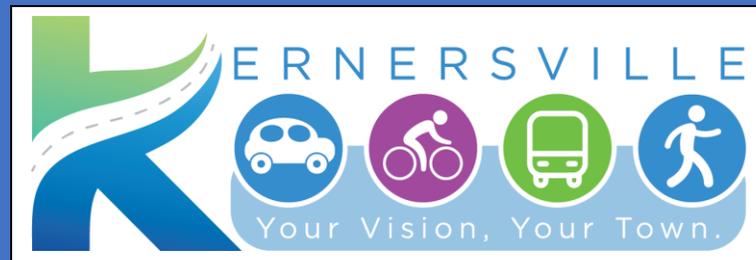


KERNERSVILLE TRANSPORTATION STUDY



The content in this document was prepared from an online version format.

MAY 2018

Introduction

Setting the Stage

The Town of Kernersville is located in the Piedmont Triad region of North Carolina. This region is located in the middle of the State between the mountain region and coastal plain. Kernersville was established in the 1700's at the crossroads of two major stagecoach routes, known as Dobson Crossroads. Since that time, Kernersville has changed significantly, from the stagecoaches in the 1700's, to a one traffic light Town in 1970, and now a major urbanized area of the Piedmont Triad region. The Town of Kernersville must continually plan for the future of transportation. By routinely identifying issues and opportunities, the Town can ensure the readiness of the transportation network to respond to future growth and development.

Vision Background

The Town of Kernersville has a long history of successful transportation planning. They have nearly finished building out past plans, and are ready to create a vision for the next phase of growth.

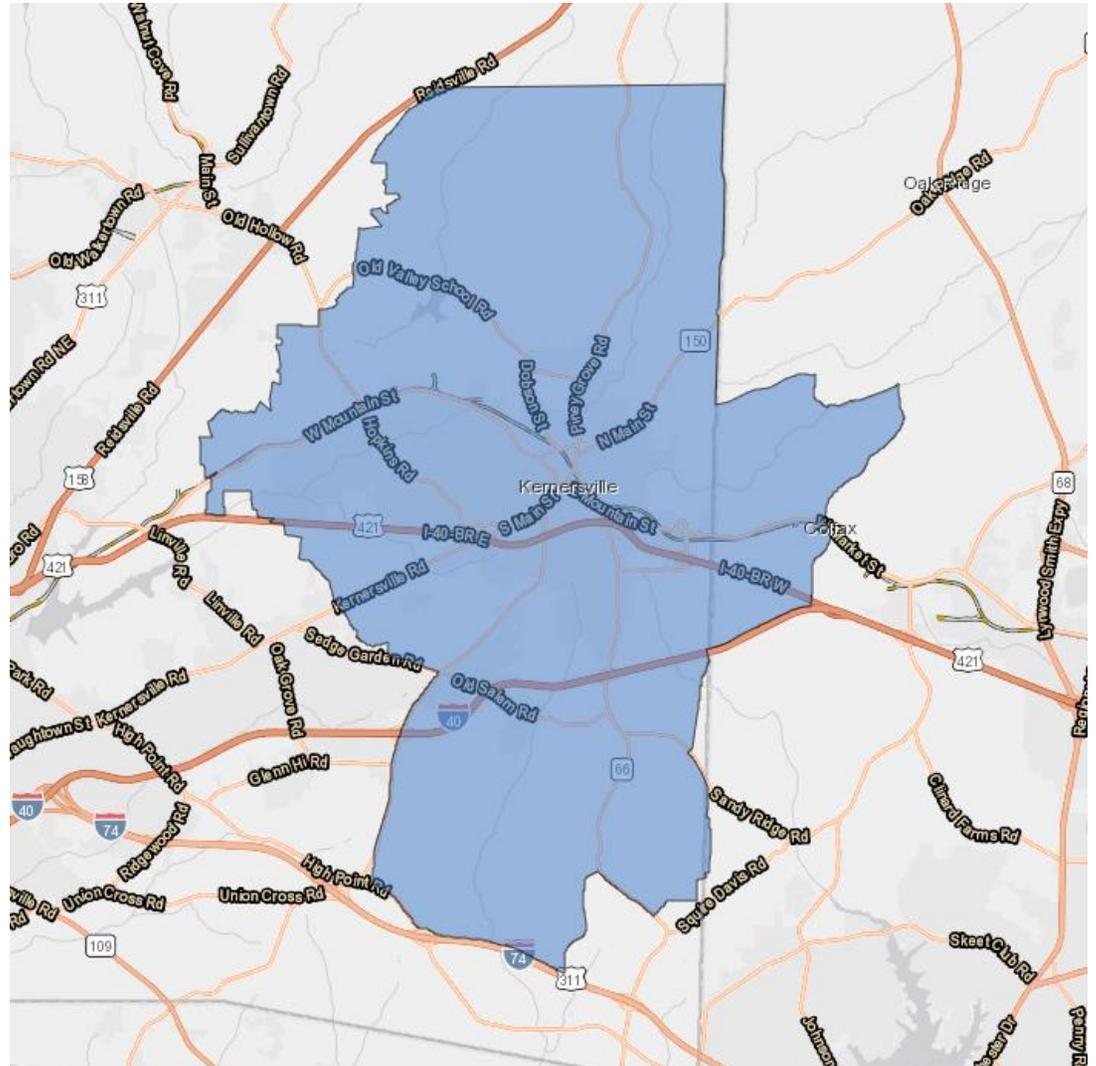
Before laying out a new plan, the Town wanted to get back to the basics. What are the needs of the community today? How is development expected to expand? And ultimately, what are the community's priorities for transportation growth and spending?

This study used a comprehensive public engagement strategy to look at those questions and help draft a Town-wide transportation vision.

Planning Process

This *Kernersville Transportation Vision* is the first of three phases in building transportation projects. This will inform the next phase, including the Comprehensive Transportation Plan (CTP), a more detailed plan with specific project recommendations regarding streets, sidewalks, bike lanes, and greenways and transit. Once identified by the CTP, projects become eligible for funding and move forward with further study, design, and ultimately construction.

Creating and maintaining a Comprehensive Transportation Plan is crucial in addressing the transportation demands of a growing community. Kernersville has the challenges of servicing the transportation demands of its residents, but also a growing and dynamic business sector.



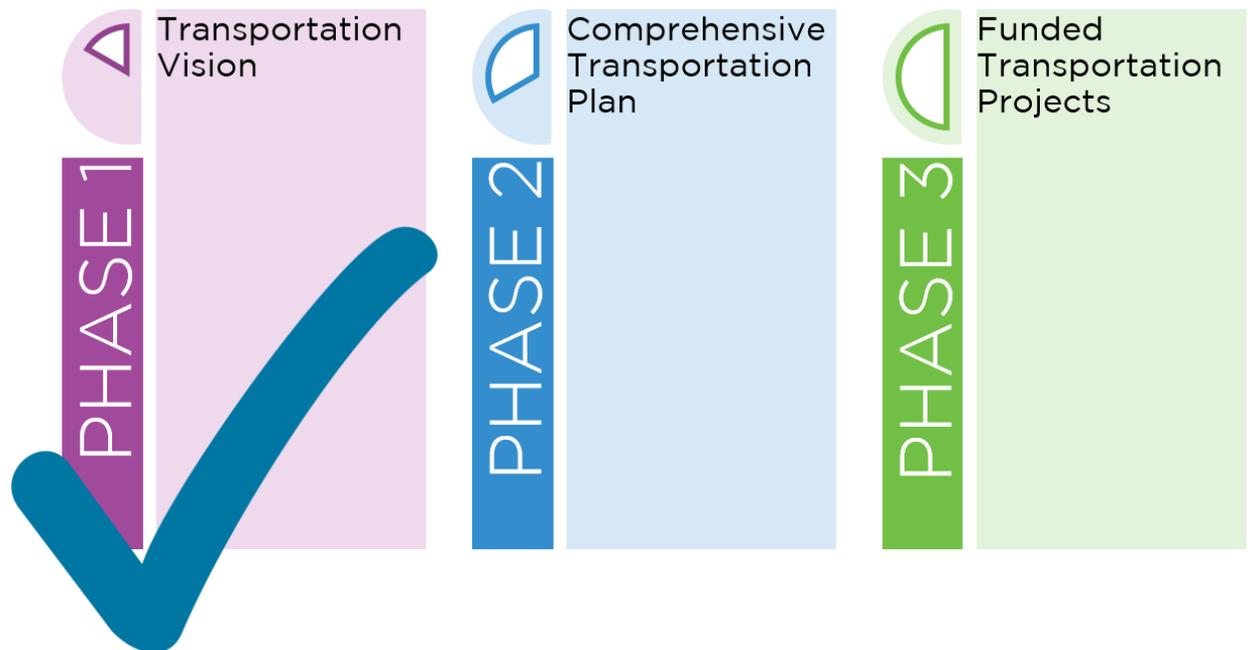
In the last Parks and Recreation Plan survey, participants identified a need for recreational facilities with the top three as follows: walking trails, greenways and bike routes. The demand for pedestrian and bicycle facilities is also reflected in the 2017 National Association of REALTORS® *Home Buyer and Seller Generational Trends* study with walking/jogging trails as being one of the most wanted neighborhood amenities. The study also cited convenience to work was the second most important criteria for selecting a home to purchase.

The business sector in Kernersville continues to grow. The Town’s marketing software Infogroup, 2017 report indicates Kernersville’s 17,000+ jobs have created an *employee to residential population ratio* at .70:1 which is higher than Winston-Salem at .59:1; High Point at .63:1 and Greensboro a .69:1. With those job numbers and *employee to residential ratio*, Kernersville has traffic flow demands from commuters, along with the logistic need to move business supplies and products efficiently in, around and out of Town.

With growing residential demands of additional pedestrian and bicycle facilities, convenient commutes to work in Kernersville and business sector needs for adequate road capacity and timely logistics, a comprehensive approach in transportation planning is essential for the Town of Kernersville to continue to grow as a unique high quality community within the Triad.

The following sections summarize the public engagement activities and the recommendations resulting from the *Vision* process. These recommendations are grouped into six “Vision & Goals” categories:

- Safety and Security
- Mobility
- Multimodal Options
- Culture & Environment
- Growth & Development
- System Preservation



Engagement

Public outreach is an important part of a successful vision. The two primary goals of outreach for the Town of Kernersville Transportation Vision were to **inform and engage the public**.

Informing the public started with the translation of engineering and planning terminology into common English. The initial intent of informing the public was to communicate the purpose of the vision and how it affects them. Once the public understands the value of the plan and its goals and objectives, they can engage with the planning process.

Engaging the public empowered citizens to speak up, as the project team and Town staff actively listened to their thoughts and opinions. For a visioning study, all citizens are equally affected. The different perspectives were considered and valued when developing the project, policy, and program recommendations. The planning process included several avenues of public engagement to improve the likelihood that the feedback obtained was representative of the entire community. The engagement process intent was not to obtain a community wide vote, but to gather a sampling of the community's view on transportation issues and opportunities.

Focus Group Meetings – approximately 40 people met twice during the project process to provide more in-depth feedback through a series of hands-on activities and discussion

Honeybee Festival – the project team engaged visitors during this local festival

Online Survey – a total of 95 people took this 5-minute survey

Agency Partner Meetings – the project team met with funding partners at key points during the process

News Articles - a series of 6 articles in the Kernersville News to encourage public participation and inform the public of the study's findings

- May 16, 2017
- June 13, 2017
- July 18, 2017
- July 25, 2017
- September 12, 2017
- September 21, 2017

Presentations - to encourage public participation and to update groups on the study's findings.

- Lions Club
- Kiwanis Club
- Rotary Club
- Youth Rotary Club
- Kernersville Senior Center
- Iglesia Cristiana Wesleyana



Strengths, Weaknesses, and Opportunities

This map highlights the strengths, weaknesses, and opportunities within Kernersville. The dots were collected through public engagement activities and represent comments received from citizens of the Town. The study used these comments and ideas in the development of the Vision and Goals laid out in the following tabs.

Strengths

The green dots on the map display areas where outreach participants feel that the transportation system works well and meets the need of the roadway user. This can include, but is not limited to, areas where traffic flows well, where pedestrians are safely accommodated, or where the street design is aesthetically appealing.

Opportunities

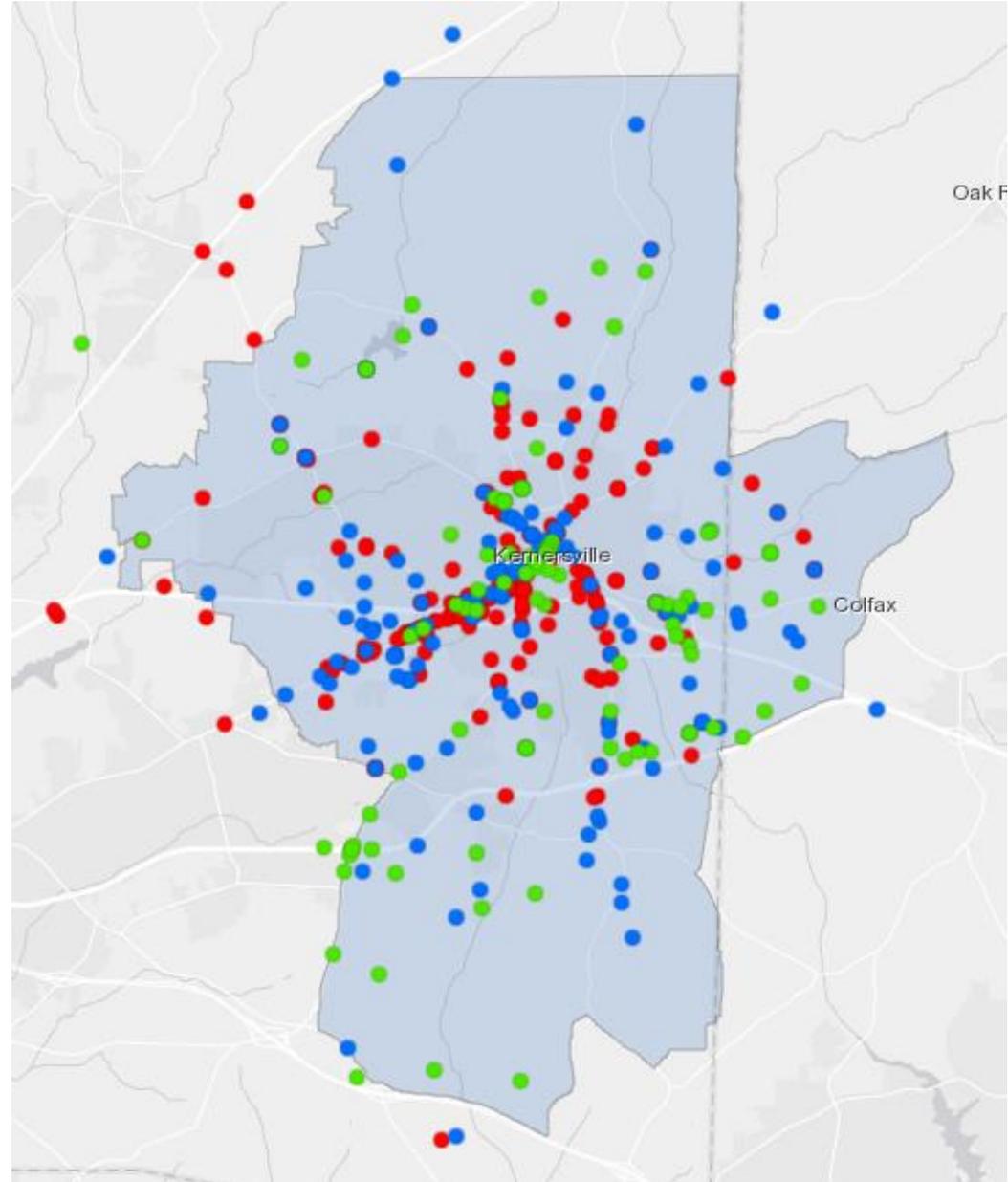
The blue dots on the map display areas where outreach participants feel that the Town of Kernersville and the transportation system is afforded an opportunity. Examples of opportunities include greater access to public transportation and multi-use trails, as well as upcoming economic development.

Weaknesses

The red dots on the map display areas where outreach participants feel that the Town of Kernersville's transportation system is falling short or under performing. These areas represent perceived safety and congestion concerns, poor pavement conditions, or the lack of bicycle and pedestrian facilities. Several of these areas are supported by safety and congestion data displayed in the next two sections: *Safety & Security* and *Mobility*.

How did this data inform the Vision & Goals?

The points on this map were overlaid with both quantitative data (e.g. crashes, high volume locations, and existing infrastructure) and qualitative data (e.g. priority ranking exercises from the outreach events). The project team used the combined information to develop the six vision categories. Once the vision categories were finalized, the combined data was used to identify areas of emphasis and goal statements within each vision category.



The final goal statements, described in the following sections, are reflective of the Town's needs and desires for the future of the transportation system in Kernersville.

Vision and Goals

The data and input gathered through this *Vision* process resulted in recommendations that have been grouped into six “Vision & Goals” categories. The first three (Safety & Security, Mobility, and Multimodal Options) ranked as higher priorities, and the last three (Culture & Environment, Growth & Development, and System Preservation) ranked as lower priorities.

It is anticipated that the Town, as well as state and federal partner agencies, will continue to fund projects in all six categories. However, the information provided as part of these Vision & Goal statements will be a key consideration as the Town identifies and evaluates potential projects and opportunities.

The following tabs describe each Vision & Goal statement, including action steps and supporting mapping. The purpose of the *Vision* process was to identify the Town’s vision statements. This process did not include a comprehensive list of potential projects, but provides example areas of need and opportunity.

The next phase will be to develop a Comprehensive Transportation Plan (CTP). The CTP process will include additional data gathering and public outreach. The result of the CTP will be a detailed map showing specific potential projects within the Town.



Vision: Safety and Security

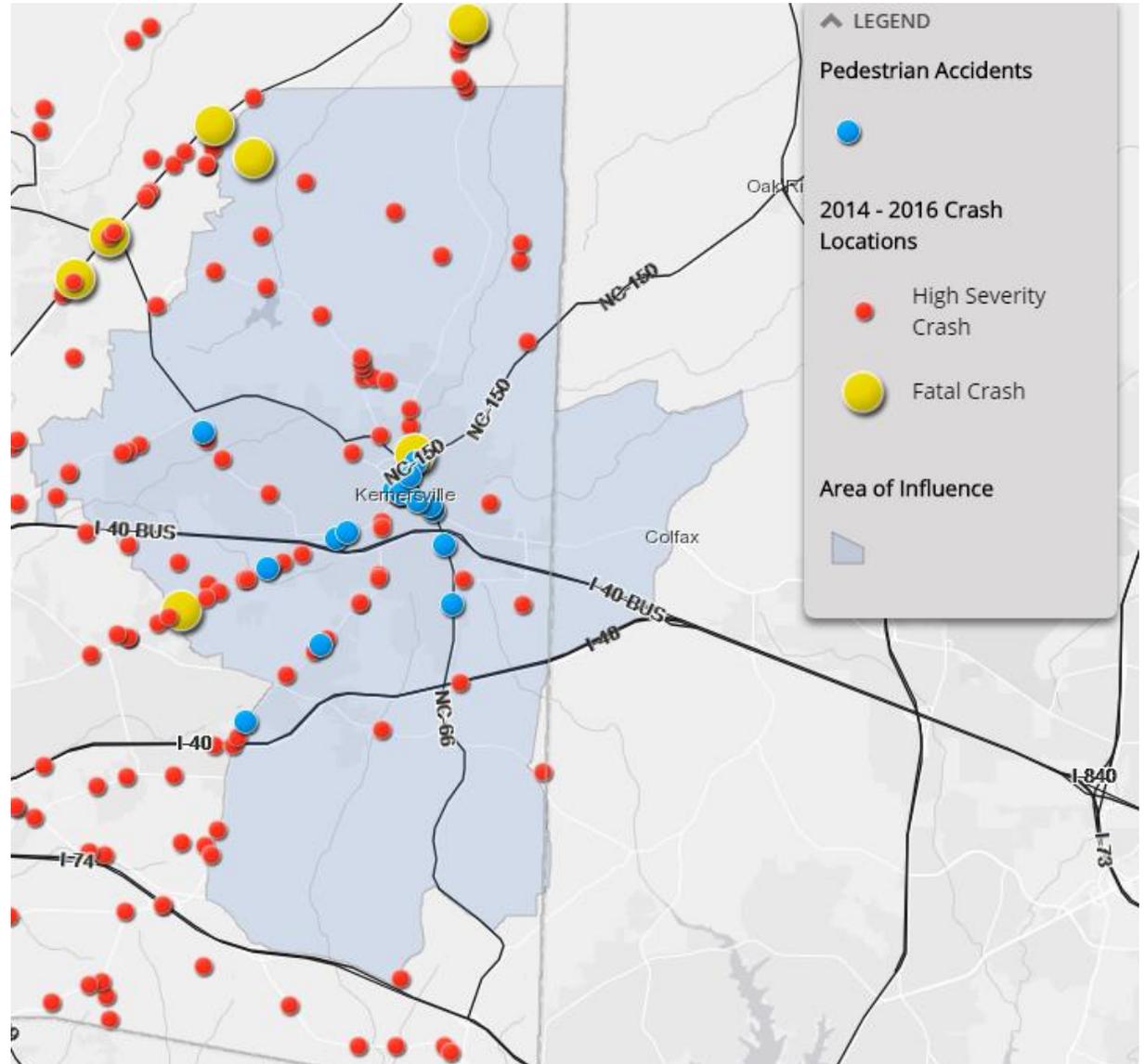
Safety and security are important to the citizens and the Town of Kernersville. Comments were received regarding speeding, roadway design, and lack of sidewalks. These comments are reflected with data. This map shows locations with highest auto pedestrian crash histories during the period of 2014 to 2016. Of the 18 pedestrian accidents, 83% occurred at an intersection. 33% had no sidewalks, and 67% had no crosswalks.

Goal

PROMOTE A SAFE AND SECURE TRANSPORTATION SYSTEM BY REDUCING CRASHES, MAKING TRAVEL RELIABLE AND PREDICTABLE, AND IMPROVING EMERGENCY RESPONSE TIMES.

Action Steps and Potential Projects

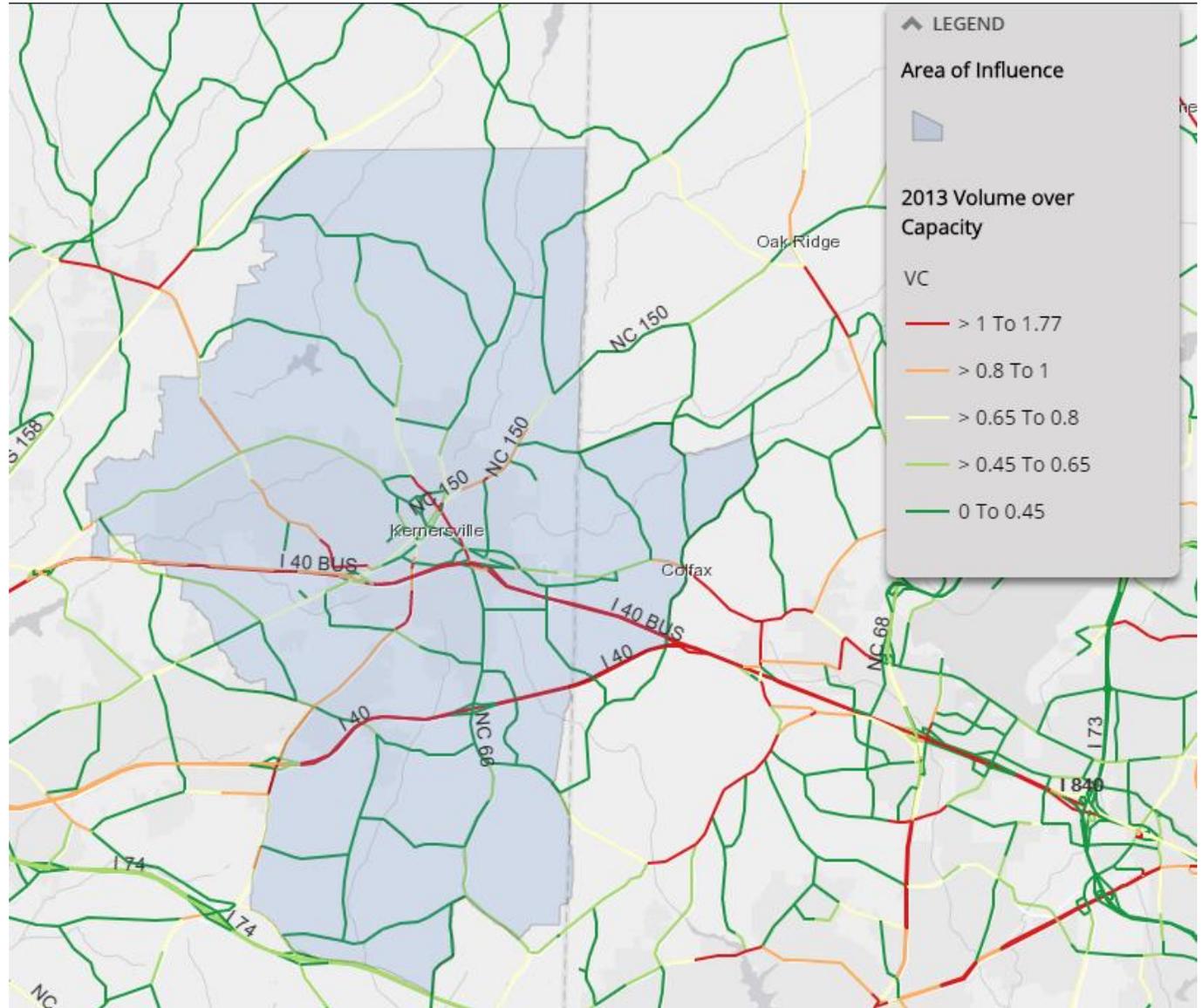
- Identify dangerous road segments and intersections. Work with regional and state partners to provide safety countermeasures.
- Clear the transportation system of debris, high water, snow/ice, and disabled vehicles in a timely and orderly fashion.
- Increase the use of innovative transportation technology to enhance the efficiency of travel times and delays by notifying citizens of travel conditions and alternative routes. (e.g. Dynamic Message Signs, Electronic Notifications of crashes)
- Initiate a Strategic Intersection Safety program to identify high crash locations and identify low-cost countermeasures to improve safety and operations.



Mobility 2013

The Volume to Capacity (V/C) ratio is a measure that compares demand with supply. The higher the V/C number on the roadway segment, the more congested the network. On roadways where auto traffic demand exceeds capacity, traffic flows break down resulting in a severely congested network.

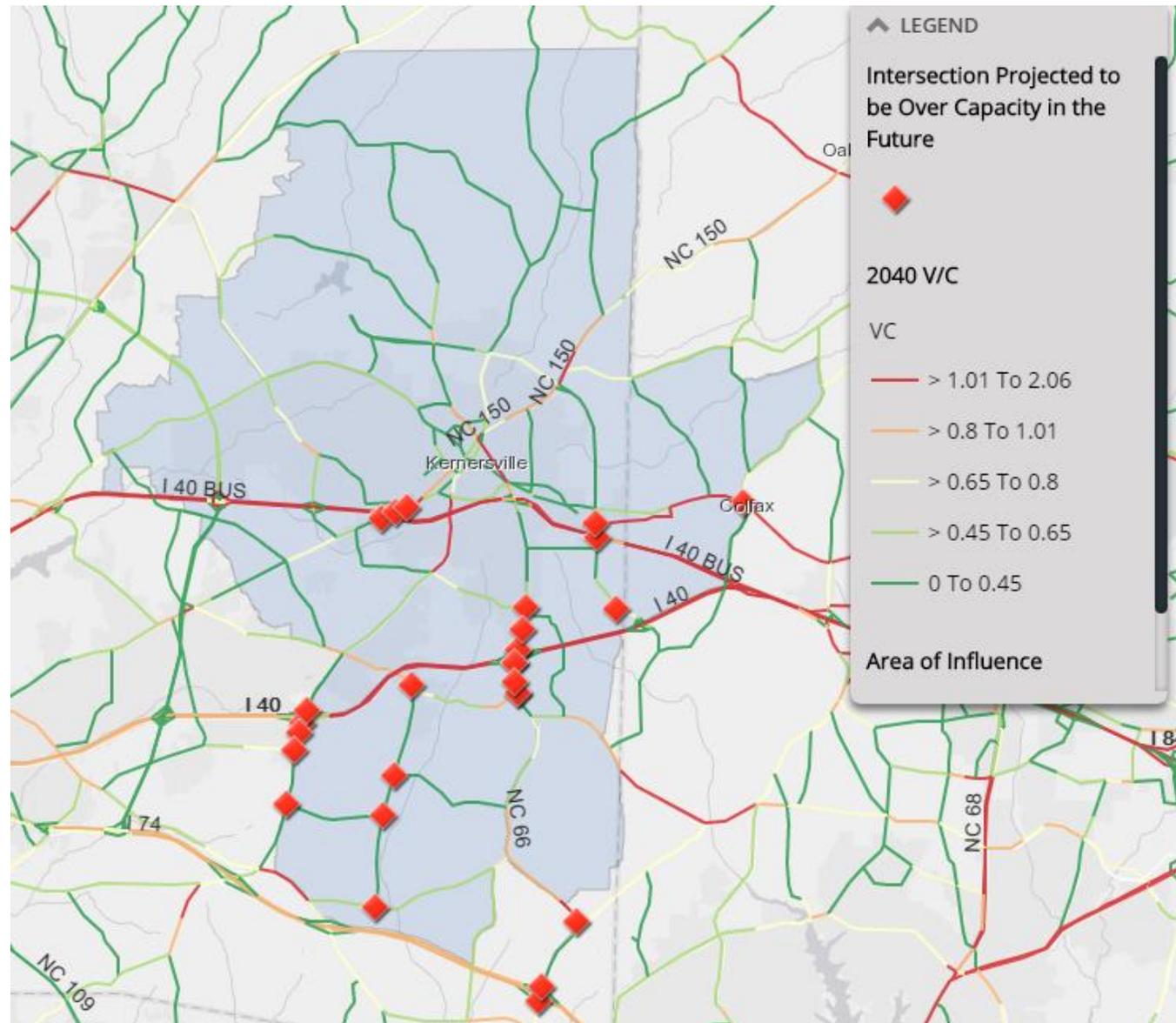
The map shows the NCDOT V/C ratio for the 2013 roadway network, the most recent year where this information is available. This information was obtained using a Travel Demand Model. Roads are often congested or “failing” when the volume is higher than the capacity (those shown in red in the map).



Mobility 2040

Over the next 22 years, it is expected that even with the planned improvements on the highways and roadways in Kernersville, auto congestion will still be a problem. The map shows the projected Volume to Capacity (V/C) ratio through 2040 based on an estimation of where future residential and employment growth will occur. The roadway network shown on the map includes funded transportation and development such as South Main Street and Old Winston Road Improvements; Big Mill Farm Road Interchange and Hopkins Road Improvements; Macy Grove Road Extension from East Mountain Street to Piney Grove Road; Winston-Salem Beltway, and I-40 and B-40 Widening to 6-lanes. Despite the improvements, a majority of the level of service projected to fail is on the highways that intersect Kernersville, along with numerous other roadway intersections.

The lines on the map to the right show projected levels of congestion by 2040, with red being over capacity. The red diamonds indicate intersections that are projected to be over capacity based on traffic impact studies prepared for individual developments, primarily associated with large scale developments on the south side of Town. Traffic studies have not been completed for the downtown intersections and intersections north of downtown.



Vision: Mobility

Goal

FOCUS ON PROJECTS THAT MAKE IT EASIER TO MOVE PEOPLE AND FREIGHT WITHIN AND THROUGH THE TOWN.

Action Steps and Potential Projects

- Undertake intersection studies in downtown and other areas that have not been studied to determine existing and future congestion.
- Pursue funding to address the projected failing intersection and road segments.
- Improve traffic flow by limiting driveways, installing medians, and coordinating traffic signals.
- Improve road and rail connections to industrial assets.
- Link local and regional destinations through improved connections and enhanced integration among travel modes.

Vision: Multimodal Options

Multimodal transportation options include walking, biking, and taking transit. Prior to the 1960s, Kernersville was built around a network of sidewalks, along with bicycle safe streets. As the automobile became the primary mode of transportation, the sidewalk system was not expanded, and busy streets made bicycling less safe.

However, the importance of improved safety and mobility through multimodal means was prioritized over the next couple of decades shown by the following efforts:

- 1994 - Kernersville recognized the importance of a sidewalk network and began requiring sidewalks in all new residential neighborhoods.
- 2000 - Kernersville started requiring all new commercial projects along major highway corridors to include sidewalks.
- 2014 - Kernersville started a senior transit service between the senior housing communities and commercial services.
- 2017 - Kernersville started to financially support Piedmont Authority for Region Transportation (PART) to assist in supporting service to the VA Health Clinic.

As Kernersville continues to urbanize, the demand for multimodal transportation will continue.

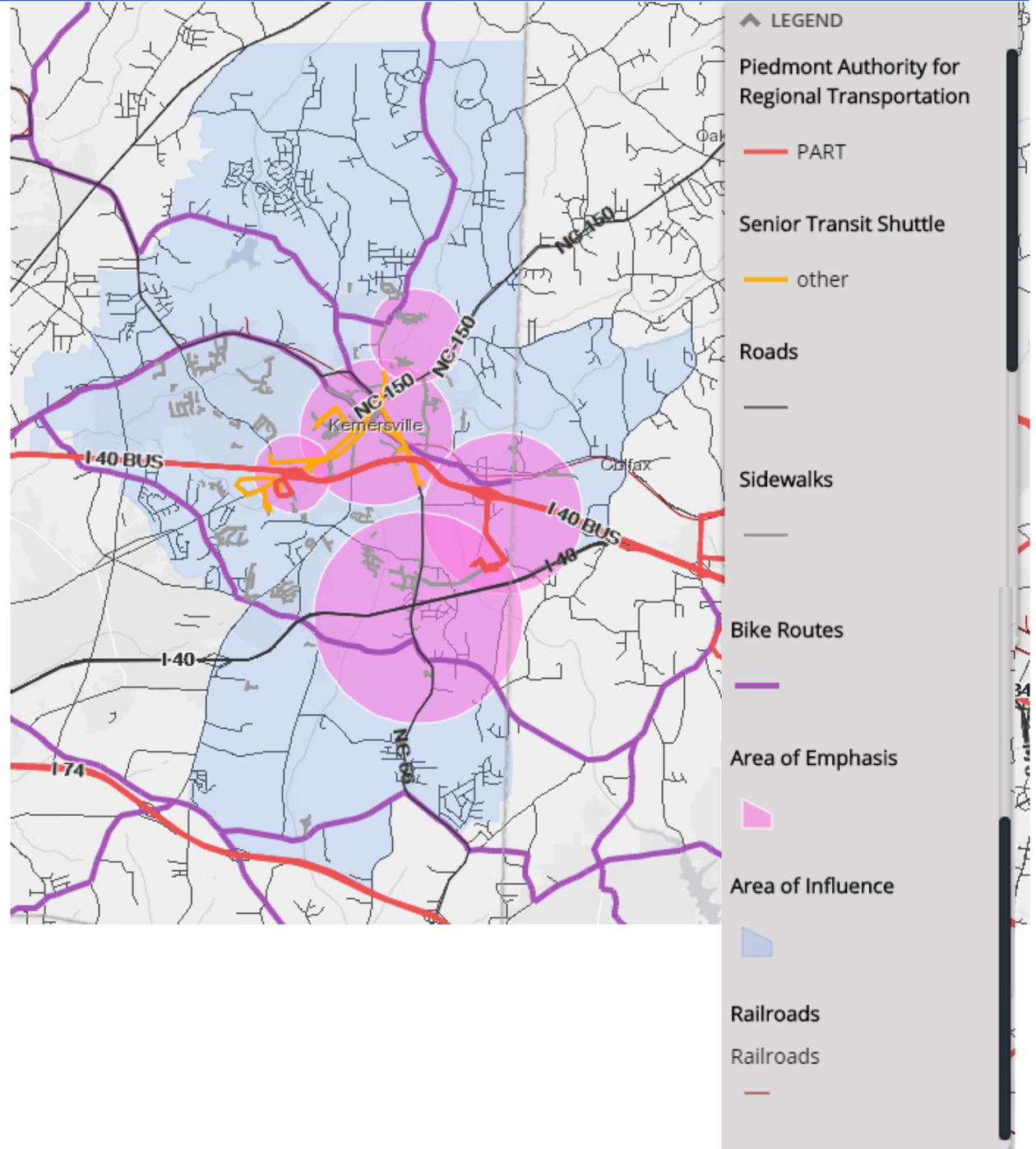
The “Areas of Emphasis” are commercial centers and job centers that would benefit the most from transit, pedestrian and bicycle mobility. Those centers would then need to be linked with the surrounding residential.

Goal

PROVIDE A BALANCED TRANSPORTATION SYSTEM THAT MAKES IT EASIER TO BIKE, WALK, AND TAKE TRANSIT.

Action Steps and Potential Projects

- Provide desirable and user-friendly transportation options for all user groups regardless of socioeconomic status or physical ability.
- Support a fully integrated multimodal network that advances the concept of complete streets.
- Identify multimodal facilities that address gaps and needs in the existing network.
- Initiate a *Sidewalk Gap Analysis and Prioritization Study* to begin filling in holes in the sidewalk network.



Vision: Culture and Environment

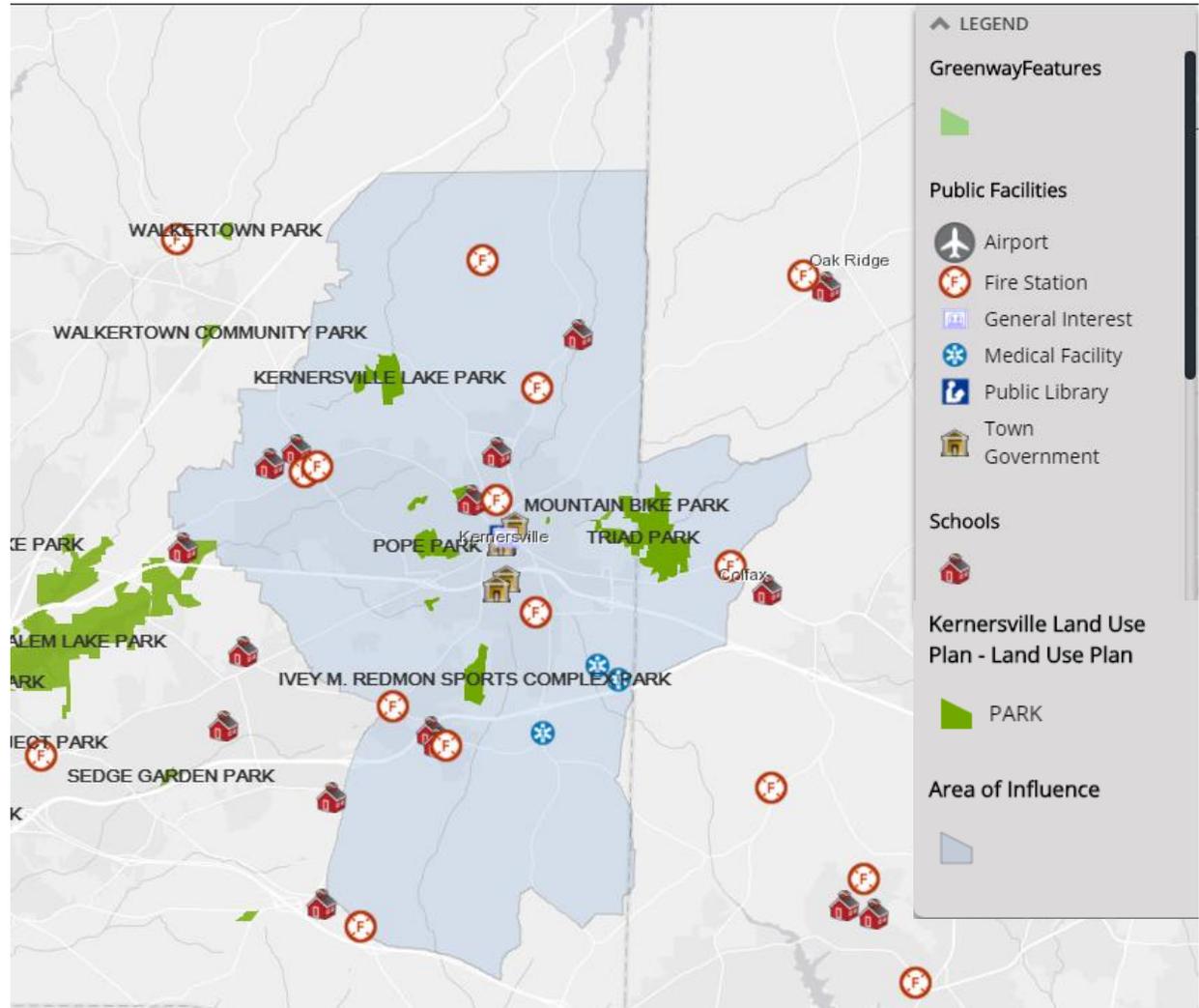
Local, state, and federal planning guidelines have evolved over recent decades to place additional emphasis on the role transportation plays in conserving the environment, preserving our neighborhoods, and protecting the quality of life. For the Town of Kernersville this process has been aided through land use planning, environmental planning, and socioeconomic awareness.

Goal

ENHANCE THE REGION'S QUALITY OF LIFE BY PRESERVING AND PROMOTING ITS VALUED PLACES AND NATURAL ASSETS.

Action Steps and Potential Projects

- Use context sensitive solutions to design streets based on the surrounding land and urban form.
- Minimize direct and indirect environmental impacts of the transportation system.
- Create barrier free connectivity to community assets such as schools, parks, and recreation areas.



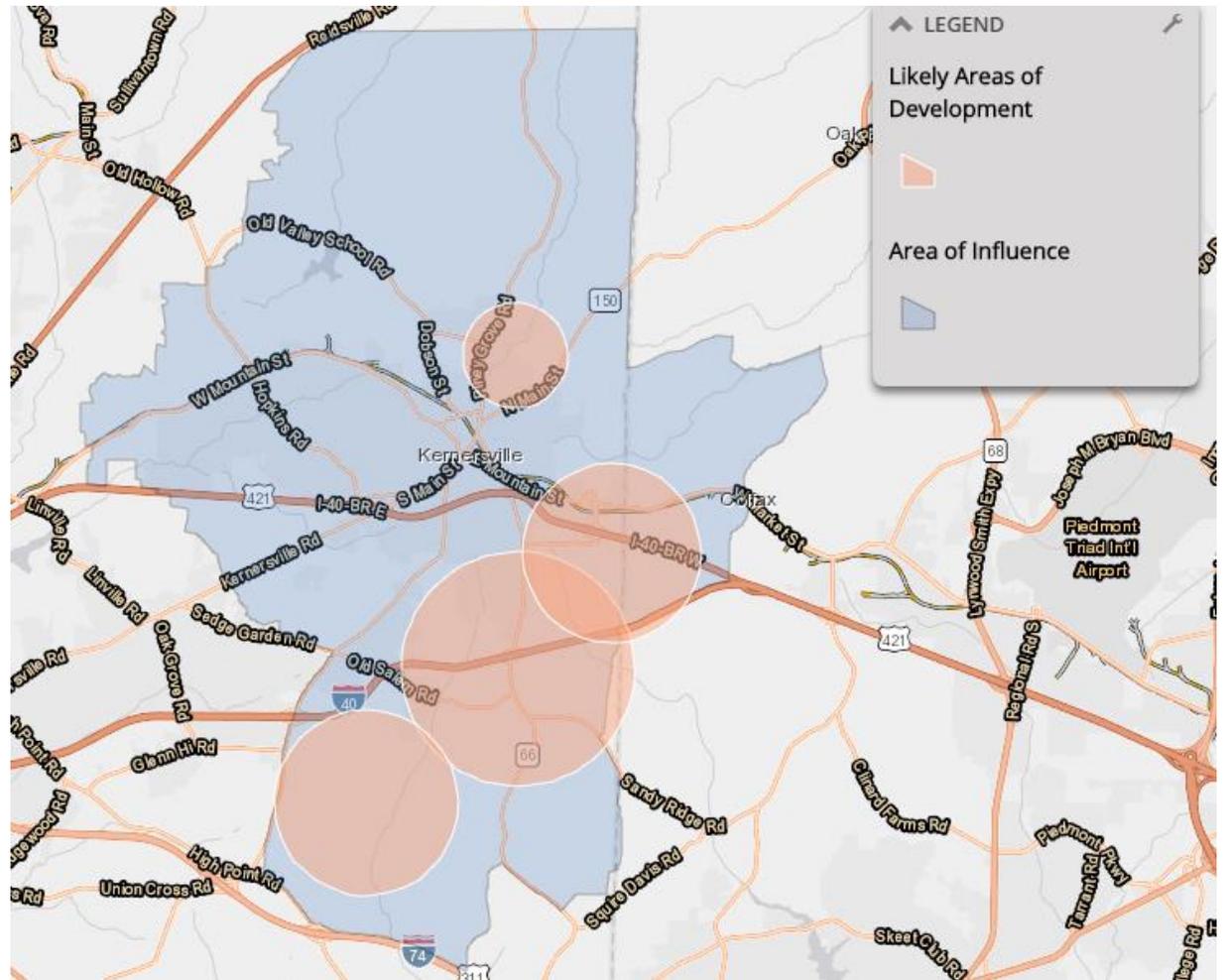
Vision: Growth and Development

Goal

BUILD A TRANSPORTATION NETWORK THAT ENCOURAGES LOCAL GROWTH AND DEVELOPMENT.

Action Steps and Potential Projects

- Make it easier to travel between homes and jobs by identifying and filling the transportation needs of employers and employees.
- Coordinate transportation planning and land use to ensure adequate infrastructure to support priority investments and growth areas.
- Leverage gateways and aesthetics of both development and transportation infrastructure to create an atmosphere that fosters economic investment and sense of place.



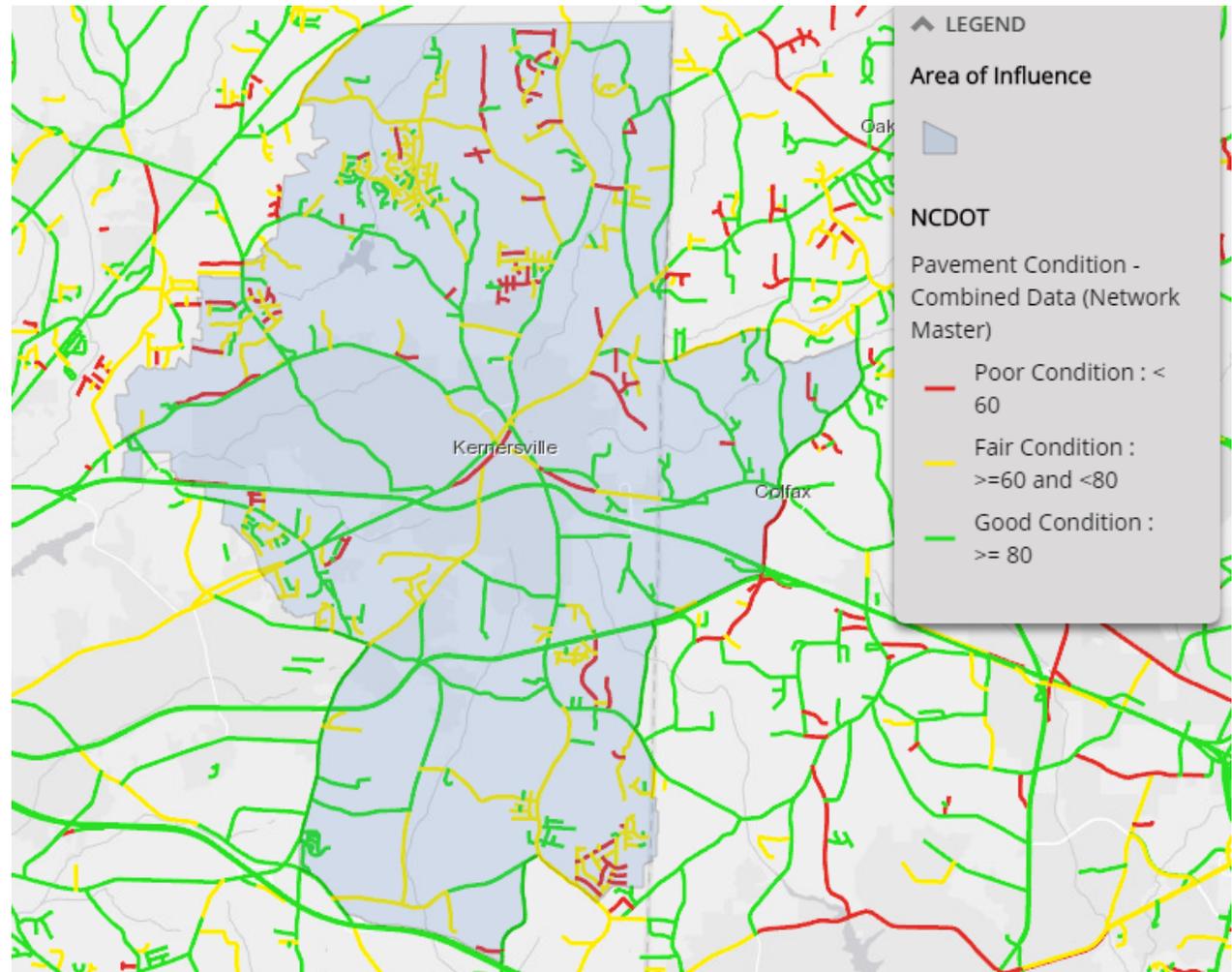
Vision: System Preservation NCDOT

Goal

EXTEND THE LIFE OF THE TRANSPORTATION SYSTEM AND PROMOTE FINANCIAL RESPONSIBILITY BY FOCUSING ON MAINTAINING EXISTING ROADS.

Action Steps and Potential Projects

- Prioritize infrastructure preservation projects such as pavement management and maintenance. (e.g. fix potholes, resurface roadways) Identify rehabilitation projects such as signal system upgrades.

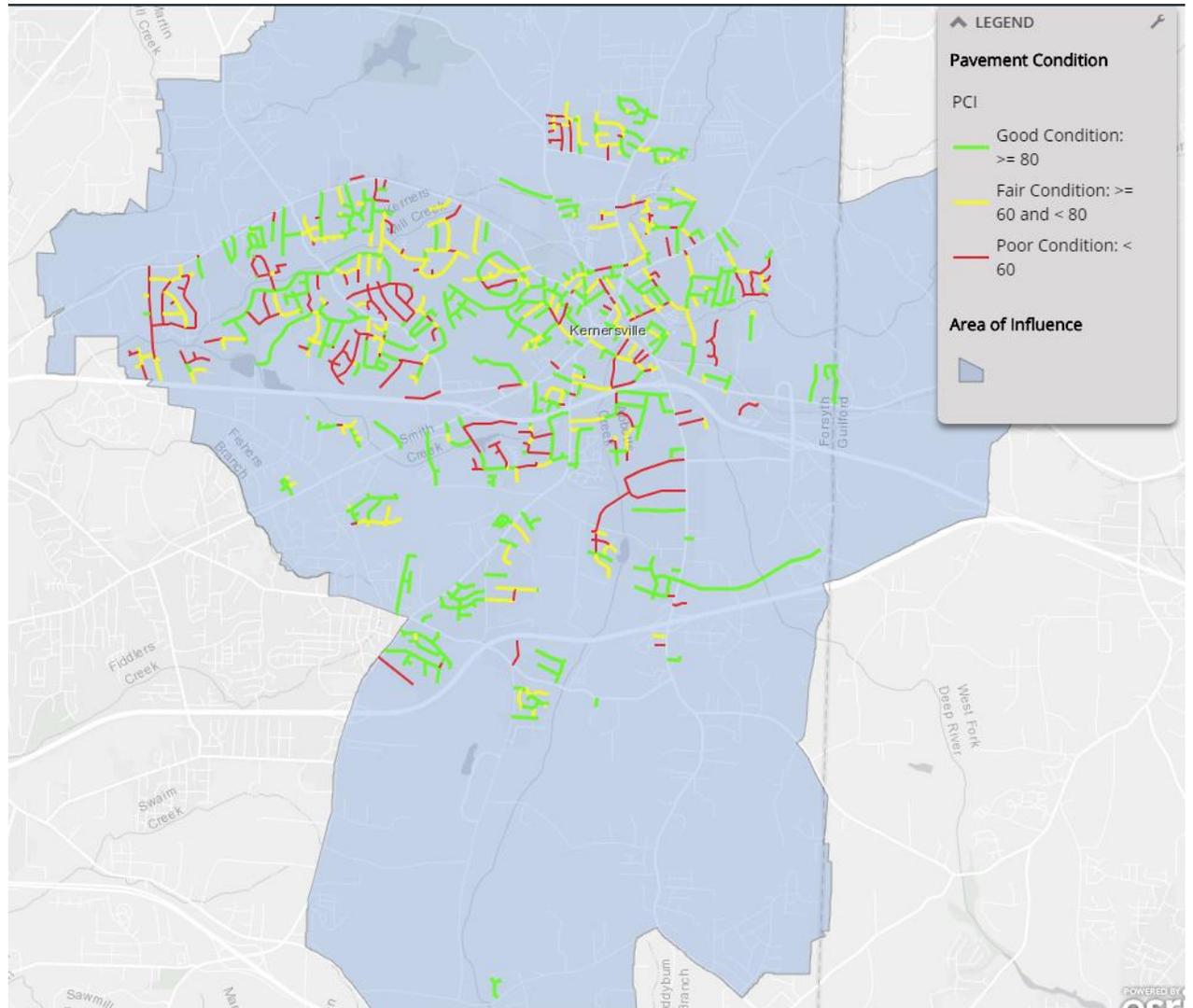


Vision: System Preservation Town

In an effort to maintain the Town’s infrastructure and track conditions, the Public Services Department has developed systems to rate the condition of pavement and sidewalks. The Pavement Condition Rating (PCR) and Sidewalk Condition Rating (SCR) are performed approximately every five years. The data is used to determine maintenance needs and is associated with an actual survey form used to rate each section.

Goal

EXTEND THE LIFE OF THE TRANSPORTATION SYSTEM AND PROMOTE FINANCIAL RESPONSIBILITY BY FOCUSING ON MAINTAINING EXISTING ROADS.



Streetscape

“Streetscaping” refers to the use of planted areas and other beautifying techniques that target the appearance, appeal, and function of a street. Streetscape improvements may include a combination of landscaping, on-street parking, multimodal facilities, lighting, signage, aesthetic surface materials, art and other décor, street furniture, and other amenities.

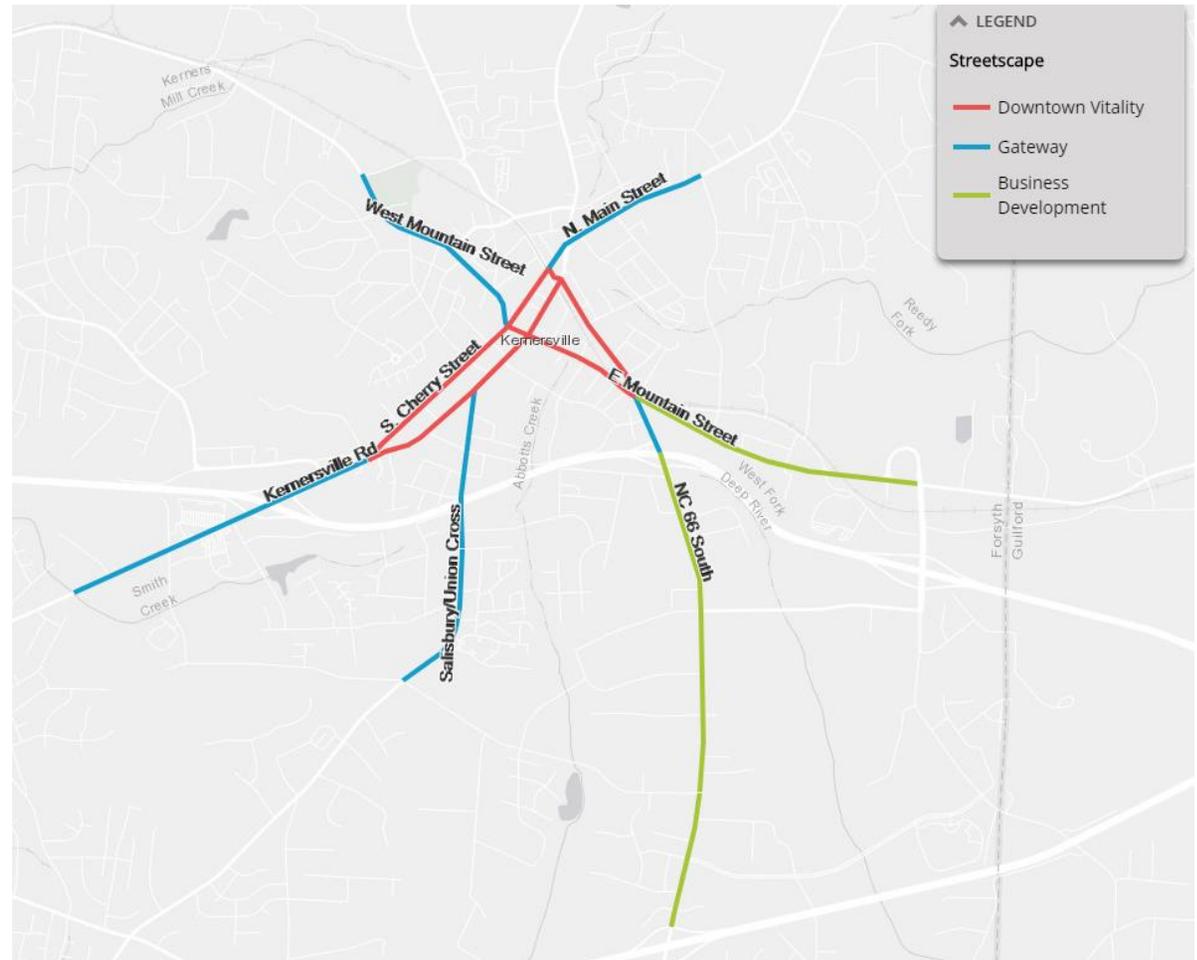
In Kernersville, potential streetscape projects would likely address one of three goals. Each of these goals would generally be applied within different areas of the town. The following sections provide benefits of each goal, and show an image of that type of streetscaping project from another town.

Downtown Vitality

Lines in red

Benefits

- Attract more visitors to the central business district
- Improve downtown to become more of a destination for pedestrians
- Create a safe place to walk and bike

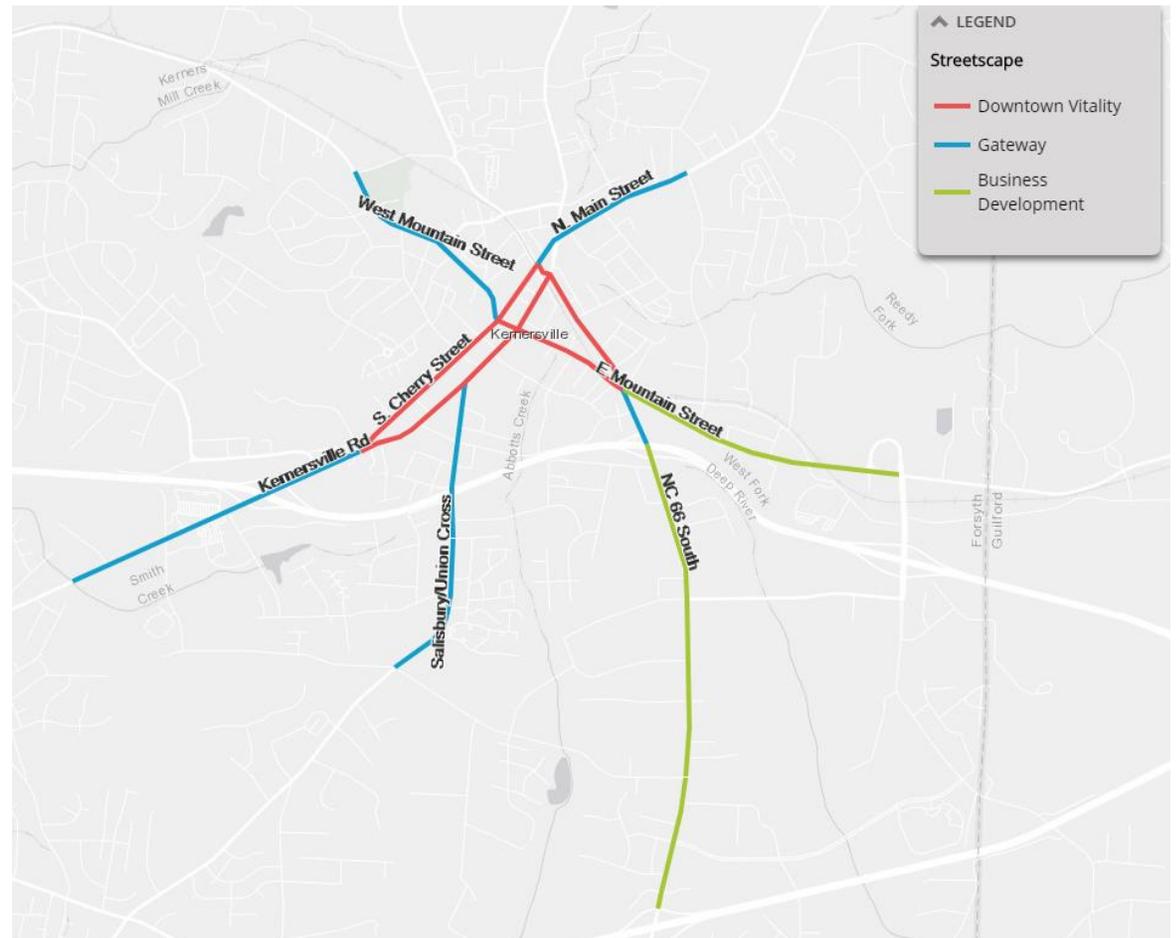


Gateway

Lines in Blue

Benefits

- Provides an identity for Kernersville to drivers as they enter city limits
- Increased traffic safety through separation of transportation modes
- Opportunity to communicate values and vision of Kernersville to the public



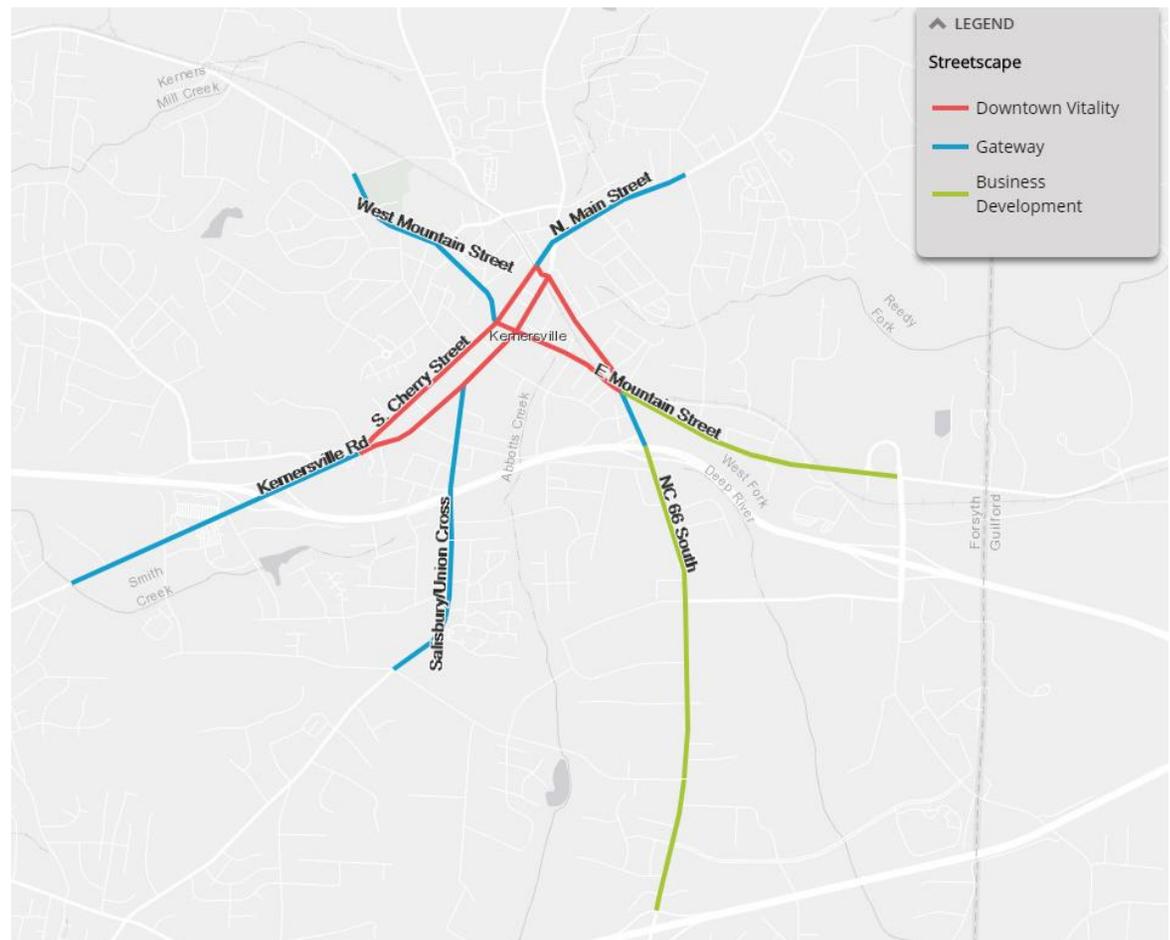
Encourage Business Redevelopment

Lines in Green

Benefits

- Organized business centers limit number of individual road trips
- Concentrated roadway improvements

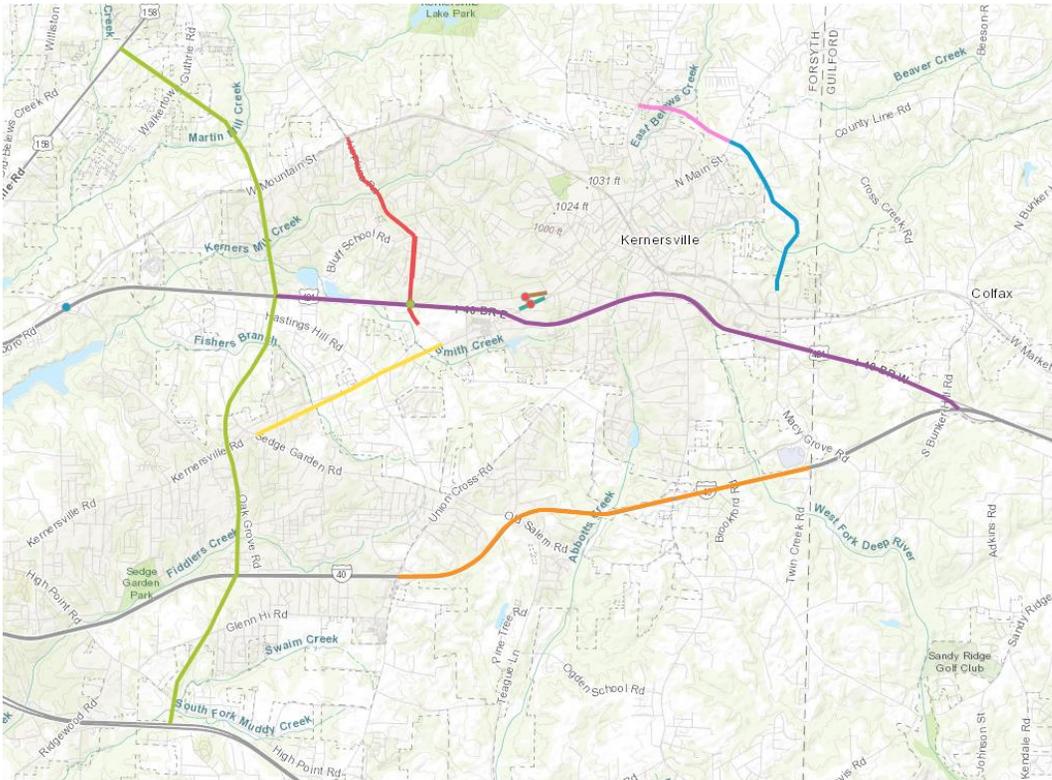
Action Steps: Initiate a *Town-wide Streetscape Plan* to identify and plan for corridor improvements that will enhance safety, appearance, and multimodal options in a consistent manner along key corridors.



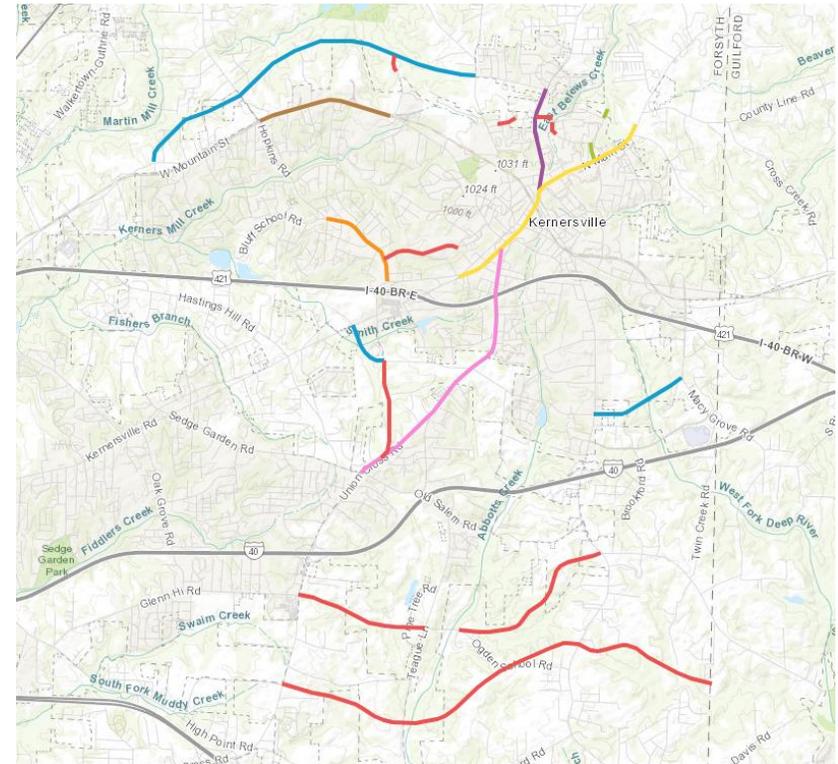
Past Projects

The 1998 Transportation Bond's last funds are being used for the South Main Street/Old Winston Road project. NCDOT has funded several major projects, however there are several unfunded projects that the current Thoroughfare and Street Plan identifies as a need to address congestion, safety, and improved mobility. Many of the identified bond projects have been completed, but as development grows and traffic patterns adapt, new needs have arisen.

The next phase of this process, the Comprehensive Transportation Plan, will delve into the details of this map in more detail. The outcome of that plan will be an updated future road network. The remaining projects proposed in previous plans will be a good starting point, and this study's Vision Statements will guide and shape the overall process and recommendations. As part of the Vision Study, four potential example projects have been identified to demonstrate how the Vision Statements will be converted into projects.



1 FUNDED PROJECT



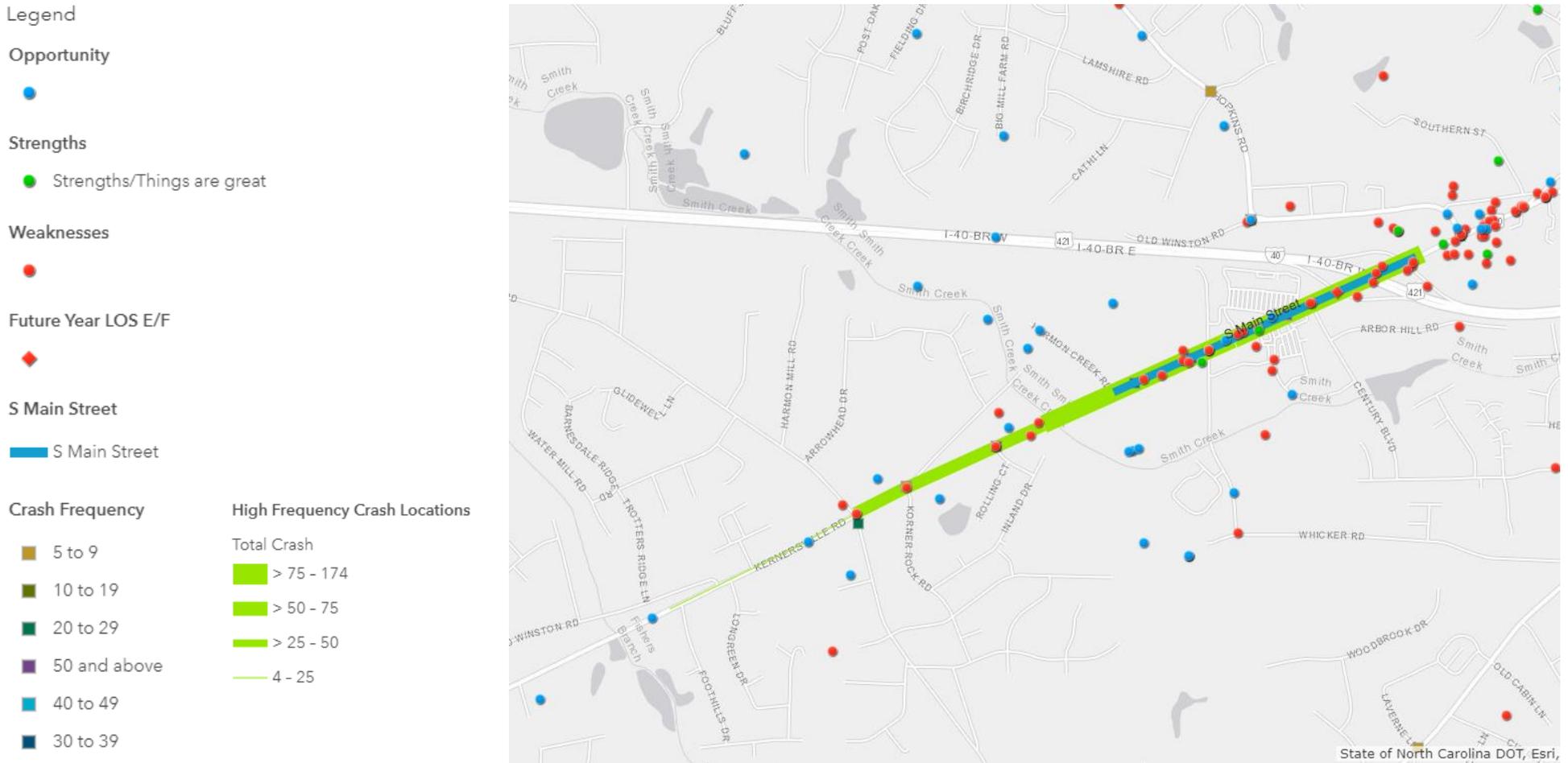
2 UNFUNDED PROJECTS

Potential Projects

S. Main Street

The section of S. Main Street through and just south of the Business 40 interchange is a challenge. Although the road is not over capacity, and the proposed Big Mill Interchange will decrease traffic congestion in the future, the number of driveways and short segments between intersections results in a corridor that has a high crash rate, congestion and delays (particularly at the main intersections), and is uncomfortable for many to travel through. This shopping node will likely experience additional redevelopment in the coming years. As those projects are proposed, the Comprehensive Transportation Plan may look at solutions to address safety and travel needs, as well as consider improvements to the driving experience such as streetscaping, sidewalks, and lighting. These would tie with adjacent projects to improve S. Main Street north of Business 40 (project W-5510, under construction) and south of Business 40 (project U-6077, proposed to be widened beginning in Fiscal Year 2026).

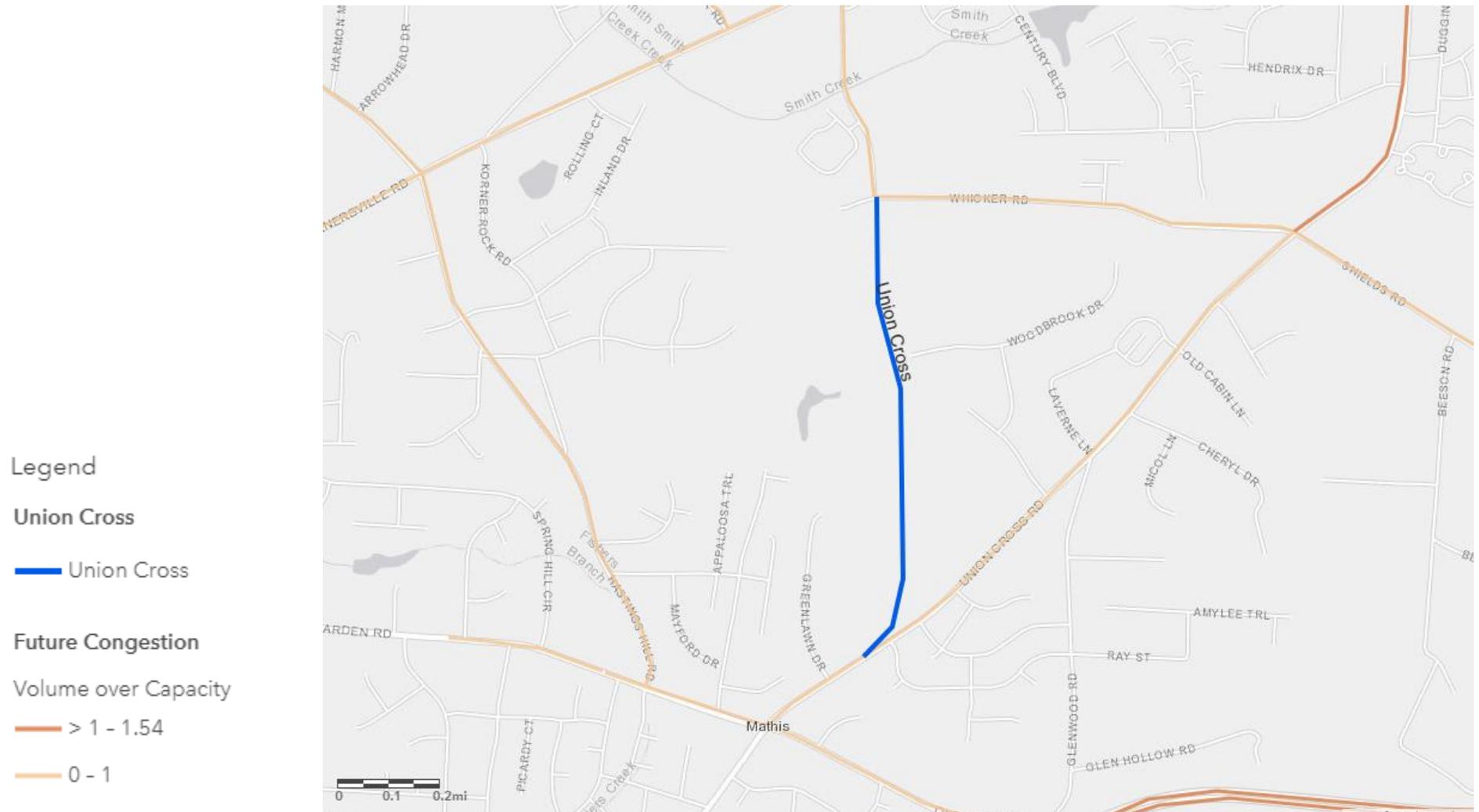
This project addresses the following Visions: *Safety & Security, Mobility, and Growth & Development*



Union Cross Road

Union Cross Road has been recommended for improvements since the Town’s 1999 plan. Since then, the southern section has been improved. The section north of Sedge Garden Road, however, is already over capacity and is anticipated to continue to worsen. The *Thoroughfare and Street Plan* recommended a new roadway running north south to connect Union Cross to the intersection of Whicker Road and Masten Drive and should be pursued.

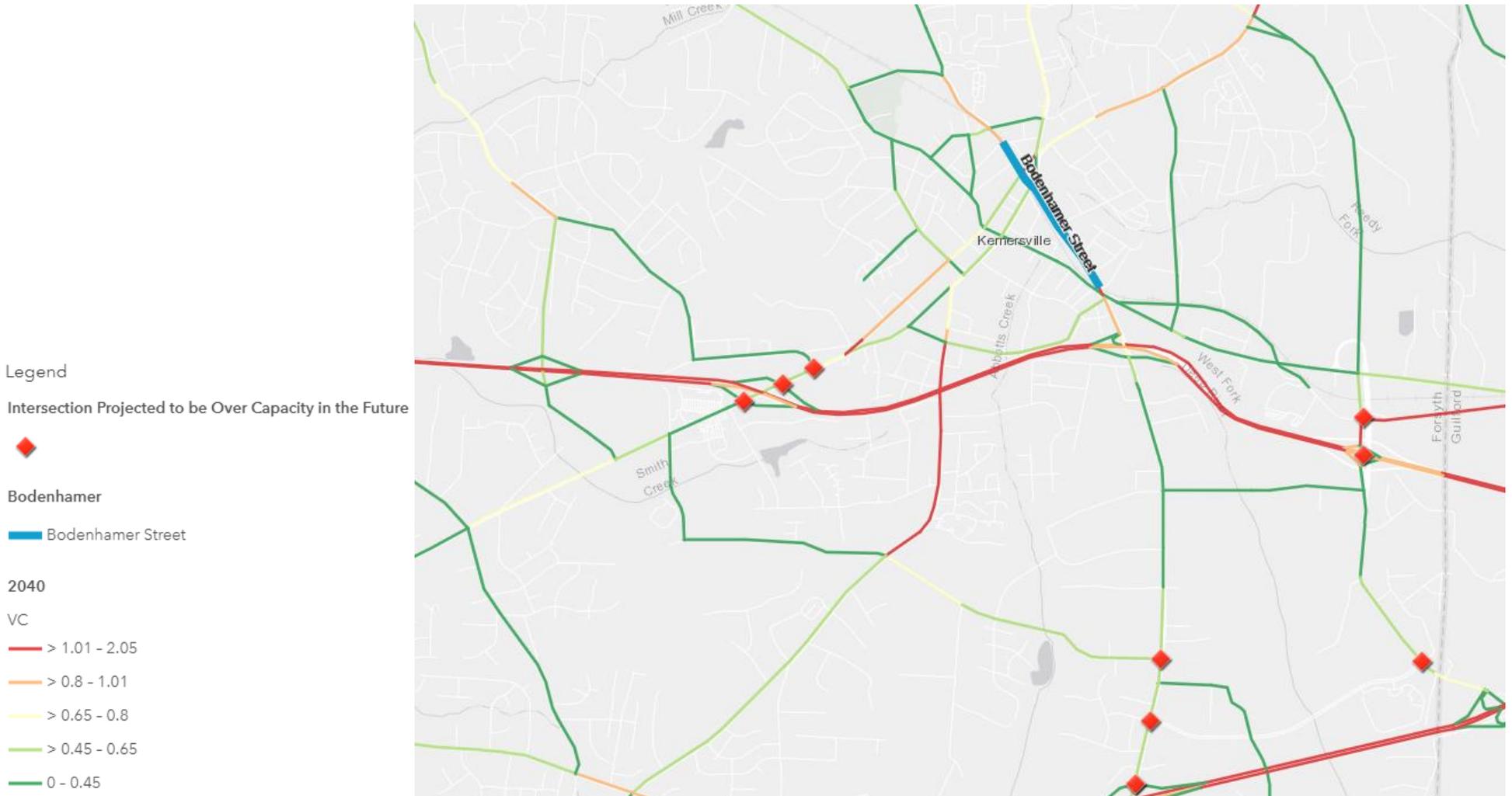
This project addresses the following **Visions: Mobility, and Growth & Development**



Bodenhamer

Bodenhamer Street is over capacity today, and is anticipated to worsen by 2035, particularly on the segment between Business 40 and N. Main Street. The 1999 Transportation Plan recommended improvements at the intersections of Bodenhamer Street with N. Main Street and E. Mountain Street. Those projects have been completed, but the area still experiences congestion and crash issues. The public identified several areas of weaknesses and other areas for opportunities along this corridor. In addition to a solution to address these concerns, the *Comprehensive Transportation Plan* may consider potential redevelopment and streetscape options on the section coming into and through downtown Kernersville.

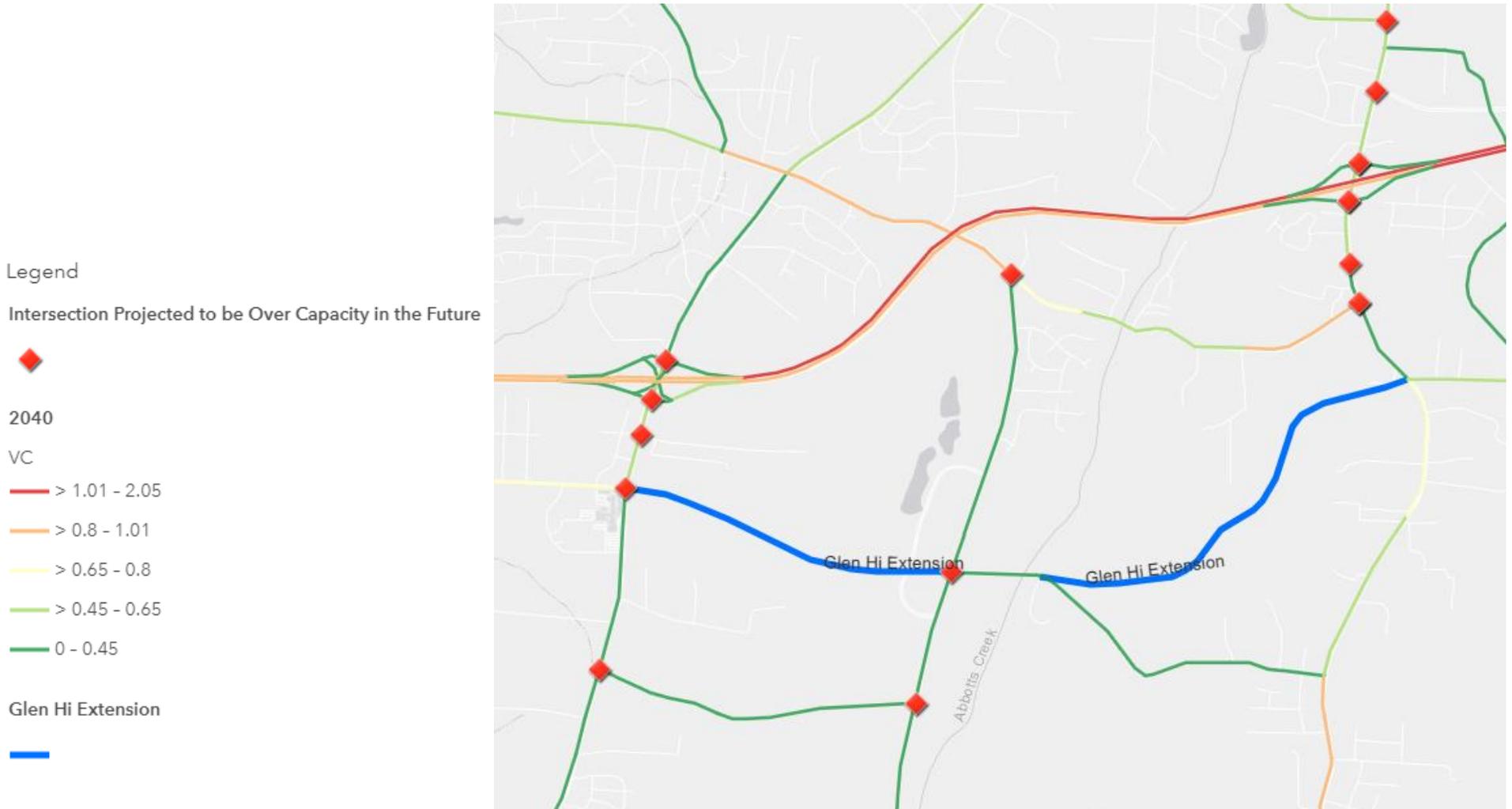
This project addresses the following Visions: *Mobility, and Culture & Environment and Growth & Development*



Glenn Hi Extension

Currently, all major intersections south of I-40 are projected to fail. The street network south of I-40 is lacking a direct east-west connection between Union Cross Road and NC 66. Forsyth County and the Town of Kernersville's thoroughfare plans calls for Glenn Hi Road to be extended east through the mixed use developments of Calebs Creek and Welden to the NC 66 /Bunker Hill Road intersection. NCDOT has reviewed and approved a 25% design of the Ogden School Road section of this extension, calling for a two lane divided parkway meeting NCDOT *Complete Streets Guidelines*. Winston-Salem Metropolitan Planning Organization and the Town of Kernersville should work closely together to assure this east-west connectivity through the unincorporated area of Forsyth County and the Town of Kernersville is completed.

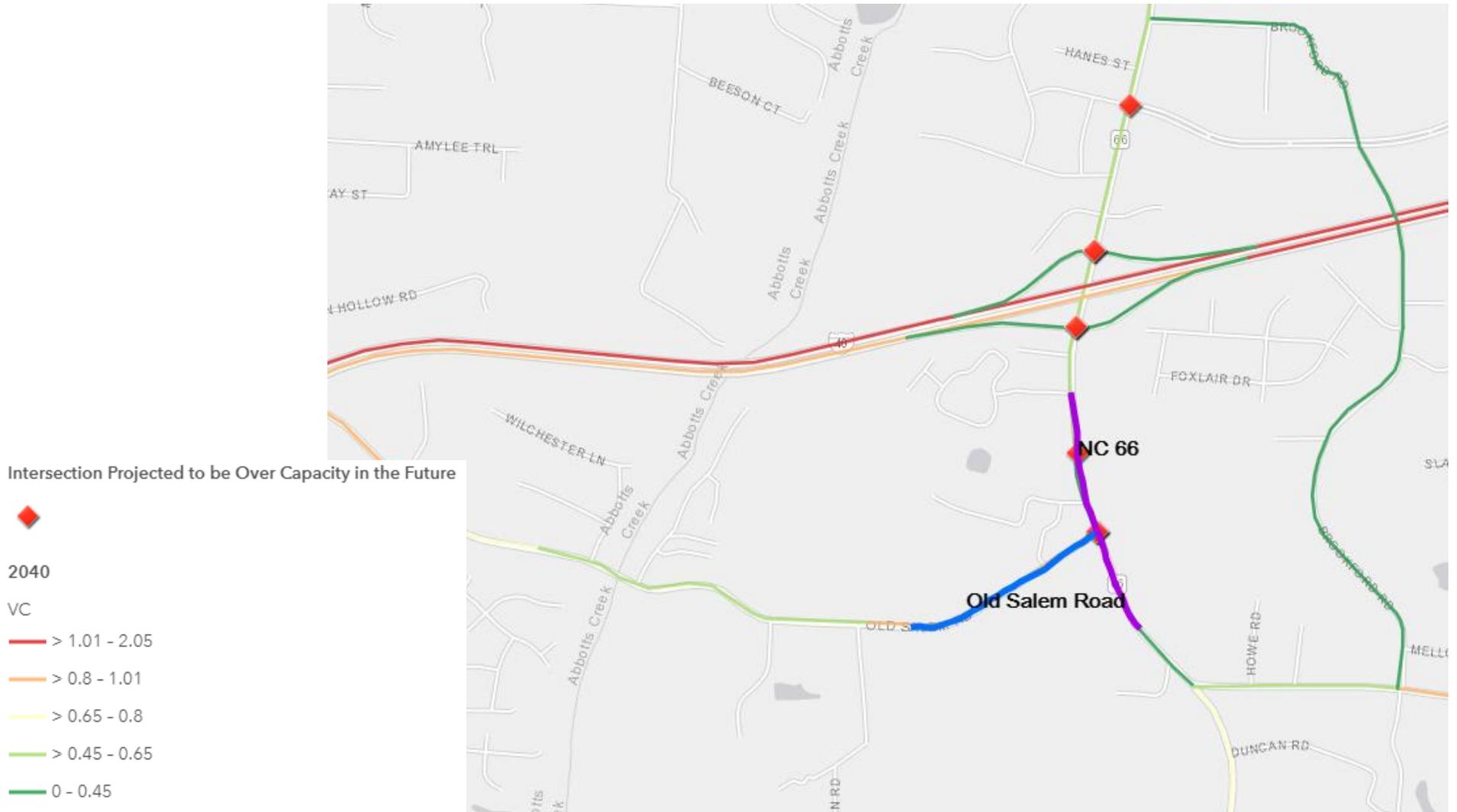
This project addresses the following: *Safety & Security, Mobility, Multimodal Options, and Growth & Development.*



NC 66 / Old Salem Road Metro Activity Center

Forsyth County and the Town of Kernersville have designated the area south of I-40 along NC 66 and Old Salem Road as the NC 66 / Old Salem Road Metro Activity Center, which promotes the area as a future new town center. Such a designation requires the highways of NC 66 and Old Salem Road to take on the form of city streets with sidewalks, crosswalks and landscaping.

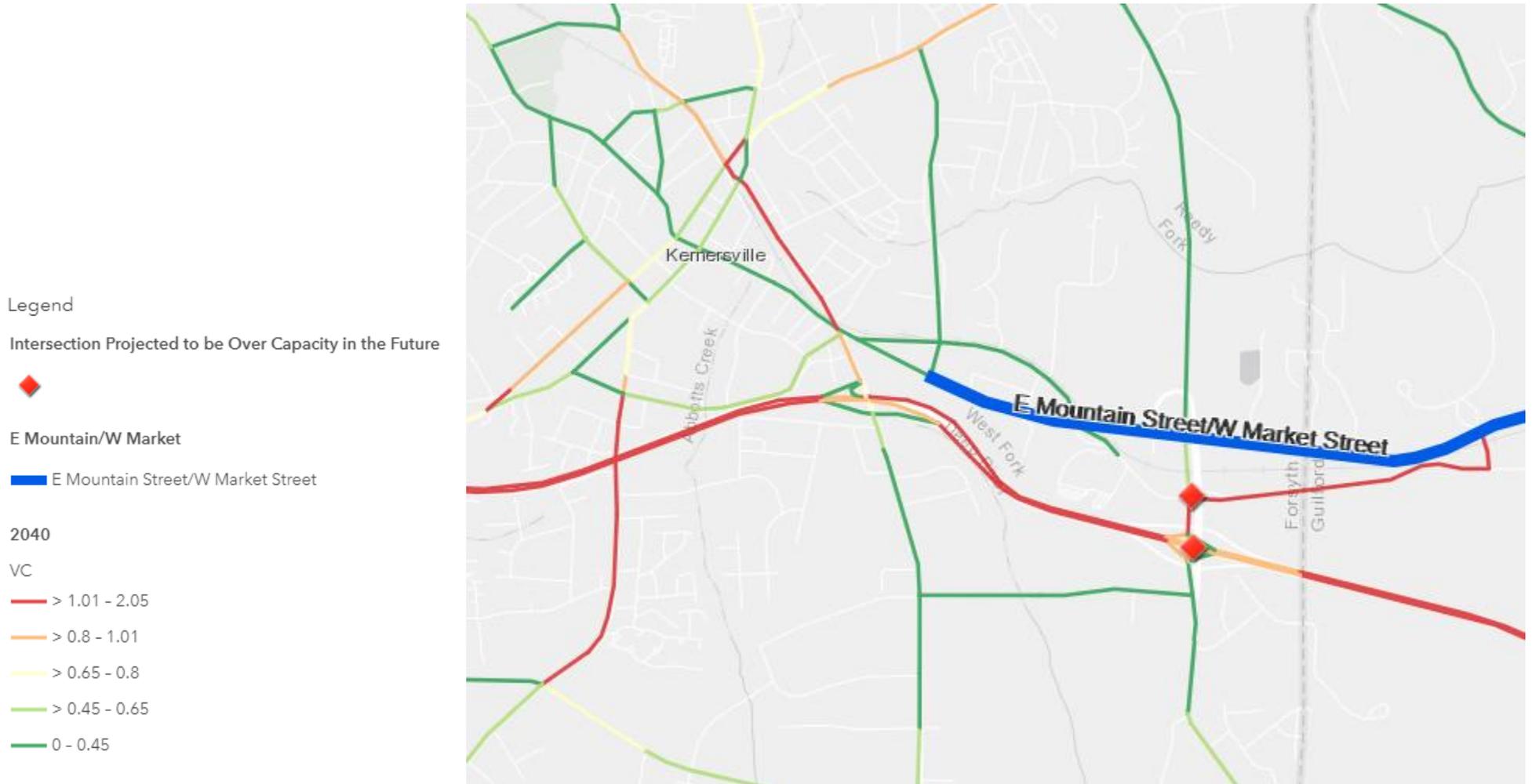
This project addresses the following: *Safety & Security, Mobility, Multimodal Options, and Growth & Development.*



W. Market/E. Mountain Street

The W. Market Street/E. Mountain Street area is anticipated to be approaching or over capacity by 2035. This area has few concerns today, in part because much of the future traffic is expected as a part of future transportation and development projects. Now that the Macy Grove Road interchange with I-40 is open, and as the future section of Macy Grove Road extensions are constructed, development will likely follow. The Town will watch changes in travel patterns as these projects are built. There are no local or state projects proposed at this time to address potential needs, but the *Comprehensive Transportation Plan* may consider future needs and solutions on this corridor.

This project addresses the following Visions: *Mobility, Culture & Environment, and Growth & Development*



Downtown Sidewalk Network

The *Pedestrian and Bicycle Plan* recommends the expansion of the downtown sidewalk network. The identified sidewalk segments include an extension of the West Mountain Street sidewalk to Asbury Drive; the missing sidewalk segment along South Cherry Street from Oakhurst Street to Holy Cross Catholic Church; the missing sidewalk segment along Oakhurst Street from West Mountain Street to Lambeth Farm Road - the missing sidewalk links along Broad Street between East Mountain Street and Harmon Lane; and the missing sidewalk link along Harmon Lane from South Main Street to Broad Street. The *Comprehensive Transportation Plan* should consider pursuing completion of the Downtown sidewalk network.

This project addresses the following Visions: Safety & Security, Mobility, and Growth & Development

Greenways

The Town's Greenway Plan has identified a network of Greenways to connect residential neighborhoods to commercial and job centers. The Town is currently pursuing the construction of two greenways. The Kerner Mill Greenway right-of-way acquisition is currently being completed, and funds are available for construction. The proposed Greenway from Triad Park to Kernersville "Feasibility Study" (30% designed) has been completed. The next step is for the Town of Kernersville, Forsyth County, Guilford County, Greensboro Urban Area Metropolitan Planning Organization (MPO), and the Winston-Salem Urban Area Metropolitan Planning Organization (MPO) to pursue funding for the final engineering and construction. The Comprehensive Transportation Plan should consider pursuing the completion of the Reedy Fork Creek/Triad Park Greenway and prioritize the construction of the remaining identified greenways.

This project addresses the following: Safety & Security, Mobility, Multimodal Options, Culture & Environment, Growth & Development, and System Preservation

Transit

As Kernersville and the central area of the Piedmont Triad region continues to urbanize, the demand for transit from employers, employees, students, and seniors will grow. The Piedmont Authority for Regional Transportation (PART) was established to enhance the regional mobility of the region. Transit offers a cost effective method of transporting people around the Piedmont Triad area, relieving traffic congestion, and reducing the environmental impact of single occupancy vehicles. It is recommended the Town continue to support the efforts of PART.

This project addresses the following: Mobility, Multimodal Options, and Growth & Development.



Conclusion

As the first phase in Kernersville's current transportation planning process comes to an end, the Town is already anticipating the next step. Building on the momentum garnered through this visioning process, Town staff will soon be initiating the process to pursue consolidating the Thoroughfare and Street Plan, Pedestrian and Bicycle Plan, Greenway Plan and future transit plan into a Comprehensive Transportation Plan (CTP).

With input from the community, the CTP will dive into the details of potential future transportation projects. These potential projects will be identified using the six *visions* developed in this phase:

- Safety and Security
- Mobility
- Multimodal Options
- Culture & Environment
- Growth & Development
- System Preservation

We look forward to working with you in the upcoming phases of Kernersville's Transportation Plan!



For additional information, please contact:
Rochelle Joseph, Community Development Manager
rjoseph@toknc.com

