MATHIS CORRIDOR REVITALIZATION PROJECT

Application for BUILD FY 2020 Grant

MAY 2020

Prepared By:

Manassas
HISTORIC HEART. MODERN BEAT.

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INTRODUCTION

The 2032 Comprehensive Plan of the City of Manassas, VA— aptly named Manassas Next—sets the challenge for the City to be the modern 21st century small town. Manassas Next dared the City to be the place where community, history, and opportunity meet for today's and tomorrow's residents, visitors, employers, and employees.

In looking toward the future, Manassas Next identified the key goal of cultivating a vibrant 21st century community, while respecting the character and historic legacy of the City. This was to be accomplished through well-designed, thoughtful, and strategic investments, redevelopment, and partnerships.

The **Mathis Corridor Revitalization Project** is symbolic of the City of Manassas' embrace of the past and commitment to the future. It reimagines one of the City's oldest commercial and automobile-oriented corridors as an **economically competitive, multimodal, pedestrian-friendly, and mixed-use main street and gateway into the City.**

The Mathis Corridor Revitalization Project consists of the implementation of streetscape standards along 0.55 miles of Mathis Avenue and the construction of a modern, multilane urban roundabout at the intersection of Sudley Road and Route 28.

For the City of Manassas, this is not just the right project at the right time, it is the foundation for redevelopment. It is the template of how a vision born in a comprehensive plan is refined into a tangible future through a meticulous sector plan process; it is the template of how that tangible future is given shape and form through a set of design principles and standards; it is a template of how those standards are implemented in partnership and collaboration with residents and the business community; and it is a template of how strategic investment of City and federal funds can stimulate and revitalize the economy, activity, and opportunity of neighborhoods throughout the City of Manassas.

This Project …

- Revitalizes a gateway commercial corridor in the City of Manassas in a federally designated Opportunity Zone
- Reduces delay and congestion for 50,000 daily commuters
- Improves vehicular safety at a known traffic bottleneck
- Improves pedestrian safety, access, and connectivity between the City's two historic districts and two urban parks
- Establishes a distinct character for the Mathis Corridor and sets the stage for private-sector investment and redevelopment
- Includes two components for the betterment of the corridor and people who use it:

Streetscape component includes:

- Conversion of two-way left-turn lane to a raised median
- 130+ new street trees
- Commercial entrance closures, consolidation, and realignment
- Pedestrian improvements (wider sidewalks, upgraded crosswalks, and landscaped buffer separating pedestrians and vehicles)

Roundabout component includes:

- Conversion of an existing temporary traffic signal on span wire to the City's first modern, multilane roundabout
- New sidewalks in all four quadrants with marked crosswalks and pedestrian refuges

History

To truly understand the importance of this project, one must understand the City of Manassas, the Mathis Corridor, and the decades of strategic planning that have brought us to this moment.

The City of Manassas

Located within the DC Metropolitan area—and just 30 miles south of Washington, DC—the City of Manassas is a unique cultural and employment hub in one of the most educated and affluent regions in the country.

The City of Manassas is considered a regional activity center. Activity Centers are the locations that will accommodate the majority of the region's future growth and play a central role in achieving the Region Forward Vision's prosperity, sustainability, accessibility, and livability goals.

From a burgeoning town first incorporated in 1873 to becoming a city in 1975 to today, Manassas' growth, challenges, and opportunities have often been linked to employment, mobility, and the City's close proximity to Washington, DC. Similarly, transportation investments in and around the City such as the Virginia Railway Express (VRE), Manassas Regional Airport, Dulles Airport, and Route 28 have cultivated the two-way flow of employment and opportunity between Manassas and the region.

Once a bedroom community, Manassas is now an epicenter for specialized industries such as defense, manufacturing, aerospace, healthcare, and professional services. Safe, efficient, and reliable transportation options are an essential requirement for these critical employers, their employees, and the 41,501 city residents to fully enjoy and experience all that Manassas has to offer.

"Among the many competing demands for public funding, the City of Manassas holds infrastructure improvements among the highest. This proposal addresses our critical need for transportation and mobility enhancement in one of our primary gateway corridors."
Harry J. Parrish II, Mayor

The Challenges

The history and tempo of Manassas' growth have had a direct impact on mobility options in the City. Many of the older, more established City corridors are auto-oriented both in land use and in function. As a result, travel patterns in the City have evolved to be focused around primarily single-occupant vehicles with all the congestion, delays, air quality issues, and degradation of the pedestrian environment that entails.

Many parts of the community lack accommodations for pedestrians and bicycles. Roadways lack sidewalks and gaps in the existing pedestrian network reduce the attractiveness and viability of a walking trip. This diminishes the likelihood of intramodality between walking, cycling, and transit.

The abundance of commercial entrances along major and minor corridors add to the traffic congestion and create potential safety hazards. These transportation challenges have led to a heavily-commercialized corridor in decline in an area that should be a prominent gateway to the City.

Mathis Corridor

Route 28 is a north-south thoroughfare of regional significance and spans more than 30 miles throughout northern Virginia from Prince William County to Loudoun County directly through the City of Manassas. Traffic and congestion along Route 28 is a regional issue that impacts the daily lives of Manassas residents as well as more than 50,000 daily commuters that use the City's portion of Route 28.

Mathis Avenue, physically parallel to Route 28, experiences much of the spillover traffic and congestion of Route 28. Land use along Mathis Avenue also has developed in tandem with Route 28—Mathis is a prototypical example of the low-density, automobile-oriented development of the 1960s and 1970s. The area contains 76 acres of commercial strip development as well as some industrial and residential uses, and is largely characterized by "seas of parking" with limited landscaping and pedestrian or bicycle connections.

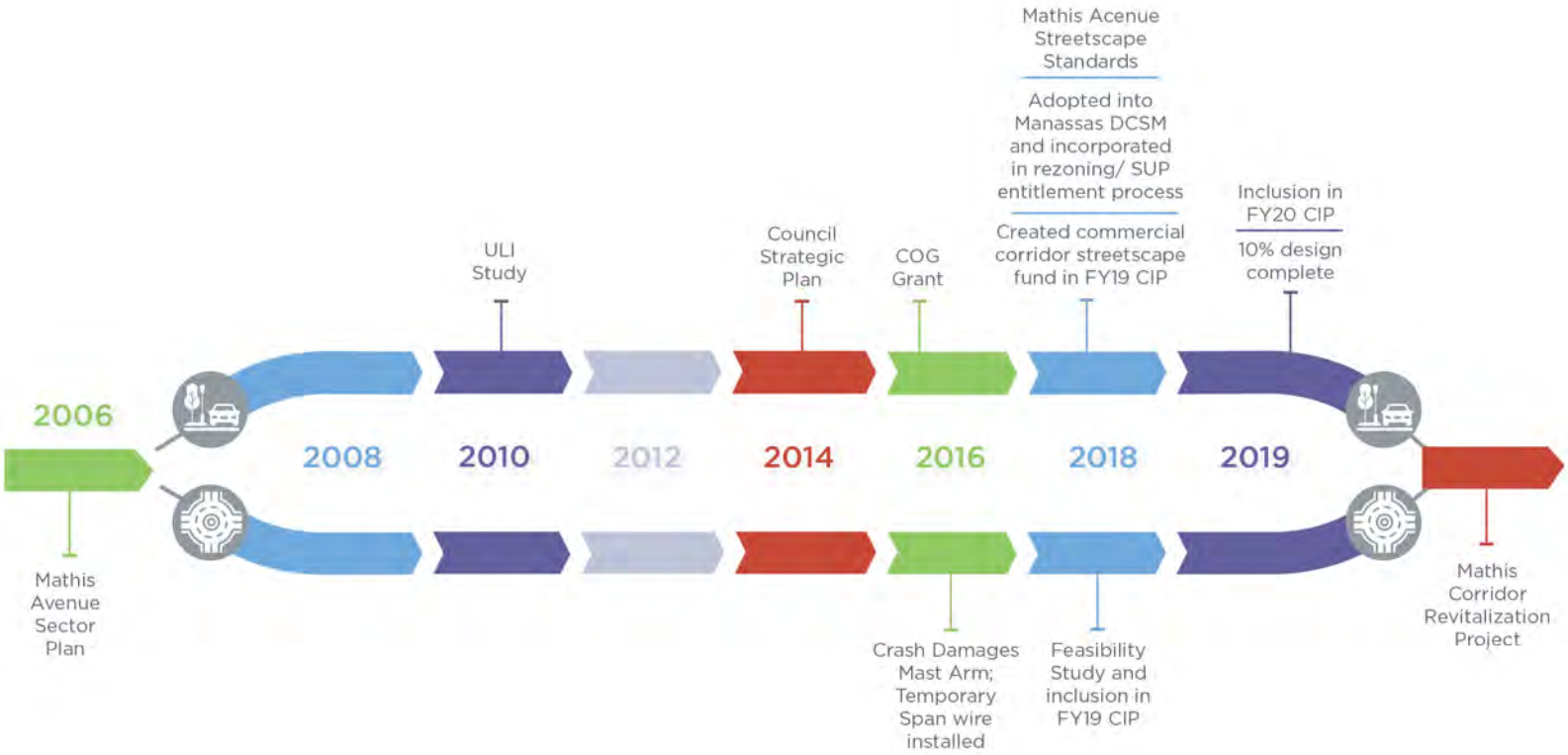
Existing conditions of the Mathis Corridor

Planning for Revitalization

There is currently significant development and economic activity occurring along the western part of the City—**Micron Technology Inc.'s (Micron) $3 billion expansion, Manassas Regional Airport, and the new residential development, The Landing at Cannon Branch**—further reinforces the current east/west divide of the City and need for strategic investment and revitalization in the east.

The Mathis Corridor provides an opportunity for eastern revitalization and could become the nexus of a variety of high-quality residential neighborhoods and productive commercial experiences, all within walking distance of Downtown and the VRE station. Rather than replicate the downtown, Mathis Avenue has the opportunity to embrace a character of its own and to stand as the Modern Beat alongside the City's Historic Heart.

Efforts to plan and prioritize redevelopment along this corridor began with the 2002 Comprehensive Plan. This plan divided the City into distinct neighborhoods, with the recommendation that sector plans be created for each subdivision. The 2002 Comprehensive Plan identified the Mathis Corridor as a key contributor to the City's commercial base and a vital gateway into Manassas—one that was ripe for redevelopment given the appropriate investments in infrastructure.



In 2006, the City adopted the Mathis Avenue Sector Plan to shape the 20-year development vision for the area. This plan called for high-density, mixed-use development; enhanced streetscapes with pedestrian/bicycle linkages; open space and green connections; and attractive gateways. **The sector plan envisioned a Mathis Corridor where people are encouraged to walk between stores, residences, and offices, which, in turn, would help to create a more vibrant and livelier place for the City of Manassas.**

The 2009 recession temporarily halted progress on revitalization and no significant actions were taken until the City's 2015 strategic plan. This plan identified enhancement of the City's gateway corridors such as Mathis as a top priority.

In 2016, the City applied for and was awarded a transportation/land use connections technical assistance grant from the Metropolitan Washington Council of Governments (MWCOG) to implement the Mathis Avenue Sector Plan's vision through the development of the Mathis Avenue Streetscape Standards.

City Council has formally endorsed the Mathis Avenue Streetscape Standards and directed its inclusion into the City's Design and Construction Standards Manual. The Council also directed that these standards be incorporated into the City's entitlement process including rezoning and special exemption permits and has included a "Commercial Corridor Streetscape" fund as a new line item in the adopted FY19 budget. Facade and landscape improvement grant programs have also been implemented to encourage private investment in building and landscape enhancements along major thoroughfares.

With this planning history as a backdrop, the stage is set for a transformative revitalization of the Mathis Corridor to better the lives and economic opportunities of the City of Manassas and its residents.

PROJECT DESCRIPTION

The purpose and need for improvement along the Mathis Corridor is clear. Revitalization is critical to achieve:

- Increased vehicular and pedestrian safety
- Reduced delays along the Route 28 corridor
- Improved access to multimodal transportation options
- Renewed economic viability of a strategic corridor in the City
- Improved livability for residents and promotion of healthy and active lifestyles for both residents and visitors

The Mathis Corridor Revitalization Project is the City of Manassas' strategic investment to achieve these goals. This unique project is made up of two key components:

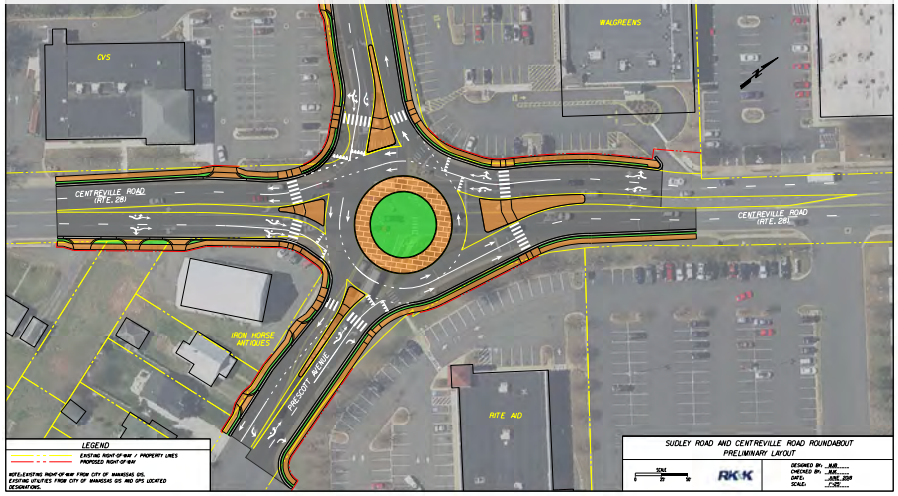
1. A streetscape project that will reconstruct a section of Mathis Avenue (from Sudley Road to Liberia Avenue) to the City's updated streetscape standards—bringing wider sidewalks, safer pedestrian crossings, and raised and planted medians that double as pedestrian-crossing refuges.
2. An innovative, multilane roundabout to redesign the Sudley Road and Route 28 intersection, creating a hallmark gateway between the Mathis Corridor and the historic downtown while simultaneously addressing a critical safety and traffic congestion hotspot in the City.

Standalone, each of these components address important and known infrastructure needs in the City. Together, these components act as a stimulus for the revitalization of the Mathis Corridor.

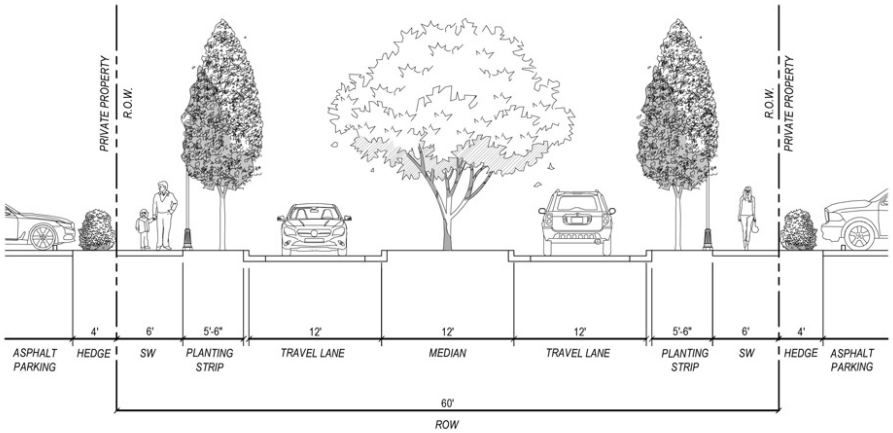
From the streetscape perspective, improvements along the Mathis Corridor will allow the City of Manassas to support and improve multimodal transportation options and renew the economic viability of a strategic corridor in the City. As the City invests in these improvements, new businesses will be attracted to the corridor and existing businesses will experience the benefits of a renewed street frontage. This component also will serve to enhance the pedestrian experience along the Mathis Corridor, stimulating access to and between adjacent commercial and residential uses and improving connectivity between the corridor and Historic Downtown Manassas.

A roundabout at the Sudley Road/Route 28 intersection will operate with reduced delays and congestion compared to the existing signalized configuration. The results of a roundabout feasibility study indicate average vehicle delay savings of 30 seconds per vehicle during the peak hours and of 18 seconds per vehicle during off-peak hours. **Cumulatively, in its first year of operation, the roundabout will save more than 16,000 hours of delay in the AM and PM peak hours of travel.**

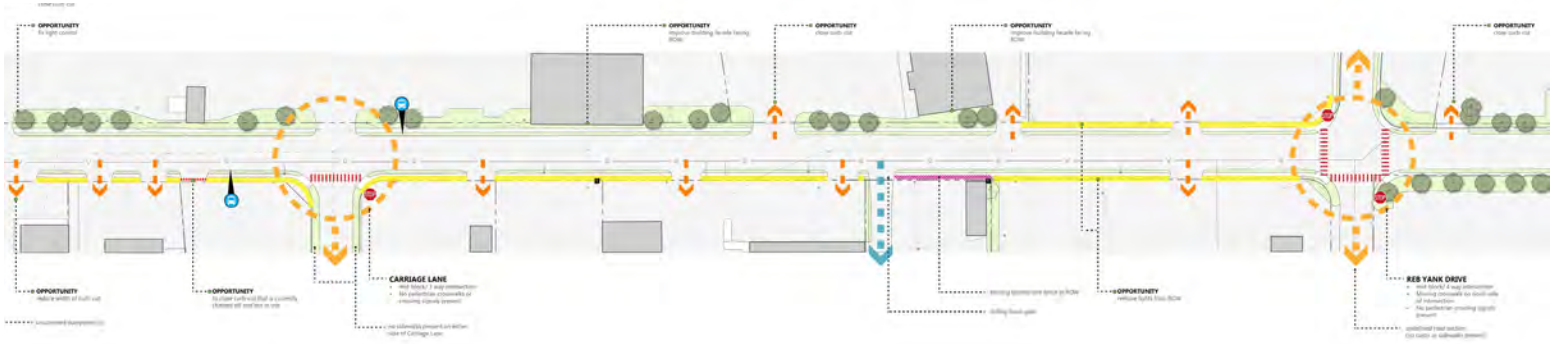
Roundabout preliminary layout for the intersection of Route 28 and Sudley Road



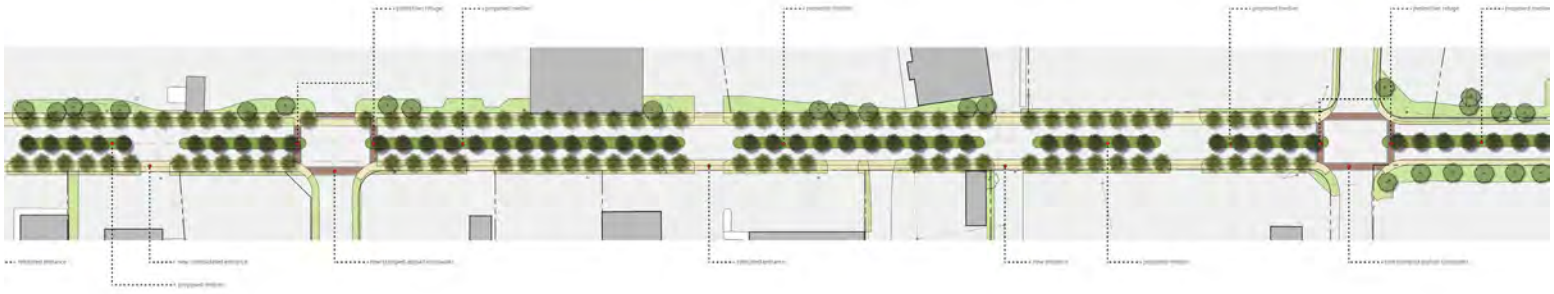
Typical Section



Existing



Proposed



2040 Comprehensive Plan

The City of Manassas recently updated its Comprehensive Plan to address the evolving challenges of the City. As part of the Comprehensive Plan update, focus priorities have been established for the Mathis Corridor. The components of the Mathis Corridor Revitalization Project directly address these priorities:

Priority	Streetscape	Roundabout
Redevelopment to create attractive residential neighborhoods of varied densities with supporting retail/service and office uses	✓	✓
Creation of higher-end housing with high-tech, eco-friendly amenities and high-quality building materials and design	✓	✓
Improved connectivity to Downtown with infrastructure and activities	✓	✓
Improved accessibility and safety for pedestrians and bicyclists	✓	✓
Incorporation of usable open space into the existing community fabric as redevelopment occurs	✓	✓

From a safety perspective, a roundabout will reduce the frequency and severity of crashes, particularly angle crashes. Pedestrian accommodations at the roundabout will include new sidewalks in all four quadrants with marked crosswalks and pedestrian refuges to enable pedestrians to cross only one direction of traffic at a time and safely wait for a gap in the other direction of traffic.

Who Benefits

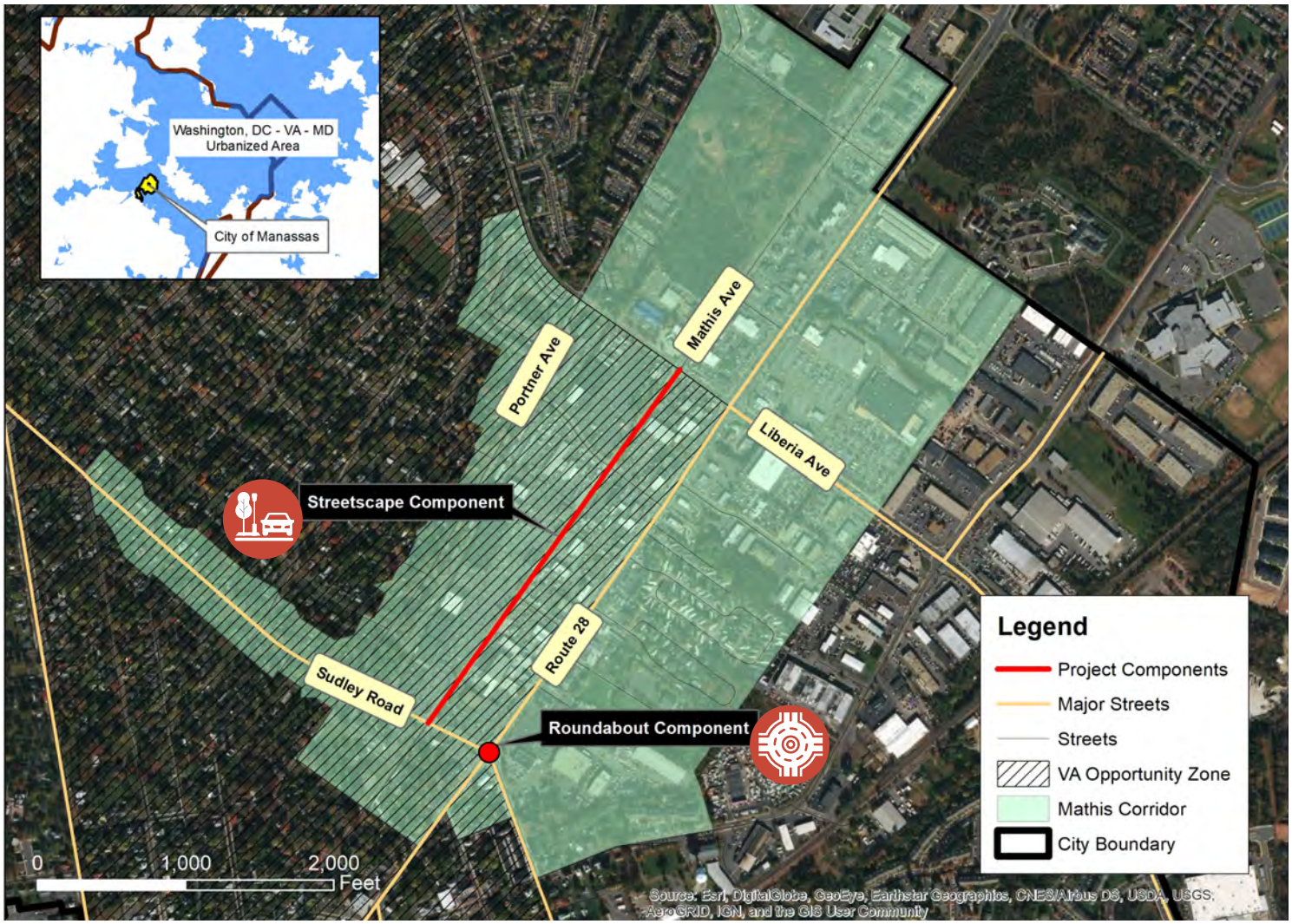
A revitalized Mathis Corridor offers unlimited opportunity for a variety of City users. It is anticipated that the benefits of revitalization will be shared by:

- Current and future residents
- Current and future businesses
- Major employers such as Micron, BAE Systems, Lockheed Martin, and Boeing
- Commuters to and through the City of Manassas
- Transit providers such as VRE and the Potomac and Rappahannock Transportation Commission (PRTC)
- Neighboring jurisdictions of Prince William County and Manassas Park
- Emergency service to the Novant Health UVA Prince William Medical Center

The City of Manassas serves commuters with local transit options

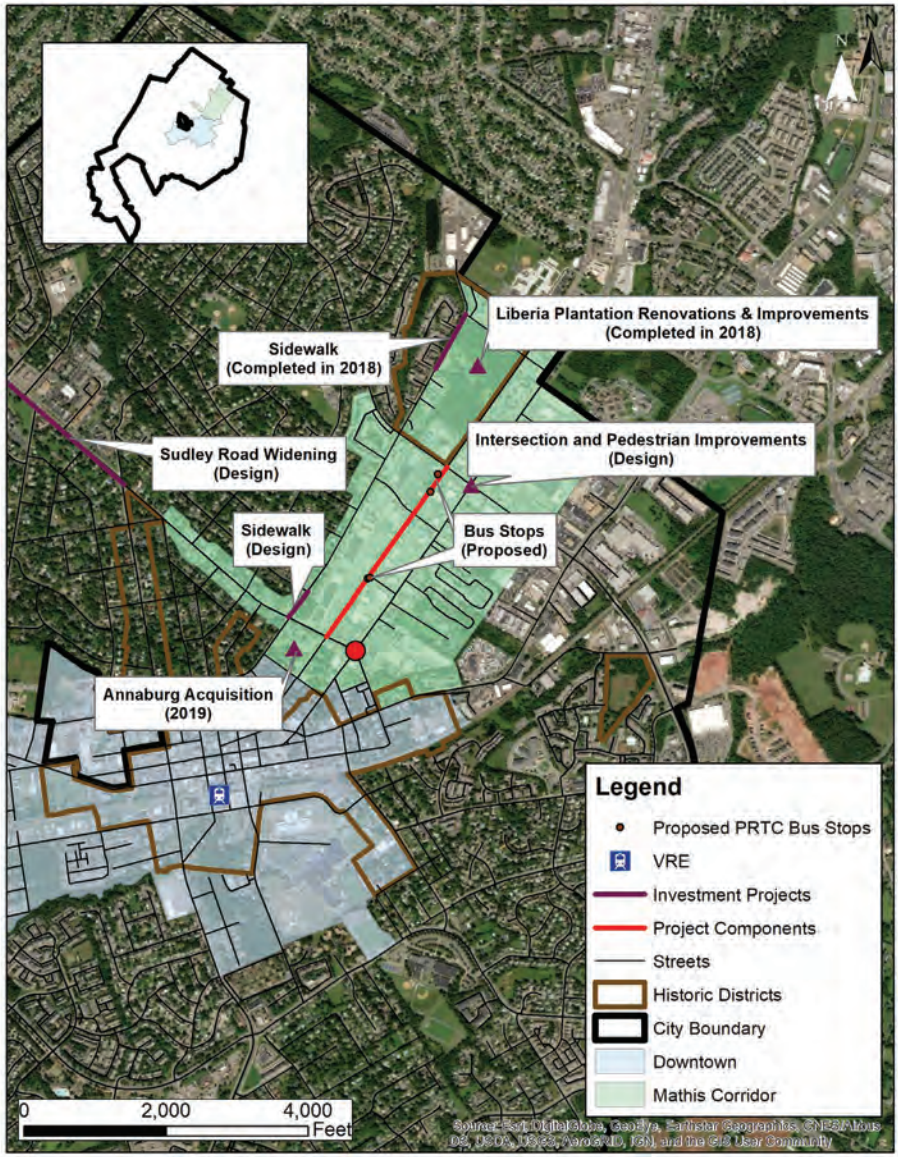
PROJECT LOCATION

The Mathis Corridor is located northeast of Downtown, southeast of Porter Avenue, south of the City/County line, and west of the Suburban Business character area along Quarry Road. The entire area designated as Mathis on the City's Character Area Map is identified as a revitalization area and meets the requirements of the Code of Virginia, Section 15.2-2303.4E(i). A portion of this area is also designated as a Federal Opportunity Zone under the Federal Tax Cuts and Jobs Act of 2017.



The streetscape component will consist of improvements along a 0.55-mile section of Mathis Avenue from Liberia Avenue to Sudley Road.

The roundabout component will consist of an innovative intersection treatment at the intersection of Sudley Road and Route 28.



The Mathis Corridor Revitalization project builds on and complements the transportation, cultural, and infrastructure investments that the City of Manassas has committed to the Mathis Corridor.

MOBILITY INVESTMENTS

- New sidewalk on Portner Avenue from Breeden Avenue to 0.2 miles North of Liberia Avenue (completed in 2018, $130,000)
- Intersection and pedestrian improvements at Liberia Avenue and Route 28 (underway, $840,000)
- New sidewalk on Portner Avenue from Sudley Road to Longstreet Drive (in design, $420,000)
- Sudley Road northbound widening from Grant Avenue to Godwin Drive (in design, SMART SCALE funding, $7.4 million)
- PRTC new routes with more stops (proposed) — from one to four stops on Mathis Avenue

$8.8 Million in Mobility Investments

PARKS, CULTURE, AND INFRASTRUCTURE

- Utilities relocated underground (completed in 2001, $560,000)
- Liberia House renovations and improvements (completed in 2018, $1.6 million)
- Annaburg Manor acquisition (ongoing, $1.3 million for acquisition and initial renovation, $5 million for future renovations and improvements, included in the FY20 Capital Improvement Program [CIP])

$8.5 Million in Parks, Culture, and Infrastructure Investments

GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

The total cost to design and implement the Mathis Corridor Revitalization Project is estimated at $10,510,420. The City of Manassas is requesting $8,408,336 in federal BUILD grant funding to bolster the City's significant investment in the Corridor. This represents 80 percent of the project's estimated costs.

The 20 percent local match will be funded through utilities funds, transportation bonds, and Northern Virginia Transportation Authority (NVTA) 30 percent funds. There is a $1,200,000 transportation bond in the FY21 bond schedule that is available for use for this project. The remaining project budget will make use of available NVTA 30 percent funds. Local funds commitment are shown on page 427 of the FY21 proposed budget. Anticipated funding sources are summarized in the table below.

Type	Source	Amount	Anticipated Percent of Total	Status
Local	Utilities/ Bonds	$1,200,000	11%	FY21 Budget
Local	NVTA 30 % Funds	$902,084	9%	FY21 Budget
Federal	Build Grant	$8,408,336	80%	FY21 Budget
Total Cost		**$10,510,420**	**100%**	

Cost estimates were recently updated which may explain inconsistency with amount shown in the FY21 proposed CIP and the resolution of support from City Council.

Cost Category	Cost Estimate	% of Component Total	% of Project Total	Anticipated Years of Expenditure
Streetscape Component				
Preliminary Engineering	$657,818	9%	6%	2021–2022
Right-of-Way/ Utilities	$1,750,200	25%	17%	2021–2022
Construction	$3,289,092	46%	31%	2022–2024
Contingency	$822,273	12%	8%	2022–2024
Construction Engineering and Inspection (CEI)	$592,037	8%	6%	2024
Total (Rounded)	**$7,111,420**	**100%**	**68%**	
Roundabout Component				
Preliminary Engineering	$380,000	11%	4%	2021–2022
Right-of-Way/ Utilities	$1,070,000	31%	10%	2021–2022
Construction	$1,317,000	39%	13%	2022–2024
Contingency	$395,000	12%	4%	2022–2024
Construction Engineering and Inspection (CEI)	$237,000	7%	2%	2024
Total (Rounded)	**$3,399,000**	**100%**	**32%**	

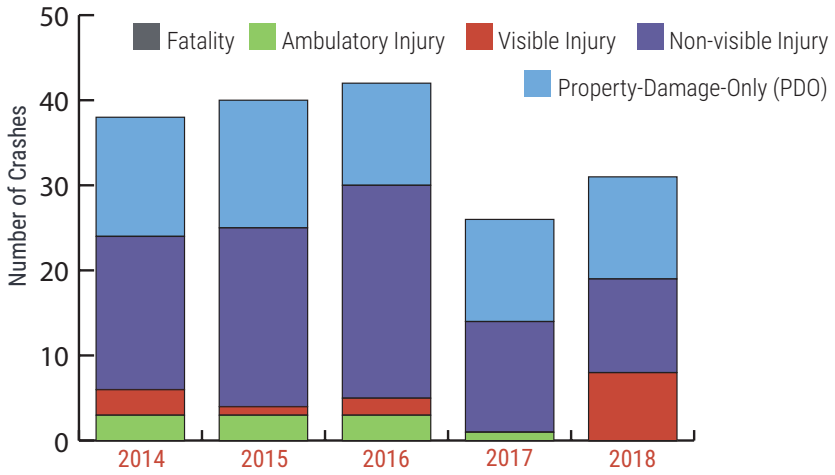
SELECTION CRITERIA

The Mathis Corridor Revitalization Project aligns well with each selection criteria. A brief description of the major anticipated benefits of this project is provided below. Efforts have been made to specifically identify those benefits that will be the direct result of each project component.

Safety

The Mathis Corridor Revitalization Project will improve safety for motorists and pedestrians by providing parallel accommodations, addressing bottlenecks, and implementing access management best practices. Those two innovative projects will also be a benefit to the region by demonstrating their effectiveness in improving safety.

An analysis of crash data from 2014–2018 indicated a total of 177 crashes along the corridor. Of those, 128 crashes occurred within the improvement area of the streetscape component and 49 crashes occurred within the improvement area of the roundabout. Based on the total number of crashes and the suggested valuation of crash-related injuries, this represents an annual societal safety cost of $2.5 million. The most prevalent crash types in the study area were rear-end crashes and angle crashes.



The streetscape component reduces the likelihood of crashes

Providing raised medians or pedestrian refuges at pedestrian crossings has demonstrated a 46 percent reduction in pedestrian crashes based on documentation from the Federal Highway Administration (FHWA) Safety Program. For vehicles, a raised median instead of a two-way left-turn lane removes many mid-block turning movements and conflict points where angle crashes occur.

Based on the FHWA Crash Modification Factor (CMF) Clearinghouse, raised medians have been shown to reduce the anticipated number of study area crashes. Applying a CMF of 0.59 to reduce the number of annual crashes anticipated along the Mathis Corridor results in a 20-year societal safety cost savings of $5.9 million (discounted at 7 percent).

The streetscape component narrows the travel way and adds a buffer between pedestrians and vehicles

Narrower lane widths—real or perceived—have been shown to reduce driving speeds. Reduced speeds, combined with a physical separation of pedestrian and vehicles, improves pedestrian comfort and safety.

The roundabout component reduces likelihood of crashes

Roundabouts have a reduced number of conflict points compared to traditional intersections. Modern roundabouts are proven safety countermeasures. They are particularly effective at reducing the frequency of angle collisions and reducing crash severity due to reduced vehicle speeds. Rear-end crashes also would be expected to be reduced compared to existing conditions, due to decreases in stopped vehicles at the intersection.

Based on the FHWA CMF Clearinghouse, the conversion of an intersection to a roundabout has been shown to reduce the anticipated number of crashes. Applying a CMF of 0.42 to reduce the number of annual crashes anticipated at the intersection of Sudley

Road and Route 28 results in a 20-year societal safety cost savings of $4.5 Million (discounted at 7 percent).

The roundabout component improves pedestrian interactions with traffic at a busy intersection

The proposed design includes sidewalks in all four quadrants connecting to the existing sidewalk network. Marked crosswalks will be provided across all four legs and pedestrian refuge areas will be provided in the median. These refuge areas will enable pedestrians to cross one direction of traffic at a time and then safely wait to find a gap in the other direction of traffic.

State of Good Repair

The Mathis Corridor Revitalization Project considers components that are more efficient to operate and maintain than the current status quo. The City of Manassas will be responsible for the maintenance of these new infrastructures.

The streetscape component results in less asphalt

The streetscape component will convert the center lane of Mathis Avenue from a two-way left-turn lane to a raised median. This will result in less pavement that needs to be resurfaced and repainted at annual intervals. Based on the City's annual budget per lane mile of pavement, the reduction of one paved lane along Mathis Avenue will result in a 20-year pavement operations and maintenance (O&M) savings of approximately $425,730 (discounted at 7 percent).

The roundabout component is more resilient and more efficient to operate and maintain than a signalized intersection

Typically, a roundabout has lower O&M costs than a traffic signal because there is no need for electricity, signal timing equipment, or any other technical hardware. Based on the net O&M savings between a roundabout and a signalized intersection, the roundabout component results in a 20-year cost savings of approximately $64,300 (discounted at 7 percent).

Economic Competitiveness

The Mathis Corridor Revitalization Project addresses regional transportation goals for providing transportation alternatives through multimodal improvements, better pedestrian features, and improved access to public transportation. Route 28 is a major regional north south corridor that provides direct access between two major airports; four counties; two cities; and major federal, state and local roadways. The Virginia Department of Transportation has consistently classified the level of service at signalized intersections along Route 28 with an "F" or "D" rating during peak commuting hours for congestion and safety, with a fatality. Relieving the known bottleneck will reduce congestion and delay for nearly 50,000 travelers daily.

The Mathis Corridor Revitalization Project creates additional economic opportunities for current and future commercial uses along the corridor, improves property values, and increases productivity. Additionally, the project represents a significant infrastructure enhancement in the City's only federally-designated Opportunity Zone. The City's efforts, in combination with the tax incentives offered to private investment in the Opportunity Zone, will be supportive of economic development and job creation in an economically-distressed community.

The streetscape component stimulates a declining commercial corridor

City and federal investment in the Mathis Corridor will be a catalyst for private redevelopment of the corridor. The pedestrian scale improvements are supportive of a 21st century modern mixed-use retail, employment, and residential environment that complements the offerings of the historic Downtown core.

The streetscape component increases property values

Complete streets investments have been shown to have a positive impact on the property value of surrounding existing properties. This is related to improved property access, street frontage beautification, and the additional foot traffic created by a pedestrian oriented environment. Even assuming a modest 5 percent increase in property

values for adjacent properties along the corridor increases total corridor property values by $2.3 million (discounted at 7 percent).

The roundabout component reduces travel times and associated costs of delay

The roundabout is a direct response to a known traffic bottleneck and the delays experienced by nearly 50,000 daily commuters. In its first year of operation, the roundabout will save more than 16,000 hours of delay in the AM and PM peak hours of travel. During a 20-year analysis, this equates to delay, lost time, and productivity savings of $2.5 million (discounted at 7 percent).

The Mathis Corridor Revitalization Project stimulates job creation in specialized, high-paying sectors

Micron announced the largest capital investment in modern Virginia history in 2018—$3 billion by 2030. They will create at least 1,110 new high-wage jobs and will increase exports from Virginia by more than $1 billion annually. Micron is the City's largest employer, tax payer, and utility customer. The Mathis Corridor serves as a vital gateway to and from the Micron campus. New and existing employees of Micron are frequent visitors of Historic Downtown Manassas and its retail communities. Revitalization of the Mathis Corridor will also provide a new exciting plaza for residents and visitors, bringing in substantial revenue to businesses.

Micron Technology, Inc.

Environmental Sustainability

The Mathis Corridor Revitalization Project reduces transportation impacts to the built and natural environment which is essential to achieve the City's and region sustainability goals.

The streetscape component improves stormwater management and sustainable features

The streetscape component reduces the amount of impervious area with a raised median and landscaped buffer to aid in stormwater management. The streetscape component also includes green, sustainable elements such as street trees and conversion to LED lighting. Street trees reduce ambient heat and improve air quality, while LED lighting reduces the City's energy costs. This will result in a 20-year cost savings of approximately $125,000 (discounted at 7 percent).

The roundabout component improves air quality

The roundabout component reduces air quality impacts and fuel consumption associated with idling, acceleration, and deceleration in congested driving conditions.

Quality of Life

The revitalization of the Mathis Corridor improves the overall sense of place, character, and livability of the neighborhood and bringing the region closer to its livability goal.

The streetscape improvements support and encourage active, affordable mobility

The proposed design includes a wide sidewalk, upgraded crosswalks, street trees, and a buffer zone between pedestrians and vehicles. These elements protect and promote walking as a viable way to move between the corridor and the Downtown Core. The improvements also include enhancements to bus stops along the corridor, which, combined with the pedestrian improvements, supports additional transit accessibility and ridership.

The streetscape improvements support healthy lifestyles

Improved sidewalks and better connectivity promotes and supports

healthy lifestyles. The revitalized streetscape will provide direct access between two parks (Liberia House and Annaburg Manor). Access to parks and open/green space has been shown to reduce stress and improve physical and mental health, which often leads to a reduction in healthcare costs.

The roundabout improvement reduces transportation noise
Compared to a traffic signal, roundabouts can be navigated without coming to a full stop; this results in a potential reduction in transportation noise associated with idling, acceleration, and deceleration. Particularly during the off-peak hours, this results in a more harmonious and serene environment that is beneficial to residents, business, and pedestrians along the corridor.

The roundabout reduces a known traffic bottleneck
An improvement to the Sudley Road/Route 28 intersection reduces traffic delays for 50,000 daily commuters. It has the potential to reduce wait and crossing times for pedestrians, and, critically, can improve the access and connectivity to the Novant Health UVA Prince William Medical Center for emergency service vehicles.

The Mathis Corridor Revitalization Project provides more travel options
The roundabout component relieves traffic congestion and delays along Sudley Road and Route 28, while the streetscape component improves multimodal connectivity and comfort along Mathis Avenue. The project has been tailored to provide a complete corridor, which will have positive impacts felt beyond the immediate vicinity into the rest of the City. Vehicular and pedestrian improvements complement each other and different travel options are emphasized where they most make sense and where they most align with the character of the Mathis Corridor.

The Mathis Corridor Revitalization Project is supportive of infill redevelopment, more accessible housing options, and improved proximity between housing, employment, and entertainment.

The Mathis Corridor Revitalization Project will create an important pedestrian-friendly connection between two parks—Liberia House and Annaburg Manor.

Liberia House

Central to the 18-acre Liberia House Park is the historic 1825 Liberia House, a headquarters to both Confederate and Union troops during the Civil War. Before the Civil War, Liberia was a successful 2,000-acre plantation that included a school, a mercantile, and numerous outbuildings.

During the War, Confederate President Jefferson Davis was thought to have visited the house after the First Battle of Manassas (Bull Run) in 1861. In 1862, President Abraham Lincoln visited the home during the Union Army's occupation. Union troops continued to use the home until the war's end, when the Weir family returned to find their land devastated but their home intact.

After the Weir family sold the home and property in 1888, Liberia became a dairy farm, and in 1947, the home and property were sold to the Breeden family, which donated the home and land to the City of Manassas in 1986. The house and grounds have undergone extensive restoration and a restroom was recently added to the property. A trail system through the extensively-wooded site is being developed and maintained by scouting groups. The park is open for passive recreation from sunrise to sunset, and the Liberia House is open for special events and tours.

Annaburg Manor

The 3.6-acre Annaburg Manor Park is named for the historic 1892 house built by wealthy Alexandria brewer, Robert Portner. This 35-room home was one of the country's first equipped with mechanical air conditioning of Portner's own invention. Twenty-five landscaped acres and a park of luxurious trees, some of which still stand, surrounded the house, and the 2,000-acre estate included a deer park, fountains, a greenhouse, a vineyard, a swimming pool, and Liberia Plantation during its era as a dairy farm. Through the early part of the 1900s, the house and grounds were considered a park for area residents, who enjoyed picnics, ice skating, fishing, and even church baptisms there.

From the 1960s through 2007, Annaburg Manor was used as a nursing and rehabilitation center run by Novant Health UVA Health System Prince William Medical Center. The City's recent purchase of the house and land will add more green space for passive recreation. The Annaburg Manor house is currently closed and awaiting restoration by an interested non-profit foundation.

Innovation

The Mathis Corridor Revitalization Project is an innovative approach to address both current mobility needs and the redevelopment of a declining commercial corridor, an approach that could be applied in the entire region.

The roundabout component will be the first multilane roundabout in the City of Manassas. The modern roundabout concept is under review by the Virginia Department of Transportation's (VDOT) Innovative Intersection Committee and represents a fresh approach to accommodate significant traffic demand while creating a hallmark gateway feature for City of Manassas.

The streetscape component represents an innovative template for how the Mathis Streetscape Standards can be implemented within the entire Mathis Corridor area and Citywide.

Partnership

No transportation projects would ever come to completion without valuable partnership. In this particular project, partnership is reflected in the attached letters of support from different stakeholders, the dedicated regional funding from the North Virginia Transportation Authority (NVTA) and the Metropolitan Washington Council of Governments (MWCOG), and VDOT for completing the survey for the roundabout.

"The City exists in a built urban environment making large scale infrastructure projects a challenge. The BUILD grant is a critical tool that can help Manassas address a pressing need to redevelop one of its primary commercial corridors by fixing a transportation bottle neck and streetscape that have contributed to disinvestment in the community."
W. Patrick Pate, City Manager

ENVIRONMENTAL RISK REVIEW

The Mathis Corridor Revitalization Project is the culmination of years of visioning and planning for how the corridor and City can grow to meet future demands. As a result, the hard work of getting the residential and business community on-board with the changes is largely complete. **Simply put, the project is ready to be matured to the next stages of design and construction, and the community is ready to embrace their improved quality of life through the enhancements of this key corridor.**

Technical Feasibility

The framework of the Mathis Avenue Streetscape Standards has contributed to the development of a thorough 10 percent design concept. By adhering to the streetscape standards and working mostly within the City's existing right-of-way, the streetscape component is technically feasible. A feasibility study for the roundabout has demonstrated that it is not just technically feasible, but also beneficial in the near- and long-term with respect to the multimodal opportunities it can offer over a traditional traffic signal, the reduction in intersection delays, and the improvement in level of service. In addition, survey for both components was recently completed.

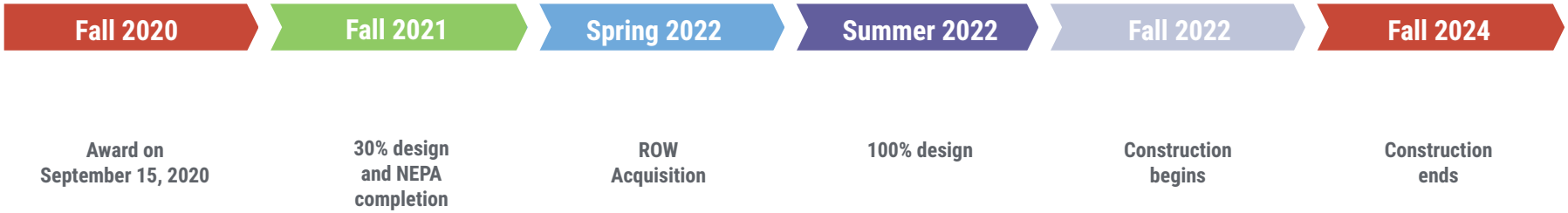
It is anticipated that further stages of design will serve to refine both concepts while maintaining the technical feasibility of implementation within the established project schedule.

Financial Feasibility

Cost estimates for each component of the Mathis Corridor Revitalization Project have been developed, separately, by outside consultants working on the design/feasibility studies for each component. These estimates have been vetted through the City of Manassas' typical independent process. As a result, the estimates reasonably approximate the costs needed to accomplish the project. The component projects have been programmed in the current and upcoming CIP and available funding mechanisms have been identified. As such, with an additional investment from the federal government, the Mathis Corridor Revitalization Project is financially feasible.

Project Schedule

The project schedule, shown below, demonstrates at a high level how all necessary project elements will be initiated and completed within BUILD obligation and expenditure deadlines.



Required Approvals

The component projects are already included within the City's Comprehensive Plan and FY20 CIP. Both projects were approved by the Planning Commission as part of the Comprehensive Plan consistency review. Project information has been shared with the regional planning agency, MWCOG, and the National Capital Region Transportation Planning Board has provided a letter of endorsement in support of this project. This proactive planning will serve to expedite the regulatory approval process. The relevant local departments and agencies will review the plans for compliance with City standards and policies.

The City of Manassas owns and maintains its road network and is consequently experienced at delivering locally administered projects on-time and with the needed regulatory approvals. The City frequently coordinates with VDOT on major transportation investments along Route 28. VDOT serves as the Federal oversight agency for the City ensuring that Federal codes and regulations are followed. When relevant, the City is experienced in navigating the various state review, permitting, and environmental processes.

It is anticipated that the National Environmental Policy Act (NEPA) process necessitated through the application of federal funds could be satisfied through a categorical exclusion (CE). The City of Manassas will work closely with FHWA to document the required environmental considerations and remain in compliance with environmental requirements which will be completed by the September 30, 2022 obligation deadline.

Assessment of Project Risks and Mitigation Strategies

The long history of visioning and planning along the corridor and the incremental yet meaningful steps to develop 10 percent designs and feasibility studies have substantially anticipated and minimized potential risks. The following table outlines an understanding of the risks that still remain and the strategies that the City has identified to mitigate those risks.

Risk	Mitigation Strategy
Utility Coordination	• Consistency with the Streetlight Master Plan • Continual coordination with utility companies
Community Acceptance	• Consistency with Streetscape Master Plan • Early education campaign for the appropriate use of the roundabout • Resident and business community outreach through the public involvement process • Outreach to affected business owners with respect to access management • Look to the Grant Avenue project as a successful example of streetscape revitalization and a one-lane roundabout
Right-of-Way Acquisition	• Designs that minimize the amount of right-of-way needed • Early coordination with private property owners for right-of-way and other easements • Inclusion of right-of-way and easement contingency budgets and including additional time within the project schedule for these activities

BENEFIT-COST ANALYSIS

A benefit-cost analysis (BCA) was prepared to demonstrate how a modest investment in the corridor would create real and long-term benefits for the City.

In order to demonstrate the independent utility of the projects, benefits and costs for the streetscape component and for the roundabout component were calculated separately.

BCA summary tables are presented on the following pages. The BCA has been documented in a spreadsheet format consistent with the application requirements. Calculation methodology and other assumptions are documented in a technical memorandum.

It is anticipated that the calculated benefits will be shared by City and corridor residents, employers, employees, visitors, and tourists. Regional commuters to and through the City of Manassas will also benefit from the revitalization efforts.

It is noted that the benefits and costs quantified in this analysis are not exhaustive—there are many benefits and costs for which direct monetary values are difficult to express. These benefits have been described, in part, throughout this application narrative. Key project impacts that were quantified were those which had a more significant value (either positive or negative), and those that could be determined independently without any transfer, double counting, or offset of benefits. As such, this BCA represents a high-level analysis of the major calculable benefits compared to the major calculable costs of each component. Efforts were made to be conservative—contingencies were included for construction costs and most calculated project benefits are based on peak-hour analysis (opposed to whole-day benefits).

The BCA considered an analysis period between 2020 and 2044, which considers the period during which initial project costs will be expended and during which 20 years of operation will be achieved.

The BCA of the streetscape component, with an applied 7 percent discount, demonstrates a **project benefit of $13.6 million**, a **project cost of $6.0 million**, and a resulting **benefit-cost ratio of 2.29**.

The BCA of the roundabout component, with an applied 7 percent discount, demonstrates a **project benefit of $7.1 million**, a **project cost of $2.9 million**, and a resulting **benefit-cost ratio of 2.47**.

The combined BCA of the Mathis Corridor Revitalization Project, with an applied 7 percent discount, demonstrates a **project benefit of $20.7 million**, a **project cost of $8.8 million**, and a resulting **benefit-cost ratio of 2.35**.

Benefit-cost ratios greater than one are indicative of return on a capital investment. This indicates that the components—both independently and as a combined project—are a strategic and positive investment of City and federal funds.

Olde Towne Square mixed-use redevelopment

Streetscape Component

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
		Long-Term Outcomes		
Safety	Reduced crashes and injuries along Mathis Avenue due to raised median	Risk reduction in automobile crashes	$15,087,000	$5,954,000
Economic Competitiveness	Long-term job creation due to supportive infrastructure, walkability, housing	Potential new Micron jobs (annual salary) created between project opening and 2030	$8,250,000	$ 4,845,652
	Property value increase (i.e., benefit to City in tax base increase, benefit to community in resale prices)	Adjacent property value "premium" related to complete streets investment (assumed to be 5% of current assessed values)	$3,190,610	$2,274,861
Environmental Sustainability	Reduced energy costs for corridor lighting	Savings in annual costs per LED light	$225,720	$91,214
	Reduction in healthcare costs, increases in energy efficiency, improvements in air quality, and reduction in runoff costs per street tree	Annual net benefit per street tree	$82,800	$33,459
State of Good Repair	Reduce annual costs of pavement maintenance	O&M savings due to one less lane of asphalt to be repaved annually	$1,053,533.33	$425,739.29
		Total Benefits	$27,889,663	$13,624,928
		Total Costs	$7,111,420	$5,951,236
		Benefit/Cost Ratio	3.92	2.29

Roundabout Component

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
		Long-term Outcomes		
Safety Benefit	Reduced crashes within influence area of intersection	Risk reduction in automobile crashes	$11,453,000	$4,520,000
Economic Competitiveness	Lost time and delay savings	Potential productivity due to savings in delay related personal value of time	$5,493,181	$2,506,129
State of Good Repair/ Innovation	Reduced annual costs of intersection control	O&M savings of a roundabout compared to a signalized intersection	$159,140	$64,309
		Total Benefits	$17,105,322	$7,090,439
		Total Costs	$3,399,000	$2,868,028
		Benefit/Cost Ratio	5.03	2.47

Mathis Corridor Revitalization Project (Combined Benefits)

Benefit Type	Undiscounted Net Benefits	7% Discount of NPV Benefits
Safety	$26,540,000	$10,474,000
Economic Competitiveness	$16,933,791	$9,626,643
Environmental Sustainability	$308,520	$124,674
State of Good Repair	$1,212,673	$490,049
Total Benefits	$44,994,985	$20,715,367
Total Costs	$10,510,420	$8,819,264
Benefit/Cost Ratio	4.28	2.35

ATTACHMENTS

Letters of Support

> *The Mathis Corridor Revitalization Project is a culmination of decades of visioning and planning. The following letters demonstrate the commitment from City, local, and state officials as well as regional planning agencies, thus reinforcing public support for this essential project.*

- Manassas City Council
- Prince William Chamber of Commerce
- National Capital Region Transportation Planning Board
- Congresswoman Jennifer Wexton, 10th District, Virginia
- Congressman Robert Wittman, 1st District, Virginia
- State Senator Jeremy McPike, 29th Senatorial District, Virginia
- Delegate Danica Roem, 13th District, Virginia House of Delegates

Benefit Cost Analysis Technical Memorandum

Benefit Cost Analysis Spreadsheet

Mathis Avenue Streetscape Component Fact Sheet

Sudley Road/Route 28 Roundabout Component Fact Sheet

"This project would be a great example of innovative, multimodal design that modernizes outdated infrastructure design. Adding alternative intersection designs such as a roundabout at the Centreville Road/Sudley Road intersection will alleviate persistent traffic congestion along Route 28 … at an intersection I requested VDOT to study for an alternative intersection design this year when I filed HB 2468 (2019) in the Virginia House of Delegates."

Danica Roem, Delegate, 13th District, VA House of Delegate

Letters of Support

MOTION:

SECOND:

July 8, 2019
Regular Meeting
Resolution #R-2020-01

RE: APPLICATION FOR FISCAL YEAR 2019 BETTER UTILIZING INVESTMENTS TO LEVERAGE DEVELOPMENT (BUILD) TRANSPORTATION GRANTS PROGRAM

WHEREAS, as a major gateway into the City, there is tremendous need for redevelopment and enhancement of the Mathis Corridor; and

WHEREAS, revitalization of the aging corridor is a Council priority; and

WHEREAS, $900 million in funding is available through the Department of Transportation for the BUILD transportation grant program for capital investments in surface transportation and infrastructure for projects that will have local and regional significance; and

WHEREAS, as part of the City's revitalization efforts for the Mathis Corridor, the City intends to seek funding in the amount of $7,449,600; and

WHEREAS, this application includes the reconstruction of a section of the Mathis Avenue from Sudley Road to Liberia Avenue (T-86) to the City's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings, and green medians that double as pedestrian crossing refuges. These improvements will serve to enhance the pedestrian experience along the Mathis Corridor, stimulating adjacent commercial and residential activity as well as improving pedestrian connectivity between the corridor and Historic Downtown Manassas; and

WHEREAS, this application also includes a roundabout which will be an innovative redesign of the Sudley Road and Route 28 intersection (T-85), a known bottleneck intersection along the Route 28 corridor. Route 28 is a major regional north-south corridor that provides direct access between two airports; four counties; and major US, state, and local roadways such as I-66 and Routes 7, 50, 234, and 267. The roundabout will reduce congestion and delay for nearly 50,000 travelers daily and will serve as a gateway to the Historic Downtown and the Mathis Corridor; and

WHEREAS, the Manassas City Council approved those two projects as part of the FY 2020 Five-Year Capital Improvement Program adopted on May 13, 2019 via Resolution #2019-55; and

WHEREAS, the City of Manassas is requesting 80% of the total project costs per the grant requirements and the City will be responsible to fund the remaining 20% of the project costs using local funds.

NOW, THEREFORE, BE IT RESOLVED that the Manassas City Council hereby supports this application to the U.S. Department of Transportation for an allocation of $7,449,600 through the Fiscal Year 2019 BUILD Transportation grants program.

Harry J. Parrish II Mayor
On behalf of the City Council
Of Manassas, Virginia

ATTEST:

Lee Ann Henderson City Clerk

Votes:
Ayes: Davis-Younger, Ellis, Lovejoy, Sebesky, Wolfe
Nays: None
Absent from Vote: None
Absent from Meeting: Elston

PRINCE WILLIAM
CHAMBER
OF COMMERCE

9720 Capital Court • Suite 203 • Manassas, VA 20110 • 703.368.6600

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue., SE
Washington DC 20590

Dear Secretary Chao:

I write today to express my support for the grant application submitted by the City of Manassas for its Mathis Corridor Revitalization Project. Successfully securing funding under the 2019 Better Utilizing Investments to Leverage Development (BUILD) Program will allow Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the City.

If funded, the project will reconstruct the Mathis Corridor to the City's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings, and green medians that double as pedestrian crossing refuges. These improvements will serve to enhance the pedestrian experience along the Mathis Corridor, stimulating adjacent commercial and residential economic activity as well as improving pedestrian connectivity between the corridor and Historic Downtown Manassas.

Further, this project includes an innovative redesign of a known bottleneck intersection along the Route 28 corridor. Route 28 is a major regional north-south corridor that provides direct access between two airports; four counties; and major US, state, and local roadways such as I-66 and Routes 7, 50, 234, and 267. Relieving the known bottleneck will reduce congestion and delay for nearly 50,000 travelers daily.

I see this project as vital to helping people of all means fully enjoy the vibrancy of the City of Manassas and helping commuters of all modes have better access to housing, employment, and opportunity.

I ask that you give this proposal full and fair consideration. Should you or your staff have any questions, please contact Nicole Smith at 703-257-8882 or nsmith@manassasva.gov.

Sincerely,

Deborah L. Jones
President & CEO
Prince William Chamber of Commerce

National Capital Region
Transportation Planning Board

July 1, 2019

Ms. Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Ms. Chao:

I am writing to express the support of the National Capital Region Transportation Planning Board (TPB), the Metropolitan Planning Organization (MPO) for the National Capital Region, for an application by the City of Manassas for a grant under the FY 2019 Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants Program.

The BUILD Grant would fund the Mathis Corridor Revitalization Project. The project will reconstruct a section of the Mathis Avenue from Sudley Road to Liberia Avenue in accordance with the City's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings, and green medians that double as pedestrian crossing refuges. This project will also include a roundabout which will be an innovative redesign of the Sudley Road and Route 28 intersection.

The Mathis Corridor Revitalization Project will allow the City of Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the City. The Mathis Streetscape will enhance the pedestrian experience along the Mathis Corridor, stimulating adjacent commercial and residential activity as well as improving pedestrian connectivity between the Mathis corridor and Historic Downtown Manassas, including the VRE commuter rail station. The Sudley/Route 28 roundabout will reduce congestion and delay for nearly 50,000 travelers daily and will serve as a gateway to the Historic Downtown and the Mathis Corridor.

Providing transportation alternatives through multimodal improvements, better pedestrian features, and improved access to public transportation is a regional priority for the TPB. The project proposed for this grant directly responds to the regional transportation goals adopted by the Transportation Planning Board and identified in the Washington region's long-range transportation plan. As such the TPB appreciates your favorable consideration of City of Manassas' application. I anticipate that upon a successful grant award, subject to the availability of the required matching funding, the region's transportation improvement program (TIP) will be amended to include this project.

Sincerely,

Martin E. Nohe
Chair, National Capital Region
Transportation Planning Board

Cc: Bryan Foster, Deputy City Manager, City of Manassas

JENNIFER WEXTON
10TH DISTRICT, VIRGINIA

COMMITTEE ON
FINANCIAL SERVICES

COMMITTEE ON SCIENCE, SPACE,
AND TECHNOLOGY

Congress of the United States
House of Representatives
Washington, DC 20515–4610

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1217 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-5136

STERLING OFFICE
21351 GENTRY DRIVE, SUITE 140
STERLING, VA 20166
(703) 234-3800

WINCHESTER OFFICE
100 NORTH LOUDOUN STREET
SUITE 120
WINCHESTER, VA 22601

July 8, 2019

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Chao,

I write to express my support for the grant application submitted by the City of Manassas for its Mathis Corridor Revitalization Project. Successfully securing funding under the 2019 Better Utilizing Investments to Leverage Development (BUILD) Program will allow Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the City.

This vitally important project will permit the City to reconstruct the Mathis Corridor to updated streetscape standards. These updated standards include wider sidewalks, safer pedestrian crossings, and upgraded medians that increase driver safety and visibility while doubling as refuges for pedestrian crossings. Enhancing the overall transportation experience along the Mathis Corridor will stimulate adjacent commercial and residential economic activity as well as increase connectivity between the corridor and Historic Downtown Manassas.

Plans also call for an innovative and critical redesign of the bottleneck intersection of Route 234 (Sudley Road) and Route 28 (Centreville Rd). The Route 28 corridor serves as a regionally significant north-south artery and provides direct access between two airports, four counties, and key transportation routes such as I-66, U.S. Route 50, and many other essential state and local routes. Redesign of this intersection will enhance the flow of traffic along Route 28 and reduce congestion and delay for nearly 50,000 travelers daily.

Revitalization of the Mathis Corridor and improvements to Route 28 will ensure people of all means are able to fully enjoy the vibrancy of the City of Manassas while ensuring commuters of all modes have better access to housing, employment, and opportunity. I ask that you give this proposal full and fair consideration. Should you or your staff have any questions, please contact Mike Lucier at (202) 225-5136 or Mike.Lucier@mail.house.gov.

Sincerely,

Jennifer Wexton
Member of Congress

ROBERT J. WITTMAN
1ST DISTRICT, VIRGINIA

HOUSE ARMED SERVICES COMMITTEE
RANKING MEMBER, SEAPOWER AND PROJECTION FORCES
TACTICAL AIR AND LAND FORCES

NATURAL RESOURCES COMMITTEE
WATER, OCEANS, AND WILDLIFE

CO-CHAIR, CONGRESSIONAL
SHIPBUILDING CAUCUS

CO-CHAIR, CONGRESSIONAL
CHESAPEAKE BAY WATERSHED TASK FORCE

CO-CHAIR, CONGRESSIONAL
PUBLIC HEALTH CAUCUS

CO-CHAIR, CONGRESSIONAL
RURAL BROADBAND CAUCUS

Congress of the United States
House of Representatives
Washington, DC 20515

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(202) 225-4261

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MECHANICSVILLE, VA 23111
(804) 730-6595

MIDDLE PENINSULA OFFICE
508 CHURCH LANE
P.O. BOX 3106
TAPPAHANNOCK, VA 22560
(804) 443-0668

WWW.WITTMAN.HOUSE.GOV

July 11, 2019

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue., SE
Washington DC 20590

Dear Secretary Chao:

I write today to request your full and fair consideration of the application submitted by the City of Manassas for the 2019 Better Utilizing Investments to Leverage Development (BUILD) Grants Program for its Mathis Corridor Revitalization Project. Securing funding under the 2019 BUILD Grants Program will allow Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the City.

If funded, the project will reconstruct the Mathis Corridor to the City's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings, and green medians that double as pedestrian crossing refuges. These improvements will serve to enhance the pedestrian experience along the Mathis Corridor, stimulating adjacent commercial and residential economic activity as well as improving pedestrian connectivity between the corridor and Historic Downtown Manassas.

Further, this project includes an innovative redesign of a known bottleneck intersection along the Route 28 corridor. Route 28 is a major regional north-south corridor that provides direct access between two airports; four counties; and major federal, state, and local roadways such as I-66 and Routes 7, 50, 234, and 267. Relieving this known bottleneck will reduce the congestion and delay that the nearly 50,000 travelers in the area experience daily.

This project would be vital to helping people of all means fully enjoy the vibrancy of the City of Manassas and helping commuters of all modes have better access to housing, employment, and opportunity.

Based on the information given, I request that you give your full and fair consideration of this FY19 BUILD grant application submitted by the City of Manassas.

Sincerely,

Robert J. Wittman
Member of Congress

SENATE OF VIRGINIA

JEREMY S. McPIKE
29TH SENATORIAL DISTRICT
ALL OF THE CITIES OF MANASSAS AND MANASSAS PARK; AND PART OF PRINCE WILLIAM COUNTY
POST OFFICE BOX 2819
WOODBRIDGE, VIRGINIA 22195

COMMITTEE ASSIGNMENTS:
GENERAL LAWS AND TECHNOLOGY
LOCAL GOVERNMENT
REHABILITATION AND SOCIAL SERVICES

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue., SE
Washington DC 20590

Dear Secretary Chao:

I write today to express my support for the grant application submitted by the City of Manassas for its Mathis Corridor Revitalization Project. Successfully securing funding under the 2019 Better Utilizing Investments to Leverage Development (BUILD) Program will allow Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the City.

If funded, the project will reconstruct the Mathis Corridor to the City's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings, and green medians that double as pedestrian crossing refuges. These improvements will serve to enhance the pedestrian experience along the Mathis Corridor, stimulating adjacent commercial and residential economic activity as well as improving pedestrian connectivity between the corridor and Historic Downtown Manassas.

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I see this project as vital to helping people of all means fully enjoy the vibrancy of the City of Manassas and helping commuters of all modes have better access to housing, employment, and opportunity.

I ask that you give this proposal full and fair consideration. Should you or your staff have any questions, please contact Nicole Smith at 703-257-8882 or nsmith@manassasva.gov.

Sincerely,

Jeremy McPike
State Senator
29th District

COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

DANICA A. ROEM
POST OFFICE BOX 726
MANASSAS, VIRGINIA 20113

THIRTEENTH DISTRICT

COMMITTEE ASSIGNMENTS:
COUNTIES, CITIES AND TOWNS
SCIENCE AND TECHNOLOGY

The Honorable Elaine Chao
Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Avenue., SE
Washington, D.C. 20590

Dear Secretary Chao,

I support the grant application submitted by the City of Manassas for its Mathis Corridor Revitalization Project. Securing funding under the 2019 Better Utilizing Investments to Leverage Development (BUILD) Program will allow Manassas to improve multimodal transportation options and renew the economic viability of a strategic corridor in the city.

Route 28 is a major regional north-south corridor that provides direct access between two airports; four counties; two cities; and major federal, state and local roadways. The Virginia Department of Transportation has consistently classified the level of service at signalized intersections along Virginia Route 28 (Centreville Road) with an "F" or "D" rating during peak commuting hours for congestion and safety, with a fatality happening in the Thirteenth District's part of Manassas in 2017.

This project would be a great example of innovative, multi-modal design that modernizes outdated infrastructure design. Adding alternative intersection designs such as a roundabout at the Centreville Road/Sudley Road intersection, will alleviate persistent traffic congestion along the Route 28 corridor. Relieving this known bottleneck will reduce congestion and delay for nearly 50,000 travelers daily at an intersection I requested the Virginia Department of Transportation to study for an alternative intersection design this year when I filed HB 2468 (2019) in the Virginia House of Delegates.

If funded, the project will also reconstruct the Mathis Corridor to the city's updated streetscape standards, bringing wider sidewalks, safer pedestrian crossings and green medians that double as pedestrian crossing refuges. These improvements will make it safer to walk down Mathis Avenue and encourage business owners to build up the local economy in the area.

This project is vital to improve the quality of life of many Prince William County and Manassas residents, helping commuters have better access to housing, employment and opportunity. I respectfully ask for you to consider this project on its merits. Should you or your staff have any questions, please contact Nicole Smith, Economic Development Coordinator for the City of Manassas, at 703-257-8882 or nsmith@manassasva.gov.

Warmly,

Danica Roem

Danica Roem
Delegate, Thirteenth District
Virginia House of Delegates

DISTRICT: (571) 393-0242 • RICHMOND: (804) 698-1013 • DELDROEM@HOUSE.VIRGINIA.GOV

Benefit Cost Analysis
Technical Memorandum

Mathis Corridor Revitalization Project
Application for BUILD FY 2020 Grant
May 2020

Benefit Cost Analysis (BCA) Technical Memorandum

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This Technical Memorandum serves as a supplement to the Benefit-Cost Analysis (BCA) Spreadsheet submitted as part of the BUILD Discretionary Grant application. The Grant application has been prepared by the City of Manassas for funds in support of the construction of streetscape improvements along Mathis Avenue and of the construction of a modern multilane roundabout at the intersection of Sudley Road and Route 28. The City of Manassas has analyzed the costs and benefits of the project in context with regional transportation goals to demonstrate the net benefits of the project. The Mathis Corridor Revitalization Project is emblematic symbolic of the City of Manassas' embrace of the past and commitment to the future. It reimagines one of the City's oldest commercial and automobile-oriented corridors as an economically competitive, multimodal, pedestrian-friendly, and mixed-use main street and gateway into the City.

The BCA has been documented in a spreadsheet format consistent with the requirements of the BUILD program. This Technical Memorandum is a companion piece to the calculations and assumptions that are presented in the BCA Spreadsheet. It details the format and layout of the BCA Spreadsheet, the methodology used to calculate costs and benefits, and the assumptions, limitations, and application of the results.

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 because of City of Manassas' investment in this transportation project. The benefit-cost ratio is the sum of project benefits divided by the sum of project costs. BCA ratios greater than one are indicative of a return on a capital investment as measured through benefits spread regionwide.

The total cost of the project is estimated to be approximately $10.5 million dollars (undiscounted). The streetscape component is estimated to be approximately $7.1 million dollars (undiscounted) and the roundabout component is estimated to be approximately $3.4 million dollars (undiscounted).

This project provides definitive benefits under all five of the five primary selection criteria of the BUILD program: quality of life, economic competitiveness, safety, state of good repair, and environmental sustainability, innovation, and partnerships. The analysis is centered on and includes calculations under the economic competitiveness, safety, state of good repair, and environmental sustainability criteria.

BCA Results

The results of the BCA are presented in **Tables 1, 2, and 3** below using a discount of 7%. BCA's have been provided independent for each component project as well as for the combined benefits.

The BCA ratio at a 7% discount is 2.35 indicating a large net benefit with the inclusion of a two-lane hybrid roundabout at this intersection. Undiscounted results (BCA of 4.28) are also included in the BCA Spreadsheet.

BENEFIT COST ANALYSIS PROJECT SUMMARY MATRICES

Table 1 - BCA Summary Table (Streetscape Component)

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
Long-term Outcomes				
Safety	Reduced crashes and injuries along Mathis Avenue due to raised median	Risk Reduction in Automobile Crashes	$15,087,000	$5,954,000
Economic Competitiveness	Long Term Job Creation due to supportive infrastructure, walkability, housing	Potential new Micron jobs (annual salary) created between project opening and 2030	$ 8,250,000.00	$ 4,845,652.92
	Property Value increase (i.e. benefit to City in tax base increase, benefit to community in resale prices)	Adjacent Property value 'premium' related to complete street investment (assumed to be 5% of current assessed value)	$ 3,190,610.00	$2,274,861
Environmental Sustainability	Reduced B16Energy Costs for corridor lighting	Savings in Annual costs per LED light	$ 225,720.00	$ 91,214.84
	Reduction in health costs, increases in energy efficiency, improvements in air quality, and reduction in runoff costs per Street tree	Annual Net benefit per Street Tr+A2ee	$ 82,800.00	$ 33,459.99
State of Good Repair	Reduce annual costs of pavement maintenance	O&M savings due to one less lane of asphalt to be repaved annually	$ 1,053,533.33	$ 425,739.29
		Total Benefits	$27,889,663	$13,624,928
		Total Costs	$7,111,420	$5,951,236
		Benefit / Cost Ratio	3.92	2.29

Table 2 - BCA Summary Table (Roundabout Component)

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
Long-term Outcomes				
Safety Benefit	Reduced crashes within influence area of intersection	Risk Reduction in Automobile Crashes	$11,453,000	$4,520,000
Economic Competitiveness	Lost Time and Delay Savings	Potential productivity due to savings in delay related personal value of time	$5,493,182	$2,506,129
State of Good Repair / Innovation	Reduced annual costs of intersection control	O&M savings of a roundabout compared to a signalized intersection	$159,140	$64,309
		Total Benefits	$17,105,322	$7,090,439
		Total Costs	$3,399,000	$2,868,028
		Benefit / Cost Ratio	5.03	2.47

Table 3 - BCA Summary Table (Mathis Corridor Revitalization Project Combined Benefits)

Benefit Type	Undiscounted Net Benefits	7% Discount of NPV Benefits
Safety	$26,540,000	$10,474,000
Economic Competitiveness	$16,933,792	$9,626,643
Environmental Sustainability	$308,520	$124,675
State of Good Repair	$1,212,673	$490,049
Total Benefits	$44,994,985	$20,715,367
Total Costs	$10,510,420	$8,819,264
Benefit / Cost Ratio	4.28	2.35

1.0 INTRODUCTION

The purpose of this grant application is to request financial assistance through USDOT's BUILD 2020 program funds in support of the construction of streetscape improvements along Mathis Avenue and of the construction of a modern multilane roundabout at the intersection of Sudley Road and Route 28, in the 21st Century modern small town of the City of Manassas. This grant request culminates decades of planning for the revitalization of the Mathis Corridor.

This project:

- Revitalizes a City of Manassas gateway commercial corridor in the City of Manassas in a federally designated Opportunity Zone
- Reduces delay and congestion for 50,000 daily commuters
- Improves vehicular safety at a known traffic bottleneck
- Improves pedestrian safety, access, and connectivity between the City's two historic districts and two urban parks
- Establishes a distinct character for the Mathis Corridor and sets the stage for private- sector investment and redevelopment
- Includes two components for the betterment of the corridor and people who use it:
    - Streetscape component includes:
        - Conversion of two-way left- turn lane to a raised median
        - 130+ new street trees
        - Commercial entrance closures, consolidation, and realignment
        - Pedestrian improvements (new sidewalk, upgraded crosswalks, and landscaped buffer separating pedestrians and vehicles)
    - Roundabout component includes:
        - Conversion of an existing temporary traffic signal on span wire to the City's first modern, multilane roundabout
        - New sidewalks in all four quadrants with marked crosswalks and pedestrian refuges

This technical memorandum serves as a supplement to the BCA Section for the BUILD grant application for the revitalization project. It has been prepared in response to the requirements of the Notice of Funding Opportunity for the Department of Transportation's National Infrastructure Investments under the Consolidated Appropriations Act, 2020.

The technical memorandum details the methodology, assumptions, and calculations used in the BCA.

This technical memorandum does not, however, attempt to source every document used in the analysis except where it is relevant in discussing the methodology applied (assumptions and sources are detailed at the calculation level in the BCA Spreadsheet).

2.0 BCA SPREADSHEET FORMAT

The BCA Spreadsheet is designed to be a useful tool to reviewers and is organized to facilitate a quick understanding of the methodologies being employed.

The BCA Spreadsheet is made up of eight tabs:

- Tab 1 is titled “Summary BCA.” It contains the overall costs and benefits associated with the project and the resulting benefit-cost ratio.

- Tab 2 is titled “Project Costs.” It provides a breakdown of the total anticipated cost of the construction, ROW, utility work, and preliminary engineering and design for both the roundabout and a comparable signalized intersection improvement.

- Tab 3 is titled “Economic Competitiveness” and provides the anticipated savings related to reduced travel delays because of the construction of the roundabout, the long-term job creation related to jobs created by employer Micron because of this project, and the increases in property values due to complete streets/corridor upgrades.

- Tab 4 is titled “Environmental Sustainability” and provides the anticipated savings related to LED conversion and energy efficiency and the anticipated savings related to the public health benefits of street trees.

- Tab 5 is titled “State of Good Repair.” It provides the anticipated savings related to operational and maintenance costs of pavement, raised medians, signalized intersections, and roundabouts.

- Tab 6 is titled “Safety.” It provides the anticipated savings related to crash reductions because of the construction the roundabout and the raised median

- Tab 7 is titled “Safety Data Summary.” It contains the raw crash data from the Virginia Department of Transportation database.

- Tab 8 is titled “Traffic MOE Summary.” It contains the summarized traffic analysis MOEs.

In all tabs, efforts have been made to source, annotate, or otherwise explain the methodology in use to ensure transparency and the ability to reproduce results and to allow reviewers to modify input parameters at their discretion.

3.0 BENEFIT-COST ANALYSIS PERIOD

For the purposes of the BCA, a 20-year time period that starts from the beginning of construction is used to total benefits and costs associated with the construction of the roundabout. This represents a period during which the long-term impacts can be confidently forecasted and is consistent with the minimum analysis period required by the BUILD program.

The initial costs of construction are applied to the year during which construction begins. Cost for PE, design, and ROW/utility work are assumed to occur in prior years.

All costs and benefits were estimated in constant dollars to be consistent with

recommended monetized values provided in the Department of Transportation's *BUILD BCA Resource Guide*. Costs and benefits are valued in the year they occur and discounted to return to a present value. A discount rate of 7 percent was applied to the calculated values per BUILD guidelines.

It is expected that the service life of the roundabout and streetscape improvements will exceed the analysis period. As a conservative measure, no residual value of the project is assumed as part of this analysis.

4.0 BASE CASE AND ALTERNATE CASE SCENARIOS

This BCA compares the base case of the transportation network (existing conditions with programmed roadway and transit projects) against a "build scenario" of the transportation network with the addition of the roundabout. The benefits of the roundabout project are only those net benefits that exist beyond the service that is provided by the baseline scenario. The baseline scenario is a full (not temporary) traffic signal at the intersection of Sudley Road and Route 28 and the current two-way left turn lane along Mathis Avenue.

5.0 SCOPE AND LIMITATION OF BCA

Calculations and estimates used in this BCA and any economic forecast are subject to uncertainty. Where possible, efforts were made to use values and assumptions from nationally recognized and accepted sources [e.g., the Environmental Protection Agency (EPA), DOT, etc.], that arrived at these values through extensive research and study. In many instances, after careful consideration of a range of values and forecasts, the more conservative estimates were used to not overstate the magnitude of the benefit.

The methodology presented herein and the derived results represent the best effort to comprehensively yet conservatively forecast the benefits and cost of the project. The analysis is only as accurate as the validity of the underlying assumptions and parameters. The purpose of the BCA is not to provide the absolute measure of the project's costs and benefits, but instead to demonstrate the expected benefits justify the costs.

6.0 TRAFFIC ANALYSIS

A traffic feasibility analysis was conducted to forecast conditions at the intersection of Sudley Road and Route 28. This analysis produced measures of effectiveness (MOEs) (delay, fuel consumption, and emissions) that were used to complete the BCA analysis for this application. The analysis included modeling the existing signalized intersection and a two-lane roundabout (using SYNCHRO and VISSIM, respectively).

7.0 BCA METHODOLOGY

The remainder of this technical memorandum introduces the methodology, general assumptions, and specific inputs that were used in the BCA. Project costs were based on capital expenditures, operations and maintenance expenditures, and additional societal disadvantages that would occur as a result of the roundabout.

BCA Assumptions

There are many high-level assumptions that were made to facilitate the calculation of costs and benefits for this project during the analysis period.

- All final costs and benefits are expressed in constant dollars to be consistent with recommended monetary values provided in the *BUILD BCA Resource Guide*
- The average consumer price index is used to convert previous-year dollars to 2017 dollars.

Costs

The project costs associated with the roundabout and the streetscape components are described in the BUILD application. The total cost of the project is estimated to be approximately $10.5 million dollars (undiscounted). The streetscape component is estimated to be approximately $7.1 million dollars (undiscounted) and the roundabout component is estimated to be approximately $3.4 million dollars (undiscounted).

Project costs consider PE, ROW/utilities, construction, contingency, and construction engineering inspection.

Economic Benefit

To calculate the economic benefits for this project, the intersection was coded into Synchro and Sidra traffic software. AM and PM peak hour delays were calculated.

These calculations were performed for the following scenarios:

- Existing Conditions
- Existing Conditions with roundabout in place
- 2035 Conditions with signal in place
- 2035 Conditions with roundabout in place

The resulting peak hour delay savings between a roundabout and the signalized intersection control was quantified. Daily peak hour savings were annualized using a factor of 480. As such this analysis only considers the delay savings during the weekday peak hours of a year.

Delay saving for interim years were estimated based on calculated growth rates of Corridor traffic (assumed to be 0.5% annually)

Delay savings were separated out into heavy vehicle and passenger vehicle delays based on the corridor daily heavy vehicle percentage (3%). These vehicle delays

were then converted to person delays using the appropriate car occupancy factors (1.0 for heavy vehicle and 1.68 for passenger vehicles).

Lastly, the delay savings were monetized using the recommended value of time of all-purpose travel ($16.10/hour) and for truck driver ($28.60/hour) travel.

Long-term job creation benefits were calculated for employer Micron only. Micron has expressed the commitment to add 1,100 new job in the City of Manassas in the next 10 years. A major selling point for this commitment is the walkable environment and support for modern housing that will be created by this project. To be conservative, the BCA assumed that 10 percent of the jobs created by micro could be attributed to the revitalization project. A $75,000 salary (matching the median income in the City of Manassas) was applied to 110 new jobs created between 20204 and 2030.

Property value benefits were created for properties adjacent to the streetscape corridor. A premium/increase of 5 percent was applied to the latest assessed property values. This property value increase was treated as a benefit, once, at the year in which the project is completed. It is noted that a review of case studies demonstrated property value increase between 5 and 12 percent. The lower value was chosen in this BCA to remain conservative.

Environmental Benefit

Because the analysis was limited to peak hours only, emission and fuel consumptions benefits were not calculated

Calculated benefits included those related to street trees and to LED conversion.

The City of Manassas recently prepared a streetlight masterplan which indicated an annual savings of $297 per converted Streetlight. This value was applied to the anticipated number of streetlight conversion and totaled for the 20-year analysis period.

Health benefits for street trees were based on empirical data from a study of 5 cities (https://www.fs.fed.us/psw/topics/urban_forestry/products/2/cufr_646_Muncpl%20For%20Bnfts%20Csts%20Five%20Cty.pdf)

The average net benefit to public health (express through less costs for emission, energy, and healthcare) was calculated at $30 per tree. This value was applied to the anticipated number of streetlight conversion and totaled for the 20-year analysis period.

State of Good Repair

To calculate the state of good repair benefit (or disbenefit) the City of Manassas' annual pavement maintenance per lane mile were reviewed. A cost savings was

developed due to the reduction of on one paved lane where the raised median will be constructed.

Additionally, the annual operation and maintenance savings were calculated by comparing the anticipated O&M of a roundabout to the anticipated O&M of a signalized intersection as reported by the “Roundabout Cost Comparison Tool v 2.6”.

Safety Benefit

To calculate the safety benefits for this project, we utilized published crash modification factors prepared by the Virginia Department of Transportation (VDOT) in its “Roundabout Cost Comparison Tool v 2.6” and in the FHWA’s Crash Modification Facto Clearinghouse.

This Safety Benefit analysis utilized information obtained from VDOT’s crash database from the years 2014 through 2018. The expected consequence for all crashes per year utilized recommended monetized values.

Once the risk reduction and expect cost consequences were determined, then a simple multiplication of these two variables provided the safety benefit per year. The expected cost consequences per year were inflated by 1.0% per year across 20 years of the analysis period.

Benefit Cost Analysis Spreadsheet

TAB 1 - Summary BCA

Streetscape Component

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
Long-term Outcomes				
Safety	Reduced crashes and injuries along Mathis Avenue due to raised median	Risk Reduction in Automobile Crashes	$15,087,000	$5,954,000
Economic Competitiveness	Long Term Job Creation due to supportive infrastructure, walkability, housing	Potential new Micron jobs (annual salary) created between project opening and 2030	$ 8,250,000.00	$ 4,845,652.92
	Property Value increase (i.e. benefit to City in tax base increase, benefit to community in resale prices)	Adjacent Property value 'premium' related to complete street investment (assumed to be 5% of current assessed value)+C14	$ 3,190,610.00	$2,274,861
Environmental Sustainability	Reduced B16Energy Costs for corridor lighting	Savings in Annual costs per LED light	$ 225,720.00	$ 91,214.84
	Reduction in health costs, increases in energy efficiency, improvements in air quality, and reduction in runoff costs per Street tree	Annual Net benefit per Street Tr+A2ee	$ 82,800.00	$ 33,459.99
State of Good Repair	Reduce annual costs of pavement maintenance	O&M savings due to one less lane of asphalt to be repaved annually	$ 1,053,533.33	$ 425,739.29
		Total Benefits	$27,889,663	$13,624,928
		Total Costs	$7,111,420	$5,951,236
		Benefit / Cost Ratio	3.92	2.29

Roundabout Component

Benefit Type	Possible Societal Benefits for Consideration	Key Benefits Quantified	Undiscounted Net Benefits	7% Discount of NPV Benefits
Long-term Outcomes				
Safety Benefit	Reduced crashes within influence area of intersection	Risk Reduction in Automobile Crashes	$11,453,000	$4,520,000
Economic Competitiveness	Lost Time and Delay Savings	Potential productivity due to savings in delay related personal value of time	$5,493,182	$2,506,129
State of Good Repair / Innovation	Reduced annual costs of intersection control	O&M savings of a roundabout compared tot a signalized intersection	$159,140	$64,309
		Total Benefits	$17,105,322	$7,090,439
		Total Costs	$3,399,000	$2,868,028
		Benefit / Cost Ratio	5.03	2.47

Mathis Corridor Revitalization Project (Combined benefits)

Benefit Type	Undiscounted Net Benefits	7% Discount of NPV Benefits
Safety	$26,540,000	$10,474,000
Economic Competitiveness	$16,933,792	$9,626,643
Environmental Sustainability	$308,520	$124,675
State of Good Repair	$1,212,673	$490,049
Total Benefits	$44,994,985	$20,715,367
Total Costs	$10,510,420	$8,819,264
Benefit / Cost Ratio	4.28	2.35

Mathis Avenue Streetscape Component Fact Sheet

MATHIS AVENUE IMPROVEMENTS

May 2019

PROJECT DESCRIPTION

The City is developing a concept for Mathis Avenue streetscape and pedestrian improvements project from Sudley Road to Liberia Avenue.

STATUS

Planning

COST ESTIMATE

$5,572,420

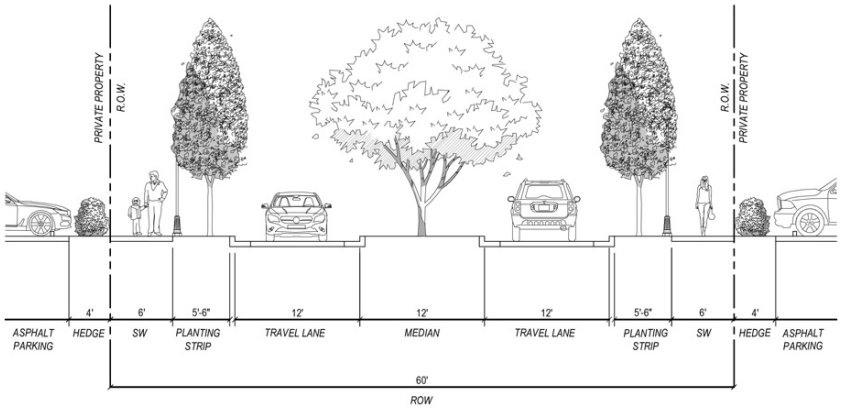
FUNDING SOURCE

The City will be seeking a federal Better Utilizing Investments to Leverage Development (BUILD) grant in 2019 to fully fund this project including design, ROW, and construction.

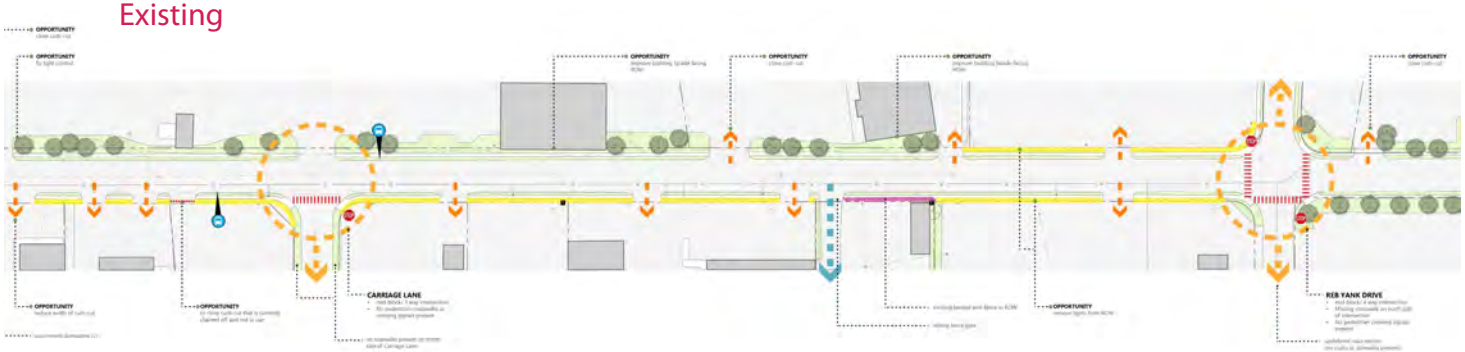
BENEFITS

- Improve pedestrian safety and connectivity between the City's two historic districts
- Establish a distinct character for the Mathis corridor
- Investment in the Mathis Corridor which was designated as an Opportunity Zone under the Federal Tax Cuts and Jobs Act of 2017

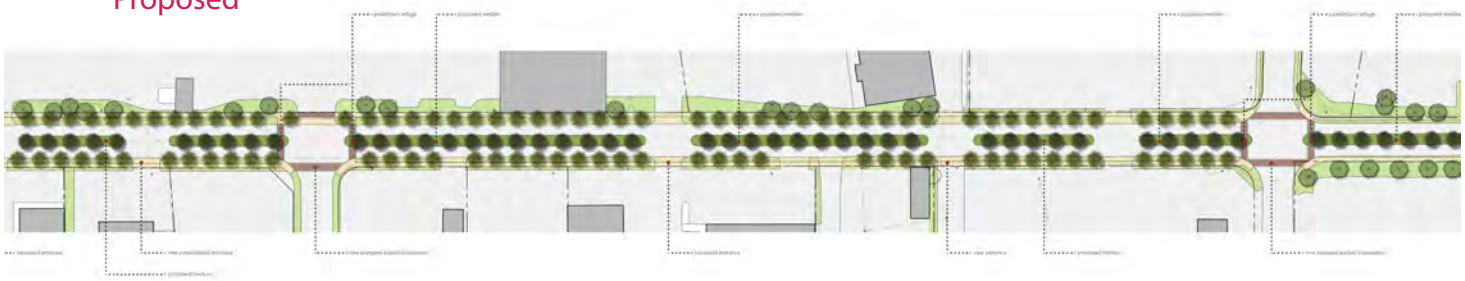
Typical Section



Existing



Proposed



Sudley Road/Route 28
Roundabout Component Fact Sheet

ROUNDABOUT AT SUDLEY/ CENTREVILLE ROADS

May 2019

PROJECT DESCRIPTION

The City is conducting a feasibility study for a two-lane roundabout at the intersection of Sudley Road and Centreville Road.

STATUS

Planning

COST ESTIMATE

$3,740,000

FUNDING SOURCE

The City will be seeking a Federal Better Utilizing Investments to Leverage Development (BUILD) grant in 2019 to fully fund this project including design, ROW, and construction.

BENEFITS

- Reduced delays during peak and off-peak periods
- Improved safety
- Creation of a gateway for Downtown
- Improved air quality
- Investment in the Mathis Corridor which was designated as an Opportunity Zone under the Federal Tax Cuts and Jobs Act of 2017