

City of Gastonia

TIGER Grant Application

October 16, 2017

Lineberger Connector



Connecting today • tomorrow • together

Gastonia

Lowell

Prepared for USDOT:



U.S. Department of Transportation

Prepared by:

The City of Gastonia



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Introduction

A bridge. A bike path. A pedestrian link. A network connector. A gateway. An opportunity. There is no question that the Gastonia-Lowell Lineberger Connector (Lineberger Connector) project is important to the Cities of Gastonia and Lowell and its significance goes well beyond design and permitting. Given the project’s context within communities, it is easy to understand why citizens have placed so much emphasis on **making the connection**.

The City of Gastonia, in conjunction with the City of Lowell, seeks **\$25 million** in TIGER Discretionary Grant funds to complete the \$57-million package needed to implement the Lineberger Connector project between the two communities. The Lineberger Connector will complete the network, braiding the communities together through this overly congested area. This project is located in Gaston County—in North Carolina’s 10th congressional district.

Protecting the mobility of almost 78,000 people (74,000 in Gastonia and 4,000 in Lowell) in communities located along the I-85 corridor will be a challenge. These communities are located just west of Charlotte, the largest city in North Carolina, and are beginning to feel the pressures the congested network. The Community Collector project blends the needs of all mode types for residents and visitors, while respecting the history and amenities that give these communities their charm and personality.

As shown in **Exhibit 1** on the following page, the Lineberger Connector project consists of approximately 3.8 miles of new location roadway and a new bridge over I-85, connecting both sides of I-85 between Franklin Boulevard and NC 7 to the north. The construction of the Lineberger Connector will complete the network between Exit 21 (Cox Road) and Exit 22 (South Main Street) east and west, and NC 7 and Franklin Boulevard north and south. The project also provides a second grade separation crossing between Exits 21 and 22 over I-85.

This project will improve traffic flow for community residents and regional commuters from Gaston County. The new grade separation will also unlock more than 450 acres of property that is ripe for local and regional development. The Charlotte Metro region is one of the fastest growing areas in North Carolina and the U.S. The project area is located along the I-85 corridor which serves the majority of the Southeast and connects the Charlotte region to the northeast corridor along I-95 South to Atlanta. This corridor serves as a major trucking corridor, supplying the eastern seaboard with vital goods and services. Unlocking the 450 acres as a part of the Lineberger Connector project can provide the much needed logistics and distribution facilities along the I-85 corridor. These improvements will provide greater economic mobility for to citizens in both cities and leverage infrastructure improvements to stimulate economic growth. This project not only will result in significant long-term benefits to the adjacent communities of Gastonia and Lowell, but also will impact the rural areas of Gaston County and the metropolitan areas of Charlotte.

The Lineberger Connector project will be an economic engine for the region.

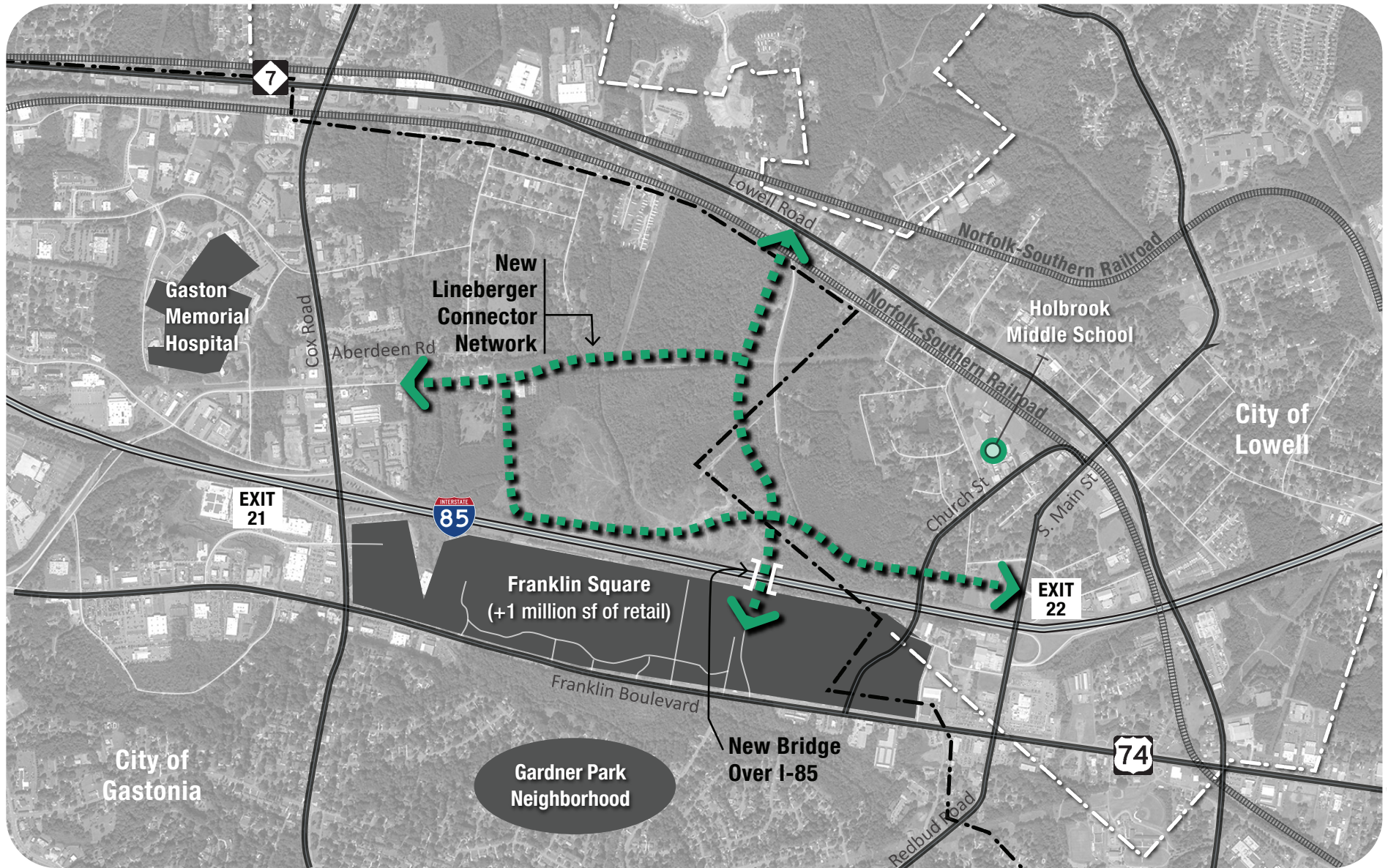


Exhibit 1—Concept Plan



Project Description

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 but 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.

Transportation, and more importantly access and land use, are the two main engines that drive property development. Currently, this 450-acre property can be accessed from the north via West 1st Street (NC 7), from the west via Aberdeen Road and from the east via South Church Street. From the south, I-85 serves as a barrier, restricting access to Franklin Square.

Previously, the “Franklin Boulevard Corridor Access and Alternative Development Mobility Strategy” served as a developmental master plan for this property. Unlike previous plans for the region, this developmental master plan envisioned development north of I-85 as well as a framework for future roadway connections to the north, south, east, and west.

As a part of the Lineberger Connector project, these north-south and east-west connections will be made across this property. To the south, Lineberger Road will be extended north via a new bridge connection over I-85. To the north, a bridge will be constructed over the existing railroad.

Within the property, a new location road network—geared towards supporting future development and greater connectivity for citizens—will be constructed and will include connections to the east and west.

WHO WILL BENEFIT?

Expected users include residents of Gastonia, Lowell, and the surrounding communities, as well as commuters traveling through Gaston County. The project area is in one of the fastest-growing parts of the country and 47% of residents commute out of Gaston County for work. Increased mobility will improve access to jobs and bolster the local and regional economies. The Lineberger Connector project will increase mobility between Exits 21 and 22 and across I-85. It also will provide better access to the transportation network for members of nearby communities.

By creating a center for industry and commercial development, the 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 trucking industry will benefit from the reduced congestion along the interstate.

Key Benefits Summary

- **Connecting communities of Gastonia and Lowell**
- **Reducing overall costs for I-85 Widening project**
- **Reducing emergency response times to and from Gaston Memorial Hospital**
- **Increasing economic mobility for residents of Gastonia, Lowell, and the Charlotte Metro region**
- **Attracting local and regional development**
- **Opening additional opportunities for trucking and shipping routes**

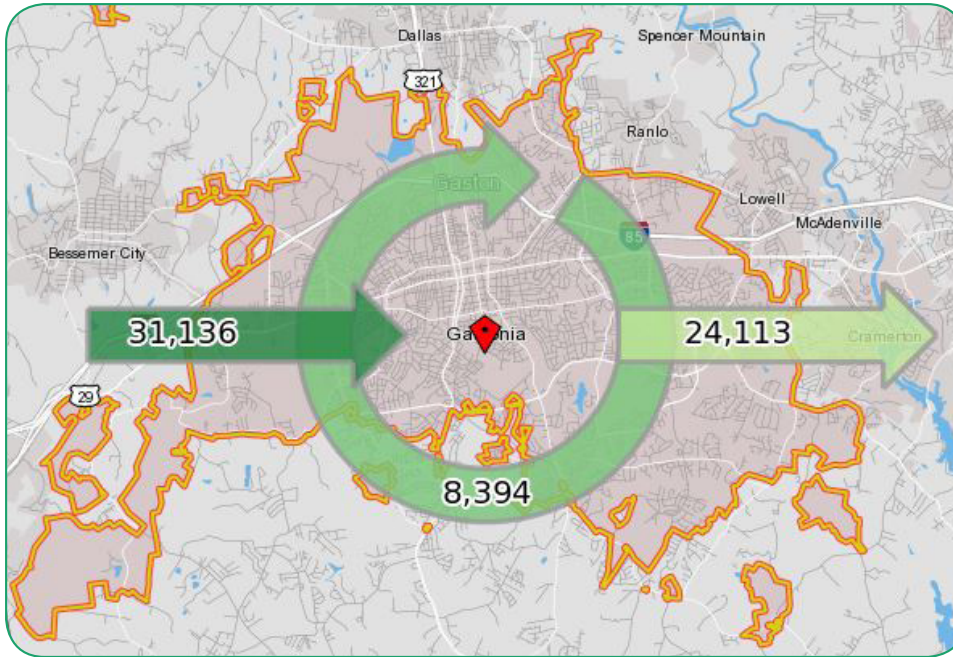


Exhibit 2—Commuting Trends

communities. Yet, none of them provide connections within and between Gastonia and Lowell. This results in poor mobility in this fast-growing area. Further, this lack of a defined transportation network has resulted in an undeveloped area, which, if developed, has the potential to dramatically shift the economy of this region.

According to the US Census, approximately 24,000 adults commute out of Gastonia and Lowell to work. Of those residents, 26% work in Charlotte, with no other commute location holder more than a 2% share of the total. Approximately 31,000 people commute into Gastonia or Lowell for work, living primarily in Charlotte. This project will improve local connectivity and open a long-isolated area of the City to development opportunities that will improve local employment opportunities and quality of life for its citizens.

PURPOSE AND NEED

The Lineberger Connector project will improve roadway connectivity and economic competitiveness as well as reduce interstate commuter traffic out of Gaston County. It will link US 74, NC 7, Cox Road, and South Main Street via a new roadway network, including a new bridge connection over I-85 at Lineberger Road and a new bridge over the railroad to the north. The project will increase the economic marketability of the undeveloped land north of I-85 and spur development that will benefit the local and regional economies and will reduce delay along the I-85 corridor, through the addition of new connections and the changing of travel patterns.

NEED FOR PROJECT

Several major east-west corridors pass through Gastonia and Lowell. I-85, US 74, and NC 7 pass through these communities, connecting them to Charlotte to the east and carrying vehicles into, out of, and through these

PROJECT PARTIES

The Cities of Gastonia and Lowell are submitting this application in partnership. As the project sponsors, these Cities have actively planned, programmed, and built lasting partnerships to prioritize investment in this area to connect and transform their communities. Key partnerships are highlighted to the right and described further in the secondary selection criteria.

Key Partnerships

- **City of Gastonia: Project Sponsor and Long-Term Maintenance Provider**
- **City of Lowell: Project Sponsor**
- **GCLMPO: Planning and Funding Partner**
- **NCDOT: Long-Term Maintenance Provider**

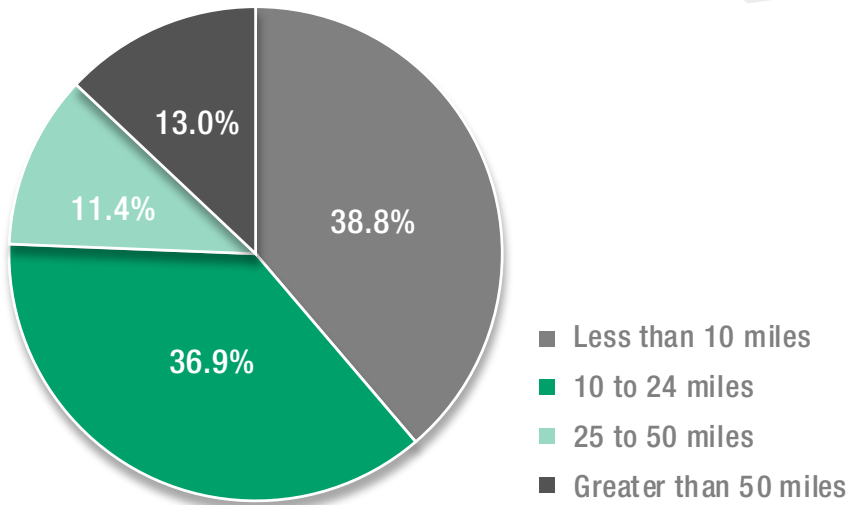


Exhibit 3—Commute Distance

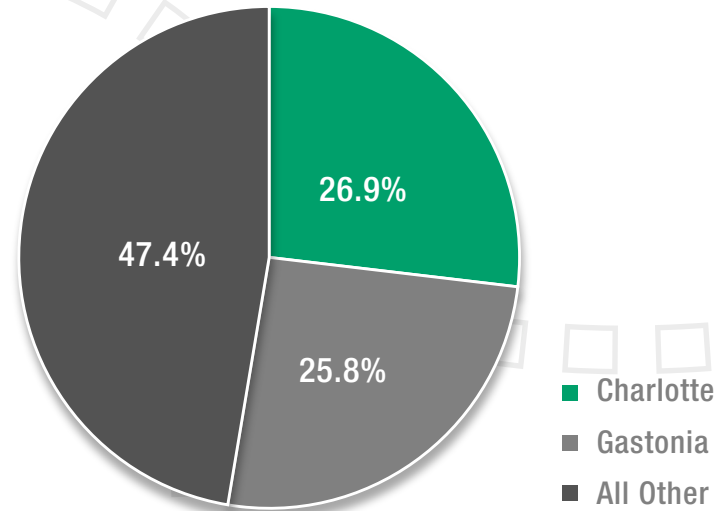


Exhibit 4—Commuting Destinations

PROJECT LOCATION

The Lineberger Connector project is located in Gaston County, NC within the Charlotte Metropolitan Statistical Area (MSA)—also known as the Charlotte Metro region. Specifically, the project is located on the eastern border of Gastonia, NC and the western border of Lowell, NC as seen in **Exhibit 5 and 6** below. Gastonia is the county seat and the largest city in the County. It is a fast-growing suburb of Charlotte and is likely to see continued growth and economic expansion due to its strategic position within the Charlotte Metro area. The City straddles I-85, which brings both economic opportunity and mobility challenges as the interstate acts as the major connection between areas and forms a barrier that can impede local travel.

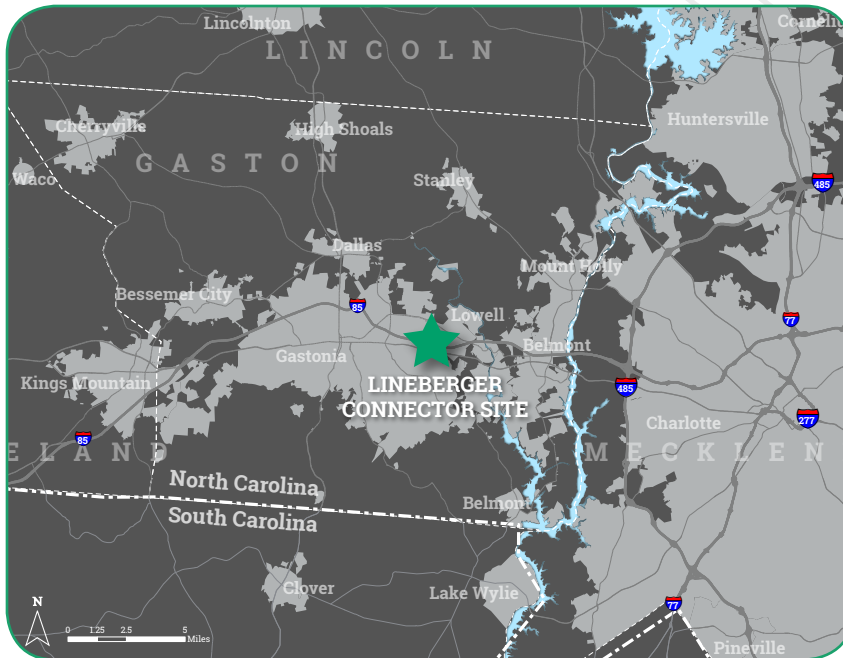


Exhibit 5—Regional Context

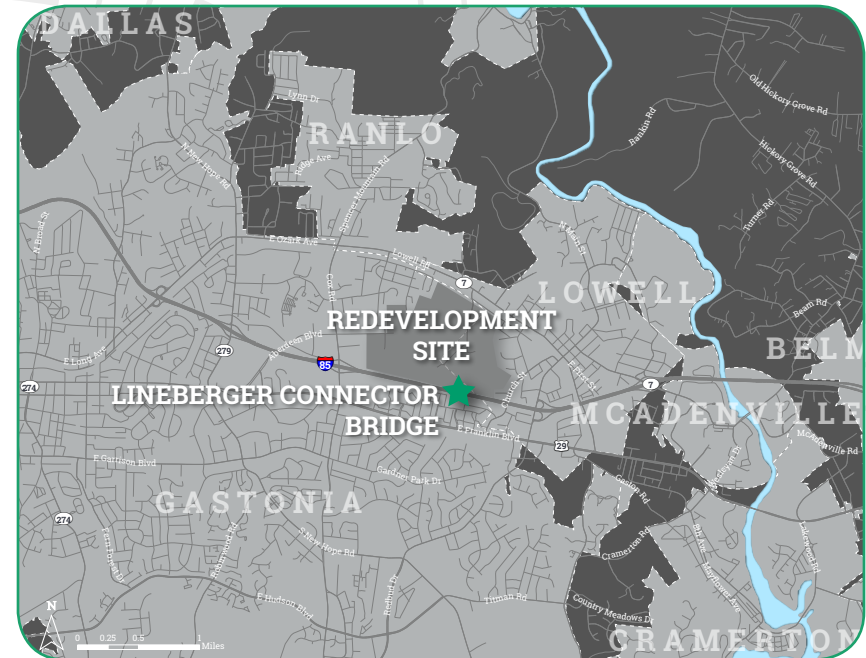


Exhibit 6—Local Context

Grant Funds, Sources, and Uses

Capital costs for the Lineberger Connector project are estimated at **\$57 million**. 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 approximately **\$25 million** in TIGER grant funding to complete the funding for project development and construction. As shown in **Exhibit 7**, the remaining sources are anticipated from local, state, or private investment funding sources. The Cities of Gastonia and Lowell 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.

Type	Source	Amount	Percent of Total	Status
State	NCDOT	\$32 million	56%	Anticipated 1 st quarter of 2018
Federal	TIGER	\$25 million	44%	Ongoing with this application
Local/ Private	*See note below	-	-	In development

Exhibit 7—Funding Sources

** With the commitment of funding through the TIGER grant program, additional funding is anticipated for this project through private land development activities. The TIGER funding will unlock the economic potential of the 450 acres of available property between the two communities.*

Exhibit 8 shows the 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 in the Project Readiness section of this application on **page 14**.

Expenditure by Year (in millions)				
Funding Source	Amount	2018	2019	2020
Local	TBD	-	-	-
State	\$32 million	\$2 million	\$1 million	\$29 million
TIGER	\$25 million	\$1 million	\$1 million	\$23 million
Total	\$57 million	\$3 million	\$2 million	\$52 million

Exhibit 8—Expenditure Schedule





The Lineberger Connector will:

Make the region safer, more prosperous, more connected, and more mobile than ever before.

Merit Criteria

This section describes how the Lineberger Connector project will meet or exceed the 2017 TIGER primary selection criteria. The quantification of benefits described in the sections that follow is drawn from the full Benefit Cost Analysis (BCA). The quantified benefits are summarized in **Exhibit 11** on **page 14**.

The Lineberger Connector project is born out of a need for increased economic development spurred by the continued evolution of the economy in Gaston County. Economic drivers have changed from predominately textile and agrarian based to cutting-edge product development and manufacturing based, which still incorporate the elements of the economy that made Gaston County successful in the past.

The project works toward the goals established by the City of Gastonia and the TIGER program of improving mobility, establishing economic development opportunities, and incorporating opportunities for a high quality of life. As Gastonia continues to grow, providing additional routes to relieve congestion on the overloaded arterials and interstates will become more and more critical. Additionally, the project provides unique opportunities to improve the City's home and work location balance to reduce commute distance, promote an active lifestyle, and improve sustainability in the coming decades.

SAFETY

The economic benefit is apparent; the direct benefit to safety that the Lineberger Connector affords is also evident and includes a reduction in both injury and property damage only (PDO) crashes. I-85 sees a huge volume of daily traffic. The Lineberger Connector is a smart solution to reducing traffic demand on I-85 and the surrounding

arterials and will go a long way towards improving the crash/accident rates in the area. Because of the large number of commuters, as evidenced by the census data provided, the connector will be ideal to reducing local traffic on I-85, improving travel in the area for residents and commuters alike.

The DOT supports projects that predictably reduce the number, rate, and severity of surface transportation-related crashes, injuries, and fatalities. The quantitative safety measures of the Lineberger Connector project include a reduction in injury and property damage only (PDO) crashes. These projected reductions can be attributed to the plan to introduce a median along the new roadway.

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 raised median is 0.79, indicating that a 21% reduction in overall collisions can be expected for a corridor where a median is installed. The Lineberger Connector project features a median for the corridor along Cox Road, Lowell Road, and South Main Street.

Part of this project includes construction of a new facility; therefore, there is no existing crash information for that portion of the project. As a proxy, the number of injuries and vehicles involved in PDO crashes along the current route between NC 74 was used and factored by the diversion rate of 11% for those shifting from this roadway to the new facility. New users of the Lineberger Connector will also benefit from the safety provided a median, but this is not captured within the BCA.

STATE OF GOOD REPAIR

The primary purpose of the Lineberger Connector project is to increase connectivity in the area between Exits 21 and Exit 22. Between these two interchanges with I-85 there is only one grade separation at Church Street. While this connection does provide some connectivity north and south, its connectivity to NC 7 (Lowell Road) is compromised due to the Norfolk Southern Railroad to the north and the existing homes and neighborhoods that make up the City of Lowell.



The Lineberger Connector project will increase connectivity from all directions (i.e., north, south, east, west), providing a parallel alternative route to I-85 and US 74 between Exits 21 and 22. The improved connection not only benefits the available property (i.e., the 450 acres to the north), but also provides an additional connection to Gaston Memorial Hospital at Exit 21.

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 marginal non-attainment for ozone. 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 need 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 2024.

During the construction of this project, all three crossings of I-85 (Exit 21, Church Street, and Exit 22) will require improvement to accommodate the four-lane typical section. The Lineberger Connector project directly benefits and

can reduce the estimated \$258-million cost of I-5719 significantly. The cost savings are realized through the ability to reduce the time of construction as well as the maintenance of traffic (MOT) during construction. The multi-lane parallel connection provided by this project, as well as the extension of Lineberger Road over I-85, allows

traffic to be distributed more efficiently between Exits 21 and 22, while maintaining access to Holbrook Middle School.

NCDOT supports projects that improve the condition of existing transportation facilities, including minimized life-cycle costs. These projects are consistent with relevant state, regional, or local efforts and plans 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 vehicle miles traveled (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.

ECONOMIC COMPETITIVENESS

The missing link between Exits 21 and 22 lies within the 450 acres known as the Lineberger property. This connection provides a much needed, uncongested connection between the residents that live to the north of I-85 and the more than one million square feet of commercial development located in Franklin Square along US 74. The construction of the Lineberger Connector project creates opportunities for all residents of Gastonia and Lowell, as well as surrounding communities, and sets up transformative change for the 450 acres currently undeveloped.

The employment base within the Charlotte Metro area is one of—if not the—highest in the state and U.S. Maintaining a substantial, competitive workforce in this region is critical.

The 450 acres adjacent to the Lineberger Connector roadway project not only provide fertile opportunities to new, expanding, or relocating businesses or industry, it also provides access to the a significant, competitively priced, and skilled workforce that the Cities of Gastonia and Lowell provide.

The adjacent property along the Lineberger Collector provides space for new companies 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

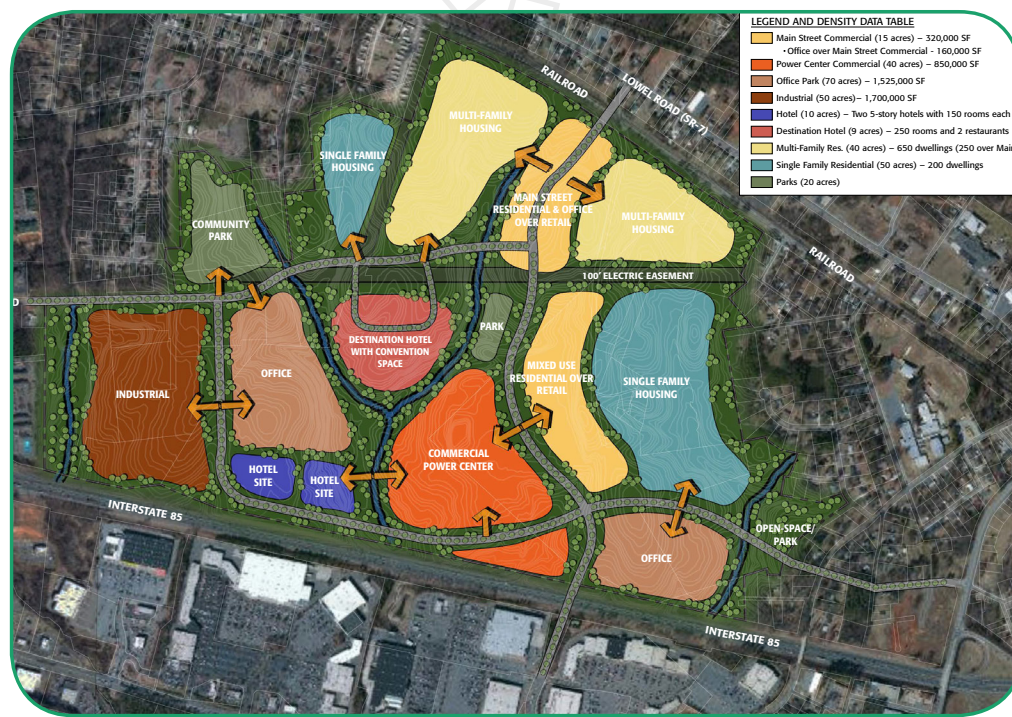


Exhibit 9—Lineberger Property Land Use Concept Map

out of the county to work. This not only improves the quality of life 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. Conservative estimates for the 450-acre property adjacent to the Lineberger Connector indicate between 1,500 to 4,000 potential new jobs, depending on the development type and density.

The implementation of the Lineberger Connector Project will save over 28,000 vehicle miles traveled upon implementation.

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 those drivers is 24.4 minutes. This is 94% higher than the statewide average commute time in NC of 23 minutes. This is one of the key benefits to this project as well as maintaining, if not improving, the economic completeness of the area. This and other key benefits are summarized below:

- **In the Path of Growth:** The area around Gastonia is projected to add 61,000 new residents between 2010 and 2040, a 30% growth rate. Gastonia is also projected to add approximately 15,000 new jobs by 2040, and 11,000 new students attending various colleges and universities in the region, such as UNC-Charlotte.
- **Ripe for Development:** The connector is in an area of high projected growth along the I-85 corridor between Gastonia and Charlotte. The Gaston-Cleveland-Lincoln Metropolitan Planning Organization (GCLMPO) projects eastern Gaston County will add between 10,000 and 15,000 new jobs in the coming decades.
- **Employment Destination:** 31,000 people commute into Gastonia each day for work.

- **Importance of I-85:** More than 30% of the local workforce commutes each day to Mecklenburg County, making I-85 one of the busiest commuter corridors in the region. In 2016, the North Carolina Department of Transportation (NCDOT) recorded between 125,000 and 130,000 vehicles per day traveling that corridor.
- **Local Employment Opportunities:** Gastonia's unemployment rate in 2015 was 7.7%—higher than the state average of 5.8%
- **Economic Opportunity:** At \$40,432, Gastonia has a lower median household income than the state's \$46,868. More than 20% of people in the City lived below the poverty level in 2015.

ENVIRONMENTAL SUSTAINABILITY

Because the Lineberger Connector 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 activity centers through this project with residents will reduce greenhouse gas emissions through the reduction of vehicle miles traveled. This reduction benefits not only those who are within proximity of the development, but also those who access Exit 21 or 22 for their daily commute.

In addition to connectivity and mobility, the shifting of commuting patterns will also aid in VMT reduction. By developing this economic node in the Gaston County, countless commuters will be able to avoid

the minimum 24-minute commute outside the area. This reduction has been calculated to exceed 28,000 VMT, a significant reduction for Gaston County, but also for the Charlotte region.

The planned network of the Lineberger Connector includes the provision for bicycle and pedestrian facilities through sidewalks, bike lanes, and side paths. This multimodal approach provides an alternative for mobility, and also accommodates the only mode(s) available to them. When coupled with the concentration of development activity on the property, additional, uncaptured reductions in VMT will be realized through the provision of proximity and alternative mode choice.

Through their Livability Initiative, the US Department of Transportation (USDOT) has partnered with other federal agencies to develop guiding principles for sustainability and livability. The Lineberger Connector will satisfy these principles by providing a regional important connection that will allow for better connectivity among existing neighborhoods, create new and vibrant communities, enhance the economic competitiveness of the region, and alleviate traffic demand along the I-85 corridor.

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 bent to economic growth, rather it provides a direct benefit to the 78,000 residents – 74,000 in Gastonia and 4,000 in Lowell – living and currently working outside this region. The completion of this network and the development around it provides Gaston county residents, both those living in the urbanized and rural areas, and opportunity for a competitive, well

paid job in their county. It affords them more time with their families and loved ones, as time that had been spent commuting can now be repurposed. While this project cannot create additional hours in the day, it can reallocate those hours providing for a better use of those, and not just for additional commerce or work, but quality giving back to the community they live within. The improved quality of life for residents has been shown to improve workforce productivity, reduce absenteeism, and generally create a more productive and stable workforce.



INNOVATION

With the implementation of the Lineberger Connector project, additional growth will occur. While some will view this as increased congestion, pollution, and impacts, this reality could not be further from the truth. Rather, jobs will be created through innovative investments in development and changes to land use yields. Under the current configuration, the property generates a modest tax revenue for both communities as currently zoned. For the property owners, a 20-year cycle of harvesting timber occurs, generating a modest return, but also an ever-increasing impact to the environment.

However, as envisioned in the masterplan (shown to the right), this property has the potential to become an economic generator for Gaston County, the Charlotte MSA, and the communities along the I-85 corridor. Strategically located along I-85, the property has tremendous opportunities and is sized and geographically positioned relative to the communities and I-85 such that it has the potential to accommodate a variety of land uses from automotive, distribution, to



single and multi-family residential development and all in between. The unique assets and potential of this property is only restrained due to its lack of strategic and thoughtful connectivity. As estimated earlier this property has the ability to generate up to 4,000 new jobs within the region, each of which will contribute to the productivity and innovation of the American workforce.

PARTNERSHIP

The Cities of Gastonia and Lowell 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. Never more evident is their ability to come together and develop this application for a 2017 TIGER grant.

The Lineberger Connector project is a top priority for the community and its greater local and regional benefits. GCLMPO, the metropolitan planning organization, has been an ongoing partner working with both communities on the development of the corridor study which was one of the catalyst projects for the creation of the Lineberger Connector project. Likewise, NCDOT has also been a supporting partner for this project. Copies of the project support letters are attached for review.

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 and City of Lowell), regional (GCLMPO), and state (NCDOT) agencies. 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.

Project Readiness

TECHNICAL FEASIBILITY

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. To encourage and support economic growth and connectivity, the Cities of Gastonia and Lowell have begun raising support and funds for the Lineberger Connector project.

This project is included as a non-fiscally constrained project in the GCLMPO Comprehensive Transportation Plan (CTP) and Metropolitan Transportation Plan (MTP). However, this project is not included, or assigned funding, in the NCDOT State Transportation Improvement Program (STIP).

STATEMENT OF WORK

Roadway Cross-Section and Alignment

The proposed Lineberger Connector project will consist of a network of four-lane roadways with curb and gutter and a tree-lined median, an interstate bridge crossing, and a railroad bridge crossing.

Right-of-Way and Access Control

The Lineberger Connector project is proposed to have a total right-of-way (ROW) width of 120 feet. Access will be provided along the proposed roads as indicated on the concept plan located on [page 2](#) and as needed to support the anticipated development.

The proposed roadway network will connect via intersection with NC 7 to the north, South Main Street to the east, the extension of Lineberger Road to the south, and the extension of Aberdeen Boulevard to the west. All connections to the existing roadway network will have full movement access.

Speed Limit

The proposed speed limit throughout the roadway network of the Lineberger Connector project is 35 miles per hour (mph).

Design Speed

The proposed design speed throughout the roadway network of the Lineberger Connector project is 40 mph.

Intersections/Interchanges

The Lineberger Connector project will connect to the existing roadway network at four locations:

- **North:** intersection with NC 7
- **East:** intersection with South Main Street
- **South:** connection to Lineberger Road
- **West:** connection to Aberdeen Boulevard

There are no interchanges proposed with the project.

Railroad Crossings

As a part of this project, a bridge crossing over the Norfolk Southern Railroad will be added just south of the proposed connection to NC 7. Coordination with Norfolk Southern has not yet begun.

Bicycle and Pedestrian Facilities/Greenways

Throughout the proposed roadway network, bicycle lanes and sidewalks are planned on both sides, as well as a community park as part of the future development around the Lineberger Connector project.

Utilities

Existing utilities are not present where the proposed new roadway will be constructed. As part of this project, utility connections will be made and carried through the proposed roadway network where

the proposed network ties into existing roadway. Detailed utility information will be developed during final design.

Landscaping

Landscaping most likely will be included as part of the Lineberger Connector project. Detailed landscaping plans will be developed during final design.

PROJECT SCHEDULE

A detailed project schedule is shown in **Exhibit 9** below and shows the start and completion dates of environmental reviews and approvals, design, ROW acquisition, and plans, specifications, and estimates (PS&E), as well as start of construction. The schedule includes flexibility to allow for unforeseen delays, while meeting the deadline to obligate funds.

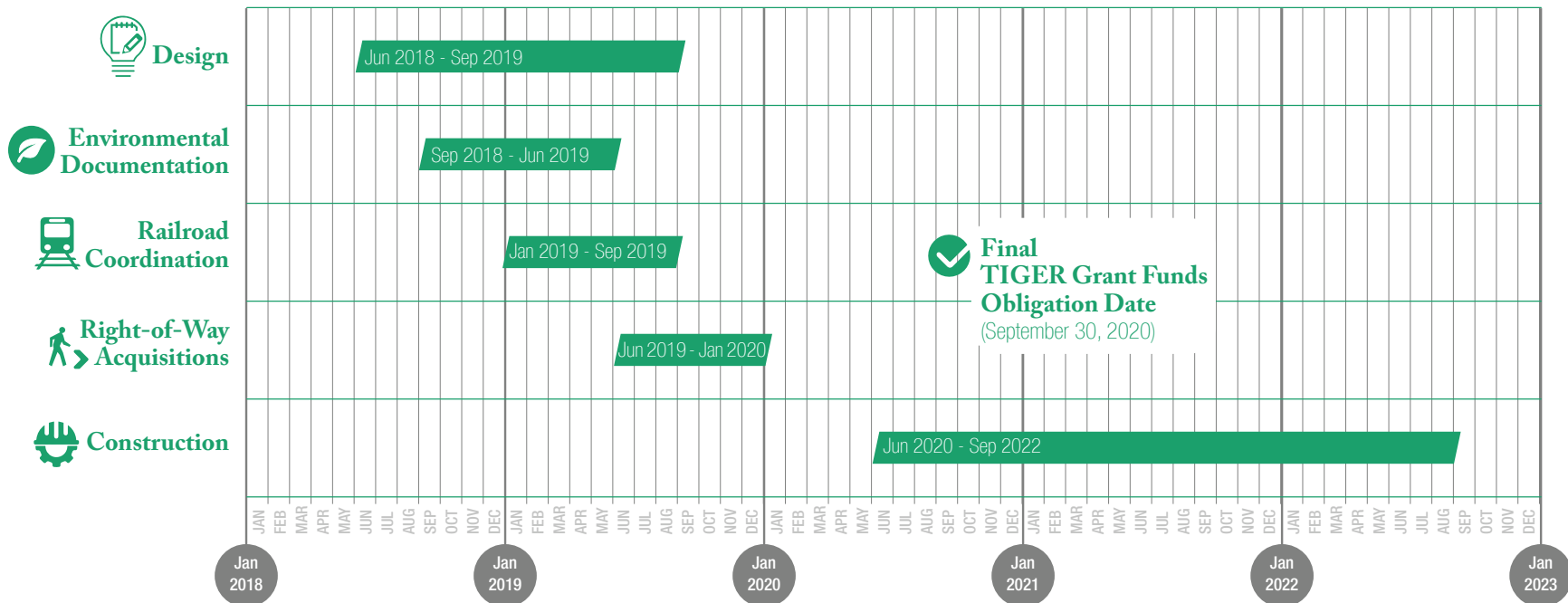


Exhibit 10–Schedule

REQUIRED APPROVALS

Environmental, federal, state, and local approvals will be required for this project. Environmental requirements are outlined in the following National Environmental Policy Act (NEPA) discussion. With the proposed interstate and railroad crossings, approval from the Federal Highway Administration (FHWA) and Norfolk Southern Railroad will be required.

At this time, state and local approvals and funding have not been secured. However, as the project moves through further planning and design, these approvals will be obtained and alternatives to secure funding sources will be evaluated.

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.

NEPA/404 Merger Process

The environmental process for the Lineberger Connector project has not yet begun. Given the anticipated stream and wetland impacts, this project likely will follow the NEPA/404 Merger Process.

To streamline the environmental planning and permitting process, NCDOT, FHWA, and the U.S. Army Corps of Engineers (USACE) developed an interagency agreement in North Carolina that integrates the environmental impact assessment requirements of NEPA and the USACE Section 404 permitting process. This process is known as the NEPA/404 Merger Process and applies to new location projects and other projects that likely will require an individual permit under Section 404 of the Clean Water Act (CWA). At the beginning of each project, NCDOT initiates a screening process to determine the applicability of the NEPA/404 Merger Process for that project.

Required Approvals

- FHWA
- Norfolk Southern Railroad
- NCDOT
- USACE
- Citizens of Gastonia, Lowell, and the surrounding region

Concurrence points are defining points in the Section 404/NEPA Merger Process. Concurrence implies that project team members and the agencies they represent agree to decisions made at these defining points in the project development process and, in doing so, pledge to abide by the decision made unless there is a substantial changed condition. Concurrence is sequential and must be achieved in the proper order. The seven concurrence points in the Merger Process are as follows:

Concurrence Point 1: Purpose and Need and Study Area

The foundation upon which project justification is established.

Concurrence Point 2: Detailed Study Alternatives (DSA)

Alternatives that satisfy the project's purpose and need; alternatives will be studied and evaluated in sufficient detail to ensure good transportation and permit decision-making.

Concurrence Point 2A: Bridging Designs and Alignment Review

Identification of bridge locations and approximate lengths and a review of the preliminary alignment for each alternative.

Concurrence Point 3: LEDPA/Preferred Alternative Selection

The alternative determined to be the "least environmentally damaging practicable alternative" or LEDPA (NEPA preferred alternative), through the project development and permitting process.

Concurrence Point 4A: Avoidance and Minimization

A detailed, interdisciplinary, and interagency review to optimize the design and benefits of the project while reducing environmental impacts to the human and natural environments.

Concurrence Point 4B: Thirty Percent Hydraulic Review

A review of the development of the drainage design.



Concurrence Point 4C: Permit Drawings Review

A review of the completed permit drawings after the hydraulic design is complete and prior to the permit application.

The up front and ongoing coordination with review agencies allows for an expedited schedule and a project that each individual agency can issue permits. This process reduces risk during the planning and permitting phases and allows for more informed decision-making by the review agencies.

ASSESSMENT OF PROJECT RISKS AND MITIGATION STRATEGIES

As with any project, there are certain risks that have been identified for the Lineberger Connector project. For this project, environmental uncertainties, an uncommitted local funding match, and lack of legislative approval are the primary risks. However, these risks will be mitigated as the project moves through the planning process, as outlined to the right.

- **Environmental Uncertainties:** There are known stream crossings that will need to be added to construct the project. Impacts to these and other environmental elements will be determined and addressed during the NEPA process.
- **Uncommitted Local Funding Match:** Funding by local agencies has not been acquired yet due to the preliminary nature of current plans. During detailed planning and design, more opportunities for local funding will be available. The local and regional benefits of this project make it a prime candidate for a local funding match.
- **Lack of Legislative Approval:** Because this project is still in the early phases of the planning process, legislative approvals have not yet been acquired. But, local support for this project thus far is indicative of opportunities to work and partner with agencies to acquire approvals as the project progresses.

Benefit Cost Analysis (BCA)

The BCA for the Lineberger Connector project is summarized in **Exhibit 1** on **page 2**. While the results show a strong positive ratio of benefits versus costs, the tool is intended to provide further understanding of the benefits and costs of the Gastonia-Lowell Lineberger Connector project in relation to other roadway projects and other potential TIGER infrastructure investments. The full BCA is provided in Attachments 1 and 2. Annual costs and benefits are compared throughout a long-term planning horizon and summarized during the project lifecycle. The project has an assumed useful life of 25 years; the time horizon evaluated in this analysis is 20 years per FHWA recommendations. Construction dollars would be spent starting in 2018 and the project would be completed and open for use in 2022. Benefits will accrue during the full operation of the project. The bridge connection from US 74 to Lowell for this project is critical during the widening of I-85 because both the Cox Road bridge and South Main Street bridges will be closed.

The project shows strong positive economic benefits across a range of outcomes, due to the decrease in expected VMT. The largest benefit will come in the form of travel time savings improved, vehicles operating costs, and safety through intersection improvements. Due to the expected decrease in VMT, all variables studied for this project, were calculated or qualified as a benefit.



Exhibit 11—Benefits Quantified

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	\$234,570	\$162,879	\$106,180
Travel Time/ Operating Costs	Vehicle Operating Costs	Additional vehicle operating costs from decreased VMT	\$69,072,599	\$47,962,123	\$31,266,321
	Travel Time Savings	Time savings from travel time reduction	\$116,078,846	\$80,601,975	\$52,544,113
Other	Noise Costs	Additional noise due to additional auto VMT	\$211,113	\$146,591	\$95,562
Emissions/ Reduction on Benefits	Air Quality (Non Carbon)	Decrease in mobile source emissions	\$1,712,364	\$1,189,018	\$775,116
	Air Quality (Carbon)	Decrease in mobile source emissions	\$2,816,612	\$2,816,612	\$2,816,612
	Indirect energy consumption and water quality (auto)	Decrease in mobile source runoff and VMT-dependent manufacturing	\$4,887,328	\$3,393,627	\$2,212,292
Safety Benefits	Reductions in injuries and PDO crashes	Improved intersections	\$28,233,488	\$19,796,541	\$13,062,537
Near-Term Jobs Creation and Economic Activity					
Property Value Increase			\$209,935,490	\$192,120,713	\$171,369,895
Total Benefits			\$433,182,410	\$348,190,078	\$274,248,628
Total Costs			\$56,948,200	\$56,948,200	\$56,948,200
Benefit/Cost Ratio			7.61	6.11	4.82

Cost Share

The Lineberger Connector project is a critical piece of infrastructure in the transportation network for the Communities of Gastonia and Lowell. TIGER funding is critical to advance and construct this project. The Lineberger Connector is currently listed in the Gaston Cleveland Lincoln MPO 2045 MTP for construction in the 2035 horizon year. However, at this point, the project is not currently within the fiscally constrained GCL MTP or the NCDOT STIP. The critical TIGER funding would help to advance the project from the 2035 horizon year to the funding window timeline outlined in the schedule section of this application. The City of Gastonia financial outlook is strong, as evidenced by maintaining an AA bond rating, according to Standard & Poor's.

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

As discussed throughout this application, the City of Gastonia sees the TIGER grant funding as a catalyst to attract additional private funding investment to bring to fruition the Lineberger Connector project. The magnitude of permits and design required to bring the Lineberger Connector to reality is beyond the abilities of a municipality or private

developer acting alone. However, with the infusion of TIGER grant funding, the project becomes feasible and marketable to other private partners that are critical to complete the project.

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 TIGER 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 does use federal funds in the implementation of their transportation program but does not rely on it exclusively. Recently, the City of Gastonia passed the "GO Bonds," which proactively invests in the implementation of sidewalks and greenways throughout the City. Currently, the City of Gastonia has 132 miles of sidewalks and 4.6 miles of greenway trails. A majority of this infrastructure has been installed or are existing sections that have been improved to current standards using the GO Bonds. Bond efforts have not been limited to active modes of transportation only. The City has also used their AA bond rating to complete and widen roadways within City limits.

In an effort to make this project a reality, the City of Gastonia is committed to the long-term maintenance of the Lineberger Connector roadways, with the exception of the proposed bridge over I-85. NCDOT will maintain this bridge per their guidelines. The City will use the additional tax revenue generated from the development of the 450 acres to maintain the 3.8 miles of new roadway.

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 found in Attachment 3. The following items are included as attachments to this document:

1. Benefit Cost Analysis Memorandum
2. Benefit Cost Analysis Spreadsheet
3. Federal Wage Rate Certification
4. Letters of Support

