North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

September 28, 2023

MEMORANDUM

TO: Mary Pope Furr mpfurr@ncdot.gov
Historic Architecture Team
NCDOT

FROM: Renee Gledhill-Earley
Environmental Review Coordinator

SUBJECT: Southeast High Speed Rail Corridor Tier II EIS, P-3819, ER 03-1507

Thank you for your August 17, 2023, email transmitting the revised National Register of Historic Places Multiple Property Documentation Form (MPDF) titled **"CSX Railroad Systems in North Carolina, 1933-2022"** by Dovetail Cultural Resource Group. We accept this report as final.

We have also reviewed the MPDF titled **"Norfolk Southern Railway System in North Carolina, 1949-1982"** by Dovetail Cultural Resource Group and do not recommend changes to the documentation and accept it as final.

With this memorandum we find that Stipulation XII of the Memorandum of Agreement for the proposed undertaking has been fulfilled. We appreciate everyone's effort to resolve the effects of the Southeast high-speed rail passenger rail project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@dncr.nc.gov. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Anamika Laad, NCDOT Rail Division alaad@ncdot.gov

Received: 8/23/2023
Historic Preservation Office

ER 03-1507

Due: 9/14/2023

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

August 17, 2023

Ms. Renee Gledhill-Earley
Environmental Review Coordinator, State Historic Preservation Office
North Carolina Department of Natural & Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Dear Renee:

RE: Final CSX Mitigation Deliverable for Southeast High Speed Rail (SEHSR) from Virginia/North Carolina state line to Raleigh in Warren, Vance, Franklin, and Wake Counties, TIP# P-3819, WBS# 34314.1.1

The North Carolina Department of Transportation (NCDOT) is completing the mitigation stipulations for the SEHSR project which includes which includes two Multiple Property Documentation Forms (MPDFs) for CSX and Norfolk Southern as well as reconnaissance-level surveys of 60 resources associated with each rail line. Enclosed is a hard copy and digital copy of the final MPDF for the CSX system in North Carolina. Your office provided comments on the draft MPDF on June 13, 2023, and these have been incorporated into the final version.

If you have any questions concerning the accompanying information, please contact Ms. Mary Pope Furr, Historic Architecture Section, (919) 707-6068.

Sincerely,

Mary Pope Furr
Historic Architecture Team

Attachment
Cc: Anamika Laad, NCDOT Rail Division

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH, NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 250-4224
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

April 20, 2023

Ms. Renee Gledhill-Earley
Environmental Review Coordinator, State Historic Preservation Office
North Carolina Department of Natural & Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Dear Renee:

RE: Draft MPDF's for Southeast High Speed Rail from Virginia/North Carolina state line to Raleigh in Warren, Vance, Franklin, and Wake Counties, TIP# P-3819, WBS# 34314.1.1

The North Carolina Department of Transportation (NCDOT) has been working to complete the mitigation requirements outlined in the Memorandum of Agreement for the Southeast High Speed Rail project. Please find attached digital and printed copies of draft Multiple Property Documentation Forms for the CSX Railroad System and the Norfolk Southern Railway System in North Carolina. Also included are survey site forms and images for the 60 above-ground resources surveyed during the project. completed by AECOM. Dovetail Cultural Resource Group completed the work for NCDOT.

Please review the enclosed MPDF's and survey site forms and provide your comments. If you have any additional questions regarding these deliverables I can be reached at (919) 707-6068 or by email at mpfurr@ncdot.gov.

Sincerely,

Mary Pope Furr
Historic Architecture Team

Cc (w/o attachments): Anamika Laad, NCDOT Rail Division

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
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RALEIGH, NC 27610

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information.

___X__ New Submission _____ Amended Submission

A. Name of Multiple Property Listing

Norfolk Southern Railway System in North Carolina, 1849–1982

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Railroad Development in North Carolina (1833–2022)

C. Form Prepared by:

name/title	Adriana T. Moss, Elise Norquist, Danae Peckler, and Kerri S. Barile with contributions from Melissa Butler, Dan Dilks, Jr., Kurtis Rogers, Heather D. Staton, Jonathan Valalik, and Katherine M. Watts				
organization	Dovetail Cultural Resource Group				
street & number	11908 Bowman Drive, Suite 502				
city or town	Fredericksburg	state	Virginia	zip code	22408
e-mail	amoss@dovetailcrg.com				
telephone	540-899-9170		date	October 4, 2023	

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

_____ _____ _____

Signature of certifying official Title Date

_____

State or Federal Agency or Tribal government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

_____ _____

Signature of the Keeper Date of Action

Table of Contents for Written Narrative

Create a Table of Contents and list the page numbers for each of these sections in the space below.

Provide narrative explanations for each of these sections on continuation sheets. In the header of each section, cite the letter, page number, and name of the multiple property listing. Refer to *How to Complete the Multiple Property Documentation Form* for additional guidance.

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.). We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

Estimated Burden Statement: Tier 4

E. STATEMENT OF HISTORIC CONTEXTS

(If more than one historic context is documented, present them in sequential order.)

Railroad Development in North Carolina (1833–2022)

In order to comprehend the history and significance of the origins and development of the Norfolk Southern (NS) rail system, it is important to understand the general history of railroad transportation in the state of North Carolina. Although the country's first railroads began in New England, the southern states were not far behind. What began as modest connections between several selected cities and commercial complexes turned into a staple of industry and passenger travel linking not only all parts of the state, but also neighboring states and beyond.[1]

Initial Stages of Railroad Development (1833–1860)

Interest in railway development in North Carolina was stimulated by a series of articles published in 1828 entitled *The Numbers of Carleton* by Dr. Joseph Caldwell, president of the University of North Carolina at the time. It described the advantages of rail over canal and river transportation and promoted a railway system throughout the state that would link important rivers.[2] The State of North Carolina was naturally divided into five distinct economic provinces at this time, two of which—the Northeast Coastal Plain and the Northeast Piedmont—were tributaries to Virginia when it came to trade matters.[3] Overflow products such as naval stores, cash grain, peanuts, cotton, and tobacco from the Coastal Plain were transported down several waterways beginning with the Roanoke River to Norfolk and Portsmouth in Virginia.[4] Tobacco from the Piedmont generally would travel the same route although some went farther north to Petersburg, Richmond, and other Virginia towns.[5] Although North Carolina seaports were never fully interested in diverting trade to Virginia, the state government often conceded to the northern region demands and followed the Commonwealth's lead.[6]

Changes in transportation began in the 1830s with the advent of the railroad between Petersburg, Virginia, and Weldon, North Carolina, just past the border between the states alone the Roanoke River. Naturally, early railroads in North Carolina "followed the course of existing trade routes, supplementing and extending the existing facilities."[7] Following a railway construction boom trend that occurred throughout the country in the 1830s, North Carolina railroad transportation began in the early part of that decade when the state made "constitutional changes that gave greater representation to the population in the west and by the rise of the Whig Party which advocated

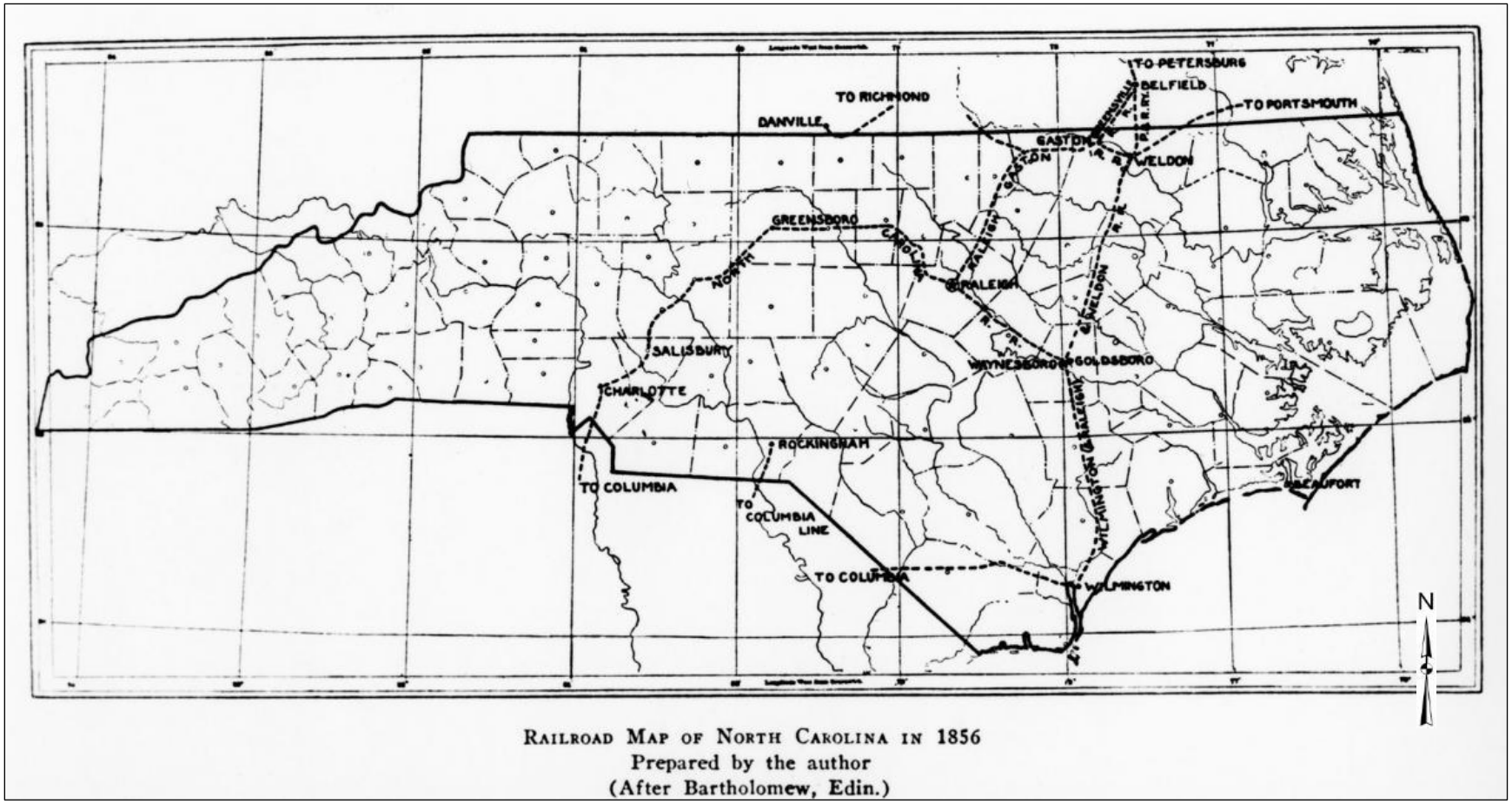
[1] Horn n.d.
[2] Eutsler 1925:428.
[3] McGuire 1934:95–96.
[4] Hanna and Obenshain 1957; McGuire 1934:95–96.
[5] Ibid.
[6] Ibid.
[7] Eutsler 1925:428.

government support for public improvements and economic development"; this action demonstrated the state's commitment to infrastructure development (Figure 1, p. 5).[8] According to Milton S. Heath's article published in *The Journal of Economic History*, North Carolina was unique in this pledge as "support from states during the early period was mostly of the nature of aid to particular city or local projects and was justified usually by the public nature of such enterprises."[9]

The first iteration of a railroad in the state was the Wilmington & Raleigh (W&R) Railroad. It was also the initiation of state-provided assistance to encourage railroad construction, as the state government purchased 40 percent of the railroad's initial stock. The line was chartered in 1833; however, shortly thereafter its name and route were changed to the Wilmington & Weldon (W&W) Railroad after the citizens of Raleigh showed little interest in the new transportation endeavor. Construction of the 161-mile track was completed in 1840. Towards the conclusion of its construction, the nation faced a financial downturn as a result of the Panic of 1837. The impacts from the financial crisis lasted from the late 1830s into the early 1840s. The Southern states lagged in financial recovery behind other sections of the country, having an extended effect on railroad development in North Carolina.[10]

Agricultural difficulties, mainly crop failure in the Piedmont region of the western half of the state, prompted regulators in the state to seek a solution to stabilize the western region's economy. One idea was to develop a more robust and fluid connection to central and eastern state markets through the development of a government-sponsored rail system that expedited connectivity. Such forethought propelled the Tar Heel State to become a visionary in the rail industry of the nineteenth century by creating a self-contained and government-controlled transportation system.[11] The North Carolina Railroad (NCRR), chartered by General Assembly in 1849 and completed in 1856, connected Charlotte to Goldsboro. It was intended to be "the centerpiece of an east-west rail linking the state's seaports with the mountains."[12] This connection had a dramatic effect on economic development not only within the western region but throughout the state and spurred a notable increase in settlement along its route. Many localities such as the cities of Durham, Goldsboro, and Burlington, among others, owe their expansion and success to the NCRR.[13]

[8] Horn n.d.; Wait and deTreville 2006.
[9] Heath 1950:45.
[10] Burke 2008.
[11] Carlton 1990:454; Castano and Kern 2006.
[12] Trelease 2006.
[13] Castano and Kern 2006.



RAILROAD MAP OF NORTH CAROLINA IN 1856
Prepared by the author
(After Bartholomew, Edin.)

Figure 1: Railroad System Map of North Carolina Circa 1856.[14] Not to scale.

[14] Konkle 1922:323.

Although the original impetus for the system was to improve the transport of agricultural goods and stabilize the state's economy, passenger traffic was initially the most important railroad component to the state. In fact, due to their precious cargo, freight trains were instructed to "keep out of the way of Passenger Trains" to safeguard "life and limb as well as property."[15] By the 1850s, freight service took over passenger service as the highest percentage of rail traffic, but the system as a whole was hindered by the poor articulation of the state's rail lines with both the southern and national rail networks.[16] Although the North Carolina system was government controlled and a single, cohesive unit, the early railroads to the north, west, and south were still independently operated. "Antebellum railroads generally were controlled by the commercial-civic elites of their major terminal cities" who saw rail lines expending their own cities all the while attempting to shut out other competitors.[17]

Rail construction before the Civil War was hard and demanding work completed by man and animal power with very limited mechanical help. Initially tracks were mainly constructed with perishable strap-iron wooden rails such as with the Raleigh & Gaston (R&G) Railroad and the W&R Railroad, but by the 1850s, many were upgraded with T-rail iron imported from England.[18] Terrain grading, tree clearing, creation of embankments and ditches, and track laying was primarily done by enslaved laborers leased by white shareholding landowners along the proposed routes. Immigrants, as free wage laborers, also provided a large work force for the construction of North Carolina's early rail, particularly the Irish.[19] According to an article originally published in the *Charleston Courier* and republished in an 1860 edition of *The Wilmington Daily Herald*, the author sought to alert the reader to how "a properly organized and controlled" utilization of enslaved labor such as with the Charleston and Savannah Railroad could lead to a "triumphant exhibition of the value, uses and efficiency of slave labor."[20] Contractors forced enslaved laborers to work in tumultuous conditions, across all seasons, and in accelerated timelines, leading to many accidents and illnesses, that they could never require hired white laborers to do.

Civil War, Reconstruction, and First Signs of Consolidation (1861–1880)

During the Civil War, railroads became a tactical and strategic resource, and therefore a prime target, for combatants on both sides of the conflict. The railroad network in North Carolina became a "central component of the Confederacy's transportation system during the Civil War" providing a vital north-south link for moving men and supplies throughout the region, which was especially critical to Confederate General Robert E. Lee's Army of Northern Virginia between 1864 and 1865 and connecting with eastern outlets like the port city of Wilmington.[21]

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[15] Horn n.d.
[16] Carlton 1990:454; Wait and deTreville 2006.
[17] Carlton 1990:454.
[18] Burke 2008:117.
[19] Adcock 2010.
[20] The Wilmington Daily Herald 1860:2.
[21] Wait and deTreville 2006.

"For four years the railroads of the South were fought over, destroyed, rebuilt, and destroyed again" leaving them in ruins by the end of the war.[22] During the war, the railroad systems in North Carolina were generally in poor condition not only from war-related damage but also due to overuse as military transportation and deferred maintenance stemming from labor shortages and a lack of quality replacement materials (Figure 2, p. 8).[23] As the government dealt with monumental repairs, the industry simultaneously faced a growing demand from both the public and the government. Passenger service on the NCRR, for example, increased from approximately 90,000 in 1861 to 506,000 people in 1865, comprising mainly soldiers, while freight volume was so extensive that cargo piled up at stations along the line.[24]

Railroad companies in the state lost skilled and unskilled workers to enlistment as well as sources for crucial spare parts for rails and locomotives.[25] Maintenance was increasingly delayed as all efforts were focused on the war. Eventually replacement materials and parts were salvaged from rarely used lines while locomotives were claimed from Virginia lines. Bridge maintenance followed suit with the rest of the railroad line as "temporary trestling was used to shore up sagging bridges."[26]

> The invasion of North Carolina by Union general William T. Sherman's army in the last months of the war led to considerable destruction, mostly by retreating Confederate troops, of bridges, track, and rolling stock on the Wilmington & Weldon Railroad and on the North Carolina Railroad between Goldsboro and Raleigh. Union forces, equally dependent on the railroad for supplies, repaired the damage almost as quickly.[27]

Years of rail rebuilding followed the end of the war in the South.[28] Both freight and passenger railway traffic had been reduced by the poor condition and temporary fixes of the tracks and separation structures, with many lines needing replacement of a majority of rails. The rebuilding effort was an obstacle and an opportunity for railroad companies doing business in North Carolina.

[22] Loy et al. 2004:7.
[23] Trelease 1991:10–12.
[24] Ibid.
[25] Trelease 1991:12; Wait and deTreville 2006.
[26] Trelease 1991:12.
[27] Wait and deTreville 2006.
[28] McGuire 1934:98.

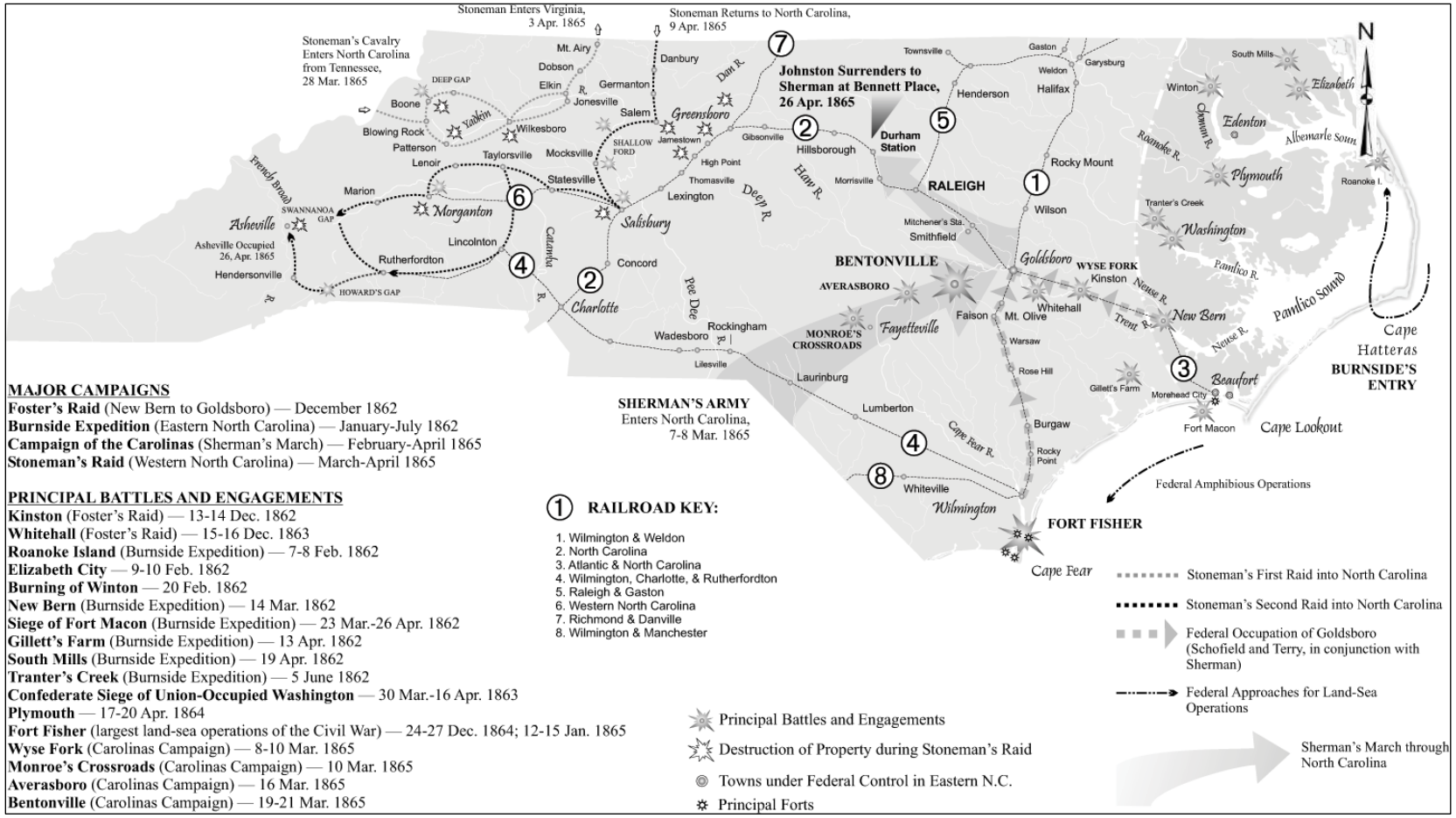


Figure 2: Key Railroads Depicted on Map of Civil War Campaigns and Battles in North Carolina.[29] Not to scale.

[29] Moore 2006.

Prior to the war, the diversity in railroad gauges presented major problems and made it "necessary either to reload freight cars and transfer passengers or to lift the car body from one set of trucks on to the other."[30] Initial planning in American railroads gave little thought about lines serving different geographic areas would eventually meet and interact.[31] Gauge measurements proliferated in the earlier periods of railroads based on engineering decisions, line preference, competitive strategy, or state legislation. The Civil War revealed the impracticality of varied rail gauges throughout the south's network and since most southern railroad companies used the wider 5-foot gauge rails, North Carolina legislators were pressured to relax their standard requirement for the 4-foot, 8.5-inch Stephenson gauge used across the state—a gauge first used by George Stephenson who built the first steam locomotive in England and laid his rails based on the width of coal wagons.[32] Furthermore, the physical condition of the lines was extremely poor. Part of the problem in the South according to Ray Morris of the *Railroad Age Gazette* is that it was relatively easy and cheap for railways to be constructed during the early years leading to both poor physical and commercial condition and creating an "oversupply of inferior lines."[33] Several solutions were attempted as markets widened outside of local networks, but finally the only reasonable solution after the war was to choose a standardized rail gauge. The South was slowest to change in the United States due to the isolation caused by the Civil War and Reconstruction and it was not until the end of this period that lines were upgraded to the standard track gauge of 4 feet and 8.5 inches. The unification of railway gauges allowed for the establishment of through rail routes from the North to the South which led to faster travel.

Although the federal government did assist in railroad recovery, the state government also issued approximately $18 million in bonds to 13 different railroad companies between 1865 and 1875.[34] Due to mismanagement of funds in the state government and railroad company administrations, however, much of the state funds in North Carolina were redirected away from rail repair. Financial difficulties in the 1870s led several rail companies into agreements and consolidations.

> With consolidation and the increased pressure for through traffic came rationalization and articulation, notably through interconnections, car interchange agreements, the nationwide standard gauge, and the through or uniform bill of lading, which permitted shipments over several different lines with a minimum of paperwork; these innovations welded North Carolina's and the nation's rails into a unified national system.[35]

For example, the R&G Railroad and the Raleigh & Augusta Air Line (RAAL) were consumed by the more stable Seaboard & Roanoke lines who later entered into agreement with the Atlanta and

[30] Morris 1909:751.
[31] Linda Hall Library n.d.
[32] Hilton 2006; Linda Hall Library n.d.
[33] Morris 1909:751.
[34] Wait and deTreville 2006.
[35] Carlton 1990:455.

Charlotte Air Line to connect with the Carolina Central at Charlotte.[36] Similarly, the NCRR leased its track in 1871 to compete with the R&D Railroad.[37]

Railroads in the South also struggled during this period with the loss of formerly enslaved labor. This issue was solved for a time by prison reformation beginning in the mid-1870s which focused on incarceration and rehabilitation for inmates. To comply with the new movement, the state was in need of employment sources for largely idle inmates.[38] According to the 1880 federal population census, 85 percent of the new inmates under the new system were Black.[39] In his article entitled "Penal Reform and Construction of the Western North Carolina Railroad 1875–1892," Homer S. Carson, III, stated "paradoxically, while the prison reform movement, based on incarceration, rehabilitation, and penitence, solved the state's problems in two critical areas, the convict labor system proved to be a racist system vulnerable to severe abuses that largely negated its original humane intent."[40] The construction of the Western North Carolina Railroad, a predecessor to the NS system, utilized 3,644 convicts to complete dangerous construction work, blasting tunnels through the Blue Ridge Mountains. Over 460 of these convicts died during the project.[41]

Expansion and Second Period of Consolidation (1881–1900)

The nation's population more than doubled, as did that of North Carolina, in the last decades of the nineteenth century. Prior to the Civil War, North Carolina had only four localities that had populations over 2,500 people, but by 1880, there were 10 localities with large populations.[42] North Carolina towns with populations greater than 500 people rose from 23 to 129 percent between 1860 and 1900, with the greatest increase occurring in the 1870s.[43] This transformation has been mainly attributed to agricultural and industrial development. While the railroad companies' primary focus continued to be on freight and local passenger traffic as it had been prior to the war, tourist services were considered a bonus for rail companies to bring in more profits.[44] Special trains were established that led to vacation spots such as the mountains and beaches that featured railroad company-built hotels and resorts such as those in Asheville and Southern Pines.[45]

With the revival of the economy in the mid-1880s:

> … the expansion of the region's railroad network provided the most tangible example of southern progress. Between 1880 and 1890, the South's railroad mileage almost doubled. In North Carolina alone, it expanded from 1,486 to 3,128

[36] Mattson, Alexander and Associates, Inc. (MAA) 2007:12–14.
[37] Carlton 1990:455.
[38] Carson 2005:205.
[39] Ibid.
[40] Ibid.
[41] Ibid.
[42] Anchor n.d.; Walbert n.d.a.
[43] Carlton 1990:457.
[44] Trelease 1991:23; Wait and deTreville 2006.
[45] Wait and deTreville 2006.

> miles, providing countless communities a connection to the national rail network [Figure 3, p. 12].[46]

By the middle of this period, several moderately sized cities, compared to those in other seaboard states, became railroad hubs. The City of Greensboro, for example, became a convergence point for lines traveling in six different directions.[47]

Although passenger traffic continued to grow, freight revenue accelerated significantly, spurred by agricultural technology and machinery development and the need to move a greater amount and variety of products.[48] Access to distant areas of the state allowed capitalization on a wider variety of resources.[49] The state's cotton production and timbering increased while both North Carolina and Virginia continued to supply tobacco that was sold nationwide for cigars, chewing tobacco, and cigarettes.[50] The connection to ports such as Norfolk in Virginia provided guano fertilizer from South America to be distributed throughout the region in hopes to continue to support agricultural efforts. Similarly, this expansion connected North Carolina farmers to potential buyers in northern states via steamship, wherein goods first traveled on rail to waterways.[51] Dozens of short line railways were constructed during this period to support this essential need for such transportation.

As the nation's economy experienced ebbs and flows during the last quarter of the nineteenth century that affected all industries, many railroad companies faced bankruptcy during economic depressions leading to a period of consolidation in the South that continued into the twentieth century. This was several decades longer than what the New York Central and Pennsylvania lines experienced.[52] "Greater trade with northern cities and higher levels of long-distance through traffic demanded greater efficiency and cooperation."[53]

[46] Huffard 2014:27.
[47] Fripp 1985:49.
[48] Anchor n.d.; Wait and deTreville 2006.
[49] Adcock 2010.
[50] Walbert n.d.b.
[51] MAA 2007:14.
[52] Dozier 1920:139.
[53] MAA 2007:12.

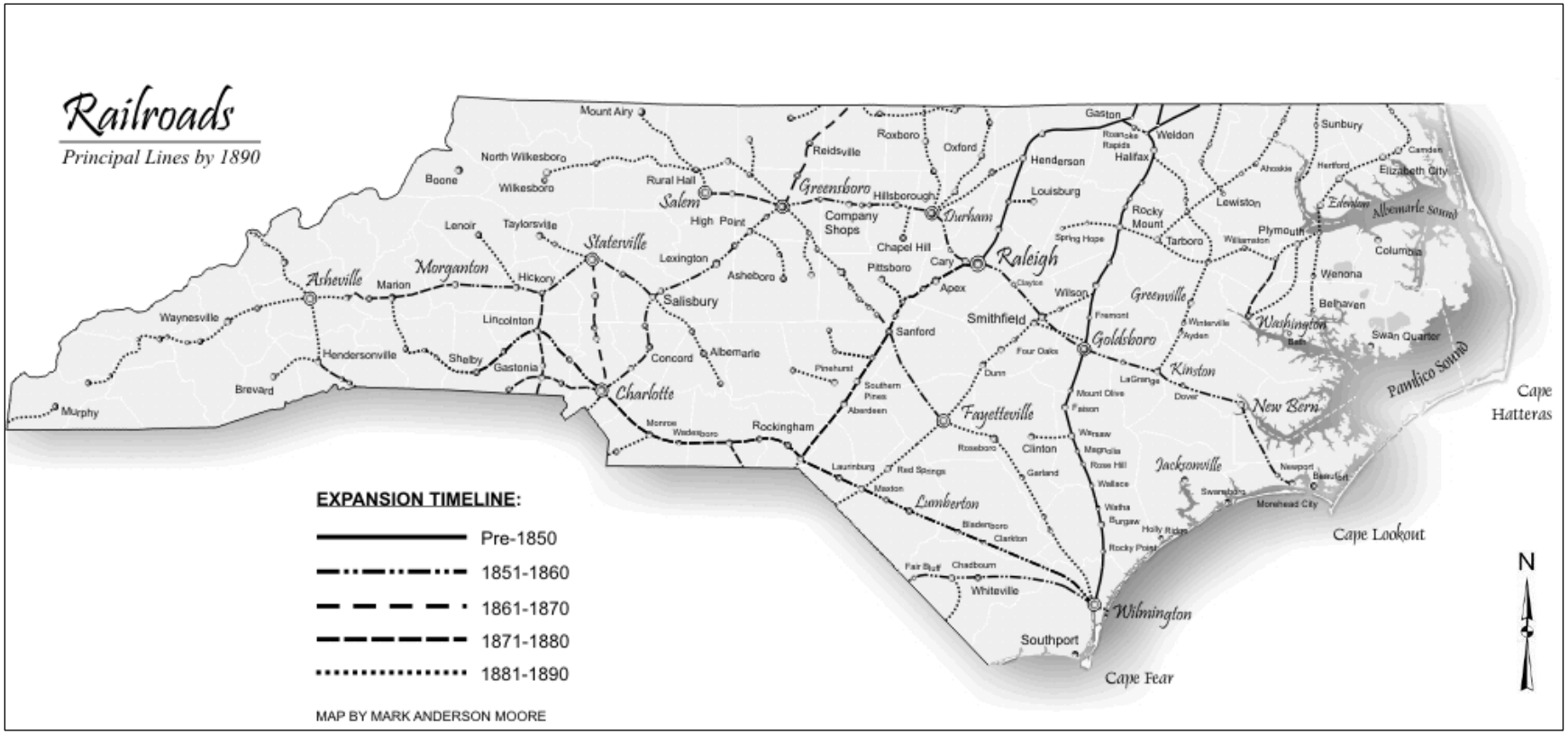


Figure 3: Principal Railroad Development in North Carolina until 1890.[54] Not to scale.

[54] Moore 2003.

It was also common in the rail industry for periods of explosive growth to be succeeded by episodes of financial collapse or cost-cutting measures, leading to forced mergers to "bolster capitalization and to create more profitable lines."[55] Many Southern railroad companies were targets for larger rail conglomerates such as the Pennsylvania Railroad which established the Southern Railway Security Company (SRSC) in 1871 to strategically build a network of rails connecting major southern cities with its northern lines by purchasing smaller failing southern lines.[56]

Concurrently during this period came a public demand for the regulation of railroad companies that monopolized transportation costs in the areas they serviced, which led to the passage of the Interstate Commerce Act of 1887.[57] The creation of the Interstate Commerce Act unnerved many railroad executives across the country.[58] Out of this law came the creation of the Interstate Commerce Commission (ICC), which was the first United States (U.S.) regulatory commission. It was established "as a result of mounting public indignation […] against railroad malpractices and abuses."[59] As a result, the ICC and Congressional committees during this period took "great interest in the financial interrelationships among railroads." According to Dr. Glenn Hoffman, "since the Interstate Commerce Act had outlawed pooling and 'gentlemen's agreements,' the solution for eliminating or at least limiting competition was to concentrate control of railroads in fewer hands."[60] This could be achieved by mergers, consolidations, or interlocking stock investments. If a competitor could not be absorbed, they could potentially be persuaded or threatened to be more cooperative by attaining a full set of controlled connections to one's own road.

Individual states soon followed suit to pass similar laws regulating railroads and other private businesses featuring almost identical sections and clauses to the federal law. In North Carolina, this began with the NCRR Commission, also known as the Board of Railroad Commissioners, "established by the Farmers' Alliance-dominated legislature of 1891 primarily to reduce freight and passenger rates on intrastate railroads and to increase the taxable value of railroad property."[61]

> The 1891 act provided for three commissioners, chosen by the General Assembly to serve six-year terms, whose major responsibility was to set or approve maximum passenger and freight rates for the state's railroads. Standard rates were generally derived from a comparative process in which the commission attempted to keep profits in North Carolina similar to those of railroad companies in other southern states. The 1891 General Assembly also empowered the Railroad Commission to prevent discrimination in rates or service, to require information from railroad companies, to promulgate administrative rules for passenger and freight business,

[55] MAA 2007:12.
[56] Wait and deTreville 2006.
[57] Federal Register n.d.; Hoffman 1998:94–95; OurDocuments.gov n.d.
[58] Hoffman 1998:94–95.
[59] Federal Register n.d.
[60] Hoffman 1998:155–156.
[61] Clark 1891:73; Hunt 2006a.

> to hold hearings on complaints about service or rates, to appraise railroad property for taxation purposes, and to act as a court of record in resolving disputes. Moreover, the commission's rate-setting powers extended to intrastate steamboat, canal, express, and telegraph companies. Its orders were subject to review in state courts.[62]

Stemming from the Panic of 1893, foreclosure sales of railroads across the country sent over 40,000 of the total 75,000 miles of track into receivership to avoid bankruptcy, of which one quarter comprised Southern railroads.[63] This national consolidation movement put the Southern rail system in the hands of a few large companies; in North Carolina, this movement resulted in three prominent lines emerging from the reorganization: the Southern Railway, the Atlantic Coast Line (ACL), and the Seaboard Air Line (SAL).

By the 1890s, the Southern Railway comprised almost 150 predecessor lines and operated out of Charleston, South Carolina.[64] Other major mergers and consolidations occurred during this period, such as the merger of the Richmond Railroad and Richmond & Petersburg (R&P) Railroad along with other systems to form the ACL Railroad in 1898.[65] The SAL would ultimately comprise 140 lines and 4,000 miles of track across six states.[66]These mergers were also spurred by the popularity of important routes. As local lines became more important, increased traffic fueled closer relationships between the lines as more communication was needed regarding line usage and car switching.

> As long as railroads were purely local affairs, each locality might charter and run its own. The moment any through traffic grew up, this was found to be a wasteful way of doing business. If they changed cars at every point of junction, the expenses were vastly increased. If they did not change cars, there was still the awkwardness of dividing responsibility, the evil of having two separate organizations where one would do the work better.[67]

It was inevitable for local lines to consider forming more permanent relationships with one another as well consider an overall managing body.

[62] Hunt 2006a. Note: The Railroad Commission was abolished in 1899 and replaced by the North Carolina Corporation Commission, which served as the primary state agency regulating railroads and other transportation companies as well as banks and electric utilities until 1933.
[63] MAA 2007:14.
[64] Southern Railway Historical Association 2019.
[65] MAA 2007:1.
[66] Griffin 1991:9–12; Johnson 1995:9–22.
[67] Hadley 1902:83.

Efficiency in the First Half of the Twentieth Century (1901–1945)

At the turn of the twentieth century, North Carolina was served by three major rail systems and approximately 30 short lines. By 1905, the North Carolina rail grid comprised approximately 3,859 miles of railroad, not including double or side-tracks (Figure 4, p. 16).[68] The "three great companies" worked to create efficient systems out of crude short lines while dividing up the territory in a generally orderly fashion.[69] At the beginning of the century, Southern Railway operated the most track (1,279.6 miles), while the ACL came in at a close second with 947.8 miles of railroad, followed by the SAL with 612.1 miles.[70] The corporate consolidations and reorganizations across the country of the last decade of the nineteenth century resulted in dense and closely controlled networks of track that were highly regulated systems, attempting not to repeat past mistakes.[71] According to Maury Klein, the railroads were controlled by the "vision of a few giant systems ruled by men who trusted each other and played the competitive game by shared rules."[72] Unlike other seaboard states, North Carolina was almost 90 percent rural at the turn of the century, with no city in the state having more than 35,000 residents.[73] During this period, urbanization first boomed in the state, swelling the urban population from 10 to 25 percent of North Carolina's total population.

Compared to the boom in railroad construction during the late-nineteenth century, relatively little new track mileage was added during this time in North Carolina, though some short lines were extended and belt lines were created to reinforce existing networks. However, major improvements to maintain lines and increase efficiency were ongoing during this period.[74] Existing lines continued to ensure the vitality and success of the towns and cities along their routes through transportation of timber and commercial agricultural freight as well as small town commerce.[75] Across the nation, trains were responsible for about 75 percent of intercity freight transportation in the early-twentieth century.[76] Industrial leaders throughout the South constructed mills and factories near rail regional rail lines outside of populous areas and small communities for easy access, further contributing to the success of the rails.[77] Where several factories or mills were concentrated in one place, track would be extended to serve the industrial complex.[78] The emergence of small towns along the rail lines during this period came to characterize eastern North Carolina and the Southside in Virginia.

[68] North Carolina Corporation Commission 1905:III; Wait and deTreville 2006.
[69] Morris 1909:751.
[70] North Carolina Corporation Commission 1905:III.
[71] Klein 1990a:317; MAA 2007:16.
[72] Klein 1990a:317.
[73] Bishir and Earley 1985:3.
[74] MAA 2007:17.
[75] Ibid.
[76] National Museum of American History n.d.
[77] MAA 2009:15.
[78] Walbert n.d.b.



Figure 4: 1900 Railroad Map of North Carolina.[79]

[79] Brown 1900.

During this period, railroad growth enabled further town development along its tracks and outward expansion in more established localities. In particular, middle and upper classes were able to move outside of city limits where industry, commerce, and rail yards were concentrated, leaving many of the residential portions of these areas to lower economic classes and underrepresented communities where lack of support and funds led to blight. The City Beautiful Movement swept the South, spurred by improvements in transportation technology and the rise of the middle class. From Portsmouth, Virginia, through the State of North Carolina, and to its terminus in Atlanta, Georgia, the SAL promoted the movement by organizing improvement societies at every stop on its line hoping to garner new interest from northern investors to a "depression-ridden region."[80] This movement was also apparent in other transportation systems. When presented at the Chicago World's Fair in 1893, "the creation of a 'White City' of architecture and infrastructure built in the Beaux Arts style" featured cohesion and state-of-the-art construction methods and materials.[81] Bridges, primarily in densely populated areas, in particular reflected this trend as these structures were smaller and thus excessive ornamentation costs were limited.[82] Similarly, urban monumental train stations were also affected by this trend.

Concurrently, the Good Roads Movement emerged in the nation. This movement involved the "broad-based crusade to build and improve the condition of U.S roads," initiated by bicyclists in the 1870s and gaining great traction in the early twentieth century. The program was initially supported by railroad companies "as better roads were seen as a way to acquire more business."[83] However, privately owned railroad companies begin to worry about the popular interstate system and its effect on its freight business. The Association of American Railroads attempted to reduce the competitive advantage of roadways by lobbying the Federal government to tax truckers to compensate for the heavy loads they carried which put strain on across paved roads.

"America's entrance into World War I found more railroads in receivership than at any time since the Panic of 1893."[84] Initial successes seen in the 1910s led to financial overextension by some of the railroad corporations as they attempted to expand into other states.[85] In 1920, at its peak expansion, railroad track in North Carolina comprised 5,522 miles.[86] Widespread accessibility and convenience of the automobile in the late 1920s, combined with the onset of the Great Depression, started a major decline of passenger travel in the state, with local service suffering the greatest. "On main lines across the state the railroads responded with sleek stainless steel and aluminum streamliners pulled by cleaner diesel engines" in an attempt to entice passenger traffic.[87] Similarly, truck traffic affected the railroads' business by transporting small freight, which was supported by

[80] Bishir and Earley 1985:11.
[81] Parsons Brinckerhoff and Engineering and Industrial Heritage (Parsons and EIH) 2005:2-19–2-20.
[82] Ibid.:2-29.
[83] Kelly n.d.
[84] Grant 2006:15.
[85] MAA 2007:17.
[86] Wait and deTreville 2006.
[87] Ibid.

new government regulations.[88] The Great Depression forced rail companies to become even more efficient requiring closures of rural stations and offices, upgrading track, and installation of longer passing sidings and automatic block signals.[89]

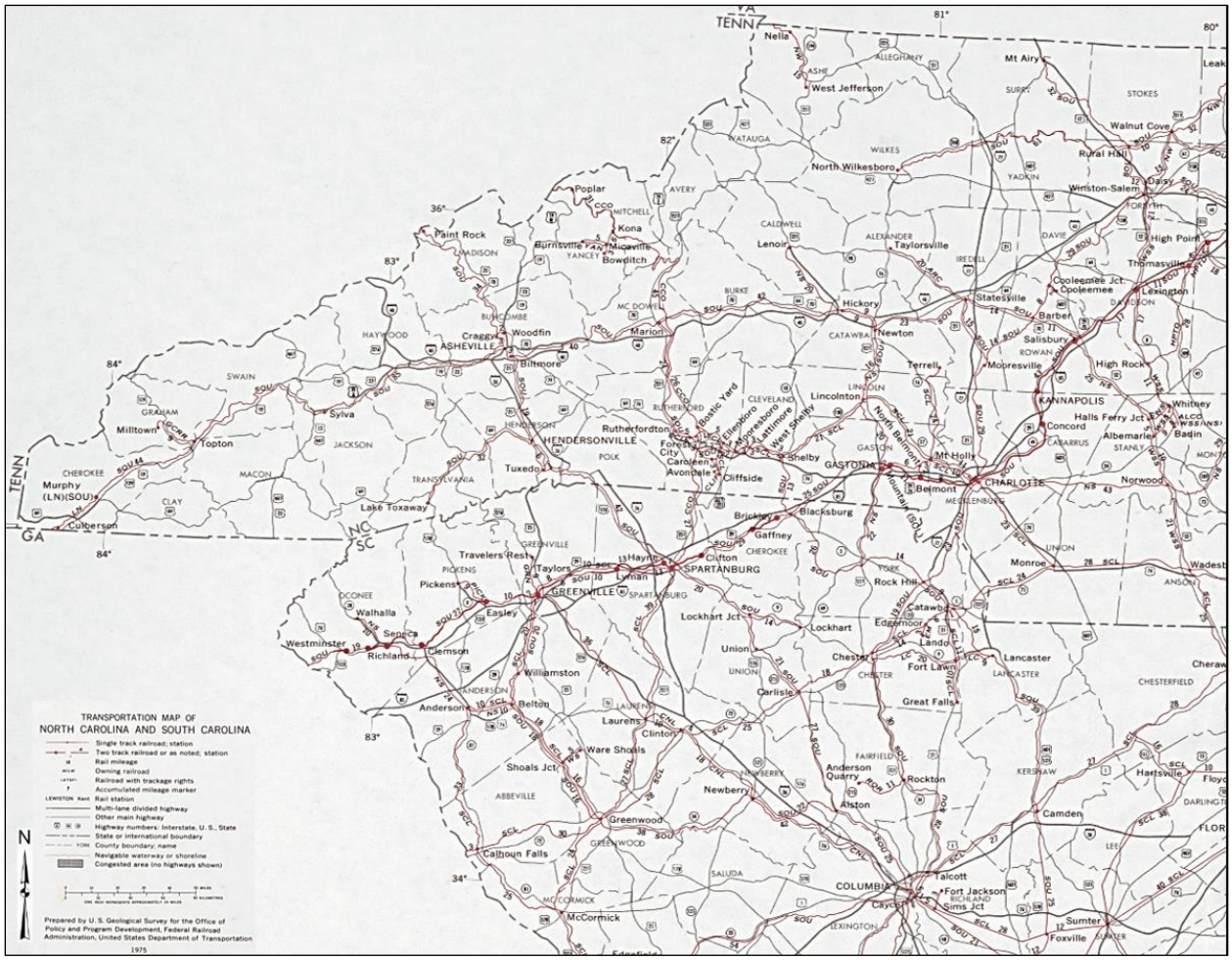
New Deal programs, policies, and projects were developed in the 1930s and 1940s, such as the Railroad Retirement Board (RRB), an independent, executive branch agency that focused on administering benefits for the nation's rail workers. and assisting the rail industry and those who worked in it. The RRB was firmly established after the passing of the Railroad Retirement Act of 1937, "which provided for an income tax levied on carriers and employees" to establish the funding for retirement, survivor, unemployment, disability, sickness, and health benefits.[90] The Works Progress Administration provided people to fill railroad track jobs while the Public Works Administration utilized its resources to "fund new locomotives, electrify rail lines, and eliminate dangerous grade crossings."[91]

The Introduction of the Interstate Highways and Third Period of Consolidation (1946–1979)

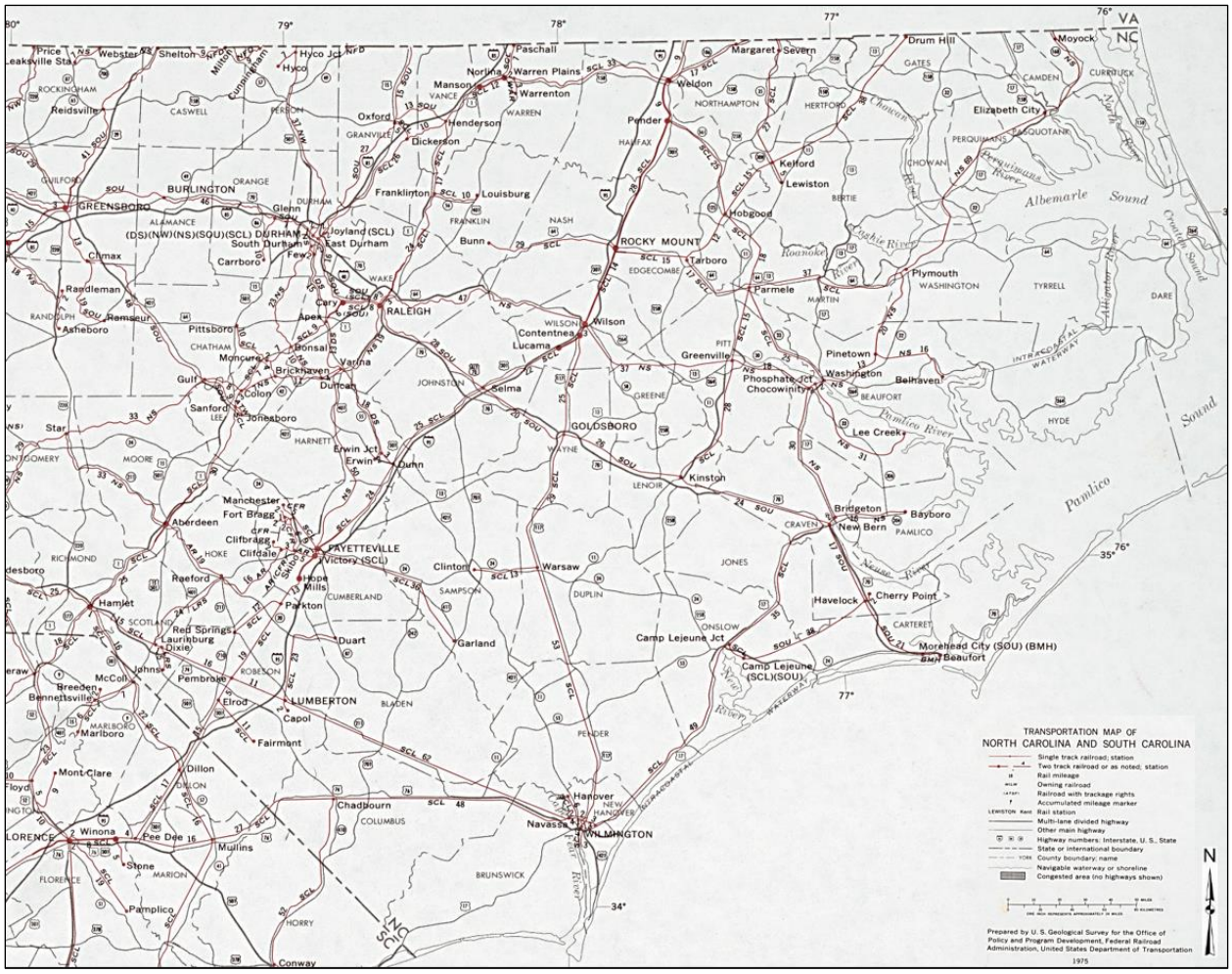
After over a century of interstate transportation domination, the construction of the interstate highway system and air travel after World War II severely affected rail transportation's profitability.[92] This influence combined with the shift to exclusive use of diesel engines from steam engines (which required less maintenance and operating personnel) necessitated rail managers to significantly cut costs.[93] The closure of depots, abandoning of rail lines, and corporate restructurings were common occurrences throughout the 1950s and 1960s.[94] One of these such cases began in 1958. Two railroad titans along the east coast, the ACL and the SAL, combined forces and by 1967 created the Seaboard Coast Line (SCL) Railroad, which immediately became very profitable due to its extensive interstate access.[95]

By the 1970s, railroads in North Carolina and throughout the nation were struggling financially. The primary focus of the remaining lines was on carrying bulk loads only, while smaller loads of freight were more and more commonly transported by trucks (Figure 5 and Figure 6, pp. 19–20). According to a 1961 Highway Cost Allocation Report, by the 1950s:

[88] Wait and deTreville 2006.
[89] Ibid.
[90] University of California Department of Geography 2021.
[91] Ibid.
[92] National Museum of American History n.d.; Weingroff 2017.
[93] Klein 1990b; Wait and deTreville 2006.
[94] MAA 2007:18.
[95] American-Rails.com 2020.


TRANSPORTATION MAP OF
NORTH CAROLINA AND SOUTH CAROLINA
Prepared by U. S. Geological Survey for the Office of Policy and Program Development, Federal Railroad Administration, United States Department of Transportation
1975
TENN
GA
NC
SC
Asheville
Hickory
Statesville
Salisbury
Kannapolis
Concord
Charlotte
Gastonia
Shelby
Rutherfordton
Spartanburg
Greenville
Anderson
Clemson
Walhalla
Easley
Pickens
Lockhart
Chester
Fort Lawn
Great Falls
Rock Hill
Monroe
Union
Laurens
Clinton
Ware Shoals
Newberry
Greenwood
Columbia
Camden
Sumter
Florence
Darlington
Hartsville
Rockton
Alston
Anderson Quarry
Talcott
Fort Jackson
Sims Jct
Foxville
McCormick
Calhoun Falls
Shoals Jct
Williamston
Belton
Westminster
Seneca
Richland
Travelers Rest
Taylors
Lyman
Clifton
Gaffney
Blacksburg
Lake Toxaway
Tuxedo
Cliffside
Avondale
Carpenters
Forest City
Ellenboro
Rosbic
Bostic Yard
Lincolnton
Newton
Terrell
Mooresville
Barber
Cooleemee Jct
Cooleemee
Thomasville
High Point
Winston-Salem
Walnut Cove
Mt Airy
Leak
Nella
West Jefferson
North Wilkesboro
Poplar
Kona
Burnsville
Micaville
Bowditch
Paint Rock
Woodfin
Craggy
Biltmore
Marion
Lenoir
Taylorsville
Milltown
Topton
Sylva
Murphy (LN)(SOU)
Culberson
Andrews
Robbinsville
Hayesville
Brasstown
Tate
Cherokee
Swain
Graham
Macon
Jackson
Transylvania
Henderson
Polk
Rutherford
Cleveland
Lincoln
Gaston
Mecklenburg
Union
Anson
Stanly
Cabarrus
Rowan
Davie
Iredell
Alexander
Catawba
Wilkes
Yadkin
Surry
Stokes
Ashe
Alleghany
Watauga
Avery
Mitchell
Yancey
Madison
Haywood
Buncombe
Burke
McDowell
Caldwell
Pickens
Oconee
Greenville
Abbeville
Laurens
Fairfield
Kershaw
Lancaster
Chesterfield
Darlington
Lee
Florence
Richland
Lexington
Saluda
Edgefield
Aiken
Barnwell
Allendale
Hampton
Jasper
Beaufort
Colleton
Dorchester
Berkeley
Charleston
Georgetown
Horry
Marion
Dillon
Marlboro
Chesterfield
Lancaster
York
Cherokee
Spartanburg
Union
Laurens
Greenwood
Abbeville
Anderson
Oconee
Pickens
Greenville
Newberry
Saluda
Lexington
Richland
Kershaw
Sumter
Clarendon
Williamsburg
Florence
Darlington
Marlboro
Dillon
Horry
Georgetown
Berkeley
Charleston
Dorchester
Colleton
Beaufort
Jasper
Hampton
Allendale
Barnwell
Aiken
Edgefield
McCormick
Abbeville
Greenwood
Laurens
Union
Chester
Lancaster
York
Cherokee
Spartanburg
Greenville
Pickens
Oconee
Anderson
Abbeville
Greenwood

but was managed as a for-profit organization.[99] Tourist trains continued to operate on a small scale by the "Great Smoky Mountains Railway in western Carolina, the Tweetsie Railroad near Blowing Rock, Spencer Shops (part of the North Carolina Transportation Museum), and the New Hope Valley Railroad near Raleigh." In the 1970s, Southern Railway relocated to a more diesel-friendly repair facility and the Spencer Shops became the North Carolina Transportation Museum.


TRANSPORTATION MAP OF
NORTH CAROLINA AND SOUTH CAROLINA
Prepared by U. S. Geological Survey for the Office of Policy and Program Development, Federal Railroad Administration, United States Department of Transportation
1975
VA
NC
ROCKY MOUNT
RALEIGH
GOLDSBORO
FAYETTEVILLE
LUMBERTON
WILMINGTON
Albemarle Sound
Pamlico Sound
Pamlico River
Neuse River
Roanoke River
Tar River
Chowan River
Pasquotank River
Elizabeth City
Morehead City (SOU) (BMH)
Beaufort
Camp Lejeune (SCL)(SOU)
Camp Lejeune Jct
Havelock
Cherry Point
New Bern
Bridgeton
Bayboro
Kinston
Greenville
Wilson
Tarboro
Plymouth
Hobgood
Lewiston
Kelford
Weldon
Pender
Henderson
Oxford
Warrenton
Warren Plains
Norlina
Paschall
Hyco
Hyco Jct
Reidsville
Greensboro
Burlington
Climax
Randleman
Asheboro
Pittsboro
Siler City
Sanford
Star
Aberdeen
Fort Bragg
Cliffdale
Raeford
Hamlet
Red Springs
Laurinburg
Maxton
Pembroke
Lumberton
Fairmont
Marlboro
Mont Clare
Dillon
Chadbourn
Whiteville
Mullins
Pee Dee
Winona
Conway
Pamplico
Stone
Navassa
Hanover
Castle Hayne
Duart
Garland
Clinton
Warsaw
Mount Olive
Selma
Smithfield
Benson
Apex
Cary
Durham
Louisburg
Franklinton
Bunn
Zebulon
Wendell
Knightdale
Clayton
Princeton
Kenly
Fremont
Goldsboro
Dunn
Erwin
Lucama
Contentnea
Phosphate Jct
Chocowinity
Washington
Belhaven
Pinetown
Parmele
Williamston
Lee Creek
Morehead City
Newport
Havelock
Jacksonville
Richlands
Trenton
Pollocksville
Maysville
Swansboro
Hubert
Sneads Ferry
Surf City
Topsail Beach
Wrightsville Beach
Carolina Beach
Kure Beach
Southport
Oak Island
Calabash
Shallotte
Ocean Isle Beach
Supply
Leland
Brunswick
Bolivia
Sunset Beach
Tabor City
Loris
Conway
Myrtle Beach
Georgetown
Andrews
Hemingway
Kingstree
Lake City
Florence
Timmonsville
Darlington
Hartsville
Bishopville
Sumter
Manning
Summerton
Camden
Kershaw
Lugoff
Elgin
Cheraw
Chesterfield
Pageland
Lancaster
Heath Springs
Kershaw
Great Falls
Chester
Rock Hill
Fort Mill
Tega Cay
Clover
York
Gastonia
Belmont
Mount Holly
Cramerton
Bessemer City
Kings Mountain
Shelby
Lawndale
Ellenboro
Forest City
Rutherfordton
Spindale
Mooresboro
Caroleen
Tryon
Saluda
Landrum
Spartanburg
Inman
Duncan
Greer
Taylors
Simpsonville
Fountain Inn
Laurens
Clinton
Newberry
Prosperity
Pomaria
Little Mountain
Irmo
Columbia
Cayce
West Columbia
Lexington
Batesburg
Leesville
Ridge Spring
Johnston
Edgefield
Trenton
Graniteville
Aiken
North Augusta
Wagener
Salley
Williston
Barnwell
Blackville
Denmark
Bamberg
Ehrhardt
Allendale
Fairfax
Hampton
Estill
Ridgeland
Yemassee
Port Royal
Beaufort
Parris Island
Hilton Head Island
Bluffton
Ridgeland
Hardeeville
Ridgeville
Summerville
Moncks Corner
Goose Creek
Charleston
Mount Pleasant
Isle of Palms
Sullivans Island
Folly Beach
James Island
Johns Island
Wadmalaw Island
Edisto Island
Meggett
Walterboro
Ravenel
Adams Run
Rockville
Seabrook
Green Pond
Yemassee
Ridgeland
Port Royal
Beaufort
Parris Island
Hilton Head Island
Bluffton

that buried their original identity forever."[101] In the eastern half of the nation, the CSX Corporation holding company was organized in 1980 for the eventual merger of the SCL and the Chessie System, which was composed of the Baltimore & Ohio (B&O) and the Chesapeake & Ohio (C&O) Railroad companies. In 1986, the systems were officially merged and called CSX Transportation (CSXT).[102] At the same time, the Southern Railway merged with the Norfolk & Western to form the Norfolk Southern Corporation (NS). According to the State Utilities Commission, North Carolina's railroad industry comprised approximately $17 billion in assets with revenues around $450 million in 1993 indicating the continued use of the transportation option.[103] Freight transportation was and continues to be the most profitable source of revenue for railroads in North Carolina, especially with the efficiency of containerized shipping.[104]

By the first decades of the twenty-first century, North Carolina was served by CSXT, NS, and approximately 20 independent short lines comprising 3,500 miles of track (Figure 7, p. 22).[105] Attempts to establish a light rail system that would operate on existing track between major cities in central North Carolina first emerged in the late 1980s and continued throughout the 1990s and 2000s, until the effort was officially discontinued in 2019.[106] Today, railroads continue to be an important part of North Carolina's transportation industry "and are an important link to the state's economic well-being and cultural heritage.[107]

Norfolk Southern (NS) Railroad Development History

Norfolk Southern (NS), as it exists today, stems from the combination of two major, early-twentieth-century rail networks—Southern Railway (Southern) and Norfolk and Western Railway (N&W)—and independent lines like the North Carolina Railroad (NCRR), that presently comprise the company's larger rail system within the state of North Carolina. This section provides a brief history of predecessor companies and rail lines to describe how NS unified its network throughout the state in the late-twentieth century.

[101] Klein 1990a:323.
[102] American-Rails.com 2020.
[103] Wait and deTreville 2006.
[104] Ibid.
[105] Ibid.
[106] GoTriangle 2020; Wait and deTreville 2006.
[107] Wait and deTreville 2006.

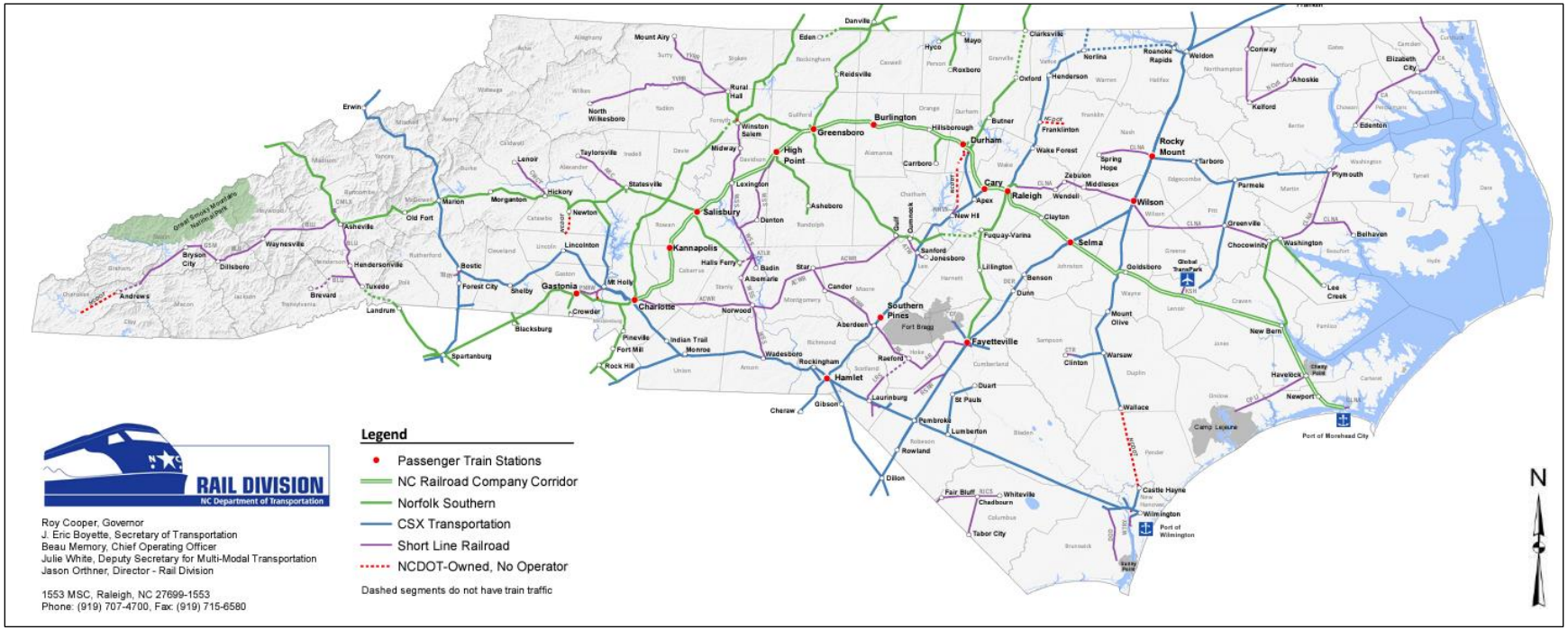


Figure 7: 2021 Map of the Current North Carolina's Rail System.[108] Note NS and NCRR lines in green. Not to scale.

[108] North Carolina Department of Transportation (NCDOT) Rail Division 2021.

North Carolina Railroad (NCRR)

The NCRR is the oldest railroad company in the state and remains an independent corporation despite having leased or "farmed out" its operations to other railroad companies since the 1870s.[109] NS is the third such company to lease and operate the NCRR, while its predecessor, Southern, was steward of the line for the longest period of time from 1894 until 1995. Since each NCRR lease agreement empowered the operator to make necessary improvements to its property—including all of the track, buildings, structures, and other objects within its right-of-way—most of the built environment within the NCRR corridor was produced by Southern, or more recently by NS.[110] Regardless, the unique position of the NCRR within North Carolina's railroad history is important and the line remains an essential part of the state's rail system today.

NCRR is also the oldest extant private business corporation, chartered in 1849, still operating in the state today.[111] Constructed in the 1850s using a mixture of state and private funds, the NCRR was created "for the purpose of effecting a railroad communication between the Wilmington and Raleigh Railroad, where the same passes over the Neuse river, in the county of Wayne, and the town of Charlotte," via Raleigh and Salisbury in Rowan County.[112] The eastern terminus of the original line is at Goldsboro, North Carolina, with the western terminus at Charlotte, North Carolina—a total distance of 223 miles.

One of three railroads established, controlled, and largely funded by the North Carolina legislature in the antebellum period, the NCRR is the sole survivor—the others were later sold to competitors (the Atlantic & North Carolina Railroad was absorbed by the NCRR in 1989, while the state sold the Western North Carolina Railroad in 1880 and eventually became part of Southern Railway's network in 1894).[113]

Incorporation, Organization, and Design

Incorporated by an act of the state legislature on January 27, 1849, known as the North Carolina Railroad bill or Ashe bill after its sponsor, W.S. Ashe, the NCRR was among some of the southern states' earliest efforts to modernize transportation, but the line itself was slow to materialize.[114] The original charter required the collection of one million dollars in privately funded subscriptions to be augmented by an additional two million dollars in state funds prior

[109] NCRR 2020.
[110] NCRR 1896.
[111] NCRR 2020.
[112] NCRR 1896:5.
[113] Lewis 2018; Trelease 1991:8.
[114] American Railroad Journal (ARJ) 1849a:661; Toler 1964:1.

to the company's formal organization; however, the state ultimately contributed nearly three quarters of the NCRR's original capital while holding a like amount of its corporate stock.[115]

Referred to as the "Central Railroad" or "North Carolina Central Railroad" because of its location through the center of the state, the company's commissioners acquired their portion of the necessary funding and formally established the NCRR at the first stockholders' meeting on July 11, 1850, in Salisbury, North Carolina.[116] Directors selected at the initial stockholders meeting were involved in the fundraising campaign and substantial stockholders in the company, including John M. Morehead (elected President), A.J. de Rosset, John I. Shaver, John B. Lord, Alonzon T. Jerkins, Francis Fries, John W. Thomas, John A. Gilmer, William A. Graham (a former governor of North Carolina), John U. Kirkland, Jeduthun H. Lindsay (elected Secretary/Treasurer), and Romulus M. Saunders.[117]

The Chief Engineer selected in July 1850 for the NCRR, Colonel Walter Gwynn (1802–1882), was a native of Virginia who studied engineering at the U.S. Military Academy at West Point under Claudius Crozet, a former French artillerist and civil engineer who served as principal engineer for the Virginia Board of Public Works and later helped found the Virginia Military Institute in 1839.[118] Gwynn graduated eighth in his class from West Point in 1822, becoming a first lieutenant of artillery in the military before resigning in 1832 to work full time for several railroad companies throughout Virginia and North Carolina in the decades prior to the Civil War. In 1835, Gwynn began designing railroads in North Carolina as Chief Engineer of the Wilmington and Raleigh Railroad Company (later known as the Wilmington & Weldon Railroad), surveying one of the longest tracks in the country at that time, extending 161.5 miles from the Cape Fear River to Roanoke River.[119] Like other enterprising railroad engineers of the period, Gwynn anticipated the industry's growth and expansion.

> As early as 1836 Gwynn had envisioned a rail system linking North Carolina to the other southern states for their mutual commercial benefit in times of peace and for mutual defense in times of war. He had already connected the state to Virginia by way of the Wilmington and Weldon Railroad. A line chartered in 1847 to run from Wilmington to Manchester, S.C., gave him an opportunity to further realize the commercial and defense scheme he had described a decade earlier. In 1848 Gwynn accepted the office of chief engineer to the Wilmington and Manchester Railroad and held it until 1853. It was in bridging the Pee Dee River for this line that he achieved for the first time in the South the sinking of cast iron cylinders by atmospheric pressure, a technique he had seen demonstrated not long previously at West Point.[120]

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[115] NCRR 2020; Trelease 1991:5.
[116] ARJ 1849b:427, 1850:231; Lewis 2018.
[117] Lewis 2018.
[118] Adams 2021; Lewis 2018; Stevenson, Jr. 1986. Another spelling of his last name is Gwynne.
[119] Stevenson, Jr. 1986.
[120] Ibid.

While overseeing construction of the NCRR, Gwynn became a consulting engineer in 1854 for the state's proposed extensions east and west, surveying the routes of the Atlantic & North Carolina Railroad from Goldsboro to Beaufort and the Western North Carolina Railroad from Salisbury to the Tennessee state line.[121] Gwynn left the NCRR in 1856 after spending nearly two decades developing North Carolina's rail system. His career was marked by the leading role played "in every major antebellum railroad in North Carolina, except for the Raleigh and Gaston Railroad," and the establishment of a series of trunk lines that provided critical support for the state throughout the Civil War.[122]

Construction and Early History of the NCRR

To efficiently survey the NCRR's path, Gwynn divided the rail line corridor into four roughly equal sections of road and established four crews, operating under a principle assistant engineer.[123] Gwynn's report to the stockholders in May 1851 outlined a 223-mile route, passing through Orange and Alamance counties and avoiding more difficult terrain farther south.[124] Local politics and the cost of acquiring land played a small role in modifications to the corridor; while a few stations were relocated to appease residents' concerns, a "greater part of the route passed through open countryside and many landowners willingly donated their land, eager to have the railroad on their property."[125] Construction plans for the line's four divisions were partitioned into subsections, ranging from 0.5 to 3 miles long, and work commenced in the summer of 1851.[126]

> The plans called for a single track, with double-width cuts through hills in contemplation of a later second track and in order to provide enough dirt fill for the low places. The roadbed was to be of gravel a foot deep, supporting the then-standard wrought iron T-rail [4-foot, 8.5-inch gauge] weighing sixty pounds per yard. Drains and culverts were to be made of stone or brick. Wooden bridges, also standard at the time, were to rest upon masonry piers and abutments. There was ample timber adjacent to the road for crossties (called sills at that time), but some of the timber for bridges had to be brought from a distance.[127]

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[121] Ibid. A copy of Gwynn's survey for the Atlantic and North Carolina Railroad is available online as part of the North Carolina Maps digital collection.
[122] Ibid.
[123] Lewis 2018. Principle assistant engineers: Lewis M. Prevost, Jr. served from the eastern terminus to about 6 miles west of Raleigh; John C. McRae from that point to Guilford County's east line; J.L. Gregg from the eastern line of Guilford County to Lexington; and John McRae for the path from Lexington to Charlotte.
[124] Stevenson, Jr. 1986. "The original watercolor drawings of the survey are in the North Carolina State Archives where they are bound in five elephant folio volumes." These drawings are also available online as part of the North Carolina Maps digital collection.
[125] Lewis 2018.
[126] Toler 1964. A groundbreaking ceremony was held on July 11, 1851, in Greensboro.
[127] Lewis 2018.

Contracts for construction of the entire line, including masonry work and bridges, were in place by January 1852. Many of the chosen contractors were also stockholders with varying levels of experience and access to skilled labor and materials. "Some were middling to larger farmers along the route; others were among the chief backers of the railroad, [and] members of the state's political and business elite"—each paid half in cash and half in company stock.[128] One such contractor, Benjamin N. Trollinger, had a brickyard and worked in conjunction with his brother-in-law, Dr. D.A. Montgomery, to build the NCRR "bridges over Haw River, Back Creek, and both river crossings on the Eno at Hillsborough. They [also] ran steam saw-mills at Cary and Asbury in Wake County for the purpose of cutting cross ties for the railroad."[129] The son of a wealthy cotton-mill entrepreneur, Trollinger further facilitated the purchase of roughly 632 acres for what would become NCRR's Company Shops, conveniently situated near one of his family's largest mills on the Haw River.[130] Contractors with strong ties to the company's directors led to some challenges for the NCRR's Chief Engineer. Early reports on the NCRR's management revealed that the executive committee regularly settled matters without Gwynn's input, creating "constant strife between Gwynn and the contractors who were building the road, though the chief engineer was technically empowered with final and conclusive authority to see that the contract to build the road was faithfully executed." One such conflict resulted in Gwynn withholding his approval of the line's eastern division while it was under construction.

Track laying began at the western terminus in Charlotte in October 1852 and at the eastern end in Goldsboro in June 1853. Initial commuter service began between Charlotte and Concord in September 1854 and from Goldsboro to Stalling's Station (now known as Clayton) the following month.[131] The line was completed on January 29, 1856; however, construction continued throughout the decade: "Many stations, water towers, warehouses, and other buildings were not finished. Bridges needed to be covered. Ten culverts on the eastern division had to be rebuilt. And the road's repair shops had to be finished."[132]

Worker housing had been completed on each of the 19 maintenance sections on the NCRR line by 1857, including one house for the section master and his family and two communal dwellings for station and section hands.[133] A report of November 1852 reported that the line's construction utilized "1,493 men, 425 boys, 581 carts, 49 wagons, 758 horses and mules, and 54 oxen."[134] Like other antebellum southern railroads, the NCRR relied heavily upon enslaved workers to build and maintain the line, most of who "toiled at grading, ditching, tracklaying,

[128] Ibid.
[129] Alamance County Historic Properties Commission 2014:115. The extant circa-1851, cut-stone, Haw River Bridge Piers (AM0184) illustrate Benjamin Trollinger's design and the work of many unnamed laborers involved in its construction.
[130] Ibid.
[131] Lewis 2018.
[132] Ibid.
[133] Ibid.
[134] Ibid.

and track repair. Injury and disease claimed many casualties."[135] The NCRR contracted with slaveholders to employ nearly 300 hands along the line in the antebellum years, including skilled laborers like mechanics and blacksmiths.[136]

By 1859, 25 stations were established on the NCRR—11 in the eastern section, 13 in the western section, and one at the midpoint in Company Shops—each of which contained a depot or "warehouse" that served passenger and freight traffic (when a joint station did not exist), water tanks, and wood sheds at a minimum.[137] Several joint facilities connected the NCRR to neighboring lines and railroad companies in the early period of operation (Figure 8, p. 28). These included an 1857 joint freight warehouse at the line's eastern terminus in Goldsboro along with the shared use of Wilmington & Raleigh Railroad passenger station there; a shared engine house and freight house in Raleigh constructed in 1856 with the Raleigh & Gaston Railroad; a joint freight and passenger station built in 1859 with the Western & North Carolina Railroad at China Grove; and a joint freight and passenger station erected with the Charlotte & South Carolina Railroad between 1856 and 1857 at the NCRR's western terminus in Charlotte where a gauge change necessitated the offloading of all passengers and cargo.[138]

Prior to the Civil War, demand for freight service was greater than that of passengers on the NCRR. Westbound freight commonly consisted of refined materials like "iron and machinery, castings, tobacco, bacon, and general merchandise," while raw commodities and agricultural staples were frequently carried east.[139] Prudent management of the line's finances in the early years gave the NCRR security that other young railroads lacked, and enabled its survival during wartime.

In 1861 and 1862, the NCRR added telegraph service to its corridor and was among other southern railroads adopting the new technology, though it did little to curb the line's abnormally high accident rate in its first decade of operation. Built to "as least average engineering standards of its day," construction economies left places where inadequate drainage, insufficient grading, and tight curves suppressed optimal operations.[140] Improvements were made in the early years of service, but many such flaws were exacerbated with high traffic volumes, deferred maintenance, and labor shortages during the Civil War.

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[135] Collins 1999:20.

[136] Trelease 1991:15. Unlike other southern railroads, the NCRR did not purchase enslaved laborers on a significant scale until December 1864, after labor shortages prompted the company to buy 28 enslaved people—an investment that was soon lost with the war's outcome. Trelease notes that the NCRR owned just two enslaved laborers prior to the war, preferring to contract with local owners.

[137] Lewis 2018; Trelease 1991:7. Wood sheds were commonly erected at 25-mile intervals or less with local landowners filling contracts for stocking them.

[138] Bishir and Southern 2003; Lewis 2018; Trelease 1991.

[139] Lewis 2018.

[140] Lewis 2018; Trelease 1991:11, 17.

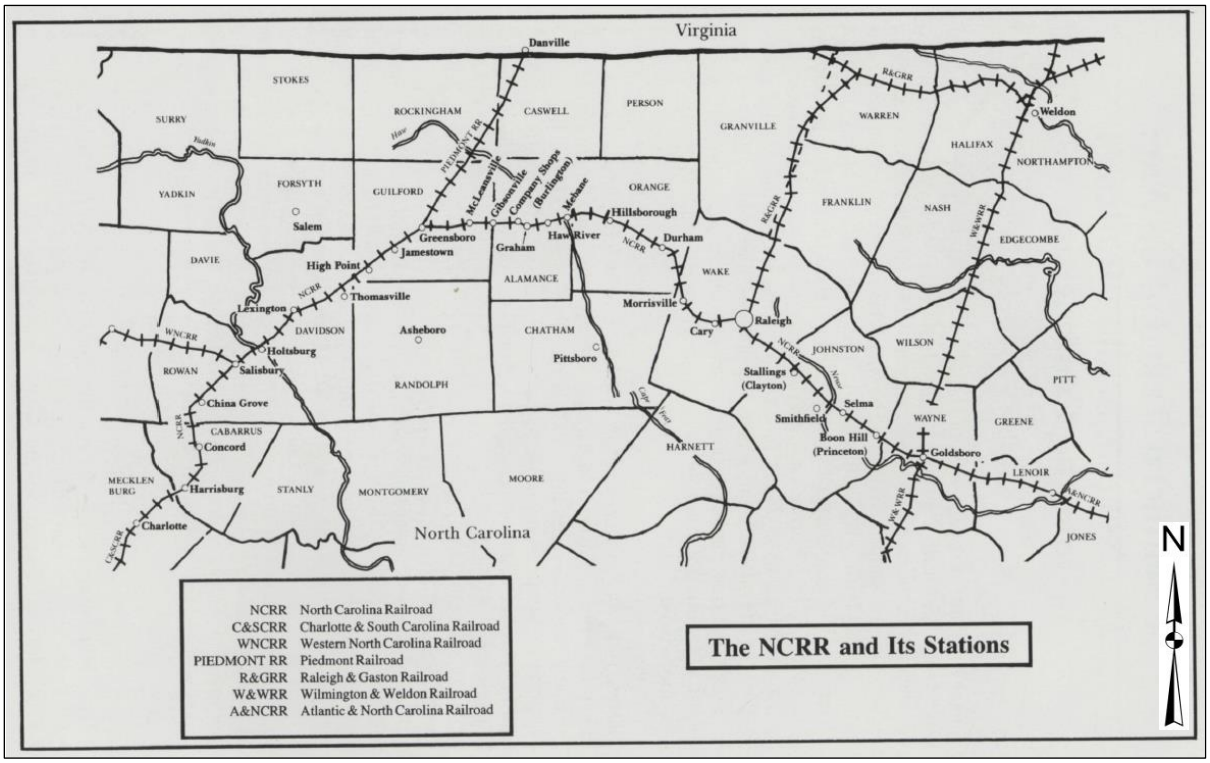


Figure 8: "The NCRR and its Stations," Circa 1861.[141] Image not to scale.

Civil War and Rebuilding During Reconstruction

A prized asset to the Confederates, the NCRR was saved from much of the physical devastation wrecked upon other railroads in the south. The entire line was not under the threat of attack until April 1865, when depots and warehouses at Goldsboro, Morrisville, Raleigh, High Point, Salisbury, and Charlotte were burned by both sides. Several bridges and short segments of track were also destroyed in the waning days of the war, yet far greater injury to the NCRR stemmed from overuse and neglect. However, the company rebuilt much of its infrastructure within just a few years and reported a profit as early as 1869.

Replacing the rails was its highest priority and greatest expense, yet "all along the line, stations, platforms, and other structures…had to be repaired or rebuilt."[142] During this rebuilding period, joint facilities at important urban centers were expanded and new stations added, while others were removed or relocated. By 1870, nearly all trestles had been replaced with wooden Howe truss bridges, some clad in sheet iron.[143]

[141] Trelease 1991:7.
[142] Lewis 2018.
[143] Ibid.

The NCRR's rebound was, in part, facilitated by a new line created during the war to connect the R&D in Danville, Virginia, to the NCRR in Greensboro. Chartered in 1847 and built with financial support from the Virginia legislature, the R&D became one of the most traveled railroads in Virginia by the time of the Civil War.[144] Its success spawned calls from some in the Virginia and North Carolina general assemblies for the creation of a railroad to tie it to the NCRR in the 1840s and 1850s, though many more legislators opposed the idea. Propelled by an act of the Confederate Congress in early 1862, the Piedmont Railroad Company was established to unite the two lines. To build the new route quickly, the R&D—as majority stockholder and controller of the Piedmont Railroad—agreed to use North Carolina's "standard" 4-foot, 8.5-inch gauge, though labor and material shortages delayed construction until the winter of 1863–1864.[145] After the Civil War, the Piedmont Railroad was seized by the federal government and held until December 1865, when it was determined to be the privately owned property of its directors, constructed with capital from the R&D, not the Confederate government. The following year, the line was formally leased to the R&D, who secured the right to make improvements, promptly changing the rails to match its own 5-foot gauge.[146]

The NCRR was both blessed and cursed by its central location in the state and the turbulent political, social, and economic trends in the decade after the war. During Reconstruction, these trends gave way to increasingly complex traffic agreements, labor strikes, and legislative control over NCRR operations. In 1870, the company's management and majority stockholders "approached the state General Assembly with an offer to repurchase all of the stock…and to become a wholly-owned private company for the first time in its existence."[147]

By 1871, the R&D had divested itself of Virginia state ownership when it was acquired by "one of the new-trend conglomerates—the Southern Railway Security Company," a subsidiary corporation created by the Pennsylvania Railroad.[148] In pursuit of its goal "to secure the control of such Southern railroads as may be essential to the formation of through lines between New-York, Philadelphia, Baltimore, Washington City, and the principal cities of the South," the Southern Railway Security Company (SRSC) and R&D's leadership wanted the NCRR at almost any cost, but state legislators and NCRR directors held to the company's charter. The group settled on a 30-year lease, set to commence on September 12, 1871 (though not fully implemented 1873 and restricted by ongoing lawsuits until 1875), that gave R&D to right to replace the NCRR tracks with 5-foot gauge rails.[149] The R&D won the right to replace the rails

[144] Bocian 2020.
[145] Lewis 2018.
[146] Ibid.
[147] Ibid.
[148] Ibid.
[149] Brown 1929:160; Lewis 2018; NCRR 1896:67–68.

in court, but later reverted to the 4-foot, 8.5-inch gauge on the NCRR and other lines in North Carolina under their control in 1886 using what was then the "national standard."[150]

Control of the Piedmont and NCRR lines enabled the R&D to run trains smoothly across what was becoming one of the largest rail networks in the South—encompassing more than 3,300 miles by 1891, about 1,090 of which passed through the state of North Carolina.[151] The R&D's accelerated pace of growth in this period coincided with notable changes to its financial network at SRSC and both companies went into receivership in 1892. By 1894 the R&D and a large portion of its network had been reorganized by J.P. Morgan as part of the newly created Southern Railway Company.

Southern Railway and Early Twentieth Century Improvements

In 1895, the Southern Railway Company (Southern) and its president, Samuel Spencer, negotiated a 99-year lease of the NCRR that shared many similarities with that of the R&D written 15 years prior. Commencing on 1st day of January, 1896, the Southern leased all of the NCRR: "its franchises, rights of transportation, works and property, including, among other things, its superstructure, road-bed and right of way incident thereto…. Also, the depot houses, shops, buildings, fixtures, engines, cars, and all franchises, rights and privileges, and other things, if any, of whatsoever kind or nature…."[152] Like the R&D before it, the lease also required Southern to keep all NCRR property in good condition, catalogued in an annual inspection report. In his 1895 address to stockholders at the annual meeting NCRR president, S. B. Alexander, called attention to several important distinctions between the agreements:

> The old lease only required the Southern Railway Company to keep the road up to the condition it was in up to 1871, and allowed it to remove all improvements and betterments. The present lease requires the Southern Railway Company to keep the road up to the condition it was in up to August 1895, and provides that there shall be no claim or liability laid upon the North Carolina Railroad Company, but all improvements put upon it shall be the property of the North Carolina Railroad Company.[153]

In his remarks, President Alexander further highlighted how the 99-year lease fulfilled the needs and desires of the NCRR and state legislators as well. Notably, this included Southern's complete assumption of the property's tax burden—"State, county, town, township and United States"—and responsibility "to comply with all demands of the Railroad Commission in regard to depots, etc."[154] The benefits of this agreement and the lasting success it lent to Southern—both its larger rail network in North Carolina and throughout the south—is reflected by the

[150] Crow 1996:713; Hilton 2006.
[151] Lewis 2018.
[152] NCRR 1896:80.
[153] Ibid.:98–99.
[154] Ibid.:99.

NCRR's existence today. "The continued leasing of the NCRR provided its stockholders, including the state, with uninterrupted dividends. As the years passed, the value of the NCRR property came to exceed by far the original capitalization."[155]

Shortly after assuming control of the NCRR, Southern undertook important improvements to the line and its rail service, modernizing its rolling stock, track, structures, buildings, and complexes. Between March and October 1896, a new shop facility was erected at Spencer, North Carolina. Named after President Samuel Spencer, who called for construction of a new facility around the halfway point between Atlanta and Washington, D.C., Spencer Shops (RW0011) was one of the largest railroad shops in the country and remains one of few surviving twentieth-century locomotive facilities in America.[156]

Another improvement reflecting the importance of the NCRR corridor to Southern's rail network included the construction of a second track parallel to the existing line. Referred to as "double-tracking" in a 1908 article in *The Engineering Record*, seasonal fruit and vegetable trains, 20 daily passenger trains, and "good freight traffic" on Southern between Washington, D.C., and Atlanta, Georgia, made the construction of a parallel line necessary between Greensboro and Spencer, North Carolina.[157] Some of this work began as early 1905 and was completed in 1907, allowing freight trains to pass over the 47-mile stretch in about two hours as opposed to six to eight hours required along a single track. George H. Gilbert, Assistant Engineer in the SR's Construction Department, noted that this work included regrading and rebuilding portions of the line, construction of new sidings every 7–8 miles, the extension or new construction of roughly 140 culverts, and alterations to many bridges along the way. Eight of 12 old steel bridges in this section were removed—six deck-plate girders and two trusses (one through and one pony)—with plans to reinstall them elsewhere, yet special attention was given to SR's use of reinforced concrete in this effort. Gilbert included details of improvements made to the Yadkin River Bridge, where a new single track was built adjacent to the old line, whose extant piers were expanded with concrete.

> Here the old bridge had four deck pin connected spans…with trusses 16-ft. centers, on round nosed piers and tee abutments. These were not disturbed…. The old stone piers showed signs of being badly shaken and were, in fact, too narrow for trusses taking the heavier train loads of late years. The new concrete pier extensions were made larger and the centers shifted as to make all four spans alike…. Riveted Warren trusses were used for the new track… furnished by the American Bridge Co.[158]

Other "old stone tee abutments" at larger stream crossings were modified to serve as single-wing abutments to new double-track arch bridges. Gilbert's article detailed several of these

[155] Lewis 2018.
[156] Paul 1977.
[157] Gilbert 1908:661.
[158] Ibid.

new "reinforced concrete arches or arch viaducts" with "Johnson corrugated bars" in sectional drawings and photographs (Figure 9, p. 33). Some of these early reinforced concrete bridges remain extant in Greensboro and Lexington, and over smaller waterways, like Richfork and Swearing creeks.

Part of a network-wide effort in the early twentieth century to improve SR's efficiency, durability, and safety, wooden framing and support members were removed and replaced with riveted steel and reinforced concrete. Physical structures along the NCRR corridor were commonly modified or rebuilt in this period. Similar upgrades were affecting the construction of roadways throughout the state and the country, at large, as automobiles increased in affordability and popularity. The Good Roads and City Beautiful movements brought attention to organization and design of transportation systems, particularly in busy urban environments where pedestrians, automobiles, and trains frequently intersected. Local leaders, state highway departments, and city engineers were increasingly involved in planning, developing, and redesigning transportation networks in urban areas.

New Deal programs became another source of support for transportation improvements in the second quarter of the twentieth century. Several rebuilding projects along the NCRR corridor used federal funding to offset the cost of these improvements. In the late 1930s, the City of High Point collaborated with Southern Railway, the State Highway and Public Works Commission, and the federal government's Public Works Administration to fund the "Grade Crossing Elimination Project" in the late 1930s.

Federal money, "made available through the United States Bureau of Public Roads for the elimination of grade crossings, undertook to build bridges, crossings and walls," through High Point's city center at a cost of roughly $1 million (Figure 10, p. 34).[159] Funds from the Public Works Administration were also used to improve one of the three pedestrian underpasses on what is now North Carolina State's campus. The service underpass currently known as the "Free Expression Tunnel," was completed in 1939 (Figure 11, p. 34).

[159] Smith 1938:3. "Frank T. Miller, of Greensboro, was retained by the city as its consulting engineer, and Mr. Miller has acted in this supervisory capacity from the beginning of the first preliminary survey. The city's contract was let to Blythe Brothers, Charlotte contracting firm. The state let the structural work to A. H. Guion and Company, also of Charlotte. Incidental jobs have been let to a number of smaller contractors…. Actual work dismantling the old tracks began in July 1937. The project is advanced to where now everything is practically in readiness for the final laying of tracks. Two of the bridges have been completed, and the southside retaining wall is installed. The new station is in use."

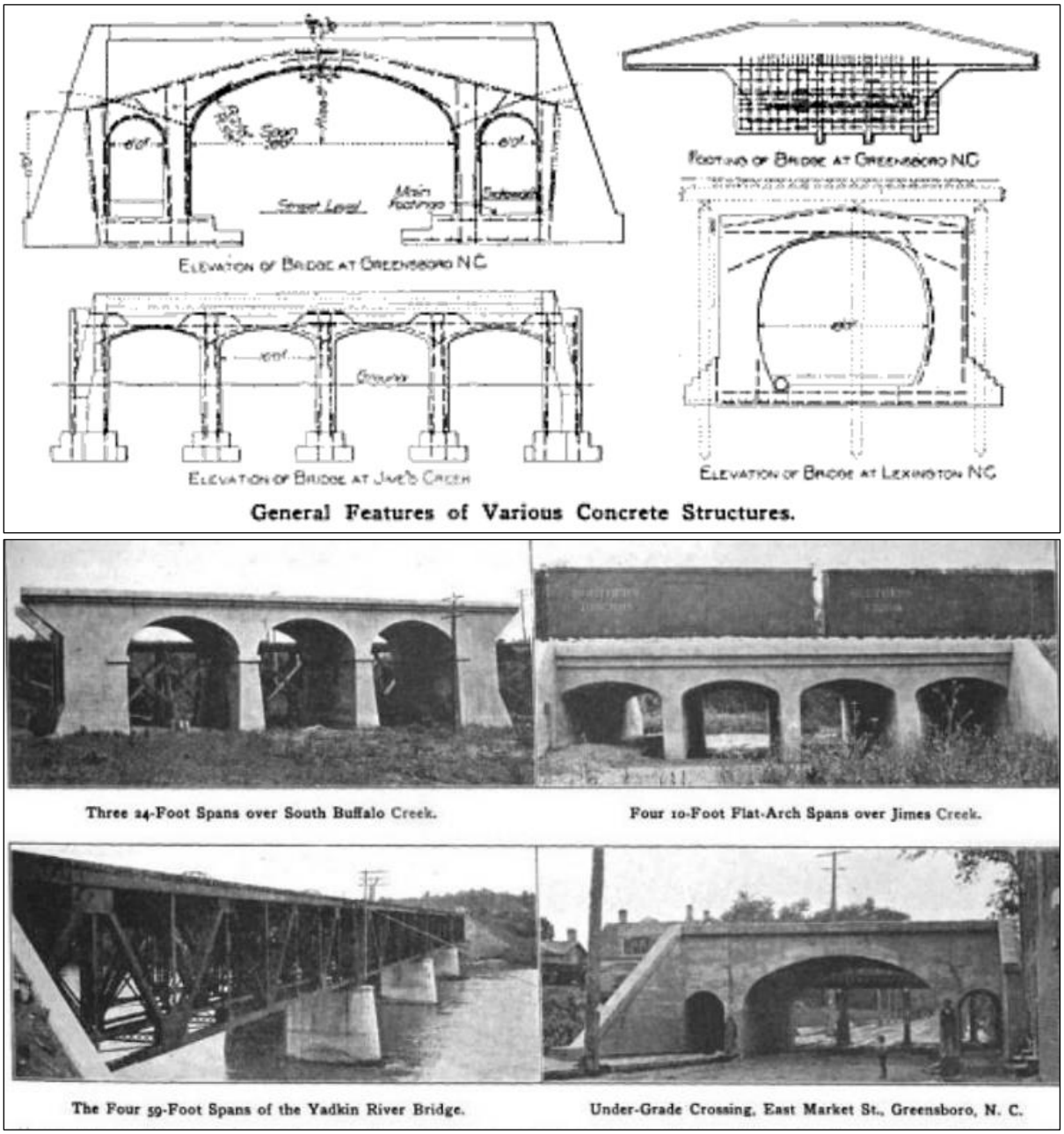


Figure 9: 1908 Drawings and Photographs of New Railroad Structures Published in *The Engineering Record*.[160]

[160] Gilbert 1908:662.



Tracks Depression Project Is Proving Solution To Problem That Has Been Worry To City Of High Point For Many Years

When Ultimately Completed, Gigantic Project Will Represent Investment Of Approximately Million Dollars

BY O. M. SMITH

High Point, like so many cities and towns in the New Industrial South, grew up alongside a railroad track, and, again like its sister cities, after advancing to a degree of maturity, found this railroad track a perplexing civic problem.

The business of High Point has been manufacturing, and manufacturing is dependent upon transportation of the manufactured products. It was natural, then, that business plants cluster about the railway line.

High Point's mercantile area also built its foundation in the neighborhood of the tracks, and after very few years it was discovered that the artery which fed the city was also to become the community eyesore.

Community eyesore is at least tolerable, but the unnecessary sacrificing of human lives is another and more serious matter. Rushing trains passing over city streets began to take their tolls. Accidents became more frequent, and a whole city answered: "Eliminate the crossings."

After tormenting the minds of citizens for nearly a half-century, the problem resolved itself into a simple answer, and that answer was the Grade Crossing Elimination Project, at this time

Such Tragedies To Be Eliminated By Grade Crossing Project

Such tragedies as that depicted at the left, when a life was lost in a grade crossing accident in High Point not many months ago will be eliminated upon completion of the gigantic tracks depression project now nearing the stage of completion here because of the construction of overhead bridges which will place the tracks below the level of the streets as shown on the right. The photo on the right was taken as the first train used the repressed tracks here. The one on the left was taken prior to the depression project. (Staff Photos).

Figure 10: Image of O.M. Smith's 1938 Article on the Depression of Tracks through Hillsboro.[161]



Figure 11: "Service Underpass: Constructed under the Southern and Seaboard Railway tracks…"[162]

[161] Smith 1938:3.
[162] North Carolina State College 1939.

At the same time that these improvements took place, a growing decline in passenger traffic after World War I and into the Great Depression prompted the railroads to increase efficiency in operations. Southern was one of the first railroad companies in the country to embrace the new technology of diesel locomotives, enabling trains to run more reliably for longer periods of time on cheaper fuel. Southern's shift to diesel engines required fewer shop facilities and a smaller workforce, resulting in the company's withdrawal from Spencer Shops beginning in the 1950s and continuing into the 1970s. Recognizing its history, Southern donated 4 acres of Spencer Shops to the state of North Carolina in 1977 and later the remainder of the site would become the North Carolina Transportation Museum in Rowan County.

Late Twentieth-Century Acquisition of the Atlantic & North Carolina Railroad

In 1989, the NCRR made its first expansion, merging with the A&NCRR to extend its rail corridor 94 miles east, connecting Goldsboro to Morehead City, North Carolina.[163] Originating around the same time as the NCRR, the A&NCRR was chartered in 1852 and formally organized on January 20, 1854, in the town of New Bern.[164] Constructed with financial support from the state, the line was completed in 1858 to connect with the NCRR at Goldsboro and extend through New Bern to a point across the sound from Beaufort, North Carolina, creating what is now the town of Morehead City. In March 1862, during the Civil War, federal troops took control of the line from New Bern to the Atlantic coast and reached Kinston by the end of the year. The entire line had fallen to Union troops by March 1865, but was returned the company after the war in October 1865.[165]

From 1904 until 1935, Norfolk & Southern Railroad leased and formally operated the A&NCRR. The A&NCRR reassumed operation of the line from 1935 until 1939, when it was leased to the newly formed Atlantic & East Carolina Railway Company (A&EC). Between 1957 and 1958, A&EC became a subsidiary of the Southern Railway, operating independently from the NCRR until its 1989 merger.[166]

As Southern Railway's lease of the NCRR edged closer to its expiration date in the 1990s, its stocks soared in value, reaching more than $5,000 per share. NCRR directors and state legislators approved a "100-for-1 stock split" in 1994 to enable a larger group of citizens to invest in the company; however, the state's three-quarters ownership remained unchanged. Four years later in 1998, the state of North Carolina bought out the remaining 25 percent of privately held shares, "making it a privately run company, fully owned by the state," a year before a new lease was granted to Norfolk Southern Railway.[167]

[163] NCRR 2020.
[164] Lewis 2018.
[165] Ibid.
[166] Ibid.
[167] Ibid.

Southern Railway (Southern)

The Southern was established in 1894 from the reorganization of nearly 150 predecessor lines amassed and held by a securities firm known as the Richmond and West Point Terminal Railway and Warehouse Company (Richmond Terminal) and its predecessor, the Southern Railway Security Company (SRSC), in the postbellum period. The plan for Richmond Terminal's reorganization was led by New York financier J.P. Morgan and gave the newly created Southern Railway a leg up, including all property belonging to Richmond Terminal's breadwinner, the R&D.

Throughout the twentieth century, Southern's rail network grew substantially to encompass more than 10,000 miles of track operating in 13 states and Washington, D.C., prior to its 1982 merger with the Norfolk and Western Railway to become the Norfolk Southern Corporation.[168]

Southern's Predecessor Holding Companies

The SRSC was one of the earliest examples of a holding company being used as a tool and method for compiling a regional rail network in the United States.[169] Established as the Overland Contract Company by an act of the Pennsylvania legislature of March 22, 1871, and changing names a month later, the SRSC was a Pennsylvania-based corporation formed "to secure the control of such Southern railroads as may be essential to the formation of through lines between New-York, Philadelphia, Baltimore, Washington City, and the principal cities of the South, by ownership of the capital stock of said companies, by leases, and by contract relations."[170] Functioning solely as a holding company, the SRSC marked the historical "post-bellum entrance of Northern capitalists into the field of railroad transportation in the South" and was instrumental in solidifying a north-south trend of rail traffic in the South Atlantic states for more than a century.[171] Yet its tenure was brief, limited to roughly 10 years from 1871 until 1881, and irrevocably marked by the Panic of 1873; prior to the Panic, SRSC built up its system of southern railroads and, thereafter, was in a state of liquidation.

From its incorporation, SRSC was led by a board of directors with extensive railroad experience, including its first president, George Cass, who then also served as president of the Pittsburg, Fort Wayne, and Chicago Railroad; vice-president and treasurer, B.F. Newcomer, and W.T. Walters, investors from Baltimore, Maryland, who held a large stock portfolio in lines that would later become part of the ACL system; H.B. Plant of August, Georgia, with official connections to the Plant rail system farther south; M.K. Jessup and D.W. James of New York, New York; R.T. Wilson, president of the East Tennessee, Virginia, and Georgia Railroad; J.D. Cameron of Philadelphia, Pennsylvania; and lastly, Thomas A. Scott, a

[168] Cates et al. 2004; Koza 1982.
[169] Brown 1929:158.
[170] Ibid.:159–160.
[171] Ibid.:158

prominent official of the Pennsylvania Railroad Company (PR) that later became its president in 1874.[172]

The board's diversity of interests, capital, and geographic influence supported the company's goal to create a north-south transportation network in the southeast. The PR had a majority financial investment in SRSC and with "Tom Scott" on the board, some historians have credited him as the SRSC's "controlling spirit;" however, other SRSC directors owned controlling interests in southern railroads prior to the companies' creation, including W.T. Walters' majority shares in the Wilmington & Weldon and Wilmington & Manchester railroads in North Carolina, and R.T. Wilson's control of several lines in Tennessee.[173]

Assuming no part in the management of any railroad under its control, the SRSC purchased securities to hold a majority stock interest in eight southern railroads by December 1871, including five lines destined to become part of the ACL system and three later absorbed by Southern Railway. The three lines that would become part of Southern included the Charlotte, Columbia, and Augusta Railroad (CC&AR); the East Tennessee, Virginia, and Georgia Railroad (ETV&G); and the R&D. [174]

The R&D system was the largest and most notable within the state of North Carolina in the postbellum period, and later came to include both the CC&AR and ETV&G by the 1880s. Further, when SRSC assumed financial control of the R&D, it gained access to the state-owned NCRR, leased to the R&D in 1871, providing critical linkage to the central part of the state and its urban centers (the NCRR retained ownership of its line, later leasing to Southern for a period of 99 years, as is more fully described in the previous section: *North Carolina Railroad,* p. 23).

R&D's capable management and geographical reach aided the SRSC's purpose and the company held onto it, but the Panic of 1873 strained both organizations. The PR and its SRSC faction, including Pennsylvania Railroad Company President, Thomas Scott, secured the financial interests of the R&D, giving the group a majority stock in the line and enabling the SRSC to retain one of its key assets.[175] To keep the R&D out of bankruptcy in the years that followed, the PR made additional loans and took on notable financial losses as the most solvent of the SRSC's investors.

In 1880, the SRSC finally sold the R&D to a syndicate of businessmen with shared interests in maintaining rail transportation throughout the south. To expand their rail network in the region, the group formed the Richmond Terminal. Approved by the Virginia legislature in March 1880, Richmond Terminal's charter included businessmen from the north and south: "John Stewart, W.H. Palmer, John B. Davis, E. Wilkinson, A.Y. Stokes, A.S. Buford [former R&D

[172] Ibid.:161.
[173] Ibid.:163.
[174] Brown 1929:162. Murray 2007:21.
[175] Brown 1929:166.

President], Reuben Foster, Isaac Davenport, Jr., John P. Branch, T.M. Logan, Joseph R. Anderson, R.E. Blankenship, Roger Gregory, B.W. Lacy, and their associates..."[176] The company's purpose was similar to the SRSC as Richmond Terminal "was authorized to acquire, by purchase or otherwise, stocks and bonds of railroad companies in the States of North Carolina, South Carolina, Tennessee, Kentucky, Georgia, Alabama, Mississippi, and other states."[177]

Numerous individuals supported the growth and development of the R&D and Richmond Terminal in this period. Many historians note the importance of "the Clyde syndicate"—led by Thomas Clyde and his son, William—within this group. The Clydes owned a steamship company that carried goods north from West Point, Virginia, to New York and Pennsylvania, and purchased the Richmond, York River, and Chesapeake Railroad (RYR&CR) in 1873, from Richmond to West Point, Virginia, to expand their transportation network.[178] In 1875, they negotiated a traffic agreement with R&D for the RYR&CR and promoted the multi-modal "Piedmont Air-Line" route "from Atlanta to West Point, with services to the northeast provided via Clyde's steamships."[179] Another influential director at Richmond Terminal, Richmond lawyer, Thomas M. Logan, was noted as the "principal organizer" of the syndicate that created Southern Railway in his 1914 obituary. [180] A native of Charleston, South Carolina, Logan rose in rank to become the youngest brigadier general in the Confederate Army and maintained business connections to American industrialists like John D. Rockefeller. Logan was also a director of the R&D and served as its Vice President from 1881 to 1883.[181]

Regardless of the individual players in this partnership, the R&D and Richmond Terminal reinforced the SRSC's efforts to solidify and expand railroad transportation in the south. An 1881 map of the R&D system connected "Virginia, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas, and Texas" with more than 2,000 miles of completed railroads (Figure 12, p. 39). By 1885, popular routes like the 576-mile "Piedmont Air-Line" were marketed to freight and passenger clientele as the "shortest and quickest" way to travel from New York to New Orleans (Figure 13, p. 40).[182]

The success of the R&D also spawned strife as both companies simultaneously struggled for independence from and control over the other. Plans to divide and reallocate certain assets ultimately led parties at Richmond Terminal to buy R&D stock, gaining a majority interest in the company by November 1886. On December 13, 1886, all R&D property was formally surrendered to Richmond Terminal.[183] In the years that followed, Richmond Terminal

[176] Brown 1929:166; Poor 1894:744.
[177] Poor 1885:898.
[178] Murray 2007:18.
[179] Ibid.
[180] Hollywood Cemetery 2022.
[181] R&D 1882.
[182] Murray 2007:18; Poor 1874:577.
[183] Harrison 1901:30; Poor 1887:638, 1897:764–765.

continued to grow their network in the south, purchasing controlling interests in other rail companies, expanding operations with new lease agreements, and extending credit to various regional lines. By 1891, however, the company's aggressive expansion, coupled with cycles of economic boom and bust, put the company into arrears with nearly $10 million in debts.[184] An August 1891 *New York Herald* exposé publicized Terminal's financial mismanagement noting dividend payments exceeding earnings, a debt level significantly higher than reported, and the inclusion of assets in the R&D's books that had actually been sold to raise cash.[185]

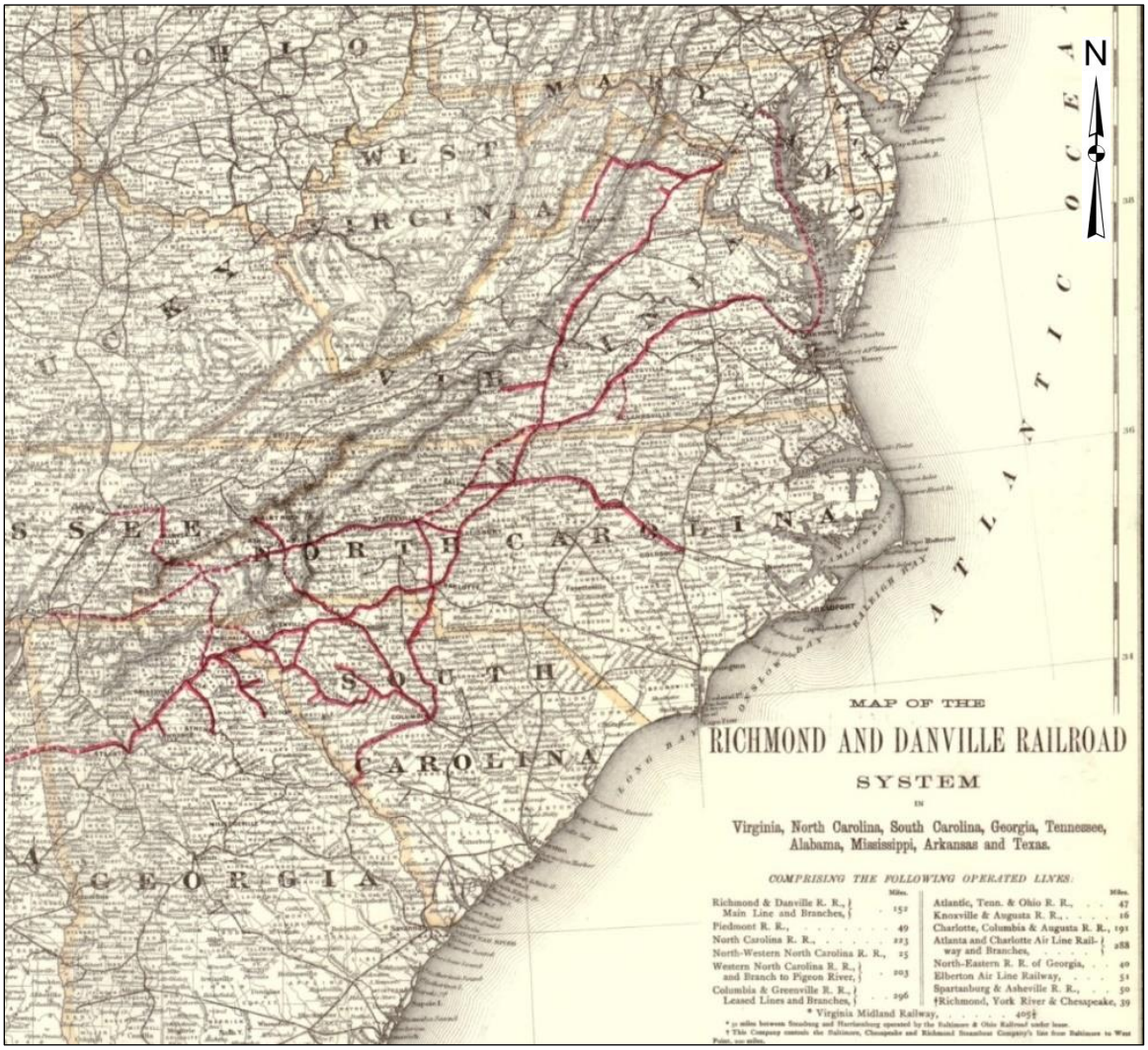
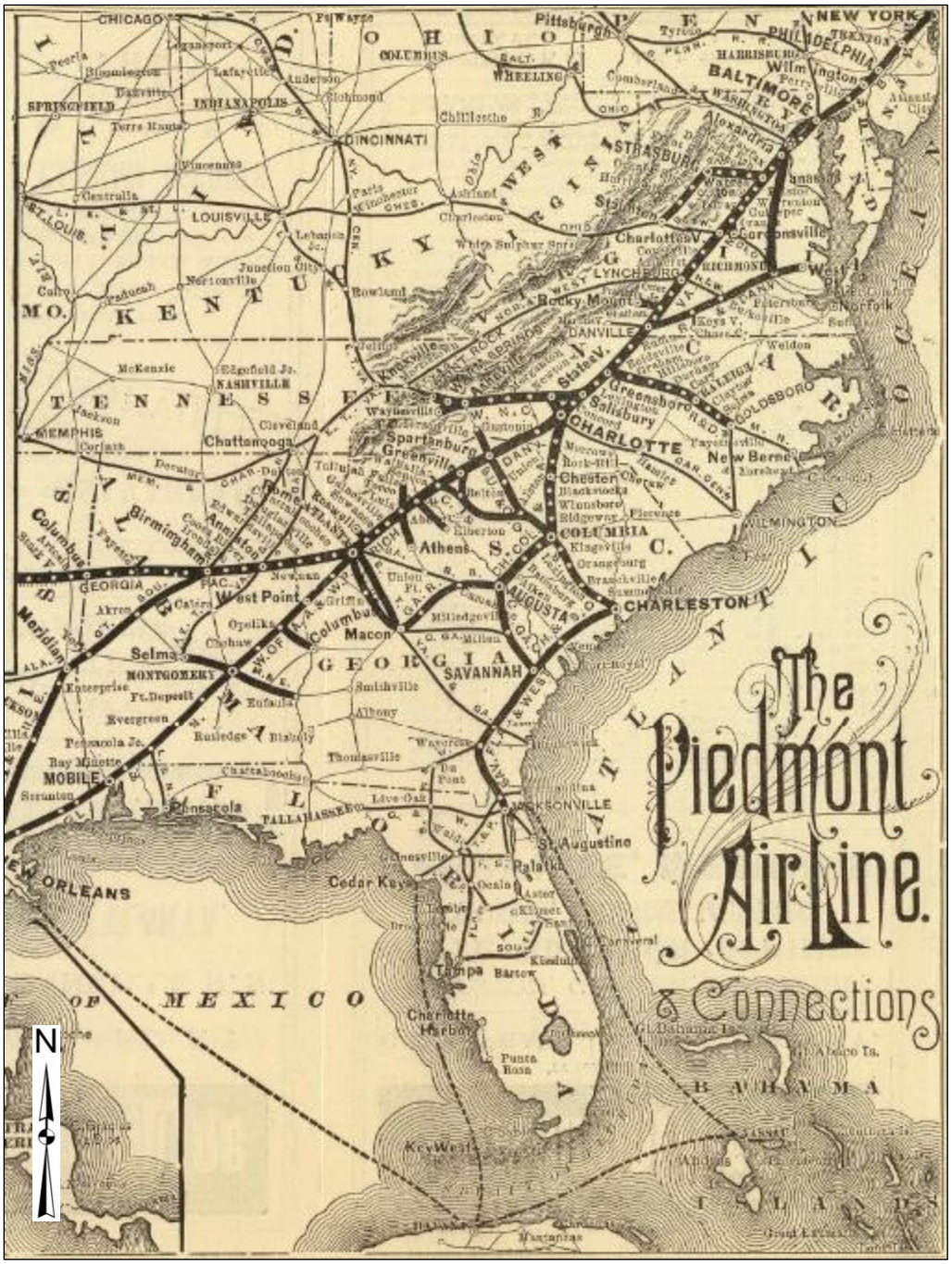


Figure 12: Detail of 1881 "Map of the Richmond & Danville System" Showing Southeastern States.[186] Image not to scale.

[184] Harrison 1901:35–36; Poor 1897:767.
[185] Murray 2007:30.
[186] G.W. & C.B. Colton & Co. et al. 1881.


The Piedmont Air Line.
& Connections
CHICAGO
CINCINNATI
LOUISVILLE
NASHVILLE
MEMPHIS
Chattanooga
ATLANTA
Birmingham
Columbus
Selma
MONTGOMERY
MOBILE
Pensacola
NEW ORLEANS
MEXICO
Macon
SAVANNAH
CHARLESTON
AUGUSTA
COLUMBIA
CHARLOTTE
Greensboro
Salisbury
Spartanburg
Greenville
Athens
West Point
Rome
Cedar Keys
Tampa
Charlotte Harbor
Punta Rosa
Key West
St. Augustine
Palatka
JACKSONVILLE
Thomasville
Albany
Eufaula
Evergreen
Ft. Deposit
Enterprise
Meridian
Columbus
Aberdeen
Okolona
Chickasaw
Newnan
Griffin
Milledgeville
Augusta
Orangeburg
Kingsville
Florence
Chester
Rock Hill
Yorkville
Gaffney
Hamlet
Wilmington
New Berne
Goldsboro
Raleigh
Weldon
Norfolk
Richmond
Lynchburg
Danville
Rocky Mount
Strasburg
Alexandria
Washington
Baltimore
Wilmington
Philadelphia
Harrisburg
Pittsburgh
Wheeling
Columbus
Indianapolis
Springfield
Peoria
St. Louis
Cairo
Paducah
Nortonville
Junction City
Lebanon Jct.
Cincinnati
Lexington
Ashland
Charleston
White Sulphur Springs
Knoxville
Bristol
Abingdon
Salem
Roanoke
Lynchburg
Staunton
Harrisonburg
Strasburg
Front Royal
Manassas
Alexandria
Washington
Baltimore
Wilmington
Philadelphia
Trenton
New York
Pittsburgh
Wheeling
Columbus
Indianapolis
Springfield
Peoria
Chicago

Maury Klein, author of *The Great Richmond Terminal: A Study in Businessmen and Business Strategy* (1970), faulted its corporate leaders for putting growth over performance with "misleading bookkeeping" to cover significant financial loss.[188] Several schemes emerged to reorganize Richmond Terminal's debt over the next two years, with a plan from Drexel, Morgan, & Company gaining approval from the Virginia Assembly in 1893. The plan was spearheaded by New York financier, J.P. Morgan, and established the Southern Railway Company on July 1, 1894, as successor and steward of roughly 4,400 miles of Richmond Terminal's rail network and appointed Samuel Spencer, Drexel Morgan's railroad expert, as its first president.[189] That same day, the R&D system was officially transferred to Southern—setting the foundation for its network across much of North Carolina.[190]

Southern's Predecessor Lines

The overarching role of the R&D in Southern's rail network in the state of North Carolina is evident by the number of lines operated, leased, acquired, or otherwise controlled by the R&D in the postbellum period. Prior to its reorganization as the property of Southern Railway Company, the R&D had been in the railroad business for nearly a half century. In the postbellum period, its rail system grew to include roughly 1,073 miles of track on 19 lines in North Carolina by 1893 (Table 1).[191]

Table 1: Lines Controlled, Leased, or Operated by the R&D in North Carolina Between 1865 and 1892.

Railroad Name	Chartered	Constructed	Path	Controlled, Leased, or Operated by R&D
Richmond & Danville Railroad (original line)	1847	1848–1856	Richmond to Danville, VA	1847
Piedmont Railroad	1862	1863–1864	Danville, VA, to Greensboro, NC	1863; 1866
North Carolina Railroad	1849	1856–1859	Goldsboro to Charlotte, NC	1871
North-Western North Carolina Railroad	1868	1873; 1890	Wilkesboro to Greensboro, NC	1871
Atlanta & Richmond Air-Line Railway (A&R)	1870	1871–1873	Atlanta, GA to Charlotte, NC	1872
Atlanta & Charlotte Air-Line Railway (successor to A&R)	1877	N/A	Atlanta, GA to Charlotte, NC	1877; 1881
Milton & Sutherlin Railroad	1876	1878	Sutherlin, VA to Milton, NC	1878; 1881

[188] Klein 1970.
[189] Murray 2007:34–35. Some lines held by Richmond Terminal were relinquished in this process, including several railroads in Georgia, South Carolina, Tennessee, and farther southwest states.
[190] Harrison 1901:46, 54, 107.
[191] North Carolina Board of Railroad Commissioners 1893:201.

Railroad Name	Chartered	Constructed	Path	Controlled, Leased, or Operated by R&D
Western North Carolina Railroad	1855	1858–1879; 1891	Salisbury to Asheville, NC; extended to Murphy, NC	1881; 1886
State University Railroad	1879	1881	NCRR at University Station to Chapel Hill, NC	1881
Asheville & Spartanburg Railroad	1874; 1881	1879–1886	Spartanburg, SC to Asheville, NC	1881; 1886
Charlotte, Columbia & Augusta Railroad	1869	1869	Charlotte, NC to Augusta, GA	1881; 1886
Chester & Lenoir Railroad	1874	1875–1881; 1884	Chester, SC to Lenoir, NC	1882
Atlantic, Tennessee & Ohio Railroad	1855	1860	Charlotte, NC to Statesville, NC	1882
Statesville & Western Railroad	1887	1887	Statesville to Taylorsville, NC	1887
Oxford & Henderson Railroad	1871	1881	Oxford to Henderson, NC	1888
Oxford & Clarksville Railroad	1885	1888	Durham, NC to Clarksville, VA	1888
High Point, Randleman, Asheboro & Southern Railroad	1887	1889	High Point to Asheboro, NC	1888
Danville, Mocksville & Southern Railroad (later the Leaksville branch of the Danville & Western Rwy)	1880	1880–1883	Danville & New Railroad at Leaksville Junction, VA to Leaksville (now Eden), NC	1880
North Carolina Midland Railroad	1880	1891	Winston-Salem to Mocksville, NC	1891
Yadkin Railroad	1871	1890–1891	Salisbury to Norwood, NC	1891

This section focuses on the R&D to include a brief history of the company and the lines it operated from the 1860s to the 1890s within North Carolina. Further information and details of their construction, operation, and modifications to these lines may be found in company-specific annual reports, contemporary railroad journals and newspapers, and various government or regulatory agency records. Most lease or operating agreements were recorded by a deed or contract and reprinted in the granting company's annual reports to stockholders. Such agreements typically assigned the R&D, as lessor, responsibility for maintenance and improvements along the lines under their management.

Richmond & Danville Railroad (R&D)

The R&D was chartered on March 9, 1847, and by 1856 its main line was completed from the City of Richmond to Danville, Virginia, near the North Carolina border—at a total distance of

140.5 miles.[192] Construction of the R&D began in January 1848, spearheaded by Chief Engineer, Colonel Andrew Talcott (1797–1883). A native of Connecticut, Talcott studied Engineering at West Point where he became close friends with Robert E. Lee and graduated second in his class in 1818.[193] Built with financial support from the Virginia legislature, the R&D became one of the most-traveled railroads in the state by the time of the Civil War. During the war, the line was frequently appropriated by the Confederate government for moving troops and supplies, to become a vital transportation resource for the South.[194]

Algernon Sidney Buford (1826–1911), a Virginia lawyer and politician from Pittsylvania County, became President of the R&D in 1867 and served in that position for another 20 years. Buford led the R&D during its large-scale expansion in the 1870s and 1880s. Colonel Talcott's son, Thomas Mann Randolph Talcott, served as Engineer and Superintendent during this period.[195]

Another prominent figure shaping the R&D's growth in this period was Alexander Boyd (A.B.) Andrews (1841–1915). Born in a prominent family in Franklin County, North Carolina, Andrews became a construction engineer and railroad executive like his uncle, Philemon Benjamin Hawkins (1823–1891), and several cousins in the mid- to late-nineteenth century.[196] Andrews worked for the Blue Ridge Railway in South Carolina before the Civil War and as Superintendent of the Raleigh & Gaston and Chatham railroads before he came to the R&D in 1875 as Superintendent of the NCRR line.[197] By the 1880s, Andrews was Superintendent for all lines in the R&D's North Carolina Division. He also served as railroad advisor to Governor Thomas Jarvis during the "Great North Carolina Railroad War," securing the R&D's controlling interest in the Western North Carolina Railroad (WNCRR) in a July 1880 agreement with William Best, later becoming President of the WNCRR in 1881 while continuing to serve as a Superintendent for the R&D, or what some North Carolina legislators referred to as "the monopoly."[198] A.B. Andrews is best known for completing the WCNRR to Paint Rock, connecting the R&D with the ETV&G system, he also oversaw the completion of shorter lines in the state, including the North-Western North Carolina; North Carolina Midland; High Point, Randleman Asheboro, and Southern; Statesville and Western; and Yadkin railroads while simultaneously rising in the ranks of R&D's corporate management.[199] After the R&D fell into bankruptcy in 1892, Andrews acted as general agent of its receivers and

[192] Johnston 1957:312; Poor 1877:354; Stanley 2014:27, 46.
[193] Cullum 1868; Thayer 2023.
[194] Civil War Trails n.d.; Johnson 2004:64. In April 1865, after Confederate General Robert E. Lee's surrender, Jefferson Davis and his cabinet fled Richmond on the R&D.
[195] R&D 1872:12.
[196] Hawkins Family Papers on file at Southern Historical Collection, University of North Carolina at Chapel Hill; Steelman 1979.
[197] Steelman 1979.
[198] Morris 1975:256; Steelman 1979.
[199] Steelman 1979.

became a director of the new Southern Railway Company in 1894, serving in the position of First Vice President from 1895 until his death in 1915.[200]

In 1885, a man-made "geyser" was constructed by private investors at the Round Knob Lodge in McDowell County, North Carolina, as a tourist attraction marking the "gateway" to the Blue Ridge Mountains.[201] After retired New York-financier George Fisher Baker purchased the lodge property in 1911, he had the feature rebuilt and named it Andrews Geyser in honor of A.B. Andrews work on the WNCRR. [202]

Piedmont Railroad

The R&D was instrumental in establishing the Piedmont Railroad—a new line authorized by the Confederate Congress in 1862 to connect the R&D with the NCRR.[203] From its inception, the R&D held most all of the stock issued in the Piedmont Railroad Company, though its path was surveyed by Chief Engineer Edmund T.P. Myers, a captain in the Provisional Army of the Confederate States of America. Its construction was fraught with challenges posed by limitations on materials and labor. The R&D contracted with the firm of Edmund Wilkes & Brother to grade much of the line, build the masonry and trestle work, and lay roughly 15 miles of the 48.4-mile line from Danville, Virginia, to Greensboro, North Carolina, between 1863 and 1864.[204] Despite having control of the line since 1862, the R&D operated the Piedmont Railroad as a separate line until 1866—shortly after the federal government determined it to be the property of private citizens, not the Confederate government, returning it to private stockholders in December 1865.[205]

The Piedmont Railroad brought R&D into closer operation with the NCRR—a line coveted by the company since its construction in the mid-1850s. The R&D's power and influence in the state grew after the SRSC secured its financial interests, enabling the company to gain operational control of three additional lines in North Carolina of great importance to the R&D and its "Piedmont Air Line" route in the early 1870s: the North-Western North Carolina Railroad (NWNCRR), the NCRR, and the Atlanta & Richmond Air-Line (A&R) Railway.[206]

Access to states south and southwest of North Carolina hinged on expanding the SRSC and R&D network connections out of Charlotte, North Carolina. The first major step towards securing their interests in the region began with gaining a financial interest in the A&R in 1872.

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[200] Ibid.
[201] Joyner 2006.
[202] North Carolina Department of Conservation and Development 1938.
[203] Brown 1926:206; Cates et al. 2004; North Carolina Board of Railroad Commissioners 1892:324, 334; Stanley 2014:2.
[204] Lewis 2018.
[205] Ibid.
[206] R&D 1872, 1873.

North-Western North Carolina Railroad

The North-Western North Carolina Railroad (NWNCRR) was chartered in 1868 to run from some point along the North Carolina Railroad corridor to the northwestern boundary of the state, but the company was slow to raise funds to complete its construction.[207] State legislators were not as keen to finance railroads in the post-war period and permitted the company's sale to the R&D in 1871. The R&D provided the capital, labor, and materials to complete construction of the 26-mile line from Greensboro to Winston-Salem, North Carolina, which opened in March 1873.[208] It was operated by the R&D under its own name and extended westward in the 1880s, reaching its final destination at Wilkesboro, North Carolina, in 1890 (Figure 14, p. 46).[209]

North Carolina Railroad (NCRR)

The 30-year lease the R&D secured to the NCRR in September 1871 was contentious and said to have been settled in "a secret night meeting at Burlington that climaxed acrimonious wrangling which saw three different sets of directors vying for authority over" the line.[210] While lawsuits over the lease limited the R&D's use of it until 1875, the agreement was generally upheld, giving the R&D the rights to all of the works and property of the NCRR, including its "superstructure, road-bed, and right of way […] depot houses, shops, buildings, fixtures, engines, cars, and all franchises, rights and privileges," while obliging the R&D to keep this property in good condition and repair.[211] Most important, however, was the ability for the R&D to change the gauge of the NCRR's rails (the NCRR retained ownership of its line, later leasing to Southern for a period of 99 years, as is more fully described in the previous section: *North Carolina Railroad,* p. 23).

[207] North Carolina Constitutional Convention 1868:364.
[208] Harrison 1901:25; Lewis 2018.
[209] North Carolina Board of Railroad Commissioners 1892:290, 299; Lewis 2018; Poor 1879:449, 1880:479, 1882:385.
[210] Dunn III 1968:12.
[211] Crow 1996. *State of North Carolina v. The Richmond and Danville Railroad Co., A. S. Buford, and others*, 72 N.C. 634 (1875).

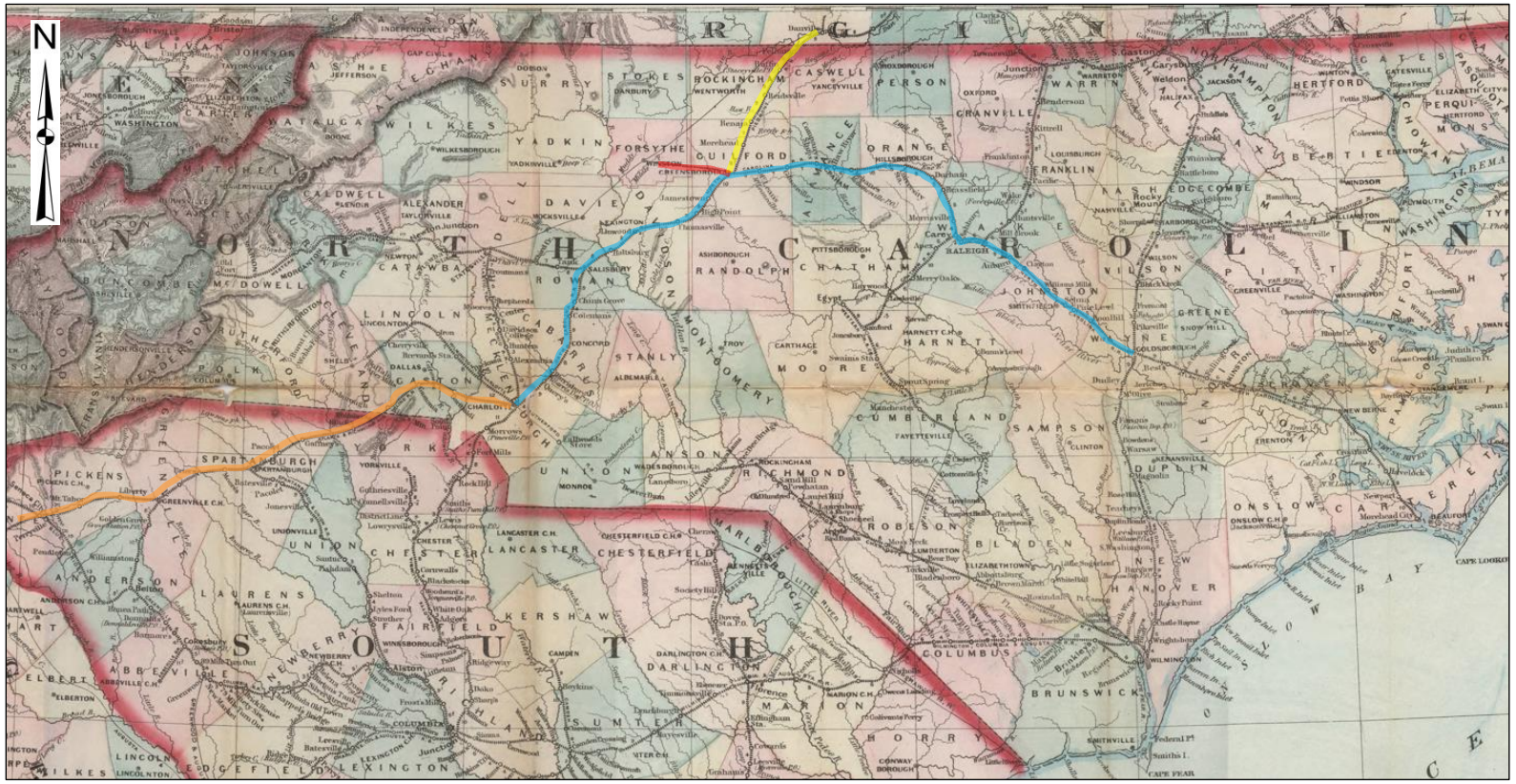


Figure 14: Detail of 1874 "Asher & Adams' North Carolina and South Carolina; Rail road map & guide of North Carolina and South Carolina," Showing R&D Operated Lines in North Carolina—the Piedmont (Yellow), NCRR (Blue), NWNCRR (Red), and A&R (Orange)."[212] Image not to scale.

[212] Asher & Adams 1874.

Atlanta & Richmond Air-Line Railway/Atlanta & Charlotte Air-Line Railway

In 1872, the R&D and SRSC as its holding company provided credit to assist with the completion of the Atlanta and Richmond Air-Line Railway (A&R) that been in receivership since 1870. The A&R formed from the 1869 consolidation of the Georgia Air-Line Railroad Company, the Air-Line Railroad Company of South Carolina, and the North Carolina Air Line Company—all of which wanted to connect Atlanta, Georgia, to Charlotte, North Carolina, by rail. The R&D became the A&R's primary stockholder in 1871 and later that same year, both companies became assets of the SRSC.[213] The entire line from Atlanta to Charlotte opened in September 1873 with roughly 48 miles in North Carolina.[214]

After the Panic of 1873, the Pennsylvania Railroad Company (PR) secured the SRSC's holdings of R&D stock through a loan of $600,000, and gained financial control of the R&D.[215] To protect its earlier investments in the SRSC and R&D, the PR was forced to secure the company's bonds for the A&R—a move that stockholders later claimed was "an illegitimate direction."[216] Despite these efforts, the A&R defaulted on its debt and went into receivership in November 1874 and the PR subsequently annulled and canceled all obligations of the R&D to it—an estimated $4 million loss.[217] At the same time, the R&D required additional funding to stay afloat, and gave "$1,000,000 worth of 6 per cent consolidated mortgage bonds" to the PR.

Several southern railroads struggled financially in the postbellum period up to the Panic of 1873, but as economic conditions worsened the number of defaulting companies grew each year. By 1876, 55 railroads—roughly 43 percent of those located in southern states—were in default on their bond interest.[218] Within the state of North Carolina, in December 1876, the A&R was sold under foreclosure and reorganized as the Atlanta and Charlotte Air-Line Railway (A&C) in 1877, whose operations were assigned to the R&D. The A&C became one of several lines managed and operated by the R&D while in receivership during this tumultuous period for railroads, and was later formally leased by the R&D on April 1, 1881, for 99 years.[219]

While the R&D helped the SRSC stave off bankruptcy through the financial crises of the 1870s, the Clyde syndicate and Richmond Terminal continued to expand the R&D's network in the early 1880s during a second period of consolidation in the railroad industry. The R&D's 1882 annual report detailed expenses and activities on the "Richmond and Danville and Piedmont" railroad, the NCRR, NWNCRR, and A&C lines, but also mentioned several smaller lines in

[213] Lewis 2018; North Carolina Board of Railroad Commissioners 1894:202.
[214] Murray 2007:15; Lewis 2018; North Carolina Board of Railroad Commissioners 1892:220.
[215] Brown 1929:164; Murray 2007:18.
[216] Brown 1929:161, 166.
[217] Brown 1929:168; Poor 1875:436.
[218] Stover 1955:41.
[219] Lewis 2018.

which the R&D was vested.[220] This included what had been the Clyde's Richmond, York River, and Chesapeake Railroad in Virginia, and North Carolina lines like the Milton and Sutherlin Railroad and State University Railroad.[221]

The R&D's 1882 annual report also included information about the company's relationship with Richmond Terminal—reflecting a growing concern of many directors for a corporate separation from some of their northern-backed stakeholders. At that time, the principal roads controlled by Richmond Terminal "through a majority ownership" were noted as the Virginia Midland; the Western North Carolina; the Charlotte, Columbia, and Augusta; and the Columbia and Greenville railroads, which "by reason of their relations, physical and proprietary, to the Richmond and Danville Company's lines, are worked in harmony with them and in close practical connection, in so far as their respective interests properly allow."[222]

Control of the WNCRR and the Charlotte, Columbia, and Augusta Railroad (CC&A) expanded Richmond Terminal and the R&D's reach west and southwest, but it also stirred the ire of many North Carolina politicians who had worked to prevent these companies from further monopolizing the state's railroad industry.

Milton and Sutherlin Railroad

The Milton and Sutherlin Narrow-Gauge Railroad Company was chartered in the state of Virginia in March 1876, followed by a North Carolina charter in 1877, to connect the town of Milton in Caswell County with the R&D main line at Sutherlin, Virginia.[223] Plans to establish a rail line through Milton began as early as 1852, when merchants of the town successfully advocated for state legislators to pass an act authorizing the R&D to erect a depot there.[224] More than two decades later, more than 50 enterprising area residents formed their own company to build and operate the 7-mile line independently, though the company's interests were intertwined with those of the R&D from its inception.[225] At the annual meeting in December 1876, R&D Director W.T. Sutherlin, who also served as director for the Milton and Sutherlin Narrow-Gauge Railroad Company, made a resolution outlining the financial arrangement between the two companies that stipulated a "drawback of 25 per cent from the receipts for traffic carried over and upon" the R&D from the Milton and Sutherlin Railroad, not to exceed $20,000 in the form of stock in new company.[226]

Caswell County residents instigated a local tax to generate funds to build the line and construction began in 1877 using convict laborers from Virginia and North Carolina to lay the

[220] R&D 1882:14.
[221] Ibid.:17.
[222] Ibid.:16.
[223] Harrison 1901:252.
[224] Ibid.
[225] Virginia General Assembly 1876:111–112.
[226] R&D 1876:9–10.

roadbed and erect a bridge over the Dan River, the stone piers of which remain extant.[227] The line opened in February 1878 and, through a March 1878 traffic agreement, the R&D continued to profit from the line in the form of company stock.[228] Primarily serving as a freight line, the R&D assumed control of the Milton and Sutherlin Railroad in May 1882 and operated the line until 1894, when both lines became the property of Southern Railway.

Competition from the Atlantic and Danville Railway, opening in 1890 and passing through Milton and neighboring Caswell County communities of Semora and Blanch, prompted Southern to cease operations on the line in September 1894.[229] The line's property was returned to the Milton and Sutherlin Railroad Company and L.M. Warlick, purchaser of all the company's stock, sold its assets in November 1896, after which the line was promptly dismantled.[230] Portions of the rail bed were later converted to a public roadway, including much of the current path of Hackberry Road in Pittsylvania County, Virginia.

Western North Carolina Railroad (WNCRR)

The WNCRR, which later served as one of two connections between the R&D and ETV&G systems, was incorporated in February 1855 to connect the NCRR with existing rail lines from the valley of the Mississippi and Ohio rivers. Predominantly controlled by the state, with a public-private partnership like that which built the NCRR and A&NCRR in the 1850s, two-thirds of the WNCRR's corporate stock was held by the state and one-third by private investors with a board of directors elected by the stockholders to manage the company.[231] Some of the company's subscribers, including several counties and localities, provided funds for the line, stipulating that it pass through their jurisdictions and adding time costs to its construction.

Contracts for the road's initial construction were generally let to stockholders, many using a combination of hired and enslaved laborers, including Charles F. Fisher, then President of the NCRR, hired to build the line between Salisbury and Statesville, and William F. McKesson, a prominent Burke County businessman and one of the largest slaveholders in the region.[232] Charles Fisher "hired 61 Burke County slaves along with 52 of his own to work on the section" east of Morganton, while "John A. Hunt, a Massachusetts surveyor and contractor, moved to Morganton and hired 31 young black men to work for him."[233] By 1860, the WCNRR was completed from Salisbury to Morganton, North Carolina, but growth farther west was inhibited

[227] Frederick, Jr. 2006; Virginia General Assembly 1876: 220, 254.
[228] Harrison 1901:253–254.
[229] Frederick, Jr. 2006.
[230] Ibid.
[231] Abrams, Jr. 1976:2–3. James C. Turner had helped survey the line under Walter Gywnn and was appointed the company's first Chief Engineer.
[232] Abrams, Jr. 1976:4–5; Inscoe 1984:167–168.
[233] Inscoe 1984:167.

by wartime shortages and challenging topography in the region; thus, the line's construction progressed at a slow pace over the following decades (Figure 15).[234]

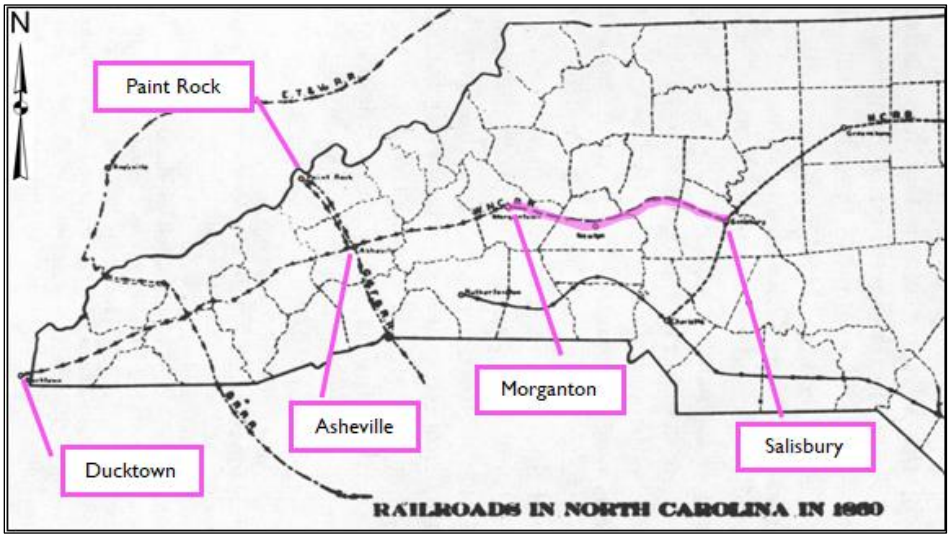


Figure 15: Detail of 1860 North Carolina Railroads Map Showing Completed Line of Western North Carolina Railroad from Salisbury to Morganton, Highlighted in Magenta, and Projected (Dashed) Lines Extending to Ducktown and Paint Rock.[235] Not to scale.

In the final years of the Civil War, much of the WNCRR was systematically dismantled with depots, shops, rolling stock, and equipment destroyed in Morganton and Salisbury by federal troops.[236] In the late 1860s, the state legislature provided additional funds and authorized increased sales of stock to support the line's expansion, but the WNCRR was soon corrupted and embroiled in scandal as its President, George W. Swepson, and General, Milton S. Littlefield, also known as "The Prince of Carpetbaggers," issued fraudulent bonds and drained its coffers.[237] A decade-long investigation began in 1870 and prompted the company's bankruptcy, the impeachment of North Carolina Governor William W. Holden, and the state's purchase of the entire WNCRR in 1875.[238]

Under the state's control and new leadership, the WNCRR resumed work to extend its lines as planned to Asheville, Paint Rock, and Ducktown. Construction through the mountainous terrain in the 1870s involved some of the earliest recorded use of nitroglycerine explosives in the field of engineering as well as the exploitation of state governments' convict labor crews populated by imprisoned African Americans, many of whom died on the job.[239] Six tunnels

[234] Abrams, Jr. 1976:11; Lewis 2018.
[235] Morris 1975:275.
[236] Abrams, Jr. 1976:17.
[237] Catsano and Kern 2006.
[238] Morris 1975:259.
[239] Abrams, Jr. 1976:35–41; Lewis 2018.

were built in an arduous construction campaign led by James William Wilson (1832–1910), a Morganton contractor and former WNCRR Superintendent later elected President of the company in 1877 while simultaneously serving as its Superintendent and Chief Engineer.[240] The longest and most well-known of these mountain tunnels was the 1,832-foot-long Swannanoa Gap Tunnel completed in 1879 (Figure 16).[241]



Figure 16: Undated Historic Image of Swannanoa Tunnel at Swannanoa Gap.[242]

With completion of the Swannanoa Tunnel and the line to Asheville nearly finished, Governor Thomas J. Jarvis and the Democrats in control of the state legislature decided to sell the WCNRR.

> In mid-January, 1880, William J. Best, James D. Fish, J. Nelson Tappan, and William R. Grace, four wealthy New Yorkers, made a tentative offer to buy the railroad and complete it. Their plan was to buy the Western North Carolina Railroad and link it to the East Tennessee, Virginia, and Georgia Line, and thus form a through line from Beaufort, North Carolina to Tennessee.[243]

The WNCRR Board of Directors advised against the sale and the matter was debated in the legislature with Governor Jarvis arguing that the costs to operate and maintain

[240] Bromberg 1996. Wilson later served as the first chairman of the North Carolina Railroad Commission in 1891.
[241] Abrams, Jr. 1976:34–35, 44; Weidman 2022.
[242] Buncombe County Special Collections 2017.
[243] Abrams, Jr. 1976:46.

the railroad, let alone complete its construction, would require additional funds which the state could not afford.[244]

In March 1880, a bill was passed authorizing the WNCRR's sale to Best and his investors who had agreed to complete its Paint Rock Branch and Ducktown Branch as a condition of the purchase.[245] The bill also required Best's group to pay roughly $30,000 in floating debt carried by the WNCRR. Months later, Best's associates pulled out of the deal and Governor Jarvis—knowing his political career was on the line—sent his friend, A.B. Andrews, then Superintendent of the R&D's North Carolina Division, to New York to help acquire the necessary funds to uphold the state's contract. This assistance entailed a series of loans from a few select R&D directors that required Best to allocate "almost all interests in the WNCRR" to the R&D.[246]

The three directors behind Best's loans were simultaneously creating a new rail network in the south, with the R&D as their lynchpin. After months of trying to raise sufficient capital to uphold their contract, on July 31, 1880, Best and his associates sold the WNCRR to William P. Clyde, Alfred S. Buford, and Thomas M. Logan—directors in both the R&D and Richmond Terminal.[247] In April 1881, A.B. Andrews became President of the WNCRR and also served as its superintendent, overseeing the line's completion to Paint Rock by January 1882, despite the ongoing "Railroad War" waged in the press and behind closed doors led by Senator Zebulon Vance. The premise of the "war" centered on the R&D's control of lines that funneled North Carolina goods to centers of trade outside the state. During the spring and summer of 1881, Vance and his advocates for "local" control of railroads sought to reconvey the WNCRR to William J. Best and a new group of investors from Boston.[248] In May 1881, Best's Boston syndicate signed an agreement with state commissioners to lease to the A&NCRR while simultaneously constructing a new line between Goldsboro and Salisbury called the Midland Railroad.[249]

The Ducktown Branch was opened to the Nantahala River in 1884, and on September 17, 1884, Governor Jarvis conveyed all of the state's interests in the WNCRR to the "the R&D syndicate."[250] Andrews then worked to extend the line to Murphy, North Carolina, to uphold the company's contract with the state, though construction costs and challenging topography slowed its progress. Undesirable geology and surveying errors undermined hastily erected structures and required the line to be rerouted three times in the mid-1880s, and the WNCRR was soon transferred from the R&D's books to those of Richmond Terminal.[251] but in July

[244] Ibid.:48.
[245] Ibid.:46, 54.
[246] Morris 1975:264–265.
[247] Abrams, Jr. 1976:50; Morris 1975:265.
[248] Morris 1975:273–275.
[249] Ibid.:273.
[250] Abrams, Jr. 1976:54.
[251] Poor 1886:649;

1891, the WNCRR was finally completed to the town of Murphy on the state line near Ducktown, Tennessee—making a total of 306 miles of track.[252] Southern Railway acquired the WNCRR along with the R&D in 1894.

State University Railroad

In February 1873, the North Carolina legislature approved a charter for the Chapel Hill Iron Mountain Railroad Company to build a line from University Station on the NCRR to the University of North Carolina at Chapel Hill following calls from local businessmen to reduce the town and university's relative isolation.[253] The company changed its name in 1879 to become the State University Railroad with subscriptions from the NCRR, Chapel Hill Iron Mountain Company, and various residents of Chapel Hill.

R&D superintendent, A.B. Andrews, Governor Jarvis, and General Robert F. Hoke, owner of the Chapel Hill Iron Mountain Company, were instrumental in constructing this 10.2-mile line that was completed by the spring of 1882.[254] The R&D held a majority stock ownership in the State University Railroad and leased the line from August 1881 until 1894.[255] After the line was absorbed into Southern's network, a small depot was built in 1900 and later replaced by a combined passenger and freight depot erected in 1913 at "Chapel Hill Station" that was surrounded by agricultural and industrial buildings like grist mills, grain bins, a cotton gin, and textile mills (Figure 17, p. 54).[256] In 1925, Southern built a larger "freight house" to replace a smaller shed as the town's textile mills increased traffic on the line.[257] In 1982, the State University Railroad Company remained in service with Southern owning a majority of its stock, while the NCRR and private citizens held a minority.[258] The line continues to be majority-owned and operated by Southern's successor, while the NCRR remains a minority stakeholder.[259]

[252] Abrams, Jr. 1976: I, 1, 7, 50; Lewis 2018; North Carolina Board of Railroad Commissioners 1892:357; Poor 1887:662.
[253] Brown et al. 1983:10.
[254] Brown et al. 1983:10; North Carolina Board of Railroad Commissioners 1892:381; Poor 1885:390, 1886:665–666.
[255] Brown et al. 1983:10
[256] Brown et al. 1983:10–11.
[257] Ibid.
[258] Legislative Research Commission 1982.
[259] Program Evaluation Division 2012.



Figure 17: Image of Southern's Circa-1913 Combination Depot at University Station, Courtesy of Arthur Peterson and the Piedmont and Western Railroad Club.[260]

Asheville and Spartanburg Railroad

Chartered in 1855 as the Greenville and French Broad Railway Company and later consolidated by an act of the General Assembly, the 48-mile line of the Spartanburg and Asheville Railroad connected Spartanburg, South Carolina, with Hendersonville, North Carolina, between 1877 and 1879.[261] The R&D acquired a majority stock in the company in 1881, promptly reorganizing it as the Asheville and Spartanburg Railroad (A&S), and leased operations along the line to the R&D (Figure 18, p. 55).[262] Between 1881 and 1886, the R&D extended the line from Hendersonville to reach Asheville, North Carolina, connecting the A&S to the WNCRR.[263]

The A&S was renowned for its dangerously steep grade at Saluda Mountain—built at 4.7 percent grade in a time when it was generally agreed that the acceptable limit was around 2 percent. Accidents along this stretch of track claimed 29 lives between 1880 and 1893, and later became the first place to feature "safety tracks," or uphill runaway ramps, installed by Southern in 1903.[264]

[260] Peterson n.d.
[261] Lewis 2018.
[262] Harrison 1901:28,392; Poor 1881:393, 1882:392, 414, 1887:566.
[263] North Carolina Board of Railroad Commissioners 1892:232.
[264] Lewis 2018.

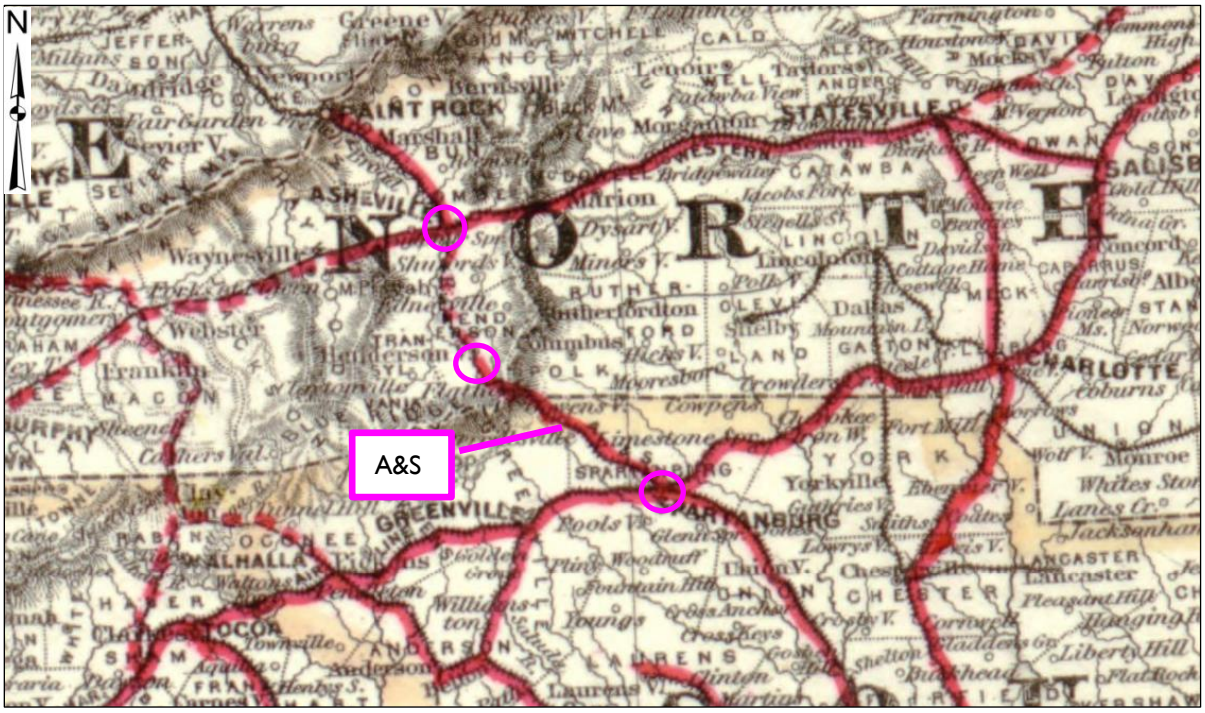


Figure 18: Detail of 1881 "Map of the Richmond & Danville Railroad system in Virginia, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas, & Texas," Showing A&S Termini (Magenta Circles) and Proposed Extension Line (Dashed) Between Henderson and Asheville, North Carolina.[265] Image not to scale.

Charlotte, Columbia & Augusta Railroad (CC&AR)

As early as 1878, the R&D acquired a majority financial interest in the CC&AR, another line leading south out of North Carolina.[266] Formed from the 1869 consolidation of the Charlotte & South Carolina Railroad and the Columbia & Augusta Railroads, this 195-mile connecting Charlotte to Augusta, Georgia, had just 10.9 miles in North Carolina, but became a critical component in the R&D's "Piedmont Air Line."[267] The CC&AR continued to operate under its own name. In 1881, Richmond Terminal purchased the R&D's stock in the company and the line was later merged with the R&D in 1882. That same year, the line was extended to Lenoir, North Carolina.[268]

The R&D formally leased the CC&AR along with three other connecting railroads in an 1886 agreement. Two of these connecting lines had track in North Carolina—the Chester and Lenoir (C&L) and the Atlantic, Tennessee, and Ohio (AT&O) railroads—both of which had been

[265] G.W. & C.B. Colton & Co. 1881.
[266] Harrison 1901:164.
[267] Lewis 2018.
[268] Lewis 2018; North Carolina Board of Railroad Commissioners 1892:256.

under the R&D's control since the early 1880s.[269] Southern Railway acquired the CC&AR on July 10, 1894, during a foreclosure sale.

Several lines in North Carolina that came under the control of the CC&AR in this period are discussed further in the following subsection and include the C&L, AT&O, the Statesville and Western Railroad, and the North Carolina Midland Railroad.

Chester and Lenoir Narrow Gauge Railroad (C&L)

The Chester and Lenoir Narrow Gauge Railroad (C&L) was organized in April 1874 from a consolidation of the Kings Mountain Railroad Company—chartered in 1849 and completed in 1852, before being destroyed by the Union Army during the Civil War—and the Chester and Lenoir Narrow Gauge Railroad Company, established in 1873, after it absorbed the Carolina Narrow Gauge Railroad.[270] In 1881, the C&L opened from Chester, South Carolina, to Lincolnton, North Carolina, having exhausted available funding. To finance operations and continue the line's progression to Lenoir, the C&L agreed to a lease with the CC&AR set to begin in September 1882, but by that time, the latter had merged with the R&D and the lease was promptly reassigned.[271] Under control of the R&D, the line was extended to Lenoir, North Carolina, intersecting with the WNCRR along its path and opening in June 1884. This extension brought the C&L's total mileage to 99.2 miles—62.2 of which were in North Carolina.[272]

After several years, the C&L went bankrupt and was reorganized as the Lenoir & Chester Railroad, but the company's tenuous financial situation necessitated its return into receivership. Thus, the C&L was excluded from the Southern's assets following the R&D's reorganization, as it continued to operate independently until 1897 when it was reorganized as the Carolina and North-Western Railway (C&NW).[273] In 1905, the C&NW gained control of a small network of logging lines leading northwest from Lenoir built by the Caldwell and Northern Railway around the turn of the century, absorbing the latter into the C&NW system in 1910. After a catastrophic flood in 1916 destroyed much of this network, Southern assisted the C&NW, then one of its subsidiaries, in rebuilding the track to the town of Edgemont, but by 1935, service was reduced to an "as needed" basis.[274] In February 1937, the C&NW petitioned the ICC to abandon passenger service on the line between Lenoir and Edgemont, and by 1938, freight service was abandoned as well. In 1940, Southern took over the line between Lenoir and Hickory, later absorbing the C&NW—what would be called its "HG

[269] North Carolina Board of Railroad Commissioners 1892:244, 257.
[270] Lewis 2018.
[271] North Carolina Board of Railroad Commissioners 1892:257, 266; Poole 1995:59.
[272] Lewis 2018.
[273] Poole 1995:59.
[274] Robie 2014.

Line"—and dissolving the corporation in 1974.[275] Its successor, NS, continues to lease to shortline operators like the Caldwell County Railroad as part of its Thoroughbred Program.[276]

Atlantic, Tennessee, & Ohio Railroad (AT&O)

The AT&O was another line that came under control of the R&D by way of the CC&AR in the early 1880s. The company was chartered in 1855 to connect Charlotte, North Carolina, with the East Tennessee & Virginia Railroad thorough Moccasin Gap at Clinch Mountain in Virginia, "by the most practicable line to the head waters of Big Sandy River, thence the most eligible route to the Ohio River."[277] Just 44 miles of track from Charlotte north to Statesville, North Carolina, was completed prior to the Civil War, when the line was leased and operated by the Charlotte and South Carolina Railroad Company.[278] In 1863, rails from the AT&O were borrowed for construction of the Piedmont Railroad and re-laid in June 1871.[279] In October 1881, the line was leased to the CC&AR and shortly thereafter to the R&D.[280] The AT&O became an asset of Southern in 1894 and became an important alternative route to the busy north-south NCRR corridor that was controlled, in large part, by the North Carolina state legislature.[281]

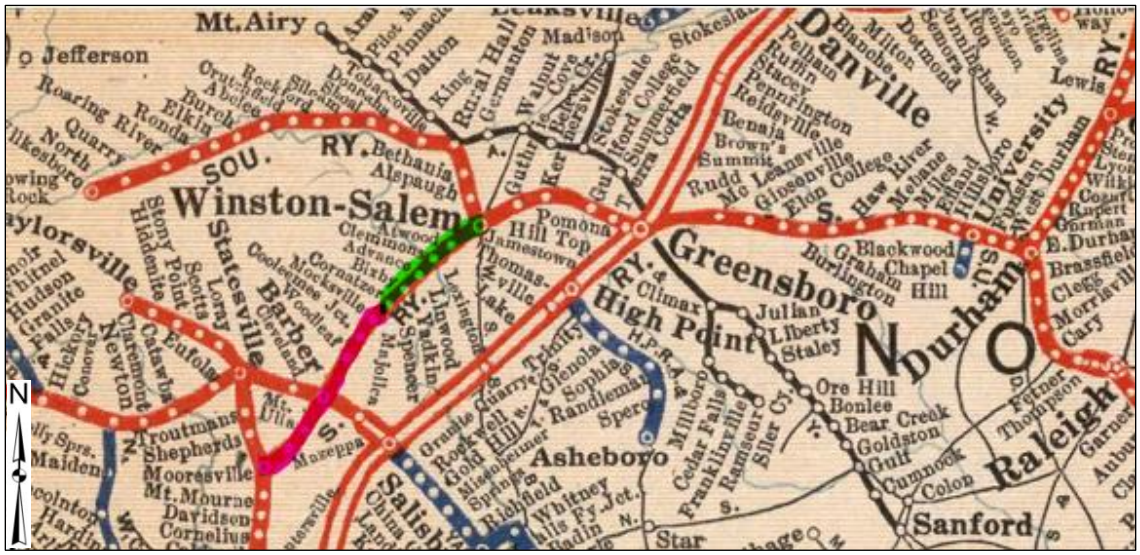
The Statesville & Western and North Carolina Midland Railroads

The Statesville and Western Railroad, having previously functioned as a subsidiary of the AT&O, was also passed to Southern in 1894. Chartered in March 1887 to connect the WNCRR around the town of Statesville to a point near the Tennessee state line, plans for constructing a line from Statesville to Taylorsville, North Carolina, were introduced to stockholders at the Annual Meeting of the CC&AR as early as 1883.[282] The R&D held a majority of the company's capital stock from its inception and operated the line until 1894. As President of the Statesville & Western, A.B. Andrews oversaw construction of this 20.4-mile line that opened in September 1887.[283] Southern sold the Statesville and Western to the Alexander Railroad Company in 1945, which continues to maintain freight service thereon.[284]

The North Carolina Midland Railroad (NCMR)—a 26.1-mile line between Winston-Salem and Mocksville, North Carolina—later extended by Southern another 27 miles southwest to

[275] Ibid.
[276] Poole 1995:67; Robie 2014.
[277] Lewis 2018.
[278] Atlantic, Tennessee, and Ohio Railroad Company 1863.
[279] Lewis 2018.
[280] North Carolina Board of Railroad Commissioners 1892:229.
[281] Robie 2014.
[282] Charlotte, Columbia, and Augusta Railroad Company 1883:i.
[283] Harrison 1901:580; Lewis 2018; North Carolina Board of Railroad Commissioners 1892:336; Poor 1889:625, 1892:529, 655.
[284] Kennedy 2006.

connect with the AT&O at Mooresville in 1899 (Figure 19).[285] The NCMR was chartered in September 1880 to consolidate three railroad companies established in the late 1870s that had failed to construct any track. The NCMR remain unbuilt until it was acquired by Richmond Terminal in 1891, after which a line from Winston-Salem to Mocksville was constructed and opened later that same year.[286]


Mt. Airy
Jefferson
Madison
Danville
Winston-Salem
Greensboro
High Point
Asheboro
Durham
Raleigh
Sanford
Salisbury
Statesville
Mooresville
Lexington
Thomasville
Pomona
Hill Top
Jamestown
Julian
Liberty
Staley
Climax
Ore Hill
Bonlee
Bear Creek
Goldston
Gulf
Cumnock
Colon
Randleman
Sophia
Trinity
Glenola
Cedar Falls
Franklinville
Ramseur
Sher Cy.
Star
Whitney
Richfield
Troutmans
Shepherds
Mt. Mourne
Davidson
Cornelius
Barber
Mocksville
Cooleemee
Woodleaf
Spencer
Landis
Granite Falls
Hickory
Newton
Conover
Catawba
Claremont
Eufola
Scotts
Lorey
Statesville
Hiddenite
Stony Point
Taylorsville
Hudson
Whitnel
Granite Falls
Maiden
Lincolnton
Hardin
Mt. Ulla
Mazeppa
Rockwell
Gold Hill
Granite Quarry
Spencer
Salisbury
China Grove
Landis
Kannapolis
Concord
Harrisburg
Mt. Pleasant
Locust
Stanfield
Misenheimer
Albemarle
Norwood
Oakboro
Stanfly
Wingate
Monroe
Marshville
Wadesboro
Polkton
Ansonville
Rockingham
Hamlet
Wagram
Laurinburg
Maxton
Pembroke
Red Springs
Lumberton
Fairmont
Rowland
Proctorville
Orrum
Fayetteville
Hope Mills
Spring Lake
Manchester
Parkton
Wade
Falcon
Cedar Creek
Godwin
Dunn
Erwin
Coats
Benson
Four Oaks
Kenly
Selma
Smithfield
Princeton
Pine Level
Clayton
Garner
Auburn
Cleveland
Fuquay Springs
Apex
Cary
Morrisville
Brassfield
Cleggs
E. Durham
Durham
University
West Durham
Lyon Station
Wilkinson
Rupert
Germanton
Walnut Cove
Stokesdale
Summerfield
Guilford College
Sedalia
Gibsonville
Elon College
Haw River
Mebane
Efland
Hillsboro
Graham
Burlington
Blackwood
Chapel Hill
Milton
Blanche
Dan River
Ruffin
Pelham
Stacey
Penrington
Reidsville
Benaja
Brown's Summit
Rudd
McLeansville
Bethania
Alspaugh
Rural Hall
Dalton
King
Pinnacle
Pilot Mt.
Tobaccoville
Rockford
Siloam
Dobson
Crutchfield
Abbotts Creek
Elkin
Ronda
Roaring River
Quarry
North Wilkesboro
Wilkesboro
Rock
Lewis
Fetzer
Thompson
Garner
Auburn
Clayton
Colonial Hts.
Petersburg
Richmond
Norfolk
Portsmouth
Suffolk
Franklin
Emporia
Roanoke
Lynchburg
Danville
Madison
Leaksville
Stokesdale
Summerfield
Guilford College

built and operated by the R&D with A.B. Andrews serving as its President, opening in July 1889.[290] In 1890, the HPRAS was formally leased to the R&D for 99 years. In 1894, the line's lease fell to Southern and HPRAS continues to function today as a majority-owned subsidiary of the Norfolk Southern Corporation.[291]

Oxford and Henderson Railroad (O&H)

The O&H Company was originally chartered in March 1871, but the short 12-mile line from Oxford to Hendersonville, North Carolina, where it connected with the Raleigh and Gaston Railroad, did not open until August 1881 after it was acquired by Richmond Terminal.[292] In October 1888, the R&D acquired a 99-year lease on the line and built a one-story brick depot on E. Spring Street around 1890.[293] The line was absorbed into Southern's rail network and the O&H continued to function as a subsidiary of it into the mid-twentieth century.

Oxford and Clarkesville Railroad

When chartered in January 1885, the Oxford and Clarkesville Railroad (O&C) Company was to build a line from the town of Oxford through Person, Granville, Vance, or Warren counties to the Virginia state line.[294] However, when the R&D finished the Richmond and Mecklenburg Railroad in 1884 from Keysville, Virginia, south to Clarkesville, Virginia, it sought control over the O&C and quickly built the 56.5-mile line from Clarksville to Oxford with 49.4 miles of track in North Carolina.[295] When complete in 1888, the O&C was promptly leased to the R&D for 99 years.[296] By 1893, the line had been extended from Oxford south to Durham.[297] The line was absorbed into Southern's rail network in 1894 and presently remains the property of its successor, though it fell out of use in the last decade of the twentieth century.[298]

Yadkin Railroad (YR)

In 1891, the R&D purchased a majority stock interest in the YR Company—chartered in April 1871 to connect Salisbury with the Charlotte and Rutherford and Cheraw and Salisbury Railroads at or near Wadesboro.[299] With assistance from the R&D, construction on this 41.1-mile railroad began in November 1890 and was completed from Salisbury to Norwood in

[290] Lewis 2018; North Carolina Board of Railroad Commissioners 1892:277, 1893:242.
[291] United States Department of Transportation 2006.
[292] Harrison 1901:571; Lewis 2018.
[293] Miller n.d.
[294] Harrison 1901:571; North Carolina Board of Railroad Commissioners 1892:302; Poor 1892:526.
[295] Harrison 1901:571.
[296] North Carolina Board of Railroad Commissioners 1892:311.
[297] North Carolina Board of Railroad Commissioners 1893:275.
[298] Abandonedrails.com 2018.
[299] Lewis 2018.

1891.[300] Though it was controlled by the R&D, the YR operated under its own name and continued as a subsidiary of Southern until 1916, when the company relinquished control over the line (Figure 20). The YR operated independently until after World War II (WWII), when it was reacquired by Southern as part of another subsidiary under its control, the C&NW.[301]



Figure 20: 1915 Photograph of Yadkin Railroad Depot in Albemarle, North Carolina.[302]

From inception, the YR was primarily a freight line. "It served the stone quarries in eastern Rowan and Stanly counties. It also hauled tons of timber, cotton, and other products—414,000 tons of goods in 1927. Cotton mills in Albemarle depended on the company, which delivered 38,000 bales of cotton to the mills in one year."[303] Competition from other lines and the construction of a new highway between Albemarle and Salisbury diminished passenger service, while the Norwood depot, a combination freight and passenger depot with offices, was destroyed by fire in 1929, nearly a year after passenger service was eliminated. Portions of the line were dismantled and abandoned in the second half of the twentieth century, but the track from Salisbury to Halls Ferry remains operational as NS's "N line."[304] The YR continues to function as a majority-owned subsidiary of the Norfolk Southern Corporation.

Southern Railway's Organization & Early History

Several plans for reorganizing the massive debt load of Richmond Terminal were floated and rejected among its creditors between the winter of 1891 and spring of 1892. On May 6, 1892, a new committee was formed and by this time, Richmond Terminal, R&D, ETV&G, and

[300] Coleman 2009; Lewis 2018; North Carolina Board of Railroad Commissioners 1892:381.
[301] Robie 2014.
[302] Stanly County Museum n.d.
[303] Lewis 2018.
[304] Robie 2014.

Central of Georgia were all under receivership.[305] Drexel, Morgan & Company—the leading corporate banking company of the late-nineteenth century headed by J.P. Morgan—took charge of Richmond Terminal's reorganization to create the plan that would ultimately be successful, and in 1893 an act was passed by the Virginia Assembly outlining the role and powers of a new company to steward its holdings.[306]

On June 15, 1894, the R&D was sold under foreclosure to the members of the Richmond Terminal Reorganization Committee and a deed dated June 18, 1894, outlined the Articles of Association for organization of the Southern Railway Company.[307] On July 1, 1894, the R&D's original line along with the Piedmont, NCRR, and A&C Railroad systems were surrendered to Southern, followed a month later by the ETV&G, CC&AR, and Columbia and Greenville railroads, and the Georgia Pacific Railway and Louisville and Southern railroads the month after that.[308] Southern took up many of the R&D's leases and operating agreements though it took years to formally transfer its titles and documents to the new company.[309] Poor's *Manual of Railroads* noted the lines owned, leased, and operated by Southern under this agreement, many of which were depicted in an 1897 map produced as marketing material by the newly chartered company (Figure 21, p. 62).[310]

The new company was spearheaded by Samuel Spencer (1847–1906), an engineer, banker, and experienced railroad executive who worked for J.P. Morgan's firm as it developed Richmond Terminal's reorganization plan.[311] Spencer would serve as the Southern Railway Company's President from 1894 until his untimely death in a railroad accident in 1906. Another experienced railroad executive at Southern in its early years was A.B. Andrews, former R&D Superintendent, who served as First Vice President of the company until 1915.[312] Building upon the R&D's connections and infrastructure, Southern saw great financial success, tripling its earnings from $17 million to $53 million during Spencer's tenure.[313]

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[305] Harrison 1901:36; Murray 2007:34–35, 38; Southern Railway Historical Association 2019. In December 1891, a committee was appointed to prepare a plan for reorganization of Richmond Terminal—what would become known as the Olcott Plan. Made public on March 16, 1892, it proposed assigning control of numerous Richmond Terminal railroads to a new company and the issuance of $170 million in consolidated mortgage bonds, but was rejected for favoring Richmond Terminal's stocks and bonds over underlying securities.
[306] Virginia General Assembly 1893:368–372.
[307] Harrison 1901:46, 107.
[308] Murray 2007:40.
[309] Ibid.:107–111. The R&D's property was officially conveyed to Southern in two deeds dated January 9, 1896, and August 30, 1897.
[310] Poor 1897:761–763.
[311] Samuel Spencer Papers.
[312] Southern Railway Company 1900:2.
[313] Brack 2021; Murray 2007:45.

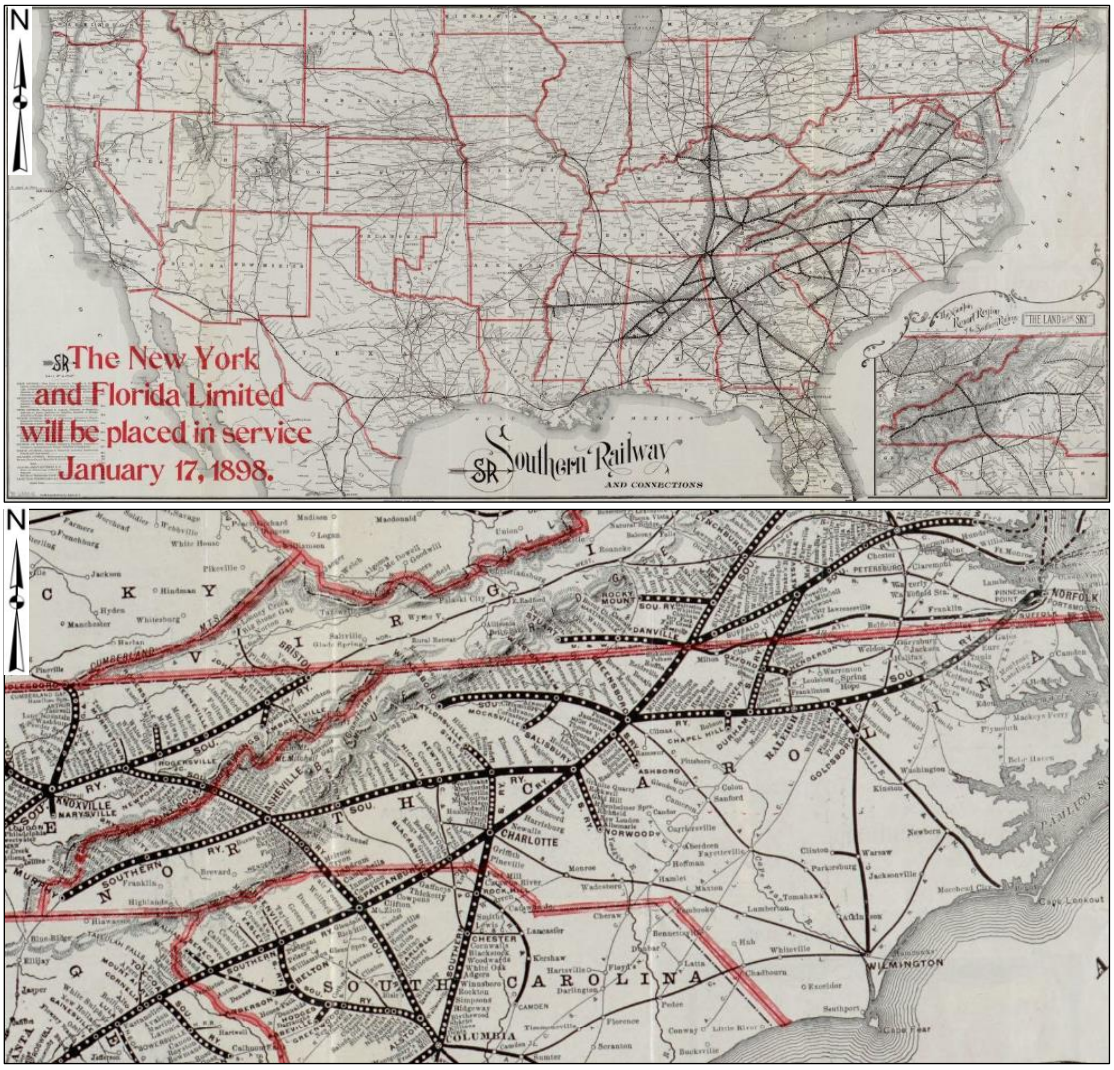


Figure 21: "Map of the United States showing relief by hachures, drainage, state boundaries, cities and towns, stations, named lines of railroads, and the [Southern Railway Company] railroad network with the main lines emphasized," Above Detail of Same Showing Southern's Network in North Carolina.[314] Not to scale.

One of the first major infrastructure projects Southern undertook was the construction of new shops for the company near the halfway point between Washington, D.C., and Atlanta, Georgia. Situated along the NCRR corridor in Rowan County, the steam locomotive facility later known as Spencer Shops opened in October 1896, and soon spawned the adjacent town of Spencer, North Carolina.[315] The company's 1897 Annual Report boasted that the "machine

[314] Southern Railway Company 1897.
[315] Paul 1977.

shop has ten tracks, and an average capacity of output of six to eight engines per month…"[316] This facility is the only preserved railroad shop complex in the country that was primarily constructed in the twentieth century. Listed in the National Register of Historic Places in 1978, Spencer Shops' 37-stall roundhouse and turntable were designated a Historic Mechanical Engineering Landmark in 2011 and have served as the centerpiece of the North Carolina Transportation Museum since 1980 (Figure 22).[317]



Figure 22: "Spencer Shops Roundhouse Circa 1945."[318]

Southern continued to expand its network into the twentieth century, acquiring and constructing new lines to increase its mileage from 4,654.3 in 1896 to 6,431.1 miles in 1900—roughly 1,344 of which were located in North Carolina where it dominated the western half of the state (Figure 23, p. 64).[319] They also expanded the type of assets it held in this period—embracing corporate partnerships with other regional rail systems and jointly holding stock in bridge-building companies with larger rail networks.[320]

[316] Southern Railway Company 1897:19.
[317] American Society of Mechanical Engineers 2011.
[318] American Society of Mechanical Engineers 2011; Paul 1977.
[319] Southern Railway Company 1900:16.
[320] Ibid. Examples include the Kentucky & Indiana Bridge and Railroad Company which Southern co-owned with the Baltimore & Ohio Southwestern Railroad Company and the Chicago, Indianapolis & Louisville Railway Company.

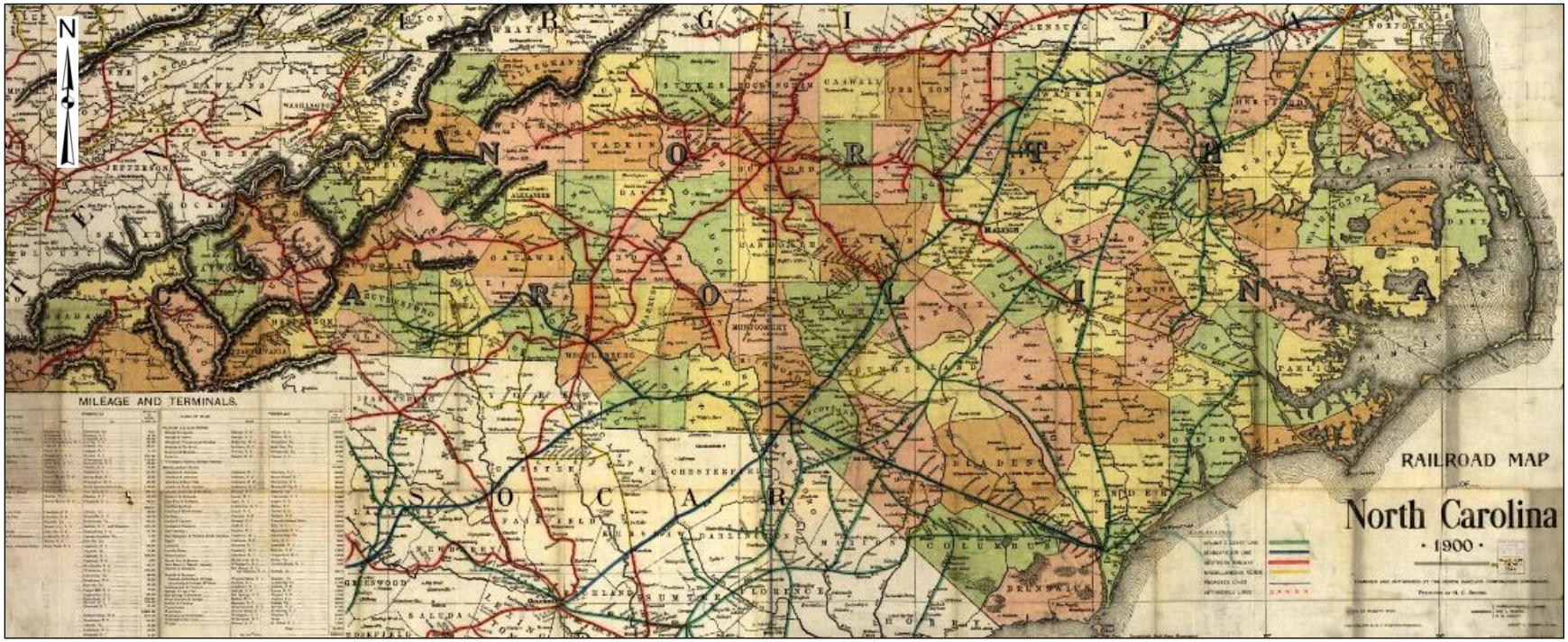


Figure 23: "Railroad map of North Carolina, 1900, examined and authorized by the North Carolina corporation commission," Showing Southern-Controlled Lines in Red.[321] The ACL was noted in green, SAL in blue, and Miscellaneous Roads in yellow. Image not to scale.

[321] Brown 1900.

By June 30, 1910, the total length of lines operated by Southern was 7,050.2 miles with about 1,464 miles in North Carolina (Table 2, p. 66).[322] Though much of its mileage was located outside the state in this early period of growth, Southern acquired some new lines through leases and cooperative trackage-rights agreements with companies like the Wilmington & Weldon Railroad and Atlantic Coast Line during the first decades of the twentieth century.[323] It also gained mileage in North Carolina by laying "belt lines" around busy urban centers and "double-tracking" the NCRR corridor between Greensboro and Charlotte, while simultaneously making substantial capital improvements—erecting new station buildings and freight houses, replacing wooden bridges with steel and concrete structures, and investing in new equipment like large-capacity freight cars and automatic block signals.[324]

Beyond internal infrastructure improvements, Southern also worked to develop commerce along its lines by promoting industrial and agricultural growth in its service territory. In conjunction with the company's top executives, M. V. Richards, Southern's land and immigration agent, led an aggressive campaign. The campaign involved surveying and marketing farmland in the railroad's service area to individuals and businesses for agricultural development and promoting economic expansion to livestock breeders, dairymen, and crop farmers by distributing booklets and propaganda identifying "The Railway as the Business Man's Partner."[325]

In North Carolina, Southern's network further benefited from the textile industry's migration south.[326] This phenomenon began in the 1880s and would bring major economic change to the state in the early-twentieth century.[327] The company's 1899 Annual Report observed that:

> The development of manufacturing industries in the South, and upon [Southern's] lines, continues to be very marked and encouraging. The greatest activity is in connection with the iron industry, and in the manufacture of textile fabrics, but there is also steady growth in diversified manufactures, including such articles as wagons, furniture, agricultural implements, brick and tiles, glassware, canned goods, leather etc. The most important development of recent years, however, is in the inauguration on a large and substantial scale of the manufacture of Southern iron into steel, by the open hearth or basic process.[328]

[322] Murray 2007:42; Poor 1911:521, 1924:176.
[323] Southern Railway Company 1895:6–8.
[324] Gilbert 1908:661; Murray 2007:50–51.
[325] Finley 1911; Murray 2007:44.
[326] Glass and Kress 2006. This movement was propelled by the passage of a law by the U.S. Congress designed to stimulate the southern cotton economy by eliminating federal taxes on manufacturers producing goods in the same district where the raw materials were grown.
[327] Murray 2007:44–45.
[328] Southern Railway 1899:13.

Table 2: Additional Lines Controlled, Leased, or Operated by Southern Railway Company in North Carolina Between 1894 and 1974.

Railroad Name	Chartered	Constructed	Path	Controlled, Leased, or Operated by Southern
Richmond & Danville	1847	N/A	Entire rail network after the fall of Richmond Terminal	1894
Norfolk & Carolina Railroad (with the Wilmington & Weldon Railroad)	1890	1890	Selma, NC to Pinner's Point, VA	1894
North Carolina Midland Railroad	1894	1894; 1899	Mocksville to Mooresville, NC	1894
Atlantic & Danville Railroad	1882	1885–1891	Portsmouth, VA to Danville, VA; passed through Person, Caswell, & Granville Co., NC	1897; 1899
Atlantic & Yadkin Railroad (previously the Cape Fear & Yadkin Valley Railroad)	1899	1860; 1884; 1888	Mt. Airy to Sanford, NC	1899
Carolina & North-Western Railway (previously the Chester & Lenoir Railroad)	1895	1897	Cheraw, SC to Lenoir, NC; extended to Edgemont, NC	1897; 1941
Tallulah Falls Railway	1898	1881–1907	Cornelia, GA to Franklin, NC	1904
Transylvania Railroad (previously Henderson and Brevard Railroad)	1889	1890–1891	Salisbury to Norwood, NC	1906
Asheville & Craggy Mountain Railroad	1889	1890; 1902	Asheville to Locust Gap at Craggy, NC	1906
Danville, Mocksville & Southern Railroad (acquired by Danville & Western in 1899)	1880	1880–1883	Leaksville Junction, VA on Danville & New Railroad to Leaksville (now Eden), NC	1907
Danville & Western Railway (previously Danville & New River)	1891	1880–1884	Stuart to Stokesland, VA; Stokesland to Danville, VA	1907
Atlantic & Eastern Carolina (created to lease/operate the Atlantic & North Carolina Railroad)	1939	N/A	Goldsboro to Morehead City, NC	1957
Atlantic & North Carolina Railroad	1852	1858	Goldsboro to Morehead City, NC	1957
Norfolk Southern Railroad/ Norfolk & Southern Railroad	1883; 1910	1881	Norfolk, VA to Raleigh, NC; extended to Charlotte, NC	1974

In 1906, after its prominent and popular first president, Samuel Spencer, died suddenly in a train wreck, Second-Vice President William W. Finley (1853–1913) assumed Southern's presidency and was promptly tested by the Panic of 1907 that nearly left the rail system in

bankruptcy.[329] It survived the crisis by severely cutting expenses to recover by 1908, along with much of the country, but efforts made during the panic prompted the company to further economize, resulting in a 7.8 percent decrease in overall operating expenses and 1.18 percent increase in operating revenue.[330]

High levels of operating efficiency would continue to be a top priority of the company when Reginald Fairfax Harrison (1869–1938) assumed the presidency around the start of World War I (WWI). The 1914 Annual Report documents the war's impacts to commerce:

> The effect upon businesses in the United States of the European war […] has been apparent in the revenues of the Company since the close of the fiscal year. The South particularly has been hard hit, for it is peculiarly dependent on the stability of the price and market for its cotton crop. While the tonnage of this staple represents a comparatively small percentage of the total tonnage hauled by the company, any disturbance which affects its sale has far reaching influence on business generally, as it limits the purchasing power of the producer.[331]

Operating expenses were reduced to prepare for an anticipated financial crisis during WWI, though matters were not helped when the U.S. Railroad Administration (USRA) assumed control of the nation's railroads in December 1917. Ton-miles increased by 58 percent between 1914 and 1918, but maintenance was deferred by the federal agency. Thus, when the railroad system was returned to the company in March 1920, Southern was left with millions of dollars in deferred maintenance. Additionally, expenses were up 111 percent under federal control, leaving Southern short on cash. Southern was denied "adequate compensation as provided by USRA's own formula [... which] would have awarded Southern more than $1.5 million per month" for the 26 months that it was under USRA control.[332]

Harrison served as a lawyer for Southern before becoming its third President in 1913, a position he would hold until 1937. He worked to reorganize the corporate structure of the company and reduced costs associated with keeping the books for a plethora of smaller companies to ensure Southern's financial stability throughout the paralyzing period of USRA control and enabled its rehabilitation and recovery in the decades that followed. [333]

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[329] Murray 2007:49.
[330] Ibid.:50.
[331] Ibid.:56–57.
[332] Ibid.:58. Murray cites Burke Davis' 1985 book, "The Southern Railway: Road of the Innovators," for much of this assessment.
[333] Ibid.:55–58.

Southern Railway Between the Wars

Post WWI, Southern spent the 1920s building and expanding facilities, replacing old machinery, and upgrading to higher-capacity freight cars. This work resolved much of the company's deferred maintenance after WWI and furthered the economic boom to industrial development in the south. Two-hundred and fifty new industries were established along Southern's lines in North Carolina, including steel and aluminum mills, chemical plants, and textile manufacturers. Increased demand for textile goods during WWI stimulated manufacturers growth and by 1923, "North Carolina had overtaken Massachusetts as the leading textile-producing state in the nation by (value of product)."[334]

Agricultural production also increased with tonnage of fruits and vegetables hauled rising 196 percent from 1905 to 1925, tobacco haulage rising 189 percent, and grain products increasing by 68 percent.[335] The movement of agricultural implements also increased 134 percent, while fertilizer traffic grew 80 percent. The company's work to promote agricultural and industrial development along its lines paid off. In 1926, Southern's ton-miles "exceeded those of any prior year, coming in at just over 9 million," though the Great Depression would soon bring that haulage streak to an end.[336]

The production and transportation of forest products, manufactured goods, mine products, and agricultural goods declined immensely during the Depression, forcing Southern to cut service and operating expenses. This included the elimination of numerous branch lines, sidetracks, stations, and shops. Southern faced bankruptcy when it suspended dividends to shareholders, but managed to register a small profit by 1936 and restructured its debt with the Reconstruction Finance Corporation (RFC) in 1938.[337]

Prior to the United States' entry into WWII, Southern had acquired a few diesel-powered trains, using the first diesel-electric locomotive as a switcher in 1925.[338] The company also added to its freight capacity using a $20 million loan from the RFC to buy nearly 9,000 new cars. These investments enabled Southern to pay off its debt to the RFC in the early 1940s and allowed its network to handle massive wartime traffic increases as freight traffic rose from 6,204 in 1938 to 15,009 in 1945.[339] In addition to the movement of petroleum, which was critical to the war effort, Southern moved troops to and from training camps and other posts, operating "nearly 16,000 troop trains carrying over six million service people" during the conflict.[340]

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[334] Glass and Kress 2006.
[335] Murray 2007:58.
[336] Ibid.
[337] Ibid.:62–63, 66.
[338] Norfolk Southern Corporation 2022a.
[339] Murray 2007:68–72.
[340] Ibid.:74.

Southern Railway After WWII

Industry in the South expanded again during WWII and industrial production was expected to continue at high levels post war. To offset the large increase in wages and material supply costs since 1940, Southern had to run heavier freight trains at faster speeds. Throughout this period, Southern modernized its fleet by transitioning to mostly diesel engines, installing Centralized Traffic Control, which improved signal and communication systems, and investing in bridge replacement, curve reduction, and other improvements. These investments paid off, the revenue ton per train average rising from 472 in 1940 to 618 in 1944 and 976 in 1951. Yet, while more efficient, operating expenses in 1951 were $177 million, a $30 million increase from 1944.[341]

Harry A. DeButts (1895–1983) was appointed Southern's President on January 1, 1952, and Dennis William (D.W.) "Bill" Brosnan (1903–1985) was appointed Vice President of Operations. DeButts and Brosnan were immediately faced with finding ways to generate funds to pay off Southern's immense debt ($65 million), which was due April 1, 1956. Brosnan was of the belief that the only way that Southern could survive was moving away from a reliance on people to machinery. While he made enemies with the labor unions, Southern's shops developed machines that improved efficiency and decreased operating expenses. "In the decade of DWB's vice-presidency (1952–1962), the number of Southern employees shrank from 37,000 to 18,000. But the result was solvency."[342]

Another means of improving train and yard operation efficiency was converting to diesel. By early 1953, Southern was the first major railroad in North America to be fully dieselized.[343] These efficiencies greatly improved Southern's financial situation. *Fortune* magazine ranked Southern eighth in 1959 for total revenues. Additionally, the railroad's operating ratio—operating expenses as a percent of revenue—from 1959 to 1963 averaged 69.4 percent, one of the lowest in the industry.[344] "In fact, Southern was one of the few roads to report better results in the second half of the decade than the first. But better operations alone couldn't curtail the [unregulated competition from] truckers…" In 1962, Brosnan succeeded DeButts to become the sixth president of Southern. "[Brosnan] fought back on several fronts. He sought lower rates for freight shipped in new 100-ton cars. He inaugurated unit coal trains, boosting locomotive and car utilization. And he planned to acquire railroads in the South with great industrial development potential and good on-line traffic."[345]

Efficiency was also improved with the introduction of the "Big John." Traditionally, grain was hauled by box cars fitted with corrugated barriers, or grain doors. These grain doors leaked air,

[341] Ibid.:75–84.
[342] Schaffer 2001.
[343] Murray 2007:85–92.
[344] Ibid.:97.
[345] National Railroad Hall of Fame 2021. Both Brosnan and Claytor, Jr. have been inducted into the National Railroad Hall of Fame.

which prohibited the movement of grain in high numbers. Southern decided to tackle this problem and developed the Big John, a 4,700 cubic foot, aluminum-covered hopper that could carry 100 tons of grain. The Big John changed the grain business, giving the Southern poultry industry, which had been small but growing, access to Midwestern grain.[346] Though it was developed during Brosnan's tenure, the federal government and ICC "denied Southern's bid to haul grain from the Midwest to the Southeast at half the boxcar rate," entangling this new technology in the court system for 15 years, before his successor, W. Graham Claytor, Jr., helped the company realize its potential.[347]

Throughout the second half of the twentieth century, Southern acquired new railroads and relinquished control over some older smaller lines that had become unprofitable (Figure 24, p. 71). Some acquisitions in North Carolina, however, were both old and small.

Between 1957 and 1958, the A&EC became a subsidiary of Southern, which leased the 96-mile line from Goldsboro to Morehead City, North Carolina.[348] Constructed as the A&NCRR with financial support from the North Carolina state legislature to link the NCRR and Wilmington & Weldon with the Atlantic Ocean near Beaufort, the A&NCRR was completed in 1858 (for more information on the A&NCRR's development, see *North Carolina Railroad*, p. 23). In 1939, the A&NCRR was leased to the A&EC, which continued to operate as a Southern subsidiary until the line was acquired by the NCRR in 1989.[349] Southern also came to lease and operate a 36-mile, government-owned railroad in North Carolina that provided access to Camp LeJeune, a U.S. Marine Corps base in North Carolina.[350]

On January 1, 1974, Southern Railway acquired the Norfolk Southern Railroad and its network, connecting Norfolk, Virginia, to Charlotte, North Carolina, that it operated as a subsidiary until Southern merged with the Norfolk & Western Railroad years later[351]. During that merger, the original Norfolk Southern Railroad was renamed the Carolina and Northwestern, allowing the two larger merging networks to form the new Norfolk Southern Corporation in January 1982.[352]

[346] Murray 2007:98–101.
[347] National Railroad Hall of Fame 2021.
[348] Murray 2007:105–109.
[349] Lewis 2018; NCRR 2020.
[350] Murray 2007:105–109.
[351] Borkowski 2008; Reisweber 2005.
[352] Murray 2007:137, 139.



Figure 24: Detail of Burns' 1952 Southern Railway System Map in North Carolina and Surrounding States.[353] Not to scale.

[353] Burns 2022.

The Original Norfolk Southern

The company that lent its namesake to the NS officially began as the Norfolk Southern Railroad Company (NSR), established in 1883 by a group of aspiring executives and stockholders at the Elizabeth City and Norfolk Carolina Railroad (EC&N). After falling into receivership in the late 1880s, the company emerged with a new name in 1891 as the Norfolk & Southern Railroad Company (N&SR). This entity would change names again after a 1906 merger to become the Norfolk and Southern Railway Company but, after struggling through another bankruptcy in the first decade of the twentieth century, reorganized for a second time as the Norfolk Southern Railroad Company on May 4, 1910.[354]

By the first quarter of the twentieth century, the NSR had created a network that linked seaports in Norfolk, Virginia, and numerous towns and coastal communities in eastern North Carolina, with major urban markets via rail connections at Goldsboro, Raleigh, Beaufort, and Fayetteville. A half century later in 1974, when the company was acquired by Southern, the NSR system encompassed more than 600 miles of track.[355]

Norfolk Southern Railroad's Predecessor Lines

The EC&N was chartered in 1870 to construct a line between its namesake cities. Construction began in 1880 and by May 1881 the 46-mile line was opened from what was briefly the town of Berkely, Virginia, before it was incorporated into the City of Norfolk in 1906, to Elizabeth City, North Carolina.[356] Months later in December 1881, the line was completed another 27 miles to Edenton, North Carolina—for a total of 76.8 miles.[357]

In February 1883, owners of the EC&N changed its name to suit their aspirations for southern expansion, becoming the NSR, which fell into bankruptcy six years later with Watson B. Dickerman of New York appointed as receiver.[358] In 1891, it emerged following a foreclosure sale as the N&SR, having expanded through consolidation with the Albemarle and Pantego Railroad—a 29.8-mile line constructed in 1890 from Mackey's Ferry via Pantego to Belhaven, North Carolina.[359]

Between 1899 and 1906, the N&SR purchased several railroads in the surrounding area, including electric streetcar lines and regional short lines (Table 3, p. 73). After it acquired the Washington and Plymouth Railroad in January 1904, the N&SR built a 10.5-mile connector between Mackey's Ferry and Plymouth to establish its 135-mile main line.[360] In the next two

[354] Reisweber 2005.
[355] Burns 2022.
[356] Lewis 2018; Reisweber 2005.
[357] Poor 1891:387.
[358] Borkowski 2008; Poor 1891:387.
[359] North Carolina Railroad Commission 1893:387–398.
[360] Reisweber 2005.

years, four more lines were added to the N&SR's network, creating a rail system that connected Norfolk to Raleigh "with branches to New Bern, Beaufort, Morehead City, Kinston, Goldsboro, Columbia, Oriental, and Belhaven," North Carolina.[361] This expansion, however, remained constrained by a slow ferry crossing over the Albemarle Sound, so the company soon began building a 5-mile-long, timber trestle bridge across the waterway (Figure 25, p. 75). "While this was under construction, the company again went into receivership in 1908, emerging as the second iteration of the NSR in May 1910. Work on the new trestle had continued during the receivership, however, and the first train across it ran on January 1st, 1910."[362] Completion of this trestle thus ended the need for any associated "carfloat ferry operations" from Edenton to Mackey, North Carolina, and served the company and its successors until it was removed circa 1987 (Figure 26, p. 76).[363] Additional improvements completed in 1910 included construction of a line from Raleigh to Chocowinity and the NSR's Pinetown and Bishop branches.[364]

Table 3: Lines Controlled, Leased, or Operated by NSR, N&SR, and NS in North Carolina Between 1891 and 1974.

Railroad Name	Chartered	Constructed	Path	Controlled, Leased, or Operated by NSR, N&SR, & NS
Norfolk Southern Railroad (previously Elizabeth City & Norfolk Railroad, chartered 1870)	1883; 1910	1881	Edenton, NC to Norfolk, VA	1891
Albemarle & Pantego Railroad	1890	1890	Mackey's Ferry to Belhaven, NC, via Pantego	1891
Jamestown & Washington Railroad	1869	1877–1885	Jamesville to Washington, NC	1894 (Abandoned in 1896)
Washington & Plymouth Railroad	1887	1887–1889; 1904	Washington to Plymouth, NC; ext. to Mackey's Ferry (a.k.a. Mackeys), NC	1904
Pamlico, Oriental & Western Railway	1891	1906	New Bern to Bayboro, NC, via Bridgeton	1906
Raleigh & Pamlico Sound Railroad (previously Raleigh & Eastern North Carolina Railroad)	1903	1906; 1910	Two lines: Washington to Bridgeton, NC, and Raleigh to Zebulon, NC	1906
Beaufort & Western Railroad	1905	1905	Beaufort to Morehead City, NC	1906
Virginia & Carolina Coast Railroad	1905	1906	Suffolk, VA to Edenton, NC	1906

[361] Ibid.
[362] Poor 1910:469; Reisweber 2005.
[363] Reisweber 2005.
[364] Lewis 2018.

Railroad Name	Chartered	Constructed	Path	Controlled, Leased, or Operated by NSR, N&SR, & NS
Atlantic & North Carolina Railroad	1852	1858	New Bern to Morehead City, NC	1904
Aberdeen & Asheboro Railroad	1893	1899	Aberdeen to Asheboro, NC	1911
Durham & Charlotte Railroad	1893	1896	Durham to Charlotte, NC	1911
Raleigh & Southport Railway	1905	1905	Caraleigh to Fayetteville, NC, via Lillington	1911
Sanford & Troy Railroad (previously the Egypt Railroad)	1909	1891; 1910	Colon to Cumnock, NC	1911
Raleigh, Charlotte & Southern Railway	1911	N/A	N/A	1911
Carthage & Pinehurst Railroad	1907	1907	Carthage to Pinehurst, NC	1911
Durham & South Carolina Railroad	1905	1906; 1913; 1925	Duncan to Durham, NC (now the New Hope Railroad); extension to Dunn, NC, via Varina	1920
Carolina Railroad (previously Kinston & Snow Hill Railroad)	1912	1908; 1913	Hines Junction near Kinston to Snow Hill, NC	1913

The NSR created the Raleigh, Charlotte, and Southern Railway Company (RC&S) in October 1911, as a subsidiary to consolidate four smaller lines that the NSR acquired by purchasing their entire capital stocks: the Aberdeen and Asheboro Railroad (A&A), Durham and Charlotte Railroad (D&C), the Raleigh and Southport Railway (R&S), and the Sanford and Troy Railroad (S&T).[365] The lease of the Carthage and Pinehurst Railroad, held by the A&A, was also transferred to the RC&S at this time.[366] The 1911 report of the North Carolina Corporate Commission noted four divisions within the RC&S: the A&A Division's lines connected Asheboro to Aberdeen, Candor to Ellerbe, Troy to Mt. Gilead, Carthage to Pinehurst, and West End to Jackson Springs; the D&C Division encompassed a line from Cumnock to Troy; the R&S Division included a line from Raleigh to Fayetteville; while the S&T Division connected Cumnock to Colon on a line built and previously owned by the Egypt Railroad.[367] By 1912, the RC&S controlled a total of about 228 miles of track in south-central North Carolina—all of which became part of the NSR when the company formally absorbed the RC&S between 1913

[365] Ibid.
[366] Ibid. Incorporated/chartered in 1907 and owned and operated by the Aberdeen and Asheboro Railroad. The line was completed from Carthage to Pinehurst, North Carolina, in 1907.
[367] Ibid.

and 1914.[368] Additional mileage to the NSR network came in 1916, after the company extended its main line west from Varina to reach Charlotte, North Carolina.[369]



Figure 25: Undated Historic Postcard Image of NSR Trestle over the Albemarle Sound from Mackeys to Edenton, North Carolina.[370]

By December 1920, total mileage operated by the NSR reached 944.2 miles.[371] This reflected new construction to extend several short lines acquired by the company. One of its most notable acquisitions at this time was the Durham and South Carolina Railroad (D&S)—a 42-mile line extending from Duncan to East Durham, North Carolina. This line was constructed between 1905 and 1906 as the New Hope Valley Railway to ship timber from land around New Hope Creek. After it was leased to the NSR in May 1920, the company extended it farther into the City of Durham in 1925 to connect with the N&W and gain freight traffic from the American Tobacco Company and its Durham-based textile business.[372]

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[368] Lewis 2018; Poor 1914:735.
[369] Burns 2022.
[370] Origin unknown. Electronic image, http://photos.wikimapia.org/p/00/00/93/37/41_big.jpg, accessed June 2022.
[371] Poor 1921:2007–2008. New NSR subsidiaries included the Kinston Carolina Railroad and Carolina Railroads, controlled as majority stockholder. In 1920, Norfolk Southern began construction on a new railroad from Wenona, North Carolina, a point on the Belhaven Branch, to New Holland, North Carolina on Lake Mattamuskeet (34 miles).
[372] Burns 2022; Coleman 2008; Poor 1920:1944.

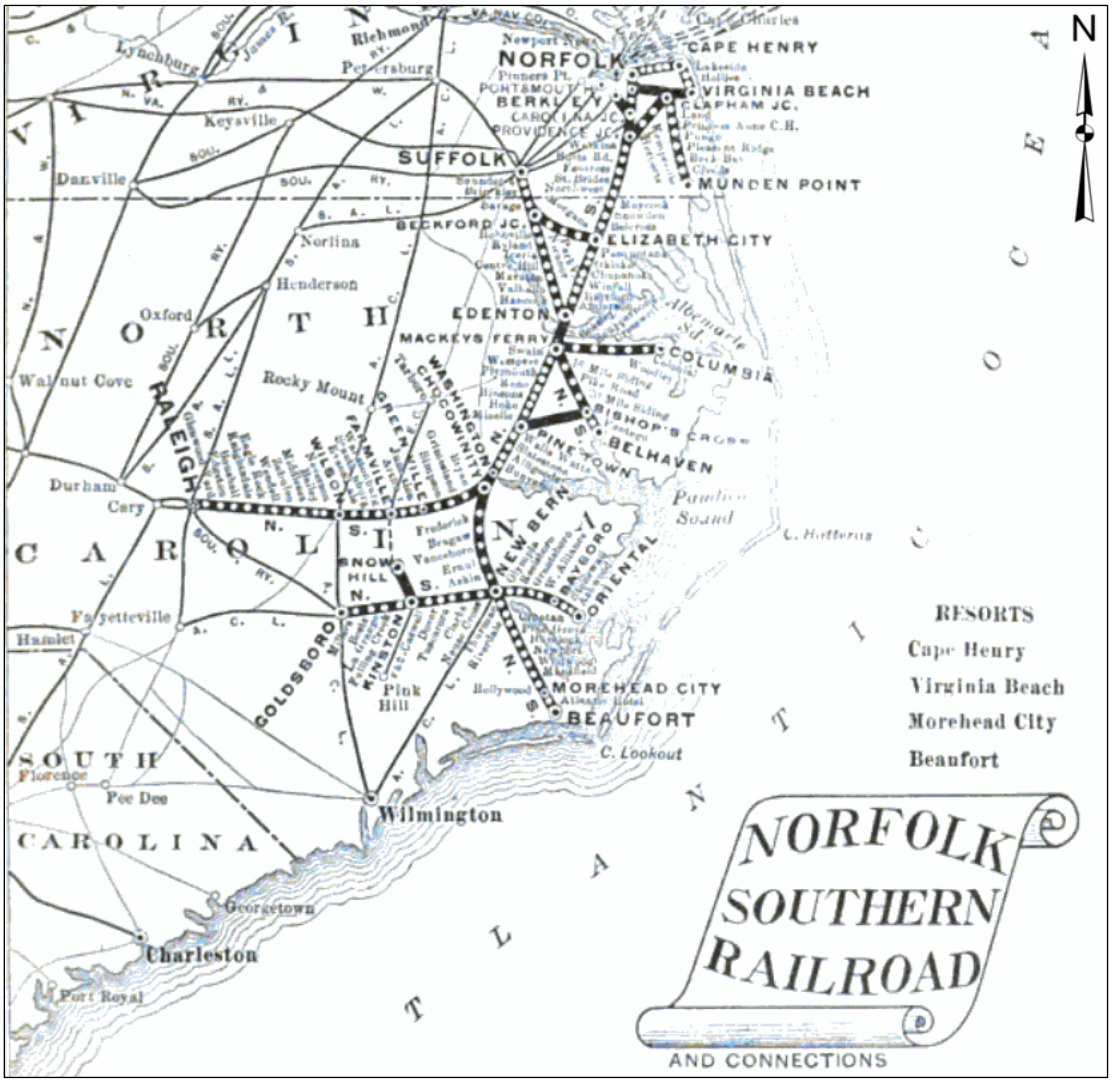


Figure 26: Map of Norfolk Southern Railroad and Connections Circa 1910.[373]
Image not to scale.

The 1930s, however, were a difficult decade for the NSR following the Great Depression. In 1932, a receiver was appointed and in the following decade numerous branches were closed or sold.[374] Branches abandoned included those to Suffolk, Columbia, Oriental, Asheboro, Ellerbe, Carthage, and Jackson Springs. The NSR defaulted on its lease of the A&NC from Morehead

[373] Poor 1910:467.
[374] Coleman 2008.

City to Goldsboro in 1932 and ceased operations on the line in 1935, abandoning other leases on lines from Beaufort and Kinston, North Carolina, in this period as well.[375]

The NSR remained solvent, however, and rebounded during WWII when it changed names once more to become the Norfolk Southern Railway on January 21, 1942.[376] Despite some modest acquisitions in the 1950s, the NSR's mileage fell from 870 miles in 1951 to 623 miles in 1969 (Figure 27, p. 78).[377] Five years later, the company was purchased by Southern and later absorbed into the NS system. While many of the NSR's short lines no longer provide service, a 5-mile section of the New Hope Railway identified as a heritage line is operated by the non-profit North Carolina Railway Museum between Bonsal and New Hill, North Carolina.

Norfolk & Western Railway (N&W)

Prior to the 1890s, the N&W's predecessor lines were concentrated in the Commonwealth of Virginia. These lines, which included the City Point, Southside, Virginia and Tennessee, and Norfolk and Petersburg railroads, were chartered as early as 1835 but did not cross into North Carolina until 1892. However, prior to describing N&W's presence in North Carolina, a basic understanding of the development of the road and its predecessor lines outside of the state is necessary.

Brief Review of N&W Predecessor Lines Outside of North Carolina

The City Point Railroad, a 9-mile line charted in 1835, is N&W's oldest predecessor line. It ran from City Point, a port on the James River, to Petersburg, Virginia, and opened in September 1839. The railroad fell into debt and in 1847 the City of Petersburg purchased the railroad, renaming it the Appomattox Railroad.[378]

The Southside Railroad was chartered in 1846 to construct a line from Petersburg to a point east of Black's and White's Tavern (now Blackstone), Virginia. In 1849, the Petersburg and Lynchburg Railroad was charted to link Petersburg and Lynchburg, Virginia. The charter of this railroad was consolidated with that of Southside in 1850.[379] In 1854, the same year that the Southside Railroad purchased the Appomattox Railroad, the Southside opened to freight traffic.[380]

[375] Reisweber 2005.
[376] Coleman 2008.
[377] Burns 2022. The NSR formally absorbed the D&S in 1957.
[378] Striplin 1981:5–6.
[379] Ibid.:25.
[380] Poor 1881:358.

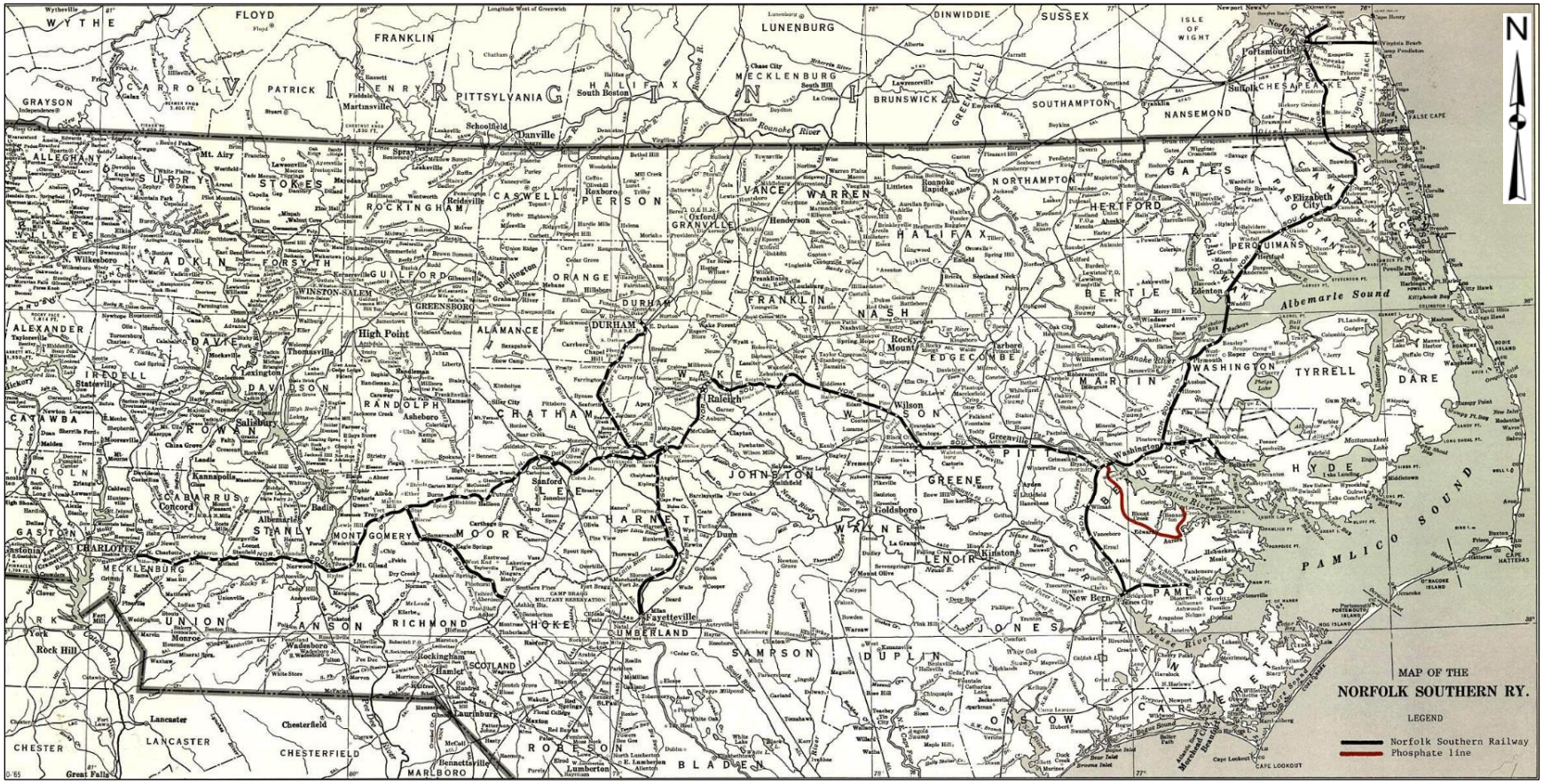


Figure 27: "Map of the Norfolk Southern Railway," Published in October 1965.[381] Not to scale.

[381] Norfolk Southern Railroad Company 1965.

The Norfolk and Petersburg Railroad connected with the Southside at Petersburg, Virginia.[382] This railroad, which extended between the two cities of its name, was chartered in 1851. The initial charter, which had been submitted to the General Assembly in 1849, was for the development of a railroad named Norfolk & Western Railroad. The charter, however, was not approved. Under a new charter, the Norfolk and Petersburg was completed in September 1858.[383]

The last early predecessor line, the Virginia and Tennessee Railroad, was charted in 1849 to connect Bristol with Lynchburg, the western terminal of the Southside Railroad. Initially, the railroad was to be named the Lynchburg and Tennessee, but the 1836 charter was not acted upon. Under a new charter, the 204-mile main line was completed by 1856, and by 1857 it was open to traffic.[384]

The Formation and Fall of the Atlantic, Mississippi and Ohio Railroad (AM&O)

After the Civil War, the railroads were restored under the leadership of Major General William Mahone (note that after the war, the Commonwealth of Virginia was governed by the Federal Army for five years). Mahone first assumed the position of Chief Executive of the Norfolk and Petersburg and several months later he was elected president of the Southside Railroad Company. By 1867, Mahone and his backers controlled a substantial amount of the Virginia and Tennessee Railroad Company's stock. Mahone and other investors sought to consolidate the three lines because Northern railroads, such as the B&O, were expanding into the South.[385]

On April 18, 1867, after many a heated hearing, the General Assembly passed the Southside Consolidation Act, which authorized the consolidation of the three railroads. The Act also called for the construction of the Virginia and Kentucky Railroad—a line from Bristol, Tennessee, to Cumberland Gap, Kentucky—and a branch line on the Virginia and Tennessee from the Central Depot (Radford) northward toward the Greenbrier River's mouth on the West Virginia line.[386] In 1870, the consolidated railroad was named the Atlantic, Mississippi and Ohio Railroad (AM&O). Mahone was elected president of the AM&O and served in the position for 10 years.[387]

A nationwide financial crisis in 1873 resulted in the AM&O being unable pay the interest charges on its debts, which it owed to an English financial group that had bought a first mortgage on the AM&O in 1871 for a total of $5.5 million. Despite cutbacks in employment, maintenance and purchases, and salaries, the AM&O defaulted in 1874 on the interest payment

[382] Shufflebarger 1958:55.
[383] Striplin 1981:25.
[384] Poor 1868:159, 1881:358; Striplin 1981:32–33.
[385] Striplin 1981:43–45.
[386] Poor 1871:333; Striplin 1981:47.
[387] Harris 2003; Striplin 1981:48.

of its bonds. The following year, the railroad was placed under receivership.[388] Mahone tried to form a new company to purchase the railroad, which was placed under foreclosure in May 1880, but his efforts failed. In February 1881, the AM&O was sold to Clarence E.W. Clark of the E.W. Clarke Company, a private banking firm in Philadelphia, Pennsylvania.[389] On May 3, 1881, the N&W was organized from the AM&O.[390]

The Formation of the Norfolk and Western Railroad (N&W Railroad)

The N&W Railroad, as of 1881, operated a total of 428 miles, none of which were in the state of North Carolina at this point. The main line from Norfolk, Virginia, to Bristol, Tennessee, was 408 miles while the City Point Branch from Petersburg to City Point, Virginia, was 10 miles and the Saltville Branch from Glade Spring to Saltville, Virginia, was 10 miles.[391] The N&W was primarily an agricultural line with cotton as the chief revenue source.[392]

The N&W Railroad continued to acquire lines outside of North Carolina and enter into traffic agreements and create branch lines in other states. Many of these lines gave the company access to the coal mines in the Flat Top Coal Region of Virginia and West Virginia.[393] Major acquisitions in 1890 included the Shenandoah Valley Railroad (238.1 miles) and the Scioto Valley and New England Railroad (128.6 miles).[394] These lines, and the extension of others, brought N&W Railroad's mileage to 1,099.8 miles by the end of 1890.[395] By 1893, N&W Railroad had been transformed from a Southern agricultural railroad into a Midwestern coal hauler system where coal tonnage increased from 4,735 tons in 1882 to 2,869,215 tons in 1893.[396]

Leasing the Lynchburg & Durham Railroad (L&D) and the Roanoke & Southern Railway (R&SRW) and the N&W's Entrance into North Carolina

In 1892, N&W Railroad assumed operation of the L&D under a lease, bringing the system into North Carolina. The 115-mile railroad was chartered in 1887 and completed in 1888, connecting Lynchburg, Virginia, to Durham, North Carolina, through the counties Person and Durham.[397] The L&D was formed from the merger of three previously chartered companies: the Lynchburg, Halifax, and North Carolina Railroad of Virginia, the Roxboro Railroad of North Carolina, and the Durham and Roxboro Railroad of North Carolina in 1887 (Table

[388] Poor 1882:375; Striplin 1981:53–54.
[389] Striplin 1981:58.
[390] McKinney 2014; Poor 1881:358.
[391] Poor 1881:358.
[392] Striplin 1981:66.
[393] Poor 1881:358, 1883:406, 1885:385, 1886:397.
[394] Poor 1891:806, 1894:594; Striplin 91–92.
[395] Poor 1891:806.
[396] Poor 1893:854, 1894:594; Striplin 1981:113, 115.
[397] North Carolina Board of Railroad Commissioners 1893:400.

4, p. 81). None of these companies were able to fund the construction of any track prior to their consolidation within the L&D; by 1888, a line was completed from Lynchburg to Rustburg and onto South Boston, Virginia, by 1889.[398] In 1890, the L&D reached its destination at Durham, North Carolina. In 1896, the railroad was absorbed into N&W Railroad.[399] Of its total mileage, approximately 43.4 miles were in North Carolina (Figure 28, p. 82).[400]

Table 4: Chartered Lines Consolidated into the L&D in 1887.[401]

Railroad Name	Chartered/ Incorporated	Intended Path
Roxboro Railroad	1881	Roxboro to TBD
Lynchburg, Halifax and North Carolina Railroad	1884	Lynchburg to VA/NC State Line
Durham and Roxboro Railroad	1885	Durham to Roxboro, NC

Also, in 1892, N&W Railroad assumed a lease for the R&S, a 121.3-mile line from Roanoke, Virginia to Winston-Salem, North Carolina, constructed in 1891.[402] The R&S was organized in Virginia and North Carolina in 1887 and reached Martinsville, North Carolina, by 1891. The line was partially funded by the City of Roanoke in hopes they would benefit from the business generated by a link to North Carolina's Piedmont.[403] The first portion constructed was in North Carolina between Winston-Salem and Martinsville, while the portion in Virginia was relatively more difficult to construct due to challenging grades of the Blue Ridge Mountains; however, they tried to follow rivers and valleys to minimize this effort.[404] The entire line was in operation by 1892 and absorbed into N&W Railroad in 1896, after the company's mortgage fell into foreclosure.[405] It was reorganized as the Norfolk, Roanoke, and Southern Railroad Company and leased by N&W Railroad. Of its total mileage, approximately 47 miles were in North Carolina (Figure 29, p. 83).[406]

The president of the L&D at the time, F.J. Kimball, who worked out of the Philadelphia office, continued a quest south.[407] Through the acquisition of new railroads and the extension of existing lines, the mileage of the railroad increased significantly, rising from 599.4 miles in 1889 to 1,099 miles in 1890 and from 1,566.5 miles in 1893 to 1,570.4 miles in 1898.[408] In

[398] Helvestine 1930.
[399] North Carolina Board of Railroad Commissioners 1892:495; Striplin 1981:100.
[400] North Carolina Board of Railroad Commissioners 1892:497.
[401] Lewis 2018.
[402] Poor 1892:820.
[403] Grymes 2020.
[404] Ibid.
[405] North Carolina Board of Railroad Commissioners 1892:543; Striplin 1981:100–101.
[406] Coleman 2008.
[407] North Carolina Board of Railroad Commissioners 1893:400.
[408] Poor 1889:589, 1891:806, 1894:594, 1897:567.

1893, approximately 87.31 miles were in the State of North Carolina.[409] Also, from 1881 to 1893, the operating ratio, which is used to determine efficiency by comparing operating expenses and net sales, increased from 51 percent to 72 percent. So, while N&W Railroad's earnings had increased from $2.26 million in 1881 to $10 million in 1893, expenses had increased from $1.1 million in 1881 to $7.2 million in 1893. The railroad found itself in debt, a large amount of which was due to the Ohio Extension, and it fell under receivership in 1896.[410]

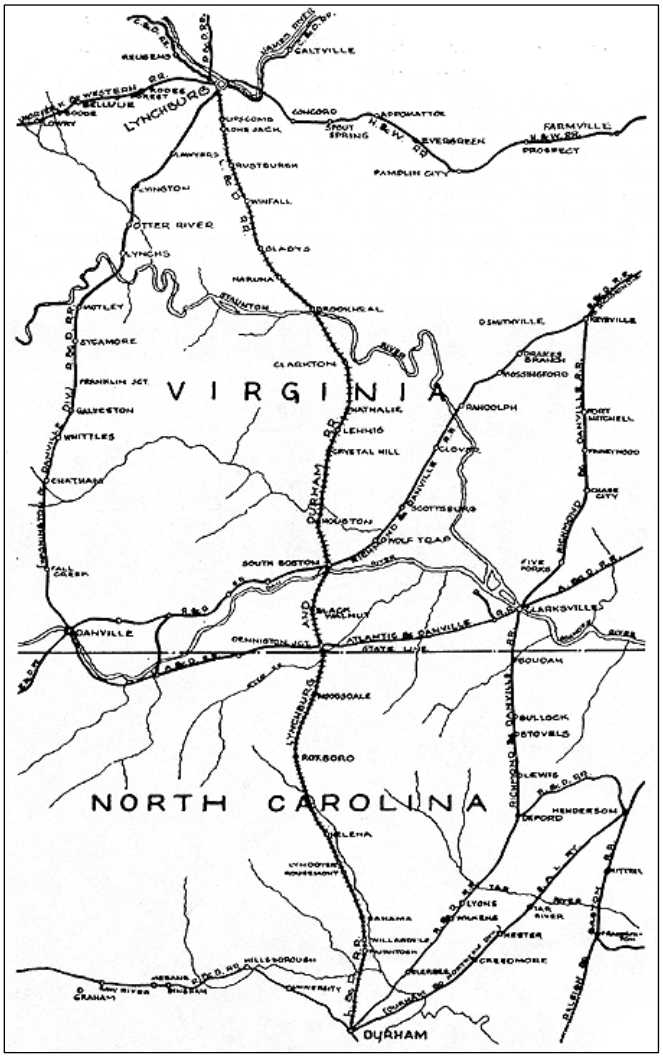


Figure 28: Undated Sketch Map of the L&D.[411]

[409] North Carolina Board of Railroad Commissioners 1893:401.
[410] Striplin 1981:113–114.
[411] Helvestine 1930.

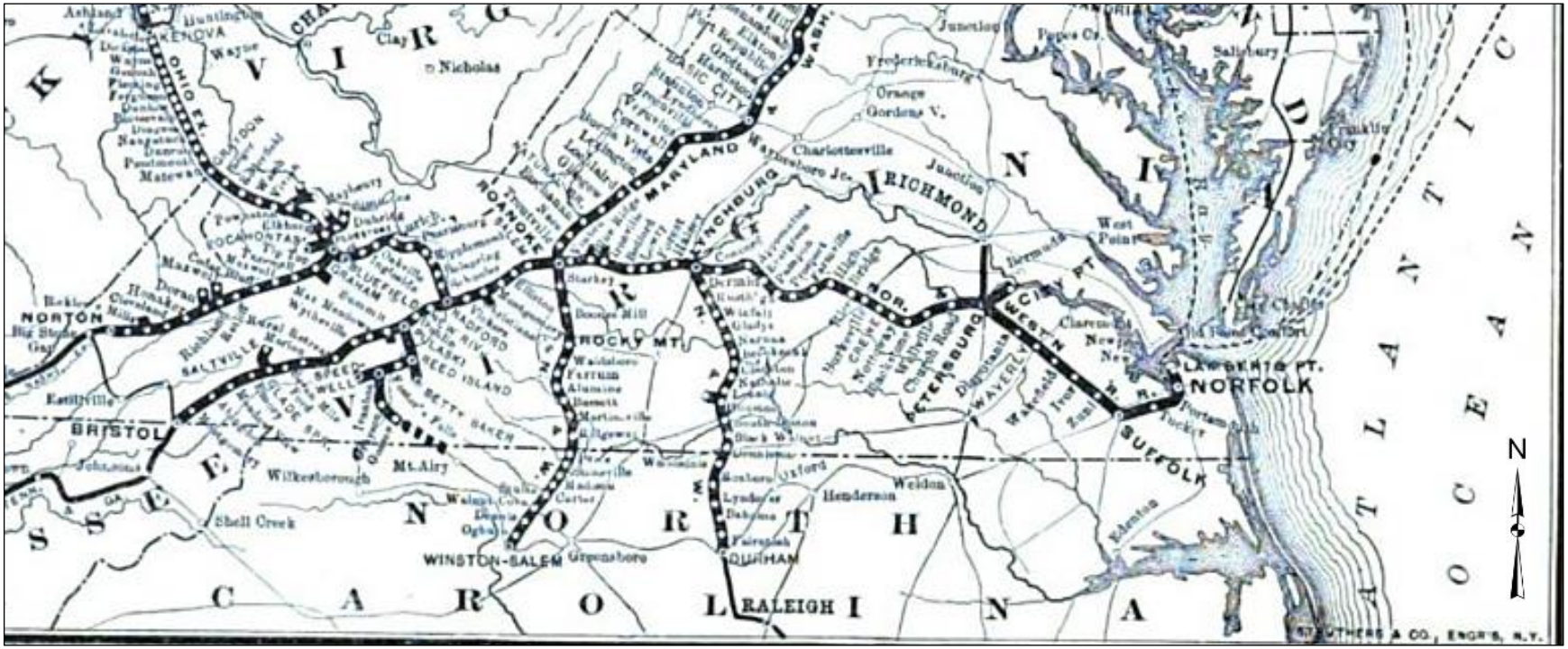


Figure 29: 1892 Map of N&W and Its Connections.[412] Note that two branches of the system have entered into North Carolina. Not to scale.

[412] Poor 1892:821.

Reorganization into the Norfolk & Western Railway Company (N&W) and New Acquisitions

While the state's railroads were just about to enter the period of *Efficiency in the First Half of the Twentieth Century (1901–1945)*, the N&W Railroad developed a reorganization plan in March 1896. Meanwhile, the main line of the railroad as well as its Durham and Shenandoah Valley divisions were sold under foreclosure in September 1896 and transferred to the newly reorganized railroad, the N&W Railway, and by 1898, other lines and divisions followed suit. At this time, the N&W Railway continued to expand into the Midwest; however, it primarily increased in mileage due to the development and acquisition of branch lines and smaller railroads that connected the railway with the coal mines, limestone quarries, and ore mines of Virginia and West Virginia.

During this period, some lines were purchased in North Carolina.[413] In 1909, N&W purchased one half of the interest in the Winston-Salem Southbound (WSSB) (chartered 1905 and completed in 1910), while the other half was purchased by the Atlantic Coast Line (ACL). The line, which operated independently, which would connect with railway at or near Wadesboro, North Carolina, a distance of approximately 87 miles and servicing the industries in the central Piedmont counties of Forsyth, Davidson, Stanly, and Anson (Figure 30, p. 85).[414]

Another line of note acquired during this period is the Virginia-Carolina Railway, which N&W Railway purchased a minority stock interest of in 1916. This railroad was chartered in the early 1890s as the Abingdon Coal and Iron Company Railroad and stretched 56 miles southeast from Abingdon and eventually reached Todd in Ashe County, North Carolina.[415] In 1900, the line was reorganized as the Virginia-Carolina Railway and was extended 16 miles in Virginia. After the partial acquisition in 1916, the N&W Railway financed an extension of the railroad from Creek Junction toward the North Carolina line across White Top Mountain at the meeting point of Virginia, North Carolina, and Tennessee.

By 1914, the railroad reached Todd, about 75 miles from Abingdon.[416] In 1919, the railway was deeded to N&W Railway and they began operating the railroad as the Abingdon Branch. Twenty-two of the 76 total miles of the line were located in North Carolina and operations ceased in 1977 when portions of the line were destroyed by flooding.[417]

[413] Ibid. 1902:222, 1903:232–233, 237.
[414] Poor 1897:567–568, 1910:472, 474; Railway Association of North Carolina 2020.
[415] Lewis 2018.
[416] Poor 1917:132; Striplin 1981:101–102.
[417] E.S.C. 1953:143; Lewis 2018.

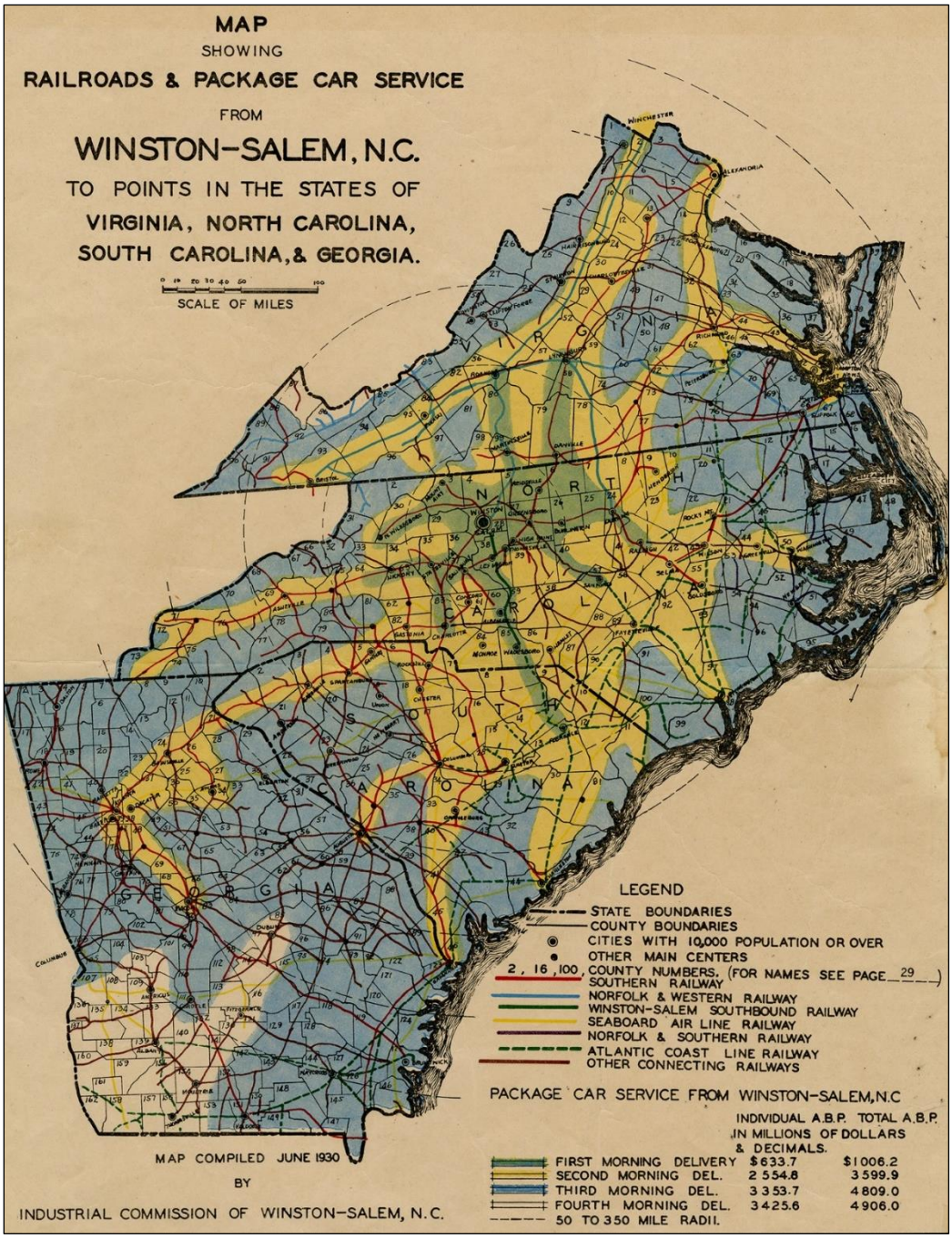


Figure 30: 1930 Map of Railroads and Package Car Service from Winston-Salem That Includes N&W as well as WSSB.[418]

[418] Industrial Commission of Winston-Salem, N.C. 1930.

It is important to note that during this period the railroad was under the control of the federal government after it fell into receivership. In late 1917, the federal government assumed control of all railroads for use in the war efforts during WWI.[419] Railroads retained full operating rights under federal control and received an annual compensation that was equal to the average three years prior. N&W Railway's heavy coal traffic meant that the railroad received a substantial income—$20 million dollars annually—while other railroads did not fare as well. Post war, the condition of the N&W Railway was better than most. However, in 1919, N&W Railway's operating ratio rose to 83.2 percent and its return on investment dropped to 3.2 percent (it had averaged 5.5 percent years prior).[420]

The Return to Private Control and Finding Success Through Transferring Coal

Almost two years after the end of WWI, the N&W Railway was returned to private control in 1920. During the next decade, there were no major acquisitions. The system solidified its position as a major coal carrier and worked on improving efficiency by cutting staff and transportation costs and reducing maintenance and equipment costs.[421] The efficiency measures taken by the N&W Railway in the 1920s allowed the railroad to fare better than most during the Great Depression. Additionally, coal, which the railroad primarily transported, was a necessary commodity, so transportation could not be postponed like other goods. Although the 1930s brought some struggle for the rail system, 31 percent of the nation's mileage in railroads was in bankruptcy. So, in comparison, N&W Railway was faring better than most. Furthermore, while N&W Railway did abandon branch lines in other states, it continued to open new branches. Meanwhile, nationwide, over 15,000 miles of railroad was abandoned in the 1930s.[422]The next crisis that the railroad faced was WWII. However, unlike WWI, railroad companies nationwide maintained control of their lines. N&W Railway transported troops and wartime goods and continued to carry a significant amount of coal. Coal tonnage transported up the Shenandoah Line for northern delivery increased significantly because of a submarine threat off the Atlantic Coast and the Navy's requisitioning of coal carrying seacraft. The tracks on the Shenandoah Line were soon double tracked to support increased freight movement along the line. Between 1942 and 1945, the Shenandoah Line transported about 17 million tons of coal, or 287,000 carloads, which was notably higher than the normal traffic load carried by the remainder of the N&W Railway lines.[423] The system also became an important carrier for highly important defense installations. By the end of the war, the railway had delivered 165,859 carloads of freight to these installations and received more than 43,573 carloads.[424]

The N&W Railway moved the largest traffic volume in its history in 1944 and operating revenues reached $159.5 million. By the following year, however, the war was winding down and revenues

[419] Striplin 1981:144–147.
[420] Ibid.:144–147.
[421] Ibid.:151–152.
[422] Ibid.:164–169.
[423] Ibid. 1981:179–182.
[424] Ibid.:184.

had dropped nine percent while operating expenses were up 10.2 percent from the year prior. Throughout the rest of the 1940s, the N&W Railway fought employee demands for higher wages and fringe benefits, faced numerous strikes and walkouts in the coal mines, and a drop in traffic as the national economy recovered from the war. To offset continually rising wages and material costs, N&W Railway enhanced its overall efficiency and spent $114 million on improvements, such as the mechanization of maintenance work.[425]

Surviving the Decline of Coal and Triggering the Mid-Twentieth-Century Merger Movement

During the 1950s, N&W Railway continued to face labor union demands and a decline in coal traffic. Despite these troubles, the 1950s were an overall good decade for the railroad even though operating expenses rose from steel and coal mine strikes.[426] Increasingly, the markets along the east coast were shifting from coal to the export of cheap residual fuel, oil, and gas. Also, in the commercial markets, the sale of natural gas was increasing. The situation improved by 1955 when freight traffic for the N&W Railway rose 25 percent and earnings reached $223 million, an all-time high.[427]

During this period, two railroads were purchased by the N&W Railway in the 1950s. In 1952, they acquired the 54-mile Chesapeake and Western, which served Virginia.[428] In 1959, the ICC approved the Virginian Railway (VGN), an Appalachian coal-hauler and N&W Railway merger, which is credited with kicking off the modern merger movement.[429] The VGN had been a longtime rival of the N&W in the Pocahontas region, and in the early 1950s, over 80 percent of its tonnage was coal.[430] The line's creation is credited to Henry Huttleston Rogers, a former executive for the John D. Rockefeller Standard Oil Company, and later focused on coal, copper, oil, and railroad investing.[431] No railroads with mileage in the state of North Carolina were acquired.

The 1960s was a prosperous decade for N&W, though again, no mileage was acquired in North Carolina. However, they did acquire several other major lines during this decade as well as an attempt at a merger with an expansive system. In 1961, the N&W Railway purchased the Atlantic & Danville Railroad (A&D), a 205-mile line from the Norfolk area to Danville, Virginia, where it connected with Southern Railway (Southern). Southern leased this line between 1899 until 1949 and operated independently until it went bankrupt in 1962. After N&W Railway acquired the A&D, they reorganized as the Norfolk, Franklin & Danville. In 1964, they purchased several lines extending west and north transforming the primarily regional coal hauler system into an eastern merchandise traffic system. [432] Merchandise traffic in 1964 accounted for 58 percent of the

[425] Ibid.:184–186, 191.
[426] Ibid.:213.
[427] Ibid.:215, 217.
[428] Ibid.:215.
[429] Ibid.:223–224.
[430] Beckett 2014:15; Striplin 1981:224.
[431] The Norfolk & Western Historical Society (N&WHS) n.d.
[432] Borkowski 2008; Nickel Plate Road Historical & Technical Society 2021.

railroad's revenue, as compared to 30 percent in 1963.[433] In August 1965, N&W and Chesapeake and Ohio (C&O) announced their plans to merge. The plan also proposed the creation of Dereco, Inc., a N&W and C&O subsidiary which would acquire many lines in Mid-Atlantic states.[434] These efforts brought N&W Railway's total mileage to 11,757.[435] The N&W Railway and C&O merger was never finalized.[436]

The N&W took its time with dieselization during this period in order to let other railroads make, and learn from, their mistakes. They also avoided massive purchases of new diesel engines as they acquired them from other lines that they leased, merged, or purchased. They continued running steam engines until the early 1960s.[437]

Throughout the 1970s, N&W's[438] financial situation fluctuated. In 1974, the railway's net income reached a record high of $113.2 million. Coal was not the primary product shipped any longer; rather, motor vehicles, metal, and chemical shipments were strong. The following year, N&W, along with the rest of the country, faced "an economic decline unprecedented since the 1930s."[439] The company's net income dropped to $87.5 million and the operating ratio rose to 71.8 percent. The financial situation improved the following year, N&W's net income rising to $131.5 million and the operating ratio dropping to 68.3 percent, the lowest operating ratio since 1966.[440] In 1982, Southern Railway and N&W received final government approval to be "merged into a 21-state freight railroad enterprise that will be the most profitable corporation in America's transportation industry."[441]

Norfolk Southern (NS) Corporation

Southern Railway (Southern) and N&W initiated consolidation talks in April 1979. These talks were likely spurred by the impending merger of Seaboard Coast Line, Southern's biggest competitor, and the Chessie system, N&W's biggest competitor. The merging of these two lines into CSX Corporation in 1980 brought that rail system's mileage to 27,000 miles and linked the South with northern industries from Philadelphia to Chicago. Thus, in a defensive maneuver, Southern and NW filed a formal merger application with the ICC in December 1980.[442] On March 25, 1982, the ICC approved the merger because, as ICC Chairman Reese Taylor Jr. explained,

[433] Striplin 1981:327.
[434] Ibid.:329–330, 335.
[435] Ibid.:336.
[436] Ibid.:317.
[437] N&WHS n.d.
[438] Striplin 1981:354.
[439] Ibid.:361.
[440] Ibid.:361.
[441] Jones 1982.
[442] Friedlein 1982:D; Striplin 1981:375.

"The consolidation should meet a growing demand for regional rail transportation service between the East, Midwest, and Southeast."[443]

Initially, the larger corporation formed from this merger was to be called NWS Enterprises, Inc.; however, due to the "rich heritage evoked by the existing names of the two railroads" and the fact that Southern had purchased the original Norfolk Southern Railroad and its network, executives decided to call the new company the Norfolk Southern Corporation (NS).[444] At its inception, NS owned about 18,000 miles of road across 21 states and the District of Columbia—making it the fourth-largest railroad system in the country (the three larger railroads were Burlington Northern, CSX, and Conrail).[445]

Southern and N&W continued to operate independently as subsidiaries of their holding company, NS. Their sales forces, however, were combined and operations at 10 of 17 points where lines under NS control interconnected became jointly managed. These points of intersection included important network hubs at Durham and Winston-Salem, where joint operations enabled more direct routing of traffic and created a savings of more than $71 million within three years.[446] Other benefits of the merger included extending grain shipments to Southeast cattle and poultry farmers, potentially easing "distribution of Appalachian coal to the region's electric utilities and to export docks near Norfolk…[and improving] movement of supplies and finished materials between the Midwest's heavy industries and automobile markets and Southeastern manufacturers of textiles and other goods."[447]

Southern Railway's lease of the NCRR from Goldsboro to Salisbury was transferred to NS in 1982.[448] In 1999, NS and NCRR reached an agreement that gave NS exclusive traffic rights to continue freight and maintenance operations on the line. That agreement was set for a period of 15 years with a renewable option for an additional 30 years. NS operated its own rolling stock and used its own crews over the line.[449]

The NS system grew after it gained control over Conrail in 1996. Trackage acquired by NS from the Conrail merger was mostly part of the monolith that was the Pennsylvania Railroad (PR). Chartered in 1846, the PR operated 11,640.7 miles by the end of 1926 and was one of the largest railroads and transportation enterprises in the world. In 1968, the PR merged with the New York Central Railroad and the New York, New Haven, and Hartford Railroad in 1969 to become the Penn Central Transportation Company (Penn Central).[450] But just a year later in 1970, Penn Central filed for bankruptcy, and in 1972 the federal government stepped in to save one of the country's largest railroads under the United States Railway Association to help establish the Consolidated

[443] Koza 1982:17A.
[444] Borkowski 2008.
[445] Friedlein 1982:5D; Koza 1982:17A.
[446] Ibid.
[447] Friedlein 1982:D.
[448] Coleman 2008.
[449] North Carolina Railroad Company 2022.
[450] Churella 2012; Paige 1989; Schotter 1927.

Rail Corporation (Conrail) in April 1976 to take over Penn Central and several other struggling lines associated with the system.[451]

CSX had been in talks with Conrail, but NS's counteroffer was seen as both tactical and critical to the corporation's survival as a CSX-Conrail merger would have threatened NS's share in eastern markets. After an intense bidding war, the deal Conrail struck with NS allowed it to obtain 58 percent of the railroad while CSX acquired the remaining 42 percent. On June 1, 1999, NS assumed control of 7,200 miles of Conrail lines, nearly doubling the size of its network—supporting an increase in annual revenues for the corporation, from $6.2 billion in 2000 to $9.4 billion in 2006.[452]

Norfolk Southern's Divisional Structure

Following the 1982 merger, the Transportation Department of NS was divided into three broad geographical regions that were further broken down into 11 divisions. Regional boundaries and division names have since been altered; however, a majority of NS lines in North Carolina remain within the same divisional category—what was initially known as the Piedmont Division (now part of the larger Blue Ridge Division)[453] The Piedmont Division contained a main line stretching from Washington, D.C., to Atlanta, Georgia, including much of the old NCRR corridor through central North Carolina, and several secondary lines—all of which were further sorted into smaller districts.[454] The Piedmont's Danville District extended from Lynchburg, Virginia, to Linwood, North Carolina, where the company's contemporary Spencer Yard is located, while its Charlotte District extended south from Linwood to Greenville, South Carolina. The Asheville District, extending west from Salisbury to Asheville, North Carolina, was populated by secondary lines that often served as a feeder route that transported local traffic to the main line and freight to terminals off of it.

After the company's formation, NS began analyzing its low-density routes for economic viability.[455] Rather than abandoning these lines, NS created the *Thoroughbred Short Line Program* (Figure 31, p. 91). Lines that did not meet the railroad's long-term plans were either leased or sold to partners, which then operated cars that were then interchanged to NS for long-distance hauls.[456] Many older short line railroads in North Carolina became part of the NS system through this program and continue to provide less trafficked areas in the state with rail service.

[451] Kalmbach Media 2006.
[452] Borkowski 2008.
[453] Trains.com 2020.
[454] Borkowski 2008.
[455] Ibid.
[456] Ibid.

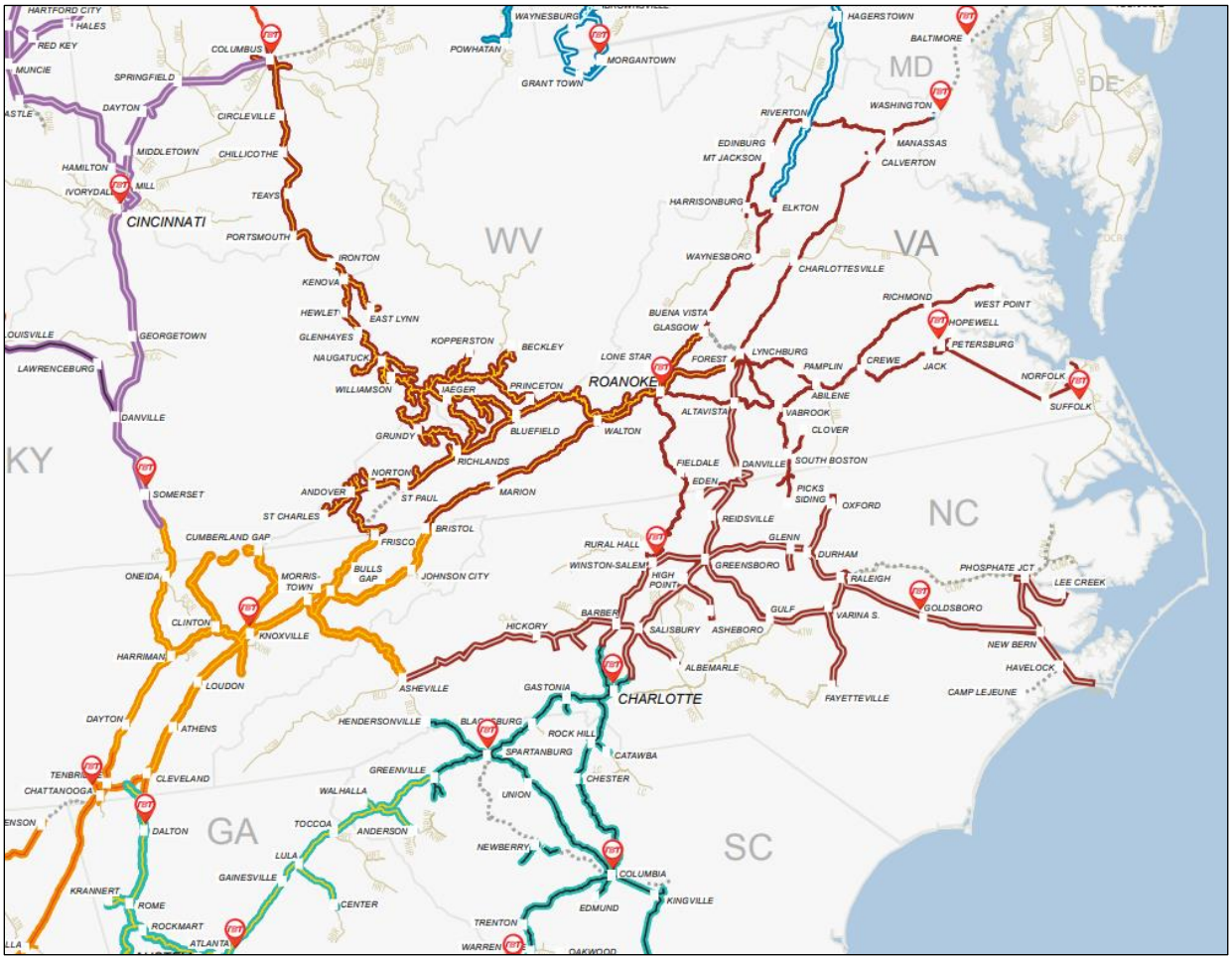


Figure 31: Detail of 2022 NS Operating Divisions Short Line Map.[457]

[457] Norfolk Southern Corporation 2022b.

F. ASSOCIATED PROPERTY TYPES

Historic Districts

Description

A railroad historic district refers to a collection of railroad-related buildings, structures, objects, sites, and districts whose purpose is shared among its constituent parts. The National Park Service (NPS) has established language that enables State Historic Preservation Offices (SHPOs) to establish property types and subtypes for common resources based on style or form, geographic ranges, time periods, or other justifiable distinction.[458] While various major built architectural and engineering resources are discussed throughout this Multiple Property Documentation Form (MPDF) and can be evaluated as individual resources for listing in the National Register of Historic Places (NRHP), it may be more appropriate to also evaluate the collection of resources as a historic district, defined by the NPS as possessing "a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.[459]

For the purposes of this MPDF, historic districts associated with railroads may fall into three categories: railroad station or depot historic districts, rail yard historic districts, and rail corridor historic districts (Table 5). A railroad corridor historic district may encompass a rail yard historic district or a railroad station or depot historic district.

Table 5: Possible Elements of Each Type of Historic District.

Railroad Corridor Historic District	Railroad Yard Historic District	Railroad Station or Depot Historic District
Ash pit	Ash pit	Ash pit
Associated railroad roadway	Associated railroad roadway	Associated railroad roadway
Bridges and tunnels	Blacksmith shops	Blacksmith shops
Blacksmith shops	Carpentry shops	Carpentry shops
Carpentry shops	Coaling station	Coaling station
Coaling station	Commercial loading facilities	Engine house
Commercial loading facilities	Engine house	Freight, passenger, or combination depot
Culverts	Freight house	Ice house
Depots	General repair and/or maintenance buildings	Machine shops
Engine house	Ice house	Power house
Freight house	Machine shops	Sheds
Freight, passenger, or combination depot	Power house	Signs

[458] Wyatt 2009:1.
[459] Shrimpton et al. 1990:5.

Railroad Corridor Historic District	Railroad Yard Historic District	Railroad Station or Depot Historic District
General repair and/or maintenance buildings	Railroad crossings	Storage warehouse
Grade separation structures	Sheds	Turntable or transfer table
Ice house	Signs	Watering stations
Machine shops	Storage warehouse	Worker shelters and other associated housing
Power house	Turntable or transfer table	Hotels
Railroad crossings	Watering stations	
Safety structures	Worker shelters	
Section houses		
Sheds		
Signs		
Storage warehouse		
Turntable or transfer table		
Watering stations		
Worker shelters		

Railroad Corridor Historic District

A railroad corridor historic district is a collection of a variety of associated buildings, structures, sites, and objects within the railroad's historic right-of-way (ROW) that are currently or were historically necessary to provide service to moving trains. Corridors are found in a variety of environments. While railroad yards were often located in level, industrial areas, corridors connecting these yards required working with the natural environment more regularly thus there is notable variation in their geographic setting. Railroad corridors could also detour from direct alignments between destination points to connect to other smaller towns.[460] Features such as commodities, terminal facilities, and connection points defined depot and station locations along the corridor. Cutting, filling, and the construction of bridges across the North Carolina landscape allowed the ideal corridor alignment. Gentle grades on the straightest routes were ideal, but the western North Carolina's mountainous landscape would cause curvatures in the corridor's alignments. Rail lines wound through the mountainous landscape as well as sometimes going through the mountain via the construction of tunnels, creating straighter and more direct railroad alignments.

Boundaries for a railroad corridor historic district should be dictated by the historic ROW of the railroad company that constructed and operated the corridor, even if the current railroad ROW has changed.[461] Railroad corridor historic districts will consist of various elements that will span over multiple and potentially discontinuous periods of significance (see Table 5, p. 92). Technological changes/advances, rail line improvements, and company-implemented elements are all factors that influence the physical characteristics of a corridor.[462] A previously recorded example of a rail

[460] Schmidt et al. 2013:83.
[461] Ibid.
[462] Ibid.:83–84.

corridor historic district in North Carolina is the R&G Rail Corridor (NC0008), which was determined eligible for the NRHP in 2007 by North Carolina Historic Preservation Office (NC HPO) staff under Criterion A for its notable connection to significant ties to area transportation history. This resource, which was a predecessor to the CSX system, encompasses a 60-mile rail corridor that travels through Warren, Vance, Franklin, and Wake counties. Another example is the Salisbury Railroad Corridor Historic District and Historic District Boundary Expansion and Additional Documentation (RW0596 and RW1576), the boundaries of which encompass buildings surrounding a railroad depot (Figure 32).[463]

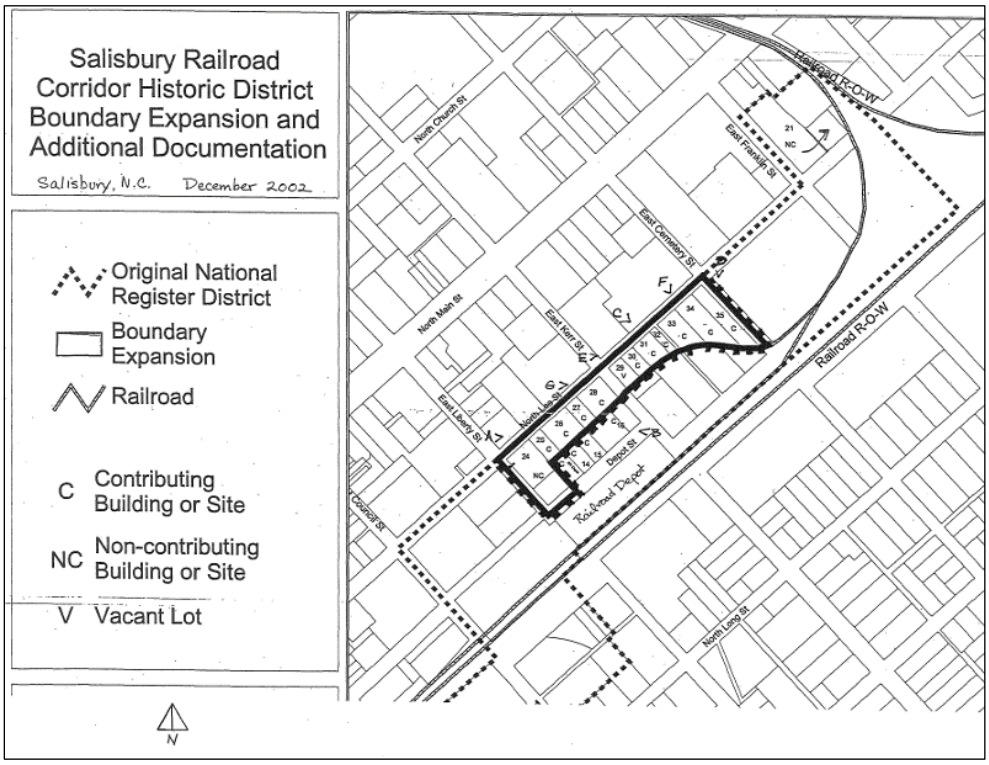


Figure 32: Map of the Salisbury Railroad Corridor Historic District Boundary Expansion and Additional Documentation (RW0596 and RW1576).[464] Not to scale.

Another example is the Railroad Right-of-Way (GF6172) of the NCRR through High Point in Guilford County. This resource, listed in the Study List in 2001, is an example of a rail line corridor historic district that derives its historic significance from a later period of its existence. In the 1930s, the community of High Point engaged in the "Grade Crossing Elimination Project" which would submerge the rail tracks through High Point and eliminate at-grade crossing and replace them with pedestrian bridges.[465] According to an article in *The High Point Enterprise* published in

[463] Hood 1987.
[464] Arnett 2002.
[465] The High Point Enterprise 1938:3.

1938, the project was funded by a cooperation of the Public Works Administration, State Highway and Public Works Commission, and Southern which stemmed from the federal government's New Deal economic recovery programs (Figure 33).



Sunday, September 4, 1938 THE HIGH POINT ENTERPRISE—*Piedmont Center of Industry*— HIGH POINT, NORTH CAROLINA

Tracks Depression Project Is Proving Solution To Problem That Has Been Worry To City Of High Point For Many Years

When Ultimately Completed, Gigantic Project Will Represent Investment Of Approximately Million Dollars

BY O. M. SMITH

High Point, like so many cities and towns in the New Industrial South, grew up alongside a railroad track, and, again like its sister cities, after advancing to a degree of maturity, found this railroad track a perplexing civic problem.

The business of High Point has been manufacturing, and manufacturing is dependent upon transportation of the manufactured products. It was natural, then, that business plants cluster about the railway line.

High Point's mercantile area also built its foundation in the neighborhood of the tracks, and after very few years it was discovered that the artery which fed the city was also to become the community eyesore.

Community eyesore is at least tolerable, but the unnecessary sacrificing of human lives is another and more serious matter. Rushing trains passing over city streets began to take their tolls. Accidents became more frequent, and a whole city answered: "Eliminate the crossings."

After tormenting the minds of citizens for nearly a half-century, the problem resolved itself into a simple answer, and that answer was the Grade Crossing Elimination Project, at this time well on toward completion.

The ironic aspect of this project is that it had its genesis in a nation-wide business depression. Never before had High Point seen its way clear to rerouting the railway tracks or depressing them.

To stimulate recovery, the Federal government made available to cities and towns a large amount of money to finance public works projects, and High Point hesitated not a moment to call for its share so that it might settle once and for all the tracks problem.

Such Tragedies To Be Eliminated By Grade Crossing Project

Such tragedies as that depicted at the left, when a life was lost in a grade crossing accident in High Point not many months ago will be eliminated upon completion of the gigantic tracks depression project now nearing the stage of completion here because of the construction of overhead bridges which will place the tracks below the level of the streets as shown on the right. The photo on the right was taken as the first train used the repressed tracks here. The one on the left was taken prior to the depression project. (Staff Photos).

Records Of North State Telephone Co Indication Of How High Point Has De

Local Company Installed First Dial System In Use In North Carolina; Has Made Much Progress

BY DOROTHY BELL

the subscriber remains on the line.

Doing away with the irritating system by which a person on a party line listens tensely each time the telephone rings, counting "one, two, three" to see who's being called, the company

FURNITURE MANUFAC

Figure 33: A 1938 *The High Point Enterprise* Article of the Submersion Project of the NCRR through High Point (GF6172; Railroad Right-of-Way) That Stemmed from New Deal Spending Programs.[466] It was listed on the study list in 2001.

Railroad Yard Historic District

Railroad yard and railroad station historic districts may share many of the same elements; however, railroad yard historic districts are the areas associated exclusively with the service and maintenance of rolling stock and do not have a depot. Key functions at different railroad yards dictated their organization and led to several variations of the rail yard. The two primary types of rail yards were those that maintained rolling stock and those that classified and built trains. The line between these

[466] Ibid.

two types of rail yards is often blurred by the inclusion of sorting and classification tracks at both types.[467]

Railroad yards required a large amount of level land in order to operate correctly as they were utilized for labor-intensive activities such as sorting and classifying freight cars. Because of their industrial nature, they were often located on the fringes of rural communities or urban centers. However, due to expanding developmental growth of most of these areas, many historic railroad yards are now intermixed with commercial and residential communities. "Topographical considerations aside, the locations of railroad yards were usually determined by railroad company's shipping traffic and sorting/classification needs within the railroad network, and the yard sites laid out by surveyors and engineers."[468] For example, the important eastern urban center of Raleigh features a major railway junction between the historic Seaboard Air Line (SAL), Norfolk Southern (NS), and North Carolina Railroad (NCRR), necessitating yards for each division present (Figure 34, p. 97). Boundaries for a railroad yard historic district should be dictated by the historic railroad ROW, which should encompass all historic railroad-related resources. Portions of the historic ROW that no longer convey characteristics of the district may be excluded from district boundary.[469]

A notable example of a historic railroad yard district is Southern Railway's Spencer Shops (RW0011) in the town of Spencer, North Carolina. One of few surviving twentieth-century locomotive facilities, Spencer Shops was listed in the NRHP in 1978 and is significant under Criteria A and C for its important historical associations with commerce, industry, and transportation as well as the architecture of these facilities.[470] The NRHP boundary of this resource encompasses a roundhouse, back shop, storehouse, offices, flue shop, car repair shed, powerhouse, and several smaller buildings constructed between 1896 and 1940—all of which are currently maintained by the North Carolina Transportation Museum (Figure 35, p. 98).

Railroad Station or Depot Historic District

A railroad station or depot historic district includes the area devoted to freight and passenger transport as well as service and maintenance of rolling stock. Geographic influences of railroad station historic districts were often determined by market forces as well as operational needs along distant routes and a need to remain competitive with rival railroads. Boundaries of a railroad station historic district will include, at minimum, the ROW at the time of its period of significance and the associated depot. Also included are associated buildings and structures necessary to keep rolling stock moving, for example ash pits, blacksmith shops, carpentry shops, coaling stations, engine house, ice house, machine shops, power house, sheds, signs, turntable or transfer table, watering stations, and worker shelters.

[467] Schmidt and Vermeer 2009:109–110.
[468] Ibid.
[469] Ibid.
[470] Paul 1977.

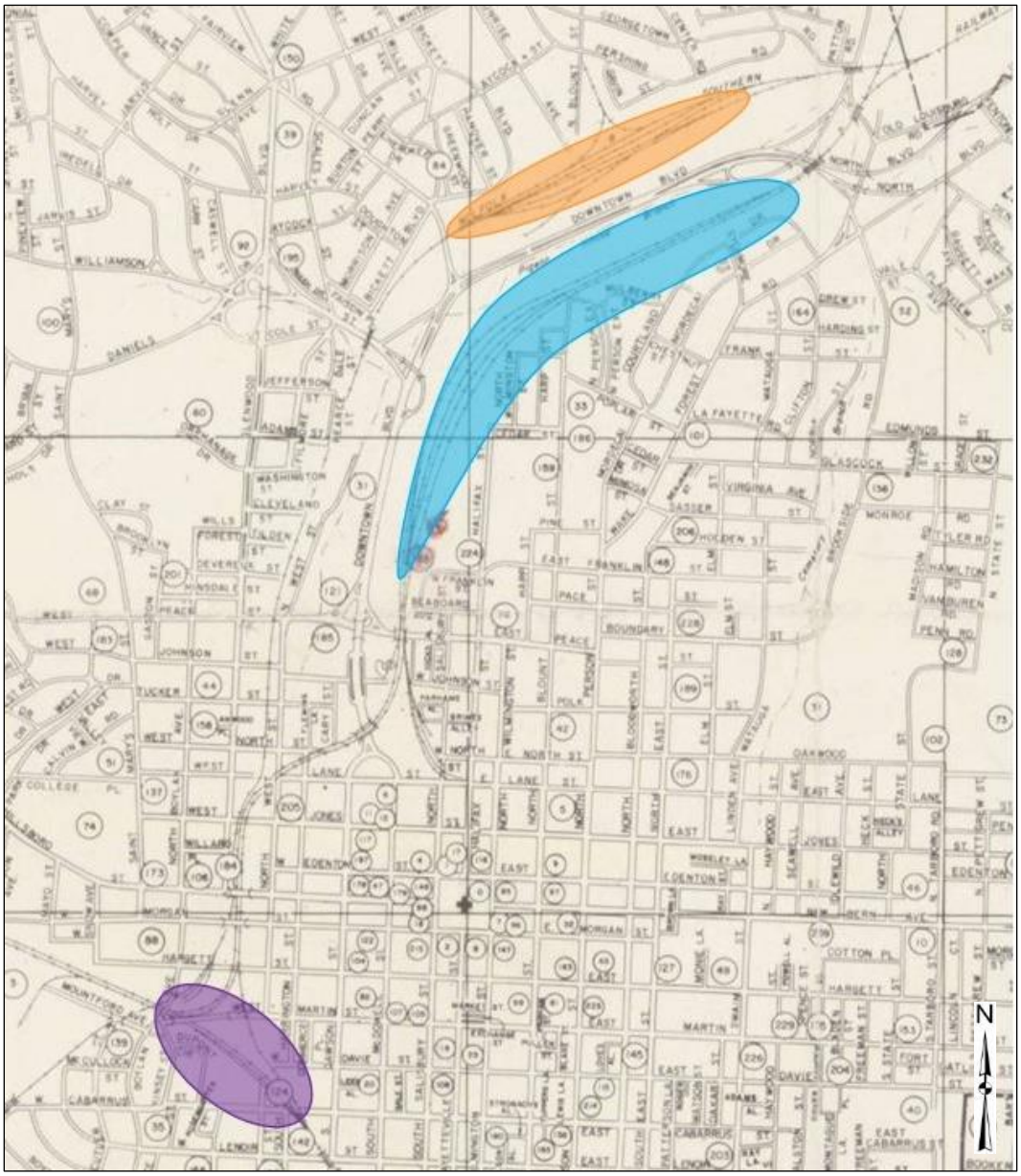


Figure 34: Approximate Locations of Railroad Yards in Raleigh in 1959. The NCRR railroad yard is in purple, the SAL railroad yard is in blue, and the NS railroad yard is in orange.[471] Map not to scale.

[471] Raleigh Chamber of Commerce 1959.

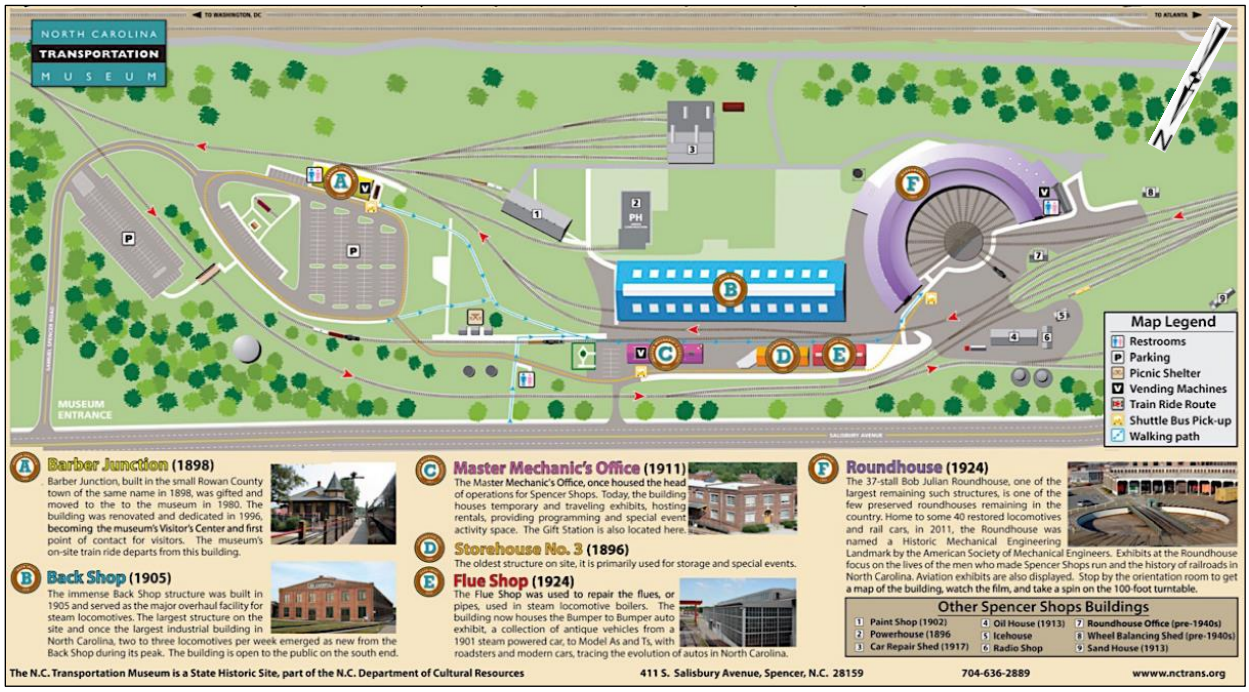


Figure 35: Map of Historic Spencer Shops and the North Carolina Transportation Museum.[472]

Occasionally, in North Carolina, other buildings are also included in a depot historic district like buildings that held residences and businesses associated with the arrival of the depot such as hotels, warehouses, and specialty stores. The district may also include archaeological sites that represent no-longer-extant resources that were key in the development and operation of the station district and may reveal significant information on the operations of the facility.

A railroad station or depot historic district will encompass elements from various stages during its period of significance, with variations based on geographical changes, the needs of the local and regional markets in regards to passenger and freight transportation, the technology associated with the period of significance, and architecture style employed within the district but especially at the station itself.[473] An example of this property type can be found in Marion in McDowell County, North Carolina. The Depot Historic District (MC0008) comprises a grouping of intact brick buildings closely related physically and historically to the Southern Railway depot with a period of significance beginning around 1894 and extending to circa 1935 (Figure 36, p. 99).[474] The resource was listed in the NRHP under Criterion A for Commerce and Transportation and Criterion C for Architecture.

[472] North Carolina Transportation Museum 2019.
[473] Schmidt and Vermeer 2009:104.
[474] Bowers 1991.

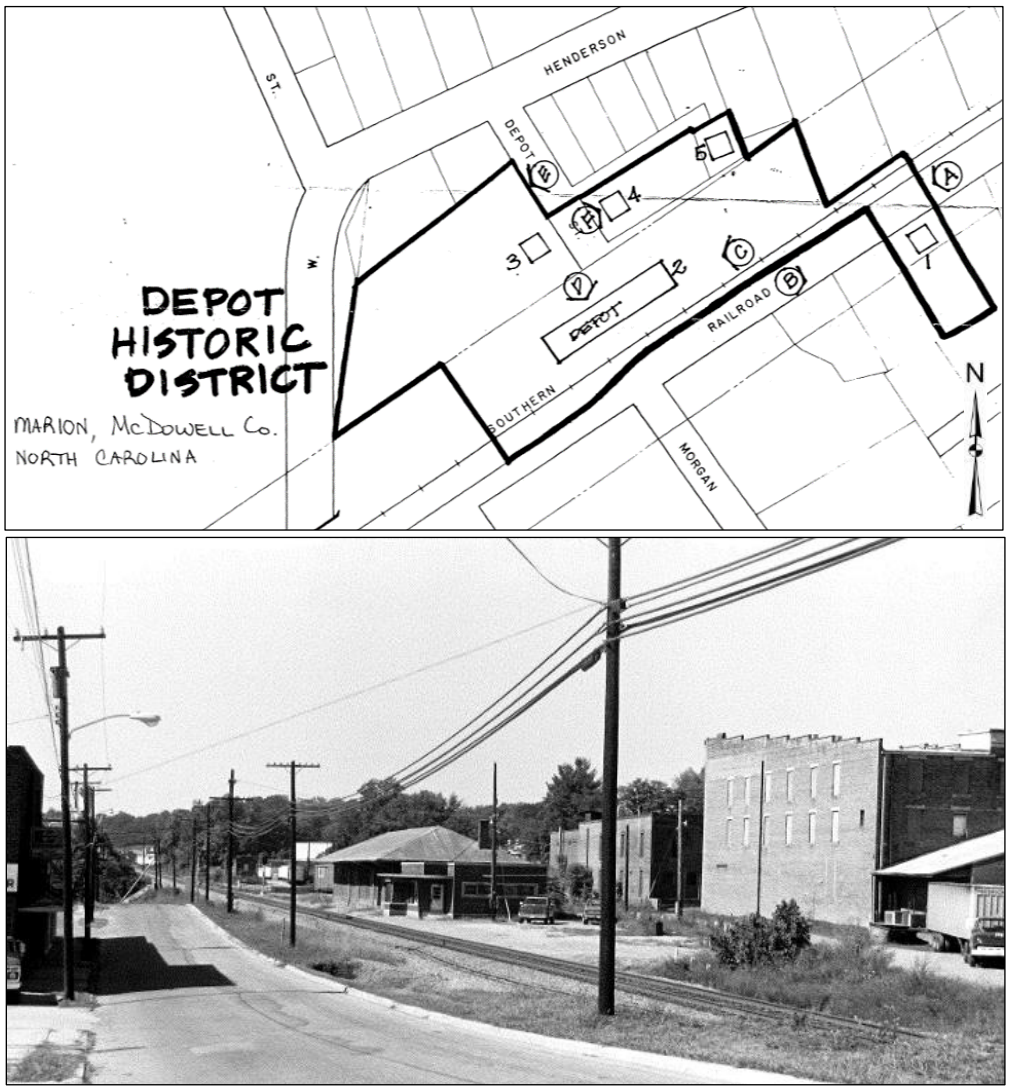


Figure 36: Site Plan (Top) and Overview Photo (Bottom) Southern Railway Depot Historic District (MC0008) in Marion, McDowell County.[475] This resource was listed in the NRHP in 1991. Map not to scale.

Significance

The most common criteria that all three of the historic district subtypes evaluated under this MPDF are likely to be considered eligible under are Criteria A and C; the most common areas of significance for this property type are Transportation, Engineering, and Architecture. These

[475] Ibid.

subtypes will likely be composed of various buildings, structures, sites, and objects across North Carolina's railway lines.

The NPS uses Areas of Significance and/or themes to organize the various type of historic significance. The NPS states that these themes:

> […] comprise patterns of development that are particularly important in American history. A property can have multiple Areas of Significance. Understanding the significance of a historic rail property within its historic context often requires consideration of development matters and historic properties beyond the geographical boundaries of the study area and/or rail ROW.[476]

Significance within a railroad corridor historic district is not placed upon segmented portions of the rail line, rather an eligibility determination should be made based on the historical significance of the entirety of the collection of resources. The railroad corridor historic district does not require the line be intact along the entire route; however, it should be present at several locations, though, to be considered a rail corridor.[477]

Railroad yard historic districts could be significant for their association with North Carolina's railroad network through important functions, such as classification and organization of trains and the construction and maintenance of rolling stock. A railroad yard historic district's period of significance may start with the yard's initial operation date if all required elements necessary to make up a railroad yard historic district were present. If not, the period of significance may begin with the acquisition of such equipment, perhaps under new ownership. A district's period of significance will generally end with the termination of freight car classification or rolling stock service.[478]

Railroad station historic districts are significant in the area of transportation for their association with major nodes of passenger and freight transportation on North Carolina's railroad network.[479] The railroad station historic district's period of significance begins at the point in time that "significant repair and maintenance buildings and structures for rolling stock were established, or when significant freight loading and storage facilities or passenger operations were established."[480] The termination of passenger or freight services, or the closing of rolling stock service buildings and structures, will mark the end of the railroad station historic district's period of significance.[481]

[476] U.S. Department of Transportation 2019:18.
[477] Ibid.:28.
[478] Schmidt et al. 2013:214.
[479] Schmidt and Vermeer 2009:104–105.
[480] Ibid.
[481] Ibid.

Criterion A

Under Criterion A, an eligible railroad corridor historic district should have significant and justifiable association with a transport area.[482] Its significance could be directly related to how the railroad enabled a network of transportation across the state, introduced industry to remote region in the state, or provided a critical link between cities throughout the state.[483] Therefore, it would likely be eligible under more than one area of significance including but not limited to Transportation, Settlement, Agriculture, Commerce, Industry, Community Development, and Tourism.

A railroad yard historic district could meet the registration requirements under Criterion A if it provided car classification service or took part in the construction, maintenance, and storage of railroad rolling stock along a historic railroad corridor. The railroad yard historic district may also be significant under Criterion A if it provided facilities for maintenance, service, construction, and repair on a historic railroad corridor.

A railroad station historic district can meet the registration requirements under Criterion A if it was a significant contributor to the physical expansion or economic growth of surrounding commercial and industrial operations, if it served as a regional distribution center for commercial or industrial products, or if it was a significant transportation center for travelers.[484] This may include areas where a small enclave or a town was established near a rail station that, in turn resulted in area growth.

Criterion B

Railroads are often associated corporate entities rather than an individual person. Thus, railroad historic districts are not likely to be eligible under Criterion B.

Criterion C

Rail-related historic districts determined eligible under Criterion C could be significant under the areas of Engineering or Architecture. A railroad corridor historic district would be less likely to be considered eligible for the NRHP under Criterion C as the district would need to embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master. As an ever-evolving entity that is in constant refurbishment and use, this could not be the case in the state of North Carolina.

Due to the standardized and utilitarian nature of the buildings that make up a railroad yard, it is unlikely that this property type would be eligible for the NRHP under Criterion C for representing

[482] Ibid.: 92.
[483] U.S. Department of Transportation 2019:20.
[484] Ibid.

the work of a master or for possession of high artistic values. A railroad yard historic district could meet this criterion if it is considered an example of period railroad engineering and planning; however, adequate documentation must be presented to support the argument of significance for a railroad yard's contribution to the development of classification systems or maintenance facilities.[485] Railroad yard historic districts do not need to be associated with a historically significant railroad corridor in order to be eligible for the National Register under Criterion C.

Railroad station or depot historic districts could be eligible under this criterion if it retains a high level of integrity and clearly demonstrate its use and period or periods of significance. It could also be a unique example of a certain architectural style, station or depot form, or the only remaining station or depot along the line. The piece-by-piece development of these resources that is attributed to the increase of passenger and freight traffic could reflect and be significant for the evolution of the collection of buildings and structures over time and as such, replacement of first- or second-generation buildings and structures could also be considered contributing to such a historic district if it occurred during the district's period of significance.

Criterion D

Under Criterion D, a rail-related historic district may be eligible for the NRHP if it has the potential to yield important information. While it may be unlikely that railroad corridor historic districts, railroad yard historic districts, and railroad station historic districts will meet Criterion D, the recordation of associated archaeological sites that date to the period of significance of the district and have data potential may render them eligible. Archival research and archaeological studies would augment an evaluation under this criterion. An example of this is the former location of the Neuse Railroad Depot (site 31WA1467**), which originally served the R&G and was established around 1840 in the town formerly known as Huntsville.[486]

Registration Requirements

In order to be eligible for the NRHP, a railroad historic district evaluated under this MPDF must have a defensible beginning and end period of significance and specific geographic boundaries. Significance can vary but should include the date of construction or possible range of relevant operational timeline. Additionally, railroad-related historic districts vary in size as well as composition related to the kinds of resources that are located inside their boundaries. When determining the historic integrity of a potential railroad historic district, the district may be divided into contributing and non-contributing segments based upon its integrity.[487]

[485] Hufstetler and Bedeau 1998:78.
[486] Blondino 2019.
[487] Hufstetler and Bedeau 1998:5–6.

Location

A railroad-related historic district will retain its integrity of location if it occupies its original site and enough of its individual elements retain their integrity of location.[488] Individual elements contributing to the historic district that have been moved do not automatically result in a loss of location integrity, especially if the resources were moved during the district's period of significance.[489]

Design and Materials

Railroad corridor historic districts must retain their historic design and materials "through their major built elements including bridges, tunnels, and stations, all of which convey the relationship of the railroad to the landscape and topography."[490] Integrity of design of the layout and plan of a railroad historic district is necessary for railroad yard historic districts and railroad station historic districts. Additionally, a sufficient number of elements within the district must also regain their integrity of design and convey the district's historic appearance. A railroad historic district will maintain a high level of integrity of materials if the historic district retains resources that are composed of their original physical elements or if modifications were done during the period of significance that reflect significance in their own right. Routine maintenance requiring replacement materials does not affect the overall integrity of the materials.[491]

Setting

A railroad historic district will retain its integrity of setting if its location, design, and materials have been determined to have a high level of historic integrity. Secondly, nearby construction of new buildings or alterations must not hinder the ability of the district to convey its historical character.[492]

Workmanship

Integrity of workmanship in railroad historic districts is derived from the district's major built elements. The elements are often utilitarian and standardized in their design; however, some elements may exhibit various degrees of workmanship if they show elements of craftsmanship.[493] Although a higher degree of workmanship in a railroad station historic district may be beneficial for an eligibility argument under Criterion C in particular, other types of railroad historic districts will likely not factor into evaluating historic integrity due to the utilitarian nature and standardized

[488] Schmidt et al. 2013:217.
[489] Pennsylvania Historical and Museum Commission (PHMC) 2015:17.
[490] Ibid.:18.
[491] Ibid.
[492] U.S Department of Transportation 2019:25.
[493] Ibid.

design of the resource. However, some specific elements may exhibit high degrees of workmanship.

Feeling and Association

A railroad historic district will retain its integrity of feeling if the resource's expression concurs with the historical sense of the period of significance.[494] Association is the link between the railroad and the transportation and/or significant services it provided or the significant engineering it embodied.[495] The historic district might not need to continue to function in its original capacity; however, its original purpose should continue be clearly interpreted and understood in order to retain integrity of association.

Depots and Stations

Description

Depots are buildings that house freight and/or passengers prior to embarkation or after disembarkation from rail transport. Often, depots of all varieties are referred to as a station, though the term station denotes a platform where trains may stop and does not necessarily contain a shelter atop that platform.[496] Both terms, depot and station, are often used interchangeably, though station applies most frequently to a location; depot refers to the building (e.g., flag depot, freight depot, combination depot, passenger depot). In the early years of the railroad, depots did not have a distinct look. In the later nineteenth century as railroad companies developed and the visual language of railroad facilities changed, depots often were built in more architecturally intricate styles.[497] This is especially true as part of the City Beautiful Movement noted in the historic context section of this document. An important part of the established visual language used at railroad stations and depots was the signage used to inform passengers of the station they were approaching. From the simplest platform to elaborate, multi-story, high-style buildings, the signs bearing the names of the towns in which they are situated are as common as any other single element of the railroad station.

The form of depots follows their function as facilities that shelter passengers and/or freight and rail staff for a short duration. They are usually one-story, multi-bay, rectangular buildings with long sides facing the railroad tracks.[498] Roof shape can vary depending on the building's form and style, but overhanging eaves to shelter passengers, baggage, and/or freight are common. Interior spaces usually feature one or more open rooms, functioning as a waiting room or cargo storage area. Additional interior spaces and amenities correspond with the type of depot and its setting,

[494] Ibid.:26.
[495] PHMC 2015:19.
[496] Schmidt and Vermeer 2009:126.
[497] Fraser and Strand 1997:156.
[498] Ibid.

further described below. By 1870, depots often featured bay windows along track-facing elevations, so that station agents could see approaching and departing trains more clearly. Other advances in rail technology and scheduling led to development of the depot and associated structures. In 1883, as standard time for train schedules was introduced in the United States, clock towers became a common feature associated with depots after this point. Additionally, as a variety of transportation options increased throughout the early-twentieth century, depots could also be multimodal; they offer multiple forms of transportation, such as bus or taxi service, though this is usually a later adaptation.[499]

Flag Depots

Flag depots, also called second-, third-, or fourth-class passenger depots, flag stops, or temporary depots, are small buildings atop platforms in which a railroad employee would wave a flag to signal to a train engineer that the train should stop.[500] Typically, flag depots are the earliest type of station built after a railroad was constructed through a new town or in rural communities, and handled a low to moderate level of traffic.[501] In many instances, the flag depot does not have a shelter atop the platform, suited to the site-specific topography. Where there is a shelter, it is often an unadorned frame building with one or two interior rooms, and may have an open frame wing appended to one side for additional shelter.[502] It could be open on one or more sides and have a shed or gable roof.[503] Additionally, the flag depot could be constructed from standardized plans or could be pre-fabricated.[504] As use of the flag depot grew and rail traffic increased, railroad companies could add an agent's office and waiting room for passengers, converting the flag depot into a passenger depot or combination depot. [505]

Passenger Depots

Passenger depots were constructed to provide temporary shelter for travelers and their guests prior to or after rail travel. They are typically rectangular buildings with its longer side facing the tracks, separated from those tracks by a platform. Passenger depots do not have a freight storage component, as they are typically located in places that cannot handle the combined volume of passengers and freight.[506] The scale of the building is usually correlated to volume of passengers; in villages and hamlets, passenger depots typically are smaller than in large towns and urban areas.

[499] Center for Urban Affairs & Community Services 2017:3.
[500] Berg 1893:264; Fraser and Strand 1997:159, 160.
[501] Fearnbach 2018:10; Schmidt and Vermeer 2009:127.
[502] Ibid.
[503] Ibid.
[504] Fraser and Strand 1997:160.
[505] Schmidt and Vermeer 2009:127–128.
[506] Ibid.

Typically, the architectural style of depots reflects national architectural trends, particularly the revival styles (Figure 37–Figure 40, pp. 106–108).[507]

Modest versions of these styles are typically observed in rural communities while high-style examples are common in more urban areas. Some of the earliest examples from the late-nineteenth century are frame buildings that include Victorian-era architectural elements like the circa-1871 Thomasville Passenger Depot (DV0006), believed to be one of the oldest extant depots in the state that was constructed on the NCRR by town officials in rural Davidson County.[508] Urban examples include several Spanish Mission-style depots that date to the early-twentieth century, like the circa-1909 Goldsboro Union Station (WY0004) designed by Joseph F. Leitner and the 1908 Southern Railway Passenger Depot (RW0010) in Salisbury designed by Frank Pierce Milburn. The Salisbury depot is the sole surviving example of the eight union depots and 11 independent stations Milburn designed for Southern while serving as the company's "official architect" from 1902 until 1909, when he partnered with his former draftsman, Michael Heister, to establish Milburn, Heister, and Company.[509] Most of Milburn's stations were "flamboyant Spanish Revival buildings with soaring towers, lavish ornamentation, and sumptuous waiting rooms."[510] Other popular styles in the early-twentieth century were the Beaux Arts and Classical Revival. One example of a Beaux Arts-style station with a Classical design is the circa-1927 Greensboro Passenger Station (GF0128), erected for Southern Railway and designed by New York architects Albert T. Felheimer and Steward Wagner.[511]



Figure 37: The 1908 Southern Railway Passenger Depot (RW0010) in Salisbury is Another Example of a Spanish Mission Revival-Style Station and Designed by Frank Pierce Milburn.[512]

[507] Schmidt and Vermeer 2009:127–128.
[508] Haley and Mobley 1981.
[509] Vivian and Brown 2009.
[510] Ibid.
[511] Bishir 2010.
[512] Page 1975.



Figure 38: NRHP-Listed Circa-1909 Goldsboro Union Station (Also Known as Goldsboro Passenger Depot), in Goldsboro, Wayne County. Jointly built by Atlantic and North Carolina, Southern, and ACL, the building embodies characteristics of the Mission style and designed by Joseph F. Leitner (WY0004).[513]

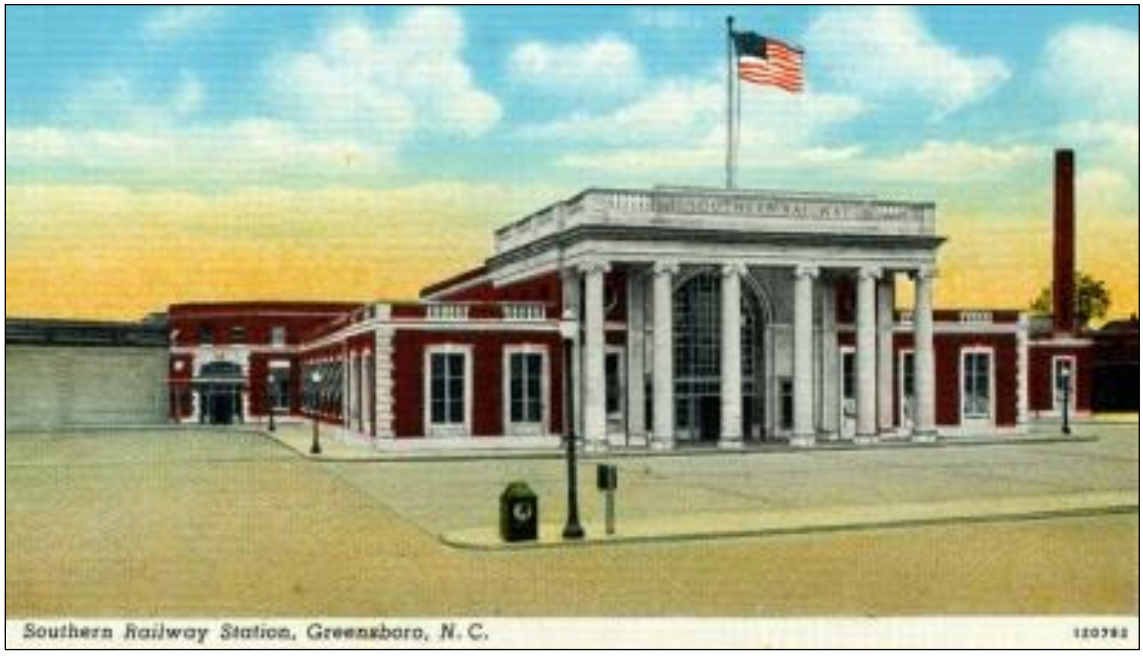


Figure 39: Extant 1927 Classical and Beaux Arts-Style "Southern Railway Station, Greensboro, N.C." (GF0128) Designed by Felheimer and Wagner.[514]

[513] University of North Carolina at Chapel Hill [UNCCH] 1930a.
[514] Bishir 2010.



Figure 40: View of Circa-1871 Thomasville Passenger Depot (DV0006) Taken in 1981.[515]

Inside, passenger depots could contain different spaces to organize travelers and their belongings, including a waiting room, baggage room, and a ticket office as seen in the 1899 Southern Railway Depot in Greensboro (Figure 41, p. 109).[516] Segregated entrances and waiting rooms are a feature of some passenger depots such as Southern's circa-1927 Greensboro Passenger Station (GF0128) and at the Aberdeen & Rockfish Railroad Depot (HK0024) in Raeford Station, Hoke County (Figure 42, p. 110).[517] Additional amenities could be offered at larger passenger stations such as restrooms, dining room or restaurant, smoking room, mail offices or postal service, wire and telegraph service, supply/storage room, news stand, staff lounge, and administrative offices.[518]

[515] Haley and Mobley 1981.
[516] Center for Urban Affairs & Community Services 2017:4.
[517] King and Wyatt 2006.
[518] PHMC n.d.:24.

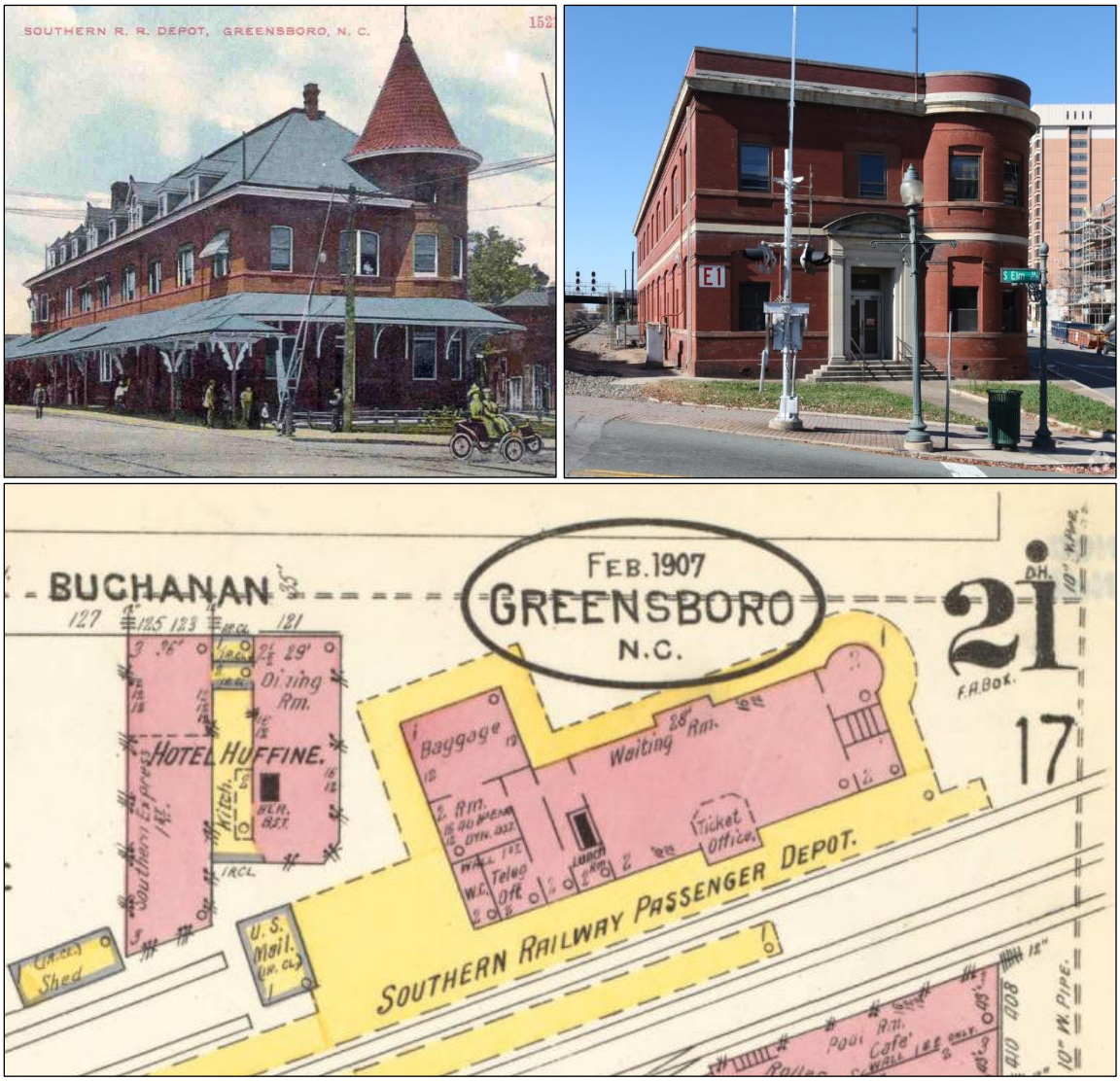


Figure 41: 1899 Romanesque Revival-style Southern Railway Passenger Depot (GF0127) in Greensboro as Depicted in Circa-1910 Postcard (Top Left) and Present Day (Top Right).[519] A 1907 Sanborn Map depicting the separation of spaces of the depot (bottom).[520] This building was extensively altered in the 1930s and 1940s. It has not received a formal eligibility determination by NC HPO staff but is located within the NRHP-Listed Downtown Greensboro Historic District (GF0042).

[519] Preservation Greensboro ca. 1910, LoopNet 2023.
[520] Sanborn Map Company 1907.

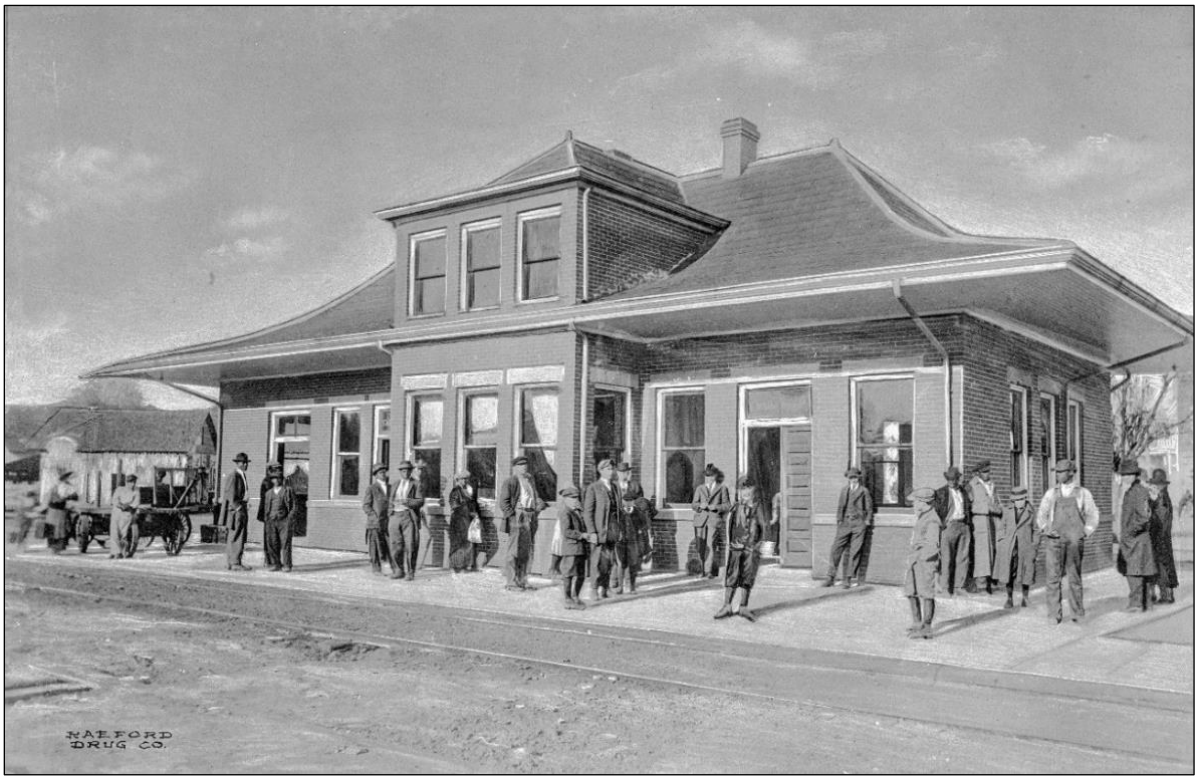


Figure 42: 1930 Artist Rendering of the Circa-1910 Aberdeen & Rockfish Railroad Depot (HK0024), an Example of a Historically Segregated Depot, in Raeford Station, Hoke County. Identified as a contributing resource to the Raeford Historic District (HK0027).[521]

Freight Depots

Freight depots were built to facilitate the short-term movement and storage of freight and cargo. Similar to passenger depots, freight depots are typically rectangular buildings with a long side oriented to face the tracks, with one or more large bays to facilitate the loading and unloading of shipped goods (Figure 43, p. 111). As there was less interface with the public occurring in freight depots, these buildings are typically utilitarian in design and style. Much less common are freight depots that reflect national high-style architectural trends. Occasionally, passenger depots and freight depots were built adjacent to one another (Figure 44, p. 111). Inside, freight depots typically contain utility space (storage) and may also feature administrative space.[522]

[521] David and Martin 2006; Lewis 2022.
[522] Fearnbach 2018:7.



Figure 43: Mitchener's Station/Southern Railway Freight Depot (JT0043) Originally Built Circa 1855 on the NCRR and Relocated Circa 1867 to the Town of Selma in Johnston County.[523]

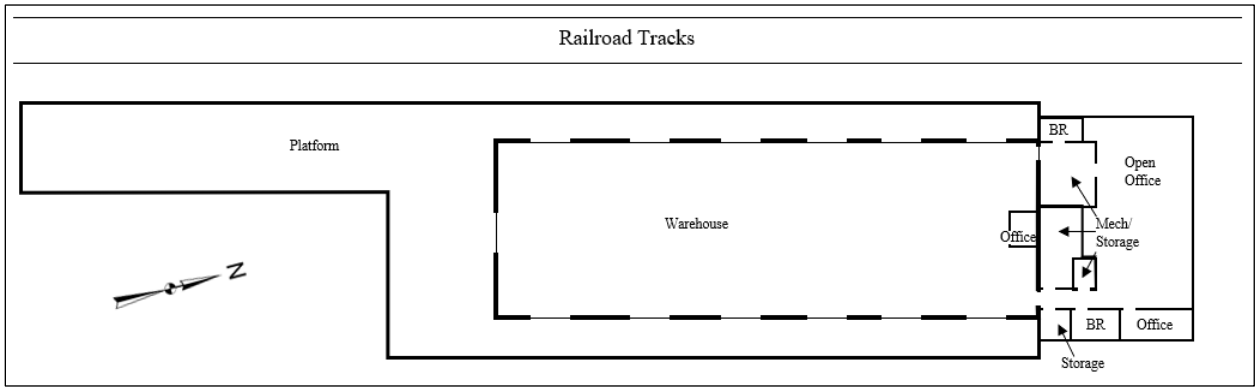


Figure 44: Floorplan of the Circa-1891 Carolina and Northwestern Railway Freight Depot in Lenoir, Caldwell County (CW0378).[524] The building was listed in the NRHP in 2019.

Combination Depots

Combination depots, as their name suggests, marry the function of passenger and freight depots under one roof. In places where the volume of traffic was too low to warrant separating these functions into independent facilities or the geographic setting did not allow for multiple resources, combination depots could house a variety of amenities.[525] The appearance of combination depots

[523] Jones 2006.
[524] Fearnbach 2018.
[525] de Kok 1991:92; Frasier and Strand 1997:158.

was largely standardized within a railroad company, resulting in a few varieties of a similar form.[526] To further aid in ease of construction, combination depots could also be pre-fabricated.[527]

Like passenger depots and freight depots, combination depots are typically rectangular buildings positioned with a long side parallel to the tracks (Figure 45).[528] Combination depots are usually one-story buildings, although two- and two-and-a-half-story examples may be present where there is not separate lodging for a station master and their family, if upper floors may be used as hotel space for staff and travelers, or when office space for the railroad was needed (Figure 46, p. 113).[529] The side of the depot oriented to face the tracks typically has two distinct functional areas: a place for passengers and/or freight to arrive, and a place for passengers and/or freight to embark.[530] Passengers and freight often shared the same platform.[531]



Figure 45: Circa-1910 Image of Southern Railway Twelfth Street Combination Station in Durham, North Carolina.[532] No longer extant.

[526] Fraser and Strand 1997:156.
[527] Ibid.
[528] PHMC n.d.:23.
[529] Berg 1893:329; de Kok 1991:92.
[530] Schmidt and Vermeer 2009:126.
[531] Ibid.
[532] Norfolk Southern Corporation n.d.



Figure 46: View of Centennial Station Arts Center and Former High Point, Randelman, Ashboro & Southern Railroad Combination Depot (GF0572) Built Circa 1938 at High Point in Guilford County.[533]

Typically, the interior space of a combination depot separates passengers and freight, relegating each to separate ends of the rectangular building, divided in the center by an office space (Figure 47; Figure 48, p. 114).[534] Common modifications from the standard plans could include second-story accommodations for station master/agents, baggage wings, freight wings, and extra-long freight wings.[535]

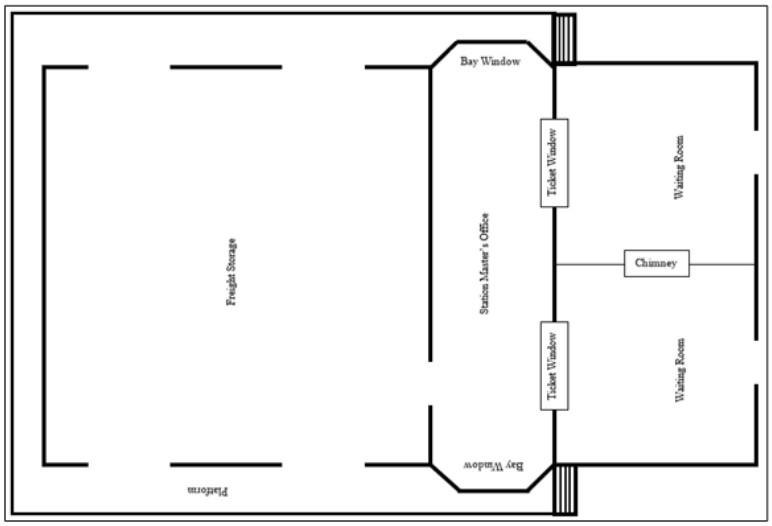


Figure 47: Example of Combination Depot Floor Plan.[536]

[533] High Point Arts Council 2022.
[534] Fraser and Strand 1997:156; Schmidt and Vermeer 2009:127.
[535] Schmidt and Vermeer 2009:127.
[536] de Kok 1991:93.

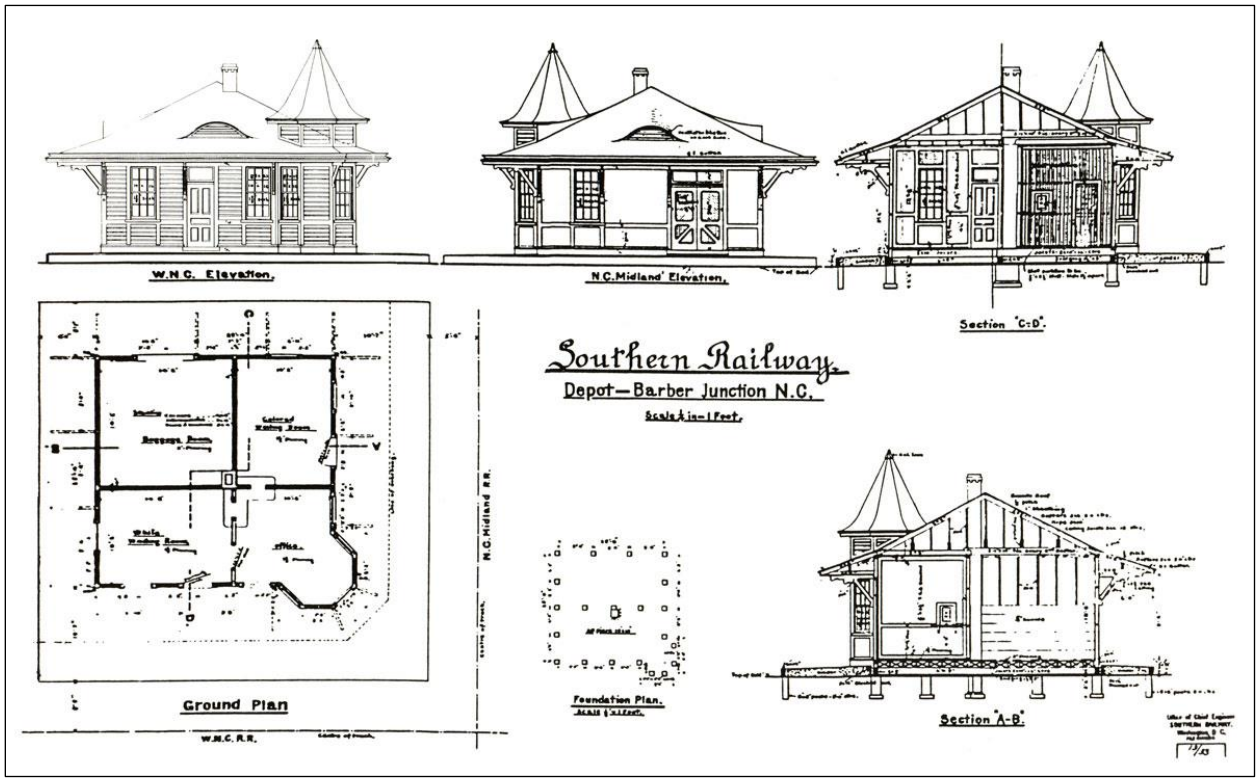


Figure 48: Station Plan Utilized from the Southern Railway Barber Junction Depot Showing the Prolific Use of the Folk Victorian Style in Many of the Southern Depots.[537]

Union and Terminal Depots

Union depots, also known as terminals or terminal depots, are large passenger depots constructed to serve a high volume of passengers and their guests, and are usually located in large towns and urban centers (Figure 49–Figure 50, pp. 115–116). Depending on their location in proximity to primary and secondary tracks, union depots can be classified as head, side, or island stations, terms which denote location as a terminus, aside tracks, or between tracks, respectively.[538] Often, they were used by more than one railroad company and occasionally they were built by more than one railroad system. The circa-1907 Salisbury Southern Railroad Passenger Depot (RW0010) and the 1926 Winston-Salem Union Station (FY1271) are two such buildings.

Union depots were typically designed to make a statement as the entry point for many traveling by rail into a city or town and are often high-style buildings; many union depots were designed by an architect.[539] The architectural style of union depots typically follows national trends including Romanesque, Eclectic, Beaux Arts, Italianate, and Colonial Revival among others. As they serve

[537] Southern Railway n.d.
[538] Fraser and Strand 1997:161.
[539] Ibid.:160.

a large number of passengers and can be used by multiple railroad companies, union stations will often feature more than one platform from which passengers can embark and disembark.

Inside, the amenities at a union depot could be extensive and are typically far more than would be available at the typical passenger station due to the sheer size of this building type and quantity of people passing through. Amenities could include ticket offices, separate men's and women's waiting rooms, restrooms, communication (telegraph/telephone) office, express office, baggage storage room, newsstand, dining room/restaurant/lunch counter, or hotel.[540]



Figure 49: Postcard Image of the NRHP-Listed Circa-1907 Salisbury Southern Railroad Passenger Depot (RW0010) in Salisbury, located along the NCRR.[541]

[540] Ibid.:161.
[541] North Carolina Postcards 1915–1930a.



Figure 50: Undated Image of the 1926 Winston-Salem Union Station (FY1271) in Winston-Salem, Designed by Fellheimer and Wagner for Southern Railway, Norfolk and Western, and the Winston-Salem Southbound Lines. This resource was listed in the National Register in 1988.[542]

Significance

The most common criteria that all depot subtypes evaluated under this MPDF are likely to be considered eligible under Criteria A and C; the most common areas of significance for this property type are Architecture, Engineering, Settlement, Transportation, and Community Development. Depots, in particular the passenger, freight, or combination subtypes, are the primary recognizable building associated with railroads; they were built with the purpose of storing or sheltering passengers/guests, freight, or both for a short period of time. Depots of all varieties were central to the function of railroads; they were the origin or termination point of passenger or freight transportation. The design and size of depots varied according to the volume of traffic in each location and were either built to standardized plans in low-traffic areas or were individually architect designed where they would make a statement as a transportation hub in densely-populated areas. Smaller depots, such as flag or temporary depots, were designed as the first shelter for passengers, freight, or staff at a rail stop, and typically were upgraded over time to increase capacity. Therefore, few of these temporary depots remain and those that do are likely to have diminished integrity. However, flag or temporary depots that remain intact with a high level of historic integrity are likely to be considered significant due to their potential rarity and because of their connection with railroad evolution and design trends, as well as association with individual railroad companies. Larger passenger, freight, combination, and union/terminal depots were

[542] Bishir 2010.

designed as more permanent tributes to rail transport and are more likely to exist intact, or with modifications to adapt to changing transportation needs. Where these depots are extant, they are also likely to be eligible in association with significant rail lines, transportation, or architectural criteria.[543]

Criterion A

A depot can meet the registration requirements under Criterion A for several reasons. Depots are often one of the most prominent surviving symbols of rail travel in their respective communities. When a railroad company established a depot in a hamlet, town, or city along the rail line, that place almost certainly experienced some level of economic growth and prosperity. The significant impacts the railroad, and specifically the depot, had on the development and economic survival of a community are likely quite extensive and could be cause for its eligibility under Criterion A. Likewise, a depot with a relationship to a historical event could meet the registration requirements under Criterion A. For example, a depot associated with the 1948 "Whistle-Stop" presidential campaign style of President Harry S. Truman in Independence, Missouri, was determined significant in association with this historical event.[544] Another example could be a depot that was historically associated with a public works project.[545] Additionally, if the design of a depot was influenced by community conditions (natural, political, social, or economic), and those conditions are apparent in the design of the depot, that depot could be considered significant under Criterion A.[546] In order for a depot to be considered eligible under Criterion A, integrity of setting, location, materials, and design are especially important to consider.[547]

Criterion B

Depots will likely not be eligible for the NRHP under Criterion B. As large railroad corporations constructed and operated these buildings, depots in general represent the enterprise of the corporation and not individuals.[548] Also, depots rarely are the primary and most significant building associated with the importance of the individuals within the rail corporations. However, there may be cases where corporate offices are no longer standing and the depots are the only remaining representative building or structure associated with the individual or company, then this relationship should be reevaluated. [549]Where depots reflect the specific skills or design sensibilities of an individual architect, that property should be instead evaluated under Criterion C.[550]

[543] Fraser and Strand 1997:163.
[544] Center for Urban Affairs & Community Services 2019.
[545] PHMC n.d.:15.
[546] Schmidt and Vermeer 2009:129.
[547] Ibid.:132.
[548] Ibid.:130.
[549] Ibid.:129–132.
[550] PHMC n.d.:14.

Criterion C

Depots vary in size, form, and architectural complexity. Most examples will fall into one of two categories: constructed from standardized plans/patterns or individually designed by an architect. Depots constructed according to company plans will embody characteristics associated with a certain railroad company.[551] In order to be eligible under Criterion C, these depots will convey corporate identity which could be expressed through characteristics including distinctive paint colors representing a railroad company's branding or notable remaining signage.[552]

Depots that are individually architect designed have different considerations under Criterion C. They may be eligible if they meet one or more of several superlative traits. For example, an architect-designed depot may be eligible if it is an early example of a particular style.[553] If the depot is an example of the work of a significant architect, builder, or engineer, and/or also embodies important traits from a particularly important moment in that architect's career, it may be considered eligible under Criterion C.[554] Another aspect to consider is the relationship between the architect and the railroad company who commissioned the depot's design such as if the architect is working "in-house" for the railroad company or they work for a specific architectural firm.[555] Within North Carolina, there are recorded examples of depots that reflect the most popular nineteenth-century and early-twentieth-century national architectural styles as shown in the table below (Table 6).

Table 6: A Sample of Previously Recorded Depots with the NC HPO Presented in Order by HPO Number.[556] These examples demonstrate some of the more popular architectural styles utilized by NS predecessor lines, including the NCRR.

HPO #	Property Name	County	Date of Construction	Architectural Style	Eligibility Determination
AM0009	Burlington NCRR Passenger Station	Alamance	1892	Tudor Revival	NRHP Listed (1974)
CV2200	Havelock Station Depot (Current Site)	Craven	ca. 1930	Vernacular	Moved; Not Eligible (2018)
DV0006	Thomasville Railroad Passenger Depot	Davidson	1871	Folk Victorian	NRHP Listed (1981
GF0128	Greensboro Union Station	Guilford	1927	Neoclassical Revival	Study List and Eligible (1978)
GF0127	Southern Railway Passenger Depot	Guilford	1899	Romanesque Revival	Individual Survey, Contributing to Downtown Greensboro Historic District (GF0042)

[551] Schmidt and Vermeer 2009:130.
[552] PHMC n.d.:16; Schmidt et al. 2013:235.
[553] Schmidt and Vermeer 2009:130.
[554] Ibid.
[555] PHMC n.d.:16.
[556]Center for Urban Affairs & Community Services 2017.

HPO #	Property Name	County	Date of Construction	Architectural Style	Eligibility Determination
MK3458	Southern Railway Passenger Station	Mecklenburg	1962	Modern	Eligible (2015)
RW0010	Salisbury Southern Railroad Passenger Depot	Rowan	ca. 1907	Spanish Mission Revival	NRHP Listed (1975)

Criterion D

Depot or depot pads (remnants of the foundation of a demolished station) may be eligible under Criterion D if analysis of the building or structure may generate information about the spatial organization of facilities within a railroad corridor, or the organization of supporting facilities associated with the depot.[557] However, a depot will only be eligible under Criterion D if that information relating to spatial organization can only come from analysis of the depot itself.[558]

Registration Requirements

Depots range from small-scale, temporary structures and buildings (flag depots/temporary depots) to large, sophisticated architectural works (union depots). Therefore, the registration requirements must take their scale and purpose into account when assessing their eligibility. Depots that have significance associated with their design or role in their respective railroad enterprise may be considered individually eligible and are also likely to be considered as a contributing element of a railroad corridor, railroad station, or railroad yard historic district. In order to be eligible for listing in the NRHP individually or as a part of a district, depots must meet one of the NRHP-criteria requirements and must retain overall historic integrity.

Location and Setting

A railroad depot or station will retain its integrity of location if it has not been moved from its historic building site. In order for a depot or station to be individually eligible, there must be some remnant or appearance of the rail corridor to convey context surrounding the depot or station.[559] If the depot has been relocated, it may still retain integrity of location by being placed within a setting comparable to its original siting, if that site is "within or adjacent to a railroad corridor that conveys the depot's association."[560] If a depot was moved during the railroad's period of significance in order to support the overall purpose and function of the railroad, this important consideration may not substantially reduce the integrity of location as well as setting.[561] A railroad depot or station must be located in a similar setting to that exhibited during its period of significance in order to

[557] Schmidt and Vermeer 2009:130.
[558] Ibid.
[559] Schmidt et al. 2013:235–236.
[560] Ibid.:236.
[561] PHMC n.d.:18.

retain integrity of setting. Additionally, the railroad depot or station must remain associated, both physically and visually, with a railroad corridor that maintains some expression of a railroad corridor.[562]

Design

A railroad depot or station must retain enough original fabric to convey the significance of its architectural or engineering design, or its function as a depot or station.[563] If it is designed according to railroad company standard plans, the depot should be indicative of those plans to maintain integrity of design.

Materials

The material aspect of integrity will be maintained first and foremost if a depot retains its original materials. However, a depot may also have integrity of materials if replacement materials were added during the resource's period of significance, or if repairs or additions were completed after the period of significance with materials in keeping with those that they replaced.[564]

Workmanship

Some depots that are constructed to standardized plans can contain prefabricated elements. Mass-produced architectural and structural components of a railroad depot or station would not exhibit integrity of workmanship. Many examples, particularly those in major metropolitan areas, are constructed to individualized plans, construction materials, and architectural elements. Surviving stylistic defining and unique features will ensure integrity of workmanship is retained.[565]

Feeling and Association

Typically, a depot without integrity of setting, design, and materials has lost its integrity of feeling. Modern alterations to historically significant architectural designs or additions that diminish the scale of the depot or station will reduce its integrity of feeling.[566] Proximity or lack thereof to a depot's rail corridor or tracks will also positively or negatively impact integrity of feeling.[567] A railroad and the significant services it provided or architecture embodied defines a depot or station's integrity of association.[568] Usually, a railroad depot or station will retain its integrity of association if it has not lost its integrity of setting, location, materials, and design. The current use

[562] Ibid.
[563] Ibid.
[564] Schmidt and Vermeer 2009:131.
[565] Schmidt et al. 2013:236.
[566] Ibid.
[567] Schmidt and Vermeer 2009:132.
[568] Ibid.

of a depot relates to the building's integrity of association. If it is still used in a transportation context, a depot will maintain integrity of association.[569]

Drainage and Grade Separation Structures

Description

Since the construction of North Carolina's first self-propelled railroad, the R&G Railroad, in the 1830s, there have been many drainage and grade separation structures constructed for the purpose of carrying railroad tracks over, under, and through obstacles along railroad routes. These minor and major built elements were crucial to the railroad's continued operation and function.[570] These structures range in size to span as little as a few feet to cross over ditches or minor drainages to hundreds of feet across to span some of the state's major waterways and marshlands. The main types of resources within this category include bridges, trestles and viaducts, culverts, and tunnels.

Bridges, the most common subtype encountered in this property type, include both underpasses and overpasses. These structures are utilized to cross larger distances and range from single- to multiple-span structures depending on the size of waterway, road, valley, or other landscape feature over which the line is carried. Trestles and viaducts are multi-span structures that cross valleys and large waterways. Culverts are the smallest of this property type and generally do not exceed 20 feet in length.[571] They are typically single-span structures used to cross drainage ditches and streams. Tunnels go through or underneath obstacles along the railroad's path and are more common in the mountainous regions of North Carolina where the terrain presented frequent challenges to grading and laying rail.[572] All of these types of structures have been utilized by historic railroad lines in North Carolina and actively support those that presently remain in service.

Bridges

An early-twentieth-century engineer, J.A.L. Waddell, stated in 1916, "the introduction of railroads in the United States in 1829 marked the beginning of bridge engineering."[573] When constructing railroad bridges, the primary objective was their functionality along with economical sustainability and the speed in which they could be constructed.[574] As such, bridge design was chiefly utilitarian. A nineteenth-century bridge builder from the northeast, Thomas Curtis Clarke, echoed this sentiment when he stated, "utility alone governs their design. So long as they are strong enough, few care how they look."[575] However, some railroad bridges were constructed with the added

[569] PHMC n.d.:18.
[570] Ibid.:4.
[571] Fraser and Strand 1997:182.
[572] Home Town Locator 2022.
[573] Parsons and EIH 2005:2-6.
[574] Fraser and Strand 1997:179.
[575] Ibid.:184.

purpose to double as a monument to the companies that built them. Bridges were constructed in numerous forms using various methods and materials that often reflect complex engineering solutions. Their overall form can be divided into three parts or subsystems: substructure, superstructure, and appurtenances or safety features.

Subsystems of a Bridge

The substructure of a bridge is the part that supports the superstructure, while the superstructure is the part of the bridge that spans the obstacle (Figure 51, p. 123).[576] The superstructure often supports a third subsystem of appurtenances designed for safety or railroad function reasons, but which may also include decorative elements like parapet walls or railings, pedestrian walkways, and water platforms.

The substructure encompasses the foundation of the bridge which typically comprises piers, abutments, and wing walls. Piers are "structures that support the superstructure at intermediate points between the end supports or abutments" commonly featured in multiple-span bridges.[577] There are many different types of piers, the most basic being solid walls, hammerhead or tee types, column bents, and pile or trestle bents.[578] The abutments are built into the landscape at termini of the bridge. These earth-retaining structures vary in material and may not match the overall bridge physical composition or even date from the same construction period as the rest of the structure. For example, it was common in the nineteenth century for wooden bridges to be supported by brick or stone abutments, features that may have been reused or retained during subsequent alterations or rebuilds. Sometimes built in conjunction with an abutment, wing walls commonly extended from one or both sides. Wing walls retain earth behind the abutment and are positioned "parallel to the bridge and approaches, or they may have a skew angle."[579] Smaller components of a pier or abutment incorporated into their design—many of which are not readily visible—can include pedestals, bearings, backwalls, stems, footings, piles, and sheeting.[580]

The superstructure of a railroad bridge comprises all of the features above the substructure, including a deck along with primary and secondary framing members designed to carry the anticipated load and resist natural and gravitational forces. The deck is the physical extension of the traffic-carrying component across the obstacle and can rest on or be integrated with "a frame or other structural system designed to distribute loads longitudinally along the length of the bridge."[581] An "open deck" for an overpass bridge features gaps between the beams and allows air to circulate around the ties and tracks, while a "solid deck" is covered by a ballast bed, typically

[576] Holth 2015. Note: This image was modified for this document.
[577] Zhao and Tonias 2007:6.
[578] Ohio Department of Transportation 2016; Zhao and Tonias 2007:7.
[579] Rossow. n.d.:1; Zhao and Tonias 2007:7.
[580] Zhao and Tonias 2007:5–8. Note: These smaller, less-visible supporting features of the substructure are not commonly considered in an assessment of its historic significance or integrity but are often detailed in construction drawings.
[581] Holth 2015; Zhao and Tonias 2007:4.

composed of gravel.[582] Primary members of the superstructure "distribute loads longitudinally and are usually designed principally to resist flexure and shear," including beam-type members known as stringers or girders commonly used in twentieth-century railroad bridges.[583] Secondary members consist of the bracing between primary members, helping to distribute some of the vertical loads and resist cross-sectional deformation, further stabilizing the structure.[584] This includes horizontal and diagonal members like lateral braces, diaphragms, and connection plates. Primary and secondary members are arranged in various configurations stemming from materials used in the construction of a given bridge.

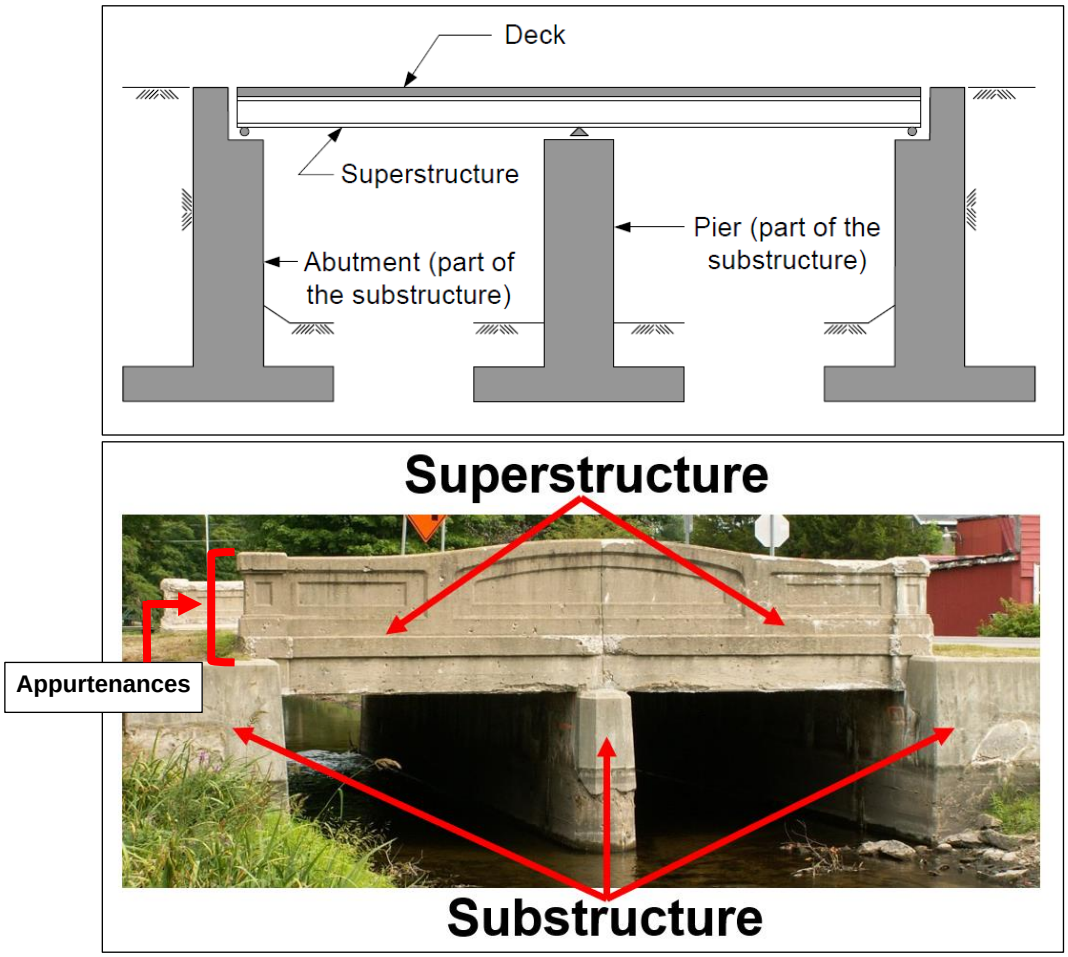


Figure 51: Parts of a Bridge as Indicated by the Historic Bridge Foundation (Top) and Nathan Holth at HistoricBridges.org (Bottom).[585]

[582] Fraser and Strand 1997:181.
[583] Zhao and Tonias 2007:5.
[584] Ibid.
[585] Historic Bridge Foundation 2021; Holth 2015.

As a system, the superstructure can be constructed in a variety of forms and materials that, taken together, further categorize and define a bridge's type. Broadly speaking, the common types historically employed on railroad lines are girder-floor beam, truss, and arch bridges constructed from wood, stone, metal, and concrete, or some combination thereof. Many different subtypes exist within these general categories—most of which correspond to a particular time period in the history of railroad construction, illustrating available technology and materials.

Methods of Construction and Materials

A knowledge of materials, methods of construction, and temporal use by railroad companies is essential to understanding, recording, and evaluating drainage and grade separation structures. Before discussing the various types of bridges and the other subtypes to this property type commonly seen along railroads in the North Carolina, a timeline of materials used and construction methods is briefly reviewed in the table below (Table 7).

Table 7: Evolution of Bridge Technology Including Materials and Construction Methods in United States.[586]

Construction Methods	Timeframe of Use	Common Material	Common Types
Traditional Methods	1830s–1860s	• Timber • Masonry • Iron • Combination of Iron and Timber	• Truss • Arch
Beginning of Standardization of Design	1840s–1860s	• Timber • Masonry • Iron (Cast) • Combination with Timber	• Truss • Arch
Factory-Produced Prefabricated Systems	1850s+	• Iron (Cast and Wrought Beginning in the 1880s) • Steel (Beginning in the Late 1800s) • Combination with Timber	• Truss • Arch
Introduction of Concrete	1890s+	• Concrete • Reinforced Concrete • Steel	• Truss • Arch • Slab • Beam/Girder • Swing

[586] Hartle et al. 2002:P.2.9–P.2.10; Parsons and EIH 2005:2-5–2-29; NCDOT 2020.

All of these materials and construction methods would come together to construct a multitude of different separation structure types throughout the nineteenth and twentieth centuries (Figure 52–Figure 57, pp. 125–128; Photo 1, p. 129). A helpful resource for learning more about bridge building technology, bridge types, and other important historic themes impacting the construction of bridges throughout the state is available online from North Carolina Department of Transportation (NCDOT)'s "Historic Bridges" project.[587] Additional resources on common types, materials, and construction methods of historic bridges and their components can be found in Section I of this document.[588]

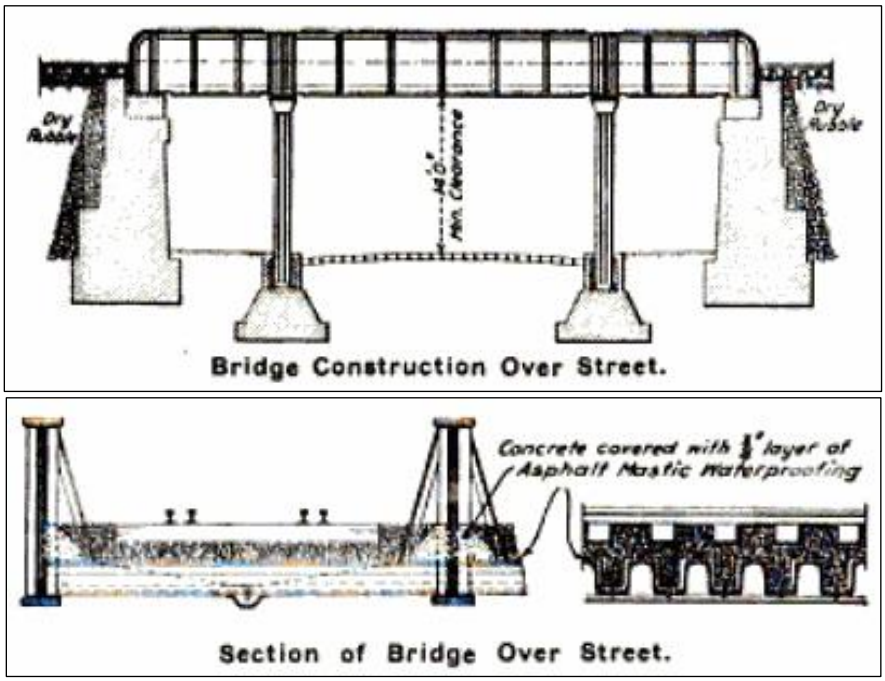


Figure 52: Diagram (Top) and Section (Bottom) of Overpass Railroad Bridge Over a Street as Presented in a 1908 Issue of the *Railroad Age Gazette*.[589]

[587] NCDOT 2020. Note: See NCDOT's online resources for historic bridge identification and evaluation through this link https://www.ncdot.gov/initiatives-policies/Transportation/bridges/historic-bridges/Pages/default.aspx.
[588] Historic Bridge Foundation 2021.
[589] Railroad Age Gazette 1908:614.

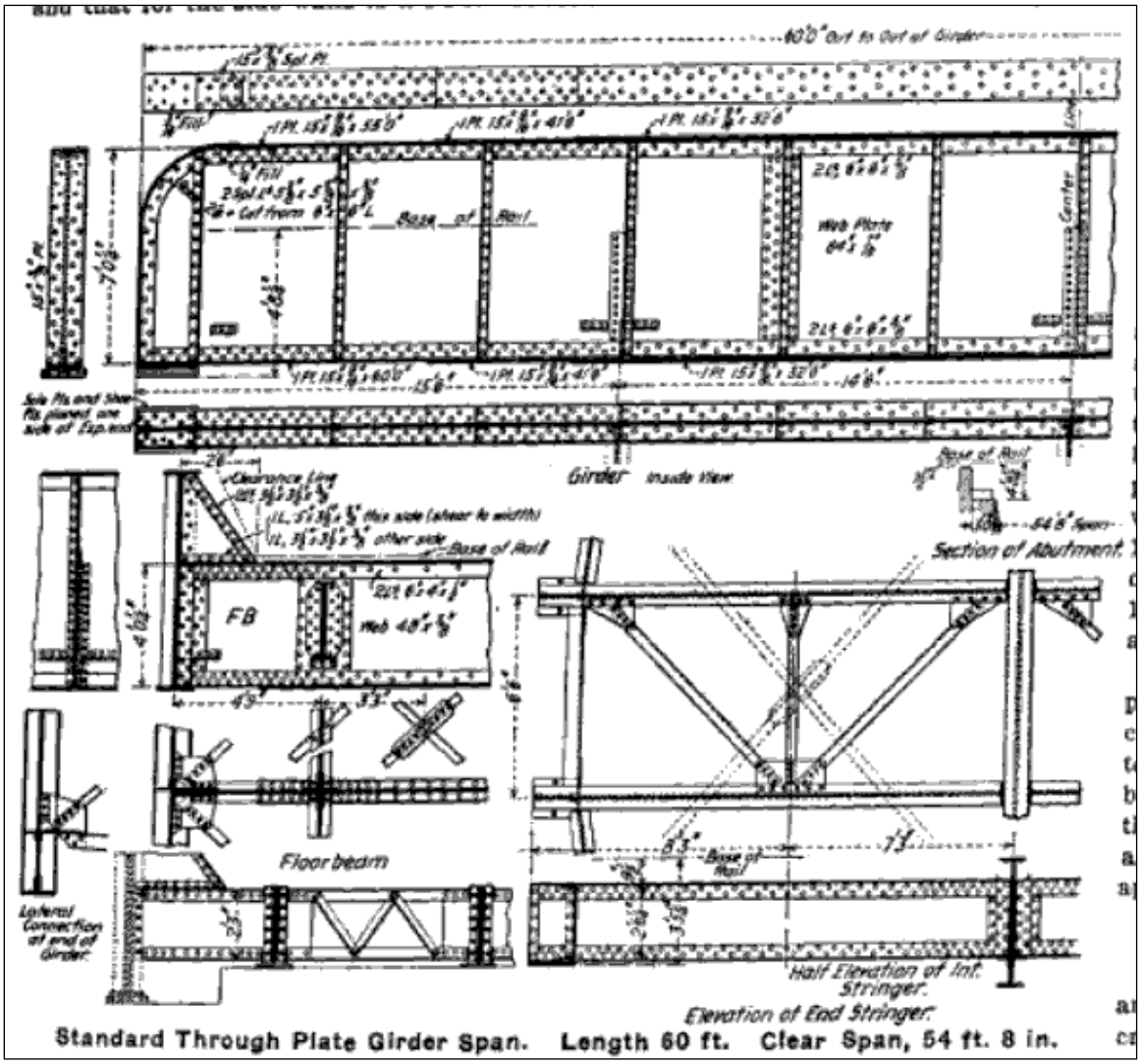


Figure 53: Diagram of a Standard Through Plate Girder Span as Presented in a 1909 Issue of the *Railroad Age Gazette*.[590]

[590] Railroad Age Gazette 1909:551.

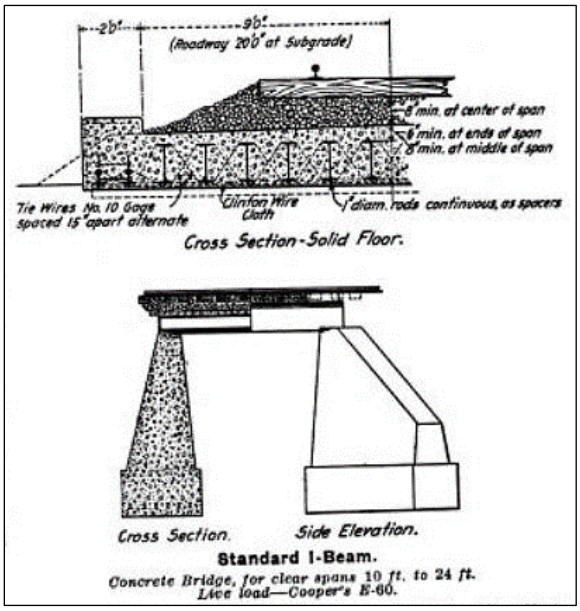


Figure 54: Diagram of Standard I-Beam as Presented in a 1909 Issue of the *Railroad Age Gazette*.[591]

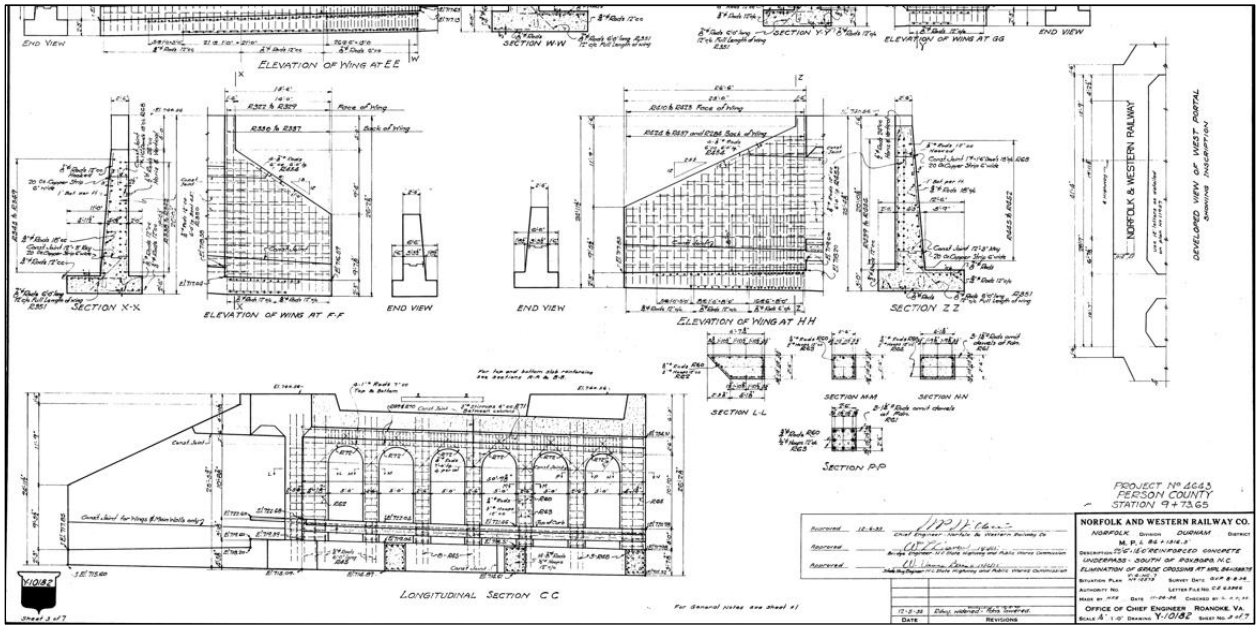


Figure 55: Detail of Original Drawing for N&W Railway Rigid-Concrete Underpass Constructed in 1936 South of Roxboro, Person County (PR0323).[592]

[591] Ibid.:550.
[592] Norfolk & Western Railway 1934.



Figure 56: 1938 Riveted Warren Through Truss Bridge Over NC 87 and W. Webb Avenue (AM0164) on the NCRR in the Glen Raven Area of Burlington, Alamance County.[593] This resource has been previously recorded with the HPO but has not received an eligibility determination.

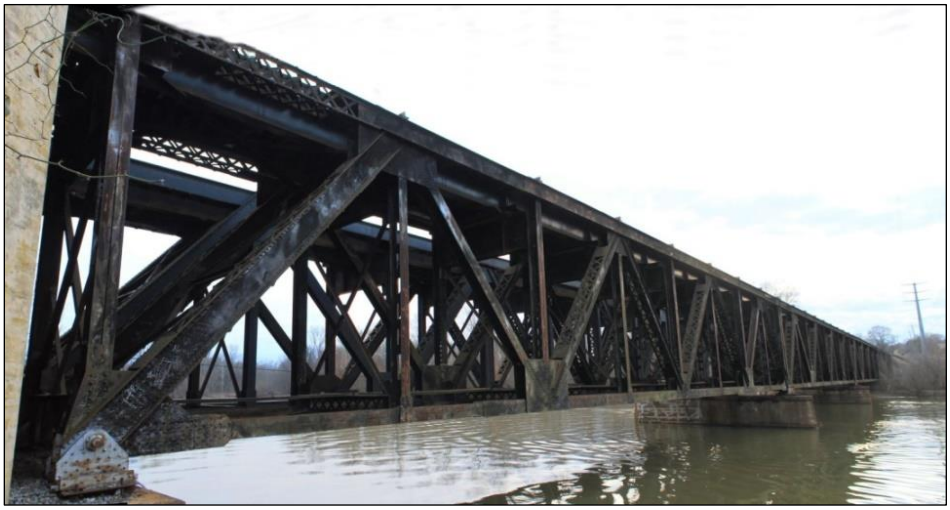


Figure 57: View of Circa-1907 Southern Railway Warren Deck Truss Bridge Crossing the Yadkin River in Rowan County (RW0934). This is one of two adjacent bridges determined eligible for the National Register in 2005 and 2022 as contributing resources to the Yadkin River Crossings Historic District.[594]

[593] Haley and Haley 2017a.
[594] Ridpath 2009; NC HPO 2022.



Photo 1: View Looking North at Southern Railway's Circa-1935, Reinforced-Concrete Underpass with Two Pedestrian Walkways (DH2504) over S. Roxboro Street in Durham. This resource was determined eligible under Criteria A and C in 1999 and 2015.[595]

Trestle and Viaducts

Trestle bridges and viaducts are braced structures utilized for crossing deep valleys and larger waterways when there is no alternate route available (Figure 58–Figure 61, pp. 129–131). Trestles are generally of wood construction built with driven wood piles and cut frame timbers and often have short spans below 20 feet between trestles. More modern versions feature concrete trestles. Viaducts are similar to trestles in construction but utilize steel girders or arches. These were often utilized in railroad corridors that would be subject to heavy traffic, heavy loads, or strong cross winds.[596]



Figure 58: Undated Photo of the 1910 Suffolk & Carolina Railway Albemarle Sound Trestle.[597] This resource was removed around 1987.

[595] Sylvester et al. 2020:440–441.
[596] Schmidt and Vermeer 2002:222.
[597] Ibid.

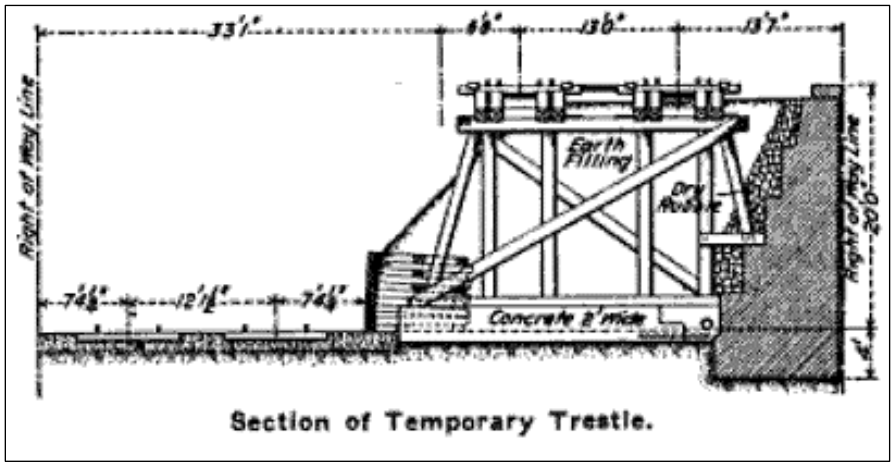


Figure 59: Section of a Temporary Trestle as Presented in a 1908 Issue of the *Railroad Age Gazette*.[598]

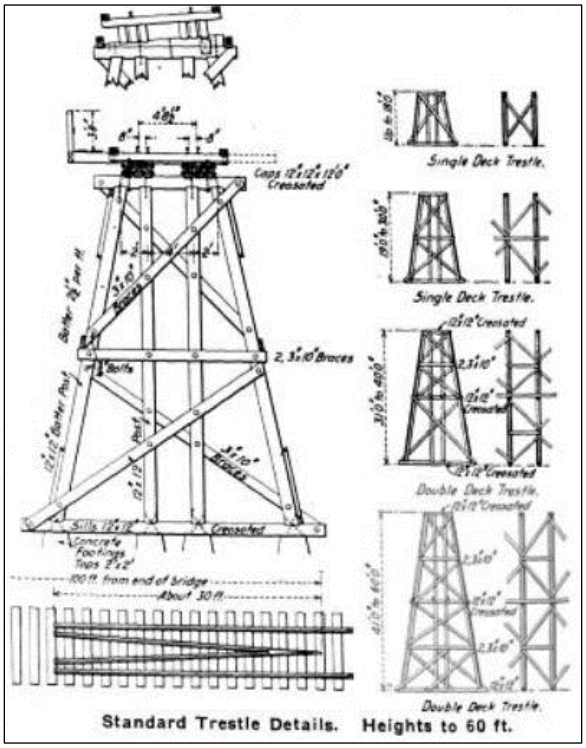


Figure 60: Diagram for Standard Trestle Details as Presented in a 1909 Issue of the *Railroad Age Gazette*.[599]

[598] Railroad Age Gazette 1908:615.
[599] Railroad Age Gazette 1909:556.

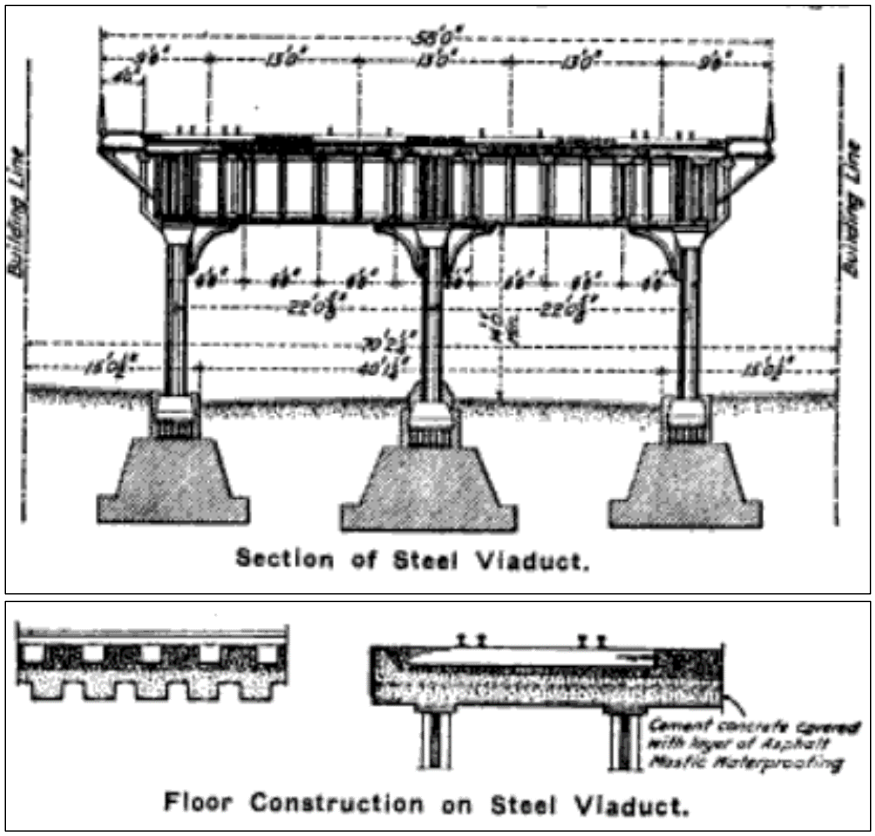


Figure 61: Section (Top) and Floor Construction (Bottom) of a Steel Viaduct as Presented in a 1908 Issue of the *Railroad Age Gazette*.[600]

Culverts

Culverts were constructed for smaller spans, typically meant to cross small streams, minor drainage ditches, or other embankment.[601] Their construction is relatively simpler compared to massive bridges.[602] In the nineteenth century, smaller culverts were wood stave forms, metal structures, or concrete pipe ranging from 1 to 3 feet in diameter. These were typically buried beneath railroad tracks and surrounded by earth fill or ballast. Wood stave pipes were commonly made of long, narrow, slightly beveled planks, similar to those used for barrel making, and held together with iron rings. While widely used, such culverts had to be replaced often due to rot.[603] Metal pipes became popular later in the nineteenth century; these pipes were made of iron and could be up to 6 feet in diameter.[604] Pipe culverts utilize multiple corrugated steel sheets riveted

[600] Railroad Age Gazette 1908:612.
[601] Hartle et al. 2002:P.3.22.
[602] Schmidt et al. 2013:119.
[603] Fraser and Strand 1997:181.
[604] Ibid.

into sections to create the desired shape. By the twentieth century, precast concrete pipe sections with single-hub ends were commonly utilized by railroads for culverts.

Larger arch or box culverts spanning larger creeks and branches were constructed from stone or brick. The arch culvert featured a single barrel (arch) that could range from 5 to 25 feet in diameter (Figure 62; Figure 63 and Photo 2, p. 133). In the nineteenth century these arch culverts were constructed with stone or brick, but by the early-twentieth century, culverts were increasingly made with concrete.[605] The availability of concrete during the twentieth century resulted in the rise of the box culvert (Figure 64–Figure 65, p. 134).[606] These culverts were functionally the same as the concrete arch culverts aside from the main difference in that the box culverts had a square barrel. Box culverts could comprise single or double openings whereas arch culverts were generally only single barrels.[607] Despite other modern materials and advanced technologies, reinforced concrete is still the most popular construction method today.

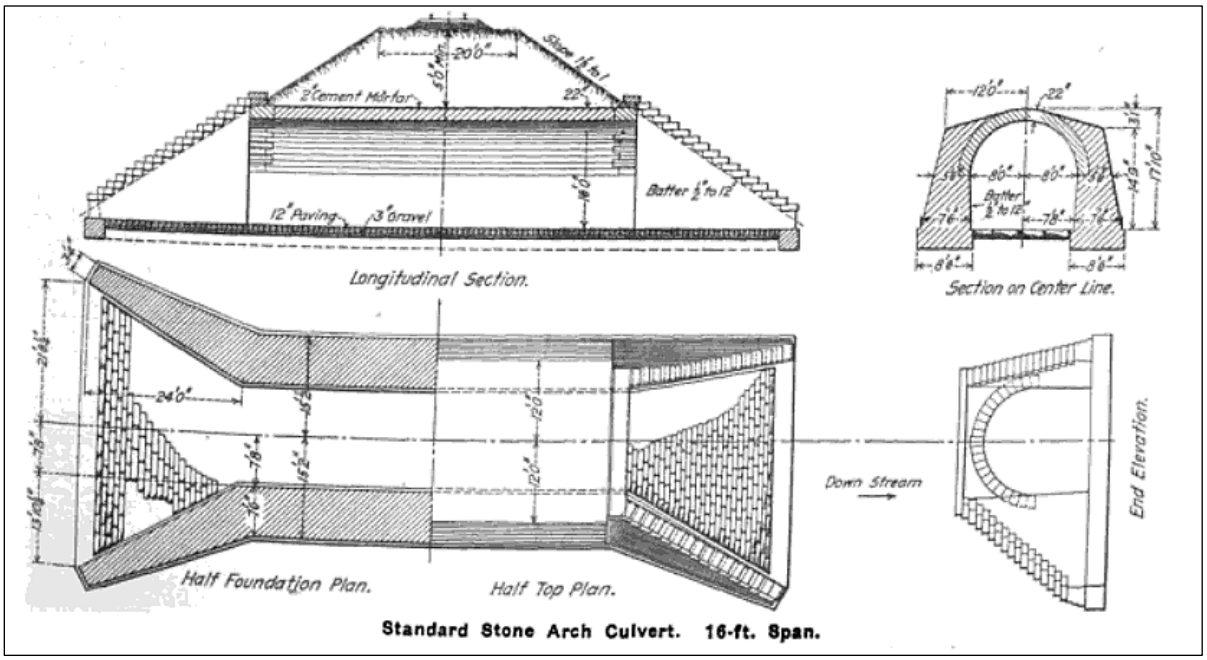


Figure 62: Diagram of a Standard Stone Arch Culvert as Presented in a 1909 Issue of the *Railroad Age Gazette*.[608]

[605] Ibid.:181.
[606] Ibid.:182.
[607] Tyrrel 1909:202–203.
[608] Railroad Age Gazette 1909:549.

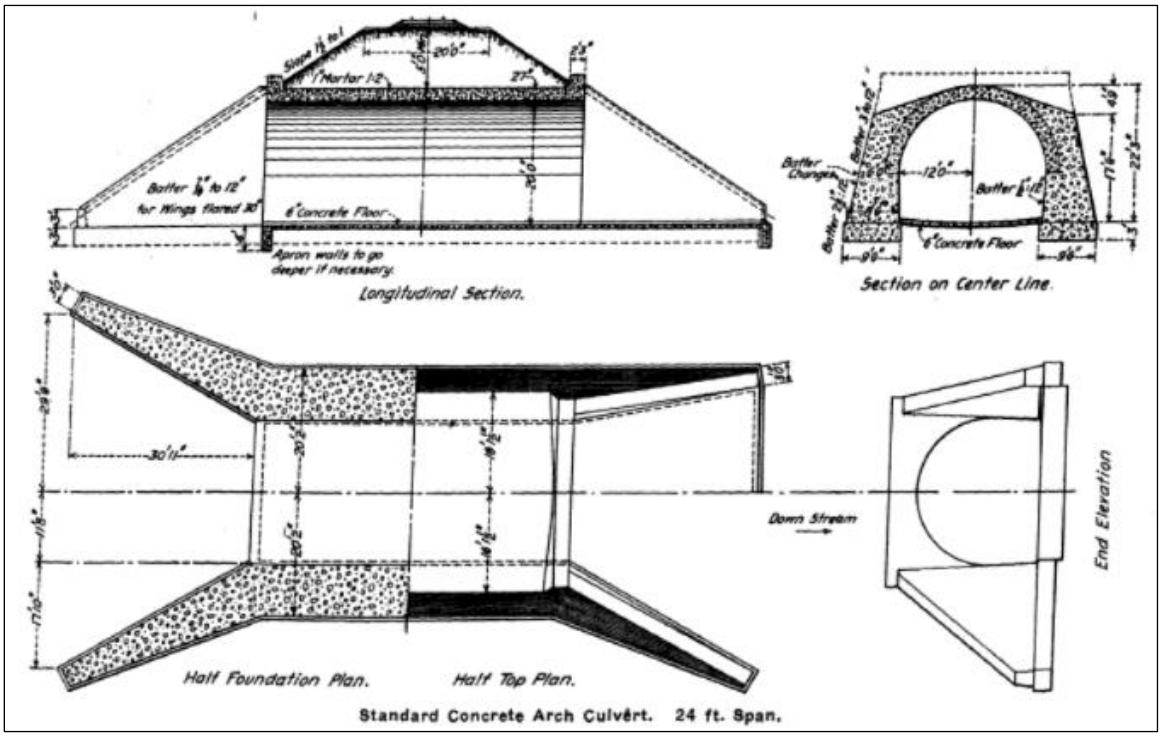


Figure 63: Diagram of a Standard Concrete Arch Culvert as Presented in a 1909 Issue of the *Railroad Age Gazette*.[609]



Photo 2: 1930 N&W Railway Concrete Box Culvert Bridge Over Tributary of Little River in Durham County Not Previously Recorded by the HPO (Left).[610] Circa-1856 NCRR stone culvert (AM2866) in Elon, Alamance County, looking south; this resource is newly identified and has not received a formal eligibility determination from HPO staff (Right).

[609] Ibid.:549.
[610] Haley and Haley 2017b.

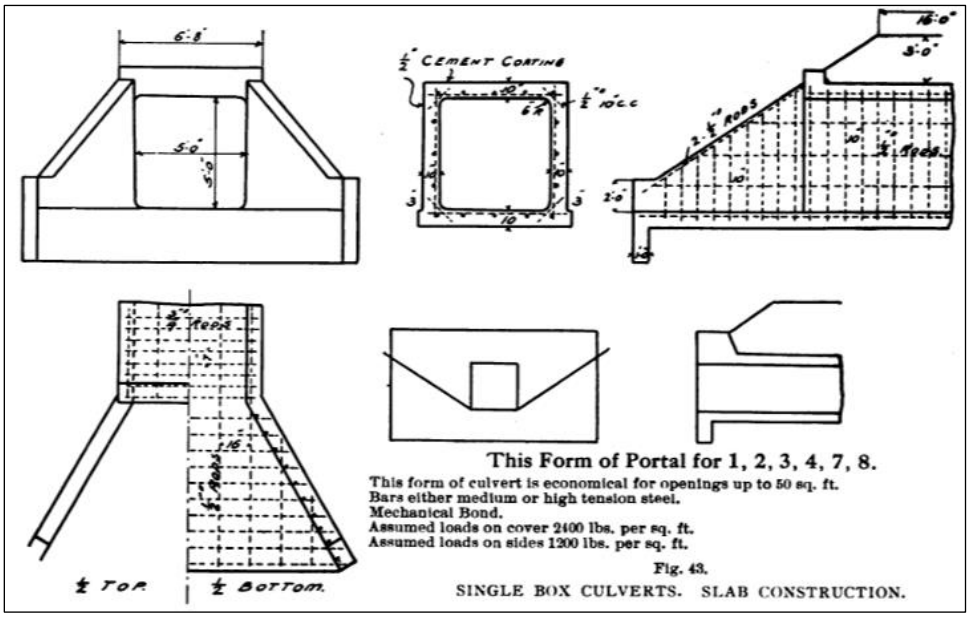


Figure 64: Diagram of a Single Box Culvert as Presented in a 1909 *Concrete Bridges and Culverts*.[611]

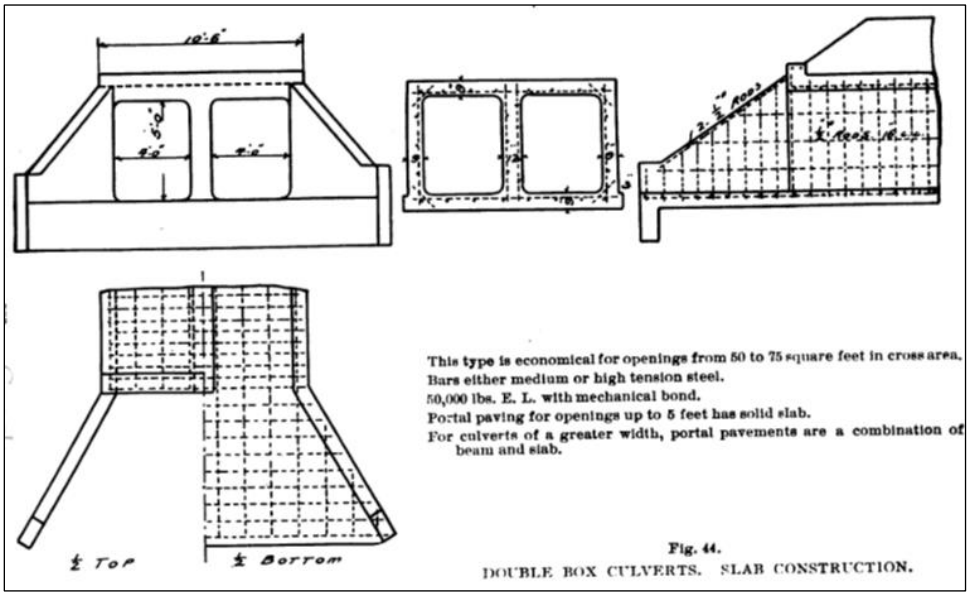


Figure 65: Diagram of a Double Box Culvert as Presented in a 1909 *Concrete Bridges and Culverts*.[612]

[611] Tyrrell 1909:202.
[612] Ibid.

Tunnels

Bridges and culverts were constructed to carry the railroad over or under obstacles, while tunnels were used to go directly through them (Figure 66). Tunnels are more commonly found in North Carolina's mountainous regions, where such obstacles could not be avoided along proposed railroad routes. Cost was a large factor in the location and design of rail tunnels, however more direct routes that cost more at the forefront were preferred to save costs in the long run with faster travel times and less grade variation to struggle with.[613]

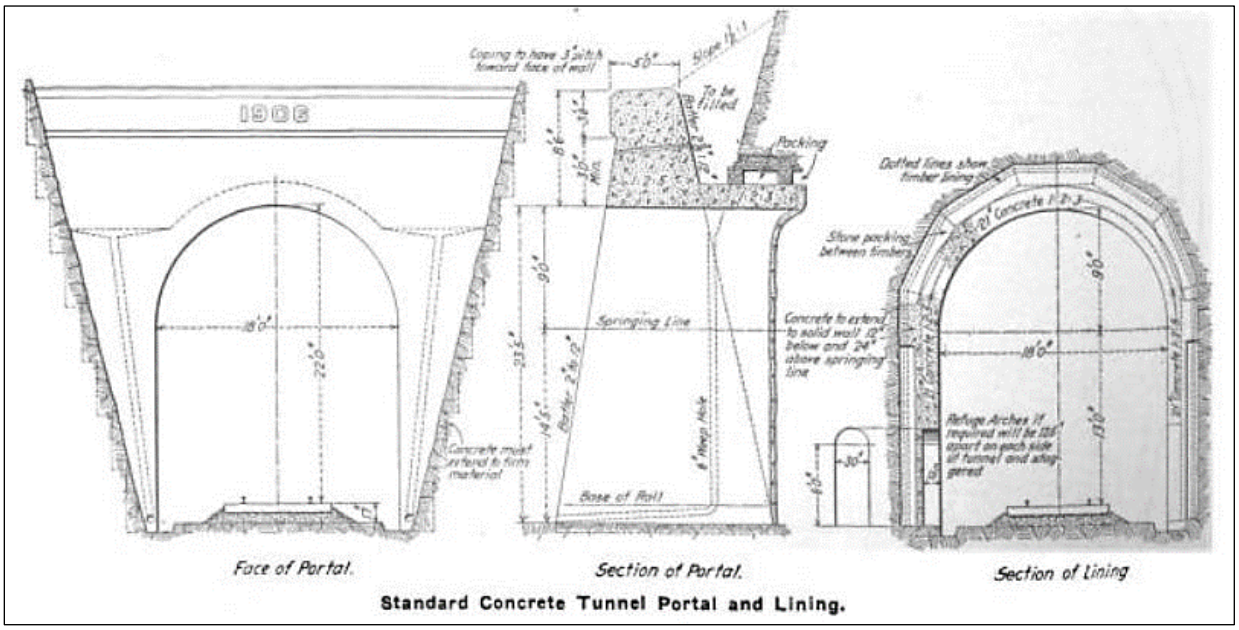


Figure 66: Diagram of a Standard Concrete Tunnel Portal and Lining as Presented in a 1909 Issue of the *Railroad Age Gazette*.[614]

Constructing tunnels was hard and dangerous work, as evidenced by the construction of the 1882 Cowee Mountain Tunnel (JK0241) in Jackson County (listed in the Study List in 1992), where 19 people died during tunnel construction, or the 1879 Swannanoa Gap Tunnel (BN0699) in Buncombe County (listed in the Study List in 1975) associated with the Western North Carolina Railroad where at least 300 people were killed throughout construction, many of whom were convicts and/or of African American descent.[615] Both of those tunnels are associated with railroads that are a part of the NS system. Tunneling for the railroads typically involved the cut and cover method of tunneling that required digging an open trench, constructing a casing, then covering the tunnel with original soil; or hard rock construction which included boring, drilling, or blasting

[613] Fraser and Strand 1997:188.
[614] Ibid.
[615] Only In Your State 2016; Weidman 2006.

utilizing explosives to a "predetermined patten, size, shape, depth, and direction" that commonly caused cave-ins.[616]

> Since the end of the Civil War, black powder had become scarce in the South, so to solve the issue of excavating solid granite, huge pyres of pine logs were cut down by hand, stacked, and burnt to hot coals by the convicts. They would then pour cold water onto the rocks and this sudden contraction would split the rock for the tunnel construction. Nitroglycerin was also used, mixed in part with sawdust and cornmeal and then tamped into a drill hole.[617]

The Inland Marine Underwriters Association states that subsequent construction after blasting or drilling would potentially require reconfiguring the shape of the original tunnel with the addition of a membrane or lining composed of concrete or steel or the use of rock bolting.[618] According to an article published on *Railway Age*, "the various classification of tunnel liner types is unlined rock, rock reinforcement systems, shotcrete, ribbed systems, segmental linings, placed concrete and slurry walls."[619] As denoted in a diagram in a standard concrete tunnel portal and lining in a 1909 Issue of the *Railroad Age Gazette* concrete was a popular lining material utilized in early tunneling, but stone was also another typical material (Figure 67, p. 137). This is also illustrated in an image of the Burgin Tunnel in McDowell County, which has not previously been recorded with the HPO.

Significance

The most common criteria that all drainage and separation structures evaluated under this MPDF are likely to be considered eligible under are Criteria A and C; the most common areas of significance for this property type are Engineering and Transportation. Drainage and separation structures are located along every rail line in North Carolina as vital components of these corridors and therefore associated with the area of significance of transportation. Although expensive for the railroad companies, these crossings were necessary when rail routes encountered unavoidable obstacles such as waterways and other topographic obstacles such as mountains and valleys. When constructed these structures needed to check multiple boxes in terms of being structurally sound along with economically viable for the railways to build and maintain. Sometimes they also carried forth marketing efforts of the company through specific design or signage. The need for these structures enables civil engineers of the nineteenth and twentieth centuries to design new structural types and nearly all new configurations for drainage and grade separation structures built during that time were built for railroads.[620]

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[616] Inland Marine Underwriters Association 1999; Weidman 2006.
[617] The Rail Project 2021.
[618] Inland Marine Underwriters Association 1999.
[619] Railroad Age Gazette 1909:548.
[620] Fraser and Strand 1997:190.



Figure 67: View of the Not Previously Recorded Burgin Tunnel in McDowell County.[621]

These structures played a significant role in the operation of all railroad corridors within the state of North Carolina and therefore are associated with historical significance in transportation along with an association to the engineering and application of the principles of design to these structures.[622] The operation of railways hinges on the construction of these drainage and grade separation structures. There is no other property type more associated with railroads than drainage and grade separation structures specifically in regard to bridges and tunnels. These structures are especially vital in the North Carolina railroads when taking into consideration the topography of the state. Many of these structures have fallen to the test of time, have received multiple repairs, or have been completely replaced; those that remain with their integrity intact are considered significant for their association with the rail ways of North Carolina.

Criterion A

Drainage and grade separation structures will likely be considered a contributing resource to a railroad corridor historic district, a railroad station historic district, or a railroad yard historic district under Criterion A. It is less likely that a structure would be individually eligible under this criterion as the historic district it is associated with likely better represents an area of significance under this criterion on the whole. However, if the structure "demonstrably associated with the construction and/or operation of significant railroad lines; structures associated with important locations along significant railroad lines; structures associated with important events or historical

[621] A Weekend in Loops of Western North Carolina n.d.
[622] Schmidt and Vermeer 2002:120.

trends that occurs along significant railroad lines" could render it individually eligible.[623] The period of significance for the structure will be the same or within the period of significance of that historic district.[624] Individually, the railroad-related structure must have "served during a historic period as an important means to access to the state."[625] A drainage and grade separation structure will also be deemed eligible under the NRHP Criterion A if it is associated with a historical event that falls within the period of significance of the railroad corridor historic district.[626]

Criterion B

Drainage and grade separation structures will likely not be eligible for the NRHP under Criterion B as it is not applicable for this property type. These structures were constructed and maintained by a number of large companies that represent the work of many people rather than one person.[627] Additionally, significance of railroad engineers, architects, contractors, or designers associated with these structures would be better evaluated under Criterion C.

Criterion C

Drainage and grade separation structures may be considered eligible for the NRHP under Criterion C when evaluating a number of aspects in relation to the resource within a large population of similar structures in the region. These evaluations should consider the age of the structure, the rarity of the structure as a design type, and any unique characteristics that the resource holds. A railroad drainage and grade separation structure will be significant under Criterion C if it meets one or more of the following conditions:

- The structure represents the early or best work of a historically important railroad engineer, architect, contractor, or the structure was designed with patented or otherwise specifically designed elements;
- The structure utilizes designs or building systems that represent historically important types or construction methods that feature experimental or innovative elaborations of those types or methods;
- The structure employs important or innovative contemporary construction methods including but not limited to the use of stone masonry for the construction of abutments or underwater caissons for pier construction; or
- The structure demonstrates unique aesthetic details or ornamentation.[628]

[623] Schmidt et al. 2013:190.
[624] Schmidt and Vermeer 2002:225.
[625] Hufstetler and Bedeau 1998:74.
[626] Fraser and Strand 1997:190.
[627] Schmidt and Vermeer 2002:225.
[628] Schmidt et al. 2013:122; Schmidt and Vermeer 2002:225.

Criterion D

Although unlikely, drainage and grade separation structures or their structural remains may be considered eligible for the NRHP under Criterion D if further analysis can yield important information about a significant type of technology or construction employed as part of the evolution of its class of railroad-related properties. The structure or remains of the structure must be the principal source of important information to meet Criterion D.[629]

Registration Requirements

To be eligible for listing in the NRHP under this MPDF, the drainage and grade separation structures must have been constructed for the purposes of carrying a railroad over, under, or through a natural or man-made feature between the years 1849 and 1982. The structures must meet one of the following National Register Criteria for evaluation and must retain overall historic integrity.

Location

A railroad grade separation structure must retain its integrity of location if it contributes to a railroad district under Criterion A. Grade separation structures that have been relocated may still be individually eligible under Criterion C for their historically significant design and construction characteristics.

Design

A grade separation structure must retain enough original physical features to effectively convey the significance of its engineering design. The most important part of railroad bridges, trestles, viaducts, and culverts related to this aspect is their superstructure, which expresses the engineering principles integral to their design. Therefore, for such structures to retain integrity of design, they must be substantially intact, including their connection types and the composition and configuration of their structural members as well as any associated aesthetic elements.[630]

Setting

To be eligible under Criterion A, a grade separation structure must be located in a setting similar to that during its period of significance. For example, a bridge should still cross a river, stream channel, or other body of water, another railroad corridor, or be situated over a similar barrier to

[629] Schmidt et al. 2013:122.
[630] Ibid.

travel. However, grade separation structures eligible under Criterion C do not need to retain integrity of setting unless the setting directly influences the architectural fabric of the structure.[631]

Materials

A railroad drainage and grade separation structure retains integrity of materials if it:

- retains original construction materials;
- has replacement materials that were installed during the structure's period of significance; or
- has modern repairs or replacements that have the same material character as those used during the period of significance.

For example, the presence of a bridge's original piers, abutments, decking, and guard rails adds to the overall material and design integrity of a bridge. However, because the periodic replacement of these elements was historically required to maintain the safety and operability of such a structure, their presence is not required for eligibility. Nevertheless, any replacements in these categories should be of appropriate scale and should not substantially obscure the functional identity of the structure.[632]

Workmanship

Most components of railroad drainage or grade separation structures were mass produced and do not exhibit qualities of workmanship. If, however, a decorative or aesthetic feature of a grade separation structure is an important feature of a structure, that feature must retain its original visual appearance.[633]

Feeling and Association

A drainage or grade separation structure's integrity of feeling will only be lost if modern alterations to its historical design or the addition of modern materials to its structural system are of "sufficient scale or visual contrast so as to dominate its overall visual appearance." [634] As integrity of association refers to the direct link between the structure and the engineering embodied in its construction and design, most resources of this property type will retain association integrity if it retains other aspects of integrity such as location, design, and materials, similar to integrity of feeling.

[631] Ibid.
[632] Ibid.:124.
[633] Ibid.
[634] Ibid.

Housing and Maintenance Buildings and Structures

Housing Buildings Description

Housing associated with railroads refers to buildings that temporarily or permanently provide shelter/accommodation for humans, human activities, and machines. Housing and maintenance buildings and structures are usually grouped together in rail yards except for buildings which serve specific purposes at intervals along a rail corridor or in more urban settings when extant block layouts may affect building siting (Figure 68).

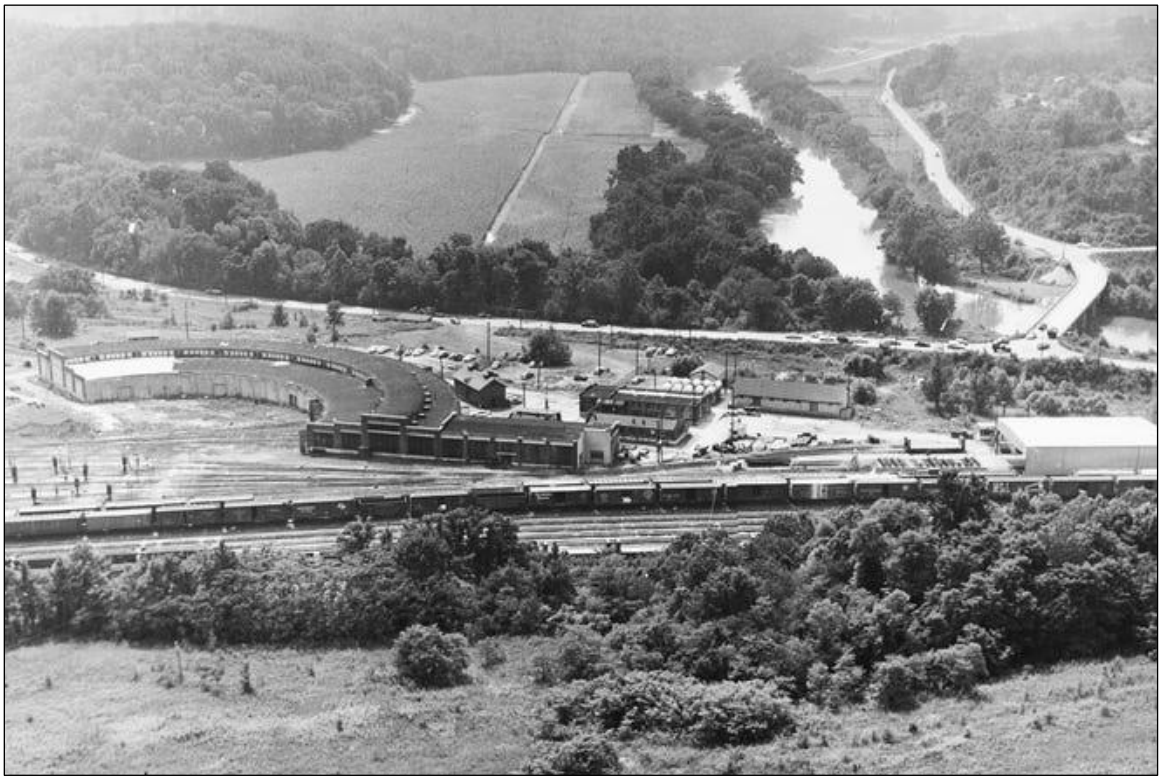


Figure 68: View of Southern Railway Tracks and Yard, Including a Roundhouse and a Variety of Maintenance Buildings, in Asheville; Date Unknown.[635]

Bunk House

Bunk houses are buildings that offer temporary accommodation for train staff/crew at juncture areas where there is either limited or no accommodation for workers.[636] Typically, these modestly

[635] Neufeld n.d.
[636] Fraser and Strand 1997:164.

sized buildings were constructed using standard company plans and are less refined/detailed than section houses (see below) (Figure 69).

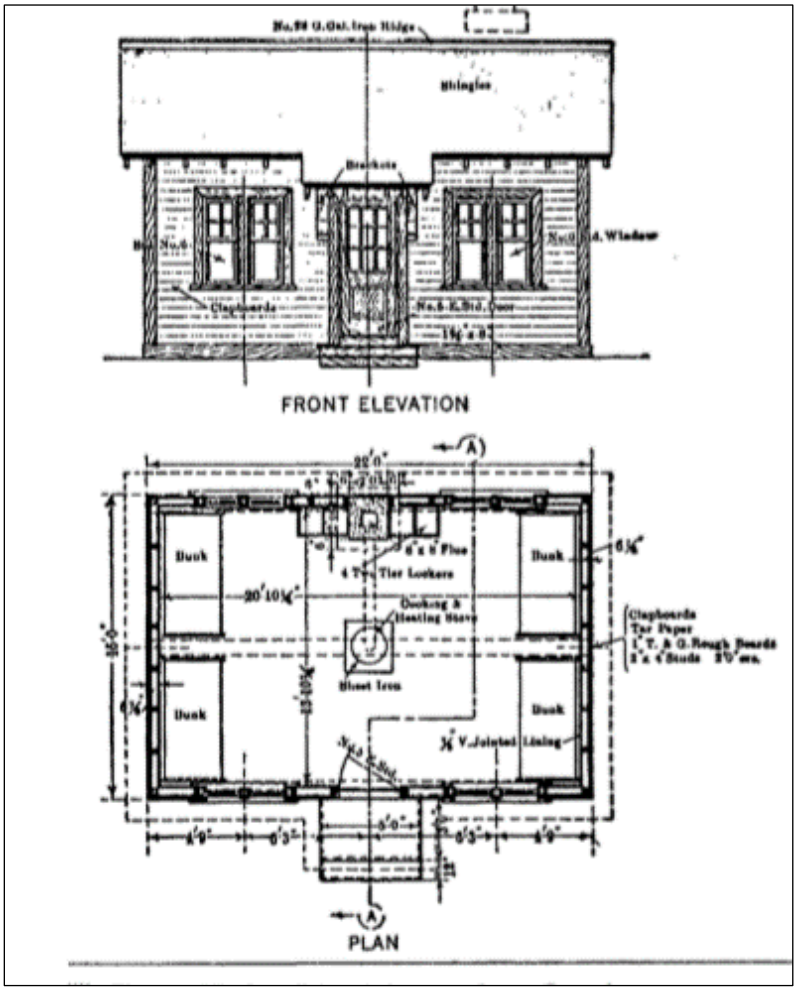


Figure 69: Example Plan of a Small Bunk House From John W. Orrock's 1918 *Railroad Structures and Estimates*.[637]

Dwelling House

Dwelling houses are residences for railroad employees, not including section workers or train crew (section workers occupied section houses and train crew resided in rest houses). These houses were company provided and located near rail infrastructure, such as at division points, near tracks, or outside the ROW.[638] These houses are often located in rural areas where there are fewer housing options available; companies may also have repurposed existing housing stock to use as employee

[637] Orrock 1918.
[638] Fraser and Strand 1997:165–166.

dwelling houses.[639] Because the dwelling houses could be purpose-built or repurposed, there is a variety of architectural styles and level of detail. Typically, purpose-built dwelling houses are one- or two-story frame dwellings constructed using company standard plans.[640]

Hospital

"From their beginning American railroads developed medical arrangements to care for the large number of workers and passengers they killed or injured."[641] Railroad employee protests and liability concerns after the Civil War led companies to expand and formalize medical arrangements and, along the East Coast, it was common for a medical organization headed by a salaried chief surgeon and contracted local physicians to provide medical care for rail staff.[642] As advertised by the *Railway Surgeon*, "a hospital or a mutual benefit society 'relieves the railway company of paying doctors, board, drugs, funeral and other bills [for employees].'" Although company management disagreed, it was stressed that proper buildings to perform surgeries and house patients was necessary leading some railroad companies to acquiesce and construct hospitals to serve railroad employees and their families (Figure 70 and Figure 71, p. 144).[643] The large railroad corporations were responsible for a massive amount of staff and their dependents, and they soon realized that the cost of building and operating a railroad hospital was more cost effective than sending the injured to a local hospital.[644] In addition to their cost effectiveness, railroad owners who built their own hospitals could choose where to locate these facilities, and often did so in very rural areas where healthcare was more difficult to find.[645] Styles of these buildings ranged from simple vernacular buildings to large, ornate versions in various high styles such as Classical Revival. Although the construction of a hospital was more popular in the western states, an example of this approach was once a part of the ACL facilities in the City of Rocky Mount. The ACL Relief Department Hospital, built in 1898, was the town's first hospital, built exclusively for use by railroad employees and their families.[646] The large building was two stories in height and featured Classical Revival elements such as pedimented gable ends, a denticulated cornice, and Tuscan-style columns. The resource has not been previously surveyed nor is it extant.

[639] Wallace and Mausolf 2001:97.
[640] Fraser and Strand 1997:165–166.
[641] Aldrich 2001:254.
[642] Ibid.:254.
[643] Ibid.:267.
[644] Ibid.:259, 266.
[645] Michaels 2017:7.
[646] Kullen 1999:26.



Figure 70: 1908 Postcard Image Depicting the Circa-1898 ACL Relief Department Hospital Rocky Mount Built by John C. Stout.[647] No longer extant.

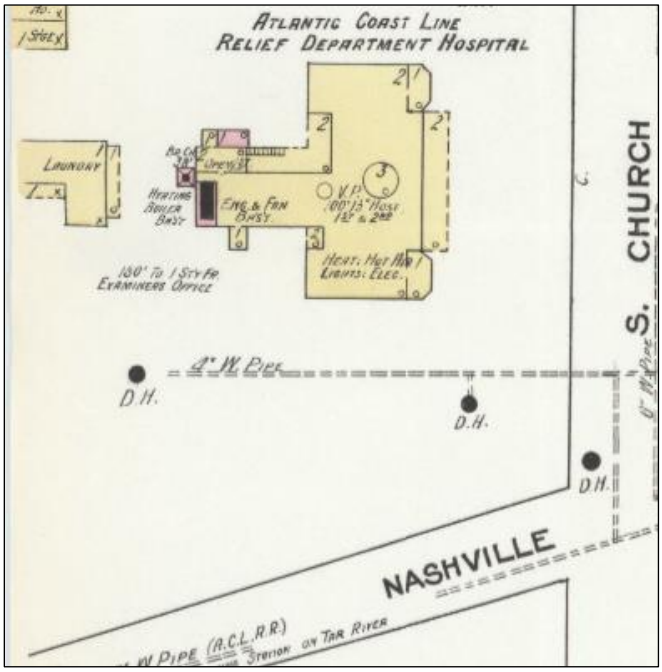


Figure 71: 1912 Sanborn Map Depicting the ACL Relief Department Hospital in Rocky Mount. No longer extant.[648]

[647] North Carolina Postcards n.d.
[648] Sanborn Map Company 1912.

Hotel

In areas where hotel accommodation was not otherwise available, railroad companies sometimes constructed hotels for passengers and occasionally staff in proximity to their rail lines. In some instances, boarding houses for railroad staff were replaced by a hotel in order to provide lodging, as well as meals, to staff and the public. Styles ranged from modest vernacular buildings to large, ornate versions in various high styles (Figure 72). Hotels could offer amenities for travelers such as a restaurant, parlors, reading rooms, and writing rooms.[649] In some cases, hotels and depots were attached.

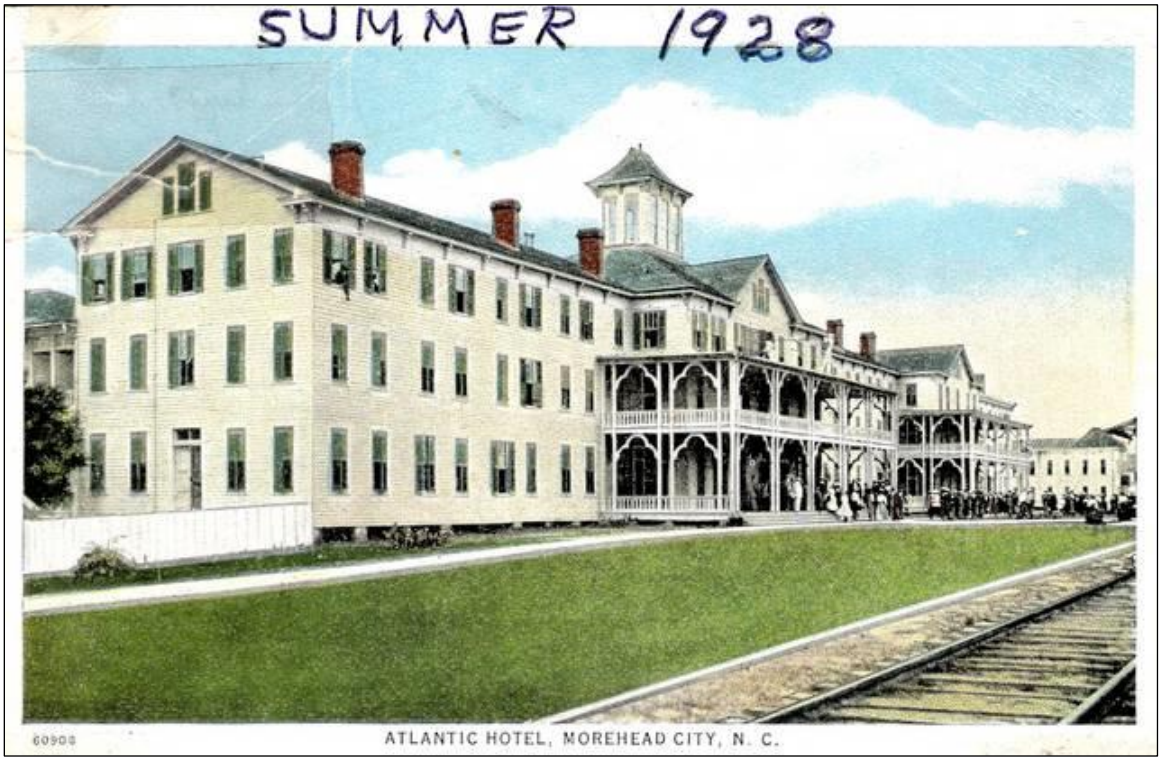


Figure 72: 1928 Postcard Image Depicting the Circa-1880 Atlantic Hotel in Morehead City owned by the Atlantic and North Carolina Railroad; this resource is no longer extant.[650]

Resort hotels were occasionally constructed along railroad routes by railroad companies to take advantage of tourists traveling to vacation destinations. These railroad resorts were highly decorated buildings of various styles and often offered recreational activities such as tennis courts or bowling greens. One example of a resort hotel erected along the Western North Carolina Railroad (WNCRR) in 1881 was the Round Knob Hotel in McDowell County, built by James Wilson in partnership with A.B. Andrews, President of the WNCRR and Superintendent of the

[649] Berg 1893:342.
[650] TrainBoard 2009.

Richmond and Danville Railroad (R&D).[651] The Round Knob Hotel (also known as the Round Knob Lodge) and a man-made foundation or "geyser" were marketed as the "gateway" to the Blue Ridge Mountains in various publications, becoming a popular tourist attraction along the WNCRR, while it was operated by the R&D, and later for Southern Railway after the hotel and geyser were rebuilt by George F. Baker in the 1910s (Figure 73).[652] The Great Depression, along with the advent of the personal vehicle, caused many of these resorts to close.[653]



Figure 73: Circa-1890s Photograph of Round Knob Lodge and Geyser.[654]

Rest House

Rest houses are dwellings for train crew built outside the rail yard. Other names for this type of building include club houses, reading rooms, changing room, and changing lounge. Amenities could include a locker room, lounging room, or living room (Figure 74, p. 147). They were ideally situated away from the noisier and messier work areas, like the rail yard, so that the crew would

[651] Hunt 2006b.
[652] Joyner 2006.
[653] Limerick 1975.
[654] Joyner 2006.

be comfortable.[655] Rest houses are typically one to two stories in height and have similar levels of architectural detail to bunk houses. A type of rest house could also include a Young Men's Christian Association (YMCA) building that had been constructed in conjunction with a railroad. An example of this, although it is no longer extant, is the circa-1910, Colonial Revival-style ACL YMCA that was in Rocky Mount and designed by the architect, Joseph F. Leitner.[656]

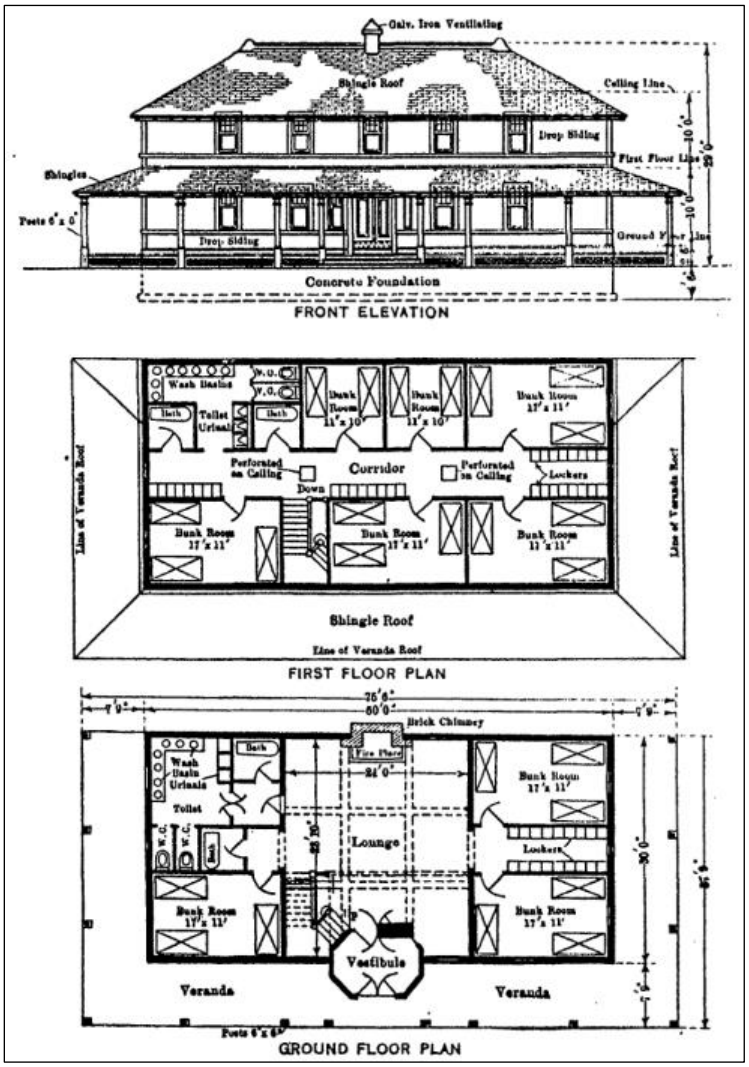


Figure 74: Example Plan of Two-Story Rest House from John W. Orrock's 1918 *Railroad Structures and Estimates*.[657]

[655] Fraser and Strand 1997:165.
[656] North Carolina State University Libraries n.d.
[657] Fraser and Strand 1997:166.

Section House

Section houses were low-cost dwellings located at intervals along the rail corridor providing shelter for workers who provided maintenance along particular rail section.[658] They were more commonly constructed in rural areas where there was a smaller existing housing stock.[659] Section houses could be for either single men or families and are also referred to regionally as shanty houses.[660] Commonly, section houses are one- or two-story, frame buildings, but may also be pre-fabricated and could be built according to standardized plans (Figure 75; Figure 76, p. 149).[661] Interior facilities could include a kitchen, living space, and sleeping quarters. Design of section houses follow national architectural trends, and the dwellings could have T- or L-shaped plans and higher level of architectural finish depending on their location and who built them.[662]

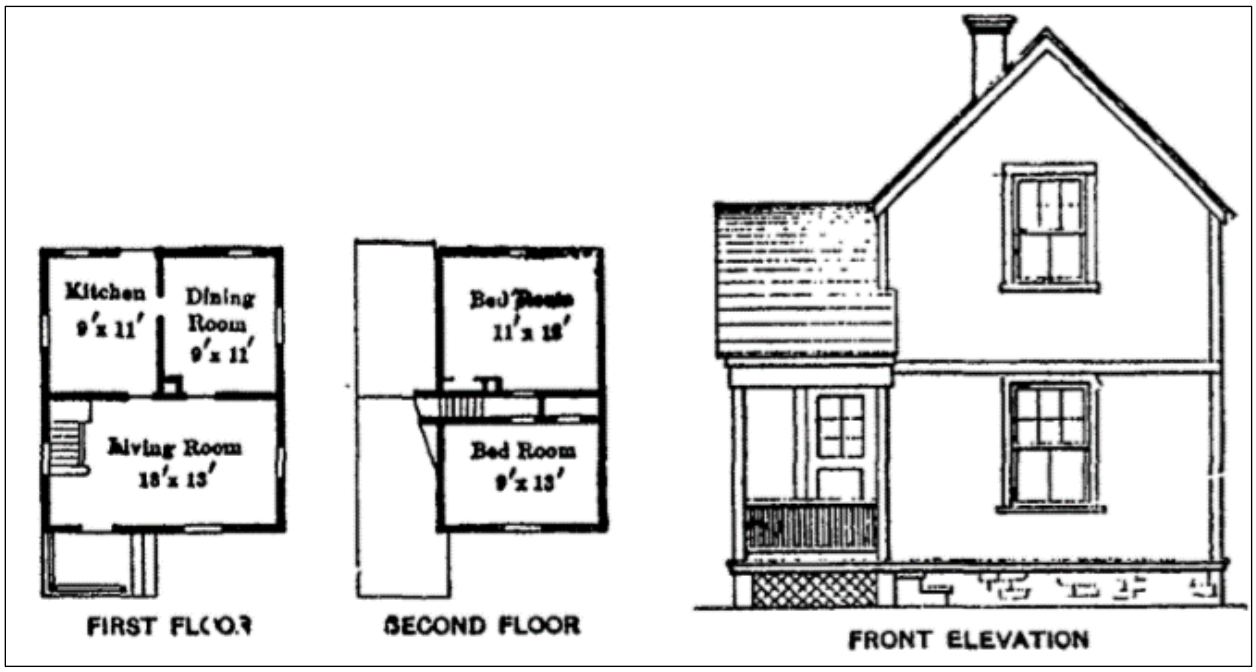


Figure 75: Example Plan of a Section House From John W. Orrock's 1918 *Railroad Structures and Estimates*.[663]

[658] Ibid.:163–164.
[659] Ibid.:164.
[660] de Kok 1991:97; Fraser and Strand 1997.
[661] de Kok 1991:97.
[662] Fraser and Strand 1997:163.
[663] Ibid.:164.



Figure 76: Early-Twentieth-Century Section House (CT0260) Associated with Southern Railroad in Catawba County.[664] This resource does not have an eligibility determination.

Watchman's Cabins

Watchman's cabins, also referred to as watchman shanties, crossing shanties, switchman's shanties, crossing tender's shanties, or signal shanties, are small buildings located in strategic places to shelter watchmen or flagmen.[665] These frame one-story buildings are designed to house workers for a short period of time and could be located at difficult grades, highway crossings, long bridges, or other hazardous areas requiring an employee to oversee that section of track (Figure 77, p. 150).[666] These buildings could be constructed from standardized patterns, prefabricated, or could be repurposed buildings or made from salvaged materials.[667]

Engine House

Engine houses store locomotives when not in use, undergoing maintenance, or being cleaned and are designed so that cars can ride a track to an individual bay within the building. Some engine houses are combined with maintenance buildings such as repair shops. When not combined, engine houses are typically constructed in proximity to other rail-related structures such as coal chutes, water tanks, oil houses, sand houses, or ashpits so that these supplies could be taken onboard or removed from an engine upon arrival or departure (Figure 78, p. 150). Engine houses are commonly located "at terminal or division yards, at junction stations, and at all points where engines are changed or held in reserve."[668]

[664] Bing 2014.
[665] Fraser and Strand 1997:153; Wallace and Mausolf 2001:88.
[666] Fraser and Strand 1997:153.
[667] de Kok 1991:99; Fraser and Strand 1997:153.
[668] Berg 1893:166.

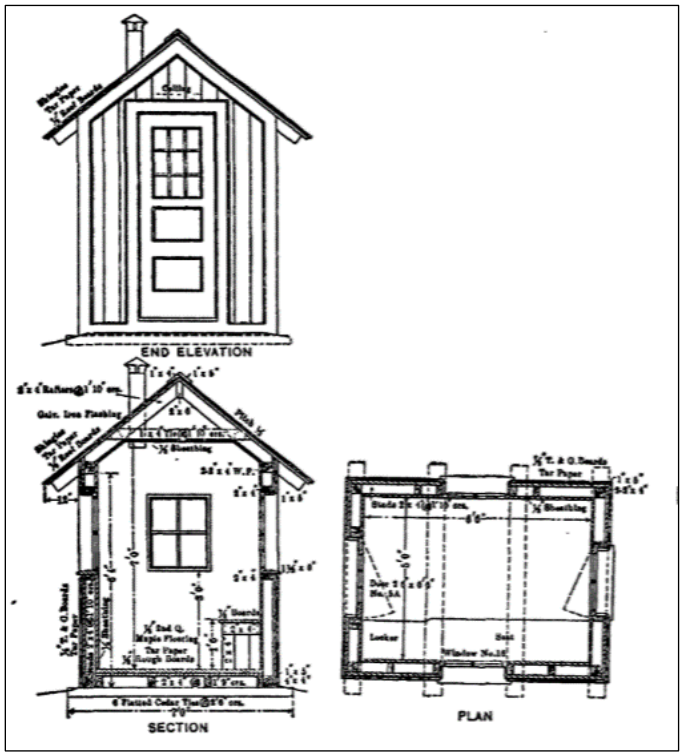


Figure 77: Example Watchman's Cabin Plan From John W. Orrock's 1918 *Railroad Structures and Estimates*.[669]



Figure 78: 1870 17-Bay Brick NCRR Company Shops Engine House (AM1472) in Burlington, Alamance County.[670] This resource was listed in the Study List in 1983.

[669] Fraser and Strand 1997:154.
[670] Amtrak 2023.

Engine houses were constructed at approximately 100-mile intervals along many rail lines, and the location of an engine house will often dictate its size. Engine houses designed to hold engines at junction points along a track may be smaller, while those at important terminals or division yards will be much larger. The purpose is to service and store train cars without impeding the movement of other trains.[671] Materials range depending on the style, size, location, and prosperity of an individual railroad company. Frame buildings with weatherboard or corrugated metal siding exist, as well as much larger buildings made of brick or stone.[672]

Engine houses are divided into two categories: square houses and roundhouses. Square houses were used for smaller operations where a small number of engine bays are necessary. These buildings were typically rectangular in plan with two or more bays within. Roundhouses are arranged radially around a turntable that spins to access each bay within the roundhouse surrounding it. Cars are loaded on to the turntable and arranged so that they may pull directly into a roundhouse bay. Roundhouses that form a complete circle are called full-circle roundhouses. Those that do not, are called segmental roundhouses.[673] As locomotive size increased, many early engine houses were reconstructed or abandoned.[674] An example of a roundhouse is the Southern roundhouse at the NRHP-listed Spencer Shops (RW0011) in Rowan County, which featured 15 stalls and appended machine shop and blacksmith shop (Figure 79, p. 152).

Stalls within an engine house were proportional to the lengths of the engines they serviced. Typically, an engine house was between 60 and 112 feet.[675] Doors to access these bays were typically double leaf.[676] Ventilation of such buildings was important, and clerestory windows or dormers were often employed to aid in the ventilation. Flooring in these spaces was designed to be flush with the tracks that entered them, and materials varied from packed earth, wood planks or blocks, to brick or concrete. Engine pits in the flooring allowed for work to be performed on the car's undercarriage.[677]

Freight Houses

Freight houses can be separated into two distinct categories: local freight houses and rail terminal freight houses. Local freight houses are smaller buildings at mid-sized stations, typically in business districts, and are often one-story frame buildings with freight platforms on at least one, and sometimes all, sides (Figure 80, p. 153). A freight house with tracks on a single side is called a side-station, and a freight house with tracks on both sides is called an island-station. Rail terminal freight houses are larger buildings used to house freight before and/or after shipping and are

[671] Ibid.:167.
[672] Ibid.
[673] Fraser and Strand 1997:169; Hufstetler and Bedeau 1998:55.
[674] Wallace and Mausolf 2001:83.
[675] Fraser and Strand 1997:170.
[676] Wallace and Mausolf 2001:83.
[677] Hufstetler and Bedeau 1998:58.

typically located as proximate to the local business district as possible, when the intention is to deliver freight to and from a railroad.[678]

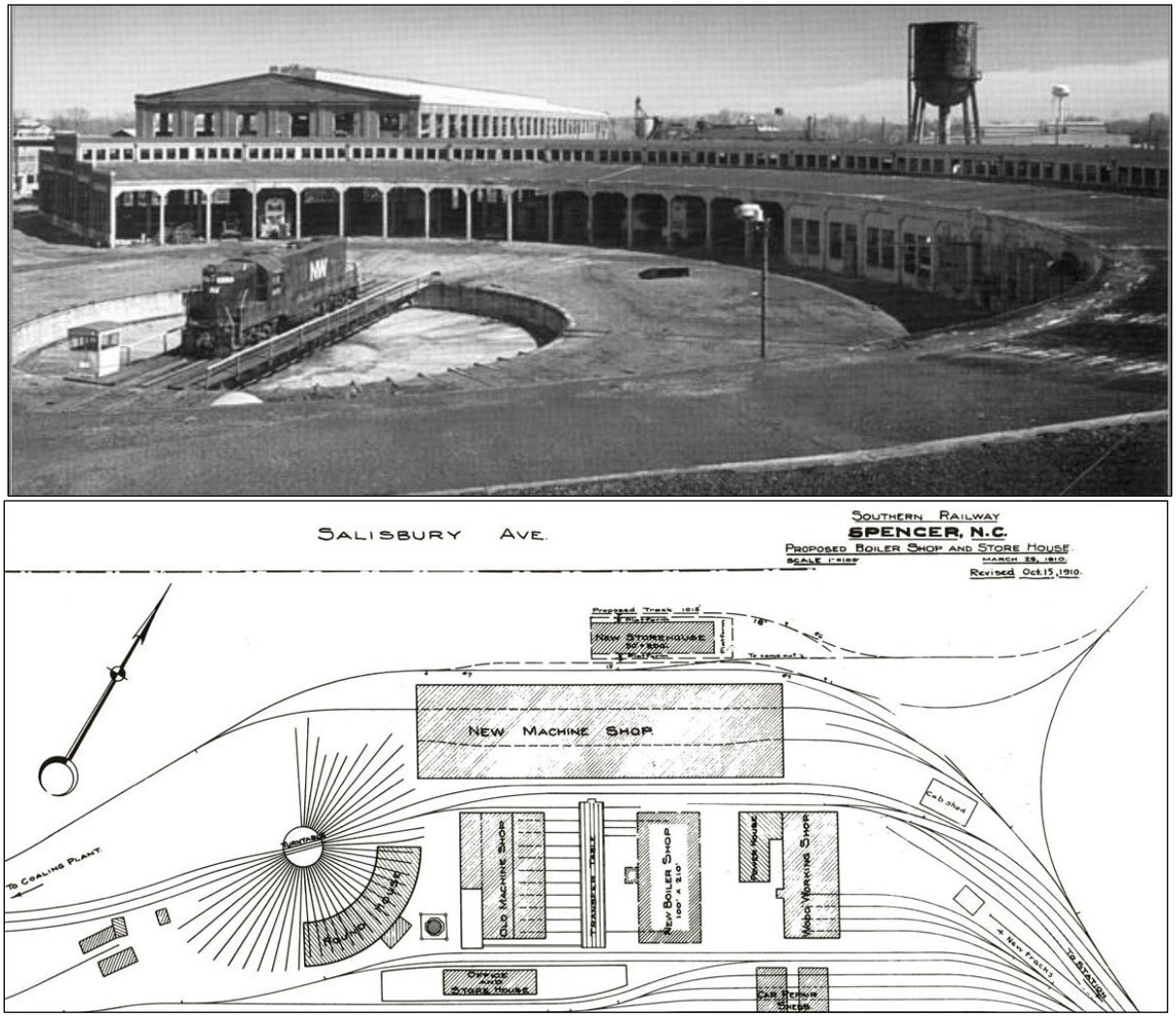


Figure 79: 1977 Photo of the 1896+ Roundtable and Engine House at the NRHP-Listed Southern's Spencer Shops (RW0011) in Spencer, Rowan County (Top).[679] 1910 Plan of the Spencer Shops with the Roundhouse at Left (Bottom).[680]

Freight platforms are sometimes arranged across from freight houses where double tracks run parallel between them. Platforms on both sides allow for freight to be moved from a car without having to cross the adjacent track to the freight house. Where traffic is heavier, a side track can

[678] Berg 1893.
[679] Sieburg-Baker 1977.
[680] Southern Railway 1910.

sometimes be constructed between the freight house and the main track. The side track can also extend around the freight house to the other side of the track, so that the freight house can be accessed by both tracks.[681] Freight house platforms are roughly 4 feet from the top of the train rail and are built with a slight slope to aid with drainage. Platforms used strictly for receiving or delivering freight to or from freight trains are typically not much longer than a train car itself, because the cars stop individually at the platform to be loaded or unloaded. Platforms for car-lot freight are much longer, because cars are typically left to be loaded or unloaded.[682]



Figure 80: Circa-1884 Cape Fear & Yadkin Valley RR Freight House (RB0504) Located in the Maxton Historic District (RB0484), Looking Southeast.[683] This resource has been previously individually surveyed but has not received an eligibility determination from HPO staff.

Ice House

Ice houses are small buildings that store ice used for passenger service. Ice is not essential for train operation and is only stored to be used as an amenity for dining and beverage service, where offered. Other perishable consumable service items or temperature-sensitive freight may also be stored in ice houses.[684] Ice house location can vary; it can either be placed by terminals or "at convenient storage locations" along the course of a rail corridor.[685] Typically, ice houses related to railroad use are frame buildings with walls filled with sawdust or other material for insulation.[686]

[681] Berg 1893.
[682] Ibid.
[683] Google 2013.
[684] Hufstetler and Bedeau 1998:63.
[685] Fraser and Strand 1997:176.
[686] Wallace and Mausolf 2001:92.

Milk House

Milk houses allow for the storage of milk in rural areas prior to shipping along a rail line and often have accompanying milk platforms for dairy freight. Atop the platforms, milk houses are often small buildings measuring about 7 by 12 feet with minimal fenestration besides an entrance typically filled with a sliding door.[687]

Oil Storage House

Oil storage houses or oil houses contain and store oil (petroleum) to fuel engines and passenger cars and are a component of a large complex of maintenance buildings and are preferably located alongside a track leading to or from an engine house, coaling or water system, or along a track that engines would take from coming in or out on a run (Figure 81).[688] Usually, oil houses are frame buildings with wood siding and oil is stored in barrels or cans inside the building.[689] Because of the hazardous nature of oil storage, buildings may also be fireproofed or built of fire-resistant material.[690] Oil mixing houses are a subtype of oil houses. These buildings have an internal separation between a space to store oil and a space to mix oil.[691] Several oil houses dating to the second half of the twentieth century that have been previously recorded in Fort Bragg (CD1202, CD1209, and CD1218) associated with the Cape Fear Railways. They are one story in height, constructed of concrete block, and feature a shed or flat roof.

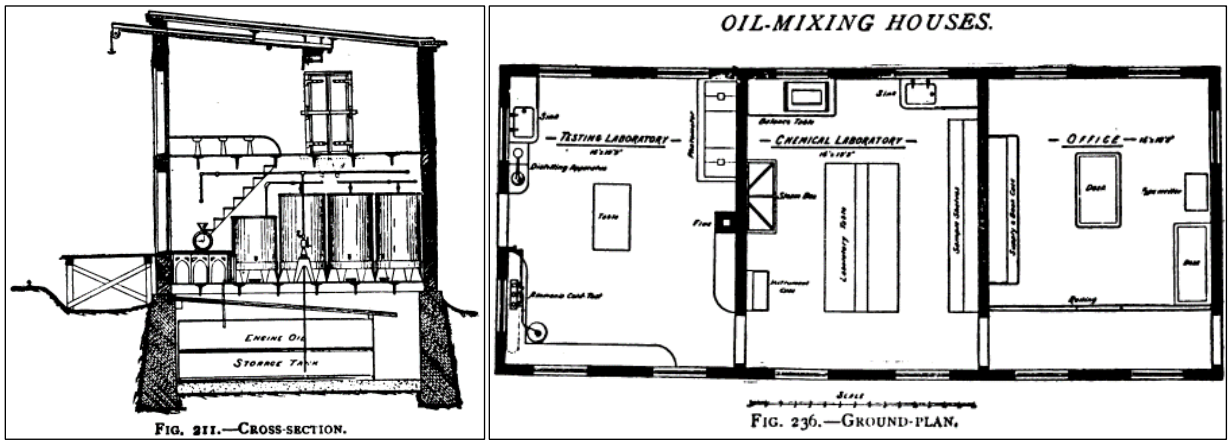


Figure 81: Oil Storage House Cross Section (Right) and Oil Mixing House Ground Plan (Left) as Portrayed in Walter Berg's 1893 *Buildings and Structures of American Railroads.*[692]

[687] Ibid.
[688] Berg 1983:82.
[689] Fraser and Strand 1997:176.
[690] Ibid.
[691] de Kok 1991:100.
[692] Berg 1893:111.

Power House

Power houses are buildings that contain a boiler that is operated to provide power to tools, light, or heat.[693] A common rail yard building, power houses are typically located near engine houses due to their need for power.[694] Power houses could be constructed in a variety of designs; they could be small wood-framed buildings with minimal architectural details or large masonry buildings designed to be fireproof.[695]

Pump House

Pump houses are small, usually frame buildings which house electric-, steam-, or gas-powered water pumps, that are typically located in a complex of other structures (Figure 82).[696] They are generally located close to the train tracks and were built according to standard company plans.[697]

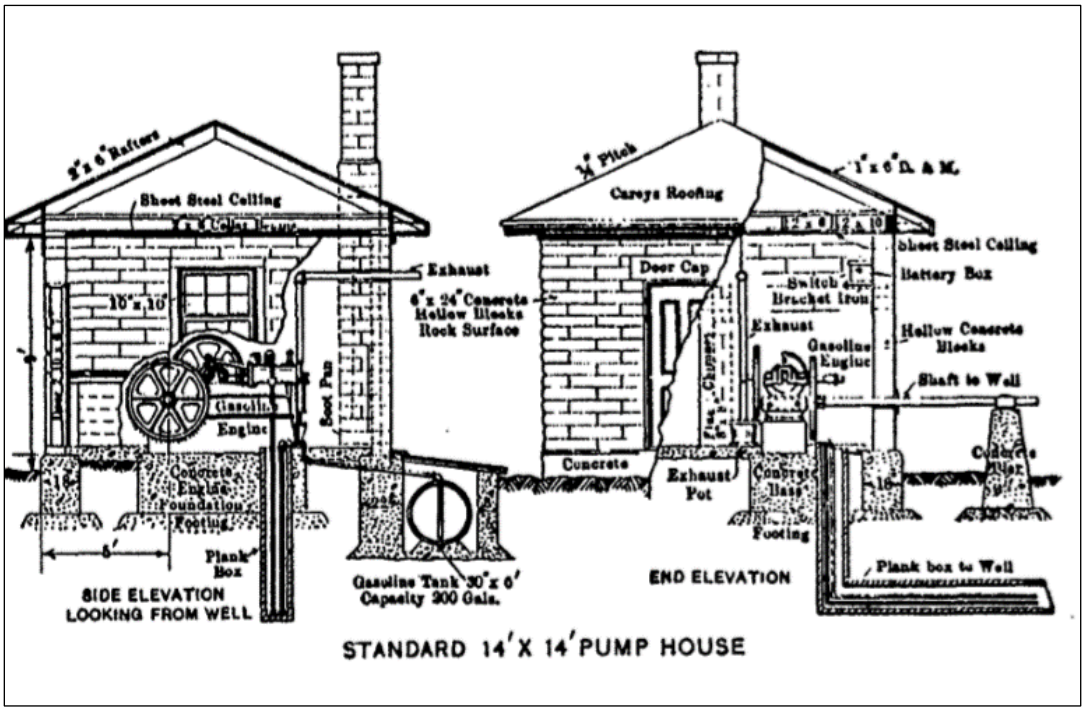


Figure 82: Example Plan of a Pump House from John W. Orrock's 1918 *Railroad Structures and Estimates*.[698]

[693] Fraser and Strand 1997:171.
[694] PHMC n.d.
[695] Fraser and Strand 1997:171.
[696] Ibid.:176.
[697] Berg 1893:483.
[698] Fraser and Strand 1997:176.

Sand House

A sand house is a small frame building used to store and distribute sand to increase traction. The building could have wood or corrugated metal siding and "facilities for storing, drying and delivering" sand to trains.[699] Sand houses were typically built to standardized plans and are often one-story, gabled, rectangular buildings (Figure 83).[700] Locomotives stored sand from sand houses in sand boxes, which would pour sand automatically to increase friction.[701]

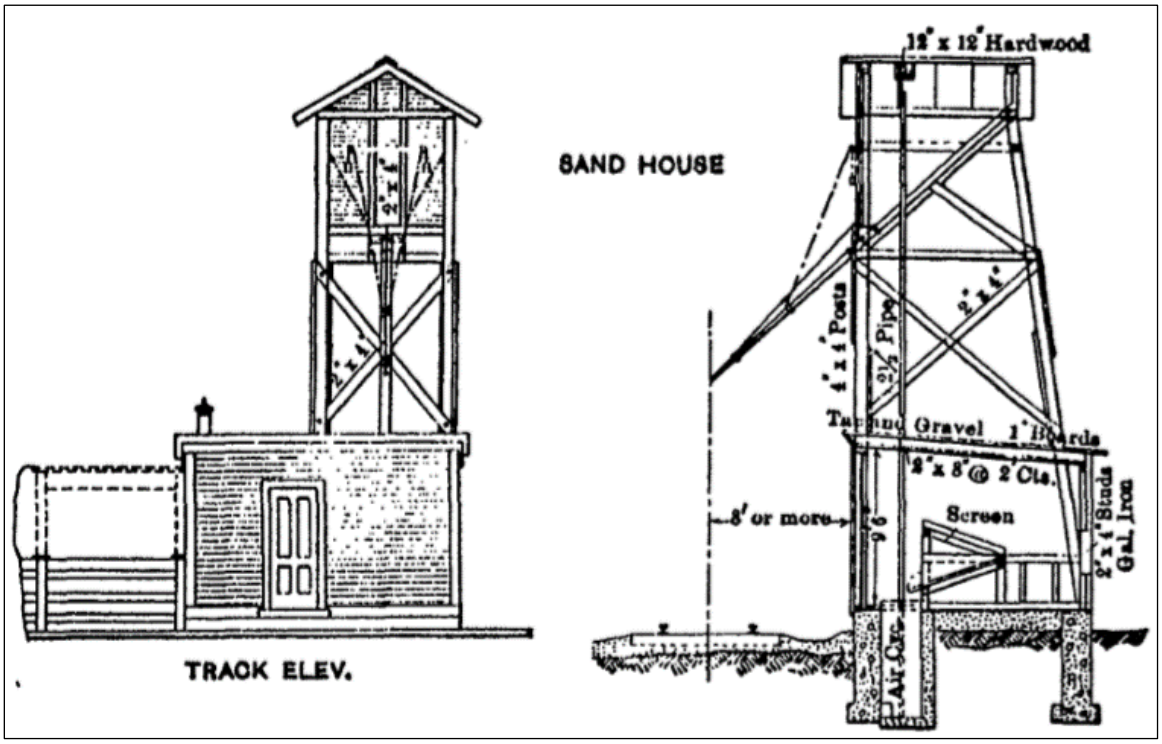


Figure 83: Example Plan of Sand House from John W. Orrock's 1918 *Railroad Structures and Estimates*.[702]

Store House

Store houses are general-purpose buildings for storage of supplies related to engines, passenger/freight cars, or other materials for the rail line. Typically store houses are small, utilitarian, wood-frame building with wood siding.[703]

[699] Ibid.:175.
[700] Hufstetler and Bedeau 1998:60.
[701] de Kok 1991:100.
[702] Fraser and Strand 1997:176.
[703] Ibid.:178.

Tool Houses/Tool Sheds

Tool houses or tool sheds are storage buildings that hold equipment used during maintenance of railroad line and other equipment. Usually designed by railroad companies and constructed from standardized plans, these one-story small buildings are often found in rail yards and by section houses. Typically, they were rectangular, gable-roofed buildings with minimal stylistic detail.[704] Although evidence of this detail could not be confirmed in North Carolina during this study, its existence is possible, and surveyors of this resource type should be aware of this possible variation.

Maintenance Buildings and Structures Definition

Maintenance buildings and structures, for the purposes of this MPDF, are a category of buildings or structures with specific functions related to servicing buildings and structures along the railroad corridor, as well as the railroad's rolling stock. They are often grouped together, forming a service yard or similar spatial arrangement. Types of maintenance shops can include blacksmith shop, carpentry shop, upholstery shop, oil house, mill rooms, and wheel foundries, detailed below. Typically, these shops are rectangular brick buildings with large doors to facilitate the entry of large equipment or rolling stock, multi-light windows, and may feature chimneys depending on the function of the building or other ventilation requirements.[705] The interiors of maintenance buildings and structures vary also according to the function of the building; for example, those used for rolling stock may have pits or depressions in the flooring so that locomotives can be serviced from below.[706]

Blacksmith Shop

Blacksmith shops are buildings that house blacksmithing activities. They are frequently part of a larger complex of buildings in a yard and in larger complexes are likely a part of a larger multi-purpose machine shop such as at the Spencer Shops (RW0011) (see Figure 79, p. 152). Blacksmith shops vary in size and material, but typically have a masonry foundation and frame or masonry structural systems with wood or metal siding. Inside, they contain a boiler, forge, storage area and working area.[707] A clearstory in the roof would not be uncommon but are sometimes present on known examples such as the no longer extant combination machine and blacksmith shop at the Spencer Shops (RW0011) (Figure 84, p. 158).[708]

[704] Hufstetler and Bedeau 1998:62.
[705] Schmidt et al. 2013:192.
[706] de Kok 1991:98.
[707] Fraser and Strand 1997:177; Orrock 1918:565.
[708] Orrock 1918:565.

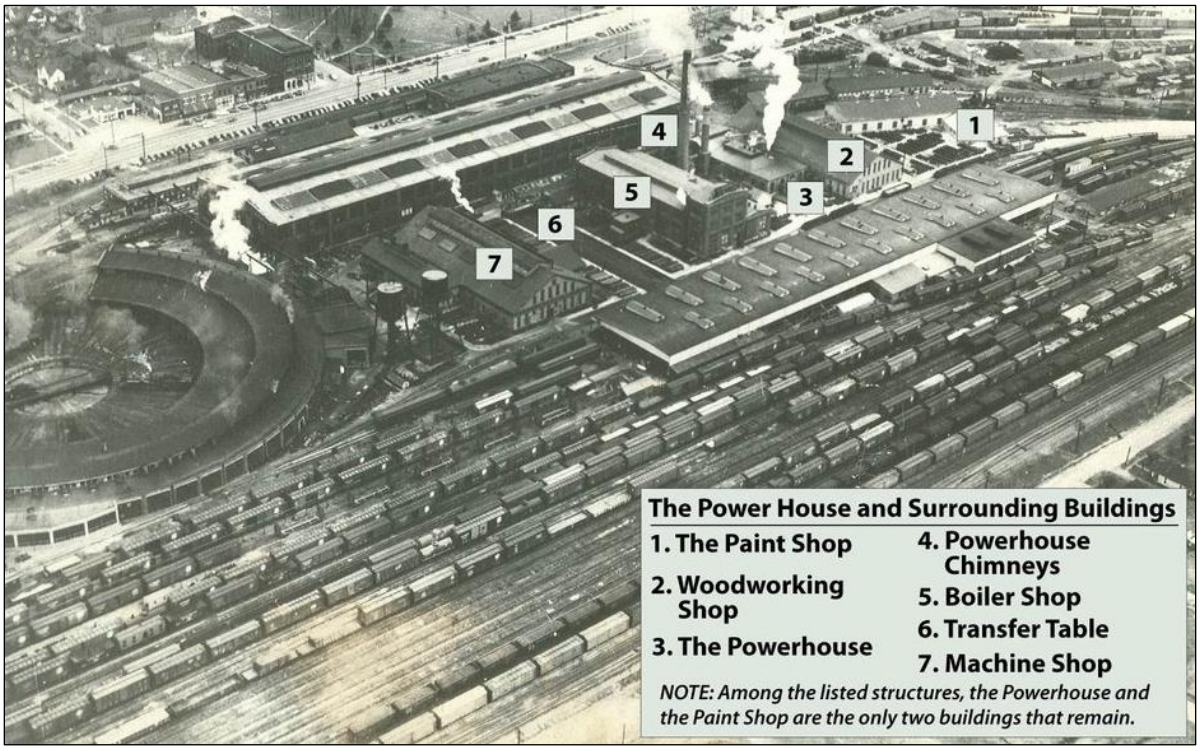


Figure 84: Historic Bird's Eye View of the Spencer Shops (RW0011).[709] Note the building marked as seven described as a machine shop. This building also contained the blacksmith shop.

Carpentry Shop

Carpentry shops provide work space for maintaining the woodwork on the "rolling stock" and many auxiliary buildings along a railroad and could also contain cabinet/upholstery workshops.[710] Carpentry shops are usually frame buildings.[711]

Car Shop (Passenger Shed, Car Barn, Car Shop Buildings)

Car shop are shelters for passenger cars while not in use and are also referred to as a passenger shed (referring to the passenger cars they store, not pedestrians), car barn, or car shed. Car sheds are usually situated in an area called a car cleaning yard.[712] In these buildings, cars are protected from exposure to weather conditions and have a covered space for cleaning and service. Similar to the configuration of square engine houses, tracks lead through large doors on opposite ends of

[709] North Carolina Transportation Museum n.d.
[710] Fraser and Strand 1997:177.
[711] Ibid.
[712] de Kok 1991:100.

the building, allowing cars to enter an open interior space.[713] Typically car shops have ventilators along a gabled roof ridge (Figure 85).[714] However, not all rail lines used car shops. In some areas like South Dakota, a method of repair called "Repair in Place [RIP]" was employed, where car maintenance was performed outdoors in a designated section of a rail yard.[715]

Coaling Station

Coaling stations were used to store and distribute coal to locomotives. They are typically included at all large stations and where engines are stored or maintained. Coal houses are usually small, wood-framed structures with wood or metal sheathing, but they can also be open-air structures built of timber, iron, or steel. Configurations of coal houses vary from site to site. Coal at these stations could be hand shoveled onto trains, dumped via buckets that either tipped or opened at the bottom, or delivered by chutes.[716]



Figure 85: Postcard Image Depicting Circa 1915 to 1930 View of a NRHP-Listed Car Shop Built by Southern Railroad along the NCRR in Spencer (RW0011).[717]

[713] Fraser and Strand 1997:172; Hufstetler and Bedeau 1998:62.
[714] Hufstetler and Bedeau 1998:62.
[715] Ibid.
[716] Fraser and Strand 1997:173–174.
[717] North Carolina Postcards 1915–1930b.

Machine Shop

Machine shops are buildings that housed activities related to repairing, fabricating, or upkeeping trains and their metal components. They are part of a larger complex of buildings and could be connected to, or combined with, a car shop.[718] Machine shops are typically large utilitarian buildings with abundant fenestration to take advantage of natural light (Figure 86).

Privies

Privies were a popular railroad structure before the advent of indoor plumbing but remained prevalent beyond that point in rural areas. Designs were typically standardized. It is possible that privies were used to dispose of refuse and may potentially yield historical information through archaeology.[719]



Figure 86: Circa-1915 Postcard Image Depicting the Southern Railway Company Machine Shops and Office near Salisbury (RW1720).[720]

[718] Ibid.:177.
[719] Hufstetler and Bedeau 1998:65.
[720] North Carolina Postcards 1905–1915.

Snowshed

Snowsheds are structures that function to divert snow or rocks away from tracks. They are primarily located in mountainous areas where snow was a threat and had heavy-timber framing or log construction. These long, open structures could have variations include the standard cribbed sidehill shed, gallery shed, toe crib, and valley shed.[721]

Transfer Table

A transfer table consists of a platform that could carry an engine or freight cars, on a set of rails that ran perpendicular to tracks leading into an engine house.[722]

Turntable

A turntable consists of a circular platform on a rotating track that can be turned to align with stationary tracks that lead to individual bays within a roundhouse (as seen in Figure 78 and Figure 79, pp. 150 and 152). Three types of turntables can be found in a railroad yard: cantilevered (or center-balanced), articulated (or center-hinged), or continuous girder. Power to move the turntable could come from gasoline, hand cranks, a nearby steam plant, or electricity.[723]

Water Station/Water Storage Facility

Water stations or water storage facilities are cylindrical storage tanks that contain water for locomotive boilers. Their diameters range between 16 to 30 feet, and they are usually set back from tracks by a distance of about 12 to 15 feet.[724] As locomotive boilers require large amounts of water, water stations were located along rail corridors ranging in distance from 5 to 20 miles apart, averaging 10 miles between such structures.[725] A spout could be lowered from the tank in order to fill the passing locomotives (Figure 87 and Figure 88, p. 162).The earliest water tanks were wood, but were replaced by 100,000-gallon steel tanks in the 1920s and 1930s.[726] A decade later, diesel engines replaced locomotive engines requiring boilers, and thus did not require water.

[721] Fraser and Strand 1997:150.
[722] Schmidt et al. 2013:239.
[723] Ibid.
[724] Wallace and Mausolf 2001:93.
[725] Ibid.
[726] Ibid.

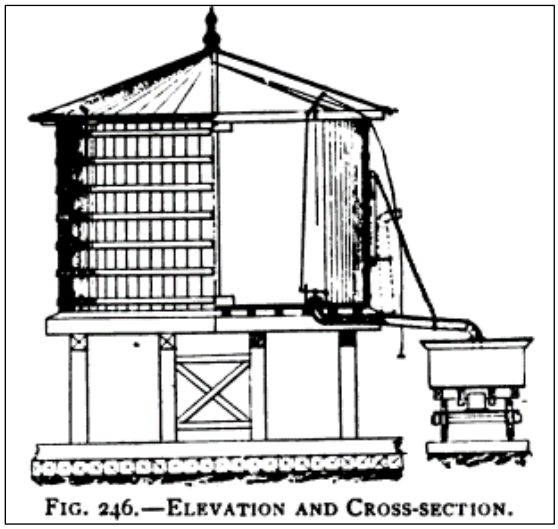


Figure 87: Example of a Water Tank Design from Walter Berg's 1893 *Buildings and Structures of American Railroads*.[727]



Figure 88: Undated Image of a Southern Railway Wood Water Station East of Lake Toxaway in Transylvania County. No longer extant.[728]

[727] Berg 1893:119.
[728] DigitalNC n.d.

Significance

Housing and maintenance buildings and structures are a combination of buildings that together house the workers and mechanical elements which keep a railroad in operation. These buildings were essential to the railroad lines; without a place for the workers to rest or the locomotives and cars to be serviced, a railroad could not function. The size, placement, and design of housing and maintenance buildings varied according to their specific role in the railroad ecosystem, as well as their placement along a corridor. Typically, these buildings and structures were built quickly and without much concern relative to style, and forms were typically dictated by their function, although many of these buildings are simple rectangular structures. Occasionally, elaborate versions of section houses or engine houses appear, typically in higher traffic areas. Maintenance buildings were often built inexpensively and simply, and could be "indifferently maintained" [729] They were frequently modified over time, and could also be repurposed to serve different functions. This could obscure the original function.

Criterion A

A housing or maintenance building or structure can meet the registration requirements under Criterion A if they are associated with railroad corridors that were historically important in the development of North Carolina's railroad transportation network, or if they are associated with important stations, railroad yards, or junctions.[730] Maintenance buildings and structures are more likely to meet the registration requirements under Criterion A as part of a historic district. Structures can be individually eligible under Criterion A if they are "demonstrably associated with the construction and/or operation of significant railroads; structures associated with important locations along significant railroads; structures associated with important events or historical trends that occurred along significant railroads."[731] Possible themes include Commerce/Trade, Exploration/Settlement, Industrial Development, and Transportation.[732]

Criterion B

Housing and maintenance buildings and structures will likely not be eligible for the NRHP under Criterion B. As large railroad corporations constructed and operated these buildings, they generally represent the enterprise of the corporation and not individuals.[733] Housing and maintenance buildings and structures are auxiliary to the primary and most significant building associated with the importance of the individuals within the rail corporations. If a housing or maintenance building

[729] Fraser and Strand 1997:178.
[730] Schmidt and Vermeer 2009:134.
[731] Fraser and Strand 1997:155.
[732] Hufstetler and Bedeau 1998:40.
[733] Ibid.:130.

or structure reflects the specific skills or design sensibilities of an individual architect, that property should be instead evaluated under Criterion C.[734]

Criterion C

A housing and maintenance building or structure will be eligible under Criterion C if it meets one of the following conditions: it embodies the distinctive architectural design or construction methods associated with significant railroads, including the use of standard company designs; it embodies the work of a significant architect, engineer or building; or it represents historically important trends in the evolution of standardized railroad company architecture.[735]

Criterion D

Housing and maintenance and building structures may be eligible under Criterion D if analysis of the structure may generate information about the spatial organization of facilities within a railroad corridor, or the organization of supporting facilities associated with a railyard or rail corridor.[736] Privies and turntables, for example, may be individually significant under Criterion D as a site of material deposits and below-ground manifestation of notable railroad activity.[737]

Registration Requirements

Housing and maintenance buildings and structures vary greatly from small-scale, temporary structures and buildings, like tool sheds, to large, sophisticated architectural works, as sometimes seen on engine and station houses or hotels. North Carolina eligibility considerations say that although buildings like section houses and maintenance buildings and structures could be evaluated individually, they are more likely to be eligible as part of a rail yard historic district.

Location and Setting

To retain integrity of location, a housing and maintenance building or structure must be physically located on its historic site adjacent to its associated corridor, yard, or station. Some observable evidence of said corridor, yard, or station should also be apparent in order to convey a larger context.[738] In order to retain integrity of setting, the area surrounding a housing and maintenance building or structure should be similar to that in existence during its period of significance. The housing or maintenance building or structure needs to remain physically and visually associated

[734] Fraser and Strand 1997:155.
[735] Fraser and Strand 1997:179; Shrimpton et al. 1990.
[736] Fraser and Strand 1997:155.
[737] Hufstetler and Bedeau 1998:64.
[738] Schmidt et al. 2013:242.

with a railroad corridor.[739] Landscape elements are important to consider and different settings for urban railroad properties and rural railroad properties are expected.

Design

Integrity of design requires that a housing and maintenance building or structure retain the original architectural, structural, and stylistic features that convey the significance of its historic functions or its architectural or engineering designs.[740] This includes the interior flow, which may be notable in regard to industrial buildings designed to have an open floor plan.

Materials

To retain a high level of integrity of materials, the property type should retain original materials. Alterations and modifications among these resource types are common and typically require updating or repairing. Therefore, the resource could still maintain integrity of materials if those changes were made during the resource's period of significance. If they did not, modifications should be of the same design and material character as the original building or changes done during the period of significance.[741]

Workmanship

Some housing and maintenance buildings and structures are constructed to a standardized plan and are commonly utilitarian in design and are less likely to maintain a high degree of workmanship. If there are decorative or aesthetic architectural features present that are considered stylistically defining features of the building or structure, to retain integrity of workmanship, those features must retain enough of their original visual appearance to effectively convey the building's historic significance.[742]

Feeling and Association

A housing or maintenance building or structure will retain its integrity of feeling if modern alterations to historic architectural design or the addition of modern materials or additions to the resource do not contrast with the historic portions or dominate its overall visual appearance. Association is the direct link between various housing and maintenance buildings or structures and the services they provided and their inherent design and function.[743] Typically, this property type will maintain integrity of feeling and association if it retains its integrity of design and materials

[739] Ibid.
[740] Ibid.
[741] Schmidt and Vermeer 2009:131.
[742] Ibid.:136.
[743] Schmidt et al. 2013:242.

Miscellaneous and Right-of-Way (ROW) Structures and Objects

Description

North Carolina railroads had various miscellaneous and ROW structures and objects that include many small-scale structures facilitating operations that do not fall into any other property type category. These include various structures and objects as switching devices, traffic signal, and telephone boxes. Each of the resources mentioned in this section are thematically as well as functionally connected to the railroad; however, each serve a different function. This list will be composed of the most common structures and will not include unique and uncommon items.

There are numerous industries that are located along the ROW that were physically connected to rail lines; however, they were not owned by any railroad companies. The U.S. Department of Transportation has released guidance that suggests that residential, commercial/industrial, and municipal buildings adjacent to the rail ROW should not be considered as a property type in rail reviews such as this document.[744] However, further research on resources within and adjacent to the corridor may reveal additional areas of significance not covered in these guidelines.

Fencing

Fencing types alongside rail lines would vary based on the needs of their geographic location, including weather, topography, and the presence of agricultural livestock. When in a rural agricultural area with livestock, a railroad company often constructed fencing along their tracks to prevent damage from roaming livestock. Fencing laws such as Virginia's section 1262, legally obligated railroad companies to install cattleguards along farmer's land. During the early-twentieth century, farmers would hand write requests to railroad companies asking them to construct cattle guards on their property to protect their cattle.[745] In North Carolina, farmers were permitted to free range their livestock until 1971 when North Carolina General Assembly passed new fencing laws requiring livestock to be fenced away from the public ROW.[746] These fences typically consisted of barbed wire, wood, steel, and concrete posts, but maintenance and replacement components often resulted in various variations of fencing (Figure 89, p. 167).

Grade Crossing Mechanics

Railroads often intersect with public roads, streets, and even highways and required various on-grade crossings, particularly in the rural areas of the state (Figure 90, p. 167). These on-grade crossings featured driveways that would cross the tracks. In early years, a signal tower may have also been included as well as cattle guards, safety gates, cross warning devices, and crossed-bar

[744] U.S. Department of Transportation 2019:4–5.
[745] Kirkpatrick and Man 1900:77.
[746] Branan 2019.

signs that would alert the public of an oncoming train.[747] Safety gates were initially operated by hand or compressed air from the associated tower and were arranged so only the operator could make it function.[748]

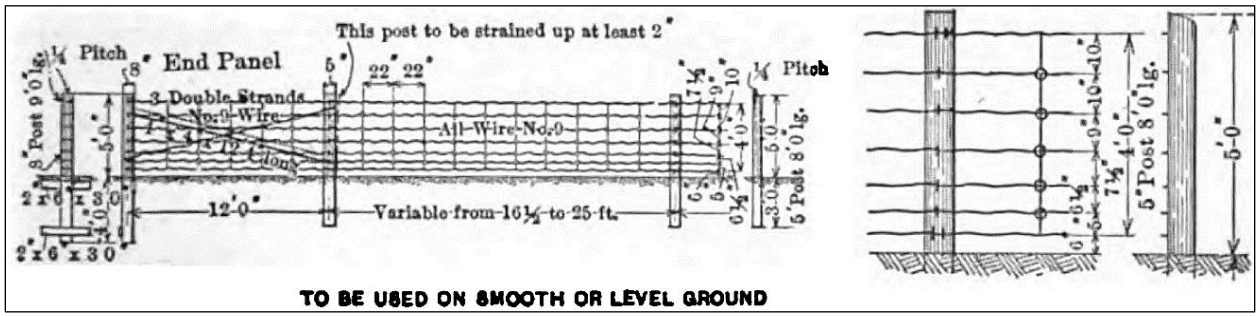


Figure 89: Early-Nineteenth-Century ROW Fencing Diagram.[749]

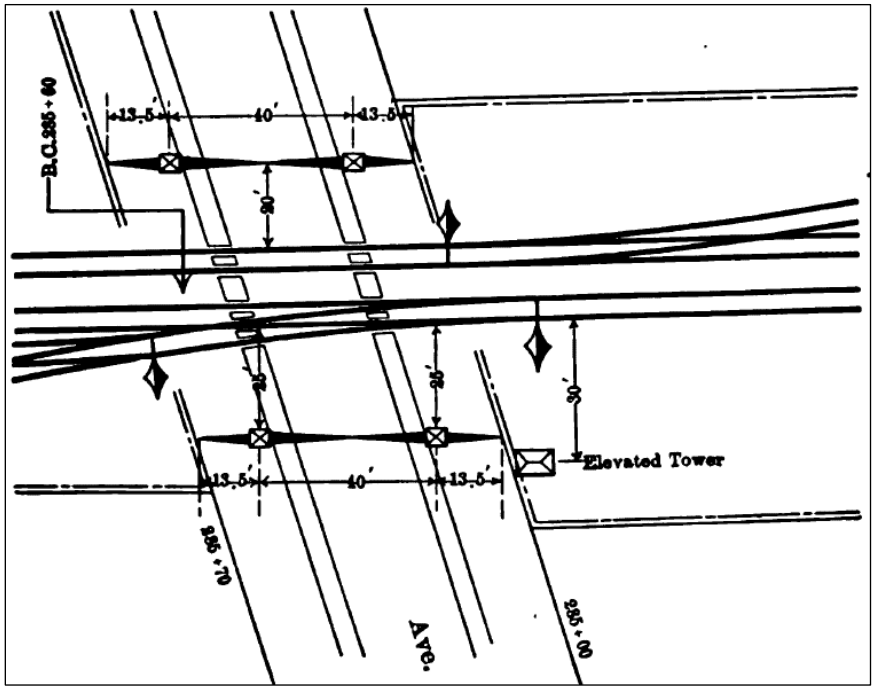


Figure 90: Diagram of an At-Grade Crossing with Safety Gates as Presented in Orrock's 1918 *Railroad Structures and Estimates*.[750]

[747] Ibid.
[748] Orrock 1918:291.
[749] Ibid.:26.
[750] Ibid.:291.

Handcar Turnout

Constructed for the railroad maintenance crews, handcar turnouts were built at several intervals for the crews to pull off the main track for a train. These turnouts were typically composed of timber ties built inside the ballast bed adjacent to the tracks.

Rail Rest

Maintenance crews used rail rests for short-term storage of iron and steel replacement rail for repairs along the railroad. These were typically located at intervals along the rail line that were not more than widened spots on the roadbed with timber ties.[751]

Rectification Structure

Railroads were commonly built along waterways, so rectification structures were used to control and redirect the flow of waterways. Rectification structures included elements such as dams, dikes, fill slopes, jetties, retaining walls, culverts, ditches, and siphons.[752]

Signal Towers

According to Walter Berg's 1893 Buildings and Structures of American Railroads:

> Signal towers are used on railroads where it is necessary to station a watchman, signal man, gateman, switch - tender, or operator, at a sufficient elevation above the railroad to enable him to command a good view of the tracks and surroundings, or to allow the signal man or his signals to be readily seen from approaching trains, vehicles, or other signal stations.[753]

Often found in railroad switching yards, the primary function of a signal tower was to facilitate incoming and outbound train movements. In early days, signal towers may have been operated at grade crossings and other types of crossing as well.[754] There are two different types of signal towers. One is intended to protect exposed areas of the track and one connected to a block-signaling system.[755] The other is known as a block-station signal tower, which was connected to a block-signaling system and could be equipped with switch levers that controls the direction of the trains. They are found at terminal yards, stations, and junction points.[756] As these buildings were meant to provide operators a higher visual vantage point, they were typically constructed at least two or more stories in height depending on their location. A basement level could house

[751] Fraser and Strand 1997:153.
[752] Orrock 1918:291.
[753] Berg 1893:39.
[754] Ibid.
[755] de Kok 1991:99–100.
[756] Berg 1893:39.

operational and electrical equipment.[757] The circa-1950 SCL Signal Tower (ED0575) in Edgecombe, once associated with the ACL, was demolished in 1986. It was a three-story signal tower with similar features as the unrecorded NS Signal Tower in Asheville (Photo 3).



Photo 3: Circa-1950 NS Signal Tower in Asheville. This resource has not been previously recorded with the HPO.

Switching Device

Railroads implemented various hand, electrical, mechanical, and cross over switches that were located at junctions between main and branch line to direct trains over the tracks. According to John W. Orrock in 1918, "Switches in common use for turnouts are the stub and split or point switch. If the end of the rail is cut off at a bevel so as to lap slightly when thrown, it is called a lap switch."[758]

Telephone Box

Once telephones became widely available, companies used them as a tool in railway communication and installed called boxes along the line. Train crews and maintenance workers used these call boxes to easily communicate essential rail operations. These telephone boxes were typically the size of a telephone booth, but they were constructed out of concrete and accessed by a wooden door. One interesting example of a telephone booth was constructed circa 1940 and was originally located between Lexington and Thomasville constructed by Southern Railway (Photo

[757] Orrock 1918:238–239.
[758] Ibid.:215.

4).[759]. This telephone box is an associated resource to the Southern Railway Spencer Shops (RW0011), which was listed in the NRHP in 1978. Theses telephone boxes modeled after the flagman's and switchman's cabin (Figure 91, p. 171). Although this specific example is associated with the NS system, such buildings were fairly uniform.



Photo 4: Circa-1940 Southern Railway Telephone Booth, Spencer (Right) and Detail of the Interior (Left). This resource is a part of the Southern Railway Spencer Shops (RW0011).

Track Sign

A plethora of signage lined the track along the grade to alert train engineers, maintenance crews, and the public regarding milepost, elevation pots, bridge and culvert numbers, railway crossing, trespass signs, yard limit sign, speed limit signs, derail signs. These signs were massed produced in large quantities and saved for use along the track and typically constructed from concrete, wood, and metal (Figure 92, p. 171). A display of circa-1910 track signs can be found at the North Carolina Transportation Museum in Spencer. These signs would activate when the approaching train's wheels would trigger a lower-power circuit (Photo 5, p. 172).

[759] Hufstetler and Bedeau 1998:63.

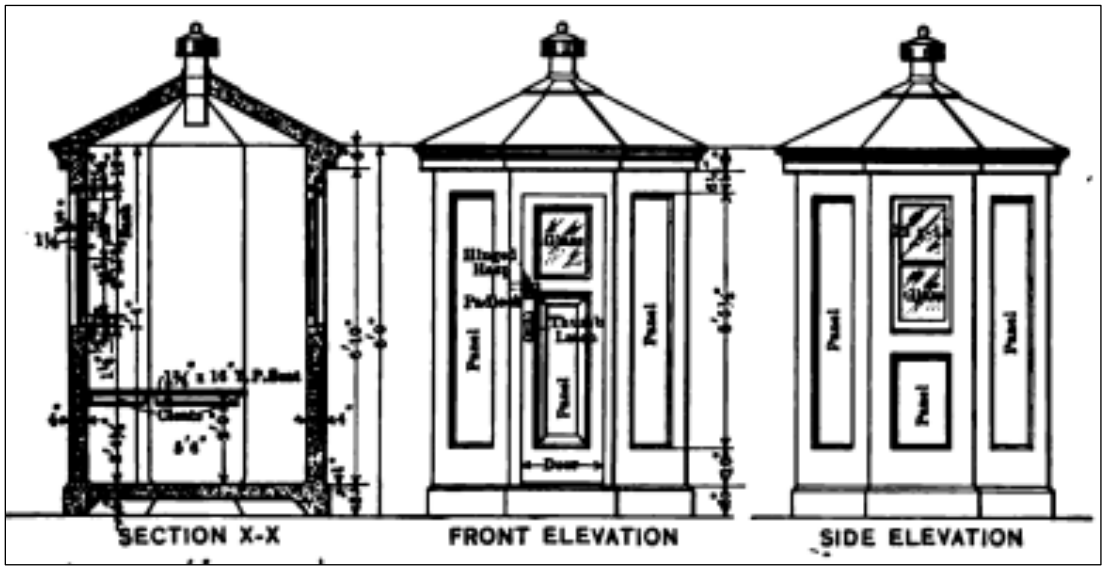


Figure 91: Circa-1900 Diagram of Flagman's Concrete Cabin as Depicted in John W. Orrock's 1918 *Railroad Buildings and Structures*.[760]

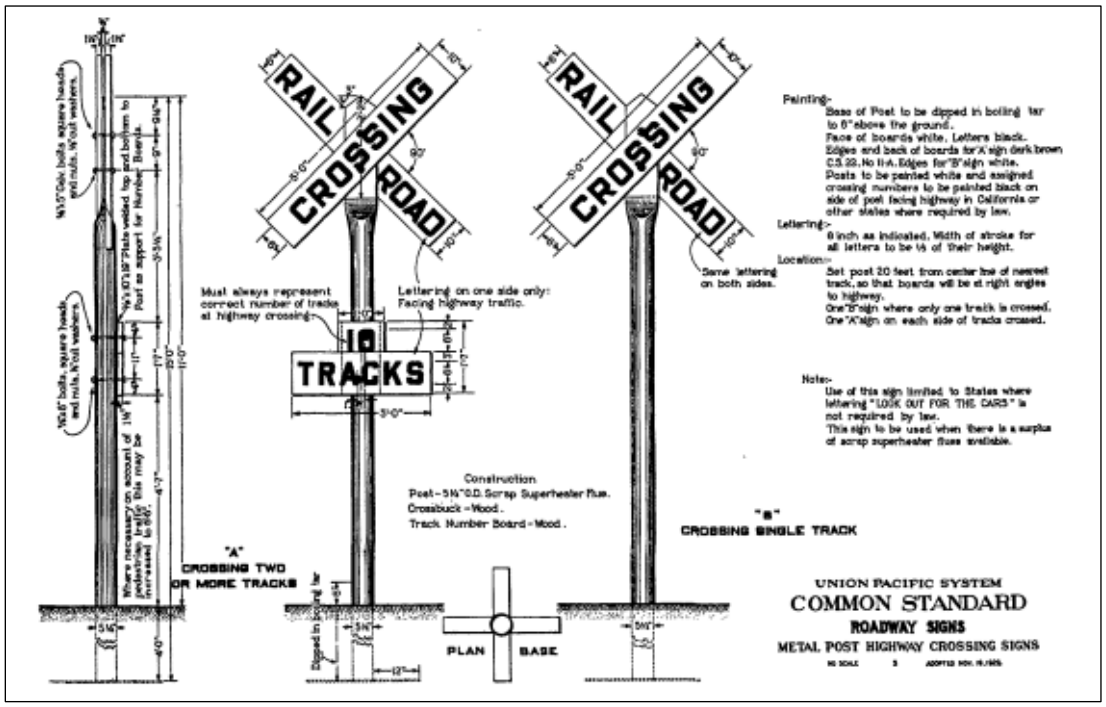


Figure 92: 1929 Union Pacific System Track Sign.[761]

[760] Orrock 1918:295.
[761] Fraser and Strand 1997:151.



Photo 5: Track Sign Display at the North Carolina Transportation Museum in Spencer.

Traffic Signal

Traffic signals are tall signal poles that are strategically positioned along the tracks to inform train engineers of possible traffic ahead. These signals have three designations, "block," "home block," and "distant," to indicate their location to nearby stations. Early poles were designed with movable signal blades that would indicate the previously mentioned designations (Figure 93, p. 173). Today, a three-light signaling system has replaced the blade system such as the Southern Railway Depot in Spencer (RW0922), recorded as the Barber Junction Depot (Photo 6, p. 173). This type of object would likely be standardized.

Utility Line

Utility lines include electrical, telephone, and telegraph lines and could be found lining the railroad's ROW. These utility lines were utilized by the railroad as well as the surrounding area and were primarily constructed from wood and metal posts.[762]

[762] Fraser and Strand 1997:153.

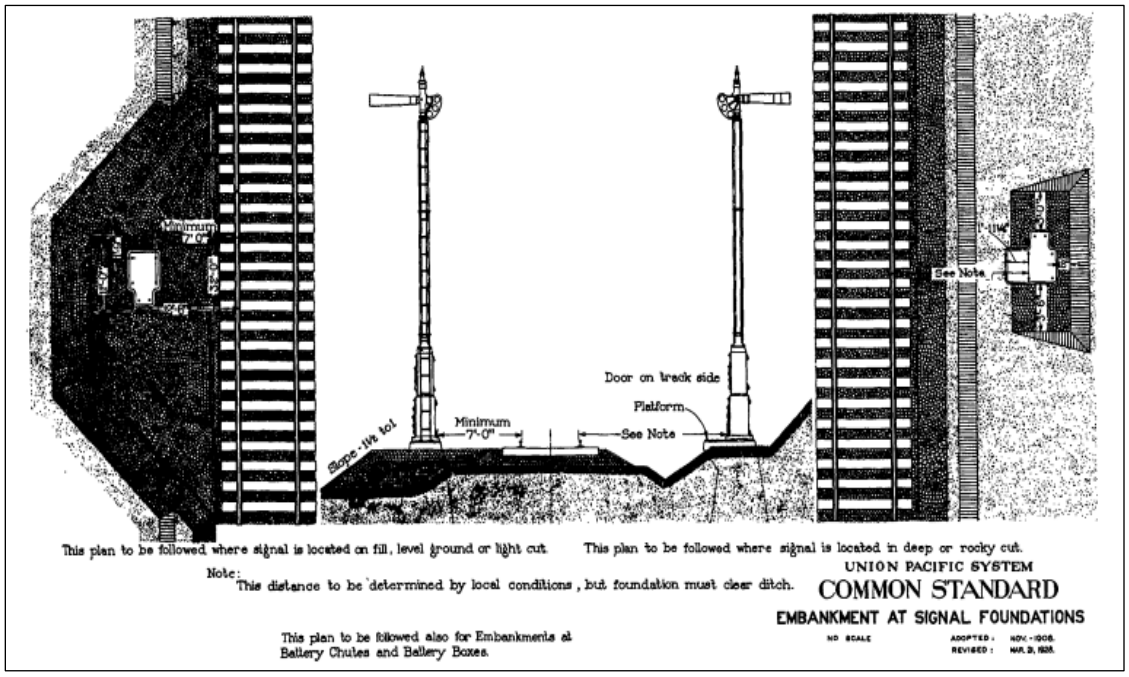


Figure 93: 1908 Union Pacific System Traffic Diagram of Blade Traffic Signal. [763]



Photo 6: Three-light Signaling System at the Southern Railway Depot in Spencer (RW0922), Reordered as the Barber Junction Depot. It does not have an eligibility determination.

[763] Ibid.:151.

Significance

Miscellaneous and ROW structures and objects include essential components to the function of the railyard and corridors such as small to large-scale structures and objects. Small-scale structures and objects were often prefabricated models built in a standardized fashion that favored functionality over style. These were not maintained for long-term use and, in many cases, were salvaged and left vacant by the railroad companies. As a result, the structures and objects within this property type that remain have the potential to be considered significant for their association with a specific corridor, railroad company, and their overall representation of the evolving railroad trends.[764]

Criterion A

A miscellaneous or ROW structure or object will meet the registration requirements under Criterion A if it is a contributing element of a railroad corridor, railroad station, or railroad yard historic district. Railroads are often found to be associated with Criterion A if they were demonstrably valuable to the growth of a community, played a critical role in the transportation history, or was in a role in the commercial, industrial, or agricultural development in the region.[765]

Criterion B

A miscellaneous or ROW structure and object is extremely unlikely to be eligible for the NRHP under Criterion B. These structures were built and operated by large corporations that represent the work of many people, rather than individuals, and similarly, these structures do not best represent the significance of those individuals. Therefore, Criterion B is not applicable to miscellaneous or ROW structures and objects.[766]

Criterion C

Most miscellaneous or ROW structures and objects could be considered representatives of a type and embody a distinctive design or construction method. They could also embody the work of a significant engineer or builder or represent the evolving technology of railroad transportation or civil engineering. Evaluation of significance under Criterion C should address additional important aspects of the property within a larger population of similar structures as well as how the structure is representative of the evolving technology of the railroad.[767] Additionally, although these types of resources were once ubiquitous throughout the landscape, their numbers are dwindling; therefore, they may achieve historic significance under this criterion as being a surviving example.

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[764] Ibid.:146.
[765] Ibid.:148.
[766] Ibid.:155.
[767] Ibid.:155.

Criterion D

Structure ruins or sites with demonstrable potential to document the spatial arrangement, extent, and/or uses of railroad-related facilities along a significant railroad may be a contributing element of a railroad corridor, railroad station, or railroad yard historic district. Many of these elements are located close to the routinely modified railroad bed, and therefore, may be compromised.[768]

Registration Requirements

As small-scale, ancillary features that were frequently altered or replaced, these miscellaneous and ROW structures and objects listed in this MPDF are rarely considered individually eligible but are more likely to be considered as a contributing element of a railroad corridor, railroad station, or railroad yard historic district if they have significance for their design or engineering or for critical and essential role in the significance of the railroad. In order to be eligible for listing in the NRHP within the MPDF *Railroad Development in North Carolina 1835–2022*, a miscellaneous and ROW structure or object must have been built within a railroad corridor between the years 1835 and 2022; must meet one of the NRHP Criteria for Evaluation; and must retain overall historic integrity. Loss of integrity of location, design, setting, materials, workmanship, feeling, and/or association "may be mitigated by demonstrable historical association or by architectural or technological significance for unique or rare structural types.[769]Although the resource is likely to continue to function to the present day, for the purposes of this MPDF, the period of significance will vary on a case-by-case basis.

Location

Miscellaneous and ROW structures and objects can be located in the vicinity of the rail lines and more specifically they can be located in historic sites, corridors, and railyards. Observing the surrounding landscape should be noted in order to locate the structure's significance and larger context.

Design

Integrity of design requires that the structure or object must retain the original architectural features that display the significance of its historic function or architectural or engineering designs.

[768] Ibid.
[769] Ibid.:147.

Setting

In order to retain integrity of setting, the vicinity to the structure or object should be similar of its period of significance. The landscape of the surrounding area should be evaluated and the structure's proximity to urban and rural railroad properties should be expected.

Materials and Workmanship

The materials used for the various miscellaneous and ROW structures and objects should retain original materials when possible. Use of materials that alter the structure's architectural features installed during the period of significance would negatively impact the resource's significance. The loss of integrity of workmanship, whether that be the replacement of a material or the reconfiguration of the structure or object's structural makeup, would negatively impact the resource's significance.

Feeling and Association

A miscellaneous or ROW structure or object's integrity of feeling could be negatively impacted by the use of modern additions and alterations to the historic architectural design. The structure has integrity of feeling if it retains its integrity of design and materials. Association is retained if the miscellaneous or ROW structure or object is located near a rail line, railroad yard, a historic district, or a corridor. Like feeling, association requires the presence of physical features that display a property's historic significance. However, association alone is never sufficient to support a determination of eligibility.

G. GEOGRAPHICAL DATA

The entire State of North Carolina was taken under consideration for this MDPF.

H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

(Discuss the methods used in developing the multiple property listing.)

This MPDF was generated as part of the Memorandum of Agreement (MOA) outlining steps to mitigate adverse effects to historic properties for the Southeast High Speed Rail (SEHSR) project (Virginia/North Carolina line to Raleigh segment) that was signed in December 2016.[770] Stipulation XII of the document required that a historic context be authored on the history and impacts of CSX Transportation (CSXT) and the Norfolk Southern Railway (NS) in the North Carolina Coastal Plain and Piedmont, particularly calling attention to the historic Atlantic Coast Line (ACL), Seaboard Air Line (SAL), and Carolina Railroad (CRR). Funding and oversight for the project was provided by the North Carolina Department of Transportation (NCDOT) Rail

[770] FRA, NCDOT Rail Division, and NC HPO 2016.

Division while project management services were provided by Three Oaks Engineering. Fieldwork, research, and Multiple Property Document Form (MDPF) production was conducted between October 2019 and May 2022 by Danae Peckler as lead author with assistance from Melissa Butler, Dan Dilks, Jr., Kurtis Rogers, Adriana T. Moss, Elise Norquist Heather Dollins Staton, Jonathan Valalik, Katherine Watts, and Kerri S. Barile of Dovetail Cultural Resource Group. Ms. Moss, Ms. Butler, Ms. Peckler, Mr. Rogers, Ms. Staton, Mr. Valalik, Ms. Watts, and Dr. Barile meet or exceed the requirements for Architectural Historian and Historian set by the Secretary of Interior.

The production of this MPDF was intended to develop a historic context for the rail corridor in order to analyze railroad resources within the context of the entire CSX railroad corridor within the state of North Carolina. Through archival and background research and limited fieldwork, Dovetail identified and recorded types of structures, buildings, objects, sites, and groupings thereof historically associated with the NS railroad system and the North Carolina Railroad (NCRR), all of which are listed in this document. Furthermore, it is meant to provide a model for research, recording, and evaluating railroad-related above-ground elements along the NS and NCRR corridor within North Carolina as well as other rail corridors. Further research on resources within and adjacent to the rail corridor may suggest additional areas of significance outside of the rail context and are not covered here. Lastly, the MPDF will also help assess future resources to be documented and inform project areas in communities along the corridor.

The historic context of the rail corridor and its predecessors is a synthesis of primarily secondary source materials. Materials included but were not limited to cultural resource reports, forms, and National Register of Historic Places (NRHP) nominations and MPDFs on file with the North Carolina Historic Preservation Office (NC HPO) and other state historic preservation offices; documentation at the NCDOT Rail Division and NCDOT Environmental Analysis Unit; and other materials and compendiums of archival data available online or at repositories such as the Library of Congress in Washington, D.C., the North Carolina State Library in Raleigh, the Center for Urban Affairs and Community Services at North Carolina State University in Raleigh, and the North Carolina Government & Heritage Library in Raleigh. Online specific repositories referenced during this effort included HPO Web, American-Rails.com, Carolana, NCPedia, Journal Storage (JSTOR), among others. As the function of railroads is transportation, thematic contexts applied in this MPDF are focused on the relationship and effect of that transportation on other aspects of North Carolina such as industry, commerce, and urban development during the period of significance of 1833 to 2022.

Background research on previously recorded above-ground resources was conducted at the NC HPO to assist in developing the historic context, list of property types, and what types have been previously surveyed or are lacking in survey. Property types delineated in this MPDF are based on function similar to the Pennsylvania State Historic Preservation Office's *Researchers Guide for Documenting and Evaluating Railroads* and other MPDFs such as the *Railroads in Colorado*

1858–1948, *Railroads in Minnesota, 1862–1956*, among others.[771] Background research also assisted in the compilation of list of previously recorded above-ground resources associated with the CSX rail corridor on file with the NC HPO. This list will inform future work and research for associated property types of the rail corridor.

Limited architectural reconnaissance-level fieldwork was conducted as part of the development of this MPDF. Above-ground resources surveyed are representative of certain property types lacking in previous survey with the NC HPO. They were evaluated for NRHP-listing potential using the criteria set forth in this document. NC HPO forms were produced and submitted for the approximately 33 above-ground resources surveyed according to the NC HPO standards. Also submitted was an Access database, a Geographic Information Systems (GIS) shapefile featuring surveyed resource data, and other deliverables as required per NC HPO guidelines. Archaeological fieldwork was not conducted as part of this effort.

Research and fieldwork helped inform the requirements for integrity for listing of individual resources in the NRHP under this MPDF. Original design elements, characteristics, and intent as well as type and extent of modifications or alterations were considered.

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APPENDIX A: NS SYSTEM PREDECESSOR LINES TABLE

Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
Aberdeen and Asheboro Railroad	1897	1912	Aberdeen to Asheboro, NC	56	Raleigh, Charlotte and Southern (1911); Norfolk Southern (1913); Southern (1974)	Formed from 1897 merger of the Aberdeen and West End and Asheboro and Montgomery Railroads; Had/has a 20.75-mile branch connecting Briscoe, NC to Troy and Mount Gilead and another branch connecting West End to Jackson Springs
Aberdeen and West End Railroad	1889	1895	Aberdeen to Star, NC	25.33	Aberdeen and Asheboro (1897)	Merged with the Asheboro and Montgomery Railroad to form the Aberdeen and Asheboro Railroad
Albemarle and Pantego Railroad	1887	1890	Mackey's Ferry to Pantego, NC	29.6	Norfolk and Southern (1891)	Albemarle and Pantego Railroad (1887–1891); The A&P operated a 29.5-mile line from Mackey's Ferry to Belhaven with a 12-mile branch. A&P became a part of the Norfolk and Southern Railroad on June 1, 1891
Asheboro and Montgomery Railroad	1896	1896	Asheboro to Star, NC	25	Aberdeen and Asheboro (1897)	Merged with the Asheboro and West End Railroad to form the Aberdeen and Asheboro Railroad
Asheville and Craggy Mountain Railway	1889	1890; 1902	Asheville to Locust Gap at Craggy, NC	4.4	Southern (1906)	From 1890 to 1892, just 2.5 miles of track were open and operated during the summer months from Chestnut Street in Asheville to the Golf Club Station. The line was out of operation from 1897 to 1900, when it was acquired by a private owner and later converted to electric locomotives. In 1902, the line was extended 1.5 miles to Locust Gap. Southern acquired majority stock control in 1906, though the line functioned as a subsidiary before it was abandoned in the 1970s
Asheville and Spartanburg Railroad	1874; 1881	1879–1886	Spartanburg, SC to Asheville, NC	41.8	Richmond & Danville (1881); Southern (1896)	Formed from the reorganization of the Spartanburg and Asheville, which was sold under foreclosure in 1881
Atlanta and Charlotte Air-Line Railway	1877	N/A	Atlanta, GA to Charlotte, NC	43.1	Richmond & Danville (1877;1881, lease for 99 years)	Organized as the successor to the Atlanta and Richmond Air-Line Railway; Absorbed by Southern as an asset of the Richmond & Danville in 1894
Atlanta and Richmond Air-Line Railway	1870	1871–1873	Atlanta, GA to Charlotte, NC	43.1	Richmond & Danville (1872)	Formed from the consolidation of the Georgia Air-Line, the Air-Line Railroad of South Carolina, and the Air-Line of North Carolina; Operated by the Richmond and Danville as part of the Piedmont Air-Line; 1874 placed under receivership; 1876 sold under foreclosure; 1877 reorganized as the Atlanta and Charlotte Air-Line Railway

Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
Atlantic and Danville Railroad	1882	1891	Portsmouth, VA to Danville, VA; passed through Person, Caswell, and Granville County, NC	26.25	Southern (1897;1899–1949); Owner Operated (1949–1960); Acquired by the Norfolk & Western (1962)	Leased by Southern Railway until 1949. After the Southern terminated the lease the Atlantic & Danville continued as an independent company for another dozen years. The company went bankrupt in 1960 and was purchased by the Norfolk and Western Railway in 1962. The N&W created a new subsidiary, the Norfolk, Franklin and Danville Railway, to operate the line.
Atlantic and East Carolina Railway	1939	N/A	Goldsboro to Morehead City, NC	96	Owner Operated (1939–1956); Southern Railway (1957); Merged with NCRR and Leased by NS (1989)	Created to operate/lease the A&NCRR in 1939 after the Norfolk and Southern Railroad defaulted on its lease in 1932. The A&NCRR assumed control of operations until the line was leased to Atlantic and East Carolina Railway Company, which became a subsidiary of Southern in 1957. The company still exists although it merged with the North Carolina Railroad in 1989
Atlantic and North Carolina Railroad	1852	1858	Goldsboro to Morehead City, NC	95	Owner Operated (1852–1904) Leased to Norfolk & Southern Railroad (1904–1932) Owner Operated (1935–1939)	Formed in 1854 and completed from Morehead City to Goldsboro, where it joined with the NCRR and the Wilmington and Weldon in 1858; State-owned for its entire operation, "the Mullet Line" was operated by the state from 1859–1904; leased to Norfolk and Southern; NS failed to pay rent in 1935, the state took over operations. On September 1, 1939 the state leased to Harry P. Edwards, who operated the line as the Atlantic and East Carolina Railway
Atlantic and Yadkin Railway	1899	1860; 1884; 1888	Sanford to Mount Airy, NC	166, including branch lines. Main line 131	Wilmington & Weldon (1899 - southern half only) Southern (1899 - northern half only)	Origins with Western Railroad Company in 1852; in 1899, purchased 130.95-mile Mount Airy-to-Sanford line of the former Cape Fear and Yadkin Valley from the Wilmington and Weldon. Established as a separate company, Atlantic and Yadkin Railway also included lines from Climax to Ramseur (18.74 miles), Stokesdale to Madison (11.38 miles), Greensboro to Proximity Mills (2.02 miles), and Gulf to Bluff Quarry (1.10 miles); Atlantic and Yadkin was absorbed into the Winston-Salem Division of the Southern Railway in 1950
Atlantic, Tennessee and Ohio Railroad	1855	1860	Charlotte to Statesville, NC	44	Charlotte Columbia and Augusta/ Richmond & Danville (1882); Southern (1894)	The rails were removed in 1863 and used in the construction of the Piedmont Railroad. The track was re-laid in June 1871
Beaufort and Western Railroad	1905	1905	Beaufort to Morehead City, NC	4	Norfolk Southern (1906); Beaufort and Morehead Railroad (1938)	Line required trestles for a causeway over marshland between the two cities, and a drawbridge over the Beaufort Channel. Acquired by Norfolk Southern in 1906; sold to the Beaufort and Morehead Railroad in 1938. Tracks removed in the 1990s

Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
Cape Fear and Yadkin Valley Railway	1879	1884; 1888; 1890	Multiple: Fayetteville to Mt. Airy; Ore Knob; Wilmington; and Bennettsville, SC		Wilmington and Weldon/Atlantic Coast Line (1894); Divided and reorganized (1899)	Formed by the consolidation of the Western Railroad and Mt. Airy and Ore Knob Railroad in 1879. Road extended from Gulf to Greensboro and from Fayetteville south to Maxton in 1884. Further extended from Greensboro via Fayetteville to Bennettsville, SC, including the leased South Carolina Pacific Railway by December 1884. Eventually sold to the Wilmington and Weldon/Atlantic Coast Line in 1894, and later divided between it and Southern in 1899 under a new company, the Atlantic & Yadkin Railroad. Southern obtained the northern portion, while the Atlantic Coast Line retained the southern half
Carolina Railroad	1912	1908; 1913	Hines Junction near Kinston to Snow Hill, NC	15	Norfolk Southern (1913)	Began as the Kinston & Snow Hill Railroad (chartered in 1908; completed 1908) and was reorganized as the Carolina Railroad in 1913, a company owned and operated by Norfolk Southern
Carthage and Pinehurst Railroad	1907	1907	Carthage to Pinehurst, NC	12	Lease transferred to Norfolk Southern Railroad (1912)	Owned and operated by Aberdeen and Asheboro
Charlotte, Columbia and Augusta Railroad	1869	1869	Charlotte, NC to Augusta, GA	10.9	Richmond and Danville controlling interest (1878). Leased to Richmond and Danville (1881; 1886); Southern (1894)	Formed in 1869 from the consolidation of the Charlotte and South Carolina (chartered 1865; opened 1869) Railroad Commissioners Report (p. 244 states 1846; 1852) and Columbia and Augusta (chartered 1865; opened 1869) Railroads. Leased to Richmond and Danville in 1881 and again in 1886 for a period of 99 years, before being absorbed into Southern in 1894.
Chester and Lenoir Railroad	1874	1875–1884	Chester, SC to Lenoir, NC	62.2	Charlotte Columbia and Augusta/Richmond and Danville (1882)	Formed from the consolidation of the Kings Mountain (chartered 1849; completed 1852) and Chester and Lenoir Railroad (chartered 1873); 1880 opened to Lincolnton, NC; 1884 completed to Lenoir
Danville, Mocksville and Southwestern Railroad (absorbed by the Danville and Western Railway)	1880	1880–1883	Leaksville Junction, VA on Danville & New Railroad to Leaksville (now Eden), NC	8	Southern (1907)	The Danville and Western Railway formed from the 1891 reorganization of the Danville and New River Railroad (chartered 1873), which was sold under foreclosure in 1890. In March 1899, the Danville and Western Railway acquired the Danville, Mocksville and Southwestern Railroad (chartered 1881; completed 1883) and standard-gauged its 8-mile branch from Leaksville Junction, Virginia, to the North Carolina town of Leaksville (now part of Eden). In 1951, its remaining mileage was leased and operated as the Carolina and North-Western's Martinsville Division.
Durham and Charlotte Railroad	1893	1900–1910	Durham to Charlotte, NC	41	Merged with Raleigh, Charlotte, and Southern Railroad (1911)	From Glendon to Star was completed in 1900; From Gulf to Cumnock and from Star to Troy completed in 1910

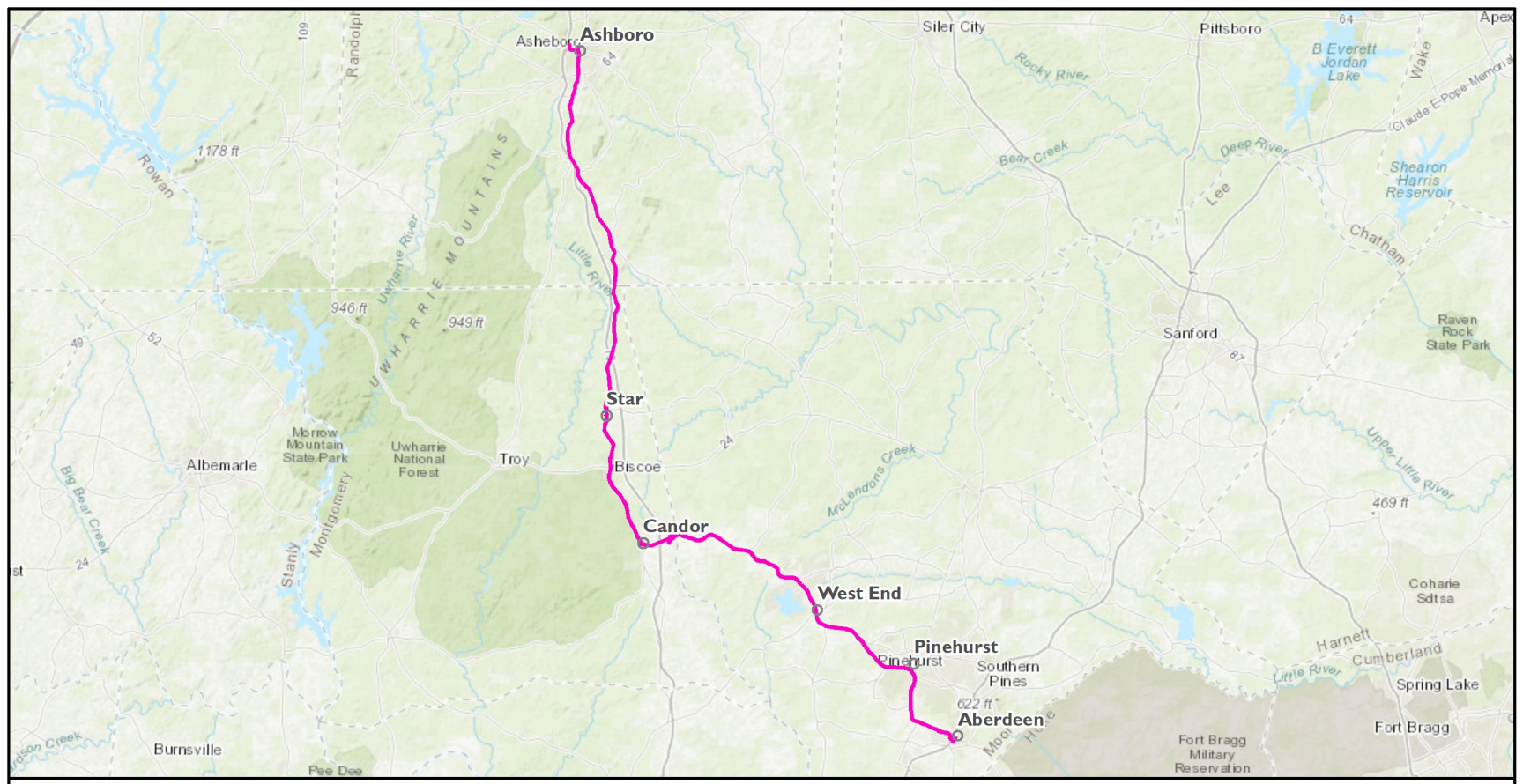
Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
Durham and South Carolina Railroad	1905	1906; 1913; 1925	Duncan to East Durham, NC; extended to Dunn, NC via Varina	42	Norfolk Southern Railroad (1920); Acquired by Norfolk Southern (1957)	Operated as the Durham Division of Norfolk Southern and was extended into Durham in 1925
Elizabeth City and Norfolk Carolina Railroad	1870	1881	Norfolk, VA to Edenton, NC	73, including mileage in VA	Norfolk & Southern Railroad (1891)	Chartered in 1870 to construct a line between its namesake cities. Renamed as Norfolk Southern Railroad in 1883
High Point, Randleman, Asheboro and Southern Railroad	1887	1889	High Point to Asheboro, NC	27.7	Operated by Richmond and Danville (1888) Leased to Southern (1894)	Initially chartered as the High Point and Randleman Railroad Company in 1882; The charter was amended and ratified by the General Assembly in 1887
Jackson Springs Railroad	1901	1901	Jackson Spring to West End, NC	4	Aberdeen and Asheboro (1907)	Absorbed by the Aberdeen and Asheboro Railroad in 1907
Lynchburg and Durham Railroad	1887	1890	Lynchburg, VA to Durham, NC	43.4	N&W assumed operation under lease (1892); Absorbed by N&W (1896)	
Milton and Sutherlin Railroad	1876	1878	Sutherlin, VA to Milton, NC	0.31	Richmond and Danville (1878); Acquired by the Richmond and Danville (1881)	Milton and Sutherlin Narrow-Gauge Railroad Company was chartered in the state of Virginia in March 1876, followed by a North Carolina charter in 1877, to connect the town of Milton in Caswell County with the R&D main line at Sutherlin, Virginia. Construction of the 7-mile line was funded by 50 enterprising area residents.
Norfolk and Southern Railroad	1891	1906	Main Line: Berkley, Virginia to Belhaven, NC (105.8)	370	Reorganized as the Norfolk and Southern Railway Company (1906)	Reorganized from the Norfolk Southern Railroad (1883–1891) and later consolidated with the Albemarle and Pantego Railroad in 1892
Norfolk Southern Railroad Company	1883	1881 (1st) 1910 (2nd)	Norfolk to Edenton, NC	52 (Norfolk Southern Railroad 1st) plus 14 (Norfolk southern railroad 2nd)	Fell under receivership and sold under foreclosure (1891) Purchased by bondholders. See below.	Name changed from Elizabeth City and Norfolk Carolina Railroad to Norfolk Southern Railroad in 1883

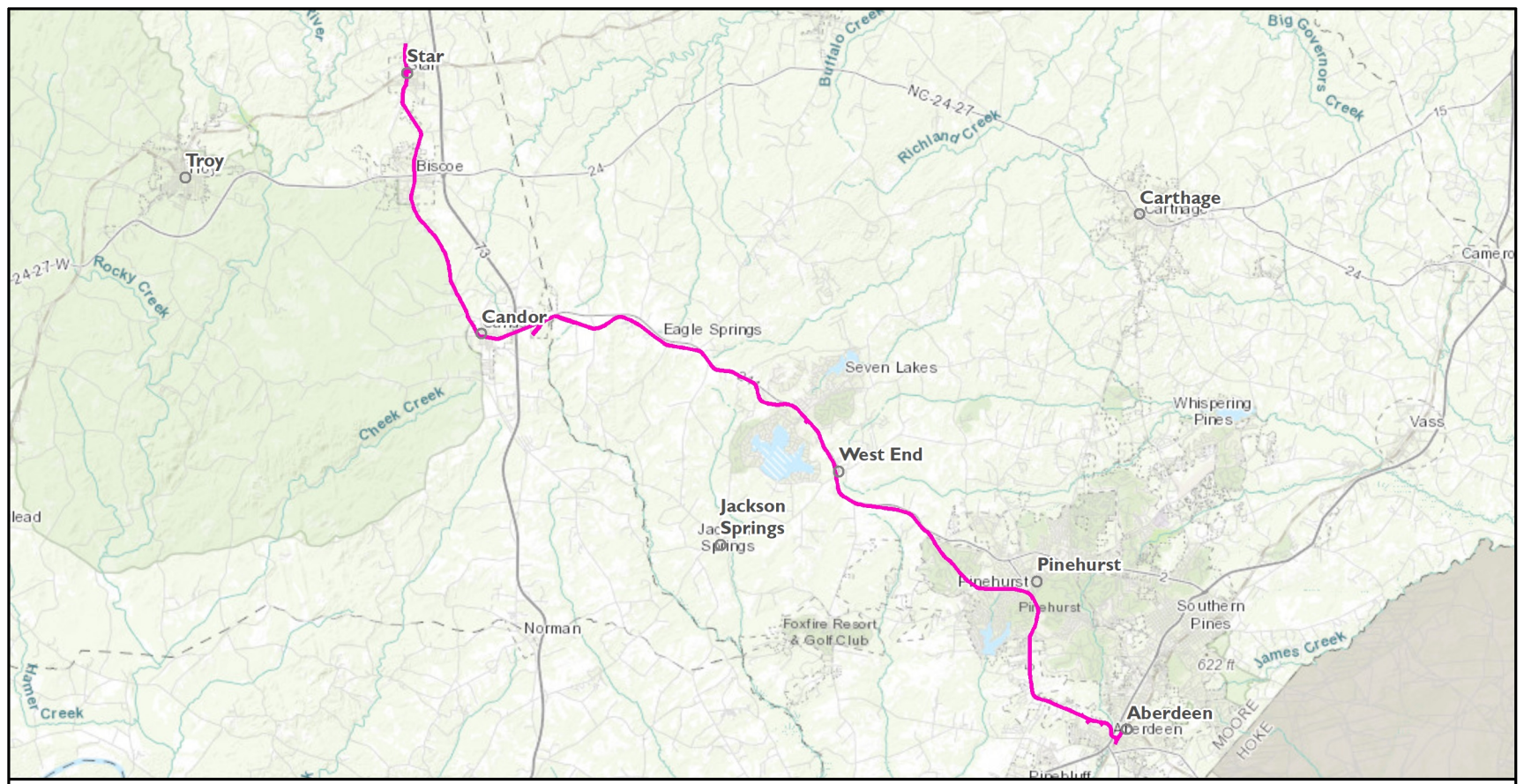
Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
North Carolina Midland Railroad	1880	1891–1899	Winston-Salem to Mocksville, NC	26.1	Acquired by Terminal Co. (holding company of the Richmond and Danville) (1891)	Formed from the September 1880 consolidation of the Winston-Salem and Madison Railroad Company and the Dan Valley and Yadkin River Railroad Company; 1891 completed from Winston-Salem to Mocksville; 1899 completed from Mocksville to Mooresville
North Carolina Railroad	1849	1856	Goldsboro to Charlotte, NC	223	Leased to Richmond and Danville (1871–1894); Southern (1894–1995) Leased to Norfolk Southern (1999–present)	Oldest extant private corporation in the state, the NCRR owns its rail corridor, but has leased operations thereon since 1871; Acquired Atlantic & North Carolina Railroad in 1989
North-Western North Carolina Railroad	1868	1873–1890	Greensboro to Wilkesboro, NC	107.8	Richmond and Danville (1872/1871) Acquired by Southern (1894)	1873 completed from Greensboro to Winston-Salem; 1890 reached Wilkesboro
Oxford and Henderson Railroad	1871	1881	Oxford to Henderson, NC	12	Richmond and Danville (1888) Acquired by Southern (1894)	Chartered in March 1871, but the 12-mile line from Oxford to Hendersonville, where it connected with the Raleigh and Gaston Railroad, did not open until August 1881 after it was acquired by Richmond Terminal. Leased to the R&D for 99 years in 1888 and later absorbed by Southern
Oxford and Clarkesville Railroad	1885	1888; 1893	Clarkesville, VA to Oxford, NC; later extended to Durham	49.4	Leased to Richmond & Danville for 99 years (1888); Acquired by Southern (1894)	When the R&D finished the Richmond and Mecklenburg Railroad in 1884 from Keysville, Virginia, south to Clarkesville, Virginia, it sought control over the O&C and quickly built the 56.5-mile line from Clarksville to Oxford with 49.4 miles of track in North Carolina. The line was absorbed by Southern in 1894
Pamlico, Oriental and Western Railroad	1891	1906	New Bern to Oriental, NC	17	Acquired by Norfolk and Southern Railway (1906)	Merged with the Norfolk and Southern Railroad, the Atlantic and North Carolina Railroad, the Pamlico, Oriental and Western Railroad, and the Virginia and Carolina Coast Railroad to become Norfolk and Southern Railway Company
Piedmont Railroad	1862	1864	Danville, VA to Greensboro, NC	42.4	Richmond and Danville (1863; 1866)	Built and operated by the Richmond and Danville Railroad, who created the Piedmont Railroad. Railroad Commissioners Report states that it was leased to the Richmond and Danville for a term of 86 years from February 1874. Later absorbed by Southern
Raleigh and Pamlico Sound Railroad	1903	1906	Washington to Bridgeton, NC and from Raleigh to Zebulon, NC	99	Acquired by Norfolk and Southern Railway (1906)	Organized as the Raleigh and Eastern North Carolina Railroad; renamed Raleigh and Pamlico Sound Railroad in 1905; Merged with the Norfolk and Southern Railroad, the Atlantic and North Carolina Railroad, the Pamlico, Oriental and Western Railroad, and the Virginia and Carolina Coast Railroad to become Norfolk and Southern Railway Company

Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
Raleigh and Southport Railway	1905	1905 (operational)	Carleigh to Lillington, NC Lillington to Fayetteville, NC	20.8 mile	Merged with the Raleigh, Charlotte and Southern Railroad (1911)	Originated as the Raleigh and Cape Fear Railroad; Successor to the Raleigh and Cape Fear Railway, the Raleigh and Southport was reorganized by owner Norfolk Southern Railroad into the Raleigh, Charlotte, and Southern Railway in February 1912
Raleigh, Charlotte and Southern Railway	1911	1906	Aberdeen to Troy; Star to Asheboro; West End to Jackson Springs; Troy to Mount Gilead; Candor to Ellerbe; Glendon to Gulf; Gulf to Cumnock; Glendon to Star; Raleigh to Fayetteville	225.5	Merged into Norfolk Southern Railroad (1913)	Created by Norfolk Southern Railroad in 1911 from the consolidation of the Aberdeen and Asheboro, Durham and Charlotte, Raleigh and Southport, and Sanford and Troy. Owned by Norfolk and Southern Railroad from inception and later absorbed by it in 1913
Richmond and Danville Railroad	1847	1848–1856	Richmond to Danville, VA	N/A	Richmond Terminal (1880); Southern (1894)	Prior to its reorganization as the property of Southern Railway Company, the Richmond and Danville had been in the railroad business for nearly a half century. In the postbellum period, its rail system grew to include 1,072.87 miles of track on 19 lines in North Carolina by 1893
Roanoke and Southern Railway	1887	1891 completed to Martinsville; 1892 entire line in operations	Roanoke, VA to Winston-Salem, NC	14	N&W lease (1892); Absorbed into N&W (1896)	
Sanford and Troy Railroad	1909	1910	Colon to Cumnock, NC	8	Merged with the Raleigh, Charlotte and Southern Railroad (1911)	Previously known as the Egypt Railroad, which was built in 1891
Southern Railway	1894	N/A	Multiple	939.91	Owner-Operated 1894–1982); merged with N&W to become Norfolk Southern Corporation (1982)	Created from the ruins of the Richmond and Danville, the Southern Railway Company created with financial investment of John Pierpont Morgan on June 18, 1894; In North Carolina, Southern absorbed most all of the Richmond and Danville's network and leased the North Carolina Railroad. Officially made its last steam-powered run-on June 17, 1953; merged with the Norfolk and Western Railway in 1982 to become the Norfolk Southern Corporation
Spartanburg and Asheville Railroad	1874	1878–1879	Spartanburg, SC to Asheville, NC	42	Acquired by Terminal Co. (Richmond and Danville's holding company) under foreclosure (1881)	1878 reached Tryon, NC; 1879 opened from Spartanburg, SC to Hendersonville, NC. Reorganized as the Asheville and Spartanburg Railroad

Line	Chartered or Incorporated	Completed	Locations Connected	Length (mi) in NC	Acquired/Leased/ Absorbed by	Notes
State University Railroad	1879	1881	NCRR at University Station to Chapel Hill, NC	10.2	Leased to the Richmond and Danville (1881)	Originally chartered as the Chapel Hill Iron Mountain Railroad Company in 1873; By an Act of the General Assembly, the name was changed to State University Railroad in 1879
Statesville and Western Railroad	1887	1887	Statesville to Taylorsville, NC	20.4	Richmond and Danville (1887); Southern (1894)	
Tallulah Falls Railway	1898	1908	Cornelia, GA to Franklin, NC	14	Acquired by Southern (1909)	Incorporated in GA to replace the Blue Ridge and Atlantic Railroad Company, which was sold under foreclosure in 1897; Placed under receivership in January 1908
Transylvania Railroad	1899	1899	Hendersonville to Brevard, NC	42.1	Acquired by Southern (1906)	Originated as the Henderson and Brevard Railroad
Virginia - Carolina Railway	early 1890s	1914	Abingdon, VA to Elkland, NC	22	N&W Acquired control (1916) Deeded to N&W (1919)	early 1890s chartered as the Abingdon Coal and Iron Company Railroad; reorganized as the Virginia-Carolina Railway in 1900
Virginia and Carolina Coast Railroad	1905	1906	Suffolk, VA to Edenton, NC	61	Acquired by Norfolk and Southern Railway (1906)	Merged with the Norfolk and Southern Railroad, the Atlantic and North Carolina Railroad, the Pamlico, Oriental and Western Railroad, and the Virginia and Carolina Coast Railroad to become Norfolk and Southern Railway Company
Washington and Plymouth Railroad	1887	1889; 1904	Washington to Plymouth, NC; extended to Mackeys Ferry	33	Acquired by Norfolk and Southern (1904)	
Western North Carolina Railroad	1855	1858–1891	Salisbury to Asheville, NC; extended to Murphy	301.39	Acquired by Terminal Co./Richmond and Danville (1881) Acquired by Southern (1894)	1858 completed from Salisbury to Morgantown, NC, to Old Fort in 1869, to Swannanoa in 1879, to the Asheville Junction in 1890, to Paint Rock in 1882, and Murphy in 1891. The Ducktown Branch was opened in 1884 to the Nantahala River and to Jarretts in 1887
Western Railroad	1852	1860–1890	Fayetteville to Gulf, NC	47	Reorganized as the Cape Fear and Yadkin Valley Railway (1879)	Created in 1852 to build a line from Fayetteville to coalfields of Egypt and completed to Deep River near Egypt (Cumnock) in 1860. Greatly damaged during the Civil War, but rehabbed by 1871. In 1879, the Western merged with Mt. Airy Railroad Company to form the Cape Fear and Yadkin Valley Railway.
Winston-Salem Southbound	1905	1910	Winston-Salem to Winton, NC	94	Acquired by N&W (1909)	N&W purchased one half of the interest in the line. The rest was purchased by the Atlantic Coast Line Railroad (1909)
Yadkin Railroad	1871	1891	Salisbury to Norwood, NC	44.5	Acquired by Richmond and Danville (1891)	

APPENDIX B: NS SYSTEM PREDESCESSOR LINES MAPS


Ashboro
Star
Candor
West End
Pinehurst
Aberdeen
Siler City
Pittsboro
Sanford
Albemarle
Troy
Biscoe
Southern Pines
Spring Lake
Fort Bragg
Fort Bragg Military Reservation
Burnsville
Pee Dee
Morrow Mountain State Park
Uwharrie National Forest
UWHARRIE MOUNTAINS
Rocky River
Bear Creek
Deep River
Little River
Uwharrie River
Lee
Chatham
Harnett
Cumberland
Raven Rock State Park
Shearon Harris Reservoir
B Everett Jordan Lake
Claude E Pope Memorial
Upper Little River
McLendons Creek
Big Bear Creek
Stanly
Montgomery
Rowan
Randolph
Wake
Cohanie Sdtsa
1178 ft
946 ft
949 ft
469 ft
622 ft
Legend:
Aberdeen and Asheboro Railroad
0 5 10 20
Miles
0 5 10 20 30
Kilometers
N



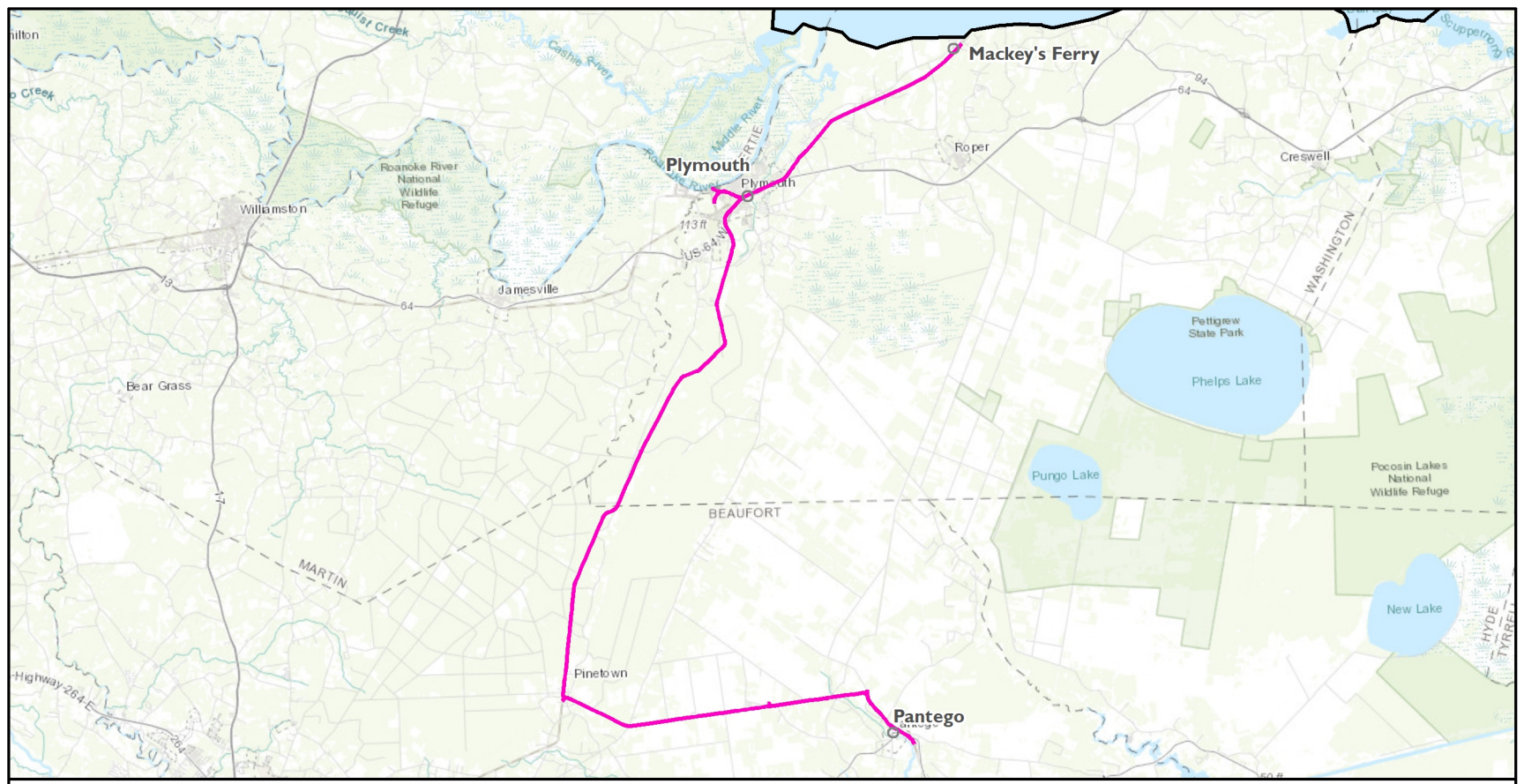
Legend:

Aberdeen and West End Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



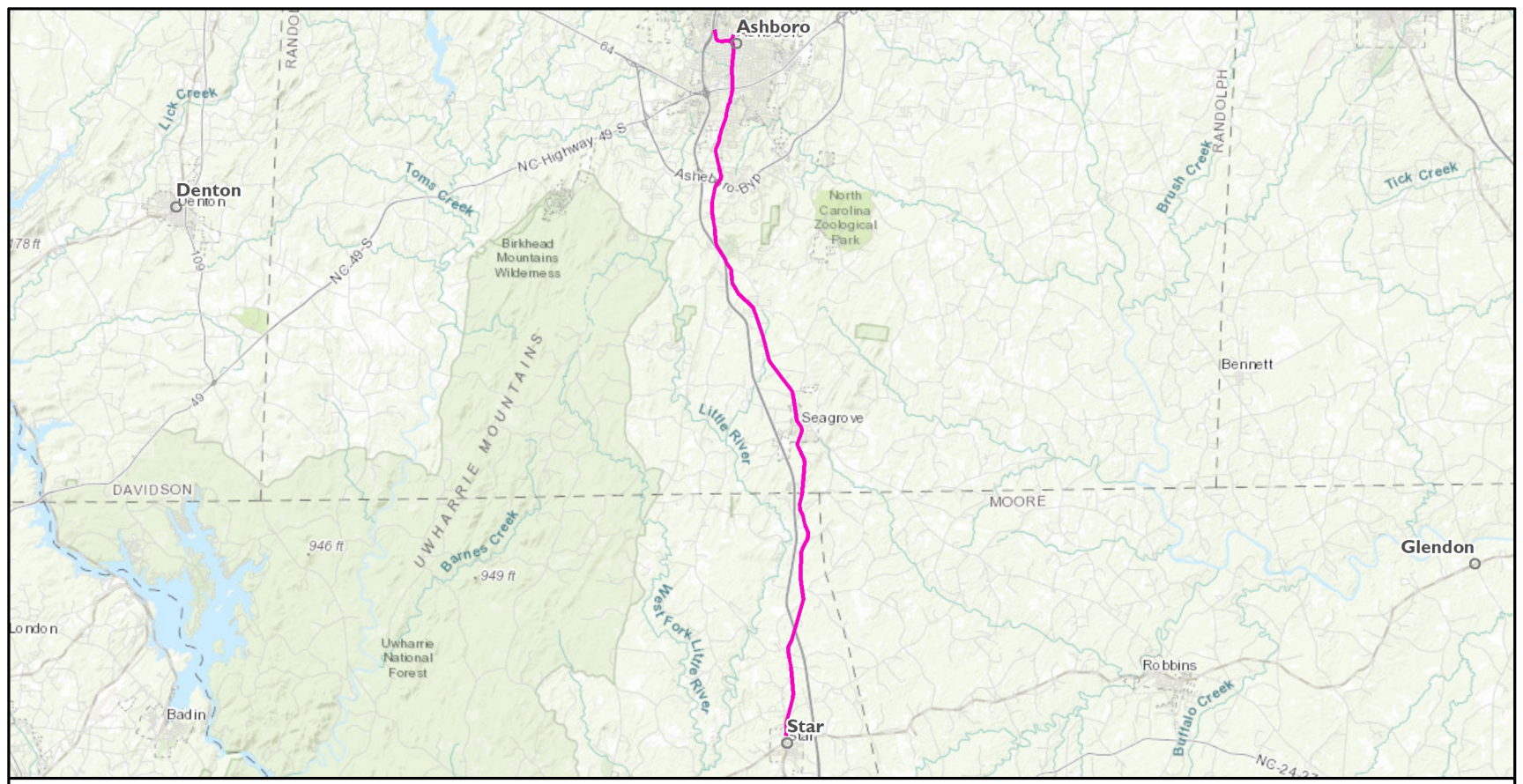
Legend:

Albemarle and Pantego Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



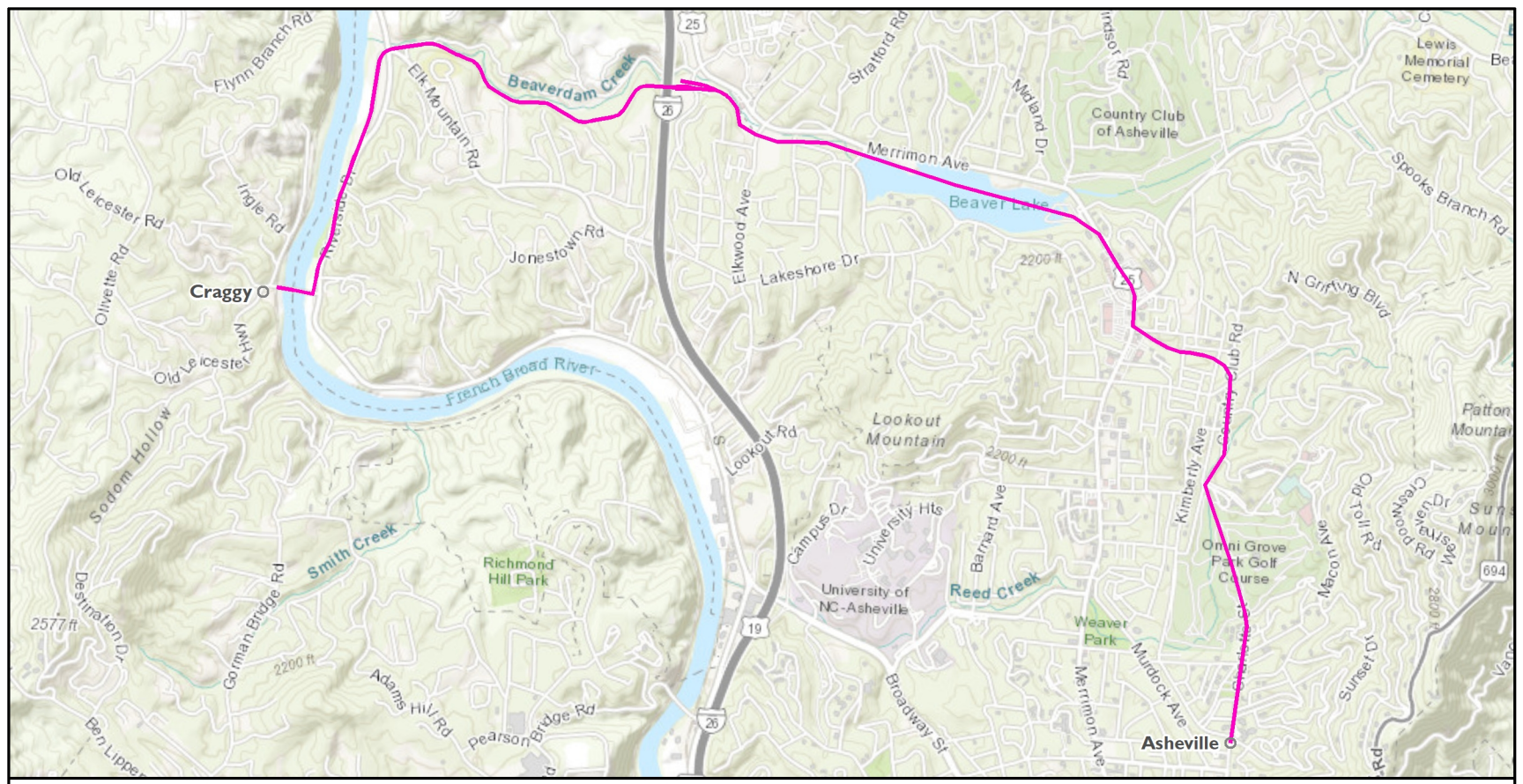
Legend:

Asheboro and Montgomery Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



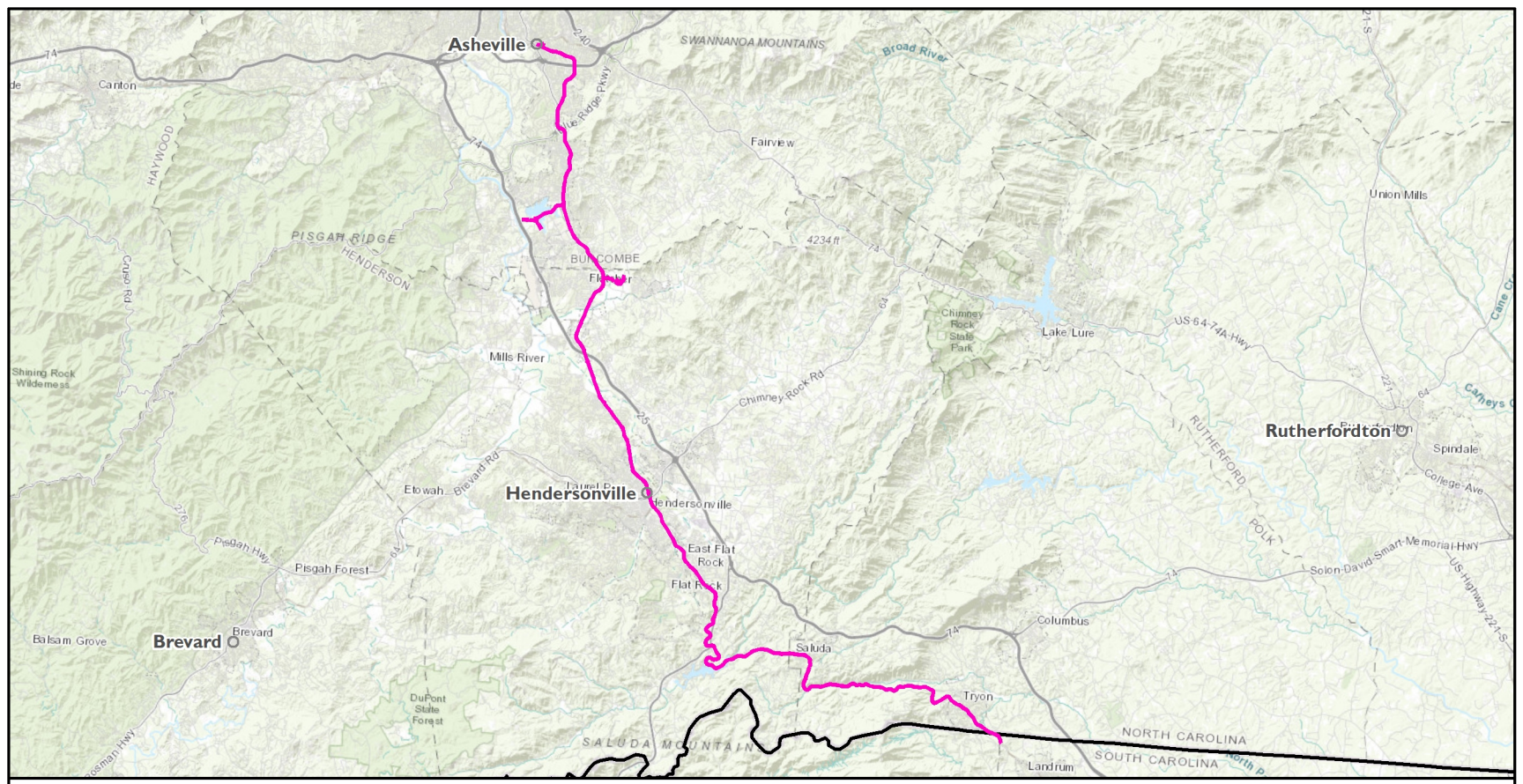
Legend:

Asheville and Craggy Mountain Railway

0 0.25 0.5 1 Miles

0 0.4 0.8 1.6 Kilometers

N



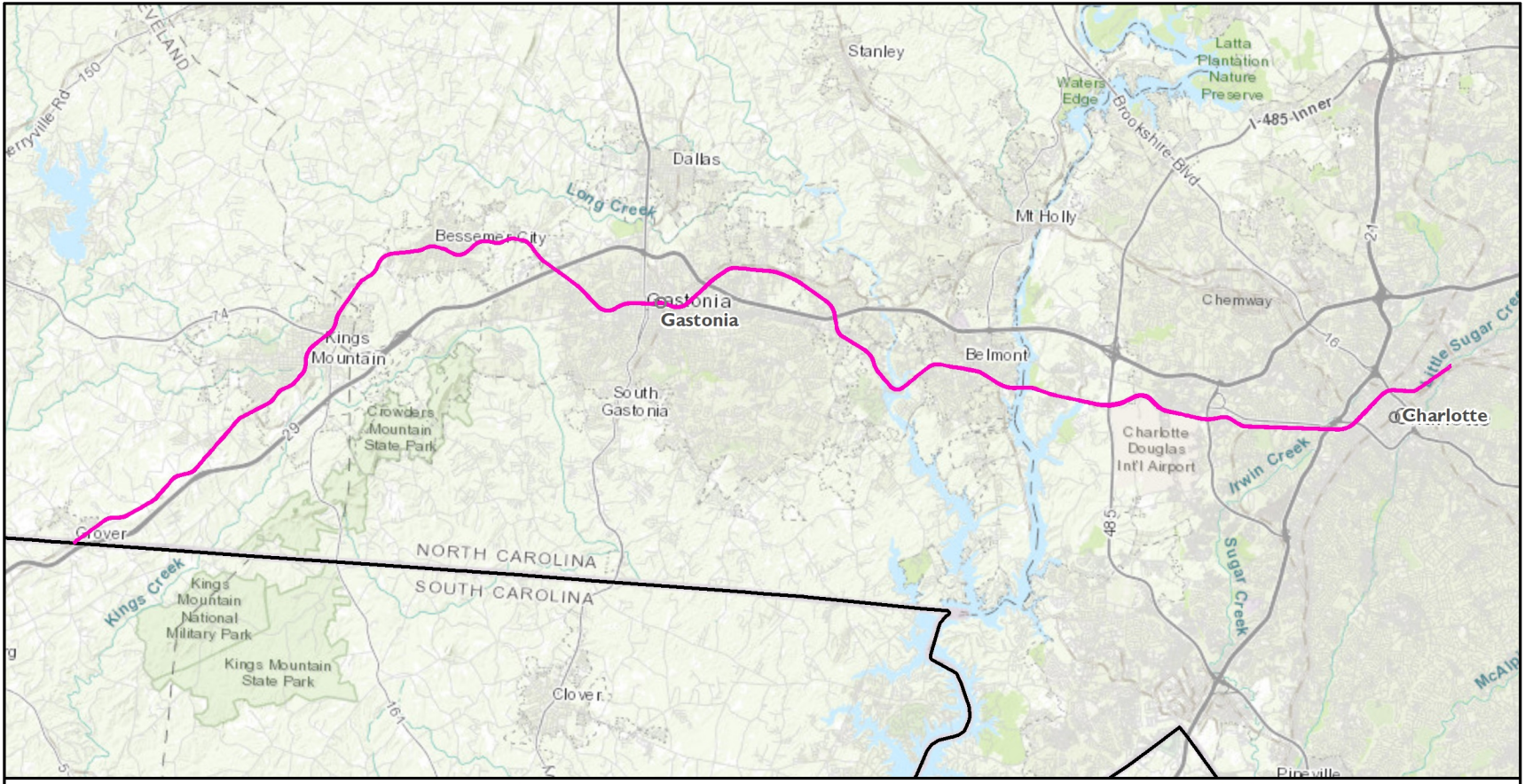
Legend:

Asheville and Spartanburg Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



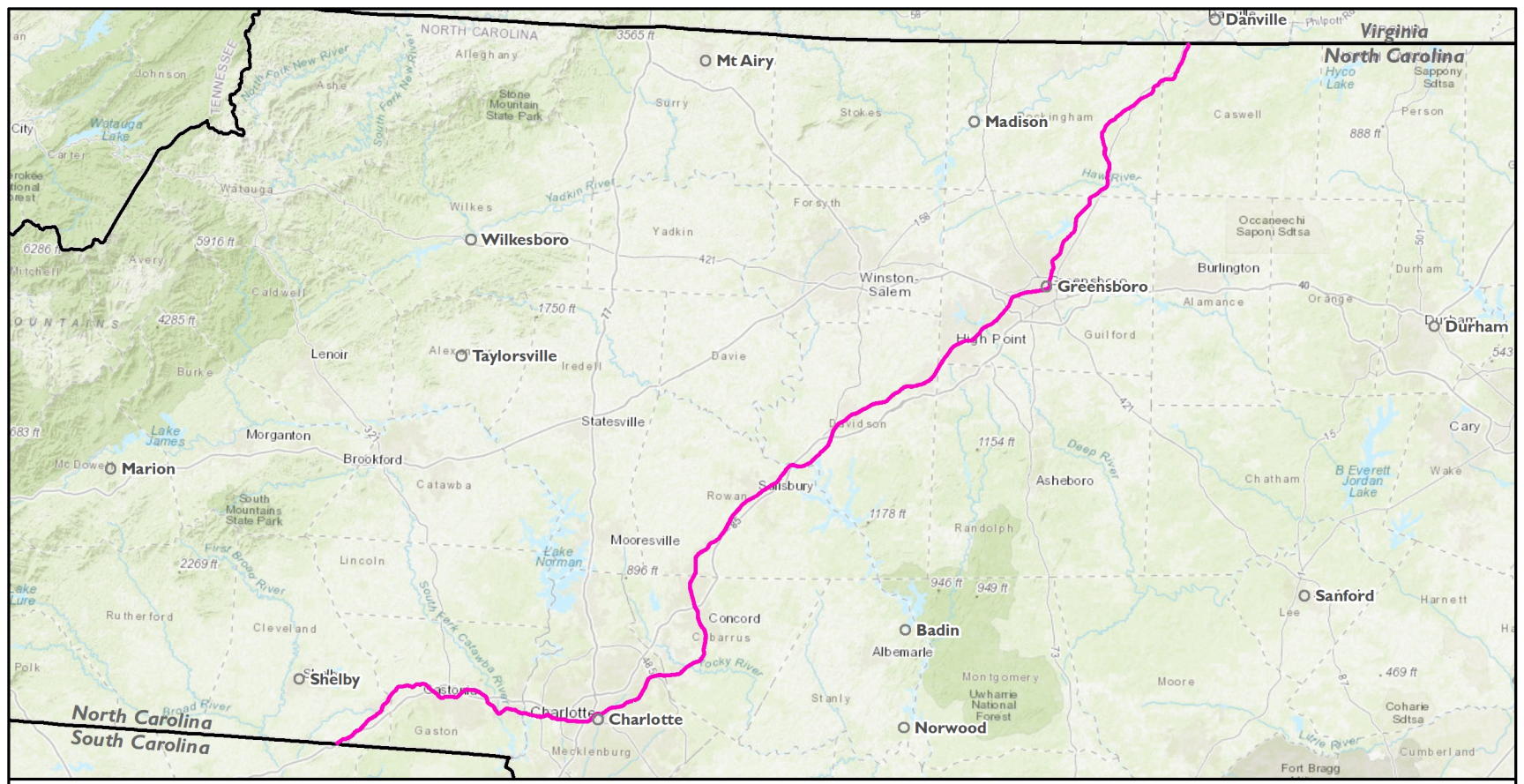
Legend:

Atlanta and Charlotte Air-Line Railway

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



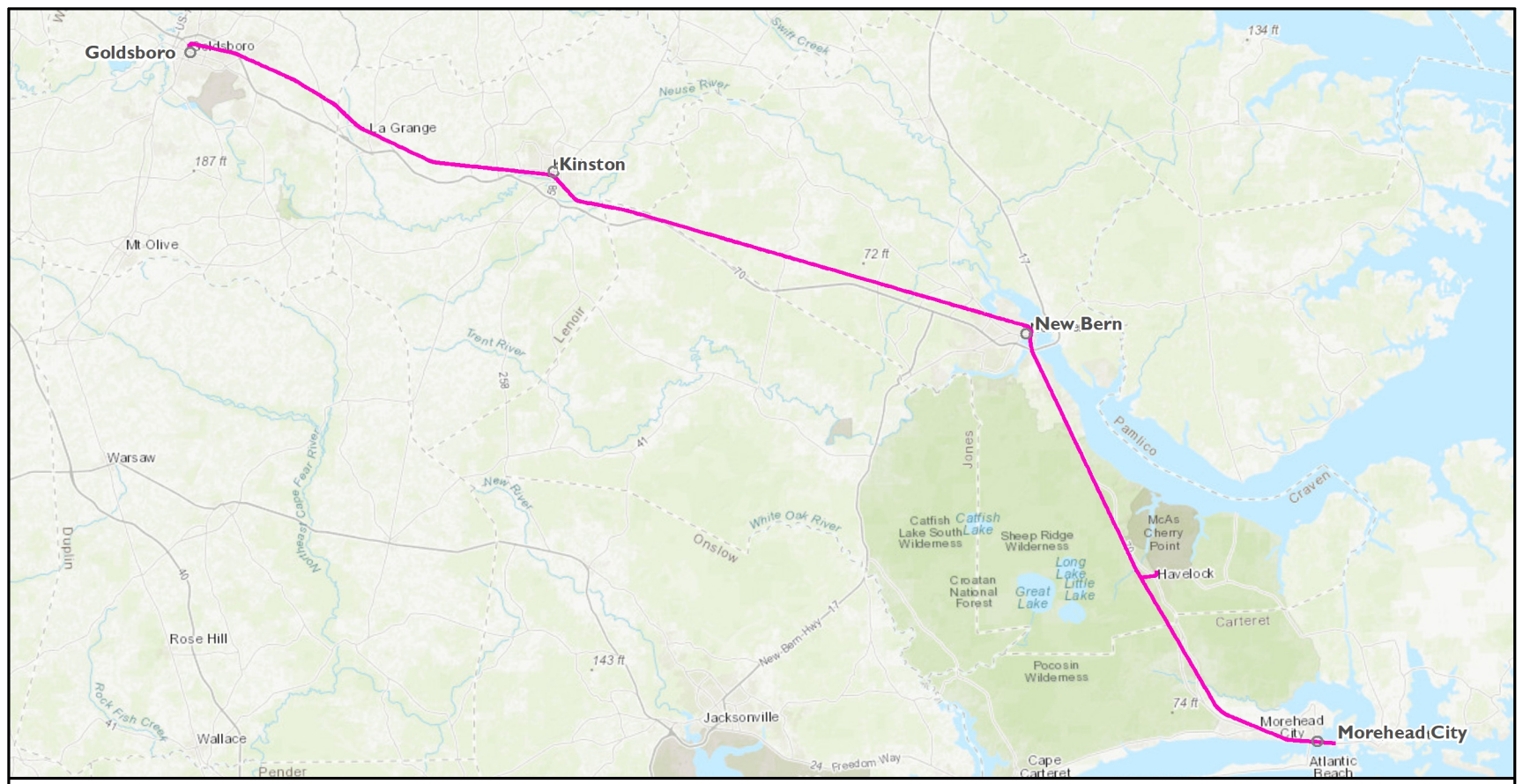
Legend:

Atlanta and Richmond Air-Line Railway

0 10 20 40 Miles

0 15 30 60 Kilometers

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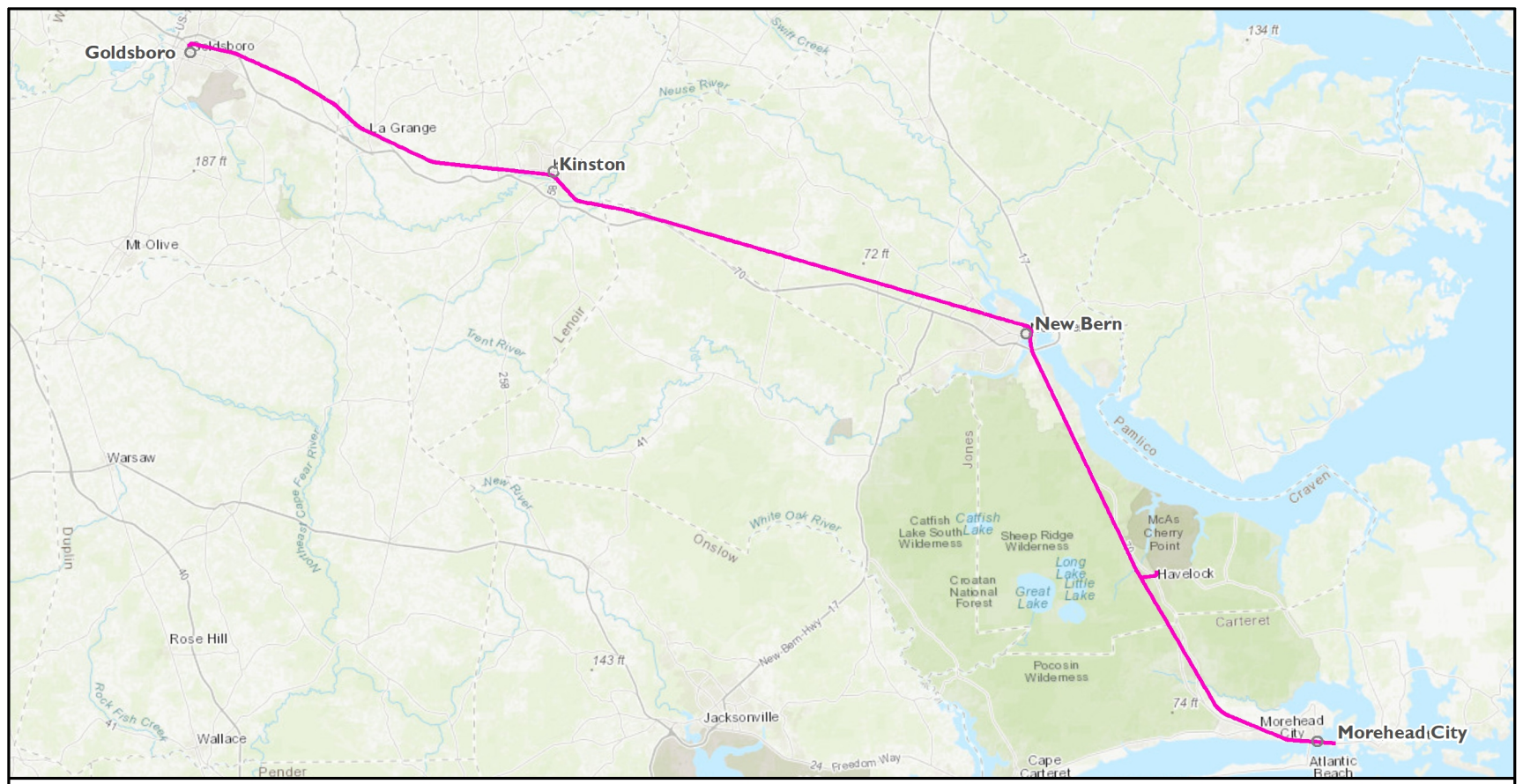
Legend:

Atlantic and East Carolina Railway

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



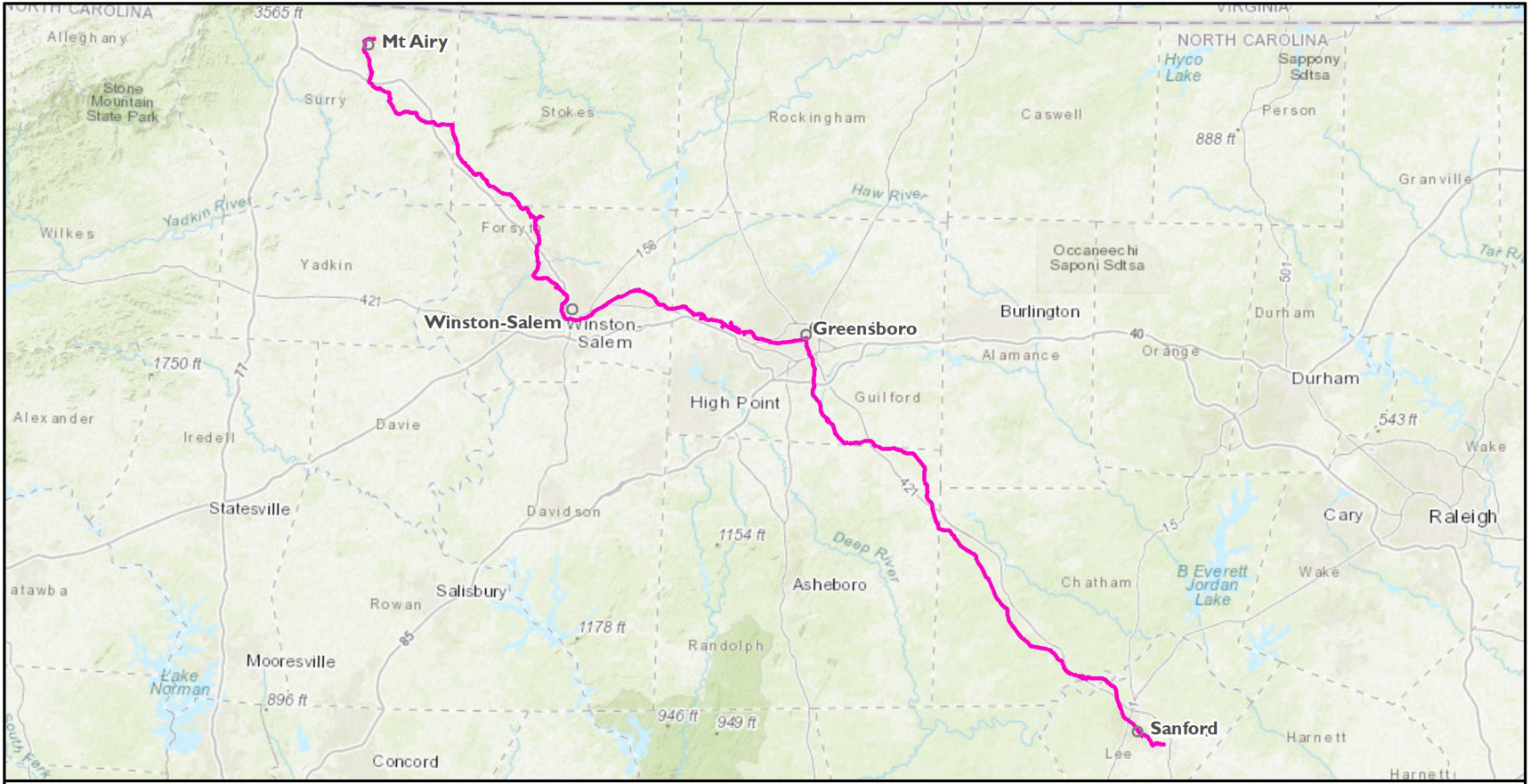
Legend:

Atlantic and North Carolina Railroad

0 5 10 20 Miles

0 5 10 20 30 Kilometers

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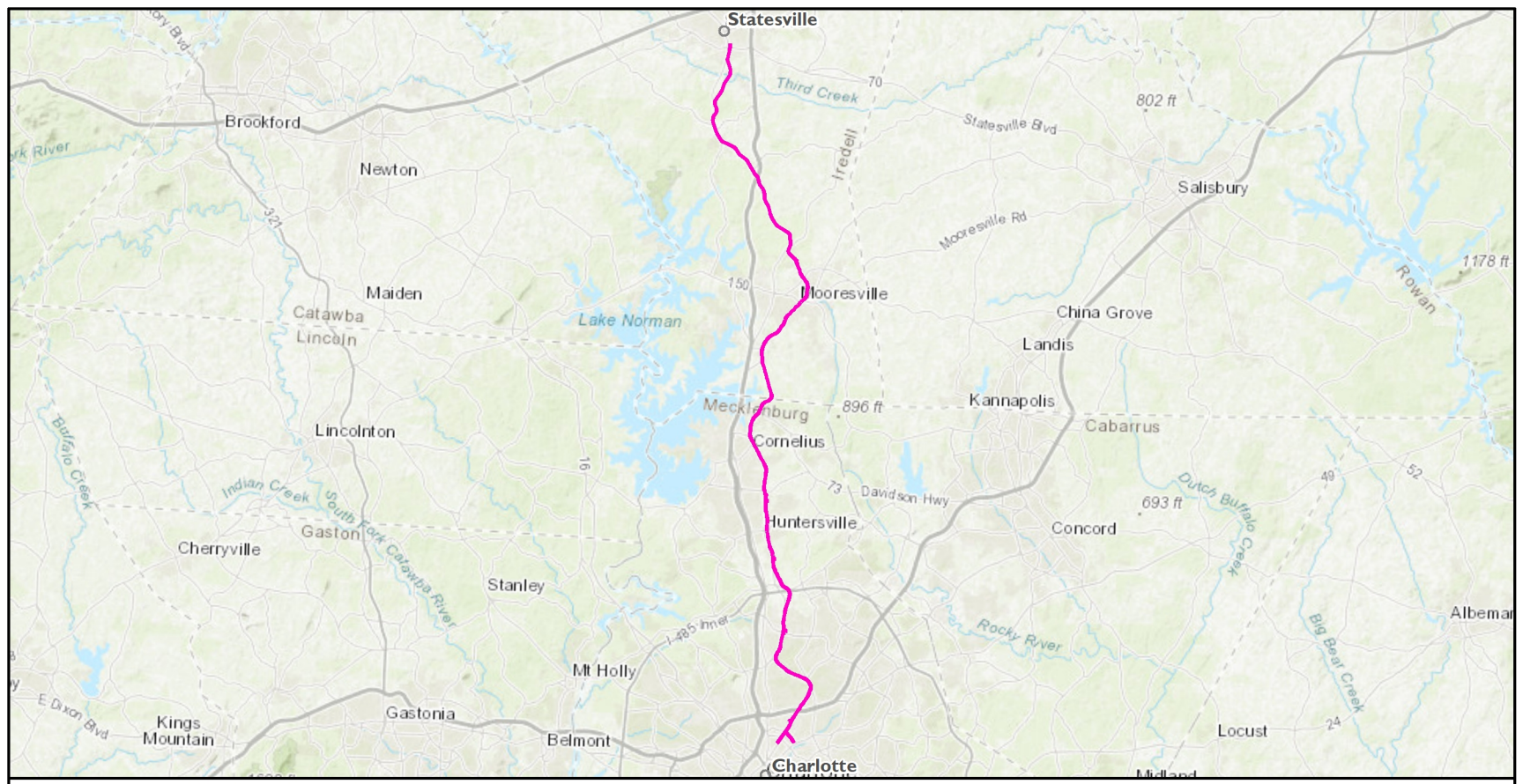
Legend:

Atlantic and Yadkin Railway

0 10 20 40 Miles

0 15 30 60 Kilometers

N



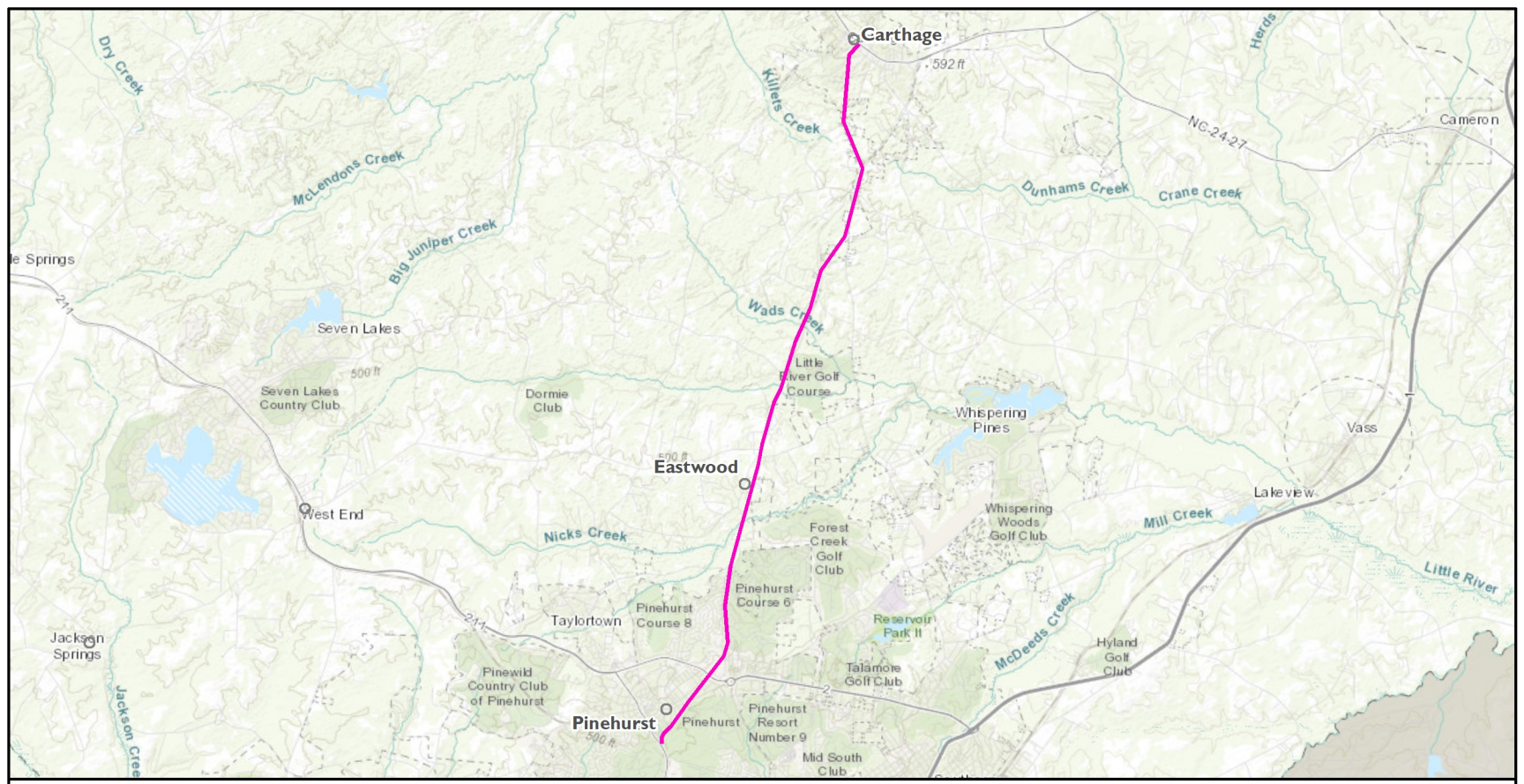
Legend:

Atlantic, Tennesee and Ohio Railroad

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



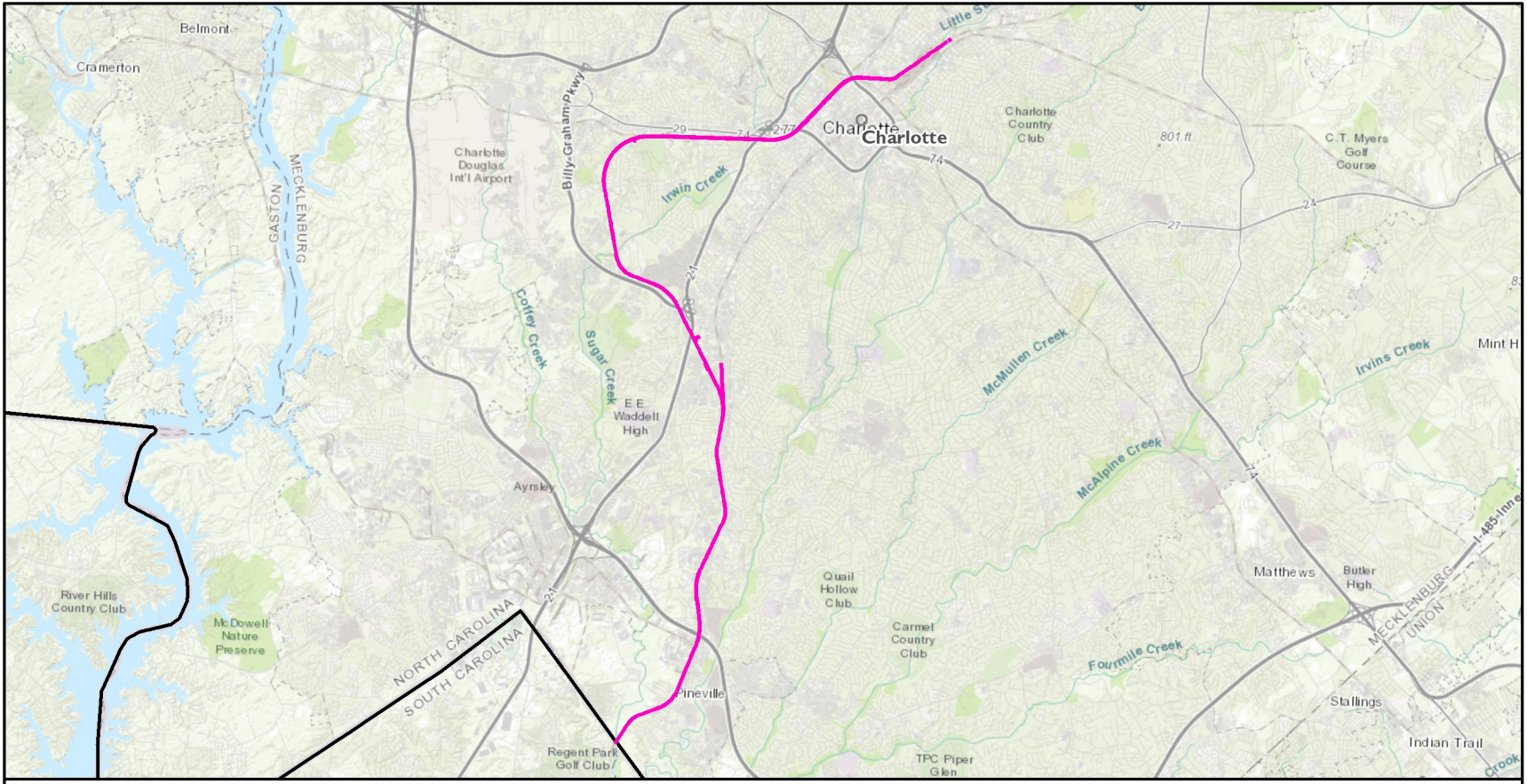
Legend:

Carthage and Pinehurst Railroad

0 1.5 3 6 Miles

0 2.5 5 10 Kilometers

N



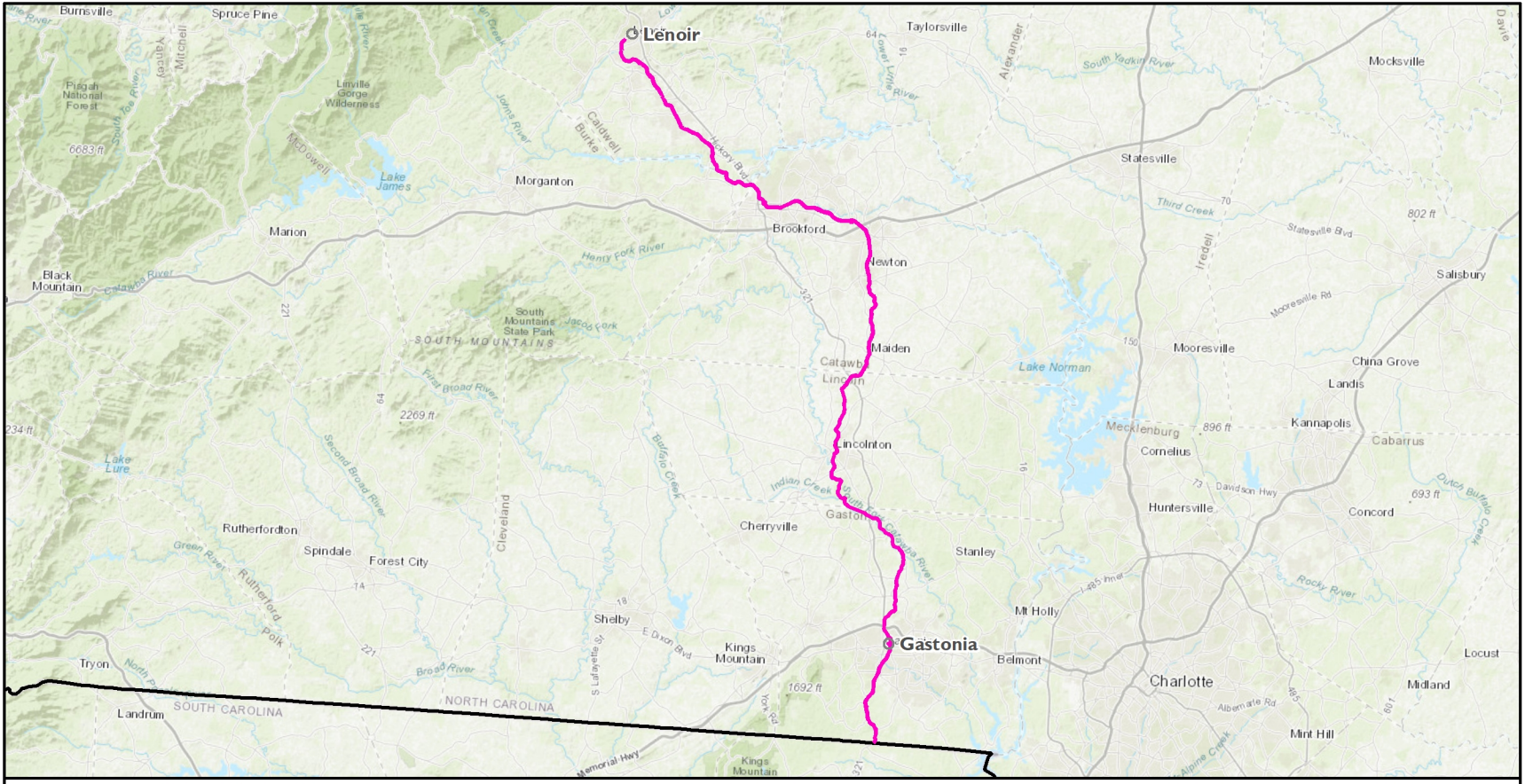
Legend:

Charlotte, Columbia and Augusta Railroad

0 1.5 3 6 Miles

0 2.5 5 10 Kilometers

N



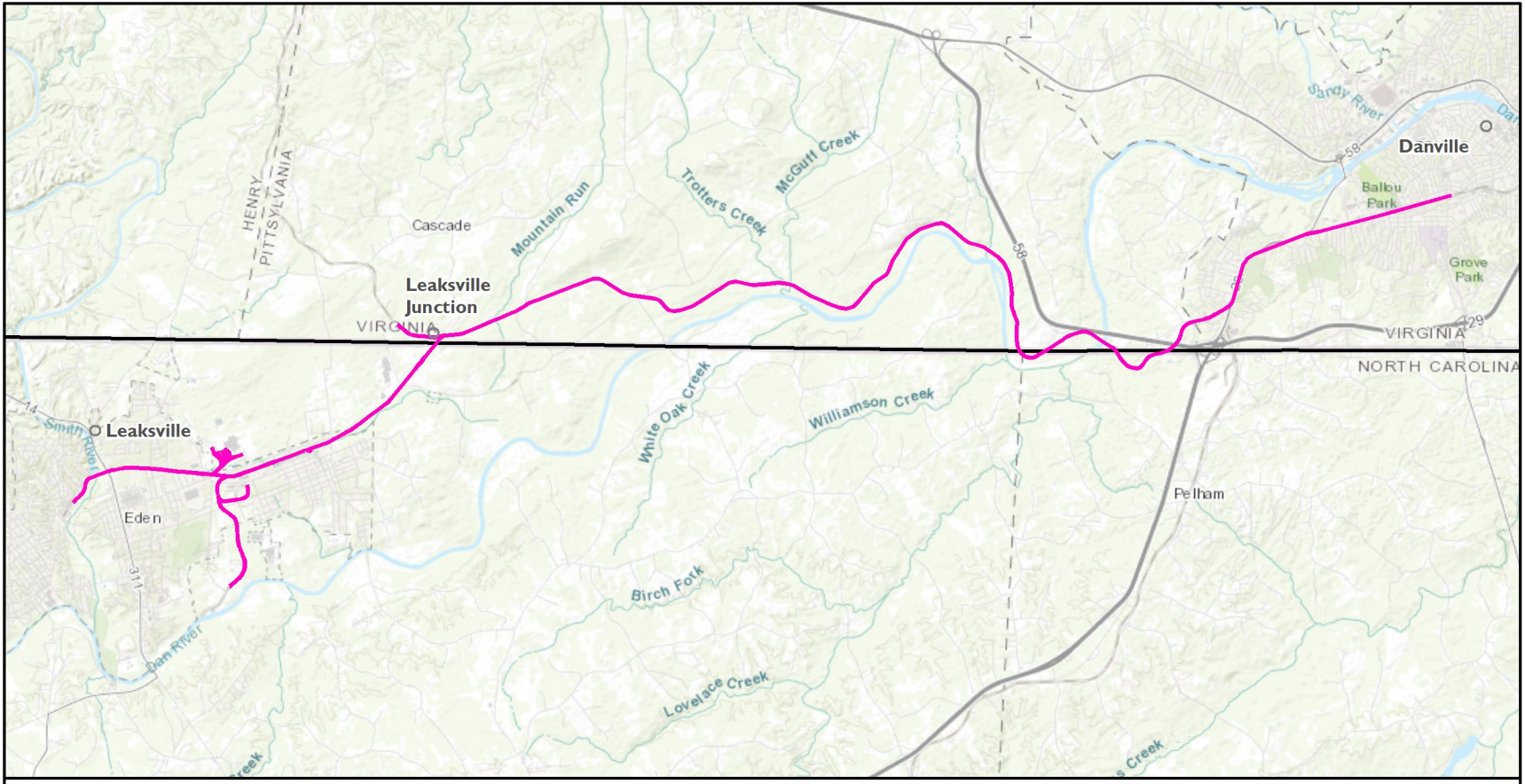
Legend:

Chester and Lenoir Railroad

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



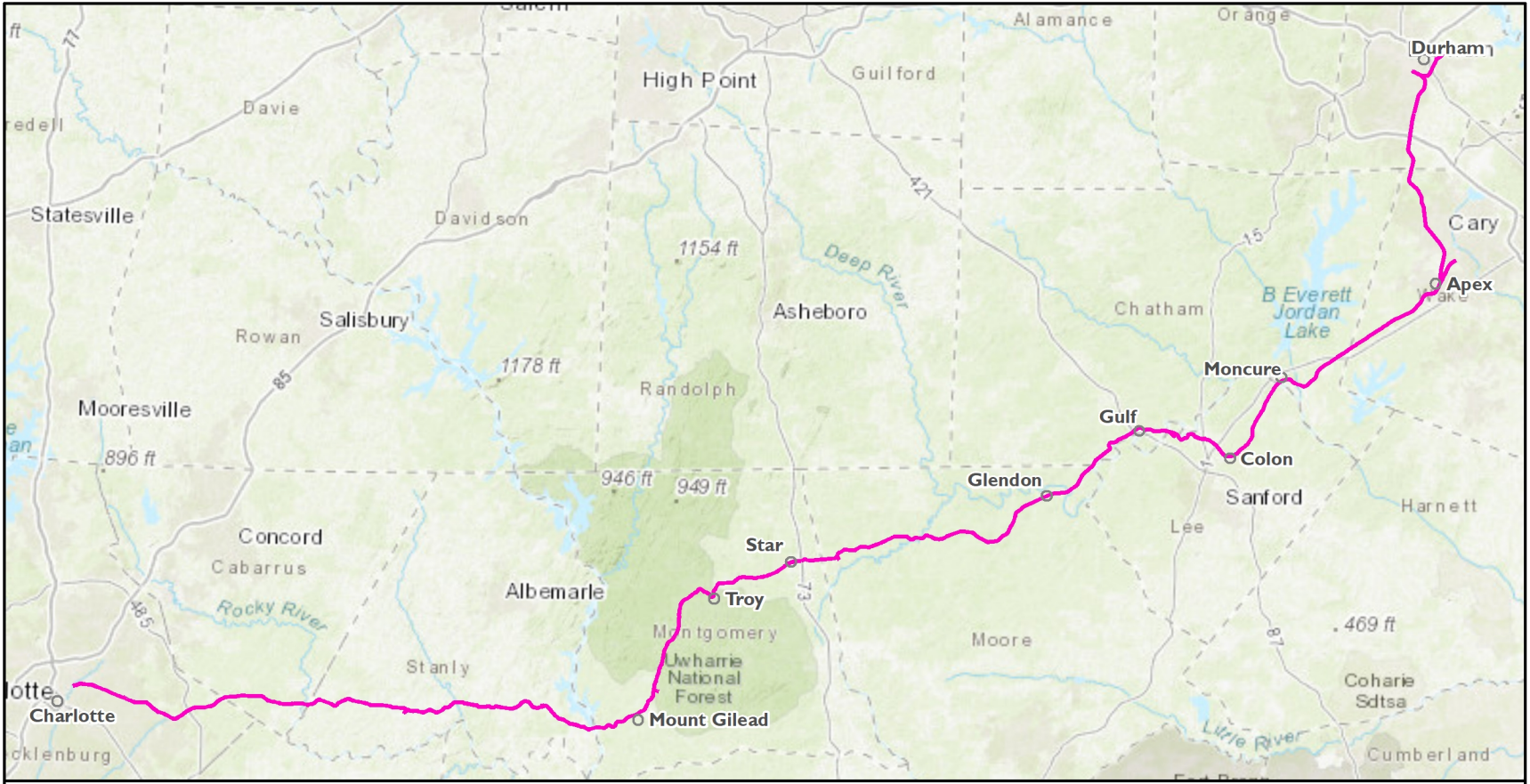
Legend:

Danville and Western Railway

0 1 2 4 Miles

0 1 2 4 6 Kilometers

N



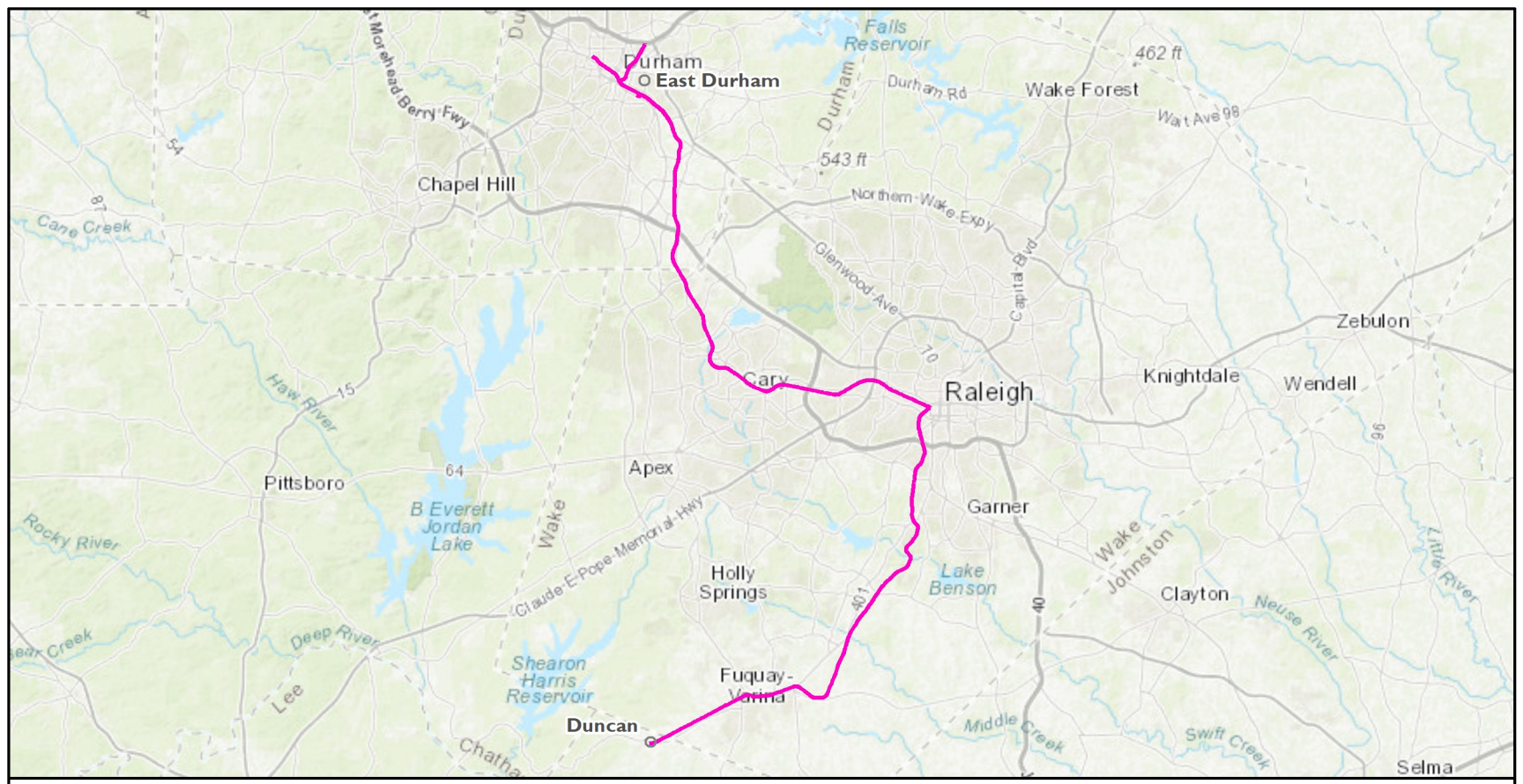
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Durham and Charlotte Railroad

0 5 10 20 Miles

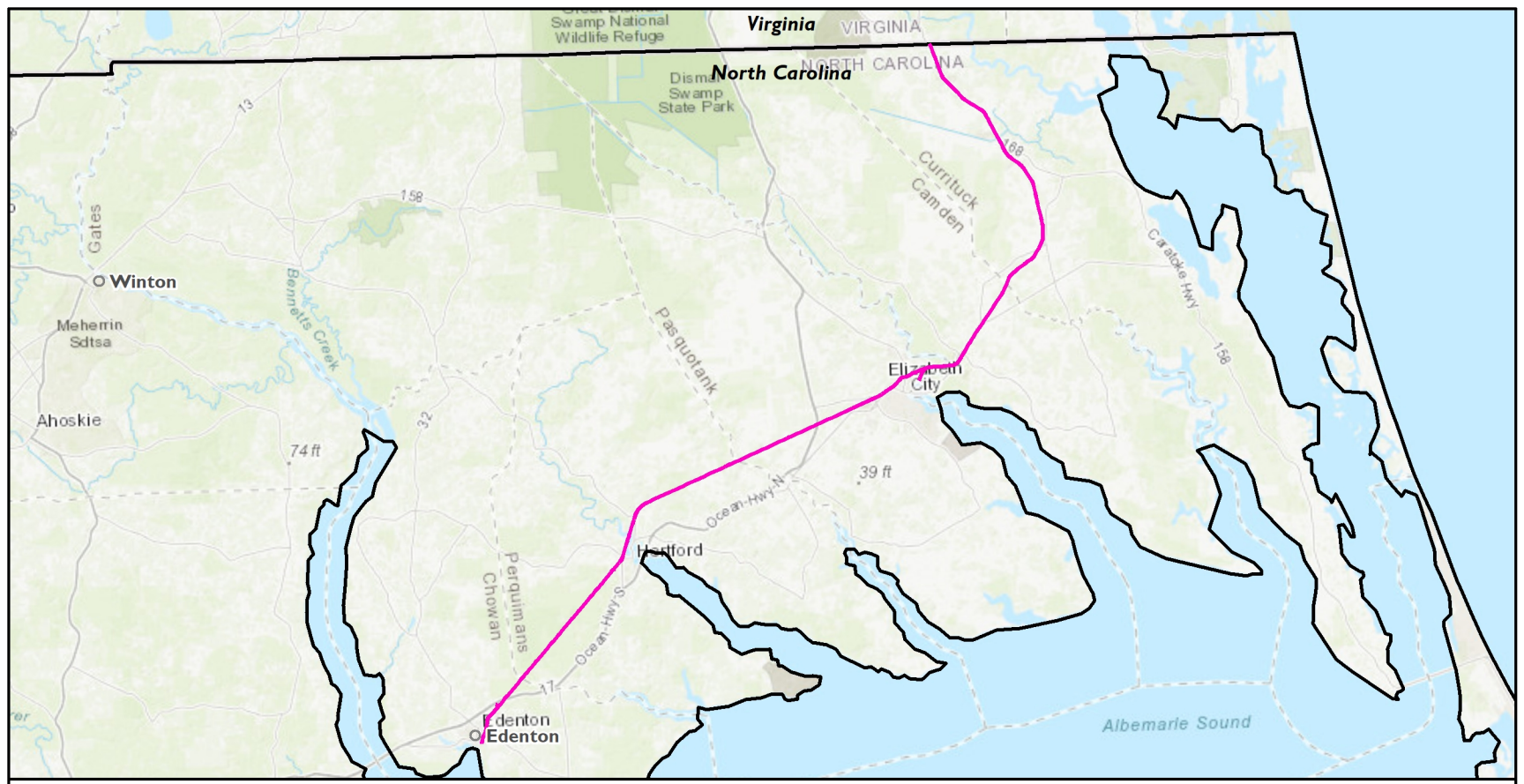
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Legend:

Durham and South Carolina Railroad



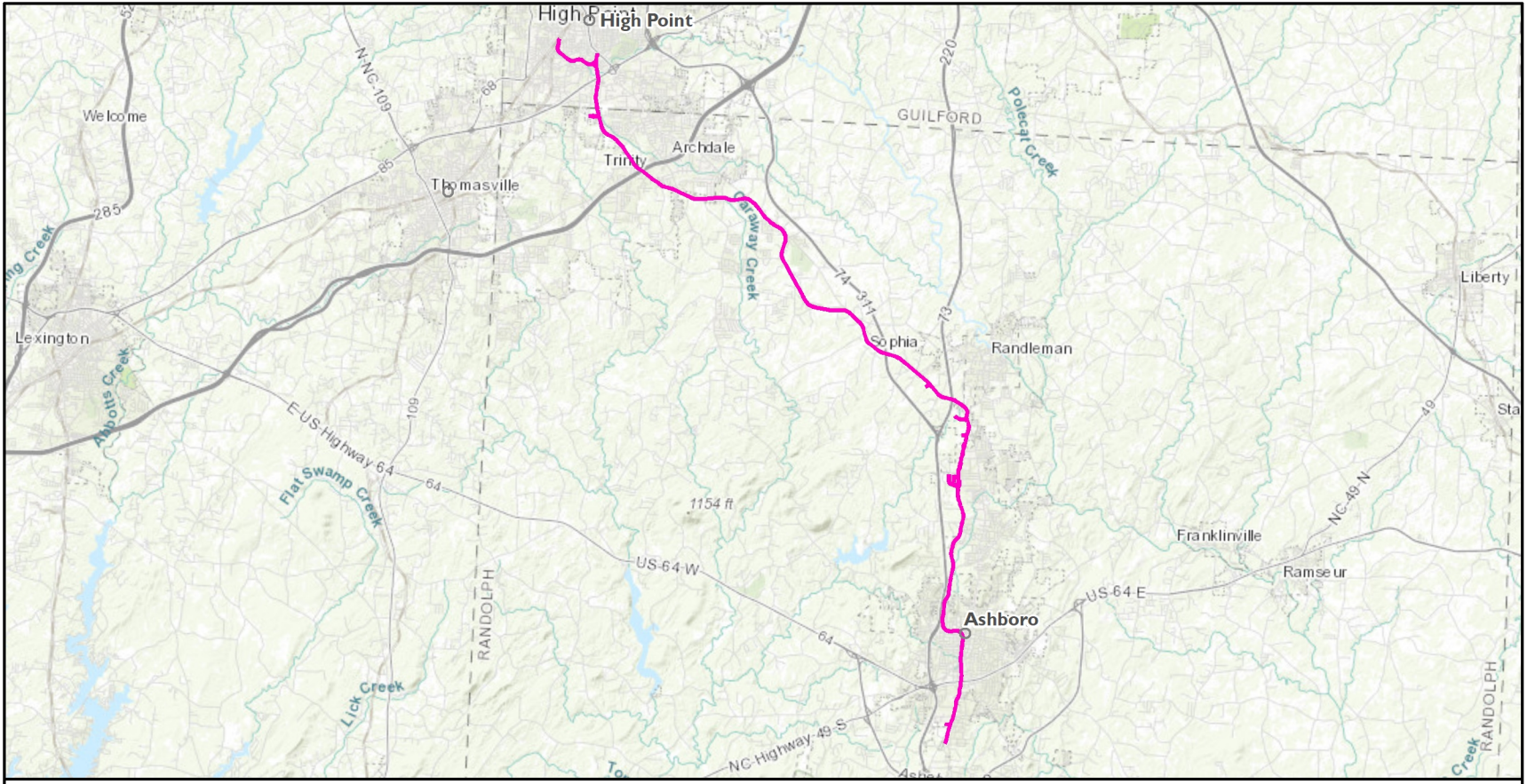
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Elizabeth City and Norfolk Carolina Railroad

0 2.5 5 10 Miles

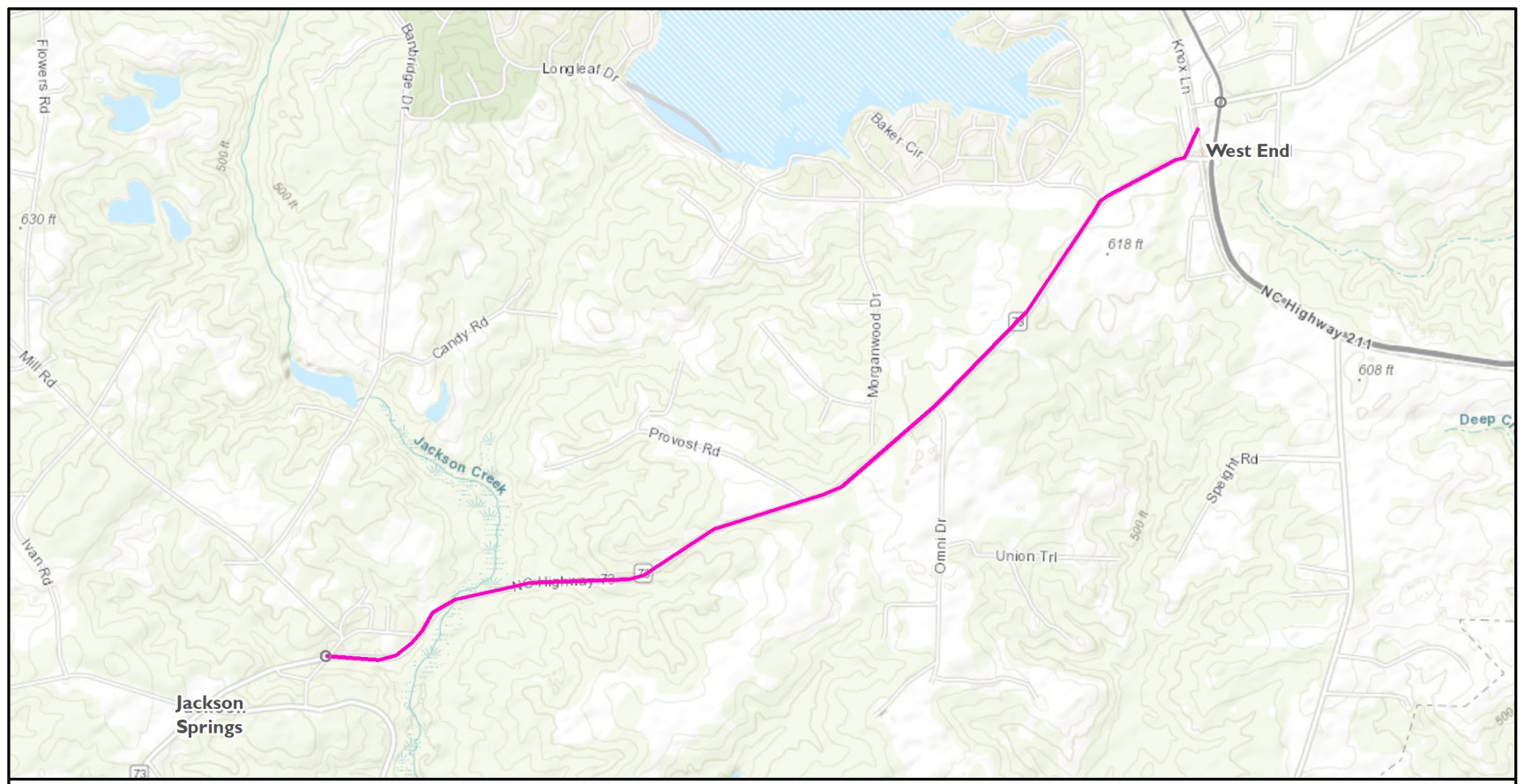
0 4 8 16 Kilometers

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Legend:

High Point, Randleman, Asheboro and Southern Railroad



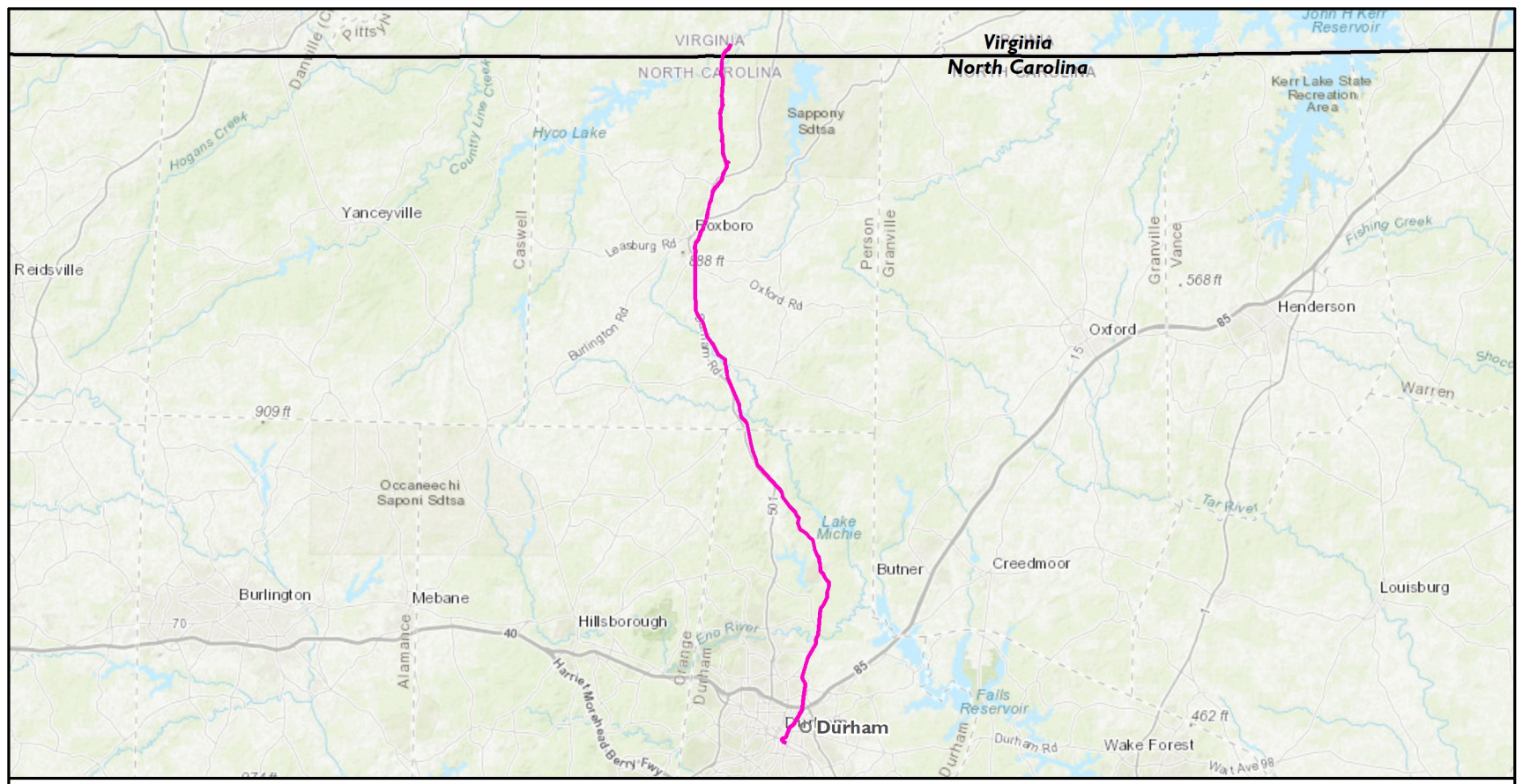
Legend:

Jackson Springs Railroad

0 0.5 1 2 Miles

0 0.75 1.5 3 Kilometers

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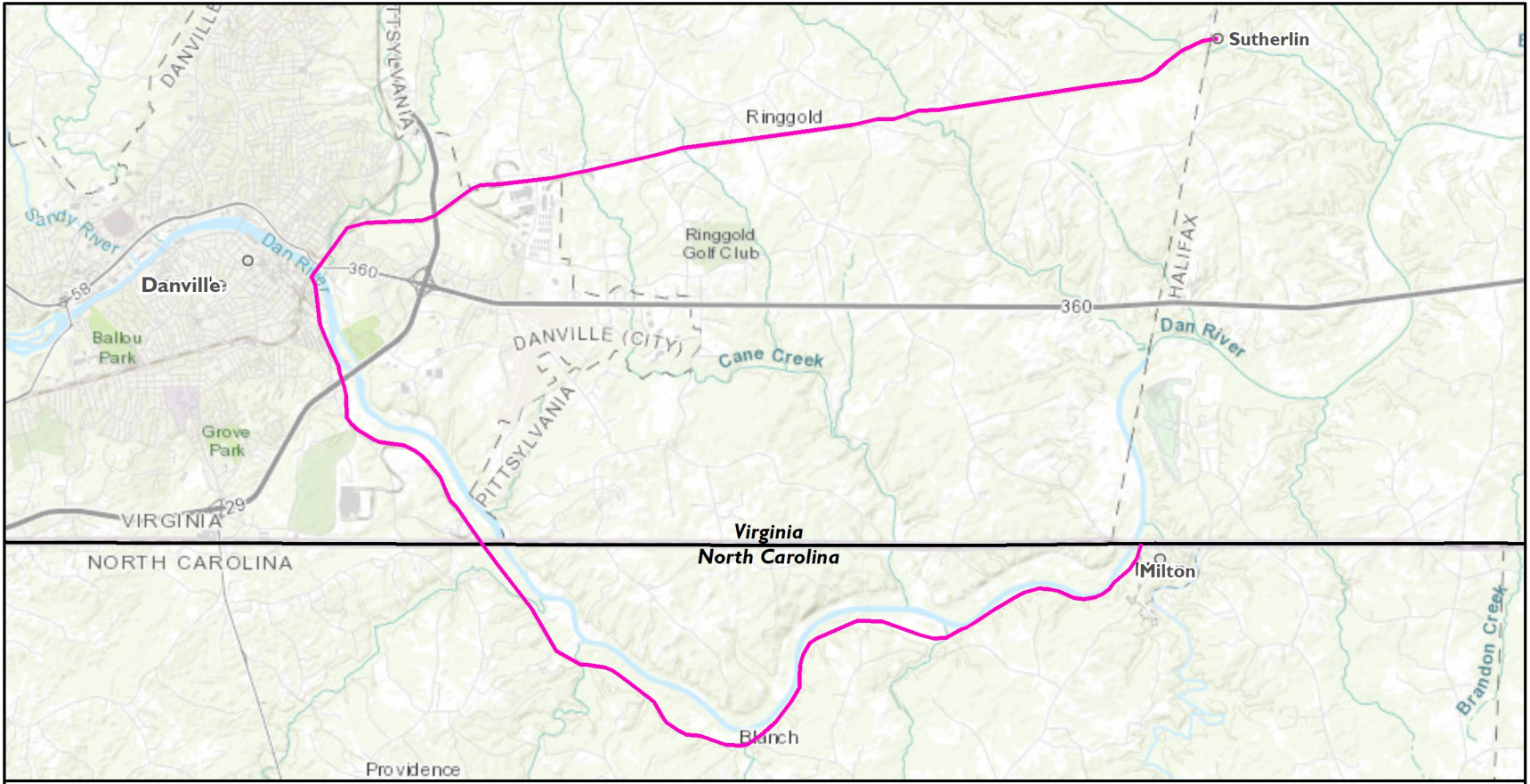
Legend:

Lynchburg and Durham Railroad

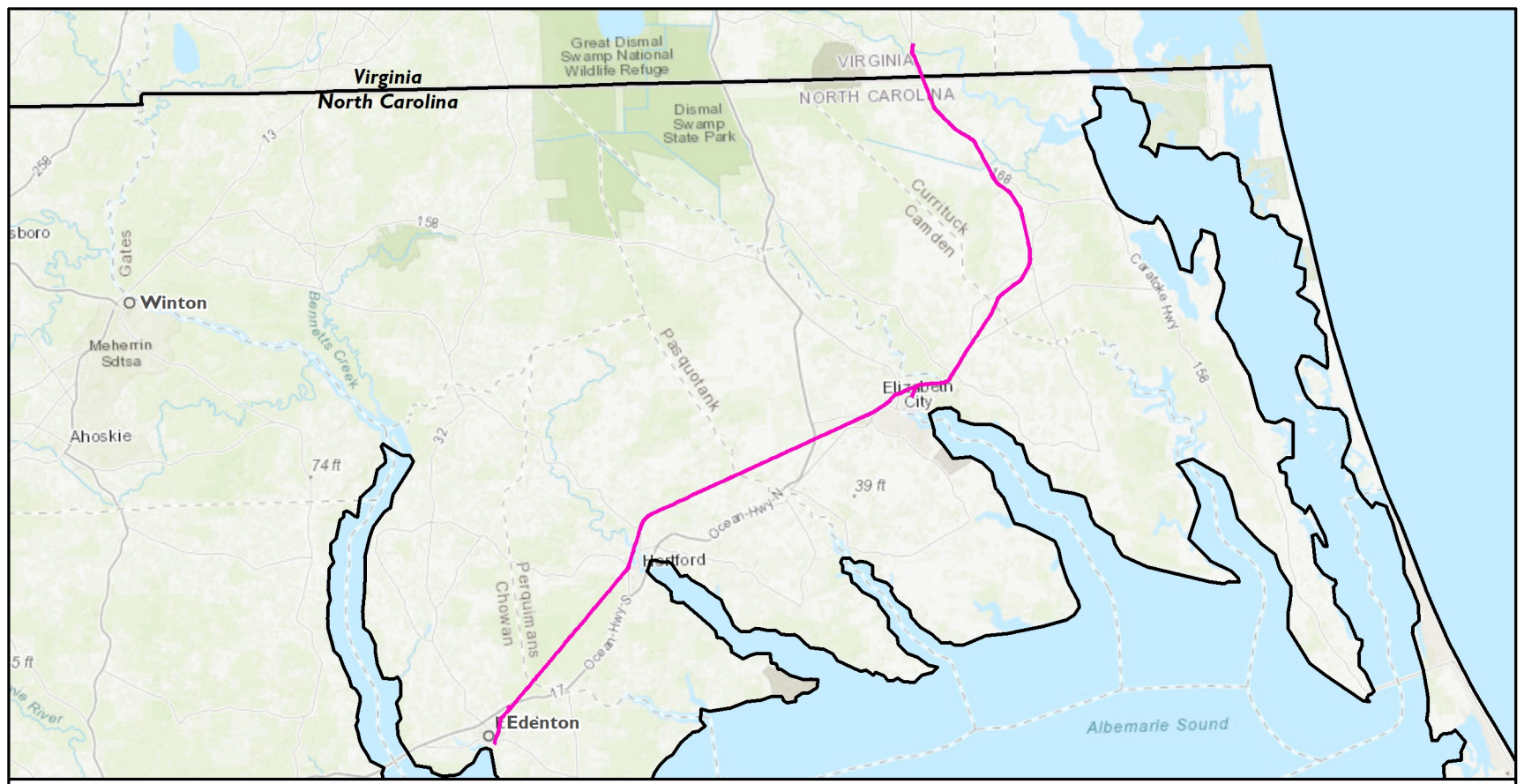
0 5 10 20 Miles

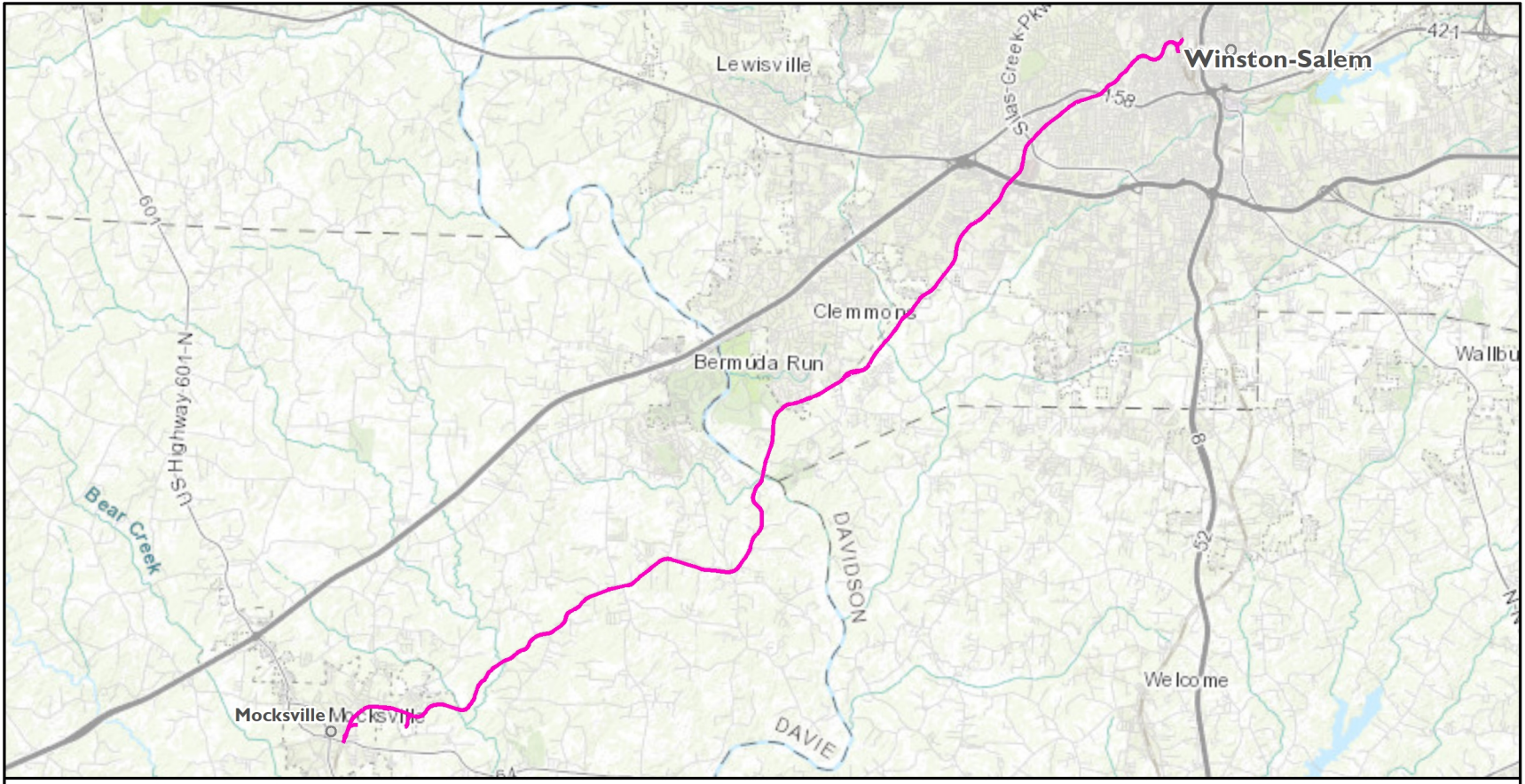
0 5 10 20 30 Kilometers

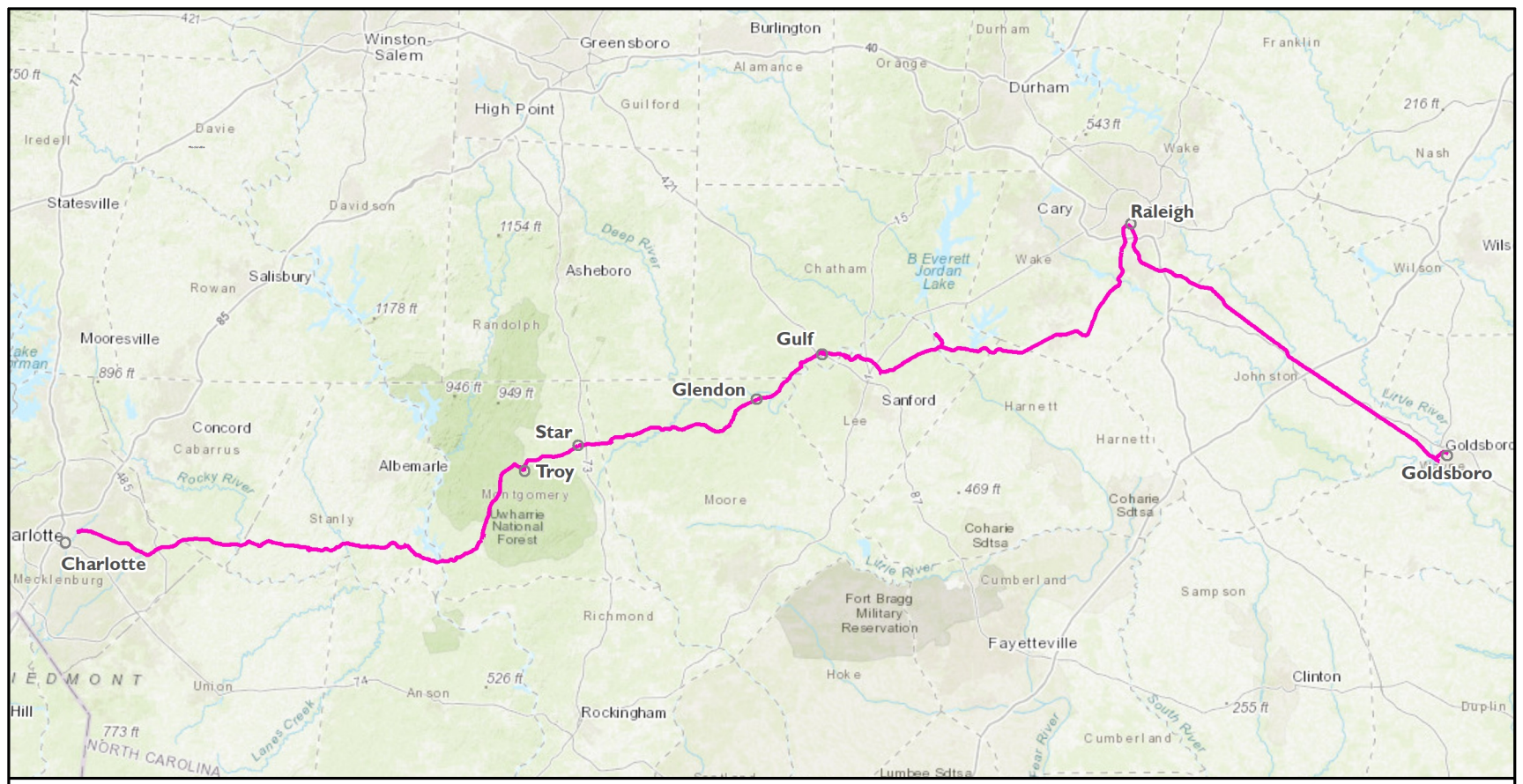
N


Sutherlin
Ringgold
Ringgold Golf Club
Sandy River
Dan River
Danville
360
HALIFAX
DANVILLE (CITY)
Cane Creek
Ballou Park
Grove Park
PITTSYLVANIA
VIRGINIA
Virginia
North Carolina
NORTH CAROLINA
Milton
Brandon Creek
Blanch
Providence
Legend:
Milton and Sutherlin Railroad
0 1 2 4 Miles
0 1.5 3 6 Kilometers
N


Virginia
North Carolina
VIRGINIA
NORTH CAROLINA
Roanoke Rapids
Northampton
Halifax
Roanoke River
Gates
Hertford
Mehemin Sdtsa
Dismal Swamp State Park
Camden
Elizabeth City
Pasquotank
Perquimans
Albemarle Sound
Edenton
Chowan
Bertie
Rocky Mount
Edgecombe
Martin
Mackey's Ferry
Plymouth
Washington
Tyrrell
Alligator River National Wildlife Refuge
Dare County Bombing Range
Dare
Phelps Lake
Pocosin Lakes National Wildlife Refuge
New Lake
Greenville
Pitt
Greene
Tar River
Pantego
Belhaven
Mattamuskeet National Wildlife
Legend:
Norfolk and Southern Railroad
0 10 20 40
Miles
Kilometers
0 15 30 60
N


Virginia
North Carolina
Great Dismal Swamp National Wildlife Refuge
VIRGINIA
NORTH CAROLINA
Dismal Swamp State Park
Currituck
Camden
Gates
Winton
Meherrin Sdtsa
Bennetts Creek
Pasquotank
Elizabeth City
Ahoskie
74 ft
39 ft
Ocean Hwy N
Ocean Hwy S
Hertford
Perquimans
Chowan
Edenton
Albemarle Sound
Legend:
Norfolk Southern Railroad Company
0 5 10 20
Miles
Kilometers
0 5 10 20 30
N


Winston-Salem
Lewisville
Clemmons
Bermuda Run
Mocksville
Bear Creek
US Highway 601 N
DAVIDSON
DAVIE
Welcome
Legend:
North Carolina Midland Railroad
0 2.5 5 10
Miles
Kilometers
0 4 8 16
N



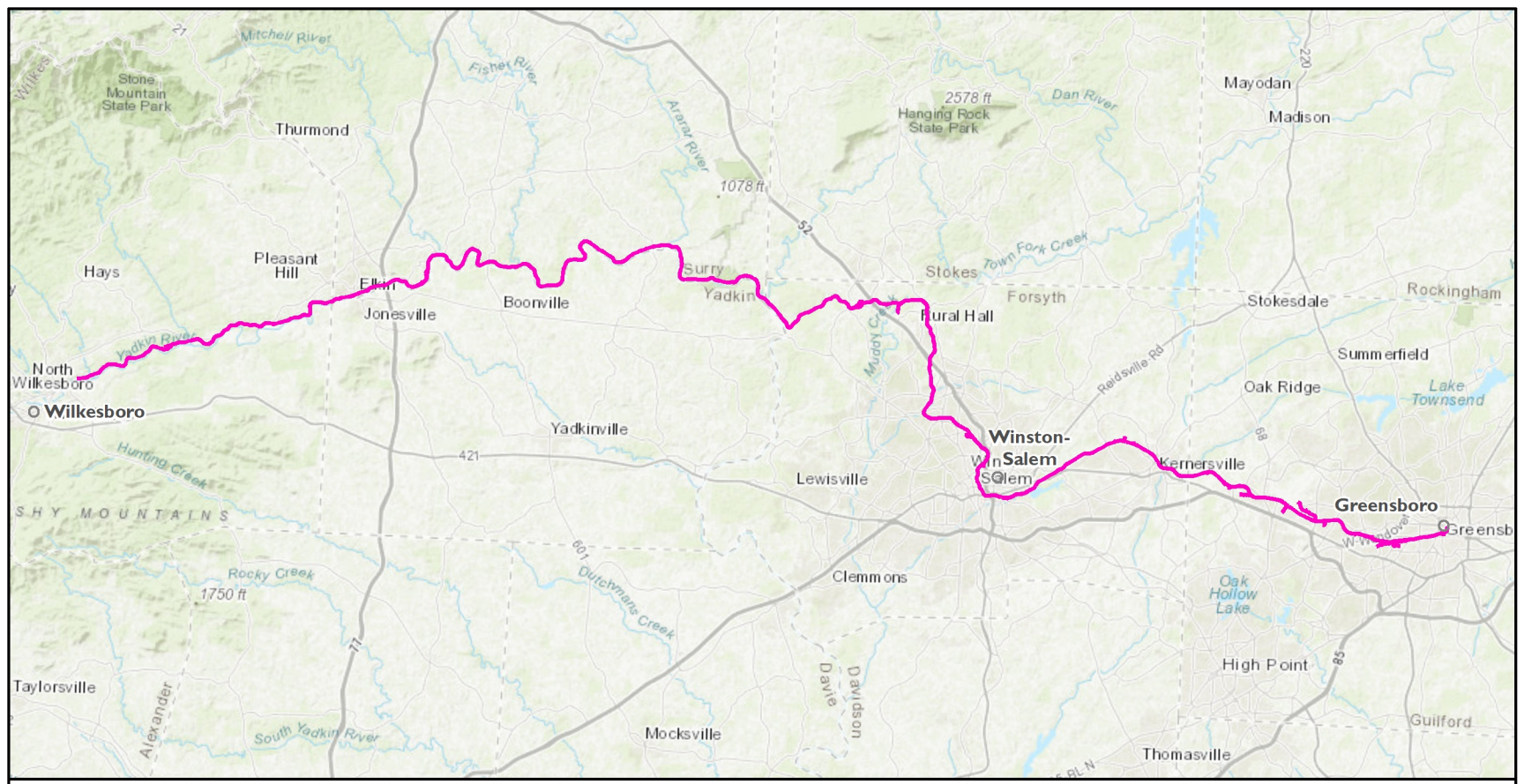
Legend:

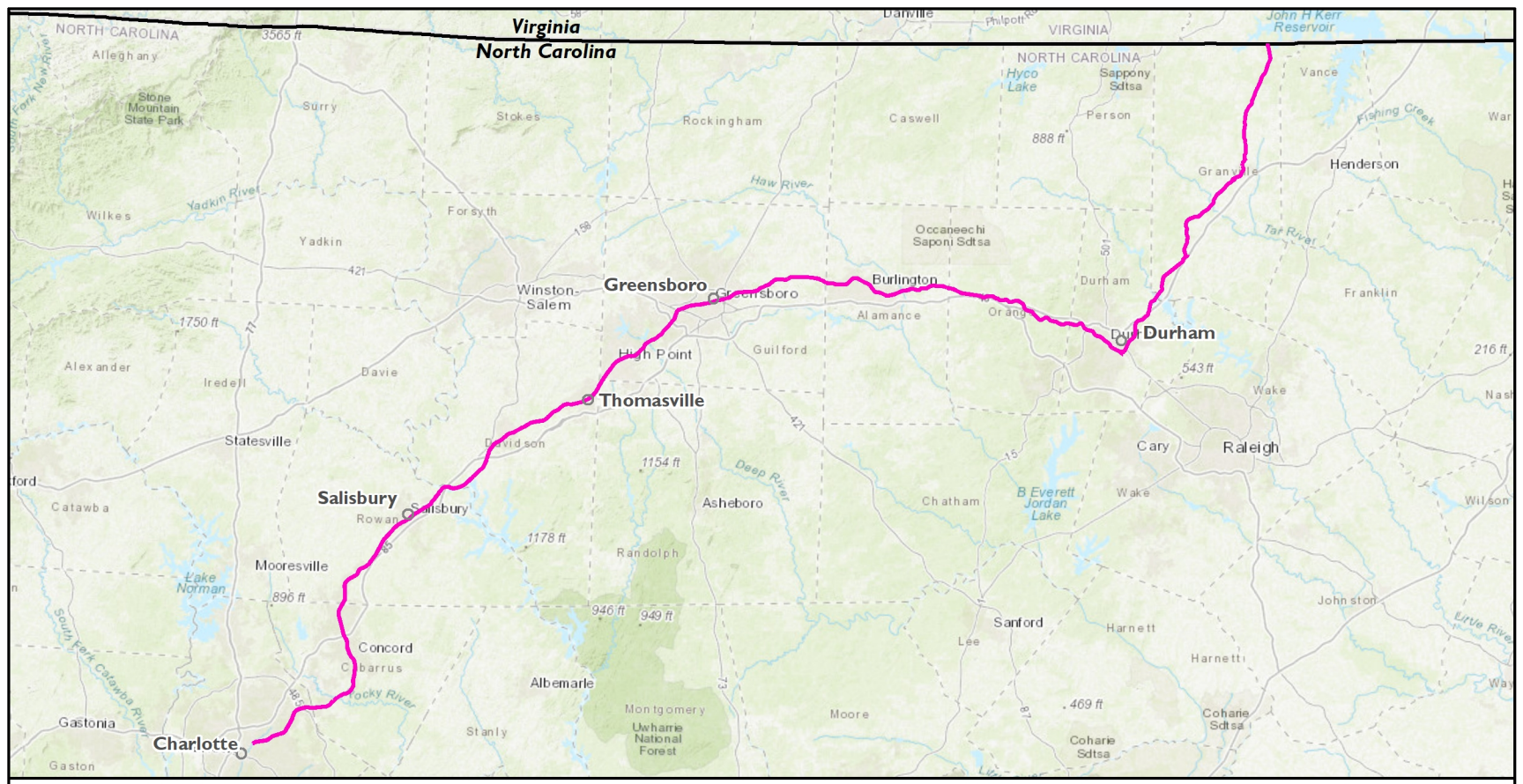
North Carolina Railroad

0 10 20 40 Miles

0 15 30 60 Kilometers

N


Mitchell River
Stone Mountain State Park
Thurmond
Fisher River
Ararat River
2578 ft
Hanging Rock State Park
Dan River
Mayodan
Madison
1078 ft
Hays
Pleasant Hill
Elkin
Jonesville
Boonville
Surry
Yadkin
Stokes
Town Fork Creek
Forsyth
Rural Hall
Stokesdale
Rockingham
Yadkin River
North Wilkesboro
Wilkesboro
Muddy Creek
Reidsville Rd
Summerfield
Oak Ridge
Lake Townsend
Yadkinville
Winston-Salem
Kernersville
Hunting Creek
421
Lewisville
Greensboro
SHY MOUNTAINS
Rocky Creek
1750 ft
601
Dutchmans Creek
Clemmons
Oak Hollow Lake
High Point
Taylorsville
Alexander
77
Davie
Davidson
South Yadkin River
Mocksville
Guilford
Thomasville
Legend:
North-Western North Carolina Railroad
0 5 10 20
Miles
Kilometers
0 5 10 20 30
N



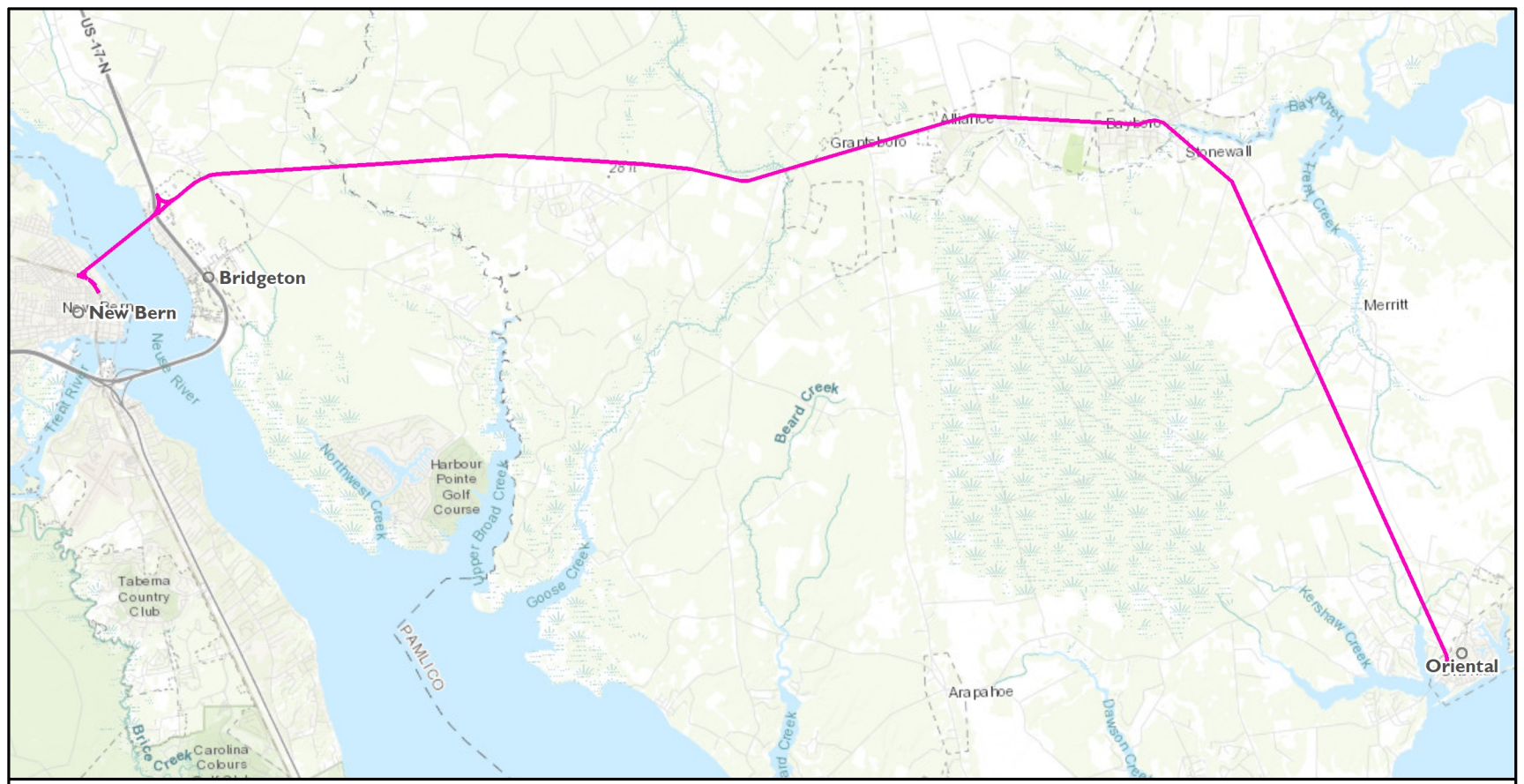
Legend:

Oxford and Clarkesville Railroad

0 10 20 40 Miles

0 15 30 60 Kilometers

N



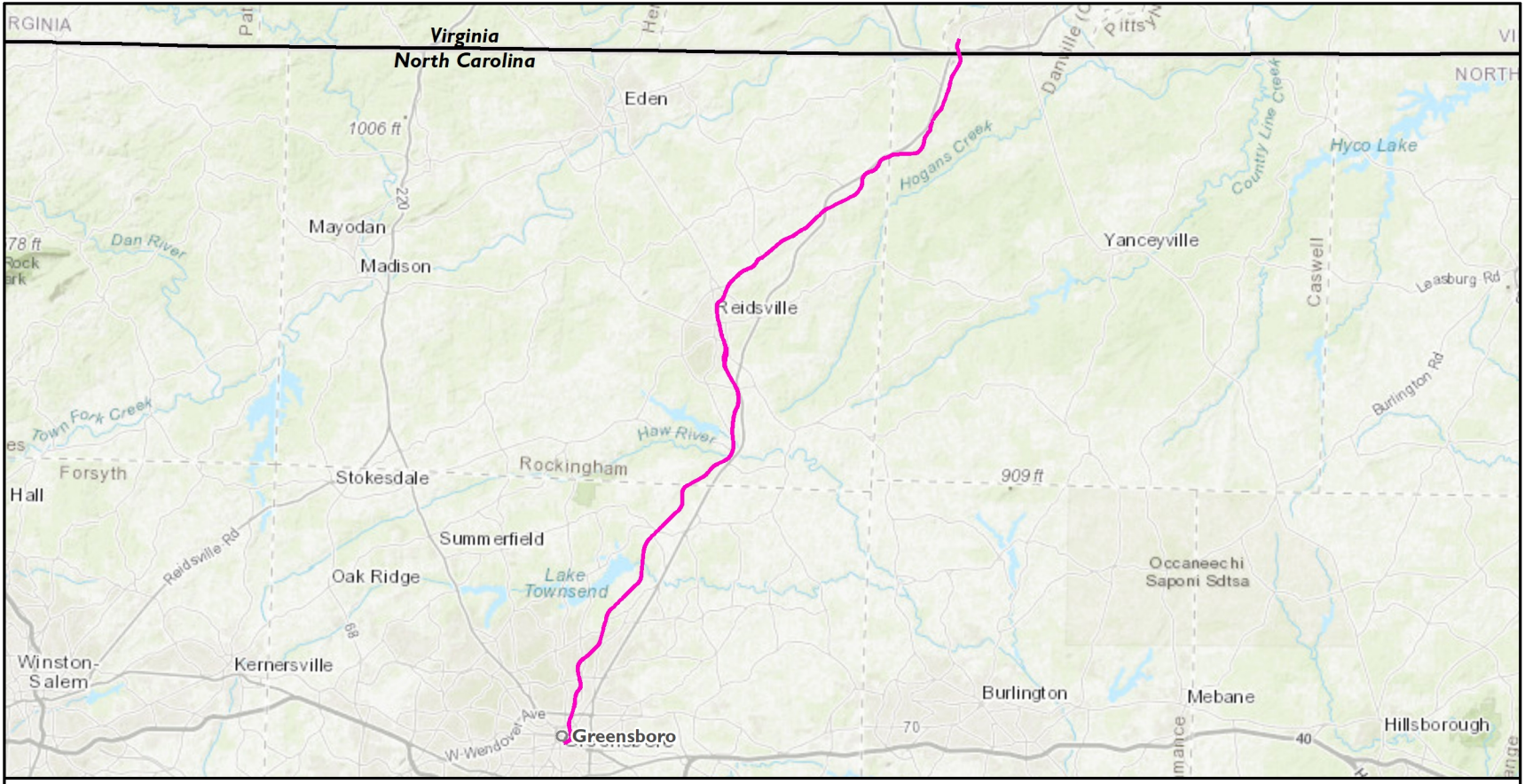
Legend:

Pamlico, Oriental and Western Railroad

0 1 2 4 Miles

0 1.5 3 6 Kilometers

N



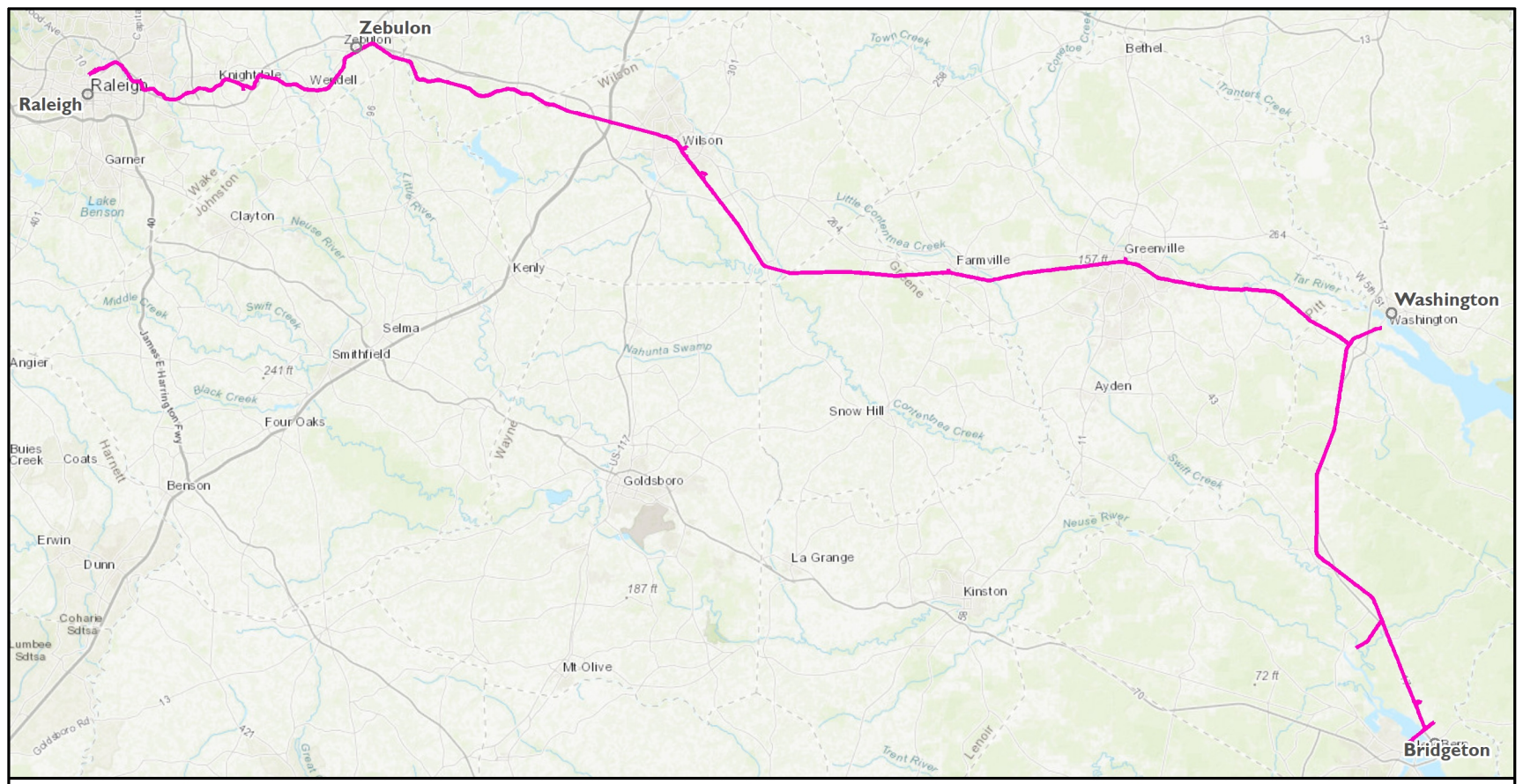
Legend:

Piedmont Railroad

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



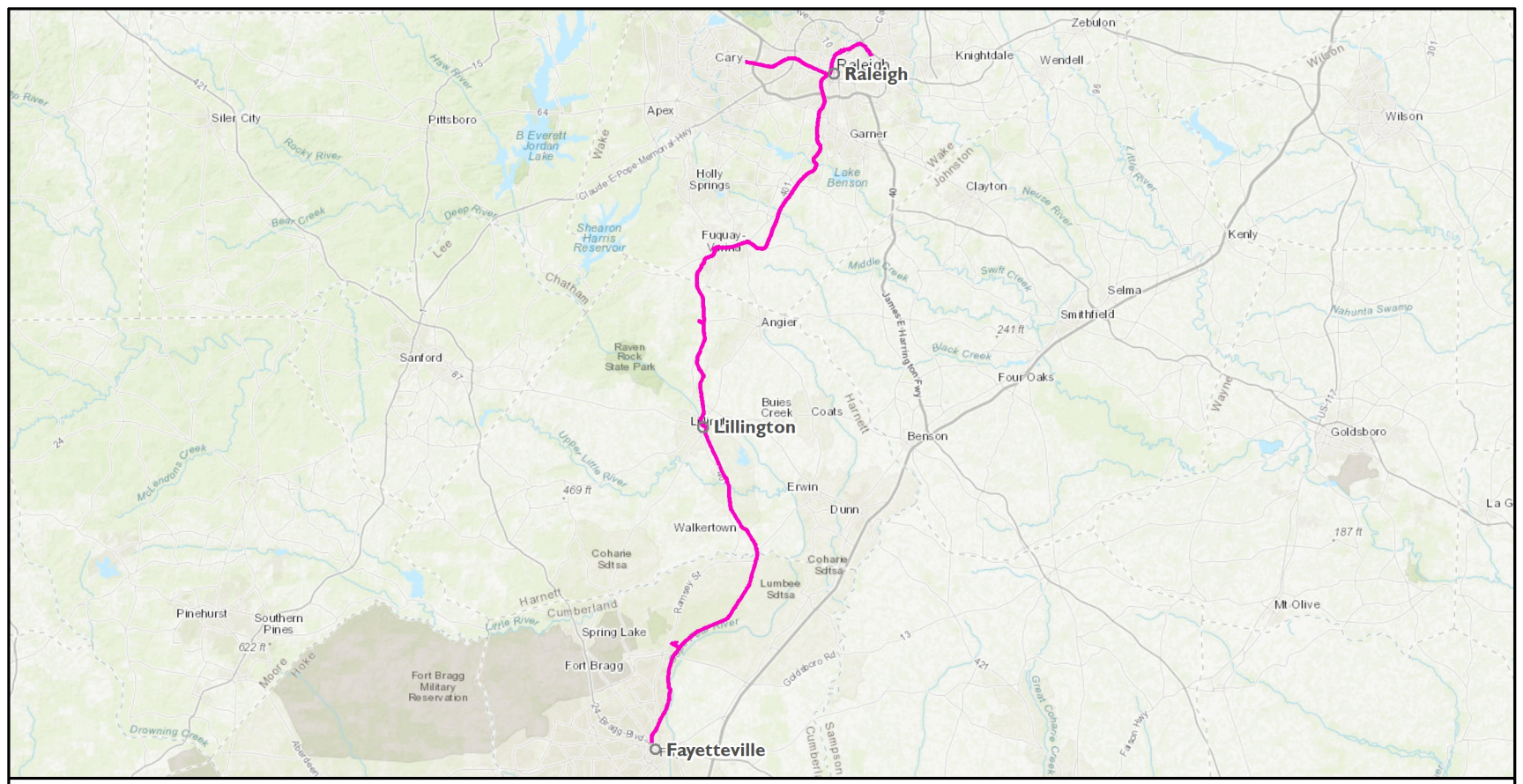
Legend:

Raleigh and Pamlico Sound Railroad

0 5 10 20 Miles

0 10 20 40 Kilometers

N



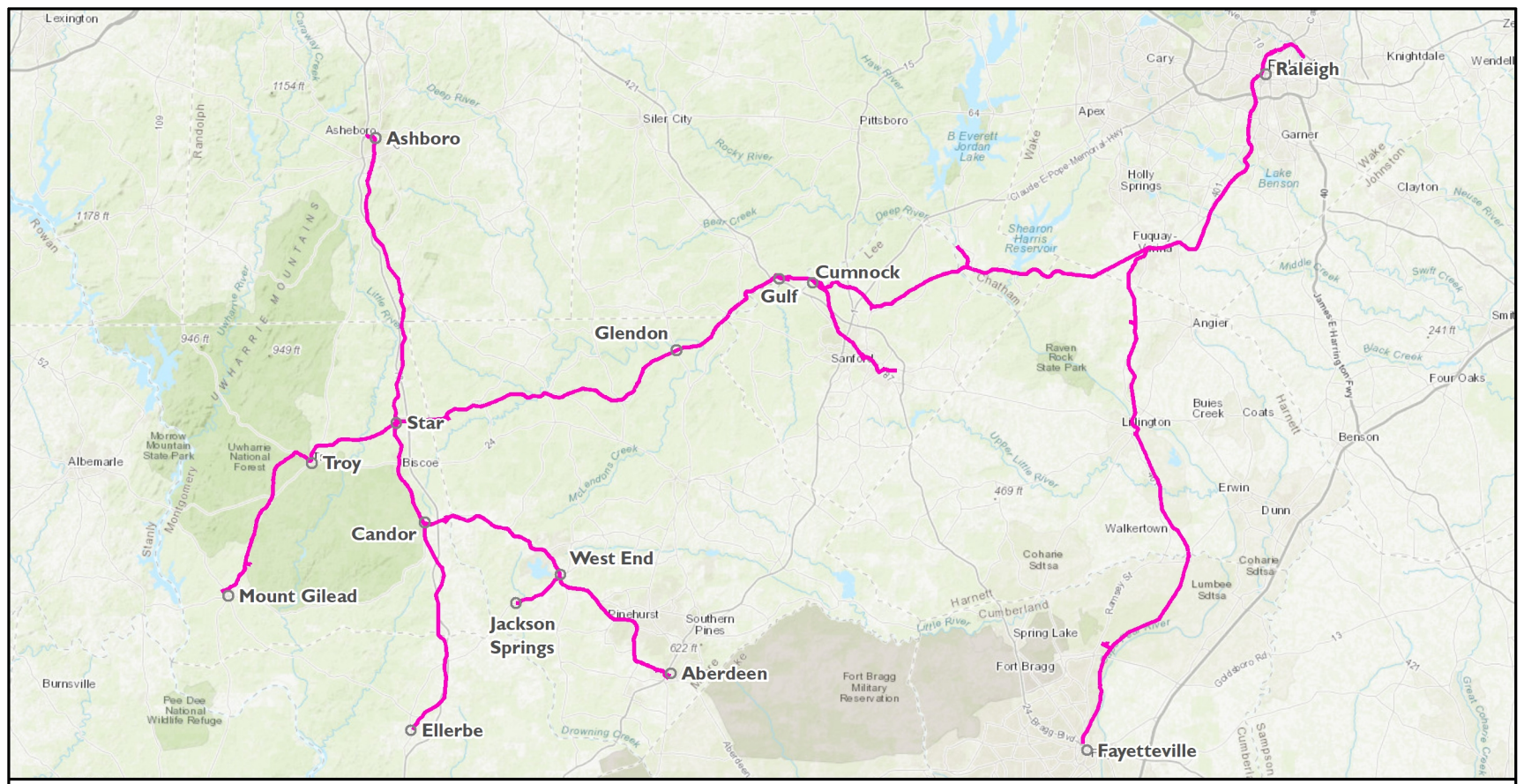
Legend:

Raleigh and Southport Railway

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



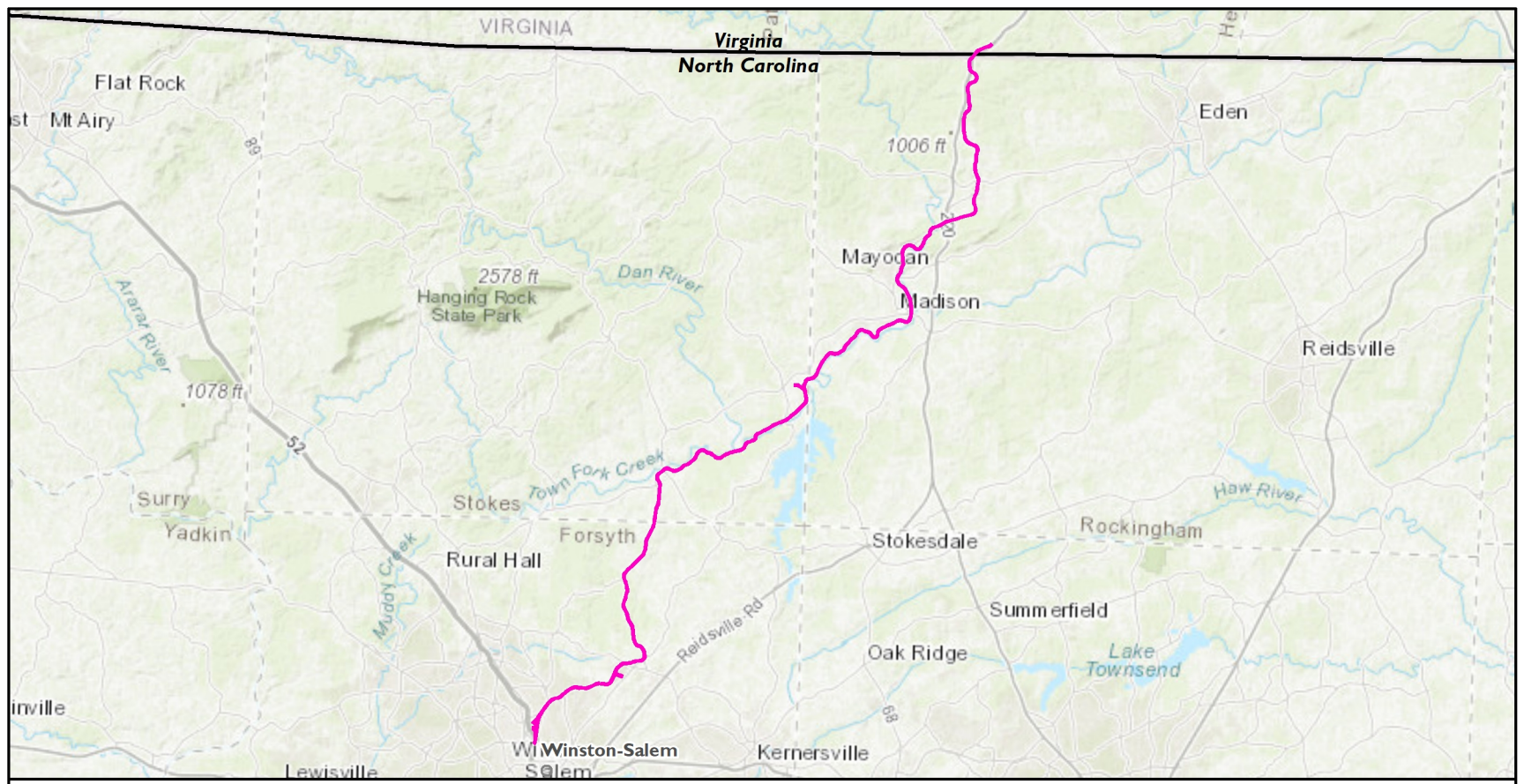
Legend:

Raleigh, Charlotte and Southern Railway

0 5 10 20 Miles

0 5 10 20 30 Kilometers

N



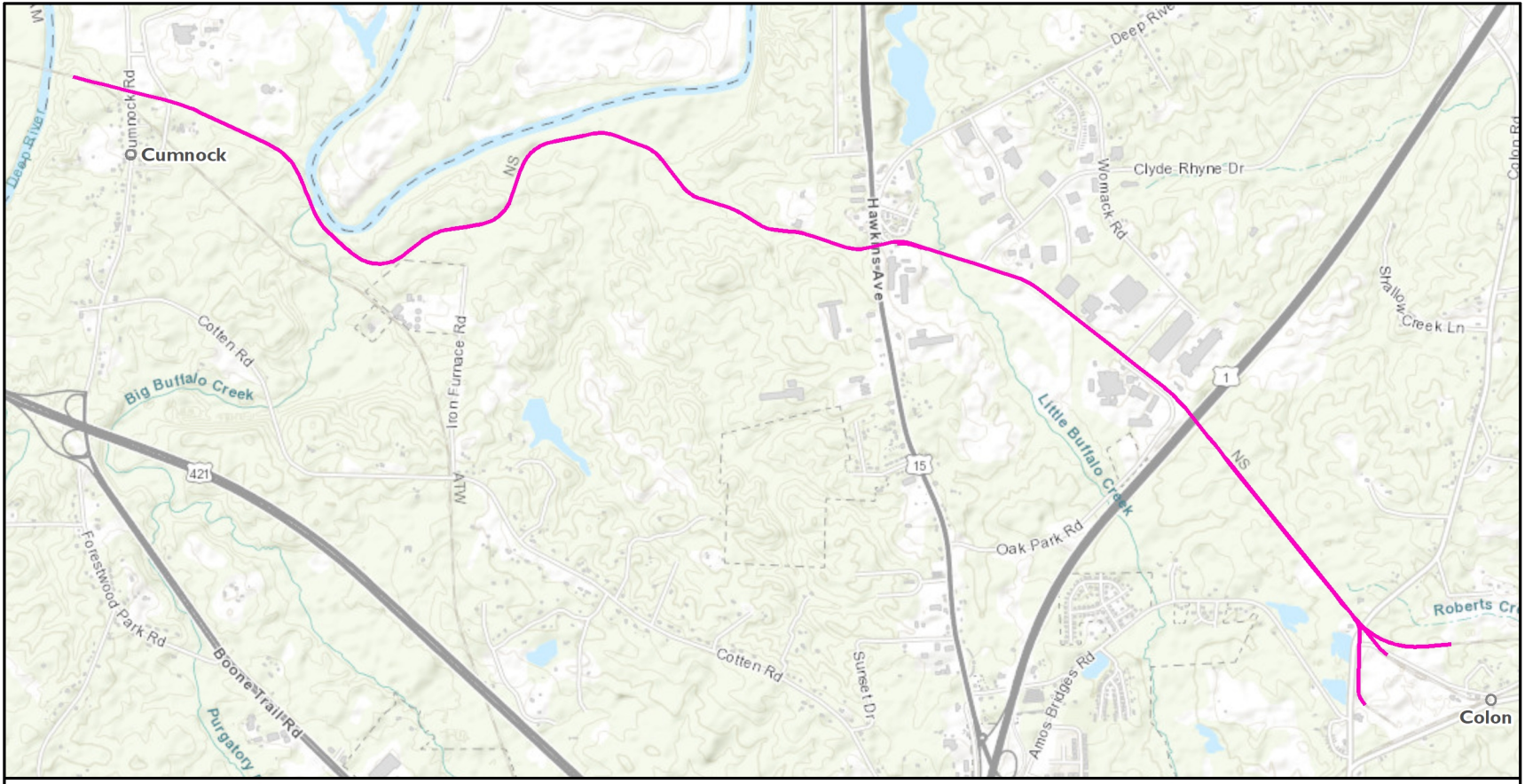
Legend:

Roanoke and Southern Railway

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



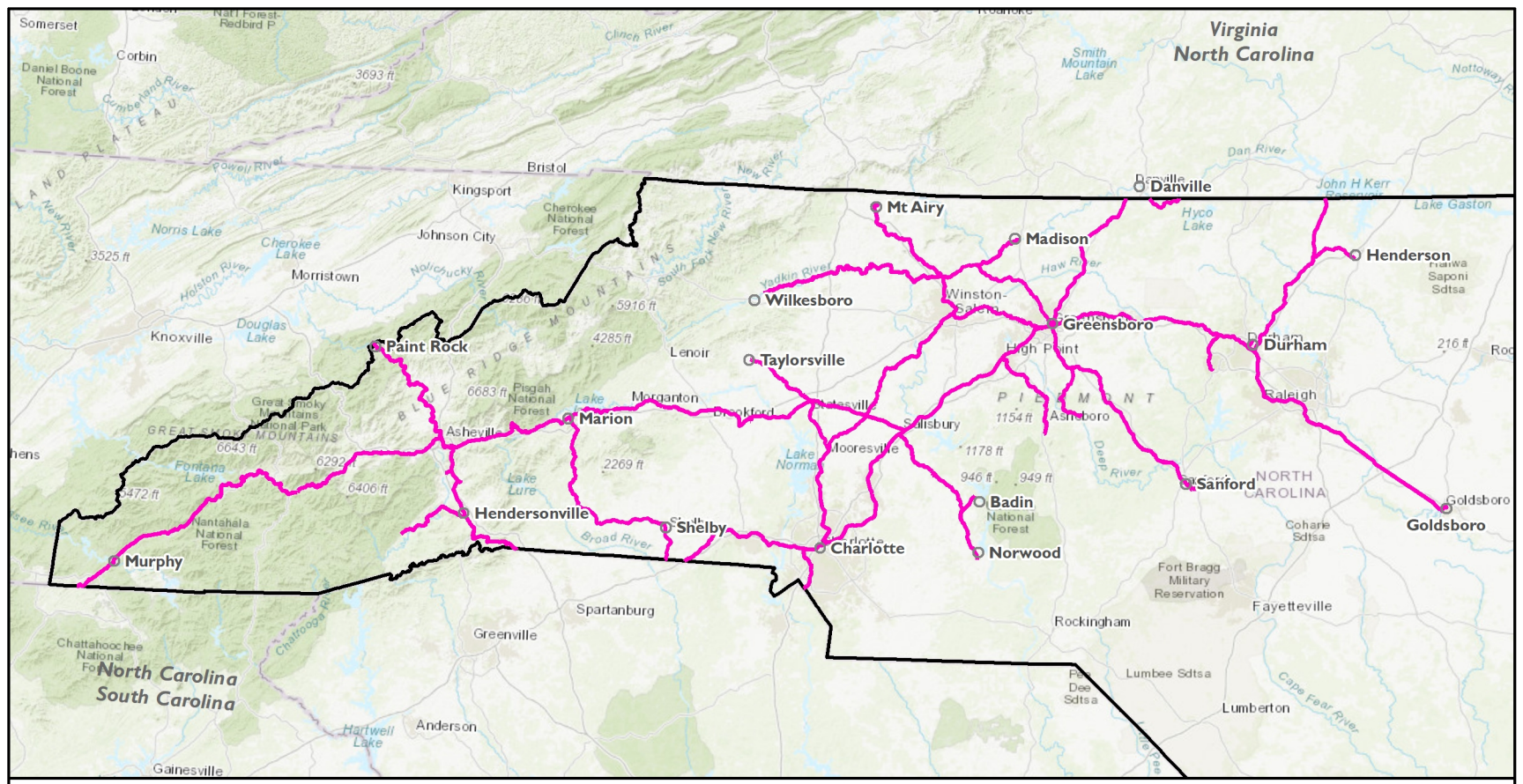
Legend:

Sanford and Troy Railroad

0 0.25 0.5 1 Miles

0 0.4 0.8 1.6 Kilometers

N



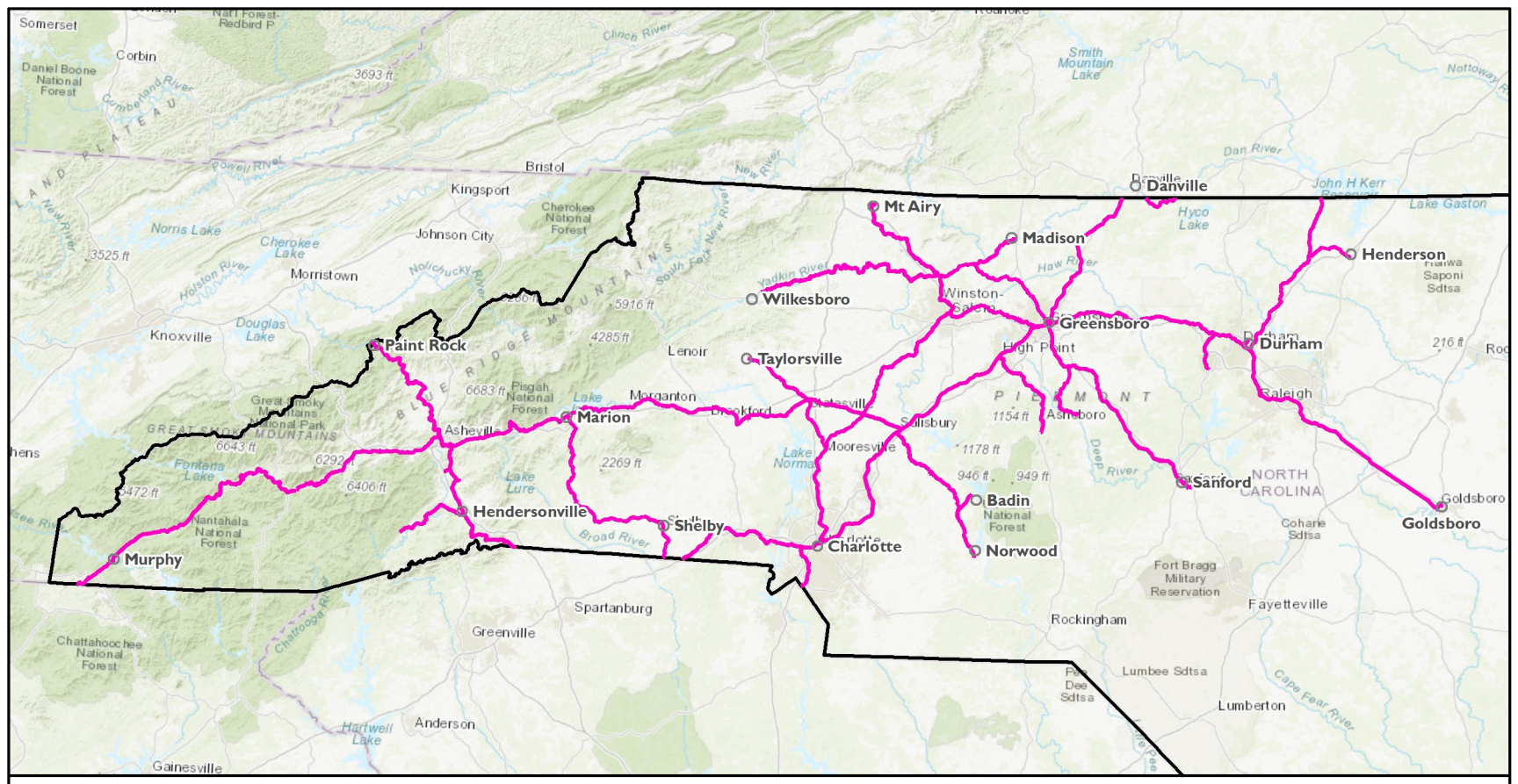
Legend:

Southern Railway

0 25 50 100 Miles

0 40 80 160 Kilometers

N



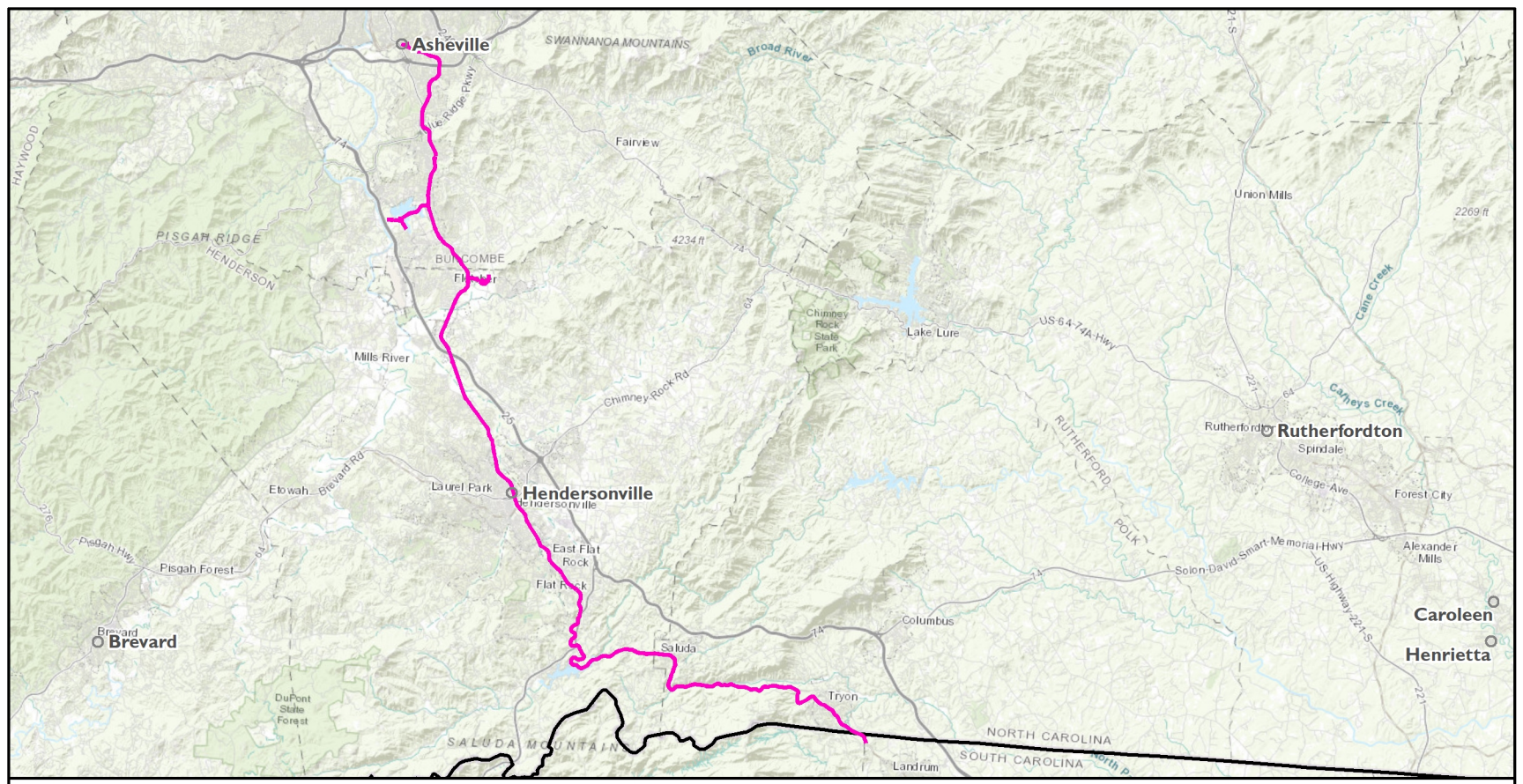
Legend:

Southern Railway

0 25 50 100 Miles

0 40 80 160 Kilometers

N



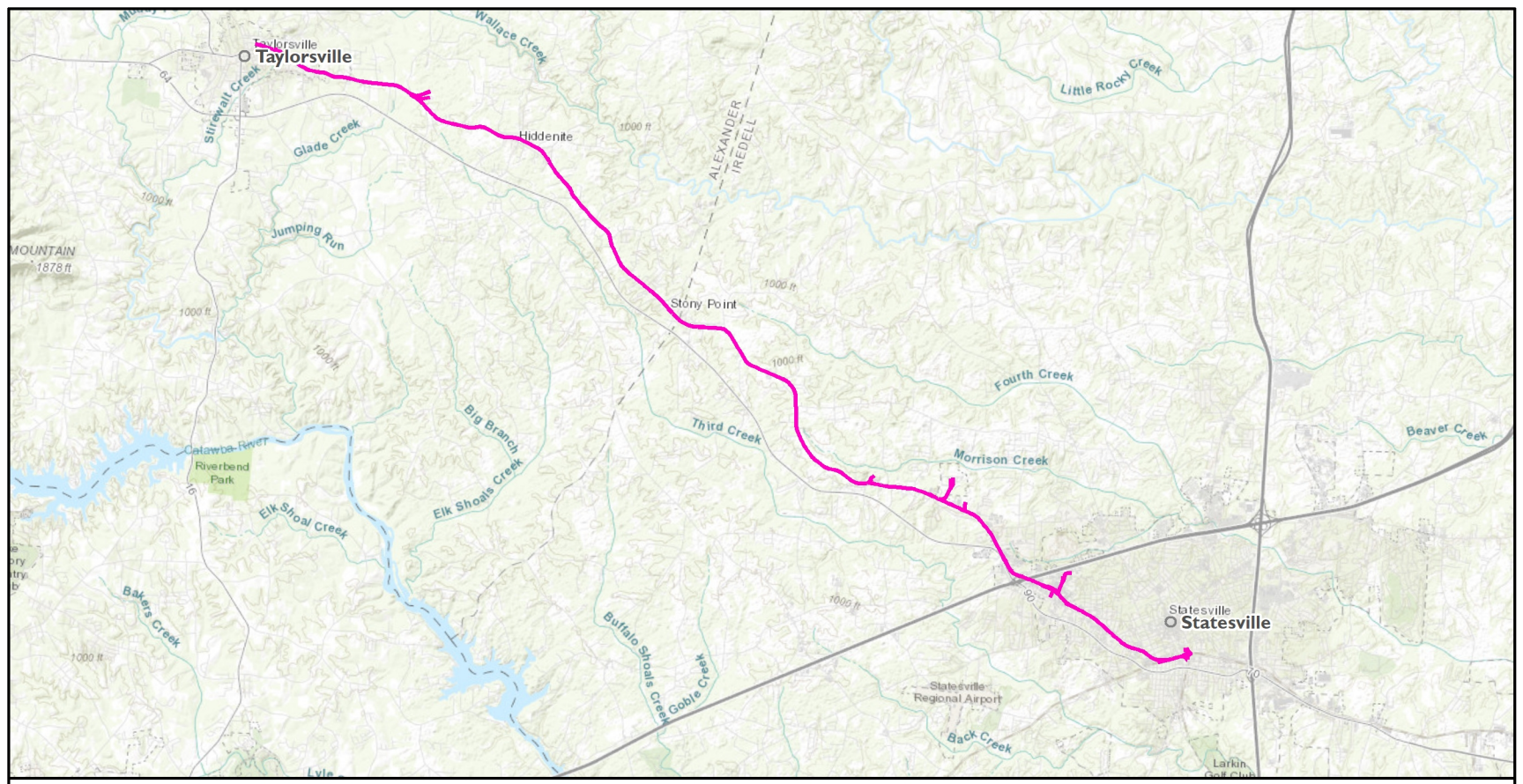
Legend:

Spartanburg and Asheville Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



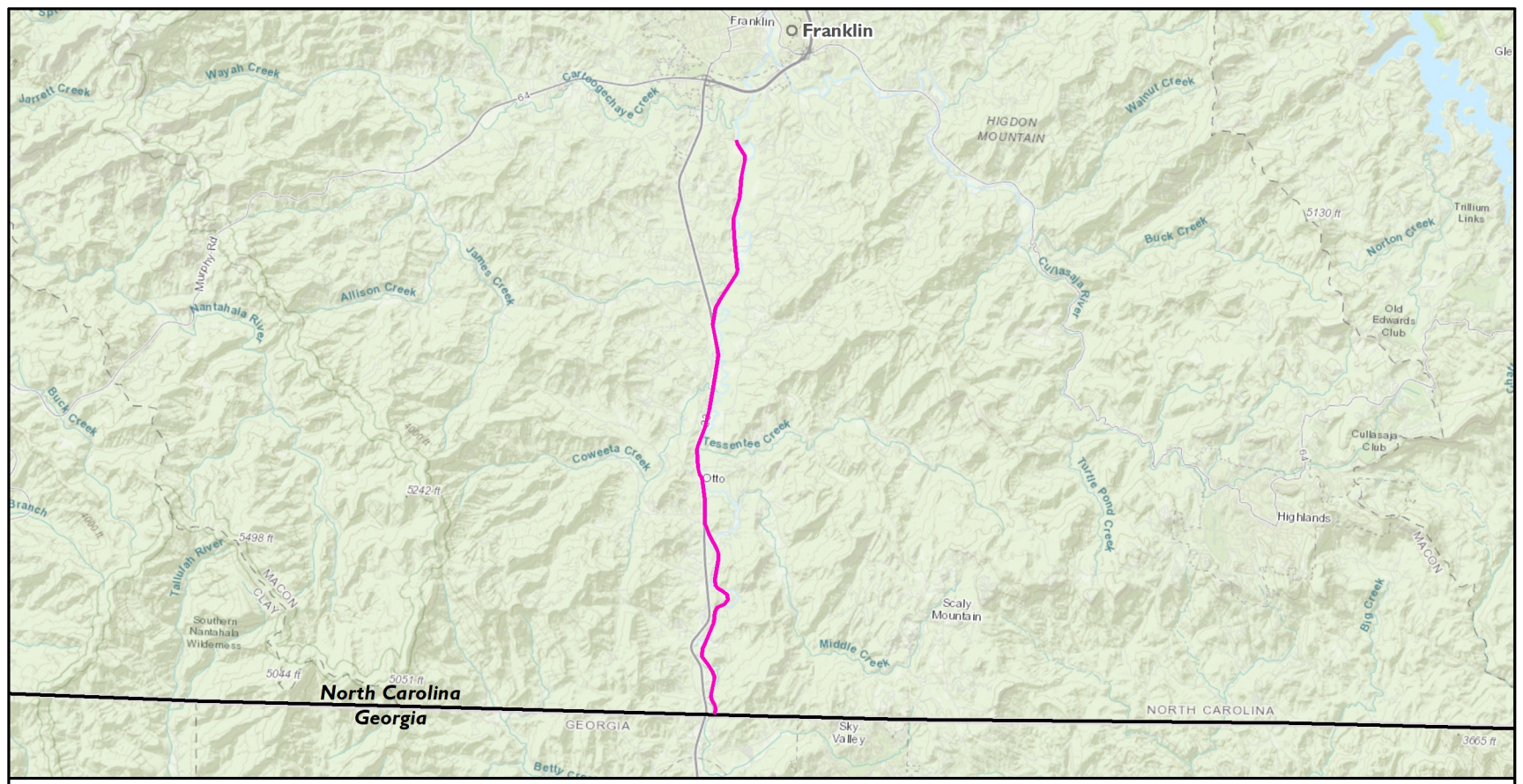
Legend:

Statesville and Western Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



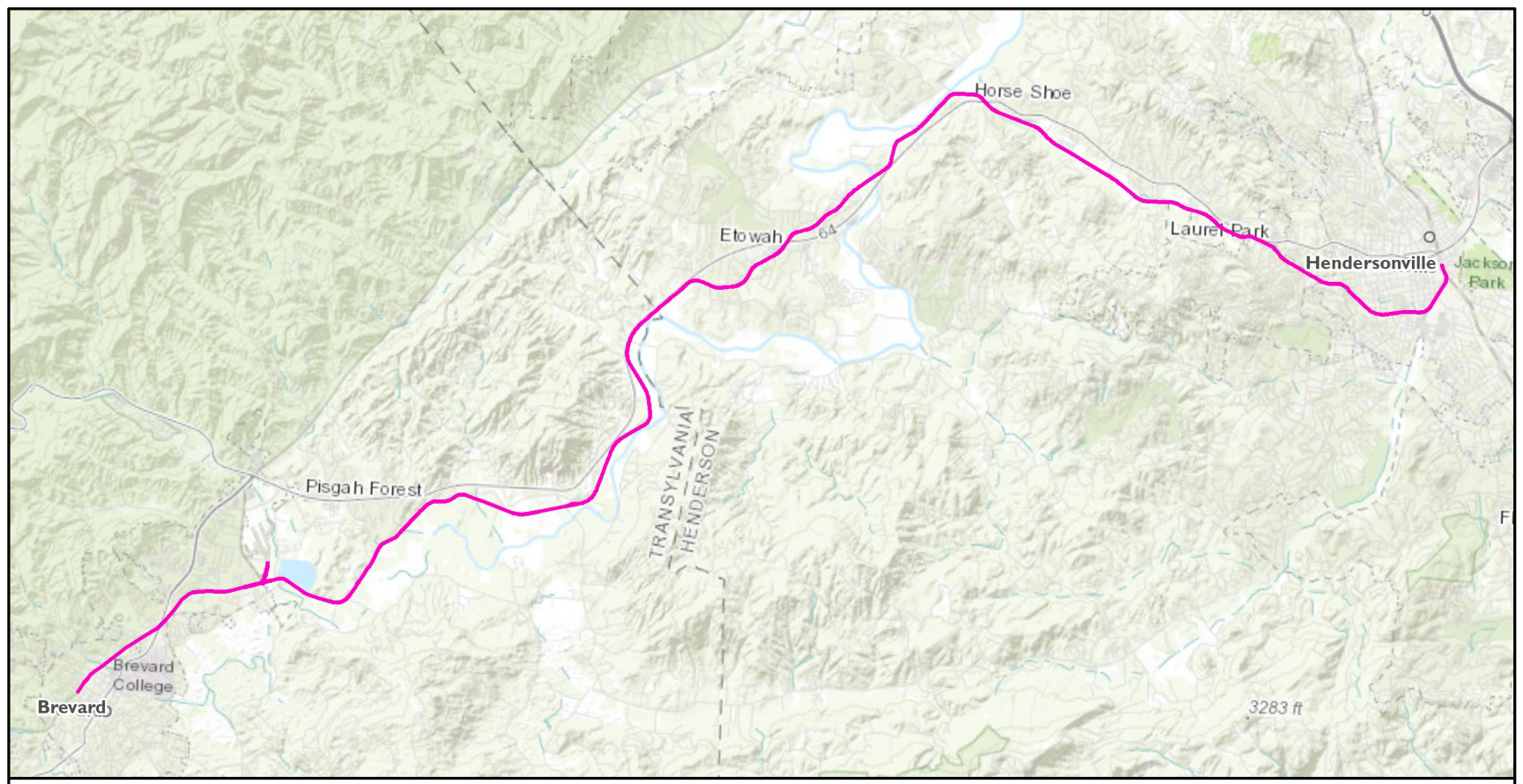
Legend:

Tallulah Falls Railway

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



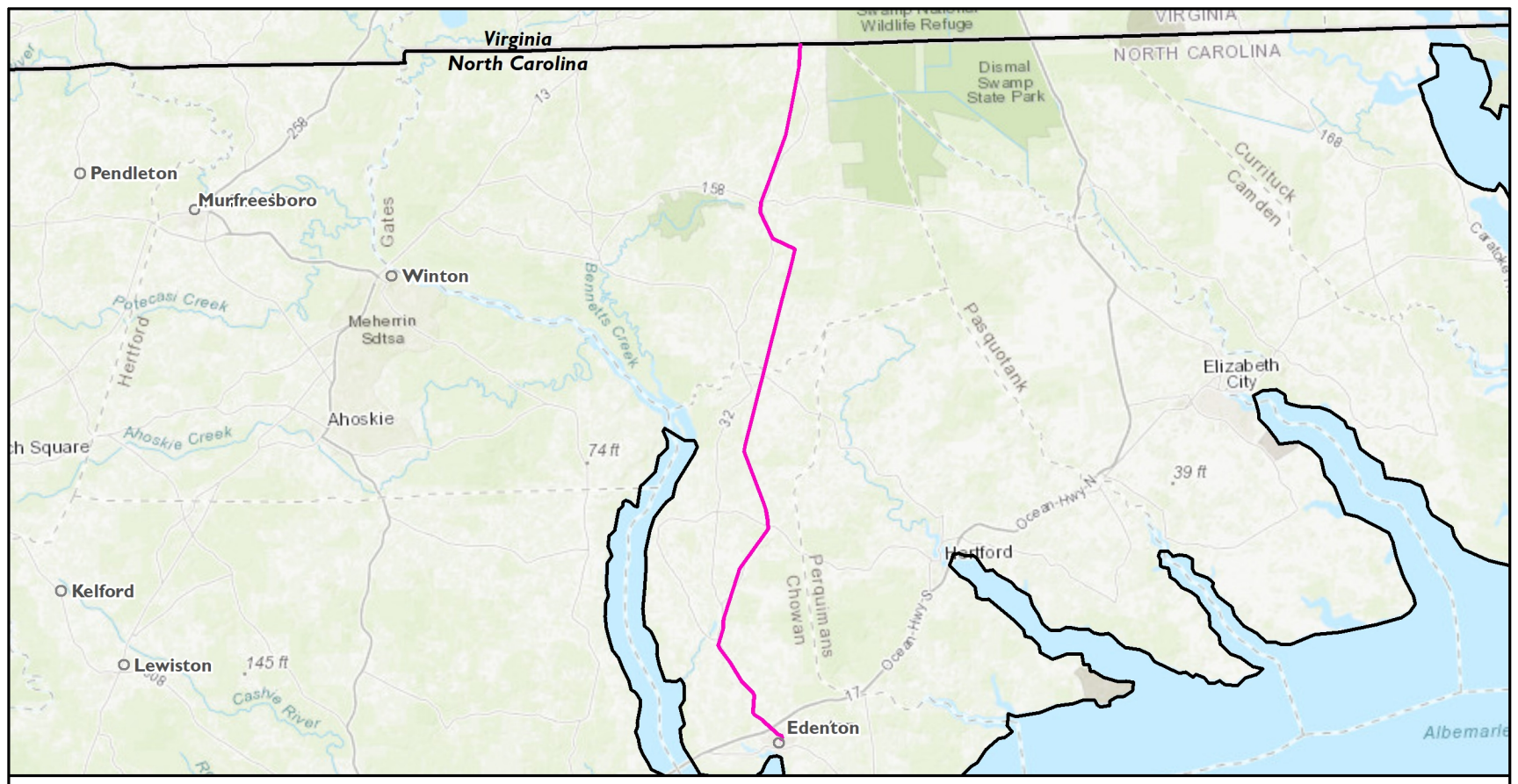
Legend:

Transylvania Railroad

0 1 2 4 Miles

0 1.5 3 6 Kilometers

N



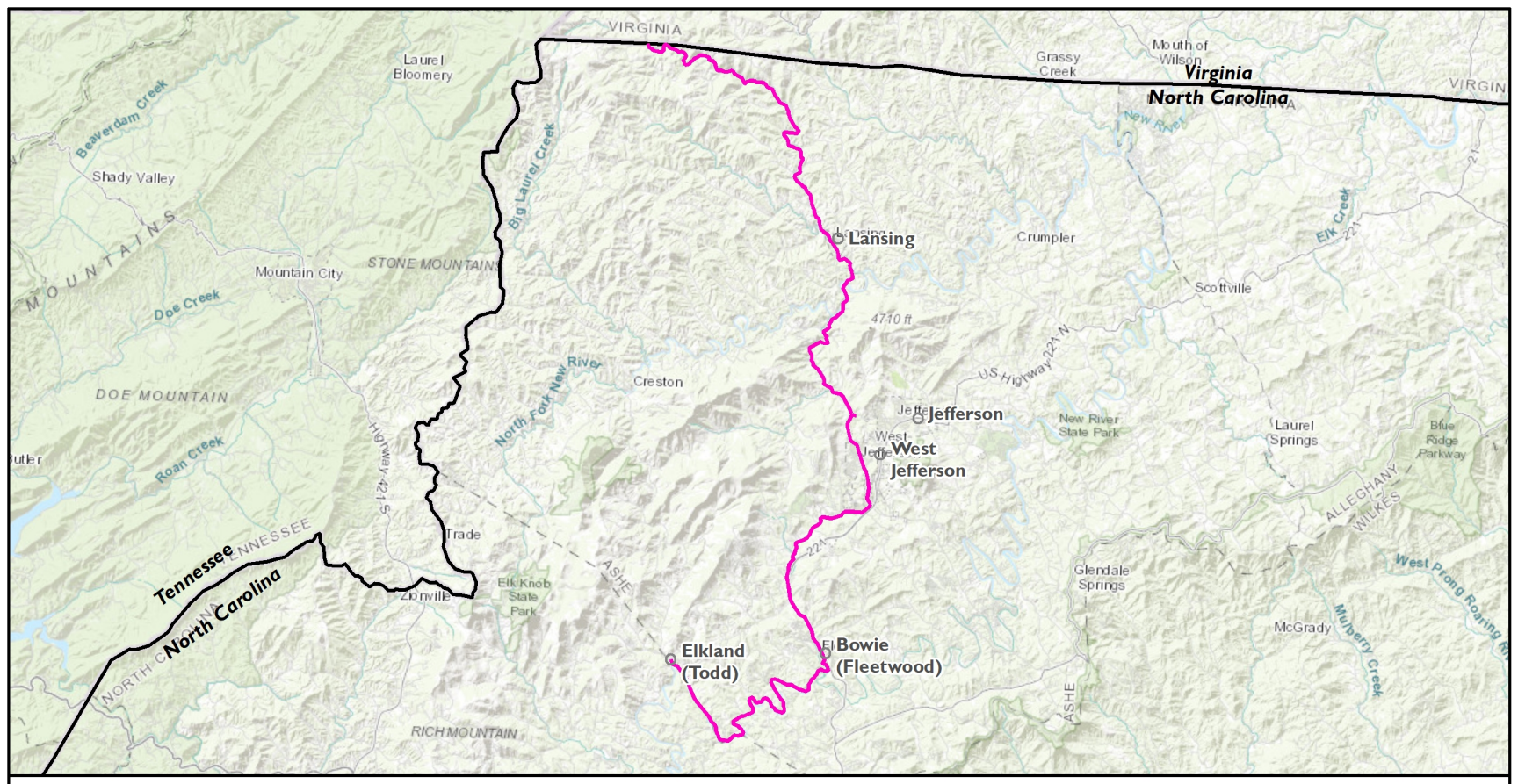
Legend:

Virginia and Carolina Coast Railroad

0 3 6 12 Miles

0 5 10 20 Kilometers

N



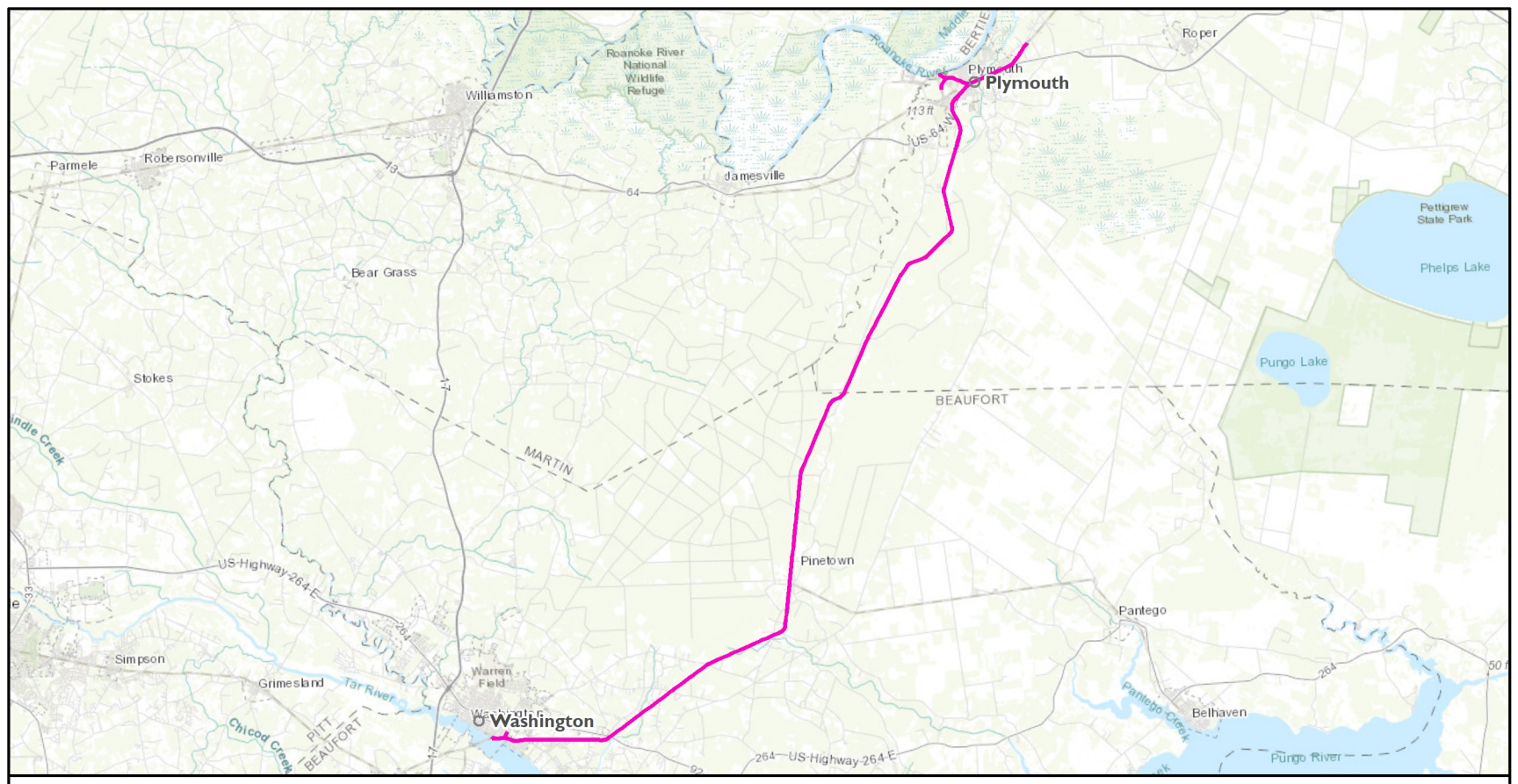
Legend:

Virginia-Carolina Railway

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



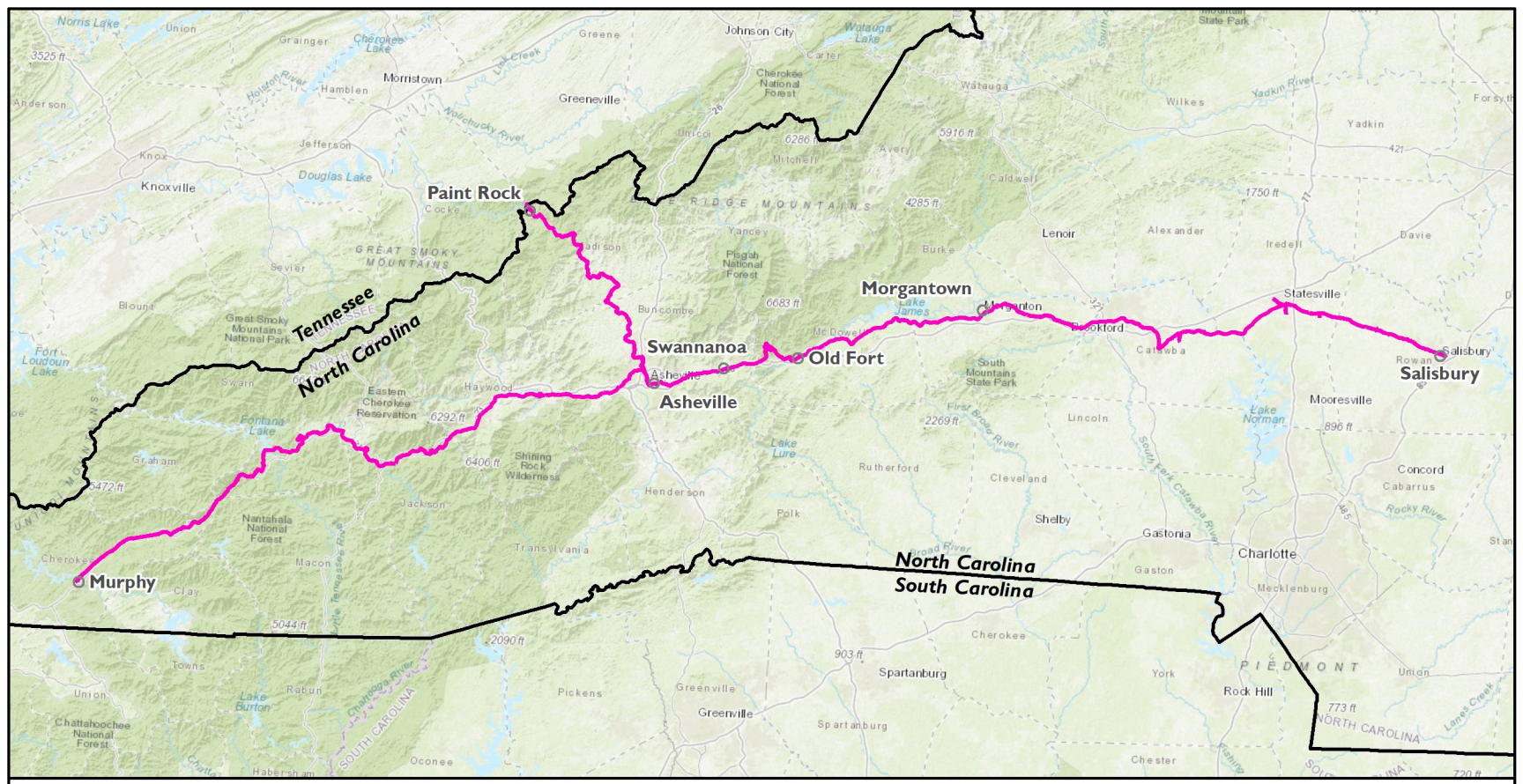
Legend:

Washington and Plymouth Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N



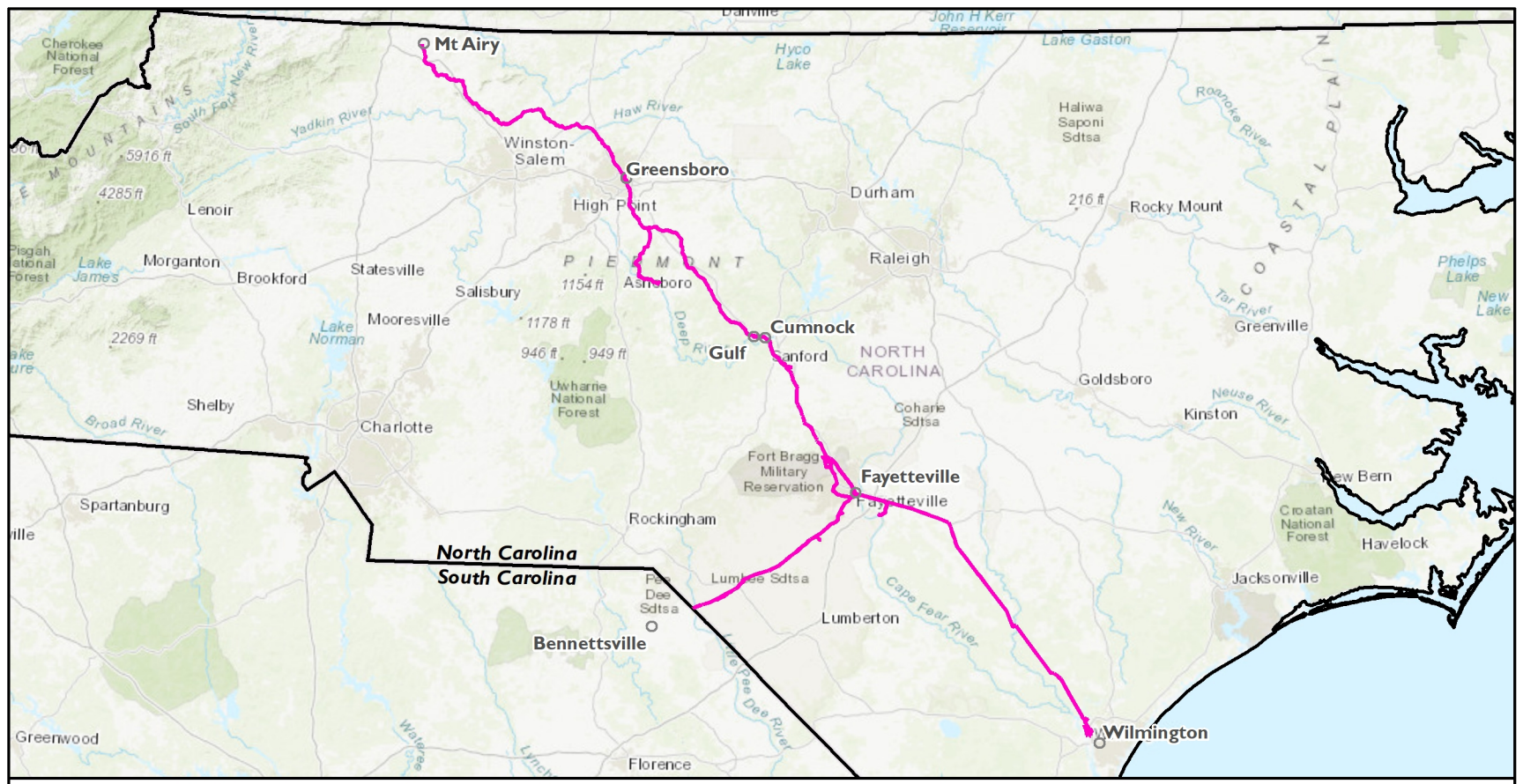
Legend:

Western North Carolina Railroad

0 10 20 40 Miles

0 15 30 60 Kilometers

N



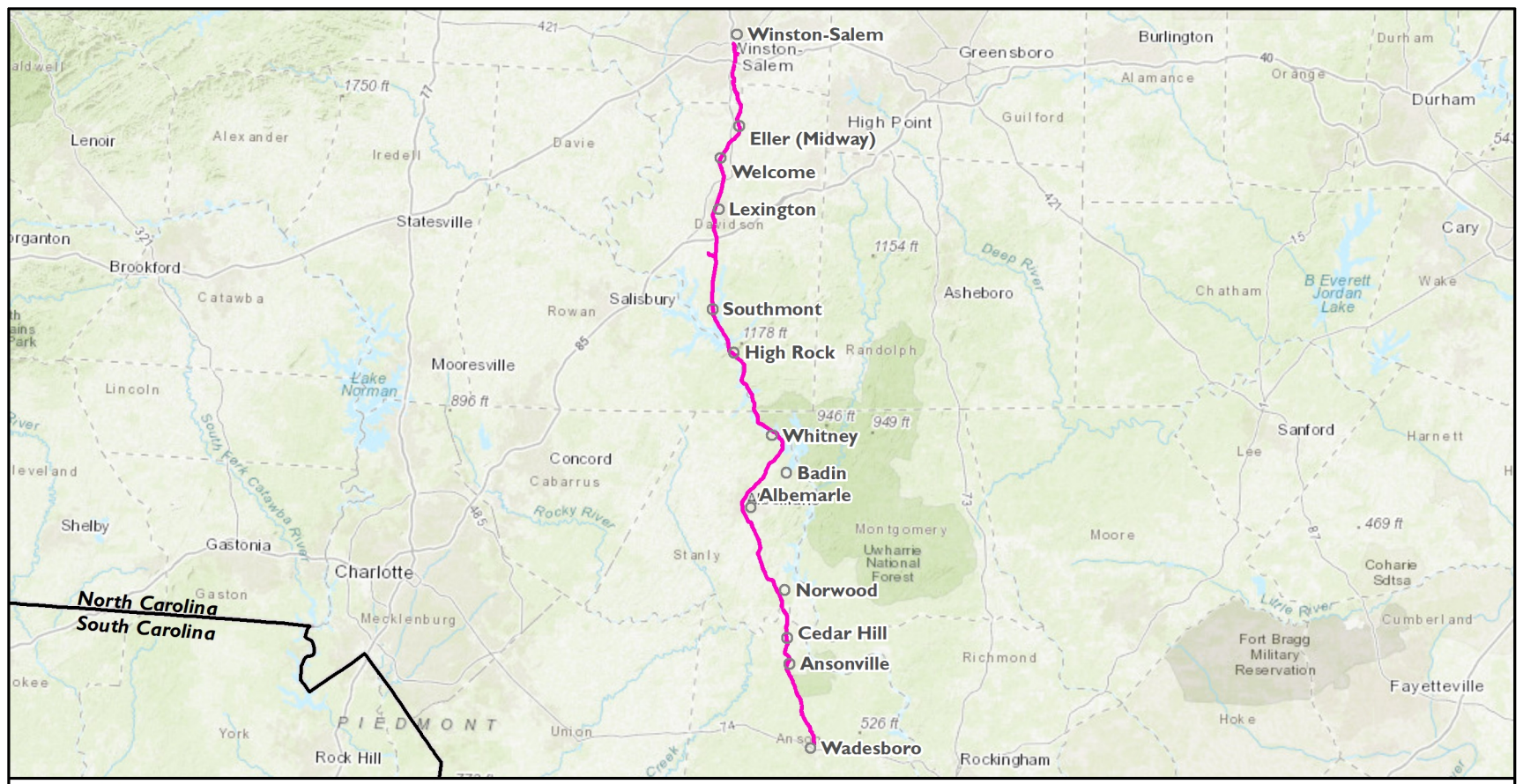
Legend:

Western Railroad / Cape Fear and Yadkin Valley Railway

0 15 30 60 Miles

0 25 50 100 Kilometers

N



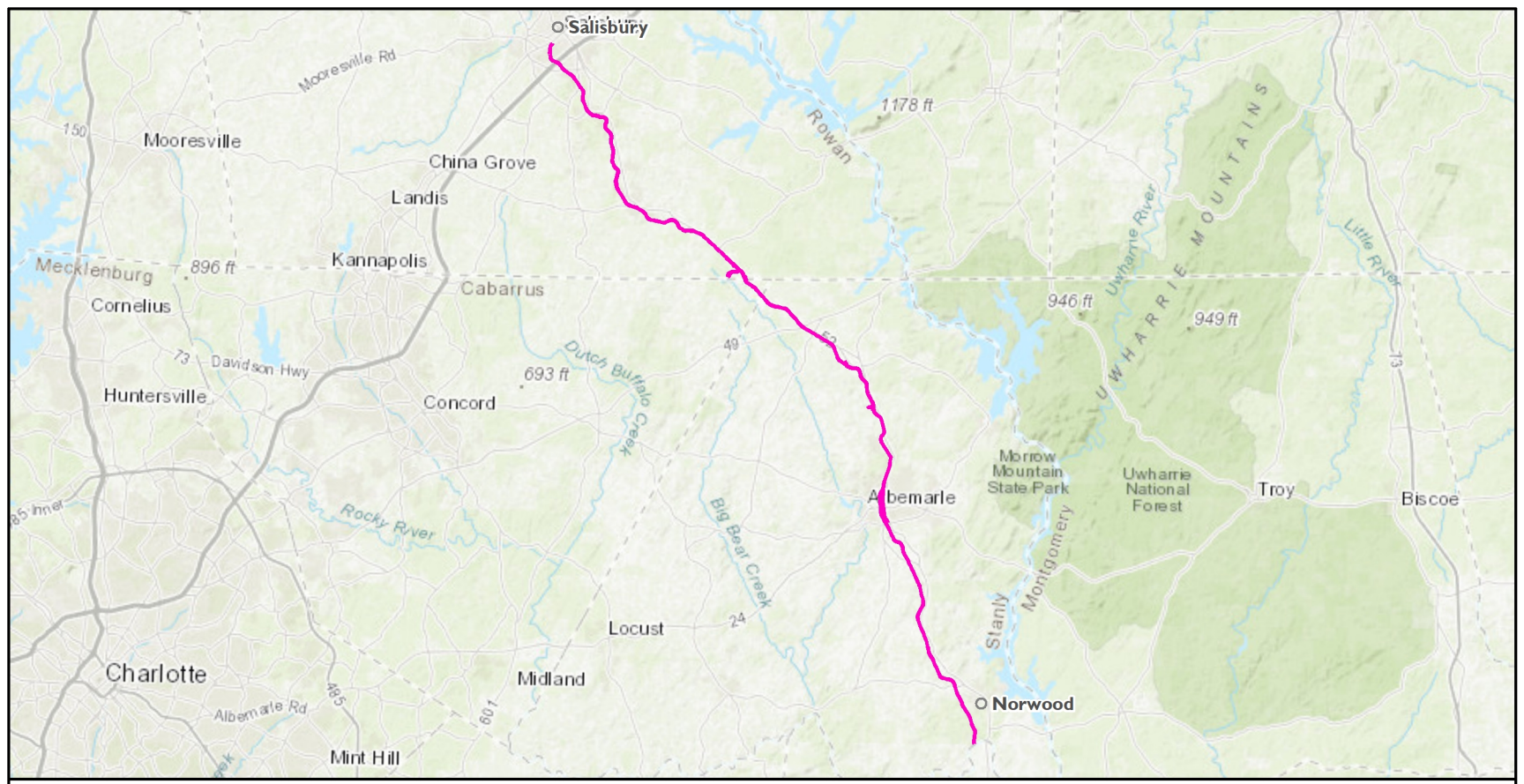
Legend:

Winston-Salem Southbound

0 10 20 40 Miles

0 15 30 60 Kilometers

N



Legend:

Yadkin Railroad

0 2.5 5 10 Miles

0 4 8 16 Kilometers

N

APPENDIX C: ACRONYM DEFINITIONS

Term	Acronym
Aberdeen and Asheboro Railroad	A&A
Asheville and Spartanburg Railroad	A&S
Atlanta and Charlotte Air-Line Railway	A&C
Atlanta & Richmond Air-Line	A&R
Atlantic & Danville Railroad	A&D
Atlantic & East Carolina Railway Company	A&EC
Atlantic, Mississippi and Ohio Railroad	A&MO
Atlantic & North Carolina Railroad	A&NCRR
Atlantic Coast Line	ACL
Atlantic, Tennessee, and Ohio Railroad	AT&O
Baltimore & Ohio	B&O
Carolina and North-Western Railway	C&NW
Charlotte, Columbia, and Augusta Railroad	CC&AR
Chesapeake & Ohio	C&O
Chester and Lenoir Narrow Gauge Railroad	C&L
Consolidated Rail Corporation	Conrail
CSX Transportation	CSXT
Durham and Charlotte Railroad	D&C
Durham and South Carolina Railroad	D&S
East Tennessee, Virginia, and Georgia Railroad	ETV&G
Elizabeth City and Norfolk Carolina Railroad	EC&N
Geographic Information Systems	GIS
High Point, Randleman, Asheboro, and Southern Railroad Company	HPRAS
Interstate Commerce Commission	ICC
Journal Storage	JSTOR
Louisville & Nashville	L&N
Lynchburg & Durham Railroad	L&D
Memorandum of Agreement	MOA
Multiple Property Document Form	MPDF
National Park Service	NPS
National Rail Passenger System	Amtrak
National Register of Historic Places	NRHP
Norfolk & Southern Railroad Company	N&SR
Norfolk Southern Corporation	NS
Norfolk Southern Railroad Company	NSR
Norfolk and Western Railroad	N&W Railroad
Norfolk & Western Railway	N&W
North Carolina Department of Transportation	NCDOT
North Carolina Historic Preservation Office	NC HPO
North Carolina Railroad	NCRR
North Carolina Midland Railroad	NCMR
North-Western North Carolina Railroad	NWNCRR
Oxford and Clarkesville Railroad	O&C
Oxford and Hendersonville Railroad	O&H
Penn Central Transportation Company	Penn Central
Pennsylvania Railroad Company	PR
Railroad Retirement Board	RRB
Raleigh & Augusta Air Line	RAAL
Raleigh & Gaston	R&G
Raleigh and Southport Railway	R&S
Richmond & Danville	R&D
Richmond & Petersburg	R&P
Richmond, York River, and Chesapeake Railroad	RYR&CR
right-of-way	ROW
Roanoke & Southern Railway	R&SRW
Sanford and Troy Railroad	S&T
Seaboard Air Line	SAL

Term	Acronym
Seaboard Coast Line	SCL
Southern Railway Security Company	SRSC
Southeast High Speed Rail project	SEHSR
United States	U.S.
United States Geological System	USGS
Virginian Railway	VGN
Wilmington & Raleigh	W&R
Western North Carolina Railroad	WNCRR
Winston-Salem Southbound	WSSB
World War II	WWII
Yadkin Railroad	YR

APPENDIX D: ARCHITECTURAL RESOURCES SURVEYED AT THE RECONNAISSANCE-LEVEL DURING THE PROJECT ORGANIZED BY COUNTY

HPO #	Resource	Address	Location	County	Built	Associated Rail System
AM2866	North Carolina Railroad Stone Culvert	near Elon University Campus on E. Trolinger Avenue	Gibsonville	Alamance	ca. 1927	NCRR/NS
CB1367	Atlantic Coast Line Railroad Trestle Bridge over Livingston Creek	near 59 State Road 1878	Acme	Columbus	ca. 1951	CSX
DV1916	Bridge Carrying E. 10th Avenue (SR3345) Over Southern Railway (NCDOT # 280106)	E. 10th Avenue (SR334)	Lexington	Davidson	1953	CSX
DV1917	Winston-Salem Southbound Railway Overpass Bridge Over Old U.S. Highway 52 (SR3010) (NCDOT # 280049)	Old U.S. Highway 52 (SR3010)	Welcome	Davidson	1926	CSX
DV1918	Winston-Salem Southbound Railway Concrete Arch Overpass Bridge (SR1104) (NCDOT # 280464)	Old Linwood Road (SR1104)	Lexington	Davidson	1959	CSX
DH3977	Norfolk Southern Railway Bridge over E Greer Street (SR 1670) (NCDOT # 310257)	E. Greer Street	Durham	Durham	1925	NS
DH3978	Norfolk & Western Railway Underpass Bridge (NCDOT # 310092)	carrying U.S. 70	Durham	Durham	1955	NS
DH3979	Norfolk and Western & Southern-Chapel Hill Street Overpass (SR1127) (W) (NCDOT # 310281)	Chapel Hill Street	Durham	Durham	1960	NS
DH3980	Norfolk Southern Railway Bridge over Gregson Street (SR1327) (NCDOT # 310068)	Gregson Street	Durham	Durham	1940	NS
ED2552	Atlantic Coast Line Rocky Mount Rail Yard	Vance Street	Rocky Mount	Edgecombe	ca. 1917	CSX
ED2553	CSX Railroad Overpass Bridge (NCDOT Bridge # 320125)	Sutton Road	Rocky Mount	Edgecombe	1901	CSX
ED2554	CSX Rocky Mount Yard Office	2501 SW Main Street	Rocky Mount	Edgecombe	ca. 1957	CSX
ED2555	CSX Railroad Overpass Bridge (NCDOT Bridge # 320124), over Sutton Road, north of CSX Rocky Mount Building	Sutton Road	Rocky Mount	Edgecombe/ Nash	1901	CSX
FY9254	Norfolk Southern Railroad Overpass Bridge, Over Hawthorne Road NW	Over Hawthorne Road NW	Winston-Salem	Forsyth	ca. 1940	NS
FY9255	Norfolk Southern Railroad Underground Sidewalk, off of W. Northwest Boulevard	W. Northwest Boulevard	Winston-Salem	Forsyth	1927	NS
FY9256	Southern Railway Deck Plate Girder Overpass Bridge over Reynolda Road	Reynolda Road NW	Winston-Salem	Forsyth	1916	NS

HPO #	Resource	Address	Location	County	Built	Associated Rail System
FY9257	Norfolk Southern Railroad Deck Plate Overpass Girder Bridge over N Broad Street and Northwest Boulevard	N Broad St and Northwest Boulevard	Winston-Salem	Forsyth	1961	NS
FY9258	Norfolk Southern Railroad Deck Plate Girder Overpass Bridge Over E. Northwest Boulevard	Over E. Northwest Boulevard	Winston-Salem	Forsyth	ca. 1925	NS
FY9259	Norfolk Southern Railroad Overpass Bridge Over Indiana Avenue	Over Indiana Avenue	Winston-Salem	Forsyth	ca.1928	NS
GF9167	Norfolk Southern Railway Overpass Bridge Over Elm Street	Over Elm Street	Greensboro	Guilford	ca. 1920	NS
GF9168	Norfolk Southern Railway and North Carolina Railroad Overpass Bridge Over Fulton Street	Over Fulton Street	Greensboro	Guilford	1907	NS
GF9169	Norfolk Southern Railway and North Carolina Railroad Overpass Bridge Over Tate Street	Over Tate Street	Greensboro	Guilford	ca. 1920	NS
GF9170	Norfolk Southern Railway and North Carolina Railroad Overpass bridge of Abandoned NS Branch/Downtown Greenway	Over abandoned NS Branch near Eugene Court (to the north), Downtown Greenway goes under	Greensboro	Guilford	1928	NS
GF9171	Southern Railway Pomona Rail Yard	Oakland Avenue	Greensboro	Guilford	ca. 1927	NS
GF9172	Southern Railway Pomona Rail Yard Office	Oakland Avenue	Greensboro	Guilford	ca. 1927	NS
GF9173	Norfolk Southern Railway and North Carolina Railroad Overpass Bridge, Over S. Holden Road (SR1392)	Over S. Holden Road	Greensboro	Guilford	ca. 1950	NS
GF9174	High Point, Randleman, Asheboro & Southern RR Co. Pile Trestle over Richland Creek	over Richland Creek north of I-85 and on the east side of Jarrell Street	High Point	Guilford	ca. 1927	NS
HT1245	Atlantic and Western Railway/ Norfolk Southern Railroad Lillington Station (moved)	101 E. Duncan Street	Lillington	Harnett	ca. 1910	NS
HF1696	Ahoskie Rail Freight Depot and Yard	Catherine Street	Ahoskie	Hertford	ca. 1970	CSX
MR1429	Norfolk Southern Railway Overpass Bridge over Beulah Hill Road S (NC5) (NCDOT Bridge # 620029)	South of Intersection of Beulah Hill Road N and Cherokee Road	Pinehurst	Moore	ca. 1935	NS
NS1567	W. Nash Street Railroad Crossing	W. Nash Street	Spring Hope	Nash	ca. 1886	CSX
NS1568	Atlantic Coast Railroad Depot Historic District	101, 107–111 Coastline Street	Rocky Mount	Nash	1903–1972	CSX
OR3238	North Carolina Railroad Brick Arch Culvert	over branch leading to Eno River	Hillsborough	Orange	ca. 1855	NCRR/NS
PT3361	Atlantic Coast Line Bridge over Tar River	over Tar River	Greenville	Pitt	1952	CSX
RH0753	CSX Hamlet Rail Yard	176–361 CSX Drive	Hamlet	Richmond	ca. 1954	CSX
RH0754	CSX Hamlet Rail Yard Office and Hump Tower	176–361 CSX Drive	Hamlet	Richmond	ca. 1954	CSX
RH0755	CSX Hamlet Rail Yard Pedestrian Tunnel	176–361 CSX Drive	Hamlet	Richmond	ca. 1954	CSX
RH0756	CSX Hamlet Rail Yard Car Shop	176–361 CSX Drive	Hamlet	Richmond	ca. 1954	CSX
RH0757	CSX Hamlet Rail Yard Water Tower	176–361 CSX Drive	Hamlet	Richmond	ca. 1954	CSX
RB0740	Atlantic Coast Line Railroad Underpass Bridge Carrying Alt Route 74 (NCDOT # 770014)	Carrying Alt Route 74	Pembroke	Robeson	1948	CSX
RB0741	Atlantic Coast Line Signal Manufacturers House	West Side of Union Chapel Road (Route 1563)	Pembroke	Robeson	ca. 1917	CSX
SC0403	CSX Oil Building	101 N. Main Street	Laurinburg	Scotland	ca. 1918	CSX

HPO #	Resource	Address	Location	County	Built	Associated Rail System
SC0404	CSX Filling Station	102 N. Main Street	Laurinburg	Scotland	ca. 1918	CSX
SC0405	Laurinburg & Southern Railroad Warehouse	South Side of E. Bizzell Street	Laurinburg	Scotland	ca. 1956	CSX
SC0406	Laurinburg & Southern Railroad Warehouse or Maintenance Shed	204 E. Bizzell Street	Laurinburg	Scotland	ca. 1971	CSX
SC0407	CSX Water Tower	South Side of Gulf Street and North of Railroad Tracks and E. Bizzell Street	Laurinburg	Scotland	ca. 1970	CSX
SC0408	Laurinburg & Southern Railroad General Office Building and Freight Station	South Corner of E. Railroad Street and Biggs Street	Laurinburg	Scotland	ca. 1918	CSX
VN0795	Possible Seaboard Air Line Freight Depot	4783 Raleigh Road	South Henderson	Vance	ca. 1944	CSX
VN0796	Possible Seaboard Air Line Rest House	4733 Raleigh Road	South Henderson	Vance	ca. 1920	CSX
WA2130	Norfolk Southern Railway Underpass Bridge over Norfolk Southern (NCDOT Bridge # 910034)	N. Selma Road	Wendell	Wake	1938	NS
WA8803	Norfolk Southern Railway Raleigh Rail Yard	1500 Carson Street	Raleigh	Wake	ca. 1914	NS
WA8804	Norfolk Southern Railway Raleigh Rail Yard Repair or Maintenance Shop	1500 Carson Street	Raleigh	Wake	ca. 1972	NS
WA8805	Norfolk Southern Railway Raleigh Rail Yard Office	1500 Carson Street	Raleigh	Wake	ca. 1972	NS
WA8806	Former Seaboard Air Line Railway Overpass Bridge over Dan Allen Drive	Dan Allen Drive	Raleigh	Wake	ca. 1918	CSX
WA8807	Former Seaboard Air Line Railway Railroad Yard Offices or Staff Buildings	south side of Peace Street	Raleigh	Wake	ca. 1965	CSX
WA8808	Former Seaboard Air Line Railway Overpass Bridge over Peace Street	Peace Street	Raleigh	Wake	ca. 1950	CSX
WR 802	Seaboard Coast Line Depot	713 U.S. Highway 1 South	Ridgeway	Warren	ca. 1954	CSX
WR 803	Railroad Overpass Bridge (NCDOT Bridge # 920019)	Over U.S. 158	Norlina	Warren	1920	CSX
WR 804	Norlina Depot and Transfer Platform	South Side of Hyco Street	Norlina	Warren	ca. 1918	CSX
WR 805	Seaboard Coast Line Norlina Maintenance Building	South Side of Hyco Street	Norlina	Warren	ca. 1954	CSX