

Lineberger CONNECTOR

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BUILD Grant Application

July 2018

Prepared for:



**U.S. Department
of Transportation**

Prepared by:

**The City of Gastonia
The City of Lowell
Gaston County**



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; 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.

Transportation, and more importantly access and land use, are the main engines that drive property development. Currently, this 390-acre property can be accessed from the north via West 1st Street (NC Highway 7), access from the west and east currently does not exist. I-85 along the southern border of the property serves as a significant barrier, restricting connectivity. However, because of environmental considerations, topography, and the presence of I-85—which will require significant initial infrastructure costs, this property has remained an undeveloped “gem” along the I-85 corridor.

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.

The Lineberger Connector project is the much-needed catalyst to stimulate development and unlock the potential of the surrounding undeveloped area. The primary north-south connector, which will serve as the catalyst project, will link US 74 to the south and NC Highway 7 to the north with I-85 between Exits 22 and 21. This primary connection will provide the fertile ground upon which future projects (such as the east-west connections across this property), geared towards supporting future development and greater connectivity for citizens, can be built and established.

However, without the access to the BUILD discretionary funds, it is likely that this property will remain undeveloped and its economic potential unrealized for years to come.

KEY BENEFIT SUMMARY

- Connecting communities of Gastonia and Lowell
- Reducing overall costs for I-85 widening project
- Reducing emergency response times to and from CaroMont Regional Medical Center
- 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
- Unlocking \$56,530,000 in annual tax revenue
- Providing mitigation credits for the I-85 widening project

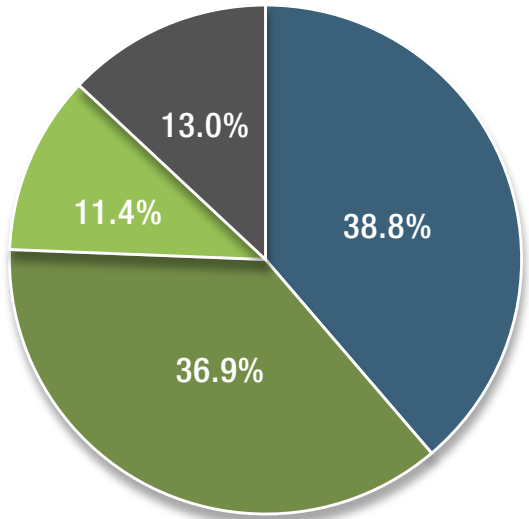


Exhibit 3—Commute Distance

- Less than 10 miles
- 10 to 24 miles
- 25 to 50 miles
- Greater than 50 miles

KEY PARTNERSHIPS

- City of Gastonia: Project Sponsor and Long-Term Maintenance Provider
- City of Lowell: Project Sponsor
- Gaston County: Project Sponsor
- Gaston County EDC: Project Champion
- GCLMPO: Planning and Funding Partner
- NCDOT: Project Champion and Long-Term Maintenance Provider

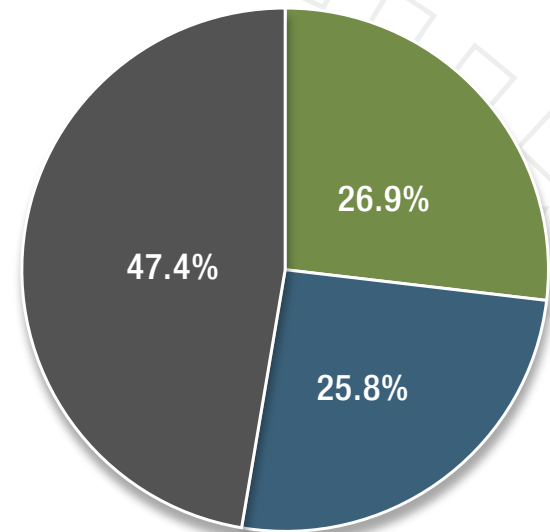


Exhibit 4—Commuting Destinations

- Charlotte
- Gastonia
- All Other

CHALLENGES

As with any roadway project, challenges for construction and development naturally will exist. For years, the Lineberger property has remained an undeveloped gem along the I-85 corridor due to the heavy infrastructure costs and construction efforts needed for a successful project. The largest and most challenging hurdle for construction is the proposed 200-foot-long grade separation bridge over I-85. Not only is this the largest and most cost impactful component of the project, it also is most critical to successful project completion. Significant coordination and project oversight will be required by both NCDOT and the Federal Highway Administration (FHWA) for project implementation. The proposed Lineberger Connector project is included in the adopted Comprehensive Transportation Plan (CTP). The construction of the bridge will require significant traffic control on I-85 during construction. Both northbound and southbound lanes will either need to be shifted to the outside—maintaining three lanes of traffic in each direction, or one lane in each direction will need to be closed for the construction of bridge substructure. Either option creates additional project costs and impacts to the community. Coupled with the required state and federal coordination and construction over an active and heavily congested interstate, the construction of this bridge will be the major challenge for the sponsoring communities.

Another critical challenge facing this project is coordination with the Norfolk Southern Railroad. While the project will improve an

existing crossing, it still will remain at grade. Project costs, impacts to existing residents, and proximity to the railroad corridor make a grade separation infeasible for implementation. Considering the preference of the Norfolk Southern Railroad to minimize conflicts between the railroad and crossing traffic, the design and coordination with Norfolk Southern Railroad on the details of the crossing design will be critical.

The proposed project also falls within the project limits for the widening of I-85 by NCDOT. TIP project I-5719 will widen I-85 from a six-lane facility to a minimum of an eight-lane facility. Environmental documentation is in development for this project at this time. Coordination with this TIP project will be critical, given the overlap of activity and impacts on the I-85 ROW. While this can be seen as a challenge for the project, it is also an opportunity to utilize the mitigation credits this site provides. These compensatory wetland and stream credits found on site have the potential to offset overall project costs and benefit the I-85 widening project by providing mitigation directly in the corridor.

These primary challenges are the most impactful to project development and implementation beyond the typical project challenges, including utility impacts, ROW, and natural and built environmental impacts. These factors are cost impactful to the overall project budget. Constructing a bridge is a significant cost for any roadway project, let alone a 200-foot-long, signature bridge project over an active interstate. **However, this provides an opportunity for placemaking.**

How to Address Challenges

To address any project challenges, it is important to establish a comprehensive understanding of the issues the project will face, engage with stakeholders to develop a reasonable and feasible plan of action that can address each of the challenges, and execute the plan of action. This is the foundation the City of Gastonia and its supporting partners have implemented for the Lineberger Connector project.

The City of Gastonia and its partners are keenly aware of the hurdles and challenges that will face the Lineberger Connector project. The solid project approach and implementation strategy will help maintain project timing and schedule; however, solid project management is not enough to make this project successful. It also takes a solid project delivery team of engineers, planners, economists, and visionaries to see the project through to fruition.

Relationships with key individuals also will be important to addressing project challenges as they arise. At times, knowing who to call can help address project challenges quickly and efficiently before they become complications. For a project of this magnitude and scope, great cooperation and partnership with NCDOT and FHWA will also be critical for the success of this project.

PROJECT HISTORY

Several major east-west corridors pass through the Cities of Gastonia and Lowell. I-85, US 74, and NC Highway 7 pass through these communities, connecting them to Charlotte to the east and carrying vehicles into, out of, and through these communities. Yet, none of them provide connections within and between the Cities of 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 U.S. Census, approximately 24,000 adults commute out of Gastonia and Lowell to work. Of those residents, 6,000 commute to Charlotte, with no other commute location holding more than a 2% share of the total. Approximately 31,000 people commute through the Cities of Gastonia or Lowell for work. 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.

BROADER CONTEXT

The Lineberger Connector project area, comprised of the Cities of Gastonia and Lowell, has remained undeveloped for more than 150 years. Rapid growth and the steady build out of the Franklin Square retail district has shifted the dynamics of the community and has raised concerns associated with land use, urban design, natural resource protection, and the function of the area's transportation network.

The proposed Lineberger Connector project will alleviate a significant portion of the transportation congestion these communities encounter, while minimally impacting the natural environment. In addition, the proposed project will provide additional connectivity, minimizing emergency response times and providing alternative mobility choices for the surrounding communities.

Merit Criteria

This section describes how the Lineberger Connector project will meet or exceed the 2018 BUILD 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 15 on page 28.

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, 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 BUILD program of improving mobility, establishing economic development opportunities, and incorporating opportunities for a high quality of life. As the City of 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 area'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 also is evident and includes a reduction in both injury and property damage only (PDO) crashes. I-85 and the study area see approximately 124,000 vehicles per

day (VDP). The Lineberger Connector is a smart way to reduce traffic demand on I-85 and the surrounding arterials and should improve the crash/accident rates in the area. Because of the large number of commuters, as evidenced by the census data provided in the Appendix, the Lineberger Connector will be ideal in reducing local traffic on I-85, improving travel in the area for residents and commuters alike.

NCDOT 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.

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 also will benefit from the safety provided a median, but this is not captured within the BCA.

THE LINEBERGER CONNECTOR WILL:

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

I-5719. The cost savings are realized through the ability to reduce construction time and 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, while maintaining access to Holbrook Middle School and improving circulation between NC Highway 7 and US Highway 74.

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 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 390 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 Gastonia and Lowell residents and residents of the surrounding communities, and sets up transformative change for the 390 acres currently undeveloped.

The employment base within the Charlotte Metro region is one of—if not the—highest in the state and U.S. Maintaining a substantial, competitive workforce in this region is critical. The 390 acres adjacent to the Lineberger Connector roadway project not only provide fertile opportunities to new, expanding, or relocating businesses or industry, but also access to a significant, competitively priced, and skilled workforce that the Cities of Gastonia and Lowell provide.

The adjacent property along the Lineberger Connector project 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 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 390-acre property adjacent to the Lineberger Connector indicate **18,600 potential new jobs** (direct+indirect+induced), depending on the development type and density. The details of this employment are summarized in the Appendix.

The implementation of the Lineberger Connector project will save more than **15,600 VMT** upon implementation.

According to the American Community Survey (2010 Census Data), 30% of adults commute out of the Cities of Gastonia and Lowell to work within the Charlotte Metro region and average travel time to work for those drivers is 35 minutes. This is 52% higher than the statewide average commute time in North Carolina of 23 minutes. This is one of the key benefits of this project. Another benefit is maintaining, if not improving, the economic completeness of the area. These 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 also is 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 the University of North Carolina at Charlotte (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 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 through Gastonia or Lowell 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, NCDOT recorded between 125,000 and 130,000 VPD 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, the City of Gastonia has a lower median household income than the national median of \$59,039. More than 23% of people in the City lived below the poverty level in 2017.

Lineberger Connector

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more time with their families and loved ones, improving quality of life. While this project cannot create additional hours in the day, it can reallocate hours for residents, allowing them flexibility, not just for additional commerce or work opportunities, but also to give back to the communities they live in. 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 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. A 20-year cycle of harvesting timber is available to property owners and will generate a modest return; however, this also adds to an ever-increasing impact to the environment.

However, as envisioned in the master plan (see Exhibit 13 on page 18), this property has the potential to become an economic generator for Gaston County, the Charlotte Metro region, 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 to accommodate a variety of land uses, including a freight distribution and logistics hub, an intermodal facility with the Norfolk Southern rail line, advanced manufacturing, single and multi-family residential development, and preserved open space and recreational uses. With its adjacency to CaroMont Medical Center, there is unmet demand for both Class A professional office



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 providing and managing land use along their shared municipal boundary, to being connected through utility service, these communities have a strong working relationship. Never more evident is their ability to come together and develop this application for a 2018 BUILD Grant.

The Lineberger Connector project is a top priority for the community and its greater local and regional benefits. GCLMPO has been an ongoing partner with both communities on the development of the corridor study, which was one of the catalyst projects for the Lineberger Connector project. The Lineberger Connector project not only benefits these cities, but also the 220,182 citizens that call Gaston County home. This project will have the ability to benefit residents of the County through additional tax revenue and **7,300 direct new jobs** that will offer upward mobility and provide advancement and increased earning potential for residents. For these and many other reasons, Gaston County is a firm supporter of this 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), Gaston County, regional (GCLMPO), and state (NCDOT) agencies. Furthermore, the regional importance of Gaston County within the larger Charlotte Metro region includes other regional partners that will all benefit greatly from the impact of this project.

Below is a listing of the agencies who have provided resolutions and letters of support for this project.

- Senator Richard Burr*
- Senator Thom Tillis*
- Representative Patrick McHenry
- Senator Kathy Harrington
- Representative John Torbett
- Representative Dana Bumgardner
- Representative Kelly Hastings*
- NCDOT Secretary Trogon
- City of Gastonia City Council
- City of Lowell City Council
- Gaston County Board of Commissioners
- Gaston County Economic Development Commission
- GCLMPO Board
- CaroMont Health
- Gaston Regional Chamber
- Greater Gaston Development Corporation
- Progressive Rail
- Lineberger Family (property owners)

In addition, the project has received letters of interest from the following potential developers:

- The Keith Corporation
- Pearson Properties and Associates
- Collett
- New Forum
- Faison
- Beacon Partners
- Childress Klein
- JLL Carolinas

* Submitting directly to USDOT Secretary Chao

REQUIRED APPROVALS

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

The City of Gastonia is committed to the development and funding of this project. The City has worked tirelessly with local and regional partners to secure support for this project. In addition, the City of Gastonia has worked to secure \$7 million in local funding for the development of this project.

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 through formal council and commission resolutions of support. Furthermore, resolutions of support have been approved unanimously by the city of Gastonia, City of Lowell, and Gaston County. Each of these resolutions were discussed and voted on in a public forum and have been met with no negative comments. This project has unprecedented support for its development and funding.

NEPA/404 Merger Process

The environmental process for the Lineberger Connector project has begun. In an effort to advance this projects development, a Phase 1 environmental scan has been completed for the project, including soil borings. The Phase 1 environmental scan indicated no hazardous materials, no impacted wetlands or streams for the initial phase, and no contaminated soils.

A copy of the Phase 1 is attached in the Appendix.

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.

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 for which 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: Based on the Phase 1 analysis, there are no known environmental concerns or impacts that could impact the initial phase of the Lineberger Connector project.

→ **Local Funding Match:** The City of Gastonia is committing significant funding for the construction of this project through project development elements. In addition, the City of Gastonia will make a \$7-million investment in utility infrastructure (electric, water, sewer, fiber). Furthermore, the City of Gastonia has the ability to provide additional project investment funding through revenue generated from the occupancy tax. The local and regional benefits of this project make it a prime candidate for a local funding match.

→ **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.

REQUIRED APPROVALS

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

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	-\$133,473	\$92,680	-\$60,418
Travel Time/ Operating Costs	Vehicle Operating Costs	Additional vehicle operating costs from decreased VMT	-\$37,623,027	-\$26,124,400	-\$17,030,394
	Travel Time Savings	Time savings from travel time reduction	\$67,787,795	\$47,069,990	\$30,684,743
Other	Noise Costs	Additional noise due to additional auto VMT	-\$120,126	-\$83,412	-\$54,376
Emissions/ Reduction Benefits	Air Quality (Non Carbon)	Decrease in mobile source emissions	\$-973,575	-\$676,024	-\$440,697
	Air Quality (Carbon)	Decrease in mobile source emissions	-\$1,602,695	-\$1,602,695	-\$1,602,695
	Indirect Energy Consumption and Water Quality (Auto)	Decrease in mobile source runoff and VMT-dependent manufacturing	-\$2,750,083	-\$1,909,582	-\$1,244,849
Safety Benefits	Reductions in Injuries and PDO Crashes	Improved intersections	\$28,541,463	\$20,012,485	\$13,205,025
Near-Term Jobs Creation and Economic Activity					
Property Value Increase			\$209,935,490	\$192,120,713	\$171,369,895
Total Benefits			\$263,061,768	\$228,714,393	\$194,826,232
Total Costs			\$56,948,200	\$56,948,200	\$56,948,200
Benefit/Cost Ratio			4.62	4.02	3.42

Exhibit 15—Benefits Quantified

