



WAKE FOREST

WAKE FOREST MOBILITY HUB

2025 BUILD Grant Application



NORTH CAROLINA
Department of Transportation



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Wake Forest Mobility Hub

BUILD 2025

Accessible, multimodal, & vibrant



Conceptual Architecture Rendering

The Wake Forest Mobility Hub ("Mobility Hub") will advance regional and local multimodal transportation in Wake Forest, North Carolina – enhancing mobility options, connecting communities, increasing the resilience of the transportation network, improving the environment and spurring economic growth. This mobility hub will advance through design and construction of the full build-out in Wake Forest, continuing the regional momentum developed through strong partnerships and planning activities.

This mobility hub will be along the planned S-Line Rail Corridor, with a planned stop in Wake Forest. This grant supports the design and construction of a pedestrian bridge, multimodal amenities, retail space, and enhanced placemaking. To date, this project has completed a feasibility study and is working through preliminary engineering.

Project Alignment with Merit Criteria



SAFETY
Lessens vehicular travel which reduces vehicular crashes, injuries, and fatalities



ENVIRONMENTAL SUSTAINABILITY
Implements transportation-efficient land use and design



QUALITY OF LIFE
Improves access to daily destinations and reduces reliance and burden of vehicular ownership and travel



MOBILITY AND COMMUNITY CONNECTIVITY
Enhances community connectivity via multimodal transportation options



ECONOMIC COMPETITIVENESS AND OPPORTUNITY
Promotes public and private investments in land-use productivity



STATE OF GOOD REPAIR
Supports development opportunities, restores and modernizes infrastructure, and encourages long-term maintenance options

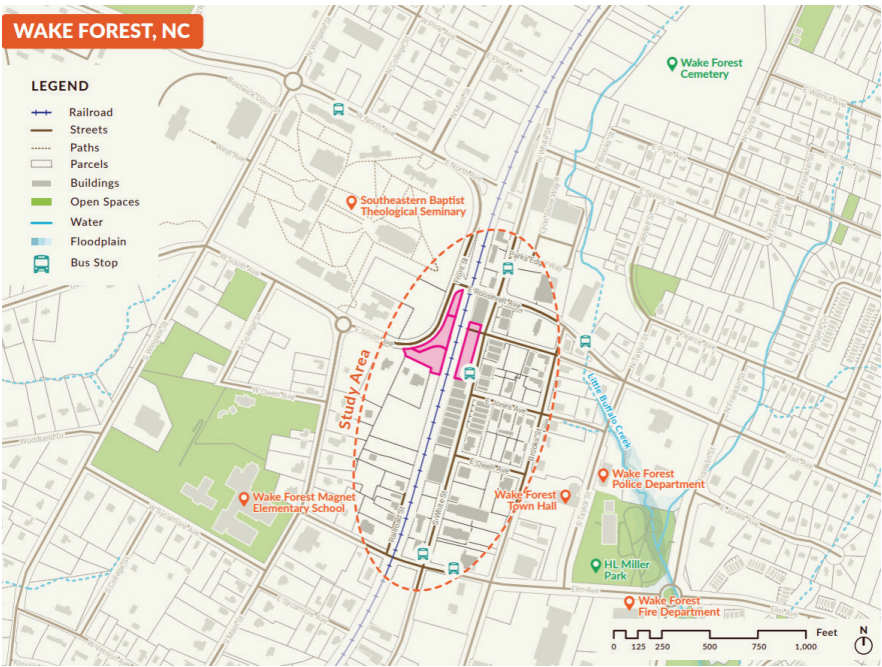



PARTNERSHIP AND COLLABORATION
Joins Wake Forest, regional transportation agencies, and NCDOT with local financial support



INNOVATION
Creates an accessible, user-friendly transportation experience tailored to each community – from origin to destination

WAKE FOREST	TOD STUDY	RAISE GRANT 2022			BUILD GRANT 2025		
	TOD Planning	Feasibility Study	NEPA	PE	Final Design	ROW	Construction



 **Connects to 6 other North Carolina locations along the S-Line**

Local Match: **\$6,250,000 (20%)** BUILD Funding Requested: **\$25,000,000 (80%)**



Total Project Cost: \$31,250,000

 **Provides access to Urban and Rural Communities**

Clear and significant benefits for all aspects of the project

-  Moving the mobility hub to shovel-ready phase or construction
-  Connects key rural and urban communities
-  Community buy-in & partnerships
-  Community readiness for innovative multimodal transportation investment
-  Supports development opportunities and economic growth
-  Support for historically disadvantaged communities
-  Connections to education, institutions, and workforce
-  Advances a transformational, nationally significant, passenger rail service
-  Unique community-specific approach that maximizes connections and access within a community's vision
-  Sustainable growth for a rapidly growing town



Project Description

The Wake Forest Mobility Hub will advance transportation within Wake Forest and surrounding areas - improving transportation options, the strength of the transportation network, and spurring economic growth.

The Better Utilizing Investments to Leverage Development (BUILD) grant is critical to advancing connectivity for Wake Forest and the larger region. Future passenger rail along the S-Line corridor will stop in Wake Forest and constructing an adjoining mobility hub will enable residents and visitors to more fully benefit from that rail service. In January 2025, the North Carolina Department of Transportation (NCDOT) was awarded Round 1 BUILD grant funding for the basic build out of the Wake Forest Mobility Hub. Wake Forest is requesting additional funding to complete the full build out, which will include additional amenities, such as a

pedestrian bridge, that the Feasibility Study for the mobility hub concluded were necessary for transportation benefits. Beyond Wake Forest, the full build out will enhance surrounding rural communities' access to passenger rail, local and regional bus services, pedestrian and bicycle facilities, and ridesharing options through integrated mobility technology. In this way, the hub will serve as a gateway to better education, jobs, and healthcare for communities along the S-Line corridor.

This access will therefore generate economic growth in Wake Forest and nearby communities.

The Wake Forest Mobility Hub builds on the Town's history of passenger rail service. This S-Line segment is a missing link in the regional vision for high performance passenger rail set by the Southeast Corridor Commission (SEC Commission), a partnership between North Carolina, South Carolina, Virginia, Tennessee, Georgia, Florida, and Washington, D.C. (Figure 1). The Town of Wake Forest is the gateway connecting rural communities along the northern S-Line

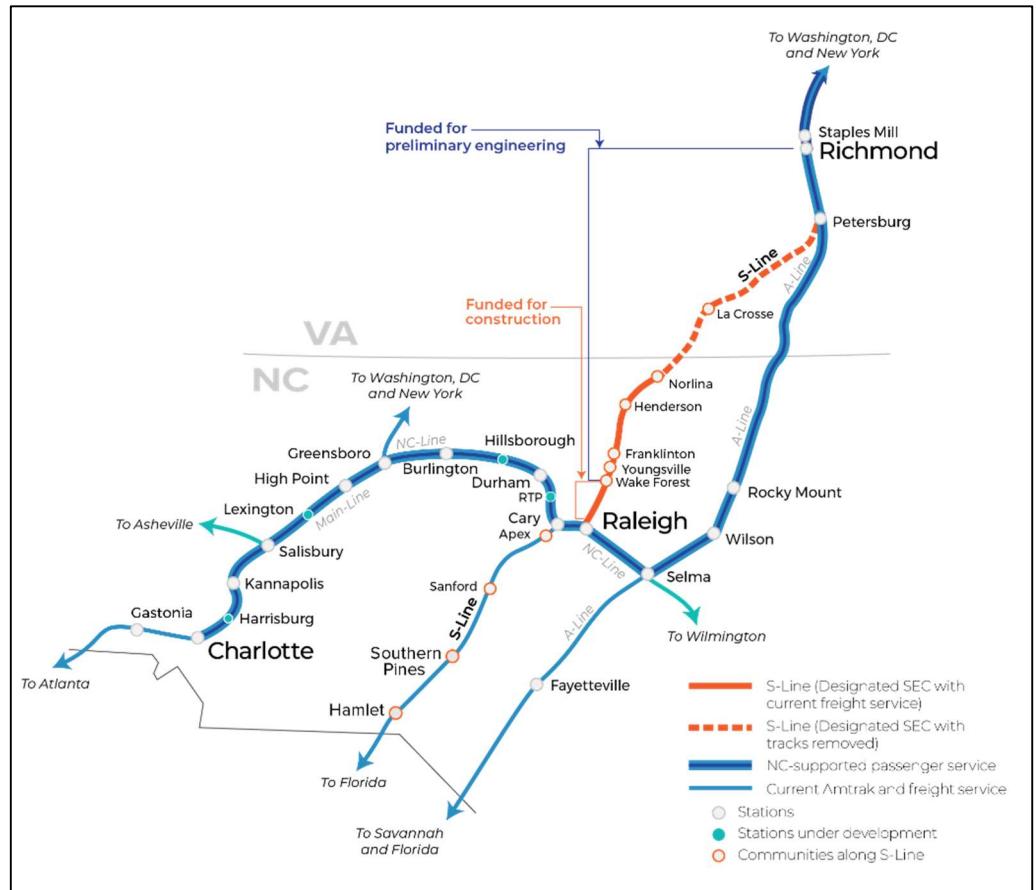


Figure 1: North Carolina S-Line Rail Corridor



corridor to the economic resources in the Triangle region. In 1992, long after the last passenger rail service through Wake Forest ended, the Federal Railroad Administration (FRA) identified the Southeast Corridor as one of five high-performance rail corridors to support safe, efficient, and sustainable transportation across growing regions. Since the end of rail service, there have been efforts to introduce other forms of transportation to Wake Forest. In 2022, a \$1.09 billion grant was awarded to NCDOT through the Federal State Partnership program to build rail service to Wake Forest. This has been the latest advancement in a sustained effort to reinstate the passenger rail service in this growing area. This grant was won on the historic precedence of efforts like the Richmond to Raleigh (R2R) Environmental Impact Statement (EIS) – which included rail service to Wake Forest – set for the region.¹

The FTA/USDOT TOD Planning Study grant supported the evaluation of market conditions, housing considerations, transportation connections, and other local policies, resulting in an actionable implementation playbook with concept designs, completed in 2023. Currently, Wake Forest is utilizing funds from the 2022 RAISE grant to carry their mobility hub through a feasibility study, NEPA, and preliminary design. Each grant has been a critical contributor to the evolution and development of the S-Line program overall, and they have each paved the way for Wake Forest to implement the first mobility hub along the S-Line corridor.

With the \$13.2 million awarded from Round 1 of the 2025 BUILD Grant, Wake Forest has the funds to complete the basic build out of the envisioned Mobility Hub. This phase includes a single floor station building complete with passenger waiting and ticket purchasing facilities, pick-up and drop-off areas for transit, and a rail platform. NCDOT has also applied for the Federal State Partnership grant in hopes to also support build out of the station.

Wake Forest seeks \$25 million in funding in Round 2 of the 2025 BUILD Grant to fulfill the Town's vision for the mobility hub and reap the full benefits of passenger rail. Upon completion of Wake Forest's Mobility Hub Feasibility Study, it became evident that more amenities are needed to ensure access to the hub for the community. For example, public engagement identified a desire for a green space, which would be funded by this grant, best suited itself to be on the west side of the tracks. A pedestrian bridge, which this grant would fund, would be a key connection from the station to this green space. Wake Forest has also completed more detailed design of amenities at higher estimates in anticipation of future growth. Full build out design includes: three stories, the pedestrian bridge, a rooftop patio, retail spaces, landscaping and green space, and ADA compliant facilities. Expanding the mobility hub beyond a basic single-story structure is essential to maximize its impact on the community. Retail spaces and a rooftop patio transform the hub into a vibrant community center, stimulating economic growth, creating jobs, and offering a welcoming environment for travelers and locals alike. Landscaping and thoughtful design foster a sense of community, making the hub not just a transit point but a community gathering place. These enhancements require additional funding but are vital for creating a space that meets the needs of a growing and diverse population in the Town of Wake Forest.

¹ <https://connect.ncdot.gov/resources/Rail-Division-Resources/Documents/SEHSR%20Tier%20I%20FEIS%20Study%20-%202002.pdf>

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People and Community

Wake Forest is an attractive destination for many, and, as the cost of living in the City of Raleigh rises and its population continues to grow, Wake Forest has become home to many new residents. In combination with the increasing population of people under 18 who may not be in the position to own a car, 12 percent of Wake Forest's population is over 65 years old which represents an aging population, 2.7 percent belong to zero car households, and 9 percent of the population experiences a disability. Therefore, the residents that are most likely to be unable or unwilling to drive make up roughly 47 percent of the town's total population.

The demand for transportation options will only continue to grow as new residents and industry continue moving to the Triangle region and sprawl into communities like Wake Forest. The Wake Forest Mobility Hub can serve as the epicenter for more connected regional travel and as the launching pad for other community mobility hubs, providing new connections, alleviating travel demands, addressing environmental concerns, and providing economic development opportunities for the Town of Wake Forest. Thorough planning in the TOD Study and the RAISE 2022 Mobility Hub Program, followed by thoughtful design and construction of this Wake Forest Mobility Hub, will ensure that there are efficient transportation options.

As of October 2024, Wake Forest began operating a microtransit service, allowing individuals to request rides when needed. The Town is currently seeking additional modes of transportation for its residents to supplement the microtransit service in anticipation of the S-Line stop. Such services would be strengthened with the construction of a central, full build out mobility hub, allowing for streamlined information and use of services and facilities, and seamless connectivity.



Figure 2: Rendering of full build out mobility hub



Project Location

The Wake Forest Mobility Hub is the first of many planned for the S-Line corridor. The community itself has an urban designation based on definitions from the grant’s Notice of Funding Opportunity (NOFO) and data from the 2020 U.S. Census.² This proposed location is at the heart of Wake Forest’s downtown. Within walking or cycling distance of the site are the local college, Southeastern Baptist Seminary, Wake Forest Baptist Church, a daycare center, community garden, numerous restaurants, offices, and residential areas. Also near the proposed mobility hub is the Wake Forest Elementary School, Boys and Girls Club, and a community center. Wake Forest is part of the Raleigh metropolitan statistical area, which has a population of 2 million people, that is continuing to experience significant growth. The nearby rural communities of Norlina, Henderson, and Franklinton – and the urban community just north of Wake Forest, Youngsville, NC - will also have access to the



Figure 3: Wake Forest Mobility Hub Concept Plan

Wake Forest Mobility Hub to employment, leisure destinations, and other community facilities not readily available to more rural areas. employment leisure destinations. Figure 3 shows the conceptual plan for the full build out of the site. The plan includes a pedestrian bridge across the railroad tracks that connects the station on the east side to additional amenities on the west. Decisions about architecture, land use, and improvements have been informed by public engagement and local plans during the feasibility study for the site.

² <https://www.census.gov/quickfacts/fact/table/wakeforesttownnorthcarolina/PST045223>



Specifically, to remain consistent with the historic architecture of downtown, the design of the mobility hub aligns with Wake Forest’s Downtown Plan (2024) subarea entitled “Historic White Street.” Alignment with the Downtown Plan means that the design of the mobility hub includes a zero-foot setback, preservation of street furniture, plantings, and pedestrian facilities. The full build out will be 2-3 stories high and include a pedestrian bridge (seen in Figure 4) over the train tracks, connecting Wake Forest physically and symbolically. The existing and future land use of the site both include commercial space, public/semi-public space, park and open space, and single-family detached living. The Hub will be designed to be dynamic, adapting as the community needs change.



Figure 4: Architectural Concept Plan



Project Budget

Budget Table

Funding Source	Component One	Total Funding
BUILD Round 2 Funds:	\$25,000,000	\$25,000,000
BUILD FY 2024 Project of Merit (Awarded):	\$13,200,000	\$13,200,000
Other Federal Funds:	\$10,250,000	\$10,250,000
Non-Federal Funds:	\$12,550,000	\$12,550,000
Total Project Cost:	\$60,000,000	\$60,000,000

NOFO Table 2a

2020 Census Tract(s)	Project Costs per Census Tract
542.24	\$60,000,000.00
Total Project Cost:	\$60,000,000.00

NOFO Table 2b

Urban/Rural	Project Costs
Urban (2020 Census-designated urban area with a population greater than 200,000)	\$ 60,000,000
Rural (Located outside of a 2020 Census designated urban area with a population greater than 200,000)	\$ 0.00
Total Project Cost:	\$60,000,000

Sources, Uses, and Availability

A 20 percent match has been provided and approved by the Town of Wake Forest. A Resolution Letter has been included as part of this application. NCDOT will be administering the grant.

Table 1. Funding Commitments

Mobility Hub Location	Total Cost	Match Required	Community Match	BUILD Funding Request
Wake Forest	\$31,250,000	Yes	\$6,250,000 (20%)	\$25,000,000



Contingency Amount and Plan

A 10 percent contingency of total cost has been budgeted for the full build out. In the event of cost overruns, the Town of Wake Forest would seek procurement of additional funds or pursue cost saving opportunities while still delivering all aspects of the project. The contingency dollars are factored into each task, shown in Table 2.

Level of Design & Cost Estimates

To date, the level of design completion for the Mobility Hub is at 5 percent. Wake Forest has finalized the Mobility Hub Feasibility Study and currently, NEPA and preliminary engineering (15 percent) are expected to be complete in June 2025. The final design of the full build out is estimated at about 6 percent of construction costs, or \$1,600,000.

Cost estimates were completed based on the feasibility study, which includes costs for the full build out of the station. The full build out includes a pedestrian bridge, second and third floors for the main station, associated stairs and elevators for second floor access, retail spaces on the first floor, and all amenities on the west side, including station building, and site improvements.

Cost Share

As an urban project, the required match is 20 percent. The Town of Wake Forest is providing the 20 percent match. NCDOT is requesting an 80 percent cost share for this grant.

Table 2. Mobility Hub Cost Breakdown

Mobility Hub Location	Mobility Hub Type	Task	Cost	Total
Wake Forest	Full Build Out	Final Design	\$1,600,000	
		ROW	\$5,000,000	\$31,250,000
		Construction	\$24,650,000	



Merit Criteria

Safety

KEY HIGHLIGHTS

- Reduces vehicle volumes on roadways, lowering the potential for crashes and fatalities
- Incorporates pedestrian-oriented design
- ADA accessible space
- Supports rail travel, the second safest form of travel

The Wake Forest Mobility Hub will reduce vehicular travel demands on Wake Forest and the Triangle Region’s rural and suburban roads by offering a reliable, alternative method of transportation, consequently reducing the potential for vehicular crashes and associated injuries and fatalities. The Mobility Hub will create a space for people to move safely and conveniently between transportation modes in one location. A key consideration in the design of the station is safety and security of non-motorized travelers. This includes access to and circulation within the site when considering all mobility options as well as first and last mile connections to and from the site. Currently, the town is split down the middle by the current rail line. At-grade pedestrian crossings are the only crossings that exist, which will be closed with the construction of the updated passenger rail line (for safety). To further address connectivity and support safe crossings, this mobility hub will also include the construction of a pedestrian bridge.

The current design of the mobility hub is consistent with the USDOT’s National Roadway Safety Strategy, specifically addressing elements of the Safe System Approach and the associated impacts on climate change and equity.³ The Mobility Hub will link numerous communities in and around Wake Forest through rail travel, which is the second safest form of transportation after flying.⁴

As previously detailed, Wake Forest and surrounding towns are anticipating rapid growth in the future as the Raleigh-Durham region continues to expand, adding more travelers to the transportation network. The Mobility Hub will spur other transportation projects for connections within Wake Forest and greater mobility throughout the region. The Mobility Hub has included pedestrian-oriented design that strives to lower vehicle speeds due to high pedestrian activity at and around mobility hubs.

³ <https://www.transportation.gov/sites/dot.gov/files/2022-02/USDOT-National-Roadway-Safety-Strategy.pdf>

⁴ Savage, Ian. Comparing the fatality risks in United States transportation across modes and over time, 2013. <https://www.sciencedirect.com/science/article/abs/pii/S0739885912002156>



Environmental Sustainability

KEY HIGHLIGHTS

- Reduce transportation-related air pollution and greenhouse gas emissions
- Implements transportation-efficient land use and design
- Options for area delivery services and amenities
- Natural home for energy efficient investments
- Incorporates natural infrastructure

Environmental sustainability was central to the design of the mobility hub. To avoid negative impacts to environmental resources within and around the site, NEPA documentation is being completed in the early winter of 2025. Figure 5 shows the preliminary mapping of the natural resources in the study area. As the figure details, the study area does not interact with key environmental features, such as the floodway or flood hazards.

To remain consistent with the historic architecture of downtown, and implement transportation-efficient land use and design, the building will be 2-3 stories high, and materials will reflect the architecture of Wake Forest while also reflecting a modern element with high windows and ceilings. The existing and future land use both include commercial space, public/semi-public space, park and open space, and single and multi-family living. The features of the mobility hub will draw upon Wake Forest's history of being a compact and walkable downtown. The green space on the west side of the tracks will also incorporate nature-based solutions with the use of native plants, which supports Wake Forest's Urban Forestry efforts highlighted in the Unified Development Ordinance (UDO)⁵.

The Mobility Hub brings transportation options together that can optimize private car parking and use, reducing congestion on highways—a major step in reducing greenhouse gas emissions. The Hub has allotted space for parcel pick up and drop off, park and ride, and other logistical uses. The Wake Forest Mobility Hub will create a central transportation node on planned or existing networks. When it comes to rail travel, on a per-passenger-mile basis, it is more energy efficient than traveling by car or air and provides lasting environmental benefits.⁶ According to the EPA, almost 60 percent of transportation sector emissions are from personal vehicles.⁷ The use of the Mobility Hub has the opportunity to provide over \$300,000 in savings for carbon emissions.

⁵ <https://www.wakeforestnc.gov/public-works/urban-forestry/urban-forestry-udo>

⁶ <https://doi.org/10.2172/1767864>

⁷ US Environmental Protection Agency. <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>

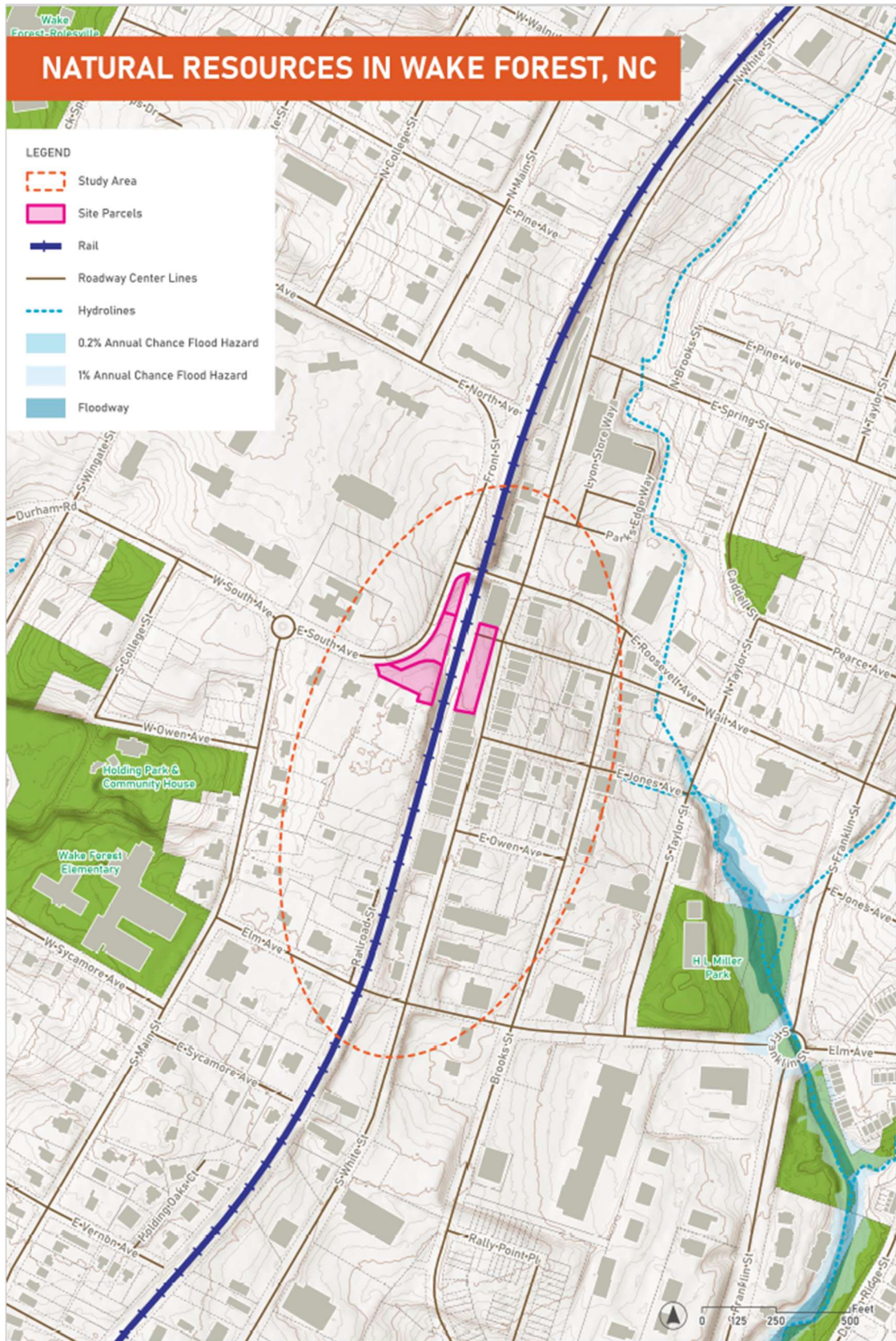


Figure 5: Natural Resources Existing Conditions Map

Quality of Life

KEY HIGHLIGHTS

- Lessens the burden of transportation costs
- Saves on commuting time, giving people time back in their day
- Creates vibrant shared spaces accessible to all, creating a strong sense of community
- Supports transit-oriented development (TOD) principles
- Connects rural communities with more economic opportunities

The construction of the mobility hub will improve the quality of life for many members of the community by improving access to daily destinations and implementing transportation efficient land use. This connection has the opportunity to lessen the burden of transportation costs for all. The BCA shows a total vehicle cost savings of \$1.4 million. The mobility hub will also provide access to the local college, a daycare, the Town of Wake Forest offices, single-family homes, apartments and townhomes, a church, a park, and numerous restaurants. Pedestrian access on both sides of the rail tracks will be maintained with the pedestrian bridge, a key component of the success of this mobility hub and accessibility for all populations in Wake Forest. The west side of the tracks will also include significant outdoor recreational space, a preferred amenity that was chosen during community outreach during the feasibility study. Enhanced amenities for economic development, including retail space, will also improve quality of life. The Town of Wake Forest is committed to supporting transit-oriented development (TOD) – outlined in the S-Line TOD Study (2023) - which seeks to reduce transportation and housing cost burdens by integrating mixed-use development with multimodal transportation infrastructure. TOD provides many benefits like improved mobility and access, economic development, and mitigation of urban heat islands. Figure 6 shows a rendering of the potential of TOD in Downtown Wake Forest. Overall health benefits calculated in the BCA come out to over \$12.3 million. In addition to the enhanced transportation options that the mobility hub creates, increasing ones quality of life, these costs savings have great opportunity to also increase quality of life factors.

Figure 6: Downtown Wake Forest TOD Rendering





Mobility and Community Connectivity

KEY HIGHLIGHTS

- Connects rural communities to Wake Forest job centers
- Supports a thriving community where all people can work, live, and play
- Enhances community connectivity with a central multimodal hub
- Provides access to mode choices for users of all ages, abilities, and backgrounds

The Wake Forest Mobility Hub is designed to deliver significant mobility and connectivity benefits, addressing gaps in the existing transportation network and laying the foundation for a more integrated system in the Southeast. By providing transit, micro-mobility, and on-demand options, the hub ensures connectivity for users of all ages and abilities. The inclusion of bicycle infrastructure, pedestrian pathways, and rideshare services reinforces the hub's importance alone in connecting Wake Forest and surrounding communities to daily destinations like jobs, healthcare, grocery stores, schools, places of worship, recreation, or parks.

Further emphasizing the impact the hub will have on the community, the hub will connect people to the future S-Line intercity passenger rail service. With ADA-compliant, regional mobility hubs at each stop along the S-Line, the rail service will establish, accessible regional transportation options. This system is expected to create a significant shift from automobile use to rail, with over 65 percent of intrastate and interstate rail travel projected to transition to this sustainable mode of transport. The Wake Forest Mobility Hub is a key component of this vision, serving as the initial step in reconnecting communities and providing affordable, efficient transportation options.

A primary objective of the Wake Forest Mobility Hub is to implement transit-oriented development that benefits existing residents and businesses. The final design of the mobility hub plans to include options for retail and a safe gathering space for individuals to use on a daily basis.

The hub's design also addresses first/last-mile connectivity challenges by integrating multimodal networks and wayfinding systems. These features provide clear and direct pathways to surrounding neighborhoods and destinations, fostering greater community connectivity. Digital amenities such as real-time information displays and app integration further enhance accessibility, ensuring that travelers can plan and execute their journeys with confidence and ease. Figure 7 below identifies the key transportation components of the hub.



Station.

The station program area includes elements within the 'Station Building', the platform, and supporting infrastructure. The Amtrak Station Program and Planning Guidelines serves as a reference for this program area.

Park and Ride.

The park and ride component includes long term parking for transit patrons. This can be in the form of surface parking lots or structured parking.

Station Entrance | Public Plaza.

The entrance to the station and public plaza serves as a primary entrance, staging, and gathering place for the station. The plaza serves as an opportunity to integrate the station within the local context and connect other program areas back to the station platform.

Bus Integration.

Bus integration can provide structured bus bays for local, express, commuter, and BRT bus service. The bus bays may be elevated for level boarding, include infrastructure for electric bus charging, and vary in size from small paratransit or on-demand transit services to larger, traditional fixed route buses.

Rideshare.

The rideshare program area includes passenger drop off for private vehicles and on-demand rideshare (Uber, Lyft, etc.). This may be in the form of on-street drop off, drop off loops or similar arrangements.



Figure 7: Distinct Program Areas for the Mobility Hub

Economic Competitiveness and Opportunity

KEY HIGHLIGHTS

- Connects rural communities to the urban core of the region
- Supports growth—mix of uses, housing, and employment concentration
- Improves regional economic strength
- Supports management of travel demand for goods
- Reduces the burden of commuting

As detailed in previous sections, the Wake Forest Mobility Hub will serve as an inter-regional destination and attract supportive levels of mixed-use development. A key design consideration has been economic competitiveness, highlighted in the dedicated retail and office space in the Mobility Hub full build out design. This space will promote public and private investments, with the potential to serve as additional office space for the Town of Wake Forest. Located on White Street, the site naturally fosters concentrations of employment. This Hub will create financial synergy between transit access and surrounding development—concentrating housing and jobs through mixed-use developments near the Hub.⁸

With almost 440,000 jobs within a 5-mile radius of the S-Line, the corridor between Norlina and Sanford is an economic engine for the region, with Wake Forest at the center (Figure 8). The construction of the proposed Wake Forest Mobility Hub is the next step in successfully preparing the Town for passenger rail service and connections to the economic centers in the corridor.

Increasing connectivity through multimodal transportation, which connects labor markets to economic hubs results in benefits such as:

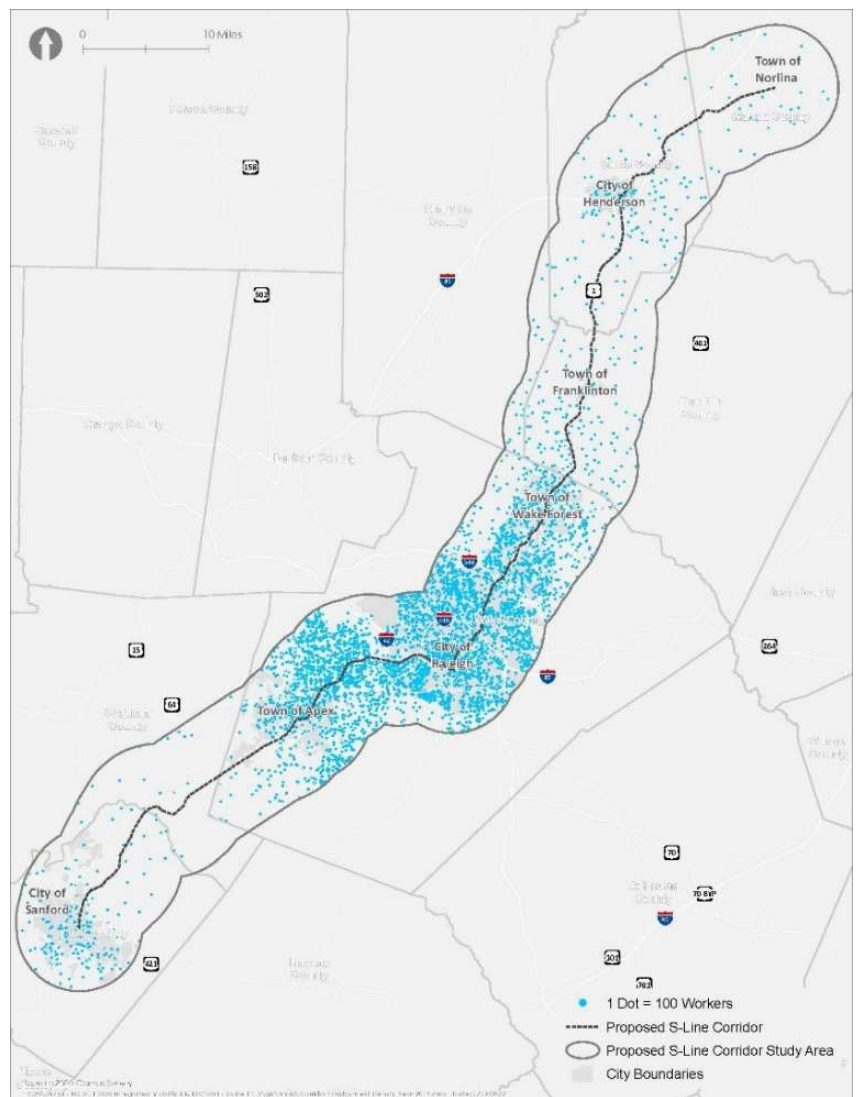



Figure 8: Corridor-wide job density

⁸ <https://www.wakeforestnc.gov/sites/default/files/uploads/planning/renaissance-plan-for-downtown-wake-forest-2017.pdf>

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- More people at work as a result of commuting travel time savings;
 - Enabling people to work longer or more flexible hours because they spend less time commuting;
 - Enabling people to work while in transit;
 - Some people changing to higher paying and a more productive jobs, as better transportation increases the accessibility of more employment options; and.
 - Greater tax revenues from increased business and employment.

Freight rail will also benefit from the intercity passenger rail investment. The S-Line is roughly parallel to the A-Line, a freight rail line just east of the S-Line. The A-Line is CSX's primary north-south corridor that generally parallels I-95 along the eastern seaboard and also carries passenger rail. Improving the S-Line for high-performance passenger rail will increase the potential freight capacity on the A-Line. Completion of the project and implementation of the proposed passenger rail service along the newly restored and upgraded portions of the S-Line will provide an alternative to 133 miles of the congested A-Line between Selma, NC and Collier, VA, improving mobility. However, the rail and then the mobility hubs must be constructed for this connection to come to fruition. Shifting the daily passenger trains to the S-Line and off of the A-Line will relieve train delays on the A-Line corridor, thereby improving freight train service and reliability, reducing total train hours in road service and related freight rail operating costs and emissions. The S-Line restoration also provides an additional line for freight when the A-Line has to be closed due to hurricanes and storms.

In addition to supporting where people can work, the Wake Forest Mobility Hub will create engaging public spaces, safe and comfortable transportation choices. With the Wake Forest Mobility Hub being the catalyst for more regional transportation options, it can revitalize the communities along the S-Line that were originally built on the rail. The rural communities surrounding Wake Forest and along the S-Line corridor were once robust, booming communities dependent on the rail line. Both the restoration of a passenger rail service and the creation of the Wake Forest Mobility Hub would support revitalization efforts in these communities and bridge significant transportation gaps between the urban and rural centers.



State of Good Repair

KEY HIGHLIGHTS

- Supports the viability of passenger rail on the S-Line
- Positions the community for future maintenance success
- Presents opportunities for public-private partnerships
- Mode options support the resiliency of roadways
- Prioritizes long-term maintenance expansion alternatives and partnerships

In the feasibility analysis activities for the Wake Forest Mobility Hub, the future State of Good Repair (SGR) was considered for future maintenance success. Dedicated yearly funding has been attributed to maintenance and operations costs of the hub after construction. Currently, the Mobility Hub space serves as a small surface parking lot. This surface lot does not support the development goals of downtown Wake Forest, where new parking areas have been designated adjacent to White Street in the Town's Downtown Master Plan⁹. Creating an economic use of this space by way of retail and multimodal transportation options improves the condition and addresses transportation system for Wake Forest. Maintaining and expanding these investments is crucial for access and reliability of the transit infrastructure at the Mobility Hub. Additionally, much of the S-Line rail corridor is currently an abandoned line. The Mobility Hub construction is critical to the success of the restored S-Line, as its construction will support the overall use of intercity rail opportunities.

The Wake Forest Mobility Hub also contributes to the viability of the S-Line through development opportunities, and public-private partnerships. In addition, due to the mode shift this will inevitably support, the resiliency of roadways will be improved by reduced traffic and therefore reduced operations and maintenance costs incurred by the communities and state for roadway maintenance. Highway externality savings, according to the BCA, total \$6.3 million. This will allow for improved investment in other modes and a broader impact on the overall transportation system. To maintain a state of good repair, the Wake Forest Mobility Hub will approach design and construction with maintenance prioritization. The feasibility assessment evaluates the Hub site for efficient maintenance opportunities and access for equipment, supporting the resiliency of the Hub assets. This long-term approach will help address the current lack of mobility options outside of the automobile and ensure access well into the future. NCDOT will also partner with Wake Forest to maintain the Hub, to include the maintenance of the rail track or sponsorship of transit operators. Additionally, the connected retail and commercial businesses (revenue generators) will create a unique opportunity to generate revenue to assist in the state of good repair. Public-private partnerships will be evaluated for the long-term operations of each Hub.

⁹ <https://www.wakeforestnc.gov/planning/wake-forest-downtown-plan>

Partnership and Collaboration

KEY HIGHLIGHTS

- Partnership of public and private stakeholders, state and local officials, regional and non-profit organizations
- Built from existing partnerships that have successfully moved the S-Line vision forward
- Significant community engagement to date
- Limiting impacts on private property

During the feasibility study stage and as part of NEPA, the project team engaged residents and community-based organizations, coordinated with other projects, like the Downtown Wake Forest Plan and partnered with historically underrepresented groups. For communication, a project website was maintained, along with social media, a community survey with over 300 responses, 20 stakeholder interviews, over 170 interactions at pop-ups, an open house with over 100 attendees, and a multiday design workshop. These outreach events largely influenced the design of the mobility hub. Members of the public commented on their current transportation concerns in Wake Forest, their visual preferences for a hub, and priorities for amenities, like clean restrooms, streets designed for pedestrians, and real time travel information. Figure 10 shows the design considerations the public preferred. Strong relationships were made as part of this study that will be maintained in further design and construction.



Figure 9: Residents attend Mobility Hub Workshop

As detailed in previous sections, partnerships for revitalizing the overall S-Line corridor have also been ongoing for numerous years, and Wake Forest has been at the table from the beginning. During the NEPA-compliance efforts for the rail infrastructure, NCDOT worked with Wake Forest to guide rail design. Stakeholder Engagement allowed the Wake Forest community

Design Considerations



Complements nearby architecture and historic structures



Welcoming/ accessible spaces



Green/open space



Restaurant space



Sustainability/ climate resilient design

Figure 10: Community Design Preferences

to share their opinions on Mobility Hub location, design, and amenities. These meetings have helped ensure we are meeting the needs of the community the hub intends to service. Wake Forest, in partnership with NCDOT, also completed the TOD Planning Study¹⁰, which fostered clear and regular collaboration through committee membership for municipal leadership and staff. Wake Forest has been a key contributor to required matches, not only providing a 20 percent match for this grant, but also providing a match for the RAISE 2022 grant. Other stakeholders currently at the table for the Wake Forest Mobility Hub include staff from local agencies, local government, and community organizations, many of which provided Letters of Support for this application (see Letter of Support Attachment).

Wake Forest recently completed an update of their Downtown Plan in 2024¹¹. This plan provides recommendations that serve as a guide for future land use and development, transportation and parking, pedestrian mobility, redevelopment opportunities, and streetscape improvements throughout Downtown Wake Forest. The Downtown Plan also advances the TOD Study work and identifies more opportunities to support housing.

The genesis of the Wake Forest Mobility Hub has been to maintain connection for the community through multiple means of transportation options. The Wake Forest Mobility Hub will continue to grow collaboration efforts with stakeholders, regional and state interested parties, and, more importantly, members of the local community.

¹⁰ <https://www.ncdot.gov/divisions/integrated-mobility/innovation/s-line-study/Pages/default.aspx>

¹¹ <https://www.wakeforestnc.gov/planning/wake-forest-downtown-plan>

Innovation

KEY HIGHLIGHTS

- Offer integrated mobility options, amenities, and technology
- Unique service delivery approach
- Project delivery through continuous partnerships to ensure transit-readiness
- Create space for emerging mobility services and new technology

Wake Forest will be the first mobility hub in North Carolina. Not only is the partnership between NCDOT and Wake Forest unique and innovative, but the project delivery methods to accomplish both the rail construction and mobility hub construction in a timely fashion are innovative as well. While design and construction continue for rail, the planning for the Mobility Hub has accelerated, ensuring that Wake Forest is well-prepared in advance of establishing intercity passenger rail service. This includes a strong partnership and coordination with supporting agencies, including NCDOT, FTA, and FRA to complete all stages of design and NEPA in a timely, streamlined manner. The NEPA analysis is currently being completed under the guidance of FTA and is expected to be complete mid-2025.

The Wake Forest Mobility Hub will also offer innovative transportation options, including bicycle docking, and rideshare pick-up and drop-off. The hub will support Wake Forest’s current microtransit program. The station will include real-time train information and advanced ticketing software. Figure 11 shows the west side of the tracks, where additional programming could be achieved for other transportation uses.



Figure 11: Potential Drop Off Locations

Project Readiness

Schedule

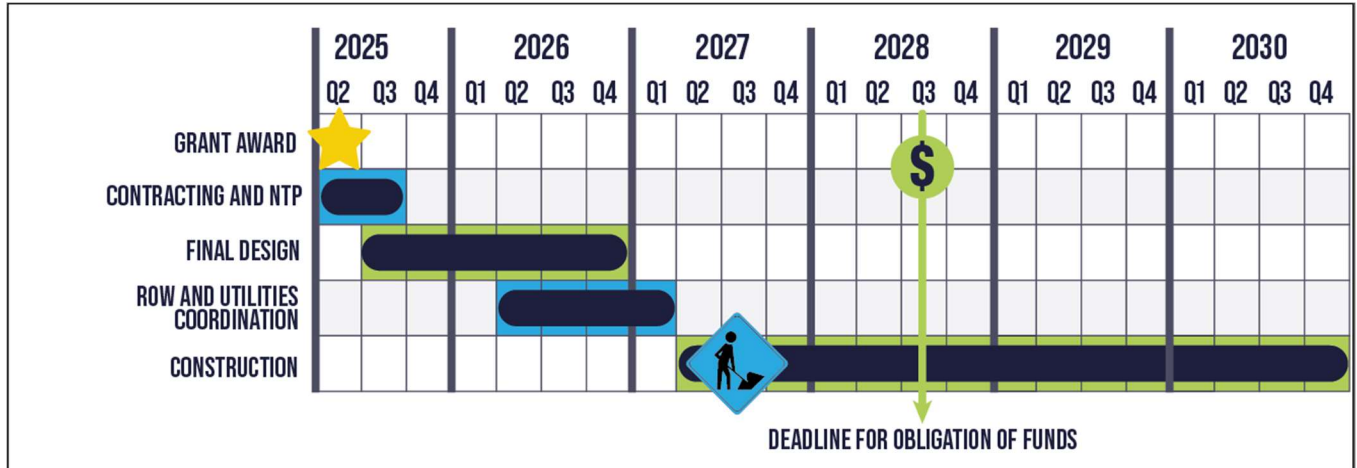


Figure 12: Wake Forest Mobility Hub Schedule

Figure 12 shows the tentative schedule for the use of these BUILD funds, assuming the grant is awarded in the second quarter of 2025. Construction will be complete four years in advance of the funding expenditure deadline (September 30, 2034). Figure 13 shows the progression of the Mobility Hubs, how they have been funded, and the intent of this BUILD 2025 Round 2 grant is to support the construction of the full build out Wake Forest Mobility Hub.

WAKE FOREST	
TOD STUDY 2020	TOD Planning
RAISE GRANT 2022	Feasibility Study
	NEPA
	PE
RAISE GRANT 2025	Final Design
	ROW
	Construction

Figure 13: Mobility Hub Development



Environmental Risk Assessment

Required Approvals

The NEPA process for the Wake Forest Mobility Hub is underway, with an anticipated completion date of June 2025. The Wake Forest Mobility Hub may be located within a national registered historic district and may require compliance with Section 106. Right-of-way acquisition plans are not final but will be pursued after NEPA.

State and Local Approvals

Wake Forest has provided continued support for the S-Line program and is providing 20 percent match for this application. This project is supported statewide and by the community, as shown in it being included in the TOD Planning Study that NCDOT completed in 2023, Wake Forest Transit Plan, also completed in 2023, the Wake Forest Downtown Master Plan, completed in 2024, and the Mobility Hub Study¹², ending in 2025. The project will also include all necessary review and approval from NCDOT as it progresses.

Assessment of Project Risks and Mitigation Strategies

Based on local knowledge, coordination with the Wake Forest, and a high-level analysis, a risk register continues to be updated and reviewed to proactively identify solutions. A summary of risks identified to date and mitigation measures is shown in Table 3.

Table 3: Project Risks and Mitigation

Risk	Mitigation
Site Conditions	NEPA will be completed by June 2025 to identify any site constraints. The schedule has built-in contingency to address environmental uncertainties, such as historic properties and utility conflicts.
Federal Process Compliance	Wake Forest and NCDOT have extensive experience complying with federal processes, including grants, NEPA, and permitting. Coordination efforts with agencies will continue throughout all phases of the Wake Forest Mobility Hub.
Community Buy-In	To accomplish consensus-driven, individualized outcomes, it will be critical for community members to have a seat at the table during all phases of the Wake Forest Mobility Hub. Community outreach is a key part of every step through construction.
ROW Acquisition	Potential ROW needs will be defined by December 2025 and early discussions with property owners will occur.
Construction Environment & Impacts	Construction cost estimates include a contingency for escalation. Trends will be monitored, and the project risk

¹² <https://www.ncdot.gov/divisions/integrated-mobility/innovation/Pages/s-line-mobility-hubs.aspx>



	assessment will be updated as necessary. Availability of resources will also be monitored.
Schedule	The current schedule provides flexibility for unforeseen delays or potential issues to ensure funds are obligated and activities complete in compliance with the grant requirements.

Technical Capacity Assessment

Federal Funding

The Town of Wake Forest will serve as the BUILD 2025 applicant and recipient responsible for administration of the grant if selected for the award and will provide program management and oversight of project delivery. NCDOT will lead the administrative requirements of grant management and will conduct reviews during the design and construction submittal processes. NCDOT will also oversee the Construction Engineering Inspection (CEI) process. For day-to-day management, a Wake Forest project manager will be assigned for all construction-related issues, and an NCDOT grant coordinator will be assigned for grant-related tracking and compliance. Working in close collaboration with its partners and the design and construction teams, the Town will be a successful manager and steward of these funds. The Town will leverage NCDOT's extensive experience completing successful TIGER, BUILD, BUILD, NSFLTP, and INFRA projects and administering federal transit and rail funding to reduce and mitigate risk. The Town will also leverage NCDOT's expertise in understanding USDOT's requirements and maintaining the records and accounting systems that will allow it to comply with the BUILD program's reporting and administration requirements. This project will provide leadership for safe, affordable, and innovative multimodal transportation throughout North Carolina. To deliver the Project, NCDOT will work closely with Wake Forest to improve mobility and system performance.



Benefit-Cost Analysis

The Better Utilizing Investments to Leverage Development (BUILD) Grant will support the construction of the **Wake Forest Mobility Hub** (the Project) creating a vital multi modal connection for North Carolina’s Triangle region. The Mobility Hub will be the first transit hub constructed along the S-Line corridor, a rail corridor that is anticipated to add passenger rail service for the southeast region. The Mobility Hub will include connections to passenger rail and bus service, as well as pedestrian bicyclist facilities.

The benefits and costs of the Wake Forest Mobility Hub were quantified using a benefit-cost analysis (BCA) in accordance with the November 2024 U.S Department of Transportation’s recommend BCA methodology.¹³ As seen in Table 1 the BCA indicated **the Project will provide a benefit cost ratio of 1.01.**

Per the BCA guidance, a discount rate of 3.1 percent was used, and all monetized benefits and cost are in 2023 dollars reflecting net present values (NPV). Final design is anticipated to begin in 2025, with construction complete by 2029. The benefits of the Project are assumed to start in 2030 and are considered through 2059 (a 30-year analysis period). A summary of the benefit-cost analysis is provided in Table 1. A full description of the data and assumptions used as part of the benefits and cost calculation are included in the following sections.

¹³ U.S. Department of Transportation, Office of the Secretary, “Benefit-Cost Analysis Guidance for Discretionary Grant Programs,” November 2024.

Table 1: Project Costs and Benefits (2023 Dollars, 3.1% Discount Rate)

BENEFITS	
Safety	\$2,383,00
Travel Times Savings	\$798,235
Vehicle Operating Cost Savings	\$1,477,557
Emissions Reduction	\$347,059
Avoided Highway Externality	\$6,311,452
Amenity Benefits	\$6,482,576
Health Benefits	\$12,263,081
Residual Value	\$7,957,353
Subtotal of Benefits	\$34,713,810
COSTS	
Capital Cost	\$34,530,945
Subtotal of Costs	\$34,530,945
Net Present Value	\$182,866
BENEFIT-COST RATIO	1.01

The following section summarizes the methodology and assumptions used to estimate the potential benefits from the Project.

Safety

The Project anticipates safety benefits from a reduction in Vehicle Miles Traveled (VMT). It was assumed that the construction of the Mobility Hub will result in a mode shift away from personal motorized vehicles. The reduction in VMT was applied to the North Carolina statewide crash rates from 2019 to 2023 to find the percentage reduced. Using the BCA guidance value for crash types, the Project results in a total cost savings of \$5,121,358 (2023 \$), discounted to \$2,383,00 (2023 \$).

Travel Times Savings

The Project will result in 16 minutes of travel times savings between Raleigh and Wake Forest. Based on the anticipated travel time savings and the reduction in VMT, total annual hours saved was applied to the BCA guidance value of \$19.40 for personal vehicles to calculate savings. This resulted in a total savings of \$1,715,503 (2023 \$) over the 30-year period, discounted to \$798,235 (2023 \$).

Vehicle Operating Costs

The Project anticipates a benefit to vehicle operating costs due to the reduction in annual VMT. The BCA guidance value for Light Duty Vehicles of \$0.56 per mile was applied to the VMT reduction over the 30-year period resulting in a total cost savings of \$3,175,449 (2023 \$), discounted to \$1,477,557 (2023 \$).



Emissions Reduction

The Project assumes there will be a mode shift from passenger vehicles to transit resulting in a reduction in CO₂ emissions. The BCA guidance value for Light Duty Vehicles – Urban of \$0.110 per mile was applied to the VMT reduction over the 30-year period resulting in a total cost savings of \$578,591 (2023 \$), discounted to \$347,059 (2023 \$).

Avoided Highway Externality

The Project assumes there will be a reduction in passenger vehicles using highways based on the assumed reduction in VMT. The BCA guidance value for Light Duty Vehicles – Urban of \$0.143 for congestion, \$0.002 for noise, and \$0.02 for safety was applied to the VMT reduction over the 30-year period resulting in a total cost savings of \$11,960,832 (2023 \$), discounted to \$6,311,452 (2023 \$).

Amenity Benefits

The construction of a new Mobility Hub will install a number of new amenities both in the facility and within the new passenger rail vehicles. Based BCA guidance values, the anticipated amenities result in a benefit of \$4.83 per ride. Using projected ridership derived from the reduction in VMT, the total cost savings over the 30-year period is \$12,285,129 (2023 \$), discounted to \$6,482,576 (2023 \$).

Health Benefits

The Project is assumed to induce pedestrian and cyclist trips due to the improvements to active transportation facilities. Based on the Project area's census block data from 2017 to 2023 and mode share estimates from the American Community Survey, induced active transportation trips were calculated for the 30-year period. The BCA guidance value for walking (\$8.06) and cycling (\$7.18) was applied to the induced walk and bike trips over the 30-year period resulting in a total cost savings of \$28,375,616 (2023 \$), discounted to \$12,263,081 (2023 \$).

Residual Value

The Project's useful life extends beyond the 30-year analysis period. Per the USDOT's BCA guidance the residual value calculates the remaining value of the asset's service life beyond the analysis period. It is assumed the Project has a useful life of 75-years (40-years of additional service life). It was calculated the residual value at year 2059 is \$23,882,543 (2023 \$), discounted to \$7,957,353 (2023 \$).

Cost

This section describes the Project's capital costs. Costs are broken out by Preliminary & Final Design, Construction Engineering, and Construction Costs. The analysis assumes an annual inflation rate of 4% per year to convert between year of expenditure dollars and constant dollars (2023 \$). Table 2 shows the cost elements included in the capital cost estimate.

Table 2: Capital Costs by Year

Year	Total Cost	Cost in 2023 \$
2025	\$779,176	\$720,392
2026	\$6,558,353	\$5,830,352
2027	\$12,155,153	\$10,390,276
2028	\$14,181,012	\$11,655,758
2029	\$14,181,012	\$11,207,460
Total	\$47,854,706	\$39,804,238

The total discounted capital cost for the Project is \$34,530,945.

Summary

The construction of a Wake Forest Mobility Hub will provide substantial benefits to communities in the Wake Forest area and future users of the S-Line passenger rail service. The benefits and costs of these improvements were quantified using a benefit-cost analysis conducted in accordance with the November 2024 U.S Department of Transportation’s recommend BCA methodology.¹⁴ Benefits quantified include safety, travel time savings, vehicle operating savings, emissions reductions, avoided highway externality, amenity benefits, and residual value. The benefits total \$80,937,971 (2023 \$), discounted to \$34,713,810 (2023 \$). This compared to the total capital costs of \$39,804,238 (2023 \$), discounted to \$34,520,945 (2023 \$) yield a net present value of \$182,866 and a **benefit-cost ratio of 1.01**.

¹⁴ U.S. Department of Transportation, Office of the Secretary, “Benefit-Cost Analysis Guidance for Discretionary Grant Programs,” November 2024.