



LINEBERGER CONNECTOR

BUILD 2020

Submitted by:

City of Gastonia, North Carolina

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SECTION 1: PROJECT DESCRIPTION

Section 1.1: Project Description

A gateway. A pedestrian link. A network connector.

A recovery opportunity.

The City of Gastonia, in conjunction with the City of Lowell and Gaston County, seek \$18,110,358 (60%) in BUILD Discretionary Grant funds to complete the \$29,934,938 package needed to implement the **Lineberger Connector Project** between the two communities. The City of Gastonia has committed a combination of matching funds from both local and private sources in the amount of \$11,824,580 (40%). As shown in **Figure 1**, the Lineberger Connector Project is **completely located in a federally designated Opportunity Zone**.

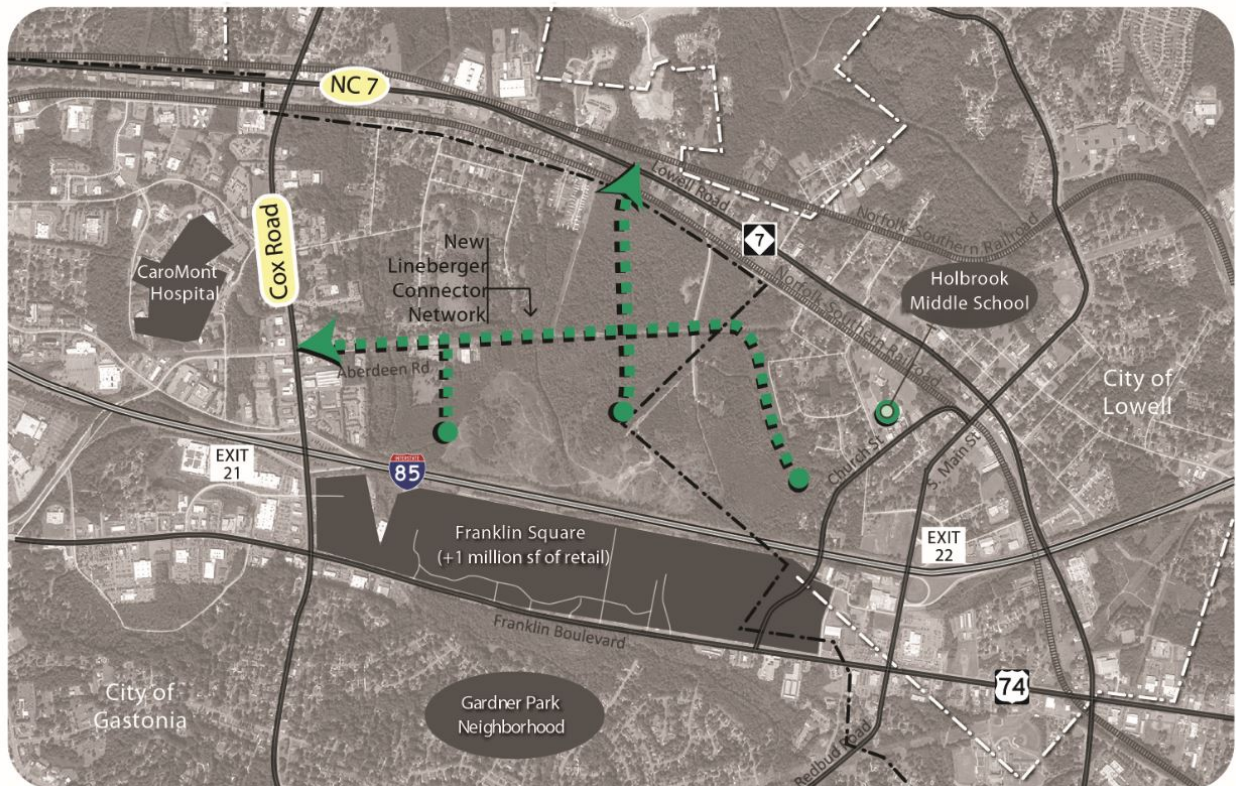


Figure 1: Lineberger Connector Project

The Lineberger Connector Project is the construction of a new roadway network from Cox Road to the west to NC Highway 7 to the north that opens up access to approximately 400 acres of infill property with superior access to the I-85 corridor. As a part of this project, an improved at-grade crossing over the Norfolk Southern Railroad will be implemented just south of the proposed connection to NC 7. In addition, utility connections will be made and carried throughout the proposed roadway network.

More specifically, the Lineberger Connector Project consists of the following:

- Aberdeen Boulevard Extension (7,200 LF)
 - 3-lane collector street
- Lineberger Road Relocation (3,500 LF)
 - 3-lane collector street
- Scalybark Road Extension (1,600 LF)
 - 2-lane industrial collector street
- Norfolk Southern Railroad Crossing Improvements
- Aberdeen Boulevard and Cox Road Intersection Improvements
 - Right Turn/Thru Lane Addition and Return Modifications
- Water Line Extensions (5,210 LF)
- Sewer Line Extensions (4,715 LF)
- Electric Extensions (67,000 LF of underground cable)
- Broadband Extensions (22,300 LF of fiber)

If the grant is awarded, the project can begin immediately. When funded, NCDOT will serve as the certified project administrator on behalf of the City of Gastonia to build the Lineberger Connector Project, meeting the FHWA certified entity requirement. NCDOT has a proven track record of working with its partners to deliver large scale transportation projects on time and under budget. Upon completion of the project, the City of Gastonia will own and maintain the Lineberger Connector roadway network.

The Charlotte Metro region is one of the fastest growing areas in North Carolina and the United States. The Lineberger Connector will unlock property that is prime for local and regional development. With **NorthPoint Development** committed to the project, a fully cooperative landowner, and both public and private support, **the Lineberger Connector Project will stimulate approximately \$322.5 million in project value** for the Greater Gaston area, assisting these communities to recover from the negative impacts of NAFTA and loss of textiles as described in **Section 1.3**.

These improvements will provide greater economic mobility for citizens in both cities and will leverage infrastructure improvements to stimulate economic growth, which is desperately needed especially now given the catastrophic economic impacts from the COVID-19 pandemic. This project not only will result in significant long-term benefits to the adjacent communities of Gastonia and Lowell, but will also impact the rural areas of Gaston County and the metropolitan areas of Charlotte. The project meets all BUILD primary and secondary selection criteria and is ready for implementation due to an unprecedented level of support. The results of the Benefit-Cost Analysis (BCA) are presented later in this narrative. The BCA ratio at a 3 percent discount is 4.26. Undiscounted and 7 percent discount results are also included in the BCA Spreadsheet.

Roadway Cross-Section

The proposed Lineberger Connector Project will consist primarily of a three-lane cross-section with curb and gutter and sidewalks on both sides.

Right-of-Way and Access Control

The Lineberger Connector Project is proposed to have a total right-of-way (ROW) width of 60 feet, with all necessary ROW being provided by the developer. Access will be provided along the proposed roads as indicated in **Figure 4** located on page 6. All connections to the existing roadway network will have full movement access.

Speed Limit and Design Speed

The proposed speed limit throughout the roadway network of the Lineberger Connector Project is 35 miles per hour (mph) with a design speed of 40 mph.

Intersections

The Lineberger Connector Project will connect to the existing roadway network at two locations, with improvements being made to the following intersections:

- **West:** signalized intersection with Cox Road via the proposed Aberdeen Boulevard Extension
- **North:** stop controlled intersection with NC Highway 7 via the proposed Lineberger Road Relocation

Railroad Crossings

As a part of this project, an improved at-grade crossing over the Norfolk Southern Railroad will be implemented just south of the proposed connection to NC 7. The City of Gastonia and NorthPoint Development have had conversations with Norfolk Southern about the proposed roadway and at-grade railroad intersection safety improvements.

Pedestrian Facilities

Throughout the proposed roadway network, sidewalks are planned on both sides. Connections will be made to an existing sidewalk network along both NC Highway 7 to the north and Cox Road to the west, and connecting to CaroMont Regional Medical Center via sidewalks to be constructed with NCDOT STIP Project EB-5976.



Transit

The City of Gastonia operates a fixed route bus system and will extend service to the newly developed area that will be created with the construction of the Lineberger Connector Project. By extending public transit service to this development, public transportation will be provided to a major job center, offering the mobility options needed to ensure the project is socially equitable.

In addition, the Charlotte Area Transit System (CATS) has recently adopted the 2030 System Update Plan that shows a light rail extension to Gaston County via US 29/74. With further study as part of the **CONNECT Beyond: A Regional Mobility Initiative**, it is anticipated that the Silver Line Light Rail to uptown Charlotte will eventually pass just south of the proposed Lineberger Connector Project, connecting this major job center directly to Charlotte.

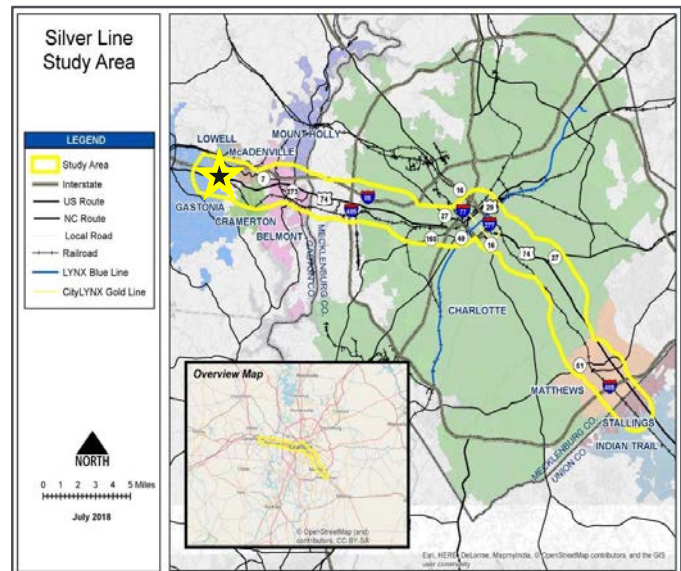


Figure 2: Silver Line TOD Study Area

In order for the communities in Gaston County to best prepare for the future extension of light rail, both the cities of Gastonia and Lowell are participating in the Silver Line Transit Oriented Development (TOD) Study, as shown in **Figure 2**. Specific outcomes of this work will include:

- Determining future land use around stations;
- Identifying supporting infrastructure;
- Advance actions for corridor preservation and affordable housing; and
- Identification of innovative economic development and financing strategies.

Utilities

In order to immediately provide truly “shovel ready” developable land upon the completion of the Lineberger Connector, utility connections will be extended from the property boundary and carried through the proposed roadway network. Detailed utility information will be developed during final design. The City of Gastonia provides water, sewer, and electric utilities and has the capacity to serve this new development. The City also owns and maintains a 90-mile fiber optic utility ring around the City that can be leased wholesale to industries who are interested.

Section 1.2: Transportation Challenges Addressed

Transportation, and more importantly access and land use, are the main engines that drive property development. Currently, this ~400-acre property can only be accessed from the north via Lineberger Road and this access has challenges due to an existing, dangerously skewed at-grade crossing of the Norfolk Southern Railroad Main Line.



Figure 3: Skewed Railroad Crossing



I-85 along the southern border of the property serves as a significant barrier, restricting connectivity and economic opportunity. Because of transportation and access issues, this property has remained an undeveloped “gem” along the I-85 corridor.

Until now...

There is a strong partnership between the cities of Gastonia and Lowell, Gaston County, and the property owner, and **NorthPoint Development** is under contract to purchase ~400 acres between NC Highway 7 to the north, I-85 to the south, Cox Road to the west, and North Main Street to the east. This property is perfectly situated between exits 21 and 22 on I-85. The development will include **over 4,693,000 sq. ft.** of manufacturing, distribution center, industrial, and warehousing facilities. With the current events of **COVID-19** highlighting just how critical our nation’s supply chain is, the proposed development will provide modern warehouse space that will support growth and development for several sectors including e-commerce, manufacturing, reshoring companies and anticipated changes in the supply chain.

As highlighted in **Figure 4** on the next page, the property currently has only one access point via Lineberger Road, which is a substandard two-lane facility with an at-grade crossing of the Norfolk Southern rail corridor. In order for freight trucks and other vehicular traffic to avoid this access, it is imperative that Aberdeen Boulevard be extended through the site to allow for a connection to Cox Road to the west, with safe and direct access to I-85.

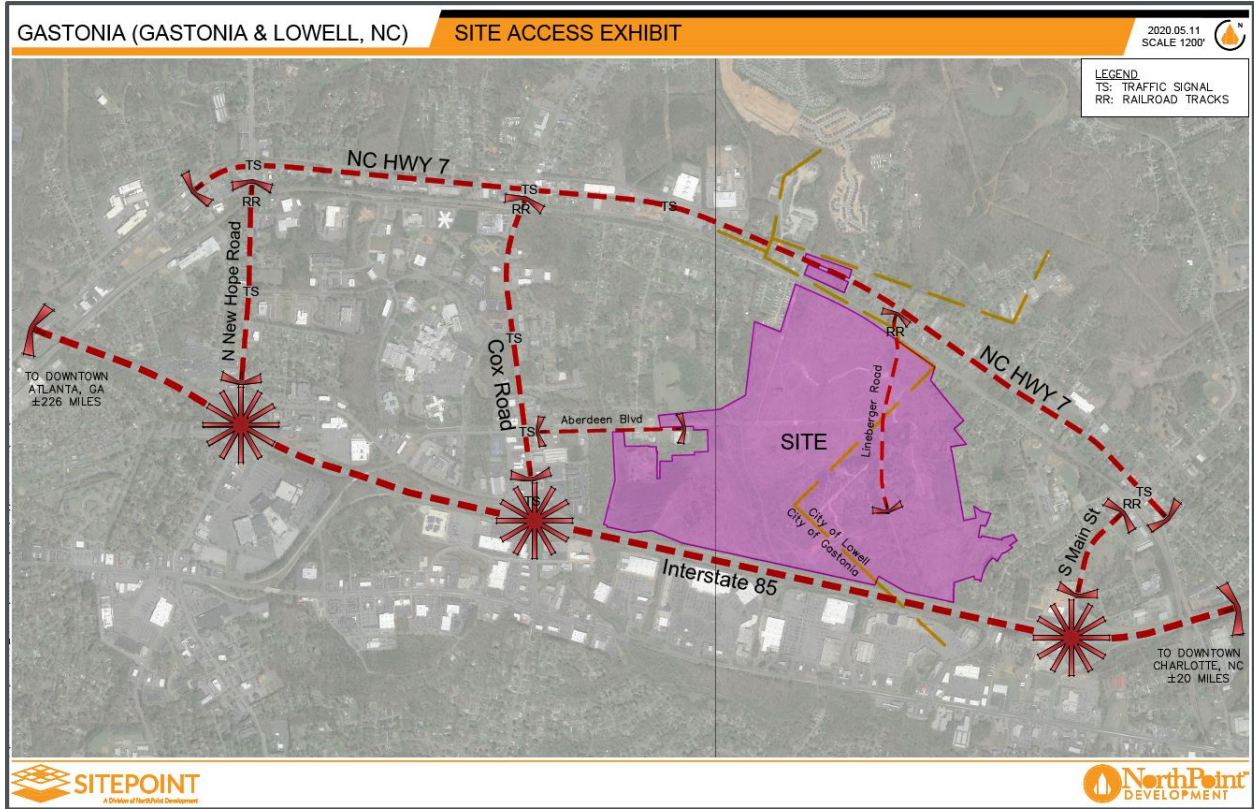


Figure 4: Existing Site Access



Figure 5: Site Master Plan

Section 1.3: Project History and Context

There is no question the Lineberger Connector Project will be an important economic engine for this region of North Carolina, the surrounding communities, and the North Carolina Department of Transportation (NCDOT). Given the devastating impacts that the North American Free Trade Agreement (NAFTA) has had on the region through the loss of textile businesses, it is easy to understand why the cities of Gastonia and Lowell and Gaston County have placed so much emphasis on making the Lineberger Connector a priority as a solution to boost the economic vitality in this part of the county.



The recession, following NAFTA's ratification in 1994, had a detrimental impact on this region of North Carolina. Between 1995 and 1999, NAFTA caused the closing of the seven (7) largest industrial utility customers (textiles) and a total of 54 manufacturing plants that resulted in the loss of more than 7,500 jobs. In 2000, additional plant closures impacted local tax and utility revenues even more—resulting in more than \$70 million in lost revenues just in water/wastewater. At the end of 2000, Gaston County had lost more than 13,000 jobs. To date, Gaston County's economy has only been able to recover to 45% of its pre-NAFTA economic glory in the early 1990's, leaving the county far behind what it once was.

Situated just north of I-85 in Gaston County, the project area remains one of the largest undeveloped properties along the I-85 corridor west of Charlotte; however, this is not from a lack of planning efforts. In fact, several master plans have been developed over the years, depicting a variety of land uses for the property. Within each master plan, access and connectivity have always been left for future consideration. Without a feasible plan for these elements, the property has remained undeveloped. With an infrastructure plan in place, all that is needed is infrastructure funding to enable NorthPoint Development to develop the property into one of the region's largest industrial parks. It is undeniable that the plan for the Lineberger Connector was a deciding factor in securing the commitment of NorthPoint Development.

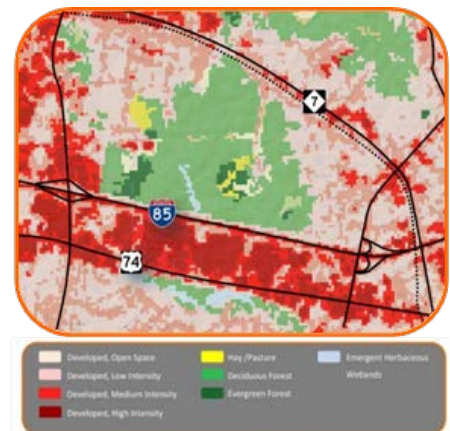
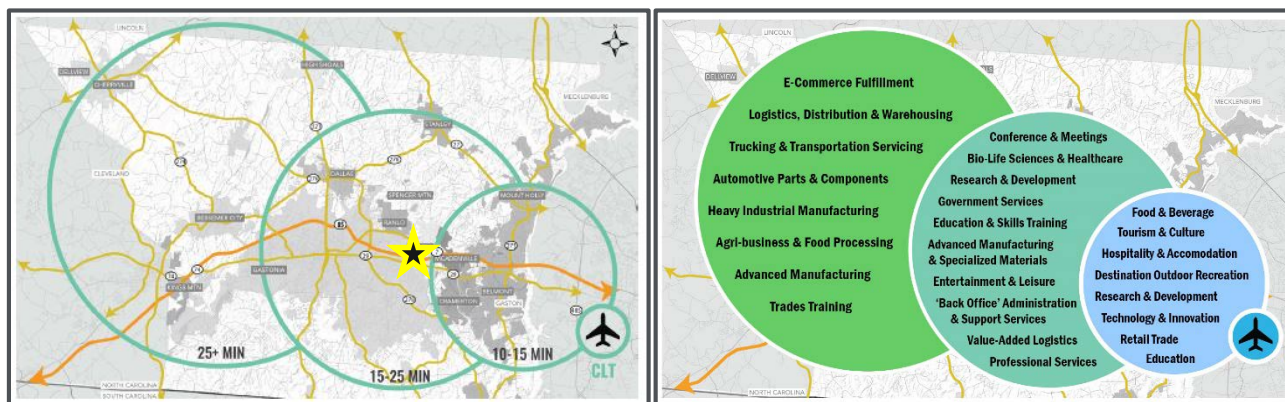


Figure 6: Built Environment

In September 2017, the Greater Gaston Development Corporation commissioned MXD Development Strategists Ltd. to prepare the **Gaston County CLT Airport Connected Economic Positioning Strategy**, included as **Attachment 10**. Through a collaborative public-private approach, the Strategy is designed to fully leverage the County's close proximity and access to the Charlotte Douglas International Airport (CLT) and its Norfolk Southern Intermodal Center. The Strategy is in place to inform and help guide Gaston County in long-range planning and economic development initiatives as they relate to the CLT Airport. As Charlotte's economy continues to grow, it creates opportunities for growth among businesses that have an economic relationship to the CLT Airport. The figures below depict the recommended economic and industry sectors for each time-distance cluster within Gaston County. By leveraging Gaston County's proximity to the CLT Airport to attract private/public sector Airport Connected Development industries, new opportunities for regional economic growth will arise. **The Strategy identified ten Economic Opportunity Areas, including the Lineberger Property**, based on criteria relating to proximity to the airport, current growth patterns, availability of land for redevelopment/development, and existing industry clusters. With the Lineberger Connector Project located just 21 minutes (~12.0 miles) from the CLT Airport, this project completely aligns with the findings of the Strategy and directly connects distribution and manufacturing to the CLT Airport and Intermodal Center via I-85.



The Lineberger Connector Project is a significant piece of infrastructure for the communities of Gastonia and Lowell and BUILD funding is critical to advance and construct this project. The Lineberger Connector is included in the Gaston-Cleveland-Lincoln Metropolitan Planning Organization's (GCLMPO) Comprehensive Transportation Plan (CTP) and is currently listed in the GCLMPO's 2045 Metropolitan Transportation Plan (MTP) for completion in the 2035 horizon year. However, this project is not included or programmed for funding in the NCDOT State Transportation Improvement Program (STIP). BUILD funding is vital to advancing the project from the 2035 horizon year to the funding timeline outlined in **Section 5.2**. This region cannot afford to wait until 2035 to develop this site, and the site cannot reach its full potential without the Lineberger Connector.

WHO WILL BENEFIT?

Freight is the economy in motion. As the greater Charlotte region has grown, its economy has become more diverse and a growing population consumes an even wider range of goods and services. The movement of goods continues to be an essential building block of the region's economic competitiveness. For the Charlotte region, freight mobility planning is critical to help the region's planning organizations and leaders balance current and future demands for freight mobility, economic growth, and land development. In accordance with the ***Greater Charlotte Regional Freight Mobility Plan***, adopted in December 2016, it is imperative that the City of Gastonia take actions to strengthen the region's freight transportation system to ensure that it provides safe, reliable and efficient freight mobility for our current needs as well as anticipated future needs. Targeting future opportunities in key locations for developing freight-related uses in these areas is important for capturing and accommodating the ongoing expansion needs in the region. By choosing to focus on development strategies that link priority freight assets with strategic land assets, and siting freight-generating industries in locations to reduce and/or mitigate negative impacts, the region will continue to attract quality job opportunities and business investment. Improving the mobility and efficiency of freight operations will further develop and strengthen the region's economic base and increase its global competitiveness. With the current events of **COVID-19** highlighting just how critical our nation's supply chain is, it is imperative that funds be used to increase mobility to developments that serve the United State's manufacturing and supply chain industries.



This project also will create opportunities for residents to live and work locally, decreasing travel time for these users. In addition to time savings for residents who may no longer need to commute along I-85, other travelers and the freight industry will benefit from the reduced congestion along the interstate. By funding the project now in order to coordinate with NCDOT's upcoming widening of I-85



(NCDOT STIP Project I-5719), the residents and interstate travelers will also benefit from reductions in construction time and related delays that would occur if the Lineberger Connector is built after the I-85 improvements are completed. BUILD grant funding will expedite this project in order to maximize the economic, environmental, and quality of life benefits of timing it with NCDOT's improvements, as well as ensure that safety remains a priority.

SECTION 2: PROJECT LOCATION

Section 2.1: Geographical Description

The Lineberger Connector Project is located in Gaston County, North Carolina, which is in the Southeastern United States and in the southern Piedmont region of North Carolina. Located within the Charlotte Metropolitan Statistical area (MSA) – also known as the Charlotte Metro Region, Gaston County is bordered by four (4) counties: Mecklenburg, Lincoln, and Cleveland Counties in North Carolina and York County in South Carolina. The project is located within the planning area for the Gaston-Cleveland-Lincoln MPO, which is an urbanized area with a population of less than 200,000, making this a **rural project**. Specifically, the project is located on the eastern border of Gastonia, NC and the western border of Lowell, NC and is **fully within a federally designated Opportunity Zone**.



The **Charlotte Douglas International Airport (CLT)** is just 21 minutes (~12.0 miles) from the Lineberger Connector Project location. The CLT Airport is the nation's sixth-busiest airport averaging 1,400 daily aircraft operations and serving approximately 178 nonstop destinations around the world.

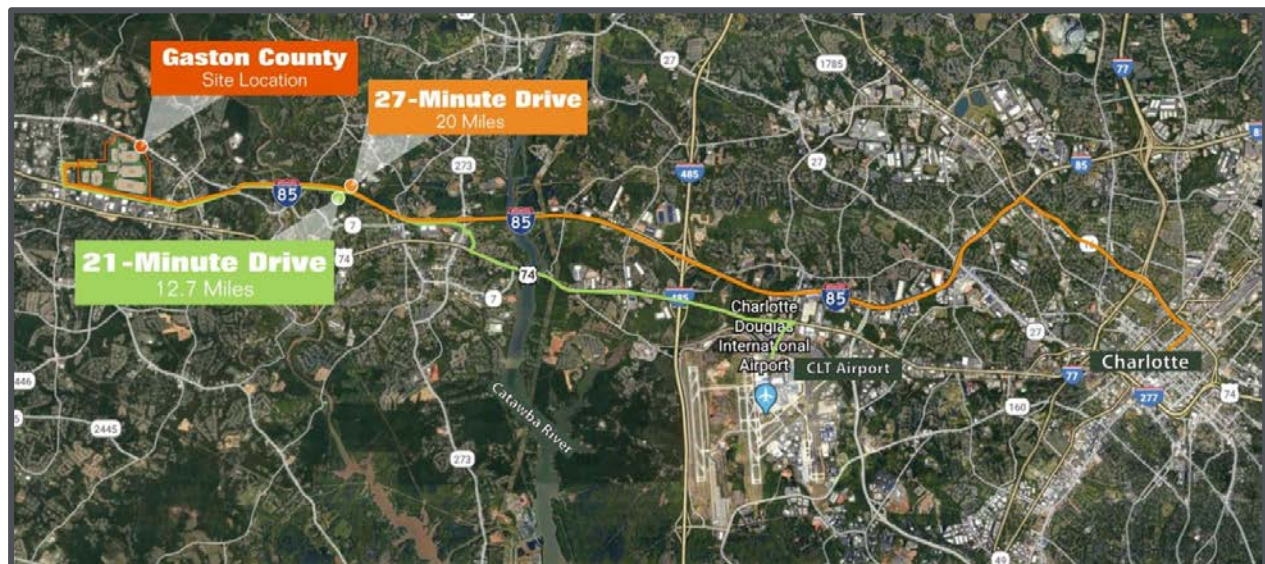


Figure 7: Project Location Context Map

Gastonia, NC, (pop. 77,000) is a three-time All American City and recipient of the U.S. Conference of Mayors Top Livability Award, and is recognized as one of the area's best places to live and work with an ideal combination of location, size, and quality of life.

Strategically located just minutes west of Charlotte, NC and midway between Atlanta, GA and North Carolina's Research Triangle in Raleigh, NC on the I-85 Corridor, Gastonia is the largest city in Gaston County and the 13th largest in the state. Gastonia's enviable quality of life is the result of a number of desirable qualities: friendly neighborhoods, an



award-winning education system, a vibrant retail environment, state-of-the-art healthcare facilities, and "picture postcard" natural surroundings. Still, what is lacking is the number of jobs needed to fully recover from the impacts of NAFTA and loss of the textile industry and now the downturn from COVID-19.

Gastonia has been the economic heart of the county for many years. Growth continues along its edges as undeveloped land is built upon and annexed in exchange for municipal services. It is an evolving suburb of Charlotte and is projected to see continued growth and economic expansion due to its strategic position within the Charlotte Metro area. The city is bisected by I-85 and US 321, which brings both economic opportunity and mobility challenges as they act as the major connection between areas, but also form a barrier that can impede local travel. Much of the retail and service employment for the city is located at interchanges on these two routes.

Lowell, NC is a small town of 4,000 located in eastern Gaston County and situated between Charlotte and Gastonia. Like many North Carolina towns, Lowell was a mill town born on the railroad tracks (today traversed by Norfolk Southern Railway). With the passage of NAFTA, textiles and manufacturing suffered disproportionately in Gaston County. Without a diverse economy and too reliant on textiles, globalization transformed Lowell from what was once a thriving town into a place that had to discover a new identity. Today Lowell has reinvented itself, relying on single family residential and three commercial corridors to provide the revenue once dominated by industrial operations. Interstate I-85, NC Highway 7, and NC Highway 74 traverse the city providing tremendous opportunities for future development, the biggest being the development of the Lineberger Property. With the combination of the Lineberger Connector, close proximity to the CLT Airport and rail access, the future is bright for this small town.



Section 2.2: Project Location Map & Connections to Existing Transportation Infrastructure

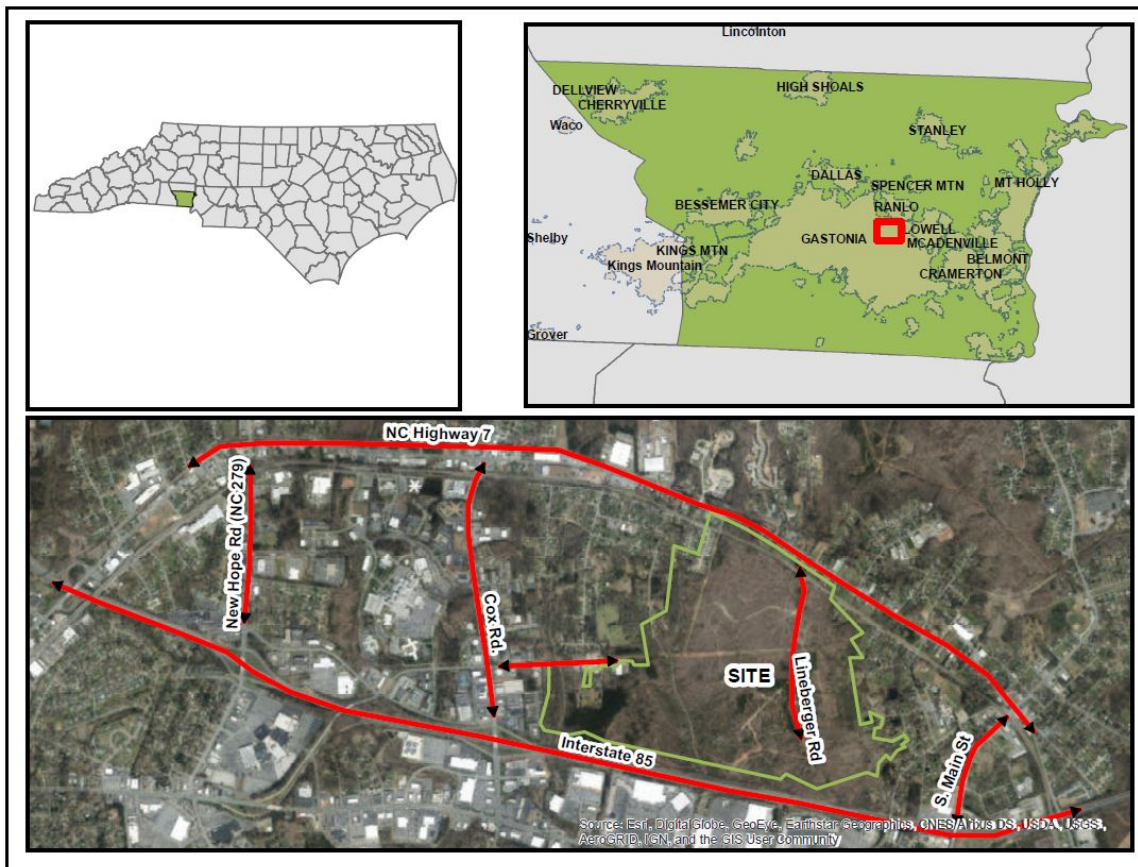


Figure 8: Project Location Map

The project site is located along the I-85 corridor which serves the majority of the Southeast and connects the Charlotte region to the northeast along I-85 and south to Atlanta. This corridor serves as a major trucking corridor, helping to supply the eastern seaboard with vital goods and services. I-85 through Gaston County has been identified as part of the Strategic Freight Network in the Greater Charlotte Regional Freight Mobility Plan. With over 77% of the region's freight tonnage being moved by truck, unlocking the ~400 acres as a part of the Lineberger Connector Project will provide much-needed manufacturing, distribution center, industrial, and warehousing facilities along the I-85 corridor.

Section 2.3: Geospatial Data Describing Project Location

The Lineberger Connector Project is located within the 28054 and 28056 zip codes. The local X Coordinate is 35.270755 and Y Coordinate is -81.124548. The US National Grid is 17S MV 88672 03076.

SECTION 3: GRANT FUNDS, SOURCES & USES OF PROJECT FUNDS

Section 3.1: Project Costs

Total project costs for the Lineberger Connector Project are estimated at \$29,934,938. The project, which is a critical connector between Gastonia and Lowell, is the genesis for continued economic growth for this region of Gaston County. The project sponsors seek \$18,110,358 (60%) in BUILD grant funding to complete the funding needed for project development and construction. As shown in **Table 2**, the remaining funding sources are anticipated from local and private investment. The cities of Gastonia and Lowell, as well as Gaston County, are committed to this project's development. Both communities understand the necessity of this project to improve overall long-term mobility, community growth, and continued economic success within the Charlotte Metro region.

Section 3.2: Source of Funds for Eligible Project Costs

Funding Source	Amount	% of Total Project Cost
Local Match	\$11,824,580	40%
2020 BUILD Request	\$18,110,358	60%
TOTAL COST	\$29,934,938	100%

Table 1: Sources of Funding and Percentage of Total Project Cost

Section 3.3: Non-Federal Funding Commitments

The City of Gastonia has secured the following non-federal funding commitments:

Type	Source	Amount	Percentage of Total	Notes
Local	City of Gastonia	\$5,699,580	19%	Extension of utilities to serve area
Local	Property Owner/Developer	\$6,125,000	21%	ROW Contribution & Stormwater Infrastructure
Total Non-Federal Amount		\$11,824,580		

Table 2: Non-Federal Funding Commitments

The cities of Gastonia and Lowell have no existing fiscal constraints that would prohibit them from using any non-federal contributions during the anticipated funding window for the BUILD grant.

The City of Gastonia is experienced in managing grants and has worked with NCDOT and GCLMPO in the past using federal funds. As the lead planning agency for the GCLMPO, the City of Gastonia administers federal funds in the implementation of their transportation program but does not rely on those funds exclusively. Recently, the City of

Gastonia passed the General Obligation Bonds (GO Bonds) which have aided the City in proactively investing in the construction of collector streets, sidewalks and greenways throughout the city.

The City of Gastonia's financial outlook is strong, as evidenced by maintaining an AA bond rating, according to Standard & Poor's.

Section 3.4: Non-Federal Matching Funds for Other Federal Funds

There are no other sources of federal funding being used for this project.

Section 3.5: Project Budget Breakdown

Uses of Funding	FY 2020 BUILD	Non-Federal Match	Total Project Cost	% of Total Project Cost
Environmental Document	\$150,000		\$150,000	0.50%
ROW Acquisition		\$1,125,000	\$1,125,000	3.76%
Construction of Roadways	\$15,239,000		\$15,239,000	50.91%
Stormwater Infrastructure		\$5,000,000	\$5,000,000	16.70%
Water Extension		\$1,268,630	\$1,268,630	4.24%
Sewer Extension		\$1,555,950	\$1,555,950	5.20%
Electric Extension		\$2,600,000	\$2,600,000	8.69%
Fiber Extension		\$275,000	\$275,000	0.92%
Project Oversight	\$2,721,358		\$2,721,358	9.09%
TOTAL COST	\$18,110,358	\$11,824,580	\$29,934,938	100%

Table 3: Project Budget Breakdown

Table 4 shows the anticipated timing of expenditure of the various funding sources through the development years of the project. Committed local funds are more than enough to advance the project to construction. A detailed project budget is also provided as [Attachment 14](#).

Expenditure by Year					
Funding Source	Amount	2021	2022	2023	2024
Federal	\$18,110,358	\$1,006,000	\$2,912,250	\$9,259,589	\$4,932,519
Local	\$5,699,580	\$3,000,000	\$2,000,000	\$600,000	\$99,580
Private	\$6,125,000	\$3,000,000	\$2,000,000	\$1,000,000	\$125,000
Total	\$29,934,938	\$7,006,000	\$6,912,250	\$10,859,589	\$5,157,099

Table 4: Funding Expenditure Schedule

SECTION 4: SELECTION CRITERIA

Section 4.1: Merit Criteria

The construction of the Lineberger Connector Project will facilitate coordination and connectivity within Gaston County's emerging surface transportation system, support long-standing principles, policies, and plans for growing smarter and greener in the county, and contribute to making Gaston County more livable for all its residents. The Lineberger Connector Project aligns well with the selection criteria within the BUILD program and qualities within each criterion.

Section 4.1.1: Safety

The property currently has only one access point from NC Highway 7 via Lineberger Road, which is a substandard two-lane facility with a dangerously skewed at-grade crossing of Norfolk Southern's main rail line. In order for freight trucks to avoid this access, it is imperative to extend Aberdeen Boulevard through the site to allow for a connection to Cox Road to the west, with safe and direct access to I-85.

Trip generation for the proposed development shows that an estimated 6,783 vehicles (1,357 trucks) would use the existing crossing daily. Norfolk Southern RR runs an average of twenty-two (22) trains per day on this segment of their tracks. The trip generation data shows an AM peak of 438 vehicle (88 truck) trips and a PM peak of 516 (103 truck) trips per day. This volume, coupled with the relatively short distance between the intersection with NC Highway 7 and



Figure 9: Potential Truck Queuing

the existing crossing, drastically increases the risk of northbound vehicles being trapped on the tracks while in queue for the intersection with NC Highway 7 as a train approaches. This potentially deadly scenario is depicted in **Figure 9**.

The Lineberger Connector Project will provide numerous rail safety improvements as outlined on page 16.

- The crossing is proposed to be relocated approximately 1,500 feet west and reconfigured from the current 50-degree skew to the preferred optimal 90-degree crossing. In this area, NC Highway 7 and the Norfolk Southern lines parallel each other, so the distance between the intersection with NC Highway 7 and the crossing cannot be extended to provide additional vehicle storage. However, straightening the crossing can dramatically improve safety by providing better sight distances and storage.
- The current crossing is equipped with lights and single lane arms that drop as trains approach. The proposed design would include a concrete median or quadrant arms to deter drivers from going around lowered gate arms, as well as signals.
- The track elevation at the current crossing is elevated above the roadway approaches, causing limited sight distance for southbound approaches looking over the crossing. If the current crossing were the sole access into the developed property, truck traffic could risk getting caught on the crossing due to the grade differences. The new proposed crossing would eliminate this by providing for flat approach grades designed for smoother transitioning.
- Lineberger Road is currently a NCDOT Secondary Route, and as such truck traffic is not prohibited on the roadway. The proposed Lineberger Connector Project will relocate this road, and the new roadway will be maintained by the City of Gastonia. Both the City of Gastonia and NorthPoint Development support declaring the proposed Aberdeen Blvd. extension as a Truck Route, per City Code section 6-24 (Truck Routes), and signing the relocated Lineberger Road as no truck access. This will remove the truck traffic from the at-grade crossing, which will reduce the opportunity for and severity of incidents.



The quantitative safety measures of the Lineberger Connector Project include a reduction in injury and property damage only (PDO) crashes. This aligns well with DOT's support for projects that predictably reduce the number, rate, and severity of surface transportation-related crashes, injuries, and fatalities among drivers.

The Crash Modification Factors (CMF) Clearinghouse provides information on a countermeasure's expected impact on the safety performance of a location based on statistically significant data from peer reviewed research papers. The CMF for installing a right turn lane is 0.70, indicating that a 30% reduction in overall collisions can be expected

for a corridor where a right-turn lane is installed. The anticipated injury and PDO crash reductions of the Lineberger Connector Project are attributable to the introduction of a right-turn lane on NC Highway 7.

The annual expected injuries avoided and property damage avoided for each year of the analysis were calculated using the current annual averages and the CMF of 0.70. The annual number of injuries avoided is calculated to be 60 and the annual reduction in vehicles involved in PDO crashes is calculated to be 60. Finally, a cost associated with each injury or vehicle in a PDO crash was derived using guidance from the BUILD Benefit-Cost Analysis Resource Guide on the value of injuries based on severity of crash. The **total safety cost savings** with the implementation of the Lineberger Connector are calculated to be **over \$6.5 million**.

The Lineberger Connector Project will also involve specific intersection improvements that will provide a safety benefit to intersection specific problems. There is not a CMF in the clearinghouse for these intersection level improvements, so we cannot quantitatively report on the safety benefit of these changes, but we believe there will be additional safety gains due to these improvements.

Section 4.1.2: State of Good Repair

As congestion continues to grow in Gastonia and Lowell, the Lineberger Connector Project provides alternative routes to improve mobility, reduces the potential for conflicts between all modes, reduces vehicle miles traveled and travel time, and improves air quality in this area, which is currently in a maintenance area for ozone levels. Based on the detailed BCA, the proposed Lineberger Connector would reduce travel times and save vehicle miles traveled, both of which have a direct benefit to air quality. As shown in the BCA, a reduction in ozone is also anticipated with this project.

The Charlotte MSA (Charlotte Metro) region is one of the fastest growing regions in the United States. Over the last decade, more than 888,000 people moved to this area, many of whom have made their homes in Gaston County. This impactful growth has created a decade-long growth rate of 59.6%. This tremendous growth has placed a significant burden on the region's transportation facilities, particularly the I-85 corridor through Gaston County. It is not uncommon for several miles-long (+7 miles) queues to form on I-85 during the AM and PM peak hours. Congestion has reached a point that improvements are needed to I-85. NCDOT, under TIP I-5719, will widen the 10-mile stretch from Belmont, NC to US 321 in Gastonia. Construction on this project is anticipated to begin in FY 2024 and will certainly help to improve the economic development outlook for Gaston County.

The Lineberger Connector Project is expected to decrease the vehicle miles traveled (VMT) on I-85. The projected land uses around the Lineberger Connector will likely attract local traffic to and from Gaston County and away from Mecklenburg County, therefore a reduction in the total VMT is calculated to be nearly 38,000 miles.

NCDOT supports projects that improve the condition of existing transportation facilities, including minimized life-cycle costs. These projects are consistent with relevant state, regional, and local efforts to maintain facilities in a state of good repair or projects with an aim to rehabilitate, reconstruct, or upgrade surface transportation assets that, if left unimproved, threaten future transportation network efficiency, the mobility of goods or people, or economic growth due to their poor conditions. The quantitative state of good repair measure of the Lineberger Connector Project is the change in repair costs.

These benefits were calculated based upon the net VMT from the project and the pavement cost per VMT. Due to a decrease in VMT, the repair benefits are positive since there will be less vehicles traveling along I-85.

Section 4.1.3: Economic Competitiveness

Completely located within a federally designated Opportunity Zone, the construction of the Lineberger Connector Project creates opportunities for all residents of Gastonia and Lowell, as well as surrounding communities and the region, and sets up transformative change for the ~400 acres currently undeveloped.

The employment base within the Charlotte Metro area is the highest in North Carolina and one of the top 25 highest in the United States. Maintaining a substantial, competitive workforce in this region is critical. The ~400 acres adjacent to the Lineberger Connector Project not only provide fertile opportunities to new, expanding, or relocating businesses or industries, it also provides access to the significant, competitively priced, and skilled workforce that the cities of Gastonia and Lowell provide.

The adjacent property along the Lineberger Connector provides space for new industries locating within the region to attract professional, skilled, and managerial staff. Many residents of these communities would readily seek employment within this area in lieu of a commute out of the county to work. This not only improves the quality of life and overall well-being for those workers, but also improves the quality of the environment through reduced vehicle emissions. In addition, the development of this area provides adjacent residents opportunities for upward mobility through proximity to well-paying jobs.

An economic impact study has been completed for the proposed development which estimates a total of **10,181 permanent new jobs** (direct & indirect) with a total **annual compensation of \$462,545,507** with the buildout of **over 4,693,000 square feet** of manufacturing, distribution center, industrial, and warehousing facilities. **This will increase the total number of jobs in Gaston County more than 10%.** The full economic impact study is provided as [Attachment 6](#).

The implementation of the Lineberger Connector Project will save nearly 38,000 vehicle miles traveled upon completion. According to the American Community Survey (2010 Census Data), 30% of adults commute out of Gastonia and Lowell to work within the Charlotte Metro Region, and average travel time to work for those drivers is 24.4 minutes. Reducing the burden of commuting is one of the key benefits of this project as well as improving the economic completeness of the area. This and other key benefits are summarized below:



In the Path of Growth: Approximately 120 people are moving into the Charlotte area each day with a 25% growth projected in Gaston County between 2015-2045. With students attending various colleges and universities in the region, such as UNC-Charlotte, Belmont Abbey College, and Gaston College, it is imperative that we offer job opportunities here in Gaston County to retain those graduates. The Lineberger Connector will allow for the creation of over **10,000 well-paying jobs**.

Ripe for Development: The project is in an area of high projected growth along the I-85 corridor between Gastonia and Charlotte.

Employment Destination: 31,000 people commute through Gastonia or Lowell each day for work.

Importance of I-85: Approximately 30% of the local workforce commutes each day to the Charlotte Metro area, making I-85 one of the busiest commuter corridors in the region. In 2018, NCDOT recorded between 130,000 and 150,000 vehicles per day traveling that corridor during peak times. The Lineberger Connector Project is expected to increase the efficiency of movement and reduce the cost of doing business by decreasing the VMT on I-85. With the proposed land use around the Lineberger Connector attracting local traffic to and from Gaston County and away from Mecklenburg County, a reduction in the total VMT is calculated to be nearly 38,000 miles.

Access to Charlotte Douglas International Airport (CLT): The CLT Airport is just 21 minutes (~12.0 miles) from the Lineberger Connector Project location. The CLT Airport is the nation's sixth-busiest airport averaging 1,400 daily aircraft operations and serving approximately 178 nonstop destinations around the world. In addition, Norfolk Southern's Charlotte Regional Intermodal Facility being located at the CLT Airport creates an intermodal hub linking air, rail and truck to the east coast seaports. With the Lineberger Connector unlocking ~400 acres for the development of over 4,693,000 s.f. of warehouse, distribution, and manufacturing operations, the property can take full advantage of being in such close proximity, improving the local and regional freight connectivity to the national and global economy.

Local Employment Opportunities: Gaston County's unemployment rate in March 2020 was 4.4%, matching that of the state. It is anticipated that this will be much higher when the April numbers are released. The Lineberger Connector will help to reduce unemployment by adding over 10,000 new jobs. This will increase the total number of jobs in Gaston County by more than 10%. With impacts of the COVID-19 pandemic being catastrophic to employment, these new jobs are needed now more than ever.

Economic Opportunity: At \$40,432, Gastonia has a lower median household income than the state's at \$46,868 and the nation's at \$59,039. Almost 20% of people in the city lived below the poverty level in 2019. The Lineberger Connector is key to providing new employment opportunities in the area, thereby helping to reduce the level of poverty.

The Lineberger Connector Project is **located completely within a federally designated Opportunity Zone** (Tract 0313.02). Construction of the Lineberger Connector will spur economic development and job creation in this distressed community.

Section 4.1.4: Environmental Sustainability

The quantitative sustainability measures of the Lineberger Connector Project include air quality impacts, water quality impacts, and fuel consumption impacts. Because the project includes a new roadway facility, the environmental benefits created by the project may seem indirect, but they have direct impacts on the community, quality of life, and the region.

Connecting the communities and shifting the commuting patterns by bringing jobs to Gaston County will reduce greenhouse gas emissions through the reduction of vehicle miles traveled (VMT). By developing this economic node in Gaston County, countless commuters will be able to avoid the minimum 24-minute commute outside the area. This reduction has been calculated at nearly 38,000 VMT, a significant reduction for not only Gaston County, but also for the Charlotte region.

The planned network of the Lineberger Connector includes the provision of pedestrian facilities through the construction of sidewalks along both sides of the new roadways. This multimodal approach provides an alternative for mobility. When coupled with the concentration of development activity on the property, additional, uncaptured reductions in VMT will be realized through the provision of an alternative mode choice.

Given the proximity to the Norfolk Southern main line located on the northern-most border of the site, a little over one-third of the development can accommodate rail and road-served buildings, allowing the development to benefit from multiple means of supply-chain connectivity. This allows the site to harvest manufacturers that require rail to receive the raw goods needed in the manufacturing process. According to the Association of American Railroads (AAR), moving freight by rail instead of trucks reduces greenhouse gas emissions an average of 75%.

In addition, landscaping will be included as part of the proposed development of the Lineberger property with native landscaping providing environmental benefits through a deep-plant root system, increased infiltration of groundwater, stormwater runoff volume and rate reduction and increased soil stabilization, which improves soil fertility and soil microbe activity.

The developer, NorthPoint Development, has a history of developing environmentally friendly and sustainable projects to Green Globe standards in the vast majority of its developments, and is committed to best management practices for stormwater management.

Section 4.1.5: Quality of Life

The Lineberger Connector Project, developed in coordination with various planning efforts by the cities of Gastonia and Lowell, aims to bring the full potential of the economic abilities of these communities to the Charlotte MSA, southeastern US, and the global economy. This opportunity is not just with a bias toward economic growth, rather it provides a direct benefit to the 81,000 residents – 77,000 in Gastonia and 4,000 in Lowell – living in Gaston County. The completion of this network and the development around it provides Gaston County residents, both those living in the urbanized areas and rural areas, an opportunity for a competitive, well-paid job in their county. It will afford them more time with their families and loved ones, as time that is now spent commuting can be repurposed. While this project cannot create additional hours in the day, it can reallocate those hours for a better use. Rather than reallocating that time for additional commerce or work, residents can devote quality time back into the community where they live. Improved quality of life for residents has been shown to improve workforce productivity, reduce absenteeism, and generally create a more productive and stable workforce.

Fast, reliable access to the Internet is critical to economic development and quality of life. The Lineberger Connector Project will include the expansion of broadband and the installation of high speed networks concurrent with the construction activities by the City of Gastonia. Direct fiber connections will be available to both public and private entities in an area currently being underserved.

Section 4.1.6: Innovation

With the implementation of the Lineberger Connector Project, additional growth will occur. Jobs will be created through innovative investments in development and changes to land use yields. In its present configuration, the property only generates a tax revenue of \$2,500 annually for both communities as currently zoned. For the property owners, a 20-year cycle of harvesting timber that generates a modest return occurs, but this also causes an ever-increasing negative impact to the surrounding environment.

The ~400 acres of property has the potential to become an economic generator for Gaston County, the Charlotte MSA, and the communities along the I-85 corridor. The property's size allows for innovative development potential. Specifically, the development enables the prospect of harboring innovation through co-location and autonomous trucking. One the industrial park planned for this property is developed, raw materials can be stored in one facility, trucked in an autonomous vehicle over a short distance to a neighboring manufacturing facility, and the manufactured product can be trucked again to an outbound distribution facility within the park for regional or local home delivery. Each short distance/drayage move within the park can be made with the use of autonomous vehicles.

Section 4.1.7: Partnership

The cities of Gastonia and Lowell and Gaston County have a history of working together collaboratively. From the **Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy** to managing land use along their shared municipal boundary, these communities have a strong working relationship. Gastonia and Lowell partner together on utility provision, transportation planning, and recreation offerings. Their ability to come together and work collaboratively has never been more evident than the process used to develop this 2020 BUILD grant application.

The Lineberger Connector Project is a top priority for the entire community due to the potential for local and regional benefits. Both municipalities have an ongoing partner in GCLMPO which oversaw the development of the corridor study which was a catalyst for the creation of the Lineberger Connector Project. Likewise, NCDOT is a supportive partner for this endeavor.

This project represents a unique conglomeration of stakeholders and partnerships. As evidenced in previous sections, the Lineberger Connector is a joint undertaking between local (City of Gastonia, City of Lowell, and Gaston County), regional (GCLMPO), state (NCDOT), and private (NorthPoint) entities. Furthermore, the regional importance of Gaston County within the larger Charlotte MSA presents other regional partners that will all benefit greatly from the impact of this project.



The City of Gastonia has been leading planning efforts to complete missing links that serve regional significance. The Lineberger Connector Project is a prime example of the City's efforts. Gastonia elected leadership is setting the overall tone for the importance of transportation in the city by their promotion of the Lineberger Connector Project as one of the top transportation priorities for the City of Gastonia. Existing utilities are not present where the proposed new roadway will be constructed. In order to immediately provide truly "shovel ready" developable land upon the completion of the Lineberger Connector, utility connections will be extended from the property boundary and carried through the proposed roadway network. The City of Gastonia provides water, sewer, and electric utilities and has the capacity to serve this new development. The City also owns and maintains a 90-mile fiber optic utility ring around the city that can be leased wholesale to industries who are interested. In addition, the City of Gastonia will own the Lineberger Connector upon completion and is committed to the long-term maintenance of the Lineberger Connector for the life of the project.

Project Partners

A description of the City's partners and their contributions to the Lineberger Connector Project are provided below:



NorthPoint Development is one of the nation's largest privately held industrial developers, and intends to develop the project area into one of the region's largest and best class-A industrial parks. But, infrastructure challenges have limited the viability of the project. With the BUILD grant and the community's support, the Lineberger Connector will enable over 4,693,000 s.f. of manufacturing, distribution, industrial, and warehousing development. NorthPoint will be honored to partner with the community to leverage over \$300 million of private capital to create a once-in-a-generation development project, leveraging BUILD's infrastructure to enable one of the region's largest private developments. NorthPoint Development sees the Lineberger Connector as critical to the property's success.



While NCDOT is not a financial partner for the project, close collaboration and coordination with them is imperative, and the City of Gastonia has been working closely with NCDOT on this project. When the Project is funded, **NCDOT will serve as the certified project administrator** for the City of Gastonia to build the Lineberger Connector. NCDOT has a proven track record of working with its partners to deliver large scale projects on time and under budget.



With the majority of the project located within the City of Gastonia's municipal limits, the City of Lowell is committed to entering into a multi-jurisdictional agreement with the City of Gastonia to ease and expedite the plan approval process. Identified as a priority project by the Lowell City Council, the Lineberger Connector is the Town's only opportunity for non-residential development that will provide the needed revenue for a balanced economy.



Gaston County's mission is clear. The County seeks to be among the finest counties in North Carolina by providing effective, efficient and affordable services leading to a safe, secure and healthy community, an environment for growth, and promoting a favorable quality of life. The County supports the Lineberger Connector Project as an important part of this mission.



The Gaston County Economic Development Commission (EDC) has a proven record of project development and is dedicated to attracting and retaining desirable businesses and employers to continue improving and diversifying economic opportunities in Gaston County. The Gaston EDC has worked diligently to market this site and the importance the Lineberger Connector will have in maximizing its benefits.



The Greater Gaston Development Corporation (GGDC) is a private sector led non-profit corporation, formed in 2014 for the sole purpose of strengthening factors influencing Gaston County's economic competitiveness. The organization serves as a leader, catalyst, convener, and facilitator of strategic initiatives designed to unite and align public, private, and non-profit entities behind a pro-growth agenda. The ultimate goal of these efforts is to substantially increase capital investment and sustainable job development in Gaston County. With transportation and access being a key focus area of the GGDC, the Lineberger Connector is instrumental to meeting their transportation and economic development objectives. The recently-completed Gaston

County CLT Airport Connected Economic Positioning Strategy (CLT Strategy) identified the Lineberger Connector (and the access it would provide to the ~400 acre undeveloped Lineberger Tract) as one of the key Economic Mobility Corridors in Gaston County. More information on this is provided in [Section 1.3](#) on page 8.



The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) is a multi-jurisdictional entity made up of 34 local governments, NCDOT, FHWA, and other providers of transportation services to jointly plan for transportation improvements in the three-county region.

The Lineberger Connector has been included in the MPO's long-range transportation plans for many years. The MPO is committed to the success of this project with the recent submittal of additional improvements to the Cox Road/Aberdeen Boulevard Intersection for scoring in NCDOT's current round of strategic prioritization to develop the 2023-2032 State Transportation Improvement Program (STIP). In addition, the MPO stands ready to process any amendments to the TIP and MTP that may be required when the Lineberger Connector Project is funded.

This project also exhibits wide support from the region's elected officials, businesses, and civic organizations. Letters and resolutions of support have been or are in the process of being secured from U.S. Senators Richard Burr and Thom Tillis, U.S. Representatives Patrick McHenry and Virginia Foxx, the local NC General Assembly delegation, both Chambers of Commerce in Gaston County, the Greater Gaston Development Corporation, the Charlotte Regional Business Alliance, GCLMPO, NCDOT, and many other local support agencies. Letters of support for this project are included as [Attachment 13](#) and are also provided on the website as additional letters are received.

Section 4.2: Demonstrated Project Readiness

The City of Gastonia has a history of working with private entities to develop projects. **The Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy**, adopted in August 2016, is a good example of a public-private partnership between the City of Gastonia, City of Lowell, and private partners. These three entities, in conjunction with the GCLMPO and NCDOT, worked collaboratively and financially to develop the corridor study and acts partly as the reason behind this application.

The Lineberger Connector Project is a significant piece of infrastructure for the communities of Gastonia and Lowell and BUILD funding is critical to advance and construct this project. The Lineberger Connector is included in both the GCLMPO CTP and 2045 MTP. **NorthPoint Development** is under contract for the purchase of ~400 acres that will be served by the Lineberger Connector Project.

Section 4.3: Project Costs & Benefits

The total estimated project cost for the Lineberger Connector is **\$29,934,938** and includes design and engineering services, right-of-way acquisition, and construction. The cost estimates were prepared by using detailed quantity estimates and unit costs based on bid prices of recent NCDOT projects of similar scope. In addition, estimates for various utility extensions came directly from the public and/or private provider. Project costs anticipate a start date of 2022 and completion date of 2024.

A Benefit-Cost Analysis (BCA) was completed to estimate the costs and benefits of the Lineberger Connector Project over a 20-year period and discounted to present-day value using a 3 percent discount rate. While this project provides definitive benefits under all five of the primary selection criteria of the BUILD program: safety, state of good repair, economic competitiveness, environmental sustainability, and quality of life, analysis is centered on safety, economic competitiveness and environmental sustainability. Specifically, the BCA for the Lineberger Connector Project highlights the benefit in the annual travel time savings by recruiting jobs and industry to Gaston County.

A summary of the findings of the BCA is listed below, with a full BCA included in this application as **Attachment 3**.

Discount Rate	Total Cost	Total Benefits	Benefit Cost Ratio
0%	\$29,934,938	\$168,081,903	5.61
3%	\$29,934,938	\$127,542,541	4.26
7%	\$29,934,938	\$93,919,704	3.14

Table 5: Summary of Project Benefits

Section 4.4: Additional Considerations

Although there have been numerous attempts, neither the City of Gastonia, nor the project partners, have been a direct recipient of TIGER or BUILD funds in the past.

SECTION 5: PROJECT READINESS

The City of Gastonia has taken steady action toward delivery of its road network in the face of high growth pressures. Based on the planning efforts of Gaston County supported by its residents and the region's transportation agencies, this project is ready to move forward quickly, and is technically and financially feasible. As shown in the project schedule and summarized in **Table 6**, funds received from the BUILD grant will be obligated by September 2022 and the road open to the public by May 2024.

Section 5.1: Environmental Risk

The Lineberger Connector Project area is bordered on all sides by major roadways and is surrounded by regions of development. Despite this, the area has remained undeveloped over the years. Although the cities of Gastonia and Lowell have been in favor of development of this property and despite the numerous studies and plans that have been developed, private development has never come to fruition. As a result, the cities focused on this property in the *Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy*. In this plan, a land use strategy and proposed roadway network were developed. It was formally adopted in August 2016, but private development still has not spurred the construction of the roadway connections.

A Phase I Environmental Site Assessment has been completed for the property and there is no evidence of Recognized Environmental Conditions (RECs) in association with the site. The full report is included as [Attachment 9](#).

Section 5.2: Project Schedule

A detailed project schedule that includes all major project milestones is included in the application as [Attachment 14](#). The schedule includes elements of start, completion, environmental reviews, approvals, right of way, PE, final design, procurement, and construction. The schedule shows that all necessary pre-construction activities will be done prior to December 31, 2021 to ensure the obligation of funds deadline of September 30, 2022 is met. The project will move forward quickly upon receipt of the BUILD funds. The City of Gastonia will request Advance Construction funds for NEPA and Design as soon as the BUILD grant is awarded. With a fully supportive landowner and developer, right-of-way acquisition will be completed in a timely manner in accordance with 49 CFR part 24, 23 CFR part 710, and all other applicable legal requirements.

A summarized project schedule in [Table 6](#) below shows the start and completion dates of environmental reviews and approvals, design, ROW acquisition, and construction. The schedule includes flexibility to allow for unforeseen delays, while meeting the September 30, 2022 deadline to obligate funds.

Milestone	Start Date	End Date
Environmental Documentation	November 2020	May 2021
Preliminary Engineering and Design	February 2021	December 2021
ROW Acquisition	September 2021	June 2022
Utility Easement Acquisition	February 2022	September 2022
Construction	January 2023	May 2024

Table 6: Schedule Summary

The funds will be spent steadily, and expeditiously once construction starts to allow all BUILD grant funding to be expended in advance of the September 30, 2027 expenditure deadline.

Section 5.3: Project Approvals

Environmental, federal, state, and local approvals will be required for this project and as the project moves through further planning and design, all necessary approvals will be obtained. Environmental requirements are outlined in **Section 5.3.1**. With the proposed improved railroad crossing, approval from Norfolk Southern Railroad will be required and a railroad certification will be acquired before construction begins. The City of Gastonia and NorthPoint Development have had conversations with Norfolk Southern about the proposed roadway and at-grade railroad intersection safety improvements.

During the public outreach portion of the *Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy*, the proposed roadway network was presented to residents of both cities. Throughout this outreach process, local citizenry voiced strong support for the project.

Section 5.3.1: Environmental Permits and Reviews

National Environmental Policy Act (NEPA) Process

It is understood that all federally-funded projects must be in compliance with the National Environmental Policy Act (NEPA) in order for ROW or construction funds to be authorized. The Lineberger Connector Project will not induce significant impacts to planned growth or land use for the area, will not require the relocation of significant numbers of people, will not have a significant impact on the natural, cultural, recreational, historic, or other resources, will not involve significant air, noise, or water quality impacts, will not have significant impacts on travel patterns, and will not have any significant environmental impacts. Due to the low probability of significant impacts, it is anticipated that a Categorical Exclusion (CE) will be sufficient for this project. The City of Gastonia will work closely with the Federal Highway Administration (FHWA) and NCDOT on this process.

Section 5.3.2: State and Local Planning

The Lineberger Connector Project supports Gaston County's long-standing policies, plans, and investments that encourage growth where it is most efficiently served in Gaston County. With the Lineberger property located in two municipal jurisdictions, the cities of Gastonia and Lowell are working together to develop an interlocal agreement to allow the City of Gastonia to lead all permitting, inspection, and approval processes. The

cities have adequately prepared for necessary utility extensions to serve the property and have water and sewer treatment capacities to facilitate development.

This project is included in the Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) Comprehensive Transportation Plan (CTP) and Metropolitan Transportation Plan (MTP). In addition, the MPO stands ready to process any amendments to the TIP that may be required when the Lineberger Connector Project is funded.

Section 5.3.3: Federal Transportation Requirements Affecting State and Local Planning

The Lineberger Connector Project is included in the Gaston-Cleveland-Lincoln Metropolitan Planning Organization's Comprehensive Transportation Plan as well as the 2045 Metropolitan Transportation Plan. In addition, the Lineberger Connector Project supports the objectives of the *Greater Charlotte Regional Freight Mobility Plan* as described on page 9.

Section 5.4: Assessment of Project Risks & Mitigation Strategies

As with any project, there are certain risks that have been identified for the Lineberger Connector Project. For this project, the potential for environmental uncertainties until NEPA is complete as well as current uncommitted local funding match are the primary risks. However, these risks will be easily mitigated as the project moves through the planning process, as outlined in the attached project schedule.

The City of Gastonia has assessed risks to the proposed project in this application relative to implementation and has not identified any major risks that will cause delay or otherwise prohibit the obligation of funds prior to the September 30, 2022 statutory obligation deadline. While NEPA and other state and federal environmental approvals present some risk in schedule delays, these risks have been accounted for in the schedule presented within this application. The dates for each phase have contingency built into them to mitigate the risk of delay. Additionally, through the multiple planning efforts that have been conducted over the last decade, there have been numerous public involvement processes to inform the public and adjacent property owners of the proposed improvement and the potential impacts. Moreover, the City of Gastonia is confident that all BUILD grant funds will be expended well in advance of the September 30, 2027 expenditure deadline.

SECTION 6: BENEFIT-COST ANALYSIS

A full BCA is included in this application as **Attachment 3**. The BCA has been documented in a spreadsheet format consistent with the requirements of the BUILD program. The cities of Gastonia and Lowell, as well as Gaston County, have analyzed the costs and benefits of the project in context with regional transportation goals to demonstrate the net benefits of the project. These benefits will be shared by residents and regional commuters of the cities of Gastonia and Lowell, and Gaston County.

There are two purposes of the BCA Spreadsheet—to describe in a thorough, complete, and accurate manner the total costs and benefits that will occur each year during the project's life cycle and to yield a benefit-cost ratio. The benefit-cost ratio is one measure of the societal change that can occur as a result of the cities of Gastonia and Lowell, and Gaston County's investment in this transportation project. The benefit-cost ratio is the sum total of project benefits divided by the sum total of project costs. BCA ratios greater than one are indicative of a return on a capital investment as measured through benefits spread region wide. The total cost of the project is estimated to be \$29,934,938.

The results of the BCA are presented in **TABLE 7** using a discount of 3%. The BCA ratio at a 3% discount is 4.26. Undiscounted results and results at a 7% discount also are included in the BCA Spreadsheet.

Benefit Type		Key Benefits Quantified	Undiscounted Net Benefits	3% Discount of NPV of Benefits	7% Discount of NPV of Benefits
Long-Term Outcomes					
Operating Costs	Additional pavement costs	Decrease in pavement repair costs from decrease in auto VMT on I-85	\$332,033	\$230,555	\$150,298
Travel Time/Operating Costs	Vehicle operating costs	Additional vehicle operating costs from decreased VMT	\$96,318,905	\$66,881,212	\$43,599,601
	Travel time savings	Time savings from travel time reduction	\$5,572,525	\$3,869,409	\$2,522,453
other	Noise Costs	Additional noise due to additional Auto VMT	\$298,830	\$207,499	\$135,268
Emissions/Reduction Benefits	Air Quality (Non-Carbon)	Decrease in mobile source emissions	\$2,683,597	\$1,863,417	\$1,214,754
	Air Quality (Carbon)	Decrease in mobile source emissions	\$77,364	\$77,364	\$77,364
	Indirect energy consumption, water quality (auto)	Decrease in mobile source run-off and VMT-dependent manufacturing	\$7,526,328	\$5,226,076	\$3,406,859
Safety Benefits	Reductions in injuries and PDO crashes	Improved intersections	\$6,519,602	\$4,571,364	\$3,016,366
Near-Term Jobs Creation and Economic Activity					
Property Value Increase			\$48,752,719	\$44,615,644	\$39,796,741
Total Benefits			\$168,081,903	\$127,542,541	\$93,919,704
Total Costs			\$29,934,938	\$29,934,938	\$29,934,938
Benefit/Cost Ratio			5.61	4.26	3.14

Table 7: Benefit-Cost Analysis Results

SECTION 7: FEDERAL WAGE RATE CERTIFICATION

The City of Gastonia will comply with the requirements of Subchapter IV of Chapter 31 of Title 40, United States Code, as evidenced by the certification in **Attachment 15**.