn't experience delays."</i> • <i>"More than half of the trains I have ridden have been delayed by an hour or more."</i> • <i>"Because the service is unreliable, I never feel I can schedule anything on the same day I go between Raleigh and Charlotte."</i> • <i>"It's a waste of time if I can't rely on it to show up on time."</i>
Freight Conflicts and Single-Track Bottlenecks (12 mentions)	Respondents pointed to freight interference, single-track sections, and grade crossings as major contributors to delays: • <i>"Don't delay passenger trains by hours because of non-passenger trains."</i> • <i>"Too slow between Durham and Greensboro—too many delays due to freight and single track sections."</i> • <i>"The Piedmont tends to only get off schedule due to things it cannot control like yielding to a freight train."</i>

Table B5: Comments on pricing

Theme	Example Quotes
General comments on lower prices (26 mentions)	• <i>"Lower the cost for a round-trip from Charlotte to Raleigh. Paying nearly \$60 feels a bit excessive."</i> • <i>"Make the cost better to incentivize people to drive less."</i> • <i>"Faster track speeds and cheaper tickets."</i>
More discounts: Lower fares on off-peak, commuter passes, special event pricing, or quick deals (16 mentions)	• <i>"I take the train 4 times a week from Durham to Greensboro and back. I currently take the 10 multi ride pass. It will be great if there can be a monthly pass available for daily commuters. There are many I know who take the train everyday."</i> • <i>"If there were a "commuter package" where you could buy a slightly cheaper package of tickets between Durham and Raleigh, I would definitely ride the train as a commuter option."</i> • <i>"More frequent options, sale on last-minute tickets (should be no more than 200% the cost of gas for a last-minute ticket bought 2 hours or less before departure)."</i>
Discounts that already exist/improve marketing (14 mentions)	• <i>"Student fares or group prices would be a great feature."</i> • <i>"Sort of like the bus pass system, making train rides subsidized or free for state employees."</i> • <i>"Frequent rider passes for commuters or frequent users."</i>
Competitiveness to driving/flying is a consideration (8 mentions)	• <i>"Lower cost. Right now the cost does not make sense over driving, and I really only use the train for work trips where it is paid for."</i> • <i>"I would consider paying more if the train was considerably faster than driving."</i> • <i>"Prices need to remain very competitive to flying. Flying is often fast yet by train can be more cost effective and is typically comfortable."</i>

Table B6: Comments on enhancing local transit connections

Theme	Example Quotes
Poor First/Last-Mile Connections at Stations (22 mentions)	Many respondents expressed frustration with the difficulty of getting to or from stations once their train ride ends—especially in Charlotte, Raleigh, and Durham. • <i>"Better connection between the light rail and Charlotte station."</i> • <i>"Make transit to the train stations more accessible – so if I don't have access to a car, I can get to a train station and take the train."</i> • <i>"It's strange that you can only go one direction when disembarking at Durham... even though the central bus station is literally right there across the track."</i> • <i>"Easier access to downtown Charlotte from the Amtrak station."</i> • <i>"Better location / connections in Charlotte."</i>
Airport Access is a High Priority (13 mentions)	Multiple riders suggested better or dedicated connections from train stations to major airports like RDU and CLT. • <i>"Add a connector bus between the train station and airport."</i> • <i>"Bring it out to the CLT airport."</i> • <i>"Better connection to RDU airport would be good too."</i> • <i>"Shuttle service to/from airports in Raleigh and Charlotte."</i> • <i>"Have a connection between the Charlotte station and the Charlotte Airport."</i>
Miscommunication or Lack of Clarity on Connector Services (6 mentions)	Confusion over how to access Amtrak Connectors and local shuttles were reported. • <i>"Clearer information about the Amtrak Connector into Winston-Salem... your website uses 'direct route connections' language, but that does not appear to be the case."</i> • <i>"I called the 1-800-NCTRAIN line to ask for clarification... and the person on the phone said she couldn't answer that. Disappointing."</i> • <i>"Make information about first and last mile connections accessible and convenient."</i>
Coordination with Local Transit Systems (15 mentions)	Participants emphasized the importance of seamless coordination with municipal transit (buses, light rail, shuttles, other trains). • <i>"Public transit connections — working with cities to get better (and frequent) public transit options at the stations would enable travel without needing to drive."</i> • <i>"Better safer long-term parking at stations and better connections to other routes around the U.S."</i> • <i>"Shuttle to the High Point Depot."</i> • <i>"Match schedule with Crescent in Greensboro."</i>

Table B7: Comments on faster travel time (71 mentions)

Theme	Example Quotes
Strong Demand for Faster Travel Times	Many riders feel that NC By Train is currently too slow, particularly between Charlotte and Raleigh. Faster travel is viewed as essential to remain competitive with driving and air travel. • <i>"Faster travel times are sorely needed. Stopping at every single town... actually discourages [people] from riding the train."</i> • <i>"For it to be truly useful, the train needs to be faster than car travel between Raleigh and Charlotte."</i> • <i>"In order to remain competitive with air travel & car travel, I think faster travel times are essential."</i> • <i>"Faster travel times should take priority... that's what would sway people to choose trains instead of cars."</i>
Support for Express or Limited-Stop Service	Many commenters advocate for offering express trains that skip smaller stations, especially during peak business travel times. These would coexist with local trains for coverage. • <i>"Express train with 1 or 2 stops. Leave Raleigh at 6 and arrive Charlotte by 8:30."</i> • <i>"Would love to see express trains that don't stop as many places... in addition to trains that stop at more/all stations."</i> • <i>"An option to choose a direct service for a faster time or one with more stops would be ideal."</i> • <i>"Weekends should have more local stops, and weekdays... should prioritize faster travel times."</i>
Calls for Infrastructure & Operational Improvements	Several riders noted that long dwell times, freight conflicts, and single-track delays are greater obstacles than the number of stops. Suggestions included staffing improvements, level boarding, and better scheduling. • <i>"I see a lot of the delays coming from long dwell times... from not enough conductors to operate doors."</i> • <i>"Every station needs two platforms... and sidings should be built to permit higher speeds."</i> • <i>"More tracks available for trains to pass each other rather than having to wait."</i> • <i>"You need to run a faster service where people are able to alight and board quickly... not make the problem worse by adding stops."</i>

Table B8: Comments on more stops (55 mentions total)

Theme	Example Quotes
Concerns About Skip-Stop Impacts on Communities	Commenters noted that skipping stations like High Point, Salisbury, Burlington, or Kannapolis reduces travel options, hurts tourism, and can cut into day-trip feasibility. • <i>“Salisbury being skipped is killing NCTM visits by train.”</i> • <i>“Skipping Kannapolis on some trains really cuts into my day trips.”</i> • <i>“Until there are significantly more trains in service, the current 4-5 trains need to make all stops.”</i> • <i>“Mostly I’d prefer High Point back as a stop on all trains.”</i>
Desire for Fair and Equitable Access	Some commenters emphasize that skipping stops disadvantages smaller communities and undercuts the train’s public transportation mission. • <i>“Do not skip any stations on any routes. This is supposed to be public transportation and so accessible to the whole public, not just the rich cities.”</i> • <i>“You have to stop at the stations on the way where you were disadvantaging all of the travelers who actually live between stops.”</i> • <i>“Stops at more stations will not impact the overall travel time compared to the flexibility and access options it will provide to all riders.”</i>

Table B9: Comments on both express trains and additional stops (75 mentions total)

Theme	Example Quotes
Improvements to operations and capital investments could make both faster trains and more stops possible	• <i>“These are not opposed. This is a false dichotomy. There are many ways to go faster AND stop at all stations,”</i> • <i>“You can do both if you add trains!”</i> • <i>“If you had service every 2 hours for every 24 hours, people would use it more.”</i>
Dual service with both express and local trains	• <i>“Some trains should be ‘all stop’ and some trains ‘express’ to get the best of both worlds,”</i> • <i>“Express Services that skip certain stops paired with full stop service would work,”</i> • <i>“I really think an approach similar to how the Long Island Rail Road does local versus faster service would serve the Piedmont well,”</i> • <i>“Ideally, a system similar to what Japan has where some trains stop at every station while others go directly between major stations would be perfect.”</i>