TOWN OF BLACK MOUNTAIN
TOWN COUNCIL

March 9, 2026 | **REGULAR SESSION AGENDA** | **Time: 6:00 PM**

Town Hall Council Chambers | 160 Midland Avenue, Black Mountain, NC 28711

Agendas and agenda packets may be accessed electronically from your laptop or smartphone. Visit the Town's website at https://www.townofblackmountain.org. **Click** on **Government** and select **Town Council** to access agenda materials for Town Council meetings. You can also scan this QR code with your smartphone to access agenda materials.

SCAN ME

Conserve Resources; print only when necessary.

The Town of Black Mountain is committed to providing accessible facilities, programs, and services for all people in compliance with the American with Disabilities Act (ADA). Should you need other assistance or accommodation for this meeting, please contact Town Clerk Wesley Barker at: town.clerk@tobm.org, or **(828) 419-9310 / TDD (800) 735-2962.**

1. CALL TO ORDER

1.A. Welcome

1.B. Pledge of Allegiance

1.C. Moment of Silence

1.D. Announcements

1.E. Ethics Statement

In accordance with the Code of Ethics adopted by the Council, all Council Members have a duty to conduct the affairs of the governing board in an open and public manner free of conflicts of interest. Is there any item on the agenda the outcome of which will have a direct, substantial, and readily identifiable financial impact for any Council Member, his or her family or close business associates? Does any Council Member have a financial interest in any public contract coming before this Council today? There being none, all Council Members have a duty and obligation to vote.

2. PROCLAMATIONS, AWARDS, RECOGNITIONS, SPECIAL RESOLUTIONS

2.A. Resolution Recognizing the Retirement of Police K-9 Cayman, and Ownership Transfer to Handler - Steve Parker, Police Chief

Motion: Motion to approve resolution recognizing the retirement of Police K-9 Cayman and to transfer ownership to his handler, Sgt. Newhouse.

2.B. 2026 Mayors' Monarch Pledge

2.C. Resolution Recognizing Women's History Month - March 2026

2.D. Resolution Recognizing International Transgender Day of Visibility on March 31, 2026

3. COMMUNICATIONS FROM STAFF, COUNCILS, COMMISSIONS & AGENCIES

3.A. Trash Trout Installation Presentation

3.B. Update on Public Safety Building Feasibility Study - Richard Hicks, Interim Town Manager

Motion: None- Presentation to Council.

4. CITIZEN COMMENTS

Individuals wishing to address the Council are asked to sign in at the entrance to the board room, indicating the topic(s) or agenda item(s) you wish to discuss, so that the chair may group speakers according to topic. The chair will recognize individuals requesting to address the Council. **Comments by any one speaker shall be limited to three (3) minutes.** If the topic you wish to discuss pertains to a public hearing scheduled for this meeting, please reserve your comment for the applicable public hearing. Note: Council will not respond during the citizen comment period.

5. COMMUNICATION FROM TOWN ATTORNEY & TOWN MANAGER

6. COMMUNICATION FROM MAYOR AND TOWN COUNCIL

7. CONSENT AGENDA

All items on the consent agenda are considered routine, to be enacted by one motion without discussion. If a member of the governing body requests discussion of an item, the item will be removed from the consent agenda and considered separately.

7.A. Adoption of Meeting Minutes- February 5, 9 & 25, 2026. - Wesley Barker, Town Clerk

Motion: Approval of meeting minutes as presented.

7.B. Monthly Tax Collector Report - Laurel Mabery, Accountant

Motion: Approve the tax collection report as presented.

7.C. Call for Public Hearing on April 13, 2026 at 6:00 p.m. to Amend Chapter 1,

Section 1.7.3, Variances, to remove the requirement that only signs in the historic district may seek a variance from the sign regulations. - Michelle Kennedy, Planning Director

Motion: To call for a public hearing to amend Chapter 1, Section 1.7.3, Variances, to remove the requirement that only signs in the historic district may seek a variance from the sign regulations to be held on Monday, April 13, 2026, at 6:00 p.m., or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain.

7.D. Call for Public Hearing on April 13, 2026 at 6:00 p.m. to Amend Chapter 9, Section 9.10, Administrative Adjustment of Signage Regulations, to additional administrative adjustments for ground signs, cantilevered ground signs, and development identification signs. - Michelle Kennedy, Planning Director

Motion: To call for a public hearing to amend Chapter 9, Section 9.10, Guidelines for Administrative Adjustment of Signage Regulations, to be held on Monday, April 13, 2026, at 6:00 p.m., or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain.

7.E. Consideration of Budget Amendment Resolution for Police Department Recognizing Grant Funds & Sale of Capital Assets - Steve Parker, Police Chief , Laurel Mabery, Accountant

Motion: Motion to approve budget amendments as presented.

7.F. Consideration of Budget Amendment Resolution to Acknowledge Payment to the Black Mountain Parks & Greenways Foundation for the Valentine's 5K Race - Richard Hicks, Interim Town Manager

Motion: Motion to approve the resolution budgeting funds to acknowledge payment to the Black Mountain Parks & Greenway Foundation for the Valentine's 5K Race as presented.

7.G. Consideration of Budget Amendment Resolution for NCLM Insurance Proceeds and Mobile Office Trailers Lease Payment - Richard Hicks, Interim Town Manager

Motion: Motion to approve budget amendments as recommended.

7.H. Consideration of Budget Amendment Resolution for Norfolk Southern Railway Lease Payment - Richard Hicks, Interim Town Manager

Motion: Motion to approve the budget amendment as recommended.

7.I. Resolution of Support for the Fonta Flora State Trail - Black Mountain to Point Lookout Trail Feasibility Study - Richard Hicks, Interim Town Manager

Motion: Motion to approve the resolution of support for the FFST Feasibility Study as presented.

8. PUBLIC HEARING

The chair will recognize individuals requesting to address the Council regarding the specific

topic of the public hearing. **Public hearing comments by any one speaker shall be limited to ten (10) minutes.** The Mayor reserves the right to alter time limits and other rules of procedure at the beginning of each public hearing.

8.A. Public Hearing for and Consideration of Approval of Voluntary Annexation of Property Owned by Givens Highland Farms (PIN# 0609-46-7498) - Michelle Kennedy, Planning Director

Motion: I move to approve the Voluntary Annexation Ordinance of property known as 318 Tabernacle Road, PIN# 0609-46-7498, into the Town of Black Mountain town limits as presented and recommended.

8.B. Public Hearing and Consideration of Approval to Rezone Property Owned by Givens Highland Farms (known as 318 Tabernacle Road- PIN #0609-46-7498) from R-1 to OI-6. - Michelle Kennedy, Planning Director

Motion: I move to approve the ordinance rezoning the property owned by Givens Highland Farms, known as 318 Tabernacle Road, PIN #0609-46-7498, from R-1 to OI-6 (office and institutional) as presented & recommended.

9. CITIZEN COMMENTS

Individuals wishing to address the Council are asked to sign in at the entrance to the board room, indicating the topic(s) or agenda item(s) you wish to discuss, so that the chair may group speakers according to topic. The chair will recognize individuals requesting to address the Council. **Comments by any one speaker shall be limited to three (3) minutes.** If the topic you wish to discuss pertains to a public hearing scheduled for this meeting, please reserve your comment for the applicable public hearing. Note: Council will not respond during the citizen comment period.

10. UNFINISHED BUSINESS

11. NEW BUSINESS

11.A. Call for Public Hearing on April 13, 2026 at 6:00 p.m. for Update to Town System Development Fees (SDF). - Richard Hicks, Interim Town Manager

Motion: Motion to call for public hearing on April 13, 2026 at 6:00 pm for update to the Town's System Development Fees (SDF) to be held at Town Hall, 160 Midland Ave., Black Mountain, NC 28711.

11.B. Petition to Dedicate Brookhaven Drive to the Town for Maintenance and Public Use - Michelle Kennedy, Planning Director

Motion: To accept the dedication of Brookhaven Drive and the subsequent sidewalk to the Town for maintenance and public use.

11.C. Authorization of Phase 1 Environmental Report for Donated Property to the Town from the State of NC - Richard Hicks, Interim Town Manager

Motion: I move that Council authorize the Town Manager to obtain a Phase 1 Environmental Report on Property being donated to the Town by the

State of North Carolina.

11.D. **Consideration of Easement Request with Duke Energy** - Richard Hicks, Interim Town Manager

Motion: I move that Council Authorize the Town Manager to Execute Easement Documents With Duke Energy.

11.E. **Consideration to Adopt Stormwater Master Plan and Associated Capital Improvement Plan** - Richard Hicks, Interim Town Manager

Motion: Motion to adopt the stormwater master plan and capital improvement plan as presented & recommended.

11.F. **Partnership with Carolina Elite Soccer** - Richard Hicks, Interim Town Manager

Motion: Motion that Council authorize town staff to enter into partnership with Carolina Elite Soccer as presented.

11.G. **Consideration of Amendment to Current Buncombe-Madison Regional Hazard Mitigation Plan** - Jessica Trotman, Assistant Town Manager

Motion: Motion to approve amendment to the Buncombe-Madison Regional Hazard Mitigation Plan for Mitigation Action Plan section as presented.

11.H. **Consideration of Pursuing Reimbursement through FEMA for Eligible Costs Incurred as a Result of Ice Storm Fern** - Richard Hicks, Interim Town Manager

Motion: Council is asked to provide direction on whether Town staff should pursue reimbursement through FEMA for eligible costs incurred from Ice Storm Fern.

11.I. **Award of Bid Received for Golf Cart Bridge Repairs at Black Mountain Golf Course & Approval of Capital Project Ordinance** - Richard Hicks, Interim Town Manager

Motion: I move that Council Award the Bid for the Replacement of the Golf Course Bridges to Dan Grady Company, LLC in the amount of $199,500, and to adopt the corresponding Capital Project Ordinance.

11.J. **Approval of Budget Amendment Resolution for Golf Cart Bridge Repairs at Black Mountain Golf Course** - Richard Hicks, Interim Town Manager

Motion: Motion to approve the budget amendment for the Golf Cart Bridge Repairs Project as presented.

11.K. **Discussion of Town Attorney's Annual Evaluation** - Richard Hicks, Interim Town Manager

Motion: Council should discuss setting a time to conduct the Town Attorney's annual evaluation.

12. CLOSED SESSION - NCGS 143-318.11 (A)(3) CONSULT WITH ATTORNEY, ATTORNEY-CLIENT PRIVILEGE.

13. ADJOURNMENT

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Steve Parker, Police Chief	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Proclamations, Awards, Recognitions, Special Resolutions	**DEPARTMENT:**	Police Department
TITLE OF ITEM:	Resolution Recognizing the Retirement of Police K-9 Cayman, and Ownership Transfer to Handler		

SUGGESTED MOTION(S):

Motion to approve resolution recognizing the retirement of Police K-9 Cayman and to transfer ownership to his handler, Sgt. Newhouse.

SUMMARY:

K-9 Cayman has faithfully served the Black Mountain Police Department since 2018, partnered with his handler, Sgt. Logan Newhouse, from the very beginning of his career. Now turning nine years old, Cayman retires after years of dedicated service to our department and the community we proudly serve.

Throughout his tenure, K-9 Cayman played a vital role in the apprehension of numerous drug offenders, contributing significantly to public safety and the disruption of illegal narcotics activity within our jurisdiction and surrounding areas. His keen nose, discipline, and unwavering work ethic made him a dependable asset on countless operations.
Beyond enforcement efforts, Cayman also assisted in search operations involving citizens in need, demonstrating the versatility and reliability that define a well-trained police K-9. Whether tracking, searching, or standing ready alongside his handler, Cayman performed each task with focus and professionalism.

Equally important has been Cayman's role as an ambassador for the Black Mountain Police Department. He has represented the department at schools, community outreach events, and public demonstrations, helping strengthen the bond between law enforcement and the community. Through these appearances, Cayman became not just a working dog, but a symbol of service, protection, and trust.

We extend our sincere appreciation to Sgt. Newhouse for his dedication, commitment, and partnership with Cayman throughout the years. The bond between handler and K-9 is built on trust, discipline, and countless hours of training, and their teamwork exemplifies the highest

standards of our profession.

On behalf of the Black Mountain Police Department and the community we serve, we thank K-9 Cayman for his years of loyal and honorable service. We wish him a well-deserved retirement filled with rest, comfort, and time with his extended family.

Council is asked to approve the attached resolution honoring K-9 Cayman's service to the BMPD, and to authorize the transfer of ownership over to his handler, Sgt. Logan Newhouse.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. Resolution Honoring Retiring K9 Cayman and Transfer Ownership to Sgt Newhouse_2026.03.09

Council Member ___ made a motion to approve the following resolution. A vote of ___.

A RESOLUTION HONORING K-9 CAYMAN UPON HIS RETIREMENT FROM THE BLACK MOUNTAIN POLICE DEPARTMENT AND TRANSFER OF OWNERSHIP OVER TO K-9 HANDLER

RESOLUTION NO. R-26-XX

WHEREAS, K-9 Cayman has faithfully served the Town of Black Mountain since 2018 as a member of the Black Mountain Police Department, partnered from the beginning of his distinguished career with his handler, Sgt. Logan Newhouse; and

WHEREAS, now at nine years of age, K-9 Cayman retires after years of dedicated and honorable service to the Department and to the citizens of Black Mountain; and

WHEREAS, throughout his tenure, K-9 Cayman played a vital role in the apprehension of numerous drug offenders, significantly contributing to public safety and the disruption of illegal narcotics activity within the Town's jurisdiction and surrounding areas; and

WHEREAS, K-9 Cayman also assisted in search operations involving citizens in need, demonstrating the versatility, reliability, and professionalism that define a well-trained police K-9; and

WHEREAS, beyond his enforcement responsibilities, K-9 Cayman served as an ambassador for the Black Mountain Police Department, representing the Department at schools, community outreach events, and public demonstrations, strengthening the bond between law enforcement and the community; and

WHEREAS, the partnership between Sgt. Logan Newhouse and K-9 Cayman exemplifies the highest standards of trust, discipline, teamwork, and commitment within the law enforcement profession;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain that the Council hereby expresses its sincere gratitude and appreciation to K-9 Cayman for his loyal and honorable service to the Town and its citizens; and

BE IT FURTHER RESOLVED that the Town Council extends its appreciation to Sgt. Logan Newhouse for his dedication and steadfast partnership with K-9 Cayman throughout his career, and wishes to transfer ownership of K-9 Cayman over to Sgt. Newhouse.

ADOPTED this 9th day of March 2026.

_____
C. Michael Sobol, Mayor

_____
Wesley M. Barker, Town Clerk

Proclamation

2026 Mayors' Monarch Pledge

WHEREAS, the monarch butterfly is an iconic North American species whose multigenerational migration and metamorphosis from caterpillar to butterfly has captured the imagination of millions of Americans; and

WHEREAS, both the western and eastern monarch populations have seen significant declines in recent years, and with commitments through the National Wildlife Federation's Mayors' Monarch Pledge, communities work to create habitats for monarch butterflies and pollinators; and

WHEREAS, the Town of Black Mountain is committed to restoring and preserving habitats that support the monarch's migration each year maintaining pollinator-friendly habitat gardens at Town Square, Lake Tomahawk, the Black Mountain-Tyson Public Library, Veteran's Park, Black Mountain Primary School, and other public spaces; and

WHEREAS, since 2015, the Town maintains official monarch waystations at Veteran's Park, Lake Tomahawk, Black Mountain-Tyson Public Library and Black Mountain Primary School, and displays educational signage about these efforts; and

WHEREAS, in 2025, the Town of Black Mountain was one of only seven municipalities in North Carolina that joined the "Leadership Circle" by taking eight or more actions for the monarch butterfly; and

WHEREAS, citizens can make a difference for the monarch by planting native milkweed and nectar plants to provide a habitat for the monarch butterfly in locations where they live, work, learn, play and worship.

NOW, THEREFORE, I, C. Michael Sobol, Mayor of the Town of Black Mountain, do hereby commit to the 2026 Mayors' Monarch Pledge with the National Wildlife Federation and proclaim this, the **9th day of March, 2026** as **"Mayor's Monarch Pledge Day"** and encourage all residents to participate in community activities that support and celebrate monarch butterfly conservation.

_____
C. Michael Sobol, Mayor

Attest: _____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Communications from Staff, Councils, Commissions & Agencies	**DEPARTMENT:**	Stormwater
TITLE OF ITEM:	Trash Trout Installation Presentation		

SUGGESTED MOTION(S):
A presentation to Council and a request for support for the project.

SUMMARY:

The Town of Black Mountain Stormwater Department proposes installation of a **Trash Trout™**, a floating passive trash collector, in the Swannanoa River at Veteran's Park. The Trash Trout has been designed by Asheville GreenWorks, with consultation by NC Wildlife Resources Commission, to ensure that the trap does not injure or prevent passage of aquatic life in the river. Asheville GreenWorks installed the first Trash Trout in Hendersonville in 2017 and, as of October 2023, has installed 42 Trash Trouts in five states.

Asheville GreenWorks received grant funding to fabricate and install several Trash Trouts in Buncombe County. As a part of this funding, a Trash Trout could be installed in Black Mountain. The Trash Trout would be installed and maintained at no cost to the Town. The Trash Trout in Black Mountain would be maintained by Asheville GreenWorks' trained group of volunteers, the StreamKeepers.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A - no cost to Town.

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. Trash Trout Brochure



urban waterway litter solutions

TRASH TROUT™

WWW.ASHEVILLEGREENWORKS.ORG

ASHEVILLE GreenWorks BUNCOMBE COUNTY

COMPANY PROFILE

ASHEVILLE GREENWORKS

Established in 1973, our mission is to inspire, equip, and mobilize individuals and communities to take care of the places we love to live. Through community-based, volunteer-led environmental conservation projects and education programs, we work together to enhance the environment and quality of life for all residents of Asheville and Buncombe County.

Today, Asheville GreenWorks is the most active environmental non-profit in Western North Carolina working with over 3,500 volunteers and managing 200+ projects annually.



SERVICES WE OFFER

- Consultation
- Project Management
- Manufacturing
- Turnkey Solutions
- Program Guidance
-



ASHEVILLE GreenWorks BUNCOMBE COUNTY



THE PROBLEM

1. Stormwater-driven litter is responsible for 75% of the manmade trash found in local waterways.

2. Trash left in waterways will photodegrade into microplastics that will be consumed by higher and lower benthic creatures.

3. All rivers eventually empty into the oceans, transporting microplastics further afield.



LITTER SOLUTIONS

TRASH TROUT™

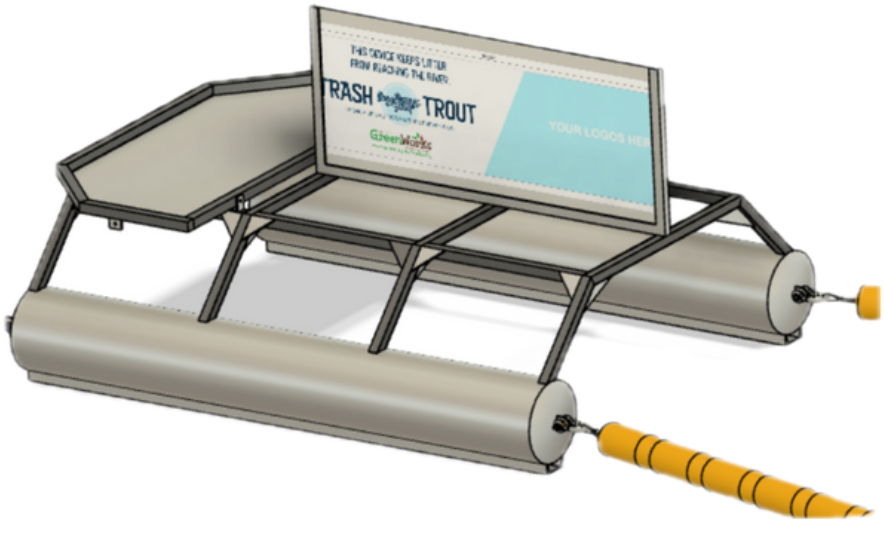
Simple and effective traps designed to capture stormwater litter and keep it from polluting our downstream neighbors.

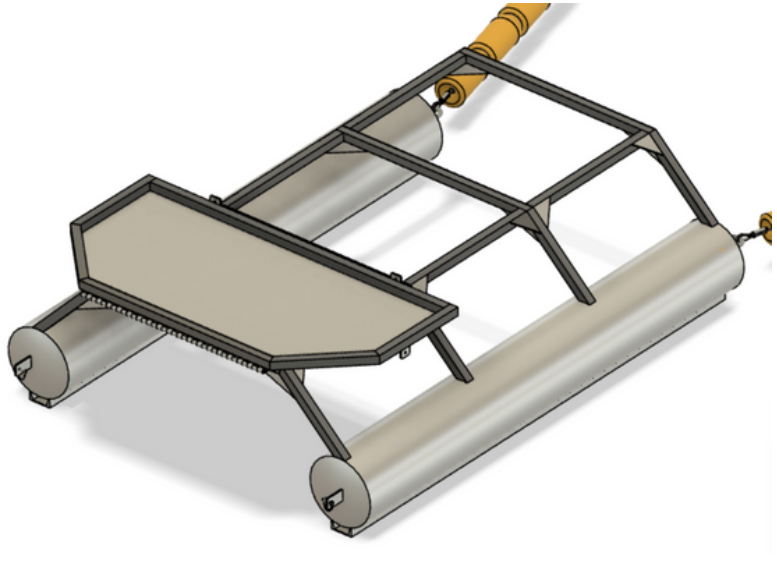
ASHEVILLE GreenWorks BUNCOMBE COUNTY

TRASH TROUT™

This device is perfect for smaller urban tributaries. It is easy to install, access, and move around for educational and research purposes.

This device was built to withstand flow rates exceeding 10,000 cfs, capture manmade litter but passive enough as to not to harm wildlife.



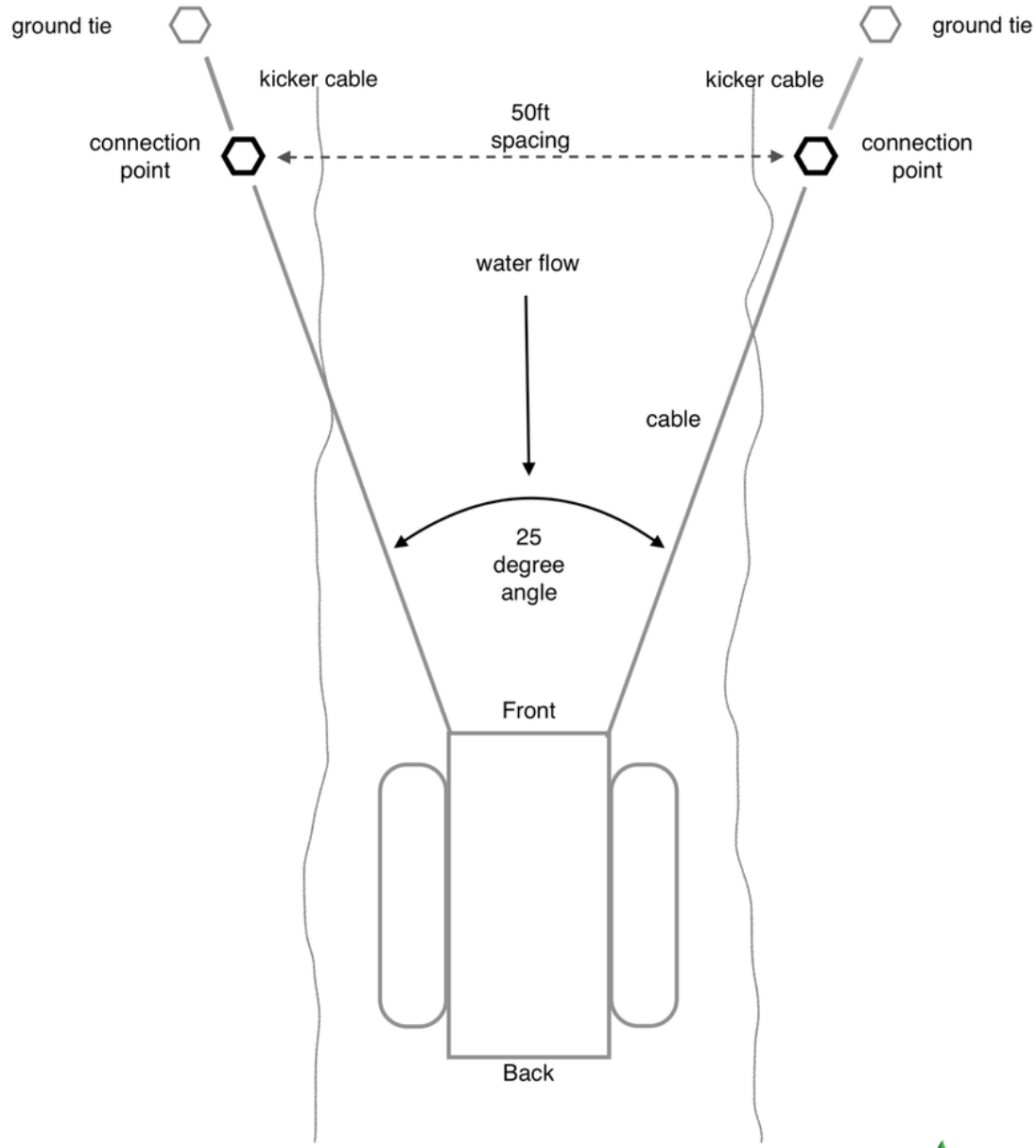


ASHEVILLE GreenWorks BUNCOMBE COUNTY

HOW DOES IT WORK?

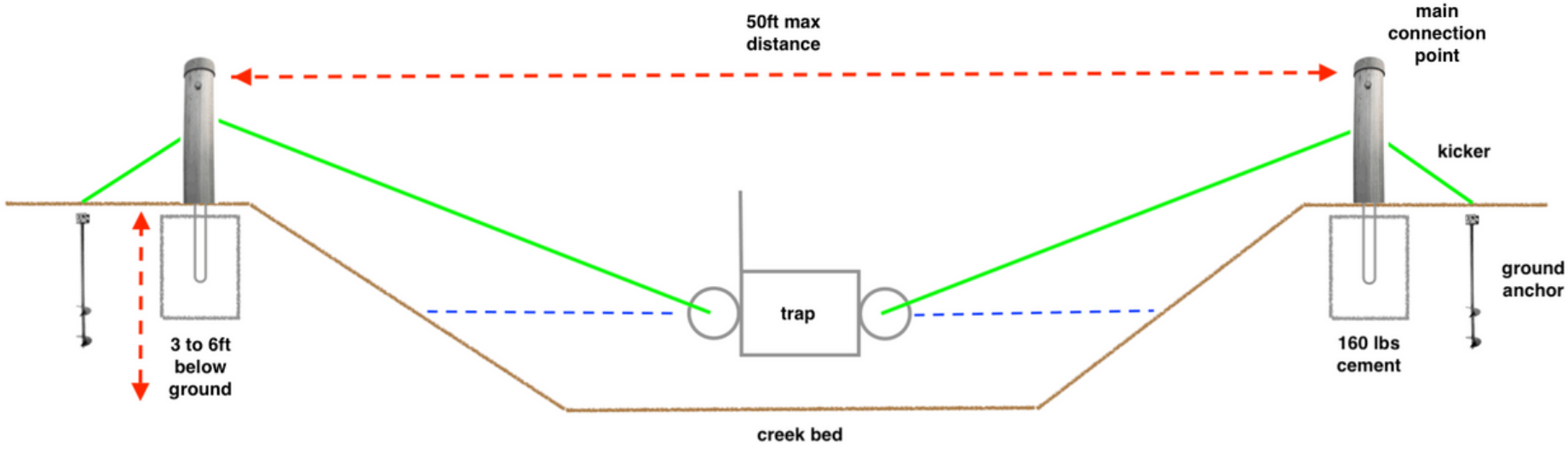
Utilizing the flow of the waterway, flotation and a mesh gate, we're able to seize floating garbage and contain it until it's ready to be cleaned out.

The device doesn't contain a top or bottom to allow creatures to pass through without harm. The 3/4 openings in the mesh gate keep smaller benthic critters from becoming entangled in the trash.



CONNECTION POINTS

Connections to the banks are achieved by using a combination of ground anchors, posts and cement. We use 7-19 strand galvanized cable to secure the traps, along with heavy gauge clamps and rust resistant hardware. Connection points on four sides maintain stability and keep the device in the primary flow of the waterway. The trap rises and falls with the water levels and is built to withstand average flooding events.



Creek Profile



SPECIFICATIONS

TRASH TROUT™

Built in the USA by
Asheville GreenWorks

Measurements
Trap 2ft (h) x 6ft (w) x 8ft (l)

Weight
Trap 250lbs

Materials
Frame: Aluminum
Pontoons: Aluminum
Gate: 3/4 Expanded Stainless Mesh

Storage Capacity
96 cubic ft

Site Specs
Not to exceed bank width of 50ft
Max historical flow rate 10k cfs

FAQ

The Trash Trout™ is a work in progress. As we make improvements, we will connect with our network and pass along any suggestions that may improve its performance and longevity.

Q. How often do you clean out your traps?
A. Roughly once a month or after a significant rain event.

Q: How long will the unit last?
A: 10 to 20 years with regular maintenance.

Q: Does the trap exacerbate flooding?
A:This device is designed to rise and fall with water levels. With regular maintenance, the trap will not become a flooding hazard.

Q: What's the most common item found in the trap?
A: Plastic beverage containers and styrofoam.



CONTACT



Asheville GreenWorks
2 Sulphur Springs Road
Asheville, NC 28806

Product inquiries:
eric@ashevillegreenworks.org
or
828.254.1776

ASHEVILLE GreenWorks
BUNCOMBE COUNTY

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Communications from Staff, Councils, Commissions & Agencies	**DEPARTMENT:**	Administration

TITLE OF ITEM: Update on Public Safety Building Feasibility Study

SUGGESTED MOTION(S):
None- Presentation to Council.

SUMMARY:

A representative from McGill Associates and Moseley Architects will be at the meeting to report their findings on the Public Safety Building Facility Condition Assessment and the project cost estimates for necessary repairs.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? yes

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Black Mountain Public Safety Bldg Facility Condition Assessment Report_2-5-26
2. Black Mountain Public Safety Bldg CIP
3. 2026-02-08-ToBM Public Safety Bldg -Needs Assessment and program of spaces

Moseley

Town of Black Mountain

Public Safety Building Facility Condition Assessment

February 5th, 2026

CONTENTS

Executive Summary 3
- Project Scope 3
- Findings 5
- Next Steps 6

Current Conditions 7
- Building Description 7
- FCI 37

Immediate Recommendations 38
- Architecture, Site, and Interiors 38
- Mechanical 38
- Electrical 39
- Plumbing 39
- Structural 40

Additional Recommendations 41
- Architecture, Site, and Interiors 41
- Mechanical 41
- Electrical 41
- Plumbing 42
- Structural 42

Capital Improvement Plan Matrix 43

Executive Summary

Project Scope

The Town of Black Mountain tasked Moseley with performing a facility condition assessment (FCA) and developing a capital improvement plan (CIP). This summary and subsequent report explain the process and findings of this project.

Facility Condition Assessment

The purpose of the Black Mountain Public Safety Building FCA is to visually evaluate the current condition of the building systems, estimate the remaining useful life of these systems, and develop a 10-year CIP for the facility based on these observations. The assessment results are then used to calculate the facility condition index (FCI) for the facility, which can be used to provide benchmarking and a high-level understanding of the building's condition.

Assessments

This FCA was to assess the architectural and engineering systems for the Town of Black Mountain facility. The FCA team consists of engineers and architects from Moseley. The FCA team assessed exterior envelope, architectural interiors, structural systems, mechanical/electrical/plumbing/fire protection systems, and life safety. This FCA process was comprised of three primary tasks:

1. Perform a visual comprehensive architectural and engineering condition assessment of components and systems for each facility to determine deficiencies and estimated remaining useful life.
2. Prioritize observed deficiencies, develop recommendations for corrective work, and specify schedule for repair or replacement over a 10-year planning window.
3. Develop planned replacement and renewal project solutions for deficiencies, or groups of deficiencies, to be included in a future CIP.

On December 18, 2025, the FCA team performed a visual physical condition assessment of the building. During this assessment we were assisted by Town of Black Mountain staff to provide both access to restricted parts of the building and institutional knowledge of the building system operations and problems.

Based on our FCA for the Black Mountain Public Safety Building, the following deliverables were created:

- Executive Summary – High-level summary of each component of the total report.
- Current Conditions Summaries – A summary of the existing systems at the building and the current FCI.
- Immediate Recommendations – A summary of the replacements, repairs, and actions that need to take place in the next fiscal year.
- Additional Recommendations – A summary of the replacements, repairs, and actions that need to take place in the two to three years after the next fiscal year.
- Capital Improvement Plan Matrix – A list of system replacements and required and recommended system maintenance for the designated planning window.

Priorities

Priorities are used for ranking systems and requirements, and to develop the deferred maintenance program and deficiencies reports. The priorities are as follows:

Priority 1 – Currently High-Priority
Conditions require immediate action to correct a cited safety hazard, return a facility to operation, and/or stop accelerated deterioration.

Priority 2 – Potentially High-Priority
Conditions in this category, if not corrected expeditiously, will become high priority within 1-3 years. Situations in this category include intermittent operations, potential life safety hazards, and rapid deterioration.

Priority 3 – Necessary – Not Yet High-Priority
Conditions in this category require attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

Priority 4 – Recommended
Conditions in this category include items that represent a sensible improvement to existing conditions. These are not required for the most basic function of the facility; however, Priority 4 projects will improve overall usability and/or reduce long-term maintenance costs and should be addressed.

Priority 5 – Does Not Meet Current Code/Standards
Conditions in this category include items that do not conform to existing codes but are “exempted” in their current condition. Substantial work should be undertaken, as certain existing conditions may require correction or may be required to be addressed during other replacement or renovation work.

Facility Condition Index

Moseley calculated a Facility Condition Index (FCI) for the Black Mountain Public Safety Building facility, based on the current year, 2025. The FCI is a ratio that defines the relative condition of a facility by comparing the cost of deferred maintenance to the replacement value of the facility. The FCI enables the owner to compare the building's relative condition against other facilities and industry-standard metrics outlined below:

Facility Condition Index Value	Condition
0.00 – 0.04	Good Condition
0.05 – 0.09	Fair Condition
0.10 – 0.30	Poor Condition
> 0.30	High-Priority Condition

A high FCI value indicates the cost of maintenance and repair is a large percentage of the building's current replacement value. This information can be leveraged by the building owner to determine the most prudent areas to allocate their limited resources.

Findings

The total deferred maintenance estimated cost is $2,207,691. The building's replacement value is $1,207,900 as provided from the 2021 Buncombe County appraised value for the building. This value does not include furniture, fixtures, and equipment (FFE) as these items were not in the scope of the FCA. The facility FCI is 0.77, which equates to a condition rating of high-priority.

Facility Condition Assessment

For the immediate future, within the next year, there is approximately $1,851,706 worth of deferred maintenance that the Town of Black Mountain should address. However, the deferred maintenance should be prioritized and aligned with the facility goals to reduce the overall cost and projects to the critical actions while the facility/Town plans and budgets.

With a facility FCI of 0.77, or a "high-priority" rating, significant capital investment will be required to improve the facility and assure both buildings and systems will continue to serve the Town and staff. The existing building (not including the bays) is roughly 12,000 square feet. To demolish and build a new building of similar size would be estimated at $6,600,000 construction costs or roughly $8,000,000 total project costs at the current market conditions.

Based on the assessment, the building has major structural deficiencies that need to be addressed. Additional testing is required to determine the full scope of structural repairs that are necessary. Major deficiencies were noted for mechanical, plumbing, emergency power, and fire alarm systems. Substantial system replacements and/or renovations are needed to improve the facility's condition.

Based on these conditions the Town should proceed with the additional testing described herein to understand the scope and severity of the repairs and building condition. Given the building is currently occupied it should be considered to move to temporary facility until repairs or a better understanding of the cause of the structural failures is determined.

Next Steps

Now that the Town of Black Mountain has the data, results, and recommendations from this project, there are several next steps Moseley recommends.

Prioritization will be key to the facility's success. Deferred maintenance and capital projects must be prioritized in order to meet Black Mountain's long-term goals and align facility spending with the goals.

The prioritization process will take time and most likely have several iterations. Moseley recommends the following actions to take place concurrently with prioritization:

1. Address the specific and known issues in high-priority building systems. This includes items noted as Priority 1- Currently High-Priority and Priority 5 – Does Not Meet Current Code/Standards.
2. Prioritize and plan for items that cannot be accomplished in the next year due to budget or other constraints. Realign these with the next two fiscal years and request budget to accommodate these projects and tasks.

In summary, the Town of Black Mountain Public Safety Building FCA and CIP project resulted in a significant amount of data and an understanding of the current facility and systems, as well as several plans that can be implemented to make progress; however, there are steps for the staff to take in the near future to be most successful in maintaining and managing the facility.

Current Conditions

Building Description

Architecture, Site, And Interiors

The Town of Black Mountain Public Safety Center is located at 106 Montreat Road in Black Mountain, North Carolina. The public safety building contains offices for the police department and the fire department, as well as an apparatus bay for emergency vehicles. There were no construction drawings available for the building, so the assessments are based solely on visible observations. The police department area has been renovated recently, while the fire department does not appear to have been renovated.

The exterior of the building is mainly brick veneer with stone cladding in some areas. The basement walls are concrete masonry unit (CMU) with brick veneer, while the main floor appears to be metal studs with a brick veneer. The east wall has obvious bowing of the brick veneer. There was previous remediation to tie back the veneer to the floor slab. It is unknown whether there has been more bow effect since the ties were installed. The north wall has some settlement in the brick veneer. There is a large horizontal separation in the mortar approximately 4-5 feet from grade. Ties are also installed on the north side veneer to what appears to be the floor slab. The apparatus bay is a prefabricated metal building structure with vertical seam metal panel veneer.



Photo 1: East wall.

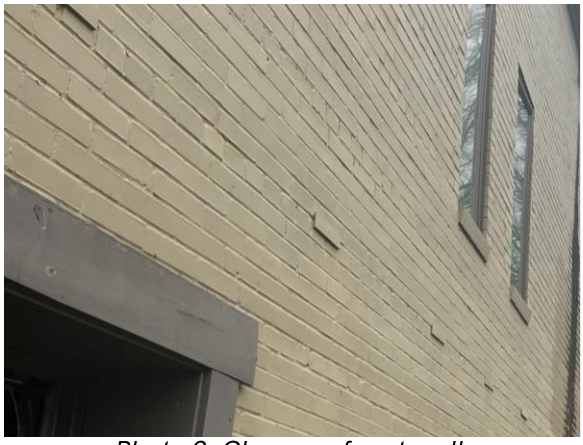


Photo 2: Closeup of east wall.



Photo 3: Mortar separation in north wall.



Photo 4: North wall tie.

The roof was not observed but appears to be a modified bitumen roof on a barrel vault wood truss. The gutters appear to be in good condition, however, the downspouts have been damaged or removed in some locations. There is evidence of wall damage to the brick veneer and peeling paint at the east wall where the downspout was removed.

Exterior windows appear to be original metal windows on the east and north sides, while the south and west look to be aluminum storefront replacements. The east and north metal windows are deteriorating and should be considered for replacement. The west and south aluminum windows appear to be in good condition. The exterior doors are a combination of steel and aluminum storefront. There are areas on the east side of the building that the door frame and wall have separated and should be resealed. Interior doors are steel frame with wood doors and appear to be in overall good condition.



Photo 5: Police department roof.



Photo 6: Missing downspout.



Photo 7: Peeling paint below downspout opening.



Photo 8: Windows on north side of building.



Photo 9: Exterior door on east side of building.

Inside, the fire station living room and kitchen areas have visible roof leaks and evidence of gypsum board repairs. The VCT flooring should be considered for replacement in the near future but is still serviceable. There are visible slab depressions that will need to be corrected and tile replaced. The kitchen casework will need to be replaced. There are unhinged or sagging doors and chipped countertops. There are areas in the bathroom and shower with cracked wall and floor tiles. If these are not corrected, water may intrude into the wall and cause further damage. Toilet and shower partitions are laminate and are starting to delaminate in some areas. These should be considered for replacement.



Photo 10: Water damage in fire station living room.



Photo 11: Fire station kitchen VCT floor.



Photo 12: Fire station kitchen casework.



Photo 13: Cracked tile in shower.



Photo 14: Cracked tile in shower.

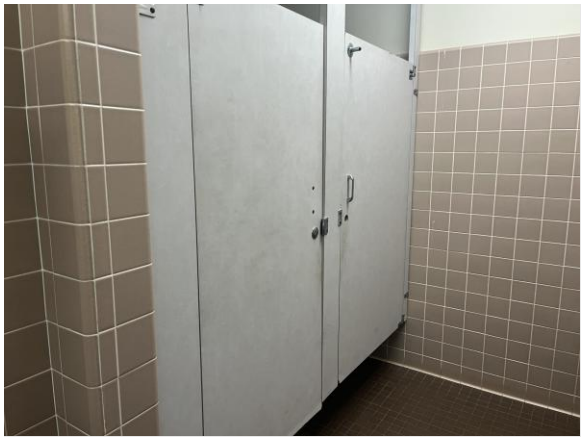


Photo 15: Toilet partitions.

Interior corridors, primarily in the rear fire station areas, have uneven floors and signs of settlement and cracking. There is an area where water has come up through the floor. Further core samples would be needed to investigate subsurface conditions and provide adequate repairs. Any interior door hardware with door knobs should be replaced with levers to meet current accessibility requirements. In other areas of the fire station that have not had water damage, the vinyl composition tile (VCT) floors, painted walls, and gypsum ceilings are in fair to good condition.



Photo 16: Damaged VCT in corridor.



Photo 17: VCT with water intrusion.



Photo 18: Typical door knob.

The community room is overall in good condition. The carpeted floor should be considered for replacement in the near future.

The police department has been renovated at some point. The luxury vinyl tile (LVT) flooring and painted walls and ceilings are in good condition. There are some areas in the bathrooms where roof leaks are visible. In other areas and offices, the LVT and carpeted flooring is in good condition. There is one area near the detective's office where water is coming up under the LVT.



Photo 19: Water damage in police station bathroom.



Photo 20: Water intrusion near detective office.

Site:

The large concrete apron in front of the apparatus bays has been recently replaced. There is a large crack running parallel with the bay. There is some settlement in the second bay. It is reported that during large precipitation events, water backs up into the bay. The asphalt around the building has many cracks and should be considered for replacement, especially on the east side.



Photo 21: Concrete drive.



Photo 22: Apparatus bay.



Photo 23: Settlement near apparatus bay.

Cracking was observed in the pavement along the east side of the building. Based on the CCTV video, a damaged and cracked pipe is located beneath this pavement and is likely contributing to excess subsurface moisture and resulting ground settlement. Pavement along the south side of the building is generally in good condition and slopes downward from the driveway entrance off Montreat Road toward the driveway connection at West Street. During the site inspection, it was observed that roof drains from the Public Safety Building are located within the sidewalk and daylight at the edge of the sidewalk. Roof runoff from the south side of the building likely drains east toward the inlet adjacent to West Street. Pavement along the south side of the building, in front of the fire apparatus bays, is concrete, while the remaining pavement throughout the site is asphalt.

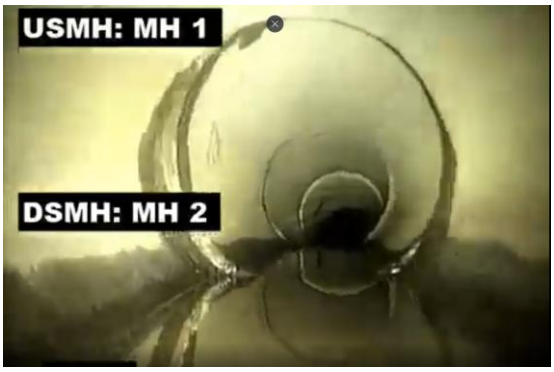
Drainage Observations

The damaged pipe referenced above conveys runoff from the grate inlet (located on the northeast side of the building) southward and ultimately connects to the grate inlet located at the West Street driveway of the Public Safety Facility. Another drainage structure is expected to be located between the inlet adjacent to West Street and the inlet on the northeast side of the building. However, this structure could not be located during the site visit. The presumed location was covered by a dumpster, and no inlet top was observed. Additionally, this area appears to have undergone pavement repairs following Hurricane Helene, which may have covered the inlet structure.

StreamStats (USGS web-based tool) was used to develop a preliminary estimate of the drainage area basin to the grate inlet at West Street. The inlet captures approximately 19.2 acres, of which 41% is impervious. We estimated that the upstream inlet located along the northeast side of the building captures approximately 15 to 16 acres of the total 19.2-acre drainage area that ultimately conveys to the inlet adjacent to West Street.

- The inlet's location along the north side of the building and the existing slope of the adjacent parking lot appear to direct runoff toward the building, which is not ideal.
- The inlet is not located at the lowest point along the northeast wall of the building, which may allow runoff to continue eastward toward the northeast corner of the structure.
- No trench drains or shallow swales were observed along the building that would redirect runoff toward the inlet and away from the building.









Mechanical

Police Department

There is no mechanical equipment or air distribution system in the basement aside from a dehumidifier. The dehumidifier was placed on top of cabinets, and the related wiring and piping were not properly installed.

The first floor of the police department wing is served by three split system air conditioning units with gas furnaces. The condensing units are located outside and the indoor furnaces are installed in mechanical rooms. Two of the condensing units are rusted, past their expected lifespan and should be replaced. All three furnaces are approaching the end of their lifespan and should be replaced.

The IT room is served by a one Ton split system heat pump. The outdoor heat pump and indoor wall units were in good condition; however, the thermostat serving the unit is not working and should be repaired or replaced.



Photo 24: Dehumidifier serving police department basement.



Photo 25: 4 ton condenser.



Photo 26: 3.5 ton condenser.



Photo 27: Typical furnance serving police department.

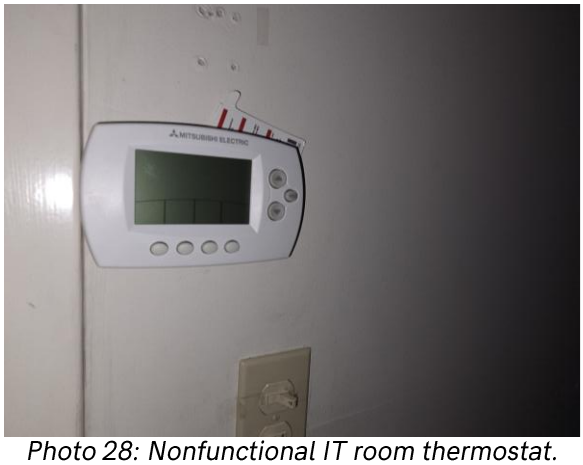


Photo 28: Nonfunctional IT room thermostat.

There are several exhaust fans throughout the building that were not functional. These include the men's restroom toilet exhaust fan, the IT room exhaust fan, breakroom exhaust fan, and the equipment room exhaust fan.

All grilles and diffusers throughout the building were clogged with dirt and should be cleaned.

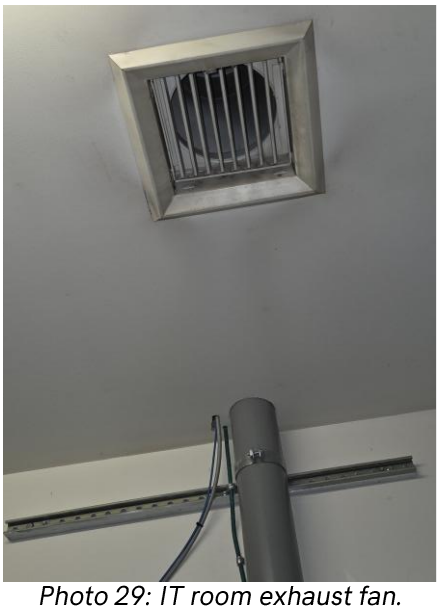


Photo 29: IT room exhaust fan.



Photo 30: Breakroom exhaust fan.



Photo 31: Equipment room exhaust fan.



Photo 32: Typical grille.

Fire Station

The main rooms of the fire department are served by a split system air conditioning unit with a gas furnace. The unit is in fair condition but requires refurbishment. All exhaust fans in the fire station wing were functional except for the men's restroom shower exhaust fan.



Photo 33: Gas furnace serving fire station.

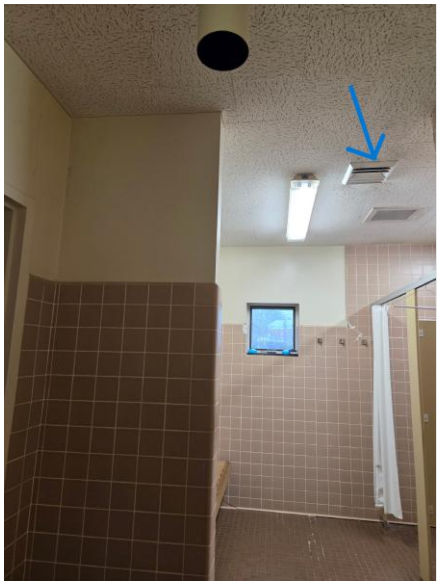


Photo 34: Men's restroom shower exhaust fan.

The fire station bays are served by three exhaust fans, three electric unit heaters, and two vehicle exhaust extraction units. Fire station staff have reported that the electric unit heaters are not operational.



Photo 35: Electric unit heater.



Photo 36: Vehicle exhaust extraction unit.

The maintenance room is served by an exhaust fan and infrared heaters. The exhaust fan was not operational. The infrared heaters do not have any controllers and are likely not functional. The truck repair room is served by a separate ducted gas furnace unit and exhaust fan. The gas furnace has surpassed its expected service life and should be replaced. Fire department staff report that the maintenance and truck repair rooms are being utilized as a garage or as storage.



Photo 37: Maintenance room infrared heater and exhaust fan.



Photo 38: Gas furnace serving truck repair room.

Electrical

Moseley conducted a limited electrical review of the existing Black Mountain Public Safety Building at 106 Montreat Road in Black Mountain, North Carolina. The electrical review of the existing building was limited in nature as no work was performed to uncover the electrical conditions that could not be seen from visual inspection. The findings of this report are based solely on visual observations of the portion of the electrical and low voltage systems which were visible at the time of the assessment. No additional testing was conducted.

Electrical Service

The facility is served by the utility, Duke Energy, via an exterior pole mounted transformer located to the northeast, adjacent to West Street, at the rear of the building from Montreat Road. The utility service is routed into the building from the utility pole through a building mounted weather head. It is then routed in the conduit through the basement ceiling space over the generator room and serves a main disconnect that feeds the building main distribution panel (MDP) in the basement.

The main disconnect is a General Electric 800-Amp, 480/277-Volt, 3-phase, 4-wire, 65 KAIC main circuit breaker. The MDP is a Siemens I-T-E 800A, 480/277V, 3-phase, 4-wire, 65 KAIC without a main circuit breaker. Building ground is established at the service, and visual inspection was per code. The main electrical room has a means of egress and proper clearance. The electrical service provides sufficient power for the building type and the MDP has sufficient space and capacity for future renovations. Prior to adding new loads, it is recommended to conduct a load study per NEC 220.87.

Power is distributed throughout the building through a combination of metal conduit and conduit feed from the main distribution panel and subpanels. The distribution is industry standard and sufficient for the building needs. Existing panelboards could be reused in a light renovation.



Photo 39: Utility power pole.

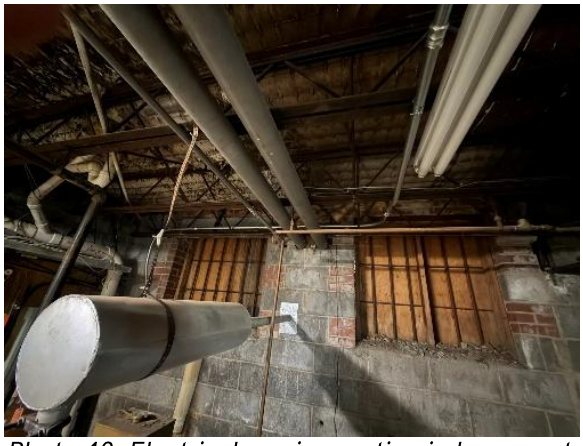


Photo 40: Electrical service routing in basement.



Photo 41: Main disconnect and MDP.



Photo 42: MDP.

Emergency Power

The building is served by an emergency standby gas generator located in the basement of the building. The generator is a Kohler 30kW, 208/120V, 3-phase, 4-wire generator. From visual inspection it appears that flood waters have been in the emergency generator room. It is recommended that emergency generators be located outside potential flood waters.

The emergency power system has a newly installed connection to a portable generator per NEC 700.3 that serves as a back up to the existing emergency standby generator in the case of maintenance or generator failure.

The generator serves a Cummins Power 100A automatic transfer switch that serves the electrical panels that then feed the connected load. The emergency power system serves a handful of circuits that feed low voltage racks and select equipment and receptacles. The generator has been maintained but is approaching the end of its reliable and expected lifetime.

A public safety building should be able to remain operational in the event of a loss of utility power. The existing emergency power system is not sufficient for this. The generator does not have the capacity to support additional loads. It is recommended to update the emergency power system to be able to provide an adequate capacity in the event of utility power loss.



Photo 43: Emergency generator.



Photo 44: Automatic transfer switch.



Photo 45: Portable generator connection.



Photo 46: Generator distribution.

Lighting

Interior lighting fixtures are primarily 1x4 surface mount, 2x4 recessed lens, and basket type fixtures. All fixtures utilize a combination of T-5, T-8, and LED replacement lamps. Exterior fixtures are generally surface-mounted canopy fixtures utilizing fluorescent lamps. All fixtures are approximately the same age as the building and should be replaced with more efficient LED fixtures.

Interior fixtures are controlled primarily by manual switches. Energy code requires lighting to be automatically controlled and requires office spaces to have multiple light level controls for the occupants. Therefore, occupancy sensors, dimming fixtures, and controls will need to be installed during renovation.

Egress lighting is provided by bug eye battery backup lights.



Photo 47: Typical light fixture.

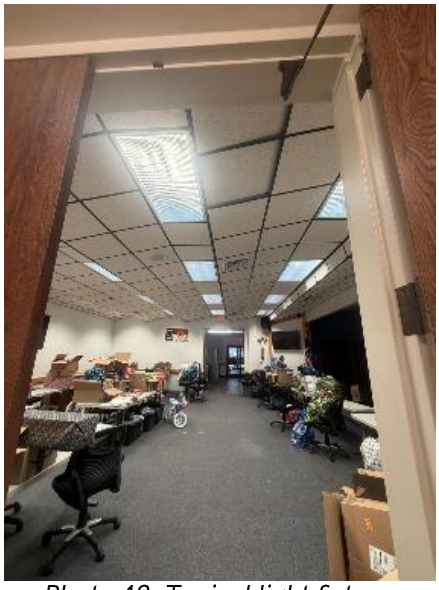


Photo 48: Typical light fixture.

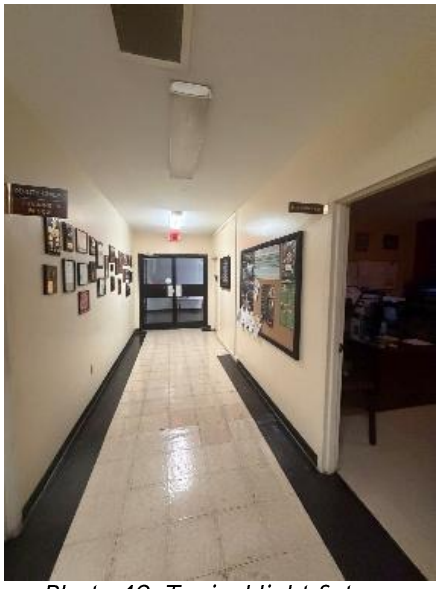


Photo 49: Typical light fixture.



Photo 50: Egress light fixture.

Low Voltage

The building is provided with adequate IT service with a fiber line from ERC Broadband and a backup service from T-Mobile. In the IT area there is a patch panels that serves as a distribution point for IT service in the building. All equipment appears to be in good working condition and should be retained. The owner reports no issues with the IT equipment. Cabling is primarily Category 5e and is distributed loose above the ceiling. Current industry standards for cable is Category 6 and 6a, which provides much greater bandwidth. It is recommended that future modifications use one of the upgraded cables.

Security, camera, speaker, and access control systems are adequately provided for a building of this purpose.

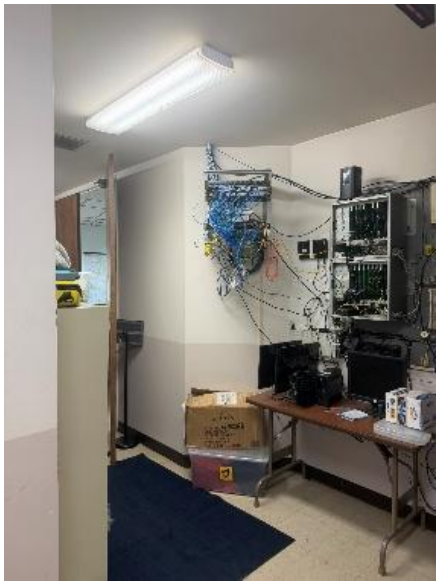


Photo 51: IT room.

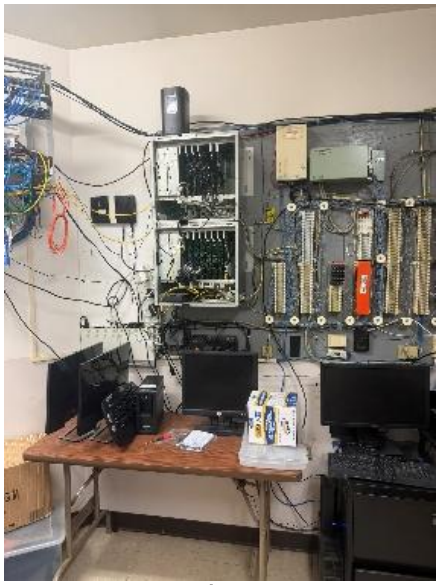


Photo 52: IT room.

Fire Alarm

There is not a central fire alarm system and there are no smoke detectors in the sleeping rooms. Smoke detectors should be added to all sleeping rooms.

A building renovation would require a new and complete fire alarm system for this specific occupancy type.

Solar Photovoltaics

A new solar photovoltaic system has been installed on the roof of the fire station apparatus bay. The system was not assessed but is assumed to be in good working condition.

Emergency Responder Radio Coverage

Currently, the building is not equipped with an emergency responder radio coverage system in accordance with Section 510 of the International Fire Code. A building of this size generally does not require a system, but this is a code requirement because of the occupancy classification. The owner should have tests performed by the local emergency responder agencies to determine if the radio signal strength is adequate at all points in the building. If all portions of the building pass testing, the owner may request a variance from the local Fire Marshall. If a system is required, it will consist of bi-directional amplifiers connected to strategically placed ceiling mounted antennas.

Plumbing

Police Department

The basement of the police department has a mixture of PVC domestic waste and vent piping and cast-iron sanitary waste piping serving fixtures on the floor above. There are several sanitary waste pipes that were patched using pipe tape to address previous leaks. The Ceiling around the P-traps were crumbling in several locations. Most of the sanitary waste piping in the basement appears to be in poor condition and should be replaced. Some of the water piping in the basement is not insulated and, since no heaters are present in the basement, present an increased chance of freezing and bursting. There are several runs of open-ended piping that should be capped if they are verified to not be in use. There are two PVC drain pipes sticking out of the floor that appear to

be abandoned. It is recommended to remove the drain and patch the floor if the drain will not be used. The basement has one gas fired water heater serving the first floor.



Photo 53: Patched sanitary waste piping.

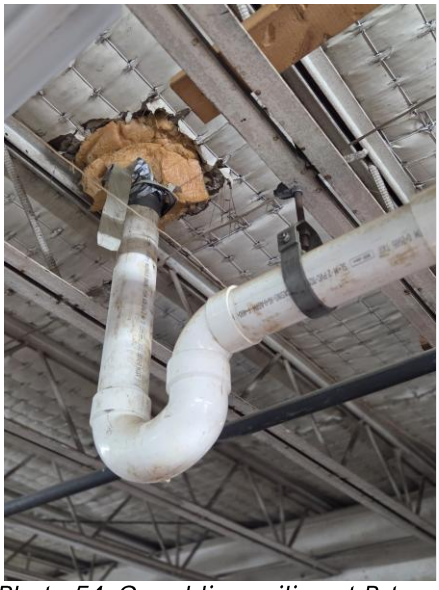


Photo 54: Crumbling ceiling at P-trap.

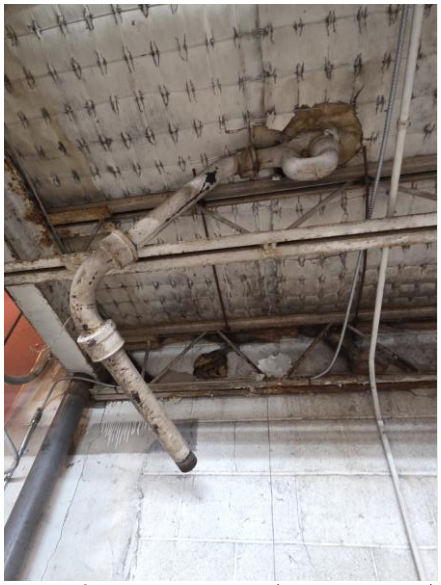


Photo 55: Open-ended sanitary waste piping.



Photo 56: Basement water heater.



Photo 57: Uninsulated water piping.



Photo 58: PVC drain pipes.

There is uninsulated water piping located at the generator in the basement. The piping should be insulated if the generator is still in use, or when it is replaced. Sanitary waste piping is routed above electrical panels in the basement. This is not code compliant: the waste piping should be re-routed.



Photo 59: Generator and uninsulated piping.



Photo 60: Sanitary piping above electrical panels.

All restrooms in the police department have tank type water closets, which is generally not suitable for commercial buildings. Urinals have a mix of sensors and manual flush valves. Lavatories have manual valves. There are two water fountains that are not in working condition. A replacement water fountain was installed at one location; however, the wall was not covered and piping was not capped at the existing water fountain location.



Photo 61: Tank type water closet.



Photo 62: Manual flush valve urinal.



Photo 63: Lavatories.



Photo 64: Water fountain.

The first floor police department wing has three water heaters: one in a mechanical room, one inside a restroom closet, and one above the ceiling. The above-ceiling water heater serves a holding cell and was not accessible at the time of the assessment. Both other water heaters are gas fired and appear to be in good condition; however, water piping by the heaters is not insulated.



Photo 65: Water heater inside restroom closet.



Photo 66: Water heater in mechanical room.

Fire Station

All restrooms in the fire department wing have tank type water closets, which is generally not suitable for commercial buildings. Urinals and lavatories have manual operated flush valves.

The fire station is served by a gas fired water heater located in a storage room. This water heater does not have an expansion tank, has corroded and uninsulated water piping, and the exhaust flue pipe has corrosion and stains. The fire department breakroom sink is served by a mini-tank water heater under the sink.



Photo 67: Tank type water closet.



Photo 68: Manual flush valve urinal.

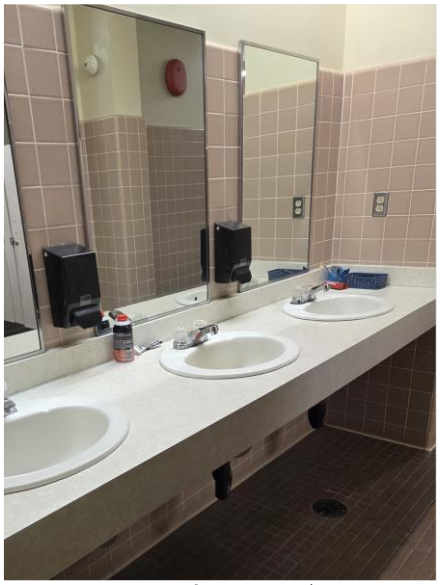


Photo 69: Lavatories.



Photo 70: Storage room water heater.



Photo 71: Mini-tank water heater.



Photo 72: Fire station area water heater.

Fire station washers and mop sink are served by an electric tank water heater. Some of the water piping serving the fire station exterior hose bibbs are disconnected from the main water lines due to previous pipe bursts and have not been reconnected.



Photo 73: Fire station exterior hose bibb.



Photo 74: Disconnected water piping.

Fire Protection

There is no fire protection system present in the building.

Structural

A visual site inspection was conducted for the building on December 18th, 2025 to assess the existing structural systems of the building. Original construction drawings for the building were not available.

Description of Structure

The facility consists of a two-story building with a partial basement under the southeast corner, with offices for both the fire department and police department, and an attached apparatus room consisting of a pre-engineered metal building with bays for emergency vehicles.

The roof structure of the office building consists of steel bowstring trusses with wood joists spanning between them. The roof is supported on exterior CMU bearing walls clad with brick. The floor system over the basement area consists of a concrete slab over steel bar joists. The bar joists are supported on steel wide-flange girders which bear on steel columns and the exterior masonry walls.

A drainage pipe runs under the northeast corner of the building, starting near the men's restrooms and exits under the building between the training room and basement level. After viewing the video of the drainpipe inspection provided by the civil engineering firm McGill Associates, it is apparent that the drainpipe has many cracks. During our visit and during the video, water was actively flowing through this pipe.

The north and west basement walls have had a drain installed on the inside of the wall to help alleviate flooding due to water infiltration. The drain installation involved removing a strip of slab, removing the soil, and backfilling along the wall to catch water seeping through and under the wall and diverting it to the exterior. It is unknown if a drainage pipe was installed.

Structural Observations

Basement Level

Many of the perimeter basement walls within the basement footprint were covered up with storage materials making a thorough inspection of all of them difficult. However, at visible areas, primarily

along the east wall, vertical and step cracks were visible. Additionally, evidence of the east wall moving away from the building was observed.

The existing floor framing appeared to be satisfactory.

Removing continuous strips of floor slabs adjacent to the bottom of the existing retaining walls is not advised for most retaining walls. Normally, basement walls will rely on the slab to restrain the bottom of the walls from sliding. When the slab is removed, this restraint is also removed, and the walls may become unstable.



Photo 75: Step cracking.



Photo 76: Step cracking.

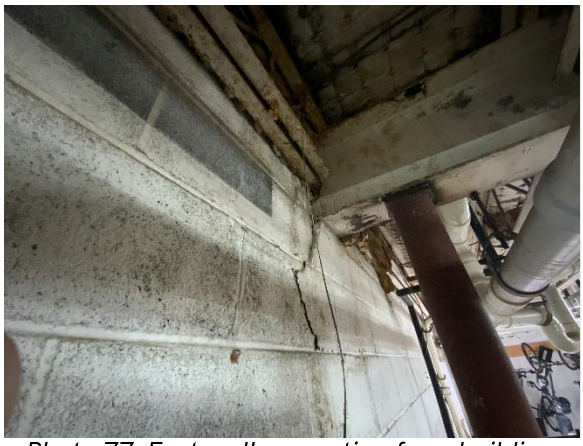


Photo 77: East wall separation from building.



Photo 78: Removed slab.



Photo 79: Removed slab.

Main Floor Level

Along the north side of the building, the building is single-story with a slab on grade. Within the veneer of the north wall, at floor level, there is a 1/4 inch tall horizontal crack running nearly the length of the building. Additionally, the slab along this entire side of the building has experienced large cracks and differential settlements of up to one inch. Cracking in some of the gypsum covered walls is visible, and walls with brittle finishes, such as the tiled walls in the men's bathroom, are showing many cracks throughout the walls and floor areas. Evidence of the slab settlement is apparent where gaps between the top of the slab and bottom of the cove base is more than 1/2 of an inch. At one location, it appears that the wall ties that are attached to the slab are dragging the slab towards the exterior wall as the veneer moves. Distress due to settlement and reported roof leaks during Hurricane Helene are visible in the ceilings as well.



Photo 80: North wall horizontal crack.



Photo 81: Differential settlement in slab.



Photo 82: Differential settlement in slab.



Photo 83: Differential settlemtn in slab.



Photo 84: Crack in slab.



Photo 85: Crack in slab.



Photo 86: Crack in slab.



Photo 87: Cracks in gypsum board.



Photo 88: Cracks in wall tile.



Photo 89: Cracks in wall tile.



Photo 90: Shifting slab.



Photo 91: Gap between slab and cove base.



Photo 92: Gap between slab and cove base.



Photo 93: Gap between slab and cove base.



Photo 94: Crack in gypsum board.

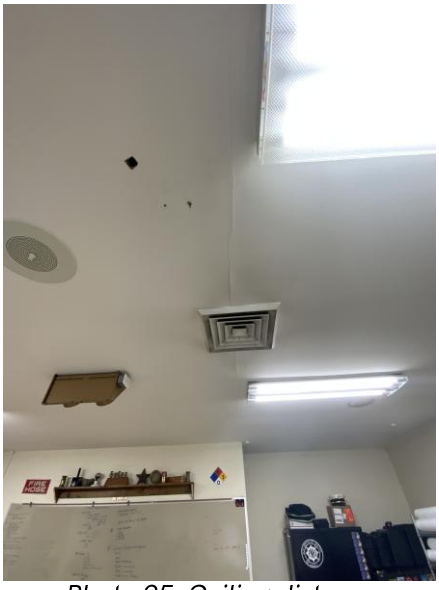


Photo 95: Ceiling distress.



Photo 96: Ceiling distress.



Photo 97: Ceiling distress.

The quarter circle windows at the dispatch office and fire chief office have both cracked, indicating excessive amounts of wall movement. The stone veneer around the door that leads to the apparatus bay has also cracked.



Photo 98: Cracked window.



Photo 99: Cracked window.



Photo 100: Cracked stone veneer.



Photo 101: Cracked stone veneer.

The floor slab in the apparatus bay appears to be in mostly good condition, with an increase in visible slab cracks as you approach the main building. These slab cracks may be due to normal shrinkage of the concrete slab. It is unusual, however, that the instance of cracking increases with the proximity to the main building with known settlement issues. It should be expected that some amount of soil stability issues may be a contributor to these cracks as well. Additionally, a video provided by Deputy Chief James Bingham shows the slab at the door threshold deflecting as the wheels of one of the fire trucks is driven over it, indicating a loss of bearing under the slab at this location.

The concrete apron in front of the apparatus bay appears to be in good condition with minimal cracking.



Photo 102: Apparatus bay slab crack.



Photo 103: Apparatus bay slab crack.



Photo 104: Apron in front of apparatus bay.



Photo 105: Apron in front of apparatus bay.

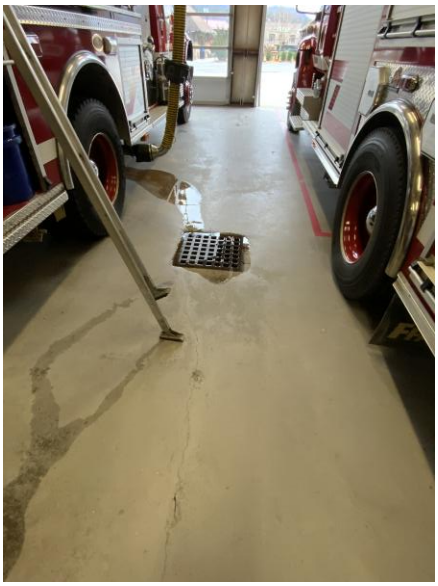


Photo 106: Apparatus bay slab crack.

Conclusions

It is readily apparent that the second-floor slabs and the building foundations have been compromised. In the facilities report that was presented on August 8, 2024 it appears that some of these issues were witnessed in 1985, with new ones being witnessed in the observations performed in both 2012 and 2018. These reports were not provided for our review. However, based on the pictures provided in the facilities report and anecdotal evidence provided during our walkthrough, these issues have steadily worsened and new ones have appeared.

The cracks, settlements, and wall movements are consistent with those caused by loss of bearing under the wall footings and slabs. The precise cause of these is unknown, but rainfall events, groundwater movement, and the cracked drainage pipe are likely contributors. Water movement is known to cause erosion, and broken drain lines can wash soil away, both creating hollow and soft spots under the facility.

Because the extents of these soft soils are unknown, it is recommended to perform borings in and around the facility. To get a realistic view of the soils below the building, borings will need to extend below the elevation of the cracked drain line. Moseley should be contacted to locate the borings and a specialty contractor with expertise in providing borings inside a structure should be contacted to gain insights into how this should be completed. It is also recommended to run a camera down the other drains in the facility to determine if any other drains are broken. After completion of this work, please contact Moseley with the results of these findings for further analysis.

Performing these investigations should be considered an immediate priority. Soft soils and voids below buildings can cause loss of structural stability and put the safety of the building occupants at risk.

FCI

The FCI for the Town of Black Mountain Public Safety Building, based on the 2025 facility condition assessment, is shown below. An FCI of 0.00 – 0.04 means the facility is in good condition. An FCI of 0.05 – 0.09 means the facility is in fair condition. An FCI of 0.10 – 0.30 means the facility is in poor condition. An FCI above 0.30 means the facility is in critical condition.

The Public Safety Building is in high-priority condition.

Town of Black Mountain Public Safety Building Facility Condition Index	Value
2025 Building Deferred Maintenance Cost[1]	$1,256,081
Building Replacement Value[2]	$2,207,691
2025 Facility Condition Index Value	0.77

[1] Deferred maintenance items recommended by Moseley through 2025 with general contractor fees, contingencies, and bonds/insurance fees included in $ amounts.

[2] Estimated building replacement value based on 2021 tax appraised value. Does not include FFE, contingency, or soft costs.

Immediate Recommendations

Immediate recommendations in this section are for the next year (Fiscal Year 2026) to help alleviate deferred maintenance and manage the age of the building systems. While some of these items can be postponed, it is important to plan and budget for them in the near future.

Architecture, Site, and Interiors

Priority 1 – Currently High-Priority

- Integrity: End of life replacement of roof over police department building. Evidence of roof leaks is present throughout facility (FY26).
- Integrity: Replace damaged or missing downspouts (FY26).
- Integrity: Conduct a water intrusion study to investigate the cause of water intrusion in interior corridor floors (FY26).
- Integrity: Conduct a water intrusion study to investigate cause of water intrusion into apparatus bay. Staff report that water backs up into the apparatus bay during large precipitation events (FY26).
- Integrity: Stormwater Pipe Repairs/ Reroute.

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority

- No items noted.

Priority 4 – Recommended

- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards

- No items noted.

Mechanical

Priority 1 – Currently High-Priority

- Functionality: Repair or replace IT room thermostat. Current thermostat is not operational (FY26).

Priority 2 – Potentially High-Priority

- Functionality: Repair or replace three unit heaters serving fire department (FY26).

Priority 3 – Necessary-Not Yet High-Priority

- Functionality: End of life replacement of gas furnace and 3.5 ton condenser serving police department (FY26).
- Functionality: Clean grilles, diffusers, and ductwork throughout building (FY26).
- Functionality: Replace 7 nonfunctional exhaust fans throughout building (FY26).
- Functionality: Repair or replace infrared heaters serving fire department maintenance room (FY26).

Priority 4 – Recommended

- Functionality: End of life replacement of gas furnace serving truck repair room (FY26).

Priority 5 – Does Not Meet Current Codes/Standards

- Functionality: Ensure gas furnaces serving fire department are properly vented. Stains on walls and ceilings indicate potential improper furnace venting and/or combustion air in the space (FY26).
- Building Code Compliance: Reinstall dehumidifier in basement. Piping and electrical to dehumidifier does not follow current codes and standards and presents a potential trip hazard when storage is moved (FY26).
- Building Code Compliance: Consider operation of evidence room exhaust fan as a continuous exhaust fan (FY26).

Electrical

Priority 1 – Currently High-Priority

- Life Safety Code Compliance: End of life replacement of generator and emergency power system. The current system is undersized. Recommend relocation of generator outside of potential flood waters (FY26).
- Life Safety Code Compliance: Install smoke detectors in sleeping areas (FY26).

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority

- Energy: End of life replacement of interior lighting system. Recommend full upgrade of original fluorescent fixtures to LED and update controls to meet current code (FY26).

Priority 4 – Recommended

- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards

- Building Code Compliance: Upgrade emergency lighting system to provide adequate coverage to maintain building functionality in the event of power loss (FY26).

Plumbing

Priority 1 – Currently High-Priority

- No items noted.

Priority 2 – Potentially High-Priority

- Functionality: Replace sanitary waste piping in basement. Remove or cap abandoned piping that sticks through slab. Reroute future piping to avoid placement over electrical panels (FY26).
- Functionality: Refurbish water heater in fire department storage room. Ensure water heater flue pipe is installed correctly. Provide expansion tank with system (FY26).

Priority 3 – Necessary-Not Yet High-Priority

- Functionality: End of life replacement of water fountain in police department. Existing piping should be capped if it will not be reused or replaced (FY26).

Priority 4 – Recommended

- Functionality: Remove or cap open ended piping/conduit in basement that appears to be abandoned (FY26).
- Functionality: End of life replacement of fire department mop sink faucet. Basement mop sink appears to be abandoned (FY26).

Priority 5 – Does Not Meet Current Codes/Standards

- Building Code Compliance: Insulate all water piping throughout facility to prevent pipe freezing. Repair existing damage to fire station hose bibbs from previous burst pipe (FY26).

Structural

Priority 1 – Currently High-Priority

- Integrity: Perform soil borings in and around facility to determine the extent of the soft soils. Contact Moseley with the results for further analysis (FY26).
- Integrity: Scope drain pipes to identify and repair cracks (FY26).
- Integrity: Repair slab, wall, and ceiling cracks caused by structural movement. The scope of the repairs will depend on the results of the soil bearing study (FY26).

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority

- No items noted.

Priority 4 – Recommended

- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards

- No items noted.

Additional Recommendations

Additional recommendations in this section are for the two to three years after the next year (Fiscal Years 2027-2028).

Architecture, Site, and Interiors

Priority 1 – Currently High-Priority

- No items noted.

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority

- Functionality: Reseal areas on the east side of the building where the door frame and wall have separated (FY28).

Priority 4 – Recommended

- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards

- No items noted.

Mechanical

Priority 1 – Currently High-Priority

- No items noted.

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority

- No items noted.

Priority 4 – Recommended

- Functionality: End of life replacement of 8 exhaust fans throughout building (FY28).

Priority 5 – Does Not Meet Current Codes/Standards

- Building Code Compliance: Consider installing exhaust fans in holding cell and armory room (FY27).

Electrical

Priority 1 – Currently High-Priority

- No items noted.

Priority 2 – Potentially High-Priority

- No items noted.

Priority 3 – Necessary-Not Yet High-Priority
- No items noted.

Priority 4 – Recommended
- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards
- Building Code Compliance: Upgrade emergency lighting system to provide adequate coverage to maintain building functionality in the event of power loss (FY26).
- Building Code Compliance: Conduct a study to determine if an Emergency Responder Radio Coverage System is required (FY26).

Plumbing
Priority 1 – Currently High-Priority
- No items noted.

Priority 2 – Potentially High-Priority
- No items noted.

Priority 3 – Necessary-Not Yet High-Priority
- No items noted.

Priority 4 – Recommended
- Functionality: Staff report fire department breakroom water heater does not have adequate capacity. Consider replacement with instantaneous water heater (FY27).

Priority 5 – Does Not Meet Current Codes/Standards
- No items noted.

Structural
Priority 1 – Currently High-Priority
- No items noted.

Priority 2 – Potentially High-Priority
- No items noted.

Priority 3 – Necessary-Not Yet High-Priority
- No items noted.

Priority 4 – Recommended
- No items noted.

Priority 5 – Does Not Meet Current Codes/Standards
- No items noted.

Capital Improvement Plan Matrix

The following pages contain the list of system replacements and required and/or recommended system maintenance for the designated planning window of 10 years. The first page is the master sheet with the totals for each year, broken down by priority. The subsequent sheets are items denoted by priority.

Each item on the capital improvement plan has a total cost that is comprised of the trade contractor cost (materials and labor), a 12% professional fee for design and review, a 3% permit & fees multiplier, and a 10% owner contingency. This total cost is then placed in the appropriate fiscal year of execution and a 6% inflation rate per year is applied.

For reference, the priorities are as follows:

Priority 1 – Currently High-Priority
Conditions require immediate action to correct a cited safety hazard, return a facility to operation, and/or stop accelerated deterioration.

Priority 2 – Potentially High-Priority
Conditions in this category, if not corrected expeditiously, will become high priority within 1-3 years. Situations in this category include intermittent operations, potential life safety hazards, and rapid deterioration.

Priority 3 – Necessary – Not Yet High-Priority
Conditions in this category require attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

Priority 4 – Recommended
Conditions in this category include items that represent a sensible improvement to existing conditions. These are not required for the most basic function of the facility; however, Priority 4 projects will improve overall usability and/or reduce long-term maintenance costs and should be addressed.

Priority 5 – Does Not Meet Current Code/Standards
Conditions in this category include items that do not conform to existing codes but are “exempted” in their current condition. Substantial work should be undertaken, as certain existing conditions may require correction or may be required to be addressed during other replacement or renovation work.

Moseley

Facility Condition Assessment

Town of Black Mountain Public Safety Building

Annual Inflation Escalation	6.00%	1 Year	2 to 5 Years	6 to 9 Years	10+ Years

Priority	Full Project Cost Estimate					FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)										
Priority 1	$1,061,900	$127,428	$31,857	$106,190	**$1,327,375**	$1,371,768									
Priority 2	$25,000	$3,000	$750	$2,500	**$31,250**	$33,125									
Priority 3	$327,310	$39,277	$9,819	$32,731	**$409,138**	$417,123				$8,364					$16,789
Priority 4	$152,950	$18,354	$4,589	$15,295	**$191,188**	$7,685	$3,511	$14,888		$100,367			$9,962		$155,916
Priority 5	$198,993	$23,879	$5,970	$19,899	**$248,741**	$22,005	$1,405			$204,305					$132,635
Grand Totals	**$1,766,153**				**$2,207,691**	**$1,851,706**	**$4,916**	**$14,888**	**$0**	**$313,036**	**$0**	**$0**	**$9,962**	**$0**	**$305,340**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

Moseley

Facility Condition Assessment

Priority 1 - Currently High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate													
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
1	Structural	0	Urgent (1 Year)	Drain Pipe Inspection	Scope drain pipes to identify and repair cracks.	$0	$0	$0	$0	**$0**										
2	Structural	0	Urgent (1 Year)	Soil Boring Study	Perform soil borings in and around facility to determine the extent of the soft soils. Contact Moseley with the results to for further analysis. Cost depends on the number and location of soil borings required, but is estimated to cost around $15,000-$20,000.	$20,000	$2,400	$600	$2,000	**$25,000**	$25,000									
3	Structural	0	Urgent (1 Year)	Allowance for Structural Repairs	Allowance for Structural Repairs based on Soil Boring Study.	$450,000	$54,000	$13,500	$45,000	**$562,500**	$562,500									
4	Architecture	1	Urgent (1 Year)	Corridor Water Intrusion Study	Conduct a water intrusion study to investigate the cause of water intrusion in interior corridor floors.	$0	$0	$0	$0	**$0**										
5	Architecture	1	Urgent (1 Year)	Apparatus Bay Water Intrusion Study	Conduct a water intrusion study to investigate cause of water intrusion into apparatus bay. Staff report that water backs up into apparatus bay during large precipitation events.	$0	$0	$0	$0	**$0**										
6	Architecture	1	Urgent (1 Year)	Downspouts	Replace damaged or missing downspouts.	$7,200	$864	$216	$720	**$9,000**	$9,540									
7	Architecture	1	Urgent (1 Year)	Police Station Roof	End of life replacement of roof over police department. Evidence of roof leaks is present throughout the facility.	$158,700	$19,044	$4,761	$15,870	**$198,375**	$210,278									

Moseley

Facility Condition Assessment

Priority 1 - Currently High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate													
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
8	Site	1	Urgent (1 Year)	Stormwater Pipe Repair	Option A: Repair Existing Pipe Structural pipe lining1, flowable fill for cracks in pipe and voids underground, and a pump-around system for stormwater during repairs ($150,000) Option B: Stormwater System Reroute Fill existing pipe and voids with flowable fill, plug and abandon existing pipe, install three (3) new structures and new stormwater pipe, pavement repairs, and a pump-around system for stormwater during repairs ($250,000) 1Note: Structural pipe liner has a 100-year life span.	$250,000	$30,000	$7,500	$25,000	**$312,500**	$331,250									
9	Electrical	1	Urgent (1 Year)	Smoke Detectors	Install smoke detectors in sleeping areas.	$500	$60	$15	$50	**$625**	$663									
10	Electrical	1	Urgent (1 Year)	Emergency Power System	End of life replacement of generator and emergency power system. The current system is undersized. Recommend relocation of generator outside of potential flood waters.	$150,000	$18,000	$4,500	$15,000	**$187,500**	$198,750									
11	Mechanical	1	Urgent (1 Year)	IT Room Thermostat	Repair or replace thermostat serving IT room split system. Current thermostat is not functional.	$500	$60	$15	$50	**$625**	$663									

Moseley

Facility Condition Assessment

Priority 1 - Currently High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate												
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
12	Structural	1	Urgent (1 Year)	Structural Repairs	Repair slab, wall, and ceiling cracks, and bowing walls caused by structural settlement. Cost for repairs to be determined after the soil boring study.	$25,000	$3,000	$750	$2,500	**$31,250**	$33,125									
					Grand Totals	**$1,061,900**				**$1,327,375**	#######	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

Moseley

Facility Condition Assessment

Priority 2 - Potentially High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation **6.00%**

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate													
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
1	Mechanical	1	Urgent (1 Year)	Unit Heaters	Fire department staff report three unit heaters are not operational. Repair or replace units to avoid pipe freezing.	$8,000	$960	$240	$800	**$10,000**	$10,600									
2	Plumbing	1	Urgent (1 Year)	Fire Department Storage Room Water Heater	Refurbish water heater in fire department storage room. Exhaust flue pipe corrosion and condensation near water heater indicate potential leaks. An expansion tank should be provided with the water heater.	$5,000	$600	$150	$500	**$6,250**	$6,625									
3	Plumbing	1	Urgent (1 Year)	Sanitary Waste Piping	Replace sanitary waste piping in basement. Sanitary piping is sticking up through slab in one location and appears to be abandoned. Remove or cap abandoned piping. Future piping should be rerouted to avoid placement above electrical panels.	$12,000	$1,440	$360	$1,200	**$15,000**	$15,900									
4	Architecture	5	Near Term (2-5 years)	Exterior Wall Repair	Repair water damage to exterior walls caused by missing or damaged downspouts.	$0	$0	$0	$0	**$0**										
					Grand Totals	**$25,000**				**$31,250**	**$33,125**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

Moseley

Facility Condition Assessment

Priority 3 - Necessary-Not Yet High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate												
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
1	Electrical	1	Urgent (1 Year)	Interior Lighting	End of life replacement of interior lighting system. Recommend full upgrade of original fluorescent lighting to LED and update controls to meet current code.	$269,160	$32,299	$8,075	$26,916	**$336,450**	$356,637									
2	Mechanical	1	Urgent (1 Year)	Nonfunctional Exhaust Fans	Replace seven exhaust fans that were are not functional. Rooms include IT room, police equipment room, police breakroom, police men's restroom, fire department maintenance room, and fire department men's showers.	$3,500	$420	$105	$350	**$4,375**	$4,638									
3	Mechanical	1	Urgent (1 Year)	Police Department 3.5 Ton System	End of life replacement of gas furnace and 3.5 ton condenser serving police department.	$8,000	$960	$240	$800	**$10,000**	$10,600									
4	Mechanical	1	Urgent (1 Year)	Infrared Heaters	Controls for fire department maintenance room infrared heaters were not located. Staff report that the maintenance room is now being used as a garage/storage room. Infrared heaters should be repaired or replaced depending on the desired future use of the room.	$10,000	$1,200	$300	$1,000	**$12,500**	$13,250									
5	Mechanical	1	Urgent (1 Year)	Grilles, Diffusers and Ductwork	Clean grilles, diffusers, and ductwork throughout building.	$22,500	$2,700	$675	$2,250	**$28,125**	$29,813									
6	Plumbing	1	Urgent (1 Year)	Drinking Fountains	End of life replacement of water fountain in police department. Existing piping should be capped if a replacement unit will not be installed.	$1,650	$198	$50	$165	**$2,063**	$2,186									
7	Architecture	3	Near Term (2-5 years)	Exterior Doors	Reseal areas on the east side of the building where the door frame and wall have separated.	$0	$0	$0	$0	**$0**										

Moseley

Facility Condition Assessment

Priority 3 - Necessary-Not Yet High-Priority

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate												
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
8	Architecture	5	Near Term (2-5 years)	Fire Department Shower Tile	Replace damaged wall and floor tile in fire department shower. Recommend replacement after structural issues have been addressed.	$5,000	$600	$150	$500	**$6,250**					$8,364					
9	Architecture	10	10+ Years	Sidewalks	Repair settlement and cracking damage to sidewalks.	$2,500	$300	$75	$250	**$3,125**										$5,596
10	Architecture	10	10+ Years	Parking Lot	Repair settlement and cracking damage to east side parking lot.	$5,000	$600	$150	$500	**$6,250**										$11,193
					Grand Totals	**$327,310**				**$409,138**	**$417,123**	**$0**	**$0**	**$0**	**$8,364**	**$0**	**$0**	**$0**	**$0**	**$16,789**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

Moseley

Facility Condition Assessment

Priority 4 - Recommended

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate													
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
1	Mechanical	1	Urgent (1 Year)	Truck Repair Room Furnace	End of life replacement of gas furnace in truck repair room. Staff report the room is primarily used as storage. Gas furnace should be replaced with an appropriate system for the room use.	$4,000	$480	$120	$400	**$5,000**	$5,300									
2	Plumbing	1	Urgent (1 Year)	Open Ended Piping	Open ended piping/conduit was noted in basement and appears to be abandoned. Remove or cap as necessary.	$0	$0	$0	$0	**$0**										
3	Plumbing	1	Urgent (1 Year)	Mop Sinks	End of life replacement of fire department mop sink faucet. Mop sink in basement appears to be abandoned.	$1,800	$216	$54	$180	**$2,250**	$2,385									
4	Plumbing	2	Near Term (2-5 years)	Fire Department Breakroom Water Heater	Staff report fire department water heater does not supply enough hot water. Unit was not accessible during the assessment. Consider replacement with instantaneous water heater.	$2,500	$300	$75	$250	**$3,125**		$3,511								
5	Mechanical	3	Near Term (2-5 years)	Exhaust Fans	End of life replacement of eight exhaust fans. Rooms include CID men's and women's restrooms, fire department bays, fire department truck repair room, police women's restroom, and police communication room.	$10,000	$1,200	$300	$1,000	**$12,500**			$14,888							
6	Architecture	5	Near Term (2-5 years)	Ceiling	Repair ceiling water damage throughout facility.	$30,000	$3,600	$900	$3,000	**$37,500**					$50,183					

Moseley

Facility Condition Assessment

Priority 4 - Recommended

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate														
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
7	Electrical	5	Near Term (2-5 years)	Building Exterior Lighting	End of life replacement of exterior building mounted fixtures. Recommend replacement with LED fixtures.	$8,000	$960	$240	$800	**$10,000**					$13,382					
8	Mechanical	5	Near Term (2-5 years)	Fire Department 7.5 Ton System	End of life replacement of two gas furnaces and 7.5 ton condensing unit serving fire department.	$10,000	$1,200	$300	$1,000	**$12,500**					$16,728					
9	Mechanical	5	Near Term (2-5 years)	Police Department 4 Ton Systems	End of life replacement of two gas furnaces and one 4 ton Carrier condensing unit serving police station. Existing furnaces may not have enough front service clearance.	$12,000	$1,440	$360	$1,200	**$15,000**					$20,073					
10	Mechanical	8	Long Term (6-9 years)	IT Room Split System	End of life replacement of split system serving IT room. Existing condensing unit does not have proper pad support.	$5,000	$600	$150	$500	**$6,250**								$9,962		
11	Architecture	10	10+ Years	Police Department Floors	Replace flooring damaged from water intrusion near detective office.	$2,000	$240	$60	$200	**$2,500**										$4,477
12	Architecture	10	10+ Years	Toilet Partitions	End of life replacement of toilet partitions in fire department restroom.	$2,400	$288	$72	$240	**$3,000**										$5,373
13	Architecture	10	10+ Years	Kitchen Casework	End of life replacement of fire department kitchen casework and countertops.	$12,750	$1,530	$383	$1,275	**$15,938**										$28,542
14	Architecture	10	10+ Years	Exterior Windows	End of life replacement of ten exterior windows on the north and east facades of the police department building.	$19,500	$2,340	$585	$1,950	**$24,375**										$43,652
15	Architecture	10	10+ Years	Fire Department Floors	Replace cracked and damaged floor finishes in the fire department. Recommend replacement after structural issues have been addressed.	$33,000	$3,960	$990	$3,300	**$41,250**										$73,872
					Grand Totals	**$152,950**				**$191,188**	**$7,685**	**$3,511**	**$14,888**	**$0**	**$100,367**	**$0**	**$0**	**$9,962**	**$0**	**$155,916**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Moseley

Facility Condition Assessment

Priority 4 - Recommended

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate												
	Type	Action Year	Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

Moseley

Facility Condition Assessment

Priority 5 – Does Not Meet Current Code/Standards

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information				Full Project Cost Estimate												
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
1	Electrical	1	Urgent (1 Year)	Emergency Lighting	Upgrade emergency lighting system to provide adequate coverage to maintain building functionality in the event of power loss.	$5,608	$673	$168	$561	**$7,009**	$7,430									
2	Mechanical	1	Urgent (1 Year)	Gas Furnace Venting	Ensure gas furnaces serving fire department are properly vented. Stains on walls and ceilings indicate potential improper furnace venting and/or combustion air in the space.	$0	$0	$0	$0	**$0**										
3	Mechanical	1	Urgent (1 Year)	Basement Dehumidifier	Dehumidifier in basement piping and electrical wiring is not properly routed and could cause a trip hazard when storage is moved. Recommend reinstallation of dehumidifier with proper routing.	$500	$60	$15	$50	**$625**	$663									
4	Mechanical	1	Urgent (1 Year)	Evidence Room Exhaust Fan	Exhaust fan in the evidence room is on a manual timer. Recommend to operate as a continuous exhaust fan. Cost includes unit replacement.	$500	$60	$15	$50	**$625**	$663									
5	Plumbing	1	Urgent (1 Year)	Pipe Insulation	Insulate all water piping to prevent pipe freezing. Uninsulated pipes were noted in basement and around water heaters. Repair existing damage to fire station hose bibbs from previous burst pipe.	$10,000	$1,200	$300	$1,000	**$12,500**	$13,250									
6	Electrical	2	Near Term (2-5 years)	Emergency Responder Radio Coverage System	Conduct a study to determine if an Emergency Responder Radio Coverage System is required.	$0	$0	$0	$0	**$0**										

Moseley

Facility Condition Assessment

Priority 5 – Does Not Meet Current Code/Standards

Town of Black Mountain Public Safety Building

Annual Inflation Escalation 6.00%

1 Year	2 to 5 Years	6 to 9 Years	10+ Years

	Project Information					Full Project Cost Estimate											
	Type	Action Year		Name	Description	Trade Contractor Subtotal	Prof. Fees 12%	Permit & Fees 3%	Owner Contingency 10%	Total Cost* (2025 $)	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
7	Mechanical	2	Near Term (2-5 years)	Holding Cell and Armory Room Exhaust Fans	Staff report no exhaust fans are present in holding cell and armory room. Recommend installing exhaust fans in these rooms.	$1,000	$120	$30	$100	**$1,250**		$1,405								
8	Electrical	5	Near Term (2-5 years)	Fire Alarm System	Install full fire alarm system. Current code requires a fire alarm system for this building occupancy.	$100,935	$12,112	$3,028	$10,094	**$126,169**					$168,842					
9	Plumbing	5	Near Term (2-5 years)	Police Breakroom Sink	End of life replacement of police breakroom sink and piping.	$1,200	$144	$36	$120	**$1,500**					$2,007					
10	Plumbing	5	Near Term (2-5 years)	Water Closets	End of life replacement of seven water closets throughout facility. Consider replacement with flush valve type water closets.	$20,000	$2,400	$600	$2,000	**$25,000**					$33,456					
11	Architecture	10	10+ Years	Door Knobs	Replace door knobs throughout facility with levers that comply with current accessibility requirements.	$59,250	$7,110	$1,778	$5,925	**$74,063**										$132,635
					Grand Totals	**$198,993**				**$248,741**	**$22,005**	**$1,405**	**$0**	**$0**	**$204,305**	**$0**	**$0**	**$0**	**$0**	**$132,635**

*Project Specific Overhead Includes Design Contingencies, Phasing Contingencies, and General Contractor Overhead and Profit Appropriate for Each Project

Recommendations that are considered strictly maintenance items with no capital impact are noted as $0 amounts. Assuming minor internal labor/material costs will be associated.

SPACE NEEDS ASSESSMENT FOR TOWN OF BLACK MOUNTAIN PUBLIC SAFETY BUILDING

SPACE REQUIREMENTS SUMMARY

	CURRENT AREA OCCUPIED	CURRENT PERSONNEL*	CURRENT NEEDS**	2031 NEEDS		2036 NEEDS		2046 NEEDS	
	NSF	PERS	NSF	PERS	NSF	PERS	NSF	PERS	NSF
POLICE DEPARTMENT SPACE SUMMARY									
POLICE DEPARTMENT	0	29	7,414	38	8,170	42	8,635	48	9,185
FIRE STATION	0	27	6,376	40	6,911	52	7,534	59	7,931
APPARATUS BAY	0	0	6,428	0	6,481	0	6,521	0	6,547
SHARED	0	0	3,814	0	3,868	0	3,962	0	4,030
TOTAL PERSONNEL / NSF:	**0**	**56**	**24,032**	**78**	**25,430**	**94**	**26,652**	**107**	**27,694**
CURRENT / REQUIRED GROSS SQ FT	80%		30,041 GSF		31,787 GSF		33,315 GSF		34,617 GSF

* CURRENT PERSONNEL indicates the number of personnel currently staffing the department which needs to be housed in its space. It does not account for any current staffing

** CURRENT NEEDS NSF indicates the amount of NSF (net square feet) required to meet the needs of the current staff based on appropriate space standards.

SPACE NEEDS ASSESSMENT FOR POLICE STATION

SPACE REQUIRED			CURRENT NEEDS		2031 NEEDS		2036 NEEDS		2046 NEEDS		REMARKS
DESCRIPTION	SPACE CODE	SQ FT EACH	QTY	SQ FT	QTY	SQ FT	QTY	SQ FT	QTY	SQ FT	
POLICE DEPARTMENT											
PERSONNEL SPACE											
Chief	po5	196	1	196	1	196	1	196	1	196	U-shaped workstation. Six person conference table.
Major / Deputy Chief	po4	168	1	168	1	168	1	168	1	168	U-shaped workstation. Four person conference table
Captain	po3	144	0	0	0	0	1	144	1	144	U-shaped workstation. Four person conference table
Lieutenant	po3	144	3	432	4	576	4	576	5	720	U-shaped workstation. Four person conference table
Patrol Sergeant			4		4		4		4		Refer to Shared Office below. Two desks, one office
Patrol Corporals			4		4		4		4		Refer to Shared Office below. Two desks, one office
Evidence Technitian / Accreditation	po2	120	1	120	2	240	3	360	3	360	L-shaped workstation. Two guest chairs
Patrol Officers			8		12		12		16		Refer to Open Office below. Cubicles
Investigators			1		2		3		4		Refer to Shared Office below. Two desks, one office
Investigators Corporal - Narcotics			1		1		1		1		Refer to Shared Office below. Two desks, one office
Licensed Clinical Health & Wellness	po2	120	1	120	1	120	1	120	1	120	L-shaped workstation. Two guest chairs
SRO			1		1		2		2		Refer to Open Office below. Cubicles
Events Coordinator			1		1		2		2		Refer to Open Office below. Cubicles
Investigation Training Officer	po2	120	1	120	1	120	1	120	1	120	L-shaped workstation. Two guest chairs
Administrative Assistant	ws3	64	1	64	3	192	2	128	2	128	Front Window, shared office space, cubicle
SUPPORT SPACE											
Reception	cs20	120	1	120	1	120	1	120	1	120	
Kiosk	cs3	15	1	15	1	15	1	15	1	15	Self Serve
Waiting	vis6	120	1	120	1	120	1	120	1	120	Seating for six
Small Conference - seat 6	cnf6	150	1	150	1	150	1	150	1	150	Adjacent to Lobby with secure and public access.
Public Toilet Room	tlt1	65	2	130	2	130	2	130	2	130	Adjacent to Lobby with public access.
Chief's Conference Room - seat 8	cnf8	175	1	175	1	175	1	175	1	175	Adjacent to Chief's office
Patrol Sergeant	po3	144	2	288	2	288	2	288	2	288	Two desks in one office
Patrol Corporals	po3	144	2	288	2	288	2	288	2	288	Two desks in one office
Investigators	po4	168	1	168	2	336	2	336	3	504	Two Cubicles in one office
Open Office	ws2	48	6	288	6	288	9	432	11	528	Open Office Area (2 shared Partrol Officers per cubicle)
Wellness Room	po1	100	1	100	1	100	1	100	1	100	Comfortable chairs, adjustable lighting.
File Room	lat	32	5	160	5	160	5	160	5	160	Digital in the Future
Copy/Supply/Storage Room	wrk3	170	1	170	1	170	1	170	1	170	
Evidence Storage	st6	200	1	200	1	200	1	200	1	200	Eight 4'-0" wide shelves for evidence storage in banker's boxes.
Evidence Storage - Drugs	st2	50	1	50	1	50	1	50	1	50	Storage for drugs with 100% ventilation
Evidence Bag and Tag	st3	80	1	80	1	80	1	80	1	80	Bag and tag with counter, sink, cabinets, and pass through lockers.
Sallyport		800	1	800	1	800	1	800	1	800	Sallyport with decon space, bicycles, and flamable evidence storage area.
Hard Interview	st3	80	2	160	2	160	2	160	2	160	Hard interview with CMU walls and detention furniture. Interview video feed goes to Sgt's office.
Interview Toilet	tlt1	65	1	65	1	65	1	65	1	65	Interview toilet with detention fixture.
Report Writing Room	cnf6	150	1	150	1	150	1	150	1	150	Seating for four with BWC and Radio charging
Closet	clos1	25	1	25	1	25	1	25	1	25	Miscellaneous storage.
Gun Cleaning	st3	80	1	80	1	80	1	80	1	80	
Armory/Quartermaster	st6	200	1	200	1	200	1	200	1	200	Ammunition shelving.
Storage	st3	80	1	80	1	80	1	80	1	80	General storage and PPE
Storage	st3	80	1	80	1	80	1	80	1	80	General storage and Camera Equipment
Toilet	tlt1	65	2	130	2	130	2	130	2	130	Single-use toilet rooms. Distributed from locker area.
TOTAL PERSONNEL			29		38		42		48		
SUBTOTAL SPACE REQUIRED				5,492		6,052		6,396		6,804	
INTERNAL CIRCULATION FACTOR		35%		1,922		2,118		2,239		2,381	
TOTAL DIVISION SPACE REQ'D				**7,414 NSF**		**8,170 NSF**		**8,635 NSF**		**9,185**	

FIRE STATION

PERSONNEL SPACE

Fire Chief	po5	196	1	196	1	196	1	196	1	196	
Deputy Chief	po3	144	1	144	1	144	1	144	1	144	
Fire Marshal	po3	144	1	144	1	144	1	144	1	144	
Deputy Fire Marshal	po2	120	0	0	0	0	1	120	1	120	
Public Education Specialist			0		0		1		1		Refer to Shared Office below. Two desks, one office
Training Officer			0		1		1		1		Refer to Shared Office below. Two desks, one office
Battalion Chief			3		3		3		3		Refer to Shared Office below. Two desks, one office
Administrative Assistant			0		0		1		2		Refer to Shared Office below. Two desks, one office
Captain			0		3		3		3		Refer to Open Office below. Cubicles
Lieutenant			6		6		9		9		Refer to Open Office below. Cubicles
Engineer			6		9		9		12		No Dedicated Workspace
FireFighter			9		15		21		24		No Dedicated Workspace

SUPPORT SPACE											
Reception	cs20	120	1	120	1	120	1	120	1	120	
Kiosk	cs3	15	2	30	2	30	2	30	2	30	Self Serve
Waiting	vis6	120	1	120	1	120	1	120	1	120	Seating for six
Small Conference - seat 6	cnf6	150	1	150	1	150	1	150	1	150	Adjacent to Lobby with secure and public access.
Public Toilet Room	tlt1	65	2	130	2	130	2	130	2	130	Adjacent to Lobby with public access.
Conference Room - seat 12	cnf12	260	1	260	1	260	1	260	1	260	
Shared Office	po3	144	2	288	2	288	3	432	4	576	Two desks in one office
Open Office	ws2	48	3	144	5	240	6	288	6	288	Open Office Area (2 shared per cubicle)
Bunk Rooms	bnk1	150	4	600	6	900	7	1,050	8	1,200	2 beds per room with personal lockers
Training Room											Refer to Shared Space
Copy Room	wrk14	196	1	196	1	196	1	196	1	196	Printers / Plotters / Scanners
Work Room	wrk14	196	1	196	1	196	1	196	1	196	Work Stations for GIS, Planning, Incedent Review
Decon Room	decon	200	1	200	1	200	1	200	1	200	Extractor / Dryer / sink
Decon shower	shw2	150	1	150	1	150	1	150	1	150	Decon Shower & Toilet
Storage - General / Files	st35	100	1	100	1	100	1	100	1	100	
Storage - Evidence & Record	st35	100	1	100	1	100	1	100	1	100	
Storage - Training	st35	100	1	100	1	100	1	100	1	100	
Storage - Radio	st35	100	1	100	1	100	1	100	1	100	
Storage - Medical	st35	100	1	100	1	100	1	100	1	100	
Storage - Fleet / Tools	st35	100	1	100	1	100	1	100	1	100	
Storage - Emergency Response Equipment	st35	100	1	100	1	100	1	100	1	100	
Storage - Community	st35	100	1	100	1	100	1	100	1	100	
Closet	clos1	25	1	25	1	25	1	25	1	25	Miscellaneous storage.
Evidence Storage - Interior	st6	200	1	200	1	200	1	200	1	200	Interior Climate Controled
Evidence Storage - Exterior	st12	500	1	500	1	500	1	500	1	500	Secure Exterior (no climate control)
Toilet	tlt1	65	2	130	2	130	2	130	2	130	Single-use toilet rooms. Distributed from locker area.
TOTAL PERSONNEL			27		40		52		59		
SUBTOTAL SPACE REQUIRED				4,723		5,119		5,581		5,875	
INTERNAL CIRCULATION FACTOR		35%		1,653		1,792		1,953		2,056	
TOTAL DEPARTMENT NET SPACE REQ'D				**6,376**		**6,911**		**7,534**		**7,931**	
APPARATUS BAY											
Apparatus Bay	app80	1440	1	1,440	1	1,440	1	1,440	1	1,440	Fire Engine /
Apparatus Bay	app80	1440	1	1,440	1	1,440	1	1,440	1	1,440	Fire Engine /
Apparatus Bay	app80	1440	1	1,440	1	1,440	1	1,440	1	1,440	Battalion Chief / Rescue
Apparatus Bay	app80	1440	1	1,440	1	1,440	1	1,440	1	1,440	Pumper / Water Tender
Storage - Gear Lockers	gear	4	21	84	33	132	42	168	48	192	in bay
Outside Storage (covered parking)			4		4		4		4		UTV Trailer, Boat Trailer, Investigation Trailer, Brush Truck
SUBTOTAL SPACE REQUIRED				5,844		5,892		5,928		5,952	
INTERNAL CIRCULATION FACTOR		10%		584		589		593		595	
TOTAL DEPARTMENT NET SPACE REQ'D				**6,428**		**6,481**		**6,521**		**6,547**	

SHARED											
Multi-purpose - seat 50 (Fire and Police)	tr6	900	1	900	1	900	1	900	1	900	Serves as training, briefing, and the EOC. Public and secure access. Fire and Police use
Kitchen	kit2	160	1	160	1	160	1	160	1	160	Full Kitchen
Break / Living Room	brk20	500	1	500	1	500	1	500	1	500	Break / Living Room
Physical Training Room	tr4	600	1	600	1	600	1	600	1	600	Four to five pieces of equipment. Open to lockers. Ref Front Royal plan
Locker Area	lkr3	10	14	140	18	180	25	250	30	300	
Staff Toilet Room	tlt1	65	4	260	4	260	4	260	4	260	Single-use toilet rooms.
~Shower in Toilet Room	shw1	35	4	140	4	140	4	140	4	140	Shower in each toilet room above
Laundry	lan1	100	1	100	1	100	1	100	1	100	Residential Laundry W/D with table
Janitor's Closet	jc1	25	1	25	1	25	1	25	1	25	
SUBTOTAL SPACE REQUIRED				2,825		2,865		2,935		2,985	
INTERNAL CIRCULATION FACTOR		35%		989		1,003		1,027		1,045	
TOTAL DEPARTMENT NET SPACE REQ'D				**3,814**		**3,868**		**3,962**		**4,030**	

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER: Wesley Barker, Town Clerk **MEETING DATE:** March 9, 2026

AGENDA SECTION: Consent Agenda **DEPARTMENT:** Administration

TITLE OF ITEM: Adoption of Meeting Minutes- February 5, 9 & 25, 2026.

SUGGESTED MOTION(S):
Approval of meeting minutes as presented.

SUMMARY:

Adoption of Town Council Meeting Minutes from the following dates: February 5, 2026, Agenda Meeting, February 9, 2026, Regular Meeting, and February 25, 2026, Special-Called Meeting.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. February 5, 2026 Agenda Meeting Minutes- Draft
2. February 9, 2026 Town Council Meeting_Minutes_Draft
3. February 25, 2025 Special Meeting _Minutes_ Draft

BLACK MOUNTAIN TOWN COUNCIL MINUTES

February 5, 2026 | Agenda Review Work Session | Time: 5:00 P.M.

Black Mountain Town Hall | 160 Midland Ave., Black Mountain, NC 28711

The Black Mountain Town Council held an agenda review work session meeting on Thursday, February 6, 2026, at 5:00 p.m. at Black Mountain Town Hall, 160 Midland Ave., Black Mountain, NC 28711. The purpose of this meeting was for the regular agenda review work session for the upcoming monthly Council meeting.

Vice Mayor Archie Pertiller called the meeting to order at 5:00 p.m. with the following members in attendance: Vice Mayor Archie Pertiller, Council Member Doug Hay, Council Member Pam King, Council Member Ryan Stone. *Mayor Sobol and Council Member Alice Berry were absent.*

The following staff members were present: Richard Hicks, Interim Town Manager; Jessica Trotman, Assistant Town Manager; Wesley Barker, Town Clerk; Jamey Matthews, Public Works Director; John Coffey, Fire Chief; Doug Morrow, Fire Marshal.

February 9, 2026 Council Meeting Agenda Review. Interim Town Manager Richard Hicks reviewed the proposed agenda items for the upcoming February 9, 2026 Regular Town Council meeting.

The following items were requested to be added to the agenda under New Business:

- Discussion of Railroad Lease
- Discussion of Lake Tomahawk & Town Square Park Hours
- Discussion of Interim Town Manager to Hire Staff Vacancies
- Black History Month Proclamation

Additionally, the Town Attorney Annual Review was suggested to be placed on the March 9, 2026 agenda.

Council Member Pam King made a motion to approve the agenda with the additional items stated above. A vote of 4-0 in favor. Council Member Alice Berry was absent.

****

There being no further business, the meeting was adjourned at 5:20 p.m.

_____ _____

C. Michael Sobol, Mayor Wesley M. Barker, Town Clerk

BLACK MOUNTAIN TOWN COUNCIL MINUTES

February 9, 2026 | Regular Session Agenda | Time: 6:00 PM

Town Hall Council Chambers | 160 Midland Avenue, Black Mountain, NC 28711

Black Mountain Town Council held their regular session agenda on Monday, February 9, 2026, at 6:00 PM in the Council Chambers of Town Hall, 160 Midland Avenue, Black Mountain, NC 28711.

1. CALL TO ORDER

Mayor C. Michael Sobol called the meeting to order at 6:00 p.m. with the following members in attendance: Mayor C. Michael Sobol, Vice Mayor Archie Pertiller, Council Member Alice Berry, Council Member Doug Hay, Council Member Pam King, Council Member Ryan Stone.

2. PROCLAMATIONS, AWARDS, RECOGNITIONS, SPECIAL RESOLUTIONS

Black History Month Resolution. Mayor Sobol read a resolution honoring Black History Month and Recognizing the 100th Anniversary of its Observance. There was a unanimous vote in favor to approve the resolution.

RESOLUTION HONORING BLACK HISTORY MONTH AND RECOGNIZING THE 100TH ANNIVERSARY OF ITS OBSERVANCE

Resolution No. R-26-11

WHEREAS, Black History Month is observed each February to recognize and honor the history, culture, and contributions of African Americans to the United States; and

WHEREAS, in 1926 Dr. Carter G. Woodson established Negro History Week, laying the foundation for what has become Black History Month, and the year 2026 marks the 100th anniversary of this historic national observance; and

WHEREAS, African Americans have made enduring contributions to the civic, cultural, social, and economic life of the Town of Black Mountain, North Carolina, and the nation; and

WHEREAS, this centennial observance provides an opportunity to reflect on history, recognize progress, and reaffirm a shared commitment to equity, inclusion, and respect for all;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the Town hereby recognizes Black History Month during the month of February and proudly commemorates the 100th anniversary of the national celebration of Black history.

ADOPTED this 9th day of February, 2026

3. COMMUNICATIONS FROM STAFF, COUNCILS, COMMISSIONS & AGENCIES

3.A. **Active Mobility Commission Annual Report.** Julie White, Active Mobility Commission (AMC) Chair, provided the Commission's yearly report to the Council which included short-, mid-, and long-term goals of the AMC.

****

3.B. **Police Department Annual Report.** Police Chief Parker gave the Police Department's annual report to the Council. Items mentioned in the report included the following:

- Public Safety building needed repairs and building issues.
- Showed graphics comparing Black Mountain Police Dept. to surrounding municipalities with staffing, budget comparison amounts, cost per citizen yearly for public safety, agencies entry pay and supervisor pay scales comparisons.
- Review of BMPD's operating budget and what percentage goes to each line item.
- Discussed risk review and accreditation of the agency- 1 of 5 in NC that are currently accredited.
- Discussion of BMPD mobile app and flock cameras.
- Review of crime statistics, arrests, charges, number of calls, training hours of officers, police vehicle resales.
- BMPD community service programs.
- www.police1.com/community-policing International magazine featured an article on the book "Where did Henry Go?", created by two BMPD officers.

****

3.C. **Presentation by Black Mountain Community Emergency Response Team (CERT).** David Bilstrom gave a presentation on the Community Emergency Response Team (CERT) which assists Black Mountain's public safety agencies. ***A copy of the presentation is included as Appendix A at the end of these minutes.***

****

4. CITIZEN COMMENTS

- Mark Henegan, Bush Farmhouse owner, spoke on a hopeful agreement with the Railroad right-of-way and parking.
- Jim Wright, Owners of Pyro Wright Fireworks, based in Black Mountain. Spoke about fireworks with the Town and would like opportunity to be hired for the 4th of July fireworks display for the Town.
- David Boughner, Town resident, offered comments on Town safety with pedestrians and motorists.
- Edwin Aaronson, 167 Vance Ave., spoke about the intersection at Black Mtn. Ave and Sutton Ave., and mitigation of the railroad train horn, with the intersection configurations.
- Cheryl Hyde, spoke about community conversations event on February 17th and encouraged Pyro Wright Fireworks, and the utilization of local businesses for services.

****

DRAFT

5. COMMUNICATION FROM MAYOR AND TOWN COUNCIL

Mayor Sobol read remarks he gave from the recent Martin Luther King, Jr. community prayer breakfast.

****

6. COMMUNICATION FROM TOWN ATTORNEY & TOWN MANAGER – none.

****

7. CONSENT AGENDA

Interim Manager Hicks recommended edits to the consent agenda which included: 1) removing the call for the special meeting on March 5, 2026 at 5:00 p.m. to hear an appeal from an order to take corrective action for 850 Blue Ridge Rd, and 2) adding a resolution to apply for SRF funding with NC Division of Water Infrastructure for water system improvements. ***Council Member Alice Berry made a motion to amend the consent agenda as recommended. A vote of 5-0 in favor.***

****

7.A. Adoption of Meeting Minutes- April 23, December 15, 23, 31, 2025 and January 5, 8, 12, 21 & 23, 2026.

Vice Mayor Archie Pertiller made a motion to approve these meeting minutes as presented. A vote of 5-0 in favor.

****

7.B. Monthly Tax Collector Report.

Vice Mayor Archie Pertiller made a motion to approve as presented. A vote of 5-0 in favor.

****

7.C. Call for Public Hearing for Voluntary Annexation of Property Owned by Givens Highland Farms, known as Buncombe County PIN #0609-46-7498.00000 to be held on Monday, March 9, 2026, at 6:00 p.m. or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue.

Vice Mayor Archie Pertiller made a motion to approve the call for public hearing as presented. A vote of 5-0 in favor.

****

7.D. Call for Public Hearing to Rezone 318 Tabernacle Road from R-1 to OI-6 (PIN #0609-46-7498.00000) from R-1 (Buncombe County zoning) to OI-6 (office and institutional) to be held on Monday, March 9, 2026, at 6:00 p.m., or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue.

DRAFT

Vice Mayor Archie Pertiller made a motion to approve the call for public hearing as presented. A vote of 5-0 in favor.

****

7.E. Call for Special Meeting on March 5, 2026 at 5:00 p.m. to hear an appeal from an order to take corrective action for 850 Blue Ridge Rd.*

Item was removed from the consent agenda.

****

7.F. Consideration of Resolution to Apply for State Revolving Fund (SRF): Hurricane Helene Funding Administered by NC Division of Water Infrastructure (NCDWI) to Support Water Supply Improvements & Water Storage Tank Improvements.

Vice Mayor Archie Pertiller made a motion to approve the resolution as presented. A vote of 5-0 in favor.

TOWN OF BLACK MOUNTAIN, NORTH CAROLINA
RESOLUTION AUTHORIZING THE SUBMISSION OF AN APPLICATION TO THE NORTH CAROLINA DIVISION OF WATER INFRASTRUCTURE STATE REVOLVING FUND (SRF) – HURRICANE HELENE FUNDING

RESOLUTION NO. # R-26-12

WHEREAS, the Town of Black Mountain experienced significant impacts to its water infrastructure as a result of Hurricane Helene; and

WHEREAS, the North Carolina Division of Water Infrastructure (DWI) has made State Revolving Fund (SRF) Hurricane Helene funding available to assist eligible communities with water infrastructure improvements necessary to enhance system reliability, resiliency, and long-term sustainability; and

WHEREAS, the Town of Black Mountain is eligible to apply for up to $5,000,000 in SRF funding for water infrastructure improvements, including water supply improvements and water storage tank improvements; and

WHEREAS, under the SRF Hurricane Helene funding program, the Town qualifies for twenty-five percent (25%) principal forgiveness and seventy-five percent (75%) loan financing, subject to final program determinations by the North Carolina Division of Water Infrastructure; and

WHEREAS, submission of an application does not obligate the Town to accept funding, enter into a loan agreement, or incur debt, and any final financial commitment would require future review and formal approval by the Town Council; and

WHEREAS, the Town Council finds it to be in the best interest of the Town to pursue available funding opportunities to support critical water infrastructure needs while preserving the Town's ability to make informed financial decisions if funding is awarded.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that:

1. The Town Manager, Assistant Town Manager, and/or their designees are hereby authorized to prepare and submit an application to the North Carolina Division of Water Infrastructure for up to $5,000,000 in State Revolving Fund Hurricane Helene funding for water supply and water storage tank improvements.

2. This authorization is for application purposes only and does not constitute approval to accept funding, execute loan documents, or incur debt on behalf of the Town.

3. Any award of SRF funding, including acceptance of principal forgiveness and loan financing terms, shall be subject to separate review and approval by the Town Council at a future public meeting.
4. The Town Manager and staff are authorized to execute all application-related documents and certifications required for submission of the SRF application.

ADOPTED by the Town Council of the Town of Black Mountain, North Carolina, this 9th day of February, 2026.

****

8. PUBLIC HEARING – NONE.

****

9. CITIZEN COMMENTS

Marilyn Sobanski spoke on the hours of Lake Tomahawk and Town Square Parks hours of operation asking the hours to be 5am-11pm, not proposed 5am-10pm.

****

10. UNFINISHED BUSINESS

10.A. Approval of the Revised MOU between the Town and the Black Mountain Beautification Committee (BMBC).

Kathy Phillips, with BMBC, spoke to the Council. The Black Mountain Beautification Committee (BMBC) has revised its Memorandum of Understanding (MOU) with the Town of Black Mountain regarding collaboration on the Downtown Tree Revitalization Plan. The updated MOU outlines shared responsibilities between the Town and BMBC for tree care, revitalization, planting, maintenance, and ongoing coordination. This item was first brought before the Council at the December 8, 2025

meeting, which was tabled as Council requested a representative from BMBC attend a Council meeting for further discussion. The MOU formalizes the following primary responsibilities:

Town of Black Mountain

1. Allocate annual budget funds for ongoing maintenance of all downtown trees, including watering, pruning, fertilizing, and general care.
2. Provide weekly watering of downtown trees and planters and maintain rain barrels.
3. Collaborate with BMBC on maintenance planning and respond to reported needs.
4. Clean out and brick over identified empty tree wells.
5. Partner with BMBC to secure a certified arborist for annual maintenance.

Black Mountain Beautification Committee

1. Fund initial 2025 pruning, fertilization, air spading, and planting of approximately 15 new trees.
2. Use a donation from Circle K to purchase replacement trees and coordinate with a local arborist on appropriate species.
3. Organize volunteers for weeding and assist with monitoring tree conditions.
4. Report maintenance needs, arborist recommendations, and cost estimates to the Town.
5. Hire arborist Andrew Wagner for the initial revitalization work.
6. Upon completion of the initial 2025 project, ongoing maintenance and replacement responsibilities will rest solely with the Town of Black Mountain.

Town Council Member Doug Hay made a motion to approve the Revised MOU between Town and Black Mountain Beautification Committee as presented. A vote of 5-0 in favor. A copy of the MOU is attached at the end of these minutes as Appendix B.

****

10.B. Consideration of Town Code of Ordinances Amendment for Lake Tomahawk & Town Square Parks Operational Hours (Chapter 33, Article I, Sec. 33-3).

At the January 12, 2026 Town Council meeting, discussion ensued about operational hours of Lake Tomahawk & Town Square parks. Council suggested amending the operational hours of these two parks to 5:00 a.m. to 10:00 p.m., daily, and asked this item to be brought back for formal approval, as it required a Town Code of Ordinances amendment. This text can be found in the Town Code of Ordinances as Chapter 33- Parks and Recreation, Article I- In General, Sec. 33-3: Closing Time Curfew for Public Parks and Recreational Areas. Discussion among Council ensued about hours of operation, and considering the closing time of 11:00 p.m., instead of 10:00 p.m. If issues persist with the closing time of 11:00 p.m., Council will consider another amendment.

Council Member Hay made a motion to approve the following Town Ordinance amendment with closing hours of Lake Tomahawk & Town Square Parks being 11:00 p.m. A vote of 5-0 in favor.

ORDINANCE TO AMEND TOWN CODE OF ORDINANCES CHAPTER 33 – PARKS AND RECREATION, ARTICLE I – IN GENERAL, SEC. 33-3: CLOSING TIME CURFEW FOR PUBLIC PARKS AND RECREATIONAL AREAS.

ORDINANCE #: O-26-02

WHEREAS, the Black Mountain Code of Ordinances was adopted by the Town Council on the 13th day of December 1993, and

WHEREAS, the Town of Black Mountain seeks to promote public safety for residents; and

WHEREAS, the Town Council finds it necessary to clarify and update existing ordinances governing closing time curfews for public parks and recreational areas; and

NOW, THEREFORE BE IT ORDAINED that Chapter 33- Parks and Recreation, Article I – In General, Sec. 33-3, of the Town of Black Mountain Code of Ordinances, be amended as follows (additions are underlined in bold and deletions are shown in red struck text):

CHAPTER 33 – PARKS & RECREATION

ARTICLE I – IN GENERAL

Sec. 33-3. Closing time curfew for public parks and recreational areas.

All public parks and recreational areas owned by the town and within the corporate limits of the town shall be closed to the general public between the hours of 9:00 p.m. and 6:00 a.m. and it shall be unlawful for any person to remain in or to enter said public parks and recreational areas during such hours; provided, however, that the provisions of this section shall not apply to the following:

(1) Employees or those employed by the town to maintain, protect, or conserve said parks and areas in the regular performance of their duties. This shall include any duly authorized law enforcement officer with jurisdiction in said parks or areas and in the performance of his official duties.

(2) Persons using the town clubhouse at Lake Tomahawk and surrounding pool and picnic area and the Black Mountain Golf Course when said parks, pool or other said areas designated in this subsection are open to use by persons having a lease, contract or prior agreement for the use thereof, or by the invitee and licensees of said persons.

(3) Any public park, recreational area or portion thereof where prior written permission has been obtained from the town manager or recreation director for an activity to extend beyond the hour of darkness. The ~~board of aldermen~~ **Town Council** may designate such other persons as it shall, from time to time, deem necessary to grant such written permission as set forth in this subsection.

(4) The two lighted tennis courts near the Black Mountain Pool, which will be allowed to remain open until 10:30 p.m.

(5) Lake Tomahawk Park and Town Square Park shall be closed to the general public between the hours of 11:00 p.m. and 5:00 a.m. and it shall be unlawful for any person to remain in or to enter these parks during such hours.

(Code 1975, § 12-8; Code 1993, § 98.03; Ord. No. 0-80-7, 6-16-1980; **Ord No. O-26-02, 2-9-2026**).

READ, APPROVED AND ADOPTED, by a vote of 5-0 on this the 9th day of February 2026.

****

11. NEW BUSINESS

11.A. Proposal for Financial Consultant Assistance with NC League of Municipalities "The League" (Amendment to Disaster Recovery Services MOA).

Interim Manager Hicks stated The League has agreed to provide contracted consultants to assist the town staff in learning and maintaining best practices in local government finance processes. The consultants will be on site as needed, at least until a full-time Finance Director can be hired. As a part of their services, they will be assisting Town staff in developing a detailed analysis of our grant funding and FEMA projects. Mr. Hicks stated The League will provide up to $30,000 in services without charge to the Town. The initial Memorandum of Agreement (MOA) with NCLM for Disaster Recovery Services was approved by the Town Council at the October 13, 2025 meeting, Resolution # R-25-67. This agenda item authorizes Amendment #1 to the existing Disaster Recovery Services MOA.

Vice Mayor Archie Pertiller made a motion to approve this proposal for financial consultant assistance with the NCLM, the Amendment #1 to Disaster Recovery Services MOA, as presented. A vote of 5-0 in favor.
A copy of the MOA Amendment #1 is included at the end of these minutes as Appendix C.

****

11.B. Consideration of Golf Course Equipment Lease Proposal.

This item is for a lease agreement with Wells Fargo for the purchase of golf equipment from Beard Equipment Company in Piedmont, South Carolina. The proposal from Wells Fargo will expire on March 11, 2026. Beard Equipment Company has the proposed equipment in stock and is ready to deliver, upon authorization, from the Town. Beard Equipment has been holding this equipment for quite some time and would like to have a determination from the Town if we intend to purchase. Any further delays could result in the equipment being sold, and any reorders could take 18-24 months for delivery.

Interim Manager Hicks stated in reviewing the proposal from Wells Fargo, there are several items to be aware of. 1) The lease is for 60 months at a cost of $5,592.80 per

month. The total cost over the 60-month period would be $335,568.00. At the end of the lease, you can purchase the equipment at fair market value, or you can turn the equipment in. 2) By leasing the equipment, the equipment becomes taxable for County and Town property taxes. 3) Beard Equipment will pay the taxes and then bill the Town for the amount. 4) Over the term of the lease, this will result in a few thousand dollars of extra cost beyond the lease. 5) At the end of the lease, if you choose to turn the equipment in, you could be subject to additional fees for excessive miles/hours or excessive wear. That determination would be made by the vendor, like when you return a leased automobile to the dealer. 6) An advantage of the lease is that at the end of the lease, you can turn the equipment in and enter into a new lease with new equipment. 7) New equipment every 5 years would more than likely result in lower maintenance costs.

The equipment that would be leased is as follows:

Equipment Schedule A

WELLS FARGO

Wells Fargo Equipment Finance, Manufacturer and Dealer Finance
801 Walnut Street | 3rd Floor | Des Moines, IA 50309

Contract Number **603-0283362-003** dated as of **December 12, 2025** (the "**Agreement**")

Qty	Make	Model	Year	Equipment Type	Serial/VIN Number	Annual Operating Hours/Miles	Excess Usage Hourly/Mileage Charge
1	John Deere	ProGator 2020A	2025	New Gas Utility Vehicle	1TC202ATKSS18 0893		
1	John Deere	2550	2025	New Riding Greensmower	1TC2550HCSS06 0174		
1	John Deere	2550	2025	New Riding Greensmower	1TC2550HHSS06 0164		
1	John Deere	2550	2025	New Riding Greensmower	1TC2550HCSS06 0166		
1	John Deere	HD200	2025	New Sprayer	1TC200GXHSS16 0179		
1	John Deere	1220	2025	New Bunker Rake	1TC1220HCSS02 0244	1	
1	John Deere	TX Turf	2025	New Gas Utility Vehicle	1M0TURFJATM21 0009		
1	John Deere	TX Turf	2025	New Gas Utility Vehicle	1M0TURFJETM21 0015		

After some discussion, Vice Mayor Archie Pertiller made a motion to authorize the Interim Town Manager to enter into the agreement for leasing equipment for the golf course as presented. A vote of 5-0 in favor.

****

11.C. Approval of Conceptual Feasibility Study – Golf Course Maintenance Building. ***Item was tabled until a later date.***

11.D. Consideration of Fireworks Proposals.

Interim Manager Hicks stated the Town has been contacted by 2 companies regarding the July 4, 2026 fireworks display. To be on the schedule for the 4th, the Council will need to determine if they are willing to obligate funds for the July 4, 2026 show. The current vendor that the Town has previously used is Pyro Shows from Lafollette, Tennessee. Their quoted price is $20,475.00. The Town has received a second proposal from Pyro Wright Fireworks. This firm is currently located in Black Mountain and has expressed a desire to provide the service to the Town. Their quoted price is $18,500. For $20,000, Pyro Wright would also be a sponsor for the Black

Mountain Christmas Parade.

Mr. Hicks stated that some towns are also adding an additional component for the 250th anniversary of our country, which will be July 4, 2026. The additional price from Pyro Wright to add a heavy minute in the beginning, and the finale with an additional 20 seconds of red, white and blue would be an additional $3,000.00. The additional cost from Pyro Shows would range from $3,000.00 to $6,000.00.

These funds would need to be allocated in the FY 26/27 budget. Costs have increased due to tariffs and the cost of materials themselves. Council discussion ensued on fireworks based on the following: funding, other expenditures, people who are traumatized by the fireworks' noise, disturbance of wildlife, the value of it being a community event, how it benefits businesses and brings people into town, and in favor of using Black Mountain business for this event.

Town Council Member Doug Hay made a motion to approve the agreement for July 4, 2026 fireworks with Pyro Wright Company as proposed. A vote of 3-2 in favor. Council Member Alice Berry and Pam King opposed.

****

11.E. Request to Use System Development Fees (SDF) to Relocate Water Line.
This request seeks authorization to use System Development Fee (SDF) funds to relocate an existing water line that does not meet current code requirements due to its proximity to a sewer line. The current configuration presents a compliance issue and potential public health risk. Relocating the water line will bring the infrastructure into compliance with applicable codes, reduce risk of contamination, and protect the long-term integrity of the water system. Use of SDF funds is appropriate, as the project supports system improvements necessary to maintain safe and reliable utility services. The estimated cost of the relocation is $55,000.00. Sufficient SDF funds are currently available to cover the cost. Public Works Director Jamey Matthews stated that approximately 552 feet of water line would need to be replaced.

Vice Mayor Archie Pertiller made a motion to approve using System Development Fees (SDF) to relocate the water line as presented and recommended. A vote of 5-0 in favor.

A RESOLUTION AUTHORIZING THE USE OF WATER SYSTEM DEVELOPMENT FEE FUNDS FOR WATER LINE RELOCATION

RESOLUTION NO. R-26-13

WHEREAS, an existing water line does not meet current code requirements due to its proximity to a sewer line, creating a compliance issue and a potential public health risk; and

WHEREAS, relocating the water line will bring the infrastructure into compliance with applicable codes, reduce the risk of contamination, and protect the long-term integrity and safety of the water system; and

WHEREAS, the proposed project constitutes a system improvement necessary to maintain safe, reliable, and compliant utility services; and

WHEREAS, System Development Fee (SDF) funds are intended to support water system capacity, infrastructure improvements, and projects necessary to accommodate development and maintain system reliability; and

WHEREAS, the proposed relocation of the existing water line is estimated to cost **$55,000.00**, and sufficient Water System Development Fee funds are currently available to fully fund the project; and

WHEREAS, use of SDF funds for this project is consistent with the intended purpose of the fees and supports continued compliance with water system standards;

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the use of Water System Development Fee funds in the amount of **$55,000.00** is hereby approved for the relocation of the existing water line; and

BE IT FURTHER RESOLVED that the Town Manager, or their designee, is authorized to take all actions necessary to implement this project consistent with this resolution; and

BE IT FURTHER RESOLVED that this resolution shall become effective upon adoption.

Adopted this 9th day of February, 2026.

****

11.F. Consideration of Ordinance Regulating Representation of Third-Party Fire Inspection Reporting Fees.

Fire Chief John Coffey and Fire Marshal Doug Morrow spoke to the Council on this item. The Town of Black Mountain requires inspection, testing, and maintenance (ITM) reports for fire protection and life safety systems. These reports are required by the North Carolina Fire Code and are essential for ensuring buildings in our community remain safe and compliant. The electronic reporting platform charges a standard fixed fee per report submission. This fee is set by the platform and is the same for all contractors. It is intended only to support the reporting system used by the Town.

The Fire Marshal's Office has identified instances where contractors invoiced property owners for a "Compliance Engine" or "reporting system" fee that was higher than the actual platform fee, without itemizing or disclosing any additional administrative charge. This practice creates confusion for business owners and gives the appearance that the Town, or reporting platform, is charging more than is required.

This proposed ordinance does not regulate the overall pricing of contractor services. Contractors remain free to determine their own fees for inspections, labor, travel, and administrative work. Instead, the proposed ordinance ensures:

- Accurate representation of the actual third-party reporting fee.
- Clear itemization of any additional contractor administrative charges.
- Transparency for local businesses so they can distinguish between required reporting fees and contractor service fees.

The ordinance prevents a contractor from labeling a charge as a Town, or platform fee, if it is not. The ordinance regulates truthful labeling and documentation of required reporting fees, not private business pricing. The benefits of the adoption of this ordinance will:

- Protect Black Mountain businesses from misleading fee descriptions.
- Promote fairness and consistency among contractors.
- Strengthen transparency in Town-required compliance processes.
- Provide the Fire Marshal with a clear enforcement mechanism when fee misrepresentation occurs.

This ordinance will be made part of the Black Mountain Code of Ordinances within Chapter 21 - Fire Prevention, Article III- Third Party Fire Inspection Reporting.

Town Council Member Pam King made a motion to approve adopting the Ordinance regulating representation of third-party fire inspection reporting fees as presented. A vote of 5-0 in favor.

AN ORDINANCE TO AMEND TOWN OF BLACK MOUNTAIN CODE OF ORDINANCES CHAPTER 21 - FIRE PREVENTION, ARTICLE II - FIRE CODE, SECS. 21-26 THROUGH 21-50, AND TO AMEND CHAPTER 21 - FIRE PREVENTION, TO ADD AN ARTICLE III - THIRD PARTY FIRE INSPECTION REPORTING, SECS. 51-59

ORDINANCE NO: O-26-01

NOW, THEREFORE, BE IT ORDAINED that Chapter 21 - Fire Prevention, Article II - Fire Code, be amended to add the following text (additions are underlined in bold):

- **Secs. 21-36 – 21.50. – Reserved.**

BE IT FURTHER ORDAINED that Chapter 21 - Fire Prevention, be amended to add a new section, Article III - Third Party Fire Inspection Reporting, beginning at Sec. 21-51, through Sec. 21-59, containing the following text (additions are underlined in bold):

Chapter 21 – Fire Prevention.

Article III – Third Party Fire Inspection Reporting.

Sec. 51. – Authority.

This ordinance is adopted pursuant to the Town's authority under North Carolina General Statutes Chapter 160D, including the authority to administer and enforce the North Carolina

Fire Code and to establish administrative requirements for inspections, permits, and reporting related to fire protection and life safety systems.

Sec 52. – Purpose.

The purpose of this ordinance is to ensure accurate representation and transparency of fees associated with required electronic submission of fire protection system inspection, testing, and maintenance reports to the Town through a designated third-party reporting system.

This ordinance regulates how required reporting fees are described and documented and does not regulate the overall price a contractor may charge for services.

Sec. 53. – Applicability.

This ordinance applies to any contractor, service provider, or company that performs inspection, testing, maintenance, certification, or service on fire protection or life safety systems where reports are required by the Fire Code Official to be submitted through a Town-designated electronic reporting system.

Covered systems include, but are not limited to:

- **(a) Automatic fire sprinkler systems.**
- **(b) Fire alarm and detection systems.**
- **(c) Commercial kitchen hood and suppression systems.**
- **(d) Fire pumps and standpipes.**
- **(e) Portable fire extinguishers.**
- **(f) Special hazard suppression systems.**
- **(g) Any other system for which reporting is required under the North Carolina Fire Code.**

Sec. 54. – Definitions.

- **(a) Third-Party Reporting System.**
  An electronic system designated by the Town for submission and tracking of required fire protection system reports.
- **(b) Pass-Through Reporting Fee.**
  The exact fee charged by the third-party reporting system to submit a required report to the Town.
- **(c) Administrative or Service Fee.**
  Any fee charged by a contractor in addition to the pass-through reporting fee for services such as preparation, handling, documentation, or processing.

Sec. 55 - Fee Representation Requirements.

(1) **Pass-Through Fee Limitation.**
A contractor shall not charge a property owner more than the actual pass-through reporting fee while representing the charge as:

(a) **"Compliance Engine Fee"**

(b) **"Reporting System Fee"**

(c) **"Town Reporting Fee"**

(d) **or any similar description implying the charge is the Town's or reporting platform's required fee.**

(2) **Itemization of Additional Charges.**
Any amount charged beyond the pass-through reporting fee shall be:

(a) **Listed separately, and**

(b) **Clearly labeled as an Administrative Fee, Service Fee, or similar term that does not imply it is a Town or reporting platform fee.**

(3) **Prohibited Misrepresentation.**
It shall be a violation of this ordinance to misrepresent an administrative or service fee as a required Town fee or third-party reporting system fee.

Sec. 56 - Documentation Requirement.

Upon request of the Fire Code Official, a contractor shall provide documentation sufficient to verify the actual pass-through reporting fee assessed by the third-party reporting system for a specific report submission.

Sec. 57. - Enforcement and Civil Penalties.

(a) **Violation.**
Failure to comply with the requirements of this ordinance shall constitute a violation of the Town's fire code administrative regulations adopted pursuant to N.C.G.S. Chapter 160D.

Each improperly represented invoice or report submission shall constitute a separate violation.

(b) **Notice of Violation.**
The Fire Code Official may issue a written Notice of Violation (NOV) to any contractor or service provider found to be in violation of this ordinance. The NOV shall describe the violation and provide a reasonable time for correction when appropriate.

(c) **Civil Penalties.**

In addition to any other remedies allowed by law, the following civil penalties may be assessed:

Offense	Civil Penalty
First Violation	$100
Second Violation	$250
Third and Subsequent Violations	$500 per violation

Each improperly represented invoice shall be treated as a separate offense.

(d) Continuing Violations.
Each day a violation continues after written notice may be considered a separate violation.

(e) Additional Remedies.
The Town may pursue any other remedies authorized by law, including:

(1) Withholding acceptance of required reports until compliance is achieved.
(2) Suspension of a contractor's privilege to submit reports through the Town's designated reporting system.
(3) Injunctive or equitable relief as permitted under North Carolina law.

(f) Appeal.
Any person assessed a civil penalty under this section may appeal the citation in accordance with the Town's established administrative appeal procedures.

Sec. 58. – Severability.

If any section or portion of this ordinance is found invalid, the remainder shall remain in full force and effect.

Sec. 59. - Effective Date.

This ordinance shall take effect upon adoption.

READ, APPROVED AND ADOPTED, by a vote of 5 - 0 on this the 9th day of February 2026.

****

11.G. Discussion of Town Council Retreat. ***This item was tabled.***

****

11.H. Discussion of Norfolk Southern Railroad Lease.

Interim Manager Hicks updated the Council on the proposed lease agreement and new rate from Norfolk Southern for the leased area for parking along Sutton Ave. Mr. Hicks stated the lease rate would be increasing to $12,000 annually and will be adjusted annually based on CPI.

Town Council Member Doug Hay made a motion to approve Norfolk Southern Railroad Lease as presented. A vote of 5-0 in favor. A copy of the signed lease is included at the end of these minutes as Appendix D.

****

11.I. Discussion of Interim Town Manager to Hire Staff Vacancies.

Discussion ensued regarding the Interim Town Manager hiring of some current staff vacancies Council Member Hay asked Interim Manager Hicks to prioritize positions with staff and report back to Council with the priority list.

****

12. CLOSED SESSION- PURSUANT TO N.C.G.S. § 143-318.11 (A)(3): ATTORNEY-CLIENT PRIVILEGE

Town Council Member Doug Hay made a motion to enter closed session pursuant to N.C.G.S. § 143-318.11(a)(3) to consult with the Town Attorney. A vote of 5-0 in favor. The time was 8:58 p.m.

****

13. ADJOURNMENT

Council returned from Closed Session at 9:10 p.m. ***Town Council Member Alice Berry made a motion to return to open session. A vote of 5-0 in favor.*** With no additional items to be discussed, Mayor Sobol adjourned the meeting.

_____

C. Michael Sobol, Mayor

Attest:

_____

Wesley M. Barker, Town Clerk

DRAFT

BLACK MOUNTAIN TOWN COUNCIL MINUTES

February 25, 2026 | Special Called Meeting | Time: 3:00 PM

Town Hall Council Chambers | 160 Midland Avenue, Black Mountain, NC 28711

Black Mountain Town Council held their special meeting agenda on Wednesday, February 25, 2026, at 3:00 PM in the Council Chambers of Town Hall, 160 Midland Avenue, Black Mountain, NC 28711.

1. CALL TO ORDER

Mayor C. Michael Sobol called the special meeting to order at 3:01 p.m. with the following members in attendance: Mayor C. Michael Sobol, Vice Mayor Archie Pertiller, Council Member Alice Berry, Council Member Pam King, Council Member Ryan Stone. *Council Member Doug Hay was absent.*

2. NEW BUSINESS

2.A. Consideration of Budget Amendment- Police Department.

This budget amendment is for the BMPD donation contribution line. The original approved budget amount was $42,000. Due to additional donations received throughout the year, the department requests to increase this line, 235-4510-55023, by $30,308.18 (from line 235-0000-47070), bringing the total budget to $72,308.18. This adjustment will be used to cover fees related to the Tactical Mindset conference and other community outreach projects.

Council Member Ryan Stone made a motion to approve the following resolution. A vote of 4-0 in favor. Council Member Doug Hay was absent.

A RESOLUTION TO AMEND THE FISCAL YEAR 2025–2026 BUDGET FOR BMPD DONATIONS

RESOLUTION NO. R-26-14

WHEREAS, the Black Mountain Police Department has received donations totaling $30,308.18; and

WHEREAS, the donations received are recommended to be moved to the Community Outreach/Public Relations Expense line item; and

WHEREAS, the Fiscal Year 2025–2026 budget should be amended to recognize and appropriate the funds.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the following amendments be made to the annual budget for the fiscal year ending June 30, 2026:

Section 1. Budget Amendments

The following accounts are hereby amended as follows:

Account Number	Account Description	Increase	Decrease
235-0000-47070	Contributions/Donations	-	$30,308.18
235-4510-55023	Community Outreach/Public Relations Expense	$30,308.18	-

Section 2. Effective Date

This resolution shall become effective upon adoption.

Adopted this the 25th day of February 2026.

****

2.B. Short-Term Repairs of Concession Stand at Veterans Park for Baseball Season.

Interim Town Manager Richard Hicks stated short-term repairs to the existing concession stand need to be performed in order to be ready for the upcoming baseball season games at Veterans Park. Mr. Hicks explained that staff should be able to complete most of the short-term repairs to get the concession stand operational for the baseball season. If work remains that would be of cost to the Town, it would be brought back before Council to authorize those repairs.

Vice Mayor Archie Pertiller made a motion to authorize staff to make these short-term repairs to the concession stand at Veterans Park, and for any additional repairs that staff cannot complete, that would incur costs, to be brought back before Council for authorization. A vote of 4-0 in favor. Council Member Doug Hay was absent.

****

3. CLOSED SESSION - § NCGS 143-318.11(A)(6) : TO CONSIDER THE QUALIFICATIONS, COMPETENCE, PERFORMANCE, CHARACTER, FITNESS, CONDITIONS OF APPOINTMENT, OR CONDITIONS OF INITIAL EMPLOYMENT OF AN INDIVIDUAL PUBLIC OFFICER OR EMPLOYEE OR PROSPECTIVE PUBLIC OFFICER OR EMPLOYEE; OR TO HEAR OR INVESTIGATE A COMPLAINT, CHARGE, OR GRIEVANCE BY OR AGAINST AN INDIVIDUAL PUBLIC OFFICER OR EMPLOYEE.

Town Council would enter into Closed Session, pursuant to NCGS 143-318.11(a)(6): To consider the qualifications, competence, performance, character, fitness, conditions of appointment, or conditions of initial employment of an individual public officer or employee or prospective public officer or employee; or to hear or investigate a complaint, charge, or grievance by or against an individual public officer or employee. The purpose of this closed session is to discuss the Town Manager/Finance Director recruitment process with the selected consulting firm, Piedmont Triad Regional Council.

Town Council Member Alice Berry made a motion to enter Closed Session pursuant to NCGS 143-318.11(a)(6). A vote of 4-0 in favor. Council Member Doug Hay was absent. The time was 3:05 p.m.

4. ADJOURNMENT

Council returned from closed session at 4:55 p.m.

Town Council Member Pam King made a motion to go back into open session. A vote of 4-0 in favor. Council Member Doug Hay was absent.

With no further business to be discussed, Mayor C. Michael Sobol adjourned the meeting at 4:55 p.m.

_____
C. Michael Sobol, Mayor

Attest:

_____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Laurel Mabery, Accountant	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Finance
TITLE OF ITEM:	Monthly Tax Collector Report		

SUGGESTED MOTION(S):
Approve the tax collection report as presented.

SUMMARY:

January 2026 Tax Collector Report.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? n/a

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Monthly Council Report - January 2026

TOWN OF BLACK MOUNTAIN TAX COLLECTOR'S REPORT

TO: Black Mountain Board of Commissioners

FROM: Laurel Mabery, Municipal Tax Collector

DATE: Monday, March 9, 2026

SUBJECT: January 2026 Tax Collector Report

According to GS 105-350(7) it is the duty of the tax collector to submit to the governing body at each of its regular meetings a report of the amount collected on each year's taxes with which is charged, the amount remaining uncollected, and the steps taken to encourage or enforce payment of uncollected taxes.
Below is the month end report for collections (current and prior years), provided by the Buncombe County Tax Collector. The tax department is using all collection remedies as provided by general statute to collect delinquent taxes including but not limited to garnishments, attachments, and NC Debt Setoff.

CURRENT YEAR TAX -ADVALOREM TAXES

Billed	$	5,448,018.88
Collected	$	5,266,340.14
Adjustments and Releases	$	5,969.36
Outstanding real and personal property taxes	**$**	**187,648.10**

TAX COLLECTION PERCENTAGE FOR CURRENT TAX YEAR 96.56%

PRIOR YEAR TAXE(S) COLLECTED WITHIN THE MONTH

Collected	$	310.25
Adjustments and Releases		

Per NCGS 105-381(b) the Tax Collector is reporting tax releases/refunds within the current period:

Ad Valorem	$	5.28
Motor Vehicle	$	526.74

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Planning & Development Services

TITLE OF ITEM: Call for Public Hearing on April 13, 2026 at 6:00 p.m. to Amend Chapter 1, Section 1.7.3, Variances, to remove the requirement that only signs in the historic district may seek a variance from the sign regulations.

SUGGESTED MOTION(S):

To call for a public hearing to amend Chapter 1, Section 1.7.3, Variances, to remove the requirement that only signs in the historic district may seek a variance from the sign regulations to be held on Monday, April 13, 2026, at 6:00 p.m., or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain.

SUMMARY:

Current text only allows for signs with the historic district to seek a variance from the sign regulations. This means that business owners and property owners outside of the historic district wanting to make a case to the board of Adjustment that there is something uniquely impinging or restrictive about their property that presents an unnecessary hardship related to the strict application of the sign regulations and that is outside of the allowances of Section 9.10, Administrative Adjustments of Signage Regulations, cannot do so. Such a prohibition is unreasonably restrictive and outside the spirit and intent of both Section 1.7.3 and Section 9.1. The recommendation from staff is to delete item (D)(5) in its entirety.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? Type answer here. If no impact, put N/A

If no, describe how it will be funded. Type answer here. If no impact, put N/A

ATTACHMENTS:

1. LEGAL_NOTICE_VARIANCES

LEGAL NOTICE

BLACK MOUNTAIN TOWN COUNCIL

PUBLIC HEARING

Monday, April 13, 2026, at 6:00 p.m.

The Black Mountain Town Council will meet on **Monday, April 13, 2026, at 6:00 p.m**. in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain, NC. The purpose of this meeting is to hold a public hearing for text amendments to Chapter 1, Section 1.7.3, Variances, to remove the requirement that only signs in the historic district are allowed to seek a variance from the sign regulations.

The meeting is open to the public.

Wesley M. Barker
Town Clerk

The Town of Black Mountain is committed to providing accessible facilities, programs and services for all people in compliance with the Americans with Disabilities Act (ADA). Should you need assistance or a particular accommodation for this meeting please contact, Wesley Barker, Town Clerk at 419-9310 or by email at townclerk@townofblackmountain.org.

Posted to the Town Bulletin Board 04/16/2026
Published in the Black Mountain News 04/23/2026 and 04/30/2026

www.townofblackmountain.org

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Planning & Development Services

TITLE OF ITEM: Call for Public Hearing on April 13, 2026 at 6:00 p.m. to Amend Chapter 9, Section 9.10, Administrative Adjustment of Signage Regulations, to additional administrative adjustments for ground signs, cantilevered ground signs, and development identification signs.

SUGGESTED MOTION(S):

To call for a public hearing to amend Chapter 9, Section 9.10, Guidelines for Administrative Adjustment of Signage Regulations, to be held on Monday, April 13, 2026, at 6:00 p.m., or as soon thereafter as possible, in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain.

SUMMARY:

The eight sign standards in the Allowable Administrative Adjustments table support the intent statement Chapter 9, which states that it is the intent of the Town of Black Mountain to allow administrative adjustment of the sign ordinance standards to provide flexibility that is compatible with the town's character; to acknowledge the artistic creativity of sign makers, business owners, and individuals; to create visual harmony between the sign, structure, and site where the sign is located; and to enhance retail areas consistent with Elevate Black Mountain, subsequent small area plans, development agreements, and form-based district codes.
The proposed amendment would address the need for the development pattern of the town, as well as evolving marketplace conditions, to be more fully reflected in the standards.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? Type answer here. If no impact, put N/A

If no, describe how it will be funded. Type answer here. If no impact, put N/A

ATTACHMENTS:

1. LEGAL_NOTICE_SIGNS

LEGAL NOTICE

BLACK MOUNTAIN TOWN COUNCIL

PUBLIC HEARING

Monday, April 13, 2026, at 6:00 p.m.

The Black Mountain Town Council will meet on **Monday, April 13, 2026, at 6:00 p.m**. in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain, NC. The purpose of this meeting is to hold a public hearing for text amendments to Chapter 9, Section 9.10, Guidelines for Administrative Adjustment of Signage Regulations, to add an allowable maximum administrative adjustment of up to thirty percent from the right-of-way and the property line for ground signs, cantilevered ground signs, and development identification signs.

The meeting is open to the public.

Wesley M. Barker
Town Clerk

The Town of Black Mountain is committed to providing accessible facilities, programs and services for all people in compliance with the Americans with Disabilities Act (ADA). Should you need assistance or a particular accommodation for this meeting please contact, Wesley Barker, Town Clerk at 419-9310 or by email at townclerk@townofblackmountain.org.

Posted to the Town Bulletin Board 04/16/2026
Published in the Black Mountain News 04/23/2026 and 04/30/2026
www.townofblackmountain.org

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Steve Parker, Police Chief , Laurel Mabery, Accountant	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Police Department
TITLE OF ITEM:	Consideration of Budget Amendment Resolution for Police Department Recognizing Grant Funds & Sale of Capital Assets		

SUGGESTED MOTION(S):
Motion to approve budget amendments as presented.

SUMMARY:

Attached are resolutions to amend the FY25-26 budget within the Police Department to recognize and appropriate safety grant funds, and sale of capital assets. These include the following:

1. Safety Grant Funds totaling $2,505.54
2. Sale of 2018 Dodge Charger in the amount of $4,000.00
3. Sale of 2010 Ford Taurus in the amount of $3,302.00

Council should review the proposed budget amendments and then take a vote on the resolutions. These three resolutions can be voted on all together.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A- these are not expenditures.

If no, describe how it will be funded. Budget Amendments will recognize the revenues.

ATTACHMENTS:

1. Safety Grant - $2,505.54

2. GovDeals - $4,000.00
3. GovDeals - $3,302.00

_____ made a motion to approve the following resolution. A vote of ___ in favor.

A RESOLUTION TO AMEND THE FISCAL YEAR 2025–2026 BUDGET FOR BMPD GRANT FUNDS

RESOLUTION NO. R-26-XX

WHEREAS, the Black Mountain Police Department has received safety grant funds totaling $2,505.54; and

WHEREAS, the funds received are recommended to be moved to the LEO Supplies & Materials expense line item; and

WHEREAS, the Fiscal Year 2025–2026 budget should be amended to recognize and appropriate the funds.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the following amendments be made to the annual budget for the fiscal year ending June 30, 2026:

Section 1. Budget Amendments

The following accounts are hereby amended as follows:

Account Number	Account Description	Increase	Decrease
100-0000-43400	Grant Revenues – Nongovernmental	-	$2,505.54
100-4510-52499	LEO Supplies & Materials	$2,505.54	-

Section 2. Effective Date

This resolution shall become effective upon adoption.

Adopted this the 9th day of March 2026.

_____
C. Michael Sobol, Mayor

_____
Wesley M. Barker, Town Clerk

_____ made a motion to approve the following resolution. A vote of ___ in favor.

A RESOLUTION TO AMEND THE FISCAL YEAR 2025–2026 BUDGET FOR SALE OF CAPITAL ASSET

RESOLUTION NO. R-26-XX

WHEREAS, the Town sells surplus vehicles on GovDeals;

WHEREAS, the Town sold a 2018 Dodge Charger (VIN 2C3CDXKT3JH140014) on January 30, 2026 for $4,000.00;

WHEREAS, the funds received are requested to be moved to the Police Departments R&M Vehicle expense line;

WHEREAS, the Fiscal Year 2025–2026 budget should be amended to recognize and appropriate the funds.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the following amendments be made to the annual budget for the fiscal year ending June 30, 2026:

Section 1. Budget Amendments

The following accounts are hereby amended as follows:

Account Number	Account Description	Increase	Decrease
100-0000-48020	Sale of Capital Assets	-	$4,000.00
100-4510-52316	R&M Vehicles	$4,000.00	-

Section 2. Effective Date

This resolution shall become effective upon adoption.

Adopted this the 9th day of March 2026.

_____
C. Michael Sobol, Mayor

_____
Wesley M. Barker, Town Clerk

_____ made a motion to approve the following resolution. A vote of ___ in favor.

A RESOLUTION TO AMEND THE FISCAL YEAR 2025–2026 BUDGET FOR SALE OF CAPITAL ASSET

RESOLUTION NO. R-26-XX

WHEREAS, the Town sells surplus vehicles on GovDeals;

WHEREAS, the Town sold a 2010 Ford Taurus (VIN 1FAHP2HW9AG165742) on January 30, 2026 for $3,302.00;

WHEREAS, the funds received are requested to be moved to the Police Department R&M Vehicle expense line;

WHEREAS, the Fiscal Year 2025–2026 budget should be amended to recognize and appropriate the funds.

NOW, THEREFORE, BE IT RESOLVED by the Town Council of the Town of Black Mountain, North Carolina, that the following amendments be made to the annual budget for the fiscal year ending June 30, 2026:

Section 1. Budget Amendments

The following accounts are hereby amended as follows:

Account Number	Account Description	Increase	Decrease
100-0000-48020	Sale of Capital Assets	-	$3,302.00
100-4510-52316	R&M Vehicles	$3,302.00	-

Section 2. Effective Date

This resolution shall become effective upon adoption.

Adopted this the 9th day of March 2026.

_____
C. Michael Sobol, Mayor

_____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Recreation & Parks
TITLE OF ITEM:	Consideration of Budget Amendment Resolution to Acknowledge Payment to the Black Mountain Parks & Greenways Foundation for the Valentine's 5K Race		

SUGGESTED MOTION(S):

Motion to approve the resolution budgeting funds to acknowledge payment to the Black Mountain Parks & Greenway Foundation for the Valentine's 5K Race as presented.

SUMMARY:

This resolution will amend the FY25-26 budget and authorize payment to the Black Mountain Parks & Greenways Foundation (the "Foundation") for its agreed-upon share of proceeds from the February 28, 2026 Valentine's Day 5K race. In accordance with the Town's event agreement, the Foundation receives 100% of sponsorship proceeds and 50% of registration fees for its role in administering and advertising the race. The proposed budget amendment allocates $1,500 in sponsorship revenue and $2,126.25 in registration fees (50% of $4,252.49 received), and authorizes the Interim Town Manager to execute any necessary budget amendments or related documents.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? No

If no, describe how it will be funded. Budget amendment to authorize payment.

ATTACHMENTS:

1. R-26-XX_Resolution_V5K Parks & Greenways Foundation Budget Amendment

Council Member _____ made a motion to approve the following resolution. A vote of ____.

A RESOLUTION BUDGETING FUNDS TO ACKNOWLEDGE PAYMENT TO THE BLACK MOUNTAIN PARKS & GREENWAYS FOUNDATION FOR THE VALENTINE'S DAY 5K RACE

Resolution No. R-26-XX

WHEREAS, the Town held the annual Valentine's Day 5k race on February 14, 2026; and

WHEREAS, the Town has an agreement with the Black Mountain Parks & Greenways Foundation to grant them all proceeds from sponsorships and 50% of the registration fees for their role in administering and advertising the race; and

WHEREAS, the Town typically budgets the Black Mountain Parks & Greenways Foundation portion of these proceeds after receiving the full amount of race registration fees; and

WHEREAS, the Town has received $1,500 for sponsorships and $4,252.49 in registration fees;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF BLACK MOUNTAIN THAT:

1. The Town makes the following budget amendments to designate payment to the Black Mountain Parks & Greenways Foundation to support the agreement for shared responsibility administering and advertising the Black Mountain Valentine's 5k race.
    - $1,500.00 – to the Non-profit Contributions/Donations account from the Customer Participation/Sponsorship account received for Valentine's Day 5k sponsorships (*to 100-4700-56110 from 100-4700-47015*)
    - $2,126.25 – to the Non-profit Contributions/Donations account from the Special Activities account for 50% of registration fees received for the Valentine's Day 5k race (*to 100-4700-56110 from 100-4700-45690*)
2. The Interim Town Manager is authorized to execute any necessary budget amendments, contracts, or related documents required to implement this allocation.

ADOPTED this 9th day of March, 2026.

_____
C. Michael Sobol, Mayor

Attest:

_____

Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Consideration of Budget Amendment Resolution for NCLM Insurance Proceeds and Mobile Office Trailers Lease Payment		

SUGGESTED MOTION(S):
Motion to approve budget amendments as recommended.

SUMMARY:

The Town's insurance provider, NC League of Municipalities (NCLM) has stated they will cover the cost of lease payments for the mobile office trailers (Planning & Public Works) for two-months. The cost of the monthly lease payments for these trailers is $17,000. NCLM will cover two months at the cost of $34,000. The budget amendment will recognize these funds - revenue & expense.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget?

If no, describe how it will be funded. Budget Amendment from NCLM will cover costs of 2-months lease payments for mobile trailers.

ATTACHMENTS:

1. R-26-XX_Resolution_Budget Amendment_NCLM Insurance Pmt_2 Months Rent on Office Trailers (34,000)_2026.03.09

Council Member _____ made a motion to approve the following resolution. A vote of ____.

A RESOLUTION BUDGETING FUNDS FOR PAYMENT FROM NCLM INSURANCE TO THE TOWN OF BLACK MOUNTAIN TO COVER TWO MONTHS RENT ON OFFICE TRAILERS AT 304 BLACK MOUNTAIN AVE.

Resolution No. R-26-XX

WHEREAS, the Town currently leases mobile office trailers for our Planning & Public Works Departments at a cost of $17,000 per month; and

WHEREAS, the Town's insurance carrier, NC League of Municipalities, will be covering two (2) months of these lease payments in the amount of $34,000, and should be recognized as revenue as well as expenditure once the lease payments are made.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF BLACK MOUNTAIN THAT:

1. The Town makes the following budget amendments to recognize revenue to the Town of Black Mountain from the Town's Insurance Carrier, NCLM, in the amount of $34,000, and the expenditure of the two-month lease payments.

Section 1. Budget Amendments. The following accounts are amended as follows:

Account Number	Account Description	Increase	Decrease
100-0000-48010	Insurance Recovery Proceeds	$34,000	
100-0000-48010	Insurance Recovery Proceeds		$34,000
100-4020-54015	Administration- Lease/Rental- Building/Land	$34,000	
100-4020-54015	Administration- Lease/Rental- Building/Land		$34,000

2. **Section 2. Effective Date.** This resolution shall become effective upon adoption.

ADOPTED this 9th day of March, 2026.

_____
C. Michael Sobol, Mayor

Attest:

_____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Consideration of Budget Amendment Resolution for Norfolk Southern Railway Lease Payment		

SUGGESTED MOTION(S):
Motion to approve the budget amendment as recommended.

SUMMARY:

This budget amendment would appropriate monies from the Local Sales & Use Tax line item and move it to the Administration- Lease/Rental - Building/Land line item for the $10,900 lease payment to Norfolk Southern Railroad.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget?

If no, describe how it will be funded. Budget amendment to appropriate monies for RR lease payment.

ATTACHMENTS:

1. R-26-XX_Resolution_Budget Amendment_Lease for Southern Railway_2026.03.09

Council Member _____ made a motion to approve the following resolution. A vote of ____.

A RESOLUTION OF BUDGET AMENDMENTS TO THE FY 2025-26 BUDGET REGARDING THE NORFOLK SOUTHERN RAILWAY LEASE REVENUES AND EXPENDITURES

Resolution No. R-26-XX

WHEREAS, the Town recently approved a revised lease with Norfolk Southern Railroad for parking along Sutton Ave; and

WHEREAS, a lease payment of $10,900 should be recognized within the budget by the corresponding budget amendments.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF BLACK MOUNTAIN THAT:

1. The Town makes the following budget amendments to recognize revenue and expenses for the N.S. Railroad lease payment in the amount of $10,900 to the Administration-Lease/Rental – Building/Land line item, from Local Sales & Use Tax line item.

Section 1. Budget Amendments. The following accounts are amended as follows:

Account Number	Account Description	Increase	Decrease
100-0000-42010	Local Sales and Use Tax		$10,900
100-4020-54015	Administration- Lease/Rental- Building/Land	$10,900	
100-4020-54015	Administration- Lease/Rental- Building/Land		$10,900

2. **Section 2. Effective Date.** This resolution shall become effective upon adoption.

ADOPTED this 9th day of March, 2026.

_____
C. Michael Sobol, Mayor

Attest:

_____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Consent Agenda	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Resolution of Support for the Fonta Flora State Trail - Black Mountain to Point Lookout Trail Feasibility Study		

SUGGESTED MOTION(S):

Motion to approve the resolution of support for the FFST Feasibility Study as presented.

SUMMARY:

This resolution of support is for the Fontra Flora State Trail - Black Mountain to Point Lookout Trail Feasibility Study conducted for the Friends of the Fonta Flora State Trail in November 2025. A copy of this study and overview map is included in the packet for reference.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? n/a

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. R-26-XX_Resolution of Support of Fonta Flora State Trail Feasibility Study_Ridgecrest Connector Trail_2026.03.09
2. Fonta Flora State Trail - Final Draft_Appendices - Reduced
3. Overview Map - Black Mountain to Point Lookout
4. Black Mountain - Point Lookout Survey Results

Council Member _____ made a motion to approve the following resolution. A vote of ____.

A RESOLUTION OF SUPPORT FROM THE TOWN OF BLACK MOUNTAIN TOWN COUNCIL FOR THE FONTA FLORA STATE TRAIL: BLACK MOUNTAIN TO POINT LOOKOUT TRAIL FEASIBILITY STUDY

Resolution No. R-26-XX

WHEREAS, the Town of Black Mountain supports efforts to expand safe recreational and multimodal transportation opportunities for residents and visitors; and

WHEREAS, a feasibility study was conducted for the Friends of the Fonta Flora State Trail in November 2025 for an approximately 2.7-mile segment of the Fonta Flora State Trail connecting the Town of Black Mountain to the Point Lookout Trail; and

WHEREAS, the study was completed through a partnership between the Friends of the Fonta Flora State Trail, North Carolina Department of Transportation Integrated Mobility Division, Buncombe County, McDowell County, and the Town of Black Mountain; and

WHEREAS, the recommended alignment generally follows Old U.S. Highway 70 and Mill Creek Road and would improve pedestrian and bicycle mobility, enhance safety, and expand regional recreation opportunities.

NOW, THEREFORE, BE IT RESOLVED that the Town Council of the Town of Black Mountain expresses its support for the proposed Fonta Flora State Trail connection between Black Mountain and the Point Lookout Trail, and the feasibility study conducted, and encourages continued collaboration to advance the project toward future design and implementation.

ADOPTED this 9th day of March, 2026.

_____
C. Michael Sobol, Mayor

Attest:

_____
Wesley M. Barker, Town Clerk

FRIENDS OF FONTA FLORA STATE TRAIL

Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

Fonta Flora State Trail

Black Mountain to Point Lookout Trail Feasibility Study

(Buncombe and McDowell Counties, NC)

KITTELSON & ASSOCIATES

November 2025

FONTA FLORA STATE TRAIL

Black Mountain to Point Lookout Trail Feasibility Study

(Buncombe and McDowell Counties, NC)

November 2025

Fonta Flora State Trail

Black Mountain to Point Lookout Trail

Feasibility Study

(Buncombe and McDowell Counties, NC)

Prepared for:
Friends of the Fonta Flora State Trail
PO Box 698
Marion, NC 28752

Prepared by:
Kittelson & Associates, Inc.
702 Oberlin Road, Suite 410
Raleigh, NC 27605
919.926.1291

Project Manager:
Liz Byrom, PhD, PE
Senior Engineer

Project Principal:
Scott Curry, AICP, CNU-A
Associate Planner

November 2025

Thank you to our community champions on the Fonta Flora Paved Trail Feasibility Study Steering Committee and project team for their participation and support of this study. Your contributions to this project were invaluable, and they will play a key role in achieving the vision for this segment of the Fonta Flora State Trail.

Fonta Flora State Trail
Black Mountain to Point Lookout Trail Feasibility Study – Project Management Team

Michael Stafford | NCDOT Integrated Mobility Division

Hart Evans | NCDOT Integrated Mobility Division

Shelley McKechnie | Friends of the Fonta Flora State Trail

Angela Duff | Friends of the Fonta Flora State Trail

Julia Weatherford | Friends of the Fonta Flora State Trail

Chloe Donohoe | Buncombe County

Heather Cotton | City of Marion

CONTENTS

Executive Summary 1

Introduction 4

Existing Conditions 5

- Planning-Level Considerations 6
- Natural Environment Considerations 26
- Human Environment Considerations 29
- Previous Plan Review 33
- Field Revlew 36
- Key Takeaways 37

Stakeholder and Public Outreach 38

- Steering Committee 38
- Public Engagement 40

Alternatives & Evaluation 42

- Alignment Alternatives Evaluation 43

Recommendations 48

- Primary Alignment 48
- Secondary Recommendations 52
- Concept Plan 54
- Trailheads 54
- Trail Amenities 54

Next Steps for Implementation 56

- Action Plan 56
- Funding 60
- Partnering 61

Conclusion 63

Executive Summary

This feasibility study examined a proposed segment of the Fonta Flora State Trail connecting the Town of Black Mountain to the existing Point Lookout Trail. This roughly 2.7-mile segment of the Fonta Flora State Trail will connect to previously planned segments of the trail within the Town of Black Mountain, adjacent neighborhoods, and other key destinations. This study was conducted through a partnership of the Friends of the Fonta Flora State Trail, local agencies (Buncombe County, McDowell County, and the Town of Black Mountain), and the North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD). The study was informed through close collaboration with a Steering Committee comprised of local trail advocates, regional public agencies, and multimodal experts.

The following vision statement was developed by the Steering Committee to guide the feasibility study.

The Fonta Flora State Trail will connect Lake James to Asheville. We envision this section as an economic and recreational asset that is safe, family-friendly, and usable for all ages/ abilities.

Once the vision statement was confirmed, key project goals were developed in partnership with the Steering Committee. These goals included:

GOALS FOR THE TRAIL	GOALS FOR THE STUDY
• Improve pedestrian and bicycle mobility. • Provide more opportunities for recreation. • Improve safety.	• Identify a trail alignment that has broad support of agency partners and stakeholders. • Deliver materials to equip partners for the next phases of engineering design and construction.

An analysis of the study area's existing transportation network, community characteristics, and environmental conditions was first conducted to understand the type of multimodal facilities that would best serve residents of Black Mountain, Buncombe County, and McDowell County. A key takeaway from this analysis was that a trail alignment along Old US Hwy 70 and Mill Creek Road provided the most direct connection between the Town of Black Mountain and Point Lookout Trail while also facilitating outdoor recreation opportunities. This alignment also supports access to residential areas north of I-40 along Old US Hwy 70, while providing opportunity for future access to residential properties south of I-40 along Yates Road.

Recommended Alignment

Several alternatives for the paved trail were identified and evaluated to determine a recommended alignment for this future segment of the Fonta Flora State Trail. A diagram illustrating the recommended alignment is included on the next page (**Figure 1**). This is supported by typical sections, recommended design standards, and an implementation strategy that can be found in the body of the report.

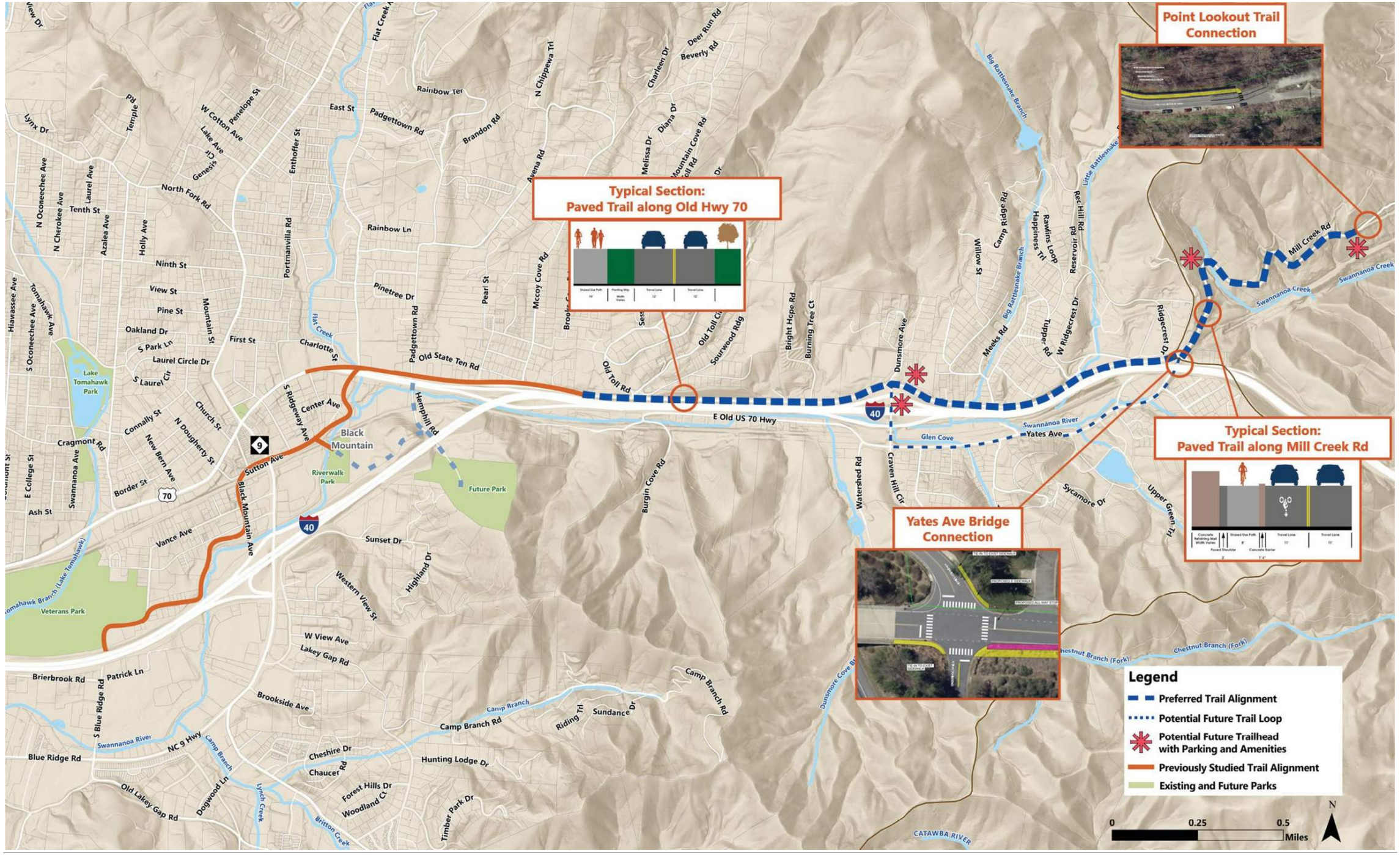


Figure 1. Fonta Flora State Trail – Black Mountain to Point Lookout Trail Recommended Alignment

This paved trail feasibility study is distinct from other, similar studies for 3 key reasons:

1. The Fonta Flora State Trail is a designated state trail;
2. The study was completed in the immediate aftermath of Hurricane Helene; and
3. There are unique considerations for planning/designing paved trails in the mountainous regions of western North Carolina.

Designated State Trails: The North Carolina General Assembly has authorized the creation of 15 State Trails throughout North Carolina. These are special trail corridors, distinguished from other regional and local trails by their statewide and cultural importance. Authorized in 2015, the Fonta Flora State Trail will be a 100-mile hiking and biking trail connecting Morganton to Asheville. The Fonta Flora State Trail is named after a local settlement of African American sharecroppers whose homes were flooded when the Catawba River was dammed to create Lake James. When complete, the trail will connect Lake James State Park, Pisgah National Forest, Fonta Flora County Park, the Overmountain Victory State Trail, the Mountains-to-Sea State Trail, and the communities of Morganton, Marion, Old Fort, Black Mountain, and Asheville. *(NC Trails. https://trails.nc.gov/state-trails/fonta-flora-state-trail)*

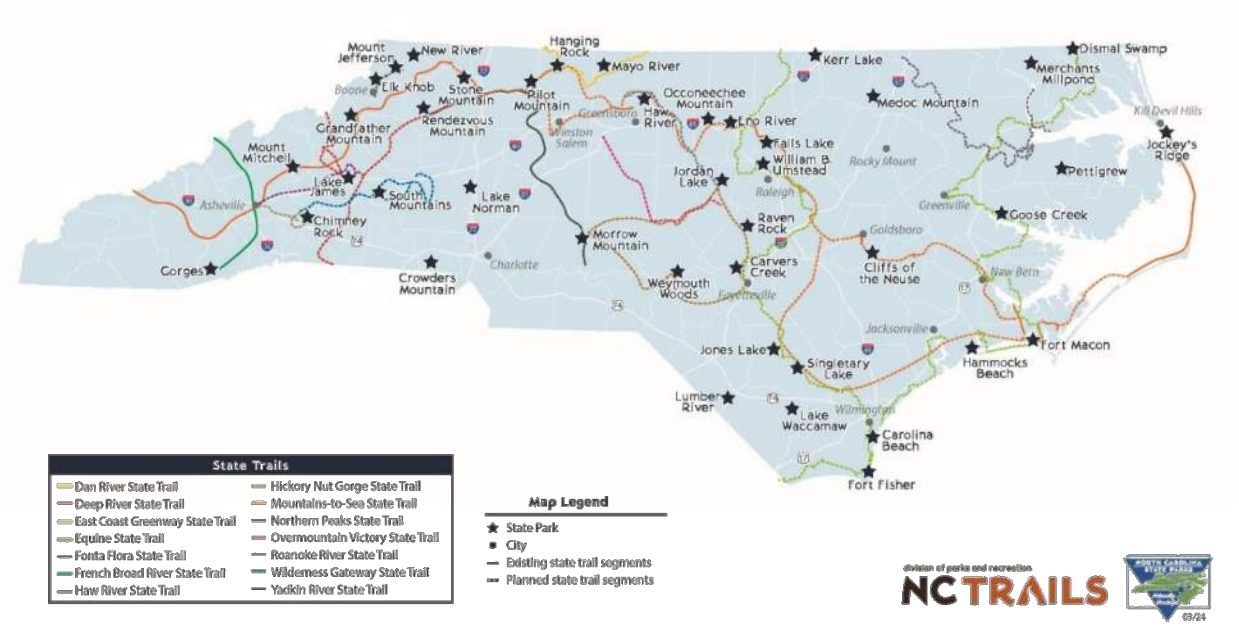


Figure 2. The NC State Trails System, including the 100-mile, Fonta Flora State Trail (see the purple line in western North Carolina between Lake James and Asheville).

Source: NC Trails. https://trails.nc.gov/state-trails

Hurricane Helene: This feasibility study began in August 2024. On September 26 and 27, 2024 Hurricane Helene hit western North Carolina. This was a catastrophic and tragic event, with 2-day rainfall totals between 12 and 20 inches over a large swath of western North Carolina *(National Weather Service)*. The resulting flooding caused significant loss of life and property damage. Within the limits of this feasibility study, flooding along the Swannanoa River damaged River Walk Park, numerous buildings, roads, bridges, and culverts. The feasibility study was paused for roughly 3 months after Hurricane Helene as agency partners shifted focus to emergency response and coordinating with federal, state, and nonprofit aid agencies.

When the Fonta Flora State Trail feasibility study began again, it began with recognition of two important considerations.

- First, the conditions and context for planning the Fonta Flora State Trail alignment through Black Mountain had changed. Ongoing recovery and reconstruction efforts, FEMA floodplain property buyouts, and shifting floodplain/floodway areas will need ongoing monitoring and will have implications for future trail design and construction.
- Second, greenways (paved trails) are a key part of resilient transportation systems that support multiple modes of travel and multiple routes for critical access.

The body of this report includes specific recommendations and action steps for advancing this section of the Fonta Flora State Trail amid a lengthy Hurricane Helene recovery and reconstruction effort.

Unique Considerations for Paved Trails in Western NC: In addition to the unique considerations from Hurricane Helene, planning and designing paved trails in the mountainous topography of western North Carolina involves other unique considerations. These include:

- Challenging stormwater, topography, and soils issues;
- The need for detailed geotechnical analysis/soils survey as a part of trail design;
- The need for more grading and structures (retaining walls, culverts, etc.)
- Unique construction challenges, like more complex plans for site access and maintenance of traffic; and
- Unique maintenance implications.

In evaluating potential trail alignments and facility types, the design team was thoughtful about these special considerations based on the best available information. However, further study, geotechnical survey, and detailed design engineering are necessary to fully calibrate these recommendations and refine the preliminary concept design.

Next Steps for Implementation

Next steps for implementing the Black Mountain to Point Lookout Trail segment of the Fonta Flora State Trail include:

1. Coordinate with ongoing infrastructure, development, and Hurricane Helene recovery projects.
2. Generate public support and build champions.
3. Adopt the paved trail network alignment and reflect it in local land use plans and development ordinances.
4. Pursue design funding.
5. Complete survey and geotechnical analysis.
6. Complete 25% design.
7. Develop a property acquisition and maintenance strategy.
8. Complete final (100%) design plans and specifications.
9. Pursue construction funding.
10. Maintain communication between jurisdictions.
11. Submit the completed trail segment for NC State Trails official designation.
12. Have a good succession plan.

Each of these steps is discussed in greater detail in the **Next Steps for Implementation** section of the report.



Figure 3. Community Members Express Support for the Fonta Flora State Trail

Introduction

The Fonta Flora State Trail is a visionary regional greenway that aims to connect Morganton to Asheville, traversing the scenic foothills of the Blue Ridge Mountains and the shoreline of Lake James. This feasibility study focuses on a roughly 2.7-mile segment of the trail within Buncombe County and McDowell County. The study evaluates opportunities to complete the Fonta Flora State Trail between the existing Point Lookout Trail (a signature segment of the Fonta Flora State Trail with sweeping views over Royal Gorge and the Catawba River Valley) and the town limits for the Town of Black Mountain (where previously completed plans have established a preferred trail alignment). The study also includes an evaluation of potential connections between River Walk Park and a future park property recently donated to the Town of Black Mountain. See **Figure 4** on the next page.

This feasibility study was carried out in a series of structured phases designed to guide the planning process from vision to implementation. The initial phase focused on establishing a shared vision and project goals through collaboration with a Steering Committee composed of local agency staff, trail advocates, and multimodal transportation experts. These goals emphasized enhancing pedestrian and bicycle mobility, expanding recreational access, and improving safety. Following this, the study team conducted a comprehensive analysis of the existing transportation network, environmental conditions, and planning considerations to identify viable trail alignments. This analysis led to the identification of Old US Hwy 70 and Mill Creek Road as the most promising corridor for connecting Black Mountain to the Point Lookout Trail, while also serving nearby residential areas.

Building on this foundation, the study evaluated multiple trail alternatives and developed a concept plan for the recommended alignment. This plan includes detailed design standards, typical cross-sections, and a phased implementation strategy. Final recommendations are grounded in both technical analysis and local stakeholder input, and they outline a clear path forward for building the trail.

Existing Conditions

This study began with an evaluation of existing conditions around the study limits shown in **Figure 4**. The study team developed maps illustrating the key existing demographic, land use, and transportation considerations within the study area. The maps found in the following sections include planning-level, natural environment, and human environment considerations.

The study team reviewed previous plans, including adjacent trail planning studies, such as the Ridgecrest Trail Connector and US 70/Swannanoa River Greenway Feasibility Study, to understand where gaps needed to be filled along the planned Fonta Flora State Trail alignment.

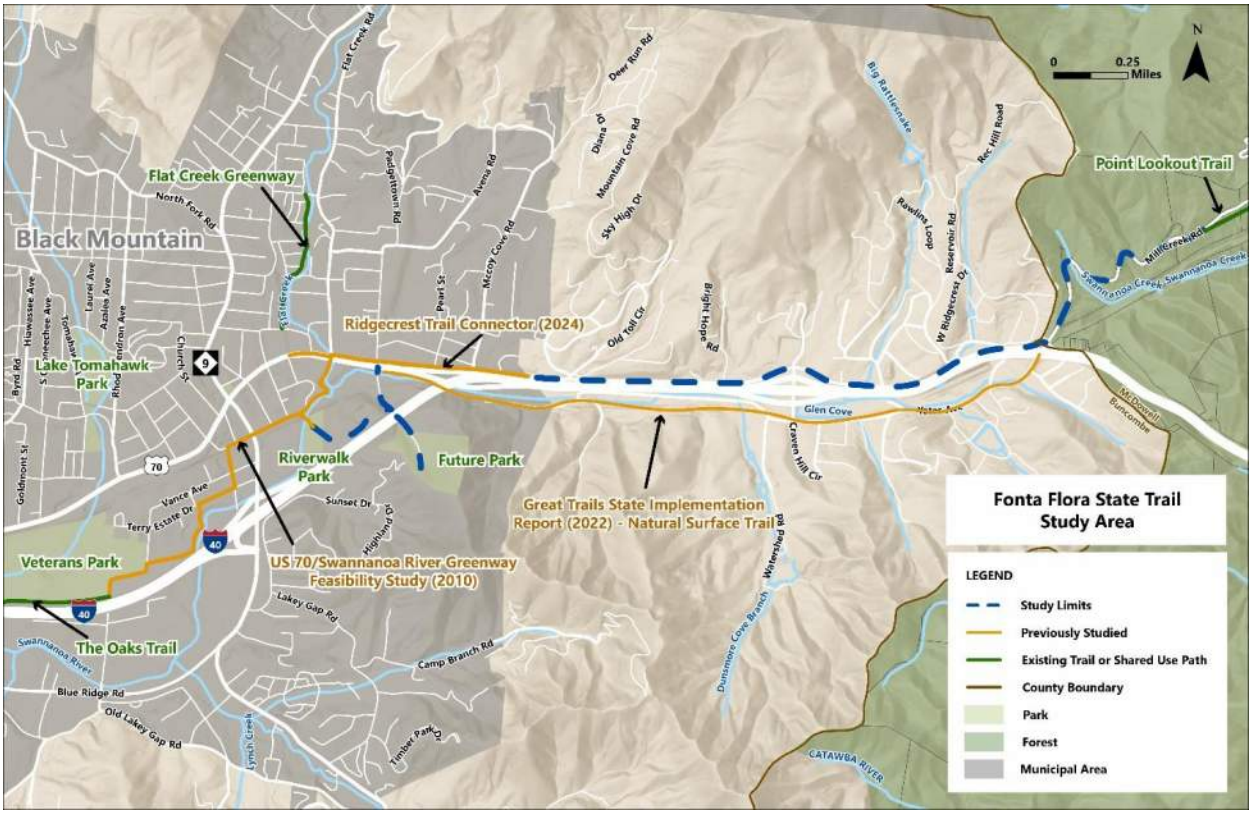


Figure 4. Fonta Flora State Paved Trail Feasibility Study Area

PLANNING-LEVEL CONSIDERATIONS

The evaluation of planning-level considerations reviewed key study area characteristics that might influence the recommended trail alignment and design. These characteristics include population distribution, transportation-disadvantaged households, land use, and the location of key destinations, among other factors.

Population Density

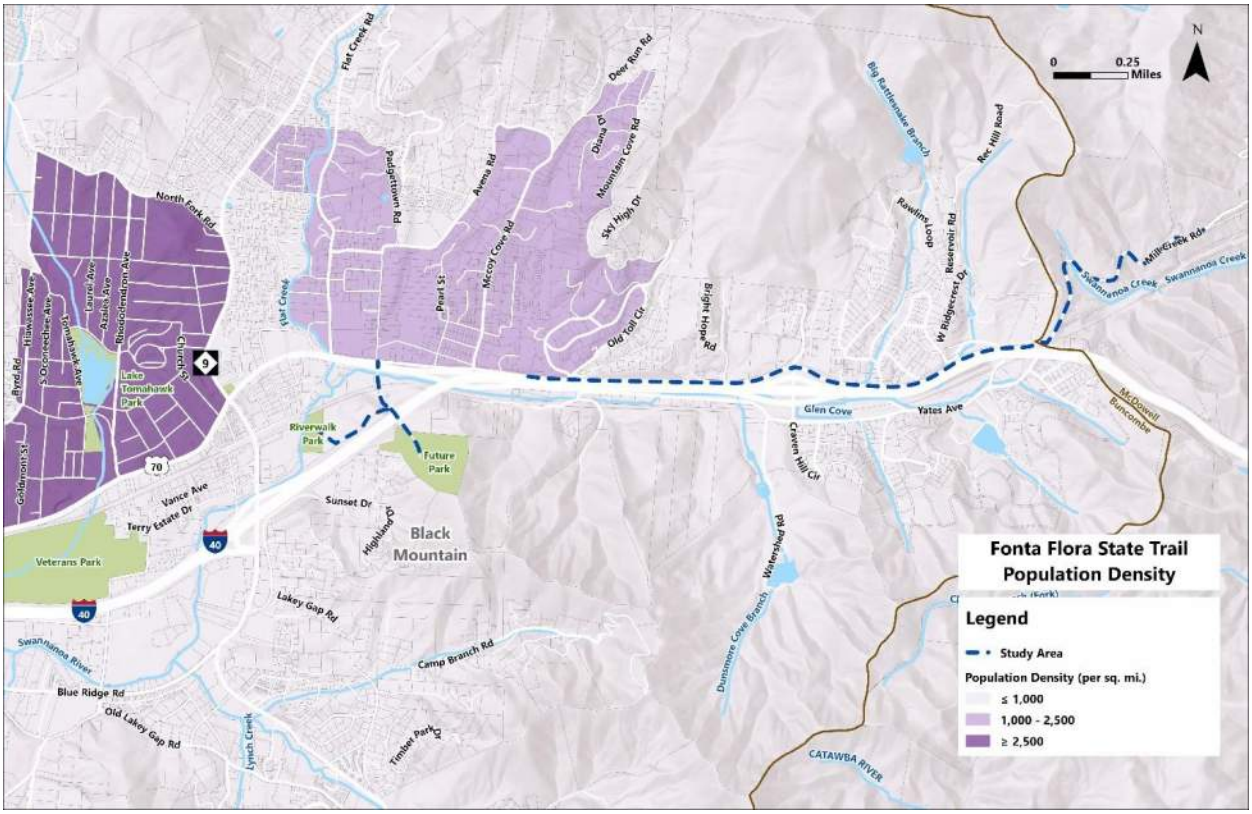


Figure 5. Population Density

Population density near the study area is concentrated in the Town of Black Mountain, as shown in **Figure 5**. The single-family home neighborhoods near downtown Black Mountain that surround Lake Tomahawk Park are the densest in the study area with over 2,500 residents per square mile. Population density decreases further east in Black Mountain and in the more rural areas of eastern Buncombe County and western McDowell County. Despite the decrease in density in the eastern portion of the study area, there are residential communities along most of the study corridor, especially near Ridgecrest. These communities would directly benefit from a multi-use path that connects to services and amenities in downtown Black Mountain.

Population Change

Over the past decade, population trends in the Town of Black Mountain and Buncombe County highlight consistent population growth, while McDowell County's population has slightly decreased. Black Mountain's population was approximately 8,000 in 2013, but that number has increased to over 8,500 in 2022 which is an approximately 6 percent increase in ten years (see **Figure 6**). Buncombe County's population was approximately 247,000 in 2013 and has since increased to over 273,000 which is an approximate 11 percent increase in ten years (see **Figure 7**). While McDowell County is not experiencing the same population growth as Black Mountain or Buncombe County, its population has held steady, only decreasing by 1 percent in the last ten years (see **Figure 8**). Residents in Black Mountain, Buncombe County, and McDowell County would all benefit from increased access to a regional trail network for safe walking and biking.

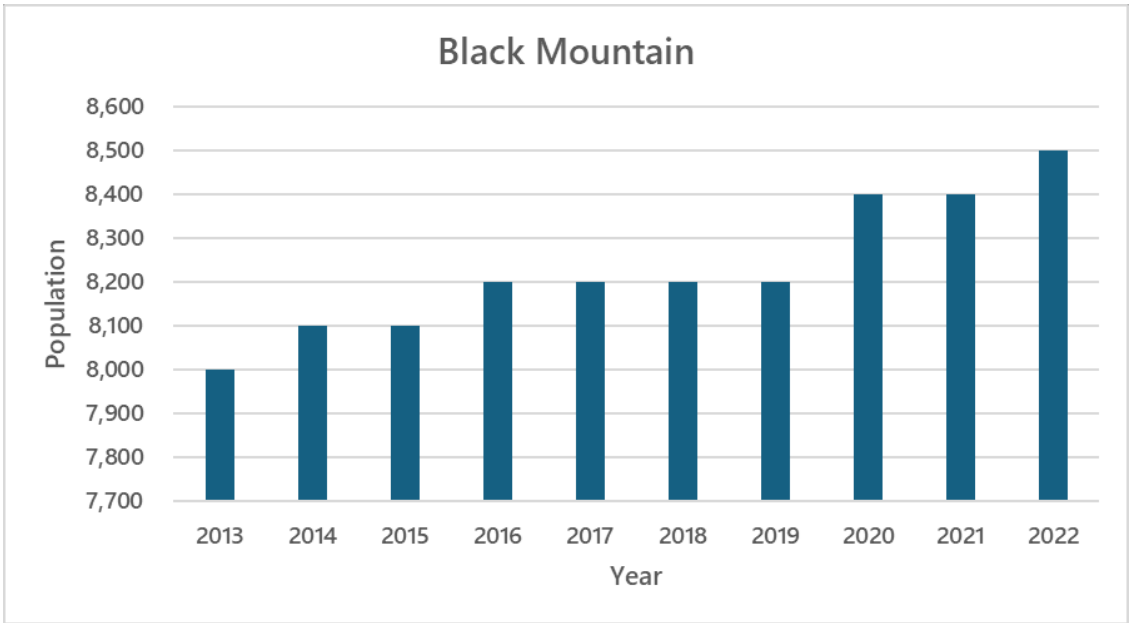


Figure 6. Population Change in Black Mountain (US Census Bureau)

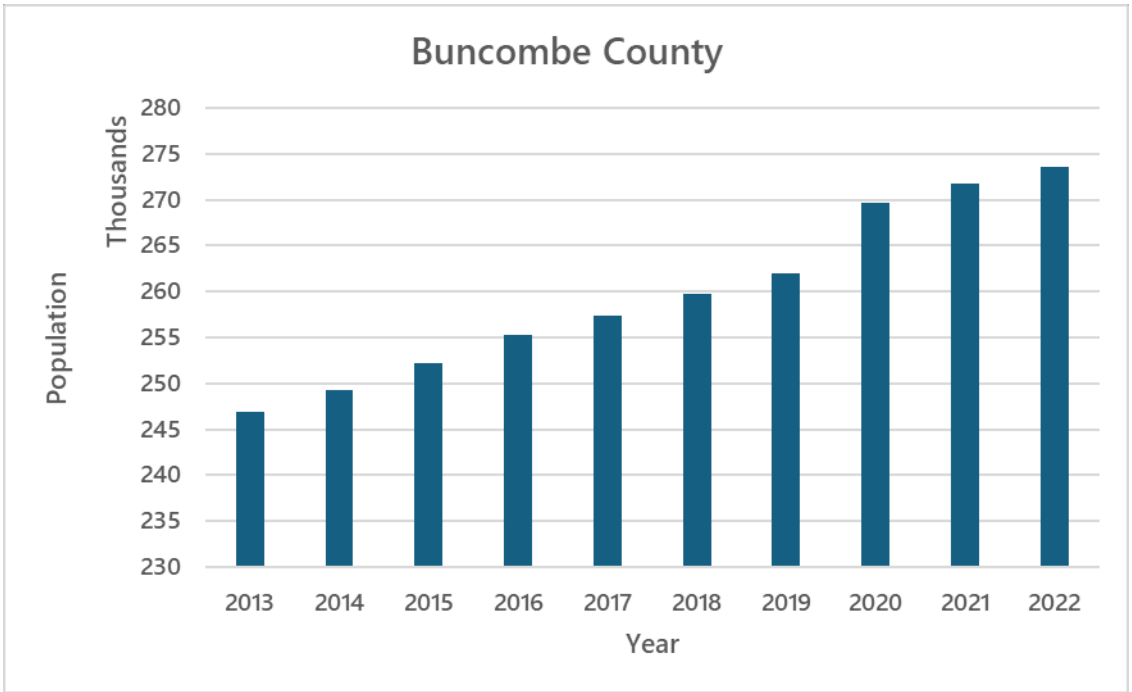


Figure 7. Population Change in Buncombe County (US Census Bureau)

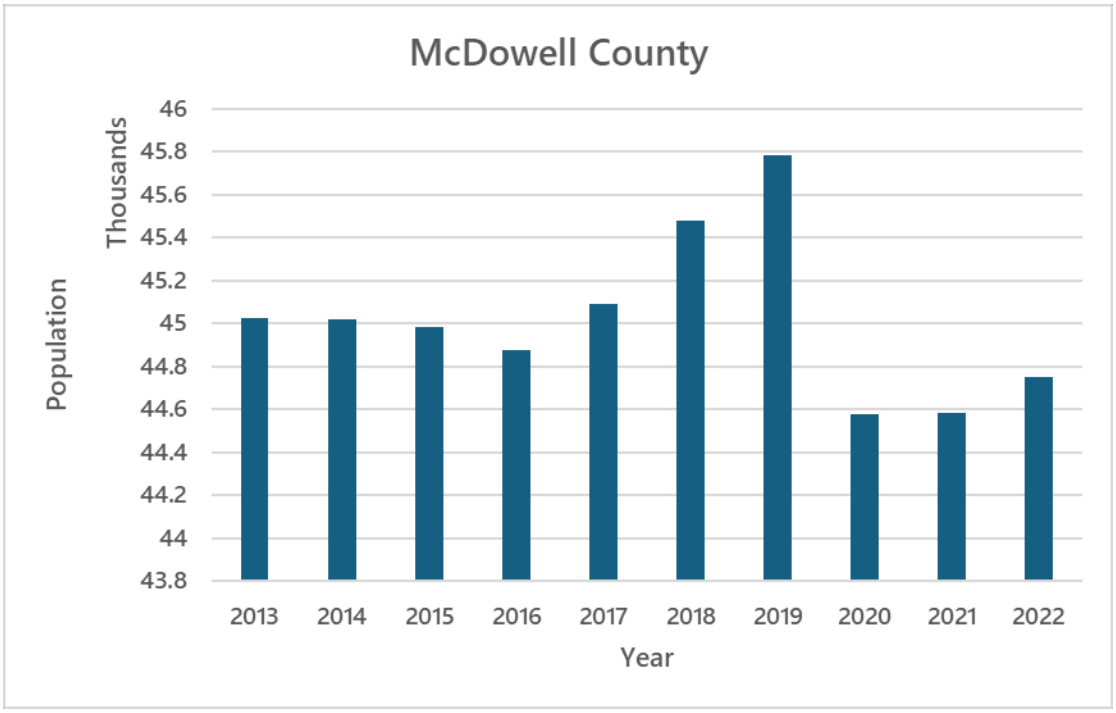


Figure 8. Population Change in McDowell County (US Census Bureau)

Race/Ethnicity

Black Mountain, Buncombe County, and McDowell County are majority White communities with all three jurisdictions being over 80 percent White. In Buncombe County, 5 percent of the population identifies as Black, and 7 percent identifies as Hispanic. In McDowell County, 4 percent of the population identifies as Black, and 6 percent identifies as Hispanic.

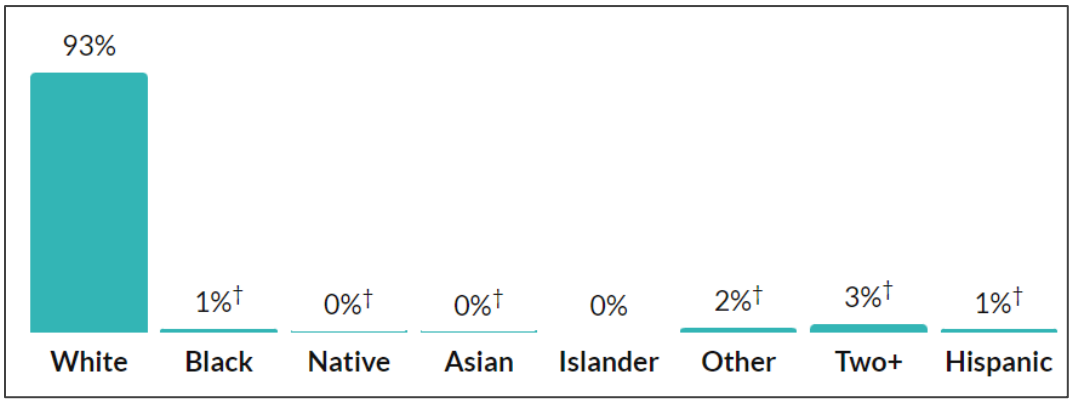


Figure 9. Race/Ethnicity in Black Mountain (Census Reporter)

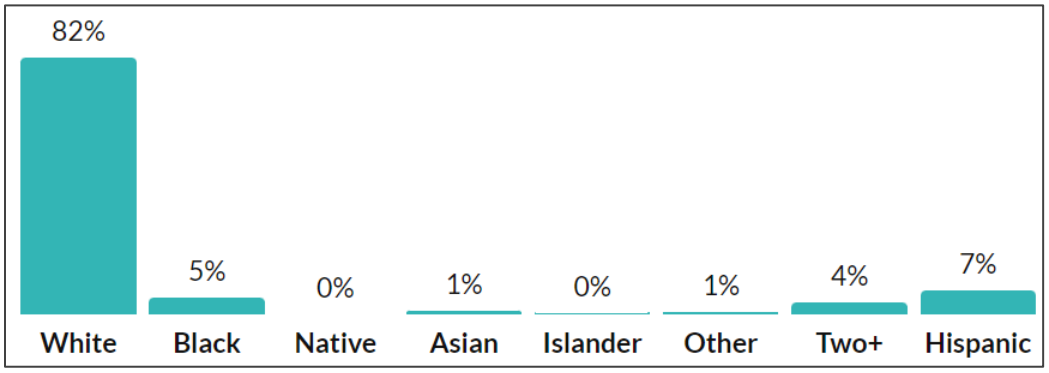


Figure 10. Race/Ethnicity in Buncombe County (Census Reporter)

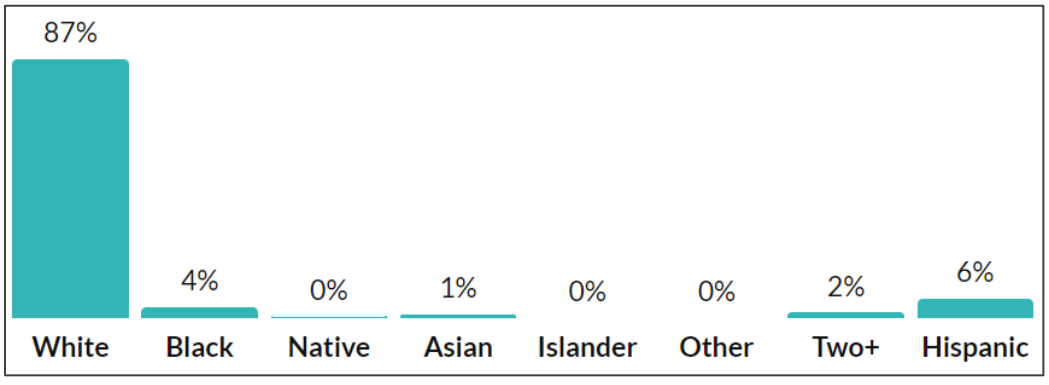


Figure 11. Race/Ethnicity in McDowell County (Census Reporter)

Household Type

In Black Mountain, the average household size is 2.1 persons per household which is considerably lower than the statewide average of 2.5. The average household size in Buncombe County (2.6) and McDowell County (2.4) is more in line with the North Carolina average. Households in all jurisdictions are primarily married couples, but there are more non-family households in the Town of Black Mountain.

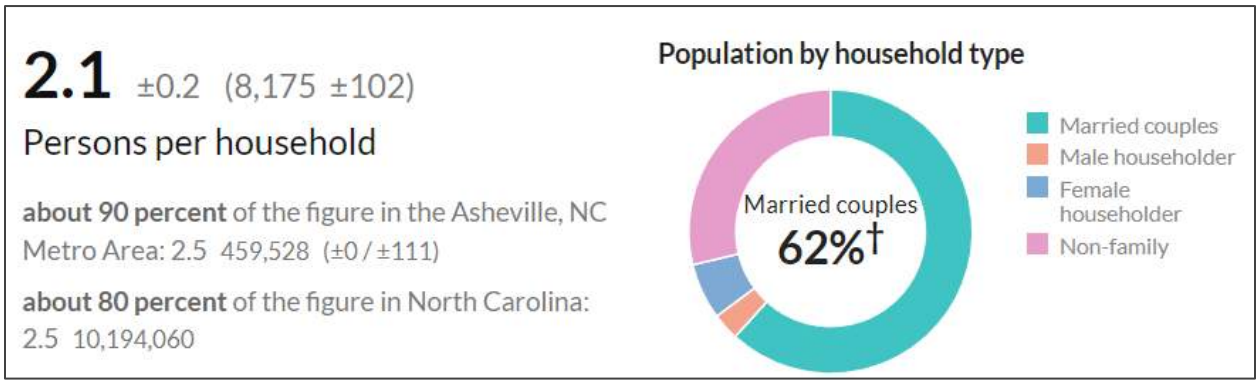


Figure 12. Household Type in Black Mountain (Census Reporter)

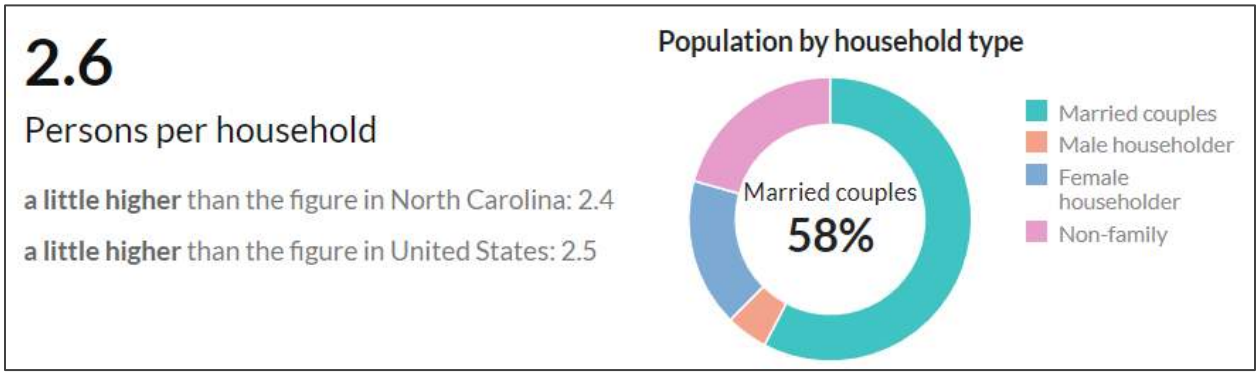


Figure 13. Household Type in Buncombe County (Census Reporter)

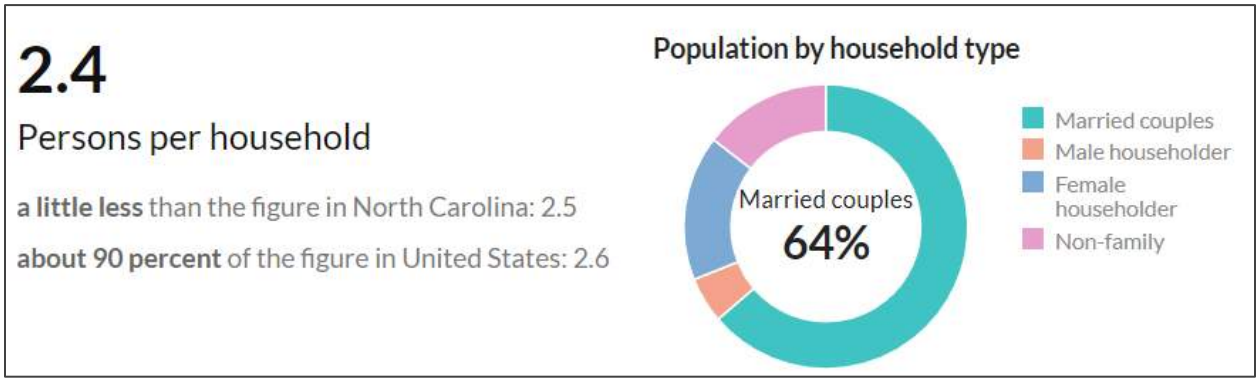


Figure 14. Household Type in McDowell County (Census Reporter)

Population by Age

The median age in Black Mountain is significantly higher relative to the median age in Buncombe County and McDowell County. The median age in Black Mountain is 60.4 years. This is approximately 50 percent older than the statewide median age of 39.1. The Median ages in Buncombe County (42.1) and McDowell County (44.3) are also higher than the statewide median, but lower relative to Black Mountain. Greenways and walking trails are important public health and recreational assets for people of all ages, including older adults.

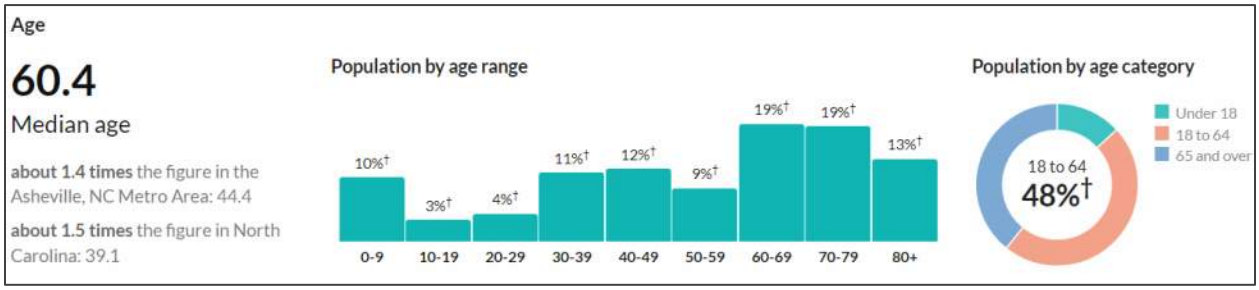


Figure 15. Population by Age in Black Mountain (Census Reporter)

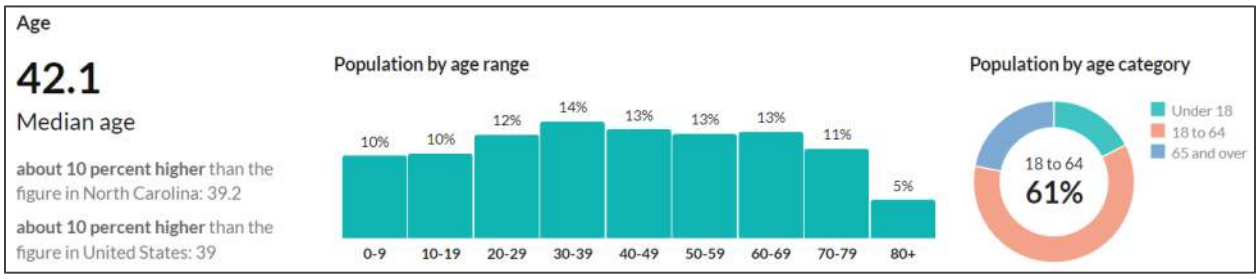


Figure 16. Population by Age in Buncombe County (Census Reporter)

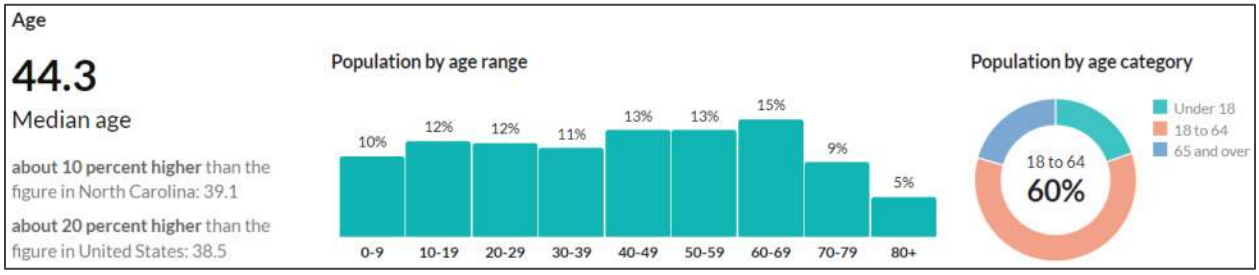


Figure 17. Population by Age in McDowell County (Census Reporter)

Median Household Income

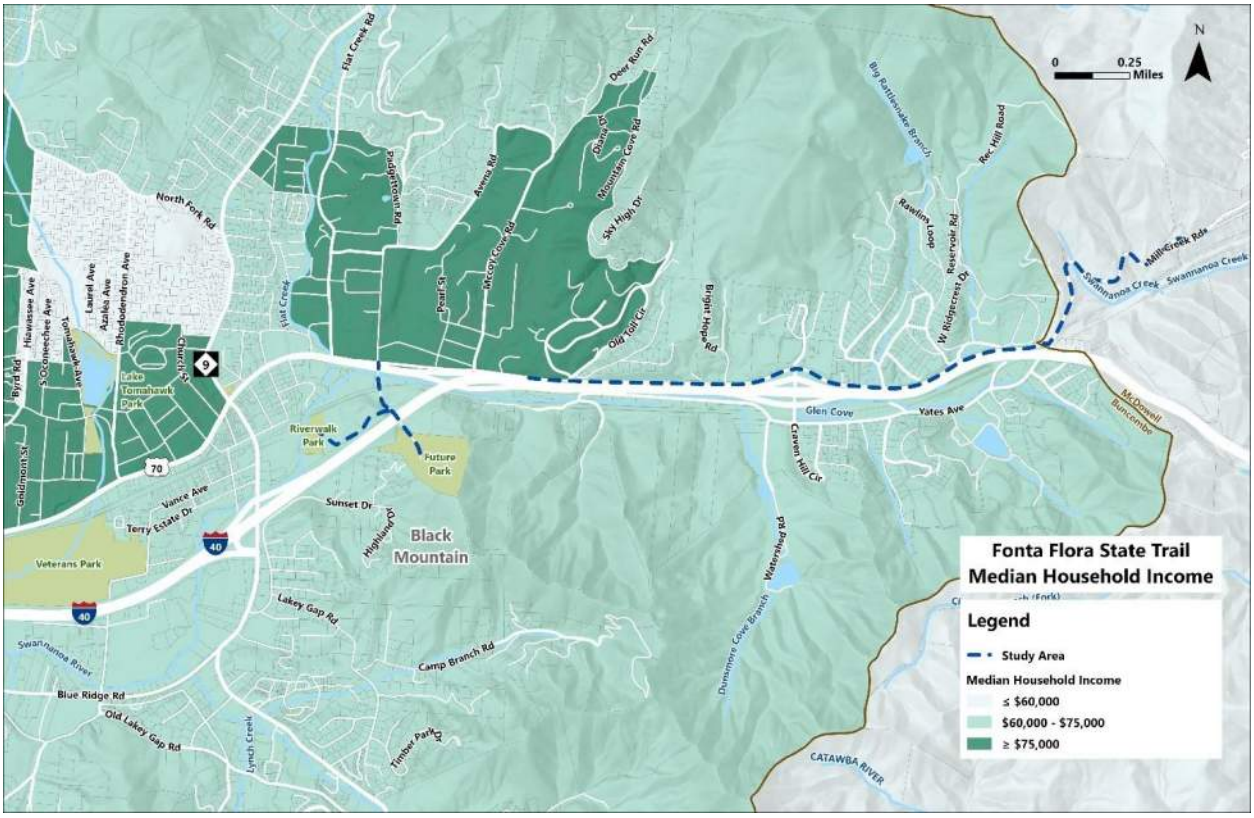


Figure 18. Median Household Income

Median household incomes in the project's study area are highest in the Town of Black Mountain and lowest in McDowell County (**Figure 18**). The Census block group south of Lake Tomahawk Park and east of Flat Creek Road have median household incomes of at least $75,000. Incomes in communities further east are lower as the block groups in McDowell County have median household incomes less than $60,000. Most of Black Mountain and the area of Buncombe County within the study limits have median household incomes between $60,000 and $75,000.

Households Below the Poverty Level

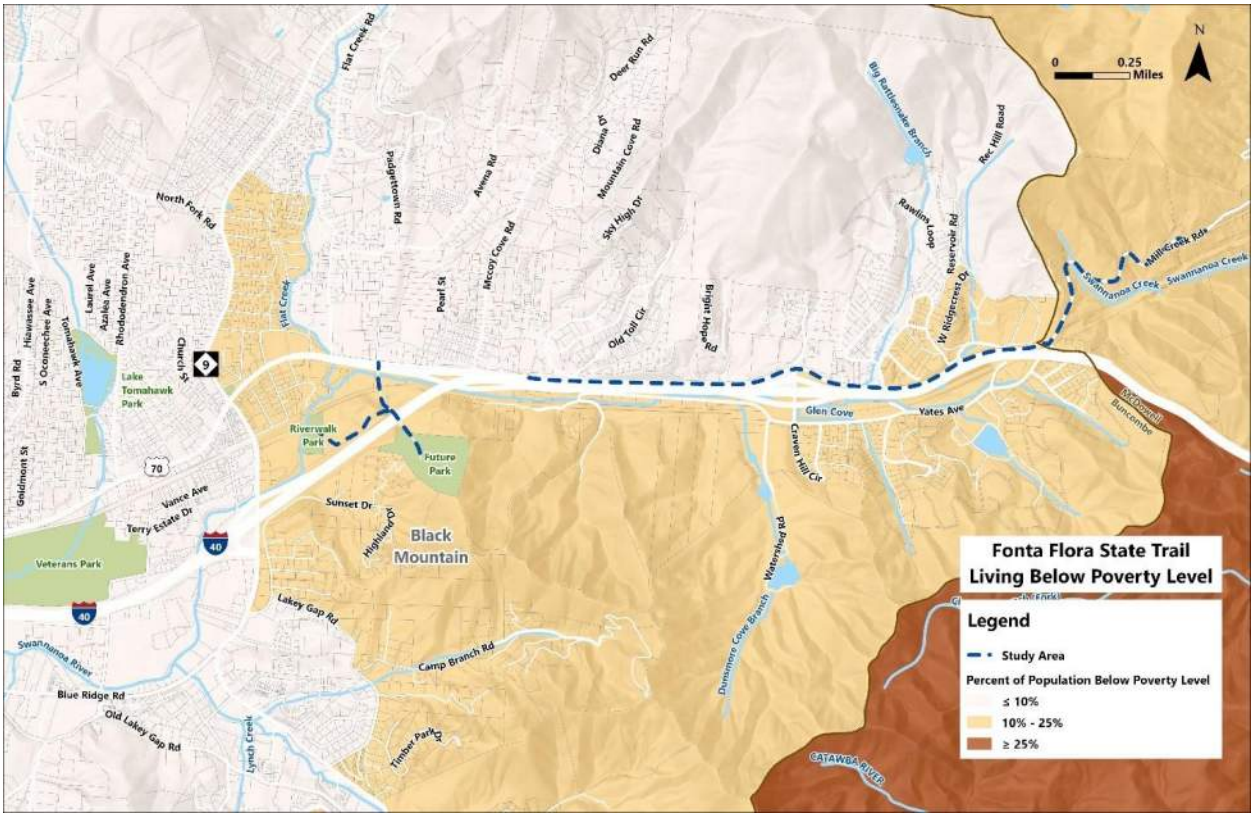


Figure 19. Population Living Below Poverty Level

Poverty rates near the Fonta Flora Paved Trail study area are generally low. However, these rates tend to increase further east into eastern Buncombe County and western McDowell County where they can exceed 25 percent. Within most of the Town of Black Mountain, poverty rates are below 10 percent (**Figure 19**). According to the US Census, the statewide poverty rate in North Carolina is 12.8 percent, indicating that much of the study area is less impoverished than the North Carolina average, especially near Black Mountain and north of I-40 in Buncombe County.

Population with a Disability

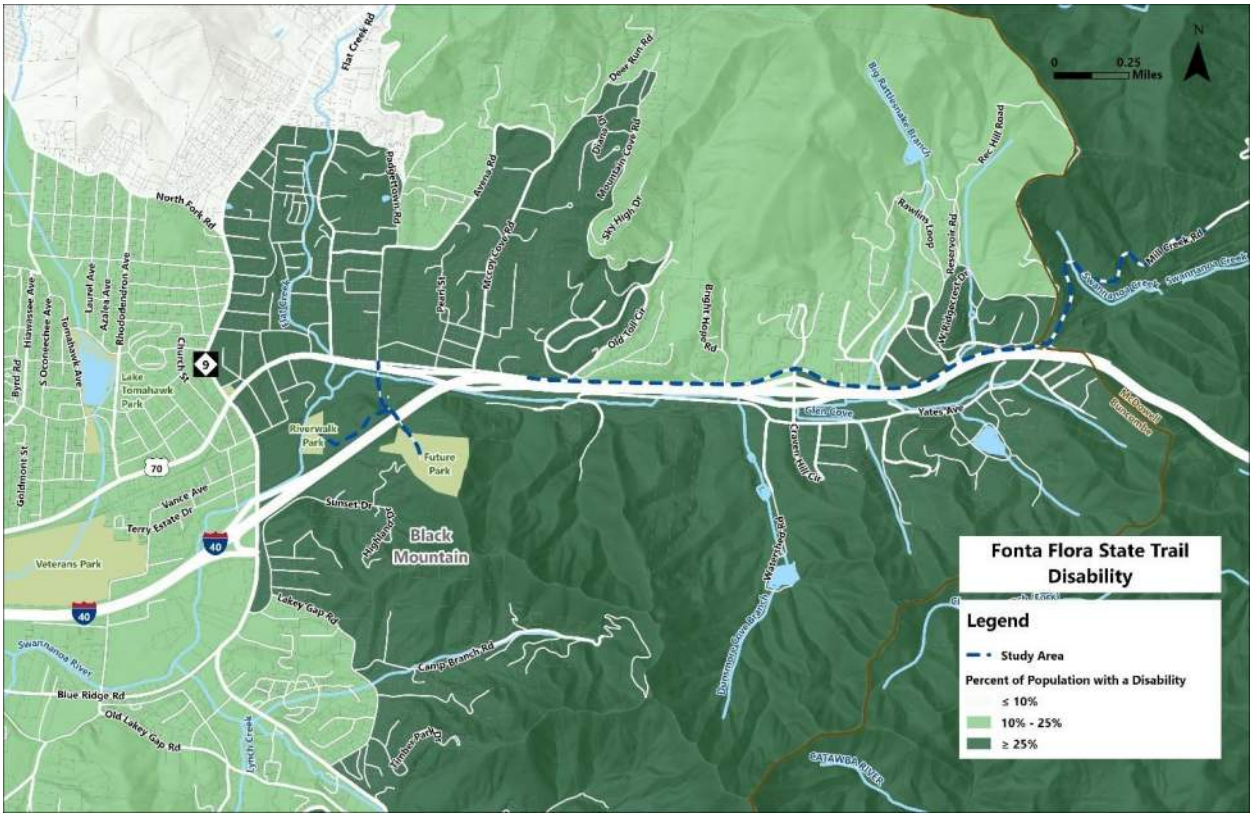


Figure 20. Population with a Disability

On average, Black Mountain area residents are older than the general Buncombe County and North Carolina populations. This older population likely contributes to the study area having a relatively high percentage of the population with at least one disability. Throughout most of the study area, at least 10 percent of the population is living with a disability. Areas of rural eastern Buncombe County and western McDowell County have higher rates of people with disabilities as at least 25 percent of the population living with at least one disability (**Figure 20**). Disabilities can limit access to mobility options, including driving. Providing access to safe and comfortable driving alternatives increases mobility options available to residents.

Youth Population

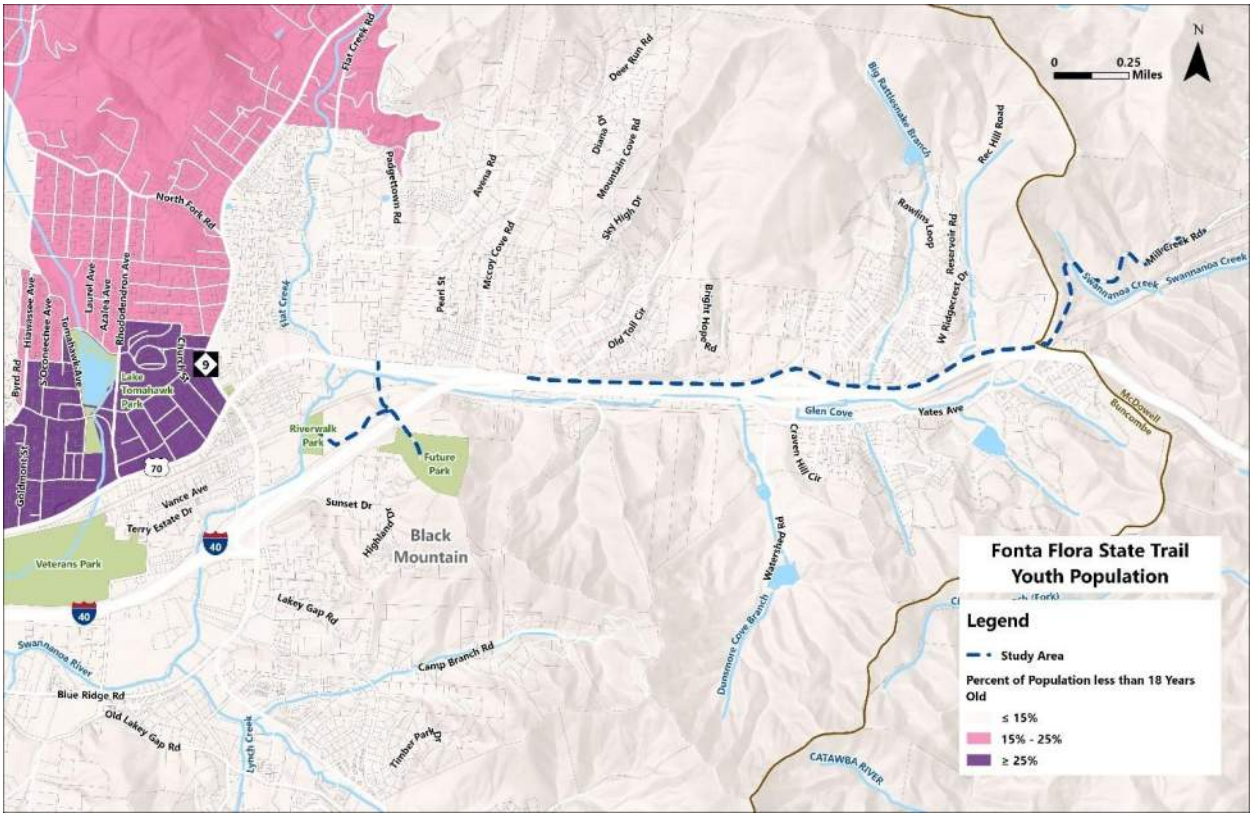


Figure 21. Youth Population

As discussed above, the study area population tends to be older than the rest of Buncombe County, McDowell County, and North Carolina as a whole. However, there are more youth living near downtown Black Mountain than in the rest of the study area. In the block group south of Lake Tomahawk Park at least 25 percent of the population is younger than 18 years old (**Figure 21**). Extending the Fonta Flora Paved Trail to the Town of Black Mountain would improve youth access to a safe multi-use trail facility that connects to recreation opportunities.

Zero Car Households

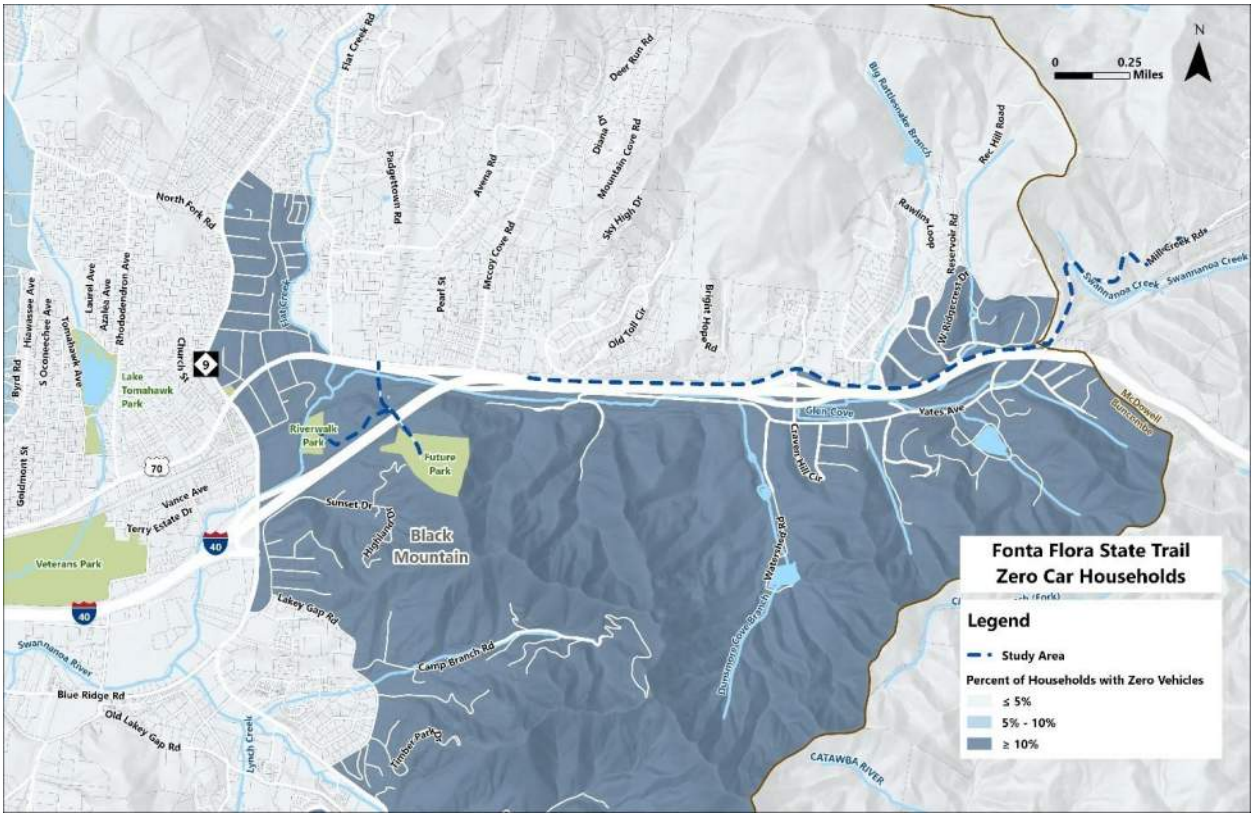


Figure 22. Zero Car Households

As shown in **Figure 22**, most households in the study area own at least one vehicle. However, there are some households that do not have access to a vehicle, especially southeast of Black Mountain. In the rural block group encompassing eastern Black Mountain and rural eastern Buncombe County, over 10 percent of households do not have access to a vehicle. Providing a safe multi-use trail in the study area would introduce a facility that improves mobility options for these zero car households.

Transportation Disadvantage Index

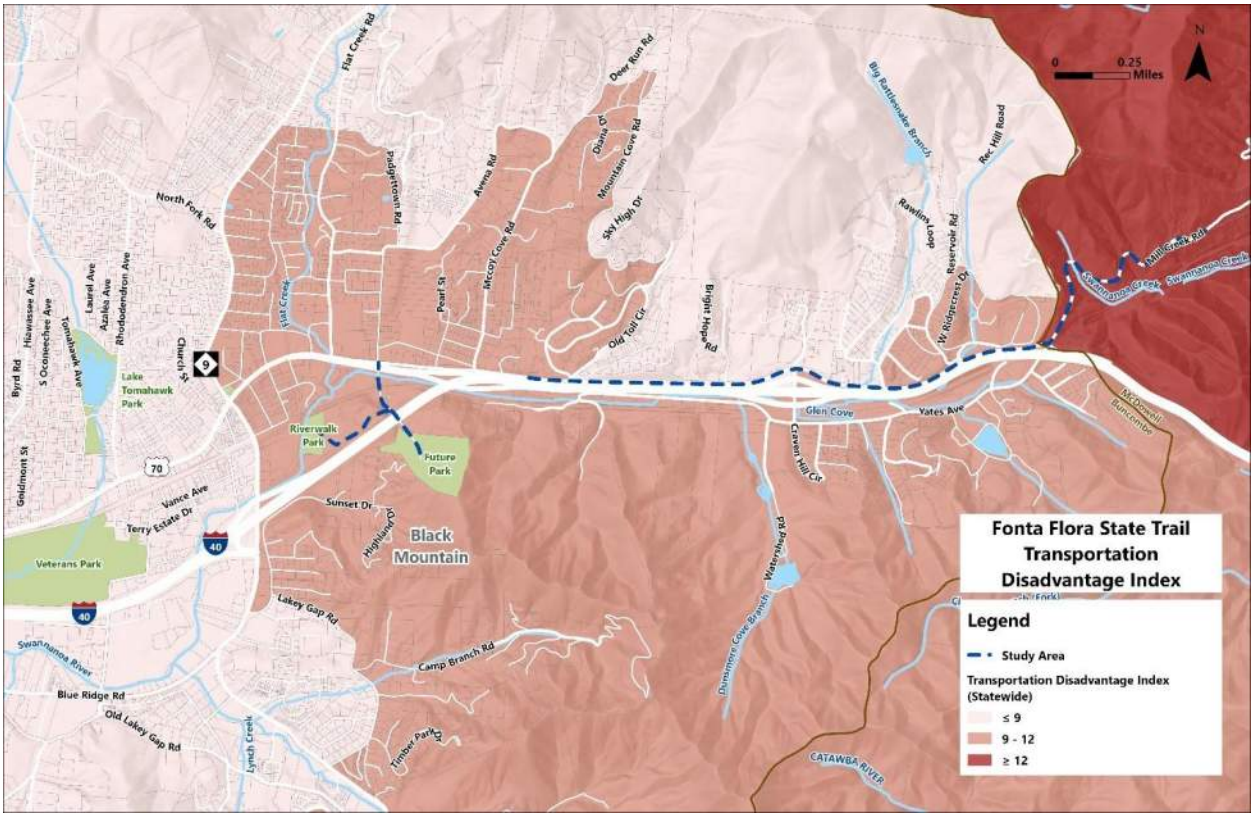


Figure 23. NCDOT Transportation Disadvantage Index (TDI)

Transportation Disadvantage describes the relative barriers that might limit access to transportation in a given area. NCDOT uses the Transportation Disadvantage Index (TDI) to understand how they can more equitably promote projects that better connect people to essential destinations. The TDI Score summarizes multiple indicators of transportation disadvantage (i.e., zero-vehicle ownership, poverty level, mobility impairments, and concentrations of Black, Indigenous and Persons of Color) to identify areas most in need of mobility improvements. In the study area, the TDI score is relatively low for most block groups, indicating reduced transportation disadvantage. However, the eastern portion of the study area, in eastern Buncombe County and western McDowell County, has higher TDI scores, indicating increased transportation disadvantage (**Figure 23**). The introduction of a multi-use path that connects transportation disadvantaged communities would reduce barriers to access and provide safe options for walking and biking.

Commuter Characteristics

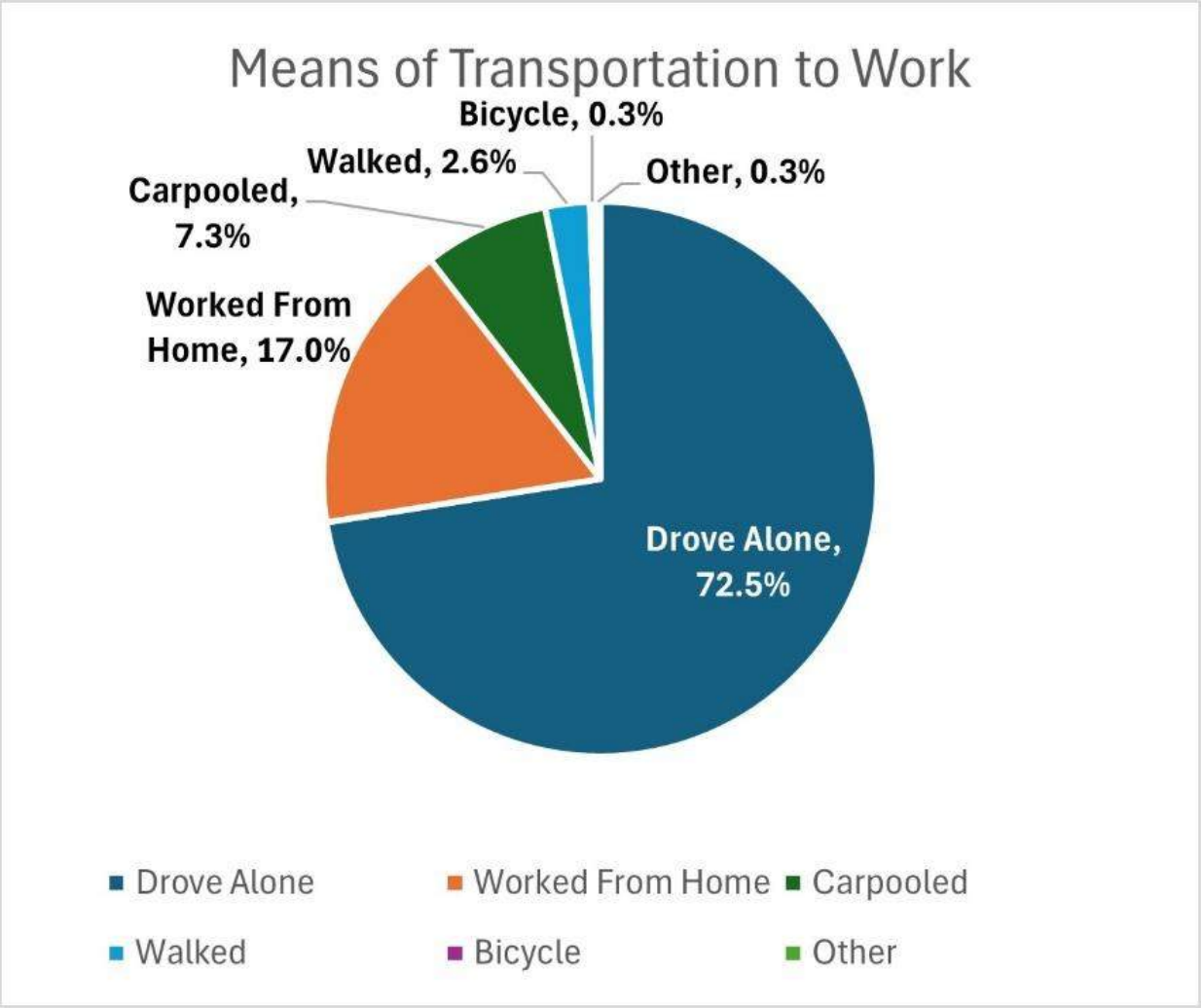


Figure 24. Town of Black Mountain Commuter Characteristics (Census ACS, 2023)

As shown in **Figure 24**, most workers in Black Mountain (72.5 percent) drive a single-occupancy vehicle to their place of work. Only 7.3 percent carpool with at least one passenger, while only 17 percent of workers work from home. In total, less than 3 percent of commuters walk or bike to work. The limited existing pedestrian and bicycle network beyond downtown Black Mountain limits the mode choice of local workers. The addition of a multi-use path along Old US Highway 70 would provide additional opportunities to safely walk or bike to employment opportunities.

Zoning

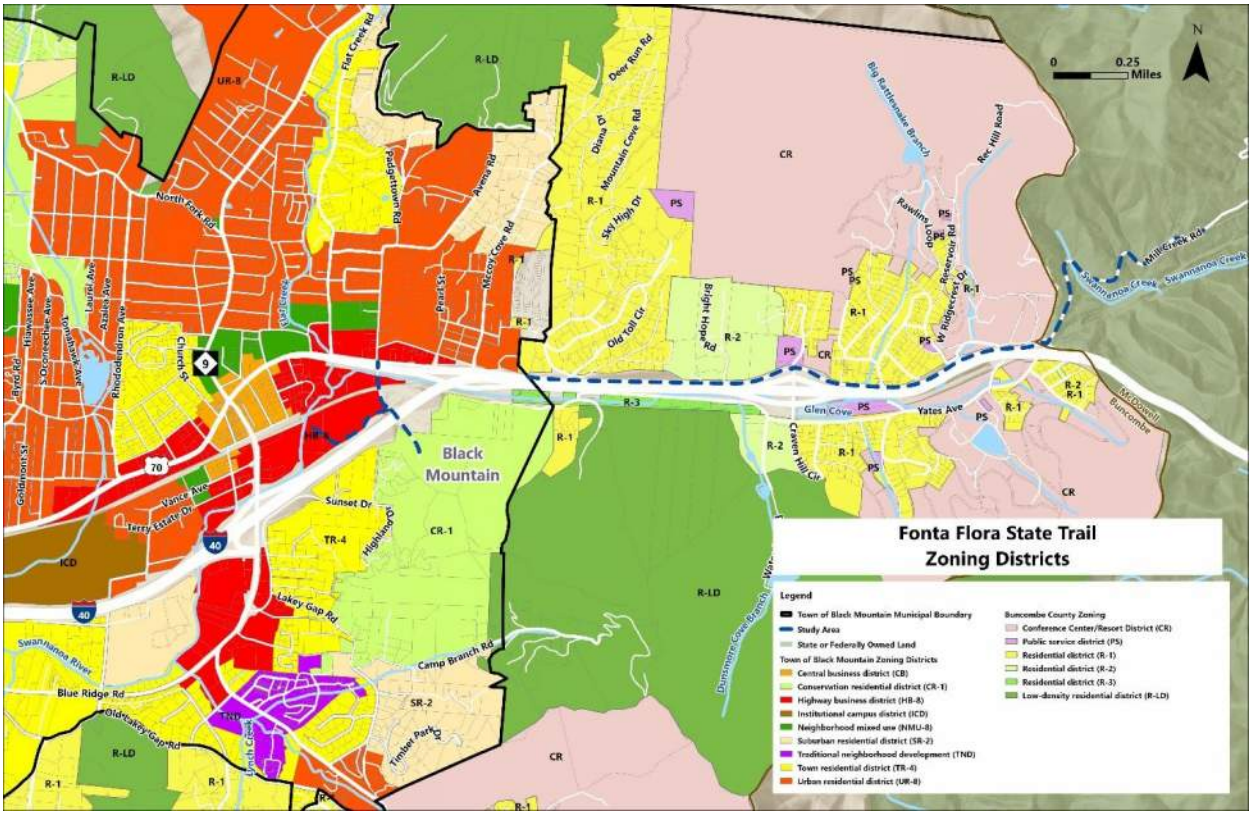


Figure 25. Zoning

Figure 25 displays zoning districts for both the Town of Black Mountain and Buncombe County. The study area primarily includes residential zoning districts of varying densities. The study area is also adjacent to Ridgecrest Camp and Ridgecrest Conference Center, which are both zoned as "Conference center/resort district" in Buncombe County. The far western extent of McDowell County near the study area is state- or federally- owned forest land. **Table 1** describes the key districts adjacent to the study area.

Table 1. Zoning Districts Adjacent to Fonta Flora Paved Trail Study Area

Town of Black Mountain[1]	
Conservation Residential District (CR-1)	The Conservation Residential District is established to protect areas in which the principal use of the land is residential or agricultural and where steep slopes or other environmental features make it more suitable for large lot development, conservation development and the preservation of open space.
Urban Residential District (UR-8)	The Urban Residential District is established to provide a variety of housing types, promote density in the more urbanized and developable areas of town, and structure the orderly development of residential neighborhoods.
Highway Business District (HB-8)	The Highway Business District provides orderly growth along the Town's major thoroughfares; promotes access management and traffic safety for all modes of transportation, encourages the redevelopment of existing commercial sites; creates economic opportunities; promotes a safe, convenient and attractive environment for pedestrians to access good and services; creates gateways and entrances into the town along central corridors; and encourages residential development that blends with the commercial character of the District and enhances the variety of housing options provided in the town. Because of the objectives and characteristics of this District, it is located contiguous to major streets or within proximity to primary commercial districts.
Buncombe County[2]	
Conference Center/Resort District (CR)	The CR Conference Center/Resort District is intended to be a district that includes, but is not limited to, large tourist-related facilities, summer/day camp properties, and conference centers held in single ownership or held collectively by related entities. Facilities within this District may include housing, hotels, retail shops, religious or secular retreats, and associated accessory uses. Such uses should currently have public water and sewer services available or have a provision for internal supply of appropriate utilities.
Residential District (R-1)	The R-1 Residential District is primarily intended to provide locations for single-family and two-family residential development and support recreational, community service, and educational uses in areas where public water and sewer services are available or will likely be provided in the future. This District is further intended to protect existing subdivisions from encroachment of incompatible

[1] Town of Black Mountain Code of Ordinances: Section 4.6 Districts Established. March 2024. https://library.municode.com/nc/black_mountain/codes/code_of_ordinances?nodeId=COOR_APXALAUSCO_CH4ZORE_S4.6DIES

[2] Buncombe County Code of Ordinances: Article VI. Buncombe County Zoning Ordinance. Jan 2024. https://library.municode.com/nc/buncombe_county/codes/code_of_ordinances?nodeId=COOR_CH78ZO_ARTVIBUCOZOOR

	land uses, and this District does not allow manufactured home parks.
Residential District (R-2)	The R-2 Residential District is primarily intended to provide locations for residential development and supporting recreational, community service and educational uses in areas where public water and sewer services are available or will likely be provided in the future. These areas will usually be adjacent to R-1 Residential Districts, provide suitable areas for residential subdivisions requiring public water and sewer services, and to help maintain the present character of R-1 Districts, will not allow manufactured home parks.
Residential District (R-3)	The R-3 Residential District is primarily intended to provide locations for a variety of residential development depending upon the availability of public water and sewer services. Some areas within the R-3 Residential District will have no public water and sewer services available and will thus be suitable primarily for single-family residential units on individual lots and mobile homes on individual lots. Other areas within the District will have public water and/or sewer service available and will thus be suitable for higher density uses such as multifamily residential units, planned unit developments, and mobile home parks. The R-3 District also provides for various recreational, community service and educational uses that will complement the residential development.
Low-Density Residential District (R-LD)	The R-LD Low-Density Residential District is primarily intended to provide locations for low-density residential and related-type development in areas where topographic or other constraints preclude intense urban development. These areas are not likely to have public water and sewer services available, and the minimum required lot area will be one acre unless additional land area is required for adequate sewage disposal. These are environmentally sensitive areas that are characterized by one or more of the following conditions: steep slopes, fragile soils, or flooding.

Future Land Use

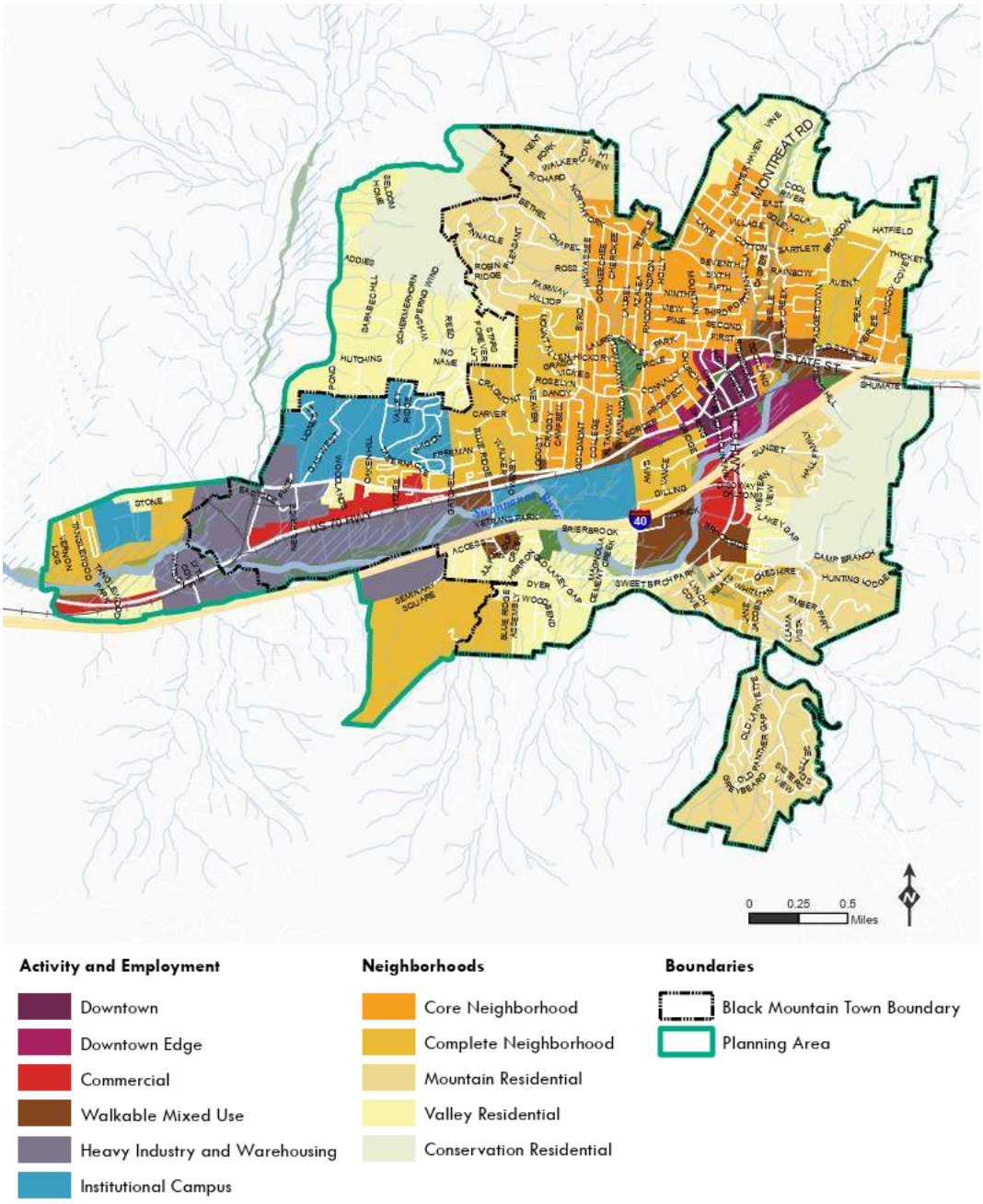


Figure 26. Future Land Use Map from Elevate Black Mountain Comprehensive Plan (2021)

Figure 26 displays the Town of Black Mountain's Future Land Use Map that was developed for the Town's most recent comprehensive plan in 2021. Future land use near the study area is primarily Conservation Residential, Downtown Edge, and Walkable Mixed Use. These land uses would support a more walkable and bikeable environment through the introduction of a multi-use trail, as described in **Table 2** below.

Table 2. Future Land Use Adjacent to Study Area[3]

Land Use	Description
Downtown Edge	Downtown Edge encompasses lands generally located adjacent to downtown and where there are opportunities to extend the pedestrian-oriented character of downtown and establish gateways. Development includes high quality building design that supports a mix of retail, restaurants, employment, and residential. Sidewalks are wide with street trees adjacent to the curb. First floors include ample windows and doors.
Walkable Mixed Use	Walkable Mixed Use areas are strategic nodes where the built environment should transition over time to walkable mixed use development. Buildings should be located adjacent to the sidewalk with translucent first floor frontages. A vertical mix of uses is encouraged, with retail or other residentially compatible uses on the first floor and residential or office uses on upper floors.
Conservation Residential	Conservation Residential areas include large contiguous tracts of land where conservation of open space and protection of the watershed is a priority. Various low impact economic opportunities are available, including conservation subdivisions with large amounts of dedicated open space. Where development occurs, it should use best practices in conservation and sustainable design.

[3] Elevate: Town of Black Mountain Comprehensive Plan. June 2021.

Publicly-Owned Land

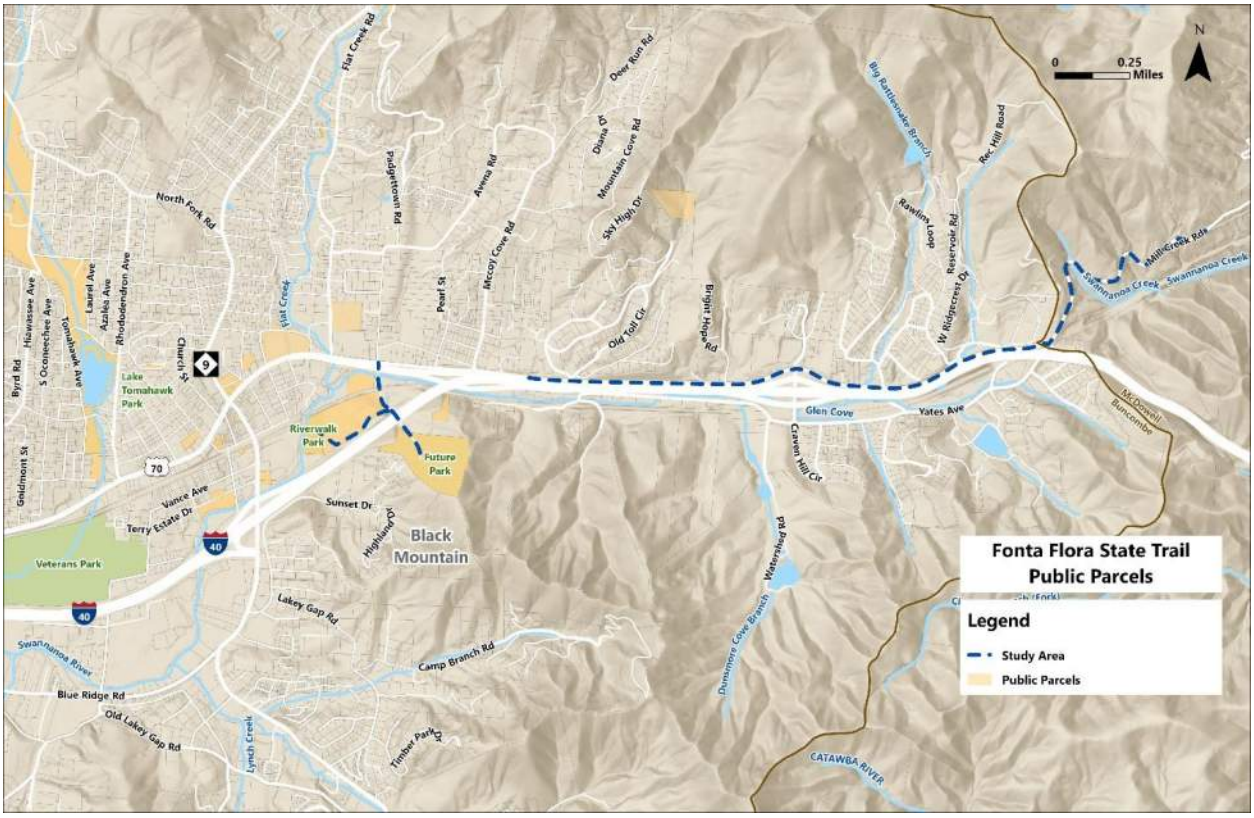


Figure 27. Public Parcels, Notable Developments, and Key Destinations

Figure 27 identifies the public parcels along the study area. These could provide opportunities to construct the paved trail without the need to acquire property easements or private right-of-way. The publicly owned parcels near River Walk Park as well as the future park south of I-40 could make the paved trail construction easier and more affordable near these parcels.

During the development of the Fonta Flora Paved Trail Feasibility Study, many property owners whose properties were impacted by Hurricane Helene were eligible for consideration of a flood buyout through the Federal Emergency Management Agency (FEMA) Hazard Mitigation Program. Local and state agencies continue to collaborate with FEMA and private property owners to determine where and how flood buyouts will occur. Flood buyout properties can potentially be used for public greenways and trails, so the location of these properties may be significant for the future alignment of the Fonta Flora Paved Trail. This is an evolving situation. Future project design efforts should reexamine the flood buyout parcels, in partnership with local agency partners, to determine if those parcels might provide opportunities to accommodate Fonta Flora State Trail connections.

Key Destinations

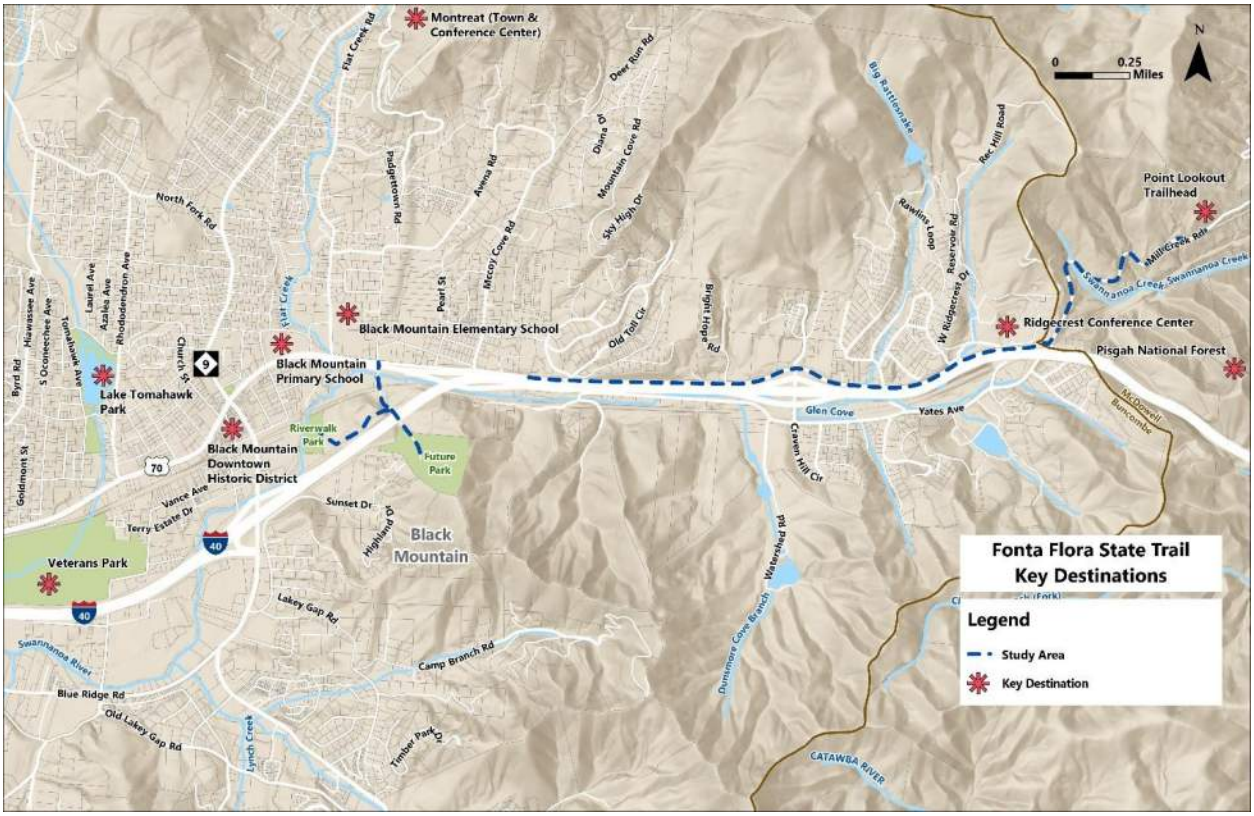


Figure 28. Key Destinations in Black Mountain

A future paved trail in Black Mountain, Buncombe County, and McDowell County would help to facilitate multimodal transportation trips to key destinations in the study area. **Figure 28** highlights multiple notable destinations that the paved trail could be connected to. One of these destinations is the Ridgecrest Conference Center, a 1,300-acre conference campus with lodging, trails, and a cafeteria. Additional destinations include two schools (Black Mountain Primary School and Black Mountain Elementary School) and the Black Mountain Downtown Historic District.

NATURAL ENVIRONMENT CONSIDERATIONS

Surface Waters and Floodplains

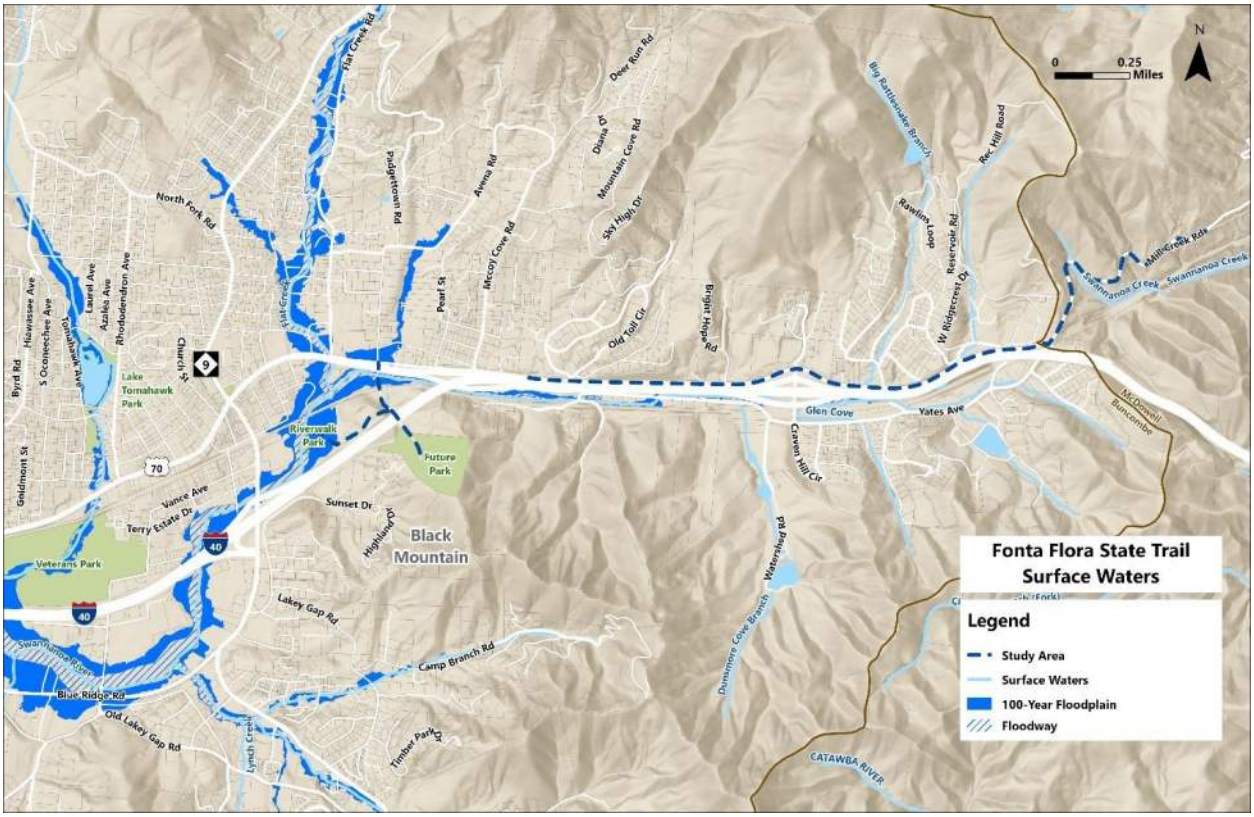


Figure 29. Surface Waters and Floodplains

Figure 29 shows the surface water conditions prior to Hurricane Helene in September 2024. During and after the hurricane, the alignment of some surface waters shifted, particularly along River Walk Park in Black Mountain. Hydrologic constraints tend to be more significant near downtown Black Mountain. River Walk Park is located fully within the 100-year floodplain of the Swannanoa River. Additionally, a future crossing for the paved trail at US 70 and I-40 would also require a crossing of the Swannanoa River. There are fewer hydrologic impacts in the study area outside of Black Mountain. A paved trail alignment on Old US Highway 70 north of I-40 has fewer direct interactions with surface waters and floodplain than an alignment south of I-40.

Managed Natural Areas

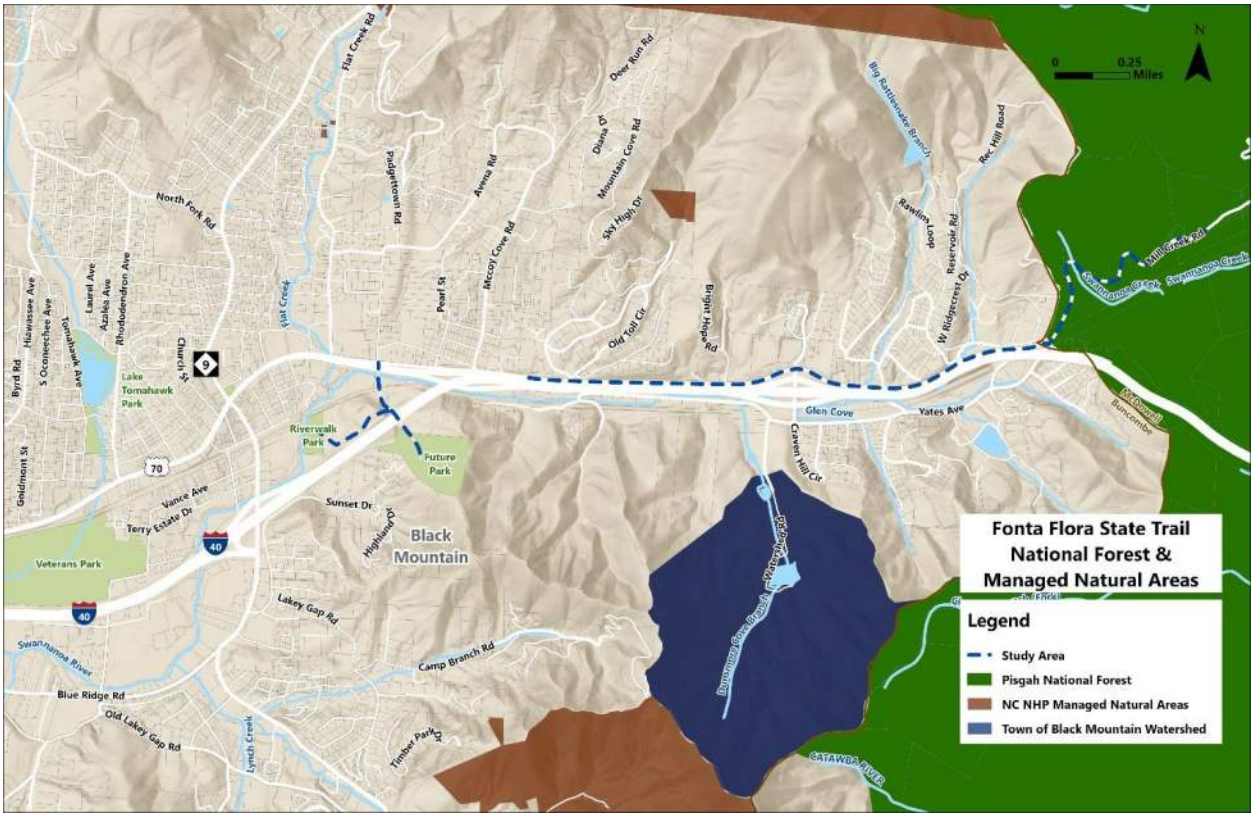


Figure 30. National Forest and Managed Natural Areas

The Pisgah National Forest covers the eastern extent of the study area in McDowell County along Mill Creek Road. Additionally, the North Carolina Natural Heritage Program (NHP) maintains data on "managed natural areas." These lands are a collection of properties and easements where conservation of biodiversity and ecosystem function are a goal of the conservation land. There are no managed lands within the Town of Black Mountain or along the study area alignment. The forested areas south of Black Mountain and in western McDowell County have been identified by the National Forest Service and NC NHP as managed natural areas, as shown in **Figure 30**. Additionally, the reservoir south of the study area is located within the Town of Black Mountain Watershed. This land is also an NHP managed area owned by the Town of Black Mountain.

Topography

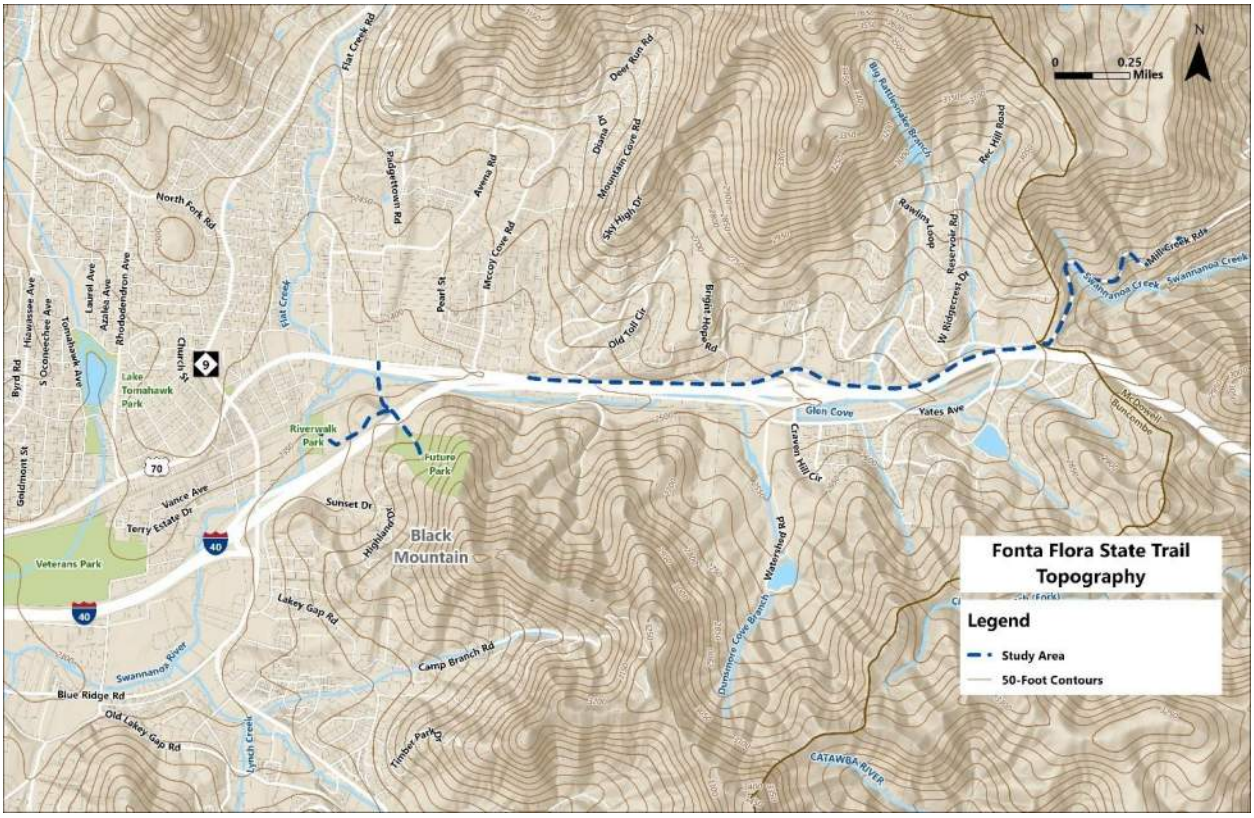


Figure 31. Topography

The topography, shown in **Figure 31**, along the study area is relatively flat along Old US Highway 70 and becomes steeper further east on Mill Creek Road. There are also steeper grades south of River Walk Park and I-40 toward the future park in Black Mountain. Paved trail design challenges and barriers related to steep slopes are more prevalent in the McDowell County portion of the study area along Mill Creek Road.

HUMAN ENVIRONMENT CONSIDERATIONS

Roadway Network

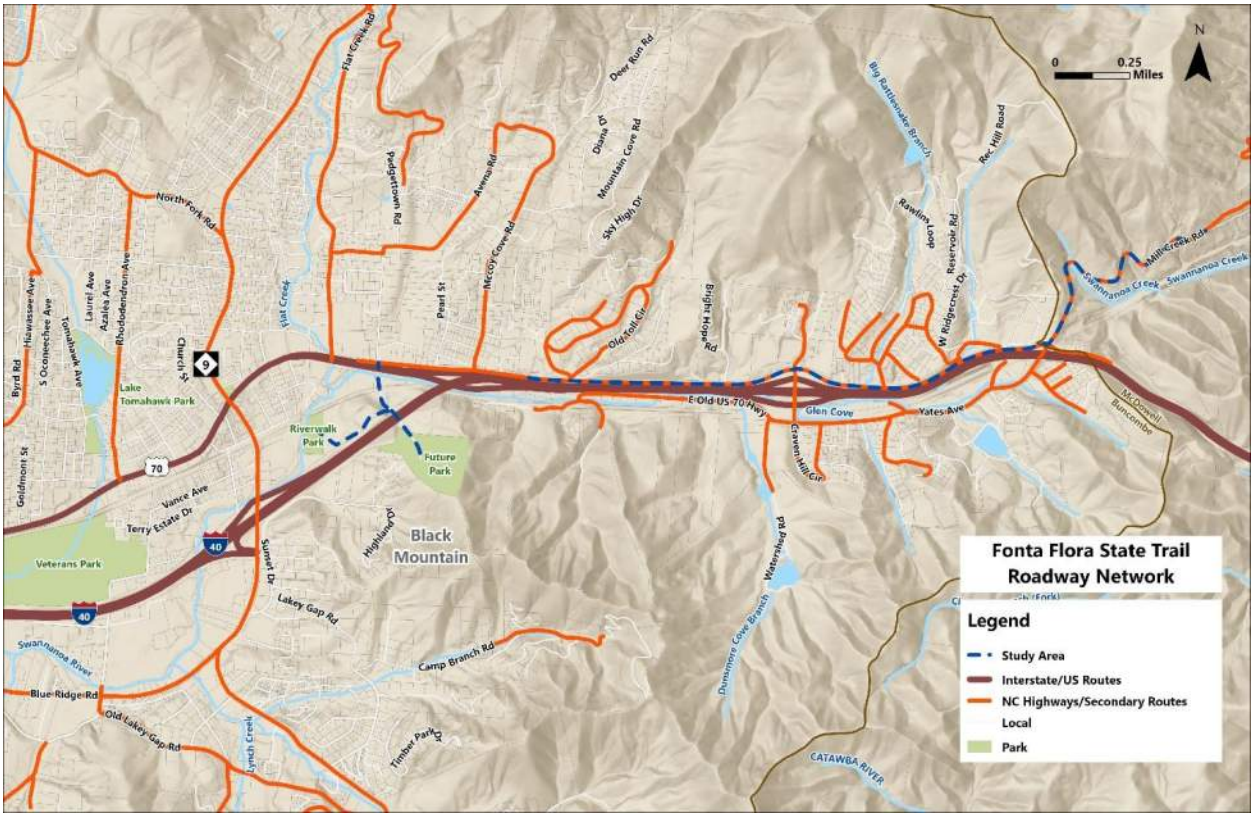


Figure 32. Roadway Classification

The study area alignment is adjacent to NCDOT-maintained roadways. In Buncombe County, the study area follows Old US Highway 70 (Secondary Route 2542) and Yates Avenue (Secondary Route 2531) which are both NCDOT-maintained roadways. In McDowell County, the study area follows Mill Creek Road (Secondary Route 1407), which is also maintained by NCDOT. The connections between River Walk Park, the future park in Black Mountain, and Old US Highway 70, do not follow NCDOT roadways. However, these segments will interact with NCDOT right-of-way at crossings with I-40 and US 70, as illustrated in **Figure 32**.

Traffic Volumes



Figure 33. Roadway Volumes (2022-2023)

Roadway volumes are available for Mill Creek Road and many roadways adjacent to the study area but are not available for the study area segments of Old US Highway 70 (NCDOT Average Annual Daily Traffic Map). Available data is provided in **Figure 33**. Mill Creek Road is a very low volume roadway with an average annual daily traffic (AADT) of approximately 200 vehicles per day. Traffic volumes are higher along the NCDOT-maintained roadways located within the Town of Black Mountain. These roadways include US 70/E State Street (approximately 10,500 AADT), NC 9/Montreat Road (approximately 7,700 AADT), and Flat Creek Road (approximately 2,200 AADT). While the multi-use path will run adjacent to I-40, there are potential interactions with the interstate at key crossings and interchanges. I-40 is the highest volume roadway in the study area with volumes near 33,000 AADT. The design of the future Fonta Flora paved trail should account for traffic volumes, when considering how to make the trail comfortable for pedestrians and cyclists of all ages and abilities.

Speed Limits

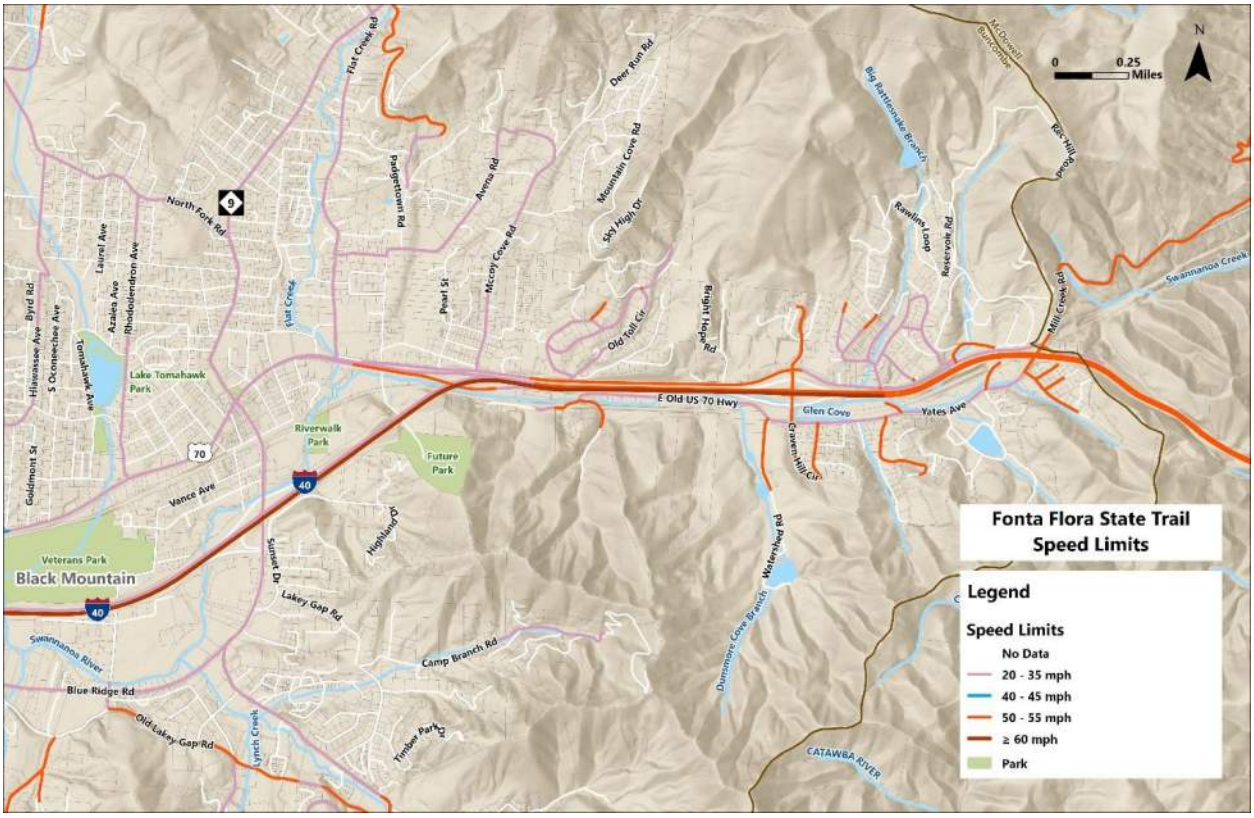


Figure 34. Speed Limits

As shown in **Figure 34**, speed limits vary between 55 miles per hour (mph) and 35 mph along the study corridor (NCDOT Speed Limits Map). The segment of Old US Highway 70 west of the I-40 interchange has a 55-mph speed limit, but the speed limit decreases to 35 mph east of the I-40 interchange. Mill Creek Road in McDowell County has a posted speed limit of 55 mph. The design of the future Fonta Flora paved trail should consider these speed limits, as well as observed speeds, when considering how to make the trail comfortable for pedestrians and cyclists of all ages and abilities.

Crash Data

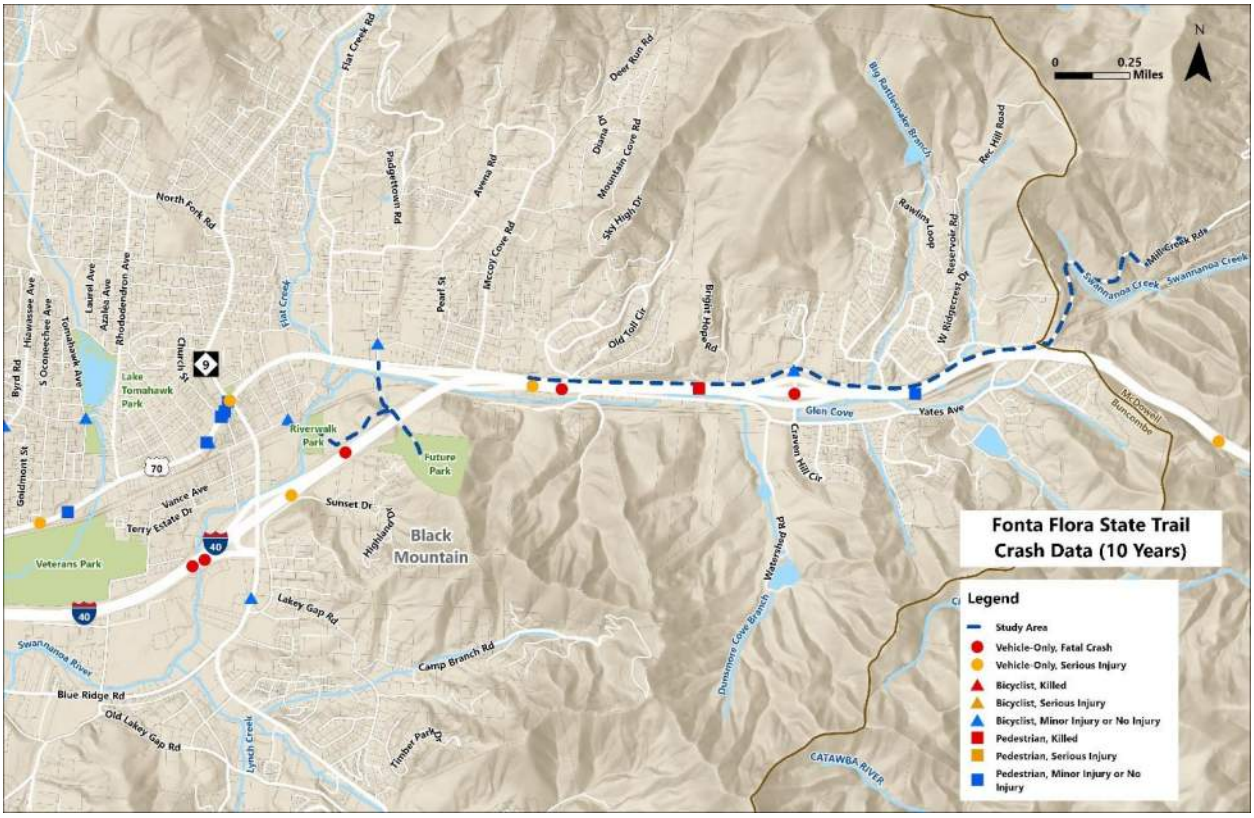


Figure 35. Crash Data

The project team reviewed crash data from January 1, 2014 to December 31, 2023 to evaluate safety for all users. In the last ten years, there was one pedestrian crash that occurred along Old US Highway 70 in the study area. This was a minor injury crash involving a pedestrian walking adjacent to the roadway. No fatal or severe bicycle/pedestrian crashes occurred along the study roadways in this timeframe. However, there are numerous crashes nearby that are notable for multimodal safety. As illustrated in **Figure 35**, bicyclist and pedestrian crashes are concentrated near downtown Black Mountain, an area where more people walk and bike to reach destinations. Fatal and severe injury crashes tend to be located along the higher volume and higher speed roadways like I-40 and US 70. The residential communities of eastern Black Mountain and Buncombe County, as well as Ridgecrest, would benefit from a safe walking and biking facility that would directly connect them to downtown Black Mountain and Point Lookout Trail.

PREVIOUS PLAN REVIEW

The project team reviewed previous trail plans near the study area to evaluate connections and alignment opportunities with this Fonta Flora Paved Trail Feasibility Study. Relevant plans are discussed below.

US 70/Swannanoa River Greenway Feasibility Study

The US 70/Swannanoa River Greenway Feasibility Study was conducted for the Buncombe County Greenways and Trails Commission in 2010. Funding for this multi-jurisdictional project came from the French Broad River Metropolitan Planning Organization (FBRMPO). The study was split into five geographical focus areas, including the Town of Black Mountain and Ridgecrest. Due to the many individual greenway projects taking place in the area, the study aimed to provide a "Map of Possibilities" for trail alignments.

The study recommended a 10-foot asphalt trail for the study area of the US 70/Swannanoa River Greenway but did not make side-of-street distinctions or provide typical sections.

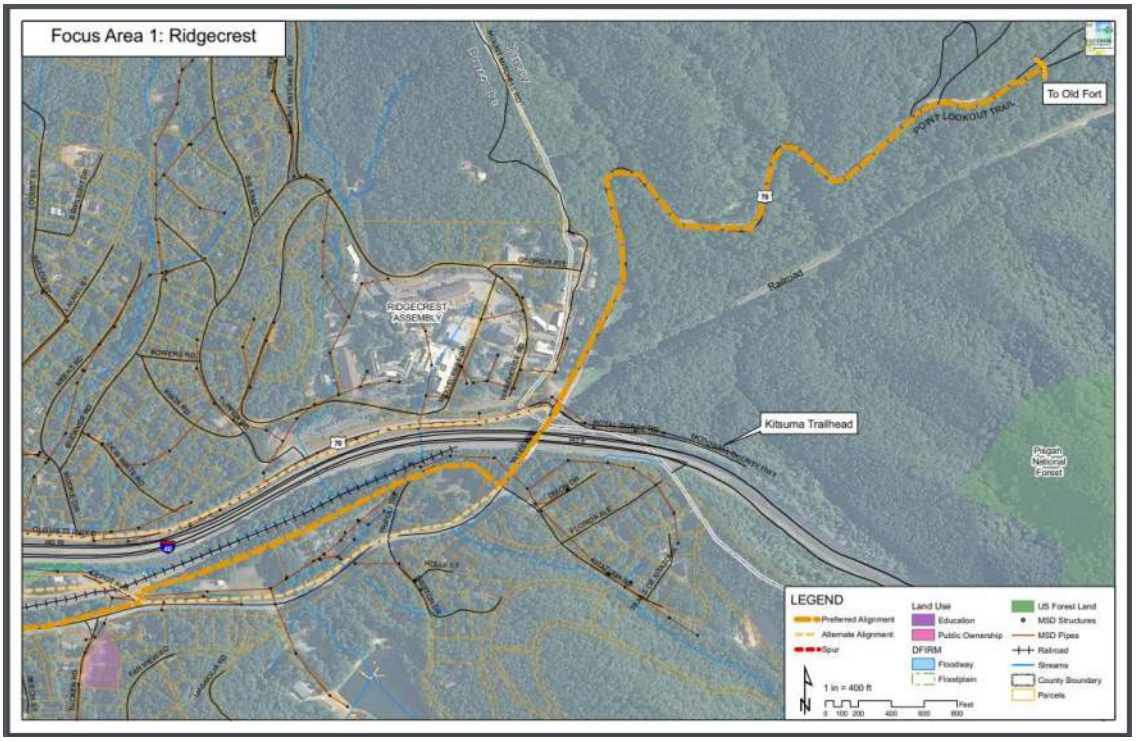


Figure 36. Proposed US 70/Swannanoa River Greenway Alignment near Ridgecrest (US 70/Swannanoa River Greenway Feasibility Study, 2010)

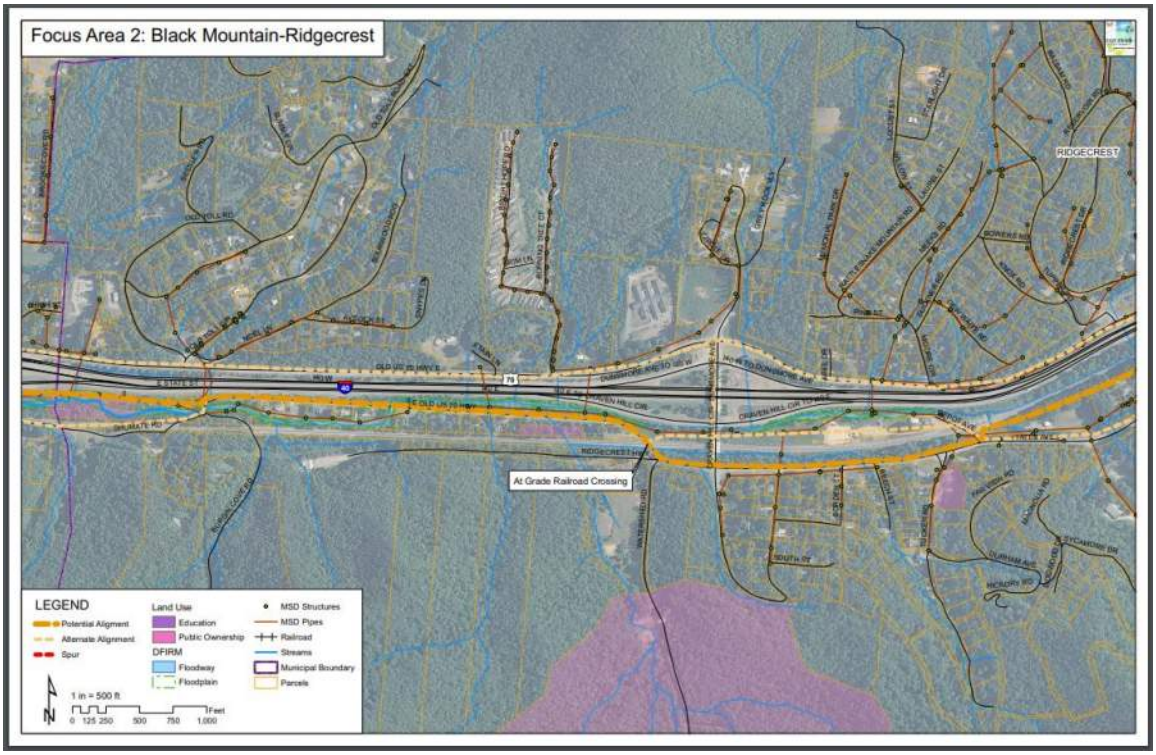


Figure 37. Proposed US 70/Swannanoa River Greenway Alignment between Black Mountain and Ridgecrest (US 70/Swannanoa River Greenway Feasibility Study, 2010)

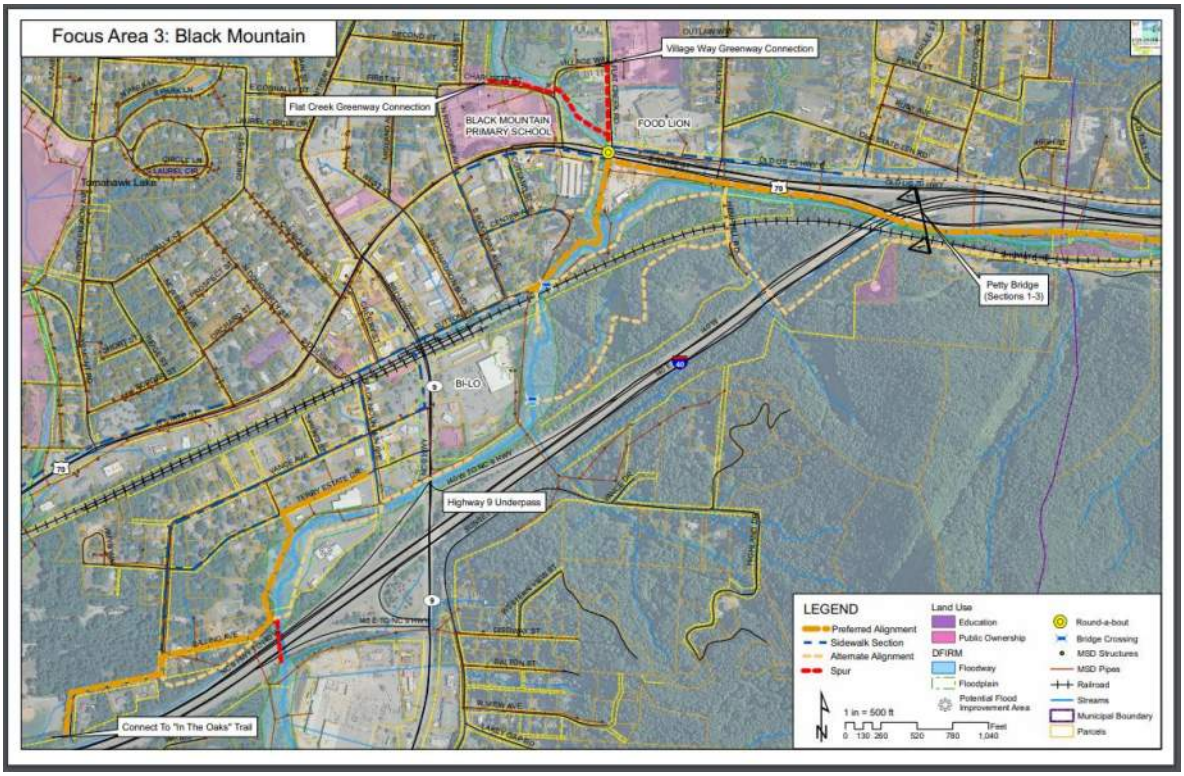


Figure 38. Proposed US 70/Swannanoa River Greenway Alignment near Black Mountain (US 70/Swannanoa River Greenway Feasibility Study, 2010)

Ridgecrest Trail Connector

The Ridgecrest Trail Connector Feasibility Study was completed in 2024 by the French Broad River MPO, NCDOT Integrated Mobility Division (IMD), and the Town of Black Mountain. This trail segment was previously identified in the Town of Black Mountain Greenway Master Plan (2019). The study evaluated options to provide a multi-use paved trail in the Town of Black Mountain from Scotland Street to the Town of Black Mountain boundary just east of High Street. The paved trail would run along US 70 and Old US Highway 70 East along the north side of the roadway. The study recommended two typical sections.

The first typical section is a 10-foot concrete multi-use path separated from Old US Highway 70 East by a planting strip and curb-and-cutter (shown in **Figure 39**). The 10-foot concrete path section runs from Scotland Street to Flat Creek Road. A trail with this typical section is likely feasible for this Paved Trail Feasibility Study and will be considered in subsequent tasks.

The second typical section is an in-street, 10-foot asphalt path with a 1.5-foot concrete monolithic island (**Figure 40**). This 10-foot in-street asphalt path section runs from Flat Creek Road to the Town of Black Mountain Boundary.

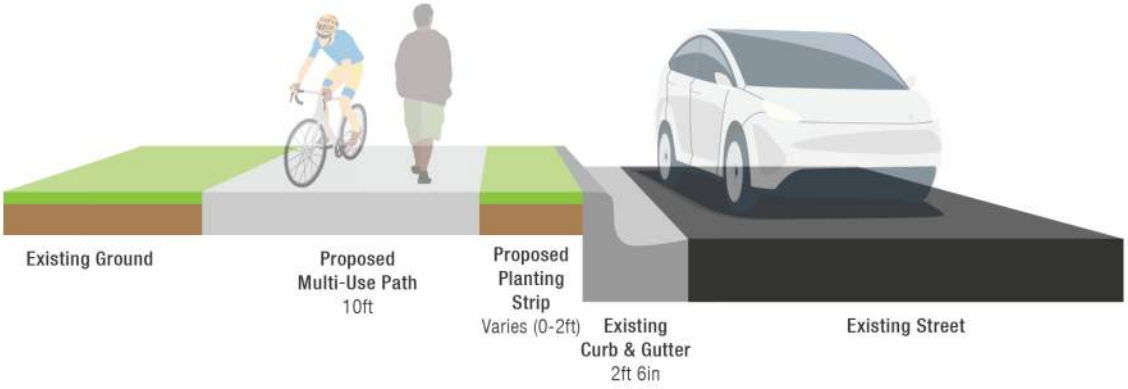


Figure 39. Ridgecrest Trail Connector Concrete Multi-Use Path Typical Section
(Ridgecrest Trail Connector Feasibility Study, 2024)



Figure 40. Ridgecrest Trail Connector In-Street Multi-Use Path Typical Section
(Ridgecrest Trail Connector Feasibility Study, 2024)

Comprehensive Parks and Recreation Master Plan

The Town of Black Mountain's Comprehensive Parks and Recreation Master Plan was adopted by Town Council in 2023. The plan outlines a set of recommendations related to future parks and recreational improvements throughout the Town. The plan recommends acquiring the Hemphill property (and two adjacent parcels) to expand River Walk Palk and construct a new community park. The two parcels adjacent to River Walk Park were proposed to expand the existing trail network and serve as a link between River Walk Park and the proposed new community park on the Hemphill property.

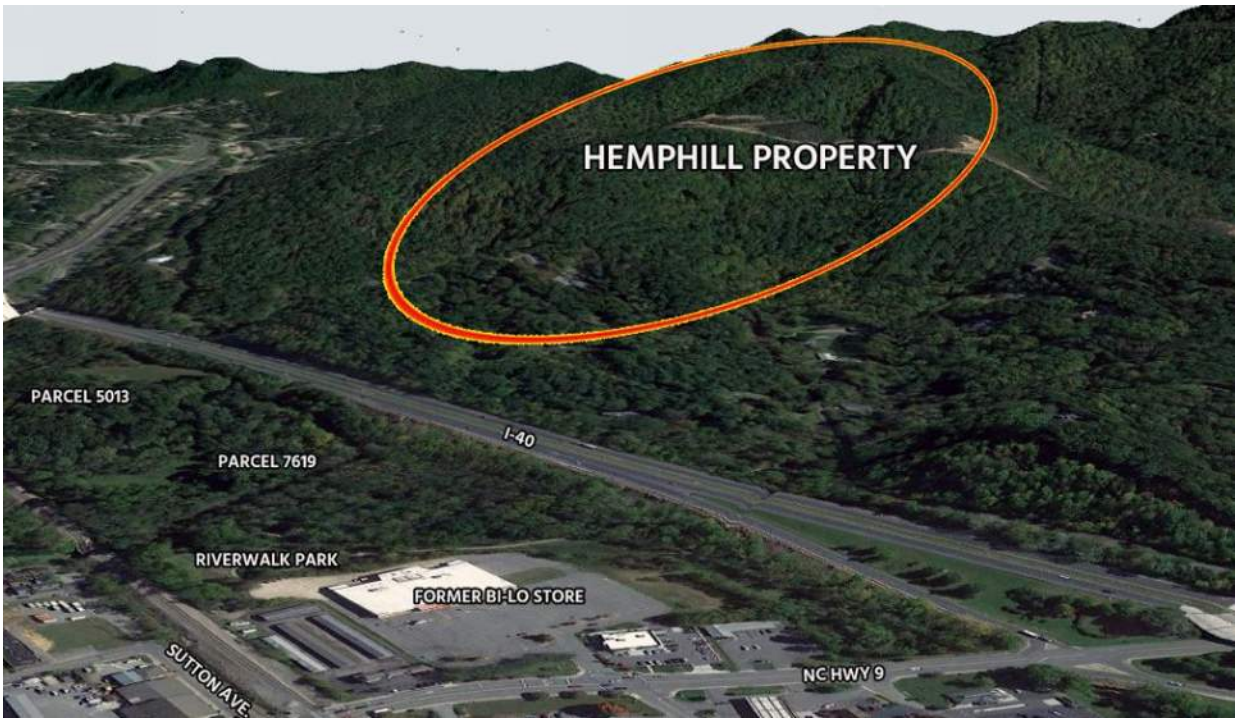


Figure 41. Hemphill Property and Parcels Adjacent to River Walk Park
(Comprehensive Parks and Recreation Master Plan, 2023)

FIELD REVIEW

The project team participated in a field review to better understand conditions along the study area following the impacts from Hurricane Helene in Fall 2024. Detailed notes from the field review are included in **Appendix A**.

Key findings from the field review included:

- There is noticeable property and infrastructure damage from Hurricane Helene, especially near River Walk Park, Hemphill Road, and Mill Creek Road.
- Access to the Hemphill property south of I-40 would require re-purposing the existing tunnel, railroad crossing, and Swannanoa River crossing.
- There are pedestrian and bicycle safety concerns at the US 70/Hemphill Road intersection.
- There is limited space south of Old US Hwy 70.
- There are steep slopes on both sides of Mill Creek Road.



Figure 42. Field Review Photos
(Clockwise from top left: steep slopes along Mill Creek Road; Flood debris from Hurricane Helene in the Swannanoa River; River Walk Park entry sign; Hemphill Road underpass beneath I-40)

KEY TAKEAWAYS

The review of existing conditions resulted in the following key takeaways that will play an important role in shaping the preferred alignment and design of this segment of the Fonta Flora paved trail.

- Previous trail feasibility studies provide useful guidance for the Fonta Flora paved trail alignment and design decisions.
- The preferred alignment should connect to the Ridgecrest Trail Connector in Black Mountain.
- The north side of Old US Hwy 70 has fewer space constraints than the south side that is adjacent to I-40.
- A 10-foot paved trail is an ideal width in locations without space constraints.
- There are more key destinations along the north side of Old US Hwy 70.
- Natural environment constraints, such as steep slopes and interactions with floodplains, are present throughout the study area.

Stakeholder and Public Outreach

This Fonta Flora Paved Trail Feasibility Study was informed by early and continuous engagement with community members through a variety of channels and opportunities. The engagement process occurred primarily in the Town of Black Mountain to promote local participation. A formal Steering Committee provided opportunity for local agency leaders, stakeholders, and community members to work directly alongside the project team to develop a project vision, goals, and final recommendations. Two additional outreach opportunities were conducted in July 2025 and October 2025 at the Black Mountain Tailgate Market. The project team came to this community event to discuss trail alternatives and collect public feedback on project's final recommendations.

STEERING COMMITTEE

The Steering Committee was comprised of a broad range of project stakeholders that represented a range of interests from local and regional government, trail advocacy, economic development, and state parks and trails. The organizations represented on the committee include:

- Town of Black Mountain
- Town of Marion
- Town of Old Fort
- Buncombe County
- McDowell County
- Land of Sky Regional Council
- Foothills Regional Commission
- North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD)
- North Carolina State Parks
- Friends of the Fonta Flora State Trail
- Local community members and trail advocates

March Steering Committee Meeting

Steering Committee members participated in the kickoff meeting for the Fonta Flora Paved Trail Feasibility Study on March 6th, 2025. The purpose of this kickoff meeting was to identify the values held by Black Mountain, Buncombe County, and McDowell County residents and stakeholders that should be reflected in a new paved trail. Project goals and a vision statement were drafted by the Steering Committee and later refined by the project team. These goals, and the project vision statement, guided the development of paved trail recommendations. See the "Executive Summary" for the project goals and vision statement.

Information used to inform paved trail recommendations:

- Project goals
- Project vision statement

May Steering Committee Meeting

The purpose of the second Steering Committee meeting (May 12, 2025) was to confirm the project vision statement and goals, review the existing conditions analysis, and discuss trail alignment alternatives. Steering Committee members offered input on the preliminary recommendations for each potential trail segment of the Fonta Flora Paved Trail. This discussion informed the trail alignment alternatives evaluation that was used to select a preferred trail alignment. The **Alternatives & Evaluation** section of this report details the segment evaluation process and findings.

Information used to inform paved trail recommendations:

- Confirmation of existing conditions analysis findings
- Feedback on the opportunities and challenges for each potential trail alignment

October Steering Committee Meeting

The purpose of the third Steering Committee meeting (October 17, 2025) was to revisit progress from previous phases of the project, collect feedback on final recommendations, and discuss next steps to implement this segment of the Fonta Flora State Trail. The committee discussed the recommended preferred alignment and preliminary concept design, including important side-of-street decisions, typical trail design, and trail amenities. Two key pieces of feedback were offered by the Steering Committee. First, the US Forest Service gate at the Point Lookout Trailhead should be upgraded to be ADA-compliant so that wheelchair users can access the trail. Second, the Fonta Flora paved trail could be a candidate for potential funding through NCDOT's Strategic Transportation Prioritization (SPOT) process. Finally, next steps to implement the trail were discussed with potential actions for government staff, NCDOT, and local trail advocates/residents.

Information used to inform paved trail recommendations:

- Confirmation of final recommendations
- Feedback on trail amenities and potential funding opportunities



Figure 43. Steering Committee Members at the October 17, 2025 Meeting
(From left Steve Pierce - Friends of the Fonta Flora State Trail Board; Hannah Bagli - Land of Sky Regional Council; Chloe Donohoe - Buncombe County)

PUBLIC ENGAGEMENT

The two community pop-up events in Black Mountain at the Black Mountain Tailgate Market allowed for residents and visitors to share their thoughts on the study and its recommendations.

July Community Pop-Up

The Fonta Flora Paved Trail Feasibility Study team visited the Black Mountain Tailgate Market on Saturday, July 5, 2025 to collect feedback on the existing conditions analysis and the preferred trail alignment. The pop-up engagement event was advertised via social media and flyers that were distributed to local businesses. In total, the project team spoke with over 160 people and collected significant feedback that led to several important takeaways.

These key takeaways directly influenced the final recommendations for the paved trail:

1. Community members and project stakeholders agree that a trail alignment along Old US Hwy 70 connects to more destinations (such as Ridgecrest Conference Center) and involves fewer challenges (such as railroad crossings, river crossings, and limited right-of-way) than other potential alignments.
2. Yates Avenue and additional neighborhood streets that connect to Old US Hwy 70 are frequently used as walking and biking routes. The trail should provide access and safe connections to these other routes.
3. Residents of Black Mountain, Buncombe County, and McDowell County want to be involved in the planning process and act as champions for the Fonta Flora Paved Trail.



Figure 44. July Pop-Up at Black Mountain Tailgate Market

October Community Pop-Up

The Fonta Flora Paved Trail Feasibility Study team visited the Black Mountain Tailgate Market on Great Trails State Day (Saturday, October 18, 2025) to share the final recommendations for a section of the Fonta Flora State Trail. The pop-up engagement event offered an opportunity for residents and visitors to learn more about the trail and ask questions directly to the design team. Over 100 people stopped by the booth during the market, demonstrating strong interest in the trail alignment. Attendees reviewed proposed improvements, discussed the feasibility study findings, and shared feedback on the proposed alignment. In general, feedback on the proposed alignment overwhelmingly confirmed support for the preferred alternative.



Figure 45. October Pop-Up at Black Mountain Tailgate Market

Alternatives & Evaluation

Informed by the existing conditions and community outreach, several alternatives for the paved trail were identified and evaluated to determine a recommended alignment for the Fonta Flora State Trail. Some initial ideas for potential trail alignments were submitted during the project's application for funding to NCDOT IMD. These alignments were vetted by the project team with the project's goals in mind. These initial alternatives were then refined to establish a preferred alternative based on a screening evaluation, community input, and consideration of potential costs.

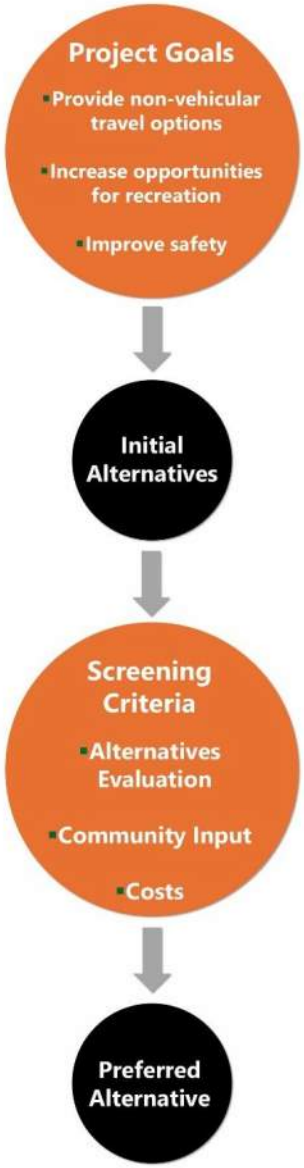


Figure 46. Development of Initial Alternatives and Selection of Preferred Alternative Process

ALIGNMENT ALTERNATIVES EVALUATION

The project team evaluated the various alignment alternatives based on a set of 13 criteria, then reviewed the results with the Steering Committee to confirm a recommended preferred alignment. Those criteria include:

- Structures required
- Impacts to existing curb
- Private property impacts
- Utility impacts
- Creek/river/tributary crossings
- Major street crossings
- Slopes
- Flood-way impact
- Access to destinations
- Access to employment centers
- User comfort
- Opportunity to leverage hurricane recovery projects
- Cost

Screening Segments

Six potential trail segments were evaluated as follows (See **Figure 47**):

- **Segment A**: River Walk Park connection from River Walk Park to Hemphill Road
- **Segment B**: Hemphill Road connection from future Town of Black Mountain Park to Ridgecrest Trail Connector
- **Segments C1 & C2**: Both sides of Old US Hwy 70 from Town of Black Mountain Limits (Old Toll Circle) to Mill Creek Rd/Yates Ave
- **Segments D1 & D2**: Both sides of Mill Creek Road from Old US Hwy 70/Yates Ave to the existing Point Lookout segment of the Fonta Flora State Trail

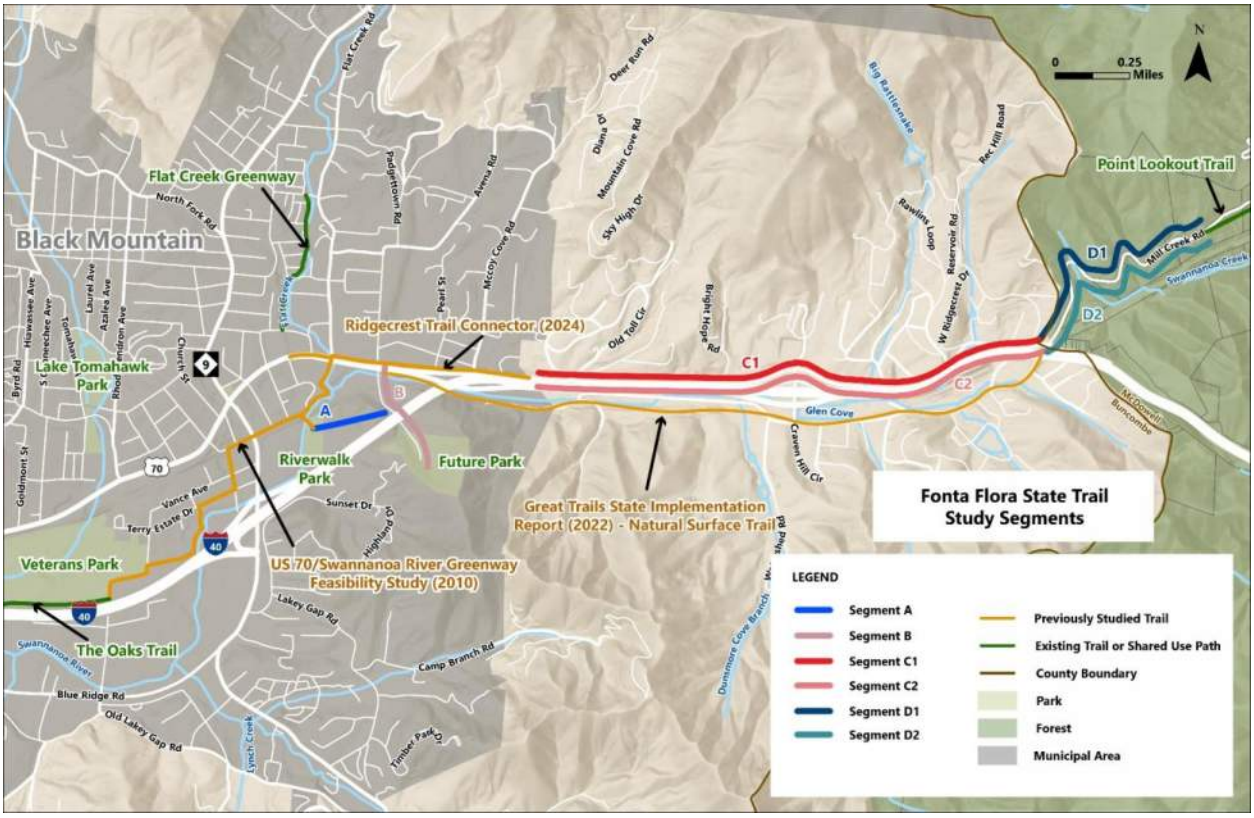


Figure 47. Fonta Flora Paved Trail Screening Segments

Segments A and B were evaluated as potential future connections to Town of Black Mountain park properties. For the purposes of this study, it was assumed that the primary route for the Fonta Flora State Trail would follow previously studied/designed alignments through the Ridgecrest Trail Connector and the US70/Swannanoa River Greenway Feasibility Study (see orange lines in **Figure 47**, above). Segments A and B are included as secondary recommendations and important connections to the mail trail alignment. Both segments will require further study. See "Secondary Recommendations" below.

Screening Criteria

Potential trail segments were screened against multiple criteria prioritizing user comfort, constructability, and alignment with NCDOT's Strategic Transportation Investments (STI) process. The STI process establishes a formula which allocates available funding based on data-driven scoring and local input. Thirteen total criteria were used to screen six trail segments. This included a side-of-street evaluation for the Old US Hwy 70 and Mill Creek Road segments which considered major street crossings and access to destinations. Some criteria were quantitative (i.e. length, number of creek crossings, and number of structures required), while others were qualitative (access to destinations, user comfort, and roadway reconfiguration). **Table 3** highlights each of the criteria used to prioritize trail segments.

Table 3. Segment Screening Criteria

Criteria Category	Criteria	Measure
STI Prioritization	Structures required	Type, Length
	Impacts to existing curb	Yes/No
	Private property impacts	Right-of-Way Area (square feet)
	Utility impacts	None/Minor/Significant
Constructability	Creek/river/tributary crossings	Count
	Major street crossings	Count
	Slopes	Few/Some/Significant
	Flood-way impact	Yes/No
	Cost	Dollars
	Opportunity to leverage hurricane recovery projects	Maybe/No
User Experience	Access to destinations	Fair/Good
	Access to employment centers	Fair/Good/Excellent
	User comfort	Fair/Good/Excellent

The potential trail segments were evaluated by referencing available spatial data, findings from the field review, data collected during the existing conditions analysis, and other relevant resources provided by Black Mountain, Buncombe County, McDowell County, and NCDOT (

Table 4). The recommended preferred trail alignment was chosen after referencing evaluation matrix screening results and gathering feedback from the Steering Committee. See **Appendix B** for the full evaluation matrix.

Table 4. Segment Screening Evaluation

Segment	Field Review Findings	Evaluation Findings
A (River Walk Park Connection)	■ Significant damage from Hurricane Helene (River Walk park is currently closed) ■ A greater than 100-foot bridge/boardwalk section will be required to cross the Swannanoa River	■ No impact to private property ■ Limited utility impacts ■ Opportunity to expand and rebuild River Walk Park and tie into the River Walk Trail ■ FEMA buyouts and recovery efforts are still in process
B (Hemphill Road)	■ Apparent damage from Hurricane Helene to structures along Hemphill Road	■ Further study required to understand the feasibility of improving the narrow Swannanoa River bridge, at-grade crossing of Norfolk Southern railroad tracks, and single lane underpass beneath I-40

	■ Intersection improvements would be required to support safe pedestrian and bicycle crossings at the intersection of US 70 and Hemphill Road	■ Topography challenges ■ Important connection between the future park south of I-40 and to the Fonta Flora State Trail / Ridgecrest Trail Connector
C1 & C2 (Old US Hwy 70)	■ Limited space south of Old US Hwy 70 due to retaining the wall, guardrail, and fence between I-40 ■ Numerous residential driveways located close to the street on the north side ■ Dense vegetation/potential utility conflicts in areas	■ Important connection to the Ridgecrest Conference Center ■ Some potential impact to private property at Ridgecrest Conference Center ■ Many conflicts with driveways and minor streets
D1 & D2 (Mill Creek Road)	■ Steep slopes throughout Mill Creek Rd ■ Opportunities to provide trail parking ■ Coordination with NCDOT needed to determine if road reconstruction efforts following Hurricane Helene may provide an opportunity to accommodate a paved trail.	■ Likely no impacts to private property – needs survey and geotechnical analysis to confirm extents of grading ■ Significant topography challenges ■ Important connections to both Point Lookout and Kitsuma Peak trailhead

Side-of-Street Considerations

Side-of-street options were evaluated for Segment C (Old US Hwy 70) and Segment D (Mill Creek Road).

Old US Hwy 70: For Segment C, the north side of Old US Hwy 70 was determined to be a more feasible alignment for its constructability, access to destinations, and connection to the Ridgecrest Connector Trail which is being advanced toward final design and construction by the Town of Black Mountain. Conversely, the south side of Old US Hwy 70 has limited space due to right-of-way constraints with I-40, would likely require roadway reconfiguration in some spots, would not connect directly to the Ridgecrest Connector Trail, and has greater concerns for user safety and comfort.

Mill Creek Road: For Segment D, the side-of-street considerations revolved around steep slopes adjacent to the mountainside and whether to place the trail along the upslope or downslope side of Mill Creek Road. On the upslope side, the trail would require construction of significant retaining wall structures. On the downslope side, the trail would require construction of a modular boardwalk.

The Steering Committee decided that cost should be used as the primary deciding factor between these two options. The project team completed a preliminary opinion of probable cost, with the upslope/retaining wall option determined to be less costly.

Upslope Trail Alignment (Segment D1)				Downslope Trail Alignment (Segment D2)			
TOTAL COST	Construction Cost	Private Property Impacts	Right-of-Way Cost	**TOTAL COST**	Construction Cost	Private Property Impacts	Right-of-Way Cost
$9,473,430	$9,379,680	20,000 SF	$93,750	**$14,129,380**	$17,036,630	20,000 SF	$93,750

NOTE – At this stage of concept development there are still significant project unknowns that limit the detail and accuracy of this preliminary opinion of probable costs. The construction line item costs were developed using broad per mile, per square foot, and/or per intersection assumptions for major design treatments. No survey or geotechnical analysis has been completed at this stage to calibrate right-of-way acquisition assumptions or to inform design development, materials quantities, utilities impacts, or other cost components. No appraisals have been completed to verify the potential real estate costs. The project costs include broad percentage assumptions for survey, design, and construction management. A significant contingency percentage has been assumed to account for the significant unknown project conditions that exist at this stage. Project costs were developed using 2025 dollars.

Figure 48. Diagram of Mill Creek Rd. Options – Segment D1 upslope trail alignment with cut and retaining wall structures (left) vs. Segment D2 downslope trail alignment with modular boardwalk (right)



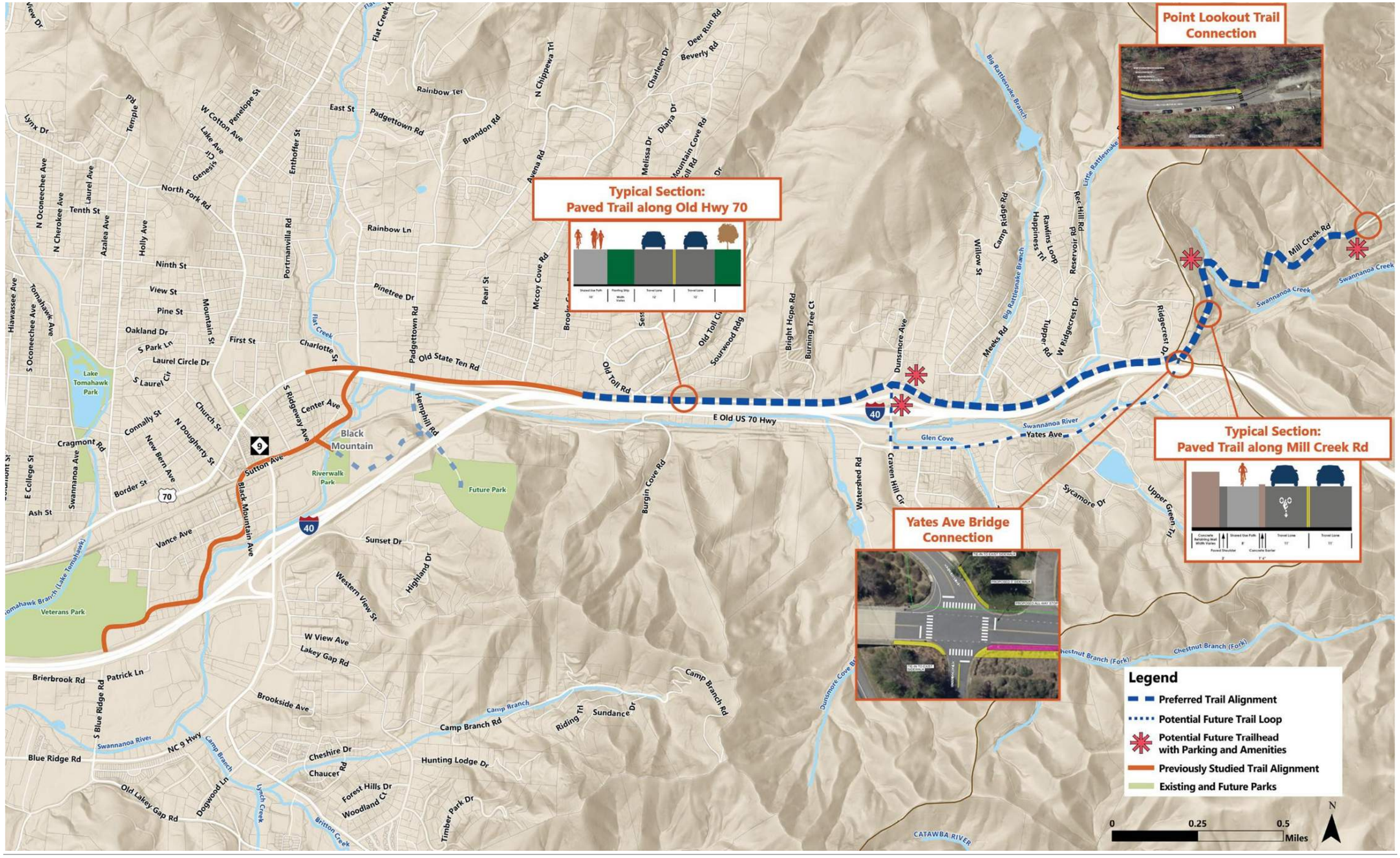
Recommendations

PRIMARY ALIGNMENT

The preferred alignment for the Black Mountain to Point Lookout Trail Segment of the Fonta Flora State Trail is illustrated in **Figure 49**. This alignment was selected based upon the screening evaluation and input from the study's Steering Committee and Black Mountain, Buncombe County, and McDowell County staff. This same figure (**Figure 49)** also illustrates potential locations for future trailheads that could be considered in partnership with Buncombe County or private sponsors (see the **Trail Amenities** section for more information on trailheads).

The preferred alignment for the trail is along the north side of Old US Hwy 70 and the upslope side (north/west side) of Mill Creek Road. Intersection safety improvements, such as adding stop bars and high visibility crosswalks, related to the trail, are recommended at Dunsmore Avenue and Yates Avenue. These intersection safety improvements will facilitate connections to residential areas as well as additional walking/biking routes that were identified while speaking to community members during the Black Mountain Tailgate Market pop-up engagement events. Potential trailhead and parking improvements should be considered at Dunsmore Avenue, Mill Creek Road, and the Point Lookout trailhead.

Figure 49. Preferred Alignment and Potential Trailhead Locations



Recommended Design Standards

For this Fonta Flora State Paved Trail Feasibility Study, typical design standards were established to facilitate the implementation of a paved trail that provides safe opportunities for outdoor recreation and connectivity between Black Mountain and Point Lookout Trail. The proposed design standards emphasize separation between vehicles and trail users. Two different typical sections were developed to accommodate the unique design challenges on Old US Hwy 70 and Mill Creek Road. Additionally, these design standards reflect the proposed 10-foot typical width for the Ridgecrest Trail Connector design. The 10-foot shared-use path recommended below will provide a consistent experience for Fonta Flora State Trail users.

The standard design criteria for elements of the paved trail are outlined below:

- The typical section along Old US Hwy 70 is a 10-foot paved trail separated from the roadway with a planting strip of varied widths (**Figure 50**). In most locations, the plating strip would function as a drainage swale.

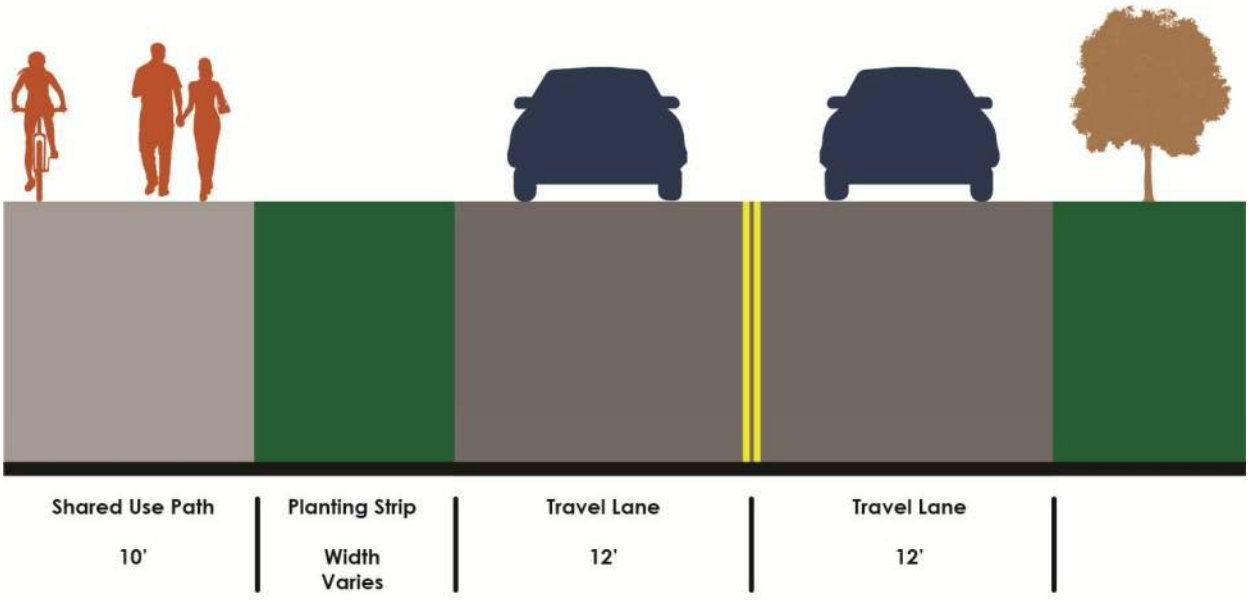


Figure 50. Old US Hwy 70 Typical Section – Recommended preferred alignment on the north side of the street

- The typical section along Mill Creek Road includes an 8-foot paved trail and a 2-foot paved shoulder (**Figure 51**). These may be paved in the same material to achieve a consistent 10-foot paving treatment. However, to account for shy distance from the necessary retaining walls on the upslope side, the usable width of the trail is still assumed to be 8 feet. A concrete barrier (1' 6" wide and curb height) is proposed to separate trail users from the roadway. The barrier could be modular curb / parking blocks or a cast in place curb with regular breaks to accommodate stormwater drainage. A sharrow (i.e., shared travel lane and bike lane) is proposed in the downhill direction. This provides another option for downhill cyclists that are comfortable riding in traffic with less speed differential between downhill cyclists and vehicles than cyclists riding in the uphill direction.

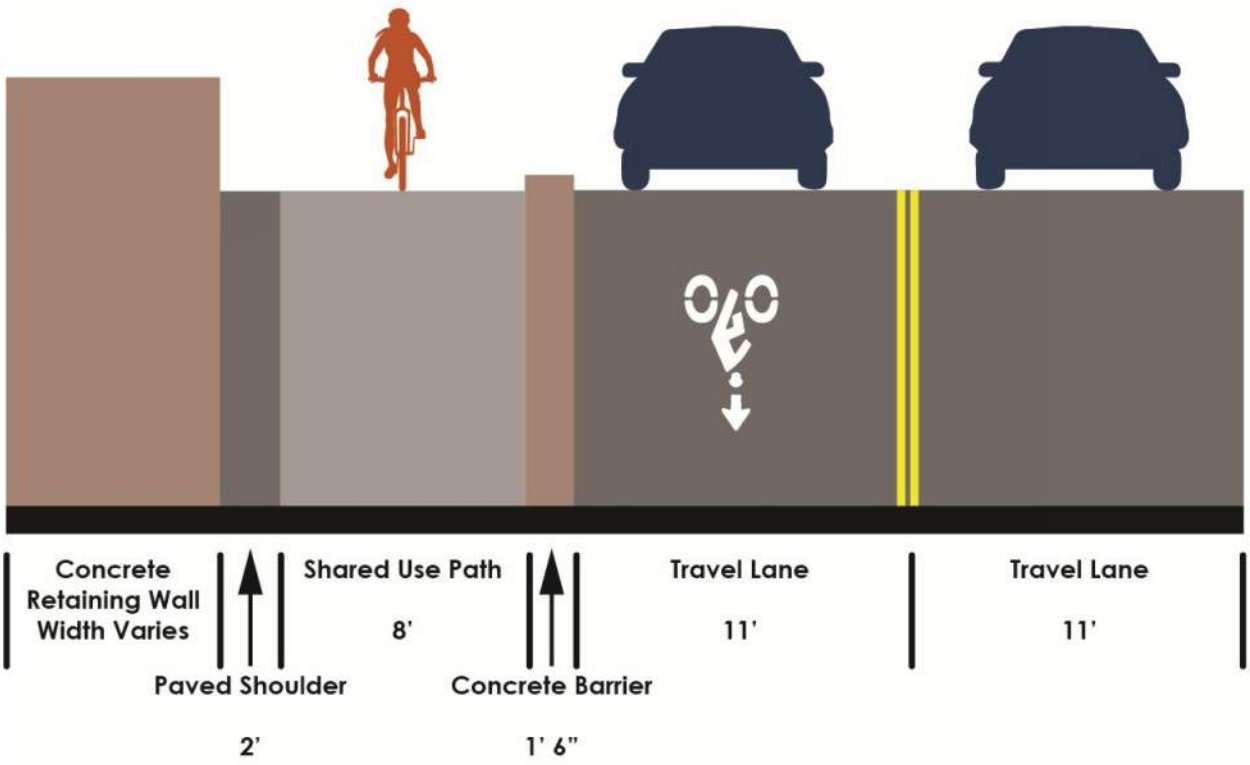


Figure 51. Mill Creek Road Typical Section – Recommended preferred alignment on the upslope (north/west) side of the street

SECONDARY RECOMMENDATIONS

In addition to the primary Fonta Flora State Trail alignment along Old US Hwy 70 and Mill Creek Road, there are several important opportunities for supporting improvements that were emphasized by the Steering Committee and the public for inclusion as secondary recommendations within this feasibility study.

Future Yates Avenue/Dunsmore Avenue Sidewalk Loop

A sidewalk loop along Yates Avenue between Dunsmore Avenue and Yates Avenue was identified as a potential future improvement to support access to the Fonta Flora State Trail. Field observations and discussions with community members at both pop-up events revealed that this is an existing route used by pedestrians and bicyclists in the region. This loop will also promote safer access for pedestrians and bicyclists to residential areas south of I-40.

The concept trail design provides crossing improvements at both the Yates Avenue and Dunsmore Avenue intersections with Old US Hwy 70 to support safe access to this future connection and to the Kitsuma Trailhead parking lot (**Figure 52**). Improvements at these intersections include extended sidewalks, high-visibility crosswalks, stop bars, and a potential all-way-stop conversion.

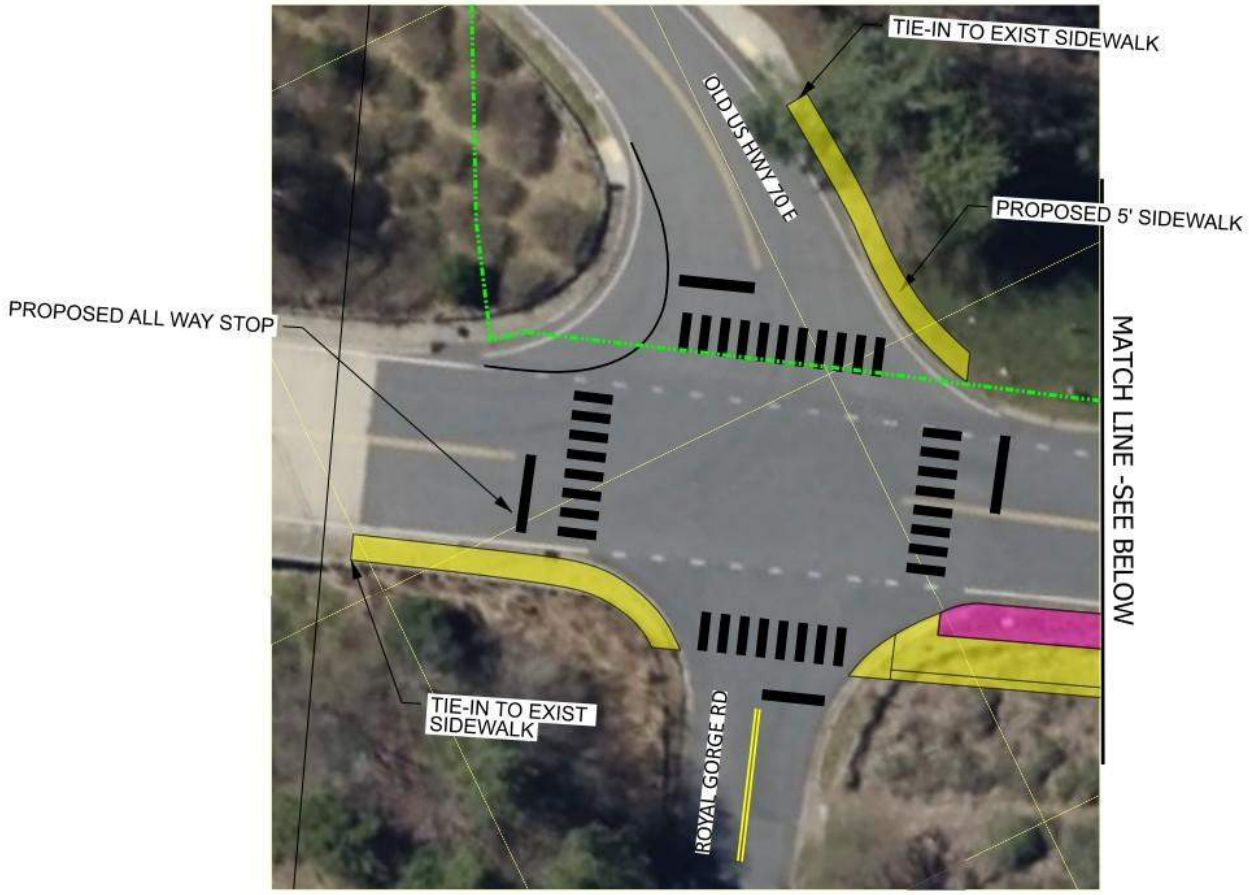


Figure 52. Concept Design for Intersection Improvements at Yates Avenue

Future River Walk Park and Hemphill Road Connections

River Walk Park (Segment A) and Hemphill Road (Segment B) were identified as key future connections to the primary Fonta Flora State Trail alignment.

Segment A (River Walk Park connection) would establish an important connection to the 2-acre River Walk Park. Prior to Hurricane Helene, the park included a small dog park, picnic tables, and a ½ mile walking trail along the Swannanoa River. These amenities were heavily impacted by flooding from Hurricane Helene. This proposed trail connection is entirely within the floodplain area and will require a new bridge over the Swannanoa River. It is also near potential FEMA flood buyout parcels that may accommodate the future trail. Due to uncertainty with ongoing FEMA flood buyouts and damage from Hurricane Helene, a specific alignment for this future trail segment was not identified.

Segment B (Hemphill Road connection) follows a privately maintained road between Old US Hwy 70 and property that was recently purchased by the Town of Black Mountain for a future park. Hemphill Road involves three significant challenges for future trail design and construction – a narrow existing bridge over the Swannanoa River, an at-grade crossing of the Norfolk Southern railroad tracks, and a single-lane underpass beneath I-40. All 3 of these locations may require costly improvements to accommodate a future paved trail.

These potential future improvements should continue to be studied/completed in association with the Town of Black Mountain Parks and Recreation's evaluation of a future park at the Hemphill property. There are numerous issues to consider related to access and usage of the routes between the Fonta Flora State Trail, the future town park at the Hemphill property, and River Walk Park:

- Anticipated park usage
- Future Hemphill Road maintenance
- Hemphill Road crossing of Norfolk Southern railroad tracks
- Single-lane underpass beneath I-40
- Future intersection improvements (likely to require a new traffic signal) at Hemphill Road/State Street/Old US Hwy 70 intersection
- Trail bridge crossing of Swannanoa River



Figure 53. River Walk Park and Hemphill Road

CONCEPT PLAN

A preliminary concept plan illustrating the project's recommended improvements can be found in **Appendix C**. Preliminary opinions of probable cost for the recommended phases of trail design and construction can be found in **Appendix D**. Project cutsheets for each of the paved trail network phases were developed to support future funding applications through NCDOT's Strategic Transportation Investments (STI) process, and can be found in **Appendix E**.

TRAILHEADS

Trailheads with parking were identified by the Steering Committee as a key amenity for the Fonta Flora State Trail. Trailheads play an important role in transforming a trail into a recreation destination by designating specific locations for beginning and ending trail trips. Vehicular and bicycle parking at trailheads provides an additional level of trail accessibility for residents and tourists who might be visiting from further distances. The following trailhead locations were recommended for this segment of the Fonta Flora State Trail.

- ***Old US Hwy 70 at Dunsmore Avenue:*** A trailhead location with parking at Dunsmore Ave would facilitate easy access to trail users traveling from I-40. It would support a key connection to residential areas north and south of I-40. This trailhead would also serve as one end of the future Yates Avenue/Dunsmore Avenue sidewalk loop discussed as a secondary recommendation for the trail. Two potential trailhead locations were identified at this intersection. Both are within NCDOT right-of-way. Establishing a trailhead here would require intersection safety improvements to accommodate pedestrian and bicycle crossings.
- ***Mill Creek Road at Point Lookout Trail:*** There is an existing informal trailhead with limited parking at this location. Parking and amenities should be upgraded to create a formal trailhead at this popular midpoint location along the Fonta Flora State Trail between Black Mountain and Old Fort. Space for additional parking and amenities here is limited by challenging topography.
- ***Along Mill Creek Road:*** While upgrading the existing informal trailhead at the Point Lookout Trail should be a greater priority, establishing another parking area along Mill Creek Road would be a welcome amenity on busy weekends when parking areas fill up. There is a flat area in a switchback along Mill Creek Road that could accommodate a small parking area and trail amenities, although slope stability and stormwater issues would need more detailed study.

TRAIL AMENITIES

Trail amenities play an important role in improving trail safety and comfort for all types of users. Amenities can improve trail access (neighborhood connections or trailhead parking), beauty (public art or landscaping gardens), comfort (benches or restrooms), and ease of use (wayfinding). Based on guidance from the Steering Committee, the project team prioritized a set of amenities that would be most beneficial for inclusion along the Fonta Flora Paved Trail (**Table 5**). These preferred amenities are in alignment with amenities on other segments of the Fonta Flora State Trail and would help support a consistent user experience.

Table 5. Preferred Trail Amenities

Trail Amenity	Example	Benefits	Costs (per unit)
Trailheads/Parking		Designated locations to begin/end trail trips for recreation users	$10,000 to $1,000,000 *(depending on amenities included)*
Trail Signage / Wayfinding		Assist trail users with accessing key destinations throughout Buncombe County and McDowell County	$500 to $2,000 per wayfinding sign post
Trail Branding		Support trail identity and user awareness of State Trail system	$500 to $2,000 per sign *(depending on size/type and foundation requirements)*
Collapsible Bollards (or other ADA-compliant gate feature) **at Point Lookout Trailhead**		Prevent vehicle encroachment on Point Lookout Trail while providing access to maintenance vehicles and trail users with limited mobility	$200 to $400 per bollard *(does not include installation labor)*

Next Steps for Implementation

ACTION PLAN

This section identifies actions that agency staff, the Friends of the Fonta Flora State Trail, and their partners should take to pursue the improvements recommended in this feasibility study.

1. Coordinate with ongoing infrastructure, development, and hurricane recovery projects.

The implementation of the Fonta Flora Paved Trail will benefit from coordination amongst ongoing infrastructure, development, and Hurricane Helene recovery projects.

The State of North Carolina's ongoing recovery efforts in the aftermath of Hurricane Helene focus on rebuilding safe housing, restoring infrastructure, and revitalizing the economy of impacted communities. Homes, businesses, roads, bridges, parks, and trails in the study area were impacted by flooding from Hurricane Helene. Staff at the Friends of the Fonta Flora State Trail should coordinate with state leaders on opportunities to leverage recovery funds to accelerate the design and construction of the Fonta Flora State Trail. In particular, FEMA flood buyouts near Riverwalk Park and Hemphill Road may provide new opportunities to accommodate trail Segments A & B, and any remaining improvements to Mill Creek Road may provide an opportunity to support trail Segment D.

A new 60-home affordable housing community is being developed by Mountain Housing Opportunities on an 8-acre property off Old US Hwy 70. This site will be developed in three phases, with some homes constructed by 2026. The paved trail will act as an important recreation and transportation asset for this community as it will improve access to amenities in Black Mountain such as grocery stores, schools, health services, and parks. Any frontage improvements along Old US Hwy 70 that are required from Mountain Housing Opportunities should be planned and designed to accommodate the future Fonta Flora State Trail.

The Ridgecrest Trail Connector is a future paved trail that is planned for construction and will be designated as part of the Fonta Flora State Trail. This segment of the Fonta Flora State Trail connects Downtown Black Mountain to the eastern town limit just past High Street. Staff with the Town of Black Mountain, NCDOT, and Friends of the Fonta Flora State Trail should coordinate to ensure the construction of this trail segment will provide an effective transition to the future planned segments of the Fonta Flora State Trail.

Finally, local government staff should coordinate with the French Broad River MPO (FBRMPO) and Foothills RPO to ensure that the Fonta Flora State Trail alignment is recognized in their transportation plans.

2. Generate public support and build champions.

To ensure long-term success and community ownership of the future trail, Friends of the Fonta Flora State Trail and local agency staff should proactively cultivate public enthusiasm through a well-crafted outreach

and engagement strategy. This effort should go beyond basic promotion by inviting residents, trail users, and local organizations to become vocal champions for the project. Public meetings, storytelling campaigns, and interactive mapping tools can help foster a sense of shared vision and uncover valuable local insights. Staff should remain open and responsive to community feedback, recognizing that meaningful input may lead to adjustments in the preferred trail alignment during future design and construction phases.

3. Adopt the paved trail alignment and reflect it in local land use plans and development ordinances.

Buncombe County, McDowell County, and the Town of Black Mountain should formally adopt the preferred alignment and publish it on their website. These jurisdictions should also integrate the plan into other planning studies, such as the Buncombe County pedestrian plan. Adoption by the Black Mountain Town Council and County Commissioners will put the trail in a better position to secure grant funding. To fully capitalize on an adopted alignment, the Black Mountain Town Council and County Commissioners should take the additional step of adopting updates to their local land use plan and development ordinances that require adjacent developers to allocate space and construct the paved trail.

4. Pursue design funding.

Local staff should begin pursuing funding support for the next phases of survey, geotechnical analysis, and design for the trail. Because this is a segment of a designated state trail, it is eligible for special funding through the NC Complete the Trails Program. The majority of funds through the NC Complete the Trails Program are administered by the NC Division of Parks and Recreation. Funds are available to support the planning, construction, promotion, and maintenance of state trails.[4]

Other state and federal funding should also be considered. Where necessary, local funds should be used as a match to pursue state and federal grant funding to support the design of the trail. The French Broad River MPO (FBRMPO) and Foothills RPO will be useful resources while applying for various state and federal funding opportunities. This should include coordination with the French Broad River MPO (FBRMPO), Foothills RPO, and NCDOT to include the paved trail in the State Transportation Improvement Program (STIP).

Potential funding sources for trail design are highlighted in the **Funding** section below.

5. Complete survey and geotechnical analysis.

Completing a detailed survey and geotechnical analysis will be necessary to calibrate impacts to utilities and private properties and to ensure structural integrity. As mentioned previously, a geotechnical analysis is especially important in mountainous terrain to inform the trail design, protect user safety, and support long-term performance of the paved trail.

[4] NC Complete the Trails Program. NC Trails. https://trails.nc.gov/state-trails/nc-complete-trails-program

This phase should include detailed topography, geology, and soil classification, to understand slope conditions and potential hazards. An engineering analysis should be performed to evaluate slope stability and bearing capacity, especially along Mill Creek Rd. where significant grading and retaining wall structures are expected. This will require subsurface investigations, like boreholes and soil sampling, and a hydrologic study to reveal soil strength, permeability, drainage patterns, and erosion potential. All of this will inform pavement design and slope stability strategies.

The final survey and geotechnical analysis should offer clear design recommendations for subgrade preparation, pavement structure, retaining walls, and drainage systems, along with a constructability assessment that considers landslide risks, access limitations, and seasonal constraints.

6. Complete 25% design.

With the benefit of the survey and geotechnical analysis, it will be possible to advance the plans to the next phase of design, which may be referred to as 25% or 50% design plans, depending on the expected number of plan submittals/revisions. The focus of this plan set will be to use the survey and geotechnical analysis to refine the concept plan to avoid things that will make the trail more time-consuming, difficult, and expensive to build (e.g., utilities, private properties, unstable slopes, and shallow bedrock). This level of design helps to refine cost estimates and is typically the level of design necessary for more accurate capital planning and programming.

7. Develop a property acquisition and maintenance strategy.

Friends of the Fonta Flora State Trail should work with the Black Mountain, Buncombe County and McDowell County attorneys to confirm what the easement/property acquisition requirements are for segments of paved trail that will impact private property along existing utility easements. Completion of the survey will be important to understand what properties may be impacted. Friends of the Fonta Flora State Trail should also work with local public works departments to discuss a maintenance strategy for this segment of the trail.

8. Complete final (100%) design plans and specifications.

The final (100%) design plans for this segment of the Fonta Flora State Trail will include detailed grading plans and structural plans for the various retaining walls, culverts, and other structures necessary to support the trail. The final plans will include a final engineer's cost estimate for the paved trail. These are the construction plans that can be put out to bid and support any potential real estate acquisition phase.

9. Pursue construction funding.

Partnering with French Broad River MPO (FBRMPO) and Foothills RPO is a key opportunity to help local staff in Buncombe County and McDowell County pursue state and federal construction funds. Regional Planning Organizations (RPOs) and Metropolitan Planning Organizations (MPOs) are the bodies that funnel state and federal dollars toward locally identified projects like the Fonta Flora paved trail. FBRMPO

and Foothills RPO staff are best equipped to help get the paved trail onto the State Transportation Improvement Program (STIP) and to keep track of additional state trail grant funding sources that may be available.

There's a possibility that the two primary project segments could be submitted through the SPOT process as a single, combined project in the Division Needs tier. There's been recent precedent for the NCDOT Highway Division 13 submitting bike/ped projects at the Division Needs tier of the SPOT process. If NCDOT Highway Division 13 does not support this approach, the Old US Hwy 70 segment and Mill Creek Road segment should be submitted separately at the local needs tier by the MPO and the RPO.

Private funding may also be an option to support construction funding or local grant match requirements.

Pursuing funding is a step often completed before, or in conjunction with, the preparation of the Final (100%) design plans. Potential funding sources for construction are highlighted in the **Funding** section below.

10. Maintain communication between jurisdictions and key partners.

A standing agenda item on FBRMPO, Black Mountain Town Council, Buncombe County Commissioner, and McDowell County Commissioner meetings should be added to provide an update on implementation of the Fonta Flora State Trail. Additionally, maintaining relationships with key partners, especially with the Friends of the Fonta Flora State Trail and the North Carolina Trails Program, will help to both implement and maintain this segment of the Fonta Flora State Trail. The North Carolina Trails Program was developed to aid local agencies in planning, developing, and managing trails across the state. The staff of the program provide technical assistance, identify grant opportunities, and work to support partnerships with local conversation and recreation advocates.

11. Submit the completed trail segment for NC State Trails official designation.

Once the trail segments are constructed, local staff should apply through the North Carolina Trails Program to have those segments officially designated as part of the Fonta Flora State Trail. This North Carolina Trails Program is managed by the Division of Parks and Recreation, a division of the North Carolina Department of Natural and Cultural Resources (DNCR). A key component of the designation process is public notice and the opportunity to review any trail segments that are proposed for state trail designation.

12. Have a good succession plan.

The implementation of regional trail efforts often lasts longer than the service of the individuals charged with their implementation. Staff turnover, through career changes, retirement, or when elected officials finish their service can leave a gap in project coverage. It’s important, in those instances, to make sure a successor picks up the baton. Without a concerted effort by all partners, it is easy for regional efforts to lose momentum through the normal professional/personal movement of people. Friends of the Fonta Flora State Trail may need to act as an important stopgap to make sure that momentum is not lost via agency turnover.

FUNDING

Implementing the recommended segments of the Fonta Flora State Trail will likely require various funding sources at the federal, state, and local levels. The tables below highlight potential funding sources.

Federal Funding

Table 6. Potential Federal Funding Sources

Source	Eligibility/Requirements/Purpose
Better Utilizing Investments to Leverage Development (BUILD) Grant Program	BUILD grants can be awarded to projects that connect communities and people to jobs, services, and education as well as to projects that anchor economic revitalization and job growth in communities. Project sponsors at state and local levels can obtain funding for multi-modal projects that are more difficult to support through traditional DOT programs. BUILD was previously known as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) or Transportation Investment Generating Economic Recovery (TIGER) grants.
FHWA Recreational Trails Program (RTP)	The RTP provides states with funds to develop and maintain recreational trails and trail-related facilities. The program is authorized through Federal fiscal years 2022 through 2026 as a set-aside from the Transportation Alternatives Program (TAP) under the Surface Transportation Block Grant (STBG) Program. This program is administered by NC Trails in North Carolina.

State Funding

Table 7. Potential State Funding Sources

Source	Eligibility/Requirements/Purpose
NCDOT Strategic Transportation Investments (STI)	NCDOT STI requires 20 percent of total project cost be a non-federal match by local governments. STI includes adopted bicycle plans, greenway plans, pedestrian plans, Safe Routes to School action plans, comprehensive transportation plans (CTPs), and long-range transportation plans.
NC Complete the Trails Program	This is special funding earmarked by the NC General Assembly to support designated state trails, like the Fonta Flora State Trail. Funds are administered by NC Trails staff at the NC Division of Parks and Recreation. Funds can be used for the planning, construction, promotion, and maintenance of state trails.
Adopt-A-Trail Grants	Adopt-A-Trail allocates $108,000 annually to government agencies, nonprofit organizations, and private trail groups for trail projects.
Great Trails State Program	The Great Trails State Program provides funding for new trail development and extension of existing trails anywhere in the state of North Carolina. This includes paved trails or greenways, natural surface trails, biking trails, equestrian trails, and any other type of trail recognized by the DNCR. The Great Trails State Program was a one-time allocation from the NC General Assembly, but it's possible the General Assembly may support future funding cycles.

Local Funding

Table 8. Potential Local Funding Sources

Source	Eligibility/Requirements/Purpose
Buncombe County Community Recreation Grants	The purpose of the Buncombe County Recreation Services Grants Program is to provide funding to qualified organizations within Buncombe County interested in partnering with the Department to carry out their mission through the promotion of recreational fitness, health and wellness initiatives as well as community-based activities and capital improvements that increase recreational opportunities for the communities served.
Capital Improvement Plan (CIP) – Buncombe County and McDowell County	The Buncombe and McDowell County CIPs are typically 5-year plans that outline planned capital projects such as new construction and the maintenance of County assets. County funding to support the construction of paved trails would be coordinated through the CIP.
Town of Black Mountain Capital Improvement Plan (CIP)	The Town of Black Mountain CIP is a long-range plan that outlines one-time maintenance expenses, new projects, or other purchases exceeding $25,000. Town funding to support the construction of paved trails would be coordinated through the CIP.

PARTNERING

Leveraging Developments

Updating ordinances, such as the local and county zoning ordinance and related development policies, to place a greater emphasis on pedestrian and bicycle facilities can assist in encouraging future development to expand the multimodal network in Black Mountain, Buncombe County, and McDowell County. This is one avenue to support the implementation of the paved trail using a phased approach. Changes to development ordinances that would improve multimodal facilities could include:

- Specifically addressing pedestrian connectivity to neighborhoods by strengthening sidewalk construction requirements and updating sidewalk design standards. This would improve sidewalks county-wide and would therefore increase pedestrian access to the future paved trail network.
- Updating local development policy to further emphasize pedestrian and bicycle access as part of any trip mitigation strategies.
- Developing bicycle parking specifications and requirements to expand bike parking county-wide, including short-term and long-term facilities for both commercial and residential land uses.
- Confirming land use and zoning that support trailhead parking and economic development opportunities along the trail.

Employer Contributions/Sponsorships

Major employers in Black Mountain, Buncombe County, and McDowell County can act as partners in providing:

- funding to support the required local match for state and federal grants,
- funding to help construct the paved trail network or provide amenities such as trailheads or benches, or
- funding to support regular maintenance.

The Friends of the Fonta Flora State Trail's existing "Business and Corporate Sponsorships" program is well-suited to recruit private sponsorships that can play a key role in funding trail segments, amenities, or matching competitive trail grant funds.

Another regional example of leveraging sponsorships to help fund trail construction and maintenance is the Spanish Moss Trail in Beaufort County, South Carolina. The Spanish Moss Trail is supported by the Friends of the Spanish Moss Trail, a nonprofit founded to advance the development, enhancement, and maintenance of the Spanish Moss Trail in communities in Beaufort County. The organization manages two programs essential to support the trail's maintenance: "Adopt a Segment" and "Sponsor a Trail Amenity." The Adopt a Segment program allows individuals, civic organizations, and private businesses to sponsor a segment of the trail in exchange for signage along the trail that acknowledges the sponsorship. Additionally, sponsors are responsible for helping to maintain and beautify their adopted trail segments. Similarly, the Sponsor a Trail Amenity Program allows individuals, civic organizations, and private businesses to sponsor amenities along the trail such as benches, rest areas and water fountains. Funds raised from these sponsorships feed directly back into the construction, maintenance, and programming of the Spanish Moss Trail.[5]

Government Agencies

Local, regional, state, and federal government agencies play a significant role in funding, maintaining, and supporting trail projects. This may include departments of transportation, parks and recreation departments, environmental agencies, and economic development agencies. Continued involvement of agency leadership from Town of Black Mountain, Buncombe County, McDowell County, FBRMPO, Foothills RPO, and NCDOT will be crucial. Additional government agency partnerships include the NC Division of Parks and Recreation and the NC Department of Natural and Cultural Resources.

Non-Profit Organizations

Nonprofits and community organizations dedicated to outdoor recreation, conservation, or community development may provide funding or technical assistance for trail design studies. These organizations often have a vested interest in supporting trail projects that align with their missions. Partners who support outdoor recreation and conservation in the project area include the Great Trails State Coalition, BikeWalk NC, RiverLink, and ConnectBuncombe.

[5] Spanish Moss Trail. Help Support the Spanish Moss Trail: https://www.spanishmosstrail.com/support-us1. 2024.

Conclusion

The Fonta Flora Paved Trail Feasibility Study examined the potential for a paved multi-use trail connecting Black Mountain to the Point Lookout Trail, evaluated alignment options, identified a preferred alignment, established design standards, prepared a preliminary concept plan, and developed an implementation strategy. The project delivered recommendations for the primary Fonta Flora State Trail alignment and important secondary connections to nearby parks and neighborhoods.

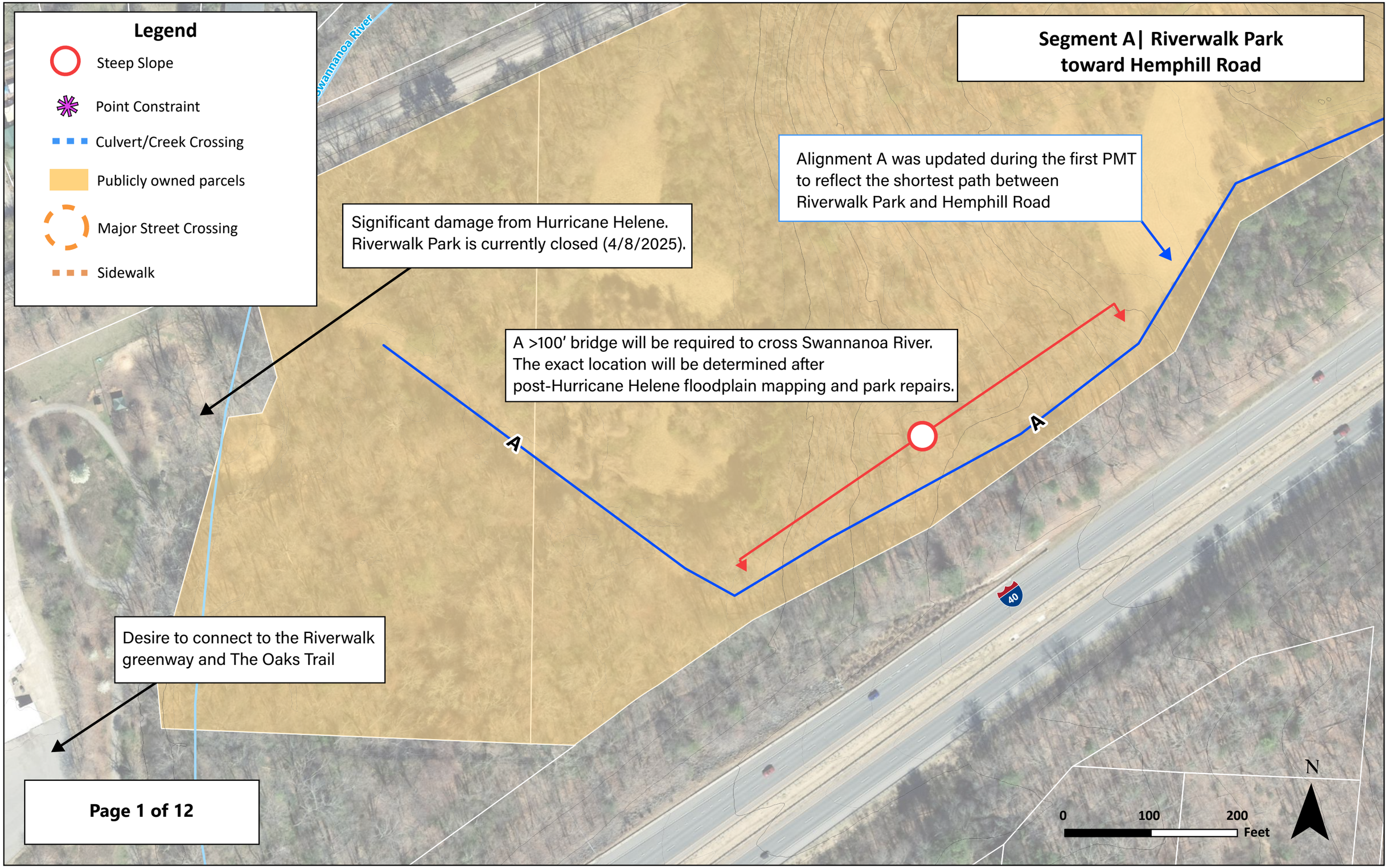
Throughout the planning process, community input played a central role in shaping the study's direction. Local stakeholders, residents, and agency partners provided valuable insights that informed the vision, goals, and final recommendations. This collaborative approach fulfilled the project goals by ensuring that the proposed trail alignment reflects the goals of the community and the study materials equip project partners for the next phases of engineering design and construction.

GOALS FOR THE TRAIL	GOALS FOR THE STUDY
• Improve pedestrian and bicycle mobility. • Provide more opportunities for recreation. • Improve safety.	• Identify a trail alignment that has broad support of agency partners and stakeholders. • Deliver materials to equip partners for the next phases of engineering design and construction.

The recommended Fonta Flora State Trail alignment supports active transportation, provides a recreational spine for the community, and addresses safety and mobility needs. Once implemented, the trail will serve as a vital transportation corridor, linking residential neighborhoods north and south of I-40 with the Town of Black Mountain and the Point Lookout Trail. It will provide safe, direct access for pedestrians and cyclists to key destinations along the alignment, improving local mobility and regional connectivity.



Appendix A
Field Review


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Swannanoa River
Segment A| Riverwalk Park toward Hemphill Road
Alignment A was updated during the first PMT to reflect the shortest path between Riverwalk Park and Hemphill Road
Significant damage from Hurricane Helene. Riverwalk Park is currently closed (4/8/2025).
A >100′ bridge will be required to cross Swannanoa River. The exact location will be determined after post-Hurricane Helene floodplain mapping and park repairs.
A
A
40
Desire to connect to the Riverwalk greenway and The Oaks Trail
Page 1 of 12
N
0
100
200
Feet

Segment A & Segment B| Hemphill Road from I-40 to Future Park

B2

Hemphill Rd

B1

A

I-40 Crossing Bridge or Tunnel Needed

Re-purpose existing tunnel -- structural analysis would be required to update/confirm use.

Legend

- Steep Slope
- Point Constraint
- Culvert/Creek Crossing
- Publicly owned parcels
- Major Street Crossing
- Sidewalk

Only one alignment (B2) will be considered given potential FEMA buyout of properties impacted by Hurricane Helene

Future Park

Hemphill Rd

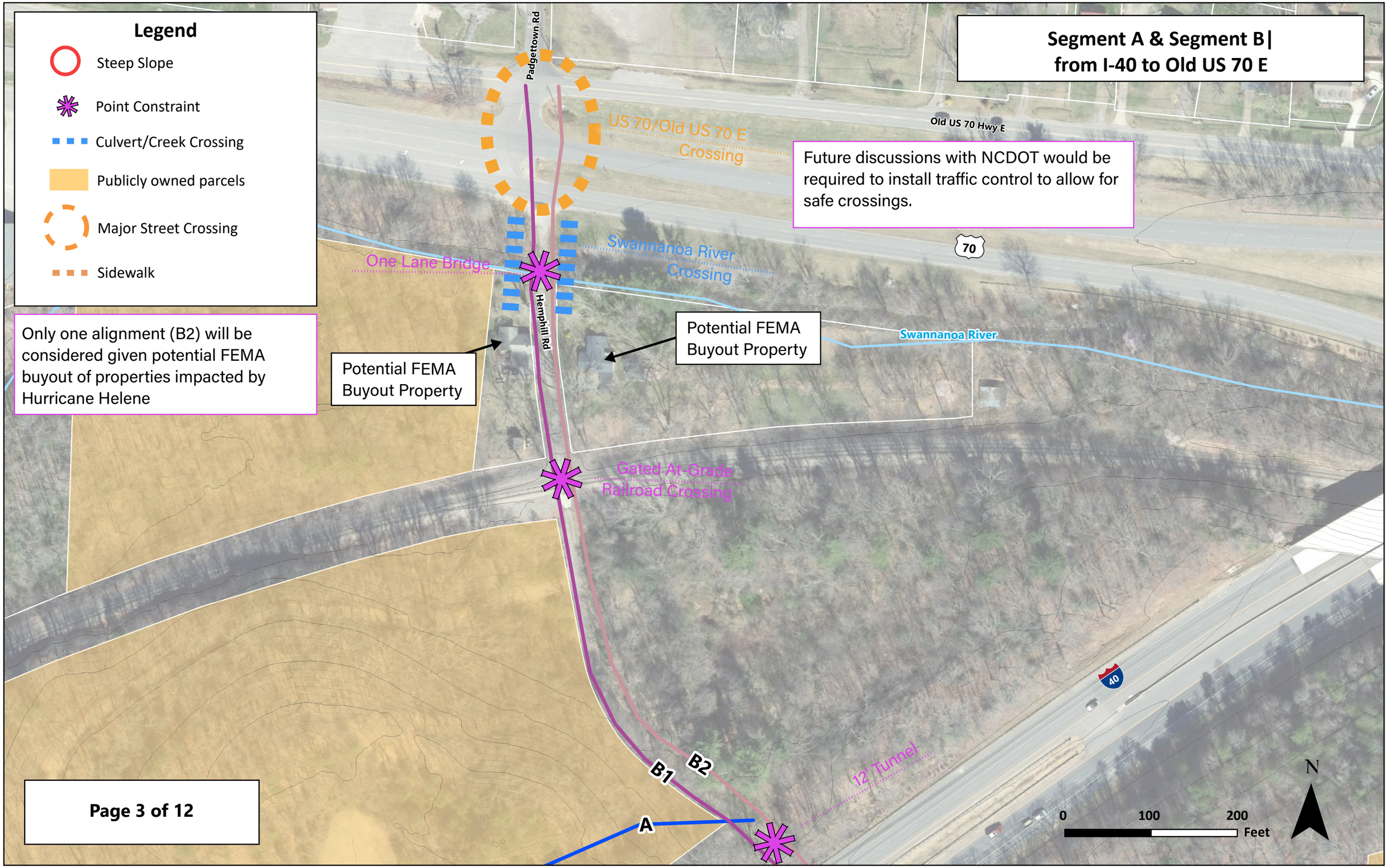
B2

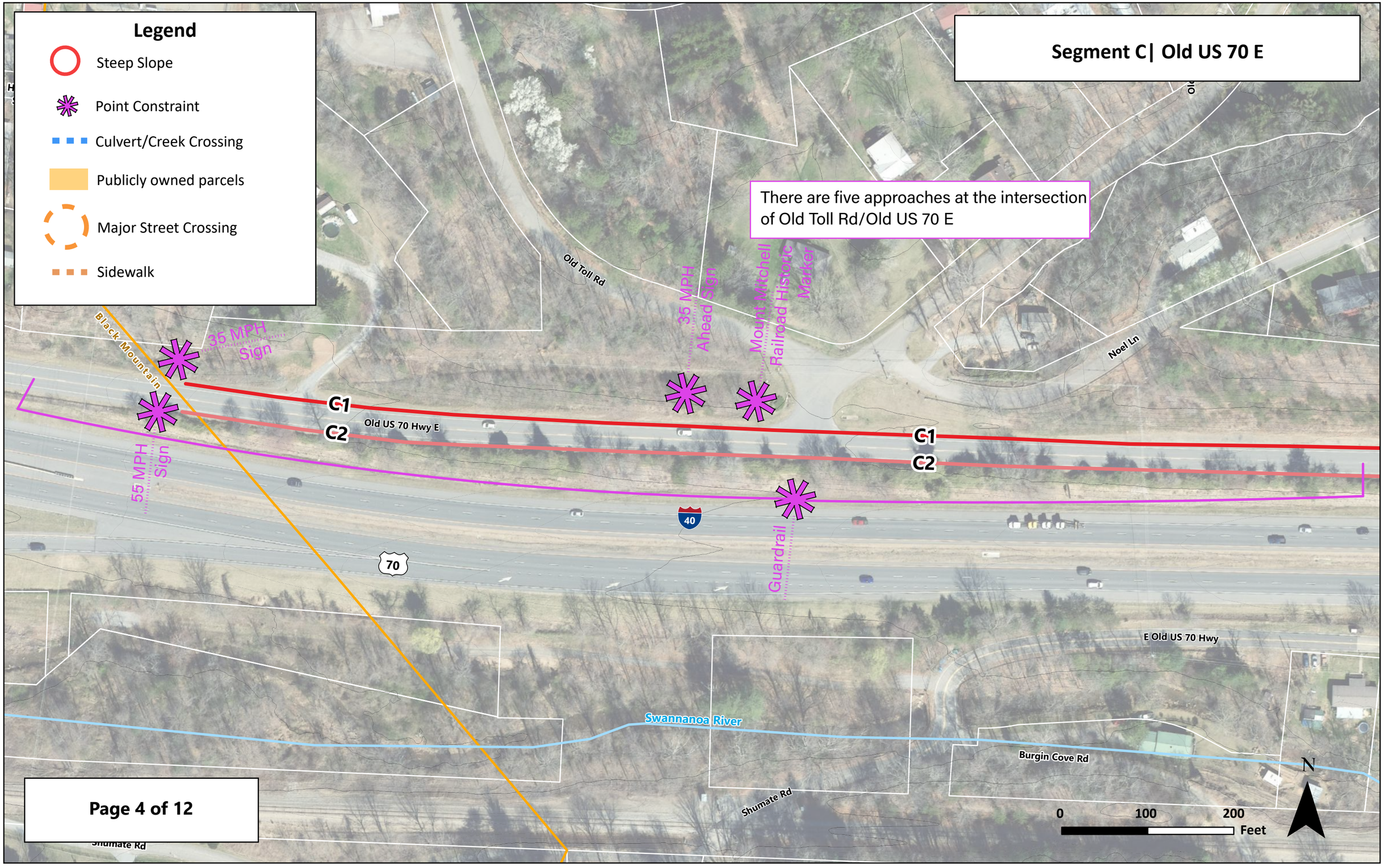
B1

0 100 200 Feet

N

Page 2 of 12


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment A & Segment B|
from I-40 to Old US 70 E
Padgettown Rd
US 70/Old US 70 E
Crossing
Old US 70 Hwy E
Future discussions with NCDOT would be required to install traffic control to allow for safe crossings.
70
One Lane Bridge
Swannanoa River
Crossing
Hemphill Rd
Potential FEMA
Buyout Property
Potential FEMA
Buyout Property
Swannanoa River
Only one alignment (B2) will be considered given potential FEMA buyout of properties impacted by Hurricane Helene
Gated At-Grade
Railroad Crossing
B1
B2
A
12' Tunnel
40
0
100
200
Feet
N
Page 3 of 12


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment C| Old US 70 E
There are five approaches at the intersection of Old Toll Rd/Old US 70 E
Old Toll Rd
35 MPH Ahead Sign
Mount Mitchell Railroad Historic Marker
Noel Ln
Black Mountain
35 MPH Sign
55 MPH Sign
C1
C2
Old US 70 Hwy E
40
70
Guardrail
E Old US 70 Hwy
Swannanoa River
Burgin Cove Rd
Shumate Rd
0
100
200
Feet
N
Page 4 of 12


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment C| Old US 70 E
Shurwood Rd
Haycock St
Slope is steeper up the hill with more manageable Grades closer to the road. Utilities and drainage Are present on this side of Old US 70 E.
C1
C2
Old US 70 Hwy E
Guardrail
40
Fence
E Old US 70 Hwy
Swanning River
0
100
200
Feet
N

Segment C| Old US 70 E

Legend

- Steep Slope
- Point Constraint
- Culvert/Creek Crossing
- Publicly owned parcels
- Major Street Crossing
- Sidewalk

Slope is steeper up the hill with more manageable grades closer to the road. Utilities and drainage are present on this side of Old US 70 E.

55 MPH Sign

Fence

C1

C2

Bright Hope Rd

Etain Ln

Old US 70 Hwy E

40

Swannanoa River

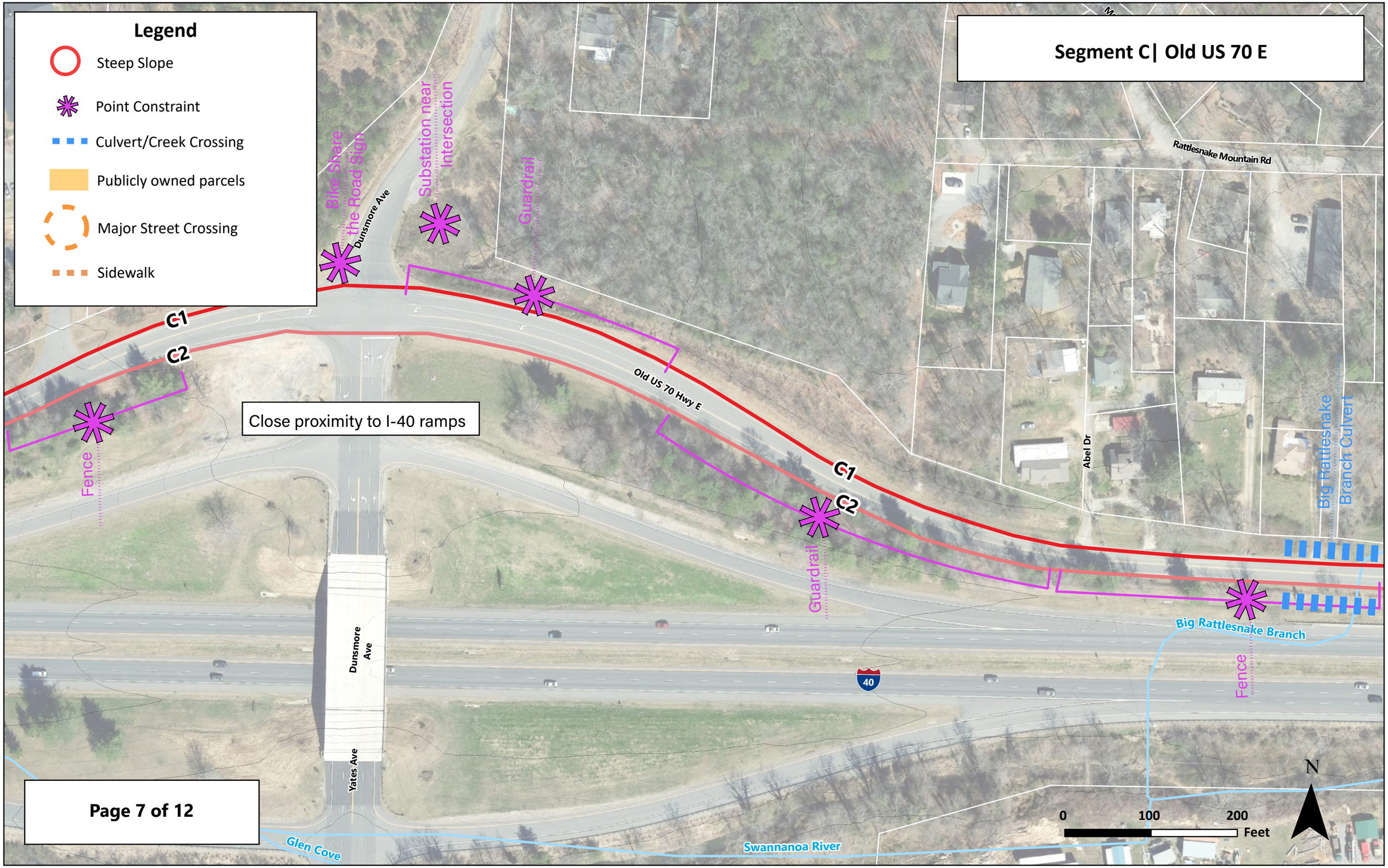
Dunsmore Cove Branch

E Old US 70 Hwy

N

0 100 200 Feet

Page 6 of 12


Segment C| Old US 70 E
Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Bike Share the Road Sign
Dunsmore Ave
Substation near Intersection
Guardrail
C1
C2
Old US 70 Hwy E
Close proximity to I-40 ramps
Fence
Rattlesnake Mountain Rd
Abel Dr
Big Rattlesnake Branch Culvert
Big Rattlesnake Branch
Fence
Guardrail
Dunsmore Ave
Yates Ave
40
Glen Cove
Swannanoa River
N
0
100
200
Feet
Page 7 of 12

Segment C| Old US 70 E

Legend

- Steep Slope
- Point Constraint
- Culvert/Creek Crossing
- Publicly owned parcels
- Major Street Crossing
- Sidewalk

Utilities are Set Back

Dense vegetation

Numerous residential driveways/houses located close to the street

Steep Curb

Stonemason's Raid Historic Marker

Retaining Wall

Fence

Meeks Rd

Moore Cir

Dew Waite Rd

Big Rattlesnake Branch

Little Rattlesnake Branch

Swannanoa River

Depot Ave

Old US 70 Hwy E

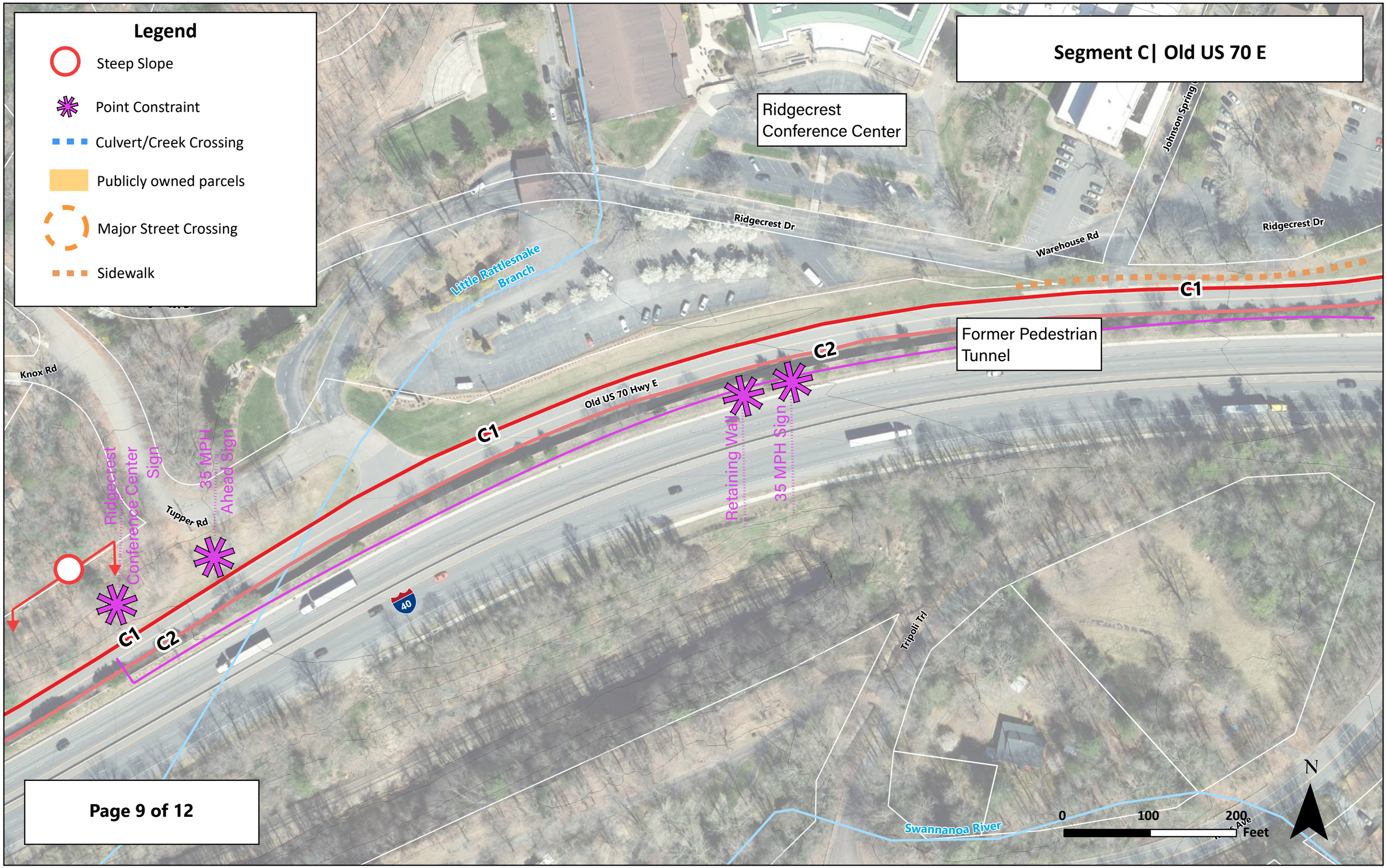
C1

C2

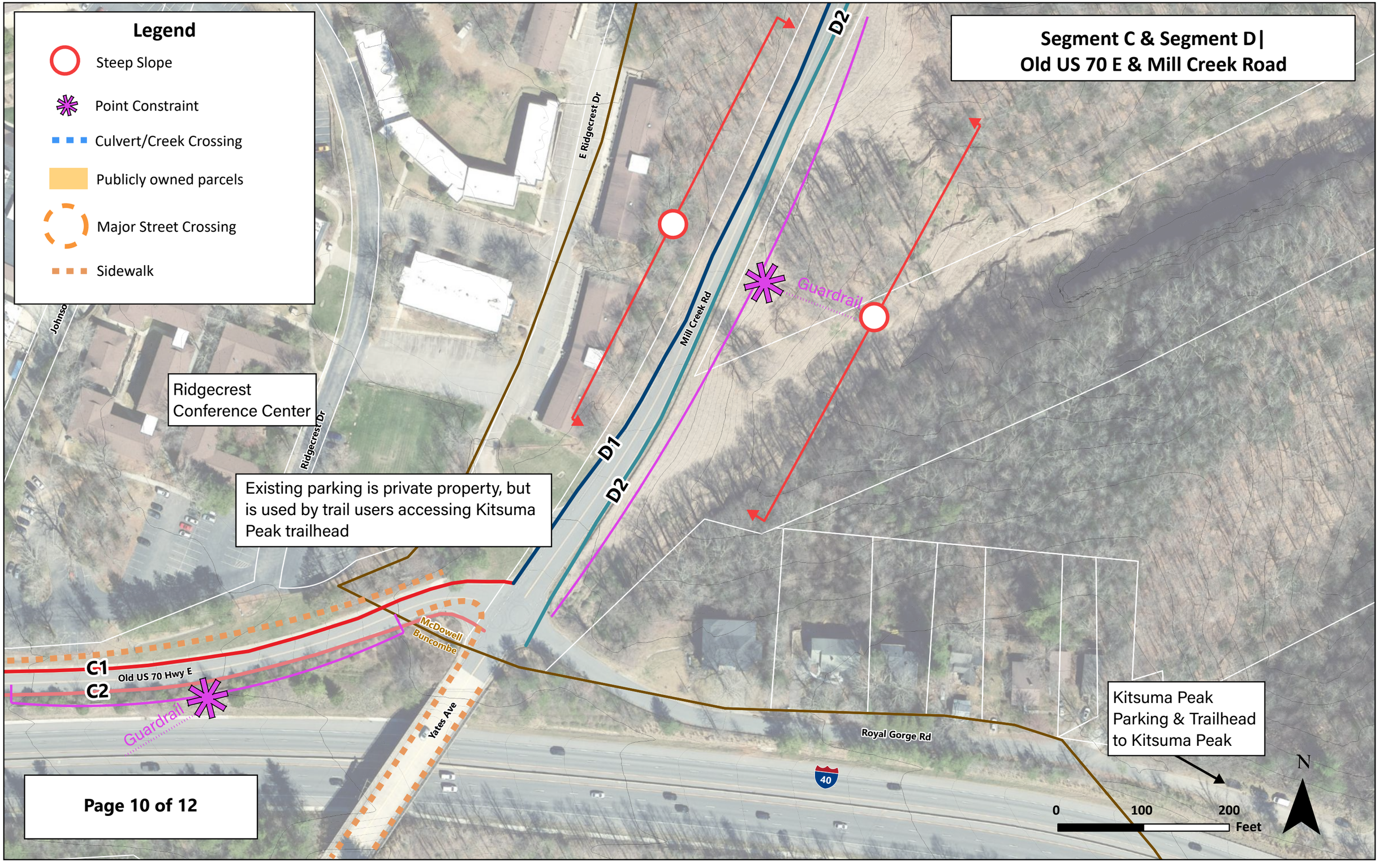
40

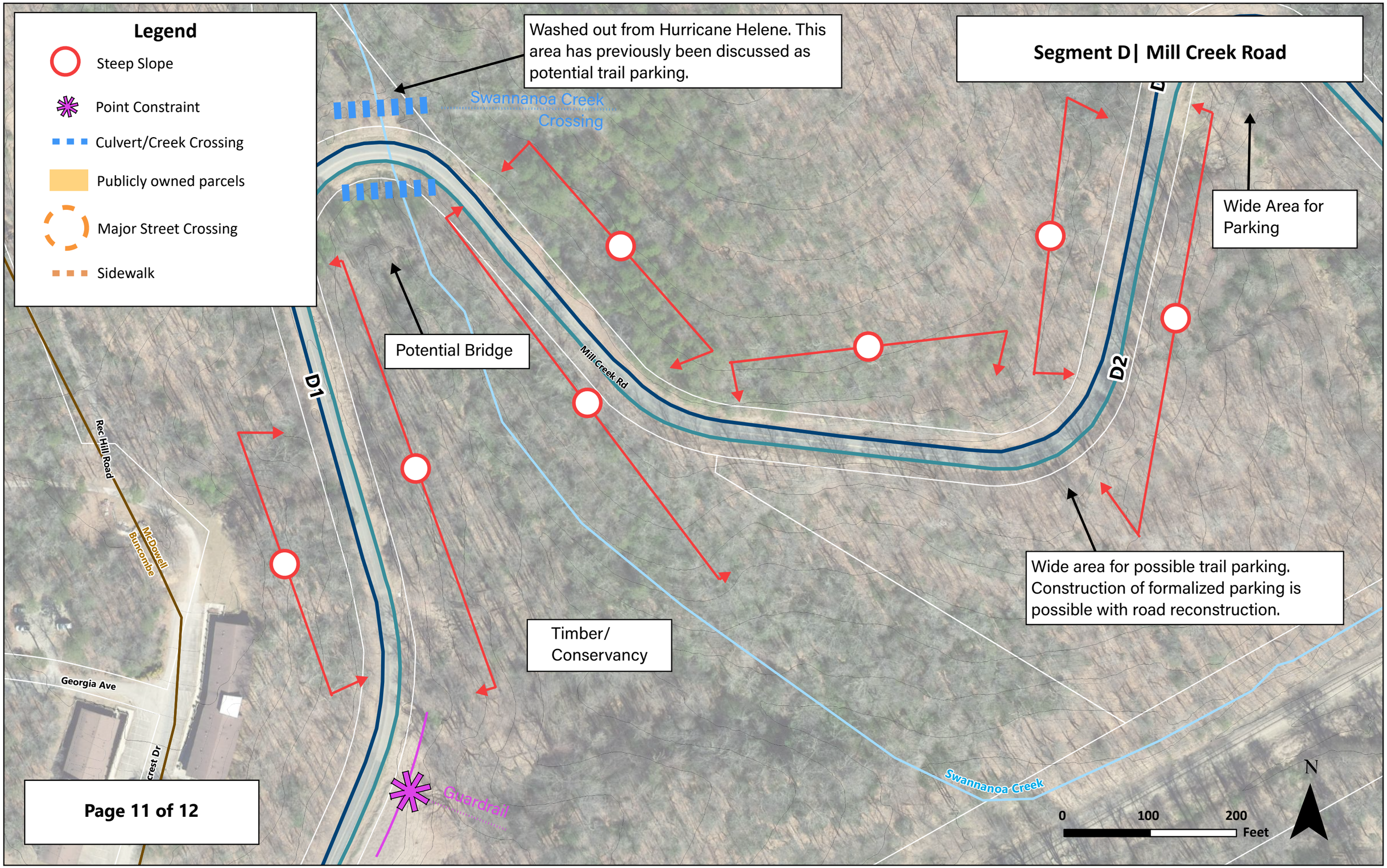
N

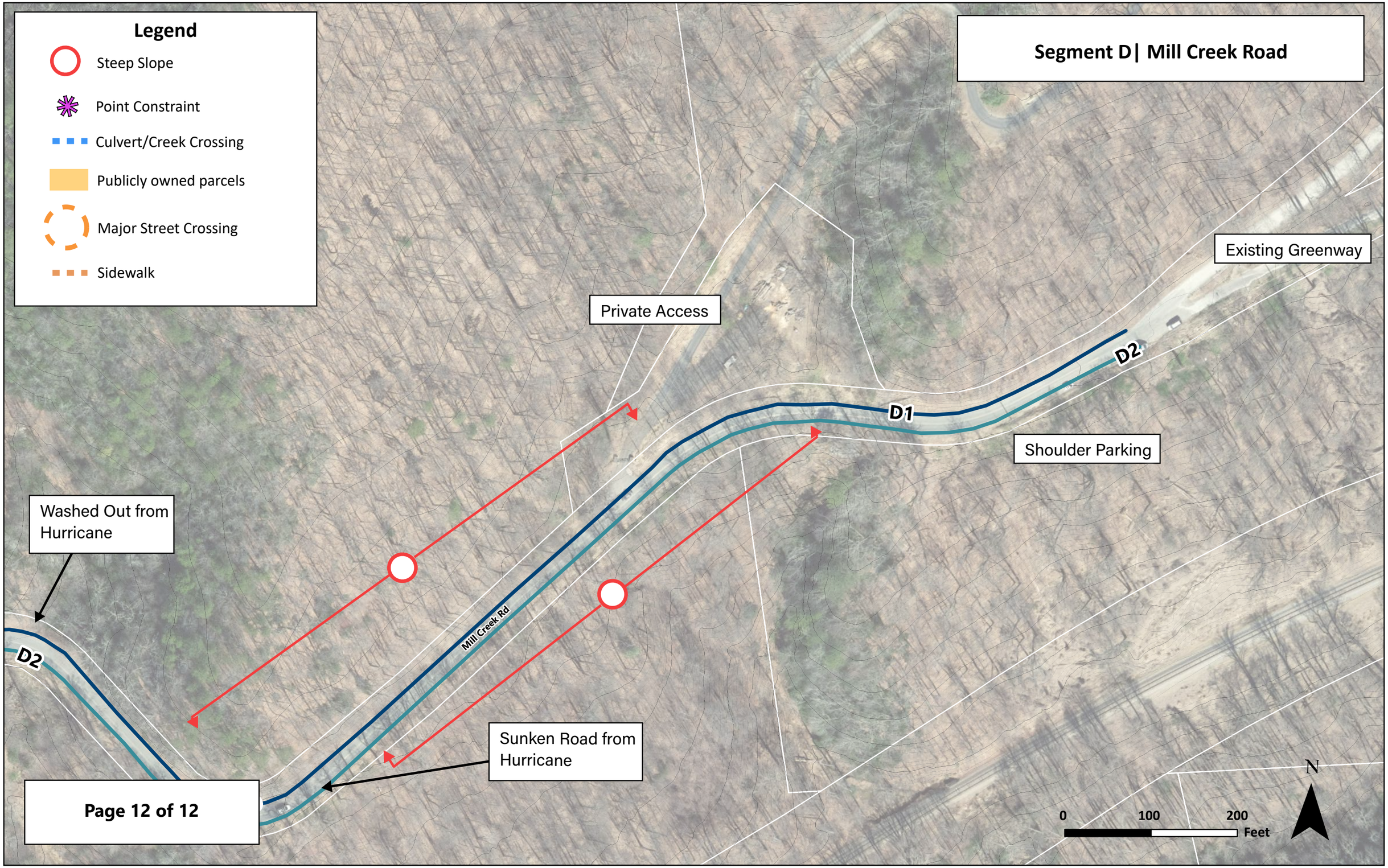
0 100 200 Feet


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment C| Old US 70 E
Ridgecrest Conference Center
Ridgecrest Dr
Warehouse Rd
Johnson Spring
Little Rattlesnake Branch
C1
C2
Former Pedestrian Tunnel
Old US 70 Hwy E
Knox Rd
Ridgecrest Conference Center Sign
35 MPH Ahead Sign
Tupper Rd
Retaining Wall
35 MPH Sign
40
Tripoli Trl
Swannanoa River
0
100
200
Feet
N

Page 9 of 12


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment C & Segment D|
Old US 70 E & Mill Creek Road
Ridgecrest Conference Center
E Ridgecrest Dr
Ridgecrest Dr
Mill Creek Rd
D2
D1
D2
Guardrail
Existing parking is private property, but is used by trail users accessing Kitsuma Peak trailhead
C1
C2
Old US 70 Hwy E
Guardrail
McDowell
Buncombe
Yates Ave
Royal Gorge Rd
40
Kitsuma Peak Parking & Trailhead to Kitsuma Peak
N
0
100
200
Feet
Page 10 of 12


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment D| Mill Creek Road
Washed out from Hurricane Helene. This area has previously been discussed as potential trail parking.
Swannanoa Creek Crossing
Wide Area for Parking
Potential Bridge
Mill Creek Rd
D1
D2
Rec Hill Road
McDowell
Buncombe
Georgia Ave
Timber/ Conservancy
Wide area for possible trail parking. Construction of formalized parking is possible with road reconstruction.
Guardrail
Swannanoa Creek
0
100
200
Feet
N


Legend
Steep Slope
Point Constraint
Culvert/Creek Crossing
Publicly owned parcels
Major Street Crossing
Sidewalk
Segment D| Mill Creek Road
Existing Greenway
Private Access
D2
D1
Shoulder Parking
Washed Out from Hurricane
D2
Mill Creek Rd
Sunken Road from Hurricane
Page 12 of 12
N
0
100
200
Feet



Appendix B
Segment Evaluation Matrix

Fonta Flora State Paved Trail Feasibility Study - 2025

Potential Trail Segments Evaluation Matrix

For this exercise, different potential trail segments were evaluated based on a variety of potential criteria. For segments where the potential trail alignment might be on either side of a street, both sides were evaluated individually (e.g. "Old US 70 North" and "Old US 70 South"). These evaluations are preliminary. They are based on a combination of field review notes, GIS measurements, and available mapping/environmental data. They are not based on survey data or a detailed parcel-level evaluation of potential contstuction impacts. For each primary criteria, a relative ranking was assigned – red (fair), yellow (good), green (excellent) – to help support at-a-glance review among potential trail segments. This matrix and the relative rankings are simply a tool to help support community conversations about a preferred trail alignment.

Potential Segments *- see corresponding map*

	Criteria	Measure	A Riverwalk Park Connection (Swannanoa River to Hemphill Rd.)	B Hemphill Road (Old US 70 to Future Park)	C1 Old US 70 (North Side - Black Mountain Town Limits to Yates Ave.)	C2 Old US 70 (South Side - Black Mountain Town Limits to Yates Ave.)	D1 Mill Creek Rd. (West/North Side - Old US 70 to Point Lookout Trail Connection)	D2 Mill Creek Rd. (East/South Side - Old US 70 to Point Lookout Trail Connection)
STI Prioritization	Length (i.e. Directness of Route)	Feet	1,500	2,000	9,600	9,600	4,700	4,700
	Structures Required	Type, Length	- Swannanoa River Bridge, ~100 ft	- Rail Bridge, ~100 ft - May also require some modification to existing tunnel under I-40 Tunnel, ~200 ft	None	None	Significant retaining wall	Significant boardwalk required
	Curb and Gutter Implications	Significant Curb Adjustments, Minor Curb Adjustments, No Curb Adjustments	No curb modifications required	Likely to be swale, minor curb and gutter implications	No	No	No	Boardwalk likely, no curb required
	Total Private Property Impacts*	ROW Area	0 SF	0 SF	2,470 SF	891 SF	0 SF	0 SF
	**Publicly owned parcel impacts*	*ROW Area*	*17,912 SF*	*5,372 SF*	*0 SF*	*0 SF*	*0 SF*	*0 SF*
	**Private parcel impacts*	*ROW Area*	*0 SF*	*0 SF*	*2,470 SF*	*891 SF*	*0 SF*	*0 SF*
	Impacts to Railroad ROW	Yes/No	No	Yes; Requires improvements to 1 rail crossing	No	No	No	No
	Utility Impacts (wire-based, sewer, and water)	None/Minor/Significant	Minor	Minor	Minor	Minor	Minor	Minor
Constructability	Creek, River, Tributary Crossings	Count	1	1	2	2	1	1
	Major Street Crossings	Count	0	2	1	1	1	1
	Total Major Driveways/Minor Streets	Count	1	2	9	2	2	1
	Slopes *(anticipated grading)*	Few Areas of Steep Slopes (only minor grading anticipated)/Some Steep Slopes/Significant Topo Challenges	Some Steep Slopes	Some Steep Slopes	Some Steep Slopes	Some Steep Slopes	Significant Topo Challenges	Significant Topo Challenges
	Flood-way Impact	Yes/No	Yes	Yes	No	No	No	No
	Reconfiguration of Existing Roadway	Minor/Some Reconfiguration of Curb and Stormwater Infrastructure/Significant Reconfiguration Required	N/A	Significant Reconfiguration Required	Minor	Significant Reconfiguration Required	Minor	Minor
User	Access to Destinations	Fair/Good	Good	Good	Good	Fair	Fair	Fair
	Access to Employment Centers	Fair/Good/Excellent	Good	Good	Good	Fair	Fair	Fair
	Opportunity to Leverage Hurricane Helene Rebuild/Recovery Projects	Maybe/No	Maybe	Maybe	No	No	No	Maybe
	User Comfort	Fair/Good/Excellent	Excellent	Excellent	Good	Fair	Good	Good
	Community-Based Opportunities	See notes	Provides future connection to Downtown Black Mountain via Broadway St. Provides an opportunity to expand and rebuild the Riverwalk Park and tie into the Riverwalk Trail.	Connection to Future Park South of I-40, Connection to Ridgecrest Trail Connector to facilitate connections to Downtown Black Mountain, Black Mountain Primary School, and Black Mountain Elementary School	Provides direct connection to Ridgecrest and residential areas on the north side of Old US 70. Requires crossing Old US 70 to access the Yates Ave./ Old US 70 loop that is used by walkers in the area.	Requires crossing Old US 70 to access to Ridgecrest and residential areas on the north side of Old US 70. Provides more direct connection to the Yates Ave./ Old US 70 loop that is used by walkers in the area.	Provides connection between Ridgecrest and existing Point Lookout Trail. Likely to be an important recreational connection. Also ties in to the existing Yates Ave./ Old US 70 loop that is used by walkers in the area.	Provides connection between Ridgecrest and existing Point Lookout Trail. Likely to be an important recreational connection. Also ties in to the existing Yates Ave./ Old US 70 loop that is used by walkers in the area. This alignment would allow trail users to avoid crossing roads to get between Point Lookout and Kitsuma Peak parking.
	Other Notes	*Field Review Notes*	*Riverwalk Park -- including the adjacent rail bridge -- is currently closed due to damage from Hurricane Helene.*	*- An alignment on the east side might provide an easier crossing experience at US 70 and SR 2542 (Old Hwy 70 E). An east side alignment would not require an additional crossing across Padgettown Rd.* *- Need to consider vehicular access to Hemphill Road properties and alignment of trail to reduce potential conflicts.* *- The existing railroad has an agreement with the adjacent property owners, but it is otherwise gated off.* *- There is an existing tunnel under I-40.* *- The property on the east side of Hemphill Road is likely a FEMA buyout property.*	*- While many of the cross-street conflicts are minor, there are many driveways that would impact an alignment on the north side of Old US 70.* *- This segment would tie into the Ridgecrest Trail Connector and extend the sidewalk in front of the Ridgecrest Conference Center.*	*Locating the trail on the south side of Old US 70 would place trail users between I 40 and Old US 70. In several locations the physical distance/separation between these two facilities is very constrainted.* *The major street crossings at Yates Ave and Dunsmore Ave are more impactful with an alignment on the south side. Locating the trail on the south side of Old US 70 would place trail users in conflict with vehicles accessing the on/off ramps of I 40 and the Yates Ave bridge over I 40.* *- There are existing sidewalks on Yates Avenue that could be tied into the paved trail.*	*- D1 would require significant cut to construct a paved trail.*	*- There are washed out shoulders along the the East/South side of Mill Creek Road from the impacts of Hurricane Helene. Recovery efforts here may provide an opportunity to construct a paved trail.* *- D2 would require the construction of elevated dridges/boardwalk and/or fill to construct a paved trail.*



Appendix C
Concept Plan

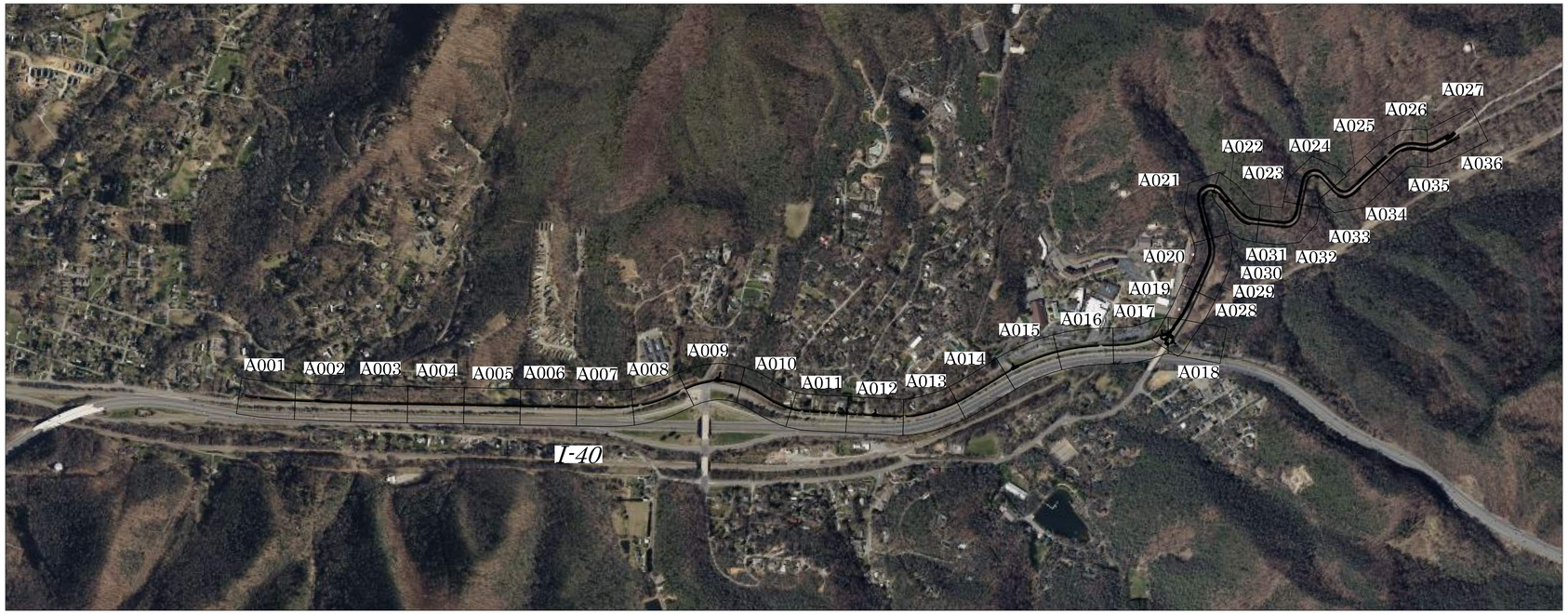
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FONTA FLORA TRAIL CONCEPTS
10/01/2025

LOCATION: *BLACK MOUNTAIN, NC*
PAVED TRAIL

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
2A - 2C	TYPICAL SECTIONS
A001 - A018	C1 CONCEPT
A019 - A027	D1 CONCEPT
A028 - A036	D2 CONCEPT



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

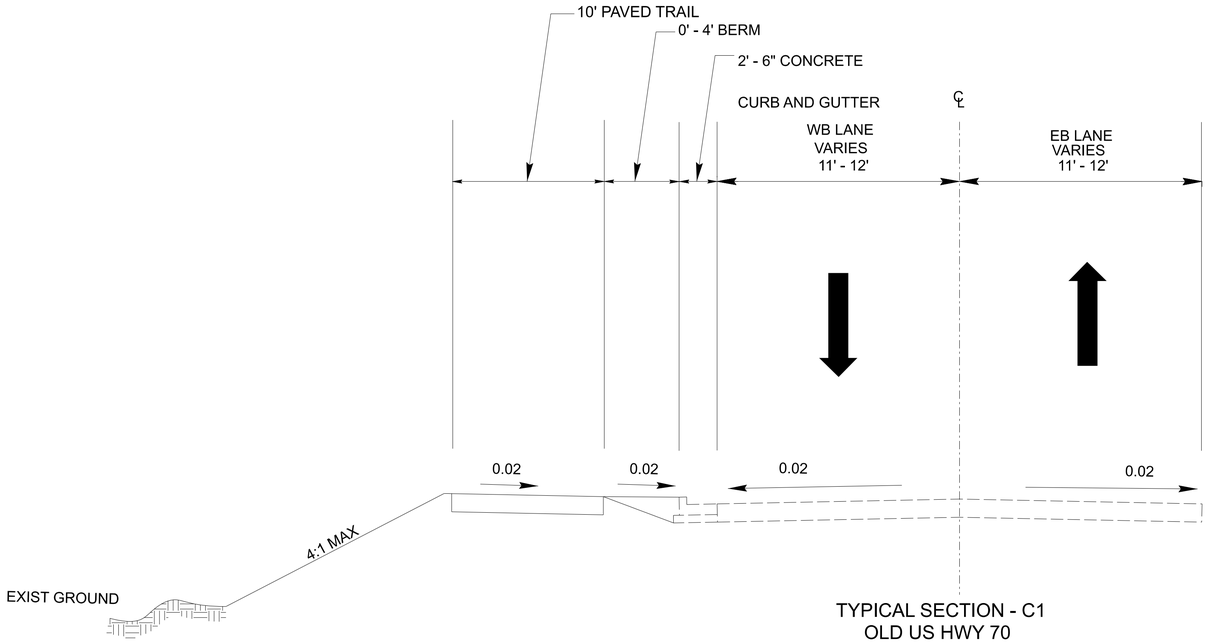
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

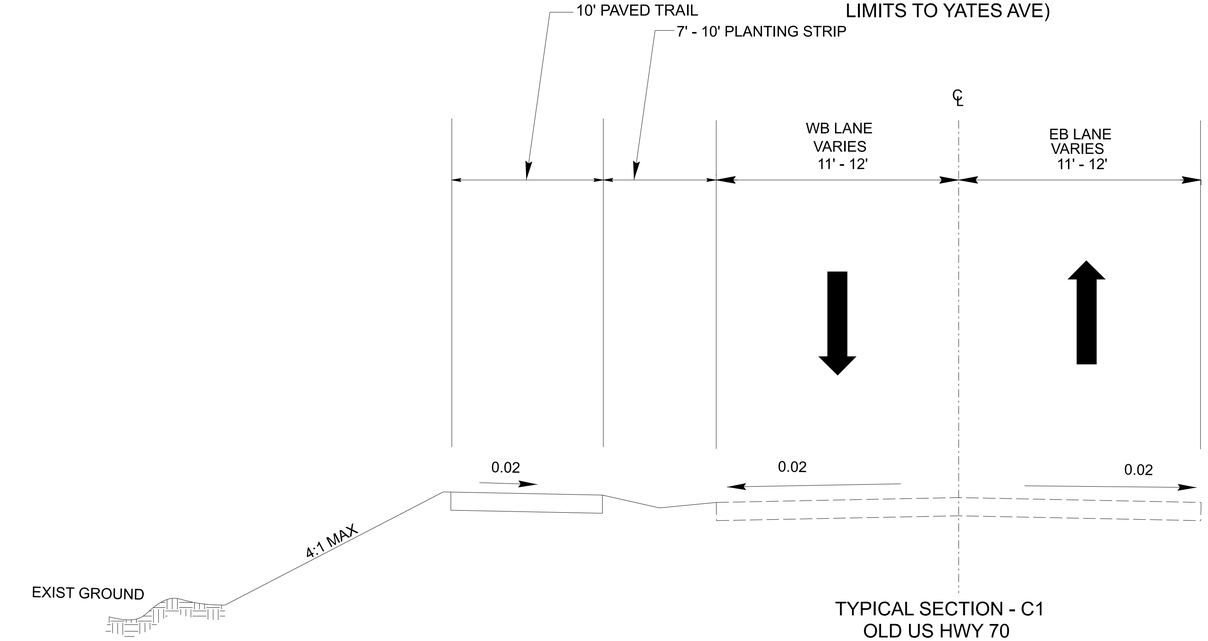
20 10 0 20 40
PLANS

KITTELSON & ASSOCIATES
702 OBERLIN RD SUITE 410
RALEIGH, NC 27605

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •



TYPICAL SECTION - C1
OLD US HWY 70
(BLACK MOUNTAIN TOWN
LIMITS TO YATES AVE)



TYPICAL SECTION - C1
OLD US HWY 70
(BLACK MOUNTAIN TOWN
LIMITS TO YATES AVE)

2A

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

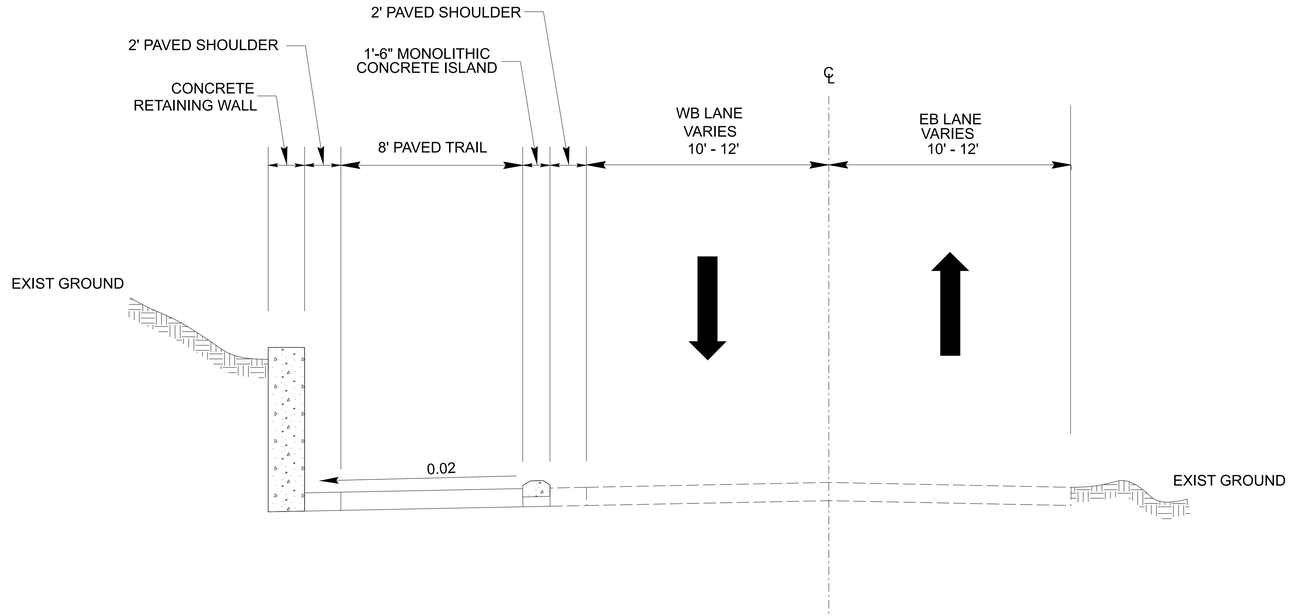
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



TYPICAL SECTION - D1
YATES AVE / MILL CREEK RD / OLD US HWY 70 W
(OLD HWY 70 E TO POINT LOOKOUT TRAILHEAD)

2B

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

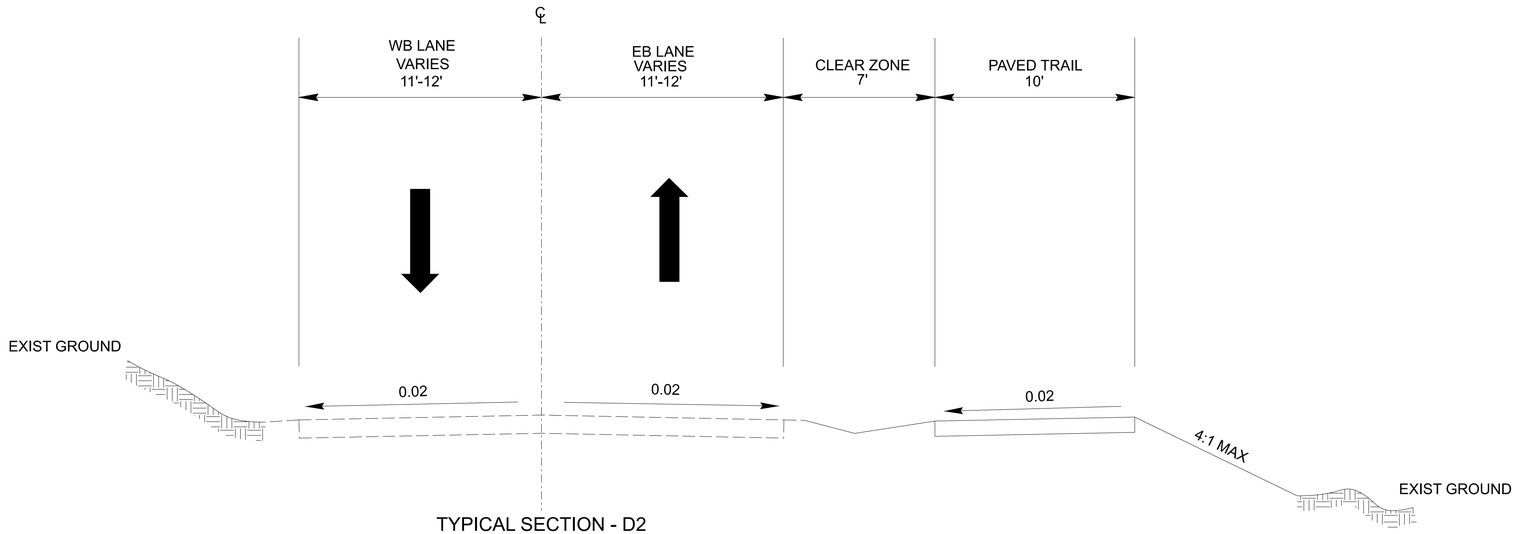
ROADWAY DESIGN UNIT

PREPARED BY

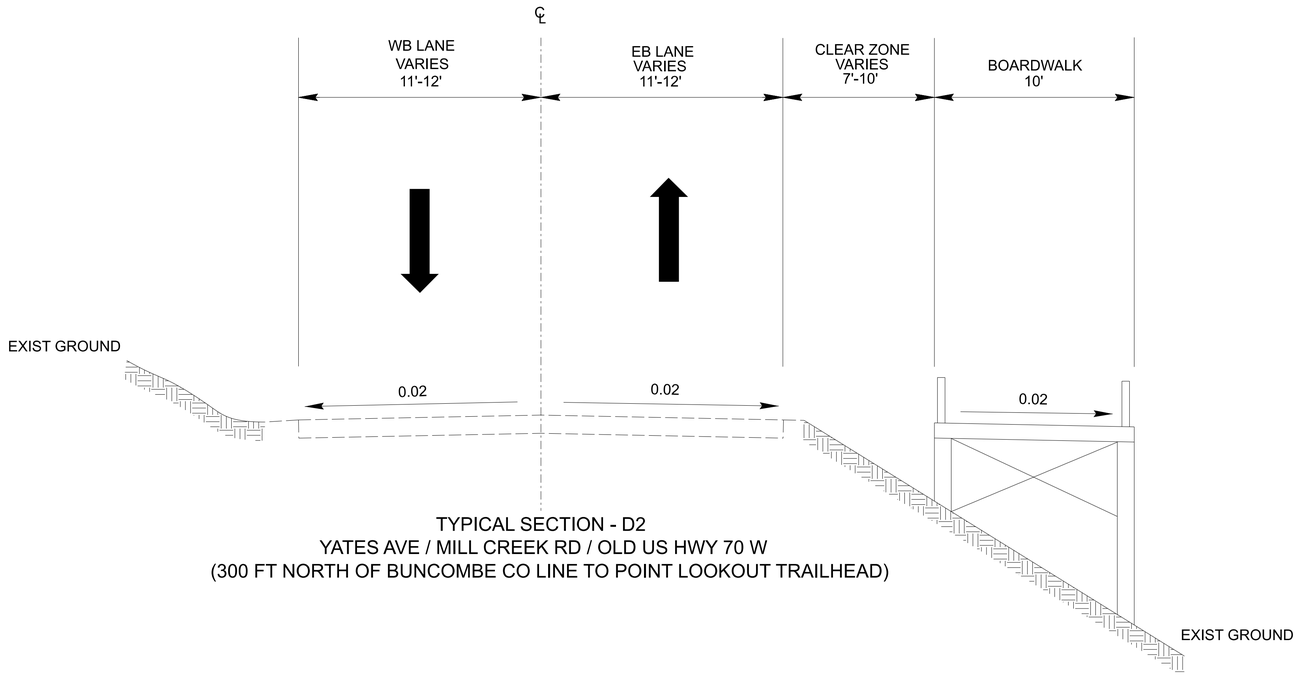
KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR BID & R/W ACQUISITION



TYPICAL SECTION - D2
YATES AVE / MILL CREEK RD / OLD HWY US 70 W
(OLD HWY 70 E TO 300 FT NORTH OF BUNCOMBE CO LINE)



TYPICAL SECTION - D2
YATES AVE / MILL CREEK RD / OLD US HWY 70 W
(300 FT NORTH OF BUNCOMBE CO LINE TO POINT LOOKOUT TRAILHEAD)

2C

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

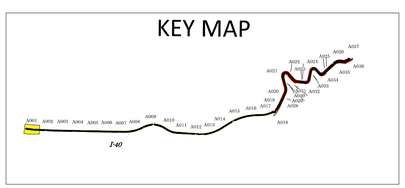


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A001

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

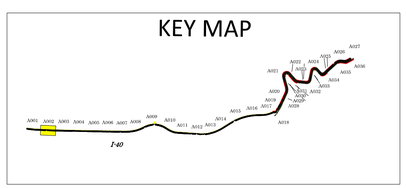


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A002

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

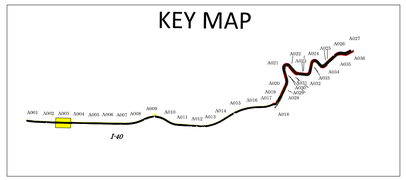


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A003

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

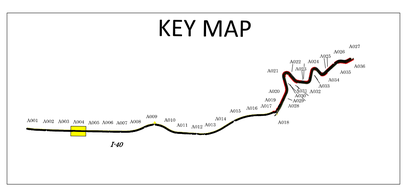


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A004

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

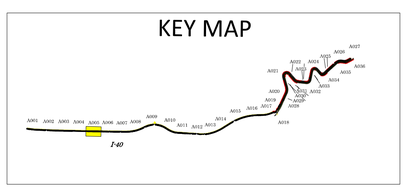


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A005

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

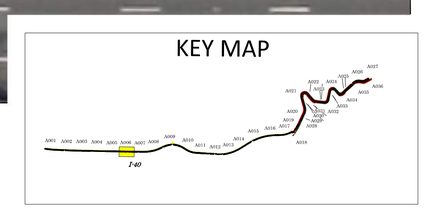
PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION





LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

PDX/btucker - 10/1/2025

A006

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

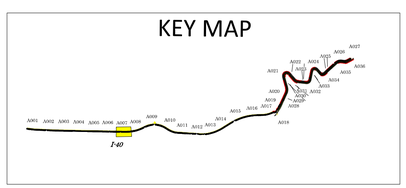


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A007

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

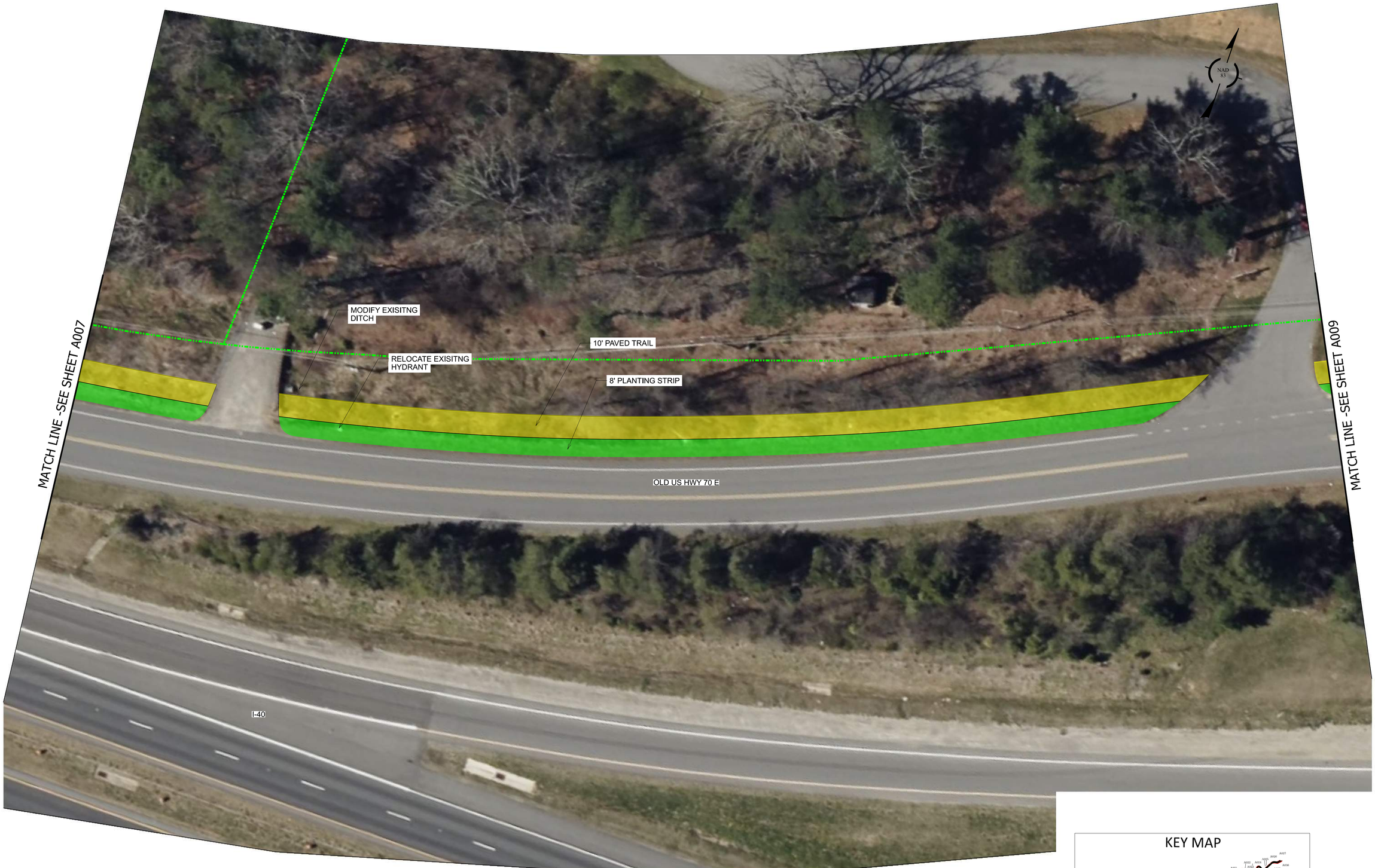
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

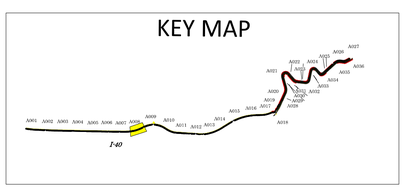


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A008

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

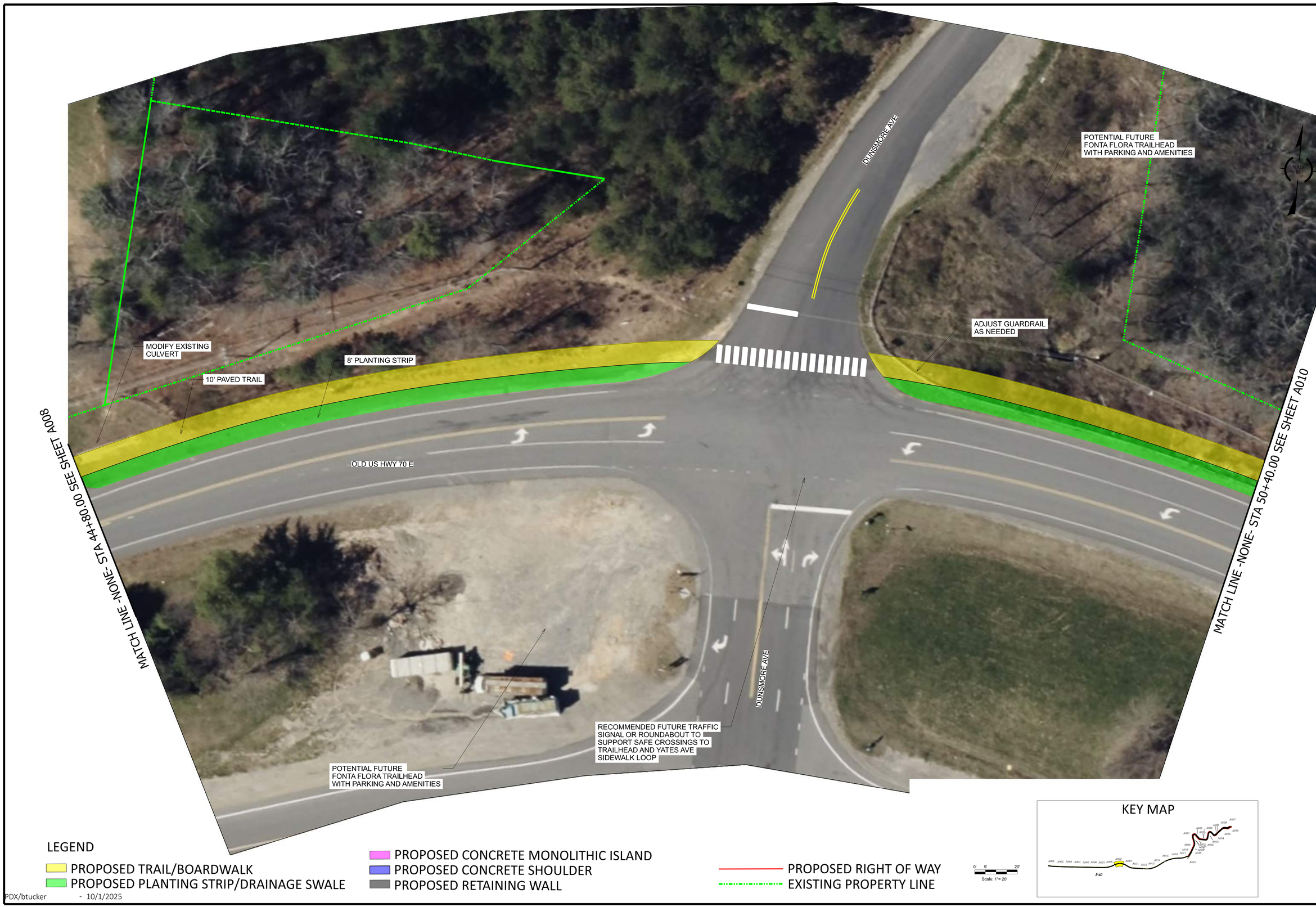
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



PDX/btucker - 10/1/2025

A009

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

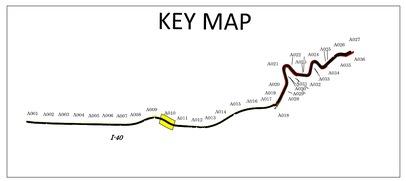


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A010

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

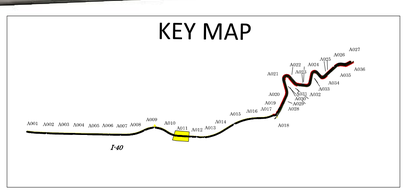


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A011

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

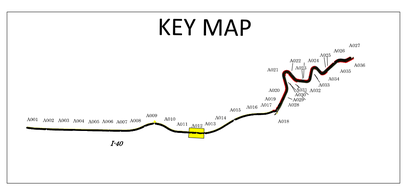


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A012

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

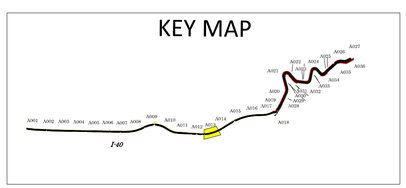


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A013

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES
KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP

PDX/btucker - 10/1/2025

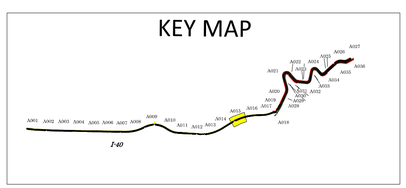


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A015

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

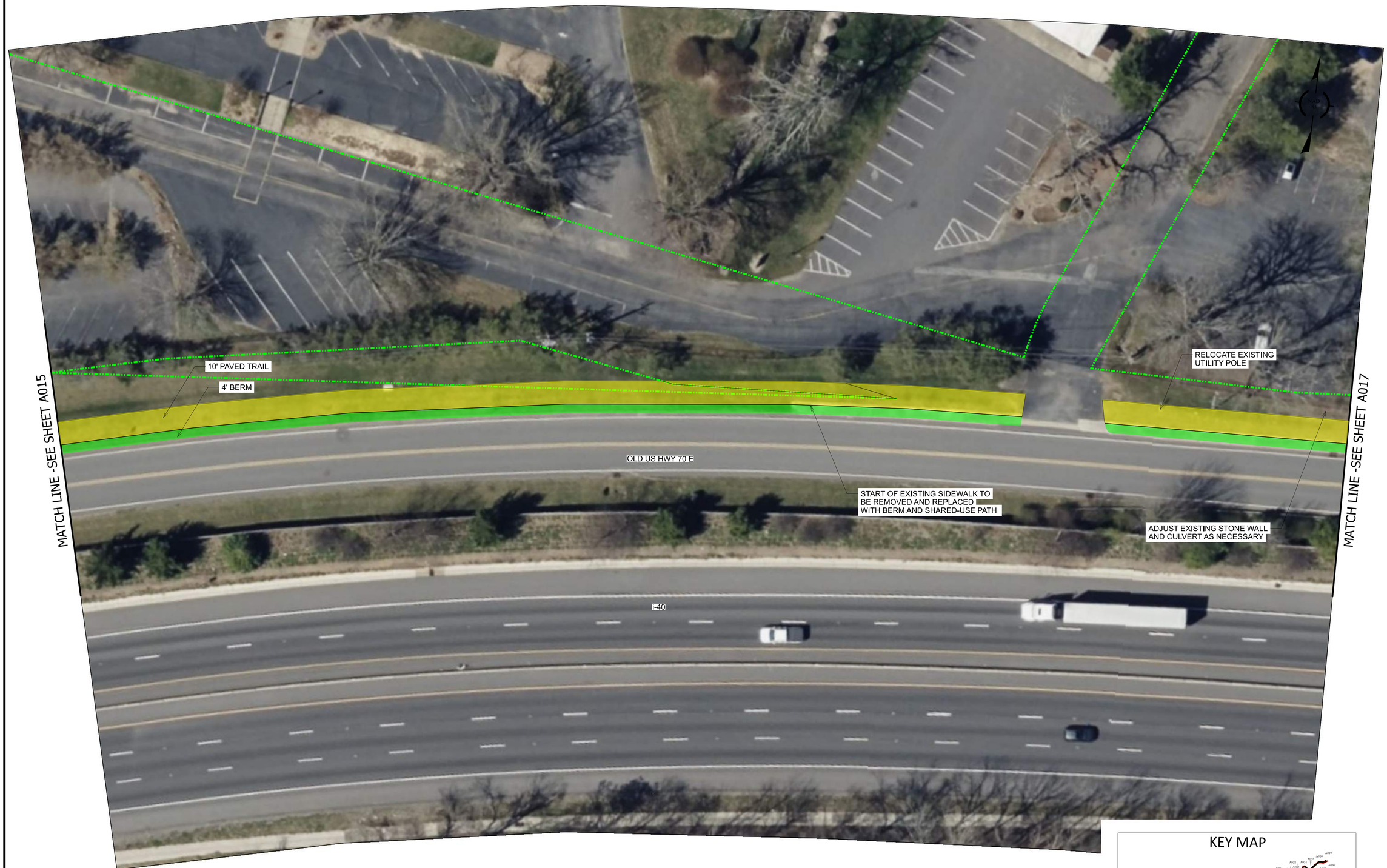
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

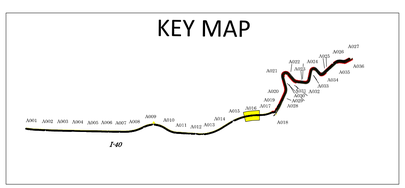


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A016

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

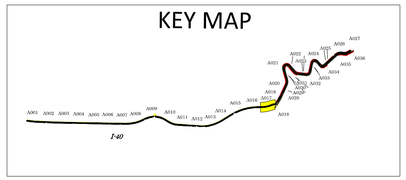


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A017

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

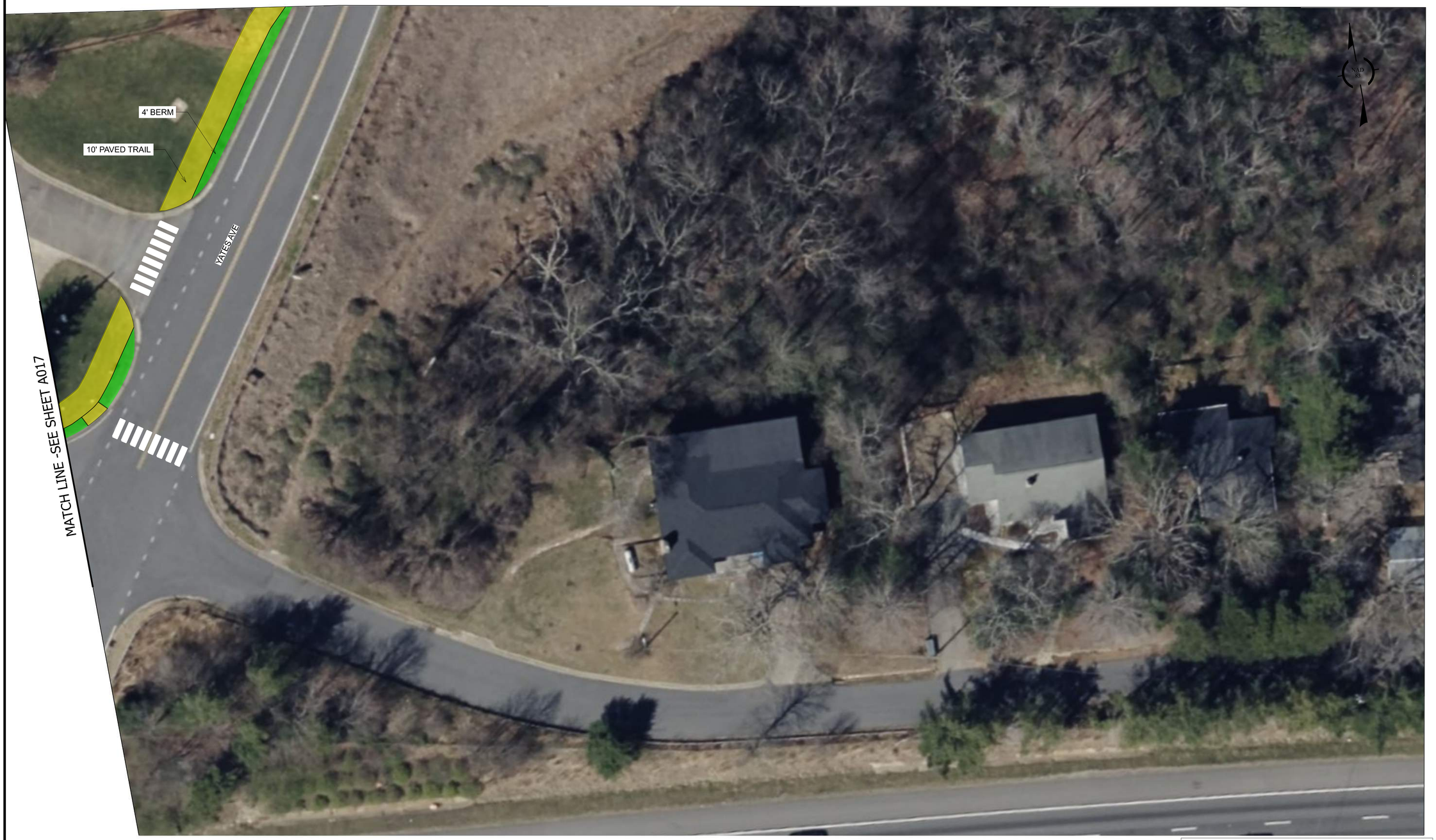
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

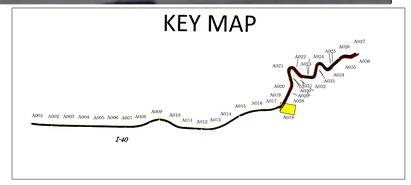


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A018

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

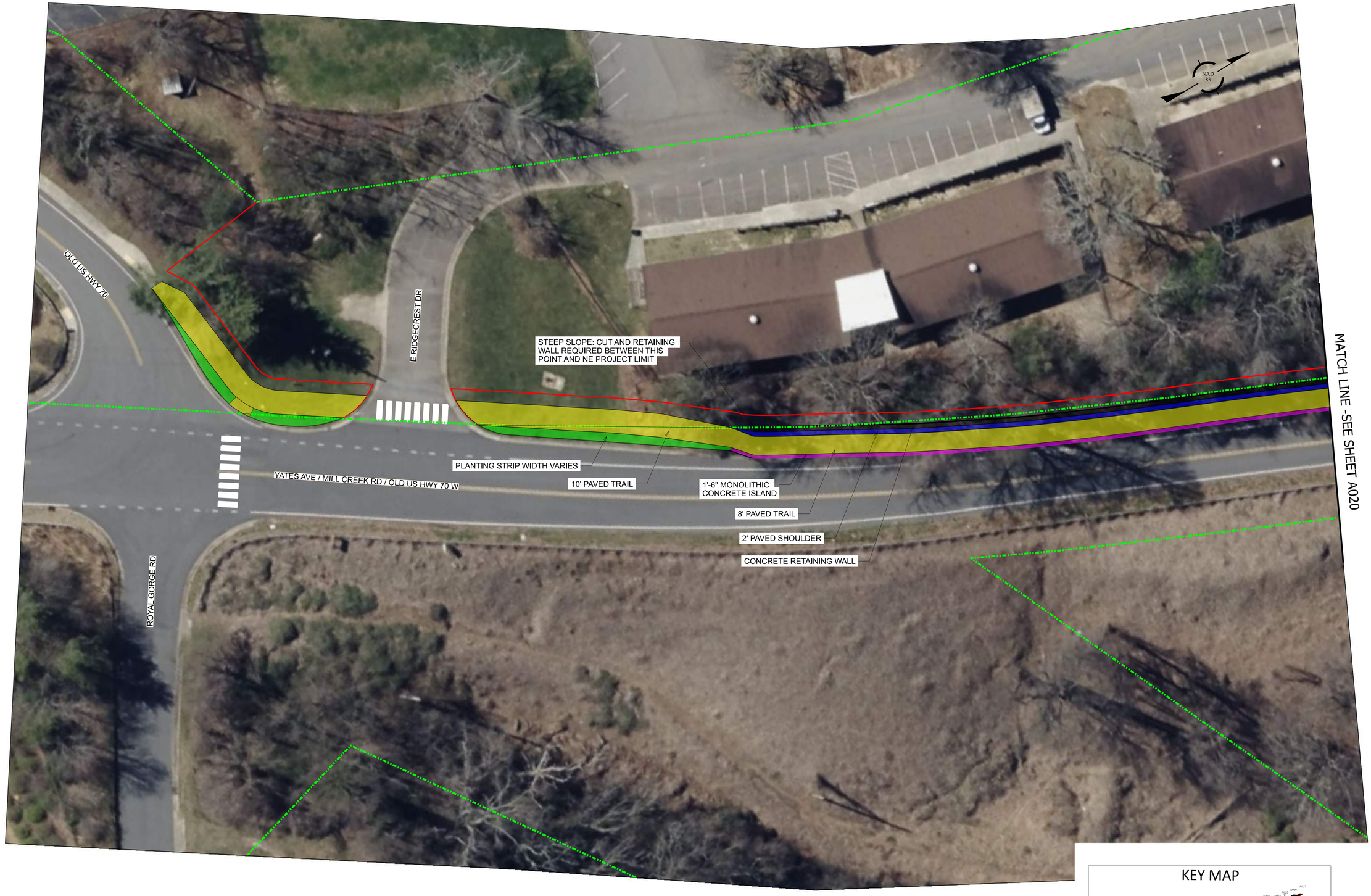
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

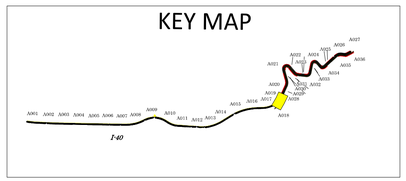


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A019

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

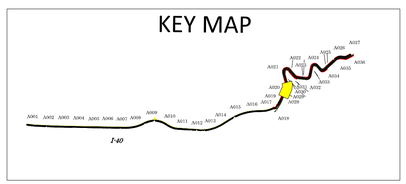


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A020

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

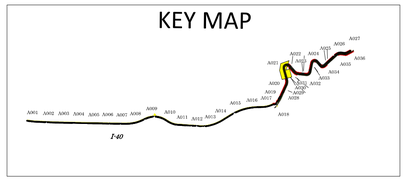


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A021

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

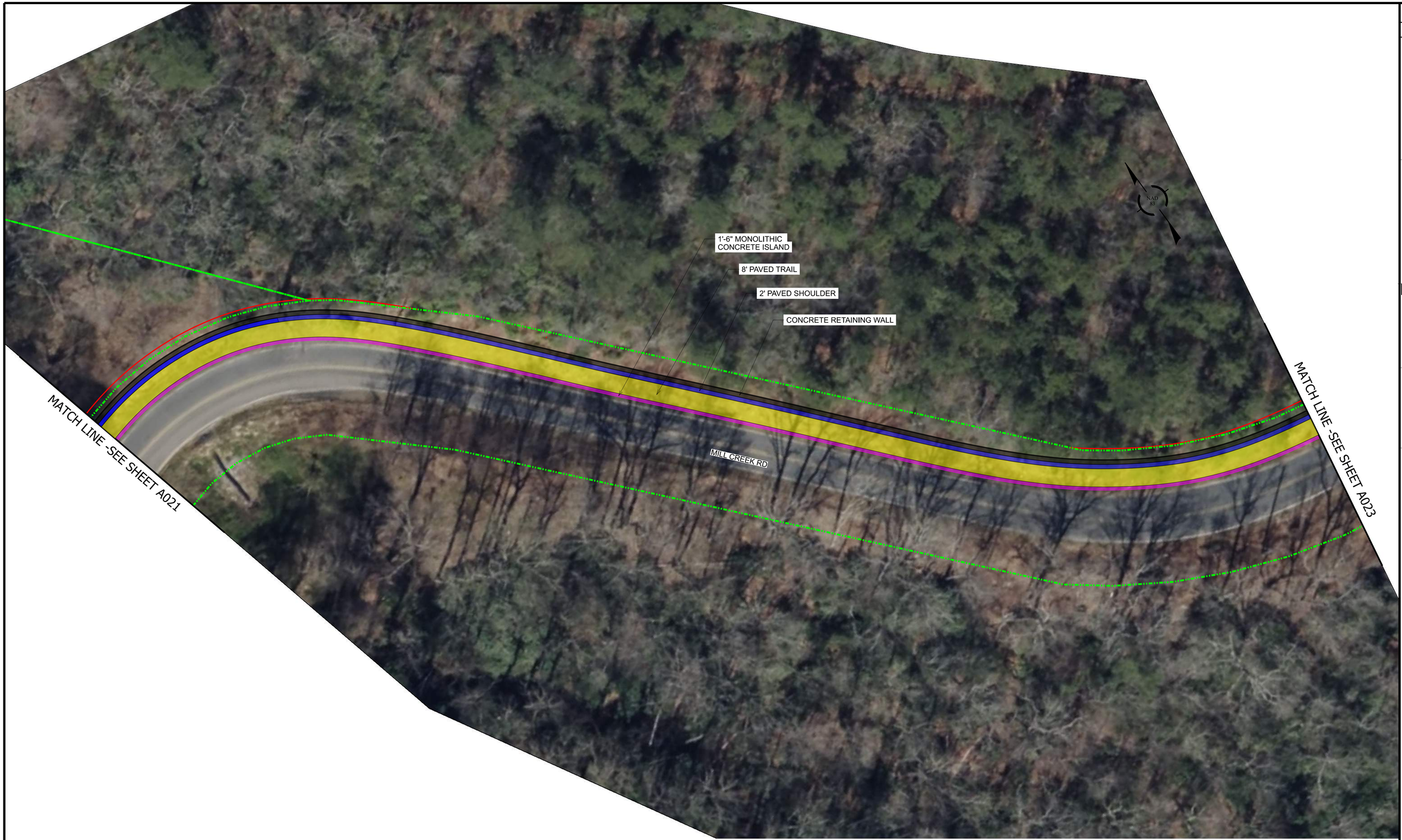
ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

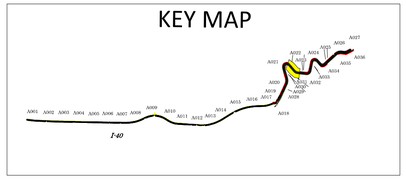


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A022

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

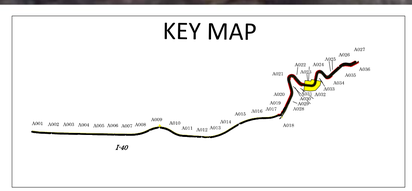


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A023

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES
KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

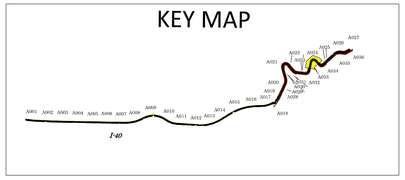


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



A024

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PDX/btucker - 10/1/2025

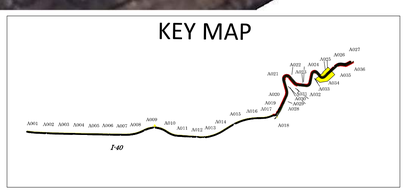


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A025

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

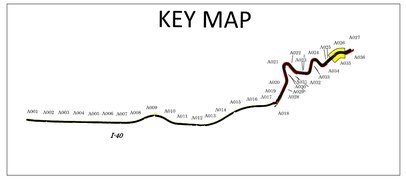


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



A026

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PDX/btucker - 10/1/2025

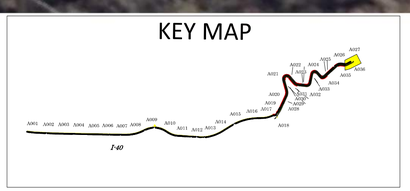


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A027

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

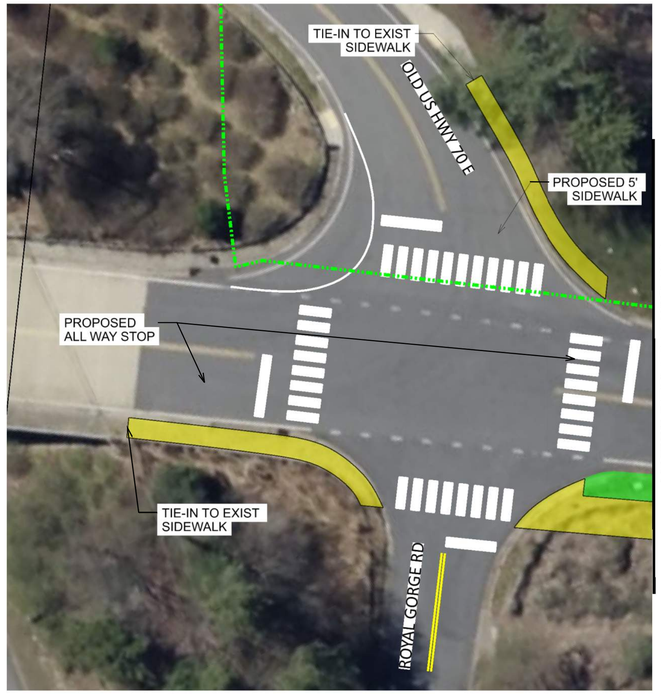
ROADWAY DESIGN UNIT

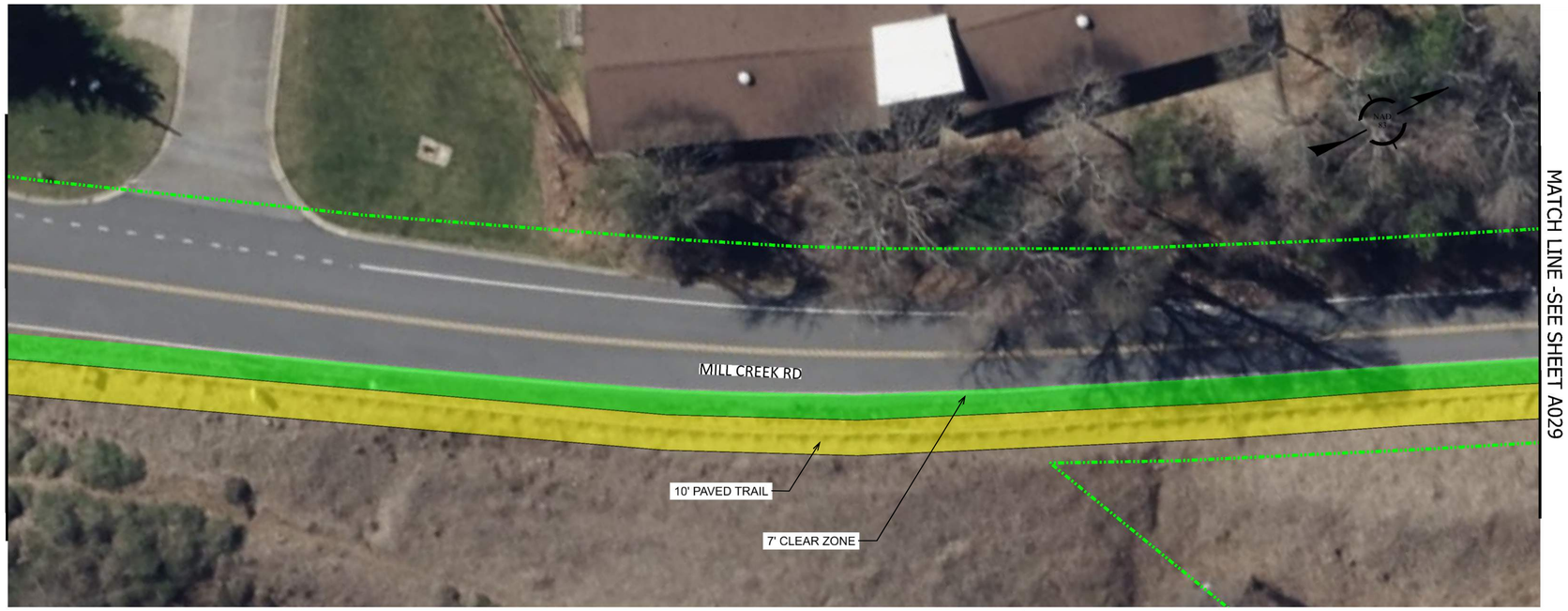
PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



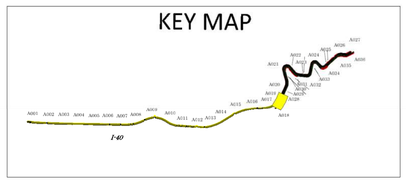


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A028

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

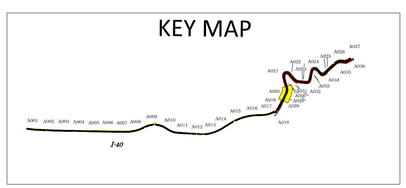


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A029

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

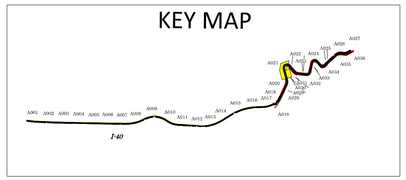


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A030

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

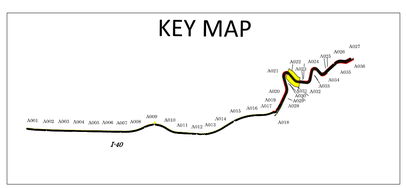


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A031

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A032

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

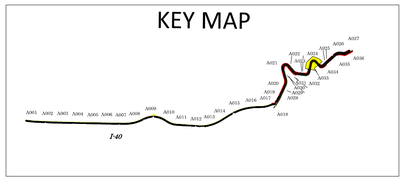


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A033

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

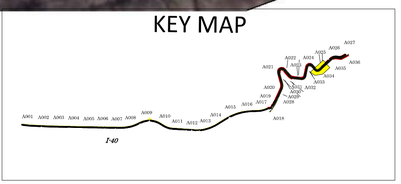


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A034

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

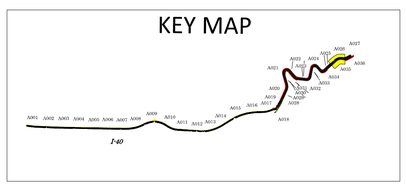


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A035

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

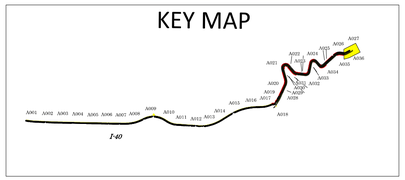


LEGEND

- PROPOSED TRAIL/BOARDWALK
- PROPOSED PLANTING STRIP/DRAINAGE SWALE
- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED CONCRETE SHOULDER
- PROPOSED RETAINING WALL
- PROPOSED RIGHT OF WAY
- EXISTING PROPERTY LINE

0' 5' 20'
Scale: 1"= 20'

KEY MAP



PDX/btucker - 10/1/2025

A036

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA

ROADWAY DESIGN UNIT

PREPARED BY

KITTELSON & ASSOCIATES

KITTELSON AND ASSOCIATES, INC.
702 OBERLIN RD, SUITE 410
RALEIGH, NC 27605

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



Appendix D
Cost Estimates

Fonta Flora Trail
Segment C1 Concept
NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$403,000.00	$403,000.00
Traffic Control	LS	ALL	$171,000.00	$171,000.00
Construction Staging	LS	ALL	$171,000.00	$171,000.00
Erosion Control	AC	4.8	$10,000.00	$48,000.00
Removal of Structures and Obstructions	LS	ALL	$72,000.00	$72,000.00
Clearing and Grubbing	LS	ALL	$96,000.00	$96,000.00
General Earthworks	CY	3,100	$65.00	$201,500.00
Concrete Curbs - Standard Curb & Gutter	LF	0	$55.00	$0.00
Separated Multi-Use Path - Concrete	SF	95,000	$10.20	$969,000.00
Detectable Warnings	EA	40	$500.00	$20,000.00
Extra for Pedestrian Ramps	EA	40	$2,250.00	$90,000.00
Residential Driveway Reconstruction	EA	12	$2,000.00	$24,000.00
Commercial Driveway Reconstruction	EA	6	$4,000.00	$24,000.00
Retaining Walls, Gravity	SF	10,400	$75.00	$780,000.00
Bridge Structure, Complete	SF	0		$0.00
Guardrail System, Complete	LF	300	$55.00	$16,500.00
Storm Water Conveyance System, Complete	LS	ALL	$385,000.00	$385,000.00
Permanent Landscaping	SF	114,000	$4.00	$456,000.00
Pavement Markings, Complete	LS	ALL	$39,000.00	$39,000.00
Signage, Complete	LS	ALL	$52,000.00	$52,000.00
Illumination System, Complete	LS	ALL	$128,100.00	$128,100.00
TOTAL CONSTRUCTION COST			**$**	**4,146,100**

Fonta Flora Trail

Segment C1 Concept

NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
This Estimate has a Rating of:		**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
RIGHT-OF-WAY COSTS				
Residential Right-of-Way Acquisition	SF	0	$15.00	$0.00
Residential Permanent Easement	SF	0	$11.25	$0.00
Residential Temporary Construction Easement	SF	0	$2.25	$0.00
Commercial Right-of-Way Acquisition	SF	2,500	$30.00	$75,000.00
Commercial Permanent Easement	SF	0	$22.50	$0.00
Commercial Temporary Construction Easement	SF	0	$4.50	$0.00
Permanent Drainage Easement	SF	0	$15.00	$0.00
RIGHT-OF-WAY SUBTOTAL				**$ 75,000**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$1,037,000.00	$1,037,000.00
Right-of-Way Support	EA	0	$18,000.00	$0.00
ENGINEERING SUPPORT SUBTOTAL				**$ 1,037,000**
			TOTAL PROJECT SUBTOTAL	**$ 5,258,100**
			30% Contingency	**$ 1,577,430**
			TOTAL ESTIMATED PROJECT COST	**$ 6,835,530**

Fonta Flora Trail
Segment D1 Concept
NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$551,000.00	$551,000.00
Traffic Control	LS	ALL	$231,000.00	$231,000.00
Construction Staging	LS	ALL	$369,000.00	$369,000.00
Erosion Control	AC	1.5	$10,000.00	$15,000.00
Removal of Structures and Obstructions	LS	ALL	$253,000.00	$253,000.00
Clearing and Grubbing	LS	ALL	$127,000.00	$127,000.00
General Earthworks	CY	2,100	$65.00	$136,500.00
Asphalt Roadway - Full Depth	SF	0	$12.60	$0.00
Concrete Curbs - Standard Curb	LF	4,800	$62.50	$300,000.00
Concrete Curbs - Standard Curb & Gutter	LF	0	$55.00	$0.00
Separated Bicycle Facility - Asphalt	SF	48,000	$5.80	$278,400.00
Concrete Walks	SF	0	$10.20	$0.00
Separated Multi-Use Path - Concrete	SF	0	$10.20	$0.00
Separated Multi-Use Path - Asphalt	SF	0	$4.20	$0.00
Detectable Warnings	EA	6	$500.00	$3,000.00
Extra for Pedestrian Ramps	EA	6	$2,250.00	$13,500.00
Residential Driveway Reconstruction	EA	0	$2,000.00	$0.00
Commercial Driveway Reconstruction	EA	2	$4,000.00	$8,000.00
Retaining Walls, Gravity	SF	38,700	$75.00	$2,902,500.00
Bridge Structure, Complete	SF	0		$0.00
Guardrail System, Complete	LF	0	$55.00	$0.00
Storm Water Conveyance System, Complete	LS	ALL	$403,000.00	$403,000.00
Permanent Landscaping	SF	9,600	$4.00	$38,400.00
Pavement Markings, Complete	LS	ALL	$22,000.00	$22,000.00
Signage, Complete	LS	ALL	$30,000.00	$30,000.00
Illumination System, Complete	LS	ALL	$73,200.00	$73,200.00
TOTAL CONSTRUCTION COST			**$**	**5,754,500**

Fonta Flora Trail
Segment D1 Concept
NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
RIGHT-OF-WAY COSTS				
Residential Right-of-Way Acquisition	SF	0	$15.00	$0.00
Residential Permanent Easement	SF	0	$11.25	$0.00
Residential Temporary Construction Easement	SF	0	$2.25	$0.00
Commercial Right-of-Way Acquisition	SF	7,500	$10.00	$75,000.00
Commercial Permanent Easement	SF	0	$7.50	$0.00
Commercial Temporary Construction Easement	SF	12,500	$1.50	$18,750.00
Permanent Drainage Easement	SF	0	$15.00	$0.00
RIGHT-OF-WAY SUBTOTAL				**$ 93,750**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$1,439,000.00	$1,439,000.00
Right-of-Way Support	EA	0	$18,000.00	$0.00
ENGINEERING SUPPORT SUBTOTAL				**$ 1,439,000**
			TOTAL PROJECT SUBTOTAL	**$ 7,287,250**
			30% Contingency	**$ 2,186,180**
			TOTAL ESTIMATED PROJECT COST	**$ 9,473,430**

Fonta Flora Trail
Segment D2 Concept
NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$825,000.00	$825,000.00
Traffic Control	LS	ALL	$345,000.00	$345,000.00
Construction Staging	LS	ALL	$552,000.00	$552,000.00
Erosion Control	AC	3.0	$10,000.00	$30,000.00
Removal of Structures and Obstructions	LS	ALL	$146,000.00	$146,000.00
Clearing and Grubbing	LS	ALL	$259,000.00	$259,000.00
General Earthworks	CY	5,000	$65.00	$325,000.00
Asphalt Roadway - Full Depth	SF	0	$12.60	$0.00
Concrete Curbs - Standard Curb	LF	0	$62.50	$0.00
Concrete Curbs - Standard Curb & Gutter	LF	0	$55.00	$0.00
Separated Bicycle Facility - Asphalt	SF	0	$5.80	$0.00
Concrete Walks	SF	0	$10.20	$0.00
Separated Multi-Use Path - Concrete	SF	10,000	$10.20	$102,000.00
Separated Multi-Use Path - Asphalt	SF	0	$4.20	$0.00
Detectable Warnings	EA	2	$500.00	$1,000.00
Extra for Pedestrian Ramps	EA	2	$2,250.00	$4,500.00
Residential Driveway Reconstruction	EA	0	$2,000.00	$0.00
Commercial Driveway Reconstruction	EA	2	$4,000.00	$8,000.00
Retaining Walls, Gravity	SF	0	$75.00	$0.00
Bridge Structure, Complete	SF	38,000	$150.00	$5,700,000.00
Guardrail System, Complete	LF	0	$55.00	$0.00
Storm Water Conveyance System, Complete	LS	ALL	$173,000.00	$173,000.00
Permanent Landscaping	SF	52,800	$1.50	$79,200.00
Pavement Markings, Complete	LS	ALL	$9,000.00	$9,000.00
Signage, Complete	LS	ALL	$18,000.00	$18,000.00
Illumination System, Complete	LS	ALL	$43,300.00	$43,300.00
TOTAL CONSTRUCTION COST			**$**	**8,620,000**

Fonta Flora Trail

Segment D2 Concept

NCDOT

Engineer's Conceptual Estimate

Prepared By: Josh Hurst, PE, PTOE		*Date: August 22, 2025*		
Reviewed By: --				
This Estimate has a Rating of:		**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
RIGHT-OF-WAY COSTS				
Residential Right-of-Way Acquisition	SF	0	$15.00	$0.00
Residential Permanent Easement	SF	0	$11.25	$0.00
Residential Temporary Construction Easement	SF	0	$2.25	$0.00
Commercial Right-of-Way Acquisition	SF	7,500	$10.00	$75,000.00
Commercial Permanent Easement	SF	0	$7.50	$0.00
Commercial Temporary Construction Easement	SF	12,500	$1.50	$18,750.00
Permanent Drainage Easement	SF	0	$15.00	$0.00
RIGHT-OF-WAY SUBTOTAL				**$ 93,750**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	$2,155,000.00	$2,155,000.00
Right-of-Way Support	EA	0	$18,000.00	$0.00
ENGINEERING SUPPORT SUBTOTAL				**$ 2,155,000**
			TOTAL PROJECT SUBTOTAL	**$ 10,868,750**
			30% Contingency	**$ 3,260,630**
			TOTAL ESTIMATED PROJECT COST	**$ 14,129,380**



Appendix E
Project Cut Sheets

FONTA FLORA PAVED TRAIL: OLD HWY 70 E

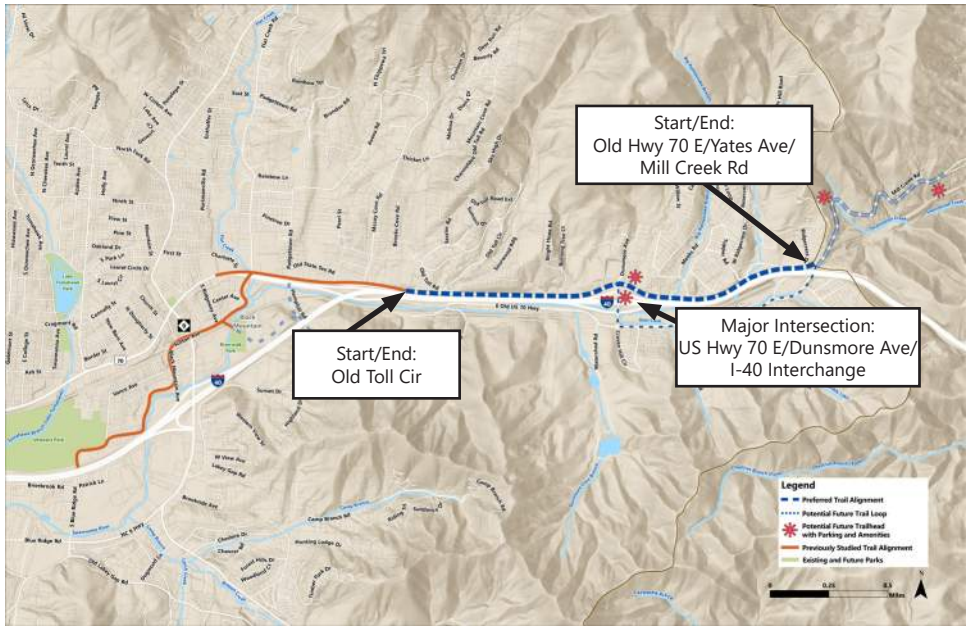
Old Hwy 70 E between Old Toll Cir and Mill Creek Rd

Description:

This segment of the Fonta Flora Paved Trail will run along the north side of Old Hwy 70 E from the Town of Black Mountain boundary to Mill Creek Road. This alignment connects residential areas and the Ridgecrest community to Black Mountain. The alignment on the trail on the north side of Old Hwy 70 E also provides direct access to residential neighborhoods without needing to crossing the road.

The typical section along Old Hwy 70 E is for a 10-foot paved trail separated from the roadway by a planting strip buffer.[1]

Phase Alignment:



Length: 1.8 Miles

Estimated Total Cost[2]: $6,835,530

- *Construction & Engineering Support Cost: $5,183,100*
- *Right-of-Way Cost: $75,000*

Impacts to Existing Curb: No

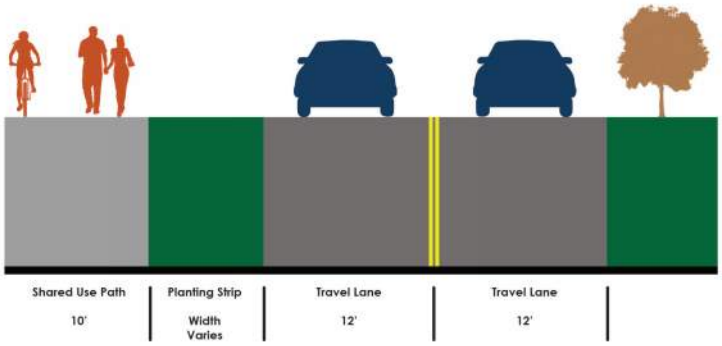
Private Property Impacts (SF)[3]: 2,470

Impacts to Railroad Right-of-Way: No

Utility Impacts[3]: Minor utility pole impacts

Structures Required[4]: None

Typical Section:



[1] Typical drainage swale dimensions need to be verified in the next phase of design.

[2] At this stage of concept development there are still significant project unknowns that limit the detail and accuracy of this preliminary opinion of probable costs. Costs were developed using broad per mile, per square foot, and/or per intersection assumptions for major design treatments. No survey has been completed to calibrate right-of-way acquisition assumptions or to inform other cost components.

[3] Private property and utility impacts should be verified through future survey and design.

[4] Structural analysis should be completed to verify the structural requirements during the next phase of design.

FONTA FLORA PAVED TRAIL: MILL CREEK ROAD

Mill Creek Rd between Old Hwy 70 E to Point Lookout Trail

Description:

This segment of the Fonta Flora Paved Trail will run along the west side of Mill Creek Road from Old US 70 E to Point Lookout Trail. This alignment facilitates a connection amongst Point Lookout Trail, Ridgecrest, and the Town of Black Mountain.

The typical section along Mill Creek Road is an 8-foot paved trail separated from the road by a 1'6" raised concrete barrier. A 2-foot paved shoulder provides separation from a concrete retaining wall. A painted sharrow provides an option for bicyclists traveling downhill from Point Lookout Trail. [1]

Length: 4,700 Feet

Estimated Total Cost[2]: $9,473,430

- *Construction & Engineering Support Cost: $7,193,500*
- *Right-of-Way Cost: $93,750*

Impacts to Existing Curb: No

Private Property Impacts (SF)[3]: 0

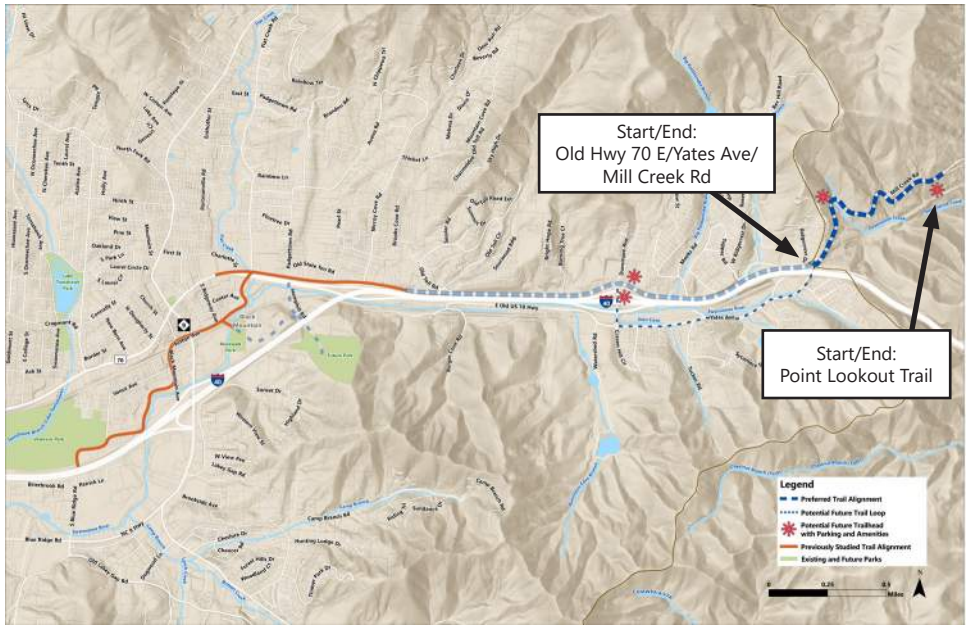
Impacts to Railroad Right-of-Way: No

Utility Impacts[3]: Minor utility pole impacts

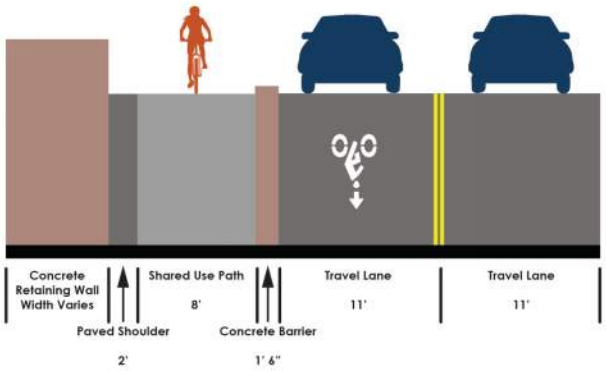
Structures Required[4]:

- Concrete retaining wall between mountainside and paved trail

Phase Alignment:



Typical Section:



[1] Typical drainage swale dimensions need to be verified in the next phase of design.

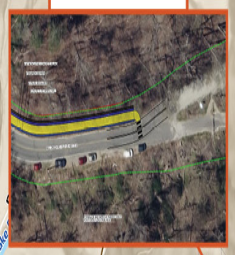
[2] At this stage of concept development there are still significant project unknowns that limit the detail and accuracy of this preliminary opinion of probable costs. Costs were developed using broad per mile, per square foot, and/or per intersection assumptions for major design treatments. No survey has been completed to calibrate right-of-way acquisition assumptions or to inform other cost components.

[3] Private property and utility impacts should be verified through future survey and design.

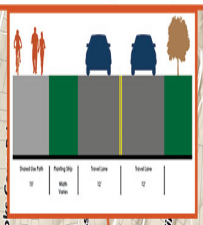
[4] Structural analysis should be completed to verify the structural requirements during the next phase of design.

FONTA FLORA PAVED TRAIL FEASIBILITY STUDY

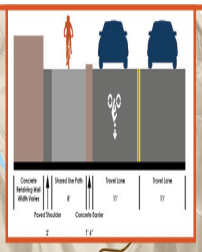
Point Lookout Trail Connection



Typical Section: Paved Trail along Old Hwy 70



Typical Section: Paved Trail along Mill Creek Rd



Yates Ave Bridge Connection



Legend

- Preferred Trail Alignment
- Potential Future Trail Loop
- Potential Future Trailhead with Parking and Amenities
- Previously Studied Trail Alignment
- Existing and Future Parks

0 0.25 0.5 Miles

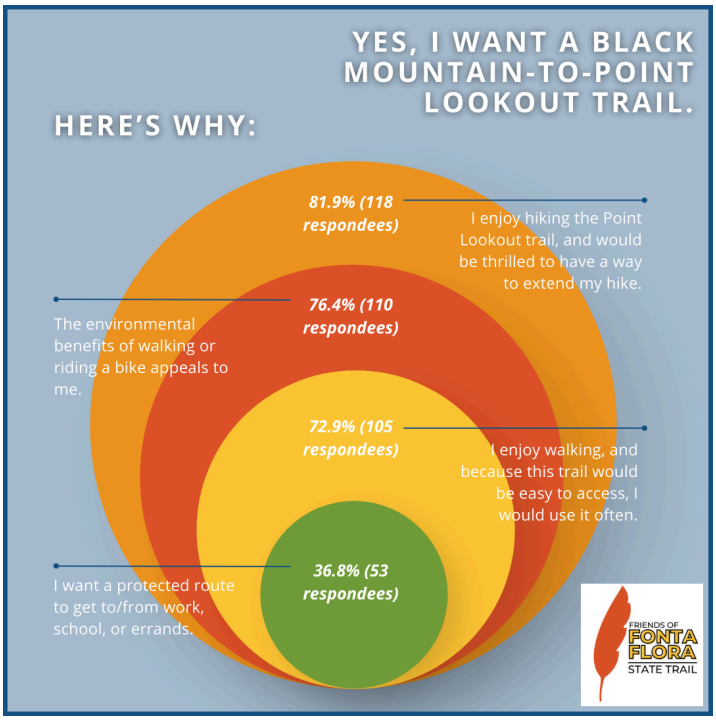
N

Community Support for the Black Mountain–Point Lookout Segment Fonta Flora State Trail

Summary of the Kittelson Feasibility Study

The preferred route for the Black Mountain–Point Lookout segment of the Fonta Flora State Trail was identified through a comprehensive feasibility study led by Kittelson & Associates in partnership with Friends of Fonta Flora State Trail (F3ST), NCDOT, and local agencies. Guided by a Steering Committee representing local governments, state agencies, trail advocates, and community members, the study combined technical analysis, field reviews, and **public engagement** to evaluate multiple alignment alternatives. Routes were assessed based on safety, constructability, cost, environmental and property impacts, access to destinations, user experience, and resilience, including hurricane recovery considerations. Through this iterative process and public pop-up engagement, a preferred alignment was selected along the north side of Old US Highway 70 and the upslope side of Mill Creek Road as the option that best balances feasibility, safety, connectivity, and community priorities.

Community Engagement & Informal Survey Results



To complement the formal feasibility study, Friends of Fonta Flora State Trail conducted a rapid, informal survey through its newsletter (500+ subscribers) and Facebook page (2,000+ followers). Community response was immediate, with more than 140 individuals responding within a short time frame to a single question asking whether they wanted the trail and why.

- 81.9% enjoy hiking the Point Lookout Trail and want a connected route to extend their hike.
- 76.4% support the trail for its environmental benefits.
- 72.9% would use the trail often because it would be easy to access.
- 36.8% want a protected route for commuting and daily errands.

On-the-Ground Engagement

These survey results reinforce feedback gathered during Kittelson-led community pop-up events, where residents and visitors reviewed maps, asked questions, and expressed support for the proposed connection.



Why This Matters for Adoption & Implementation

The combination of professional technical analysis and demonstrated community support shows that the Black Mountain–Point Lookout segment is both feasible and publicly supported. This level of engagement provides local governments and partner agencies with a strong foundation to adopt, refine, and advance the project into design and implementation.

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Public Hearing	**DEPARTMENT:**	Planning & Development Services

TITLE OF ITEM: Public Hearing for and Consideration of Approval of Voluntary Annexation of Property Owned by Givens Highland Farms (PIN# 0609-46-7498)

SUGGESTED MOTION(S):

I move to approve the Voluntary Annexation Ordinance of property known as 318 Tabernacle Road, PIN# 0609-46-7498, into the Town of Black Mountain town limits as presented and recommended.

SUMMARY:

Givens Highland Farms has acquired 318 Tabernacle Road, PIN #0609-46-7498. The property is 2.5 acres. Givens Highland Farms is seeking voluntary annexation of this parcel to be able to combine the parcel with their existing 87+ acre campus, all of which is inside town limits.
The Planning Board heard this request at their February 23, 2026, meeting and found no reason the property should not be annexed into the town limits.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. 26_03_09_ORDINANCE_GHF_ANNEXATION
2. annexation_application_GHF
3. annexation_plat_GHF

4. annexation_deed_GHF

ORDINANCE #

AN ORDINANCE ANNEXING THAT PROPERTY OF GIVENS HIGHLAND FARMS, LLC, ON THAT PLAT RECORDED IN PLAT BOOK 0095 AT PAGE 0120 INTO THE TOWN OF BLACK MOUNTAIN

WHEREAS, Givens Highland Farms, LLC has requested that the Town of Black Mountain annex that property owned by Givens Highland Farms, LLC and described as that 2.5-acre tract of land shown on that plat recorded in Plat Book 0095 at Page 0120, Buncombe County Registry; and

WHEREAS, Givens Highland Farms, LLC owns all of the property proposed to be annexed and submitted an application in their name and signed by them, so that such application and petition is signed by or on behalf of all the property owners as required by N.C.G.S. 160A-31 et seq; and

WHEREAS, the Town Clerk has investigated the annexing petition and has certified that he found as a fact that the petition was signed by all owners of the property lying within the area to be annexed; and

WHEREAS, Givens Highland Farms, LLC has asserted that there are no vested rights that they wish to retain after annexation; and

WHEREAS, a public hearing was held by the Town Council of the Town of Black Mountain after proper notice was given to the public and the parties; and

WHEREAS, the Town of Black Mountain will benefit from annexation of the proposed area to be annexed in that its annexation will allow the Town to regulate development and ensure a use of such property that is beneficial to the area where it is located and not detrimental to the properties surrounding it.

NOW, THEREFORE, BE IT ORDAINED by the Town Council for the Town of Black Mountain, North Carolina, that the property described in Exhibit A as being all of that 2.5-acre parcel of land shown on that plat recorded in Plat Book 0095 at Page 0120, Buncombe County Registry and is hereby annexed and made a part of the corporate limits of the Town of Black Mountain, North Carolina.

This ordinance shall become effective on the 9th day of March 2026, if confirmed by the Town Council at its regular meeting in March 2026. In the absence of a majority vote of the Council to confirm this ordinance at that meeting, it shall become void and have no force or effect.

I move the adoption of the foregoing ordinance.

_____
_____
Council Member

READ, APPROVED AND ADOPTED, by a vote of _____ to _____ on this the 9th day of March 2026.

_____
C. Michael Sobol, Mayor

ATTEST:

_____
Wesley M. Barker, Town Clerk

Approved as to form:

_____
Craig Justus, Town Attorney

EXHIBIT A
LEGAL DESCRIPTION OF PROPERTY TO BE ANNEXED

BEGINNING at an iron pin found in the Northeast corner of property described in Deed Book 784, Page 403, Buncombe County Registry; thence North 89 deg. 20' 30" West 84.01 feet to an iron pin; thence North 85 deg. 32' 16" West 70.85 feet to an iron pin; thence North 83 deg. 57' 36" West 110.29 feet to an iron pin; thence North 84 deg. 54' 11" West 109.92 feet to an iron pin; thence North 84 deg. 53' 46" West 144.85 feet to an iron pin; thence North 84 deg. 51' 04" West 215.50 feet to an iron pin; thence North 84 deg. 51' 04" West 15 feet to a point in the Eastern edge of Tabernacle Road; thence running with said road, North 6 deg. 58' 17" East 170.26 feet to a point; thence leaving said road and running south 85 deg. 04' 54" East 12 feet to an iron pin; thence South 85 deg. 04' 54" East 763.92 feet to an iron pin; thence South 15 deg. 42' 53" West 170.26 feet to the point of BEGINNING, containing 3.00 acres, more or less, as shown on a survey for Jack Wheeler dated June 25, 1993, prepared by Michell E Effler, R.L.S., and being all of that property described in Book 2079 at Page 853, Buncombe County Registry, and being that property shown on the tax maps for Buncombe County as PIN #0609-46-7498-00000.

VOLUNTARY ANNEXATION PETITION FORM

To: The Town of Black Mountain Town Council

Date: November 24, 2025

We, the undersigned, being all of the owners of the real property described herein, per the requirements of Town of Black Mountain Code of Ordinances Chapter 48, Section 48-164 (d) (2), petition that the area described herein be annexed to the Town of Black Mountain pursuant to the provisions of G.S. 160A-31.

The area to be annexed is ☐ **contiguous** ☐ **non-contiguous** to the existing Town Limits and the boundaries of such territory are as indicated on the attached map and description.

Parcel Identification Number(s): **0609-46-7498-00000**

Current County Zoning District: **R-1**

Town Zoning District designation requested: **OI-6**

Buncombe County property tax valuation: **$0.00**

Do you declare vested rights*? ☐ yes ☒ no

*We acknowledge that any zoning vested rights acquired pursuant to G.S. 160A-385.1 or G.S. 153A-344.1 must be declared and identified on this petition. We further acknowledge that failure to declare such rights on this petition shall result in a termination of vested rights previously acquired for the property. (If zoning vested rights are claimed, indicate "yes" and attach proof.)

Are you requesting water service from the Town of Black Mountain? ☒ yes ☐ no

Number of existing residential dwelling units: **1** Number of commercial units: **0**

A legal description of the area, complete copy of the last deed of record for each parcel of property to be annexed, and copies of the draft annexation plat prepared by a registered land surveyor are attached. We have also provided the following for your additional information:

Please feel free to attach any additional information you feel may help the Town Council in determining the appropriateness of annexing this parcel into the Town of Black Mountain.

Property Owner(s): Address: Signature: Date:

All property owners must sign this petition including husband and wife if jointly owned. Add other sheets as needed.

x  Matt Sharpe, Executive Director

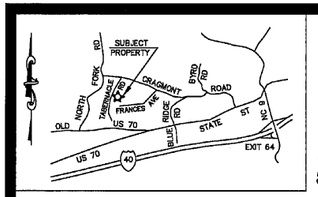
Givens Highland Farms, LLC
200 Tabernacle Rd, Black Mountain, NC 28711

Please Return Completed Applications to the Town of Black Mountain Planning and Development Department, 160 Midland Avenue, Black Mountain, NC 28711, (828) 419-9300.

Docusign Envelope ID: D1A8D95D-4F4E-4A6A-B69F-08D56B8276B0

Type: CONSOLIDATED REAL PROPERTY
Recorded: 12/8/2025 1:55:15 PM
Fee Amt: $21.00 Page 1 of 1
Buncombe County, NC
Drew Reisinger Register of Deeds

BK 253 PG 165



LOCATION MAP

Line Table

LINE	BEARING	DISTANCE
L1	N 84°29'58" W	35.03'
L2	S 84°25'10" E	35.81'
L3	S 88°02'28" E	83.79'

Septic Easement Calls

LINE	BEARING	DISTANCE
E1	S 08°09'15" W	60.00'
E2	N 83°53'56" W	45.00'
E3	N 08°09'15" E	60.00'

I, DONALD R. BLANKENSHIP, CERTIFY THAT THIS PLAT WAS DRAWN BY ME FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTIONS RECORDED IN D.B. 6547, P. 1546 AND P.B. 95, P. 120.) THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY MARKED AS BROKEN LINES DRAWN FROM RECORD DESCRIPTIONS AS SHOWN FOR ADJOINERS; THAT THE RATIO OF PRECISION IS NOT LESS THAN 1:10000, THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, LICENSE NO. AND SEAL THIS 8th DAY OF DECEMBER, 2025.

I, DONALD R. BLANKENSHIP, CERTIFY THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND OR ONE OR MORE EXISTING EASEMENTS AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

I, DONALD R. BLANKENSHIP, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GNSS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING WAS USED TO PERFORM THE SURVEY.

1. CLASS OF SURVEY: CLASS A (HORIZONTAL)
2. POSITIONAL ACCURACY: NOT TO EXCEED 0.10 FT H.
3. TYPE OF FIELD PROCEDURE: RTK-VRS
4. DATES OF SURVEY: 11/18/2025
5. DATUM/EPOCH: H-NAD 83-2011 EPOCH 2010, V-NAVD 88
6. PUBLISHED/FIXED-CONTROL USED: NC VRS NETWORK
7. GEOID MODEL: GEOID 18
8. COMBINED GRID FACTOR: 0.99978317
9. UNITS USED: US SURVEY FOOT

Signed by: Donald Blankenship
DABF0487455F45B...

PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER L-4665

NORTH CAROLINA PROFESSIONAL SEAL L-4665 LAND SURVEYOR DONALD R. BLANKENSHIP

TOTAL AREA =2.502 AC.
By Coord. Computation

Boundary Survey For:

Givens Highland Farms, LLC.

P.I.N. 0609-46-7498

Black Mountain Township, Buncombe County, NC

1 inch = 50' ft. December 8, 2025

50' 0 25' 50' 100' 200'

REFERENCES: DEED BOOK 6547, PAGE 1546
DEED BOOK 6443, PAGE 1522 (Access Esmt.)
DEED BOOK 2629, PAGE 35 (Septic Esmt.)
DEED BOOK 985, PAGE 341 (NCDOT R/W)
PLAT BOOK 95, PAGE 120

HIGH COUNTRY SURVEYORS, INC.
403-B WEST STATE ST., BLACK MOUNTAIN, NC 28711 (828) 664-0091
HIGHCOUNTRYSURVEYORS.NET CORPORATE LICENSE NUMBER C-1854

Submitted electronically by "High Country Surveyors Inc."
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Buncombe County Register of Deeds.

NOTES

1. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE SEARCH, AND MAY NOT SHOW ALL EASEMENTS, RESTRICTIONS, RIGHTS OF WAY, ENCUMBRANCES, OR OTHER FACTS THAT MAY BE DISCLOSED BY A FULL TITLE EXAMINATION PERFORMED BY AN ATTORNEY AT LAW. THIS SURVEY SHALL NOT BE CONSIDERED A CERTIFICATION OF OWNERSHIP, ZONING, TITLE, OR GUARANTEE THAT THE PROPERTY IS FREE FROM ENCUMBRANCES.
2. THE DISTANCES AND ACREAGE SHOWN ON THIS PLAT ARE GRID MEASUREMENTS. TO CONVERT TO GROUND DISTANCES AND ACREAGE, DIVIDE BY THE COMBINED FACTOR OF 0.99978317.
3. UNLESS STATED OTHERWISE HEREON, ONLY EVIDENCE OF EASEMENTS, BURIED UTILITIES, PIPELINES, OR STRUCTURES THERETO WHICH ARE READILY APPARENT FROM A CASUAL ABOVE GROUND VIEW OF PREMISES ARE SHOWN. INTERESTED PARTIES SHOULD INVESTIGATE THE EXISTENCE OF EASEMENTS, BURIED UTILITIES, OR PIPELINES, IF ANY, AND VERIFY. NO LIABILITY IS ASSUMED BY HIGH COUNTRY SURVEYORS, INC. FOR ANY LOSS THAT MAY BE ASSOCIATED WITH THE EXISTENCE OF ANY EASEMENT, BURIED UTILITY, OR PIPELINE ON THE PREMISES.
4. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY FEMA. SEE FIRM 3710060900J DATED 01.06.2010.
5. UNDERGROUND SEWERLINE INFORMATION IS TAKEN FROM BUNCOMBE COUNTY MSD GIS INFORMATION, AND HAS NOT BEEN FIELD VERIFIED.
6. THIS PROPERTY IS ZONED R-1 BY BUNCOMBE COUNTY.
SETBACKS: 20' FRONT, 10' SIDE, 20' REAR.
SEE THE BUNCOMBE COUNTY ZONING ORDINANCE FOR MORE INFORMATION.
INTERESTED PARTIES SHOULD INVESTIGATE ALL EXISTING RESTRICTIONS PRIOR TO DESIGN OR CONSTRUCTION. HIGH COUNTRY SURVEYORS, INC MAKES NO CLAIM TO THE EXISTENCE OF ANY RESTRICTIONS OR COVENANTS.
7. ANY STREAMS, CREEKS, PONDS, LAKES, WETLANDS, ETC. LOCATED ON THIS PROPERTY, SHOWN OR NOT SHOWN HEREON, MAY BE SUBJECT TO BUFFER AREAS. IT IS THE OWNER'S/DEVELOPER'S RESPONSIBILITY TO HAVE THE AREAS DESIGNATED BY THE PROPER AUTHORITIES TO MAKE THESE DETERMINATIONS.

LEGEND

- △ . . NGS GEODETIC MONUMENT
- □ CMF. . . CONCRETE MONUMENT FOUND
- ▨ PSF. . . PLANTED STONE FOUND
- ◉ IPF . . IRON PIN FOUND-SIZE AS NOTED
- ◉ RBF . . REBAR FOUND-SIZE AS NOTED
- ◉ RBS . . #5 REBAR W/ 1D CAP SET
- ○ . . . CALCULATED POINT-NOT SET
- . . . FIRE HYDRANT
- . . . SEWER CLEANOUT
- . . . ELECTRIC METER
- . . . GAS METER
- . . . PHONE PEDESTAL
- . . . WATER VALVE
- . . . WATER METER
- . . . HEAT PUMP
- . . . AREA LIGHT
- . . . SWAMP AREA
- . . . UTILITY POLE & OVERHEAD LINES
- . . . BARBED WIRE FENCE
- . . . WOOD RAIL FENCE LINE
- . . . WOVEN WIRE FENCE LINE
- . . . UNDERGROUND ELECTRIC
- . . . UNDERGROUND FIBER OPTICS

COORD. FILE 2023-106.crd DRAWING NO. 2025-199

Exhibit A

Type: CONSOLIDATED REAL PROPERTY
Recorded: 12/3/2025 9:33:45 AM
Fee Amt: $826.00 Page 1 of 7
Revenue Tax: $800.00
Buncombe County, NC
Drew Reisinger Register of Deeds

BK 6547 PG 1546 - 1552

There are no delinquent taxes that are a lien the parcel(s) described in the deed which the Buncombe County Tax Collector is charged with collecting.
12-03-2025 Michelle Warren
Date Deputy Tax Collector

NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: $ 800.00

Parcel Identifier No. 0609-46-7498
Verified by _____ County on the ____ day of_____, 20_____
By:_____

Mail/Box to: Peter U. Kanipe, PO Box 3180, Asheville, NC 28802

This instrument was prepared by: Peter U. Kanipe, a licensed NC attorney. Delinquent taxes, if any, to be paid by the closing attorney to the county tax collector upon disbursement of closing proceeds. No title examination performed by deed preparer. File:36288.17

Brief description for the Index: _____

THIS DEED made this 2nd day of December, 2025, by and between

GRANTOR	GRANTEE
Vickey B. Wheeler, unmarried; and, **Kenneth Ray Wheeler, unmarried; and,** **Michael Todd Wheeler and Wendy Chea Wheeler, married to each other; and** **Jeffrey Scott Wheeler and Stacy Wheeler, married to each other**	**Givens Highland Farms, LLC, a North Carolina limited liability company**
318 Tabernacle Road Black Mountain, NC 28711	200 Tabernacle Road Black Mountain, NC 28711

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in Buncombe County, North Carolina and more particularly described as follows:

Submitted electronically by "McGuire, Wood & Bissette"
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Buncombe County Register of Deeds.

SEE EXHIBIT A, INCORPORATED HEREIN BY REFERENCE.

The property hereinabove described was acquired by Grantor by instrument recorded in Book 5658, Page 723, Buncombe County Registry

All or a portion of the property herein conveyed does include the primary residence of a Grantor.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

SUBJECT to easements, restrictions, rights of way(s) of record, and ad valorem taxes not yet due and payable.

(Signature Page Follows)

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Vickey B. Wheeler (SEAL)
Vickey B. Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Vickey B. Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Kenneth Ray Wheeler (SEAL)
Kenneth Ray Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Kenneth Ray Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U. Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Michael Todd Wheeler (SEAL)
Michael Todd Wheeler

Wendy Chea Wheeler (SEAL)
Wendy Chea Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Michael Todd Wheeler and Wendy Chea Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U. Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

_____ (SEAL)
Jeffrey Scott Wheeler

_____ (SEAL)
Stacy Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Jeffrey Scott Wheeler and Stacy Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires:

_____

(Affix Seal)

_____ Notary Public

Peter U Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

EXHIBIT A

BEING all of that 2.50 acre tract as shown on that plat recorded in Plat Book 95, at Page 120 of the Buncombe County Registry, reference to which is hereby made for a more particular description.

4919-2143-1419, v. 1

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	Public Hearing	**DEPARTMENT:**	Planning & Development Services

TITLE OF ITEM: Public Hearing and Consideration of Approval to Rezone Property Owned by Givens Highland Farms (known as 318 Tabernacle Road- PIN #0609-46-7498) from R-1 to OI-6.

SUGGESTED MOTION(S):

I move to approve the ordinance rezoning the property owned by Givens Highland Farms, known as 318 Tabernacle Road, PIN #0609-46-7498, from R-1 to OI-6 (office and institutional) as presented & recommended.

SUMMARY:

There is a 2.5 acre parcel known as 318 Tabernacle Road, PIN #0609-46-7498, that has been purchased by Givens Highland Farms. The parcel is currently zoned R-1 by Buncombe County. Givens Highland Farms is also seeking voluntary annexation of this parcel and, if approved, would like to have the property zoned to OI-6, which is the zoning designation for the existing 87+ acre campus. The Planning Board heard the request at their February 23, 2026, meeting and recommended the property be rezoned to OI-6 upon annexation into the town limits. The motion passed with a vote of 4-0.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. 26_03_09_ORDINANCE_GHF_ZONING_ORDINANCE

2. rezoning_map_GHF
3. annexation_deed_GHF

ZONING ORDINANCE #

AN ORDINANCE AMENDING THE ZONING MAP FOR PROPERTY LOCATED AT 318 TABERNACLE ROAD

WHEREAS, the Town of Black Mountain has the authority pursuant to Article 6 of Chapter 160D of the North Carolina General Statutes, to adopt zoning regulations, to establish zoning districts and to classify property within its jurisdiction according to zoning district, and may amend said regulations and district classifications from time to time in the interest of the public health, safety, and welfare; and

WHEREAS, a comprehensive amendment to the Town's zoning regulations was adopted on January 11, 2010, (Ordinance #O-10-01) and is codified in Appendix A of the Town of Black Mountain Code of Ordinances (herein "Zoning Ordinance"), and map dividing and classifying the property within the Town's zoning jurisdiction was adopted on January 11, 2010, (Ordinance #O-10-01) and are on file and maintained in the Offices of the Town of Black Mountain Planning and Development Department (herein "Official Zoning Map"); and

WHEREAS, this proposed amendment is consistent with the Town of Black Mountain Comprehensive Plan and other official plans of the Town of Black Mountain and is determined to be reasonable and in the public interest for the following reasons:

1. The overall size of the tract of land proposed for the rezoning is reasonable compared to the size of the zoning district in which the subject property is located.
2. The proposed rezoning is consistent with the comprehensive plan or elements thereof.
3. The impact to adjacent property owners and surrounding community is reasonable and the benefits of the zoning shall outweigh any potential inconvenience or harm to the community.
4. The allowable uses within the proposed zoning district are similar or comparable to the permitted uses as currently zoned.

NOW, THEREFORE, BE IT ORDAINED BY THE TOWN OF BLACK MOUNTAIN TOWN COUNCIL THAT:

The Official Zoning Map be, and the same is hereby, amended as follows:

The zoning classification of that certain portion of real property described in Exhibit A and identified on the Buncombe County tax maps as PIN 0609-46-7498, recorded in Plat Book 0095 at Page 0120 and currently owned by Givens Highland Farms, LLC, from R-1 to Office and Institutional (OI-6). A copy of the official zoning map showing said lot is attached hereto as Exhibit B and made a part thereof.

This ordinance shall be in full force and effective on the date of adoption.

READ, APPROVED AND ADOPTED, this the 9th day of March 2026.

_____

_____

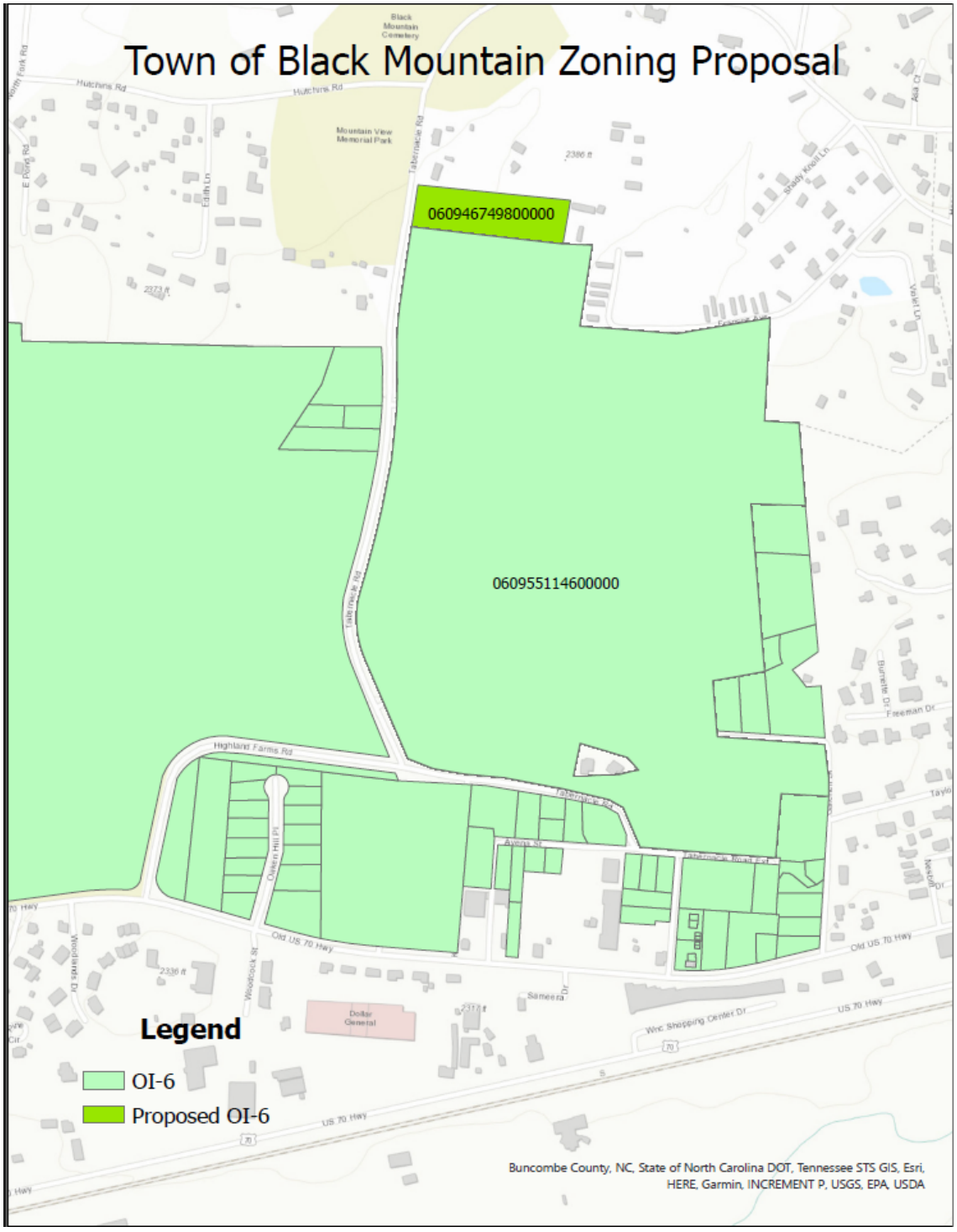
Wesley M. Barker, Town Clerk C. Michael Sobol, Mayor

Approved to form

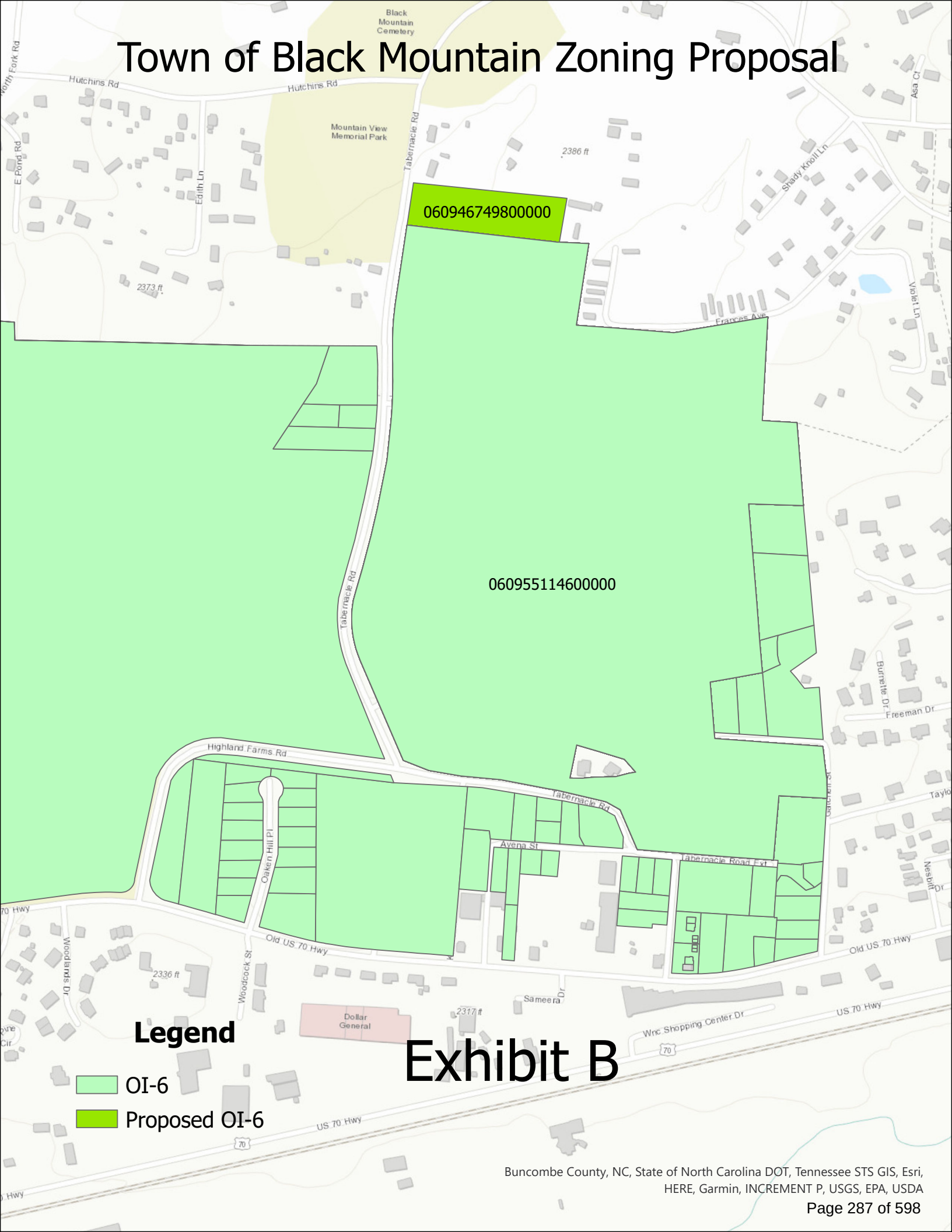
EXHIBIT A
LEGAL DESCRIPTION OF PROPERTY TO BE REZONED

BEGINNING at an iron pin found in the Northeast corner of property described in Deed Book 784, Page 403, Buncombe County Registry; thence North 89 deg. 20' 30" West 84.01 feet to an iron pin; thence North 85 deg. 32' 16" West 70.85 feet to an iron pin; thence North 83 deg. 57' 36" West 110.29 feet to an iron pin; thence North 84 deg. 54' 11" West 109.92 feet to an iron pin; thence North 84 deg. 53' 46" West 144.85 feet to an iron pin; thence North 84 deg. 51' 04" West 215.50 feet to an iron pin; thence North 84 deg. 51' 04" West 15 feet to a point in the Eastern edge of Tabernacle Road; thence running with said road, North 6 deg. 58' 17" East 170.26 feet to a point; thence leaving said road and running south 85 deg. 04' 54" East 12 feet to an iron pin; thence South 85 deg. 04' 54" East 763.92 feet to an iron pin; thence South 15 deg. 42' 53" West 170.26 feet to the point of BEGINNING, containing 3.00 acres, more or less, as shown on a survey for Jack Wheeler dated June 25, 1993, prepared by Michell E Effler, R.L.S., and being all of that property described in Book 2079 at Page 853, Buncombe County Registry, and being that property shown on the tax maps for Buncombe County as PIN #0609-46-7498-00000.

EXHIBIT B
PROPOSED ZONING MAP



Town of Black Mountain Zoning Proposal



Legend

- OI-6
- Proposed OI-6

Exhibit B

Buncombe County, NC, State of North Carolina DOT, Tennessee STS GIS, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

Exhibit A

Type: CONSOLIDATED REAL PROPERTY
Recorded: 12/3/2025 9:33:45 AM
Fee Amt: $826.00 Page 1 of 7
Revenue Tax: $800.00
Buncombe County, NC
Drew Reisinger Register of Deeds

BK 6547 PG 1546 - 1552

There are no delinquent taxes that are a lien the parcel(s) described in the deed which the Buncombe County Tax Collector is charged with collecting.
12-03-2025 Michelle Warren
Date Deputy Tax Collector

NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: $ 800.00

Parcel Identifier No. 0609-46-7498
Verified by _____ County on the ____ day of_____, 20_____
By:_____

Mail/Box to: Peter U. Kanipe, PO Box 3180, Asheville, NC 28802

This instrument was prepared by: Peter U. Kanipe, a licensed NC attorney. Delinquent taxes, if any, to be paid by the closing attorney to the county tax collector upon disbursement of closing proceeds. No title examination performed by deed preparer. File:36288.17

Brief description for the Index: _____

THIS DEED made this 2nd day of December, 2025, by and between

GRANTOR	GRANTEE
Vickey B. Wheeler, unmarried; and, **Kenneth Ray Wheeler, unmarried; and,** **Michael Todd Wheeler and Wendy Chea Wheeler, married to each other; and** **Jeffrey Scott Wheeler and Stacy Wheeler, married to each other**	**Givens Highland Farms, LLC, a North Carolina limited liability company**
318 Tabernacle Road Black Mountain, NC 28711	200 Tabernacle Road Black Mountain, NC 28711

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in Buncombe County, North Carolina and more particularly described as follows:

Submitted electronically by "McGuire, Wood & Bissette"
in compliance with North Carolina statutes governing recordable documents
and the terms of the submitter agreement with the Buncombe County Register of Deeds.

SEE EXHIBIT A, INCORPORATED HEREIN BY REFERENCE.

The property hereinabove described was acquired by Grantor by instrument recorded in Book 5658, Page 723, Buncombe County Registry

All or a portion of the property herein conveyed does include the primary residence of a Grantor.

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, other than the following exceptions:

SUBJECT to easements, restrictions, rights of way(s) of record, and ad valorem taxes not yet due and payable.

(Signature Page Follows)

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Vickey B. Wheeler (SEAL)
Vickey B. Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Vickey B. Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Kenneth Ray Wheeler (SEAL)
Kenneth Ray Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Kenneth Ray Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U. Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

Michael Todd Wheeler (SEAL)
Michael Todd Wheeler

Wendy Chea Wheeler (SEAL)
Wendy Chea Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Michael Todd Wheeler and Wendy Chea Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires: _____

(Affix Seal)

_____ Notary Public

Peter U. Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

IN WITNESS WHEREOF, the Grantor has duly executed the foregoing as of the day and year first above written.

_____ (SEAL)
Jeffrey Scott Wheeler

_____ (SEAL)
Stacy Wheeler

State of North Carolina - County of Buncombe

I, the undersigned Notary Public of the County and State aforesaid, certify that Jeffrey Scott Wheeler and Stacy Wheeler personally appeared before me this day and acknowledged the due and voluntary execution of the foregoing instrument for the purposes therein expressed.

Witness my hand and Notarial stamp or seal this 1st day of December, 2025.

My Commission Expires:

_____

(Affix Seal)

_____ Notary Public

Peter U Kanipe
Notary's Printed or Typed Name

PETER U. KANIPE
NOTARY PUBLIC
Buncombe County
North Carolina
My Commission Expires June 08, 2029

EXHIBIT A

BEING all of that 2.50 acre tract as shown on that plat recorded in Plat Book 95, at Page 120 of the Buncombe County Registry, reference to which is hereby made for a more particular description.

4919-2143-1419, v. 1

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Call for Public Hearing on April 13, 2026 at 6:00 p.m. for Update to Town System Development Fees (SDF).		

SUGGESTED MOTION(S):

Motion to call for public hearing on April 13, 2026 at 6:00 pm for update to the Town's System Development Fees (SDF) to be held at Town Hall, 160 Midland Ave., Black Mountain, NC 28711.

SUMMARY:

The Town Council hired McGill Associates to complete the required 5-year update of the Town's Cost-Justified Water System Development Fees (SDF). The draft report was completed in September 2025 and was presented to Council at a later date. Notice and a copy of the draft report, and requests for citizen comments, were placed on the Town's website mid-January 2026. Citizens comments were accepted within a 45-day review period. The 45-day review period ended on March 1, 2026. Further, a copy of the draft report has been available for public inspection at Town Hall. Prior to adopting the new rates, the Council will need to hold a Public Hearing. **Staff is asking that the Council set Monday, April 13, 2026 at 6:00 p.m. as the date & time for the Public Hearing, to be held during the regular monthly Council meeting at Town Hall.**

###

System Development Fees 5-year Update Report:

In July 2017, the North Carolina General Assembly passed Session Law 2017-138 (HB 436), amending Chapter 162A of the General Statutes to add Article 8, System Development Fees, which establishes uniform authority, calculation requirements, and a five-year update cycle for system development fee (SDF) analyses for public water and sewer systems. Black Mountain adopted its previous SDF analysis in 2019 and is therefore required to complete an updated analysis. The SDF analysis calculates the cost per unit volume of existing and planned utility assets that provide capacity for new development, with fees assessed per Service Unit, defined as the demand of a typical customer. A three-bedroom single-family residence qualifies as an Equivalent Residential Unit (ERU) with an assigned water demand of 400 gallons per day under NC Administrative Code. This report documents the methodology and calculations used to

update the SDF analysis, which must be prepared by a qualified engineer or financial professional; McGill Associates, PA meets these qualifications and conducted the analysis using industry-standard practices.

A copy of the Cost - Justified Water System Development Fees 5-Year Update Report Draft, which was prepared by McGill Associates, is available for public viewing at Town Hall, 160 Midland Ave., Black Mountain, NC 28711, Monday-Friday 8am-5pm, or via the link below.

View Draft System Development Fees 5-Year Update Report

Further, this item is open for public comment through March 1, 2026. Public Comments may be submitted to town.clerk@tobm.org or in writing to: Town of Black Mountain, 160 Midland Ave., Black Mountain, NC 28711.

Background Information:
The Town of Black Mountain's System Development Fees is part of the Town's Code of Ordinances in Chapter 48: Utilities, Article IV: System Development Fees.

This Ordinance section explains what system development fees are and why they are charged. System development fees apply to new development that increases demand on the Town's water or sewer systems and are used to recover the cost of existing infrastructure and to help fund capital improvements needed to provide additional system capacity. The fees are required to comply with North Carolina General Statutes Chapter 162A, Article 8, and ensure that growth pays for the infrastructure needed to serve it, rather than shifting those costs to existing customers. The ordinance defines what qualifies as new development, when fees apply and are collected, what costs are excluded, and how fees are calculated based on anticipated water use. It also outlines exemptions, credits, and timing provisions to ensure fees are assessed fairly and consistently, with all collected funds restricted to water and sewer capital improvements.

For questions regarding the Town's SDF, you can contact Public Works at 828-419-9300, option 4; or via email: publicworks@tobm.org.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? No additional expenditures anticipated.

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. Call for PH_LEGAL_System Development Fee Updates for 4-13-26

PUBLIC NOTICE

BLACK MOUNTAIN TOWN COUNCIL

PUBLIC HEARING

Monday, April 13, 2026, at 6:00 p.m.
Black Mountain Town Hall
160 Midland Ave., Black Mountain, NC 28711

The Black Mountain Town Council will meet on **Monday, April 13, 2026, at 6:00 p.m**. in the Council Room of Town Hall, 160 Midland Avenue, Black Mountain, NC, 28711. **The purpose of this meeting is to hold a public hearing for public comment regarding updates to the Town's System Development Fees (SDF) 5-Year Update.** The meeting is open to the public.

/s/ Wesley M. Barker
Wesley M. Barker
Town Clerk

The Town of Black Mountain is committed to providing accessible facilities, programs and services for all people in compliance with the Americans with Disabilities Act (ADA). Should you need assistance or a particular accommodation for this meeting please contact, Wesley Barker, Town Clerk at 828-419-9310 or by email at Wesley.barker@tobm.org.

Posted to the Town Bulletin Board 04/16/2026
www.townofblackmountain.org

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Michelle Kennedy, Planning Director	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Planning & Development Services

TITLE OF ITEM: Petition to Dedicate Brookhaven Drive to the Town for Maintenance and Public Use

SUGGESTED MOTION(S):
To accept the dedication of Brookhaven Drive and the subsequent sidewalk to the Town for maintenance and public use.

SUMMARY:

The owners of the residences on Brookhaven Drive have filed a petition to dedicate Brookhaven Drive and the subsequent sidewalk to the Town for maintenance and ownership.
Public Works and the Fire Marshal have inspected the road and are recommending that the Town take over this road and sidewalk with one provision:
* A No Parking sign to be installed at the end of the turn-around.

The mileage is approximately .12 miles. Dedication and acceptance of this road and sidewalk will include accepting all maintenance of both the street and the sidewalk to include paving, snow removal, and any general maintenance of said street and sidewalk within the 20 foot right-of-way.

A resolution is attached should the Council decide to accept the road.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. brookhaven_drive_petition
2. chapmans_cove_plat
3. Resolution_Brookhaven_Drive_Dedication

Received 2/16/2026
Jennifer Jupton

Exhibit B

TOWN OF BLACK MOUNTAIN - STREET DEDICATION POLICY

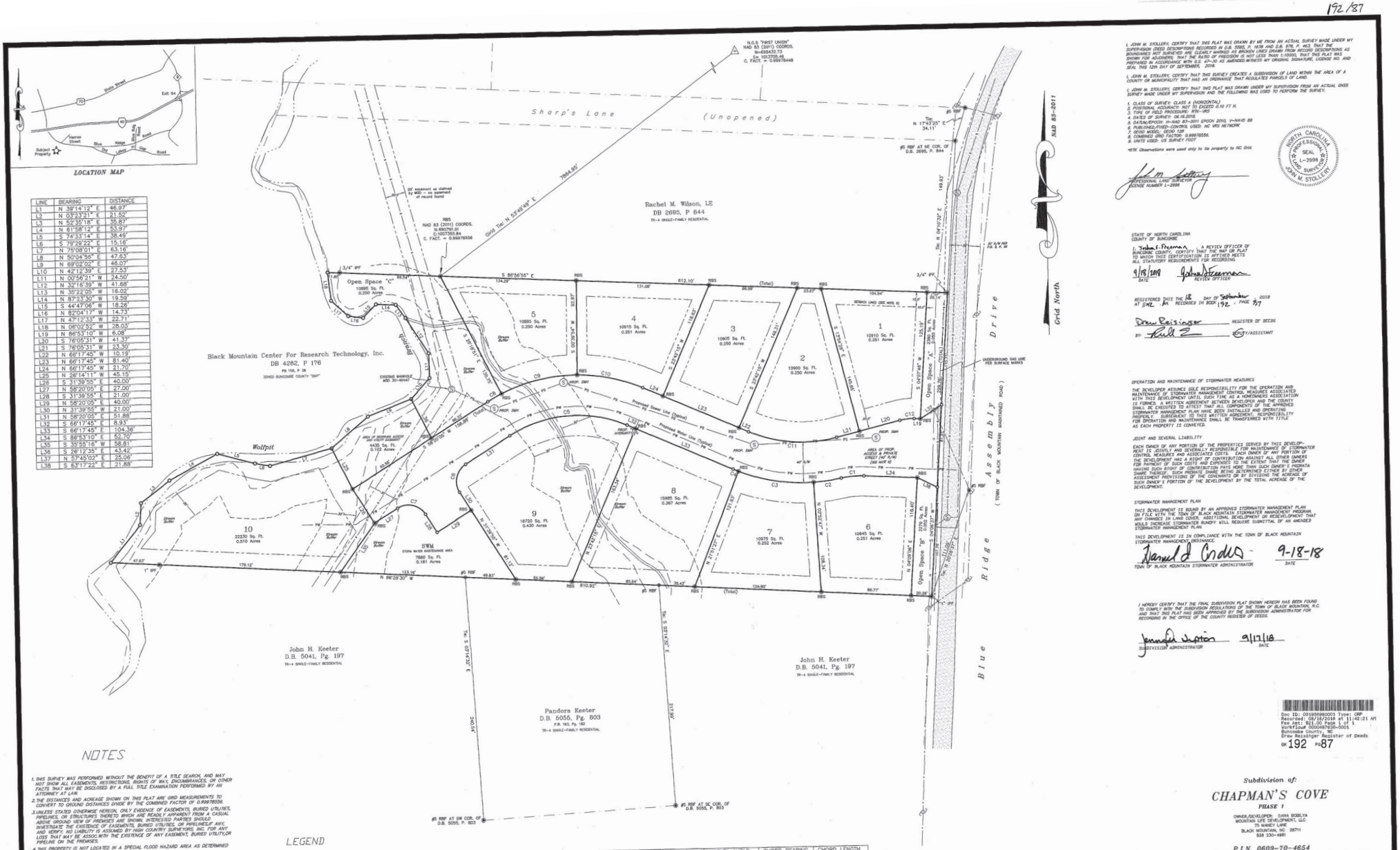
PETITION

We, the undersigned property owners of property located abutting a private street knows as Brookhaven Dr, located off of Blue Ridge Assembly Dr, do hereby petition the Black Mountain Town Council to dedicate and maintain said street for public use.

We verify that we are willing to provide a cleared 40 foot right-of-way needed to establish this as a town street.

	Name/Signature	Property/Mailing Address
1.		104 BROOKHAVEN DR. BLACK MOUNTAIN, NC, 28711
2.		103 Brookhaven Dr Black Mountain NC 28711
3.	Cynthia H. Flemden	107 Brookhaven Dr Black Mountain, NC 28711
4.		112 Brookhaven Dr Black Mtn 28711
5.	Judith M. Weston	111 Brookhaven DR
6.	Odette E. Colón	117 Brookhaven Dr.
7.	Edwin W. Kaltenbrun	113 Brookhaven Dr, Black Mtn, NC 28711
8.		122 Brookhaven Dr
9.		108 Brookhaven Dr
10.		118 Brookhaven Dr Black Mtn 28711

Exhibit A



LINE	BEARING	DISTANCE
L1	N 39°14'12" E	46.97'
L2	N 03°23'21" E	21.52'
L3	N 52°35'18" E	35.87'
L4	N 61°58'12" E	53.97'
L5	S 74°33'14" E	38.49'
L6	S 79°29'22" E	15.16'
L7	N 75°08'01" E	63.16'
L8	N 50°04'56" E	47.63'
L9	N 69°02'02" E	46.07'
L10	N 42°12'39" E	27.53'
L11	N 00°56'21" W	24.50'
L12	N 32°16'39" W	41.68'
L13	N 35°22'05" W	16.02'
L14	N 87°23'30" W	19.59'
L15	S 44°47'06" W	18.26'
L16	N 87°04'17" W	14.73'
L17	N 47°12'33" W	22.71'
L18	N 06°02'52" W	28.03'
L19	N 86°53'10" W	6.08'
L20	S 76°05'31" W	41.37'
L21	S 76°05'31" W	23.30'
L22	N 66°17'45" W	10.19'
L23	N 66°17'45" W	81.40'
L24	N 66°17'45" W	21.70'
L25	N 26°14'11" W	45.15'
L26	S 31°39'55" E	40.00'
L27	N 58°20'05" E	21.00'
L28	S 31°39'55" E	21.00'
L29	N 58°20'05" E	40.00'
L30	N 31°39'55" W	21.00'
L31	N 58°20'05" E	51.88'
L32	S 66°17'45" E	8.93'
L33	S 66°17'45" E	104.36'
L34	S 86°53'10" E	52.76'
L35	S 35°55'16" W	58.81'
L36	S 26°12'35" E	43.42'
L37	N 57°45'02" E	25.06'
L38	S 63°17'22" E	21.88'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	22.58'	86.00'	15°02'47"	S 85°35'26" W	22.52'
C2	27.65'	175.00'	9°03'10"	S 82°30'38" W	27.62'
C3	75.56'	175.00'	24°44'14"	N 80°30'40" W	74.97'
C4	5.64'	175.00'	1°50'49"	N 67°13'09" W	5.64'
C5	120.80'	125.00'	55°22'10"	S 86°01'10" W	116.15'
C6	31.42'	20.00'	90°00'00"	S 13°20'05" W	28.28'
C7	31.42'	20.00'	90°00'00"	N 76°39'55" W	28.28'
C8	15.41'	165.00'	5°21'04"	N 61°00'37" E	15.40'
C9	77.69'	165.00'	26°58'45"	N 77°10'31" E	76.98'
C10	66.35'	165.00'	23°02'22"	S 77°48'56" E	65.90'
C11	88.62'	135.00'	37°36'44"	S 85°06'07" E	87.04'
C12	14.26'	48.00'	17°01'18"	N 84°36'11" E	14.21'

NOTES

1. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE SEARCH, AND MAY NOT SHOW ALL EASEMENTS, RESTRICTIONS, RIGHTS OF WAY, ENCUMBRANCES, OR OTHER FACTS THAT MAY BE DISCLOSED BY A FULL TITLE EXAMINATION PERFORMED BY AN ATTORNEY AT LAW.
2. THE DISTANCES AND ACREAGE SHOWN ON THIS PLAT ARE GRID MEASUREMENTS TO CONVERT TO GROUND DISTANCES DIVIDE BY THE COMBINED FACTOR OF 0.99978356.
3. UNLESS STATED OTHERWISE HEREON, ONLY EVIDENCE OF EASEMENTS, BURIED UTILITIES, PIPELINES, OR STRUCTURES THERETO WHICH ARE READILY APPARENT FROM A CASUAL ABOVE GROUND VIEW OF PREMISES ARE SHOWN. INTERESTED PARTIES SHOULD INVESTIGATE THE EXISTENCE OF EASEMENTS, BURIED UTILITIES, OR PIPELINES IF ANY, AND VERIFY. NO LIABILITY IS ASSUMED BY HIGH COUNTRY SURVEYORS, INC. FOR ANY LOSS THAT MAY BE ASSOC. WITH THE EXISTENCE OF ANY EASEMENT, BURIED UTILITY OR PIPELINE ON THE PREMISES.
4. THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY FEMA. SEE FIRM 3700066900J DATED 01.06.2010.
5. UNDERGROUND SEWERLINE INFORMATION IS TAKEN FROM BUNCOMBE COUNTY MSD GIS INFORMATION, AND HAS NOT BEEN FIELD VERIFIED.
6. THIS PROPERTY IS ZONED TH-4 BY THE TOWN OF BLACK MOUNTAIN. SETBACKS: 20' FRONT, 10' SIDE, 15' REAR. MINIMUM LOT SIZE: 10,890 SQ. FT. SEE THE BLACK MOUNTAIN ZONING ORDINANCE FOR MORE INFORMATION.
7. THIS PROPERTY IS SUBJECT TO A 30' VEGETATIVE BUFFER AS MEASURED FROM THE TOP OF THE BANK OF THE EXISTING STREAM, AS OUTLINED BY THE NC DEPT. OF NATURAL RESOURCES -- WATER QUALITY DIVISION. (STATE CODE SECTION 15A NCAC 2B.0200).
8. THE TOTAL NUMBER OF LOTS IS 10, WITH A LOT FOR STORM WATER MAINTENANCE, AND OPEN SPACE AREAS. THE TOTAL AREA OF THE SUBDIVISION IS 4.335 ACRES. THE OPEN SPACE LOTS ARE 8.2% OF THE TOTAL AREA OF THE ORIGINAL TRACT. THE AREA OF THE PROPOSED ACCESS AND PRIVATE STREET RIGHT OF WAY IS 0.633 ACRES (27,575 SQ. FT.), AND THE TOTAL LINEAR FOOTAGE OF THE PROPOSED STREET IS 620 FT., WITH AN ADDITIONAL 59 FT. FOR THE TURN-AROUND.

LEGEND

- CMF . . . CONCRETE MONUMENT FOUND
- IPF . . . IRON PIN FOUND
- RBS . . . #5 REBAR SET W/ 1.5" CAP
- CALCULATED POINT-NOT SET
- FIRE HYDRANT
- UTILITY POLE & LINES
- BARBED WIRE FENCE
- CHAIN LINK FENCE LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND GAS
- ELECTRIC STUB
- GAS METER
- EXISTING MANHOLE & SEWERLINE
- PROPOSED MANHOLE & SEWERLINE
- CLEAN OUT
- PHONE PEDESTAL
- EXISTING WATER METER & LINE
- PROPOSED WATER METER & LINE
- CATCH BASIN (DRAINS
- TRANSFORMER BOX

Original document returned to customer at time of recording

I, JOHN M. STOLLERY, CERTIFY THAT THIS PLAT WAS DRAWN BY ME FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTIONS RECORDED IN D.B. 5585, P. 1638 AND D.B. 976, P. 463, THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS BROKEN LINES DRAWN FROM RECORD DESCRIPTIONS AS SHOWN FOR ADJOINERS; THAT THE RATIO OF PRECISION IS NOT LESS THAN 1:10000; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED WITNESS MY ORIGINAL SIGNATURE, LICENSE NO. AND SEAL THIS 12th DAY OF SEPTEMBER, 2018.

I, JOHN M. STOLLERY, CERTIFY THAT THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.

I, JOHN M. STOLLERY, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GNSS SURVEY MADE UNDER MY SUPERVISION AND THE FOLLOWING WAS USED TO PERFORM THE SURVEY:

1. CLASS OF SURVEY: CLASS A (HORIZONTAL)
2. POSITIONAL ACCURACY: NOT TO EXCEED 0.10 FT H.
3. TYPE OF FIELD PROCEDURE: RTK-VRS
4. DATES OF SURVEY: 08.16.2018
5. DATUM/EPOCH: H=NAD 83-2011 (EPOCH 2010), H=NAVD 88
6. PUBLISHED/FIXED-CONTROL USED: NC VRS NETWORK
7. GEOID MODEL: GEOID 12B
8. COMBINED GRID FACTOR: 0.99978356.
9. UNITS USED: US SURVEY FOOT

*RTK Observations were used only to tie property to NC Grid.

JOHN M. STOLLERY
PROFESSIONAL LAND SURVEYOR
LICENSE NUMBER L-2996

NORTH CAROLINA PROFESSIONAL SEAL L-2996 LAND SURVEYOR JOHN M. STOLLERY

STATE OF NORTH CAROLINA
COUNTY OF BUNCOMBE

I, John S. Freeman, A REVIEW OFFICER OF BUNCOMBE COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

9/18/2018 DATE — John S. Freeman REVIEW OFFICER

REGISTERED THIS THE 18 DAY OF September 2018 AT 11:42 AM RECORDED IN BOOK 192, PAGE 87

Drew Reisinger REGISTER OF DEEDS
BY: DEPUTY/ASSISTANT

OPERATION AND MAINTENANCE OF STORMWATER MEASURES

THE DEVELOPER ASSUMES SOLE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF STORMWATER MANAGEMENT CONTROL MEASURES ASSOCIATED WITH THIS DEVELOPMENT UNTIL SUCH TIME AS A HOMEOWNERS ASSOCIATION IS FORMED, A WRITTEN AGREEMENT BETWEEN DEVELOPER AND THE COUNTY SHALL BE EXECUTED TO ATTEST THAT ALL COMPONENTS AND OPERATING STORMWATER MANAGEMENT PLAN HAVE BEEN INSTALLED AND OPERATING PROPERLY. SUBSEQUENT TO THIS WRITTEN AGREEMENT, RESPONSIBILITY FOR OPERATION AND MAINTENANCE SHALL BE TRANSFERRED WITH TITLE AS EACH PROPERTY IS CONVEYED.

JOINT AND SEVERAL LIABILITY

EACH OWNER OF ANY PORTION OF THE PROPERTIES SERVED BY THIS DEVELOPMENT IS JOINTLY AND SEVERALLY RESPONSIBLE FOR MAINTENANCE OF STORMWATER CONTROL MEASURES AND ASSOCIATED COSTS. EACH OWNER OF ANY PORTION OF THE DEVELOPMENT HAS A RIGHT OF CONTRIBUTION AGAINST ALL OTHER OWNERS FOR PAYMENT OF SUCH COSTS IN PROPORTION TO THE EXTENT THAT THE OWNER HAVING SUCH RIGHT OF CONTRIBUTION PAYS MORE THAN SUCH OWNER'S PRORATA SHARE. EACH OWNER'S PRORATE SHARE BEING DETERMINED EITHER BY EITHER SHARED STORMWATER MANAGEMENT MEASURES OR BY DIVIDING THE ACREAGE OF ASSESSMENT PROVISIONS OF THE COVENANTS OR BY DIVIDING THE ACREAGE OF SUCH OWNER'S PORTION OF THE DEVELOPMENT BY THE TOTAL ACREAGE OF THE DEVELOPMENT.

STORMWATER MANAGEMENT PLAN

THIS DEVELOPMENT IS BOUND BY AN APPROVED STORMWATER MANAGEMENT PLAN ON FILE WITH THE TOWN OF BLACK MOUNTAIN STORMWATER MANAGEMENT PROGRAM. ANY CHANGES IN LAND COVER, ADDITIONAL DEVELOPMENT OR REDEVELOPMENT THAT WOULD INCREASE STORMWATER RUNOFF WILL REQUIRE SUBMITTAL OF AN AMENDED STORMWATER MANAGEMENT PLAN.

THIS DEVELOPMENT IS IN COMPLIANCE WITH THE TOWN OF BLACK MOUNTAIN STORMWATER MANAGEMENT ORDINANCE.

Darrell Cribb 9-18-18
TOWN OF BLACK MOUNTAIN STORMWATER ADMINISTRATOR — DATE

I HEREBY CERTIFY THAT THE FINAL SUBDIVISION PLAT SHOWN HEREON HAS BEEN FOUND TO COMPLY WITH THE SUBDIVISION REGULATIONS OF THE TOWN OF BLACK MOUNTAIN, N.C. AND THAT THIS PLAT HAS BEEN APPROVED BY THE SUBDIVISION ADMINISTRATOR FOR RECORDING IN THE OFFICE OF THE COUNTY REGISTER OF DEEDS.

Jennifer Horton 9/17/18
SUBDIVISION ADMINISTRATOR — DATE

Doc ID: 001995980001 Type: CRP
Recorded: 09/18/2018 at 11:42:21 AM
Fee Amt: $21.00 Page 1 of 1
Workflow# 0000487526-0001
Buncombe County, NC
Drew Reisinger Register of Deeds
BK 192 PG 87

Subdivision of:

CHAPMAN'S COVE

PHASE 1

OWNER/DEVELOPER: DANA BOBILYA
MOUNTAIN LIFE DEVELOPMENT, LLC
75 NANEY LANE
BLACK MOUNTAIN, NC 28711
828 230-4981

P.I.N. 0609-70-4654

Town of Black Mountain, Buncombe County, NC

September 12, 2018

1 inch = 40' ft.

REFERENCES: DEED BOOK 5585, PAGE 1638; DEED BOOK 976, PAGE 463; PLAT BOOK 106, PAGE 38; PLAT BOOK 163, PAGE 182; PLAT BOOK 9, PAGE 96

HIGH COUNTRY SURVEYORS, INC.
403-B WEST STATE ST, BLACK MOUNTAIN, NC 28711 (828) 664-0091
HIGHCOUNTRYSURVEYORS.NET CORPORATE LICENSE NUMBER C-1854

COORD. FILE 2018-111.crd DRAWING NO. 2018-111

RESOLUTION #

RESOLUTION TO ACCEPT AND DEDICATE BROOKHAVEN DRIVE TO THE TOWN'S STREET SYSTEM

WHEREAS, North Carolina General Statute 160A-296 grants municipalities general authority and control over all public streets within its corporate limits; and

WHEREAS, including a street on a town map does not provide any evidence of intent to accept the street for public use; and

WHEREAS, the Town Council has been petitioned to accept the following street and sidewalk for Town maintenance, and as recorded on the Plat "Chapman's Cove" with the Buncombe County Register of Deeds Office in Book 192, Page 87, dated September 18, 2018; and

Street	Pavement Width	Right-of-Way Width	Sidewalk Width
Brookhaven Drive	20'	20' (10' on each side)	5' (included in the 10' right-of-way)

WHEREAS, a copy of the aforementioned Plat accompanies this resolution as "Exhibit A"; and

WHEREAS, a copy of the aforementioned petition accompanies this resolution as "Exhibit B"; and

WHEREAS, if accepted and dedicated as Town Streets, the Town will be responsible for the road and sidewalk maintenance within the designated road and right-of-way to include paving and snow removal; and

WHEREAS, in accordance with the Street Dedication Policy, the Public Works Director and the Fire Marshal have reviewed and do recommend the dedication; and

WHEREAS, the Fire Marshal requires a "No Parking" sign in the turn-around; and

NOW, THEREFORE, BE IT RESOLVED that the Black Mountain Town Council hereby accept Brookhaven Drive and dedicates to the Town's street system.

APPROVED AND ADOPTED by the Black Mountain Town Council this the 9th day of March 2026.

_____

C. Michael Sobol, Mayor

ATTEST:

_____
Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Authorization of Phase 1 Environmental Report for Donated Property to the Town from the State of NC		

SUGGESTED MOTION(S):

I move that Council authorize the Town Manager to obtain a Phase 1 Environmental Report on Property being donated to the Town by the State of North Carolina.

SUMMARY:

The Town Staff has been working with the State of North Carolina on the donation of 10.26 acres on North Fork Road for a potential Public Safety complex. Attached for your review and information is a copy of the final survey and a copy of the proposed Offer to Purchase Agreement. The property will be donated by the State of North Carolina in an "as is" condition. The Town would then accept any future liability in the event an environmental condition was discovered on the property. It is my recommendation that prior to executing the agreement, that the Town hire a firm to perform a Phase 1 Environmental review of the property. This should be part of the Town's due diligence prior to accepting the property. The Phase 1 report would identify potential issues that might be discovered on the property. The Town is also in the process of working out a donation for another piece of property in this area that is estimated to be around 5 acres. A Phase 1 report should be completed on both pieces of property.

BUDGET IMPACT:

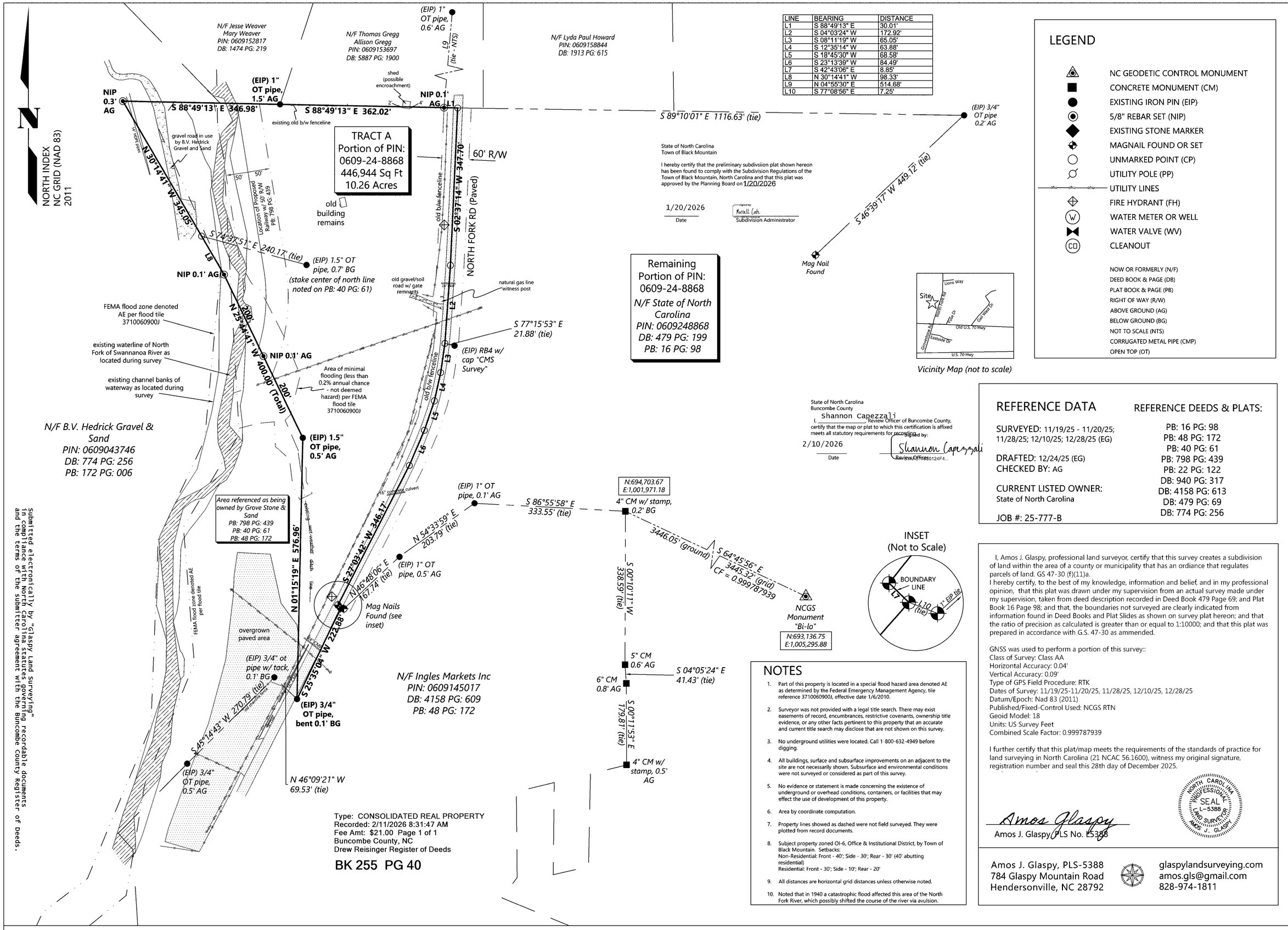
Is this expenditure approved in the current fiscal year budget? No

If no, describe how it will be funded. The Town has set aside funds from a State grant to fund a feasibility study and other initial reviews. These funds could be used to pay the costs. Normally, a Phase 1 would cost between $2,000 - $3,000 per parcel.

ATTACHMENTS:

1. Survey Map_25-777-B_recorded Future Public Safety Property
2. GIS Map with Imagery- PIN 0609248868 _PS Bldg Proposed Area
3. GIS Map Street Layer- PIN 0609248868 _PS Bldg Proposed Area
4. Offer to Purchase Agreement by State of NC and TOBM_re_Future Public Safety Property

Docusign Envelope ID: A52ADAF8-E4A8-4F50-B982-C55E4989FD15



LINE	BEARING	DISTANCE
L1	S 88°49'13" E	30.01'
L2	S 04°03'24" W	172.92'
L3	S 08°11'19" W	65.05'
L4	S 12°35'14" W	63.88'
L5	S 18°45'30" W	68.58'
L6	S 23°13'39" W	84.49'
L7	S 42°43'06" E	8.85'
L8	N 30°14'41" W	98.33'
L9	N 04°55'30" E	514.68'
L10	S 77°08'56" E	7.25'

State of North Carolina
Town of Black Mountain

I hereby certify that the preliminary subdivsiion plat shown hereon has been found to comply with the Subdivision Regulations of the Town of Black Mountain, North Carolina and that this plat was approved by the Planning Board on 1/20/2026

1/20/2026
Date

Signed by: Russell Eckard
Subdivision Administrator

LEGEND

- NC GEODETIC CONTROL MONUMENT
- CONCRETE MONUMENT (CM)
- EXISTING IRON PIN (EIP)
- 5/8" REBAR SET (NIP)
- EXISTING STONE MARKER
- MAGNAIL FOUND OR SET
- UNMARKED POINT (CP)
- UTILITY POLE (PP)
- UTILITY LINES
- FIRE HYDRANT (FH)
- WATER METER OR WELL
- WATER VALVE (WV)
- CLEANOUT

NOW OR FORMERLY (N/F)
DEED BOOK & PAGE (DB)
PLAT BOOK & PAGE (PB)
RIGHT OF WAY (R/W)
ABOVE GROUND (AG)
BELOW GROUND (BG)
NOT TO SCALE (NTS)
CORRUGATED METAL PIPE (CMP)
OPEN TOP (OT)

Vicinity Map (not to scale)

State of North Carolina
Buncombe County
Shannon Capezzali
I, _____, Review Officer of Buncombe County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

2/10/2026
Date

Signed by: Shannon Capezzali
Review Officer

REFERENCE DATA

SURVEYED: 11/19/25 - 11/20/25; 11/28/25; 12/10/25; 12/28/25 (EG)
DRAFTED: 12/24/25 (EG)
CHECKED BY: AG

CURRENT LISTED OWNER:
State of North Carolina

JOB #: 25-777-B

REFERENCE DEEDS & PLATS:

PB: 16 PG: 98
PB: 48 PG: 172
PB: 40 PG: 61
PB: 798 PG: 439
PB: 22 PG: 122
DB: 940 PG: 317
DB: 4158 PG: 613
DB: 479 PG: 69
DB: 774 PG: 256

INSET
(Not to Scale)

NOTES

1. Part of this property is located in a special flood hazard area denoted AE as determined by the Federal Emergency Management Agency, tile reference 3710060900J, effective date 1/6/2010.
2. Surveyor was not provided with a legal title search. There may exist easements of record, encumbrances, restrictive covenants, ownership title evidence, or any other facts pertinent to this property that an accurate and current title search may disclose that are not shown on this survey.
3. No underground utilities were located. Call 1-800-632-4949 before digging.
4. All buildings, surface and subsurface improvements on an adjacent to the site are not necessarily shown. Subsurface and environmental conditions were not surveyed or considered as part of this survey.
5. No evidence or statement is made concerning the existence of underground or overhead conditions, containers, or facilities that may effect the use of development of this property.
6. Area by coordinate computation.
7. Property lines showed as dashed were not field surveyed. They were plotted from record documents.
8. Subject property zoned OI-6, Office & Institutional District, by Town of Black Mountain. Setbacks:
   Non-Residential: Front - 40'; Side - 30'; Rear - 30' (40' abutting residential)
   Residential: Front - 30'; Side - 10'; Rear - 20'
9. All distances are horizontal grid distances unless otherwise noted.
10. Noted that in 1940 a catastrophic flood affected this area of the North Fork River, which possibly shifted the course of the river via avulsion.

I, Amos J. Glaspy, professional land surveyor, certify that this survey creates a subdivision of land within the area of a county or municipality that has an ordiance that regulates parcels of land. GS 47-30 (f)(11)a.
I hereby certify, to the best of my knowledge, information and belief, and in my professional opinion, that this plat was drawn under my supervision from an actual survey made under my supervision, taken from deed description recorded in Deed Book 479 Page 69; and Plat Book 16 Page 98; and that, the boundaries not surveyed are clearly indicated from information found in Deed Books and Plat Slides as shown on survey plat hereon; and that the ratio of precision as calculated is greater than or equal to 1:10000; and that this plat was prepared in accordance with G.S. 47-30 as ammended.

GNSS was used to perform a portion of this survey::
Class of Survey: Class AA
Horizontal Accuracy: 0.04'
Vertical Accuracy: 0.09'
Type of GPS Field Procedure: RTK
Dates of Survey: 11/19/25-11/20/25, 11/28/25, 12/10/25, 12/28/25
Datum/Epoch: Nad 83 (2011)
Published/Fixed-Control Used: NCGS RTN
Geoid Model: 18
Units: US Survey Feet
Combined Scale Factor: 0.999787939

I further certify that this plat/map meets the requirements of the standards of practice for land surveying in North Carolina (21 NCAC 56.1600), witness my original signature, registration number and seal this 28th day of December 2025.

NORTH CAROLINA PROFESSIONAL SEAL L-5388 LAND SURVEYOR AMOS J. GLASPY

Amos Glaspy
Amos J. Glaspy, PLS No. L5388

Amos J. Glaspy, PLS-5388
784 Glaspy Mountain Road
Hendersonville, NC 28792
glaspylandsurveying.com
amos.gls@gmail.com
828-974-1811

Submitted electronically by "Glaspy Land Surveying" in compliance with North Carolina's statutes governing recordable documents and the terms of the submitter agreement with the Buncombe County Register of Deeds.

Type: CONSOLIDATED REAL PROPERTY
Recorded: 2/11/2026 8:31:47 AM
Fee Amt: $21.00 Page 1 of 1
Buncombe County, NC
Drew Reisinger Register of Deeds

BK 255 PG 40

GLASPY
LAND SURVEYING

EXEMPT SUBDIVISION SURVEY | PREPARED FOR

TOWN OF BLACK MOUNTAIN

North Fork Road, Black Mountain, NC, 28711
Black Mountain Township
PIN: 0609248868
DEED: 479/199

SIZE

SCALE: 1" = 130'

0' 130' 260' 390'

PIN 0609248868



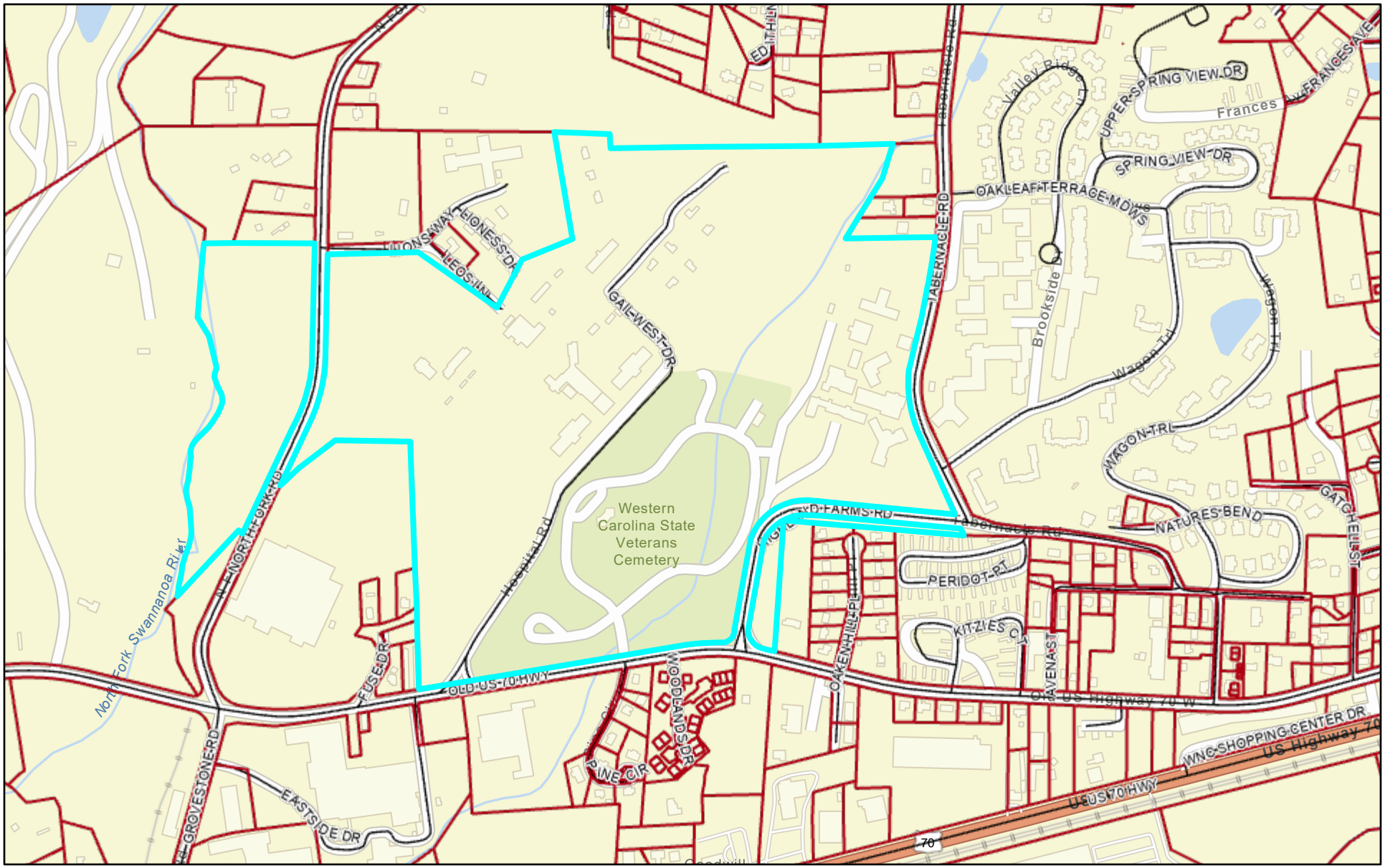
March 6, 2026

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

PIN 0609248868



March 6, 2026

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

OFFER TO PURCHASE AGREEMENT

THIS OFFER TO PURCHASE AGREEMENT (hereinafter "Agreement"), is made and entered into as of this ____ day of _____, 2026 ("Effective Date"), by and between the **State of North Carolina**, a body politic and corporate (hereinafter referred to as "Seller") and the **Town of Black Mountain**, a North Carolina municipal corporation (hereinafter referred to as "Buyer").

WITNESSETH

In consideration of $10 and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged (the "Deposit"), and of the agreements contained in this Offer, subject to review and approval by the Joint Legislative Commission on Governmental Operations and the Governor and Council of State, Seller hereby grants to Buyer, its successors and assigns, the exclusive right to purchase an approximately 11 acre portion of a certain tract or parcel of land together with all improvements located thereon, located in Black Mountain, Buncombe County, North Carolina, described on Exhibit A and Exhibit A1 attached hereto and incorporated herein by reference ("Property").

The terms, provisions and conditions of this Agreement are as follows:

1. **PURCHASE PRICE**. Pursuant to N.C.G.S. § 146-29.1(b), the Property is being conveyed by Seller to Buyer without monetary consideration.
2. **CLOSING**. A closing of the sale of the Property shall take place on or before the date that is fifteen (15) days after Buyer obtains the Approvals (defined below) (the "Closing"), provided, in all events the Closing shall occur within twelve (12) months after the Effective Date, unless the Closing is extended pursuant to an express extension right set forth in the Agreement**.**
3. **DOCUMENTS FOR CLOSING**. Seller shall execute and deliver at Closing a Non-Warranty Deed prepared at the expense of Seller. The legal description of the Property to be contained in the deed shall be based on the Subdivision Plat.
4. **REVERSION**. The Non-Warranty Deed conveying the Property to Buyer shall include a reversionary clause similar to the following:

   Subject to the notice provisions in paragraph 4a below, the Property is conveyed to Grantee for so long as it is utilized for government emergency service purposes ("Exclusive Use Requirement"). If the Property ceases to be used for such purposes after notice to cure is provided for in paragraph 4a and the running of time specified therein, then all interests granted herein shall automatically revert to Grantor, without any further action by Grantor or Grantee, restoring fee simple absolute title in the Property to Grantor. In the event of such reversion, Grantee shall, at its sole cost and expense, remove all of its personal property from the Property and, if Grantor so directs in writing, Grantee shall, at its sole cost and expense, restore the Property to the condition existing at the date of this Deed, and/or restore and repair the Property and any improvements and fixtures located thereon to such other condition satisfactory to Grantor. The restoration of the Property may include, in Grantor's

discretion, the demolition of buildings, the removal of debris and fixtures, site grading and the remediation of hazardous substances. For purposes of this Agreement, the term "government emergency service purposes" includes activities for the planning, coordination or provision of resources necessary to enable the Town of Black Mountain, County of Buncombe, the State of North Carolina or any of their designees, including citizens of each body politic or corporate entity, to mitigate, prepare for, respond to, or recover from incidents that threaten or occur in Buncombe County or the surrounding areas. Notwithstanding the above, a period of cessation is tolled when the Property is used for training, is subject to development, reconstruction, renovation or repair or due to Acts of God.

4a. **Notice to Cure**. Seller shall provide in writing to the Town manager or his or her authorized designee notice of any violation of the Exclusive Use Requirement specifying the grounds for such violation and providing to the Town ninety (90) days from the receipt of said notice to cure the alleged violation prior to the reversion being triggered.

5. **MISCELLANEOUS CLOSING EXPENSES**. Buyer shall pay for survey, recording fees, attorney fees, title insurance premiums and other costs associated with its acquisition of the Property except as expressly set forth herein.

6. **POSSESSION**. The Seller will deliver exclusive possession of the Property to the Buyer at Closing.

7. **RIGHT OF ENTRY AND INSPECTION**. Buyer and Buyer's agents or employees shall have the right to enter upon the Property at reasonable times during the term of this Agreement to survey the Property and to conduct such other inspections, tests and studies as Buyer may deem necessary (collectively, the "Inspections"). Buyer and/or its agents, representatives, contractors, subcontractors and consultants shall be adequately insured regarding such work. Buyer shall not unreasonably interfere with Seller's use of the Property or damage the Property and Buyer shall leave the Property in substantially the same or better condition as it was prior to the entry thereon by Buyer or its agents or employees. In the event of any damage to the Property, Buyer shall repair and restore the Property substantially to its prior condition. Buyer is a body corporate and as such is ordinarily immune from liability for damage by reason of death or injury to person or property; however, Buyer may waive its immunity pursuant to applicable law if it is indemnified by a policy of insurance. Accordingly, to the extent covered by any insurance policy, Buyer agrees to save Seller harmless from and against any and all loss, damage, claim, demand, liability, or expense, including reasonable attorney fees, by reason of damage to person or property on or about the Property, which may arise or be claimed to have arisen as a result of Inspections conducted on the Property by Buyer, its agents or employees, except where such loss or damage arises from the willful or negligent misconduct of Seller, its agents or employees. Upon any termination of this Agreement, Buyer shall return the Property to the extent damaged or disturbed by Buyer or its agents, contractors or representatives to the condition it was in prior to the performance of such tests to the extent reasonably practicable; provided Buyer shall not be required to replace any vegetation that is damaged or removed in the performance of permitted testing. Buyer's obligations under this Paragraph 6 shall survive the termination of this Agreement and shall survive Closing.

8. **CONDITIONS TO CLOSING**.

A subdivision is required pursuant to applicable law in connection with the conveyance of the Property to Buyer. The Property to be conveyed to Buyer shall contain approximately 11 acres as shown on Exhibit A1 attached hereto and incorporated herein by reference and the remainder of the acreage tracts out of which the Property is subdivided shall be retained by Seller ("Retained Property"). Buyer, at its sole cost and expense, shall have a survey of the Property and the Retained Property prepared, which survey shall form the basis of the subdivision plat (the "Subdivision Plat"). The final form of the Subdivision Plat shall be agreed to by Buyer and Seller during the term of this Agreement. After agreeing to the form of the Subdivision Plat and prior to Closing, Seller shall reasonably cooperate with Buyer to cause the Property to be properly subdivided in compliance with such applicable law ("Subdivision Approval") at Buyer's sole cost and expense, and the mutually agreed upon Subdivision Plat shall be executed by Seller at the time of recordation. In no event shall the Retained Property be rezoned or subjected to the subdivision ordinance of the Town of Black Mountain or to any other condition or restriction without the specific consent of the Seller.

9. **BINDING EFFECT**. This Agreement becomes effective when signed by Buyer and shall then apply to and bind Buyer and Buyer's successors, and assigns (hereinafter the "Effective Date"). This Agreement shall not apply to or bind Seller until the sale of the Property has been approved by the Joint Legislative Commission on Governmental Operations and the Governor and Council of State and the Subdivision Plat has been approved by the parties hereto, in conformity with the terms, provisions and conditions set forth herein (herein referred to as "Approvals"). If the sale of the Property is not approved by the Joint Legislative Commission on Governmental Operations and the Governor and Council of State in accordance with the terms, provision and conditions set forth herein, this Agreement shall automatically terminate without any further action by Seller

10. **CONDITION OF PROPERTY**. Buyer shall purchase the Property in an "as-is, with all faults" condition and hereby acknowledges and agrees that it is relying solely upon its own inspections, investigations and analyses of the Property in entering into this Agreement and is not relying in any way upon any representations, statements, agreements, warranties, studies, reports, descriptions, guidelines or other information or material from Seller or its representatives, whether oral or written, express or implied, of any nature whatsoever regarding the Property.

11. **COMMISSION**. Buyer and Seller each represent to each other that no real estate agent, broker or finder has acted for it in connection with this Agreement and the transaction contemplated hereby.

12. **ASSIGNMENT**. This Agreement may not be assigned by either party without the express written approval of the other party. Subject to the foregoing, this Agreement shall be binding upon and enforceable against, and shall inure to the benefit of, Buyer and Seller and their respective legal representatives, successors and permitted assigns.

13. **HEADINGS**. The use of headings, captions and numbers in this Agreement is solely for the convenience of identifying and indexing the various provisions in this Agreement and shall in no event be considered otherwise in construing or interpreting any provision in this Agreement.

14. **TERMS**. Capitalized terms used in this Agreement shall have the meanings ascribed to them at the point where first defined, irrespective of where their use occurs, with the same effect as if the definitions of such terms were set forth in full and at length every time such terms are used.

15. **NO WAIVER**. No provision or condition of this Agreement can be waived except by written consent of the parties hereto. A waiver of any provision or condition on one occasion shall not be deemed a waiver of said provision or condition on any subsequent occasion unless such fact is specifically stated in the waiver. Forbearance or indulgence by Seller in any regard whatsoever shall not be deemed a waiver of its rights hereunder and until Buyer has completely performed all provisions and conditions of this Agreement, Seller shall be entitled to invoke any remedy available to Seller under this Agreement.

16. **APPLICABLE LAW**. This Agreement shall be governed by, construed under and interpreted and enforced in accordance with the laws of the State of North Carolina.

17. **AMENDMENT**. This Agreement shall not be modified or amended except by an instrument in writing executed by or on behalf of Buyer and Seller.

18. **CALCULATION OF TIME PERIOD**. If any date or any period provided for in this Agreement shall end on a Saturday, Sunday or a holiday recognized by the State of North Carolina, the applicable date or period shall be extended to the first business day following such Saturday, Sunday or holiday.

19. **COUNTERPARTS; FACSIMILE OR ELECTRONIC SIGNATURES**. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, and all such counterparts together shall constitute one and the same instrument. Facsimile or electronic mail signatures shall have the same effect as original signatures.

20. **CONSTRUCTION**. No provision of this Agreement shall be construed against or interpreted to the disadvantage of any party by any court or other governmental or judicial authority by reason of such party's having or being deemed to have prepared or imposed such provision.

21. **COMPLETE AGREEMENT**. This Agreement contains the entire contract between the parties hereto regarding the subject matter hereof and each party acknowledges that neither has made (either directly or through any agent or representative) any representations or agreements in connection with this Agreement not specifically set forth herein.

22. **SEVERABILITY**. In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereof and this Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

[remainder of page intentionally left blank]

IN TESTIMONY THEREOF, Buyer has executed this Agreement to be effective as of the day and year first written above.

BUYER:

Town of Black Mountain

By: _____
Name: _____
Title: _____

SELLER:

STATE OF NORTH CAROLINA,
a body politic and corporate

By: _____
Name: _____
Title: _____

Exhibit A

BEING an approximately 11 acre portion of the tract or parcel of land located in Black Mountain, North Carolina and described in the deed recorded in Book 0479, Page 199, Buncombe County Registry, and more particularly a portion of Parcel Number 060924886800000.

An illustrative map showing the Property is attached hereto as Exhibit A1 and incorporated herein by reference.

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration

TITLE OF ITEM: Consideration of Easement Request with Duke Energy

SUGGESTED MOTION(S):

I move that Council Authorize the Town Manager to Execute Easement Documents With Duke Energy.

SUMMARY:

Duke Energy has requested that the Town grant them an easement along the Golf Course. They need to run an underground line for customer reliability and resiliency measures. They would bore approximately 1500 feet of 3 phase primary cable along the edge of Hole #12 of the Golf Course, which runs along North Fork Road and Greene Drive. They would need to place 3 new UG enclosures along the path at the turns and midspan as seen in the attached right-of-way map (P2, P3 and P4). In addition to the underground they need to replace one pole and add an additional pole along Green Drive. Some tree work would be necessary along Greene Drive for the pole installations. The underground line would run along the row of white pines that follow the 12th hole. This circuit tie would provide increased reliability by allowing their system to back feed between the circuits. This would help reduce the duration and number of customers affected during an outage.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? n/a

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Black Mtn golfcourse proposed line route Duke Energy
2. UG Enclosure Example

3. Enclosure Example Duke Energy Easement

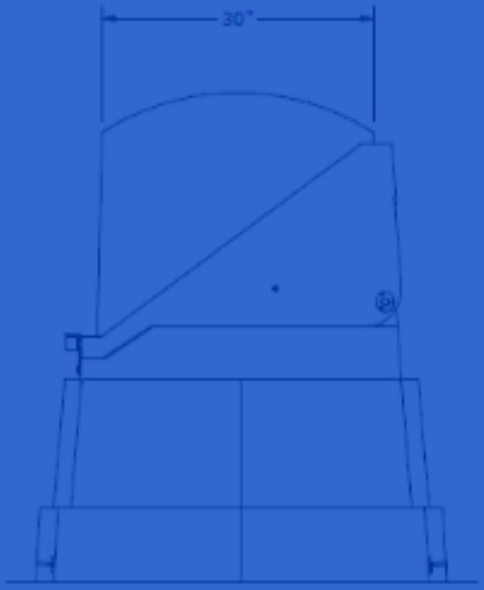
WO 57906022



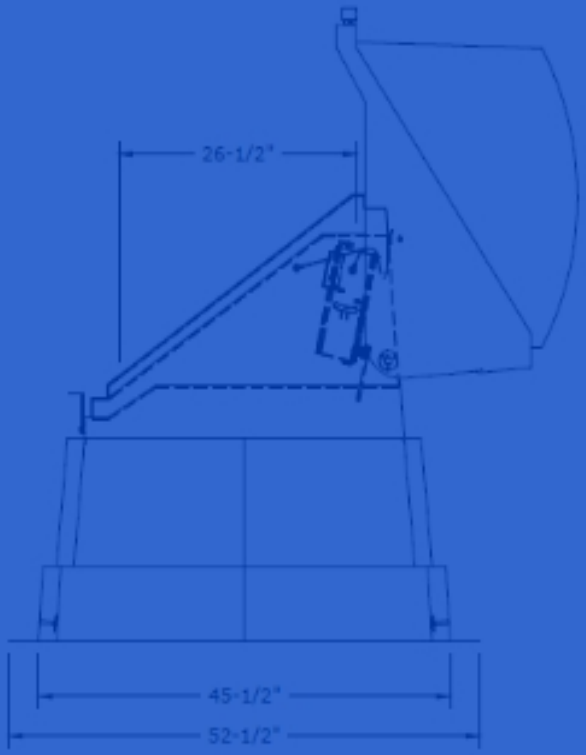
NOT TO SCALE


AMP ECI
HI-TECH
DANGER
KEEP OUT!
CAUTION
X1
HR3
HR4

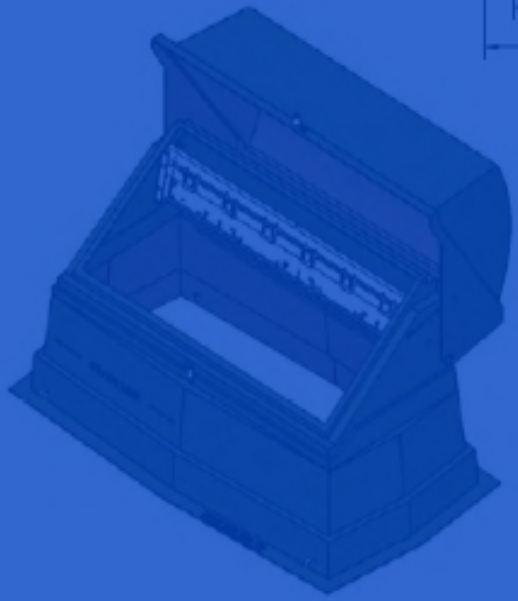
Example enclosure:



SIDE VIEW
(LID CLOSED)



SIDE VIEW
(LID OPEN)



TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Consideration to Adopt Stormwater Master Plan and Associated Capital Improvement Plan		

SUGGESTED MOTION(S):

Motion to adopt the stormwater master plan and capital improvement plan as presented & recommended.

SUMMARY:

EXECUTIVE SUMMARY: The Town of Black Mountain (Town) Stormwater Master Plan (SWMP) is funded by a Local Assistance for Stormwater Infrastructure Investments (LASII) from the American Rescue Plan Act (ARPA). The purpose of the SWMP is to develop a GIS map of the Town's stormwater system, identify flooding issues, assess the existing conveyance system capacity and infrastructure condition, develop and prioritize flood reduction projects, and establish an implementation strategy for the recommended capital infrastructure projects.

The Study Area for the SWMP includes the following:
• Secondary stormwater conveyance system in the Downtown corridor,
• Tomahawk Branch watershed, both the primary system culvert crossings and the secondary stormwater conveyance system located in the surrounding residential areas of Lake Tomahawk,
• Flat Creek Tributary 1 primary system culvert crossings in the vicinity of Portmanvilla, Sixth, and Seventh Street roads, and
• Tributary 35 (of the Swannanoa River) primary system culvert crossings in the vicinity of Avena and Padgettown roads.

The watersheds within the Town are all tributary to the Swannanoa River. In some cases, the closed system stormwater outfalls are located very closely to or directly into the Swannanoa River.

EXISTING STORMWATER INFRASTRUCTURE: The Town manages an extensive stormwater conveyance system, including streams, roadside ditches and swales, and nearly nine (9) miles of

closed pipe conveyance. Privately-owned stormwater infrastructure and private ponds also impact the Town's stormwater system. This SWMP includes assessment of the Town's stormwater conveyance system and includes multiple objectives: (1) reduce street and property flooding, (2) develop solutions to remove pipes presently located underneath commercial and government structures, (3) evaluate stormwater assets for maintenance and criticality, and (4) provide options to achieve a high level of service for roadways.

The stormwater inventory conducted for this SWMP determined that approximately 13 percent of the Town's evaluated structures are partially obstructed at 50% or less and require maintenance/debris removal. Approximately six (6) percent of the evaluated structures were severely obstructed (over 75 percent) at the time of assessment. The remaining 81 percent of evaluated structures were found to be clear of debris. Based on the results of the field assessments, four high-priority maintenance areas were identified and are shown in Figure ES-2. Beyond these four areas, it is recommended that the Town begin a systematic maintenance program to clear obstructions, beginning with the stormwater assets located in the Tomahawk Branch Watershed.

At the January 8, 2026 Special Called Council meeting, representatives from WK Dickson, LLC provided a presentation to the Town Council on the SWMP Draft.

The full Executive Summary document from WK Dickson, Full Report document and Appendices document are included as attachments within this item.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? n/a

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Black Mtn SWMP Executive Summary_Draft
2. Black Mtn SWMP_Draft Full Report
3. Black Mtn SWMP_Combined_Appendices

WK DICKSON

AN ARDURRA COMPANY

TOWN OF BLACK MOUNTAIN

BLACK MOUNTAIN STORMWATER MASTER PLAN

Executive Summary | December 2025









DRAFT

TOWN OF BLACK MOUNTAIN

STORMWATER MASTER PLAN

EXECUTIVE SUMMARY

WK Dickson/Ardurra Project No. 20230691.00.GV

December 2025

Prepared for:
Town of Black Mountain
160 Midland Avenue
Black Mountain, North Carolina 28711

Prepared by:
WK Dickson LLC dba Ardurra Group North Carolina
720 Corporate Center Drive
Raleigh, North Carolina 27607
919-782-0495
NC License Number F-0374

TABLE OF CONTENTS

Table of Contents 1
List of Figures 1
List of Tables 1
Executive Summary 1
ES.1 Existing Stormwater Infrastructure 3
ES.2 Infrastructure Criticality Analysis 3
ES.3 Stormwater Capital Improvement Projects 6
ES.4 Prioritization and Recommendations 6

List of Figures

Figure ES-1 Location Map 2
Figure ES-2 Obstructed Stormwater Structures 4
Figure ES-3 Criticality Analysis – Stormwater Pipes 5
Figure ES-4 Proposed Capital Stormwater Improvement Projects 7
Figure ES-5 Proposed Stormwater Improvement Projects – Downtown 9
Figure ES-6 Proposed Stormwater Improvement Projects – Tomahawk Branch 44
Figure ES-7 Proposed Stormwater Improvement Projects – Flat Creek 51
Figure ES-8 Proposed Stormwater Improvement Projects – Tributary 35 / Avena Rd 60

List of Tables

TABLE ES.1. Proposed CIP Planning Cost and Prioritization Summary 8

EXECUTIVE SUMMARY

The Town of Black Mountain (Town) Stormwater Master Plan (SWMP) is funded by a Local Assistance for Stormwater Infrastructure Investments (LASII) from the American Rescue Plan Act (ARPA). The purpose of the SWMP is to develop a GIS map of the Town's stormwater system, identify flooding issues, assess the existing conveyance system capacity and infrastructure condition, develop and prioritize flood reduction projects, and establish an implementation strategy for the recommended capital infrastructure projects.

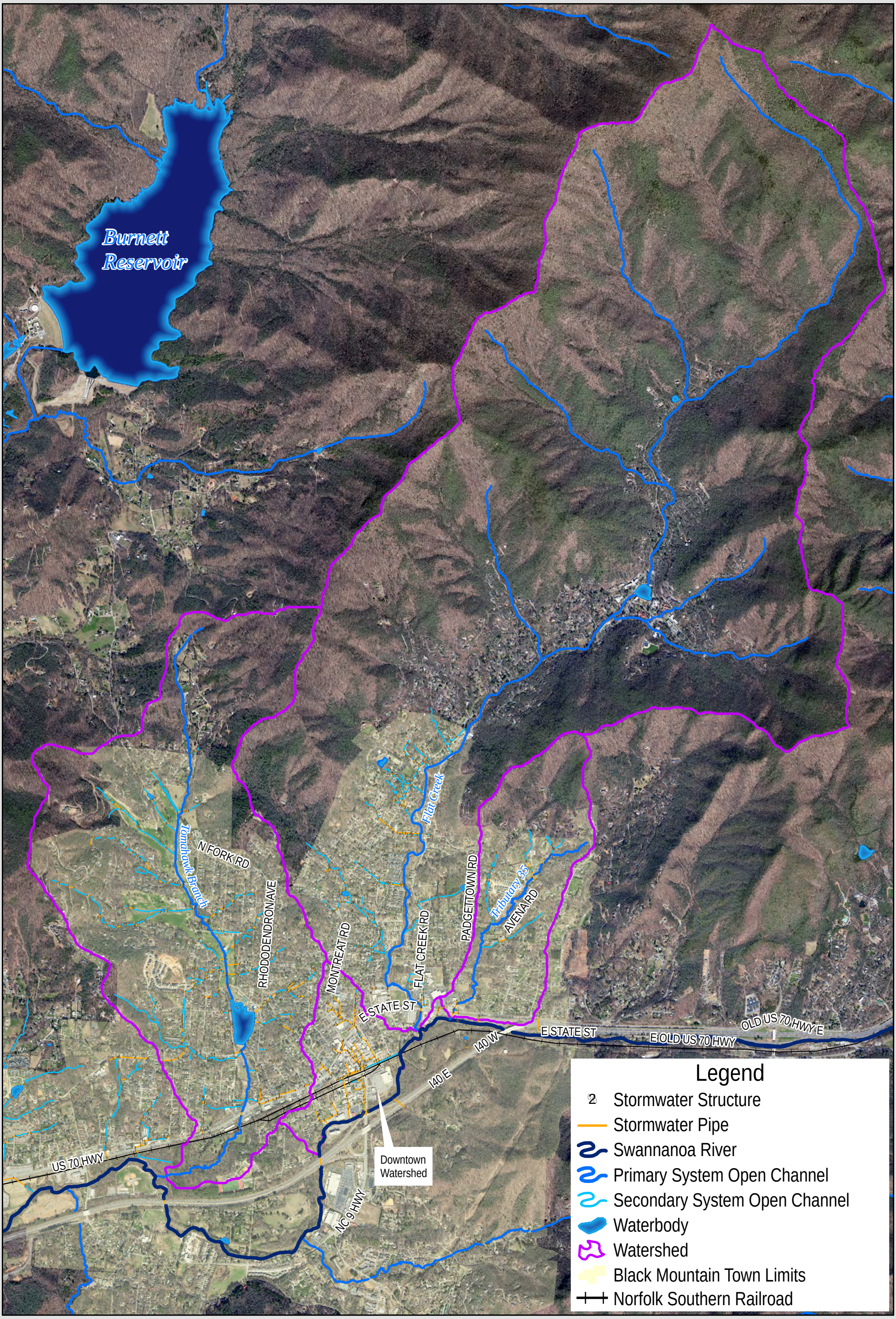
The Study Area for the SWMP includes the following:

- Secondary stormwater conveyance system in the Downtown corridor,
- Tomahawk Branch watershed, both the primary system culvert crossings and the secondary stormwater conveyance system located in the surrounding residential areas of Lake Tomahawk,
- Flat Creek Tributary 1 primary system culvert crossings in the vicinity of Portmanvilla, Sixth, and Seventh Street roads, and
- Tributary 35 (of the Swannanoa River) primary system culvert crossings in the vicinity of Avena and Padgettown roads.

The watersheds within the Town are all tributary to the Swannanoa River. In some cases, the closed system stormwater outfalls are located very closely to or directly into the Swannanoa River.

Based on historical records obtained from the National Oceanic and Atmospheric Administration (NOAA) online national climate data service[1], Hurricane Helene brought over 14 inches of rainfall in a span of three days to the mountains in September 2024, resulting in catastrophic flooding along the Swannanoa River corridor. Many roadways and bridges within the Town of Black Mountain were impacted. As a result, the Town desired to develop projects that would meet the 50-year level of service (LOS) where feasible. All proposed projects were evaluated and developed with this goal. However, there are a few areas where downstream hydraulic conditions and/or available cover prevent this level of flood reduction.

The Study Area for the Town's SWMP is shown in Figure ES-1.



WK DICKSON
AN ARDURRA COMPANY

Figure ES-1: Project Location
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 1,000 2,000
Feet
1 in = 2,000 ft

ES.1 Existing Stormwater Infrastructure

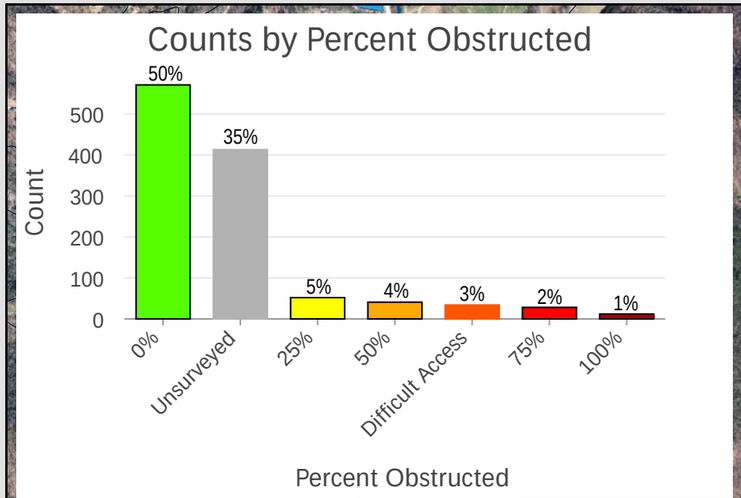
The Town manages an extensive stormwater conveyance system, including streams, roadside ditches and swales, and nearly nine (9) miles of closed pipe conveyance. Privately-owned stormwater infrastructure and private ponds also impact the Town's stormwater system. This SWMP includes assessment of the Town's stormwater conveyance system and includes multiple objectives: (1) reduce street and property flooding, (2) develop solutions to remove pipes presently located underneath commercial and government structures, (3) evaluate stormwater assets for maintenance and criticality, and (4) provide options to achieve a high level of service for roadways.

The stormwater inventory conducted for this SWMP determined that approximately 13 percent of the Town's evaluated structures are partially obstructed at 50% or less and require maintenance/debris removal. Approximately six (6) percent of the evaluated structures were severely obstructed (over 75 percent) at the time of assessment. The remaining 81 percent of evaluated structures were found to be clear of debris. Based on the results of the field assessments, four high-priority maintenance areas were identified and are shown in Figure ES-2. Beyond these four areas, it is recommended that the Town begin a systematic maintenance program to clear obstructions, beginning with the stormwater assets located in the Tomahawk Branch Watershed.

ES.2 Infrastructure Criticality Analysis

As part of the Town of Black Mountain Stormwater Master Plan, a preliminary condition assessment was completed to identify high-priority areas for detailed CCTV and/or maintenance needs. Prioritization is based on the likelihood of asset failure, as well as the consequence of asset failure. By evaluating the likelihood of asset failure in relation to the consequence of asset failure, a combined criticality score is then developed for each asset. This criticality score can enable the Town to more strategically evaluate which assets to focus capital improvement resources on for repair, rehabilitation, or further condition assessments. Of the pipes evaluated, 20% scored in Level 4 or 5, indicating the highest need for stormwater rehabilitation efforts. Within the structures evaluated, 21% scored in Level 4 or 5, indicating the highest need for stormwater structure rehabilitation efforts.

Because the data in the GIS database are dynamic, the results of the prioritization tool are a static representation based upon when the tool is run. As data are updated in the database, the tool can be utilized, and the results of the prioritization process can be updated easily. Typically, a jurisdiction may use a prioritization tool such as this on an annual or semi-annual basis as budgets are developed and capital plans and O&M plans are revised. A valuable component of this dynamic prioritization tool is the ability to quickly perform different scenario analyses to determine the relative benefit of capital and operation and maintenance (O&M) projects. The Town can determine if the at-risk score of a particular component can be dramatically reduced by improvement. In some cases, the consequence of failure score is so high that an improved asset will always remain in the high-risk category. These assets can be monitored on a frequent basis to consistently check their condition and proactively work to prevent a failure. Conversely, assets with the greatest likelihood of failure scores are often the target of initial condition assessment and rehabilitation programs. Town staff can perform scenario analyses to determine where condition assessment and rehabilitation programs can most reduce the at-risk scores of critical assets. The criticality of the Town's stormwater pipes are shown in Figure ES-3.



**The location of unknown/unsurveyed structures are not exact.
Unknown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.

There are a few concentrated areas where obstructions and debris need to be removed.
Most of the obstructions are spread out across the Town's system.
It is recommended that the Town start with the four high priority areas identified and then move to systematic cleaning/maintenance beginning with the Tomahawk Branch watershed.

Legend

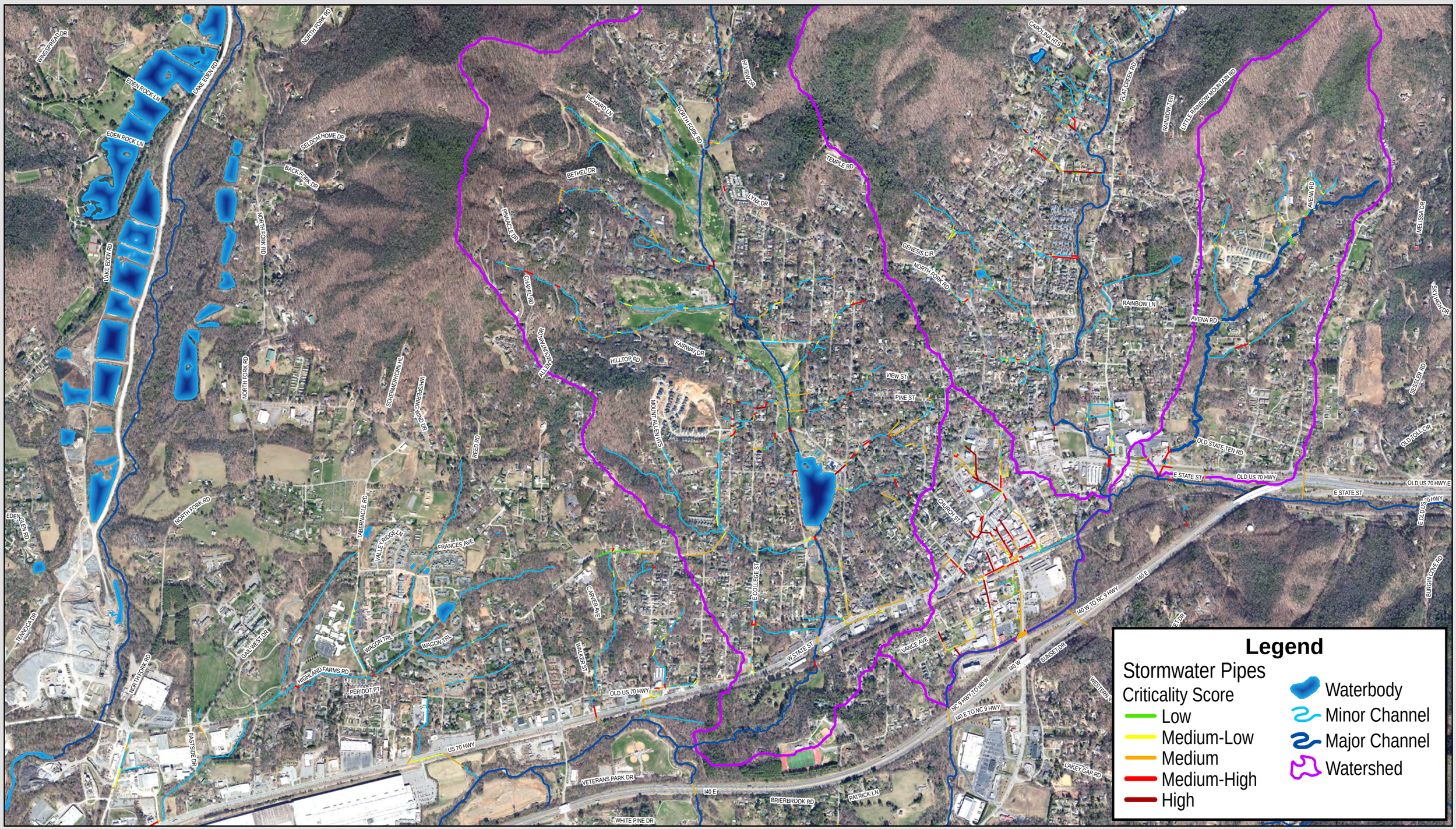
Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- # Difficult Access Structure
- 2 Unsurveyed Structure

- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed
- High Priority Maintenance Area

WK DICKSON
AN ARDURRA COMPANY

Figure ES-2: High Priority Maintenance Areas
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 1,250 2,500 Feet
1 in = 1,250 ft



Legend

Stormwater Pipes

Criticality Score

- Low
- Medium-Low
- Medium
- Medium-High
- High

- Waterbody
- Minor Channel
- Major Channel
- Watershed

WK DICKSON
AN ARDURRA COMPANY

TOWN OF BLACK MOUNTAIN NORTH CAROLINA 1893

Figure ES-3: Criticality Analysis Results - Stormwater Pipes
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 1,250 2,500 Feet

1 in = 1,250 ft

N

ES.3 Stormwater Capital Improvement Projects

Developing flood mitigation alternatives in an urban environment is a complex process based on limitations imposed by the constraints within the environment, such as floodplain encroachments, increased peak flows due to impervious areas, public and private utilities, and private property. Improvements in this portion of the study were identified through an iterative process of infrastructure improvements, open channel improvements, floodplain benching, and detention options where feasible. As previously noted, the Town desired to focus the stormwater capital projects towards achieving a goal of a 50-YR LOS. In some cases, existing conditions limit options to plan for the desired LOS. Options for providing a high LOS are presented herein.

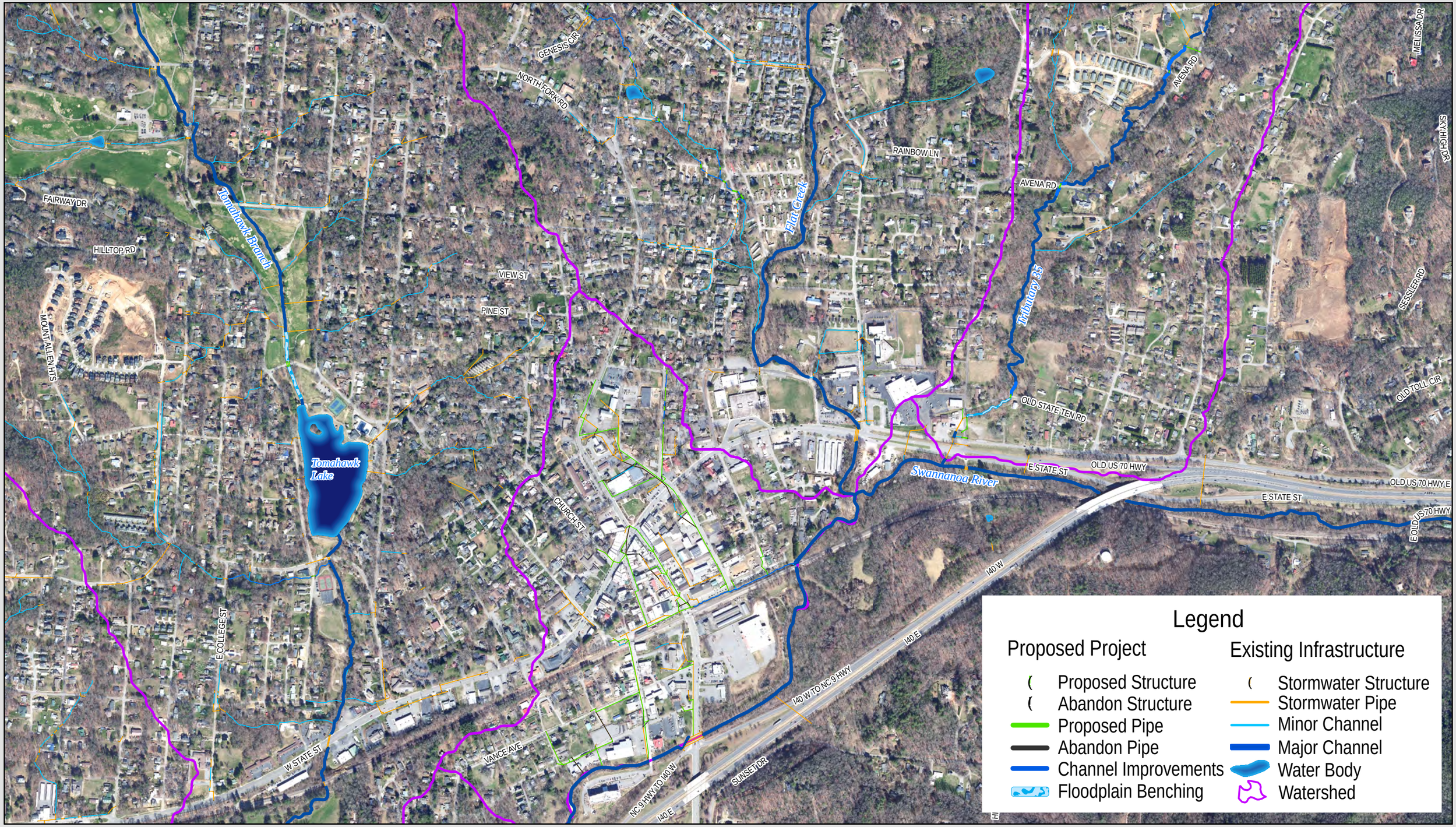
1D PCSWMM models were developed to analysis the Town's existing stormwater system, including the downtown secondary system and the culvert crossings along the three major tributaries to the Swannanoa River running through Town: Tomahawk Branch, Flat Creek, and Tributary 35. The results of the existing system capacity analysis indicated that much of the Town's stormwater system does meet a 10-year LOS and in the downtown area does not meet a 2-year LOS. The models were then used to develop planning level capital improvement projects to meet the Town's desired 50-year LOS. Twenty-nine (29) stormwater improvement capital projects were identified in phases to address the Town's goals within the SWMP. Each stormwater project is identified by watershed and a project ID. Downtown projects are additionally designated by the outfall locations for Sutton Avenue, Black Mountain Avenue, Terry Estates Drive, and NC9. The proposed projects are shown in Figure ES-4.

ES.4 Prioritization and Recommendations

To appropriately allocate Town resources, the flood reduction projects listed above were prioritized based on the following categories:

- Utility Conflicts
- Severity of Street Flooding
- Land or Right-of-Way Ownership
- Effect of Improvements
- Cost Effectiveness
- Bonus Points for Grant Funding Eligibility
- Bonus Points for Criticality Analysis

In some instances, project prioritization will be impacted by the required sequencing to provide the highest possible flood reduction benefits and to reduce or negate any downstream impacts for the proposed projects. Table ES.1 shows the proposed prioritizations and planning level cost estimates for the proposed capital stormwater improvement projects. The total cost for stormwater improvements in the Downtown corridor is approximately $27 Million, and the total cost to provide improvements along primary stream culvert crossings in Tomahawk Branch, Flat Creek, and Tributary 35 (Avena Rd area) is approximately $8 Million. Proposed project sheet summaries and planning level cost estimates are provided following Table ES.1.



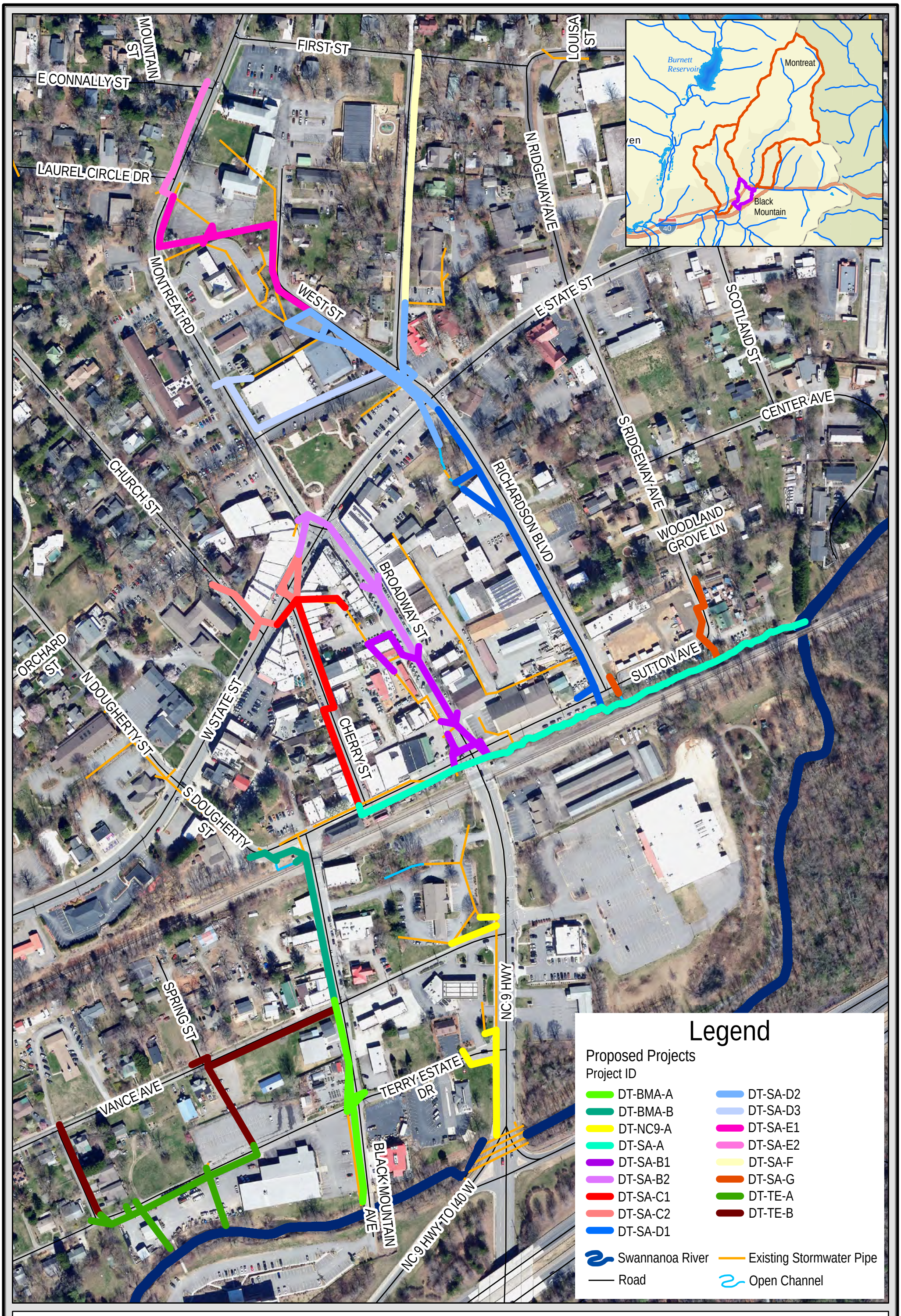
WK DICKSON
AN ARDURRA COMPANY

Figure ES-4: Proposed Projects
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 700 1,400 Feet
1 in = 700 ft

TABLE ES.1. PROPOSED CIP PLANNING COST AND PRIORITIZATION SUMMARY

PROPOSED STORMWATER IMPROVEMENT PROJECT		PROJECT PLANNING LEVEL OPINION OF COST	PRIORITIZATION SCORE
DOWNTOWN SYSTEM			
DT-SA-A	Sutton Ave	$ 2,250,000	88
DT-SA-B1	Broadway St Phase I	$ 2,029,000	83
DT-SA-B2	Broadway St Phase II	$ 1,292,000	88
DT-SA-C1	Cherry St Phase I	$ 1,510,000	75
DT-SA-C2	Cherry St Phase II	$ 1,021,000	88
DT-SA-D1	Police Station/Post Office Phase I	$ 4,303,000	71
DT-SA-D2	Police Station/Post Office Phase II	$ 1,932,000	87
DT-SA-D3	Police Station/Post Office Phase III	$ 923,000	81
DT-SA-E1	West St to Montreat Rd	$ 1,228,000	76
DT-SA-E2	Montreat Rd at Laurel Circle Dr	$ 797,000	49
DT-SA-F	Midland Ave	$ 1,121,000	82
DT-SA-G	S. Ridgeway Ave	$ 827,000	76
DT-BMA-A	Black Mountain Ave Phase I	$ 1,880,000	82
DT-BMA-B	Black Mountain Ave Phase II	$ 1,308,000	88
DT-TE-A	Terry Estate Dr Phase I	$ 1,963,000	61
DT-TE-B	Terry Estate Dr Phase II	$ 1,380,000	78
DT-NC9-A	NC 9	$ 1,335,000	68
TOMAHAWK BRANCH PRIMARY SYSTEM			
TB-A1	Laurel Circle Culvert Replacement	$ 760,000	58
TB-A2	Golf Course Floodplain Benching	$ 690,000	53
TB-B	Swannanoa Ave Culvert	$ 430,000	77
FLAT CREEK PRIMARY SYSTEM			
FC-TRIB1-A	Portmanvilla Rd	$ 900,000	87
FC-TRIB1-B	6th St	$ 633,000	78
FC-TRIB1-C	7th St	$ 405,000	87
FC-TRIB1-D	Montreat Rd	$ 546,000	88
TRIBUTARY 35 PRIMARY SYSTEM			
TR35-A	Padgettown Rd	$ 1,422,000	62
TR35-B1	Old State 10 Rd	$ 608,000	77
TR35-B2	Tributary 35 Floodplain Benching	$ 425,000	66
TR35-C	Avena Rd	$ 438,000	85
TR35-D	Bellgrove Rd / Avena Rd	$ 824,000	83



WK DICKSON
AN ARDURRA COMPANY

Figure ES-5: Proposed Stormwater Improvement Projects
DOWNTOWN DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

PROJECT NAME: **Sutton Ave and Open Channel Stormwater Improvements** PROJECT ID: **DT-SA-A**

PROJECT INFORMATION

LOCATION: Sutton Ave: Cherry St to Broadway St outfall
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 1360

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 25 LF of new 42" RCP across Sutton Ave at Cherry St.
- Replace existing pipe on south side of Sutton Ave with 280 LF of 42" RCP.
- Replace existing pipe in the Broadway St/SuttonAve intersection with 100 LF of 48" RCP.
- Replace exising outfall pipe with 20 LF of 60" RCP.
- Install 940 LF of channel improvements from the outfall to the confluence with the Swannanoa River.*

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Cherry St	< 2-YR	50-YR	100
Sutton Ave at Broadway St	< 2-YR	50-YR	100
Future Outfall Projects*	< 2-YR	50-YR	100

**Open Channel improvements along existing roadside channel from outfall at Broadway St to the confluence with the Swannanoa River provide capacity for future outfall improvements at Richardson Blvd and S. Ridgeway Ave.*

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,394,000
Design and Permitting	$ 493,800
Other Project Costs	$ 362,200
Total Project	**$ 2,250,000**

PROJECT AREA MAP



PROJECT NAME **Sutton Ave and Open Channel Stormwater Improvements** PROJECT ID: **DT-SA-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 420

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 51,060.00	$ 51,100.00
Erosion Control	1	LS	$ 41,850.00	$ 41,900.00
Traffic Control	1	LS	$ 16,740.00	$ 16,700.00
Moderate Utility Conflict	1	LS	$ 125,550.00	$ 125,600.00
Unclassified Excavation/Hauling	500	CY	$ 72.00	$ 36,000.00
Infrastructure Removal and Disposal	400	LF	$ 115.00	$ 46,000.00
Structure Removal and Disposal	6	EA	$ 6,800.00	$ 40,800.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	6	EA	$ 12,000.00	$ 72,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	400	LF	$ 670.00	$ 268,000.00
New Pipe: 60-inch	20	LF	$ 875.00	$ 17,500.00
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	940	LF	$ 350.00	$ 329,000.00
Roadway/Sidewalk Replacement	240	SY	$ 110.00	$ 26,400.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 322,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,394,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 69,700.00
Design and Permitting	20%	$ 278,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ 150,000.00
Geotechnical Investigation	1%	$ 13,900.00
Structural Evaluation	1%	$ 13,900.00
Real Estate	2%	$ 27,900.00
Utility Relocation	2%	$ 27,900.00
Project Maintenance (3yr)	5%	$ 69,700.00
Construction Inspections	10%	$ 139,400.00
Construction	100%	$ 1,394,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 2,250,000.00

PROJECT NAME: **Broadway St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-B1**

PROJECT INFORMATION

LOCATION: Broadway St in Downtown Business District
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 700

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24" pipe in Broadway St with 325 LF of 42-inch RCP.
- Replace existing catch basins and connecting pipes along Broadway with larger pipes.
- Re-route private system to proposed Broadway system and remove pipe under structure.
- Install upsized and new crossings and connections at Montreat Rd and Sutton Ave.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**83**

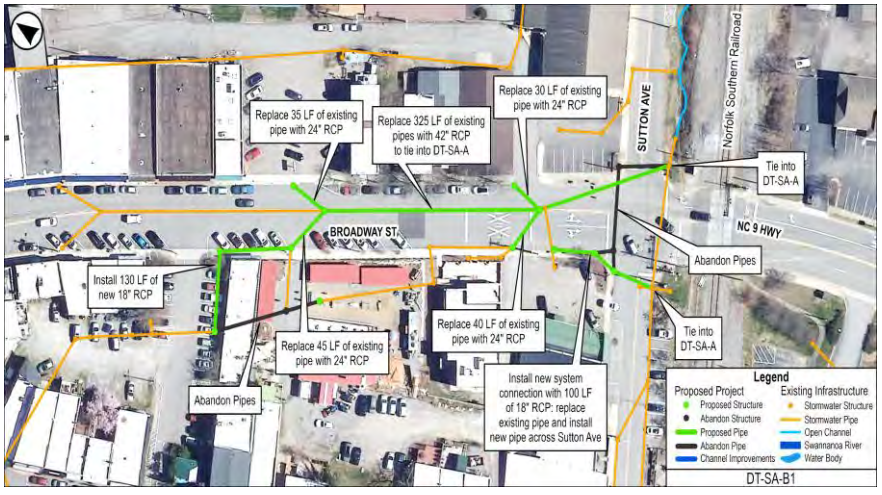
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Broadway St at Sutton Ave	< 2-YR	50-YR	100
Side system along Broadway	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,390,000
Design and Permitting	$ 278,000
Other Project Costs	$ 361,000
Total Project	**$ 2,029,000**

PROJECT AREA MAP



PROJECT NAME **Broadway St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-B1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 700
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 50,915.00	$ 50,900.00
Erosion Control	1	LS	$ 37,160.00	$ 37,200.00
Traffic Control	1	LS	$ 14,864.00	$ 14,900.00
Major Utility Conflict	1	LS	$ 222,960.00	$ 223,000.00
Unclassified Excavation/Hauling	500	CY	$ 72.00	$ 36,000.00
Infrastructure Removal and Disposal	720	LF	$ 115.00	$ 82,800.00
Structure Removal and Disposal	15	EA	$ 6,800.00	$ 102,000.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	375	LF	$ 390.00	$ 146,300.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	325	LF	$ 670.00	$ 217,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	380	SY	$ 110.00	$ 41,800.00
New Concrete Curb and Gutter	125	LF	$ 110.00	$ 13,800.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 321,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,390,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 69,500.00
Design and Permitting	20%	$ 278,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,900.00
Structural Evaluation	1%	$ 13,900.00
Real Estate	2%	$ 27,800.00
Utility Relocation	2%	$ 27,800.00
Project Maintenance (3yr)	5%	$ 69,500.00
Construction Inspections	10%	$ 139,000.00
Construction	100%	$ 1,390,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 2,029,000.00

PROJECT NAME: **Broadway St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-B2**

PROJECT INFORMATION

LOCATION: Broadway St north to Montreat Rd
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 615

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24" pipe in Broadway St with 210 LF of 36-inch RCP.
- Install 285 LF of new 30-inch RCP from 36-inch RCP in Broadway St across E State St.
- Replace 30 LF of existing pipe across Montreat Rd at E State St with 30-inch RCP.
- Remove pipe across Montreat flowing to first catch basin on W. State St.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

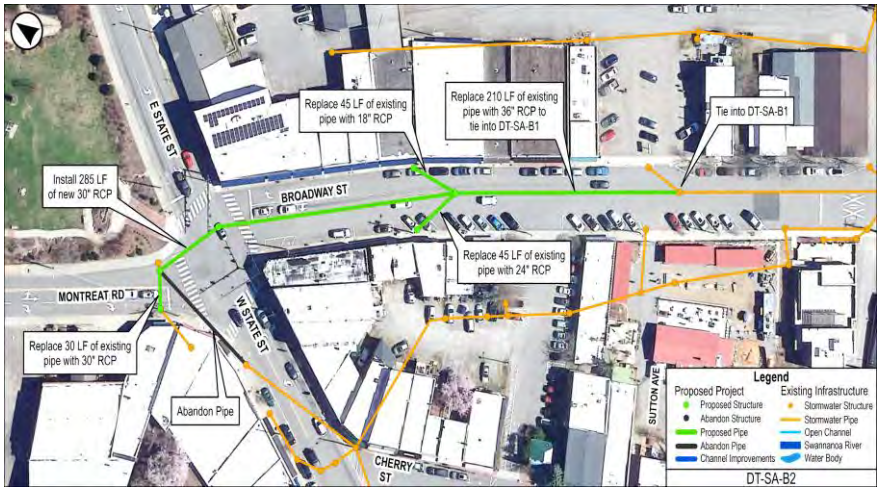
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
E State St at Broadway St	NA	50-YR	New Crossing
Montreat Rd at E State St	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 885,000
Design and Permitting	$ 177,000
Other Project Costs	$ 230,000
Total Project	**$ 1,292,000**

PROJECT AREA MAP



PROJECT NAME **Broadway St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-B2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 615
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 32,425.00	$ 32,400.00
Erosion Control	1	LS	$ 26,580.00	$ 26,600.00
Traffic Control	1	LS	$ 10,632.00	$ 10,600.00
Moderate Utility Conflict	1	LS	$ 79,740.00	$ 79,700.00
Unclassified Excavation/Hauling	620	CY	$ 72.00	$ 44,600.00
Infrastructure Removal and Disposal	435	LF	$ 115.00	$ 50,000.00
Structure Removal and Disposal	5	EA	$ 6,800.00	$ 34,000.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	90	LF	$ 390.00	$ 35,100.00
New Pipe: 30-inch to 36-inch	525	LF	$ 535.00	$ 280,900.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	310	SY	$ 110.00	$ 34,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 204,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 885,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 44,300.00
Design and Permitting	20%	$ 177,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,900.00
Structural Evaluation	1%	$ 8,900.00
Real Estate	2%	$ 17,700.00
Utility Relocation	2%	$ 17,700.00
Project Maintenance (3yr)	5%	$ 44,300.00
Construction Inspections	10%	$ 88,500.00
Construction	100%	$ 885,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,292,000.00

PROJECT NAME: **Cherry St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-C1**

PROJECT INFORMATION

LOCATION: Cherry St from W State St to Sutton Ave
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 690

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe on Cherry St with 270 LF of 36-inch RCP and tie into 42-inch RCP at Sutton Ave.
- Install 330 LF of new 36-inch RCP along Cherry St. from W. State St.
- Replace existing pipe crossing Cherry St at W State St with 85 LF of 36-inch RCP.
- Remove pipe under structure at corner of W State St and Cherry St. to re-route flow to right-of-way.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**75**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Cherry St at W State St	< 2-YR	50-YR	100
Cherry St at Sutton Ave	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,034,000
Design and Permitting	$ 206,800
Other Project Costs	$ 269,200
Total Project	**$ 1,510,000**

PROJECT AREA MAP



PROJECT NAME **Cherry St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-C1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 690
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 37,855.00	$ 37,900.00
Erosion Control	1	LS	$ 31,030.00	$ 31,000.00
Traffic Control	1	LS	$ 12,412.00	$ 12,400.00
Moderate Utility Conflict	1	LS	$ 93,090.00	$ 93,100.00
Unclassified Excavation/Hauling	860	CY	$ 72.00	$ 61,900.00
Infrastructure Removal and Disposal	500	LF	$ 115.00	$ 57,500.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	4	EA	$ 8,600.00	$ 34,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	690	LF	$ 535.00	$ 369,200.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	390	SY	$ 110.00	$ 42,900.00
New Concrete Curb and Gutter	300	LF	$ 110.00	$ 33,000.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 239,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,034,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 51,700.00
Design and Permitting	20%	$ 206,800.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 10,300.00
Structural Evaluation	1%	$ 10,300.00
Real Estate	2%	$ 20,700.00
Utility Relocation	2%	$ 20,700.00
Project Maintenance (3yr)	5%	$ 51,700.00
Construction Inspections	10%	$ 103,400.00
Construction	100%	$ 1,034,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,510,000.00

PROJECT NAME: **Cherry St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-C2**

PROJECT INFORMATION

LOCATION: Church St and W State St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 420

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing crossings at Church St and W State St with 50 LF of 30-inch RCP and 50 LF of 36-inch RCP.
- Replace existing pipe along Church St with 24-inch RCP and connect to new system at W. State St/Cherry St.
- Install 160 LF of 18-inch RCP along W. State St to redirect flow to proposed Cherry St system.
- Remove remaining connection between Montreat Rd and Cherry St.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
W State St at Church St	< 2-YR	50-YR	100
W State St east of Cherry St	2-YR	50-YR	100
Church St at W State St	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 699,000
Design and Permitting	$ 139,800
Other Project Costs	$ 182,200
Total Project	**$ 1,021,000**

PROJECT AREA MAP



PROJECT NAME **Cherry St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-C2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 420
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 25,635.00	$ 25,600.00
Erosion Control	1	LS	$ 21,015.00	$ 21,000.00
Traffic Control	1	LS	$ 8,406.00	$ 8,400.00
Moderate Utility Conflict	1	LS	$ 63,045.00	$ 63,000.00
Unclassified Excavation/Hauling	340	CY	$ 72.00	$ 24,500.00
Infrastructure Removal and Disposal	440	LF	$ 115.00	$ 50,600.00
Structure Removal and Disposal	8	EA	$ 6,800.00	$ 54,400.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	325	LF	$ 390.00	$ 126,800.00
New Pipe: 30-inch to 36-inch	95	LF	$ 535.00	$ 50,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	260	SY	$ 110.00	$ 28,600.00
New Concrete Curb and Gutter	210	LF	$ 110.00	$ 23,100.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 161,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 699,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 35,000.00
Design and Permitting	20%	$ 139,800.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 7,000.00
Structural Evaluation	1%	$ 7,000.00
Real Estate	2%	$ 14,000.00
Utility Relocation	2%	$ 14,000.00
Project Maintenance (3yr)	5%	$ 35,000.00
Construction Inspections	10%	$ 69,900.00
Construction	100%	$ 699,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,021,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase I** PROJECT ID: **DT-SA-D1**

PROJECT INFORMATION

LOCATION: Richardson Blvd / Post Office
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 1600

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 150 LF of 3' x 7' RCBC along Richardson Blvd to the outfall in the open channel along Sutton Ave.
- Install 570 LF of twin 42-inch RCP north along Richardson Blvd to the post office.
- Install 190 LF of 42-inch pipe to the intersection with E State St.
- Install 70 LF of new 36-inch RCP adjacent to the post office to reroute flow to the right-of-way.
- Project allows for stormwater improvements upstream at Police Station.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	0
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**71**

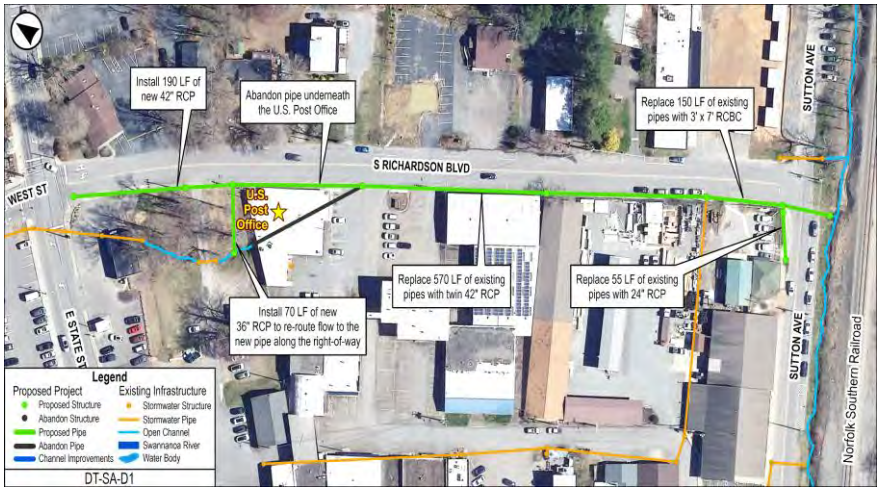
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Richardson	< 2-YR	50-YR	100
Post Office Infrastructure	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 2,913,000
Design and Permitting	$ 632,600
Other Project Costs	$ 757,400
Total Project	**$ 4,303,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase I** PROJECT ID: **DT-SA-D1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 1600
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 106,720.00	$ 106,700.00
Erosion Control	1	LS	$ 87,475.00	$ 87,500.00
Traffic Control	1	LS	$ 34,990.00	$ 35,000.00
Moderate Utility Conflict	1	LS	$ 262,425.00	$ 262,400.00
Unclassified Excavation/Hauling	2310	CY	$ 72.00	$ 166,300.00
Infrastructure Removal and Disposal	760	LF	$ 115.00	$ 87,400.00
Structure Removal and Disposal	6	EA	$ 6,800.00	$ 40,800.00
Standard Structure	3	EA	$ 8,600.00	$ 25,800.00
Large Structure or Headwall	8	EA	$ 12,000.00	$ 96,000.00
New Pipe: 18-inch to 24-inch	50	LF	$ 390.00	$ 19,500.00
New Pipe: 30-inch to 36-inch	70	LF	$ 535.00	$ 37,500.00
New Pipe: 42-inch to 54-inch	1330	LF	$ 670.00	$ 891,100.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	150	LF	$ 1,700.00	$ 255,000.00
Rip Rap	50	TN	$ 50.00	$ 2,500.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	610	SY	$ 110.00	$ 67,100.00
New Concrete Curb and Gutter	550	LF	$ 110.00	$ 60,500.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 672,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 2,913,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 145,700.00
Design and Permitting	20%	$ 582,600.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 29,100.00
Structural Evaluation	1%	$ 29,100.00
Real Estate	2%	$ 58,300.00
Utility Relocation	2%	$ 58,300.00
Project Maintenance (3yr)	5%	$ 145,700.00
Construction Inspections	10%	$ 291,300.00
Construction	100%	$ 2,913,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 4,303,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase II** PROJECT ID: **DT-SA-D2**

PROJECT INFORMATION

LOCATION: West St at E State St / Police Station
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 775

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 170 LF of new 42-inch RCP from Honeycutt St crossing E State St to tie-into proposed project DT-SA-D1.
- Install 55 LF of new 24-inch RCP and 200 LF of new 36-inch RCP in a new alignment along West St.
- Install new connecting pipes north of the police station to re-route flow to the right-of-way.
- Remove/abandon in place stormwater system running underneath police station to south of E State St.
- Install 235 LF of 24-inch RCP at the West/Midland intersection.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**87**

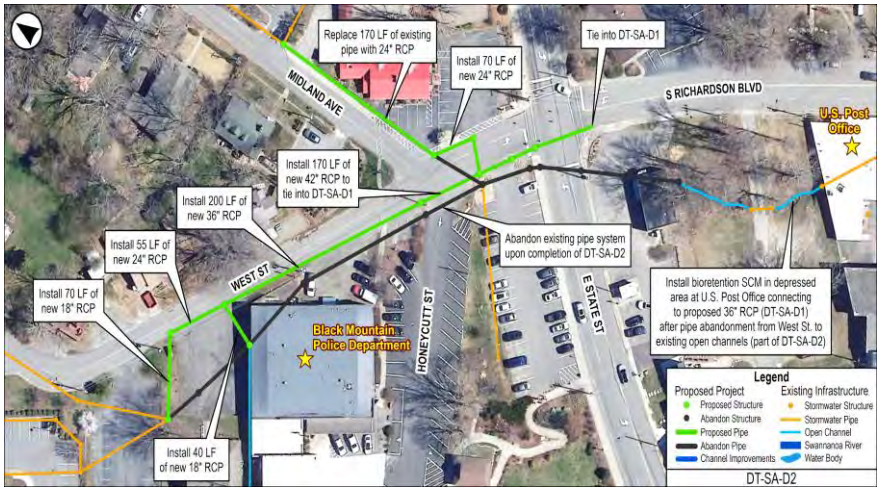
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
E State St/Richardson INT	< 2-YR	50-YR	100
West/Midland INT	< 2-YR	50-YR	100
Police Station Infrastructure	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,323,000
Design and Permitting	$ 264,600
Other Project Costs	$ 344,400
Total Project	**$ 1,932,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase II** PROJECT ID: **DT-SA-D2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 775
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 48,475.00	$ 48,500.00
Erosion Control	1	LS	$ 39,735.00	$ 39,700.00
Traffic Control	1	LS	$ 15,894.00	$ 15,900.00
Moderate Utility Conflict	1	LS	$ 119,205.00	$ 119,200.00
Unclassified Excavation/Hauling	940	CY	$ 72.00	$ 67,700.00
Infrastructure Removal and Disposal	710	LF	$ 115.00	$ 81,700.00
Structure Removal and Disposal	10	EA	$ 6,800.00	$ 68,000.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	4	EA	$ 12,000.00	$ 48,000.00
New Pipe: 18-inch to 24-inch	400	LF	$ 390.00	$ 156,000.00
New Pipe: 30-inch to 36-inch	200	LF	$ 535.00	$ 107,000.00
New Pipe: 42-inch to 54-inch	175	LF	$ 670.00	$ 117,300.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	370	SY	$ 110.00	$ 40,700.00
New Concrete Curb and Gutter	425	LF	$ 110.00	$ 46,800.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 305,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,323,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 66,200.00
Design and Permitting	20%	$ 264,600.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,200.00
Structural Evaluation	1%	$ 13,200.00
Real Estate	2%	$ 26,500.00
Utility Relocation	2%	$ 26,500.00
Project Maintenance (3yr)	5%	$ 66,200.00
Construction Inspections	10%	$ 132,300.00
Construction	100%	$ 1,323,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,932,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase III** PROJECT ID: **DT-SA-D3**

PROJECT INFORMATION

LOCATION: Montreat Rd and Honeycutt St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 575

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with paved over inlet across Montreat Rd at Fire Station with 35 LF of 24-inch RCP.
- Install 540 LF of new 24-inch RCP along Montreat Rd to Honeycutt St connecting to 42-inch RCP at West St.
- Remove existing pipe directing public water onto private property just north of the Fire Station.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	0
FINAL PROJECT SCORE:	**81**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd at Fire Station	< 2-YR	50-YR	100
Honeycutt St	NA	50-YR	New System

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 632,000
Design and Permitting	$ 126,400
Other Project Costs	$ 164,600
Total Project	**$ 923,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase III** PROJECT ID: **DT-SA-D3**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 575
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 23,135.00	$ 23,100.00
Erosion Control	1	LS	$ 18,960.00	$ 19,000.00
Traffic Control	1	LS	$ 7,584.00	$ 7,600.00
Moderate Utility Conflict	1	LS	$ 56,880.00	$ 56,900.00
Unclassified Excavation/Hauling	510	CY	$ 72.00	$ 36,700.00
Infrastructure Removal and Disposal	100	LF	$ 115.00	$ 11,500.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	4	EA	$ 8,600.00	$ 34,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	575	LF	$ 390.00	$ 224,300.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	310	SY	$ 110.00	$ 34,100.00
New Concrete Curb and Gutter	150	LF	$ 110.00	$ 16,500.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 146,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 632,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 31,600.00
Design and Permitting	20%	$ 126,400.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 6,300.00
Structural Evaluation	1%	$ 6,300.00
Real Estate	2%	$ 12,600.00
Utility Relocation	2%	$ 12,600.00
Project Maintenance (3yr)	5%	$ 31,600.00
Construction Inspections	10%	$ 63,200.00
Construction	100%	$ 632,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 923,000.00

PROJECT NAME: **West St to Montreat Rd Stormwater Improvements** PROJECT ID: **DT-SA-E1**

PROJECT INFORMATION

LOCATION: West St to Montreat Rd
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 760

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 735 LF of new 24-inch system along Montreat Rd and West St to connect to Proposed Project DT-SA-D2.
- This requires a permanent easement along the property line with the bank and church.
- Install 575 LF of new 24-inch system along Montreat Rd at Fire Station and Honeycutt Rd.
- Proposed project re-routes flow away from private property into the right-of-way.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**76**

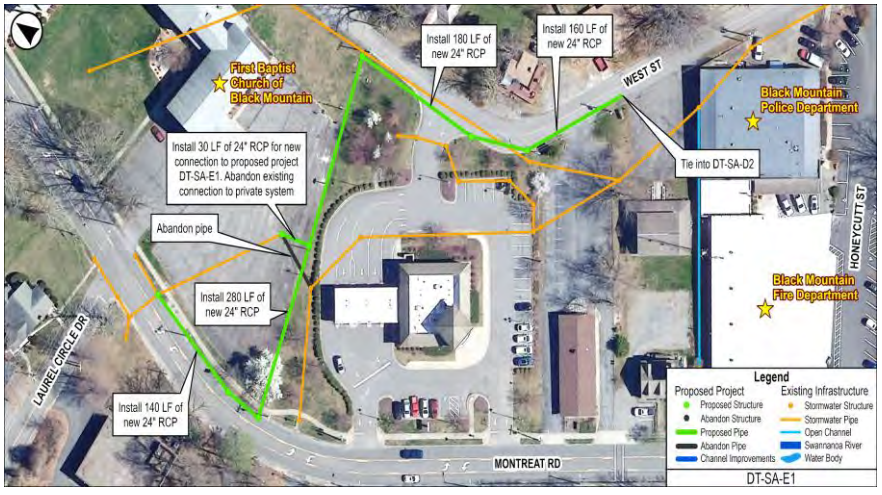
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd at the Church	NA	50-YR	New System
West St behind Bank	NA	50-YR	New System

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 841,000
Design and Permitting	$ 168,200
Other Project Costs	$ 218,800
Total Project	**$ 1,228,000**

PROJECT AREA MAP



PROJECT NAME **West St to Montreat Rd Stormwater Improvements** PROJECT ID: **DT-SA-E1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 760
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 30,820.00	$ 30,800.00
Erosion Control	1	LS	$ 25,260.00	$ 25,300.00
Traffic Control	1	LS	$ 10,104.00	$ 10,100.00
Moderate Utility Conflict	1	LS	$ 75,780.00	$ 75,800.00
Unclassified Excavation/Hauling	910	CY	$ 72.00	$ 65,500.00
Infrastructure Removal and Disposal	30	LF	$ 115.00	$ 3,500.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	8	EA	$ 8,600.00	$ 68,800.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	760	LF	$ 390.00	$ 296,400.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	210	SY	$ 110.00	$ 23,100.00
New Concrete Curb and Gutter	300	LF	$ 110.00	$ 33,000.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 194,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 841,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 42,100.00
Design and Permitting	20%	$ 168,200.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,400.00
Structural Evaluation	1%	$ 8,400.00
Real Estate	2%	$ 16,800.00
Utility Relocation	2%	$ 16,800.00
Project Maintenance (3yr)	5%	$ 42,100.00
Construction Inspections	10%	$ 84,100.00
Construction	100%	$ 841,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,228,000.00

PROJECT NAME: **Montreat Rd at Laurel Circle Dr Stormwater Improvements** PROJECT ID: **DT-SA-E2**

PROJECT INFORMATION

LOCATION:	Montreat Rd: E. Connally St to Laurel Circle Dr	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 260 LF of new 24-inch RCP along Montreat Rd from E. Connally St to Laurel Circle Dr.
- Replace 90 LF of existing pipe with 24-inch RCP across Laurel Circle Dr to tie-into proposed project DT-SA-E1.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	8
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**49**

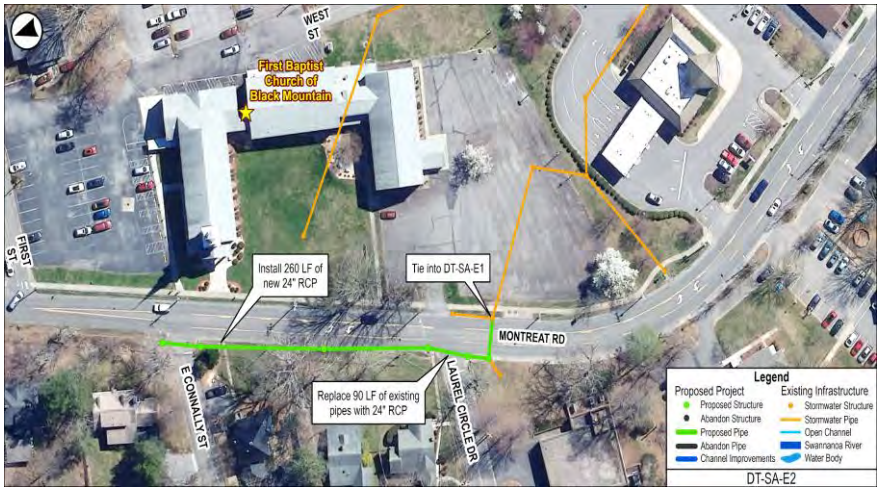
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Dr	< 2-YR	25-YR	45
E Connally St at Montreat Rd	NA	25-YR	New Crossing

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 546,000
Design and Permitting	$ 109,200
Other Project Costs	$ 141,800
Total Project	**$ 797,000**

PROJECT AREA MAP



PROJECT NAME **Montreat Rd at Laurel Circle Dr Stormwater Improvements** PROJECT ID: **DT-SA-E2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 350

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 19,975.00	$ 20,000.00
Erosion Control	1	LS	$ 14,580.00	$ 14,600.00
Traffic Control	1	LS	$ 5,832.00	$ 5,800.00
Major Utility Conflict	1	LS	$ 87,480.00	$ 87,500.00
Unclassified Excavation/Hauling	300	CY	$ 72.00	$ 21,600.00
Infrastructure Removal and Disposal	95	LF	$ 115.00	$ 10,900.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	350	LF	$ 390.00	$ 136,500.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	240	LF	$ 110.00	$ 26,400.00
Replace Driveway Culvert Pipe	30	LF	$ 300.00	$ 9,000.00
Replace Existing Concrete Driveway	15	SY	$ 120.00	$ 1,800.00
			Construction Contingency (30%):	$ 126,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 546,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 27,300.00
Design and Permitting	20%	$ 109,200.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,500.00
Structural Evaluation	1%	$ 5,500.00
Real Estate	2%	$ 10,900.00
Utility Relocation	2%	$ 10,900.00
Project Maintenance (3yr)	5%	$ 27,300.00
Construction Inspections	10%	$ 54,600.00
Construction	100%	$ 546,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 797,000.00

PROJECT NAME: **Midland Ave Stormwater Improvements** PROJECT ID: **DT-SA-F**

PROJECT INFORMATION

LOCATION: Midland Ave
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 675

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing culvert crossing at First St and Midland Ave with 30 LF of 24-inch RCP.
- Replace existing pipe and open channel system along Midland Ave with 24-inch RCP.
- Tie-into 24-inch RCP (part of proposed project DT-SA-D2) at Town Hall.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**82**

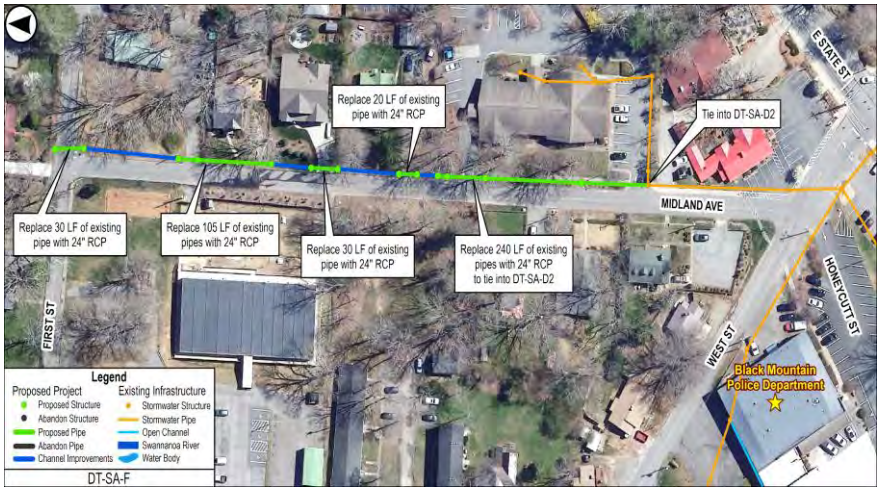
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
First St at Midland Ave	2-YR	50-YR	100
System at Town Hall	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 768,000
Design and Permitting	$ 153,600
Other Project Costs	$ 199,400
Total Project	**$ 1,121,000**

PROJECT AREA MAP



PROJECT NAME **Midland Ave Stormwater Improvements** PROJECT ID: **DT-SA-F**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 425

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 28,125.00	$ 28,100.00
Erosion Control	1	LS	$ 25,115.00	$ 25,100.00
Traffic Control	1	LS	$ 10,046.00	$ 10,000.00
Minor Utility Conflict	1	LS	$ 25,115.00	$ 25,100.00
Unclassified Excavation/Hauling	210	CY	$ 72.00	$ 15,100.00
Infrastructure Removal and Disposal	425	LF	$ 115.00	$ 48,900.00
Structure Removal and Disposal	5	EA	$ 6,800.00	$ 34,000.00
Standard Structure	13	EA	$ 8,600.00	$ 111,800.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	425	LF	$ 390.00	$ 165,800.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	250	LF	$ 350.00	$ 87,500.00
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	70	LF	$ 300.00	$ 21,000.00
Replace Existing Concrete Driveway	40	SY	$ 120.00	$ 4,800.00
			Construction Contingency (30%):	$ 177,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 768,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 38,400.00
Design and Permitting	20%	$ 153,600.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 7,700.00
Structural Evaluation	1%	$ 7,700.00
Real Estate	2%	$ 15,400.00
Utility Relocation	2%	$ 15,400.00
Project Maintenance (3yr)	5%	$ 38,400.00
Construction Inspections	10%	$ 76,800.00
Construction	100%	$ 768,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,121,000.00

PROJECT NAME: **S. Ridgeway Ave Stormwater Improvements** PROJECT ID: **DT-SA-G**

PROJECT INFORMATION

LOCATION:	Sutton Ave at S. Ridgway Ave	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	310

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 50 LF of 30-inch RCP across Sutton Ave on east side of Richardson Blvd.
- Install 80 LF of new 18-inch RCP and 100 LF of new 24-inch RCP along S. Ridgeway Ave.
- Replace existing pipe with 85 LF of 36-inch RCP to outfall at the open channel along Sutton Ave.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	0
FINAL PROJECT SCORE:	**76**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Richardson	< 2-YR	50-YR	100
Sutton Ave at Ridgeway Ave	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 532,000
Design and Permitting	$ 156,400
Other Project Costs	$ 138,600
Total Project	**$ 827,000**

PROJECT AREA MAP



PROJECT NAME **S. Ridgeway Ave Stormwater Improvements** PROJECT ID: **DT-SA-G**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 310
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 19,475.00	$ 19,500.00
Erosion Control	1	LS	$ 14,215.00	$ 14,200.00
Traffic Control	1	LS	$ 5,686.00	$ 5,700.00
Major Utility Conflict	1	LS	$ 85,290.00	$ 85,300.00
Unclassified Excavation/Hauling	170	CY	$ 72.00	$ 12,200.00
Infrastructure Removal and Disposal	105	LF	$ 115.00	$ 12,100.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	175	LF	$ 390.00	$ 68,300.00
New Pipe: 30-inch to 36-inch	135	LF	$ 535.00	$ 72,200.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	75	LF	$ 110.00	$ 8,300.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 123,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 532,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 26,600.00
Design and Permitting	20%	$ 106,400.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,300.00
Structural Evaluation	1%	$ 5,300.00
Real Estate	2%	$ 10,600.00
Utility Relocation	2%	$ 10,600.00
Project Maintenance (3yr)	5%	$ 26,600.00
Construction Inspections	10%	$ 53,200.00
Construction	100%	$ 532,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 827,000.00

PROJECT NAME: **Black Mountain Ave Stormwater Improvements Phase I** PROJECT ID: **DT-BMA-A**

PROJECT INFORMATION

LOCATION: Vance Ave to the Swannanoa River
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 585

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 85 LF of 30" RCP across Vance St at Black Mountain Ave.
- Replace 175 LF of existing pipe with 30" RCP and 36" RCP at Vance Ave intersection and moving south.
- Install 370 LF of new 36" RCP just north of the Terry Estate Dr intersection to the outfall.
- Install 40 LF of new 24" RCP across Black Mountain Ave at Terry Estate Dr.
- Remove 195 LF of existing pipe from service at Terry Estate Dr/Black Mountain Ave intersection.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**82**

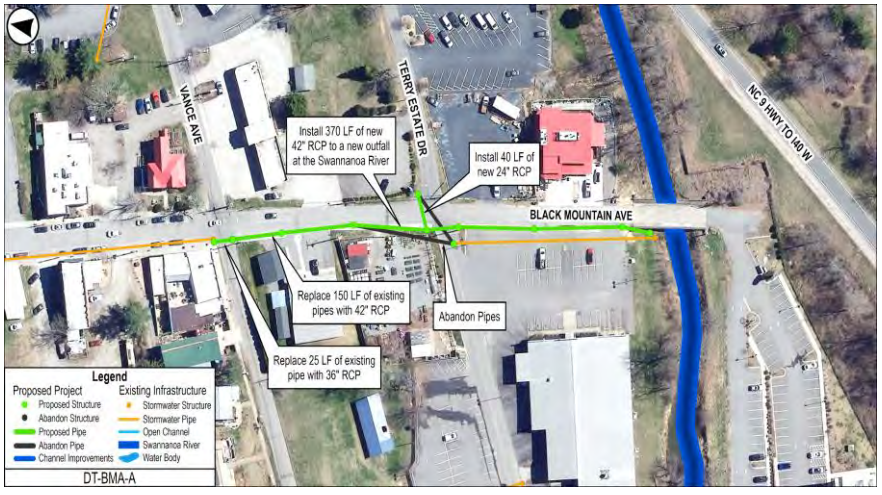
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate at Black Mtn Ave	< 2-YR	50-YR	100
Vance Ave at Black Mtn Ave	< 2-YR	25-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,253,000
Design and Permitting	$ 300,600
Other Project Costs	$ 326,400
Total Project	**$ 1,880,000**

PROJECT AREA MAP



PROJECT NAME **Black Mountain Ave Stormwater Improvements Phase I** PROJECT ID: **DT-BMA-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 585
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 45,910.00	$ 45,900.00
Erosion Control	1	LS	$ 37,630.00	$ 37,600.00
Traffic Control	1	LS	$ 15,052.00	$ 15,100.00
Moderate Utility Conflict	1	LS	$ 112,890.00	$ 112,900.00
Unclassified Excavation/Hauling	860	CY	$ 72.00	$ 61,900.00
Infrastructure Removal and Disposal	370	LF	$ 115.00	$ 42,600.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	3	EA	$ 8,600.00	$ 25,800.00
Large Structure or Headwall	8	EA	$ 12,000.00	$ 96,000.00
New Pipe: 18-inch to 24-inch	40	LF	$ 390.00	$ 15,600.00
New Pipe: 30-inch to 36-inch	25	LF	$ 535.00	$ 13,400.00
New Pipe: 42-inch to 54-inch	520	LF	$ 670.00	$ 348,400.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	560	SY	$ 110.00	$ 61,600.00
New Concrete Curb and Gutter	450	LF	$ 110.00	$ 49,500.00
Replace Driveway Culvert Pipe	25	LF	$ 300.00	$ 7,500.00
Replace Existing Concrete Driveway	15	SY	$ 120.00	$ 1,800.00
			Construction Contingency (30%):	$ 289,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,253,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 62,700.00
Design and Permitting	20%	$ 250,600.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 12,500.00
Structural Evaluation	1%	$ 12,500.00
Real Estate	2%	$ 25,100.00
Utility Relocation	2%	$ 25,100.00
Project Maintenance (3yr)	5%	$ 62,700.00
Construction Inspections	10%	$ 125,300.00
Construction	100%	$ 1,253,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,880,000.00

PROJECT NAME: **Black Mountain Ave Stormwater Improvements Phase II** PROJECT ID: **DT-BMA-B**

PROJECT INFORMATION

LOCATION:	S. Doughtery St to Vance Ave	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	585

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace nearly 400 LF of existing pipe along Black Mountain Ave from S. Doughtery St to Vance Ave.
- Install 160 LF of new 24" RCP at S. Doughtery St. to Black Mountain Ave.
- Replace existing culvert adjacent to the railroad tracks with 30 LF of 18" RCP.
- Install 50 LF of stormwater channel improvements as needed.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Black Mountain Ave at RR	< 2-YR	50-YR	100
S. Dougherty St Bend	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 862,000
Design and Permitting	$ 222,400
Other Project Costs	$ 223,600
Total Project	**$ 1,308,000**

PROJECT AREA MAP



PROJECT NAME **Black Mountain Ave Stormwater Improvements Phase II** PROJECT ID: **DT-BMA-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 585
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 31,570.00	$ 31,600.00
Erosion Control	1	LS	$ 28,185.00	$ 28,200.00
Traffic Control	1	LS	$ 11,274.00	$ 11,300.00
Minor Utility Conflict	1	LS	$ 28,185.00	$ 28,200.00
Unclassified Excavation/Hauling	550	CY	$ 72.00	$ 39,600.00
Infrastructure Removal and Disposal	500	LF	$ 115.00	$ 57,500.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	190	LF	$ 390.00	$ 74,100.00
New Pipe: 30-inch to 36-inch	395	LF	$ 535.00	$ 211,300.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	350	SY	$ 110.00	$ 38,500.00
New Concrete Curb and Gutter	400	LF	$ 110.00	$ 44,000.00
Replace Driveway Culvert Pipe	50	LF	$ 300.00	$ 15,000.00
Replace Existing Concrete Driveway	30	SY	$ 120.00	$ 3,600.00
			Construction Contingency (30%):	$ 199,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 862,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 43,100.00
Design and Permitting	20%	$ 172,400.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ 50,000.00
Geotechnical Investigation	1%	$ 8,600.00
Structural Evaluation	1%	$ 8,600.00
Real Estate	2%	$ 17,200.00
Utility Relocation	2%	$ 17,200.00
Project Maintenance (3yr)	5%	$ 43,100.00
Construction Inspections	10%	$ 86,200.00
Construction	100%	$ 862,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,308,000.00

PROJECT NAME: **Terry Estate Dr Stormwater Improvements Phase I** PROJECT ID: **DT-TE-A**

PROJECT INFORMATION

LOCATION: Terry Estate Drive
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 745

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipes across Terry Estate Dr in 5 locations with larger pipes.
- Replace the existing pipe on the south side of Terry Estate Dr with 55 LF of 30-inch and 400 LF of 36-inch RCP.
- Install a new 42-inch outfall pipe across the parking lot to the Swannanoa River.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	24
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	10
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**61**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate Dr at Bridge St	< 2-YR	50-YR	100
Terry Estate Dr	< 2-YR	25-YR	96

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,310,000
Design and Permitting	$ 312,000
Other Project Costs	$ 341,000
Total Project	**$ 1,963,000**

PROJECT AREA MAP



PROJECT NAME **Terry Estate Dr Stormwater Improvements Phase I** PROJECT ID: **DT-TE-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 745
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 48,010.00	$ 48,000.00
Erosion Control	1	LS	$ 35,045.00	$ 35,000.00
Traffic Control	1	LS	$ 14,018.00	$ 14,000.00
Major Utility Conflict	1	LS	$ 210,270.00	$ 210,300.00
Unclassified Excavation/Hauling	630	CY	$ 72.00	$ 45,400.00
Infrastructure Removal and Disposal	730	LF	$ 115.00	$ 84,000.00
Structure Removal and Disposal	7	EA	$ 6,800.00	$ 47,600.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	120	LF	$ 390.00	$ 46,800.00
New Pipe: 30-inch to 36-inch	485	LF	$ 535.00	$ 259,500.00
New Pipe: 42-inch to 54-inch	140	LF	$ 670.00	$ 93,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	410	SY	$ 110.00	$ 45,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 302,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,310,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 65,500.00
Design and Permitting	20%	$ 262,000.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,100.00
Structural Evaluation	1%	$ 13,100.00
Real Estate	2%	$ 26,200.00
Utility Relocation	2%	$ 26,200.00
Project Maintenance (3yr)	5%	$ 65,500.00
Construction Inspections	10%	$ 131,000.00
Construction	100%	$ 1,310,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,963,000.00

PROJECT NAME: **Terry Estate Dr Stormwater Improvements Phase II** PROJECT ID: **DT-TE-B**

PROJECT INFORMATION

LOCATION: Vance Ave at Bridge St and Spring St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 715

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe and stormwater roadside ditches along Bridge St with 260 LF of 24-inch RCP.
- Replace existing pipe crossing Spring St and Vance St with 70 LF of 24-inch RCP.
- Install 375 LF of new 24-inch RCP to re-route flow to Vance Ave and Black Mountain Ave rights-of-way.
- Remove/abandon in place stormwater pipe running south to Terry Estate Dr through private property.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**78**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Vance Ave at Bridge St	10-YR	50-YR	100
Vance Ave/Spring St INT	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 945,000
Design and Permitting	$ 189,000
Other Project Costs	$ 246,000
Total Project	**$ 1,380,000**

PROJECT AREA MAP



PROJECT NAME **Terry Estate Dr Stormwater Improvements Phase II** PROJECT ID: **DT-TE-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 715
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 34,625.00	$ 34,600.00
Erosion Control	1	LS	$ 28,380.00	$ 28,400.00
Traffic Control	1	LS	$ 11,352.00	$ 11,400.00
Moderate Utility Conflict	1	LS	$ 85,140.00	$ 85,100.00
Unclassified Excavation/Hauling	590	CY	$ 72.00	$ 42,500.00
Infrastructure Removal and Disposal	580	LF	$ 115.00	$ 66,700.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	265	LF	$ 390.00	$ 103,400.00
New Pipe: 30-inch to 36-inch	450	LF	$ 535.00	$ 240,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	180	SY	$ 110.00	$ 19,800.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 218,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 945,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 47,300.00
Design and Permitting	20%	$ 189,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 9,500.00
Structural Evaluation	1%	$ 9,500.00
Real Estate	2%	$ 18,900.00
Utility Relocation	2%	$ 18,900.00
Project Maintenance (3yr)	5%	$ 47,300.00
Construction Inspections	10%	$ 94,500.00
Construction	100%	$ 945,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,380,000.00

PROJECT NAME: **NC 9 Stormwater Improvements** PROJECT ID: **DT-NC9-A**

PROJECT INFORMATION

LOCATION: Vance Ave to outfall at Swannanoa River
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 595

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe along NC 9 with 280 LF of 36-inch RCP and tie-into culvert at Swannanaoa River.
- Replace existing pipe along Terry Estate Dr with 24-inch RCP and tie into proposed 36-inch pipe at NC 9.
- Install 130 LF of new 24-inch RCP to route flow along the Vance Ave right-of -way to tie into the NC 9 system.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**68**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate Dr west of NC9	< 2-YR	50-YR	100
Terry Estate Dr at NC9	25-YR	50-YR	100
Vance Ave at NC9	25-YR	50-YR	100
Vance Ave west of NC 9	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 880,000
Design and Permitting	$ 226,000
Other Project Costs	$ 229,000
Total Project	**$ 1,335,000**

PROJECT AREA MAP



PROJECT NAME **NC 9 Stormwater Improvements** PROJECT ID: **DT-NC9-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 595
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 32,250.00	$ 32,300.00
Erosion Control	1	LS	$ 26,435.00	$ 26,400.00
Traffic Control	1	LS	$ 10,574.00	$ 10,600.00
Moderate Utility Conflict	1	LS	$ 79,305.00	$ 79,300.00
Unclassified Excavation/Hauling	540	CY	$ 72.00	$ 38,900.00
Infrastructure Removal and Disposal	470	LF	$ 115.00	$ 54,100.00
Structure Removal and Disposal	7	EA	$ 6,800.00	$ 47,600.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	315	LF	$ 390.00	$ 122,900.00
New Pipe: 30-inch to 36-inch	280	LF	$ 535.00	$ 149,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	270	SY	$ 110.00	$ 29,700.00
New Concrete Curb and Gutter	220	LF	$ 110.00	$ 24,200.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 203,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 880,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 44,000.00
Design and Permitting	20%	$ 176,000.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,800.00
Structural Evaluation	1%	$ 8,800.00
Real Estate	2%	$ 17,600.00
Utility Relocation	2%	$ 17,600.00
Project Maintenance (3yr)	5%	$ 44,000.00
Construction Inspections	10%	$ 88,000.00
Construction	100%	$ 880,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,335,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure ES-6: Proposed Stormwater Improvement Projects
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200
Feet
1 in = 200 ft

PROJECT NAME: **Laurel Circle Culvert Replacement (Tomahawk Branch)** PROJECT ID: **TB-A1**

PROJECT INFORMATION

LOCATION:	Laurel Circle Dr north of Lake Tomahawk	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	220

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing arch culverts with 40 LF of triple 5' x 9' RCBC.
- Install floodplain benching upstream/downstream of proposed culvert (documented separately).
- Tomahawk Lake analysis is required to determine any additional measures to improve the level of service.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	8
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	2
FINAL PROJECT SCORE:	**58**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Drive	< 2-YR	10-YR	0

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 455,000
Design and Permitting	$ 186,000
Other Project Costs	$ 119,000
Total Project	**$ 760,000**

PROJECT AREA MAP



PROJECT NAME **Laurel Circle Culvert Replacement (Tomahawk Branch)** PROJECT ID: **TB-A1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 120

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 16,650.00	$ 16,700.00
Erosion Control	1	LS	$ 14,865.00	$ 14,900.00
Traffic Control	1	LS	$ 5,946.00	$ 5,900.00
Minor Utility Conflict	1	LS	$ 14,865.00	$ 14,900.00
Unclassified Excavation/Hauling	190	CY	$ 72.00	$ 13,700.00
Infrastructure Removal and Disposal	120	LF	$ 115.00	$ 13,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	120	LF	$ 1,700.00	$ 204,000.00
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	100	LF	$ 350.00	$ 35,000.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 105,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 455,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 22,800.00
Design and Permitting	20%	$ 91,000.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 4,600.00
Structural Evaluation	1%	$ 4,600.00
Real Estate	2%	$ 9,100.00
Utility Relocation	2%	$ 9,100.00
Project Maintenance (3yr)	5%	$ 22,800.00
Construction Inspections	10%	$ 45,500.00
Construction	100%	$ 455,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 760,000.00

PROJECT NAME: **Tomahawk Branch Floodplain Benching at Golf Course** PROJECT ID: **TB-A2**

PROJECT INFORMATION

LOCATION:	Laurel Circle Dr north of Lake Tomahawk	STORMWATER PROJECT TYPE:	Floodplain Benching
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	500

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install approximately 500 LF of channel improvements with floodplain benching to lower WSELs.
- Floodplain benching improvements are located up and downstream of the proposed RCBC in project TB-A1.

PROJECT PRIORITIZATION AND PROPERTY REQUIREMENTS

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	8
Public or Privately-Owned Land	4
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**53**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Drive	< 2-YR	10-YR	0

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 406,000
Design and Permitting	$ 146,200
Other Project Costs	$ 137,800
Total Project	**$ 690,000**

PROJECT AREA MAP



PROJECT NAME: **Tomahawk Branch Floodplain Benching at Golf C** PROJECT ID: **TB-A2**

PROJECT TYPE: Floodplain Benching WATERSHED: Tomahawk Branch

PLANNING LEVEL COST ESTIMATE

- Construction estimate includes 30% contingency for planning.
- Proposed project footprints are based on GIS and modeling analyses.
- Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 15,660.00	$ 15,700.00
Erosion Control	1	LS	$ 13,980.00	$ 14,000.00
Traffic Control	1	LS	$ 5,592.00	$ 5,600.00
Minor Utility Conflict	1	LS	$ 13,980.00	$ 14,000.00
Clearing and Grubbing	1110	SY	$ 5.50	$ 6,100.00
Earthwork	370	CY	$ 90.00	$ 33,300.00
Fine Grading	1110	SY	$ 18.00	$ 20,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Infrastructure Removal and Disposal	-	LF	$ 115.00	-
Stone, Class B	125	TN	$ 92.00	$ 11,500.00
Filter Fabric/Geotextiles	2780	SY	$ 35.00	$ 97,300.00
Plantings	1110	SY	$ 7.00	$ 7,800.00
3-gallon Container Plants	135	EA	$ 70.00	$ 9,500.00
Riffle Grade Control	2	EA	$ 4,025.00	$ 8,100.00
Floodplain Tree Removal	1	LS	$ 15,000.00	$ 15,000.00
Log Grade Control Structure	-	EA	$ 4,000.00	-
Pump Around Operation	1	LS	$ 46,000.00	$ 46,000.00
Golf Course Bridge	1	LS	$ 25,000.00	$ 25,000.00
			Construction Contingency (30%):	$ 77,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 406,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 20,300.00
Design and Permitting	20%	$ 81,200.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 4,100.00
Structural Evaluation	1%	$ 4,100.00
Real Estate	10%	$ 40,600.00
Utility Relocation	2%	$ 8,100.00
Project Maintenance (3yr)	5%	$ 20,300.00
Construction Inspections	10%	$ 40,600.00
Construction	100%	$ 406,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 690,000.00

PROJECT NAME: **Swannanoa Ave Culvert Replacement and Stream Stabilization** PROJECT ID: **TB-B**

PROJECT INFORMATION

LOCATION:	Swannanoa Ave near Cragmont Rd	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	355

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing culvert with 30 LF of 48-inch RCP.
- Install approximately 200 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**77**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Swannanoa Ave	2-YR	25-YR	50

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 250,000
Design and Permitting	$ 115,000
Other Project Costs	$ 65,000
Total Project	**$ 430,000**

PROJECT AREA MAP



PROJECT NAME **Swannanoa Ave Culvert Replacement and Stream Stabilization** PROJECT ID: **TB-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 35
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 9,140.00	$ 9,100.00
Erosion Control	1	LS	$ 8,155.00	$ 8,200.00
Traffic Control	1	LS	$ 3,262.00	$ 3,300.00
Minor Utility Conflict	1	LS	$ 8,155.00	$ 8,200.00
Unclassified Excavation/Hauling	40	CY	$ 72.00	$ 2,900.00
Infrastructure Removal and Disposal	35	LF	$ 115.00	$ 4,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	35	LF	$ 670.00	$ 23,500.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	320	LF	$ 350.00	$ 112,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 58,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 250,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 12,500.00
Design and Permitting	20%	$ 50,000.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,500.00
Structural Evaluation	1%	$ 2,500.00
Real Estate	2%	$ 5,000.00
Utility Relocation	2%	$ 5,000.00
Project Maintenance (3yr)	5%	$ 12,500.00
Construction Inspections	10%	$ 25,000.00
Construction	100%	$ 250,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 430,000.00

PROJECT NAME: **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT INFORMATION

LOCATION: Padgettown Rd/US Hwy 70E Intersection
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 460

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 145 LF of twin 60-inch RCP by-pass system to depression area south of the gas station.
- Replace existing pipe across Padgettown Road at Old US 70E with twin 48" RCP.
- Excavate and enlarge existing open channel and outfall area downstream of gas station.
- Existing conditions severly limit options to provide desired LOS. An option is presented herein.
- Additional survey and engineering investigation required to determine constructability and achievable LOS.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	16
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**62**

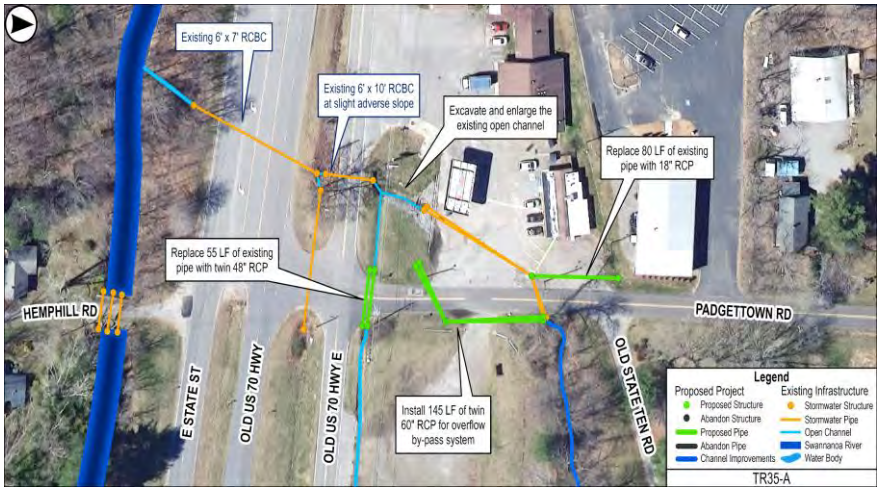
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown at Old US70E	2-YR	25-YR	80
Gas Station (Twin 36")	2-YR	10-YR	76
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Padgettown Rd (Twin 60")	NA	25-YR	New Crossing

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 909,000
Design and Permitting	$ 276,800
Other Project Costs	$ 236,200
Total Project	**$ 1,422,000**

PROJECT AREA MAP



PROJECT NAME **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 460

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 33,290.00	$ 33,300.00
Erosion Control	1	LS	$ 24,300.00	$ 24,300.00
Traffic Control	1	LS	$ 9,720.00	$ 9,700.00
Major Utility Conflict	1	LS	$ 145,800.00	$ 145,800.00
Unclassified Excavation/Hauling	770	CY	$ 72.00	$ 55,400.00
Infrastructure Removal and Disposal	125	LF	$ 115.00	$ 14,400.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	1	EA	$ 8,600.00	$ 8,600.00
Large Structure or Headwall	5	EA	$ 12,000.00	$ 60,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	90	LF	$ 670.00	$ 60,300.00
New Pipe: 60-inch	290	LF	$ 875.00	$ 253,800.00
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	100	SY	$ 110.00	$ 11,000.00
Earthwork	105	CY	$ 90.00	$ 9,500.00
Fine Grading	550	SY	$ 18.00	$ 9,900.00
Plantings	250	SY	$ 7.00	$ 1,800.00
			Construction Contingency (30%):	$ 210,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 909,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 45,500.00
Design and Permitting	20%	$ 181,800.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 9,100.00
Structural Evaluation	1%	$ 9,100.00
Real Estate	2%	$ 18,200.00
Utility Relocation	2%	$ 18,200.00
Project Maintenance (3yr)	5%	$ 45,500.00
Construction Inspections	10%	$ 90,900.00
Construction	100%	$ 909,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,422,000.00

PROJECT NAME: **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT INFORMATION

LOCATION: Old State 10 Rd Culvert Crossing
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 160

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 30 LF of twin 4'x6' RCBC under Old State 10 Rd.
- Install 100 LF of upstream channel improvements to accommodate flow into new RCBC.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**77**

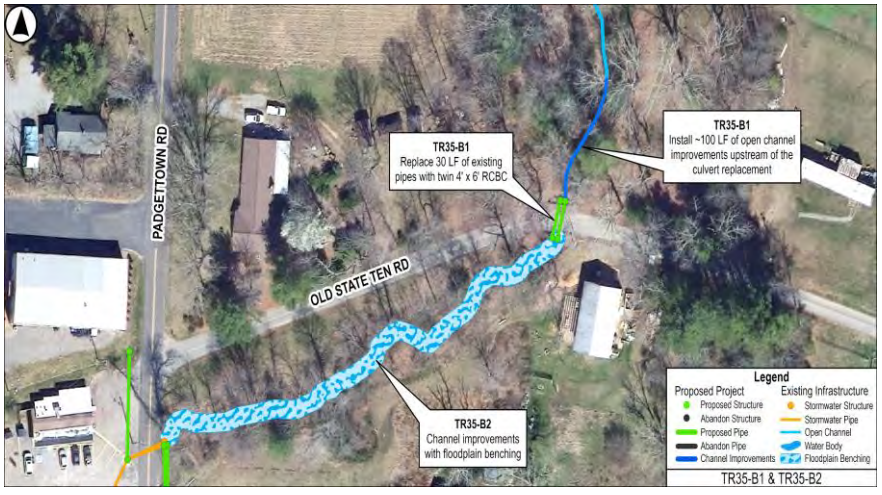
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 351,000
Design and Permitting	$ 165,200
Other Project Costs	$ 91,800
Total Project	**$ 608,000**

PROJECT AREA MAP



PROJECT NAME **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 60
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 12,860.00	$ 12,900.00
Erosion Control	1	LS	$ 9,385.00	$ 9,400.00
Traffic Control	1	LS	$ 3,754.00	$ 3,800.00
Major Utility Conflict	1	LS	$ 56,310.00	$ 56,300.00
Unclassified Excavation/Hauling	70	CY	$ 72.00	$ 5,000.00
Infrastructure Removal and Disposal	30	LF	$ 115.00	$ 3,500.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	60	LF	$ 1,700.00	$ 102,000.00
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	100	LF	$ 350.00	$ 35,000.00
Roadway/Sidewalk Replacement	30	SY	$ 110.00	$ 3,300.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 81,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 351,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 17,600.00
Design and Permitting	20%	$ 70,200.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,500.00
Structural Evaluation	1%	$ 3,500.00
Real Estate	2%	$ 7,000.00
Utility Relocation	2%	$ 7,000.00
Project Maintenance (3yr)	5%	$ 17,600.00
Construction Inspections	10%	$ 35,100.00
Construction	100%	$ 351,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 608,000.00

PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10 Rd** PROJECT ID: **TR35-B2**

PROJECT INFORMATION

LOCATION: Old State 10 Road near Padgettown Rd
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Floodplain Benching
DRAINAGE IMPROVEMENTS (LF): 350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install approximately 350 LF of channel improvements with floodplain benching to lower WSELs.
- Floodplain benching improvements are located downstream of the proposed RCBC in project TR35-B1.

PROJECT PRIORITIZATION AND PROPERTY REQUIREMENTS

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	16
Public or Privately-Owned Land	4
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**66**

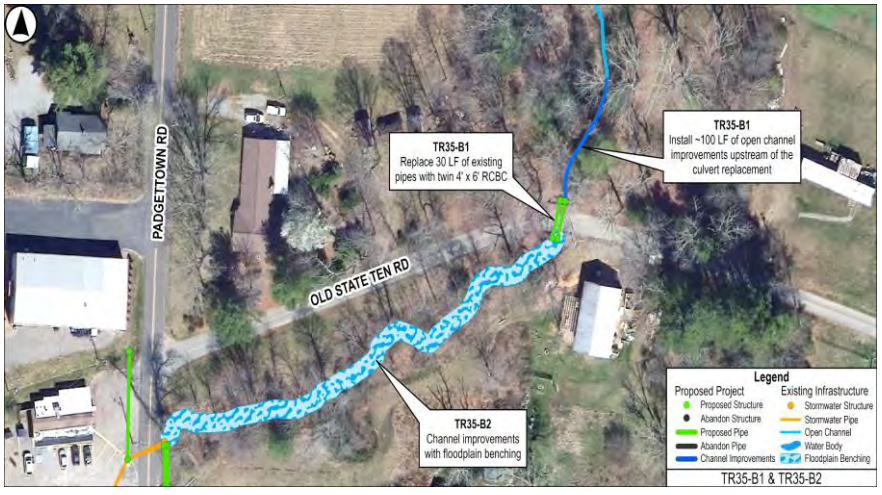
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 234,000
Design and Permitting	$ 111,800
Other Project Costs	$ 79,200
Total Project	**$ 425,000**

PROJECT AREA MAP



PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10** PROJECT ID: **TR35-B2**

PROJECT TYPE: Floodplain Benching WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

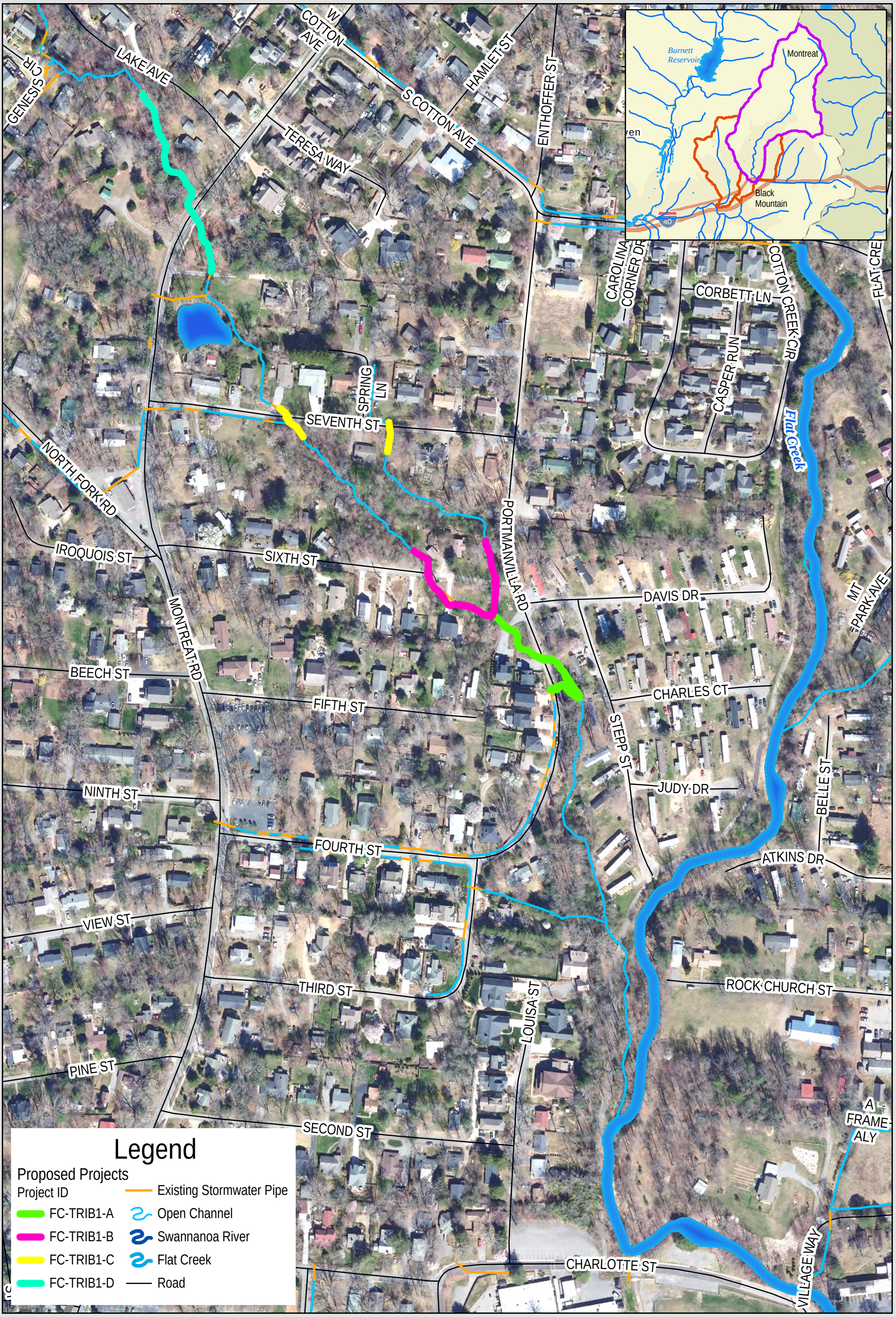
- Construction estimate includes 30% contingency for planning.
- Proposed project footprints are based on GIS and modeling analyses.
- Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 9,090.00	$ 9,100.00
Erosion Control	1	LS	$ 8,120.00	$ 8,100.00
Traffic Control	1	LS	$ 3,248.00	$ 3,200.00
Minor Utility Conflict	1	LS	$ 8,120.00	$ 8,100.00
Clearing and Grubbing	390	SY	$ 5.50	$ 2,100.00
Earthwork	0	CY	$ 90.00	$ -
Fine Grading	390	SY	$ 18.00	$ 7,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Infrastructure Removal and Disposal	-	LF	$ 115.00	-
Stone, Class B	75	TN	$ 92.00	$ 6,900.00
Filter Fabric/Geotextiles	1940	SY	$ 35.00	$ 67,900.00
Plantings	390	SY	$ 7.00	$ 2,700.00
3-gallon Container Plants	95	EA	$ 70.00	$ 6,700.00
Riffle Grade Control	2	EA	$ 4,025.00	$ 8,100.00
Floodplain Tree Removal	1	LS	$ 15,000.00	$ 15,000.00
Log Grade Control Structure	-	EA	$ 4,000.00	-
Pump Around Operation	1	LS	$ 46,000.00	$ 46,000.00
			Construction Contingency (30%):	$ 43,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 234,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,700.00
Design and Permitting	20%	$ 46,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,300.00
Structural Evaluation	1%	$ 2,300.00
Real Estate	10%	$ 23,400.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,700.00
Construction Inspections	10%	$ 23,400.00
Construction	100%	$ 234,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 425,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure ES-7: Proposed Stormwater Improvement Projects
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

PROJECT NAME: **Portmanvilla Rd Stormwater Improvements** PROJECT ID: **FC-TRIB1-A**

PROJECT INFORMATION

LOCATION: Portmanvilla Rd near Davis Dr
WATERSHED: Flat Creek
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 540

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CMP with 35 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing 30-inch CMP with 45 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Replace existing upstream private pipe with 25 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Replace existing downstream private pipe with 40 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Install approximately 250 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**87**

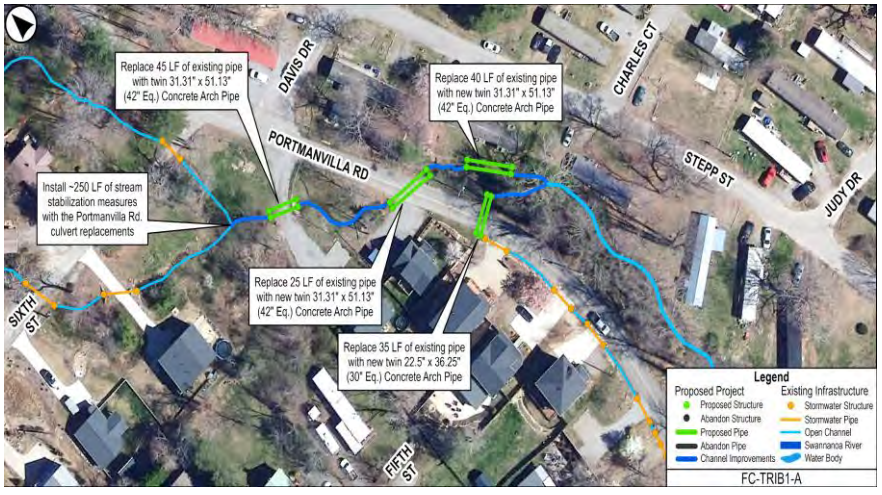
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Portmanvilla Rd (15" CMP)	< 2-YR	50-YR	100
Portmanvilla Rd (30" RCP)	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 572,000
Design and Permitting	$ 179,400
Other Project Costs	$ 148,600
Total Project	**$ 900,000**

PROJECT AREA MAP



PROJECT NAME **Portmanvilla Rd Stormwater Improvements** PROJECT ID: **FC-TRIB1-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 290
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 20,940.00	$ 20,900.00
Erosion Control	1	LS	$ 17,160.00	$ 17,200.00
Traffic Control	1	LS	$ 6,864.00	$ 6,900.00
Moderate Utility Conflict	1	LS	$ 51,480.00	$ 51,500.00
Unclassified Excavation/Hauling	270	CY	$ 72.00	$ 19,400.00
Infrastructure Removal and Disposal	140	LF	$ 115.00	$ 16,100.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	4	EA	$ 12,000.00	$ 48,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	290	LF	$ 500.00	$ 145,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	250	LF	$ 350.00	$ 87,500.00
Roadway/Sidewalk Replacement	60	SY	$ 110.00	$ 6,600.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 132,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 572,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 28,600.00
Design and Permitting	20%	$ 114,400.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,700.00
Structural Evaluation	1%	$ 5,700.00
Real Estate	2%	$ 11,400.00
Utility Relocation	2%	$ 11,400.00
Project Maintenance (3yr)	5%	$ 28,600.00
Construction Inspections	10%	$ 57,200.00
Construction	100%	$ 572,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 900,000.00

PROJECT NAME: **6th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-B**

PROJECT INFORMATION

LOCATION: 6th St near Portmanvilla Rd
WATERSHED: Flat Creek
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 500

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CMP with 20 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing 42-inch CMP with 30 LF of twin 26.625" x 43.75" (36" Eq) Concrete Arch Pipe.
- Install approximately 150 LF of stream stabilization measures upstream of the proposed culverts.
- Install approximately 250 LF of stream stabilization measures downstream of the proposed culverts.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**78**

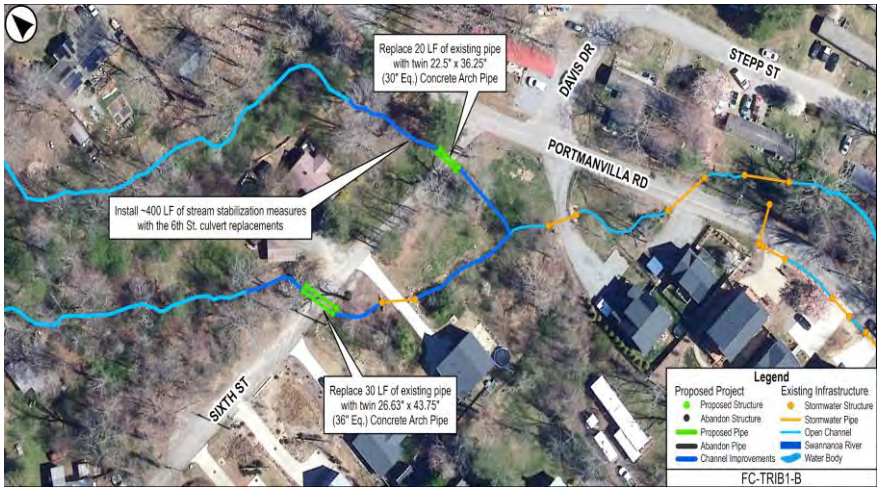
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
6th St at Portmanvilla Rd	< 2-YR	50-YR	100
6th Street	10-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 389,000
Design and Permitting	$ 142,800
Other Project Costs	$ 101,200
Total Project	**$ 633,000**

PROJECT AREA MAP



PROJECT NAME **6th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 100
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 14,250.00	$ 14,300.00
Erosion Control	1	LS	$ 12,725.00	$ 12,700.00
Traffic Control	1	LS	$ 5,090.00	$ 5,100.00
Minor Utility Conflict	1	LS	$ 12,725.00	$ 12,700.00
Unclassified Excavation/Hauling	70	CY	$ 72.00	$ 5,000.00
Infrastructure Removal and Disposal	50	LF	$ 115.00	$ 5,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	100	LF	$ 500.00	$ 50,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	400	LF	$ 350.00	$ 140,000.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 90,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 389,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 19,500.00
Design and Permitting	20%	$ 77,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,900.00
Structural Evaluation	1%	$ 3,900.00
Real Estate	2%	$ 7,800.00
Utility Relocation	2%	$ 7,800.00
Project Maintenance (3yr)	5%	$ 19,500.00
Construction Inspections	10%	$ 38,900.00
Construction	100%	$ 389,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 633,000.00

PROJECT NAME: **7th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-C**

PROJECT INFORMATION

LOCATION: 7th St near Portmanvilla Rd
WATERSHED: Flat Creek
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 210

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CPP with 25 LF of 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing triple 24-inch CMP with 25 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Install approximately 110 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**87**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
7th St at Portmanvilla Rd	< 2-YR	50-YR	100
7th Street	2-YR	25-YR	78

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 233,000
Design and Permitting	$ 111,600
Other Project Costs	$ 60,400
Total Project	**$ 405,000**

PROJECT AREA MAP



PROJECT NAME **7th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-C**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 100
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 8,525.00	$ 8,500.00
Erosion Control	1	LS	$ 7,615.00	$ 7,600.00
Traffic Control	1	LS	$ 3,046.00	$ 3,000.00
Minor Utility Conflict	1	LS	$ 7,615.00	$ 7,600.00
Unclassified Excavation/Hauling	60	CY	$ 72.00	$ 4,300.00
Infrastructure Removal and Disposal	100	LF	$ 115.00	$ 11,500.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	100	LF	$ 500.00	$ 50,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	110	LF	$ 350.00	$ 38,500.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 54,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 233,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,700.00
Design and Permitting	20%	$ 46,600.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,300.00
Structural Evaluation	1%	$ 2,300.00
Real Estate	2%	$ 4,700.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,700.00
Construction Inspections	10%	$ 23,300.00
Construction	100%	$ 233,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 405,000.00

PROJECT NAME: **Montreat Road Culvert Replacement (Flat Creek)** PROJECT ID: **FC-TRIB1-D**

PROJECT INFORMATION

LOCATION:	Montreat Rd near Lake Ave	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24-inch CMP with 50 LF of 42-inch RCP.
- Install approximately 200 LF of stream stabilization measures upstream.
- Install approximately 100 LF of stream stabilization measures downstream of the proposed culvert.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd near Lake Ave	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 329,000
Design and Permitting	$ 130,800
Other Project Costs	$ 86,200
Total Project	**$ 546,000**

PROJECT AREA MAP



PROJECT NAME **Montreat Road Culvert Replacement (Flat Creek)** PROJECT ID: **FC-TRIB1-D**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

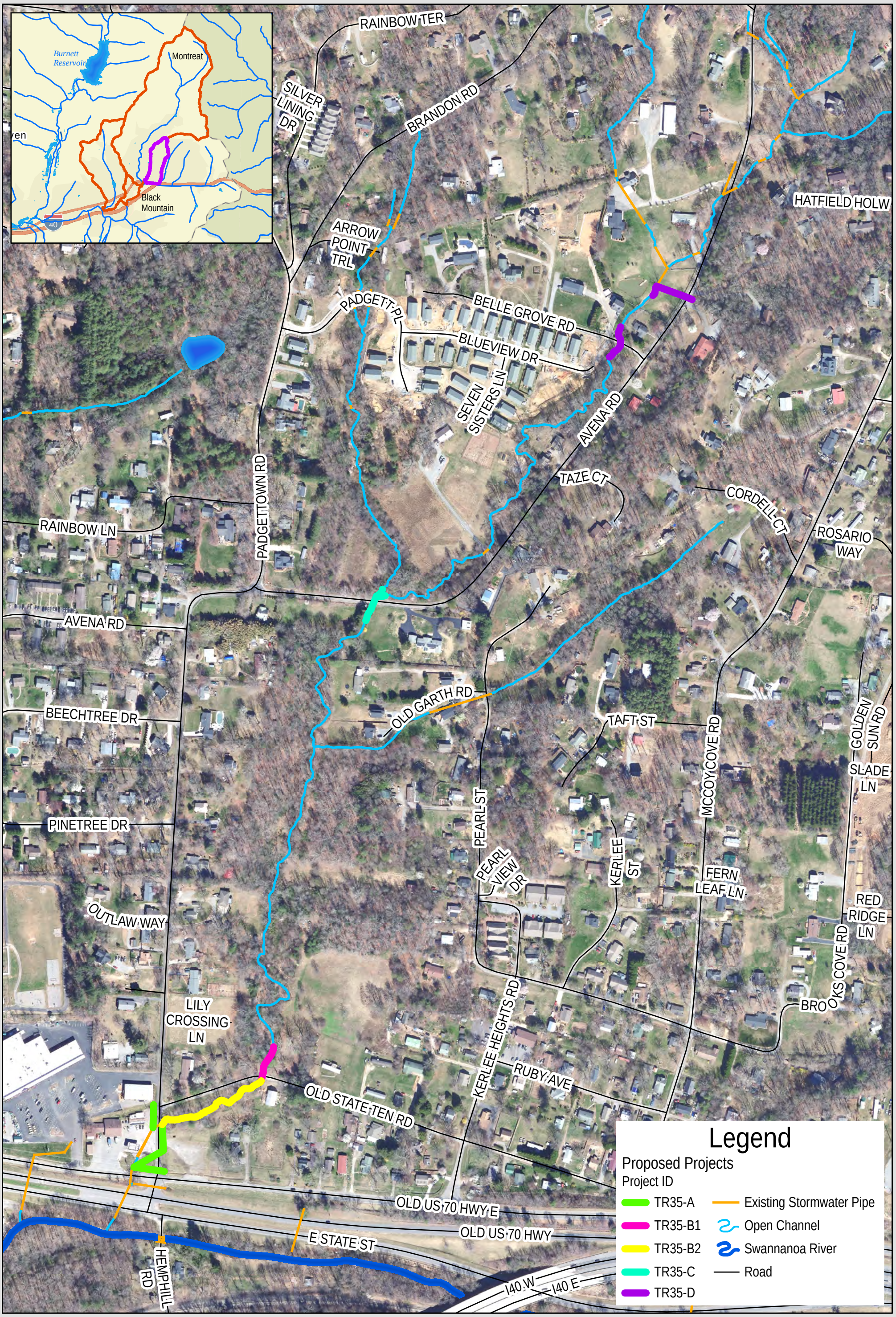
Construction cost includes 30% contingency for planning. Improvements (LF): 50
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 12,060.00	$ 12,100.00
Erosion Control	1	LS	$ 8,805.00	$ 8,800.00
Traffic Control	1	LS	$ 3,522.00	$ 3,500.00
Major Utility Conflict	1	LS	$ 52,830.00	$ 52,800.00
Unclassified Excavation/Hauling	60	CY	$ 72.00	$ 4,300.00
Infrastructure Removal and Disposal	50	LF	$ 115.00	$ 5,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	50	LF	$ 670.00	$ 33,500.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	300	LF	$ 350.00	$ 105,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 76,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 329,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 16,500.00
Design and Permitting	20%	$ 65,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,300.00
Structural Evaluation	1%	$ 3,300.00
Real Estate	2%	$ 6,600.00
Utility Relocation	2%	$ 6,600.00
Project Maintenance (3yr)	5%	$ 16,500.00
Construction Inspections	10%	$ 32,900.00
Construction	100%	$ 329,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 546,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure ES-8: Proposed Stormwater Improvement Projects
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300
Feet
1 in = 300 ft

PROJECT NAME: **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT INFORMATION

LOCATION: Padgettown Rd/US Hwy 70E Intersection
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 460

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 145 LF of twin 60-inch RCP by-pass system to depression area south of the gas station.
- Replace existing pipe across Padgettown Road at Old US 70E with twin 48" RCP.
- Excavate and enlarge existing open channel and outfall area downstream of gas station.
- Existing conditions severly limit options to provide desired LOS. An option is presented herein.
- Additional survey and engineering investigation required to determine constructability and achievable LOS.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	16
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**62**

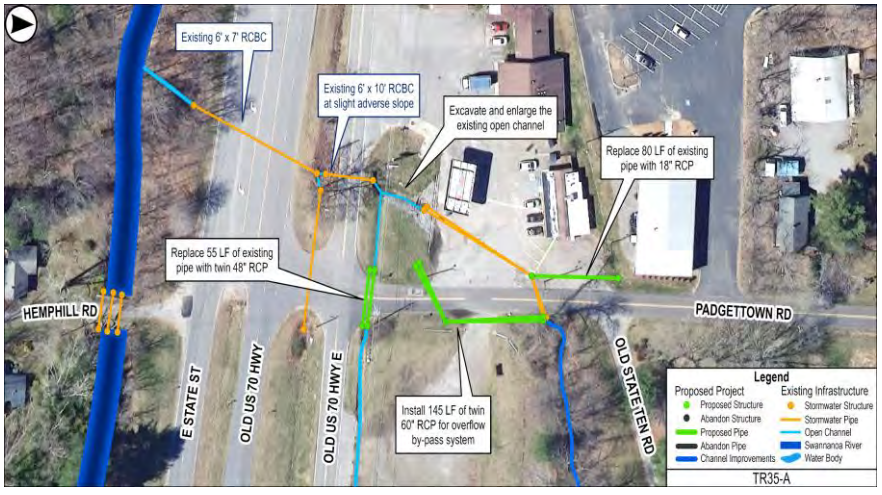
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown at Old US70E	2-YR	25-YR	80
Gas Station (Twin 36")	2-YR	10-YR	76
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Padgettown Rd (Twin 60")	NA	25-YR	New Crossing

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 909,000
Design and Permitting	$ 276,800
Other Project Costs	$ 236,200
Total Project	**$ 1,422,000**

PROJECT AREA MAP



PROJECT NAME **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 460

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 33,290.00	$ 33,300.00
Erosion Control	1	LS	$ 24,300.00	$ 24,300.00
Traffic Control	1	LS	$ 9,720.00	$ 9,700.00
Major Utility Conflict	1	LS	$ 145,800.00	$ 145,800.00
Unclassified Excavation/Hauling	770	CY	$ 72.00	$ 55,400.00
Infrastructure Removal and Disposal	125	LF	$ 115.00	$ 14,400.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	1	EA	$ 8,600.00	$ 8,600.00
Large Structure or Headwall	5	EA	$ 12,000.00	$ 60,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	90	LF	$ 670.00	$ 60,300.00
New Pipe: 60-inch	290	LF	$ 875.00	$ 253,800.00
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	100	SY	$ 110.00	$ 11,000.00
Earthwork	105	CY	$ 90.00	$ 9,500.00
Fine Grading	550	SY	$ 18.00	$ 9,900.00
Plantings	250	SY	$ 7.00	$ 1,800.00
			Construction Contingency (30%):	$ 210,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 909,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 45,500.00
Design and Permitting	20%	$ 181,800.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 9,100.00
Structural Evaluation	1%	$ 9,100.00
Real Estate	2%	$ 18,200.00
Utility Relocation	2%	$ 18,200.00
Project Maintenance (3yr)	5%	$ 45,500.00
Construction Inspections	10%	$ 90,900.00
Construction	100%	$ 909,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,422,000.00

PROJECT NAME: **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT INFORMATION

LOCATION: Old State 10 Rd Culvert Crossing
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 160

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 30 LF of twin 4'x6' RCBC under Old State 10 Rd.
- Install 100 LF of upstream channel improvements to accommodate flow into new RCBC.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**77**

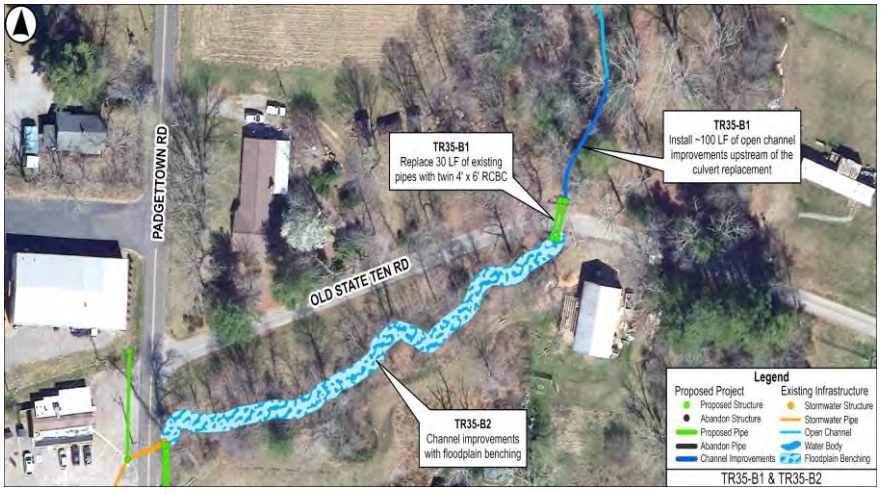
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 351,000
Design and Permitting	$ 165,200
Other Project Costs	$ 91,800
Total Project	**$ 608,000**

PROJECT AREA MAP



PROJECT NAME **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 60
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 12,860.00	$ 12,900.00
Erosion Control	1	LS	$ 9,385.00	$ 9,400.00
Traffic Control	1	LS	$ 3,754.00	$ 3,800.00
Major Utility Conflict	1	LS	$ 56,310.00	$ 56,300.00
Unclassified Excavation/Hauling	70	CY	$ 72.00	$ 5,000.00
Infrastructure Removal and Disposal	30	LF	$ 115.00	$ 3,500.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	60	LF	$ 1,700.00	$ 102,000.00
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	100	LF	$ 350.00	$ 35,000.00
Roadway/Sidewalk Replacement	30	SY	$ 110.00	$ 3,300.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 81,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 351,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 17,600.00
Design and Permitting	20%	$ 70,200.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,500.00
Structural Evaluation	1%	$ 3,500.00
Real Estate	2%	$ 7,000.00
Utility Relocation	2%	$ 7,000.00
Project Maintenance (3yr)	5%	$ 17,600.00
Construction Inspections	10%	$ 35,100.00
Construction	100%	$ 351,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 608,000.00

PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10 Rd** PROJECT ID: **TR35-B2**

PROJECT INFORMATION

LOCATION:	Old State 10 Road near Padgettown Rd	STORMWATER PROJECT TYPE:	Floodplain Benching
WATERSHED:	Tributary 35	DRAINAGE IMPROVEMENTS (LF):	350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install approximately 350 LF of channel improvements with floodplain benching to lower WSELs.
- Floodplain benching improvements are located downstream of the proposed RCBC in project TR35-B1.

PROJECT PRIORITIZATION AND PROPERTY REQUIREMENTS

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	16
Public or Privately-Owned Land	4
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**66**

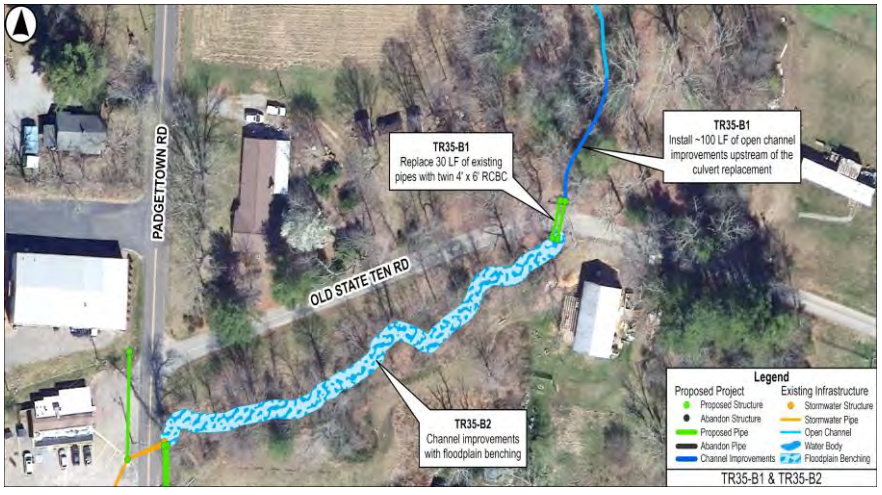
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 234,000
Design and Permitting	$ 111,800
Other Project Costs	$ 79,200
Total Project	**$ 425,000**

PROJECT AREA MAP



PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10** PROJECT ID: **TR35-B2**

PROJECT TYPE: Floodplain Benching WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

- Construction estimate includes 30% contingency for planning.
- Proposed project footprints are based on GIS and modeling analyses.
- Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 9,090.00	$ 9,100.00
Erosion Control	1	LS	$ 8,120.00	$ 8,100.00
Traffic Control	1	LS	$ 3,248.00	$ 3,200.00
Minor Utility Conflict	1	LS	$ 8,120.00	$ 8,100.00
Clearing and Grubbing	390	SY	$ 5.50	$ 2,100.00
Earthwork	0	CY	$ 90.00	$ -
Fine Grading	390	SY	$ 18.00	$ 7,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Infrastructure Removal and Disposal	-	LF	$ 115.00	-
Stone, Class B	75	TN	$ 92.00	$ 6,900.00
Filter Fabric/Geotextiles	1940	SY	$ 35.00	$ 67,900.00
Plantings	390	SY	$ 7.00	$ 2,700.00
3-gallon Container Plants	95	EA	$ 70.00	$ 6,700.00
Riffle Grade Control	2	EA	$ 4,025.00	$ 8,100.00
Floodplain Tree Removal	1	LS	$ 15,000.00	$ 15,000.00
Log Grade Control Structure	-	EA	$ 4,000.00	-
Pump Around Operation	1	LS	$ 46,000.00	$ 46,000.00
			Construction Contingency (30%):	$ 43,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 234,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,700.00
Design and Permitting	20%	$ 46,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,300.00
Structural Evaluation	1%	$ 2,300.00
Real Estate	10%	$ 23,400.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,700.00
Construction Inspections	10%	$ 23,400.00
Construction	100%	$ 234,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 425,000.00

PROJECT NAME: **Avena Road Culvert Replacement and Stream Stabilizaton** PROJECT ID: **TR35-C**

PROJECT INFORMATION

LOCATION:	Avena Road near Padgettown Rd	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tributary 35	DRAINAGE IMPROVEMENTS (LF):	230

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 40 LF of twin 48" RCP across Avena Rd.
- Install approximately 120 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**85**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Avena Road	2-YR	25-YR	97

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 235,000
Design and Permitting	$ 142,000
Other Project Costs	$ 61,000
Total Project	**$ 438,000**

PROJECT AREA MAP



PROJECT NAME **Avena Road Culvert Replacement and Stream Stabilizaton** PROJECT ID: **TR35-C**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 80
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 8,605.00	$ 8,600.00
Erosion Control	1	LS	$ 7,680.00	$ 7,700.00
Traffic Control	1	LS	$ 3,072.00	$ 3,100.00
Minor Utility Conflict	1	LS	$ 7,680.00	$ 7,700.00
Unclassified Excavation/Hauling	120	CY	$ 72.00	$ 8,600.00
Infrastructure Removal and Disposal	40	LF	$ 115.00	$ 4,600.00
Structure Removal and Disposal	1	EA	$ 6,800.00	$ 6,800.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	80	LF	$ 670.00	$ 53,600.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	150	LF	$ 350.00	$ 52,500.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 54,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 235,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,800.00
Design and Permitting	20%	$ 47,000.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,400.00
Structural Evaluation	1%	$ 2,400.00
Real Estate	2%	$ 4,700.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,800.00
Construction Inspections	10%	$ 23,500.00
Construction	100%	$ 235,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 438,000.00

PROJECT NAME: **Bellgrove Road/Avena Road Stormwater Improvements** PROJECT ID: **TR35-D**

PROJECT INFORMATION

LOCATION: Bellegrove Rd and Avena Rd Culvert Crossings
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 475

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 20 LF of twin 48" RCP under Bellegrove Rd.
- Install approximately 140 LF of stream stabilization measures with the Bellgrove culvert.
- Replace existing pipe with 135 LF of 30" RCP under Avena Rd.
- Install 35 LF of channel improvements downstream of 30" RCP.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**83**

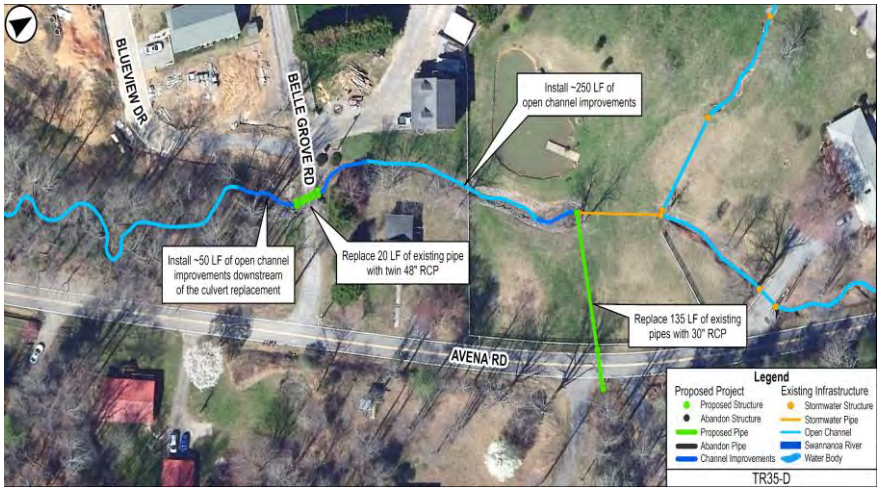
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Bellegrove Road	2-YR	50-YR	100
Avena Road	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 499,000
Design and Permitting	$ 194,800
Other Project Costs	$ 130,200
Total Project	**$ 824,000**

PROJECT AREA MAP



PROJECT NAME **Bellgrove Road/Avena Road Stormwater Improvements** PROJECT ID: **TR35-D**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 175
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 18,295.00	$ 18,300.00
Erosion Control	1	LS	$ 14,995.00	$ 15,000.00
Traffic Control	1	LS	$ 5,998.00	$ 6,000.00
Moderate Utility Conflict	1	LS	$ 44,985.00	$ 45,000.00
Unclassified Excavation/Hauling	180	CY	$ 72.00	$ 13,000.00
Infrastructure Removal and Disposal	155	LF	$ 115.00	$ 17,800.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	135	LF	$ 535.00	$ 72,200.00
New Pipe: 42-inch to 54-inch	40	LF	$ 670.00	$ 26,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	300	LF	$ 350.00	$ 105,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 115,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 499,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 25,000.00
Design and Permitting	20%	$ 99,800.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,000.00
Structural Evaluation	1%	$ 5,000.00
Real Estate	2%	$ 10,000.00
Utility Relocation	2%	$ 10,000.00
Project Maintenance (3yr)	5%	$ 25,000.00
Construction Inspections	10%	$ 49,900.00
Construction	100%	$ 499,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 824,000.00

WK DICKSON

AN ARDURRA COMPANY



TOWN OF BLACK MOUNTAIN

BLACK MOUNTAIN STORMWATER MASTER PLAN

Draft Report | December 2025









DRAFT

TOWN OF BLACK MOUNTAIN

STORMWATER MASTER PLAN

WK Dickson/Ardurra Project No. 20230691.00.GV

December 2025

Prepared for:
Town of Black Mountain
160 Midland Avenue
Black Mountain, North Carolina 28711

Prepared by:
WK Dickson LLC dba Ardurra Group North Carolina
720 Corporate Center Drive
Raleigh, North Carolina 27607
919-782-0495
NC License Number F-0374

TABLE OF CONTENTS

Table of Contents i
List of Figures ii
List of Tables iii
List of Appendices iii
1. Introduction 1-1
2. Existing Watershed Conditions 2-1
2.1. Existing Conditions Survey and Field Data Collection 2-1
2.2. Hydrology and Flood Zones 2-4
2.3. NOAA Precipitation 2-4
2.4. Land Use and Soils 2-4
3. Existing Stormwater System Analysis 3-1
3.1. Downtown System 3-1
3.2. Tomahawk Branch Watershed 3-5
3.2.1 Primary System 3-5
3.2.2 Secondary System 3-5
3.3. Flat Creek Watershed 3-10
3.4. Tributary 35 / Avena Road Watershed 3-10
3.5. Intense Storm Analyses and Hurricane Helene 3-15
4. Criticality Analysis 4-1
4.1. Project Background 4-1
4.2. Criticality Analysis 4-1
4.3. Operations and Maintenance Recommendations 4-4
4.4. Criticality Analysis as an Ongoing Process 4-4
5. Proposed Capital Improvement Plan 5-1
5.1. Downtown System 5-1
5.2. Tomahawk Branch Watershed 5-5
5.2.1 Primary System 5-5
5.2.2 Secondary System 5-5
5.3. Flat Creek Watershed 5-8
5.4. Tributary 35 / Avena Road Watershed 5-11
5.5. Intense Storm Analysis 5-14
6. Anticipated Permitting 6-1
6.1. NCDEQ Division of Water Resources 401 Water Quality Certification and USACE 404 6-1
NWP#3 – Maintenance 6-1
NWP #13 – Bank Stabilization 6-2
NWP #27 – Stream and Wetland Restoration Activities 6-2
6.2. Individual Permits 6-3
6.3. Federal Emergency Management Agency (FEMA) 6-3
6.4. Erosion and Sedimentation Control 6-3
7. Prioritization and Recommendations 7-1
7.1. Infrastructure Project Prioritization 7-1

7.2. Planning Level Cost Estimates 7-3
7.3. Project Recommendations 7-3
8. Funding Opportunities 8-1
8.1. Clean Water State Revolving Fund (CWSRF) 8-1
8.2. Water Resources Development Grant – State and Local Projects 8-1
8.3. Golden Leaf Flood Mitigation Grant 8-3
8.4. North Carolina Water and Land Fund 8-3
8.5. Environmental Enhancement Grant (EEG) 8-3
8.6. Emergency Watershed Protection 8-3
8.7. Streamflow Rehabilitation Assistance Program 8-4
8.8. Federal Emergency Management Agency (FEMA) 8-4
Building Resilient Infrastructure and Communities (BRIC) 8-4
FEMA Hazard Mitigation Grant (HMGP) 8-4
Flood Mitigation Assistance (Floodplain Buyouts) 8-5
9. References 9-1

List of Figures

Figure 1-1 Project Location Map 1-2
Figure 2-1 Overall Inventory Map 2-2
Figure 2-2 Overall Obstructed Structures Map 2-3
Figure 2-3 Hydrologic Map 2-6
Figure 3-1 Downtown Secondary System 3-2
Figure 3-2 Downtown Existing Conditions Level of Service – North of Railroad 3-3
Figure 3-3 Downtown Existing Conditions Level of Service – South of Railroad 3-4
Figure 3-4 Tomahawk Branch Primary System 3-6
Figure 3-5 Tomahawk Branch Primary System Existing Conditions Level of Service 3-7
Figure 3-6 Tomahawk Branch Secondary System 3-8
Figure 3-7 Tomahawk Branch Secondary System Existing Conditions Level of Service 3-9
Figure 3-8 Flat Creek Primary System 3-11
Figure 3-9 Flat Creek Primary System Existing Conditions Level of Service 3-12
Figure 3-10 Tributary 35/Avena Rd Primary System 3-13
Figure 3-11 Tributary 35/Avena Rd Primary System Existing Conditions Level of Service 3-14
Figure 4-1 Downtown Secondary System – Criticality Analysis Stormwater Pipes 4-5
Figure 4-2 Tomahawk Branch Primary System – Criticality Analysis Stormwater Pipes 4-6
Figure 4-3 Flat Creek Primary System – Criticality Analysis Stormwater Pipes 4-7
Figure 4-4 Tributary 35 / Avena Rd Primary System – Criticality Analysis Stormwater Pipes 4-8
Figure 5-1 Downtown Secondary System Proposed Projects 5-2
Figure 5-2 Downtown Proposed Conditions Level of Service – North of Railroad 5-3
Figure 5-3 Downtown Proposed Conditions Level of Service – South of Railroad 5-4
Figure 5-4 Tomahawk Branch Primary System Proposed Projects 5-6

Figure 5-5 Tomahawk Branch Primary System Proposed Conditions Level of Service 5-7
Figure 5-6 Flat Creek Primary System Proposed Projects 5-9
Figure 5-7 Flat Creek Primary System Proposed Conditions Level of Service 5-10
Figure 5-8 Tributary 35/Avena Rd Primary System Proposed Projects 5-12
Figure 5-9 Tributary 35/Avena Rd Primary System Proposed Conditions Level of Service 5-13

List of Tables

Table 2.1: Inventory Summary – Closed System Structures 2-1
Table 2.2: Inventory Summary – Pipes 2-1
Table 2.3: NOAA Rainfall Depths 2-4
Table 2.4: Watershed Characteristics Summary 2-5
Table 3.1: Downtown Secondary System - Existing Conditions Level Of Service 3-1
Table 3.2: Tomahawk Primary System - Existing Conditions Level Of Service 3-5
Table 3.3: Tomahawk Secondary System - Existing Conditions Level Of Service 3-5
Table 3.4: Flat Creek Primary System - Existing Conditions Level Of Service 3-10
Table 3.5: Tributary 35 Primary System - Existing Conditions Level Of Service 3-10
Table 3.6: NOAA Rainfall Depths - 6 Hr Storms 3-15
Table 4-1: Stormwater Pipes Scoring Summary And Distribution 4-2
Table 4.2: Stormwater Structures Scoring Summary And Distribution 4-3
Table 5.1: Downtown Secondary System - Proposed Level Of Service 5-1
Table 5.2: Tomahawk Primary System - Existing Conditions Level Of Service 5-5
Table 5.3: Tomahawk Secondary System Recommended Improvement Areas 5-5
Table 5.4: Flat Creek Primary System - Proposed Level Of Service 5-8
Table 5.5: Tributary 35 Primary System - Proposed Level Of Service 5-11
Table 6.1: Anticipated Permitting Matrix For Proposed Projects 6-4
Table 7.3. Proposed Cip Planning Cost And Prioritization Summary 7-4
Table 8.1. Funding Opportunities 8-2

List of Appendices

Appendix A Obstructed Structures and Inventory Maps
Appendix B Hydrologic Analysis
Appendix C Hydraulic Analysis
Appendix D Criticality Analysis
Appendix E Proposed Project Cut Sheets/Planning Costs

1. INTRODUCTION

The Town of Black Mountain (Town) Stormwater Master Plan (SWMP) is funded by a Local Assistance for Stormwater Infrastructure Investments (LASII) from the American Rescue Plan Act (ARPA). The purpose of the SWMP is to develop a GIS map of the Town's stormwater system, identify flooding issues, assess the existing conveyance system capacity and infrastructure condition, develop and prioritize flood reduction projects, and establish an implementation strategy for the recommended capital infrastructure projects.

The Study Area for the SWMP includes the following:

- Secondary stormwater conveyance system in the Downtown corridor,
- Tomahawk Branch watershed, both the primary system culvert crossings and the secondary stormwater conveyance system located in the surrounding residential areas of Lake Tomahawk,
- Flat Creek Tributary 1 primary system culvert crossings in the vicinity of Portmanvilla, Sixth, and Seventh Street roads, and
- Tributary 35 (of the Swannanoa River) primary system culvert crossings in the vicinity of Avena and Padgettown roads.

The watersheds within the Town are all tributary to the Swannanoa River. In some cases, the closed system stormwater outfalls are located very closely to or directly into the Swannanoa River. As shown in Exhibit 1, the main outfall for the downtown commercial area from Broadway Street and westward is a corrugated plastic 18-inch pipe outfall to an open channel. This open channel runs parallel to Sutton Avenue from Broadway Street down to its confluence with the Swannanoa River, collecting runoff from the downtown corridor north of the railroad via four additional outfalls.



Exhibit 1
18-inch CPP outlet to Sutton Ave Open Channel

Based on historical records obtained from the National Oceanic and Atmospheric Administration (NOAA) online national climate data service[1], Hurricane Helene brought over 14 inches of rainfall in a span of three days to the mountains in September 2024, resulting in catastrophic flooding along the Swannanoa River corridor. Many roadways and bridges within the Town of Black Mountain were impacted. As a result, the Town desired to develop projects that would meet the 50-year level of service where feasible. All proposed projects were evaluated and developed with this goal. However, there are a few areas where downstream hydraulic conditions and/or available cover prevent this level of flood reduction.

The Study Area for the Town's SWMP is shown in Figure 1-1.

Burnett Reservoir

N FORK RD

Tomahawk Branch

RHODODENDRON AVE

MONTREAT RD

FLAT CREEK RD

Flat Creek

PADGETTOWN RD

Tributary 35

AVENA RD

E STATE ST

E STATE ST

E OLD US 70 HWY

OLD US 70 HWY E

I40 W

I40 E

US 70 HWY

NC 9 HWY

'RZQWRZQ
:DWHUVKHG

Legend

2 6WRUPZDWHU 6WUXFW

6WRUPZDWHU 3LSH

6ZDQQDQRD 5LYHU

3ULPDU\ 6\VWHP 2SH

6HFRQGDU\ 6\VWHP 2

:DWHUERG\

:DWHUVKHG

%ODFN 0RXQWDLQ 7R

1RUIRON 6RXWKHUQ 5

WK DICKSON
AN ARDURRA COMPANY

)LJXUH 3URMHFW /RFDWLRQ

72:1 2) %/$&. 02817$,1 1&)HHW

7RZQ RI %ODFN 0RXQWDLQ 6WRUPZDWHU

2. EXISTING WATERSHED CONDITIONS

2.1. Existing Conditions Survey and Field Data Collection

Stormwater utility infrastructure throughout the Town was collected by Kee Mapping and Survey (Kee) personnel to compile a GIS stormwater inventory database for the Town. This was accomplished by using survey-grade Global Positioning Systems (GPS) as the primary means of data capture to locate the x, y, and z coordinates of each visible stormwater system structure. Conventional surveying techniques were used to obtain attributes, including but not limited to size, material, slope, and length. All coordinate system data were collected using horizontal datum NAD 1983 and vertical datum NAVD 1988. A total of 1195 closed system structures were surveyed and/or inventoried. Figure 2-1 shows the Town's surveyed and inventoried stormwater system. A summary of closed system structures is noted in Table 2.1.

TABLE 2.1: INVENTORY SUMMARY – CLOSED SYSTEM STRUCTURES

STRUCTURE TYPE	NUMBER SURVEYED
Culvert Pipe Ends	505
Closed System Pipe Ends	126
Inlets	247
Junction Boxes	52
Manholes	14
Unknown Structures	251

As noted in Table 2.1, there are a significant number of unknown structures. These were included when field crews found different pipe sizes and/or materials between surveyed stormwater structures. CCTV will be required to obtain additional information on stormwater systems with unknown structures prior to any project design and construction.

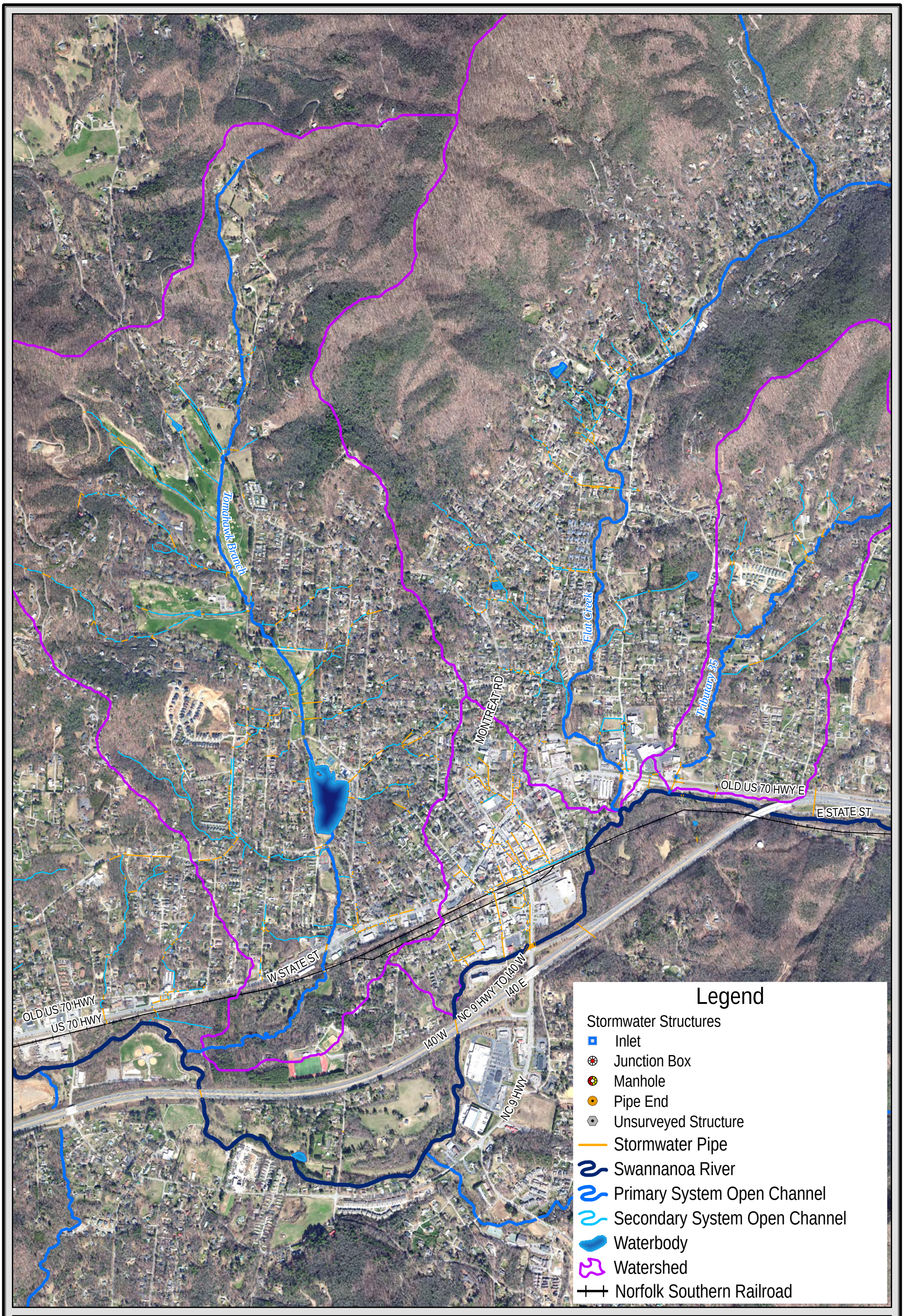
Additionally, numerous structures were found to be obstructed with sediment and/or debris during the field data collection. These are identified in the stormwater inventory GIS geodatabase provided to the Town and are also shown in Figure 2-2. Obstructed structures by watershed are provided in Appendix A.

Over 46,500 linear feet of pipe were also collected as part of the Town's infrastructure inventory. Unknown pipe sizes were documented because of difficult access or obstructed structures. A summary of the Town's infrastructure is noted in Table 2.2 and shown in Figure 2-1.

TABLE 2.2: INVENTORY SUMMARY – PIPES

PIPE DIAMETER	% OF INVENTORY
<= 15-inch	28%
18- to 24-inch	30%
30- to 36-inch	10%
42- to 90-inch	3%
Pipe Size Unknown	29%

An additional 108,000 linear feet of open channel are included in the Town inventory as identified by the survey or in GIS for connectivity.

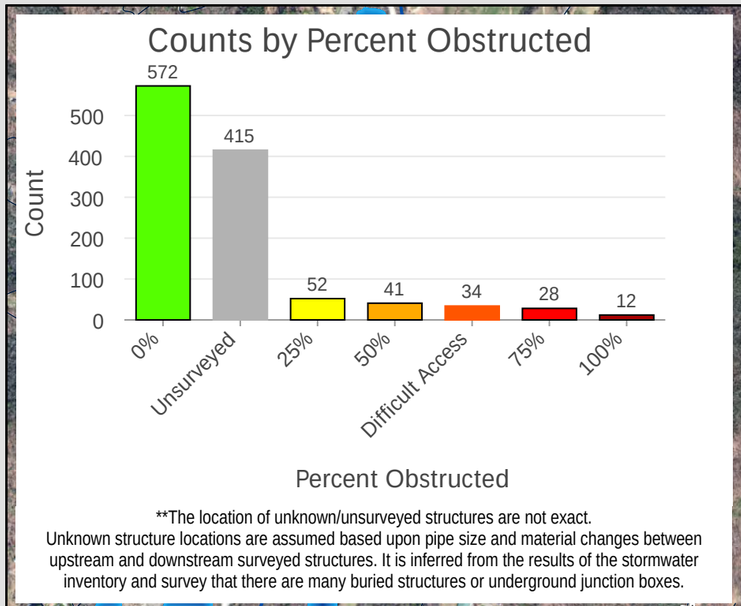


WK DICKSON
AN ARDURRA COMPANY

Figure 2-1: Stormwater Inventory
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 600 1,200
Feet
1 in = 1,200 ft

N
W E
S



**The location of unknown/unsurveyed structures are not exact.
Unknown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.

Legend

Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- # Difficult Access Structure
- 2 Unsurveyed Structure

- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed

WK DICKSON
AN ARDURRA COMPANY

Figure 2-2: Obstructed & Difficult Access Stormwater Structures
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 1,250 2,500 Feet

1 in = 1,250 ft

2.2. Hydrology and Flood Zones

The Town is generally located north of I-40 and the Swannanoa River. The Town primarily encompasses three tributaries to the Swannanoa River: Tomahawk Branch, Flat Creek, and Tributary 35 (of the Swannanoa River), as identified by Federal Emergency Management Agency (FEMA). Known flooding locations from the Town's 2022 Stormwater Master Plan Update[2] and meetings with Town staff were used to identify areas to model and evaluate the Town's existing stormwater conveyance system.

Additionally, FEMA models for Tomahawk Branch, Flat Creek, Tributary 35, and the Swannanoa River were downloaded from the North Carolina Flood Risk Information System (FRIS)[3] system and the bridge data and water surface elevations were used in modeling and evaluating the primary open channel systems.

The hydrologic make-up of the Town is shown in Figure 2-3.

2.3. NOAA Precipitation

Precipitation data were obtained from National Oceanic and Atmospheric Administration (NOAA). 24-hour precipitation depths as shown in Table 2.2 were obtained from NOAA Atlas 14, Volume 2, Version 3 for the Town's North Fork 2 Station (Station ID 31-6236)[4]. This station was chosen as the basis for the storm events as it is located at a high elevation in the mountains and is representative of the intensity and depth of rainfall coming off the mountains and draining down to the Town proper.

TABLE 2.3: NOAA RAINFALL DEPTHS

RECURRENCE INTERVAL	ANNUAL EXCEEDANCE PROBABILITY	NOAA 24-HOUR RAINFALL DEPTH (in)
2-YR, 24HR	5%	3.39
10-YR, 24HR	10%	5.00
25-YR, 24HR	4%	5.98
50-YR, 24HR	2%	6.76
100-YR, 24HR	1%	7.57

2.4. Land Use and Soils

The Town has a mix of land uses, including substantial low intensity residential development, forested areas in the upper parts of Flat Creek, and significant commercial development in the downtown corridor. There are some on-going residential developments in the upper parts of the Tomahawk Branch and Tributary 35 watersheds. These developments were included as existing land use for the watershed characterization. For example, the Tudorcroft development in Tomahawk Branch was incorporated into the existing land use data set. The Town has a very well-developed impervious land cover dataset provided by Raftelis that was also incorporated into the watershed characterization. For the purposes of the modeled watersheds, the current land use was assumed to be the future land use.

General characteristics of the modeled watersheds are noted in Table 2.2. Overall land use and soils maps for the Town as well as additional detail on the hydrologic parameterization[5,6] of the watershed models is provided in Appendix B.

TABLE 2.4: WATERSHED CHARACTERISTICS SUMMARY

WATERSHED	DRAINAGE AREA (SQ MI)	PRIMARY LAND USE	WATERSHED PERCENT IMPERVIOUSNESS	PRIMARY HYDROLOGIC SOIL GROUP
Study Area	8.68	Forest	9.4%	B
Downtown	0.23	Impervious	52.6%	B and D
Tomahawk Branch	1.93	Low Intensity Residential	15.3%	B
Flat Creek	6.04	Deciduous Forest	5.9%	B and A
Tributary 35	0.48	Low Intensity Residential	12.4%	B

Flat Creek

Jomahawk Branch

Tributary 35

US 70 HWY

I40 W

I40 E

NC 9 HWY

E STAT

Legend

- Stormwater Pipe
- Swannanoa River
- Primary System Open Channel
- Secondary System Open Channel
- Waterbody
- Norfolk Southern Railroad
- Watershed
- HUC 12 Boundary (060101050602)
- Wetland (National Wetland Inventory)

FEMA National Flood Hazard Layer

- 0.2% Annual Chance Flood Hazard
- 1% Annual Chance Flood Hazard
- Regulatory Floodway

WK DICKSON
AN ARDURRA COMPANY

Figure 2-3: Hydrology
TOWN OF BLACK MOUNTAIN, NC
Town of Black Mountain Stormwater Master Plan

0 1,000 2,000 Feet

1 in = 2,000 ft

N W E S

3. EXISTING STORMWATER SYSTEM ANALYSIS

The purpose of the stormwater system analysis is to determine the existing level of service for the Town's mapped stormwater conveyance system and to develop proposed solutions to mitigate flooding. The Town's stormwater system was modeled in 1D PCSWMM. PCSWMM analyzes both the hydrologic watershed conditions and the conveyance hydraulics. Bridge data for primary systems was imported from corresponding FEMA models. Additional information on the hydraulic analyses and input data[7] is provided in Appendix C. A hard copy of the PCSWMM input/output is available upon request. A summary of the existing conditions for each watershed is noted below.

3.1. Downtown System

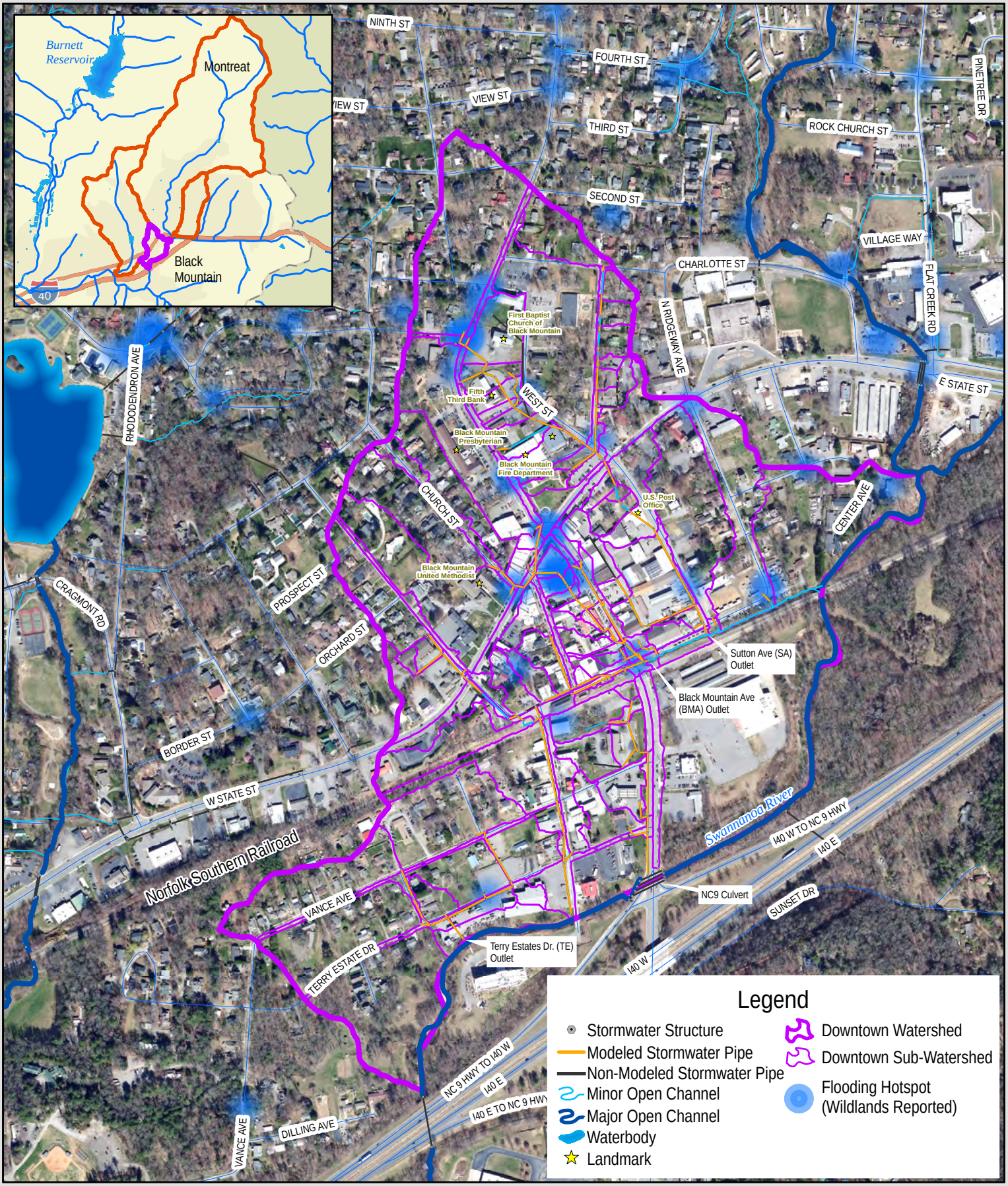
The downtown stormwater conveyance system consists of a significant amount of aged infrastructure that runs between public and private property. Several systems have pipes that convey public water underneath commercial and government buildings. The existing downtown stormwater, shown in Figure 3-1, has four primary outlets (three direct to the Swannanoa River and one to an open channel paralleling the railroad and Sutton Ave to the Swannanoa River). These are noted as the Sutton Ave outlet (SA), NC Highway 9 outlet (NC9), Black Mountain Ave outlet (BMA), and Terry Estates Drive outlet (TE).

Figure 3-1 also indicates locations of previously documented flooding issues at the intersection of Broadway and Sutton and along the following roads: W State St, West St, Montreat Rd, Richardson Blvd, Midland Ave, and Terry Estates Dr.

Model results for the existing system level of service are noted in Figures 3-2 and 3-3. The level of service for key locations in the downtown corridor is noted in Table 3.1.

TABLE 3.1: DOWNTOWN SECONDARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	EXISTING PIPE	EXISTING SYSTEM LEVEL OF SERVICE
NORTH OF RAILROAD		
Sutton Ave (east of Cherry St)	15" RCP	< 2-YR
Sutton Ave (at Broadway St)	15" CMP	< 2-YR
Broadway St (north of Sutton Ave)	24" RCP	2-YR
Richardson Blvd (2 crossings at Sutton Ave)	30" RCP / 15" HDPE	< 2-YR
S. Ridgeway Dr (at Sutton Ave)	15" HDPE	< 2-YR
W. State St (at Church St)	18" RCP	< 2-YR
W. State St (at Cherry St)	18" VCP and PVC	< 2-YR
Cherry St (at W. State St)	18" RCP	< 2-YR
W. State St (at Broadway St)	18" and 24" RCP	2-YR
E. State St (at Richardson Blvd)	15" VCP	< 2-YR
Police Station (pipe under building)	15" RCP	< 2-YR
SOUTH OF RAILROAD		
Railroad Crossing - S. Dougherty St	12" VCP	< 2-YR
Black Mountain Ave (at Terry Estates Dr)	12" CMP	< 2-YR
Terry Estates Dr (5 crossings)	12" and 15" CPP	< 2-YR



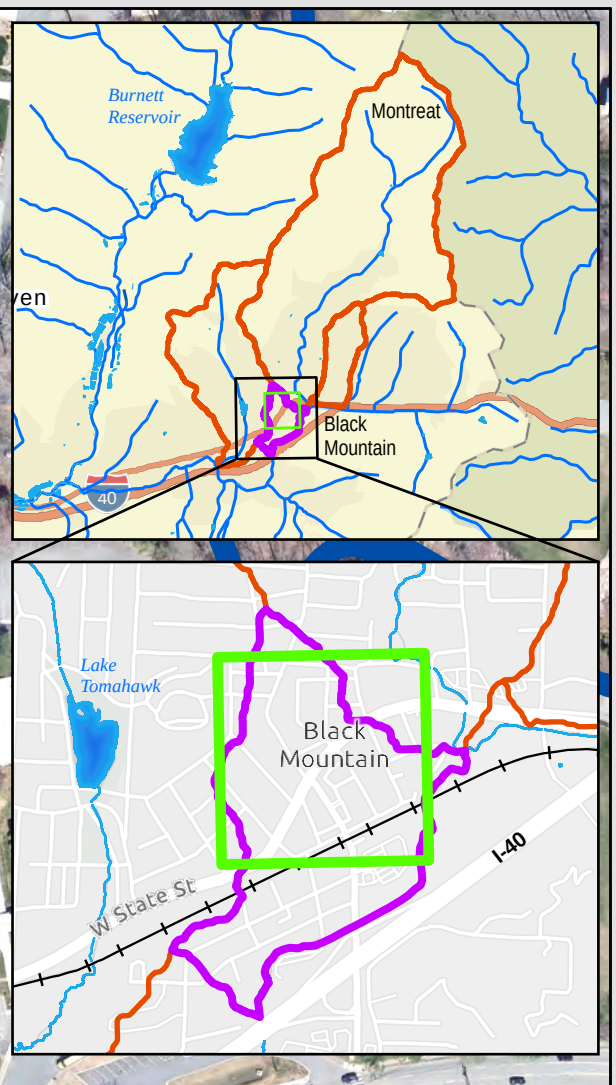
WK DICKSON
AN ARDURRA COMPANY

Figure 3-1: Downtown Secondary System
Town of Black Mountain Stormwater Master Plan

0 300 600 Feet
1 inch = 600 feet

N
W E
S

Sutton Avenue / Richardson Boulevard Outfall Systems	
ROADWAY	LEVEL OF SERVICE
Sutton Ave at S. Ridgeway Ave	< 2-YR
2 Sutton Ave at Richardson Blvd Crossings	< 2-YR
East State St at Richardson Blvd	< 2-YR
System between Montreat Rd and West St	2-YR
System along West Street at the Police Station	< 2-YR
Laurel Circle Dr at Montreat Rd	< 2-YR
West Street at Midland Ave	2-YR
First St at Midland Ave	2-YR
Sutton Ave east of NC 9	25-YR
Sutton Ave and Broadway St intersection	< 2-YR
Cherry St at Sutton Ave	< 2-YR
System along west side of Broadway St	< 2-YR
Cherry St at West State St	2-YR
West State St at Church St	< 2-YR
Church St at West State St	< 2-YR
Church St	< 2-YR
Montreat Rd at East State St	< 2-YR
24" System in Broadway to Cherry St	2-YR
24" System in Broadway north of Cherry St	25-YR



SECOND ST
N RIDGEWAY AVE
LAUREL CIRCLE DR
WEST ST
Police Station
HONEYCUTT ST
MONTREAT RD
CHURCH ST
BROADWAY ST
E STATE ST
SCOTLAND ST
S RIDGEWAY AVE
CENTER AVE
U.S. Post Office
S RICHARDSON BLVD
W STATE ST
CHERRY ST
SUTTON AVE
NC 9 HWY
Norfolk Southern Railway

Modeled as overland flow between pipes. No defined channel.

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- Modeled Open Channel
- Non-Modeled Pipe*
- Non-Modeled Swannanoa NC9 HWY Culvert

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River
- Norfolk Southern Railway

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

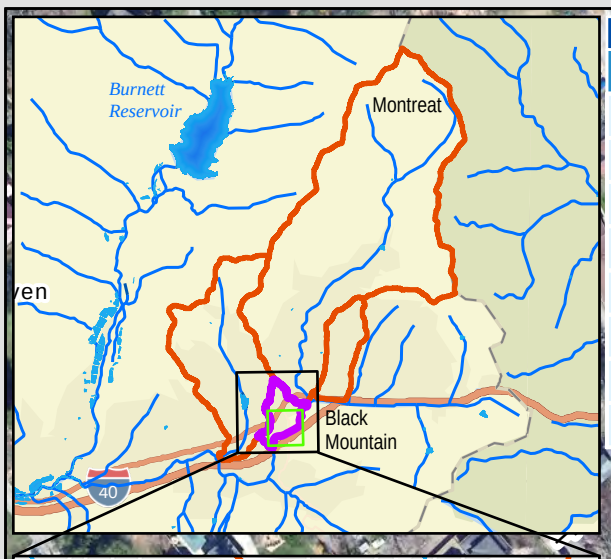
WK DICKSON
AN ARDURRA COMPANY

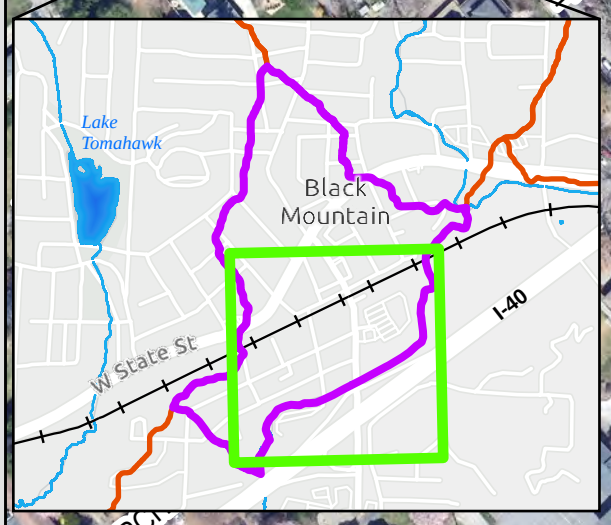
Figure 3-2: Existing Conditions Level of Service
DOWNTOWN (NORTH) DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet

1 in = 200 ft

N
W E
S





Black Mountain Avenue Outfall System	
ROADWAY	LEVEL OF SERVICE
Terry Estate Dr at Black Mtn Ave	< 2-YR
Black Mountain Ave at Terry Estate Dr	< 2-YR
Vance Ave at Black Mtn Ave	< 2-YR
Railroad Tracks at Black Mtn Ave	< 2-YR
S. Dougherty St at Black Mtn Ave	25-YR
S. Dougherty St Bend	< 2-YR
West State St (US 70)	25-YR
N. Dougherty St at West State St	25-YR

NC 9 Outfall System	
ROADWAY	LEVEL OF SERVICE
Terry Estate Dr west of NC 9	< 2-YR
Terry Estate Dr at NC 9	25-YR
Vance Ave at NC 9	25-YR
Vance Ave west of NC 9	2-YR

Bridge Street / Terry Estate Outfall System	
ROADWAY	LEVEL OF SERVICE
3 Terry Estate Dr Crossings near Bridge St	< 2-YR
2 Terry Estate Dr Crossings east of Bridge St	< 2-YR
Vance Ave at Bridge St	10-YR
Vance Ave near Spring St	2-YR

Modeled as overland flow between pipes. No defined channel.

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- Modeled Open Channel
- Non-Modeled Pipe*
- Non-Modeled Swannanoa NC9 HWY Culvert

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River
- Norfolk Southern Railway

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 3-3: Existing Conditions Level of Service
DOWNTOWN (SOUTH) DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

3.2. Tomahawk Branch Watershed

3.2.1 Primary System

Tomahawk Branch watershed is 1.93 square miles and encompasses several residential developments around Tomahawk Lake as shown in Figure 3-4. Known flooding locations along the primary system are concentrated at Laurel Circle Dr and Hiawassee Ave. Model results for the existing system level of service are noted in Figure 3-5. The level of service for key locations is noted in Table 3.2.

TABLE 3.2: TOMAHAWK PRIMARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	EXISTING PIPE	EXISTING SYSTEM LEVEL OF SERVICE
Laurel Circle Dr (north of Lake Tomahawk)	Triple Arch CMP Culvert	< 2-YR
Cragmont Rd (south of Lake Tomahawk)	Twin 90" CMP Culvert	50-YR
W. State St	Twin 7' x 10' RCBC*	50-YR
Swannanoa Ave (south of Cragmont Rd)	30" CMP / 48" CMP	2-YR

**Reinforced Concrete Box Culvert*

3.2.2 Secondary System

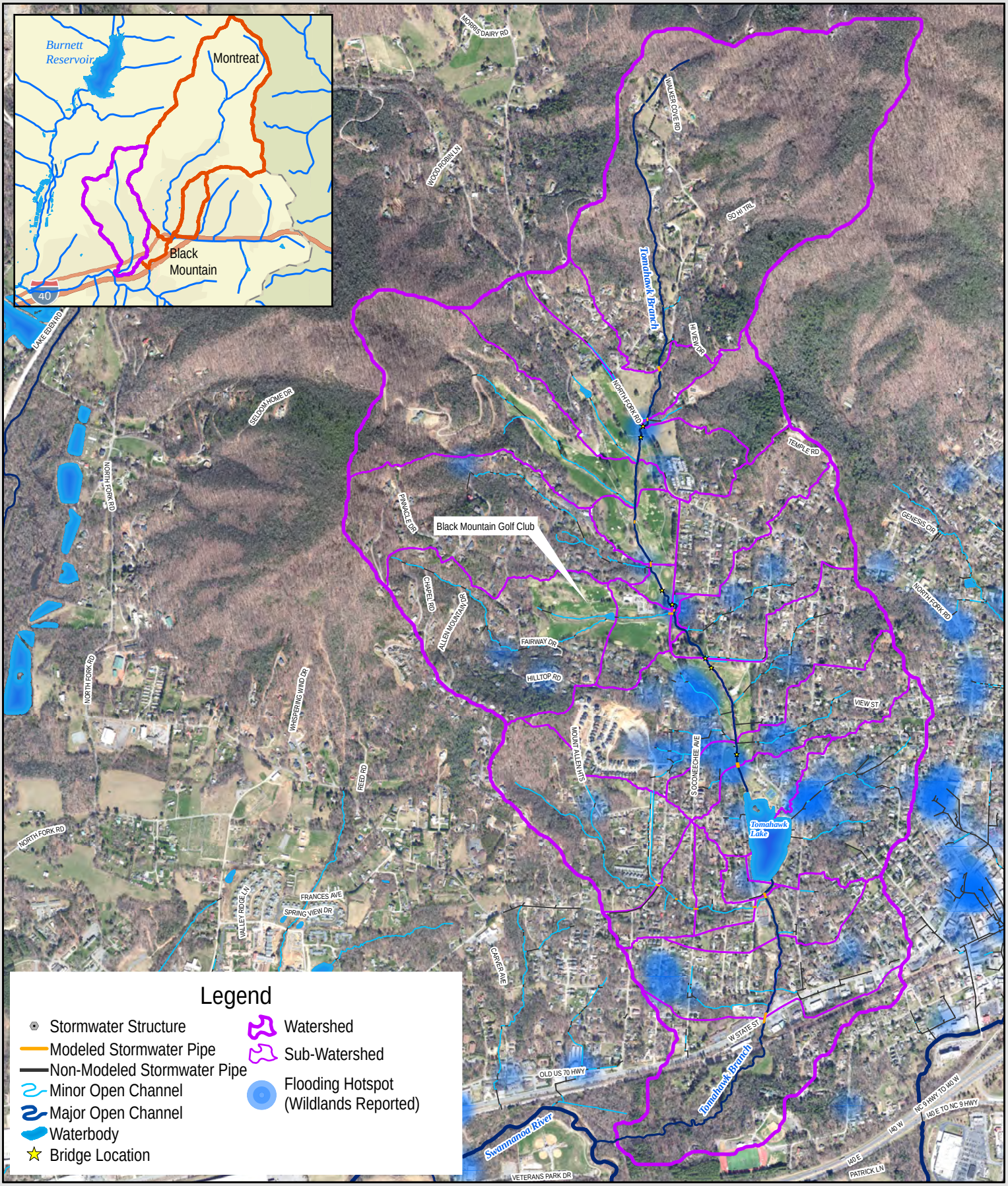
There are multiple secondary systems that drain to Tomahawk Branch north of Tomahawk Lake and directly to the lake itself as noted in Figure 3-6. 0.3 square miles of secondary system drainage area was modeled with seven (7) outfalls to Tomahawk Branch upstream of the lake and four (4) outfalls directly to Tomahawk Lake. One small system across Walnut St at Tomahawk Ave was also included in the secondary system model with an outlet to an open channel on the west side of Tomahawk Ave.

Runoff from the Tudorcroft residential development in the upper parts of the watershed have been a concern for downstream residents. Previously documented flooding locations are shown in Figure 3-6.

Model results for the existing system level of service are noted in Figure 3-7. The level of service for key locations is noted in Table 3.3.

TABLE 3.3: TOMAHAWK SECONDARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	EXISTING PIPE	EXISTING SYSTEM LEVEL OF SERVICE
Stream crossing Byrd Rd, Hiawassee Ave, and S. Oconeechee Ave	18" and 24" CMP	< 2-YR
Tomahawk Ave (downstream of above system)	36" CMP	2-YR
Hiawassee Ave at Fairway Dr	18" CMP/HDPE	< 2-YR
Tomahawk Ave (just north of Fairway Dr)	18" CPP	2-YR
Tomahawk Ave and Hickory St	15" CPP/18" CMP	2-YR
Rhododendron Ave (at Eighth St)	24" CMP	2-YR
Rhododendron Ave (at Laurel Circle Dr to Lake)	24" CMP	< 2-YR
Azalea Ave (north of Ninth St)	18" CPP	< 2-YR
9th St (west of Azalea Ave)	18" CPP	< 2-YR
Laurel Ave (south of 9th St)	36" CMP	2-YR



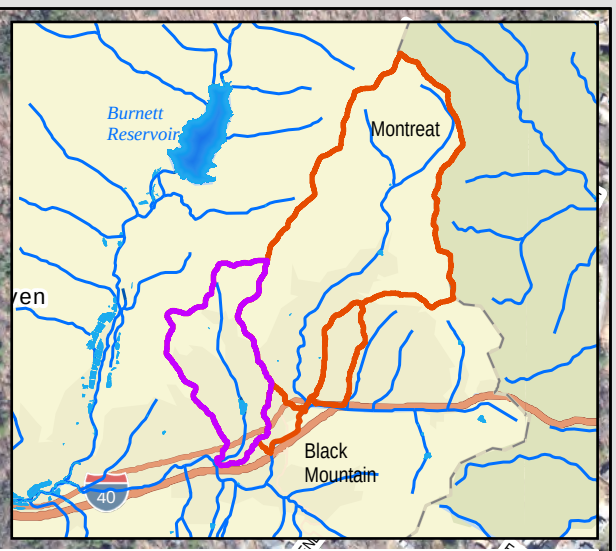
WK DICKSON
AN ARDURRA COMPANY

TOWN OF BLACK MOUNTAIN
NORTH CAROLINA
1893

Figure 3-4: Tomahawk Branch Primary System
Town of Black Mountain Stormwater Master Plan

0 750 1,500 Feet
1 in = 1,500 ft

N
W E
S



CULVERT CROSSING	LEVEL OF SERVICE
W State St (Hwy 70)	50-YR
Cragmont Rd	50-YR
Laurel Circle Dr	<2-YR
9th St Bridge	25-YR
Hiawassee Ave Bridge	25-YR
Chapel Rd	25-YR
Walker Cove Rd	50-YR
Hiawassee Ave (South of Ross Dr)	50-YR
Swannanoa Ave	2-YR
E College St	50-YR
Cragmont Rd (Secondary Crossing)	25-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*
- Bridge Location

Stormwater Structures

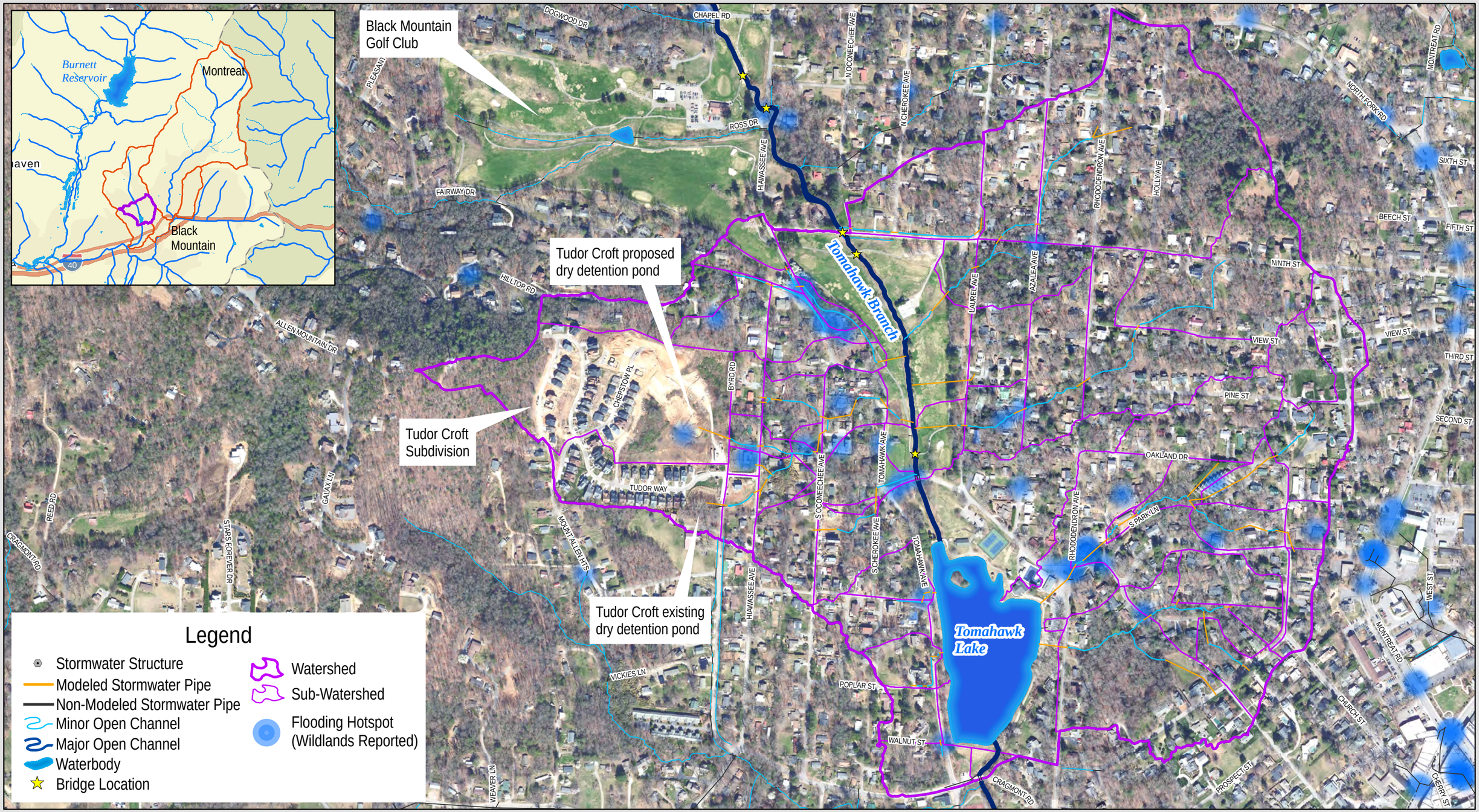
- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Tomahawk Branch
- Tomahawk Lake

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 3-5: Existing Conditions Level of Service
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 250 500 Feet
1 in = 500 ft



WK DICKSON
AN ARDURRA COMPANY

TOWN OF BLACK MOUNTAIN 1893 NORTH CAROLINA

Figure 3-6: Tomahawk Branch Secondary System
Town of Black Mountain Stormwater Master Plan

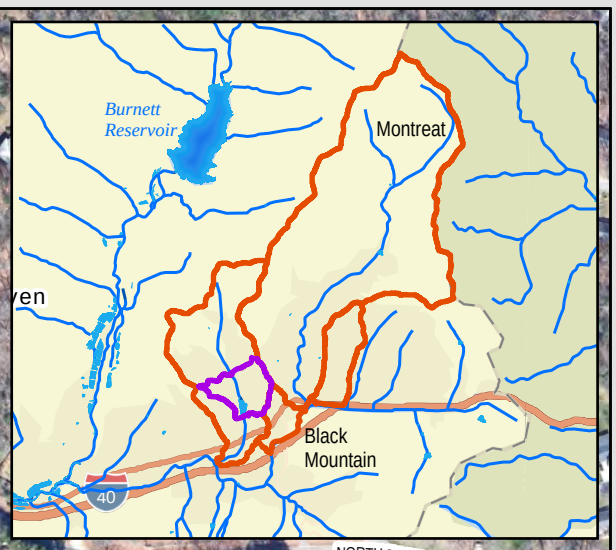
0 500 1,000 Feet

1 in = 500 ft

N W E S

East of Tomahawk Branch / Tomahawk Lake	
ROADWAY	LEVEL OF SERVICE
N. Cherokee Ave at 9th St	< 2-YR
Laurel Ave (north of 9th St)	25-YR
Laurel Ave (south of 9th St)	2-YR
9th Street	< 2-YR
Azalea Ave (north of 9th St)	< 2-YR
Rhododendron Ave (south of 10th St)	10-YR
Laurel Ave at 8th St	25-YR
8th St at Laurel Ave	2-YR
Laurel Ave (south of 8th St)	< 2-YR
Azalea Ave (south of 8th St)	< 2-YR
Rhododendron Ave (south of View St)	2-YR
View St	< 2-YR
Rhododendron Ave at Laurel Circle Dr	< 2-YR
N. Park Ln	2-YR
Oakland Dr	10-YR
S. Park Ln	25-YR
Church St	< 2-YR
Laurel Circle Dr at Church St	25-YR
Rhododendron Ave	10-YR
S Laurel Circle (west)	2-YR
Circle Ln	25-YR
S Laurel Circle (central)	25-YR
S Laurel Circle (east)	25-YR
Connally St (east of N Dougherty St)	25-YR
Connally St (west of N Dougherty St)	10-YR

West of Tomahawk Branch / Tomahawk Lake	
ROADWAY	LEVEL OF SERVICE
Fairway Dr at Hiawassee Ave	< 2-YR
Tomahawk Ave (north of Fairway Dr)	2-YR
Hiawassee Ave (parallel north)	25-YR
Hiawassee Ave (parallel south)	25-YR
S. Oconeechee Ave (north)	25-YR
Byrd Rd (north)	< 2-YR
Hiawassee Ave (north central)	< 2-YR
Hiawassee Ave (south central)	10-YR
Byrd Rd (south)	10-YR
Hiawassee Ave (south)	10-YR
S. Oconeechee Ave (central)	< 2-YR
Tomawhawk Ave	2-YR
S. Oconeechee Ave (south)	25-YR
Hickory St at Tomahawk Ave	2-YR
Tomahawk Ave north of Hickory Dr	2-YR
Tomahawk Ave south of Hickory Dr	2-YR
Walnut St at Tomahawk Ave	2-YR



Intersection of Fairway Dr and Tomahawk Ave and further south on Tomahawk Ave are known flooding locations. There is no stormwater infrastructure in this area. Runoff overflows the stormwater ditches flowing down Tomahawk Ave and across properties towards Tomahawk Branch.

Intersection of Laurel Circle Dr and Tomahawk Ave is a known flooding location. There is no stormwater infrastructure in this area. The pipes along S. Cherokee Ave end and runoff overflows into the intersection towards Tomahawk Branch.

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*
- Primary System Culvert**

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Tomahawk Branch
- Tomahawk Lake

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model
**Level of Service for Primary System Culverts provided on a separate map

WK DICKSON
AN ARDURRA COMPANY

Figure 3-7: Existing Conditions Level of Service
TOMAHAWK BRANCH SECONDARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 300 600 Feet

1 in = 300 ft

3.3. Flat Creek Watershed

The Flat Creek watershed is six (6) square miles, including the 0.35 square mile Flat Creek Tributary 1 watershed. Most of the primary road crossings along Flat Creek are bridges, which were modeled using FEMA data as shown in Figure 3-8. The most downstream Flat Creek crossing prior to confluence with the Swannanoa River is at US 70 East and is a triple 11' x 10' Reinforced Concrete Box Culvert (RCBC). Known flooding concerns are primarily located along Flat Creek Tributary 1 from Portmanvilla Rd upstream to Montreat Rd.

Model results for the existing system level of service are noted in Figure 3-9. The level of service for key locations along Flat Creek Tributary 1 is noted in Table 3.4.

TABLE 3.4: FLAT CREEK PRIMARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	EXISTING PIPE	EXISTING SYSTEM LEVEL OF SERVICE
Montreat Rd (NC 9)	24" CMP	2-YR
Seventh St	Triple 24" CMP	2-YR
Seventh St (west of Portmanvilla Rd)	15" PVC	< 2-YR
Sixth St	42" CMP	10-YR
Sixth St (west of Portmanvilla Rd)	15" CMP	< 2-YR
Portmanvilla Rd	30" CMP	2-YR
Portmanvilla Rd	15" CMP	< 2-YR
US 70 (E. State St)	Triple 11' x 10' RCBC	50-YR

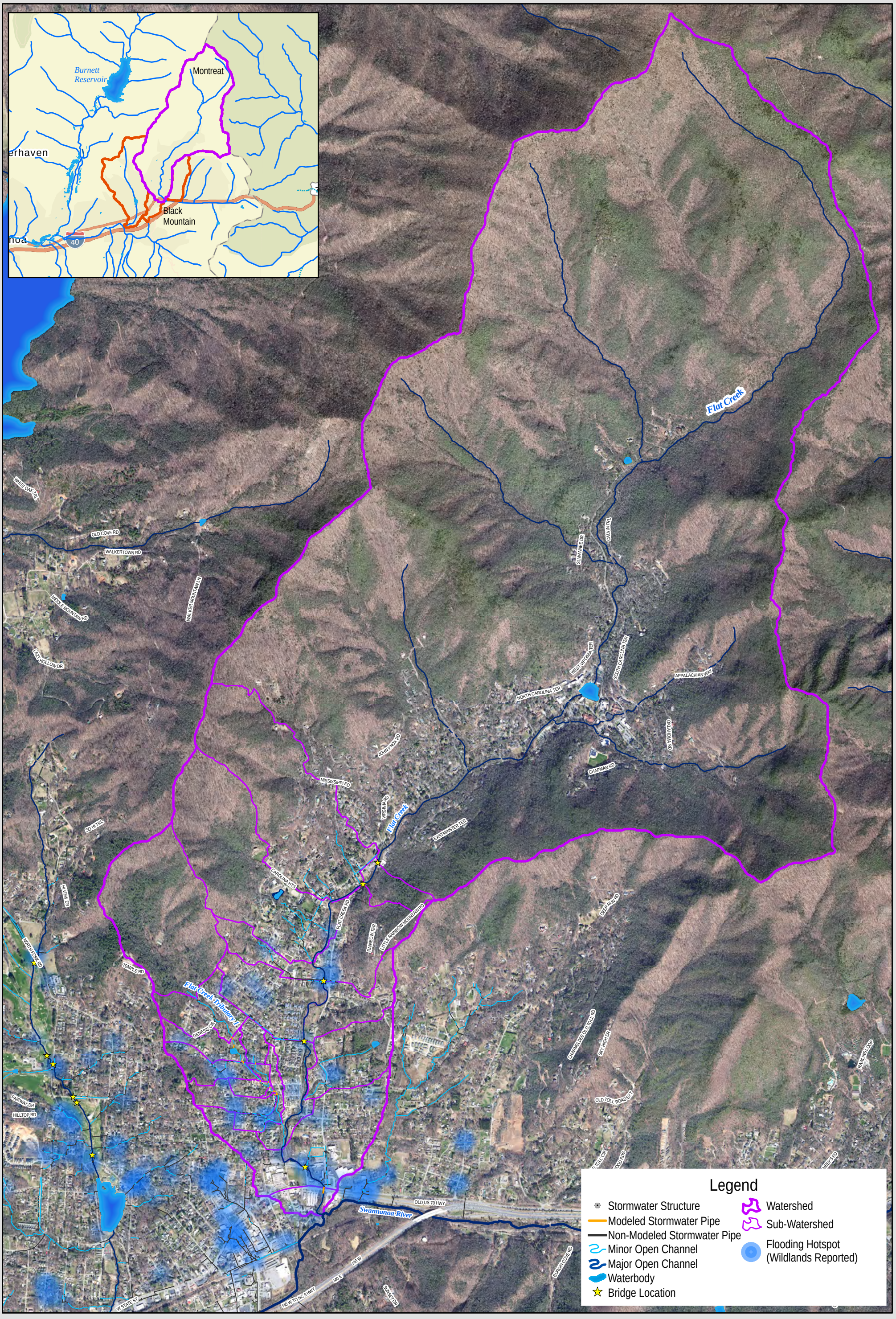
3.4. Tributary 35 / Avena Road Watershed

The Tributary 35 (of the Swannanoa River) watershed encompasses approximately 0.48 square miles and includes two primary thoroughfares: Avena Road and Padgettown Road. The stormwater conveyance system is comprised of open channel, culvert crossings, and outfalls to the Swannanoa River via a 6' x 7' RCBC underneath US 70 as shown in Figure 3-10. Primary flooding concerns within this watershed include the crossing at Old State 10 Rd and Padegettown Rd from Old State 10 Rd to Old US 70E.

Model results for the existing system level of service are shown in Figure 3-11 and noted in Table 3.5.

TABLE 3.5: TRIBUTARY 35 PRIMARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	EXISTING PIPE	EXISTING SYSTEM LEVEL OF SERVICE
Avena Rd (near Bellgrove Rd)	48" CMP	2-YR
Bellgrove Rd	Twin 36" CMP	2-YR
Avena Rd	48" CMP	10-YR
Old State 10 Rd	Twin 36" HDPE/CPP	2-YR
Padgettown Rd (north of Old US 70 E)	Twin 36" CMP	< 2-YR
Old US 70 East	6' x 10' RCBC	25-YR
US 70 (E. State St)	6' x 7' RCBC	50-YR

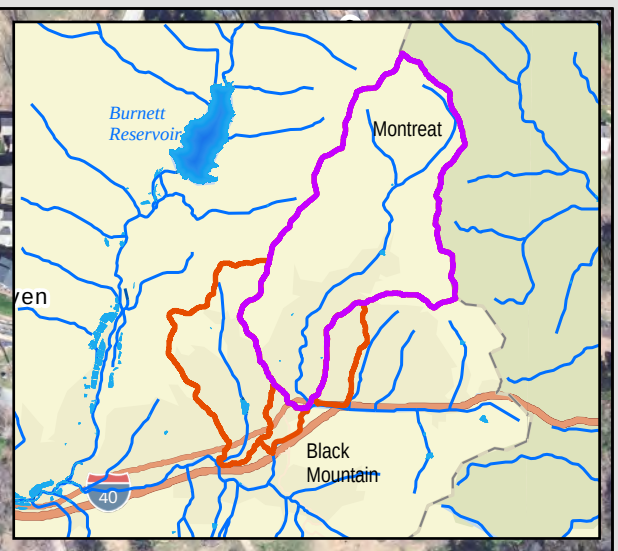


WK DICKSON
AN ARDURRA COMPANY

Figure 3-8: Flat Creek Tributary 1 Primary System
Town of Black Mountain Stormwater Master Plan

0 750 1,500 Feet
1 in = 1,500 ft

N
W E
S



CUVLERT CROSSING	LEVEL OF SERVICE
US 70 (Triple 11'x10' RCBC)	50-YR
Flat Creek Tributary 1 Culverts	
Portmanvilla Rd (15" CMP)	< 2-YR
Portmanvilla Rd (30" CMP)	2-YR
6th Street near Portmanvilla Rd (15" CMP)	<2-YR
6th Street (42" CMP)	10-YR
7th Street near Portmanvilla Rd (15" CPP)	< 2-YR
7th Street (Triple 24" CMP)	2-YR
Montreat Rd (24" CMP)	2-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*

Stormwater Structures

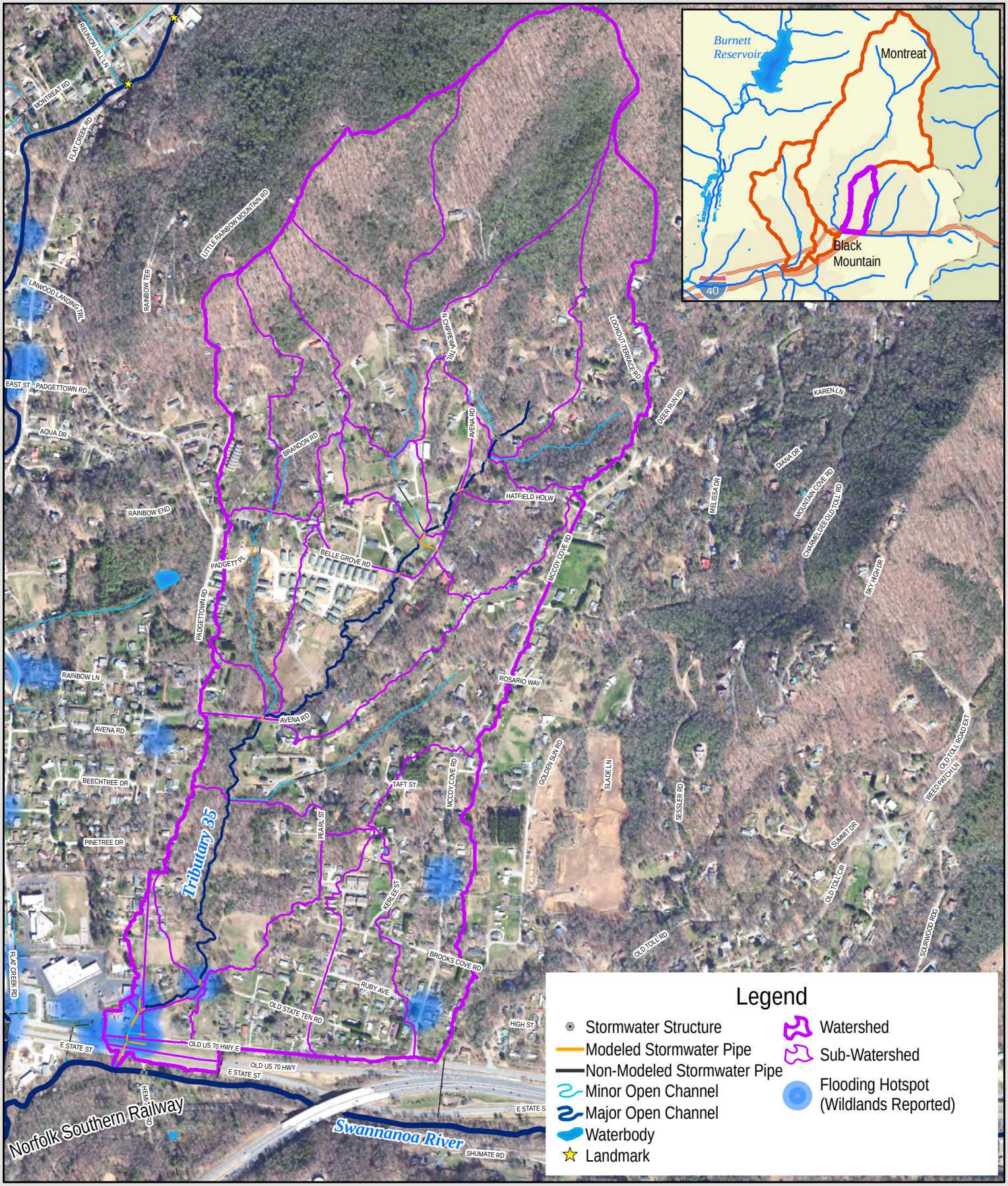
- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River
- Flat Creek
- Bridge Location

Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 3-9: Existing Conditions Level of Service
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 125 250 Feet
1 in = 250 ft

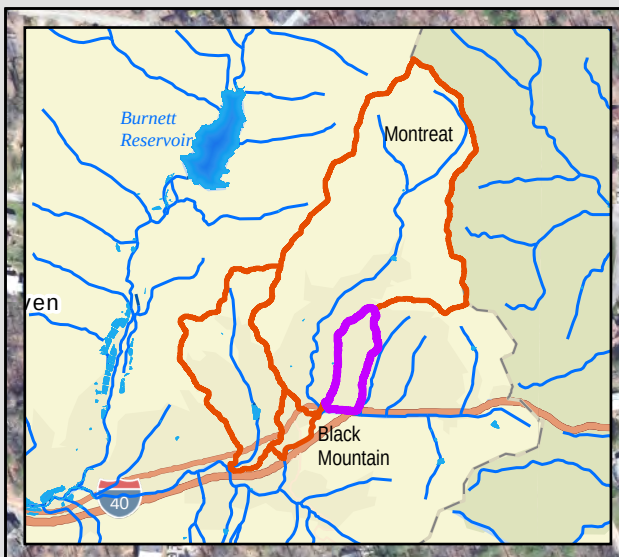


WK DICKSON
AN ARDURRA COMPANY

Figure 3-10: Avena Rd./Tributary 35 Primary System
Town of Black Mountain Stormwater Master Plan

0 400 800 Feet
1 in = 800 ft

N
W E
S



CULVERT CROSSING	LEVEL OF SERVICE
US-70 (6'x7' RCBC)	50-YR
Old US-70 (6' x10' RCBC)	25-YR
Parking Lot (Twin 36" CMP)	2-YR
Padgettown Rd (Twin 36" CMP)	< 2-YR
Padgettown Rd (24" CMP)	2-YR
Old State Ten Rd (Twin 36" CPP)	2-YR
Avena Rd (48" CPP)	2-YR
Padgett Place (Twin 36" CPP)	50-YR
Belle Grove Rd (Twin 36" CPP)	2-YR
Avena Rd (24" CMP)	2-YR
Avena Rd (48" CMP)	50-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

LOS results at US-70 include the use of the depression area between Old US-70 and US-70 as a storage area.

WK DICKSON
AN ARDURRA COMPANY

Figure 3-11: Existing Conditions Level of Service
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N W E S

3.5. Intense Storm Analyses

The 2-yr and 5-yr, 6-hr storm events were also modeled as SCS Type II storm events to simulate high-intensity rainfall events for the purpose of developing projects more resilient to climate change. Storm events, in general, are becoming more frequent with higher intensity. These types of rainfall events tend to lead towards generating more runoff rather than less intense rains leading to more infiltration. The shorter rainfall events were modeled to evaluate the impact on the Town's infrastructure of a more frequent, higher-peaked storm event to assess the system's capacity to handle intense events that may generate more runoff than infiltration.

The rainfall depths are noted in Table 3.6 were obtained from NOAA Atlas 14, Volume 2, Version 3 for the Town's North Fork 2 Station (Station ID 31-6236).[4]

TABLE 3.6: NOAA RAINFALL DEPTHS - 6 HR STORMS[4]

RECURRENCE INTERVAL	NOAA 6-HOUR RAINFALL DEPTH (in)
2-YR, 6HR	2.23
5-YR, 6HR	2.79

In the Downtown corridor, the model results indicated that the level of service (LOS) for roadways in the 5-yr, 6-hr storm event mirrored that of the 2-yr, 24-hr storm. For a high-intensity rainfall, the existing system shows significant flooding across major roadways in and around Downtown. In the Tomahawk Branch secondary system, most roadways meet a level of service sufficient to handle the modeled 5-yr, 6-hr storm event.

As indicated by the modeling results, the following culverts along primary systems in the Tomahawk Branch, Flat Creek Tributary 1, and Tributary 35 / Avena Rd watersheds, do not provide a level of service to handle the 5-yr, 6-hr storm event:

- Sixth Street near Portmanvilla Road
- Portmanvilla Road
- Padgettown Road just south Old State 10 Road

4. CRITICALITY ANALYSIS

As part of the Town of Black Mountain Stormwater Master Plan, a preliminary condition assessment was completed to identify high priority areas for detailed CCTV and/or maintenance needs. Prioritization is based on the likelihood of asset failure, as well as the consequence of asset failure. By evaluating the likelihood of asset failure in relation to the consequence of asset failure, a combined criticality score is then developed for each asset. This criticality score can enable the Town to more strategically evaluate which assets to focus capital improvement resources on for repair, rehabilitation, or further condition assessments. This section summarizes the results of a GIS audit and the scoring criteria and methodology used in developing the condition assessment.

4.1. Project Background

WK Dickson (An Ardurra Company) collected and analyzed the stormwater infrastructure data which included GIS stormwater data, building and transportation locations, and geographic features. This data was audited to determine the availability of necessary attribute information to conduct the criticality analysis. Upon resolution of the identified data gaps, WK Dickson performed a criticality assessment by running the criticality toolset to generate results. The results of this prioritization are included in this report as the findings of asset criticality within the Town of Black Mountain. The detailed methodology for customizing the prioritization tool for the Town can be found in Appendix D.

4.2. Criticality Analysis

After the scoring criteria and attribute analysis was completed, the pipe and structure matrices were populated and the asset criticality analysis was run. As a result, the highest scoring assets indicate the most critical assets in terms of overall risk due to consequence and likelihood of failure. Since there are a different number of assets for each utility system grouping, the distribution range differs.

Table 4.1 summarizes the number of stormwater pipe assets falling into each scoring category. A single pipe asset is defined as a section of pipe between either two (2) structures or between a structure and an outfall. The table presents the total criticality score as well as the likelihood and consequence scores.

When reviewing the table, it is noticeable that the class ranges are not uniform. The data was evaluated and confirmed that the criticality analysis followed a normal distribution. In an effort to highlight the infrastructure at both ends of the spectrum, the following class ranges were devised based on a modified bell curve: the top and bottom 5% of total scores were classified as ‘High’ and ‘Low’, the middle 63% as ‘Medium’, and the remaining 13.5% on either side of the middle as ‘Medium-High’ and ‘Medium-Low’. The purpose of these class ranges is to assign a criticality level to each asset, which informs overall scoring for rehabilitation projects. Assets rated at criticality levels 4 or 5 are typically the highest priority for rehabilitation.

Table 4.1 also shows the criticality levels for stormwater pipes. Of the pipes evaluated, 20% scored in Level 4 or 5, indicating the highest need for stormwater rehabilitation efforts. Exhibit 4.1 shows the distribution graphically.

TABLE 4-1: STORMWATER PIPES SCORING SUMMARY AND DISTRIBUTION

CATEGORIES ASSIGNED					
	Low (1)	Medium-Low (2)	Medium (3)	Medium-High (4)	High (5)
TOTAL CRITICALITY SCORE DISTRIBUTION					
	40-180	181-220	221-390	391-480	481-700
Stormwater Pipes	46	121	405	126	45
LIKELIHOOD SCORE DISTRIBUTION					
	20-108	109-196	197-284	285-372	373-460
Stormwater Pipes	82	288	256	103	14
CONSEQUENCE SCORE DISTRIBUTION					
	0-88	89-176	177-264	265-352	353-440
Stormwater Pipes	266	333	128	13	3

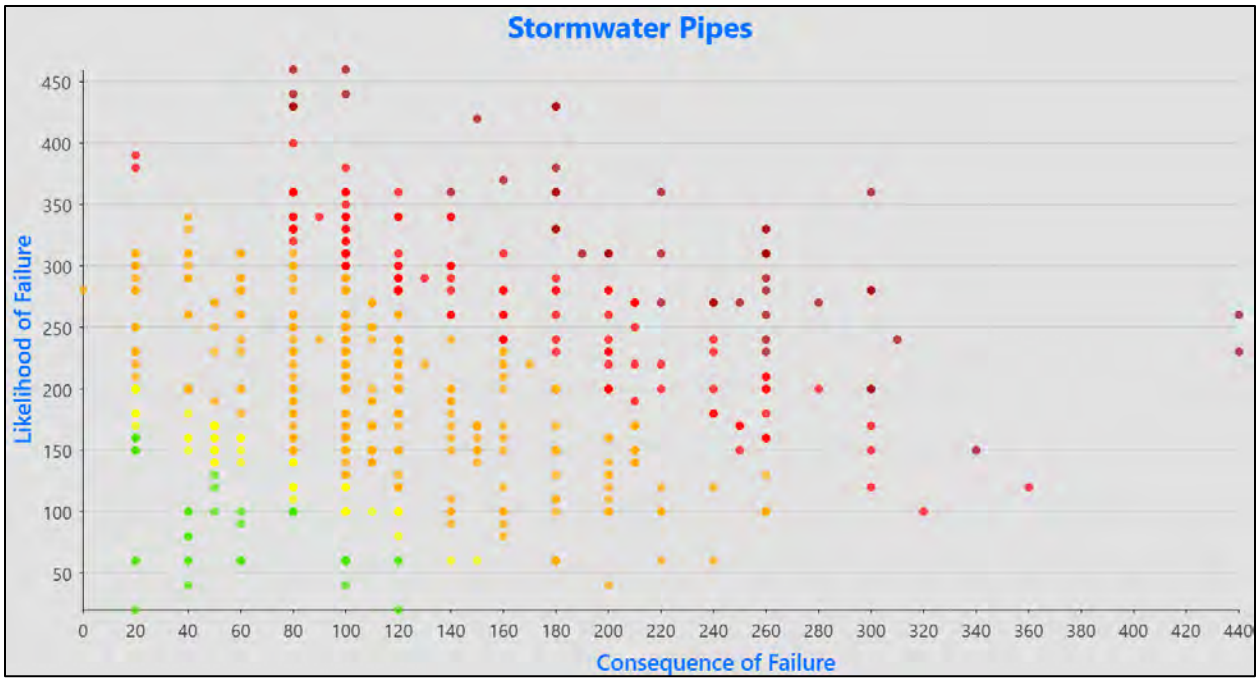


Exhibit 4.1
Stormwater Pipe Scoring Results

Table 4.2 shows the criticality levels for stormwater structures. Within the structures evaluated, 21% scored in Level 4 or 5, indicating the highest need for stormwater structure rehabilitation efforts. Exhibit 4.2 shows the distribution graphically.

TABLE 4.2: STORMWATER STRUCTURES SCORING SUMMARY AND DISTRIBUTION

CATEGORIES ASSIGNED					
	Low (1)	Medium-Low (2)	Medium (3)	Medium-High (4)	High (5)
TOTAL CRITICALITY SCORE DISTRIBUTION					
	60-155	156-185	186-315	316-400	401-585
Stormwater Structures	48	180	719	190	57
LIKELIHOOD SCORE DISTRIBUTION					
	20-98	99-176	177-254	255-332	333-410
Stormwater Structures	77	767	252	78	20
CONSEQUENCE SCORE DISTRIBUTION					
	0-62	63-124	125-186	187-248	249-310
Stormwater Structures	593	370	182	40	9

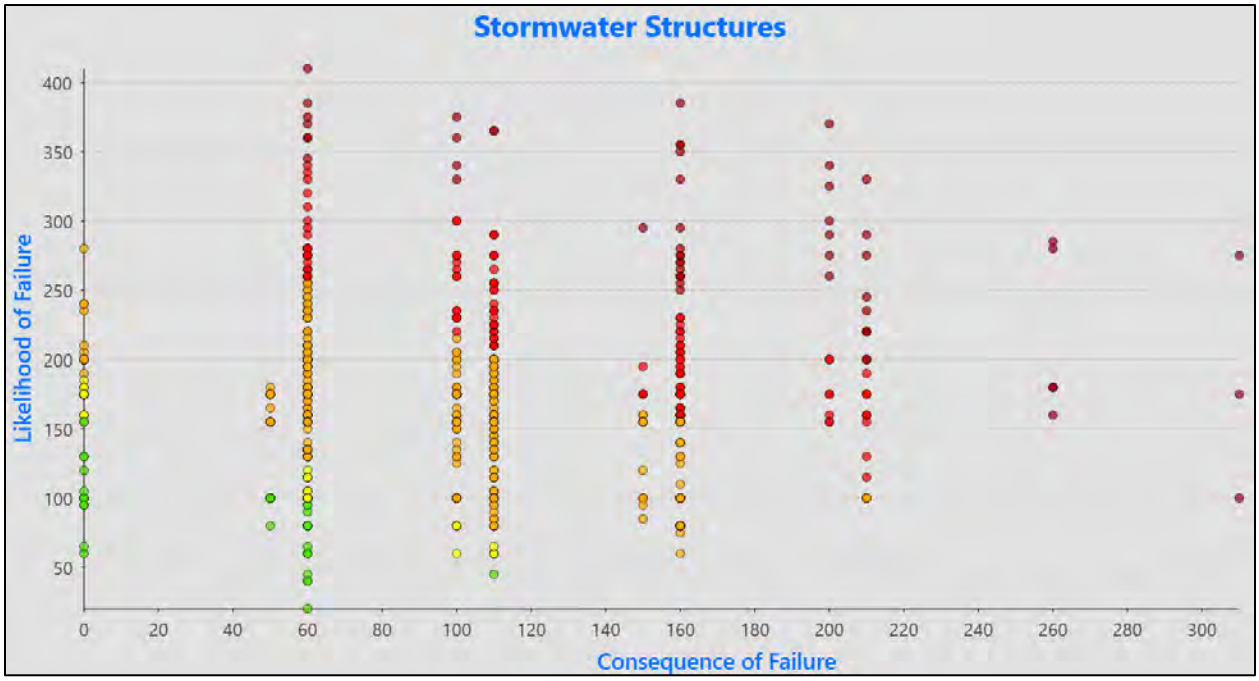


Exhibit 4.2
Stormwater Structure Scoring Results

4.3. Operations and Maintenance Recommendations

The stormwater drainage systems evaluated in this report are composed of a series of culverts, closed drainage systems, and open channels. It is recommended that properly scheduled maintenance be conducted at routine intervals to prolong system life and to identify and address system failures in a timely manner.

The condition assessment evaluated pipes and structures based on likelihood and consequence of failure. It is recommended that the Town prioritize the areas with high-risk infrastructure shown in red and dark red in Figures 4-1 through 4-4 for repair, rehabilitation, or further conditions assessment.

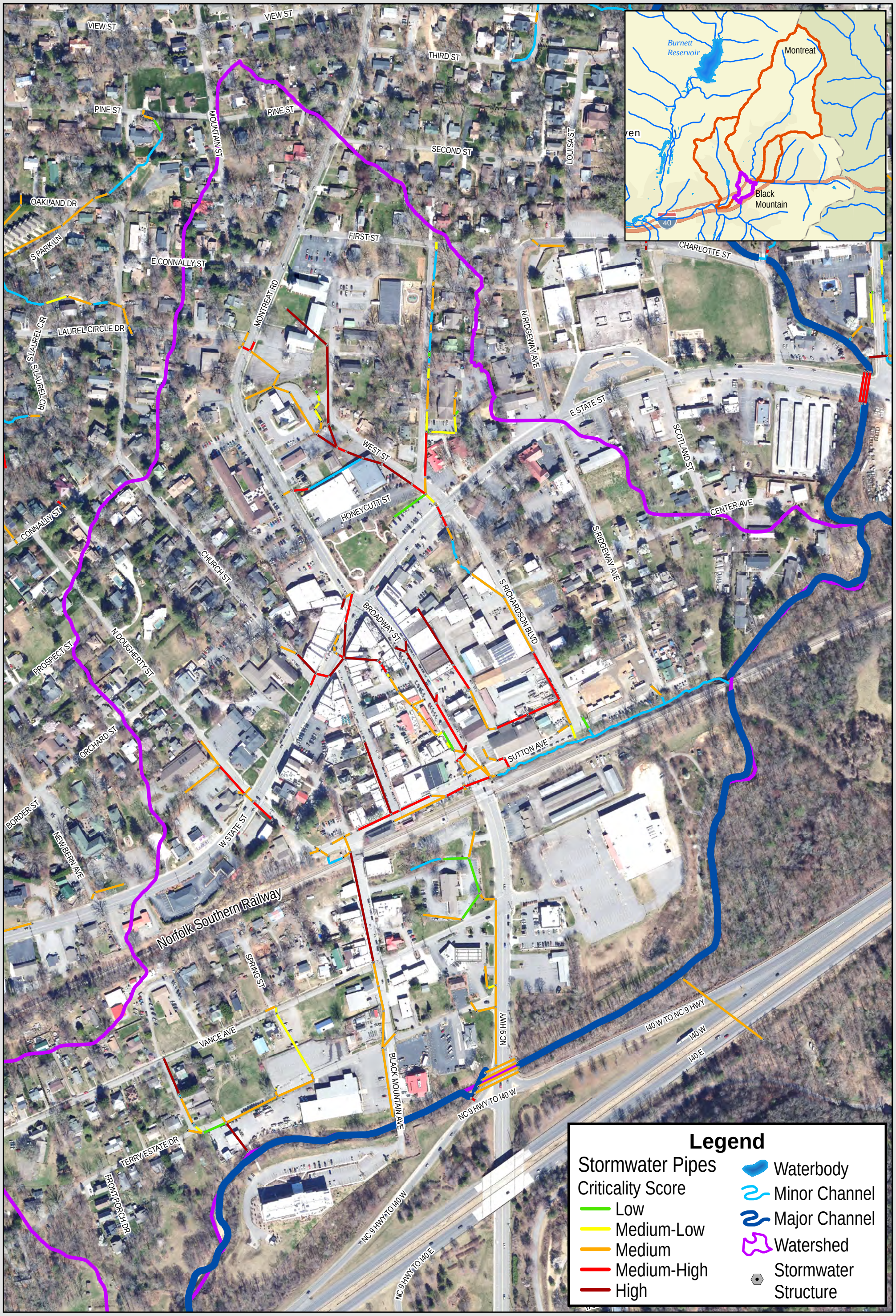
Stormwater structure result maps indicating high-risk structures are provided in Appendix D. Additional detail on the scoring criteria is also provided in Appendix D.

4.4. Criticality Analysis as an Ongoing Process

Because the data in the GIS database are dynamic, the results of the prioritization tool are a static representation based upon when the tool is run. As data are updated in the database, the tool can be utilized, and the results of the prioritization process can be updated easily. Typically, a jurisdiction may use a prioritization tool such as this on an annual or semi-annual basis as budgets are developed and capital plans and O&M plans are revised.

It should be noted that the criticality rating system will always generate assets that are rated as high-risk components. The rating system is a relative one, where the risk of a particular asset is rated relative to the other assets that are also evaluated. Therefore, the Town will always have assets that rank in the Level 4 or Level 5 risk category. As these assets are rehabilitated, replaced or repaired their likelihood of failure score will improve and their total risk rating can be reduced. Meanwhile, lower at-risk components will age and deteriorate over time and their risk scores will increase.

A valuable component of this dynamic prioritization tool is the ability to quickly perform different scenario analyses to determine the relative benefit of capital and operation and maintenance (O&M) projects. The Town can determine if the at-risk score of a particular component can be dramatically reduced by improvement. In some cases, the consequence of failure score is so high that an improved asset will always remain in the high-risk category. These assets can be monitored on a frequent basis to consistently check their condition and proactively work to prevent a failure. Conversely, assets with the greatest likelihood of failure scores are often the target of initial condition assessment and rehabilitation programs. Town staff can perform scenario analyses to determine where condition assessment and rehabilitation programs can most reduce the at-risk scores of critical assets.

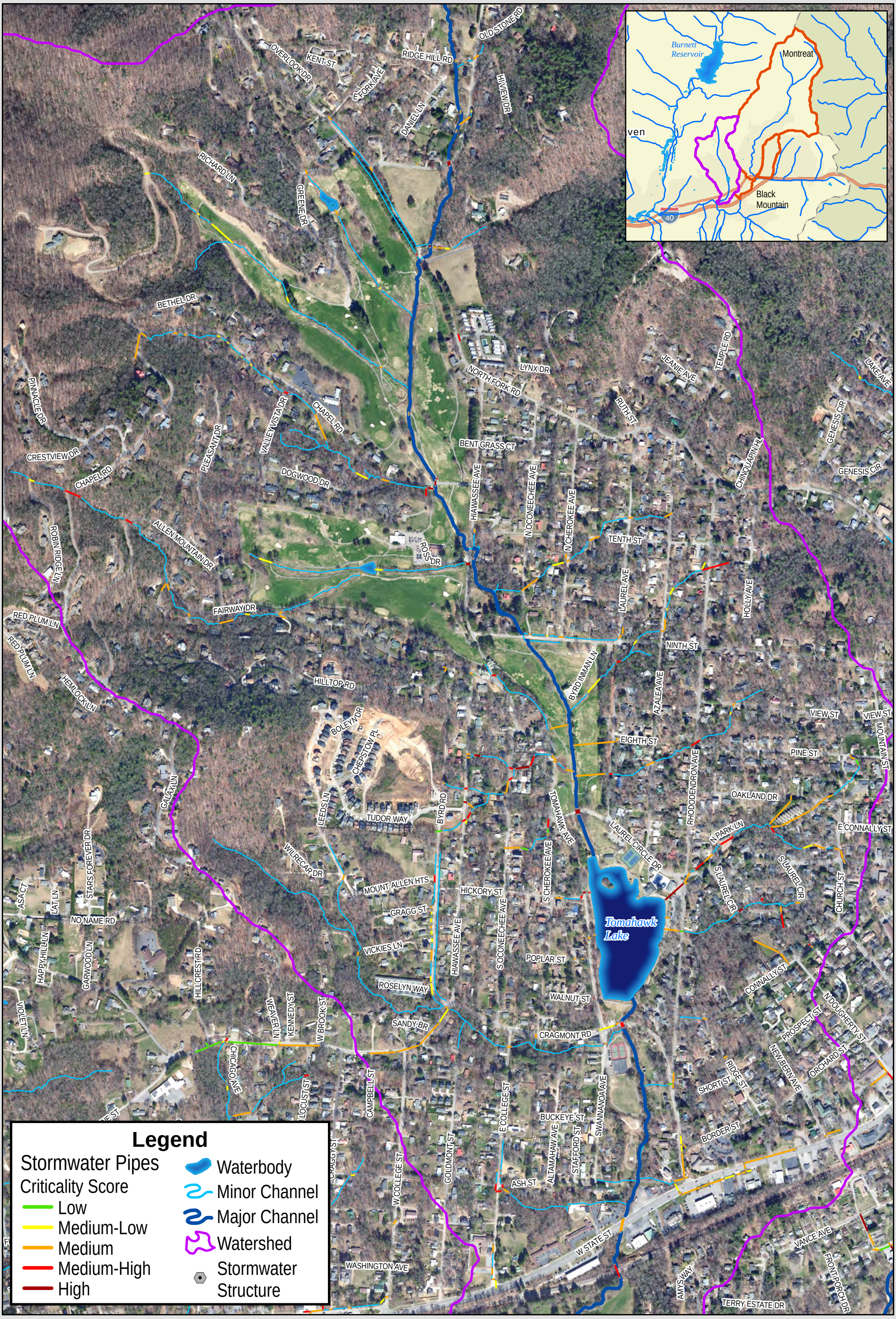


WK DICKSON
AN ARDURRA COMPANY

Figure 4-1: Criticality Analysis Results - Stormwater Pipes
DOWNTOWN SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N W E S



Legend

Stormwater Pipes
Criticality Score
- Low
- Medium-Low
- Medium
- Medium-High
- High

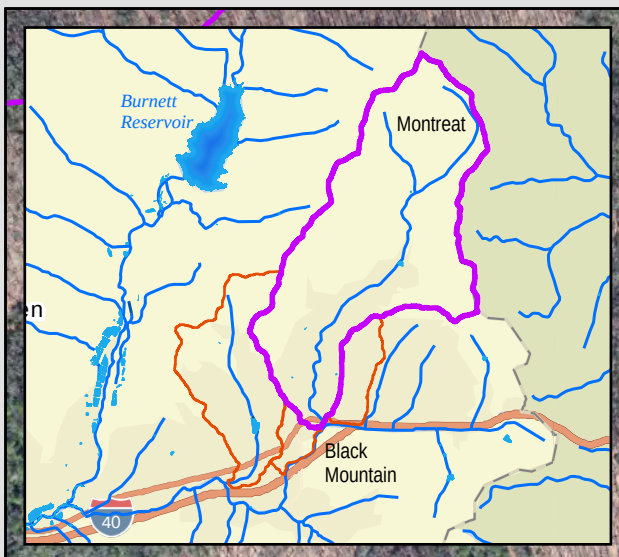
- Waterbody
- Minor Channel
- Major Channel
- Watershed
- Stormwater Structure

WK DICKSON
AN ARDURRA COMPANY

Figure 4-2: Criticality Analysis Results - Stormwater Pipes
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 300 600 Feet
1 in = 600 ft

N W E S



Legend

Stormwater Pipes
Criticality Score
- Low
- Medium-Low
- Medium
- Medium-High
- High

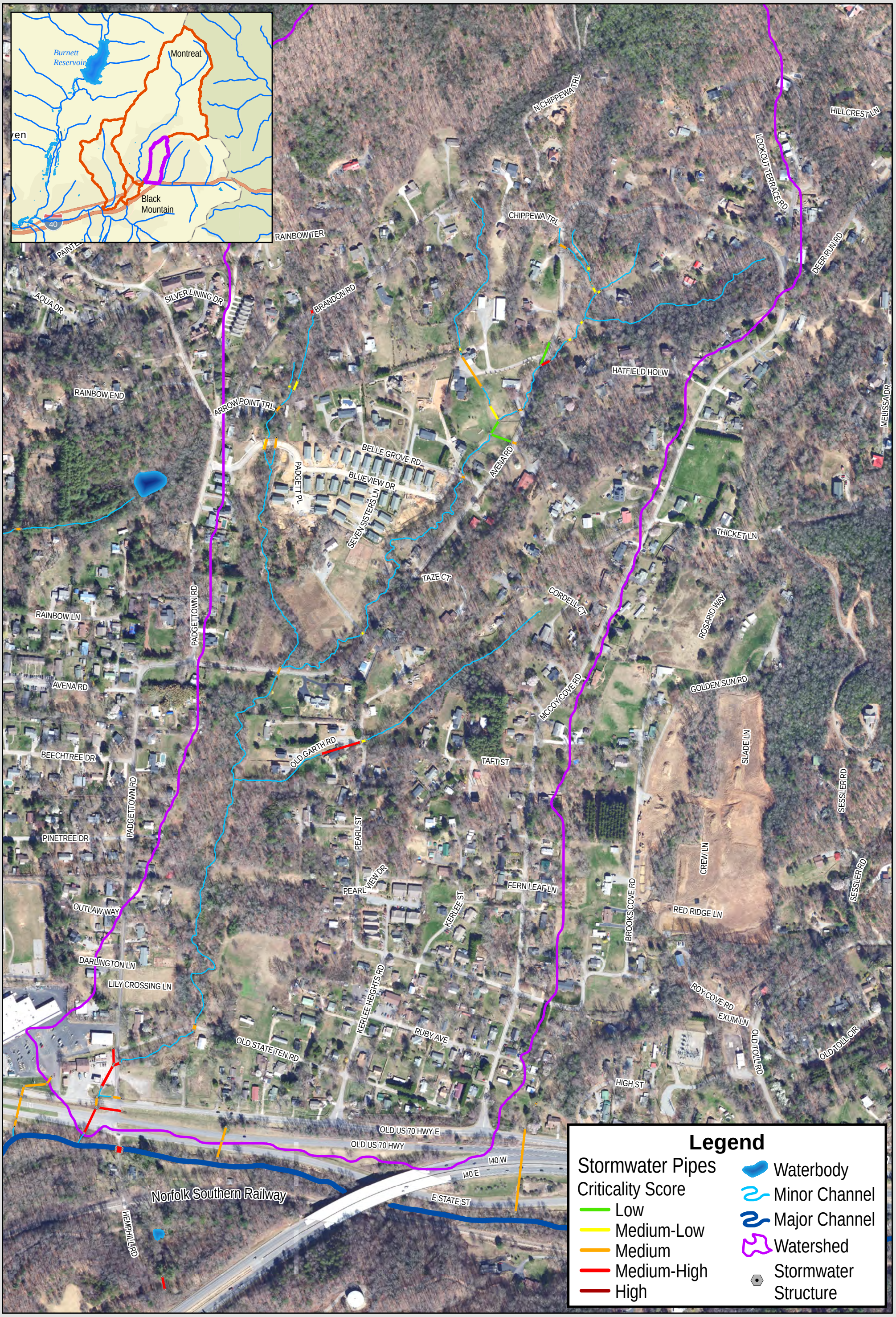
- Waterbody
- Minor Channel
- Major Channel
- Watershed
- Stormwater Structure

WK DICKSON
AN ARDURRA COMPANY

Figure 4-3: Criticality Analysis Results - Stormwater Pipes
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 250 500 Feet
1 in = 500 ft

N W E S



WK DICKSON
AN ARDURRA COMPANY

Figure 4-4: Criticality Analysis Results - Stormwater Pipes
AVENA ROAD/TRIBUTARY 35 WATERSHED
Town of Black Mountain Stormwater Master Plan

0 200 400 Feet
1 in = 400 ft

N
W E
S

5. PROPOSED CAPITAL IMPROVEMENT PLAN

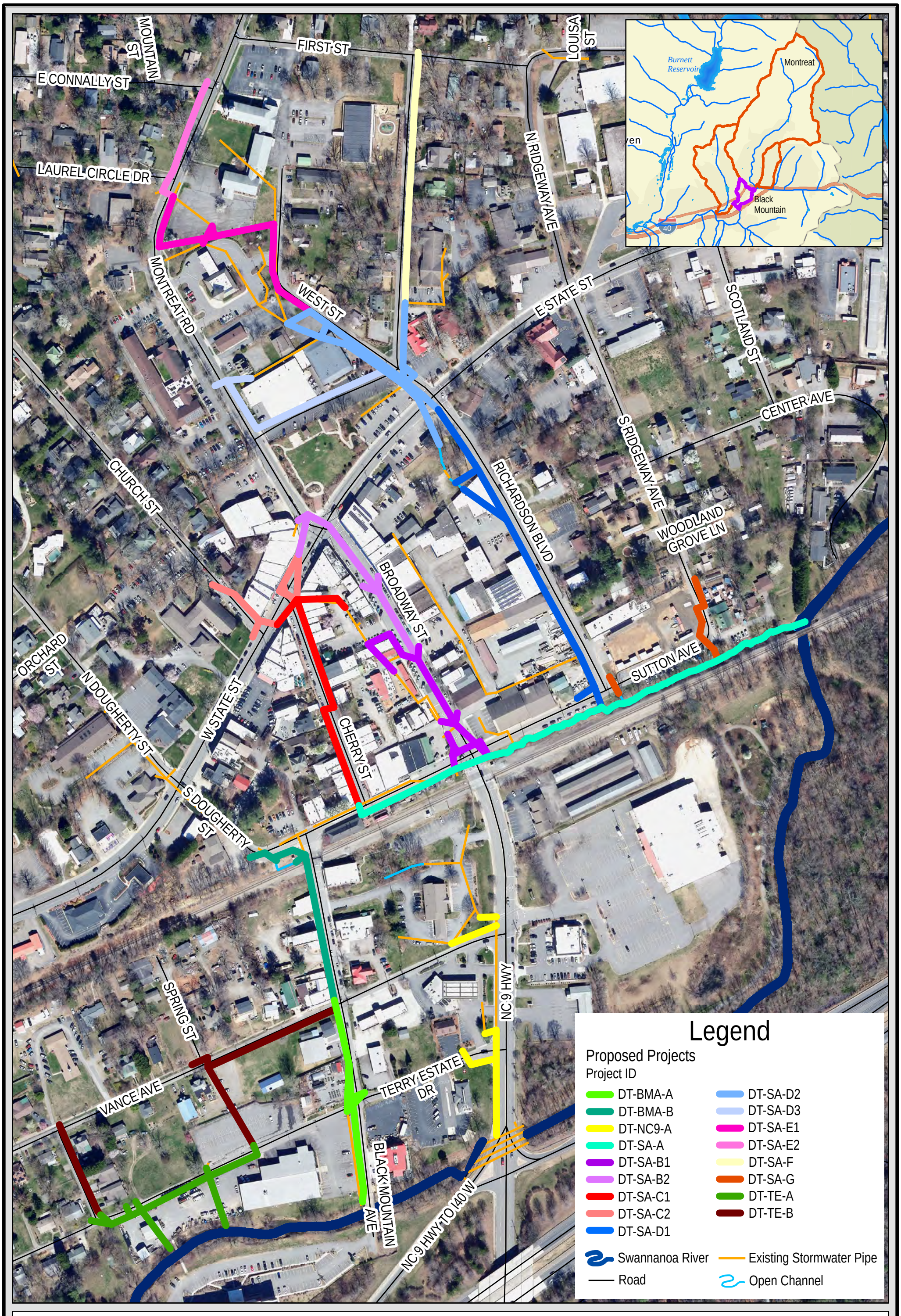
Developing flood mitigation alternatives in an urban environment is a complex process based on limitations imposed by the constraints within the environment, such as floodplain encroachments, increased peak flows due to impervious areas, public and private utilities, and private property. Improvements in this portion of the study were identified through an iterative process of infrastructure improvements, open channel improvements, floodplain benching, and detention options where feasible. As previously noted, the Town desired to focus the stormwater capital projects towards achieving a goal of a 50-YR LOS. In some cases, existing conditions limit options to plan for the desired LOS. Options for providing a high LOS are presented herein.

5.1. Downtown System

The Downtown system is a complex network of pipes in a limited space, combined with nearby utilities, businesses, and the railroad. Much of the Downtown stormwater conveyance system currently runs through private property, with several stormwater pipes located under commercial and critical Town facilities. The proposed improvements focused on re-aligning stormwater infrastructure to the public right-of-way, removal of public water from private systems where feasible, removing pipes underneath structures, providing a greater LOS for roadways, and providing flood reduction to nearby businesses and property owners. The proposed projects are shown in Figure 5-1. The proposed LOS for the Downtown corridor is shown in Figures 5-2 and 5-3 for areas north and south of the railroad. A summary of the proposed stormwater improvements and proposed LOS is provided in Table 5.1.

TABLE 5.1: DOWNTOWN SECONDARY SYSTEM - PROPOSED LEVEL OF SERVICE

ROADWAY CROSSING	PROPOSED PIPE	EXISTING SYSTEM LEVEL OF SERVICE	PROPOSED SYSTEM LEVEL OF SERVICE
NORTH OF RAILROAD			
Sutton Ave (east of Cherry St)	42" RCP	< 2-YR	50-YR
Sutton Ave (at Broadway St)	48" RCP	< 2-YR	50-YR
Broadway St (north of Sutton Ave)	42" RCP	2-YR	50-YR
Richardson Blvd (2 crossings at Sutton Ave)	3' x 7' RCBC / 30" RCP	< 2-YR	50-YR
S. Ridgeway Dr (at Sutton Ave)	36" RCP	< 2-YR	50-YR
W. State St (at Church St)	36" RCP	< 2-YR	50-YR
W. State St (at Cherry St)	18" RCP	< 2-YR	50-YR
Cherry St (at W. State St)	36" RCP	< 2-YR	50-YR
W. State St (at Broadway St)	30" RCP	2-YR	50-YR
E. State St (at Richardson Blvd)	42" RCP	< 2-YR	50-YR
Police Station (pipe under building)	36" RCP	< 2-YR	50-YR
SOUTH OF RAILROAD			
Railroad Crossing - S. Dougherty St	30" RCP	< 2-YR	50-YR
Black Mountain Ave (at Terry Ests.)	42" RCP	< 2-YR	50-YR
Terry Estates Dr (5 crossings)	24", 30", 36" RCP	< 2-YR	25-YR / 50-YR



WK DICKSON
AN ARDURRA COMPANY

Figure 5-1: Proposed Stormwater Improvement Projects
DOWNTOWN DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200
Feet
1 in = 200 ft

Sutton Avenue / Richardson Boulevard Outfall Systems	
ROADWAY	LEVEL OF SERVICE
Sutton Ave at S. Ridgeway Ave	50-YR
2 Sutton Ave at Richardson Blvd Crossings	50-YR
East State St at Richardson Blvd	50-YR
System between Montreat Rd and West St	50-YR
System along West Street at the Police Station	50-YR
Laurel Circle Dr at Montreat Rd	25-YR
West Street at Midland Ave	50-YR
First St at Midland Ave	50-YR
Sutton Ave east of NC 9	50-YR
Sutton Ave and Broadway St intersection	50-YR
Cherry St at Sutton Ave	50-YR
System along west side of Broadway St	50-YR
Cherry St at West State St	50-YR
West State St at Church St	50-YR
Church St at West State St	50-YR
Church St	50-YR
Montreat Rd at East State St	50-YR
24" System in Broadway to Cherry St	50-YR
24" System in Broadway north of Cherry St	50-YR

Legend

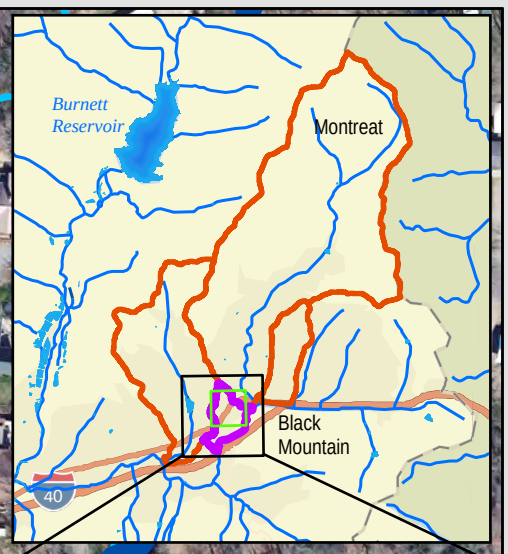
Stormwater Pipe Level of Service

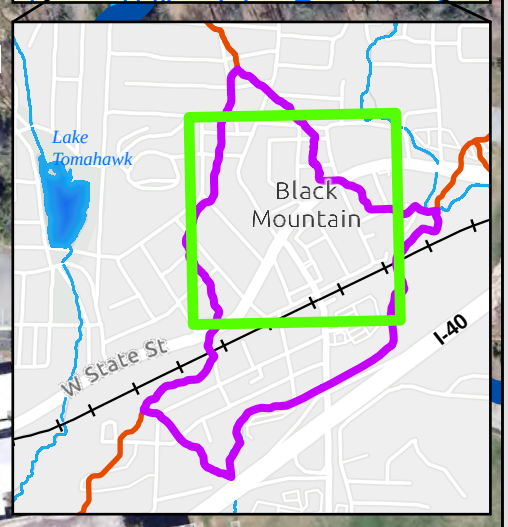
- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Proposed Pipe Abandonment
- Non-Modeled Swannanoa NC9 HWY Culvert
- Non-Modeled Pipe*

Stormwater Structures

- Existing Structure
- Proposed Structure
- Proposed Structure Abandonment
- Proposed Channel Improvements
- Existing Open Channel
- Swannanoa River
- Norfolk Southern Railway

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model



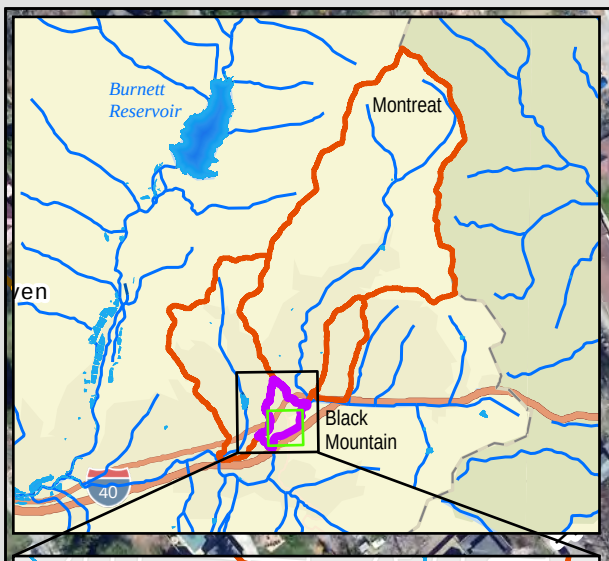


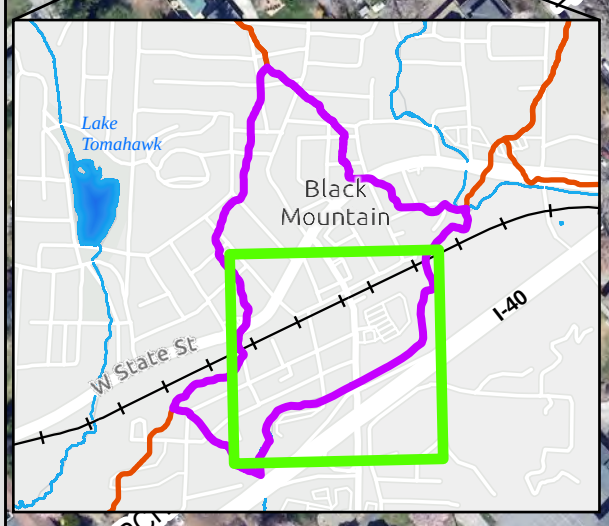
WK DICKSON
AN ARDURRA COMPANY

Figure 5-2:Proposed Conditions Level of Service
DOWNTOWN (NORTH) DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N W E S





Black Mountain Avenue Outfall System

ROADWAY	LEVEL OF SERVICE
Terry Estate Dr at Black Mtn Ave	50-YR
Black Mountain Ave at Terry Estate Dr	50-YR
Vance Ave at Black Mtn Ave	25-YR
Railroad Tracks at Black Mtn Ave	50-YR
S. Dougherty St at Black Mtn Ave	50-YR
S. Dougherty St Bend	50-YR
West State St (US 70)	25-YR
N. Dougherty St at West State St	50-YR

NC 9 Outfall System

ROADWAY	LEVEL OF SERVICE
Terry Estate Dr west of NC 9	50-YR
Terry Estate Dr at NC 9	50-YR
Vance Ave at NC 9	50-YR
Vance Ave west of NC 9	50-YR

Bridge Street / Terry Estate Outfall System

ROADWAY	LEVEL OF SERVICE
3 Terry Estate Dr Crossings near Bridge St	25-YR
2 Terry Estate Dr Crossings east of Bridge St	25-YR
Vance Ave at Bridge St	50-YR
Vance Ave near Spring St	50-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Proposed Pipe Abandonment
- Non-Modeled Swannanoa NC9 HWY Culvert
- Non-Modeled Pipe*

Stormwater Structures

- Existing Structure
- Proposed Structure
- Proposed Structure Abandonment
- Proposed Channel Improvements
- Existing Open Channel
- Swannanoa River
- Norfolk Southern Railway

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 5-3: Proposed Conditions Level of Service
DOWNTOWN (SOUTH) DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N W E S

5.2. Tomahawk Branch Watershed

5.2.1 Primary System

Improvements along Tomahawk Branch focused on the Laurel Circle Drive culvert. Based on observed field conditions, the culvert is in a low spot in the roadway, making it difficult to significantly increase the culvert size due to cover limitations. With upstream and downstream floodplain benching along the golf course for additional storage area and replacing the existing arch pipes with a triple barrel 5' x 9' RCBC, the Town may achieve a 10-yr LOS at this location. Proposed projects and proposed LOS are shown in Figures 5-5 and 5-5. Recommended infrastructure improvements are noted below in Table 5.2.

TABLE 5.2: TOMAHAWK PRIMARY SYSTEM - EXISTING CONDITIONS LEVEL OF SERVICE

ROADWAY CROSSING	PROPOSED PIPE	EXISTING SYSTEM LEVEL OF SERVICE	PROPOSED SYSTEM LEVEL OF SERVICE
Laurel Circle Dr (north of Lake Tomahawk)	Triple RCBC	< 2-YR	10-YR
Cragmont Rd (south of Lake Tomahawk)	NA	50-YR	50-YR
W. State St (US 70)	NA	50-YR	50-YR
Swannanoa Ave (south of Cragmont Rd)	48" RCP	2-YR	25-YR

5.2.2 Secondary System

The Town is currently completing projects to improve the stormwater drainage system on Tomahawk Ave at Fairway Dr. This includes upsizing the existing culvert that drains from the right-of-way on Tomahawk Ave to the golf course from a 15" to 24" culvert, establishing swales along both sides of Tomahawk Ave and along the west side of the golf course pathway, and routing the stormwater to a new bioretention facility on the golf course.

Secondary system improvements located within the Tomahawk Lake watershed should be coordinated with the Town's maintenance plan and infrastructure criticality improvements. It is also recommended that the Town conduct additional, detailed evaluation of the stormwater systems draining to Lake Tomahawk as well as evaluating the lake itself for additional storage capacity. Key stormwater conveyance crossings that are both under capacity and have been designated as high-risk infrastructure (as determined by the criticality analysis) are noted in Table 5.3 below.

TABLE 5.3: TOMAHAWK SECONDARY SYSTEM RECOMMENDED IMPROVEMENT AREAS

ROADWAY CROSSING	EXISTING LEVEL OF SERVICE	CRITICALITY ASSESSMENT
Rhododendron Ave (south of Tenth St)	10-YR	Medium-High
Rhododendron Ave (near Eighth St)	2-YR	Medium-High
Rhododendron Ave (Laurel Circle Dr to Lake)	< 2-YR	Medium / High
S. Laurel Circle (near Circle Dr)	2-YR	High
Tomahawk Ave (just north of Fairway Dr)	2-YR	Medium-High
Hiawassee Ave (north of Tudor Way)	< 2-YR	Medium-High
S. Oconeechee Ave (downstream of noted Hiawassee Ave crossing)	< 2-YR	Medium-High
Hickory St / Tomahawk Ave to Lake	2-YR	Medium-High / High

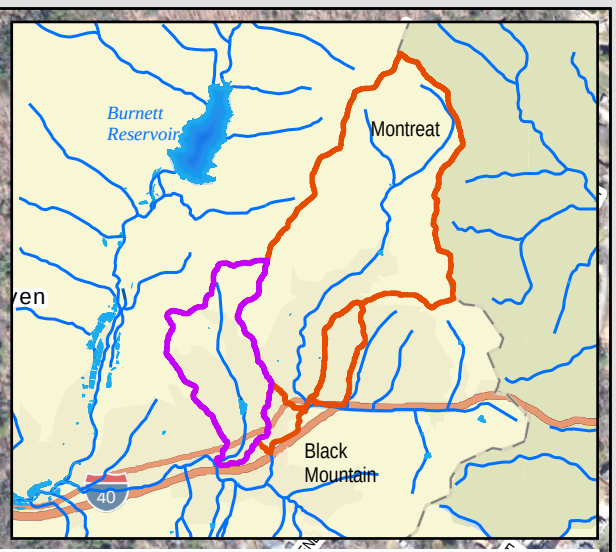


WK DICKSON
AN ARDURRA COMPANY

Figure 5-4: Proposed Stormwater Improvement Projects
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200
Feet
1 in = 200 ft

N
W E
S



CULVERT CROSSING	LEVEL OF SERVICE
W State St (Hwy 70)	50-YR
Cragmont Rd.	50-YR
Laurel Circle Dr.	10-YR
9th St Bridge	25-YR
Hiawassee Ave Bridge	25-YR
Chapel Rd.	25-YR
Golf Course Bridge	2-YR
North Fork Rd. Bridge	50-YR
Private Dr.	50-YR
Walker Cove Rd.	50-YR
Hiawassee Ave (South of Ross Dr.)	50-YR
Swannanoa Ave	25-YR
E College St.	50-YR
Cragmont Rd. (Secondary Crossing)	25-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*
- Bridge Location

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Tomahawk Branch
- Tomahawk Lake

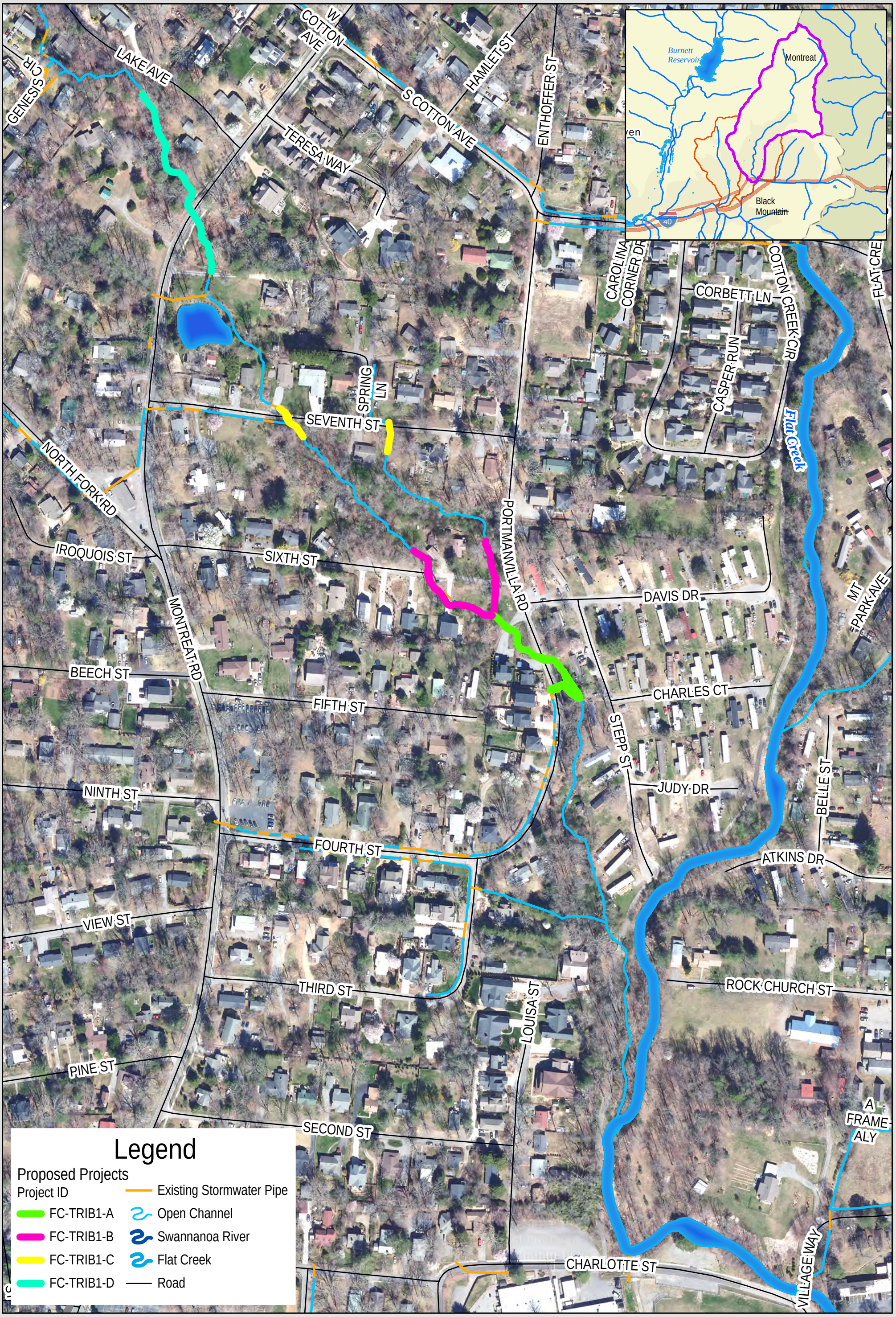
*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 5-5: Proposed Conditions Level of Service
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 250 500 Feet
1 in = 500 ft

N
W E
S

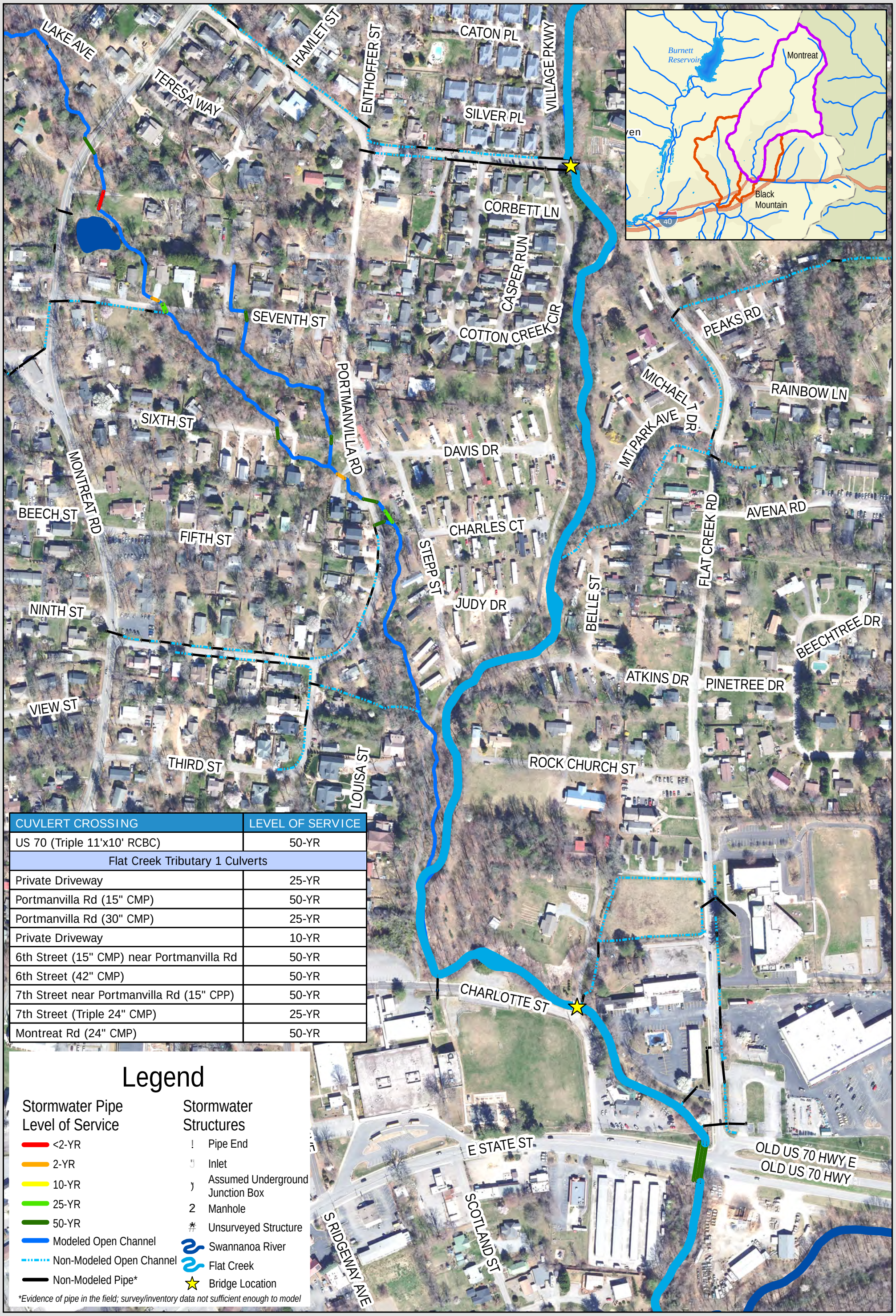


WK DICKSON
AN ARDURRA COMPANY

Figure 5-6: Proposed Stormwater Improvement Projects
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N
W E
S



CUVLERT CROSSING	LEVEL OF SERVICE
US 70 (Triple 11'x10' RCBC)	50-YR
Flat Creek Tributary 1 Culverts	
Private Driveway	25-YR
Portmanvilla Rd (15" CMP)	50-YR
Portmanvilla Rd (30" CMP)	25-YR
Private Driveway	10-YR
6th Street (15" CMP) near Portmanvilla Rd	50-YR
6th Street (42" CMP)	50-YR
7th Street near Portmanvilla Rd (15" CPP)	50-YR
7th Street (Triple 24" CMP)	25-YR
Montreat Rd (24" CMP)	50-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River
- Flat Creek
- Bridge Location

Evidence of pipe in the field; survey/inventory data not sufficient enough to model

WK DICKSON
AN ARDURRA COMPANY

Figure 5-7: Proposed Conditions Level of Service
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 125 250 Feet
1 in = 250 ft

5.3. Flat Creek Watershed

Proposed improvements focused on the known flooding concerns located along Flat Creek Tributary 1 from Portmanvilla Rd upstream to Montreat Rd. Except for the NC DOT large RCBC culvert at US 70, the primary stream crossings along Flat Creek within the Town are bridges. As previously noted, these were modeled using FEMA data. Bridge improvements were not included as part of the SWMP.

Proposed improvements along Flat Creek Tributary 1 are shown in Figure 5-6 and the proposed level of service is provided in Figure 5-7. The proposed LOS for key roadway crossings is noted in Table 5.4.

TABLE 5.4: FLAT CREEK PRIMARY SYSTEM - PROPOSED LEVEL OF SERVICE

ROADWAY CROSSING	PROPOSED PIPE	EXISTING SYSTEM LEVEL OF SERVICE	PROPOSED SYSTEM LEVEL OF SERVICE
Montreat Rd (NC 9)	42" RCP	2-YR	50-YR
Seventh St	Triple 22.5" x 36.25" Arch (30" Eq)	2-YR	25-YR
Seventh St (west of Portmanvilla Rd)	22.5" x 36.25" Arch (30" Eq)	< 2-YR	50-YR
Sixth St	Twin 26.63" x 43.75" Arch (36" Eq)	10-YR	50-YR
Sixth St (west of Portmanvilla Rd)	Twin 22.5" x 36.25" Arch (30" Eq)	< 2-YR	50-YR
Portmanvilla Rd (existing 30" CMP)	Twin 31.31" x 51.13" Arch (42" Eq)	2-YR	50-YR
Portmanvilla Rd (existing 15" CMP)	Twin 22.5" x 36.25" Arch (30" Eq)	< 2-YR	50-YR
US 70 (E. State St)	NA	50-YR	50-YR

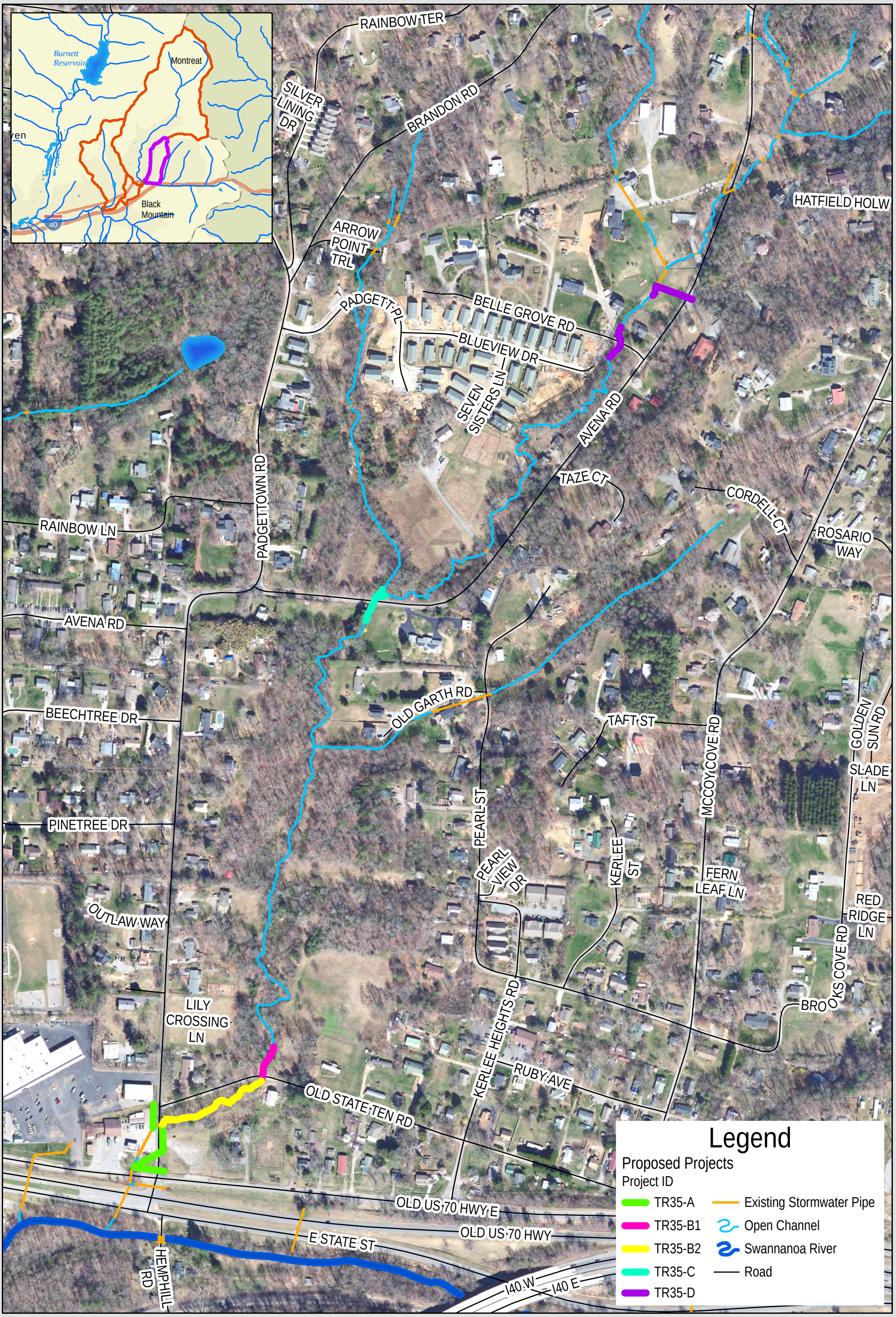
5.4. Tributary 35 / Avena Road Watershed

Tributary 35 of the Swannanoa River is located on the eastern edge of the Town. Historical flooding has been noted along Old State 10 Rd and Padegettown Rd. New development is underway near Bellgrove Rd and Avena Rd in the upper part of the watershed. The primary system consists of open channel and culverts. Infrastructure improvements focused on providing the Town's desired level of service along main roadways, allowing for emergency vehicle access.

Proposed projects are shown in Figure 5-8 and the resulting proposed LOS is provided in Figure 5-9. Proposed LOS for the primary system crossings are also noted below in Table 5.5. It should be noted that the existing conditions around Padgettown Road and Old US 70 East limit the amount of flood reduction achievable in this area.

TABLE 5.5: TRIBUTARY 35 PRIMARY SYSTEM - PROPOSED LEVEL OF SERVICE

ROADWAY CROSSING	PROPOSED PIPE	EXISTING SYSTEM LEVEL OF SERVICE	PROPOSED SYSTEM LEVEL OF SERVICE
Avena Rd (near Bellgrove Rd)	30" RCP	2-YR	50-YR
Bellgrove Rd	Twin 48" RCP	2-YR	50-YR
Avena Rd	Twin 48" RCP	10-YR	25-YR
Old State 10 Rd	Twin 4' x 6' RCBC	2-YR	25-YR
Padgettown Rd (north of Old US 70 E) New Bypass System	Twin 60" RCP	< 2-YR	10-YR
Old US 70 East	6' x 10' RCBC	25-YR	25-YR
US 70 (E. State St)	6' x 7' RCBC	50-YR	50-YR

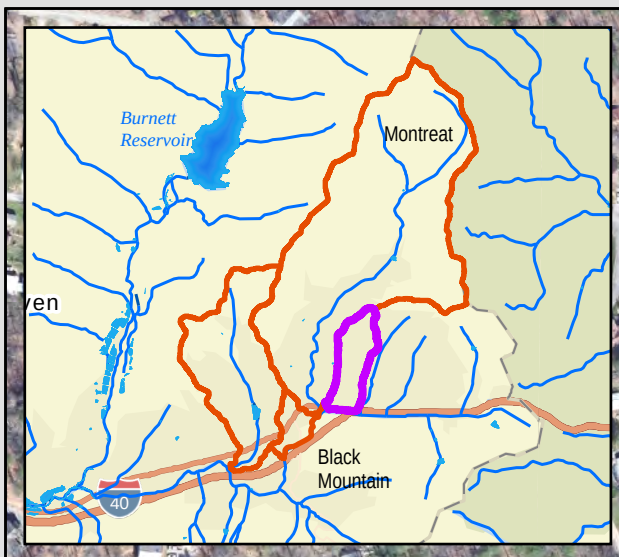


WK DICKSON
AN ARDURRA COMPANY

Figure 5-8: Proposed Stormwater Improvement Projects
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N
W E
S





CULVERT CROSSING	LEVEL OF SERVICE
US-70 (6'x7' RCBC)	100-YR
Old US-70 (6' x10' RCBC)	50-YR
Padgettown Rd (15" CMP)	50-YR
Parking Lot (Twin 36" CMP)	10-YR
Parking Lot (12" CMP)	100-YR
Padgettown Rd (Twin 36" CMP)	10-YR
Unimproved property	10-YR
Padgettown Rd (24" CMP)	25-YR
Old State Ten Rd (Twin 36" CPP)	25-YR
Avena Rd (48" CMP)	25-YR
Padgett Place (Twin 36" CPP)	100-YR
Belle Grove Rd (Twin 36" CMP)	50-YR
Avena Rd (24" CMP+18" CMP)	50-YR
Avena Rd (48" CMP)	100-YR

Legend

Stormwater Pipe Level of Service

- <2-YR
- 2-YR
- 10-YR
- 25-YR
- 50-YR
- Modeled Open Channel
- Non-Modeled Open Channel
- Non-Modeled Pipe*

Stormwater Structures

- Pipe End
- Inlet
- Assumed Underground Junction Box
- Manhole
- Unsurveyed Structure
- Swannanoa River

*Evidence of pipe in the field; survey/inventory data not sufficient enough to model

LOS results at US-70 include the use of the depression area between Old US-70 and US70 as a storage area.

WK DICKSON
AN ARDURRA COMPANY

Figure 5-9: Proposed Conditions Level of Service
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N W E S

5.5. Intense Storm Analysis

As noted in Section 3.5, the 2-yr and 5-yr, 6-hr storm events were modeled to simulate high-intensity rainfall events for the purpose of developing projects more resilient to climate change. These storm events were also modeled with the proposed stormwater improvement projects for each watershed. The modeling results indicate that the proposed capital projects would provide carrying capacity to prevent roadway overtopping during an intense storm event.

6. ANTICIPATED PERMITTING

The proposed improvements described in Sections 5 and 7 may require local, State, and/or Federal permits or approvals prior to the onset of construction. Based on the types of projects identified within the Town, permits or approvals may be required for any of the following reasons:

- Stream, riparian buffer, and/or wetland impacts;
- FEMA floodway and floodplain impacts;
- Land disturbance; and
- Potable water and sewer line adjustments.

The permitting matrix in Table 6-1 shows the different types of permits that are anticipated for each of the proposed projects. Riparian buffer requirements may apply to projects located within fifty (50) feet of a streambank. Coordination with the North Carolina Department of Environmental Quality (NCDEQ) is recommended to determine if buffer impacts are exempt or allowable with mitigation.

The types of 404/401 permits are described below and may vary based on the length of stream impacts and/or acreage of wetland impacts. Wetlands will need to be delineated to determine the acreage of impacts. Permit requirements for a given project may change based on the final design and any changes to the existing regulations. The appropriate permitting agencies should be contacted during the design process to determine if permits will be required.

6.1. NCDEQ Division of Water Resources 401 Water Quality Certification and USACE 404

Proposed improvements must adhere to the requirements set forth in Section 401 and 404 of the Clean Water Act. Required permitting can range from activities that are pre-authorized to those requiring pre-construction notification (PCN) for a Nationwide Permit (NWP) to those requiring an Individual Permit (IP). Individual permits may be required for projects with stream impacts greater than 300 feet and wetland impacts greater than 0.5 acres. It is anticipated that NWP #3 (Maintenance) and NWP #13 (Bank Stabilization) may be required to support the projects that include work within channels that are claimed jurisdictional by the US Army Corps of Engineers (USACE). More detailed explanations of the types of 404 permits are provided below.

NWP#3 – Maintenance

This permit authorizes the repair, replacement, or rehabilitation of any previously permitted or currently serviceable structure. A PCN is not required for minor deviations in the structure's configuration or filled area that occur because of changes in materials, construction techniques, or safety standards necessary to make repair or replacement, provided environmental impacts are minimal. A PCN to the USACE is required if a significant amount of sediment is excavated/filled within the channel. The NCDEQ Division of Water Resources (DWR) does not typically require a PCN for NWP #3 but usually receives one as a courtesy. A general water quality certification (WQC) is conditionally authorized under a NWP #3. If an activity does not meet the general WQC conditions, an individual WQC from DWR will be required.

Other provisions imposed by the State of North Carolina require that culvert inverts must be buried a minimum of 1-foot below the streambed for culverts greater than or equal to 48 inches in diameter to allow low flow passage of water and aquatic life. Culverts less than 48 inches in diameter should be buried to a depth of 20% or greater of the culvert's diameter.

NWP #13 – Bank Stabilization

This permit authorizes the reshaping of channel banks or bank stabilization activities that are necessary for erosion prevention. The placement of material is prohibited in any special aquatic site in a manner that may impede surface water flow into or out of a wetland area, or in a manner that will be eroded during normal or high flows. The activity must be part of a single and complete project and cannot exceed one cubic yard per running foot placed below the high-water mark line. If stabilization activities exceed 500 linear feet, then a PCN is required for both the USACE and DWR. DWR must also be notified and should fill be placed within the streambed. A WQC is conditionally authorized under a NWP #13. If an activity does not meet the general WQC conditions, an individual WQC from DWR will be required.

NWP #27 – Stream and Wetland Restoration Activities

This permit authorizes stream enhancement, stream restoration, and channel relocation for restoration purposes that provide gains in aquatic functions. Stream channelization and the conversion of streams to other aquatic uses such as impoundments or waterfowl habitat are not authorized. A PCN to the USACE is required for any restoration activities occurring on private or public lands. DWR requires a PCN if impacts are proposed for greater than 500 feet of stream bank or if in-stream structures are used.

Impacts proposed to the streams may need evaluation under the State Environmental Policy Act (SEPA). An Environmental Assessment (EA) is required under SEPA if greater than 500 linear feet of perennial stream is disturbed, and stream restoration or enhancement is not performed. Channel disturbances are defined as activities that remove or degrade stream uses such as channelization, culvert placement, riprap, and other hard structures. A list of some other conditions that should be followed under regulations provided by the USACE and DWR include the following:

- Soil erosion and sediment controls must be used and maintained in effective operating conditions during construction, and all exposed soil and fills should be stabilized at the earliest possible date.
- No activity is authorized under any NWP that is likely to jeopardize the existence of a threatened or endangered species, or which will destroy or adversely modify the habitat of such species.
- No activity is authorized that may affect historic properties listed or eligible for listing in the National Register of Historic Places.
- More than one NWP used for a single and complete project is prohibited.
- Impacts to the waters of the US should be avoided and minimized to the greatest extent practicable.
- Mitigation in all its forms will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
- Hardening techniques should be avoided and minimized to the greatest practicable extent.

6.2. Individual Permits

Individual permits are required when stream or wetland impacts do not meet the conditions of a nationwide permit. Permit applications may be reviewed by multiple agencies including but not limited to USACE, DWR, EPA, State Historic Preservation Office (SHPO), North Carolina Wildlife Resources Commission (NCWRC), and United States Fish and Wildlife Service (USFWS). The application is also made available for public review. There is no defined timeline for review of the application for an IP; therefore, the permitting process for an IP is typically significantly longer than the review time for a NWP. Typically, 404 and 401 Individual Permits are applied for jointly and their review is concurrent. There are no anticipated individual permit requirements for proposed projects as part of the Town's Proposed Capital Improvement Plan.

6.3. Federal Emergency Management Agency (FEMA)

Streams with a drainage area greater than one (1) square mile are typically modelled and mapped by FEMA for flood insurance purposes. The 100-year floodway and floodplain have been mapped for the watersheds included in the Town's SWMP (Tomahawk Branch, Flat Creek, Tributary 35 of the Swannanoa River, and the Swannanoa River). Any proposed projects that will include grading within a FEMA defined floodway will require a Conditional Letter of Map Revision (CLOMR) submitted to FEMA for pre-approval purposes and a Letter of Map Revision (LOMR) upon completion of construction.

6.4. Erosion and Sedimentation Control

The NCDEQ Division of Energy, Mineral, and Land Resources (DEMLR) is another agency that requires notification before proposed activities are constructed. DEMLR requires that an erosion and sedimentation control plan be submitted to the for approval before the start of construction for any disturbance greater than one (1) acre.

TABLE 6.1: ANTICIPATED PERMITTING MATRIX FOR PROPOSED PROJECTS

PROPOSED STORMWATER IMPROVEMENT PROJECT		FEMA	NCDEQ /NPDES	404/401 (NWP)	404/401 (IP)	NC DOT	Railroad
DOWNTOWN SYSTEM							
DT-SA-A	Sutton Ave	x		x		x	x
DT-SA-B	Broadway St			x		x	
DT-SA-C	Cherry St					x	
DT-SA-D1	Police Station/Post Office Phase I	x		x			
DT-SA-D2	Police Station/Post Office Phase II					x	
DT-SA-E	West St / Honeycutt St					x	
DT-SA-F	Montreat Rd / Midland Ave					x	
DT-SA-G	S. Ridgeway Ave	x		x			
DT-BMR-A	Black Mountain Ave Phase I			x			
DT-BMR-B	Black Mountain Ave Phase II						x
DT-TE-A	Terry Estate Dr Phase I	x		x			
DT-TE-B	Terry Estate Dr Phase II						
DT-NC9-A	NC 9	x		x		x	
TOMAHAWK BRANCH PRIMARY SYSTEM							
TB-A1	Laurel Circle	x		x			
TB-A2	Golf Course Floodplain Benching	x		x			
TB-B	Swannanoa Ave	x		x			
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM							
FC-TRIB1-A	Portmanvilla Rd	x		x			
FC-TRIB1-B	6th St	x		x			
FC-TRIB1-C	7th St	x		x			
FC-TRIB1-D	Montreat Rd	x		x		x	
TRIBUTARY 35 / AVENA ROAD PRIMARY SYSTEM							
TR35-A	Padgettown Rd	x		x		x	
TR35-B1	Old State 10 Rd	x		x			
TR35-B2	Tributary 35 Floodplain Benching	x		x			
TR35-C	Avena Rd	x		x		x	
TR35-D	Bellgrove Rd / Avena Rd			x		x	

7. PRIORITIZATION AND RECOMMENDATIONS

Infrastructure capital projects are proposed in areas where historic flooding has been reported, where infrastructure has been determined to be high risk, and in general where the desired level of service for stormwater conveyance is not provided.

7.1. Infrastructure Project Prioritization

After completing the assessments and modeling documented in this Report, conceptual solutions were developed to address stormwater quantity and protecting and restoring natural stream corridors where possible. The recommended solutions begin with projects that reduce flooding, which was identified as a priority for the Town.

The initial conceptual analysis of each proposed project was evaluated through a prioritization process based on utility conflicts, level of street flooding, property ownership, effect of improvements, and cost effectiveness. A summary of the prioritization criteria used in the initial evaluation is noted below and documented in Table 7.1.

1. **Utility Conflicts**: The number and type of sanitary sewer conflicts and/or stream crossings within the proposed project footprint.
2. **Street Flooding:** Improvements to help meet the LOS across major and minor public streets.
3. **Public or Private Land:** Location of the proposed project and whether it is situated on Town, NCDOT, or privately-owned land.
4. **Effect of Improvements**: Flood reduction risk to a property by 0.5’ or greater and the number of properties experiencing the flood reduction risk.
5. **Cost Effectiveness**: Ratio of total project cost to project benefits.

Bonus points were awarded for projects that may be eligible for grant funding and stormwater systems with medium-high and high criticality scores.

TABLE 7.1. INFRASTRUCTURE PRIORITIZATION CRITERIA

CATEGORY	RATING	DESCRIPTION
Utility Conflicts	3	Minimal Utility Conflicts
	2	Stream Crossing, Water Main Conflict, and/or Minor Sewer Conflict
	1	Potential Re-Alignment of Sewer
Street Flooding	4	Improvements Help Meet LOS for Principal Arterial and Major Collector
	3	Improvements Help Meet LOS for Minor Arterial and Other Public Streets
	2	Project Improves Los for Public Roads at Primary System Crossings, but Desired Los Not Met
	1	LOS Improved for Secondary Systems, but Desired Los Not Met
Publicly Or Privately-Owned Land	4	Town
	3	County
	2	Public and Private
	1	NCDOT
	1	1 Private Landowner
	0	2+ Private Landowners
Effects Of Improvements*	4	Reduces Flood Risk > 5 Properties
	3	Reduces Flood Risk At 2-5 Properties and Potential Structural Flooding
	2	Reduces Flood Risk At 2-5 Properties
	1	Reduces Flood Risk < 2 Properties
Cost Effectiveness	4	Cost/Benefit Ratio < $20,000
	3	Cost/Benefit Ratio: $20,000 - $30,000
	2	Cost/Benefit Ratio: $30,001 - $40,000
	1	Cost/Benefit Ratio: $40,001 - $50,000
	0	Cost/Benefit Ratio > $50,000
Grant Bonus Points	1	Project May Be Eligible for 1 Grant
	2	Project May Be Eligible for 2 Grants
	3	Project May Be Eligible for 3 or More Grants
Criticality Bonus Points	1	Project Aligns with Infrastructure in the Medium Category
	2	Project Aligns with Infrastructure in the Medium-High and High Categories

**Flood risk defined as reduction of 0.5' or greater*

Weighting factors for infrastructure improvement projects placed emphasis on the primary goal of reducing street flooding. The weighting factors, which standardize the final project scores on a 100-point scale, are shown in Table 7.2.

TABLE 7.2. INFRASTRUCTURE WEIGHTING FACTORS

CRITERIA	WEIGHTING FACTOR
Utility Conflicts	4
Street Flooding	8
Publicly Or Privately-Owned Land	4
Effect Of Improvements	5
Cost Effectiveness	5

7.2. Planning Level Cost Estimates

The opinions on project costs have been prepared to assist Town staff in making planning level decisions and prioritizing improvements. The costs presented herein are not final design cost estimates. The preliminary project cost estimates were developed using recent bid tabulations from other communities within North Carolina. They include easement acquisitions, environmental permitting, surveying, engineering, legal, and administrative costs.

The cost estimates are planning-level costs based on current information. Costs are subject to change based on local factors, materials, delivery, construction, and other influences. A detailed breakdown of estimated capital and project costs per proposed stormwater improvement project is in Appendix E.

7.3. Project Recommendations

The recommended projects are focused on improving the Town's stormwater conveyance system. System upgrades to replace aging infrastructure, improve carrying capacity, and reduce flooding are presented herein. The Town should continue to promote nature-based solutions and green infrastructure in redevelopment and future development projects to reduce stormwater runoff.

Table 7-3, on the next page shows the total prioritization score of each proposed stormwater capital improvement project. Opinions of total project cost are also provided in Table 7-3. The planning costs presented are based on the infrastructure necessary to meet the Town's 50-year desired level of service where feasible.

Projects were also evaluated based on the prioritization criteria noted in Section 7.1. As noted in Table 7-3, there are several instances where a phase II or upstream project has a higher priority score. However, the downstream project should be constructed first to provide the capacity for implementing stormwater improvements upstream.

The Town should re-visit the prioritization lists annually to determine if the priorities should change. Project sheets and detailed cost estimates for each proposed project are provided in Appendix E.

TABLE 7.3. PROPOSED CIP PLANNING COST AND PRIORITIZATION SUMMARY

PROPOSED STORMWATER IMPROVEMENT PROJECT		PROJECT PLANNING LEVEL OPINION OF COST	PRIORITIZATION SCORE
DOWNTOWN SYSTEM			
DT-SA-A	Sutton Ave	$ 2,250,000	88
DT-SA-B1	Broadway St Phase I	$ 2,029,000	83
DT-SA-B2	Broadway St Phase II	$ 1,292,000	88
DT-SA-C1	Cherry St Phase I	$ 1,510,000	75
DT-SA-C2	Cherry St Phase II	$ 1,021,000	88
DT-SA-D1	Police Station/Post Office Phase I	$ 4,303,000	71
DT-SA-D2	Police Station/Post Office Phase II	$ 1,932,000	87
DT-SA-D3	Police Station/Post Office Phase III	$ 923,000	81
DT-SA-E1	West St to Montreat Rd	$ 1,228,000	76
DT-SA-E2	Montreat Rd at Laurel Circle Dr	$ 797,000	49
DT-SA-F	Midland Ave	$ 1,121,000	82
DT-SA-G	S. Ridgeway Ave	$ 827,000	76
DT-BMA-A	Black Mountain Ave Phase I	$ 1,880,000	82
DT-BMA-B	Black Mountain Ave Phase II	$ 1,308,000	88
DT-TE-A	Terry Estate Dr Phase I	$ 1,963,000	61
DT-TE-B	Terry Estate Dr Phase II	$ 1,380,000	78
DT-NC9-A	NC 9	$ 1,335,000	68
TOMAHAWK BRANCH PRIMARY SYSTEM			
TB-A1	Laurel Circle Culvert Replacement	$ 760,000	58
TB-A2	Golf Course Floodplain Benching	$ 690,000	53
TB-B	Swannanoa Ave Culvert	$ 430,000	77
FLAT CREEK PRIMARY SYSTEM			
FC-TRIB1-A	Portmanvilla Rd	$ 900,000	87
FC-TRIB1-B	6th St	$ 633,000	78
FC-TRIB1-C	7th St	$ 405,000	87
FC-TRIB1-D	Montreat Rd	$ 546,000	88
TRIBUTARY 35 PRIMARY SYSTEM			
TR35-A	Padgettown Rd	$ 1,422,000	62
TR35-B1	Old State 10 Rd	$ 608,000	77
TR35-B2	Tributary 35 Floodplain Benching	$ 425,000	66
TR35-C	Avena Rd	$ 438,000	85
TR35-D	Bellgrove Rd / Avena Rd	$ 824,000	83

8. FUNDING OPPORTUNITIES

There have been substantial changes in the North Carolina stormwater funding landscape over the last five (5) years that have enabled new capital investment in stormwater infrastructure by communities large and small. Available funding, and thus competitiveness for each grant or loan program changes year-to-year as priorities fluctuate at the state and federal level. Keeping up to date on these changes and leveraging one funding source to gain access to another are both crucial elements to developing a successful funding strategy for a given project.

As the Town navigates the current and future opportunities, the key will be to evaluate each funding program, the selection criteria, application deadlines, and funding timelines to estimate compatibility with the Town's project goals and timeline.

Multiple federal and state agencies provide funding opportunities for municipalities and organizations to implement watershed management projects. As the Town of Black Mountain explores opportunities to fully fund or partially fund this Capital Improvement Plan, additional investigation will be needed to determine complete project eligibility and competitiveness for each funding program identified.

The financial resource summary provided below is informational and are current grant programs available at the time this SWMP was prepared. A summary of key points for each one is provided in Table 10.1.

8.1. Clean Water State Revolving Fund (CWSRF)

Administered through the NCDEQ Division of Water Infrastructure, the Clean Water State Revolving Fund (CWSRF) program funds construction projects related to wastewater treatment, wastewater collection, reclaimed water, stormwater control measures (SCMs), stream restoration, and energy efficient projects. These projects may be funded by low-interest loans or Principal Forgiveness (PF) and any local government can apply for this funding. Additional information can be found here: CWSRF | NCDEQ

8.2. Water Resources Development Grant – State and Local Projects

Through the NCDEQ Division of Water Resources, the Water Resources Development Grant (WRDG) provided funding to local governments to support technical assistance (planning, engineering, and design) and implementation of water-related projects. The seven eligible projects include: general navigation, recreational navigation, water management, stream restoration, water-based recreation, the NRCS Environmental Quality Incentives Program (EQIP) (stream restoration), and feasibility/engineering studies. Relevant to the Town of Black Mountain, the non-navigation/coastal projects are referred to as State and Local Projects (S&L) and will fund up to a 50% cost-share. The maximum award for constructions projects is $200,000 and the maximum award for feasibility/engineering studies is $50,000. The applicant must be a local government entity. Further information on can be found here: WRDG | NCDEQ-DWR

TABLE 8.1. FUNDING OPPORTUNITIES

FUNDING AGENCY	PROGRAM	POTENTIAL PROJECT TYPES	TENTATIVE APPLICATION DEADLINE
NCDEQ-DWI	Clean Water State Revolving Fund (CWSRF)	Stormwater SCMs, Stream Restoration	March/April & Sept. 2025 Cycles
NCDEQ-DWR	Water Resources Development Grant (WRDG)	Stormwater SCMs, Watershed Planning, Engineering Study, Stream/Wetland/Floodplain Restoration, Bank Stabilization, Dam Removal, Trails/River Access, Land Acquisition, NRCS EQIP Projects	June 30, 2025 & Dec. 31, 2025
NCDEQ-DWR	205(j) WQ Management Planning Grant*	Water Quality Planning, Stormwater Infrastructure Mapping, Stormwater SCMs, Watershed Assessment	Sept 19, 2025
GOLDEN LEAF FOUNDATION	Flood Mitigation Grant	Stormwater Management, Engineering/ Planning, Stormwater System Mapping, Flood Mitigation	Oct. 24. 2024 Dec. 26, 2024 Feb. 20, 2025
NCLWF	NC Land and Water Fund Grants	Stream/Wetland Restoration, Land Acquisition, Innovative Stormwater Management, Planning	March 1, 2025
NCDOJ	Environmental Enhancement Grant (EEG)	Stormwater Management, Stream/Wetland Restoration, Planning, Land Acquisition, Research	LOI: March 1, 2025 Due: April 4, 2025
USDA - NRCS	Emergency Watershed Protection (EWP)	Stream Debris Removal, Stream/Erosion Stabilization, Repair Stormwater Infrastructure/Flood Management Structures, Conservation Practices, Purchase EWP Buyouts	Submit Application With 60 Days of Declared Disaster
NCDA&CS	Streamflow Rehabilitation Assistance Program (StRAP)	Stream Debris Removal, Stream Stabilization, Stream Restoration, Repair to Impoundment Structures	Spring 2025
FEMA	Building Resilient Infrastructure and Communities (BRIC)**	Mitigate Impacts to Infrastructure due to Natural Hazards, Flood Control, Stormwater Infrastructure, Stream Stabilization/Restoration, Capability and Capacity Building Projects	LOI: TBD Sub-App: TBD Final App: TBD
FEMA	Hazard Mitigation Grant Program (HMGP)	Disaster Specific Funding to Support Recovery and Mitigation Efforts	Based On Date of Declared Disaster
FEMA	Flood Mitigation Assistance (FMA)	Floodplain Property Buyouts due to Repetitive Loss, Individual and Localized Flood Reduction Projects, Capability and Capacity Building Projects	LOI: Dec 20, 2024 Sub-App: TBD Final App: TBD

**Grant applicant must be a Council of Government*

***Projects outside of a declared disaster area compete at the national level.*

8.3. Golden Leaf Flood Mitigation Grant

As an annual appropriation from the North Carolina General Assembly, the Golden LEAF Foundation administers the Flood Mitigation Program (FMP) grant that awards funding for flood mitigation projects to local units of government. The program will fund construction of improvements to or the addition of new publicly owned stormwater infrastructure, including natural drainage ways, streams, green infrastructure stormwater control measures (SCMs), flood controls, and grey infrastructure. Improvements must mitigate flooding impacts for the future. Funds can also be used to cover planning or engineering studies related to flood mitigation solutions. The maximum grant award request is $2M, although most projects do not exceed $1M. Applications are reviewed twice a year. There is no financial match requirement. Learn more about the program here: FMP | Golden LEAF

8.4. North Carolina Water and Land Fund

Funded through the NC General Assembly, the North Carolina Water and Land Fund (NCWLF) (formerly known as the Clean Water Management Trust Fund) funds projects focused on conservation, ecological restoration, and water quality improvements throughout the state. Grants are available for Acquisition, Restoration, Innovative Stormwater, and Planning activities. Most appropriate for the Town to consider, the Restoration grant funds stream restoration and stabilization, wetland restoration and creation, dam removal and fish-passage culvert replacement, and other projects that improve surface water quality, including stormwater green infrastructure facilities and removal of infrastructure from floodplains.

Local units of government and non-profit organizations are eligible to apply. While the max funding request is not capped, recent awards have generally ranged from $150,000 to $900,000. The availability of funding varies year to year based on General Assembly priorities. No cost-share is required, however matching funds is a major component of project scoring. For stream projects, NCLWF requires a conservation easement to be established to protect a 50’ wide vegetated riparian buffer on both sides of the stream (100’ in total). To learn more about the Restoration grant program or any of the other NCLWF programs visit this website: NCLWF

8.5. Environmental Enhancement Grant (EEG)

Resulting from a legal settlement between the NC Attorney General and Smithfield Foods, the Environmental Enhancement Grant (EEG) was established to support projects that improve North Carolina’s air, water, and quality. Non-profit, academic, and governmental entities are eligible to apply, and awards generally range from $5,000 to $500,000. Eligible projects include land acquisition, remediation, restoration, planning, education, research, and construction activities. Projects that provide benefits to underserved or overburdened communities and address environmental justice issues. A financial match is not required but is advantageous. More information on scoring criteria and the application process can be found here: EEG | NCDOJ

8.6. Emergency Watershed Protection

The Emergency Watershed Protection (EWP) Program provides emergency federal recovery assistance to communities impacted by natural disasters. The program is administered through the USDA and NRCS and offers technical and financial assistance. In the absence of a federal or state disaster declaration, the NRSC State Conservationist can declare a local watershed emergency to open access to the EWP program.

Eligible projects include stream debris removal, stream bank and land erosion stabilization, repair or replacement of drainage facilities, repair of flood control structures, repair some conservation practices, and purchase EWP Buyouts. Projects must provide protection from future flooding, reduce threats to life and property, and restore hydraulic capacity to the natural environment. The program applicant/sponsor must be a local governmental entity and there is a 25% cost-share required. More detail about the program can be found here: EWP | USDA

8.7. Streamflow Rehabilitation Assistance Program

Under the North Carolina Department of Agriculture and Consumer Services (NCDA&CS), the Streamflow Rehabilitation Assistance Program (StRAP) funds projects that reduce flooding, improve streams through bank stabilization, stream debris removal, and stream restoration activities, and protect or improve drainage infrastructure (e.g., principal spillway, emergency spillway, and impoundment maintenance). Local governmental entities and non-profit organizations are eligible to apply, and awards can range from <$100,000 to $1M. More information can be found here: StRAP | NCDACS

8.8. Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency (FEMA) provides multiple avenues for financial assistance, some of which are managed by the NC Department of Public Safety Division of Emergency Management. Additional information on these programs can be found at these links: Hazard Mitigation Assistance Grants | FEMA.gov and North Carolina Department of Public Safety's Division of Emergency Management.

Building Resilient Infrastructure and Communities (BRIC)

FEMA has several hazard mitigation programs that are particularly well-suited for stormwater projects. The newest of these programs is a retooling of the former Pre-Disaster Mitigation Program (PDM), known as the Building Resilient Infrastructure and Communities (BRIC) grant program. It represents a significant shift in the way FEMA conducts pre-disaster mitigation funding. It is a standard Stafford Act program with a 25% local match required. Applications are accepted in the fall of each year through the state emergency management agency, which is NCDPS. This program focuses on projects that have multi-layer benefits for the community and those that employ nature-based solutions. These can include flood control, water, sewer, or infrastructure construction projects or plans and studies to help develop future projects called Capability & Capacity Building (C&CB) proposals. The request amount is capped at $50M.

Eligible project types include shovel-ready (construction) projects, phased projects, and C&CB projects (planning and design). C&CB planning projects will be selected at the state level and awarded sooner than construction projects that will be scored and compete at the national level. It is important to note that applications are conducted through NCDPS, and that FEMA requires a minimum Benefit Cost Analysis (BCA) score for all non-planning projects. Currently, the BRIC program has not received funding, but it could be a source if the program is reinstated. More information can be found here: BRIC | NCDPS.

FEMA Hazard Mitigation Grant (HMGP)

FEMA's Hazard Mitigation Grant Program (HMGP) also funds stormwater projects that are designed to reduce flooding impacts. It is different from the BRIC and HMA programs in that it is not pre-disaster funding. HMGP funds are made available to areas that were covered under a federal disaster declaration. The need for the project submitted does not have to be a result of the disaster but must align with the

area's FEMA-approved Hazard Mitigation Plan. Pre-applications are normally due to NCDPS within 6 months after the declaration. Read further about the program here: HMGP | NCDPS

Flood Mitigation Assistance (Floodplain Buyouts)

Another program under the FEMA mitigation umbrella is the Flood Mitigation Assistance (FMA) grant program. The focus of this program is to fund projects that reduce or eliminate repetitive flood damage to buildings or structures insured by the National Flood Insurance Program (NFIP). The primary purpose of the FMA is to support individual floodplain property buyouts in NFIP communities. The program can also fund C&CB activities and localized flood rick reduction projects. As with the BRIC program, FEMA prioritizes projects that integrate nature-based solutions. Applications for this program follow the same process and general timeframe as BRIC program. Learn more about this program here: BRIC | NCDPS

9. REFERENCES

1. NOAA National Climate Data for Hurricane Helene: Daily Summaries Station Details: ASHEVILLE, NC US, GHCND:USW00013872 | Climate Data Online (CDO) | National Climatic Data Center (NCDC)
2. Town of Black Mountain Stormwater Master Plan Update (2022), Wildlands Engineering.
3. FEMA Models downloaded from the North Carolina Flood Risk Information System (FRIS): NCEM FRIS
4. NOAA National Weather Service ATLAS 14: https://hdsc.nws.noaa.gov/pfds/
5. Urban Hydrology for Small Watersheds, United States Department of Agriculture, Natural Resources Conservation Service, Conservation Engineering Division, Technical Release 55, June 1986.
6. USACE HEC-HMS Land Cover Curve Numbers: Curve Numbers | HEC-HMS | USACE
7. Environmental Protection Agency: Storm Water Management Model (SWMM) | US EPA
8. References for Anticipated Permits and Funding Opportunities are provided within Sections 6 and 8, respectively.

WK DICKSON

AN ARDURRA COMPANY



TOWN OF BLACK MOUNTAIN

BLACK MOUNTAIN STORMWATER MASTER PLAN

Appendix | December 2025









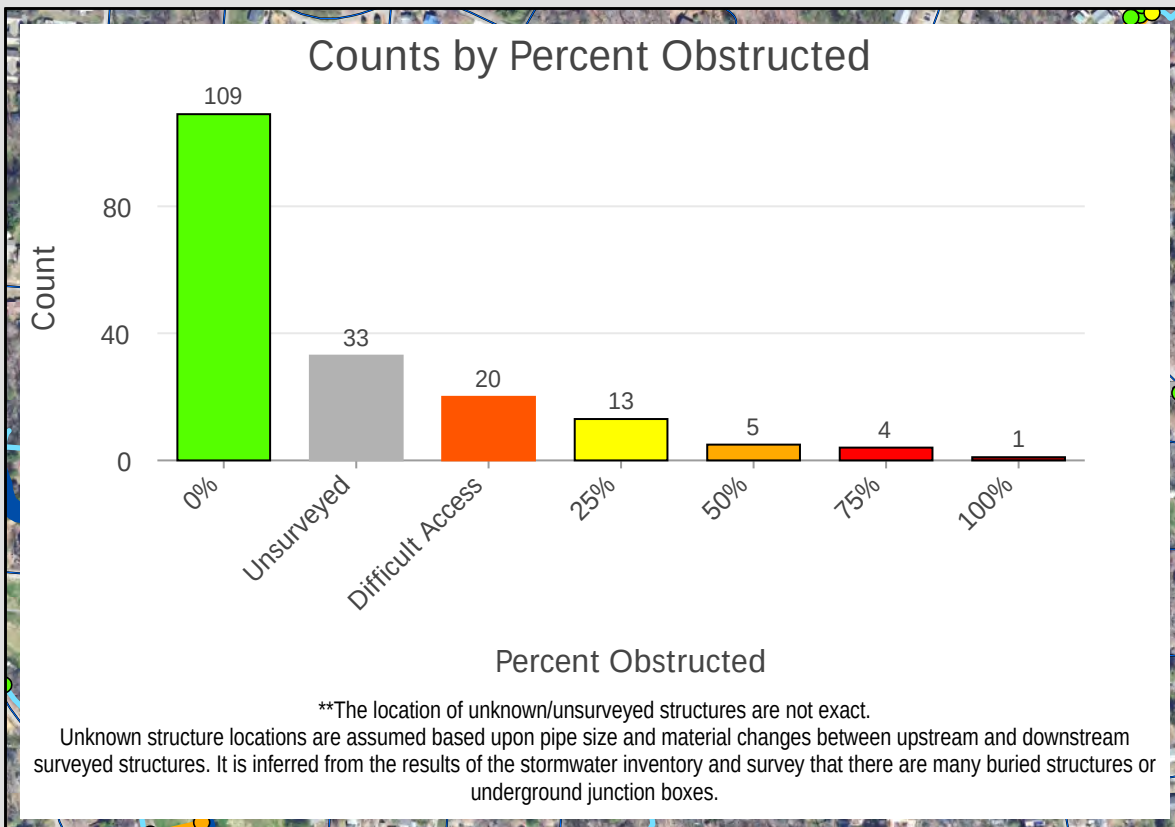
APPENDIX A
MAPS

Figure A-1 Downtown Obstructed Structures

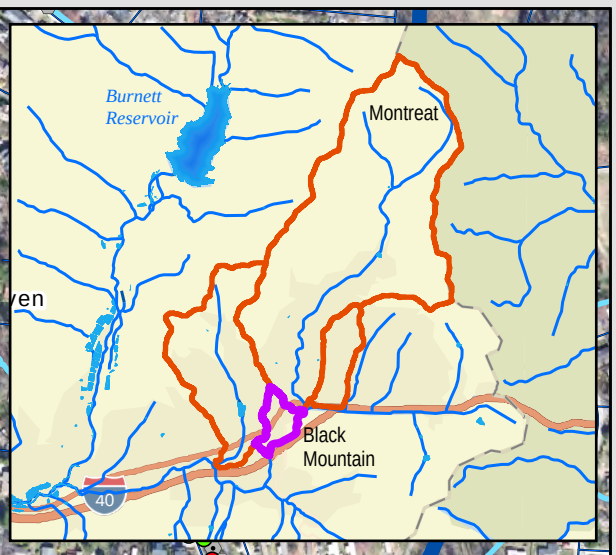
Figure A-2 Tomahawk Branch Obstructed Structures

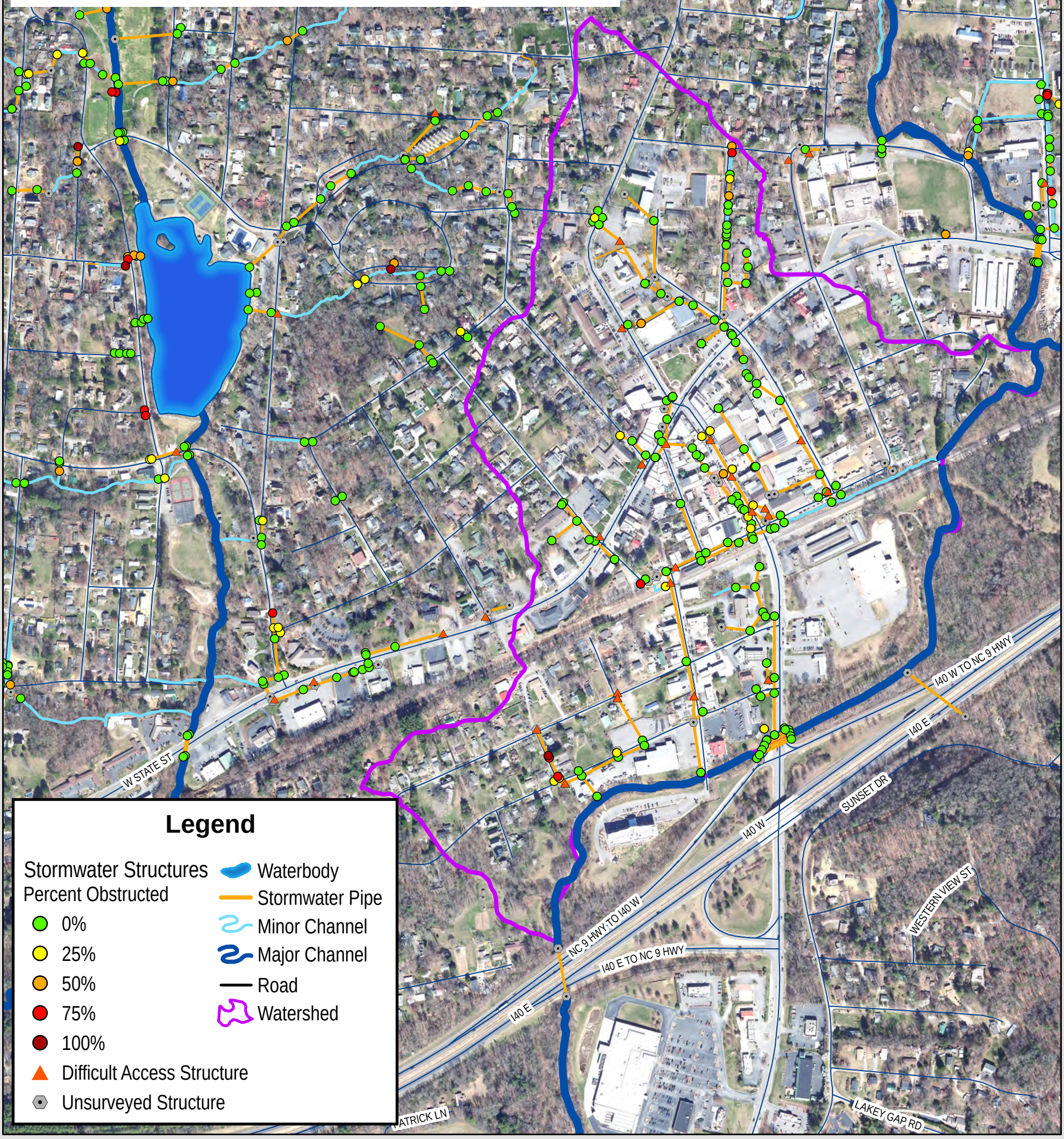
Figure A-3 Flat Creek Obstructed Structures

Figure A-4 Tributary 35 / Avena Rd Obstructed Structures



**The location of unknown/unsurveyed structures are not exact.
Unknown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.





Legend

Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- Difficult Access Structure
- Unsurveyed Structure

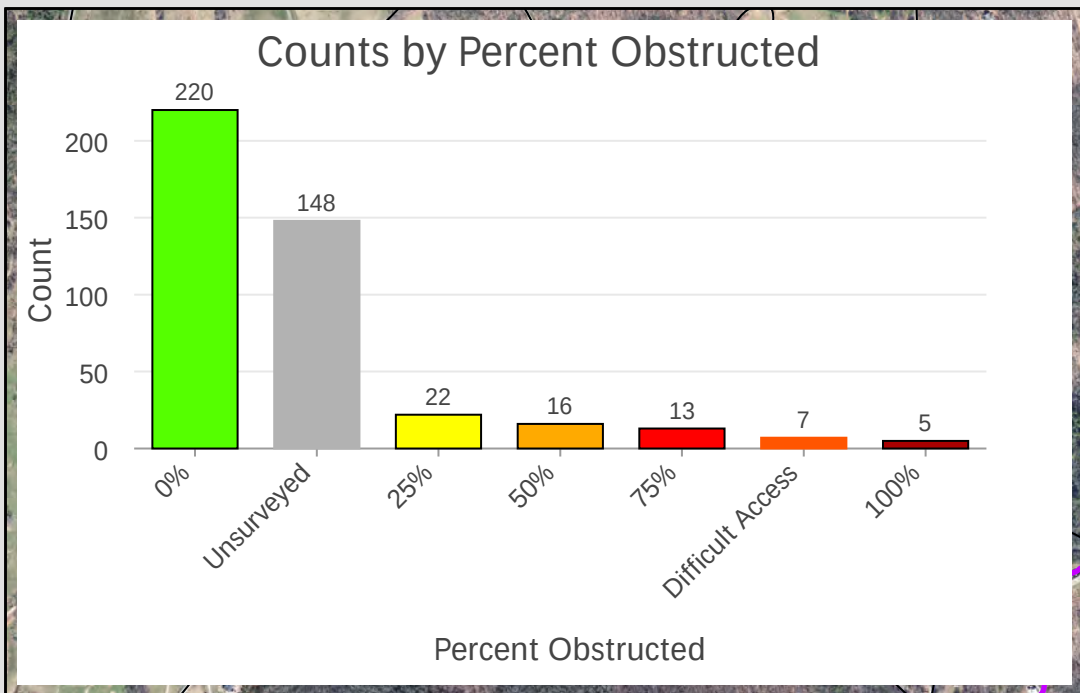
- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed

WK DICKSON
AN ARDURRA COMPANY

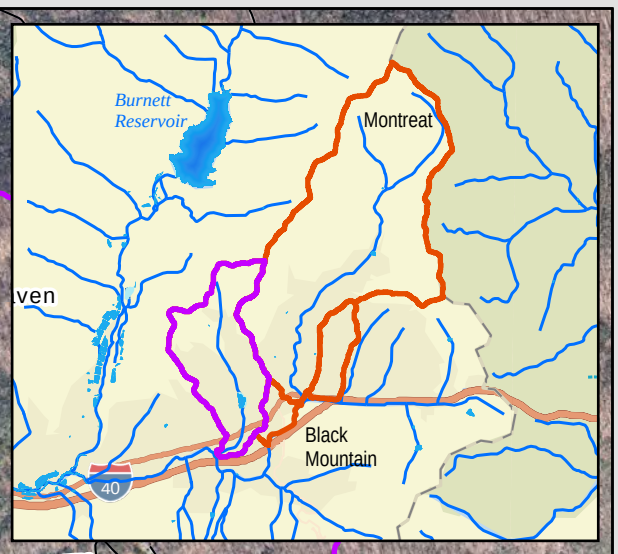
Figure A-1: Obstructed & Difficult Access Stormwater Structures
DOWNTOWN DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 250 500 Feet
1 in = 500 ft

N W E S



**The location of unknown/unsurveyed structures are not exact.
Unkown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.



SO HI TRL
HI VIEW DR
SELDOM HOME DR
TEMPLE RD
PINNACLE DR
CHAPEL RD
ALLEN MOUNTAIN DR
NORTH FORK RD
FAIRWAY DR
HILLTOP RD
VIEW ST
WHISPERING WIND DR
REED RD
MOUNT ALLEN HTS
VALLEY RIDGE LN
FRANCES AVE
CARVER AVE
W STATE ST
NC 9 HWY; TO I40 W
VETERANS PARK DR
I40 W
I40 E
BRIERBROOK RD
PATRICK LN
WHITE PINE DR

Legend

Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- Difficult Access Structure
- Unsurveyed Structure

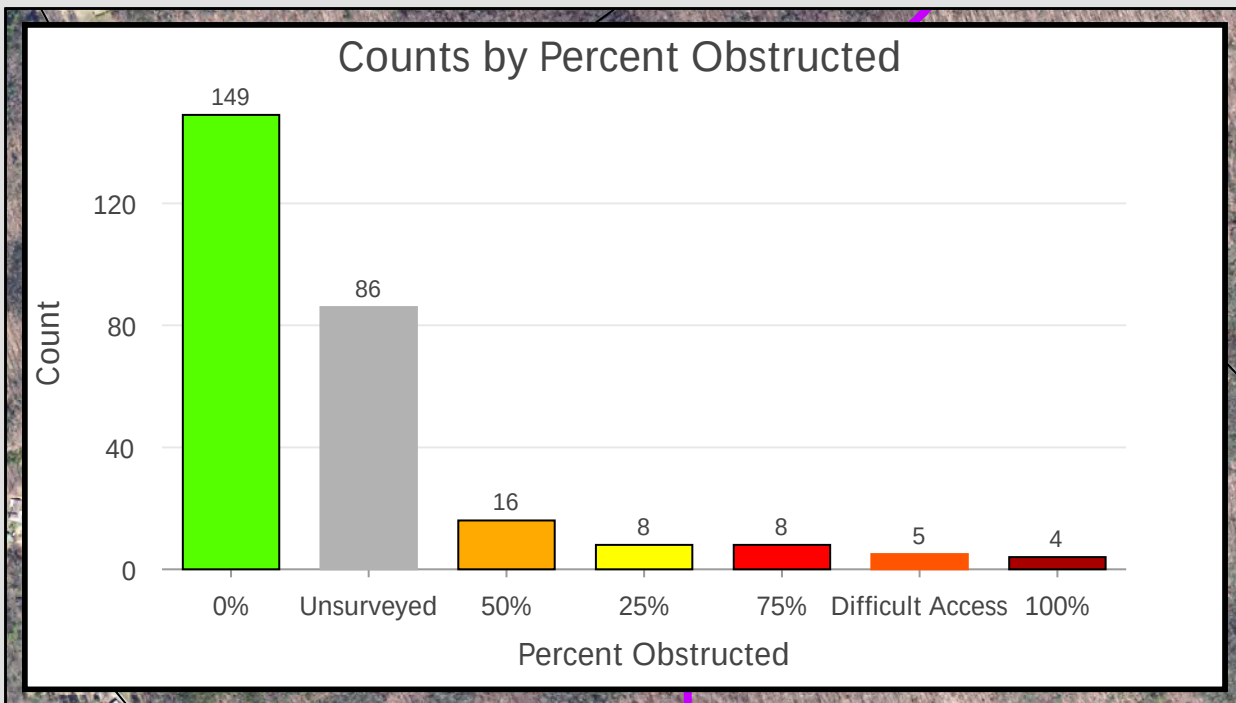
- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed

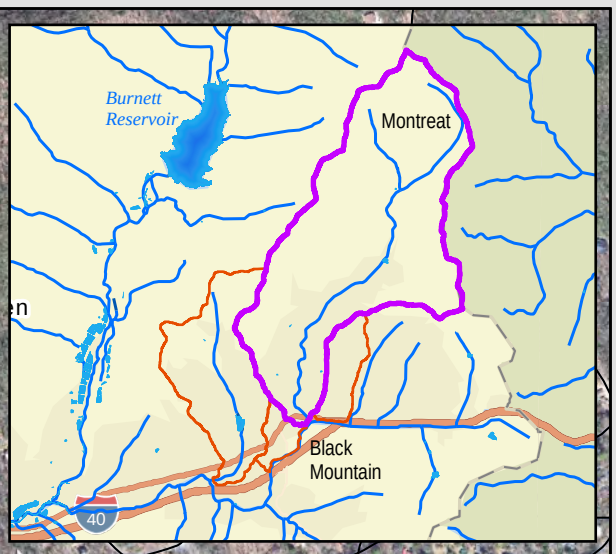
WK DICKSON
AN ARDURRA COMPANY

Figure A-2: Obstructed & Difficult Access Stormwater Structures
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 500 1,000 Feet
1 in = 1,000 ft

N W E S





**The location of unknown/unsurveyed structures are not exact.
Unknown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.

Legend

Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- Difficult Access Structure
- Unsurveyed Structure

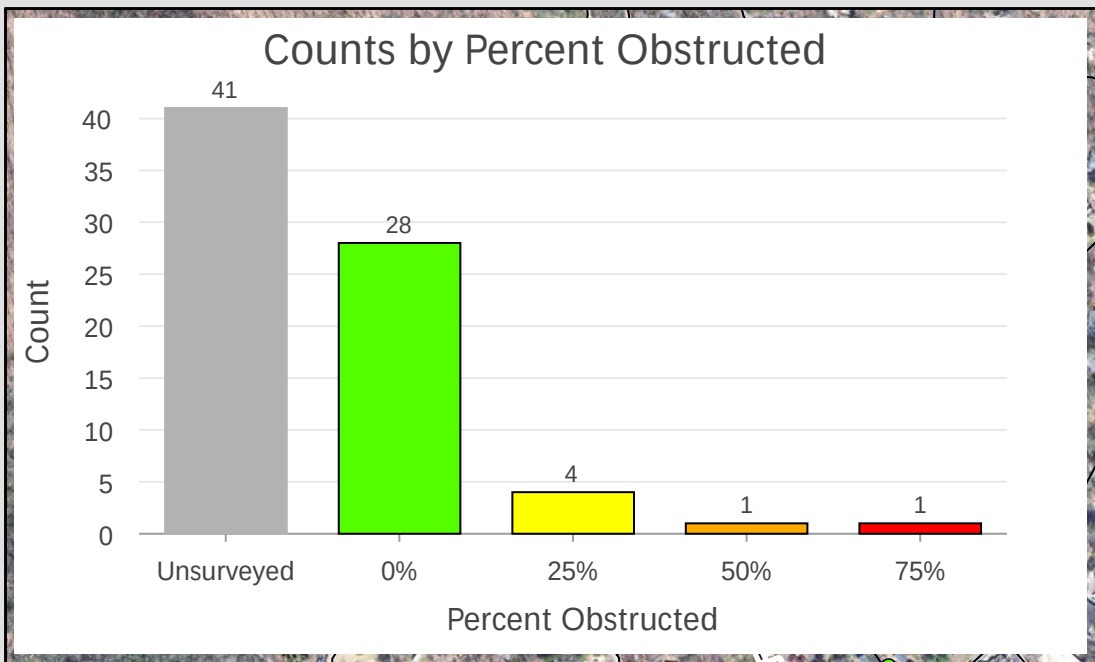
- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed

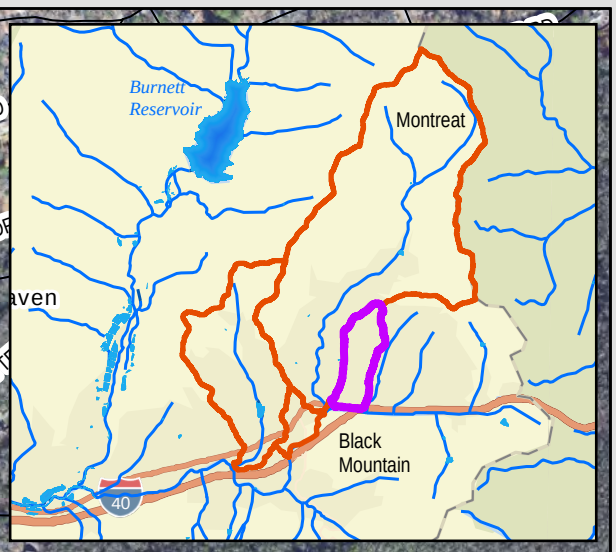
WK DICKSON
AN ARDURRA COMPANY

Figure A-3: Obstructed & Difficult Access Stormwater Structures
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 400 800 Feet
1 in = 800 ft

N W E S





**The location of unknown/unsurveyed structures are not exact.
Unkown structure locations are assumed based upon pipe size and material changes between upstream and downstream surveyed structures. It is inferred from the results of the stormwater inventory and survey that there are many buried structures or underground junction boxes.

Legend

Stormwater Structures
Percent Obstructed
- 0%
- 25%
- 50%
- 75%
- 100%
- Difficult Access Structure
- Unsurveyed Structure

- Waterbody
- Stormwater Pipe
- Minor Channel
- Major Channel
- Road
- Watershed

WK DICKSON
AN ARDURRA COMPANY

Figure A-4: Obstructed & Difficult Access Stormwater Structures
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 300 600 Feet
1 in = 600 ft

N W E S

HYDROLOGIC ANALYSIS

Per the contract, PCSWMM developed by the CHI was selected as the hydrologic and hydraulic model to evaluate both the primary and secondary stormwater conveyance systems. The model uses the EPB-developed SWMM engine for computations and is particularly effective at evaluating systems that may: (a) have significant backwater effects from rising water surface elevations within the primary systems, (b) have attenuation within drainage ditches or behind roadways, and (c) show a sensitivity to the timing response of runoff to rainfall.

The precipitation data for the 24-hour duration, NRCS Type II storm was used to represent the synthetic rainfall event. The NRCS curve number approach was selected to calculate runoff volumes from the precipitation data, and the sub-basin unit hydrographs for these flood volumes were developed using the NRCS lag times.

The NRCS curve number approach was selected to calculate runoff volumes from the precipitation data, and the sub-basin unit hydrographs for these flood volumes were developed using the watershed width parameter. PCSWMM simulates the surface runoff response to precipitation for an interconnected system of surfaces, channels, and ponds. Input data for the PCSWMM model was developed using topographic data, land cover data, and soils maps in GIS to delineate and calculate the basin areas and NRCS hydrologic parameters.

The PCSWMM model offers a variety of methods for simulating the rainfall-runoff response, hydrograph development, and channel routing. One advantage to using PCSWMM to model both hydrology and hydraulics is that channel routing is modeled in the EXTRAN (hydraulics) block automatically based on the geometry and nature of the conveyance system. This eliminates the need to iterate between a hydrologic model and a hydraulic model to produce reasonable flows.

B. 1 Watershed Delineation and Connectivity

Watersheds were delineated for the Town study areas utilizing digital LiDAR data available from the State of North Carolina, survey, and the stormwater inventory. The preliminary watersheds were created using automated delineation procedures in a GIS platform and then adjusted as necessary based on the conveyance system and known ridge lines. Subwatersheds were selected at hydrologically and hydraulically significant points, such as major roadway crossings, stream convergences, known problem areas, etc. Secondary systems like Downtown and Tomahawk Branch/Lake areas were delineated in more detail to effectively evaluate the closed stormwater system.

Watershed maps showing the sub-basins and hydrological connectivity are provided in Section 2 of the SWMP. In its entirety, the study covers an area of approximately 5,557 acres (8.68 square miles). Drainage areas for each of the watersheds studied are noted in Table B.1. The upper parts of the primary

system watersheds extend outside of the Town limits. However, runoff from these areas drains down the mountain and through the Town's stormwater conveyance system on its way to the Swannanoa River.

TABLE B-1: WATERSHED DRAINAGE AREAS

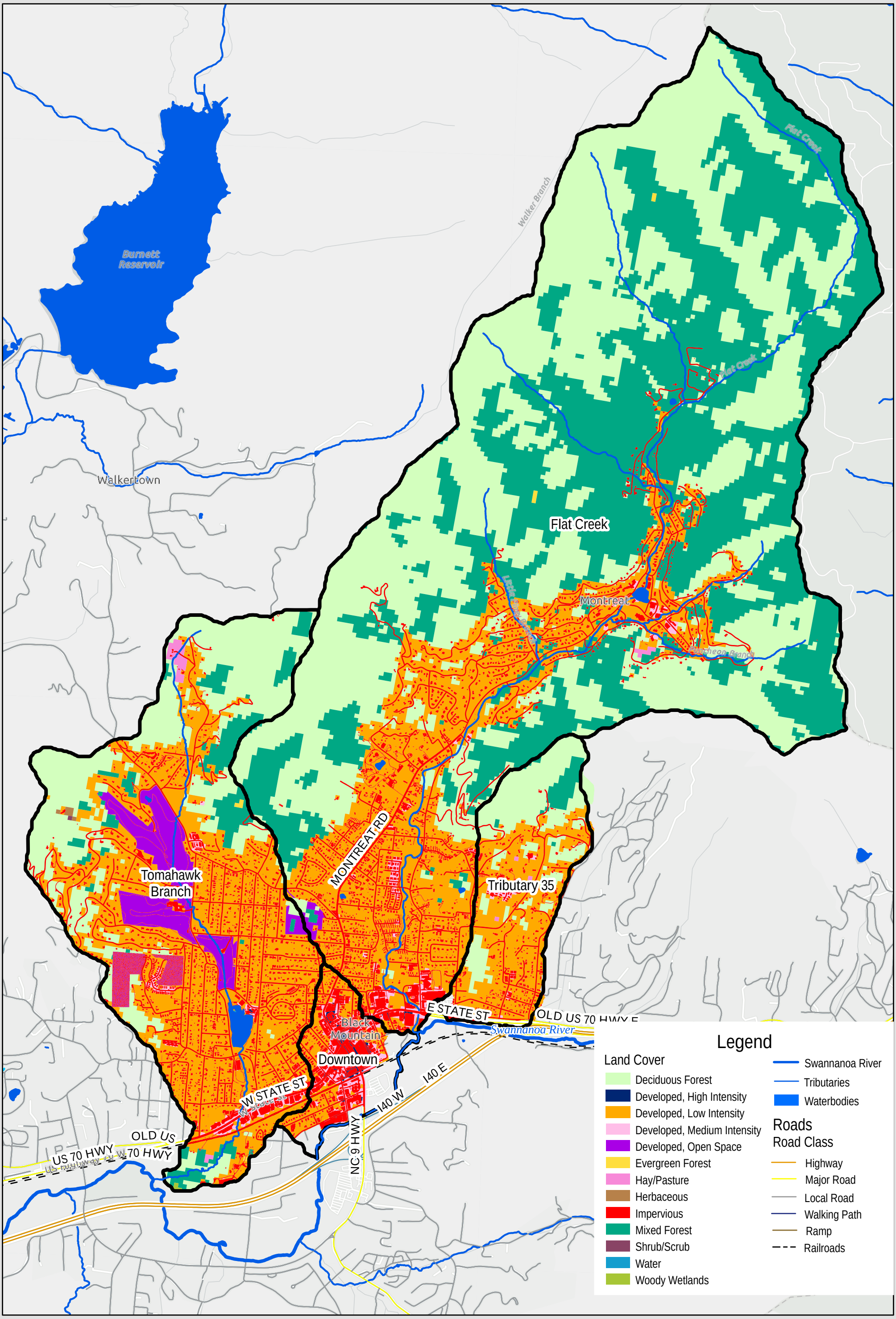
WATERSHED	AREA (ACRES)	PERCENT OF WATERSHED LOCATED INSIDE TOWN LIMITS
Downtown	151	100%
Tomahawk Branch	1,233	73%
Flat Creek	3,863	13%
Tributary 35 (of the Swannanoa)	310	69%
TOTAL STUDY DRAINAGE AREA	**5,557**	**42%**

B. 2 Land Cover

Land cover represents the physical surface characteristics of the watershed, describing what is present on the ground e.g., impervious surfaces, open water, forest, etc. Land cover directly influences the hydrologic response of a watershed by affecting infiltration, evapotranspiration, and surface runoff. In combination with other basin characteristics, land cover is used to estimate hydrologic parameters such as the SCS curve number for the basin.

One of the most critical land cover components in an urban environment is impervious surface coverage. Using a high-resolution impervious layer developed by Raftelis, Ardurra integrated this dataset into the overall land cover classification framework. Next, water features were identified and incorporated into the dataset using USGS data products (3DHP). After establishing impervious and water features, the National Land Cover Dataset (NLCD) was used to classify remaining areas and fill data gaps. In total, fifteen (15) land cover categories were delineated within the Town. Aerial imagery, field observations, and current development plans provided by the Town of Black Mountain (e.g., Tudor Croft Development) were used to verify and refine the land cover classifications as necessary.

Land cover within the Town is mostly forest (especially in the upper watershed of Flat Creek) and low intensity development. The overall land cover map for the watershed study is shown in Figure B-1. Acreage of each existing land cover groups and correlating percentages are listed in Tables B-2 and B-6.



WK DICKSON
AN ARDURRA COMPANY

Figure B-1: Land Cover
Town of Black Mountain Stormwater Master Plan

0 1,000 2,000 Feet
1 in = 2,000 ft

N
W E
S

TABLE B.2: BLACK MOUNTAIN LAND COVER

LAND COVER CATEGORY	EXISTING	
	AREA (ACRES)	PERCENT OF BASIN AREA
Deciduous Forest	2046.2	37.1
Mixed Forest	1505.6	27.3
Low Intensity Development	1236.3	22.4
Impervious	517.1	9.4
Developed Open Space	107.7	2.0
Water	52.0	0.9
Medium Intensity Development	40.0	0.7
Hay/Pasture	8.8	0.2
High Intensity Development	4.0	0.1
Evergreen Forest	2.3	0.0
Grassland/Herbaceous	1.3	0.0
Woody Wetland	0.7	0.0
Shrub/Scrub	0.2	0.0

TABLE B-3: DOWNTOWN WATERSHED LAND COVER

LAND COVER CATEGORY	EXISTING	
	AREA (ACRES)	PERCENT OF BASIN AREA
Impervious	61.8	52.6
Low Intensity Development	38.6	32.8
Medium Intensity Development	13.5	11.5
High Intensity Development	3.5	3.0
Water	0.1	0.0

TABLE B-4: TOMAHAWK BRANCH LAND COVER

LAND COVER CATEGORY	EXISTING	
	AREA (ACRES)	PERCENT OF BASIN AREA
Low Intensity Development	507.9	42.0
Deciduous Forest	318.3	25.8
Impervious	189.2	15.3
Developed Open Space	103.0	8.4
Mixed Forest	78.7	6.4
Water	16.8	1.4
Medium Intensity Development	9.4	0.8
Hay/Pasture	6.6	0.5
Grassland/Herbaceous	1.3	0.1
Evergreen Forest	0.9	0.1
Woody Wetlands	0.7	0.1
Shrub/Scrub	0.2	0.0
High Intensity Development	0.1	0.0

TABLE B-5: FLAT CREEK LAND COVER

LAND COVER CATEGORY	EXISTING	
	AREA (ACRES)	PERCENT OF BASIN AREA
Deciduous Forest	1622.8	42.0
Mixed Forest	1412.4	36.6
Low Intensity Development	544.0	14.1
Impervious	227.7	5.9
Water	35.1	0.9
Medium Intensity Development	13.5	0.3
Developed Open Space	4.8	0.1
Hay/Pasture	1.6	0.0
Evergreen Forest	1.3	0.0
High Intensity Development	2.3	0.0

TABLE B-6: AVENDA ROAD/TRIBUTARY 35 LAND COVER

LAND COVER CATEGORY	EXISTING	
	AREA (ACRES)	PERCENT OF BASIN AREA
Low Intensity Development	146.3	47.1
Deciduous Forest	106.6	34.4
Impervious	38.5	12.4
Mixed Forest	14.7	4.7
Medium Intensity Development	3.6	1.2
Hay/Pasture	0.7	0.2

B. 3 Soils

The infiltration rate of soil influences the volume of surface runoff that results from given storm events. Soils with high infiltration rates produce lower runoff than soils with lower infiltration rates. The Soil Conservation Service has prepared soil maps for Buncombe County that identify four (4) primary soil groups. This data is available digitally and was obtained for the Town of Black Mountain. The groups (A, B, C, and D) correspond to decreasing rates of infiltration. A general description of the four (4) soil groups taken from the USDA, SCS, NEH-4 (1972) is presented in Table B-7. A map of the hydrologic soil groups (HSG) is shown in Figure B-2.

TABLE B-7: HYDROLOGIC SOIL GROUPS

SOIL GROUP	DESCRIPTION
A	Group A soils have high infiltration rates even when thoroughly wetted and consist chiefly of deep, well to excessively drained sand or gravels. These soils have a high rate of water transmission (greater than 0.3 inches per hour).
B	Group B soils have moderate infiltration rates even when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission (0.15 to 0.3 inches per hour).
C	Group C soils have slow infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission (0.5 to 0.15 inches per hour).

SOIL GROUP	DESCRIPTION
D	Group D soils have a very slow infiltration rate when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high-water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission (0 to 0.05 inches per hour).
A/D B/D C/D	The first letter applies to the drained condition and the second to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high-water table is kept at least 60 centimeters (24 inches) below the surface.

Soils within study area are predominantly NRCS hydrologic soil groups A and B soils. It should be noted that all soils designated as dual hydrologic soils groups (A/D, B/D, and C/D) were assumed to be D for the hydrologic analysis. Additionally, soils that were not surveyed due to significant soil disturbance (deemed "disturbed" or "urban" soils) were also assumed to be D for the hydrologic analysis. A breakdown of the HSGs for the entire study area and each watershed is provided in Tables B-8 through B-12.

TABLE B-8: AREA DISTRIBUTION OF HYDROLOGIC SOIL GROUPS – OVERALL STUDY AREA

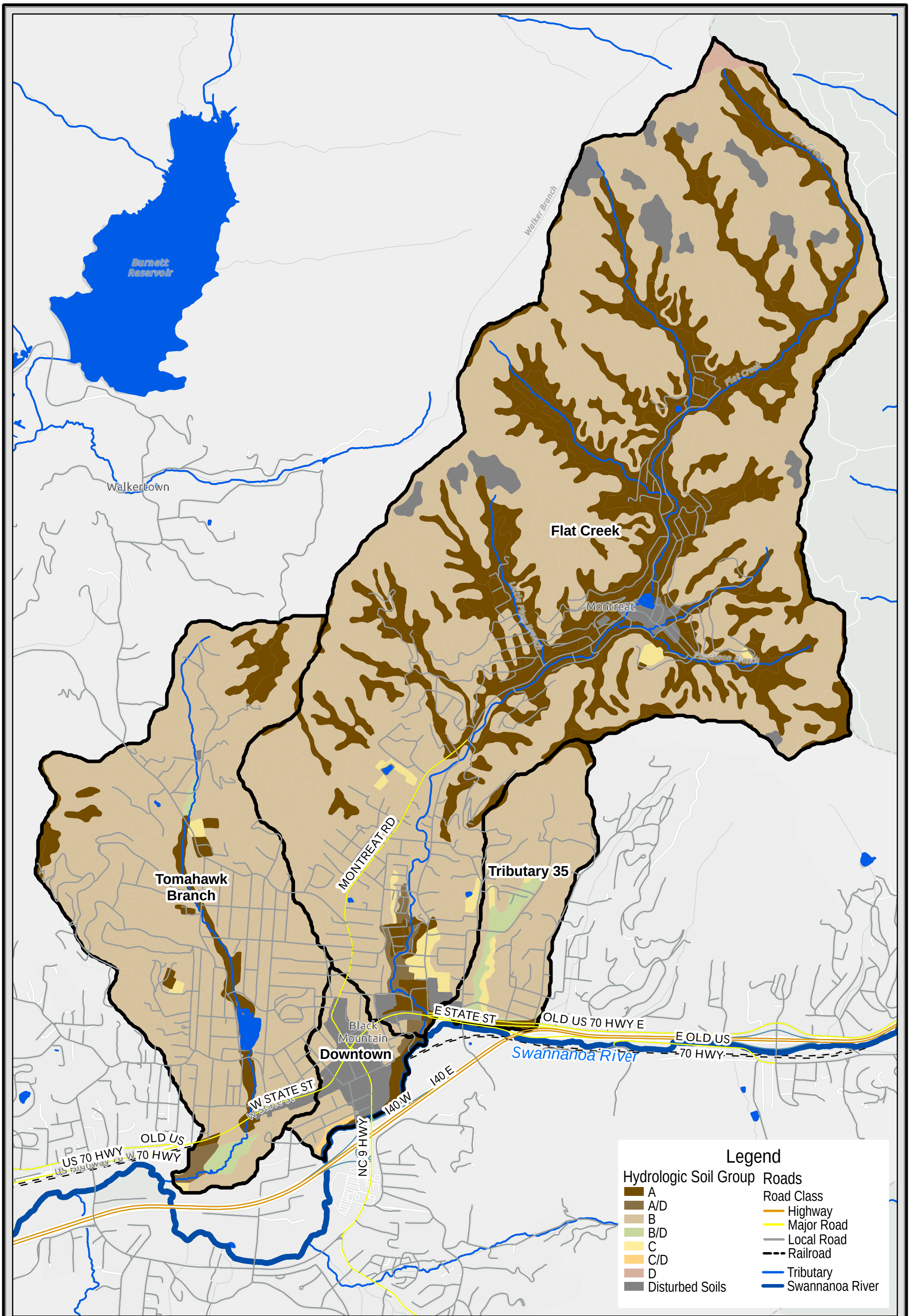
SOIL GROUP	TOTAL AREA (ACRE)	PERCENT OF TOTAL AREA
A	1,284.5	23.3%
B	3,878.2	70.2%
C	51.8	0.9%
D*	307.5	5.6%

**Includes A/D, B/D, C/D, and Non-surveyed (Null) soils*

TABLE B-9: AREA DISTRIBUTION OF HYDROLOGIC SOIL GROUPS – DOWNTOWN WATERSHED

SOIL GROUP	TOTAL AREA (ACRE)	PERCENT OF TOTAL AREA
A	1.3	1.1%
B	59.6	50.7%
D*	56.7	48.2%

**Includes A/D, B/D, C/D, and Non-surveyed (Null) soils*



WK DICKSON
AN ARDURRA COMPANY

Figure B-2: Hydrologic Soil Groups
Town of Black Mountain Stormwater Master Plan

0 1,000 2,000 Feet

1 in = 2,000 ft

N
W E
S

TABLE B-10: AREA DISTRIBUTION OF HYDROLOGIC SOIL GROUPS – TOMAHAWK BRANCH

SOIL GROUP	TOTAL AREA (ACRE)	PERCENT OF TOTAL AREA
A	108.5	8.8%
B	1,071.3	86.9%
C	6.8	0.6%
D*	46.3	3.8%

**Includes A/D, B/D, C/D, and Non-surveyed (Null) soils*

TABLE B-11: AREA DISTRIBUTION OF HYDROLOGIC SOIL GROUPS – FLAT CREEK

SOIL GROUP	TOTAL AREA (ACRE)	PERCENT OF TOTAL AREA
A	1,162.8	30.1%
B	2488.5	64.4%
C	34.0	0.9%
D*	178.0	4.6%

**Includes A/D, B/D, C/D, and Non-surveyed (Null) soils*

TABLE B-12: AREA DISTRIBUTION OF HYDROLOGIC SOIL GROUPS – AVENA RD. / TRIBUTARY 35

SOIL GROUP	TOTAL AREA (ACRE)	PERCENT OF TOTAL AREA
A	12.4	4.0%
B	260.4	83.9%
C	11.0	3.5%
D*	26.5	8.5%

**Includes A/D, B/D, C/D, and Non-surveyed (Null) soils*

As there is a high-resolution impervious cover layer available for the Town, it became the primary basis for a mixed methods approach to determine land cover for the study area. To supplement the high-resolution impervious cover, U.S. Geological Survey 3D Hydrography Program (3DHP) data were used to capture water features with high accuracy within the study area. Areas not represented in these datasets were supplemented with classifications from the National Land Cover Database (NLCD).

To avoid double-counting impervious areas already represented in the dedicated impervious layer, all NLCD classes identified as high, medium, or low-density developed were reclassified to match the "Developed – Open Space" category. These are demarcated with an * in Table B-13.

The combined land cover and soil data were then used to assign curve numbers (CNs) based on the U.S. Army Corps of Engineers (USACE) HEC-HMS guidance. These are also noted in Table B-13 below. A composite runoff curve number was calculated for each of the sub-basins based on the weighted curve number for the sub-basin.

TABLE B-13: CURVE NUMBERS BASED ON LAND COVER AND SOIL GROUPS

LAND USE CATEGORY	SOIL GROUP			
	A	B	C	D
Water	98	98	98	98
Impervious	98	98	98	98
Developed Open Space	49	69	79	84
Low Intensity Development*	49	69	79	84
Medium Intensity Development*	49	69	79	84
High Intensity Development*	49	69	79	84
Barren Land	78	86	91	93
Deciduous Forest	45	66	77	83
Evergreen Forest	25	55	70	77
Mixed Forest	36	60	73	79
Shrub/Scrub	55	72	81	86
Grassland/Herbaceous	50	69	79	84
Pasture/Hay	49	69	79	84
Cultivated Crops	67	78	85	89
Woody Wetlands	30	58	71	78
Emergent Herbaceous Wetlands	30	58	71	78

A summary of the hydrologic input for each of the watershed models can be provided upon request.

B. 4 Rainfall

Rainfall distributions for Black Mountain are derived using the NRCS Type II standard distribution. Total rainfall volumes for the modeled frequency storms were based on data obtained from NOAA Atlas 14. Table B-14 shows the total rainfall volumes used for this study.

TABLE B-14: DESIGN STORM RAINFALL DEPTHS

DESIGN STORM	RAINFALL DEPTH (IN)
2-YR, 24HR	3.39
10-YR, 24HR	5.00
25-YR, 24HR	5.98
50-YR, 24HR	6.76
100-YR, 24HR	7.57
2-YR, 6HR	2.23
5-YR, 6HR	2.79

While the depth-duration-frequency curves are calculated based on real rainfall data, the rainfall data used for the PCSWMM represents the Type II synthetic rainfall distribution. Actual runoff is based on several factors including rainfall intensity, duration and the antecedent moisture conditions of the watershed.

B. 5 Hydrograph Translation

The lag time, as defined by the NRCS for use in the NRCS dimensionless unit hydrograph method, is the time, or lag, between the center of mass of rainfall excess and the peak of the unit hydrograph. The lag time is based on the subwatershed time of concentration, or travel time, and is a function of the subwatershed size, shape, slope, cover, and other basin characteristics. For the NRCS method, the subwatershed lag time is calculated to be 0.6 times the time of concentration for each subwatershed.

The times of concentration for the subwatersheds were calculated from the methodology described in TR-55. The longest flow path is divided into three types of flow; overland flow, shallow concentrated flow, and channel flow. A spreadsheet was developed to tabulate the incremental travel times for each type of flow for each sub-basin. The incremental travel times were totaled and multiplied by 0.6 to compute the lag time for each sub-basin.

The equation detailing the travel time for sheet flow is as follows:

$$T_t = \frac{.007\,(nL)^{0.8}}{(P_2)^{0.5}\,s^{0.4}}$$

T_t = Travel Time in hours

n = Manning Roughness Coefficient (Paved=0.011, Unpaved=0.24)

L = flow length in feet

P_2 = 2-year, 24 hour rainfall = 3.76 inches

S = slope of hydraulic grade line (land slope in ft/ft)

For shallow concentrated flow, the velocity (V) is calculated for either paved or unpaved sections by using the following equations:

$$\text{Unpaved } V = 16.1345\ (S)^{1/2}$$

$$\text{Paved } V = 20.3282\ (S)^{1/2}$$

The travel time for shallow flow is then calculated by dividing the flow length (L in feet) by velocity as follows:

$$T_t = \text{Travel Time} = L / (3600*V)$$

The open channel travel times are determined by a modified version of the Manning equation, which is as follows:

$$V = \frac{1.49\ R^{2/3}\ S^{0.5}}{n}$$

V = Average full-flow velocity (ft/s)

R = Hydraulic radius (ft)

S = Slope of hydraulic grade line (ft/ft)

n = Manning roughness coefficient

Instead of a time of concentration parameter, the PCSWMM model uses a watershed width parameter to crate the unit hydrograph used in the model that will translate the rainfall into runoff. The watershed width is a parameter unique to PCSWMM that typically represents the watershed area divided by the longest flow path. The width parameter is typically calibrated to flow gauge data, if available.

The watersheds studied lacked flow gauge data, so the peak flows from PCSWMM were compared to flows developed using the Rational Method, USGS Regression where applicable, Stream Stats flows, and FEMA model flows. Based on the flow comparison, the watershed widths for each basin were adjusted in some instances to produce reasonable flows.

HYDRAULIC ANALYSIS

The purpose of the hydraulic modeling analysis is to determine an existing level of flooding for the stormwater drainage network and to develop proposed solutions to mitigate flooding, on both the primary systems and the secondary systems.

The stormwater models were developed using survey, stormwater inventory, FEMA models, and LiDAR data. Detailed and limited detailed FEMA study models were downloaded from the North Carolina Flood Risk Information System (FRIS) website. The bridge data included in the FEMA models for Tomahawk Branch, Flat Creek, Flat Creek Tributary 1, and Tributary 35 (of the Swannanoa River) were imported into PCSWMM to include in the primary system analyses. The FEMA water surface elevations were also used as the fixed starting water surface elevation to evaluate the primary and secondary stormwater systems. LiDAR data available from the State of North Carolina was used to supplement open channel cross sections.

C.1 Stormwater Inventory

For the SWMP, stormwater utility infrastructure throughout the subwatershed was collected by Kee Mapping and Surveying personnel (located in Asheville, NC) to compile a GIS stormwater inventory database for the Town. This was accomplished by using GPS as the primary means of data capture to locate the x, y, and z coordinates of each visible stormwater system structure and conventional surveying techniques to obtain other attributes including but not limited to size, material, slope, and length. Data was obtained for those streams and open channels required to complete connectivity for modeling purposes. The data was collected using horizontal datum NAD 1983 and vertical datum NAVD 1988.

Attributes collected as part of the inventory were used to populate the various models. Field visits and digital photographs for each structure and some channels were used to estimate the roughness coefficients and energy loss coefficients.

C.2 Roughness Coefficients

Manning's roughness coefficients, or 'n' values, represent the resistance to flow and influence the flow capacity of channels and floodplains. The PCSWMM model uses these coefficients to compute friction loss longitudinally in the channel and floodplain. The roughness value is a function of the type and density of the vegetation, channel bottom and stream bank material, degree of channel meandering, and depth of flow.

Roughness coefficients were determined for all stream reaches for which hydraulic analyses were performed. The right or left bank of the stream is referenced facing downstream. Roughness coefficients used in this study are listed in Table C-1. All roughness coefficients were estimated through field observation and by referencing standard engineering manuals.

TABLE C-1: ROUGHNESS COEFFICIENTS

LOCATION	RANGE OF 'N' VALUES
Main Channel	0.04 - 0.065
Left Overbank	0.04 - 0.16
Right Overbank	0.035 - 0.16

C.3 Starting Water Surface Elevation

The starting water surface elevations (WSEL) for the PCSWMM models were set based on the FEMA water surface elevations where available. Table C-2 indicates the number of outfalls for each watershed model and if FEMA WSELs were referenced directly from the models. Where FEMA WSELs were not directly published, the FEMA results were interpolated between storm events.

All 2-yr 24-hr, 2-yr and 5-yr 6-hr storm events used normal outfall conditions as the starting water surface elevations.

The Town is currently engaged in the Swannanoa Floodplain Bench Project, which provides additional floodplain storage along the south bank of the Swannanoa River to lower WSELs. The project is located between Hemphill Road and the Norfolk Southern Railway near the confluence with Flat Creek. The second phase of the project extends floodplain benching along the south bank to just I-40 East near Riverwalk Park and includes construction of a 1.3-acre wetland to lower WSELS.

Preliminary (unapproved) FEMA WSELS for the Swannanoa Floodplain Bench Project were provided by the Town's consultant. These were considered with the proposed capital improvement projects as the floodplain project will likely be constructed prior to recommended capital projects within the Town.

TABLE C-2: FEMA WSEL REFERENCES

Model	Outfalls to the Swannanoa River	FEMA WSELs	Swannanoa FPB Projected WSELs
Downtown	4	10-, 50-, and 100-yr	Yes
Tributary 35	Direct Confluence	10-, 50-, and 100-yr	Yes
Flat Creek	Used Flat Creek FEMA	10-, 50-, and 100-yr	No
Tomahawk	Used Tomahawk FEMA	10-, 50-, and 100-yr	No

C.4 Model Run Descriptions and Assumptions

PCSWMM is a dynamic rainfall-runoff model capable of modeling the hydrologic response of a watershed and hydraulic routing throughout a stormwater conveyance system. The model calculates the effect of backwater, flat or negative slopes, energy losses, and minor headlosses associated with bends, entrances and exits.

Input data for the PCSWMM (hydraulics) computer model include the following:

- Conveyance pipes including structure inverts, pipe sizes and lengths;
- Open channel cross section geometries;
- Roughness coefficients for pipes and channels;
- Energy loss coefficients for flow in the pipes and channels;
- Storage rating curves; and
- Overland flow characteristics.

PCSWMM provides an accurate evaluation of the existing and proposed conditions because it combines hydrology and hydraulics while accounting for the routing effects of the channel and overbank storage areas. Because hydrology and hydraulics are combined, changes to peak flows or water surface elevations resulting from proposed modifications to the existing channels or culverts are calculated in the model in one (1) step. Additionally, changes to flow from proposed pipes and channel improvements are seen both upstream and downstream, reducing the potential for a stormwater system having increased flooding downstream.

The 2-, 10-, 25-, 50- and 100-year 24-hour storm events were modeled as well as the 2- and 5-year 6-hour storm events. The hydraulic analysis for this study is based only on the condition of unobstructed flow. Therefore, flood elevations shown on the profiles are considered valid only if hydraulic structures remain unobstructed and do not fail. Flood elevations may be raised by debris blockage of the culvert, channel, or floodplain.

Energy Loss Coefficients

Contraction and expansion of flow produces energy losses caused by the transition. The magnitude of these losses is related to the velocity and the estimated loss coefficient. Where the transitions are gradual, the losses are small. At abrupt changes in cross-sectional area, the losses are higher. Energy losses resulting from expansion are greater than losses associated with contraction. Energy loss coefficients used for the hydraulic PCSWMM models are presented in Table C-3.

Additional energy losses for structures having bends were divided between the two (2) joining pipes. The bend losses used for this project are based on NCDOT values and are shown below in Table C-4.

TABLE C-3: ENERGY LOSS COEFFICIENTS FOR PCSWMM MODELS

TYPE OF TRANSITION	EXPANSION	CONTRACTION
None	0	0
Manhole/Inlet	0.7	0.5
Open Channel	1	0.5–Headwall/ 0.9 - Projecting

TABLE C-4: BEND LOSS COEFFICIENTS

ANGLE (°)	LOSS COEFFICIENT	ANGLE (°)	LOSS COEFFICIENT
90	0.70	40	0.38
80	0.66	30	0.28
70	0.61	25	0.22
60	0.55	20	0.16
50	0.47	15	0.10

APPENDIX D
CONDITION ASSESSMENT METHODOLOGY

D.1 Data Collection and Analysis

Since running the prioritization tool is highly dependent upon existing infrastructure data, WK Dickson worked closely with the Town to compile as much available data regarding the stormwater infrastructure as possible. The data collection and analysis tasks included:

- Inventory and review of stormwater GIS database and attributes
- Collection and review of relevant transportation and geographic data
- Summary and analysis of data reviewed
- Confidence level and applicability to the prioritization tool

As a result, the following information pertaining to the stormwater infrastructure was collected and analyzed for the prioritization tool:

- GIS data and attributes for stormwater systems
- GIS data for the following relevant layers:
    - Road centerlines
    - Building footprints
    - Soils
    - Hydrography
    - Critical Facilities

D.2 Summary of Existing Facilities

In order to clearly identify critical infrastructure for each utility, WK Dickson separated the stormwater infrastructure database into stormwater pipes and stormwater structures. The following discussion presents a summary of the stormwater system assets and relative attributes that were incorporated into the prioritization tool for the criticality assessment.

Stormwater System Assets

The Town of Black Mountain stormwater system asset infrastructure data is noted in Table D-1. Attributes assigned to these assets and considered for the stormwater system included the following:

- Unique ID
- Pipe diameter
- Pipe material
- Pipe length
- Pipe slope
- Pipe condition

- Proximity to corrosive soils
- Proximity to transportation infrastructure
- Proximity to buildings
- Proximity to hydrographic features
- Proximity to critical facilities

The stormwater system assets listed below were incorporated into the prioritization tool.

TABLE D-1: STORMWATER SYSTEM ASSET SUMMARY

ASSET NAME	NUMBER	UNITS
Unknown Storm Pipe	12,828	LF
Irregular Dimension Storm Pipe	2,205	LF
4” Storm Pipe	38	LF
6” Storm Pipe	67	LF
8” Storm Pipe	432	LF
10” Storm Pipe	281	LF
12" Storm Pipe	3,934	LF
15" Storm Pipe	7,256	LF
16” Storm Pipe	111	LF
18" Storm Pipe	6,984	LF
20” Storm Pipe	144	LF
21" Storm Pipe	45	LF
24” Storm Pipe	6,335	LF
30" Storm Pipe	2,286	LF
36" Storm Pipe	2,019	LF
42" Storm Pipe	70	LF
48" Storm Pipe	938	LF
60” Storm Pipe	146	LF
66” Storm Pipe	193	LF
90” Storm Pipe	183	LF
Inlet	246	EA
Junction Box	52	EA
Pipe End	631	EA
Manhole	14	EA
Unknown Structure	251	EA

Critical Facilities

Critical facilities are those service locations within the system where failure of infrastructure would have an impact on a large concentration of customers or customers that provide critical operations. In the case of Black Mountain, the critical facilities were determined to be a combination of schools, fire stations, medical facilities, police stations, libraries, hazardous waste facilities, and nursing homes/assisted living facilities. Within the study area it was determined that there are thirty critical facilities. The critical facilities identified are as follows: nursing homes/assisted living facilities (4), medical facilities (5), fire stations (2), police stations (3), hazardous waste facilities (3), a library (1), and schools (12).

Soil Corrosivity

Corrosion is a significant factor affecting the long-term integrity of stormwater infrastructure. The degree of soil corrosivity varies depending on the material composition of the asset, as soils influence concrete and metallic structures differently. For this analysis, WK Dickson utilized data from the USDA SSURGO (Soil Survey Geographic Database), which provides corrosivity ratings classified as 'Low', Moderate', or 'High' for both concrete and metallic materials. These ratings are based on soil drainage class, total acidity, electrical resistivity and conductivity. Each stormwater asset was spatially overlaid with the SSURGO soil areas to determine the soil unit in which it was located. The corresponding corrosivity rating for that soil was then applied to the asset based on its material type. For pipes intersecting multiple soil units, the corrosivity rating associated with the soil encompassing the majority of the pipe's length was assigned. Plastic assets e.g., HDPE, CPP, CPE, PVC, etc. were given a rating of 0, as plastic materials are not subject to corrosion.

Within the USDA SSURGO database, some soil areas are not included in the soil survey due to extensive disturbance from development. This condition is common in the downtown area of Black Mountain due to the extent of development in this area. Because these soils lack reliable data, WK Dickson assigned a moderate corrosivity rating to all non-plastic stormwater assets within these soil regions to provide a reasonable, conservative estimate of potential corrosion risk.

D. 3 GIS Data Audit

WK Dickson performed an audit of the Town's GIS data to establish a confidence level for utilizing the data in the creation of the criticality assessment tool. The audit consisted of the following tasks:

- Review of GIS layer data to determine ability to assess for the criticality analysis
- Review of attribute fields utilized for the assessment tool
- Analysis of attribute data for use in the assessment tool
- Review of weighted criticality scoring values to determine audit locations/databases

The data collection and audit enabled the tool to be applied with a high level of confidence and reliability. Tables D-2 and D-3 summarize the reliability of the attribute data based on the percentage of data available for each attribute relative to the total number of assets. Reliability can be improved over time as more information is entered into and linked to the GIS database.

TABLE D-2: STORMWATER PIPES ATTRIBUTE RELIABILITY

STORMWATER PIPES – LIKELIHOOD		STORMWATER PIPES – CONSEQUENCE	
FIELD	DATA SET	FIELD	DATA SET
Installation Date	0.0%	Proximity to Hydrographic features	100.0%
Pipe Length	100.0%	Pipe Diameter	75.1%
Age	0.0%	Proximity to Critical Facilities	100.0%
Remaining Life	0.0%	Proximity to Transportation Infrastructure	100.0%
Material Type	73.5%	Proximity to Buildings	100.0%
Pipe Slope	45.8%	**Average**	**93.8%**
Corrosive Soils	100.0%		
Condition	75.1%		
Proximity to Frequent Flooding Locations	100.0%		
Average	**82.4%**		

TABLE D-3: STORMWATER STRUCTURE ATTRIBUTE RELIABILITY

STORMWATER STRUCTURES – LIKELIHOOD		STORMWATER STRUCTURES – CONSEQUENCE	
FIELD	DATA SET	FIELD	DATA SET
Installation Date	0.00%	Proximity to Hydrographic Features	100.00%
Proximity to Frequent Flooding Locations	100.00%	Proximity to Buildings	100.00%
Age	0.00%	Proximity to Critical Facilities	100.00%
Remaining Life	0.00%	Proximity to Transportation Infrastructure	100.00%
Material Type	71.5%	**Average**	**100.00%**
Structure Obstructions	62.7%		
Condition	64.7%		
Corrosive Soils	100.00%		
Average	**79.8%**		

As shown in Tables D-2 and D-3, data reliability was sufficiently high to obtain a good measure of the criticality of each asset. Average values were calculated without including the reliability ratings of the fields: “Installation Date”, “Age”, and “Remaining Life”. This is because despite not having adequate age data, the other available data was sufficient enough to evaluate the infrastructure.

D. 4 Criticality Scoring and Methodology

Attribute scoring categories provide a quantitative value for the likelihood and consequence of failure and associated criticality score summation. Tasks for the criticality scoring and methodology included:

- Establishment of scoring criteria and attribute factors
- Establishment of final scoring system and documentation of methodology
- Application of scoring criteria to system assets to obtain ranking and thresholds

Each attribute was assigned between 2 to 6 factors with a scoring range between 0 and 100. Scores were added together within the likelihood of failure category and the consequence of failure category to develop a total cumulative score.

Tables D-4 through D-7 summarize the final attributes, attribute factors, and factor scoring used in the prioritization tool for the criticality assessment.

Limitations of the scoring system included availability of data, accuracy of data, and associated reliability scoring as discussed in the GIS data audit section.

D. 5 Results

Criticality Results for the Stormwater Pipes are provided in Section 4 of the SWMP. Maps of the criticality results for the Stormwater Structures are shown in Figures D-1 through D-4.

D-1 Downtown Secondary System – Criticality Analysis Stormwater Structures

D-2 Tomahawk Branch Primary System – Criticality Analysis Stormwater Structures

D-3 Flat Creek Primary System – Criticality Analysis Stormwater Structures

D-4 Tributary 35 / Avena Rd Primary System – Criticality Analysis Stormwater Structures

TABLE D-4: STORMWATER PIPES SCORING MATRIX – LIKELIHOOD OF FAILURE

ATTRIBUTE	ATTRIBUTE FACTOR	ATTRIBUTE FACTOR SCORING
Slope	Less than 0.2%	50
	Between 0.2% and 1%	20
	Between 1% and 2% or Null	0
	Between 2% and 4%	50
	Greater than 4%	100
Corrosive Soils*	High	100
	Moderate or Null	80
	Low	60
Condition	Needs Repair	100
	Poor	80
	Fair or Unknown	50
	Good	20
	Excellent	0
Material*	Brick/VCP	100
	CMP/CPP	80
	CPE/HDPE/Other/Unknown	40
	DIP/Steel/CAS	20
	PRE/PVC/RCP/CSU/PCCP/CP/CON	0
Proximity to Frequent Flooding Locations	Less than or equal to 100 feet	100
	Greater than 100 feet	0

**Category considers pipe material in the analysis.*

TABLE D-5: STORMWATER PIPES SCORING MATRIX – CONSEQUENCE OF FAILURE

ATTRIBUTE	ATTRIBUTE FACTOR	ATTRIBUTE FACTOR SCORING
Pipe Diameter	Greater than 42	100
	37 to 42	80
	25 to 36	60
	16 to 24	40
	8 to 15	20
	Less than 8	0
	Unknown/Null	50
Proximity to Transportation Infrastructure	Under Railroad	100
	Under Road	60
	Not Under Road	0
Proximity to Building	Underneath Building	200
	Less than 20 feet from Building	100
	Greater than 20 feet from Building	0
Proximity to Critical Facility	Underneath Facility	200
	Less than 100 feet from Facility	100
	Greater than 100 feet from Facility	0
Proximity to Waterbody / Waterway	Less than or equal to 25 feet	100
	26 to 50 feet	50
	Greater than 50 feet	0

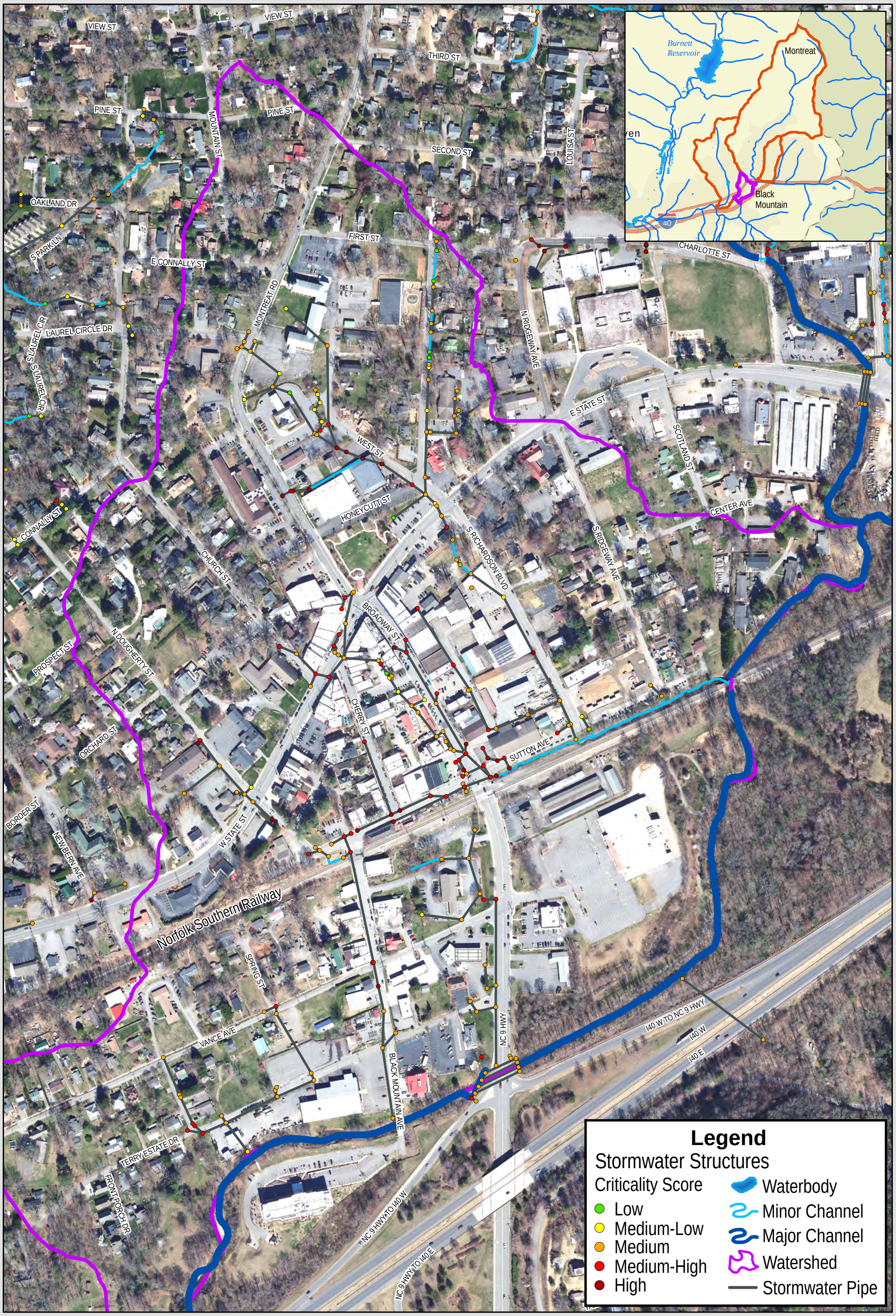
TABLE D-6: STORMWATER STRUCTURE SCORING MATRIX – LIKELIHOOD OF FAILURE

ATTRIBUTE	ATTRIBUTE FACTOR	ATTRIBUTE FACTOR SCORING
Corrosive Soils*	High	100
	Moderate or Null	80
	Low	60
Proximity to Frequent Flooding Location	Less than or equal to 100 feet	100
	Greater than 100 feet	0
Material*	Brick/VCP/Stone	100
	CMP/CPP	80
	Concrete Block	60
	HDPE/Other/Unknown	40
	DIP	20
	PVC/PreCast/RCP/Concrete	0
Percent Obstructed	100%	50
	75%	30
	50%	15
	25% or Null	5
	0%	0
Condition	Needs Repair	100
	Poor	80
	Fair or Unknown	50
	Good	20
	Excellent	0

**Category considers pipe material in the analysis.*

TABLE D-7: STORMWATER STRUCTURE SCORING MATRIX – CONSEQUENCE OF FAILURE

ATTRIBUTE	ATTRIBUTE FACTOR	ATTRIBUTE FACTOR SCORING
Proximity to Waterbody / Waterway	Up to 100 feet	100
	101 feet to 500 feet	50
	Greater than 500 feet	0
Proximity to Transportation Infrastructure	Within 100 feet of Railroad	100
	Within 50 feet of Roadway	60
	Not Within 50 feet of Roadway	0
Proximity to Building	Within 20 feet of Building	100
	Greater than 20 feet from Building	0
Proximity to Critical Facility	Within 100 feet of Facility	100
	Not within 100 feet of Facility	0



WK DICKSON
AN ARDURRA COMPANY

Figure D-1: Criticality Analysis Results - Stormwater Structures
DOWNTOWN SECONDARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N W E S



Legend

Stormwater Structures

Criticality Score

- Low
- Medium-Low
- Medium
- Medium-High
- High

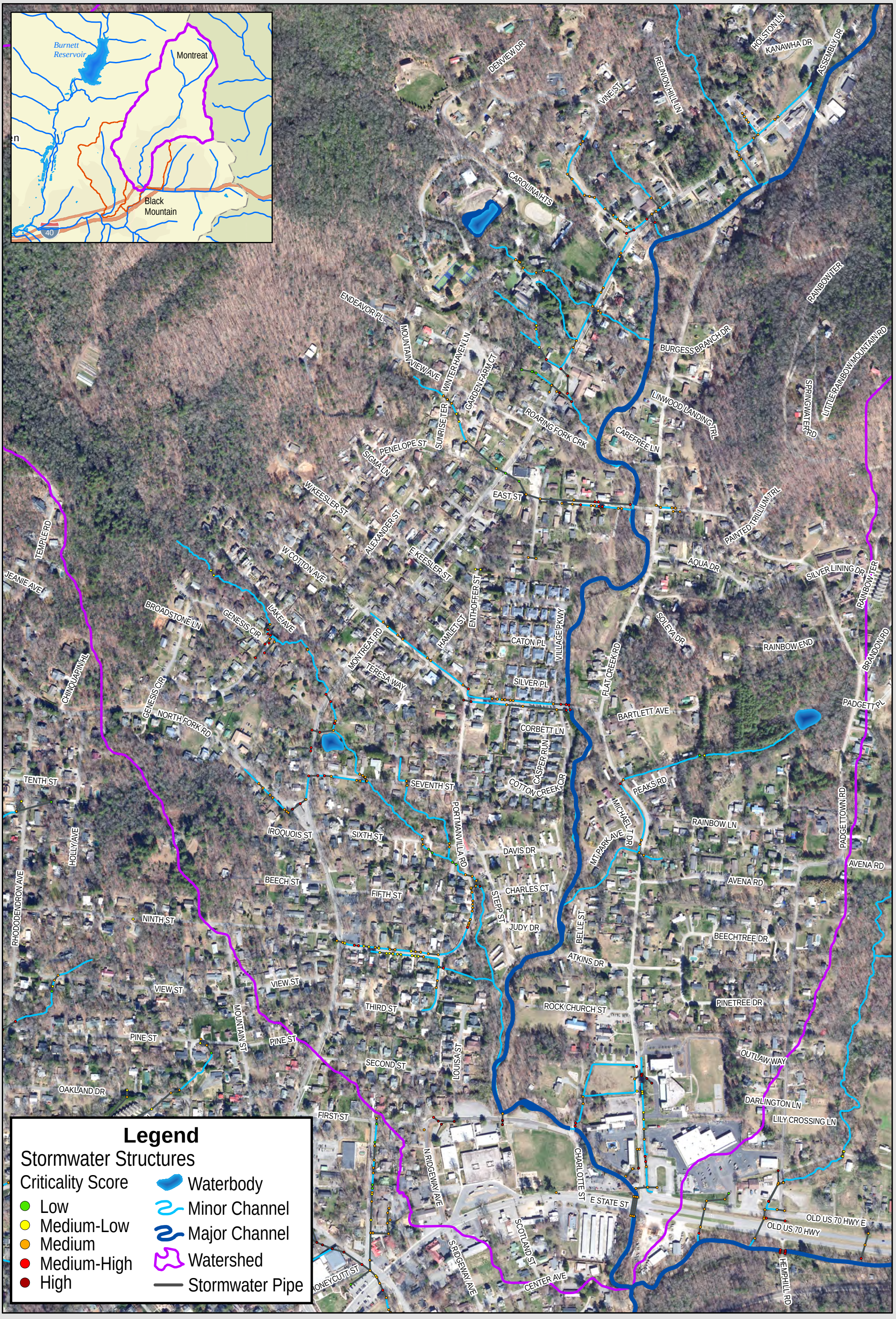
- Waterbody
- Minor Channel
- Major Channel
- Watershed
- Stormwater Pipe

WK DICKSON
AN ARDURRA COMPANY

Figure D-2: Criticality Analysis Results - Stormwater Structures
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 300 600 Feet
1 in = 600 ft

N W E S



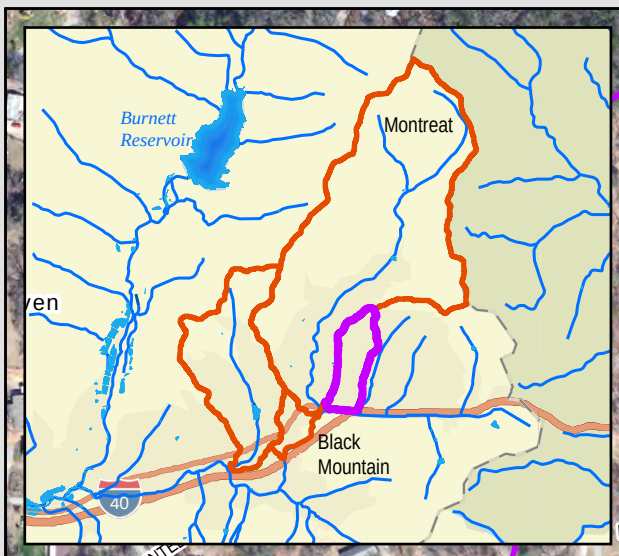
WK DICKSON
AN ARDURRA COMPANY

Figure D-3: Criticality Analysis Results - Stormwater Structures
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 250 500 Feet

1 in = 500 ft

N W E S



RAINBOW TER
PAINTE
AQUA DR
SILVER LINING DR
BRANDON RD
RAINBOW END
ARROW POINT TRL
N CHIPPEWA TRL
CHIPPEWA TRL
HILLCREST LN
LOOKOUT TERRACE RD
DEER RUN RD
HATFIELD HOLW
MELISSA DR
BELLE GROVE RD
BLUEVIEW DR
PADGETT PL
SEVEN SISTERS LN
AVENA RD
THICKET LN
TAZE CT
CORDELL CT
ROSARIO WAY
RAINBOW LN
PADGETTOWN RD
AVENA RD
MCCOY COVE RD
GOLDEN SUN RD
BEECHTREE DR
OLD GARTH RD
TAFT ST
SLADE LN
SESSLER RD
PINETREE DR
PEARL ST
PEARL VIEW DR
FERN LEAF LN
CREW LN
OUTLAW WAY
KERLEE ST
BROOKS COVE RD
RED RIDGE LN
DARLINGTON LN
LILY CROSSING LN
KERLEE HEIGHTS RD
ROY COVE RD
EXUM LN
OLD TOLL RD
OLD TOLL CIR
OLD STATE TEN RD
RUBY AVE
HIGH ST
OLD US 70 HWY E
OLD US 70 HWY
I40 W
I40 E
Norfolk Southern Railway
E STATE ST
HEMPHILL RD

Legend

Stormwater Structures

Criticality Score

- Low
- Medium-Low
- Medium
- Medium-High
- High

- Waterbody
- Minor Channel
- Major Channel
- Watershed
- Stormwater Pipe

WK DICKSON
AN ARDURRA COMPANY

Figure D-4: Criticality Analysis Results - Stormwater Structures
AVENA ROAD/TRIBUTARY 35 WATERSHED
Town of Black Mountain Stormwater Master Plan

0 200 400 Feet

1 in = 400 ft

N W E S

APPENDIX E
PROPOSED CAPITAL IMPROVEMENT PLAN

Downtown Proposed Projects Map (17 Projects)

Downtown Project Sheets and Planning Level Opinions of Cost

Tomahawk Branch Proposed Projects Map (3 Projects)

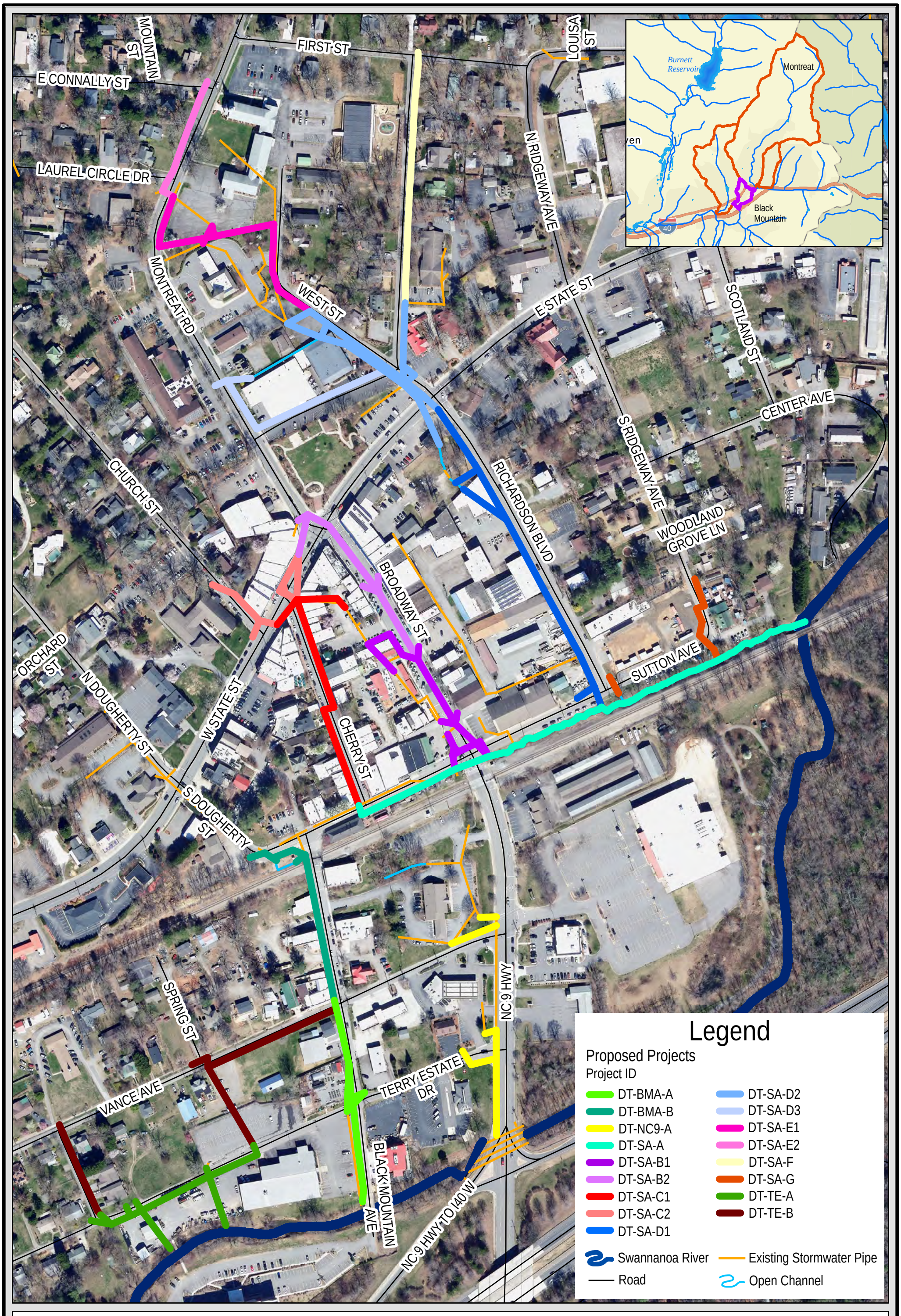
Tomahawk Branch Sheets and Planning Level Opinions of Cost

Flat Creek Proposed Projects Map (4 Projects)

Flat Creek Branch Sheets and Planning Level Opinions of Cost

Tributary 35 / Avena Rd Proposed Projects Map (5 Projects)

Tributary 35 / Avena Rd Sheets and Planning Level Opinions of Cost



WK DICKSON
AN ARDURRA COMPANY

Figure E-1: Proposed Stormwater Improvement Projects
DOWNTOWN DRAINAGE SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N W E S

PROJECT NAME: **Sutton Ave and Open Channel Stormwater Improvements** PROJECT ID: **DT-SA-A**

PROJECT INFORMATION

LOCATION: Sutton Ave: Cherry St to Broadway St outfall
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 1360

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 25 LF of new 42" RCP across Sutton Ave at Cherry St.
- Replace existing pipe on south side of Sutton Ave with 280 LF of 42" RCP.
- Replace existing pipe in the Broadway St/SuttonAve intersection with 100 LF of 48" RCP.
- Replace exising outfall pipe with 20 LF of 60" RCP.
- Install 940 LF of channel improvements from the outfall to the confluence with the Swannanoa River.*

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Cherry St	< 2-YR	50-YR	100
Sutton Ave at Broadway St	< 2-YR	50-YR	100
Future Outfall Projects*	< 2-YR	50-YR	100

**Open Channel improvements along existing roadside channel from outfall at Broadway St to the confluence with the Swannanoa River provide capacity for future outfall improvements at Richardson Blvd and S. Ridgeway Ave.*

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,394,000
Design and Permitting	$ 493,800
Other Project Costs	$ 362,200
Total Project	**$ 2,250,000**

PROJECT AREA MAP



PROJECT NAME **Sutton Ave and Open Channel Stormwater Improvements** PROJECT ID: **DT-SA-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 420

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 51,060.00	$ 51,100.00
Erosion Control	1	LS	$ 41,850.00	$ 41,900.00
Traffic Control	1	LS	$ 16,740.00	$ 16,700.00
Moderate Utility Conflict	1	LS	$ 125,550.00	$ 125,600.00
Unclassified Excavation/Hauling	500	CY	$ 72.00	$ 36,000.00
Infrastructure Removal and Disposal	400	LF	$ 115.00	$ 46,000.00
Structure Removal and Disposal	6	EA	$ 6,800.00	$ 40,800.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	6	EA	$ 12,000.00	$ 72,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	400	LF	$ 670.00	$ 268,000.00
New Pipe: 60-inch	20	LF	$ 875.00	$ 17,500.00
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	940	LF	$ 350.00	$ 329,000.00
Roadway/Sidewalk Replacement	240	SY	$ 110.00	$ 26,400.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 322,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,394,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 69,700.00
Design and Permitting	20%	$ 278,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ 150,000.00
Geotechnical Investigation	1%	$ 13,900.00
Structural Evaluation	1%	$ 13,900.00
Real Estate	2%	$ 27,900.00
Utility Relocation	2%	$ 27,900.00
Project Maintenance (3yr)	5%	$ 69,700.00
Construction Inspections	10%	$ 139,400.00
Construction	100%	$ 1,394,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 2,250,000.00

PROJECT NAME: **Broadway St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-B1**

PROJECT INFORMATION

LOCATION: Broadway St in Downtown Business District
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 700

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24" pipe in Broadway St with 325 LF of 42-inch RCP.
- Replace existing catch basins and connecting pipes along Broadway with larger pipes.
- Re-route private system to proposed Broadway system and remove pipe under structure.
- Install upsized and new crossings and connections at Montreat Rd and Sutton Ave.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**83**

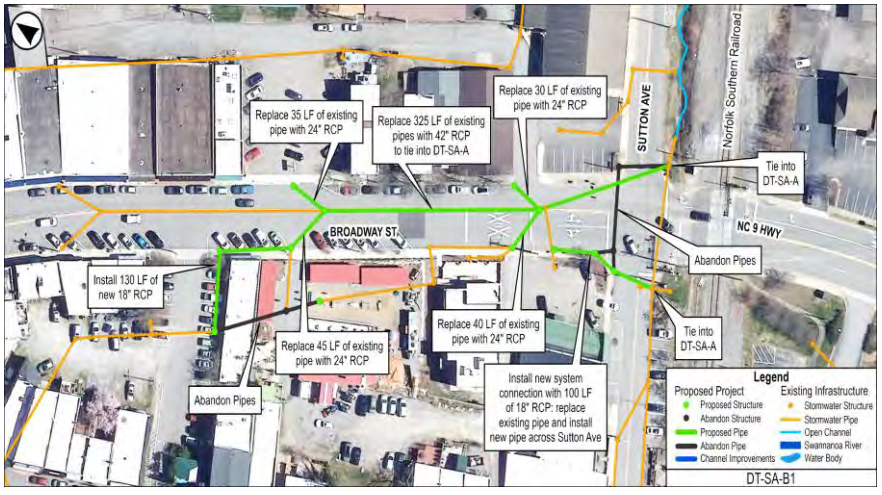
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Broadway St at Sutton Ave	< 2-YR	50-YR	100
Side system along Broadway	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,390,000
Design and Permitting	$ 278,000
Other Project Costs	$ 361,000
Total Project	**$ 2,029,000**

PROJECT AREA MAP



PROJECT NAME **Broadway St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-B1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 700

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 50,915.00	$ 50,900.00
Erosion Control	1	LS	$ 37,160.00	$ 37,200.00
Traffic Control	1	LS	$ 14,864.00	$ 14,900.00
Major Utility Conflict	1	LS	$ 222,960.00	$ 223,000.00
Unclassified Excavation/Hauling	500	CY	$ 72.00	$ 36,000.00
Infrastructure Removal and Disposal	720	LF	$ 115.00	$ 82,800.00
Structure Removal and Disposal	15	EA	$ 6,800.00	$ 102,000.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	375	LF	$ 390.00	$ 146,300.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	325	LF	$ 670.00	$ 217,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	380	SY	$ 110.00	$ 41,800.00
New Concrete Curb and Gutter	125	LF	$ 110.00	$ 13,800.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 321,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,390,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 69,500.00
Design and Permitting	20%	$ 278,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,900.00
Structural Evaluation	1%	$ 13,900.00
Real Estate	2%	$ 27,800.00
Utility Relocation	2%	$ 27,800.00
Project Maintenance (3yr)	5%	$ 69,500.00
Construction Inspections	10%	$ 139,000.00
Construction	100%	$ 1,390,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 2,029,000.00

PROJECT NAME: **Broadway St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-B2**

PROJECT INFORMATION

LOCATION: Broadway St north to Montreat Rd
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 615

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24" pipe in Broadway St with 210 LF of 36-inch RCP.
- Install 285 LF of new 30-inch RCP from 36-inch RCP in Broadway St across E State St.
- Replace 30 LF of existing pipe across Montreat Rd at E State St with 30-inch RCP.
- Remove pipe across Montreat flowing to first catch basin on W. State St.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

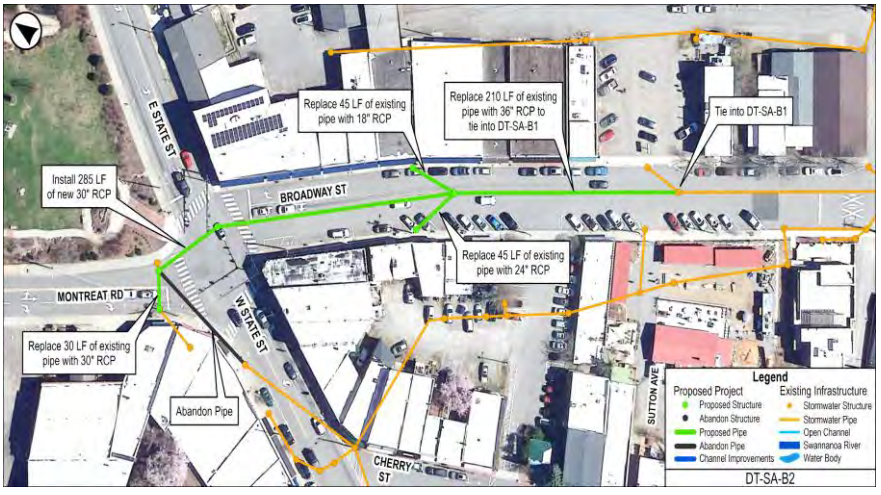
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
E State St at Broadway St	NA	50-YR	New Crossing
Montreat Rd at E State St	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 885,000
Design and Permitting	$ 177,000
Other Project Costs	$ 230,000
Total Project	**$ 1,292,000**

PROJECT AREA MAP



PROJECT NAME **Broadway St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-B2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 615
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 32,425.00	$ 32,400.00
Erosion Control	1	LS	$ 26,580.00	$ 26,600.00
Traffic Control	1	LS	$ 10,632.00	$ 10,600.00
Moderate Utility Conflict	1	LS	$ 79,740.00	$ 79,700.00
Unclassified Excavation/Hauling	620	CY	$ 72.00	$ 44,600.00
Infrastructure Removal and Disposal	435	LF	$ 115.00	$ 50,000.00
Structure Removal and Disposal	5	EA	$ 6,800.00	$ 34,000.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	90	LF	$ 390.00	$ 35,100.00
New Pipe: 30-inch to 36-inch	525	LF	$ 535.00	$ 280,900.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	310	SY	$ 110.00	$ 34,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 204,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 885,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 44,300.00
Design and Permitting	20%	$ 177,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,900.00
Structural Evaluation	1%	$ 8,900.00
Real Estate	2%	$ 17,700.00
Utility Relocation	2%	$ 17,700.00
Project Maintenance (3yr)	5%	$ 44,300.00
Construction Inspections	10%	$ 88,500.00
Construction	100%	$ 885,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,292,000.00

PROJECT NAME: **Cherry St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-C1**

PROJECT INFORMATION

LOCATION: Cherry St from W State St to Sutton Ave
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 690

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe on Cherry St with 270 LF of 36-inch RCP and tie into 42-inch RCP at Sutton Ave.
- Install 330 LF of new 36-inch RCP along Cherry St. from W. State St.
- Replace existing pipe crossing Cherry St at W State St with 85 LF of 36-inch RCP.
- Remove pipe under structure at corner of W State St and Cherry St. to re-route flow to right-of-way.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**75**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Cherry St at W State St	< 2-YR	50-YR	100
Cherry St at Sutton Ave	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,034,000
Design and Permitting	$ 206,800
Other Project Costs	$ 269,200
Total Project	**$ 1,510,000**

PROJECT AREA MAP



PROJECT NAME **Cherry St Stormwater Improvements Phase I** PROJECT ID: **DT-SA-C1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 690
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 37,855.00	$ 37,900.00
Erosion Control	1	LS	$ 31,030.00	$ 31,000.00
Traffic Control	1	LS	$ 12,412.00	$ 12,400.00
Moderate Utility Conflict	1	LS	$ 93,090.00	$ 93,100.00
Unclassified Excavation/Hauling	860	CY	$ 72.00	$ 61,900.00
Infrastructure Removal and Disposal	500	LF	$ 115.00	$ 57,500.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	4	EA	$ 8,600.00	$ 34,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	690	LF	$ 535.00	$ 369,200.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	390	SY	$ 110.00	$ 42,900.00
New Concrete Curb and Gutter	300	LF	$ 110.00	$ 33,000.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 239,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,034,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 51,700.00
Design and Permitting	20%	$ 206,800.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 10,300.00
Structural Evaluation	1%	$ 10,300.00
Real Estate	2%	$ 20,700.00
Utility Relocation	2%	$ 20,700.00
Project Maintenance (3yr)	5%	$ 51,700.00
Construction Inspections	10%	$ 103,400.00
Construction	100%	$ 1,034,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,510,000.00

PROJECT NAME: **Cherry St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-C2**

PROJECT INFORMATION

LOCATION: Church St and W State St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 420

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing crossings at Church St and W State St with 50 LF of 30-inch RCP and 50 LF of 36-inch RCP.
- Replace existing pipe along Church St with 24-inch RCP and connect to new system at W. State St/Cherry St.
- Install 160 LF of 18-inch RCP along W. State St to redirect flow to proposed Cherry St system.
- Remove remaining connection between Montreat Rd and Cherry St.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
W State St at Church St	< 2-YR	50-YR	100
W State St east of Cherry St	2-YR	50-YR	100
Church St at W State St	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 699,000
Design and Permitting	$ 139,800
Other Project Costs	$ 182,200
Total Project	**$ 1,021,000**

PROJECT AREA MAP



PROJECT NAME **Cherry St Stormwater Improvements Phase II** PROJECT ID: **DT-SA-C2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 420
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 25,635.00	$ 25,600.00
Erosion Control	1	LS	$ 21,015.00	$ 21,000.00
Traffic Control	1	LS	$ 8,406.00	$ 8,400.00
Moderate Utility Conflict	1	LS	$ 63,045.00	$ 63,000.00
Unclassified Excavation/Hauling	340	CY	$ 72.00	$ 24,500.00
Infrastructure Removal and Disposal	440	LF	$ 115.00	$ 50,600.00
Structure Removal and Disposal	8	EA	$ 6,800.00	$ 54,400.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	325	LF	$ 390.00	$ 126,800.00
New Pipe: 30-inch to 36-inch	95	LF	$ 535.00	$ 50,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	260	SY	$ 110.00	$ 28,600.00
New Concrete Curb and Gutter	210	LF	$ 110.00	$ 23,100.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 161,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 699,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 35,000.00
Design and Permitting	20%	$ 139,800.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 7,000.00
Structural Evaluation	1%	$ 7,000.00
Real Estate	2%	$ 14,000.00
Utility Relocation	2%	$ 14,000.00
Project Maintenance (3yr)	5%	$ 35,000.00
Construction Inspections	10%	$ 69,900.00
Construction	100%	$ 699,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,021,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase I** PROJECT ID: **DT-SA-D1**

PROJECT INFORMATION

LOCATION: Richardson Blvd / Post Office
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 1600

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 150 LF of 3' x 7' RCBC along Richardson Blvd to the outfall in the open channel along Sutton Ave.
- Install 570 LF of twin 42-inch RCP north along Richardson Blvd to the post office.
- Install 190 LF of 42-inch pipe to the intersection with E State St.
- Install 70 LF of new 36-inch RCP adjacent to the post office to reroute flow to the right-of-way.
- Project allows for stormwater improvements upstream at Police Station.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	0
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**71**

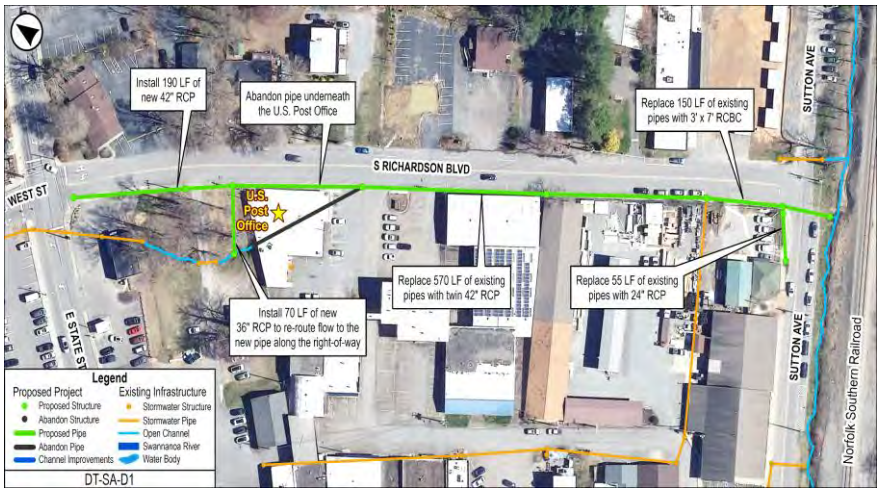
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Richardson	< 2-YR	50-YR	100
Post Office Infrastructure	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 2,913,000
Design and Permitting	$ 632,600
Other Project Costs	$ 757,400
Total Project	**$ 4,303,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase I** PROJECT ID: **DT-SA-D1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 1600
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 106,720.00	$ 106,700.00
Erosion Control	1	LS	$ 87,475.00	$ 87,500.00
Traffic Control	1	LS	$ 34,990.00	$ 35,000.00
Moderate Utility Conflict	1	LS	$ 262,425.00	$ 262,400.00
Unclassified Excavation/Hauling	2310	CY	$ 72.00	$ 166,300.00
Infrastructure Removal and Disposal	760	LF	$ 115.00	$ 87,400.00
Structure Removal and Disposal	6	EA	$ 6,800.00	$ 40,800.00
Standard Structure	3	EA	$ 8,600.00	$ 25,800.00
Large Structure or Headwall	8	EA	$ 12,000.00	$ 96,000.00
New Pipe: 18-inch to 24-inch	50	LF	$ 390.00	$ 19,500.00
New Pipe: 30-inch to 36-inch	70	LF	$ 535.00	$ 37,500.00
New Pipe: 42-inch to 54-inch	1330	LF	$ 670.00	$ 891,100.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	150	LF	$ 1,700.00	$ 255,000.00
Rip Rap	50	TN	$ 50.00	$ 2,500.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	610	SY	$ 110.00	$ 67,100.00
New Concrete Curb and Gutter	550	LF	$ 110.00	$ 60,500.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 672,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 2,913,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 145,700.00
Design and Permitting	20%	$ 582,600.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 29,100.00
Structural Evaluation	1%	$ 29,100.00
Real Estate	2%	$ 58,300.00
Utility Relocation	2%	$ 58,300.00
Project Maintenance (3yr)	5%	$ 145,700.00
Construction Inspections	10%	$ 291,300.00
Construction	100%	$ 2,913,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 4,303,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase II** PROJECT ID: **DT-SA-D2**

PROJECT INFORMATION

LOCATION: West St at E State St / Police Station
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 775

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 170 LF of new 42-inch RCP from Honeycutt St crossing E State St to tie-into proposed project DT-SA-D1.
- Install 55 LF of new 24-inch RCP and 200 LF of new 36-inch RCP in a new alignment along West St.
- Install new connecting pipes north of the police station to re-route flow to the right-of-way.
- Remove/abandon in place stormwater system running underneath police station to south of E State St.
- Install 235 LF of 24-inch RCP at the West/Midland intersection.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**87**

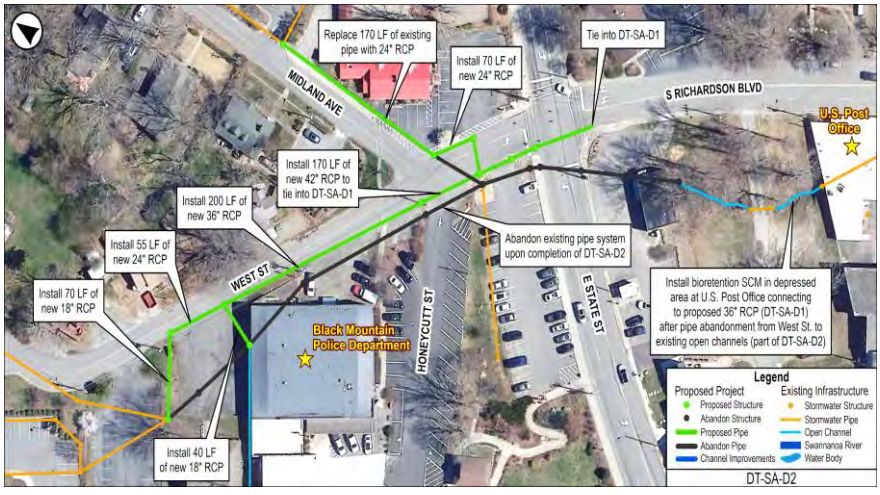
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
E State St/Richardson INT	< 2-YR	50-YR	100
West/Midland INT	< 2-YR	50-YR	100
Police Station Infrastructure	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,323,000
Design and Permitting	$ 264,600
Other Project Costs	$ 344,400
Total Project	**$ 1,932,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase II** PROJECT ID: **DT-SA-D2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 775
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 48,475.00	$ 48,500.00
Erosion Control	1	LS	$ 39,735.00	$ 39,700.00
Traffic Control	1	LS	$ 15,894.00	$ 15,900.00
Moderate Utility Conflict	1	LS	$ 119,205.00	$ 119,200.00
Unclassified Excavation/Hauling	940	CY	$ 72.00	$ 67,700.00
Infrastructure Removal and Disposal	710	LF	$ 115.00	$ 81,700.00
Structure Removal and Disposal	10	EA	$ 6,800.00	$ 68,000.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	4	EA	$ 12,000.00	$ 48,000.00
New Pipe: 18-inch to 24-inch	400	LF	$ 390.00	$ 156,000.00
New Pipe: 30-inch to 36-inch	200	LF	$ 535.00	$ 107,000.00
New Pipe: 42-inch to 54-inch	175	LF	$ 670.00	$ 117,300.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	370	SY	$ 110.00	$ 40,700.00
New Concrete Curb and Gutter	425	LF	$ 110.00	$ 46,800.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 305,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,323,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 66,200.00
Design and Permitting	20%	$ 264,600.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,200.00
Structural Evaluation	1%	$ 13,200.00
Real Estate	2%	$ 26,500.00
Utility Relocation	2%	$ 26,500.00
Project Maintenance (3yr)	5%	$ 66,200.00
Construction Inspections	10%	$ 132,300.00
Construction	100%	$ 1,323,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,932,000.00

PROJECT NAME: **Police Station / Post Office Stormwater Improvements Phase III** PROJECT ID: **DT-SA-D3**

PROJECT INFORMATION

LOCATION: Montreat Rd and Honeycutt St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 575

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with paved over inlet across Montreat Rd at Fire Station with 35 LF of 24-inch RCP.
- Install 540 LF of new 24-inch RCP along Montreat Rd to Honeycutt St connecting to 42-inch RCP at West St.
- Remove existing pipe directing public water onto private property just north of the Fire Station.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	0
FINAL PROJECT SCORE:	**81**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd at Fire Station	< 2-YR	50-YR	100
Honeycutt St	NA	50-YR	New System

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 632,000
Design and Permitting	$ 126,400
Other Project Costs	$ 164,600
Total Project	**$ 923,000**

PROJECT AREA MAP



PROJECT NAME **Police Station / Post Office Stormwater Improvements Phase III** PROJECT ID: **DT-SA-D3**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 575
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 23,135.00	$ 23,100.00
Erosion Control	1	LS	$ 18,960.00	$ 19,000.00
Traffic Control	1	LS	$ 7,584.00	$ 7,600.00
Moderate Utility Conflict	1	LS	$ 56,880.00	$ 56,900.00
Unclassified Excavation/Hauling	510	CY	$ 72.00	$ 36,700.00
Infrastructure Removal and Disposal	100	LF	$ 115.00	$ 11,500.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	4	EA	$ 8,600.00	$ 34,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	575	LF	$ 390.00	$ 224,300.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	310	SY	$ 110.00	$ 34,100.00
New Concrete Curb and Gutter	150	LF	$ 110.00	$ 16,500.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 146,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 632,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 31,600.00
Design and Permitting	20%	$ 126,400.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 6,300.00
Structural Evaluation	1%	$ 6,300.00
Real Estate	2%	$ 12,600.00
Utility Relocation	2%	$ 12,600.00
Project Maintenance (3yr)	5%	$ 31,600.00
Construction Inspections	10%	$ 63,200.00
Construction	100%	$ 632,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 923,000.00

PROJECT NAME: **West St to Montreat Rd Stormwater Improvements** PROJECT ID: **DT-SA-E1**

PROJECT INFORMATION

LOCATION: West St to Montreat Rd
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 760

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 735 LF of new 24-inch system along Montreat Rd and West St to connect to Proposed Project DT-SA-D2.
- This requires a permanent easement along the property line with the bank and church.
- Install 575 LF of new 24-inch system along Montreat Rd at Fire Station and Honeycutt Rd.
- Proposed project re-routes flow away from private property into the right-of-way.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**76**

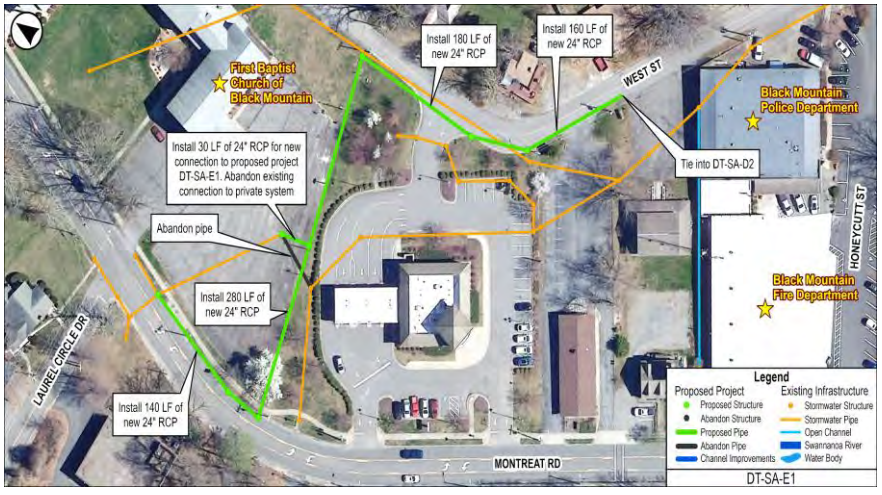
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd at the Church	NA	50-YR	New System
West St behind Bank	NA	50-YR	New System

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 841,000
Design and Permitting	$ 168,200
Other Project Costs	$ 218,800
Total Project	**$ 1,228,000**

PROJECT AREA MAP



PROJECT NAME **West St to Montreat Rd Stormwater Improvements** PROJECT ID: **DT-SA-E1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 760
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 30,820.00	$ 30,800.00
Erosion Control	1	LS	$ 25,260.00	$ 25,300.00
Traffic Control	1	LS	$ 10,104.00	$ 10,100.00
Moderate Utility Conflict	1	LS	$ 75,780.00	$ 75,800.00
Unclassified Excavation/Hauling	910	CY	$ 72.00	$ 65,500.00
Infrastructure Removal and Disposal	30	LF	$ 115.00	$ 3,500.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	8	EA	$ 8,600.00	$ 68,800.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	760	LF	$ 390.00	$ 296,400.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	210	SY	$ 110.00	$ 23,100.00
New Concrete Curb and Gutter	300	LF	$ 110.00	$ 33,000.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 194,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 841,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 42,100.00
Design and Permitting	20%	$ 168,200.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,400.00
Structural Evaluation	1%	$ 8,400.00
Real Estate	2%	$ 16,800.00
Utility Relocation	2%	$ 16,800.00
Project Maintenance (3yr)	5%	$ 42,100.00
Construction Inspections	10%	$ 84,100.00
Construction	100%	$ 841,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,228,000.00

PROJECT NAME: **Montreat Rd at Laurel Circle Dr Stormwater Improvements** PROJECT ID: **DT-SA-E2**

PROJECT INFORMATION

LOCATION:	Montreat Rd: E. Connally St to Laurel Circle Dr	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 260 LF of new 24-inch RCP along Montreat Rd from E. Connally St to Laurel Circle Dr.
- Replace 90 LF of existing pipe with 24-inch RCP across Laurel Circle Dr to tie-into proposed project DT-SA-E1.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	8
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**49**

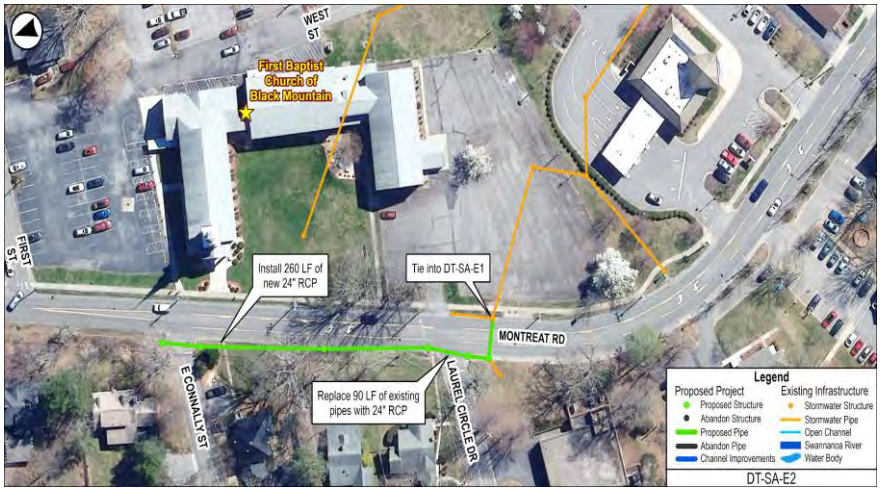
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Dr	< 2-YR	25-YR	45
E Connally St at Montreat Rd	NA	25-YR	New Crossing

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 546,000
Design and Permitting	$ 109,200
Other Project Costs	$ 141,800
Total Project	**$ 797,000**

PROJECT AREA MAP



PROJECT NAME **Montreat Rd at Laurel Circle Dr Stormwater Improvements** PROJECT ID: **DT-SA-E2**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 350

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 19,975.00	$ 20,000.00
Erosion Control	1	LS	$ 14,580.00	$ 14,600.00
Traffic Control	1	LS	$ 5,832.00	$ 5,800.00
Major Utility Conflict	1	LS	$ 87,480.00	$ 87,500.00
Unclassified Excavation/Hauling	300	CY	$ 72.00	$ 21,600.00
Infrastructure Removal and Disposal	95	LF	$ 115.00	$ 10,900.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	350	LF	$ 390.00	$ 136,500.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	240	LF	$ 110.00	$ 26,400.00
Replace Driveway Culvert Pipe	30	LF	$ 300.00	$ 9,000.00
Replace Existing Concrete Driveway	15	SY	$ 120.00	$ 1,800.00
			Construction Contingency (30%):	$ 126,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 546,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 27,300.00
Design and Permitting	20%	$ 109,200.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,500.00
Structural Evaluation	1%	$ 5,500.00
Real Estate	2%	$ 10,900.00
Utility Relocation	2%	$ 10,900.00
Project Maintenance (3yr)	5%	$ 27,300.00
Construction Inspections	10%	$ 54,600.00
Construction	100%	$ 546,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 797,000.00

PROJECT NAME: **Midland Ave Stormwater Improvements** PROJECT ID: **DT-SA-F**

PROJECT INFORMATION

LOCATION: Midland Ave
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 675

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing culvert crossing at First St and Midland Ave with 30 LF of 24-inch RCP.
- Replace existing pipe and open channel system along Midland Ave with 24-inch RCP.
- Tie-into 24-inch RCP (part of proposed project DT-SA-D2) at Town Hall.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**82**

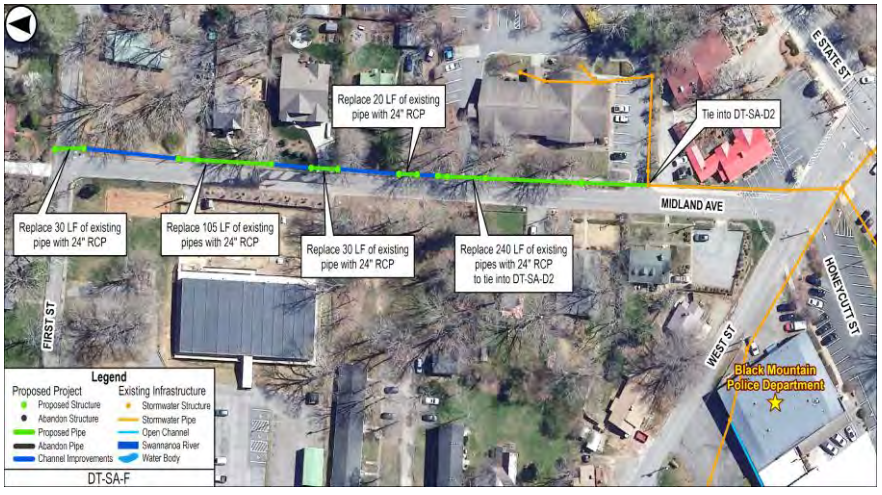
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
First St at Midland Ave	2-YR	50-YR	100
System at Town Hall	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 768,000
Design and Permitting	$ 153,600
Other Project Costs	$ 199,400
Total Project	**$ 1,121,000**

PROJECT AREA MAP



PROJECT NAME **Midland Ave Stormwater Improvements** PROJECT ID: **DT-SA-F**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 425

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 28,125.00	$ 28,100.00
Erosion Control	1	LS	$ 25,115.00	$ 25,100.00
Traffic Control	1	LS	$ 10,046.00	$ 10,000.00
Minor Utility Conflict	1	LS	$ 25,115.00	$ 25,100.00
Unclassified Excavation/Hauling	210	CY	$ 72.00	$ 15,100.00
Infrastructure Removal and Disposal	425	LF	$ 115.00	$ 48,900.00
Structure Removal and Disposal	5	EA	$ 6,800.00	$ 34,000.00
Standard Structure	13	EA	$ 8,600.00	$ 111,800.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	425	LF	$ 390.00	$ 165,800.00
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	250	LF	$ 350.00	$ 87,500.00
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	70	LF	$ 300.00	$ 21,000.00
Replace Existing Concrete Driveway	40	SY	$ 120.00	$ 4,800.00
			Construction Contingency (30%):	$ 177,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 768,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 38,400.00
Design and Permitting	20%	$ 153,600.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 7,700.00
Structural Evaluation	1%	$ 7,700.00
Real Estate	2%	$ 15,400.00
Utility Relocation	2%	$ 15,400.00
Project Maintenance (3yr)	5%	$ 38,400.00
Construction Inspections	10%	$ 76,800.00
Construction	100%	$ 768,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,121,000.00

PROJECT NAME: **S. Ridgeway Ave Stormwater Improvements** PROJECT ID: **DT-SA-G**

PROJECT INFORMATION

LOCATION:	Sutton Ave at S. Ridgway Ave	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	310

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 50 LF of 30-inch RCP across Sutton Ave on east side of Richardson Blvd.
- Install 80 LF of new 18-inch RCP and 100 LF of new 24-inch RCP along S. Ridgeway Ave.
- Replace existing pipe with 85 LF of 36-inch RCP to outfall at the open channel along Sutton Ave.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	0
FINAL PROJECT SCORE:	**76**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Sutton Ave at Richardson	< 2-YR	50-YR	100
Sutton Ave at Ridgeway Ave	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 532,000
Design and Permitting	$ 156,400
Other Project Costs	$ 138,600
Total Project	**$ 827,000**

PROJECT AREA MAP



PROJECT NAME **S. Ridgeway Ave Stormwater Improvements** PROJECT ID: **DT-SA-G**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 310
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 19,475.00	$ 19,500.00
Erosion Control	1	LS	$ 14,215.00	$ 14,200.00
Traffic Control	1	LS	$ 5,686.00	$ 5,700.00
Major Utility Conflict	1	LS	$ 85,290.00	$ 85,300.00
Unclassified Excavation/Hauling	170	CY	$ 72.00	$ 12,200.00
Infrastructure Removal and Disposal	105	LF	$ 115.00	$ 12,100.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	175	LF	$ 390.00	$ 68,300.00
New Pipe: 30-inch to 36-inch	135	LF	$ 535.00	$ 72,200.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	110	SY	$ 110.00	$ 12,100.00
New Concrete Curb and Gutter	75	LF	$ 110.00	$ 8,300.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 123,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 532,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 26,600.00
Design and Permitting	20%	$ 106,400.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,300.00
Structural Evaluation	1%	$ 5,300.00
Real Estate	2%	$ 10,600.00
Utility Relocation	2%	$ 10,600.00
Project Maintenance (3yr)	5%	$ 26,600.00
Construction Inspections	10%	$ 53,200.00
Construction	100%	$ 532,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 827,000.00

PROJECT NAME: **Black Mountain Ave Stormwater Improvements Phase I** PROJECT ID: **DT-BMA-A**

PROJECT INFORMATION

LOCATION: Vance Ave to the Swannanoa River
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 585

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 85 LF of 30" RCP across Vance St at Black Mountain Ave.
- Replace 175 LF of existing pipe with 30" RCP and 36" RCP at Vance Ave intersection and moving south.
- Install 370 LF of new 36" RCP just north of the Terry Estate Dr intersection to the outfall.
- Install 40 LF of new 24" RCP across Black Mountain Ave at Terry Estate Dr.
- Remove 195 LF of existing pipe from service at Terry Estate Dr/Black Mountain Ave intersection.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	4
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**82**

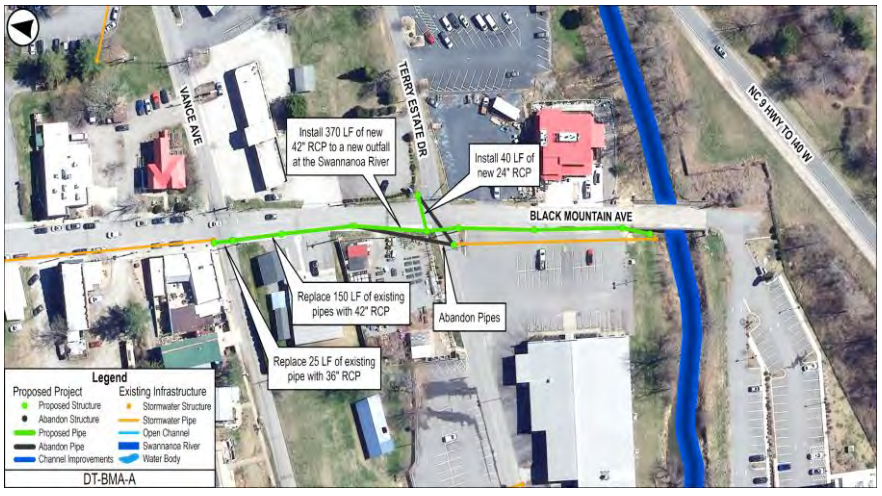
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate at Black Mtn Ave	< 2-YR	50-YR	100
Vance Ave at Black Mtn Ave	< 2-YR	25-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,253,000
Design and Permitting	$ 300,600
Other Project Costs	$ 326,400
Total Project	**$ 1,880,000**

PROJECT AREA MAP



PROJECT NAME **Black Mountain Ave Stormwater Improvements Phase I** PROJECT ID: **DT-BMA-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 585
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 45,910.00	$ 45,900.00
Erosion Control	1	LS	$ 37,630.00	$ 37,600.00
Traffic Control	1	LS	$ 15,052.00	$ 15,100.00
Moderate Utility Conflict	1	LS	$ 112,890.00	$ 112,900.00
Unclassified Excavation/Hauling	860	CY	$ 72.00	$ 61,900.00
Infrastructure Removal and Disposal	370	LF	$ 115.00	$ 42,600.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	3	EA	$ 8,600.00	$ 25,800.00
Large Structure or Headwall	8	EA	$ 12,000.00	$ 96,000.00
New Pipe: 18-inch to 24-inch	40	LF	$ 390.00	$ 15,600.00
New Pipe: 30-inch to 36-inch	25	LF	$ 535.00	$ 13,400.00
New Pipe: 42-inch to 54-inch	520	LF	$ 670.00	$ 348,400.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	560	SY	$ 110.00	$ 61,600.00
New Concrete Curb and Gutter	450	LF	$ 110.00	$ 49,500.00
Replace Driveway Culvert Pipe	25	LF	$ 300.00	$ 7,500.00
Replace Existing Concrete Driveway	15	SY	$ 120.00	$ 1,800.00
			Construction Contingency (30%):	$ 289,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,253,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 62,700.00
Design and Permitting	20%	$ 250,600.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 12,500.00
Structural Evaluation	1%	$ 12,500.00
Real Estate	2%	$ 25,100.00
Utility Relocation	2%	$ 25,100.00
Project Maintenance (3yr)	5%	$ 62,700.00
Construction Inspections	10%	$ 125,300.00
Construction	100%	$ 1,253,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,880,000.00

PROJECT NAME: **Black Mountain Ave Stormwater Improvements Phase II** PROJECT ID: **DT-BMA-B**

PROJECT INFORMATION

LOCATION:	S. Doughtery St to Vance Ave	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Downtown	DRAINAGE IMPROVEMENTS (LF):	585

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace nearly 400 LF of existing pipe along Black Mountain Ave from S. Doughtery St to Vance Ave.
- Install 160 LF of new 24" RCP at S. Doughtery St. to Black Mountain Ave.
- Replace existing culvert adjacent to the railroad tracks with 30 LF of 18" RCP.
- Install 50 LF of stormwater channel improvements as needed.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**88**

	LEVEL OF SERVICE		% REDUCTION
KEY CROSSING	EXISTING	PROPOSED	50 YR
Black Mountain Ave at RR	< 2-YR	50-YR	100
S. Dougherty St Bend	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 862,000
Design and Permitting	$ 222,400
Other Project Costs	$ 223,600
Total Project	**$ 1,308,000**

PROJECT AREA MAP



PROJECT NAME **Black Mountain Ave Stormwater Improvements Phase II** PROJECT ID: **DT-BMA-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 585
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 31,570.00	$ 31,600.00
Erosion Control	1	LS	$ 28,185.00	$ 28,200.00
Traffic Control	1	LS	$ 11,274.00	$ 11,300.00
Minor Utility Conflict	1	LS	$ 28,185.00	$ 28,200.00
Unclassified Excavation/Hauling	550	CY	$ 72.00	$ 39,600.00
Infrastructure Removal and Disposal	500	LF	$ 115.00	$ 57,500.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	6	EA	$ 8,600.00	$ 51,600.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	190	LF	$ 390.00	$ 74,100.00
New Pipe: 30-inch to 36-inch	395	LF	$ 535.00	$ 211,300.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	350	SY	$ 110.00	$ 38,500.00
New Concrete Curb and Gutter	400	LF	$ 110.00	$ 44,000.00
Replace Driveway Culvert Pipe	50	LF	$ 300.00	$ 15,000.00
Replace Existing Concrete Driveway	30	SY	$ 120.00	$ 3,600.00
			Construction Contingency (30%):	$ 199,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 862,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 43,100.00
Design and Permitting	20%	$ 172,400.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ 50,000.00
Geotechnical Investigation	1%	$ 8,600.00
Structural Evaluation	1%	$ 8,600.00
Real Estate	2%	$ 17,200.00
Utility Relocation	2%	$ 17,200.00
Project Maintenance (3yr)	5%	$ 43,100.00
Construction Inspections	10%	$ 86,200.00
Construction	100%	$ 862,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,308,000.00

PROJECT NAME: **Terry Estate Dr Stormwater Improvements Phase I** PROJECT ID: **DT-TE-A**

PROJECT INFORMATION

LOCATION: Terry Estate Drive
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 745

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipes across Terry Estate Dr in 5 locations with larger pipes.
- Replace the existing pipe on the south side of Terry Estate Dr with 55 LF of 30-inch and 400 LF of 36-inch RCP.
- Install a new 42-inch outfall pipe across the parking lot to the Swannanoa River.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	24
Public or Privately-Owned Land	4
Effect of Improvements	15
Cost Effectiveness	10
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**61**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate Dr at Bridge St	< 2-YR	50-YR	100
Terry Estate Dr	< 2-YR	25-YR	96

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 1,310,000
Design and Permitting	$ 312,000
Other Project Costs	$ 341,000
Total Project	**$ 1,963,000**

PROJECT AREA MAP



PROJECT NAME **Terry Estate Dr Stormwater Improvements Phase I** PROJECT ID: **DT-TE-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 745
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 48,010.00	$ 48,000.00
Erosion Control	1	LS	$ 35,045.00	$ 35,000.00
Traffic Control	1	LS	$ 14,018.00	$ 14,000.00
Major Utility Conflict	1	LS	$ 210,270.00	$ 210,300.00
Unclassified Excavation/Hauling	630	CY	$ 72.00	$ 45,400.00
Infrastructure Removal and Disposal	730	LF	$ 115.00	$ 84,000.00
Structure Removal and Disposal	7	EA	$ 6,800.00	$ 47,600.00
Standard Structure	9	EA	$ 8,600.00	$ 77,400.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	120	LF	$ 390.00	$ 46,800.00
New Pipe: 30-inch to 36-inch	485	LF	$ 535.00	$ 259,500.00
New Pipe: 42-inch to 54-inch	140	LF	$ 670.00	$ 93,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	410	SY	$ 110.00	$ 45,100.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 302,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 1,310,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 65,500.00
Design and Permitting	20%	$ 262,000.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 13,100.00
Structural Evaluation	1%	$ 13,100.00
Real Estate	2%	$ 26,200.00
Utility Relocation	2%	$ 26,200.00
Project Maintenance (3yr)	5%	$ 65,500.00
Construction Inspections	10%	$ 131,000.00
Construction	100%	$ 1,310,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,963,000.00

PROJECT NAME: **Terry Estate Dr Stormwater Improvements Phase II** PROJECT ID: **DT-TE-B**

PROJECT INFORMATION

LOCATION: Vance Ave at Bridge St and Spring St
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 715

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe and stormwater roadside ditches along Bridge St with 260 LF of 24-inch RCP.
- Replace existing pipe crossing Spring St and Vance St with 70 LF of 24-inch RCP.
- Install 375 LF of new 24-inch RCP to re-route flow to Vance Ave and Black Mountain Ave rights-of-way.
- Remove/abandon in place stormwater pipe running south to Terry Estate Dr through private property.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**78**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Vance Ave at Bridge St	10-YR	50-YR	100
Vance Ave/Spring St INT	< 2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 945,000
Design and Permitting	$ 189,000
Other Project Costs	$ 246,000
Total Project	**$ 1,380,000**

PROJECT AREA MAP



PROJECT NAME **Terry Estate Dr Stormwater Improvements Phase II** PROJECT ID: **DT-TE-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 715
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 34,625.00	$ 34,600.00
Erosion Control	1	LS	$ 28,380.00	$ 28,400.00
Traffic Control	1	LS	$ 11,352.00	$ 11,400.00
Moderate Utility Conflict	1	LS	$ 85,140.00	$ 85,100.00
Unclassified Excavation/Hauling	590	CY	$ 72.00	$ 42,500.00
Infrastructure Removal and Disposal	580	LF	$ 115.00	$ 66,700.00
Structure Removal and Disposal	4	EA	$ 6,800.00	$ 27,200.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	265	LF	$ 390.00	$ 103,400.00
New Pipe: 30-inch to 36-inch	450	LF	$ 535.00	$ 240,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	180	SY	$ 110.00	$ 19,800.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 218,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 945,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 47,300.00
Design and Permitting	20%	$ 189,000.00
Environmental Permitting	-	$ -
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 9,500.00
Structural Evaluation	1%	$ 9,500.00
Real Estate	2%	$ 18,900.00
Utility Relocation	2%	$ 18,900.00
Project Maintenance (3yr)	5%	$ 47,300.00
Construction Inspections	10%	$ 94,500.00
Construction	100%	$ 945,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,380,000.00

PROJECT NAME: **NC 9 Stormwater Improvements** PROJECT ID: **DT-NC9-A**

PROJECT INFORMATION

LOCATION: Vance Ave to outfall at Swannanoa River
WATERSHED: Downtown
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 595

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe along NC 9 with 280 LF of 36-inch RCP and tie-into culvert at Swannanaoa River.
- Replace existing pipe along Terry Estate Dr with 24-inch RCP and tie into proposed 36-inch pipe at NC 9.
- Install 130 LF of new 24-inch RCP to route flow along the Vance Ave right-of -way to tie into the NC 9 system.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**68**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Terry Estate Dr west of NC9	< 2-YR	50-YR	100
Terry Estate Dr at NC9	25-YR	50-YR	100
Vance Ave at NC9	25-YR	50-YR	100
Vance Ave west of NC 9	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 880,000
Design and Permitting	$ 226,000
Other Project Costs	$ 229,000
Total Project	**$ 1,335,000**

PROJECT AREA MAP



PROJECT NAME **NC 9 Stormwater Improvements** PROJECT ID: **DT-NC9-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Downtown

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 595

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 32,250.00	$ 32,300.00
Erosion Control	1	LS	$ 26,435.00	$ 26,400.00
Traffic Control	1	LS	$ 10,574.00	$ 10,600.00
Moderate Utility Conflict	1	LS	$ 79,305.00	$ 79,300.00
Unclassified Excavation/Hauling	540	CY	$ 72.00	$ 38,900.00
Infrastructure Removal and Disposal	470	LF	$ 115.00	$ 54,100.00
Structure Removal and Disposal	7	EA	$ 6,800.00	$ 47,600.00
Standard Structure	7	EA	$ 8,600.00	$ 60,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	315	LF	$ 390.00	$ 122,900.00
New Pipe: 30-inch to 36-inch	280	LF	$ 535.00	$ 149,800.00
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	270	SY	$ 110.00	$ 29,700.00
New Concrete Curb and Gutter	220	LF	$ 110.00	$ 24,200.00
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 203,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 880,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 44,000.00
Design and Permitting	20%	$ 176,000.00
Environmental Permitting	-	$ 50,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 8,800.00
Structural Evaluation	1%	$ 8,800.00
Real Estate	2%	$ 17,600.00
Utility Relocation	2%	$ 17,600.00
Project Maintenance (3yr)	5%	$ 44,000.00
Construction Inspections	10%	$ 88,000.00
Construction	100%	$ 880,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 1,335,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure E-2: Proposed Stormwater Improvement Projects
TOMAHAWK BRANCH PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N W E S

PROJECT NAME: **Laurel Circle Culvert Replacement (Tomahawk Branch)** PROJECT ID: **TB-A1**

PROJECT INFORMATION

LOCATION:	Laurel Circle Dr north of Lake Tomahawk	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	220

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing arch culverts with 40 LF of triple 5' x 9' RCBC.
- Install floodplain benching upstream/downstream of proposed culvert (documented separately).
- Tomahawk Lake analysis is required to determine any additional measures to improve the level of service.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	8
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	2
FINAL PROJECT SCORE:	**58**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Drive	< 2-YR	10-YR	0

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 455,000
Design and Permitting	$ 186,000
Other Project Costs	$ 119,000
Total Project	**$ 760,000**

PROJECT AREA MAP



PROJECT NAME **Laurel Circle Culvert Replacement (Tomahawk Branch)** PROJECT ID: **TB-A1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 120
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 16,650.00	$ 16,700.00
Erosion Control	1	LS	$ 14,865.00	$ 14,900.00
Traffic Control	1	LS	$ 5,946.00	$ 5,900.00
Minor Utility Conflict	1	LS	$ 14,865.00	$ 14,900.00
Unclassified Excavation/Hauling	190	CY	$ 72.00	$ 13,700.00
Infrastructure Removal and Disposal	120	LF	$ 115.00	$ 13,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	120	LF	$ 1,700.00	$ 204,000.00
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	100	LF	$ 350.00	$ 35,000.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 105,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 455,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 22,800.00
Design and Permitting	20%	$ 91,000.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 4,600.00
Structural Evaluation	1%	$ 4,600.00
Real Estate	2%	$ 9,100.00
Utility Relocation	2%	$ 9,100.00
Project Maintenance (3yr)	5%	$ 22,800.00
Construction Inspections	10%	$ 45,500.00
Construction	100%	$ 455,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 760,000.00

PROJECT NAME: **Tomahawk Branch Floodplain Benching at Golf Course** PROJECT ID: **TB-A2**

PROJECT INFORMATION

LOCATION:	Laurel Circle Dr north of Lake Tomahawk	STORMWATER PROJECT TYPE:	Floodplain Benching
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	500

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install approximately 500 LF of channel improvements with floodplain benching to lower WSELs.
- Floodplain benching improvements are located up and downstream of the proposed RCBC in project TB-A1.

PROJECT PRIORITIZATION AND PROPERTY REQUIREMENTS

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	8
Public or Privately-Owned Land	4
Effect of Improvements	10
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**53**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Laurel Circle Drive	< 2-YR	10-YR	0

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 406,000
Design and Permitting	$ 146,200
Other Project Costs	$ 137,800
Total Project	**$ 690,000**

PROJECT AREA MAP



PROJECT NAME: **Tomahawk Branch Floodplain Benching at Golf C** PROJECT ID: **TB-A2**

PROJECT TYPE: Floodplain Benching WATERSHED: Tomahawk Branch

PLANNING LEVEL COST ESTIMATE

- Construction estimate includes 30% contingency for planning.
- Proposed project footprints are based on GIS and modeling analyses.
- Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 15,660.00	$ 15,700.00
Erosion Control	1	LS	$ 13,980.00	$ 14,000.00
Traffic Control	1	LS	$ 5,592.00	$ 5,600.00
Minor Utility Conflict	1	LS	$ 13,980.00	$ 14,000.00
Clearing and Grubbing	1110	SY	$ 5.50	$ 6,100.00
Earthwork	370	CY	$ 90.00	$ 33,300.00
Fine Grading	1110	SY	$ 18.00	$ 20,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Infrastructure Removal and Disposal	-	LF	$ 115.00	-
Stone, Class B	125	TN	$ 92.00	$ 11,500.00
Filter Fabric/Geotextiles	2780	SY	$ 35.00	$ 97,300.00
Plantings	1110	SY	$ 7.00	$ 7,800.00
3-gallon Container Plants	135	EA	$ 70.00	$ 9,500.00
Riffle Grade Control	2	EA	$ 4,025.00	$ 8,100.00
Floodplain Tree Removal	1	LS	$ 15,000.00	$ 15,000.00
Log Grade Control Structure	-	EA	$ 4,000.00	-
Pump Around Operation	1	LS	$ 46,000.00	$ 46,000.00
Golf Course Bridge	1	LS	$ 25,000.00	$ 25,000.00
			Construction Contingency (30%):	$ 77,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 406,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 20,300.00
Design and Permitting	20%	$ 81,200.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 4,100.00
Structural Evaluation	1%	$ 4,100.00
Real Estate	10%	$ 40,600.00
Utility Relocation	2%	$ 8,100.00
Project Maintenance (3yr)	5%	$ 20,300.00
Construction Inspections	10%	$ 40,600.00
Construction	100%	$ 406,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 690,000.00

PROJECT NAME: **Swannanoa Ave Culvert Replacement and Stream Stabilization** PROJECT ID: **TB-B**

PROJECT INFORMATION

LOCATION:	Swannanoa Ave near Cragmont Rd	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tomahawk Branch	DRAINAGE IMPROVEMENTS (LF):	355

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing culvert with 30 LF of 48-inch RCP.
- Install approximately 200 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**77**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Swannanoa Ave	2-YR	25-YR	50

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 250,000
Design and Permitting	$ 115,000
Other Project Costs	$ 65,000
Total Project	**$ 430,000**

PROJECT AREA MAP



PROJECT NAME **Swannanoa Ave Culvert Replacement and Stream Stabilization** PROJECT ID: **TB-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

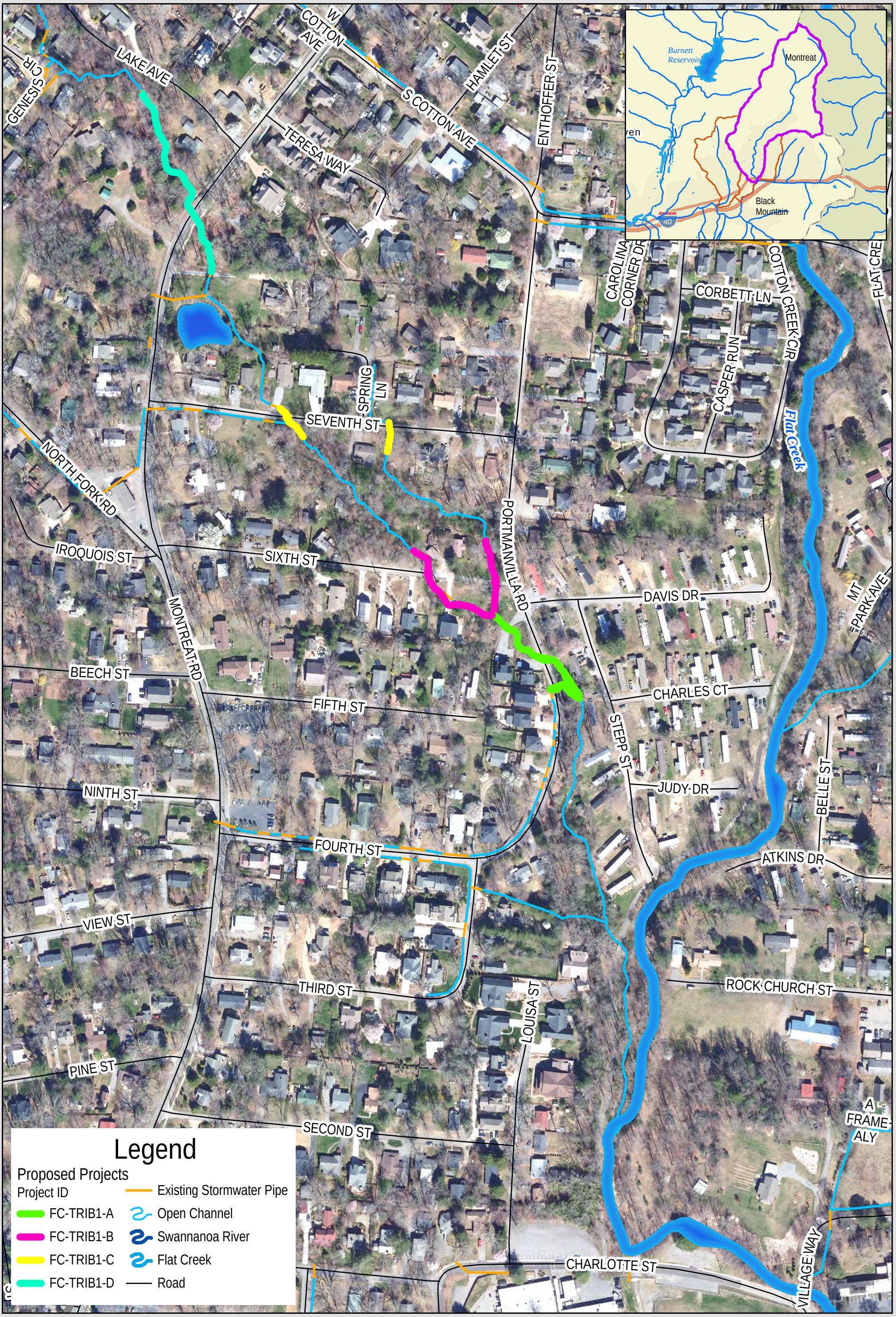
Construction cost includes 30% contingency for planning. Improvements (LF): 35
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 9,140.00	$ 9,100.00
Erosion Control	1	LS	$ 8,155.00	$ 8,200.00
Traffic Control	1	LS	$ 3,262.00	$ 3,300.00
Minor Utility Conflict	1	LS	$ 8,155.00	$ 8,200.00
Unclassified Excavation/Hauling	40	CY	$ 72.00	$ 2,900.00
Infrastructure Removal and Disposal	35	LF	$ 115.00	$ 4,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	-	EA	$ 12,000.00	-
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	35	LF	$ 670.00	$ 23,500.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	320	LF	$ 350.00	$ 112,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 58,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 250,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 12,500.00
Design and Permitting	20%	$ 50,000.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,500.00
Structural Evaluation	1%	$ 2,500.00
Real Estate	2%	$ 5,000.00
Utility Relocation	2%	$ 5,000.00
Project Maintenance (3yr)	5%	$ 12,500.00
Construction Inspections	10%	$ 25,000.00
Construction	100%	$ 250,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 430,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure E-3: Proposed Stormwater Improvement Projects
FLAT CREEK TRIBUTARY 1 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 100 200 Feet
1 in = 200 ft

N
W E
S

PROJECT NAME: **Portmanvilla Rd Stormwater Improvements** PROJECT ID: **FC-TRIB1-A**

PROJECT INFORMATION

LOCATION: Portmanvilla Rd near Davis Dr
WATERSHED: Flat Creek
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 540

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CMP with 35 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing 30-inch CMP with 45 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Replace existing upstream private pipe with 25 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Replace existing downstream private pipe with 40 LF of twin 31.31" x 51.13" (42" Eq) Concrete Arch Pipe.
- Install approximately 250 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**87**

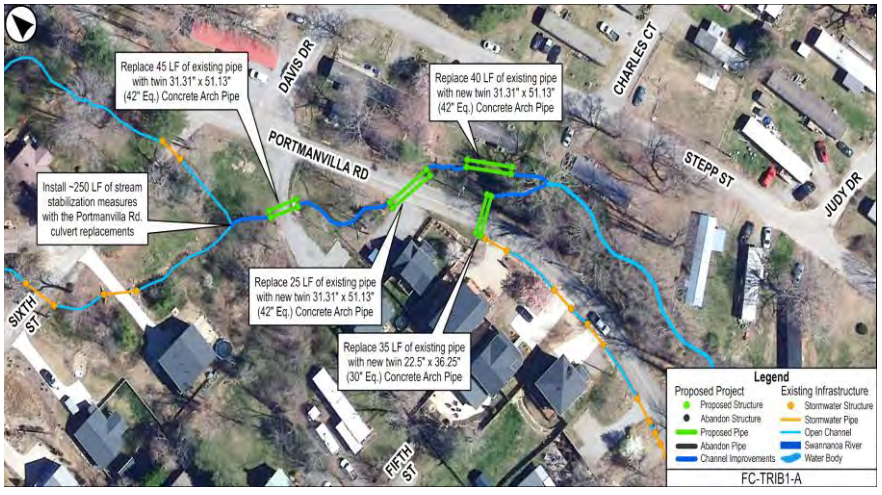
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Portmanvilla Rd (15" CMP)	< 2-YR	50-YR	100
Portmanvilla Rd (30" RCP)	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 572,000
Design and Permitting	$ 179,400
Other Project Costs	$ 148,600
Total Project	**$ 900,000**

PROJECT AREA MAP



PROJECT NAME **Portmanvilla Rd Stormwater Improvements** PROJECT ID: **FC-TRIB1-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 290
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 20,940.00	$ 20,900.00
Erosion Control	1	LS	$ 17,160.00	$ 17,200.00
Traffic Control	1	LS	$ 6,864.00	$ 6,900.00
Moderate Utility Conflict	1	LS	$ 51,480.00	$ 51,500.00
Unclassified Excavation/Hauling	270	CY	$ 72.00	$ 19,400.00
Infrastructure Removal and Disposal	140	LF	$ 115.00	$ 16,100.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	4	EA	$ 12,000.00	$ 48,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	290	LF	$ 500.00	$ 145,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	250	LF	$ 350.00	$ 87,500.00
Roadway/Sidewalk Replacement	60	SY	$ 110.00	$ 6,600.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 132,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 572,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 28,600.00
Design and Permitting	20%	$ 114,400.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,700.00
Structural Evaluation	1%	$ 5,700.00
Real Estate	2%	$ 11,400.00
Utility Relocation	2%	$ 11,400.00
Project Maintenance (3yr)	5%	$ 28,600.00
Construction Inspections	10%	$ 57,200.00
Construction	100%	$ 572,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 900,000.00

PROJECT NAME: **6th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-B**

PROJECT INFORMATION

LOCATION:	6th St near Portmanvilla Rd	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Flat Creek	DRAINAGE IMPROVEMENTS (LF):	500

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CMP with 20 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing 42-inch CMP with 30 LF of twin 26.625" x 43.75" (36" Eq) Concrete Arch Pipe.
- Install approximately 150 LF of stream stabilization measures upstream of the proposed culverts.
- Install approximately 250 LF of stream stabilization measures downstream of the proposed culverts.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	2
FINAL PROJECT SCORE:	**78**

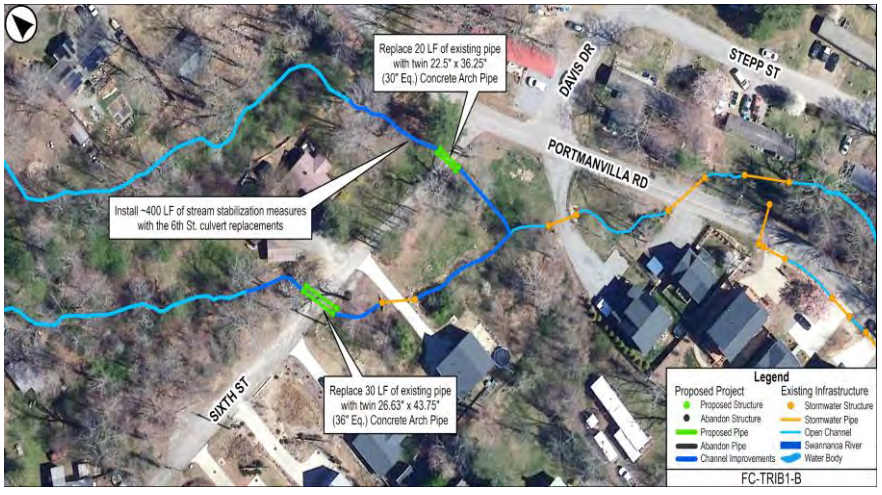
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
6th St at Portmanvilla Rd	< 2-YR	50-YR	100
6th Street	10-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 389,000
Design and Permitting	$ 142,800
Other Project Costs	$ 101,200
Total Project	**$ 633,000**

PROJECT AREA MAP



PROJECT NAME **6th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-B**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 100
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 14,250.00	$ 14,300.00
Erosion Control	1	LS	$ 12,725.00	$ 12,700.00
Traffic Control	1	LS	$ 5,090.00	$ 5,100.00
Minor Utility Conflict	1	LS	$ 12,725.00	$ 12,700.00
Unclassified Excavation/Hauling	70	CY	$ 72.00	$ 5,000.00
Infrastructure Removal and Disposal	50	LF	$ 115.00	$ 5,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	100	LF	$ 500.00	$ 50,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	400	LF	$ 350.00	$ 140,000.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	15	LF	$ 300.00	$ 4,500.00
Replace Existing Concrete Driveway	10	SY	$ 120.00	$ 1,200.00
			Construction Contingency (30%):	$ 90,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 389,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 19,500.00
Design and Permitting	20%	$ 77,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,900.00
Structural Evaluation	1%	$ 3,900.00
Real Estate	2%	$ 7,800.00
Utility Relocation	2%	$ 7,800.00
Project Maintenance (3yr)	5%	$ 19,500.00
Construction Inspections	10%	$ 38,900.00
Construction	100%	$ 389,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 633,000.00

PROJECT NAME: **7th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-C**

PROJECT INFORMATION

LOCATION: 7th St near Portmanvilla Rd
WATERSHED: Flat Creek
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 210

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 15-inch CPP with 25 LF of 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Replace existing triple 24-inch CMP with 25 LF of twin 22.5" x 36.25" (30" Eq) Concrete Arch Pipe.
- Install approximately 110 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**87**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
7th St at Portmanvilla Rd	< 2-YR	50-YR	100
7th Street	2-YR	25-YR	78

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 233,000
Design and Permitting	$ 111,600
Other Project Costs	$ 60,400
Total Project	**$ 405,000**

PROJECT AREA MAP



PROJECT NAME **7th Street Culvert Replacements and Stream Stabilization** PROJECT ID: **FC-TRIB1-C**

PROJECT TYPE: Stormwater Drainage WATERSHED: Flat Creek

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 100
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 8,525.00	$ 8,500.00
Erosion Control	1	LS	$ 7,615.00	$ 7,600.00
Traffic Control	1	LS	$ 3,046.00	$ 3,000.00
Minor Utility Conflict	1	LS	$ 7,615.00	$ 7,600.00
Unclassified Excavation/Hauling	60	CY	$ 72.00	$ 4,300.00
Infrastructure Removal and Disposal	100	LF	$ 115.00	$ 11,500.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	100	LF	$ 500.00	$ 50,000.00
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	110	LF	$ 350.00	$ 38,500.00
Roadway/Sidewalk Replacement	50	SY	$ 110.00	$ 5,500.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 54,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 233,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,700.00
Design and Permitting	20%	$ 46,600.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,300.00
Structural Evaluation	1%	$ 2,300.00
Real Estate	2%	$ 4,700.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,700.00
Construction Inspections	10%	$ 23,300.00
Construction	100%	$ 233,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 405,000.00

PROJECT NAME: **Montreat Road Culvert Replacement (Flat Creek)** PROJECT ID: **FC-TRIB1-D**

PROJECT INFORMATION

LOCATION: Montreat Rd near Lake Ave
WATERSHED: Tomahawk Branch
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing 24-inch CMP with 50 LF of 42-inch RCP.
- Install approximately 200 LF of stream stabilization measures upstream.
- Install approximately 100 LF of stream stabilization measures downstream of the proposed culvert.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**88**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Montreat Rd near Lake Ave	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 329,000
Design and Permitting	$ 130,800
Other Project Costs	$ 86,200
Total Project	**$ 546,000**

PROJECT AREA MAP



PROJECT NAME **Montreat Road Culvert Replacement (Flat Creek)** PROJECT ID: **FC-TRIB1-D**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tomahawk B

PLANNING LEVEL COST ESTIMATE

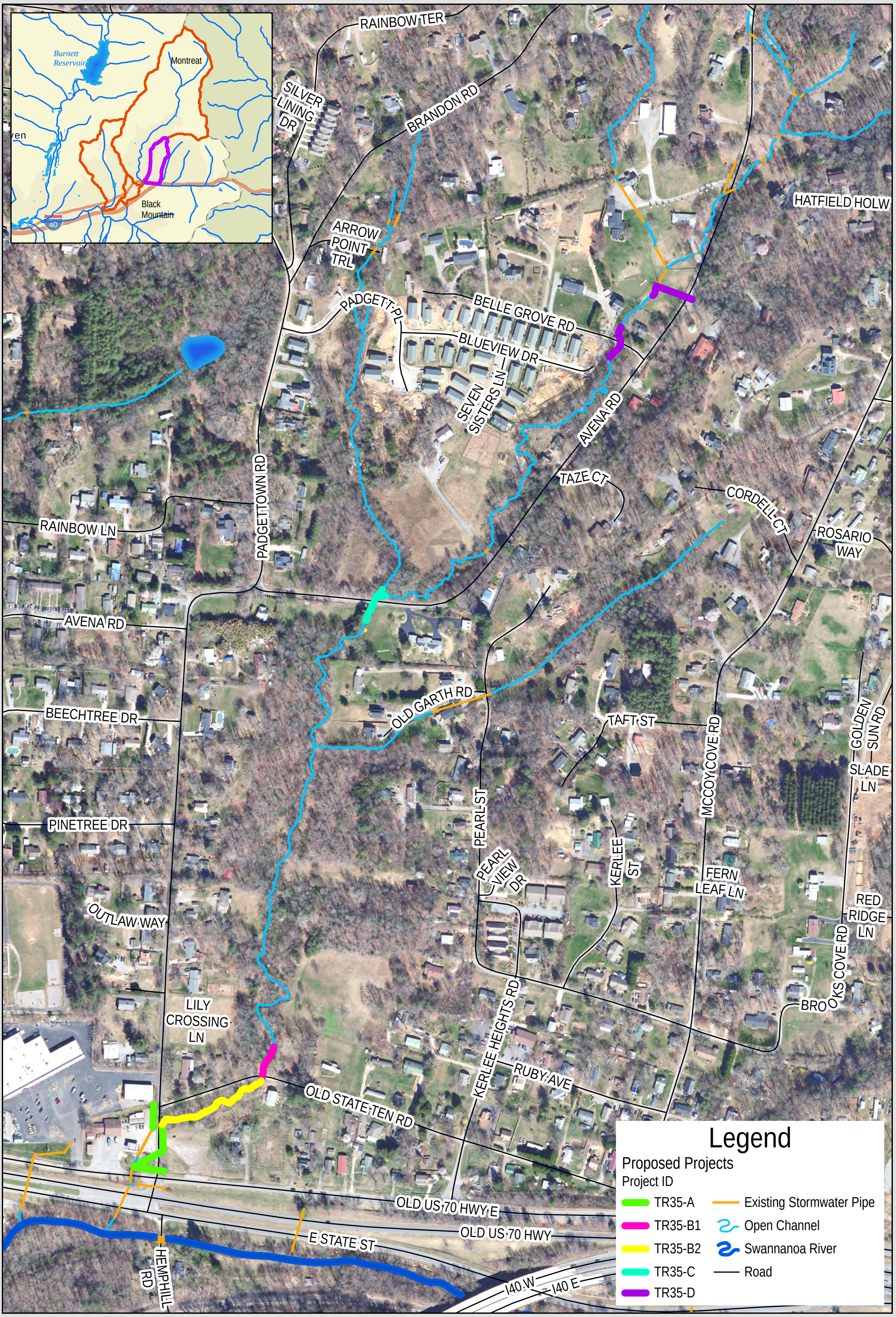
Construction cost includes 30% contingency for planning. Improvements (LF): 50
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 12,060.00	$ 12,100.00
Erosion Control	1	LS	$ 8,805.00	$ 8,800.00
Traffic Control	1	LS	$ 3,522.00	$ 3,500.00
Major Utility Conflict	1	LS	$ 52,830.00	$ 52,800.00
Unclassified Excavation/Hauling	60	CY	$ 72.00	$ 4,300.00
Infrastructure Removal and Disposal	50	LF	$ 115.00	$ 5,800.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	50	LF	$ 670.00	$ 33,500.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	300	LF	$ 350.00	$ 105,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 76,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 329,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 16,500.00
Design and Permitting	20%	$ 65,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,300.00
Structural Evaluation	1%	$ 3,300.00
Real Estate	2%	$ 6,600.00
Utility Relocation	2%	$ 6,600.00
Project Maintenance (3yr)	5%	$ 16,500.00
Construction Inspections	10%	$ 32,900.00
Construction	100%	$ 329,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 546,000.00



WK DICKSON
AN ARDURRA COMPANY

Figure E-4: Proposed Stormwater Improvement Projects
AVENA ROAD/TRIBUTARY 35 PRIMARY SYSTEM
Town of Black Mountain Stormwater Master Plan

0 150 300 Feet
1 in = 300 ft

N
W E
S

PROJECT NAME: **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT INFORMATION

LOCATION: Padgettown Rd/US Hwy 70E Intersection
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 460

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install 145 LF of twin 60-inch RCP by-pass system to depression area south of the gas station.
- Replace existing pipe across Padgettown Road at Old US 70E with twin 48" RCP.
- Excavate and enlarge existing open channel and outfall area downstream of gas station.
- Existing conditions severly limit options to provide desired LOS. An option is presented herein.
- Additional survey and engineering investigation required to determine constructability and achievable LOS.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	16
Public or Privately-Owned Land	8
Effect of Improvements	15
Cost Effectiveness	15
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**62**

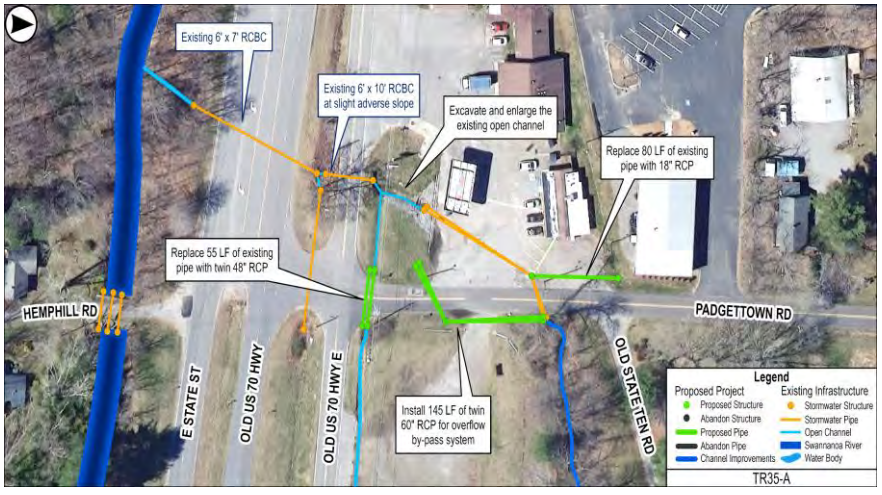
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown at Old US70E	2-YR	25-YR	80
Gas Station (Twin 36")	2-YR	10-YR	76
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Padgettown Rd (Twin 60")	NA	25-YR	New Crossing

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 909,000
Design and Permitting	$ 276,800
Other Project Costs	$ 236,200
Total Project	**$ 1,422,000**

PROJECT AREA MAP



PROJECT NAME **Padgettown Rd Stormwater Improvements** PROJECT ID: **TR35-A**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning.
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

Improvements (LF): 460

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 33,290.00	$ 33,300.00
Erosion Control	1	LS	$ 24,300.00	$ 24,300.00
Traffic Control	1	LS	$ 9,720.00	$ 9,700.00
Major Utility Conflict	1	LS	$ 145,800.00	$ 145,800.00
Unclassified Excavation/Hauling	770	CY	$ 72.00	$ 55,400.00
Infrastructure Removal and Disposal	125	LF	$ 115.00	$ 14,400.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Standard Structure	1	EA	$ 8,600.00	$ 8,600.00
Large Structure or Headwall	5	EA	$ 12,000.00	$ 60,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	90	LF	$ 670.00	$ 60,300.00
New Pipe: 60-inch	290	LF	$ 875.00	$ 253,800.00
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	-	LF	$ 350.00	-
Roadway/Sidewalk Replacement	100	SY	$ 110.00	$ 11,000.00
Earthwork	105	CY	$ 90.00	$ 9,500.00
Fine Grading	550	SY	$ 18.00	$ 9,900.00
Plantings	250	SY	$ 7.00	$ 1,800.00
			Construction Contingency (30%):	$ 210,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 909,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 45,500.00
Design and Permitting	20%	$ 181,800.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 9,100.00
Structural Evaluation	1%	$ 9,100.00
Real Estate	2%	$ 18,200.00
Utility Relocation	2%	$ 18,200.00
Project Maintenance (3yr)	5%	$ 45,500.00
Construction Inspections	10%	$ 90,900.00
Construction	100%	$ 909,000.00

PLANNING LEVEL OPINION OF TOTAL PROJECT COST: $ 1,422,000.00

PROJECT NAME: **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT INFORMATION

LOCATION:	Old State 10 Rd Culvert Crossing	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tributary 35	DRAINAGE IMPROVEMENTS (LF):	160

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 30 LF of twin 4'x6' RCBC under Old State 10 Rd.
- Install 100 LF of upstream channel improvements to accommodate flow into new RCBC.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	4
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**77**

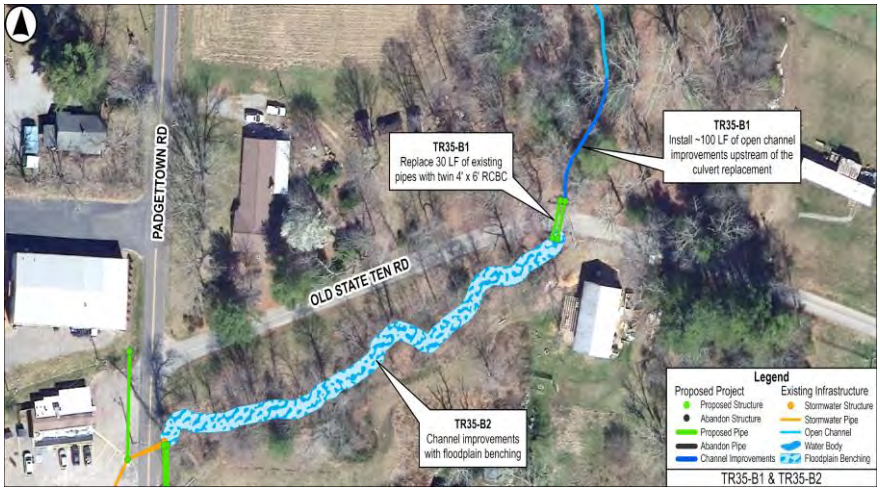
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 351,000
Design and Permitting	$ 165,200
Other Project Costs	$ 91,800
Total Project	**$ 608,000**

PROJECT AREA MAP



PROJECT NAME **Old State 10 Rd Culvert Replacement and Stream Stabilization** PROJECT ID: **TR35-B1**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 60
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 12,860.00	$ 12,900.00
Erosion Control	1	LS	$ 9,385.00	$ 9,400.00
Traffic Control	1	LS	$ 3,754.00	$ 3,800.00
Major Utility Conflict	1	LS	$ 56,310.00	$ 56,300.00
Unclassified Excavation/Hauling	70	CY	$ 72.00	$ 5,000.00
Infrastructure Removal and Disposal	30	LF	$ 115.00	$ 3,500.00
Structure Removal and Disposal	2	EA	$ 6,800.00	$ 13,600.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	-	LF	$ 670.00	-
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	60	LF	$ 1,700.00	$ 102,000.00
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	100	LF	$ 350.00	$ 35,000.00
Roadway/Sidewalk Replacement	30	SY	$ 110.00	$ 3,300.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 81,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 351,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 17,600.00
Design and Permitting	20%	$ 70,200.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 3,500.00
Structural Evaluation	1%	$ 3,500.00
Real Estate	2%	$ 7,000.00
Utility Relocation	2%	$ 7,000.00
Project Maintenance (3yr)	5%	$ 17,600.00
Construction Inspections	10%	$ 35,100.00
Construction	100%	$ 351,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 608,000.00

PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10 Rd** PROJECT ID: **TR35-B2**

PROJECT INFORMATION

LOCATION: Old State 10 Road near Padgettown Rd
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Floodplain Benching
DRAINAGE IMPROVEMENTS (LF): 350

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Install approximately 350 LF of channel improvements with floodplain benching to lower WSELs.
- Floodplain benching improvements are located downstream of the proposed RCBC in project TR35-B1.

PROJECT PRIORITIZATION AND PROPERTY REQUIREMENTS

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	16
Public or Privately-Owned Land	4
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	3
Criticality Bonus	1
FINAL PROJECT SCORE:	**66**

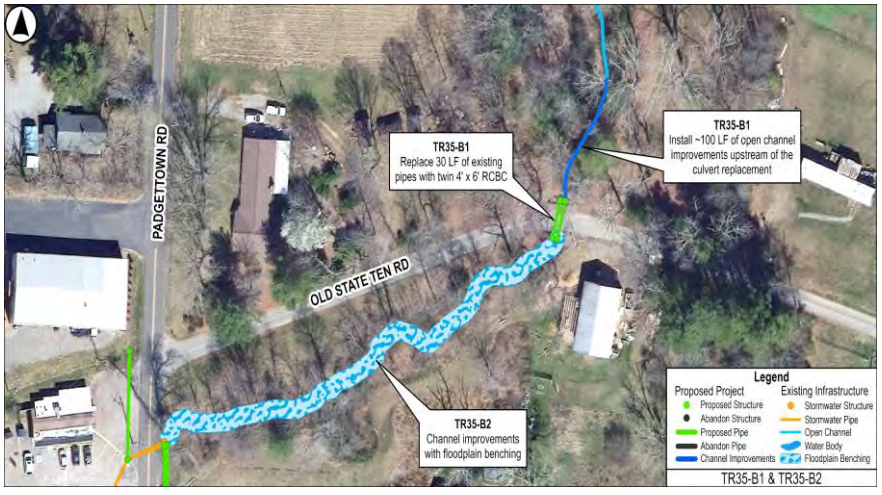
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Padgettown Rd (Twin 36")	< 2-YR	10-YR	68
Old State 10 Road (Twin 36")	2-YR	25-YR	91

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 234,000
Design and Permitting	$ 111,800
Other Project Costs	$ 79,200
Total Project	**$ 425,000**

PROJECT AREA MAP



PROJECT NAME: **Tributary 35 Floodplain Benching at Old State 10** PROJECT ID: **TR35-B2**

PROJECT TYPE: Floodplain Benching WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

- Construction estimate includes 30% contingency for planning.
- Proposed project footprints are based on GIS and modeling analyses.
- Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 9,090.00	$ 9,100.00
Erosion Control	1	LS	$ 8,120.00	$ 8,100.00
Traffic Control	1	LS	$ 3,248.00	$ 3,200.00
Minor Utility Conflict	1	LS	$ 8,120.00	$ 8,100.00
Clearing and Grubbing	390	SY	$ 5.50	$ 2,100.00
Earthwork	0	CY	$ 90.00	$ -
Fine Grading	390	SY	$ 18.00	$ 7,000.00
Structure Removal and Disposal	-	EA	$ 6,800.00	-
Infrastructure Removal and Disposal	-	LF	$ 115.00	-
Stone, Class B	75	TN	$ 92.00	$ 6,900.00
Filter Fabric/Geotextiles	1940	SY	$ 35.00	$ 67,900.00
Plantings	390	SY	$ 7.00	$ 2,700.00
3-gallon Container Plants	95	EA	$ 70.00	$ 6,700.00
Riffle Grade Control	2	EA	$ 4,025.00	$ 8,100.00
Floodplain Tree Removal	1	LS	$ 15,000.00	$ 15,000.00
Log Grade Control Structure	-	EA	$ 4,000.00	-
Pump Around Operation	1	LS	$ 46,000.00	$ 46,000.00
			Construction Contingency (30%):	$ 43,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 234,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,700.00
Design and Permitting	20%	$ 46,800.00
Environmental Permitting	-	$ 65,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,300.00
Structural Evaluation	1%	$ 2,300.00
Real Estate	10%	$ 23,400.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,700.00
Construction Inspections	10%	$ 23,400.00
Construction	100%	$ 234,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 425,000.00

PROJECT NAME: **Avena Road Culvert Replacement and Stream Stabilizaton** PROJECT ID: **TR35-C**

PROJECT INFORMATION

LOCATION:	Avena Road near Padgettown Rd	STORMWATER PROJECT TYPE:	Stormwater Drainage
WATERSHED:	Tributary 35	DRAINAGE IMPROVEMENTS (LF):	230

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 40 LF of twin 48" RCP across Avena Rd.
- Install approximately 120 LF of stream stabilization measures.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	12
Street Flooding	32
Public or Privately-Owned Land	8
Effect of Improvements	10
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**85**

KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Avena Road	2-YR	25-YR	97

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 235,000
Design and Permitting	$ 142,000
Other Project Costs	$ 61,000
Total Project	**$ 438,000**

PROJECT AREA MAP



PROJECT NAME **Avena Road Culvert Replacement and Stream Stabilizaton** PROJECT ID: **TR35-C**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 80
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 8,605.00	$ 8,600.00
Erosion Control	1	LS	$ 7,680.00	$ 7,700.00
Traffic Control	1	LS	$ 3,072.00	$ 3,100.00
Minor Utility Conflict	1	LS	$ 7,680.00	$ 7,700.00
Unclassified Excavation/Hauling	120	CY	$ 72.00	$ 8,600.00
Infrastructure Removal and Disposal	40	LF	$ 115.00	$ 4,600.00
Structure Removal and Disposal	1	EA	$ 6,800.00	$ 6,800.00
Standard Structure	-	EA	$ 8,600.00	-
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	-	LF	$ 535.00	-
New Pipe: 42-inch to 54-inch	80	LF	$ 670.00	$ 53,600.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	150	LF	$ 350.00	$ 52,500.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 54,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 235,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 11,800.00
Design and Permitting	20%	$ 47,000.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 2,400.00
Structural Evaluation	1%	$ 2,400.00
Real Estate	2%	$ 4,700.00
Utility Relocation	2%	$ 4,700.00
Project Maintenance (3yr)	5%	$ 11,800.00
Construction Inspections	10%	$ 23,500.00
Construction	100%	$ 235,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 438,000.00

PROJECT NAME: **Bellgrove Road/Avena Road Stormwater Improvements** PROJECT ID: **TR35-D**

PROJECT INFORMATION

LOCATION: Bellegrove Rd and Avena Rd Culvert Crossings
WATERSHED: Tributary 35
STORMWATER PROJECT TYPE: Stormwater Drainage
DRAINAGE IMPROVEMENTS (LF): 475

PROJECT DESCRIPTION

To improve level of service for surrounding roadways and reduce flood risk to nearby property owners:

- Replace existing pipe with 20 LF of twin 48" RCP under Bellegrove Rd.
- Install approximately 140 LF of stream stabilization measures with the Bellgrove culvert.
- Replace existing pipe with 135 LF of 30" RCP under Avena Rd.
- Install 35 LF of channel improvements downstream of 30" RCP.

PROJECT PRIORITIZATION and LEVEL OF SERVICE

CRITERIA	TOTAL SCORE
Utility Conflict	8
Street Flooding	24
Public or Privately-Owned Land	8
Effect of Improvements	20
Cost Effectiveness	20
Grant Bonus	2
Criticality Bonus	1
FINAL PROJECT SCORE:	**83**

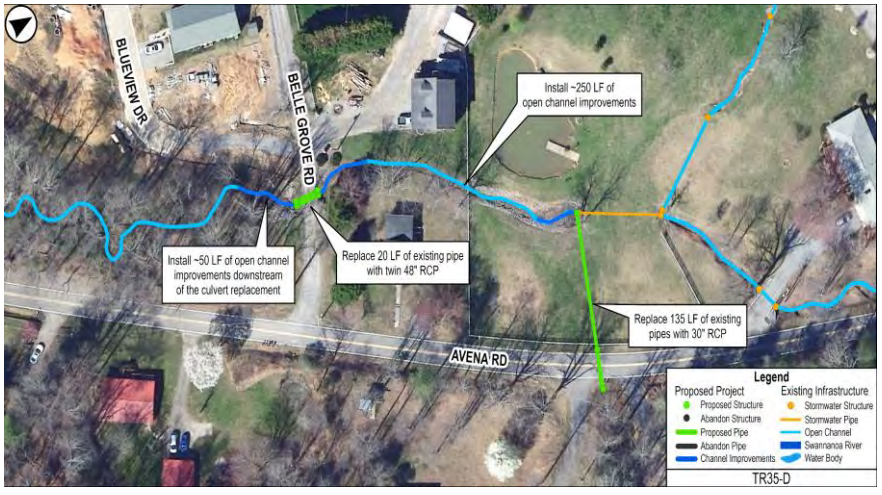
KEY CROSSING	LEVEL OF SERVICE EXISTING	LEVEL OF SERVICE PROPOSED	% REDUCTION 50 YR
Bellegrove Road	2-YR	50-YR	100
Avena Road	2-YR	50-YR	100

PLANNING LEVEL OPINION OF COST

Construction estimate includes 30% contingency for planning. Design and permitting includes environmental permitting estimates. Proposed project footprints are based on GIS and modeling analyses. Detailed planning level costs are provided separately.

ITEM	COST OPINION
Construction	$ 499,000
Design and Permitting	$ 194,800
Other Project Costs	$ 130,200
Total Project	**$ 824,000**

PROJECT AREA MAP



PROJECT NAME **Bellgrove Road/Avena Road Stormwater Improvements** PROJECT ID: **TR35-D**

PROJECT TYPE: Stormwater Drainage WATERSHED: Tributary 35

PLANNING LEVEL COST ESTIMATE

Construction cost includes 30% contingency for planning. Improvements (LF): 175
Proposed project footprints are based on GIS and modeling analyses.
Real estate, if privately-owned land, is estimated based on property value.

CONSTRUCTION COST:

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Mobilization	1	LS	$ 18,295.00	$ 18,300.00
Erosion Control	1	LS	$ 14,995.00	$ 15,000.00
Traffic Control	1	LS	$ 5,998.00	$ 6,000.00
Moderate Utility Conflict	1	LS	$ 44,985.00	$ 45,000.00
Unclassified Excavation/Hauling	180	CY	$ 72.00	$ 13,000.00
Infrastructure Removal and Disposal	155	LF	$ 115.00	$ 17,800.00
Structure Removal and Disposal	3	EA	$ 6,800.00	$ 20,400.00
Standard Structure	2	EA	$ 8,600.00	$ 17,200.00
Large Structure or Headwall	2	EA	$ 12,000.00	$ 24,000.00
New Pipe: 18-inch to 24-inch	-	LF	$ 390.00	-
New Pipe: 30-inch to 36-inch	135	LF	$ 535.00	$ 72,200.00
New Pipe: 42-inch to 54-inch	40	LF	$ 670.00	$ 26,800.00
New Pipe: 60-inch	-	LF	$ 875.00	-
Arch Pipe (22.5" - 31.3")	-	LF	$ 500.00	-
Large RCBC	-	LF	$ 1,700.00	-
Rip Rap	25	TN	$ 50.00	$ 1,300.00
Open Channel Improvements	300	LF	$ 350.00	$ 105,000.00
Roadway/Sidewalk Replacement	20	SY	$ 110.00	$ 2,200.00
New Concrete Curb and Gutter	-	LF	$ 110.00	-
Replace Driveway Culvert Pipe	-	LF	$ 300.00	-
Replace Existing Concrete Driveway	-	SY	$ 120.00	-
			Construction Contingency (30%):	$ 115,000.00
			PLANNING LEVEL OPINION OF CONSTRUCTION COST:	**$ 499,000.00**

PROJECT COST:

PROJECT BUDGET ITEM	% of CONSTRUCTION	AMOUNT
Survey	5%	$ 25,000.00
Design and Permitting	20%	$ 99,800.00
Environmental Permitting	-	$ 95,000.00
Railroad Permitting/Coordination	-	$ -
Geotechnical Investigation	1%	$ 5,000.00
Structural Evaluation	1%	$ 5,000.00
Real Estate	2%	$ 10,000.00
Utility Relocation	2%	$ 10,000.00
Project Maintenance (3yr)	5%	$ 25,000.00
Construction Inspections	10%	$ 49,900.00
Construction	100%	$ 499,000.00
PLANNING LEVEL OPINION OF TOTAL PROJECT COST:		$ 824,000.00

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Recreation & Parks
TITLE OF ITEM:	Partnership with Carolina Elite Soccer		

SUGGESTED MOTION(S):

Motion that Council authorize town staff to enter into partnership with Carolina Elite Soccer as presented.

SUMMARY:

The Town Parks and Recreation Department has received a proposal from Carolina Elite Soccer to enhance the youth recreational soccer experience and provide more opportunities for the children participating in the Town program. This would be an enhancement of the existing program, but does come at a cost of $8 per player. The Town would pay the $8 to Carolina Elite Soccer Academy, and in return Carolina Elite would pay this to NC Youth Soccer. Collin Bugniazet, with Recreation & Parks, will be present at the meeting to provide more detailed information. Registration is currently at $70 for residents and $80 for non-residents. One option to cover the cost is to raise the registration fees by $8 per child. As with all recreational programs, for participants that cannot afford the cost of the program, there are scholarships available.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? No

If no, describe how it will be funded. Potentially through increased registration fees

ATTACHMENTS:

1. Re_ Partnership Proposal - Carolina Elite Soccer - Email Copy

Outlook

Re: Partnership Proposal

From Joey Giaritelli <joeyg@carolinaelitesc.com>
Date Tue 3/3/2026 9:15 AM
To Richard Hicks <richard.hicks@tobm.org>

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Richard, here is the text of what I sent Collin. Let me know if you would like me to reformat it to you or anyone else at the town. If you have any questions my number is 202-330-2556, and I can be at the council meeting to answer any questions.
Thanks!
Joey

Hi Collin,

I am writing to propose a partnership between Carolina Elite Soccer Academy (CESA) WNC and the Town of Black Mountain (TOBM) to enhance the youth recreational soccer experience and create a pathway for players to reach their individual goals and potential. Eventually (and outside of rec soccer programming) CESA envisions providing regular Academy and Classic level training in the town of Black Mountain. By partnering with TOBM in their recreation soccer program, CESA WNC can not only assist the current staff and volunteers through sharing training platforms and resources, but can additionally offer more playing opportunities and participation in recreation soccer events.

CESA WNC would hold a preseason training clinic for TOBM rec volunteer coaches where we would help coaches create training plans for their seasons, and help educate coaches about some of the common mistakes that often accidentally discourage kids, while offering techniques for coaches that encourage kids and demonstrate how to implement those in training sessions. At the end of the season, we would host another coaching clinic to discuss the season and help identify successes and areas for improvement, and provide coaches with offseason educational materials for those interested.

CESA coaches would conduct three or four skill and training sessions in Black Mountain for players, where all TOBM rec players would join our staff for group training sessions, with skill work and futsal small side training. I am convinced from experience in youth soccer development this training is the missing piece to unlocking the real fun and creative risk taking that makes soccer such a valuable sport for kids, and it is missing from almost all recreation programs. By participating in these sessions and learning individual ways to find achievement and satisfaction playing and practicing soccer, we will help kids ignore the pressure that comes from the competitive environment (often accidentally from coaches and parents), and help them learn lifelong skills about the enjoyment of playing soccer that will translate across many parts of their lives.

Additional opportunities Collin and I can discuss are games against different recreation teams for TOBM rec teams and participation in the CESA rec tournament (the southeast's largest rec

tournament) for teams looking for that additional experience.

To facilitate our partnership, CESA proposes TOBM registers players and forms teams as they are currently registered and managed by Collin, but additionally register them as NCYSA rec players for CESA, at a cost of $8 per player (we pay this to NC Youth Soccer which is the USYS department for NC). This additional registration will allow our staff to host, interact, and offer onsite training and instruction to TOBM players, as well as allowing TOBM players to participate in CESA activities- recreation and other levels (including Junior Academy and advanced teams if those opportunities arise.)

I look forward to talking further and working with Collin (who I have known for a few years now) to help make this rec experience the best it's ever been and build opportunities for kids in Black Mountain. Cost should not be an issue for kids and families and I know how the town supports players with scholarships and CESA has the same approach and mindset, so we will do what it takes to support that effort. Over the next two years, I hope to bring Academy and Classic training to a location in Black Mountain and hope to discuss ways to work with the town to find a location eventually to facilitate this training as well.
Hide quoted text

Best regards,

Joey Giaritelli
CESA WNC (formerly CESA Asheville) Director
202-330-2556

On Tue, Mar 3, 2026, 08:49 Richard Hicks <richard.hicks@tobm.org> wrote:

> Can you send me a copy of the proposed partnership email that you sent to Collin Bugniazet? Trying to get it on the agenda next week before the Council.
>
> Richard N Hicks
> Interim Town Manager
> richard.hicks@tobm.org
> 828-419-9311

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Jessica Trotman, Assistant Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Consideration of Amendment to Current Buncombe-Madison Regional Hazard Mitigation Plan		

SUGGESTED MOTION(S):
Motion to approve amendment to the Buncombe-Madison Regional Hazard Mitigation Plan for Mitigation Action Plan section as presented.

SUMMARY:

The Town of Black Mountain, NC participates in the Buncombe Madison Regional Hazard Mitigation Plan that was adopted in 2021, and the Town of Black Mountain wishes to be an eligible participant in the Federal Emergency Management Agency's HMGP Program.

A copy of the current Buncombe Madison Regional Hazard Mitigation Plan (HMGP), adopted in 2021, can be accessed **via this link.**

The North Carolina Department of Public Safety Division of Emergency Management, Hazard Mitigation Section has identified certain required amendments to the aforesaid plan in order to meet eligibility requirements. These include:

1. **Section 9** of the plan, the Mitigation Action Plan, identifies mitigation actions for The Town of Black Mountain. The table of actions in Section 9, page 9:23, Black Mountain Mitigation Actions, is hereby amended to include the following measures:

Mitigation Action #: PP-3

- Description: Increase resiliency to hazard impacts on water and sewer infrastructure through improvements to utility, distribution, collection, and treatment system components.
- Hazard Addressed: All Hazards
- Relative Priority: High
- Lead Agency/Department: Public Works

- Potential Funding Sources: Grant funding, local enterprise revenues
- Implementation Schedule: 2028
- Implementation Status: Applying for funding, ongoing grant application development and submission

This amendment will be incorporated into the next regularly scheduled update of the Buncombe Madison Regional Hazard Mitigation Plan. Work has already began on the next update of this plan. Council is asked to review the proposed amendments and vote to approve the attached resolution.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? n/a

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Resolution Amending Buncombe Madison Regional Hazard Mitigation Plan for TOBM Section Mitigation Action Plan_2026.03.09

Council Member ___ made a motion to approve the following resolution. A vote of ___.

A RESOLUTION BY THE TOWN OF BLACK MOUNTAIN TO AMEND THE BUNCOMBE-MADISON REGIONAL HAZARD MITIGATION PLAN APPROVED & ADOPTED JUNE 14, 2021 THAT AMENDS THE MITIGATION ACTION PLAN SECTION

RESOLUTION NO. R-26-19

WHEREAS The Town of Black Mountain, NC participates in the Buncombe Madison Regional Hazard Mitigation Plan; and

WHEREAS: The Town of Black Mountain wishes to be an eligible participant in the Federal Emergency Management Agency's HMGP Program; and

WHEREAS: The North Carolina Department of Public Safety Division of Emergency Management, Hazard Mitigation Section has identified certain required amendments to the aforesaid plan in order to meet eligibility requirements; and

WHEREAS, the following amendments need to be made to the aforesaid plan:

A) **Section 9** of the plan, the Mitigation Action Plan, identifies mitigation actions for The Town of Black Mountain. The table of actions within the FINAL-April 2021 edition of the Buncombe Madison Regional Hazard Mitigation Plan; Section 9, Page 9:23, Black Mountain Mitigation Actions, is hereby amended to include the following measures:

Mitigation Action PP-3

- Description: Increase resiliency to hazard impacts on water and sewer infrastructure through improvements to utility, distribution, collection, and treatment system components.
- Hazard Addressed: All Hazards
- Relative Priority: High
- Lead Agency/Department: Public Works
- Potential Funding Sources: Grant funding, local enterprise revenues
- Implementation Schedule: 2028
- Implementation Status: Applying for funding, ongoing grant application development and submission

WHEREAS, This amendment will be incorporated into the next regularly scheduled update of the Buncombe Madison Regional Hazard Mitigation Plan.

NOW THEREFORE BE IT RESOLVED by the Town Council of the Town of Black Mountain that the following amendments be approved as presented and incorporated into the next regularly scheduled update of the Buncombe Madison Regional Hazard Mitigation Plan.

ADOPTED this 9th day of March 2026.

C. Michael Sobol, Mayor

Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Consideration of Pursuing Reimbursement through FEMA for Eligible Costs Incurred as a Result of Ice Storm Fern		

SUGGESTED MOTION(S):

Council is asked to provide direction on whether Town staff should pursue reimbursement through FEMA for eligible costs incurred from Ice Storm Fern.

SUMMARY:

Ice Storm Fern impacted Western North Carolina between January 21 and January 27, 2026, resulting in hazardous travel conditions, downed trees, utility disruptions, and the need for emergency response and protective measures. During this period, the Town incurred costs related to emergency operations, public safety, and recovery activities.

On January 24, 2026, the President issued a federal emergency declaration covering the event, making eligible local governments eligible to seek FEMA reimbursement for qualifying costs.

Federal Emergency Declaration

- Disaster Event: Ice Storm Fern
- Emergency Declaration Number: EM-3637-NC
- Incident Period: January 21, 2026 – January 27, 2026
- Declaration Date: January 24, 2026
- Eligible Applicants: State, tribal, and local governments and certain private nonprofit organizations
- Eligible Work Categories:
- Category B – Emergency Protective Measures

Under FEMA's Public Assistance program for emergency declarations, eligible costs are typically reimbursed at a federal cost share, with the remaining portion required as a state and/or local match.

Considerations

FEMA reimbursement may offset a portion of the Town's emergency response costs associated with Ice Storm Fern.
Participation requires detailed documentation, adherence to FEMA eligibility and procurement requirements, and administrative effort by staff or consultants.
Not all costs incurred during the incident period may be eligible for reimbursement.
Council direction is needed to determine whether staff should proceed with the application process.
IEM would not be associated with this work. The work would be done by staff or Land of Sky.

Council is asked to provide direction on whether the Town should pursue reimbursement through the Federal Emergency Management Agency (FEMA) for eligible costs incurred as a result of Ice Storm Fern, which would be employee overtime (OT) pay.

Requested Council Direction

Council is asked to indicate whether it wishes to:

- Authorize staff to pursue FEMA Public Assistance reimbursement under Emergency Declaration EM-3637-NC for eligible Ice Storm Fern response costs; or
- Decline participation in FEMA reimbursement for this event.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? No.

If no, describe how it will be funded. Possibly through FEMA Reimbursement if pursued, for eligible costs.

ATTACHMENTS:

None

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Award of Bid Received for Golf Cart Bridge Repairs at Black Mountain Golf Course & Approval of Capital Project Ordinance		

SUGGESTED MOTION(S):

I move that Council Award the Bid for the Replacement of the Golf Course Bridges to Dan Grady Company, LLC in the amount of $199,500, and to adopt the corresponding Capital Project Ordinance.

SUMMARY:

The Town received bids for the replacement of golf course bridges on February 9, 2026. The following bids were received:

- Dan Grady Company, LLC $199,500.00
- AJH Custom Homes, LLC $265,000.00
- IPC Paving, LLC dba IPC Structures $550,000.00
- NHM Constructors, Inc. $502,000.00
- B.H. Graning Landscapes, Inc. $437,000.00

At the November 1, 2025 meeting, the Town Council adopted a budget amendment to appropriate $100,000 for the bridge replacement and $8,000 for cart path repairs (R-25-103). All of the documentation has been presented to FEMA for approval of the replacement costs. As you are aware, FEMA is not actively engaged in approving any projects due to the partial government shutdown involving Homeland Security. As this point, we do not have a specific number from FEMA as to their level of participation.

In discussing the project with the contractor, he has indicated that he has inspected the bridges several times, and given the extent of the erosion and their current condition, he believes replacement is the only viable option. If the bid is awarded, the steel fabrication could begin immediately and they would propose to begin site preparation once the bridge delivery was

about 2 weeks out. The estimate timeframe from award of bid to project completion would be 6-8 weeks.

In discussing the project with Brent Miller, he is of the opinion that the number 3 bridge could possibly be repaired, but the number 5 bridge has real issues with the headwall being broken and falling, and the amount of scour behind what is left of the concrete. He did have a contractor look at the bridges and the contractor felt the number 3 bridge could be saved with some shoring of the bank on the green side and reusing the steel beams. In his opinion, the number 5 bridge needed to be a complete tear out and replace. He did not want to submit a formal bid on the projects, due to it being a FEMA project and the potential paperwork involved.

The low bidder on the project, DanGrady Company, LLC has also been awarded the bid on a small storm drainage project within the Town, and would prefer to work on both projects at the same time. If the Town was to change the scope of work now to a partial replacement and a partial new construction, this would probably complicate the FEMA scope of work. If the Council wants to move forward with the project, the Town will have to shift some funds from the other cash flow loan projects, until such time as the project is approved by FEMA. Until the government shutdown ends, we will unfortunately not have any answers or funding from FEMA.

BUDGET IMPACT:

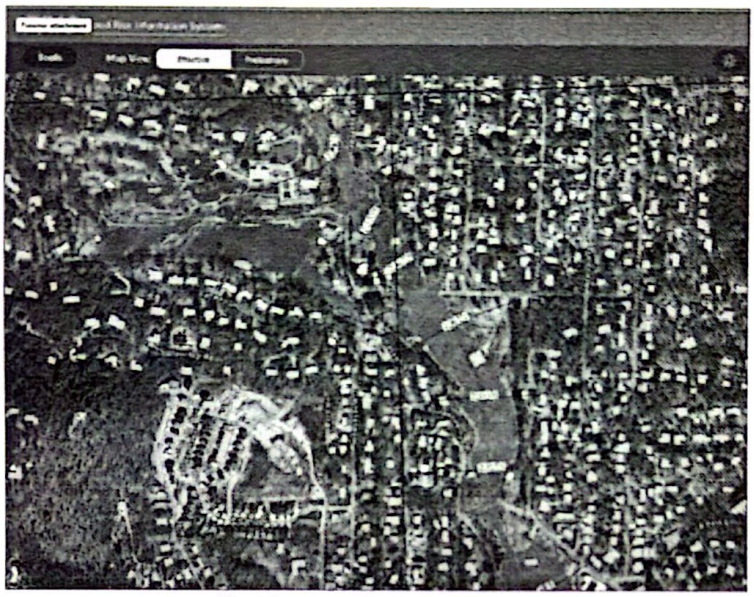
Is this expenditure approved in the current fiscal year budget? The additional funding would have to come from the previously approved cash flow loan funds ($2,405,275)

If no, describe how it will be funded. n/a

ATTACHMENTS:

1. Black Mountain Golf Cart Bridge Bid- Dan Grady Co. LLC
2. O-26-XX Golf Course Cart Bridges Capital Project Ordinance (3-9-26)

- NFIP & local floodplain ordinances
    - Floodplain development permits will be required for work occurring in Flood Risk Information System (FRIS) designated Special Flood Hazard Areas (including the bridges on holes 3 & 5)



SECTION 5 – PROJECT SCHEDULE

- **Notice to Proceed:** As soon as contractor is selected
- **Permit Procurement:** Within 10 business days of NTP

Upon award contractor will collaborate with the Town of Black Mountain to develop and agree upon a construction timeline.

Contractor must coordinate closely with Golf Course maintenance staff.

SECTION 6 – BID FORM

Bidders shall submit pricing in the following format:

Base Bid

Item	Description	Lump Sum Price
1	Bridge Replacement – Hole 3	$ 72,500.00
2	Bridge Replacement – Hole 5	$ 72,500.00
3	Mobilization	$ 39,500.00

Item	Description	Lump Sum Price
4	Engineering & Surveying	$ 15,000.00
TOTAL BASE BID		$ 199,500.00

Alternates (if applicable): _____

ESTIMATE

DanGrady Company LLC
1517 Little Savannah Rd
Sylva, NC 28779

Noah@dangradyco.com
+1 (828) 506-0112

Bill to
town of black mountain
town of black mountain

Estimate details
Estimate no.: 1261
Estimate date: 12/29/2025

#	Date	Product or service	Description	Qty	Rate	Amount
1.		**Mobilization**		1	$39,500.00	$39,500.00
2.		**Engineering/ surveying**		1	$15,000.00	$15,000.00
3.		**Bridge Replacement Materals - Hole #3**		1	$55,000.00	$55,000.00
4.		**Bridge Replacement Materals - Hole #5**		1	$55,000.00	$55,000.00
5.		**Bridge Replacement Labor - Hole #3**		1	$17,500.00	$17,500.00
6.		**Bridge Replacement Labor- Hole #5**		1	$17,500.00	$17,500.00
			Total			**$199,500.00**

Accepted date **Accepted by**

Golf Cart Bridge Replacement Project – 5-Week Gantt Schedule

Start: Feb 23, 2026 Duration: 5 Working Weeks Finish: Mar 27, 2026

Week	Dates	Primary Activities
Week 1	Feb 23 – Mar 1	NTP kickoff, site review, engineering, permits
Week 2	Mar 2 – Mar 8	Mobilize, erosion controls, demolish bridges
Week 3	Mar 9 – Mar 15	Excavate, form, rebar, pour abutments
Week 4	Mar 16 – Mar 22	Set girders, install decking & railings
Week 5	Mar 23 – Mar 27	Restore site, inspect, closeout

NON-COLLUSION AFFIDAVIT, DEBARMENT CERTIFICATION AND GIFT BAN CERTIFICATION

LIMITED LIABILITY COMPANY

The prequalified bidder, being duly sworn, solemnly swears (or affirms) that neither he, nor any official, agent or employee has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with any bid or contract, that the prequalified bidder has not been convicted of violating *N.C.G.S. § 133-24* within the last three years, and that the prequalified bidder intends to do the work with its own bonafide employees or subcontractors and will not bid for the benefit of another contractor.

By submitting this non-collusion affidavit, the Contractor is certifying his status under penalty of perjury under the laws of the United States in accordance with the Debarment Certification attached, provided that the Debarment Certification also includes any required statements concerning exceptions that are applicable.

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

SIGNATURE OF PREQUALIFIED BIDDER

DanGrady Company LLC
Full Name of Firm

1517 Little Savannah Rd Sylva NC 28779
Address as Prequalified

Signature of Witness

Signature of Member/Manager/Authorized Agent
Select appropriate title

Mike Lovingood
Print or type Signer's name

Noah Savvitt
Print or type Signer's Name

AFFIDAVIT MUST BE NOTARIZED

Subscribed and sworn to before me this the

6 day of February 2026

Signature of Notary Public

of Jackson County

State of NC

My Commission Expires: 10/15/27

NOTARY SEAL

SHAWN LEWIS NOTARY PUBLIC JACKSON COUNTY, NC

DEBARMENT CERTIFICATION

Conditions for certification:

1. The prequalified bidder shall provide immediate written notice to the Department if at any time the bidder learns that his certification was erroneous when he submitted his debarment certification or explanation filed with the Department, or has become erroneous because of changed circumstances.

2. The terms *covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal,* and *voluntarily excluded,* as used in this provision, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. A copy of the Federal Rules requiring this certification and detailing the definitions and coverages may be obtained from the Contract Officer of the Department.

3. The prequalified bidder agrees by submitting this form, that he will not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in NCDOT contracts, unless authorized by the Department.

4. For Federal Aid projects, the prequalified bidder further agrees that by submitting this form he will include the Federal-Aid Provision titled *Required Contract Provisions Federal-Aid Construction Contract (Form FHWA PR* 1273) provided by the Department, without subsequent modification, in all lower tier covered transactions.

5. The prequalified bidder may rely upon a certification of a participant in a lower tier covered transaction that he is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless he knows that the certification is erroneous. The bidder may decide the method and frequency by which he will determine the eligibility of his subcontractors.

6. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this provision. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

7. Except as authorized in paragraph 6 herein, the Department may terminate any contract if the bidder knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available by the Federal Government.

ﺑﺨﺶ ۱۱ ﺗﻌﻠﻴﻖ

۱۱.۱ ﻫﺮ ﻛﺪام از ﻃﺮﻓﻴﻦ ﻣﻲ ﺗﻮاﻧﺪ ﻗﺮارداد را ﺑﺎ ﻳﻚ ﻣﺎه اﻃﻼع ﻗﺒﻠﻲ ﺑﻪ ﻃﺮف دﻳﮕﺮ ﺑﺪون ﺟﺮﻳﻤﻪ ﻓﺴﺦ ﻛﻨﺪ.

۱۱.۲ ﻫﺮ ﻳﻚ از ﻃﺮﻓﻴﻦ ﻣﻲ ﺗﻮاﻧﺪ ﻗﺮارداد را ﺑﺎ اﻃﻼع ﻛﺘﺒﻲ ﻓﻮري ﺑﻪ ﻃﺮف دﻳﮕﺮ ﻓﺴﺦ ﻛﻨﺪ اﮔﺮ:

۱۱.۲.۱ ﻃﺮف دﻳﮕﺮ ﻣﺮﺗﻜﺐ ﻧﻘﺾ ﻣﺎدي ﻗﺮارداد ﺷﻮد و ﻧﺘﻮاﻧﺪ آن را ﺑﺮﻃﺮف ﻛﻨﺪ ﻳﺎ ﺟﺒﺮان ﻛﻨﺪ؛

۱۱.۲.۲ ﻃﺮف دﻳﮕﺮ ﻣﺮﺗﻜﺐ ﻧﻘﺾ ﻏﻴﺮ ﻣﺎدي ﻗﺮارداد ﺷﻮد و ﻧﺘﻮاﻧﺪ آن را ﺑﺮﻃﺮف ﻛﻨﺪ ﻳﺎ ﺟﺒﺮان ﻛﻨﺪ ﻛﻪ ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۵ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۶ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۷ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۸ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۹ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۰ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۱ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۲ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۳ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۴ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۵ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۶ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۷ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۸ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۱۹ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۰ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۱ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۲ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۳ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۴ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۵ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۶ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۷ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۸ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۲۹ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۰ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۱ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۲ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۳ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۴ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۵ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۶ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۷ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۸ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۳۹ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۰ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۱ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۲ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۳ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۴ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۵ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۶ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻏﻴﺮ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴﺮ ﺧﻮد ﺧﺎﺗﻤﻪ ﻧﺪﻫﺪ؛

۱۱.۲.۴۷ ﻳﻜﻲ از ﻃﺮﻓﻴﻦ ﺑﻪ ﻃﻮر ﻛﻠﻲ ﻳﺎ ﺑﺨﺸﻲ از ﺗﻌﻬﺪات ﺧﻮد ﺑﻪ ﻣﻮﺟﺐ ﻗﺮارداد ﻧﻘﺾ ﻛﻨﺪ و ﻧﻘﺾ ﻗﺎﺑﻞ ﺟﺒﺮان ﺑﺎﺷﺪ و ﻃﺮف دﻳﮕﺮ ﻇﺮف ﻳﻚ ﻣﺎه ﺑﻪ ﺗﻘﺼﻴ

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents of all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, United States Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Organization: dangrady company LLC

Street address: 1517 Little savannah rd

City, State, Zip: Sylva Nc 28779

noah Saunier
CERTIFIED BY: (type or print)

owner
TITLE:


(signature)

02/05/2026
(date)

Approved by OMB

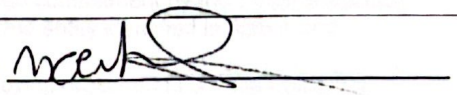
0348-0046

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract ____ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application _____ b. initial award c. post-award	**3. Report Type:** a. initial filing _____ b. material change **For material change only:** Year _____ quarter _____ Date of last report_____

4. Name and Address of Reporting Entity: ____ Prime _____ Subawardee Tier_____, if Known: **Congressional District, if known:**	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District, if known:**
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known:*	**9. Award Amount,** *if known:* **$**
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Signature:**  **Print Name:** noah Saunier **Title:** owner **Telephone No.:** 828-506-0112 **Date:** 02/05/2026
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitations for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Included prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget,
Paperwork Reduction Project (0348-0046), Washington, DC 20503

CERTIFICATION OF ELIGIBILITY
Under the Iran Divestment Act

Pursuant to G.S. 143C-6A-6, any person identified as engaging in investment activities in Iran, determined by appearing on the Final Divestment List created by the State Treasurer pursuant to G.S. 143C-6A-4, is ineligible to contract with the State of North Carolina or any political subdivision of the State. The Iran Divestment Act of 2015, G.S. 143C-6A-1 *et seq*. requires that each vendor, prior to contracting with the State certify, and the undersigned on behalf of the Vendor does hereby certify, to the following:

1. that the vendor is not identified on the Final Divestment List of entities that the State Treasurer has determined engages in investment activities in Iran;
2. that the vendor shall not utilize on any contract with the State agency any subcontractor that is identified on the Final Divestment List; and
3. that the undersigned is authorized by the Vendor to make this Certification.

Vendor: dangrady company LLC

By: _____ 02/05/2026
Signature Date

noah Saunier owner
Printed Name Title

The State Treasurer's Final Divestment List can be found on the State Treasurer's website at the address www.nctreasurer.com/Iran and will be updated every 180 days. For questions about the Department of State Treasurer's Iran Divestment Policy, please contact Meryl Murtagh at *Meryl.Murtagh@nctreasurer.com* or (919) 814-3852.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 3/3/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Nick Greene	
Guidelight Insurance PO Box 1177 Brevard NC 28712-5078	PHONE (A/C, No, Ext): 828-552-5477	FAX (A/C, No): 828-476-4604
	E-MAIL ADDRESS: coi@guidelight.com	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Dangrady Company, LLC 1517 Little Savannah Rd Sylva NC 28779	INSURER A: Berkley Specialty Ins Co	31295
	INSURER B: Benchmark Ins Co	41394
	INSURER C: STONEWOOD INS CO	11828M
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:	Y		CGL 0217162-21	2/12/2025	2/12/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG [ ]	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
	AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] OWNED AUTOS ONLY [X] SCHEDULED AUTOS [X] HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY	Y		JST100621901	2/12/2025	2/12/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) [ ]	$ 1,000,000 $ $ $ $
A	[ ] UMBRELLA LIAB [X] OCCUR [X] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $	Y		CX 0217163-21	2/12/2025	2/12/2026	EACH OCCURRENCE AGGREGATE [ ]	$ 4,000,000 $ 4,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N [N] (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		TWNC0001257600	2/21/2025	2/21/2026	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Town of black mountain

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Nick Greene

© 1988-2015 ACORD CORPORATION. All rights reserved.

Expiration Date
2026

License No.
99645

North Carolina

Licensing Board for General Contractors

This is to Certify That:

DanGrady Company LLC

Sylva, NC

is duly registered and entitled to practice

General Contracting

Limitation: Unlimited

Classification: H (Grading & Excavating), PU(Water Lines & Sewer Lines)

until

December 31, 2026

when this Certificate expires.

Witness our hands and seal of the Board.

Dated, Raleigh, N.C.

01/07/2026

This certificate may not be altered.

LICENSING BOARD FOR GENERAL CONTRACTORS
MAY 20, 1775
NORTH CAROLINA

Chairman

Secretary-Treasurer

Ordinance: O-26-XX
Council Meeting: March 9, 2026

Town of Black Mountain
Two Golf Cart Bridges Project
Capital Project Fund Ordinance
O-26

BE IT ORDAINED by the Town Council of the Town of Black Mountain, North Carolina, that, pursuant to the Local Government Budget and Fiscal Control, a local government may, in its discretion, authorize and budget for a capital project or a grant project in a project ordinance adopted pursuant to G.S. 159-13.2. A project ordinance authorizes all appropriations necessary for the completion of the project and neither it nor any part of it need be readopted in any subsequent fiscal year; and the following Capital Project Fund Ordinance is hereby created as follows:

Section 1: Project Defined
The Town of Black Mountain defines a "Capital project" as a project financed in whole or in part by the proceeds of bonds, notes or debt instruments or a project involving the construction or acquisition of a capital asset with expenditures that span across multiple fiscal years.

Section 2: Project Authorization
The project authorized is for the purpose of constructing two replacement golf cart bridges on the Black Mountain Golf Course.

Section 3: Funding
The project is funded in whole or in part by revenue provided by the North Carolina Helene Cash Flow Loan Program. FEMA Public Assistance expenditure reimbursements related to project costs from this capital project will be sourced from Unassigned Fund Balance within the Helene Fund.

Section 4: Directives
The officers of the Town of Black Mountain are hereby directed to proceed with the capital project within the terms and budget contained herein, as approved by the Governing Board of the Town of Black Mountain. The Town Manager is hereby directed to act on behalf of the Town Council in all matters associated with the project within the terms of all contracts, agreements, and legal requirements binding on the project and within limits of the appropriate funds.

Section 5. Revenues
The following anticipated Revenues are hereby adopted:

Budgeted Revenues	
Revenue Type	***Anticipated Revenues***
Allocation of Helene Fund Unassigned Fund Balance (11/1/25)	$100,000.00
Reallocation of Cash Flow Loan	$35,000.00
Allocation of Helene Fund Unassigned Fund Balance	$64,500.00
Total Revenue	**$199,500.00**

Section 6. Expenditures
The following anticipated appropriations are hereby adopted:

Budgeted Expenditures	
Expenditure Type	***Anticipated Expenditures***
Construction	$199,500.00
Total Expenditure	**$199,500.00**

Section 7. Records and Reporting
The Finance Director is hereby directed to maintain within the Capital Project Fund sufficient specific detailed accounting records to satisfy the disclosure requirements of all the contractual agreements, if applicable.

Section 8. Authority to Manage Accounts
The Town Manager and/or the Finance Director has the authority to transfer funds; both expenditures and revenues, between the accounts contained within the capital project as may be necessary, provided however that the total expenditures equal the total revenues and that expenditures may not exceed the project total without an amended ordinance from council.

Section 9. Official Copies
Copies of this Capital Project Ordinance shall be furnished to the Town Clerk, the Town Manager and the Finance Director for the direction in carrying out this project.

Section 10. Budget Inclusion
Authorized project expenditures represent appropriations necessary for the completion of projects and therefore do not require re-appropriation in any subsequent fiscal year. However, per G.S. 159-13.2 information on project ordinances will be included in the annual budget. Each year the finance officer shall include within the budget information in such detail as he or the governing board may require concerning each grant project or capital project. This information will be detailed for any new project funds expected to be authorized by project ordinance during the budget year and include information on projects authorized by previously adopted project ordinances which have remaining appropriations available for expenditure during the budget year.

Section 11. Project Expiration

This project ordinance expires when the project has been completed and all of the Project Funds have been obligated and expended by the Town OR by the date set forth within the grant funding contract, if applicable, whichever comes first.

Duly adopted this 9th day of March 2026.

_____
C. Michael Sobol
Mayor

ATTEST:

_____
Wesley M. Barker
Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER: Richard Hicks, Interim Town Manager

MEETING DATE: March 9, 2026

AGENDA SECTION: New Business

DEPARTMENT: Administration

TITLE OF ITEM: Approval of Budget Amendment Resolution for Golf Cart Bridge Repairs at Black Mountain Golf Course

SUGGESTED MOTION(S):

Motion to approve the budget amendment for the Golf Cart Bridge Repairs Project as presented.

SUMMARY:

This budget amendment resolution coincides with the Capital Project Ordinance for the Golf Cart Bridge Repairs Project at the Black Mountain Golf Course. The proposed budget amendments are as follows:

Account Number	Account Description	Increase	Decrease
425-8806-57610	Capital Outlay – Golf Course Bridges		$100,000
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$100,000	
425-8806-57610	Capital Outlay – Flat Creek Greenway (Capital Project)		$35,000
425-8806-48025	Debt Proceeds – Cash Flow Loan	$35,000	
425-8806-48025	Debt Proceeds – Cash Flow Loan		$35,000
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$35,000	
425-0000-32000	Unassigned Fund Balance		$64,500
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$64,500	

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? No.

If no, describe how it will be funded. The attached budget amendments.

ATTACHMENTS:

1. Resolution_Golf Cart Bridges Project Budget Amendment (3-9-26)

Council Member _____ made a motion to approve the following resolution. A vote of ____.

A RESOLUTION BUDGETING FUNDS TO THE GOLF CART BRIDGES CAPTIAL PROJECT

Resolution No. R-26-XX

WHEREAS, the Town intends to rebuild golf cart bridges damaged beyond repair during Tropical Storm Helene; and

WHEREAS, this project is being processed under the FEMA Public Assistance program for reimbursement of the project; and

WHEREAS, the Town Council of the Town of Black Mountain budgeted $100,000 for construction of Golf Cart Bridges and $8,000 for cart paths, on November 1, 2025; and

WHEREAS, the Town of Black Mountain has passed O-26-XX, a Capital Project Ordinance for the project, on March 9, 2026; and

WHEREAS, the Town has received bids from several contractors for the cart bridge project project, with the lowest reasonable, responsible bidder having a bid amount of $199,500; and

WHEREAS, the remaining $99,500 can be covered by $35,000 from a reallocation of the Helene Cash Flow Loan budgeted for the Flat Creek Greenway and a part of the FEMA reimbursement for the Category B Expedited Project;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF BLACK MOUNTAIN THAT:

1. The Town makes the following budget amendments to support the construction of golf course cart bridges.

Account Number	Account Description	Increase	Decrease
425-8806-57610	Capital Outlay – Golf Course Bridges		$100,000
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$100,000	
425-8806-57610	Capital Outlay – Flat Creek Greenway (Capital Project)		$35,000
425-8806-48025	Debt Proceeds – Cash Flow Loan	$35,000	
425-8806-48025	Debt Proceeds – Cash Flow Loan		$35,000
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$35,000	
425-0000-32000	Unassigned Fund Balance		$64,500
425-8806-57610	Capital Outlay – Golf Course Bridges (Capital Project)	$64,500	

2. The Interim Town Manager is authorized to execute any necessary budget amendments, contracts, or related documents required to implement this allocation.

ADOPTED this 9th day of March 2026.

_____

C. Michael Sobol, Mayor

Attest:

_____

Wesley M. Barker, Town Clerk

TOWN OF BLACK MOUNTAIN

AGENDA ITEM SUMMARY

SUBMITTER:	Richard Hicks, Interim Town Manager	**MEETING DATE:**	March 9, 2026
AGENDA SECTION:	New Business	**DEPARTMENT:**	Administration
TITLE OF ITEM:	Discussion of Town Attorney's Annual Evaluation		

SUGGESTED MOTION(S):
Council should discuss setting a time to conduct the Town Attorney's annual evaluation.

SUMMARY:

At the December 8, 2025 Town Council meeting, the Council voted to approve the Town Attorney Performance Evaluation Document which would be used to evaluate the Town Attorney annually. Council originally planned to conduct the attorney evaluation in January 2026. Council members have indicated they would like to proceed with the evaluation and asked the item be placed on the agenda for setting a date and time to do so. One suggestion would be for the Council members to each complete the evaluation form prior to the next meeting, and Council could meet with the Attorney in closed session at the April 13, 2026 regular meeting to discuss. Council could also call for a special meeting for the purpose of discussing the attorney's evaluation in closed session.

BUDGET IMPACT:

Is this expenditure approved in the current fiscal year budget? N/A

If no, describe how it will be funded. N/A

ATTACHMENTS:

1. TOBM Town Attorney Performance Evaluation Form- Final Approved Version 2025.12.08

TOWN OF BLACK MOUNTAIN TOWN ATTORNEY PERFORMANCE EVALUATION FORM

Employee Name:
Town Council Member:
Date Submitted:
Each member of the elected body should complete this evaluation form, sign it in the space below, and return it to Town Clerk Wesley Barker. Evaluations will be summarized and included for discussion at a closed session.
Part 1. Assessment of Performance Areas Use the following three-point scale to evaluate the Town Attorney's performance for the seven performance areas outline below. 1= Needs Improvement 2 = Meets Expectations 3 = Exceeds Expectations N/A = Not Applicable This evaluation form also contains a provision for entering narrative comments, including responses to specific questions and any observations you believe appropriate and pertinent to the rating period.

TOWN OF BLACK MOUNTAIN TOWN ATTORNEY PERFORMANCE EVALUATION FORM

PERFORMANCE AREAS	RATINGS
1. COMMUNICATIONS WITH THE COUNCIL	
Maintains effective and open lines of communication with the Council as a body and with individual members, responding to requests in a timely and thorough manner.	
Is accessible when needed to respond to requests for legal information and assistance.	
Keeps the Council apprised of ongoing and current legal issues involving the Town.	
Accurately interprets and clarifies Town Council direction.	
Comments:	

PERFORMANCE AREAS	RATINGS
2. PROFESSIONALISM	
Represents the Town in a professional and ethical manner.	
Is impartial and objective in their duties and responsibilities.	
Invests sufficient effort toward being diligent and thorough in the discharge of their duties.	
Comments:	

PERFORMANCE AREAS	RATING
3. MANAGEMENT OF LEGAL AFFAIRS	
Aggressively represents the interests of the Town as directed by the Town Council.	
Suggests and pursues creative solutions to legal issues involving the Town.	
Conveys information effectively and can articulate their position and offer legal recommendations while respecting the Council's policy prerogative.	
Uses an effective approach to achieving the best possible legal outcomes for the Town's interests given the issues that arise.	
Comments:	

NARRATIVE EVALUATION

What would you identify as the Attorney's strength(s), expressed in terms of principle results achieved during the rating period?

What performance area(s) would you identify as most critical for improvement?

What constructive suggestions or assistance can you offer the Attorney to enhance performance?

What other comments do you have for the Attorney (e.g., priorities, expectations, goals, or objectives for the new rating period)?