Tunnel Road & South Tunnel Road Corridor Study

FINAL REPORT

June 2021

FRENCH BROAD RIVER METROPOLITAN PLANNING ORGANIZATION
A PROGRAM OF LAND OF SKY REGIONAL COUNCIL

BUNCOMBE COUNTY GOVERNMENT
NORTH CAROLINA

THE CITY OF ASHEVILLE
NORTH CAROLINA

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June 2020

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INTRODUCTION

Study Background

The Tunnel Road area that is the focus of this study is 1.75 miles long and parallels Interstate 240 to the east of Downtown Asheville. Its five-lane configuration has sidewalks in some sections and fixed-route transit service provided by Asheville Rides Transit (ART). With its proximity to Downtown Asheville, access to its many destinations, and role connecting the regional road and transit networks, activities on Tunnel Road create competing needs within the road's right-of-way. Growth expected in Buncombe County, and specifically along the corridor, create an important opportunity to focus near-term change on a safer more inviting Tunnel Road. The mostly commercial land uses along the corridor are giving way to a 24-hour environment with numerous new hotels, proposed mixed use developments, and a broader range of retail options. As new investment is drawn to the corridor, there is an opportunity to pro-actively coordinate development to address corridor wide needs for property access, circulation and build a multimodal system of connections. Reversing the present trend of each development building its own site access requires a plan that identifies and coordinates new investment to produce internal connectivity among buildings with parking and open space placed to support walking and placemaking. This study endeavors to offer that plan by taking a comprehensive and detailed look at how the corridor works today and ways it can change. It provides a generalized outline of the ways each area could change and offers strategies that can build Living Asheville's vision for a Tunnel Road that increases safety and convenience for its users and builds a comfortable, inviting place for its neighbors and visitors.

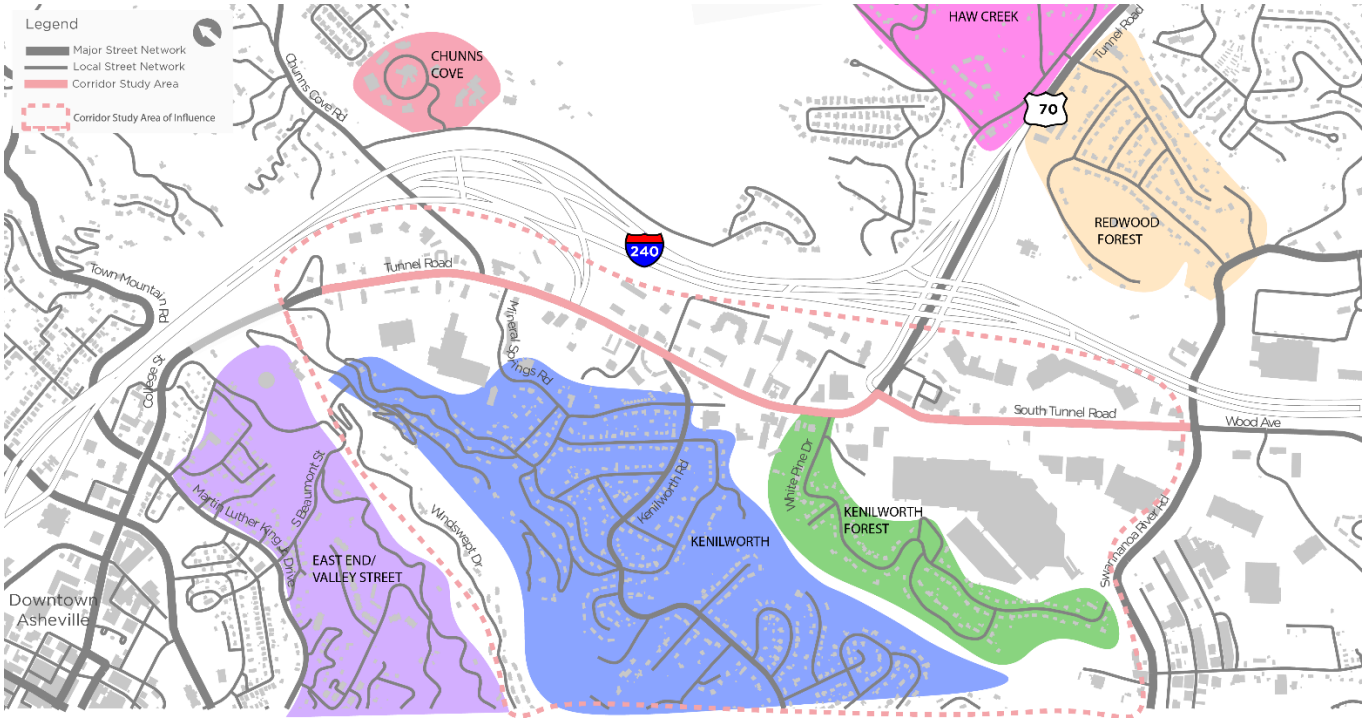


Figure 1: Tunnel Road & South Tunnel Road Study Area Map

The Tunnel Road Corridor Study begins with a description of the area's characteristics today. It examines Tunnel Road's operations and proposes ways to mitigate and manage peak congestion, provide pedestrian and cyclist safety, and increase convenient connectivity among places along and across the road. To accomplish this, the project team has collaborated closely with the City of Asheville, the French Broad River MPO, Buncombe County, and NCDOT, and, listened to perspectives and ideas of people representing the communities, advocates, businesses and institutions working for a better Tunnel Road.

The success of this plan will depend upon many in the community: people living, working and shopping on and near Tunnel Road; people using this vital link in the region's overall roadway network, and people and organizations investing in and developing corridor properties. This study has aimed to provide opportunities for as many of these communities as possible to participate in the planning process. It began with interviews and focus groups of nearly 70 people described below and will conclude with a community workshop. The following information and analysis are designed to prepare community members and decision-makers with a comprehensive view of what has come before, where we are now and ways we can potentially advance toward the vision for the corridor.

Corridor Vision

The project team reviewed recent overlapping plans, consulted with government agency representatives, and conducted group discussions with community representatives, advocacy organizations, and business and investor interests living and working along the corridor to develop a vision statement for the Tunnel Road corridor:

Public and private reinvestment and redevelopment efforts result in Tunnel Road as a pleasant and connected corridor where people live, shop, build a business, work, and play.

This report is organized to describe the study area's existing conditions, the City's future vision for the corridor based on recent planning efforts. It then describes ways similar arterial corridors in Asheville and beyond have harnessed change to address livability goals and visions and provides a set of proposals for implementation and/or further investigation. This report evaluates the existing conditions and the issues and opportunities associated with achieving the City's more walkable community-oriented vision for the corridor. This report summarizes findings for the following topic areas:

- Corridor Context
- Agency and Stakeholder Engagement
- Land Use and Zoning
- Transportation Conditions
- Market and Value Assessment
- Peer Place Case Study Examples
- Study proposals for near-term implementation or further investigation

The findings from the data collection and existing conditions assessment tasks are synthesized in the Issues and Opportunities section.

The project team was unable to host in-person public meetings to hear from community members due to the outbreak of COVID-19 and the state-wide stay-at-home order. However, a project website and public comment map allowed people to learn about the study and share their knowledge of needs and opportunities early in the study process as an alternative to in-person meetings. Toward the conclusion of the study, the public was invited to participate in a virtual meeting to receive a briefing on the study process, findings and ideas for change.

CORRIDOR CONTEXT

The Physical Context

The corridor is located just outside of downtown Asheville and is a principal arterial that runs parallel to I-240. The study area is surrounded by Beaucatcher Mountain and Piney Mountain. Steep topography creates challenges in the "valley transition" area that extends into the commercial areas along the corridor. Smaller commercial parcels are found between the valley transition areas and widen to larger parcels at both ends of the corridor in the vicinity of the Asheville Mall and the Innsbruck Mall site.

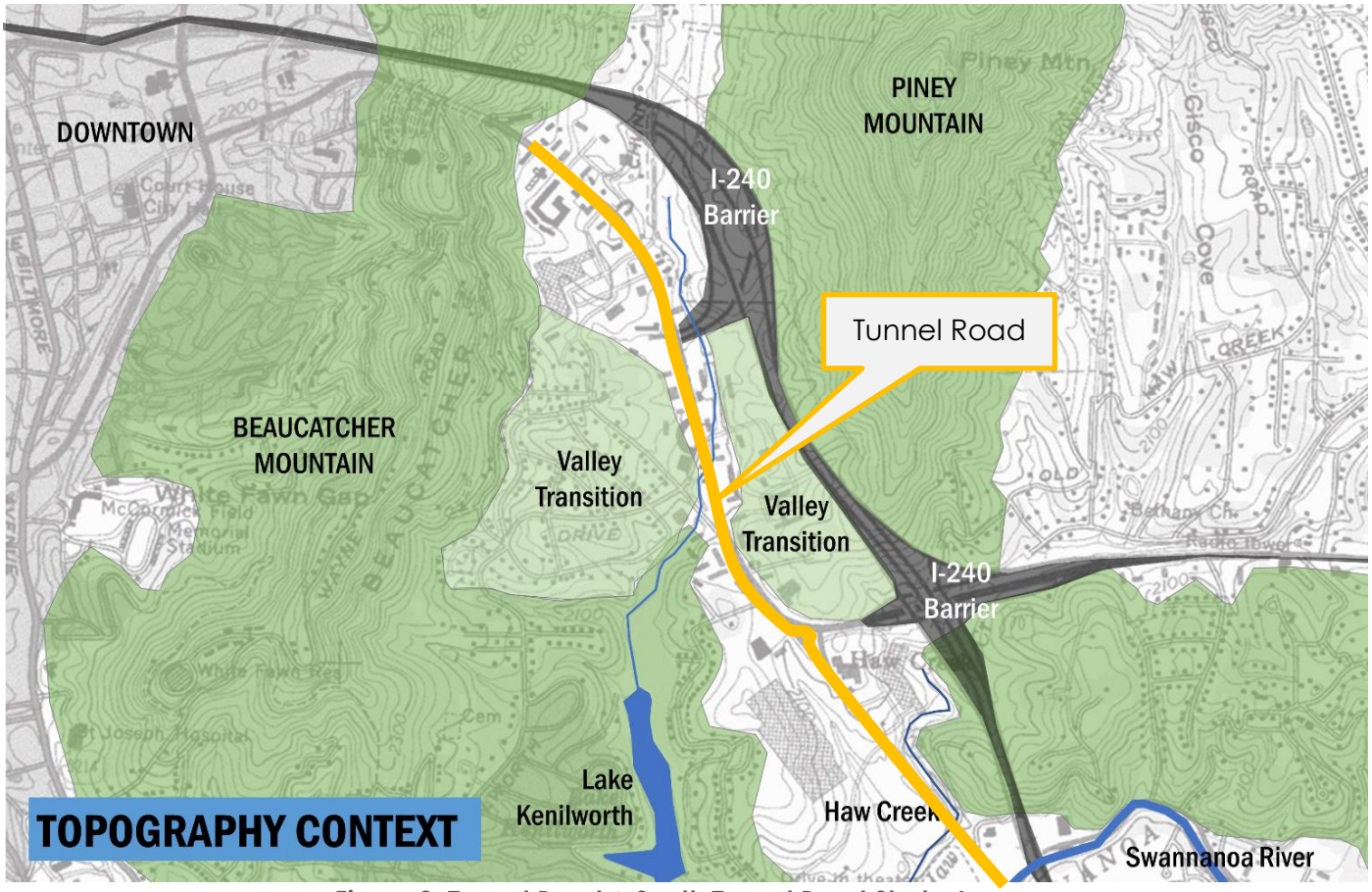


Figure 2: Tunnel Road & South Tunnel Road Study Area

Who Uses the Corridor

Tunnel Road is an important employment area for the region. In spite of its relatively low density, **4,300 jobs were located within the study area boundaries,** compared to a denser downtown Asheville with 18,800 jobs[1]. Approximately, **85% of jobs** are retail, accommodation, and food service jobs. Figure 3

[1] Source: LEHD, 2017

provides a map of where workers along the corridor live. Workers are travelling from all over the city, County, and region. Approximately **49% of workers** on Tunnel Road make $1,250/month or less.

The corridor also has several retail establishments that serve and are valued by area residents. Particularly important are grocery stores (Ingles and the newer Whole Foods), local retail like Black Dome Mountain Sports and stores like Lowes and Walmart that draw from the larger region and beyond. The area benefits from Asheville's robust tourism industry with several hotel chains locating here in recent years.

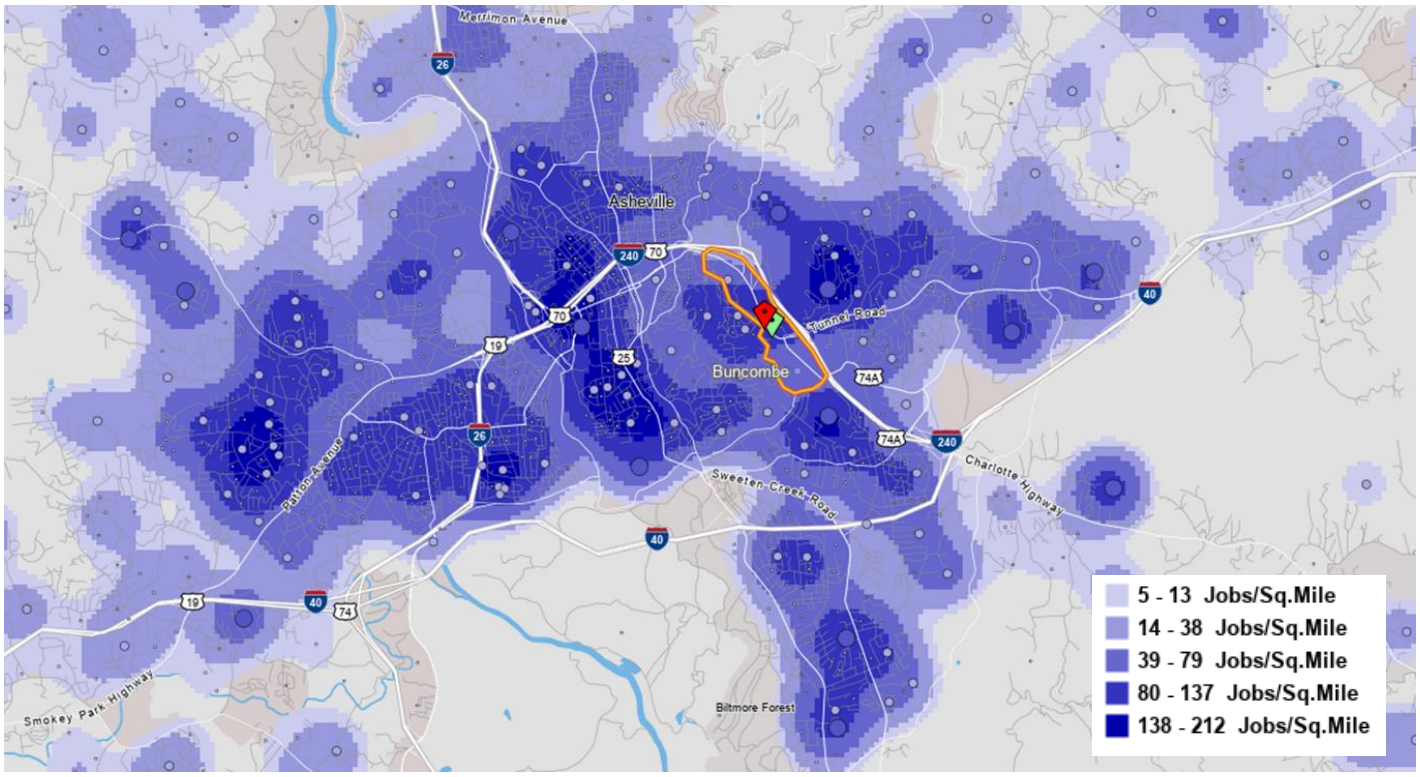


Figure 3: Where Workers Along the Corridor Live (LEHD, 2017)

While only about 240 people live in the study area, residential neighborhoods just beyond the corridor are found both on the west side of Tunnel Road and adjacent to the existing retail and on the east side of I-240.

The areas with the highest percentages of households without access to a car (according to the 2017 American Community Survey) helps to show neighborhoods where more people are likely to rely on walking and taking transit. Those with greater than 14% of households without access to a private automobile, shown in Figure 5, are also very likely to depend upon the affordable retail and corridor-based transit service found on Tunnel Road.

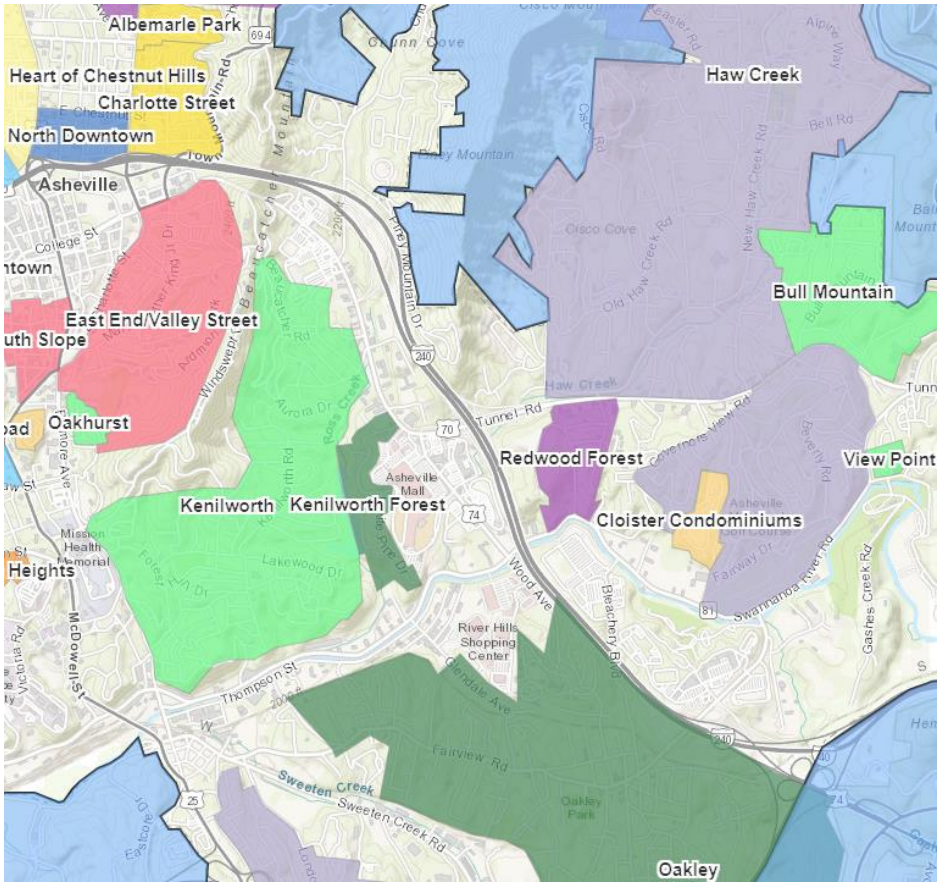


Figure 4: Asheville Neighborhoods Around the Study Area
(Source: City of Asheville, 2020)

Figure 5: Zero-Car Households, (Source: Social Explorer, 2020)

AGENCY & STAKEHOLDER ENGAGEMENT

Focus Group Discussions

A series of focus group discussions were held with over 70 stakeholders along the corridor. These individuals represented interests from business owners, developers, hotel managers/owners, implementing agencies, affordable housing experts, multimodal interests, and representatives from the nearby neighborhoods. A summary of the focus areas discussed, and the stakeholders engaged is provided in Table 1 and a detailed list of the representatives are listed in the appendix.

Table 1. Agency, Stakeholders & Interest Groups Engaged in Topical Focus Group Discussions

Focus Area	Organizations		
Hotel Owners/ Tourism	Best Western Glow Hotel Comfort Inn True by Hilton	HI Express Comfort Inn & Suites Fairfield Inn, Quality Inn	Homewood Suites Magellelon Consulting Explore Asheville Virtelle Hospitality
Affordable Housing	Russell Davis & Associates, Inc Mountain Housing Pisgah Legal- Affordable Housing Advocate	McMillan Pazdan Smith Architecture Weaver Cooke Homeward Bound Affordable Housing Committee	City of Asheville- City Community Economic Development City of Asheville- Community Development Division
Business Owners	Asheville Mall Copper Crown Avl	Asheville area Chamber of Commerce Taco Bell Franchise Group	Align Life Chiro Black Dome Mountain Shop SAI Int. Music Fraternity
Developers/ Real Estate	CDC Vanoy ECS Wood and Bisset	Spake Real Estate Weaver Cooke Construction 3 Mountaineers Zapolski Real Estate	Pulliam Properties Whitney Commercial and CIRA Ingles SEA NIC, LLC
Multimodal Interest Groups	Asheville on Bikes City of Asheville- Bike Ped Task Force	City of Asheville- Greenway Committee City of Asheville- Transit Committee	City of Asheville- Multimodal Transportation Committee JustEconomics
Partner Agencies	NCDOT Buncombe County City of Asheville- Transportation	City of Asheville- Planning & Urban Design	City of Asheville- Communication & Public Engagement
Neighborhood Representatives	Redwood Forest Oakley	Chunns Cove Haw Creek	Kenilworth Forest, Coalition of Asheville Neighborhoods (CAN)
Other Interest Groups	AAA AARP		

The top common themes from the discussions are summarized below:

Form & Place

Tunnel Road developed as an auto-oriented destination. This pattern served people well for many years. And while the auto-oriented nature of the corridor works for some businesses, the corridor no longer works for other people and businesses. There is opportunity for change through redevelopment and roadway improvements. Key opportunities that stakeholders identified included:

- **Enhance form and place through redevelopment.** *New development standards result in a greener corridor that is more people, bicycle, pedestrian, and transit friendly.*
- **Establish a sense of place throughout the corridor.** *Identify and develop public and private project opportunities to establish Tunnel Road as an identifiable branded place.*
- **Encourage a greater mix of uses along the corridor:** *Identify partners and strategies to incentivize housing opportunities, particularly affordable housing, during redevelopment.*
- **The Beaucatcher Tunnel is an iconic asset.** *Reconfigure (for bikes and peds), spruce up and brand the Tunnel to create a pleasant entryway to downtown (e.g. lighting, art).*

Redevelopment Potential


Sears Site at the Asheville Mall

The Tunnel Road corridor contains a mix of older and newer buildings, and very little undeveloped land. The corridor has some opportunity for larger scale redevelopment (e.g. Innsbruck Mall and Sears) and abundant opportunity for **incremental redevelopment** at smaller sites. Key opportunities that stakeholders identified included:

- **Tunnel Road is becoming an extension of Downtown.** *Create comfortable and convenient connections to Downtown Asheville.*
- **Encourage a greater mix of uses along the corridor.** *Identify partners and strategies to incentivize housing opportunities, particularly affordable housing, during redevelopment and strategies to repurpose the "sea of parking" along the corridor.*
- **A variety of constraints (natural and person-made) complicate redevelopment.** *Identify public and private strategies to improve challenging conditions (e.g. stormwater improvements, clarify City and NCDOT ROW).*
- **The auto-oriented development pattern is an asset to some existing business and property owners.** *Engage to understand the access and property development needs of existing businesses and property owners. Seek solutions that have mutual value.*
- **Multimodal transportation improvements and a greater mix of uses improvements may be the catalyst for redevelopment.** *Identify strategies to implement **large- and small-scale** public/private catalyst projects that demonstrate the redevelopment potential along Tunnel Road.*
- **Current UDO standards will not result in the corridor's vision.** *Update all or portions of the UDO to ensure that development standards result in the corridor vision. The update process should incorporate developer and property owner feedback.*

Housing Potential

There is very little housing directly on the Tunnel Road corridor, however, many established neighborhoods are located near the corridor. Due to its proximity to employment centers and Downtown Asheville, Tunnel Road is viewed as a prime location for income-based and market rate

housing. Many believe Tunnel Road can support a dense housing pattern, especially when incorporated within a mixed-use development. Key opportunities that stakeholders identified included:

- **The City of Asheville is continually evaluating its affordable housing strategies.** *Identify the affordable housing strategies that are most appropriate for Tunnel Road (e.g. land banking, development incentives).*
- **Some development elements increase the cost of housing development.** *Identify and improve land development regulations that increase the cost of housing development (e.g. current parking standards).*
- **There is a "we are not housing developers" sentiment from commercial developers.** *Develop a public/private education series to explore projects in other communities where affordable (and other) housing has been incorporated with projects along corridors with similarities to Tunnel Road.*

Employment Potential

The Tunnel Road corridor is home to thousands of jobs, many of which are low wage. Many workers are transit dependent and work non-traditional hours. Travel to work during the holiday season is challenging. Key opportunities that stakeholders identified included:

- **Many workers on the corridor do not work traditional hours (e.g. At hotels, second shift ends/third shift begins at 11:00 PM).** *Coordinate with employers to identify transit strategies that match the employment needs of the corridor.*
- **Workforce housing along the corridor could help employers recruit and retain employees.** *Develop public/private strategies to develop workforce- oriented housing along the corridor.*

Traffic

Tunnel Road's development pattern prioritizes the movement of automobiles over pedestrians, bicyclists, and transit riders. Therefore, there are conflicts between motorists and other users. Corridor strategies should encourage redevelopment while improving conditions for all roadway users. Key opportunities that stakeholders identified included:

- **Changing the road changes redevelopment potential.** *Develop plans and secure funding for a City/NCDOT multimodal roadway redevelopment project (e.g., RADTIP).*
- **The corridor has few parallel options.** *Create an (pseudo) parallel network to relieve some pressure from Tunnel Road (e.g., connections through parking lots).*
- **Traffic is fast, creating unsafe conditions.** *Develop strategies to slow traffic.*
- **Traffic patterns cause confusion.** *Develop strategies to clarify vehicular movements (e.g. signage, traffic signals).*
- **Development may be small scale.** *Develop an overall corridor connection (access management) plan to implement as small-scale redevelopment projects happen; also develop public/private opportunities.*
- **Options to reduce need to drive.** *Most people do not "park once". Shuttles and improved pedestrian connections can reduce trips.*

Bicyclists & Pedestrians

Both personal stories and recorded data indicate that the experience traveling as a bicyclist or pedestrian is uncomfortable at its best and deadly at its worst. Key opportunities that stakeholders identified included:

- **Multimodal users are not prioritized.** *In all things, prioritize the safe and efficient movement via coordinated networks designed for bicyclists, pedestrians, and transit riders/bus drivers (e.g., bus pull outs).*
- **Roadway crossings are dangerous.** *Ensure safe crossings throughout the corridor; prioritize signalized intersections. Identify the need for mid-block crossings.*
- **The corridor has pedestrian facility gaps and some pedestrian facilities that do exist can be challenging.** *Identify strategies to fill gaps and modernize existing facilities where needed.*
- **No bicycle facilities exist.** *Identify a bicycle "super-highway" (from Swannanoa River to Downtown Asheville) and neighborhood connectors (e.g. Kenilworth to Tunnel Road).*

Key Themes

The discussions and insights from stakeholders and interest groups were boiled down to a few key, reoccurring themes:

- Make the corridor **a better neighbor** (preserving views, adding greenspace & good neighbors, reduce negative influences, especially safety/security).
- There is strong **potential for redevelopment**.
- **Pedestrian safety** is paramount.
- Tunnel Road is a prime location for **affordable living** [housing].
- Tunnel Road can be a better place - a **destination – and a gateway** to downtown.

The focus group discussions also yielded key themes for the implementing agencies:

- **City Planning:** Re-zoning is the key tool for redevelopment- City expects development community to drive change based on re-zoning
- **NCDOT and City Transportation:** A major priority for traffic operations is to avoid queuing from Tunnel Road signal causing traffic to spillback on to the freeway. The section from Beaucatcher Tunnel to South Tunnel Road also has a poor planning level safety score on NCDOT's safety scoring (2015-2019). There is a recognized benefit to re-orienting driveway access to side streets to reduce conflict points along Tunnel Road, but agencies identified challenges, such as how to pay for modified or new access points.
- **Asheville Rides Transit (ART):** This is a high ridership and priority corridor for increasing transit frequency along the corridor. Pedestrian crossings to bus stops are a major safety concern. Riders have explained that the signal lengths are so long, that if a bus is coming, people will dart across the road and through traffic to make the bus (it can be over an hour wait for the next bus).

Field Walk Through

Staff from the City, County, MPO and NCDOT and the project team shared observations and documented safety and circulation issues during a corridor walk-through in June 2020. The observations identified specific locations of high traffic activity, poor parcel access, recent improvements related to new development, topography challenges and multimodal safety concerns. Concerns identified will inform the criteria for identifying, rating and prioritizing this plan's proposed solutions.

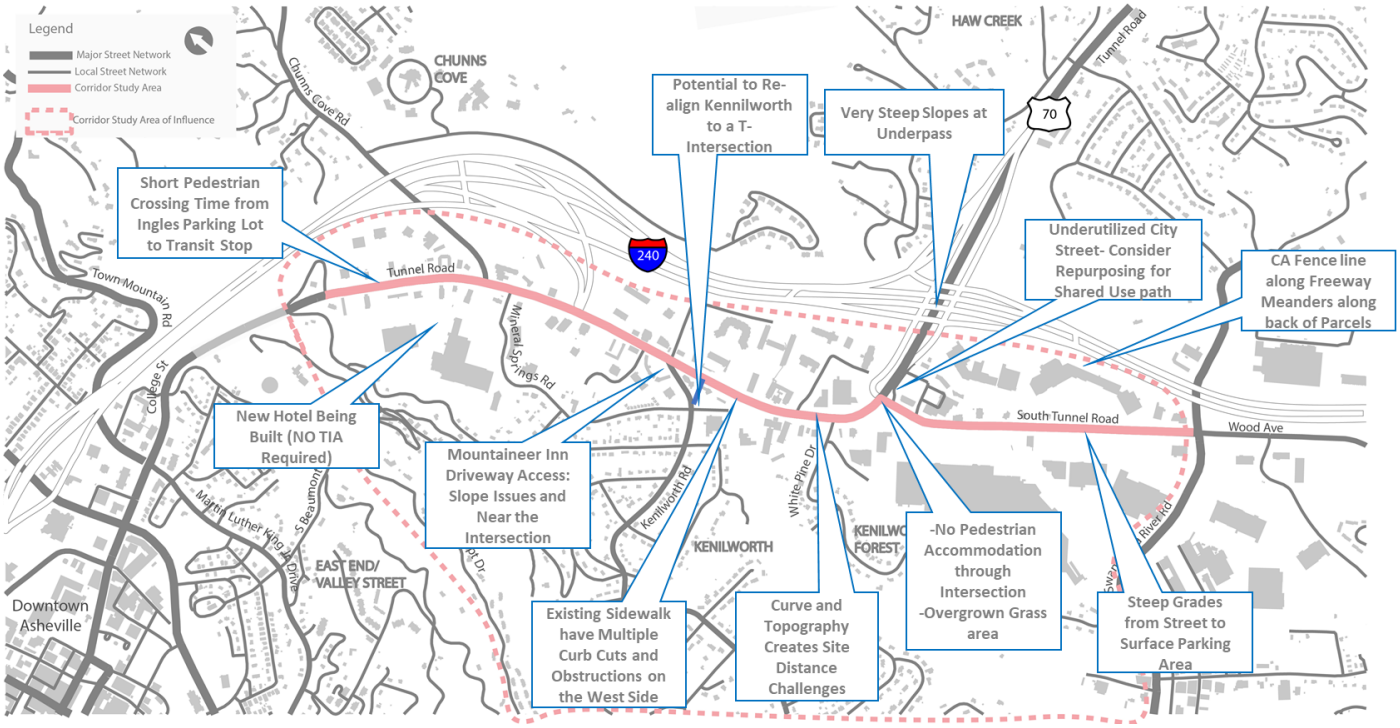


Figure 6: Observations from Multi-Agency Field Walk-Through of the Corridor

Public Input

Due to COVID 19 and social distance requirements and precautions, the project team was not able to hold a typical in-person public meeting. In place of a public meeting, the project team increased and expanded the number of focus group discussions to include additional neighborhood and local business discussions. The project team also provided an online public comment map that was promoted on the MPO's website, the City's media channels and through focus group participants' network channels and word of mouth. Figure 7 summarizes the comments provided by the public in the online maps.

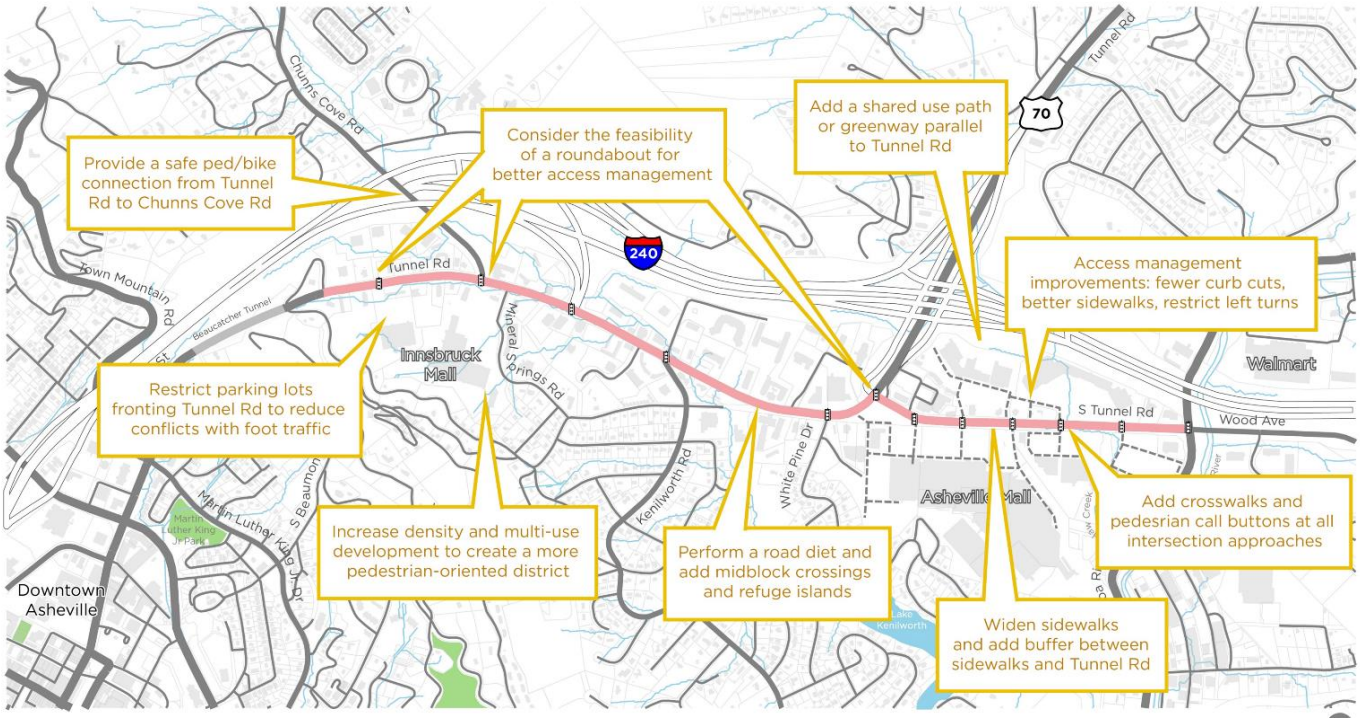


Figure 7: Summary of Comments in the Online Public Comment Map, October 2020

LAND USE & PROPERTY ACCESS

Existing Land Use

The study area consists of commercial and residential land uses as shown in Figure 8. The study area has mostly commercial uses fronting Tunnel Road and South Tunnel Road, while the predominant land use west of the corridor and on the east side of I-240 is single-family residential. The commercial activity along the corridor includes the Innsbruck and Asheville Mall, an Ingles grocery store, chain hotels, small shopping centers, stand-alone businesses and several restaurants.

In addition to their customers, these commercial uses create a high demand for employees in the retail, food service and accommodation sectors. As users of the transportation system, these workers often rely on transit or means other than driving alone to reach jobs.

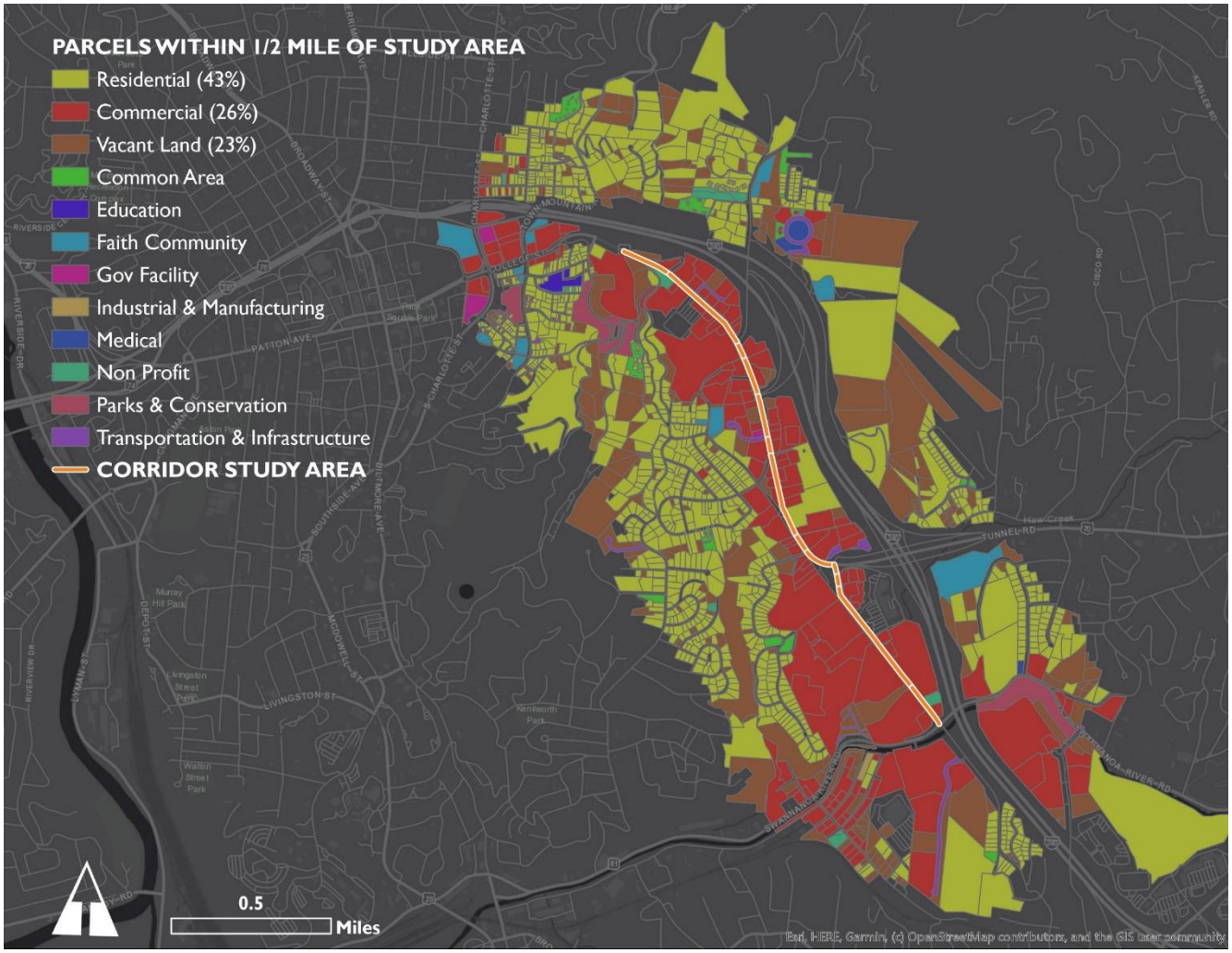


Figure 8: Existing Land Use
(Source: Buncombe County Parcel Data, 2020)

Existing & Future Zoning

The corridor is currently zoned for a suburban-style commercial and retail development pattern which has led to low and medium density residential uses developing behind commercial zones. This zoning explains the current development patterns along the corridor. The current re-development activity is mostly renovation related and does not include any active major re-development at the time of this report. Recent property transfers and former-now-withdrawn development proposals will be discussed later in this document.

The 2018 Living Asheville Comprehensive Plan outlines a very different future vision from the current development pattern. In contrast to the current single-use commercial district, it envisions urban places and town centers that can be served by frequent transit and short trips on foot, by bicycle or scooter from housing within and just beyond the districts. Redevelopment is proposed as mixed use with multifamily housing options, particularly on South Tunnel Road and on the northern end of the corridor by the Innsbruck Mall site. Achieving this vision will require a very different set of zoning and design guidance compared to existing development rules. New zoning categories are proposed and individual parcels along the corridor can be re-zoned per the Comprehensive Plan's policy direction. The Comprehensive Plan also classifies Tunnel Road and South Tunnel Road as traditional and urban transit corridors.

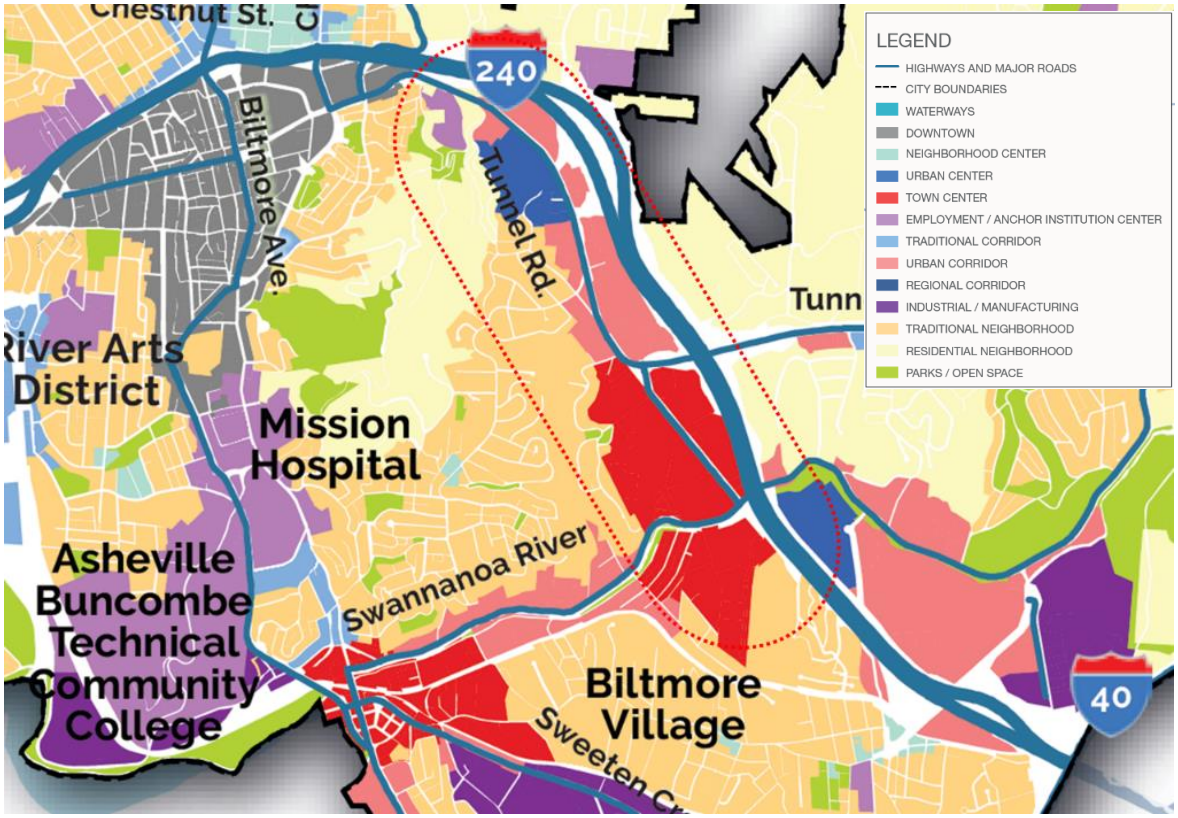


Figure 9: Proposed Zoning in the Living Asheville Comprehensive Plan

TRANSPORTATION CONDITIONS

Existing Property Access and Street Network

Tunnel Road's commercial development pattern coupled with, area topography, streams and other environmental conditions has been built out with each site relying on direct connections to Tunnel Road itself for access. There are few connections between sites and without a continuous parallel street all trips are forced onto Tunnel Road for ingress and egress to and from nearby neighborhoods, and the broader area. Figure 10 shows the driveways that currently exist between Old Chunns Cove Road and South Tunnel Road. This 1.8-mile segment of road has **approximately 71 curb cuts, an average of 1 curb cut every 82 feet.**

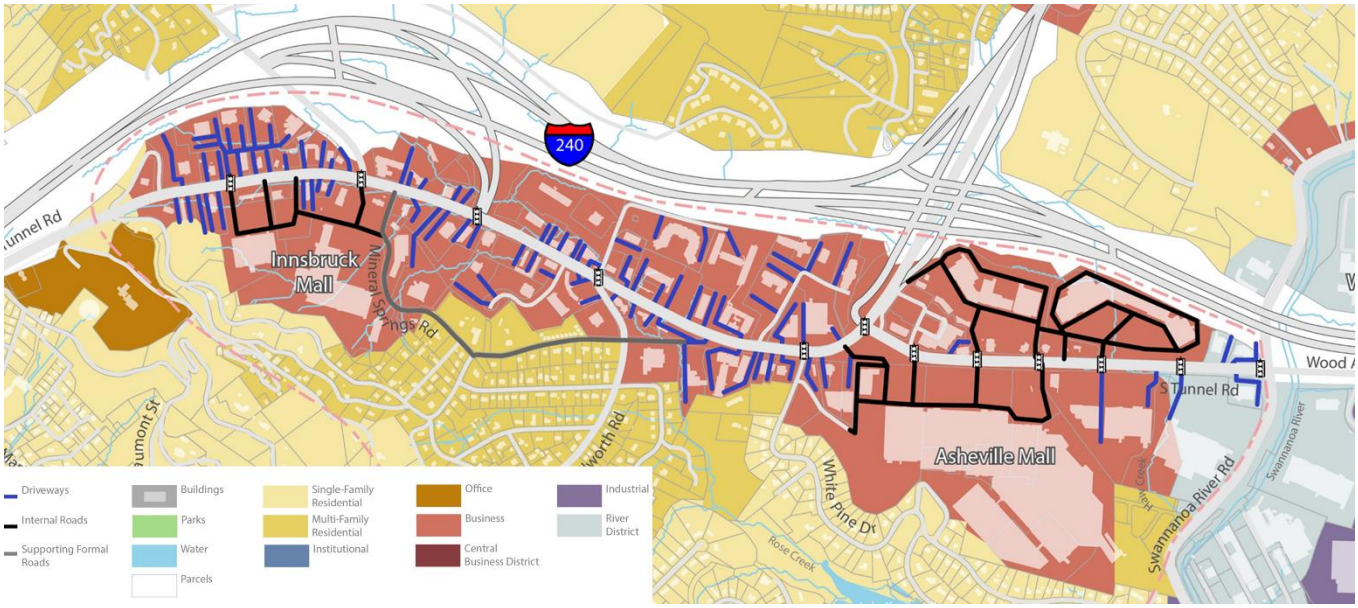


Figure 10: Existing Zoning & Driveways

The effective street network shown as major and collector roads in darker shades in Figure 11 demonstrates how the few roads that comprise a connected system of local streets forces all trips of all types to a limited set of options and intersections. The high reliance on Tunnel Road for both through trips and parcel access that relies on driveways, interrupts the path of travel for pedestrians and causing vehicles to enter and exit the road everywhere, without the benefit of managed conflict points. The addition of buses stopping, passengers boarding, private vehicles entering and exiting the road to and from travel lanes contributes to a high probability of crashes and near misses.

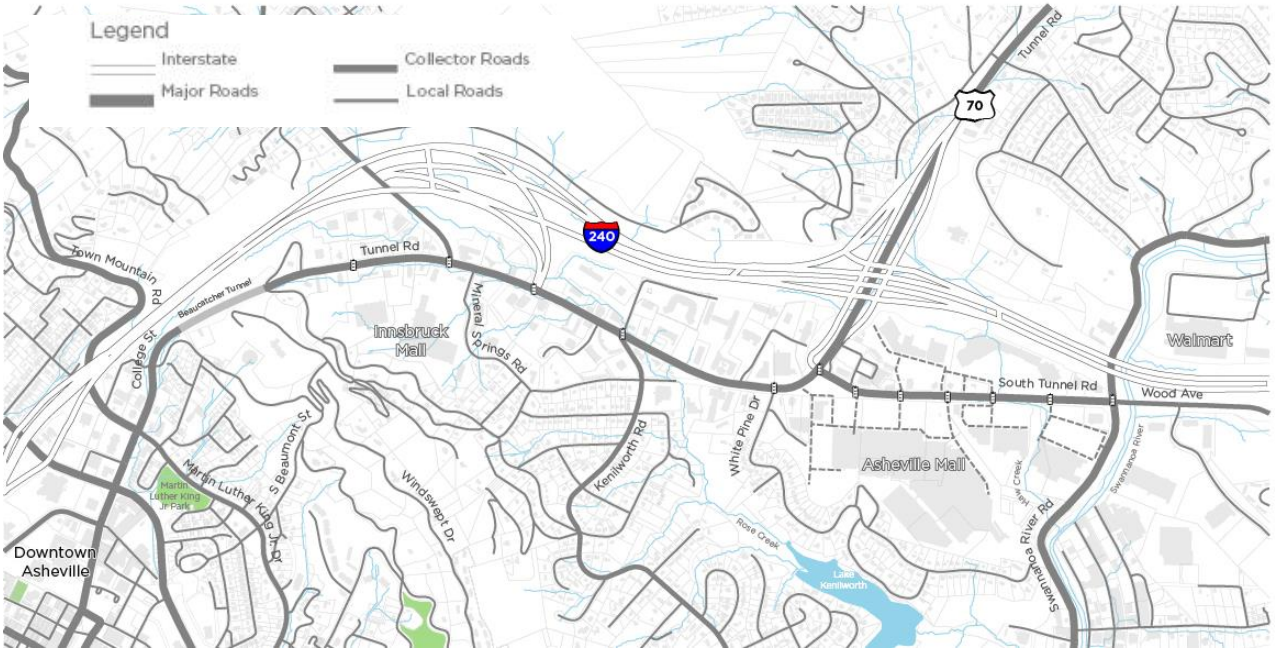


Figure 11: Effective Street Network

Existing Traffic Conditions

Overall traffic capacity on Tunnel Road exceeds demand. Most congestion is concentrated on South Tunnel Road, near the Asheville Mall. Congestion periods on South Tunnel Road relate to a concentration of retail so do not correspond to the more common commuter-oriented peak hours. Congested conditions generally last throughout the day and the corridor is particularly congested during the weekend mid-day and holiday peaks. This condition, reflected in Table 2, shows the traffic operations for the PM peak hour where only the Asheville Mall intersection at North Peaks Center Lane on a Saturday is highly congested, and where the same location's weekday peak shows an acceptable traffic level of service.

Table 2. Summary of Traffic Level of Service (LOS) for Peak Conditions (Traffic Volume Source: NCDOT, 2020, Intersection Average LOS Reported)

Segment	Intersection	Existing PM LOS	Existing Saturday Peak LOS
Tunnel Road	Ingles Driveway	B	B
	Innsbruck Mall/Chunns Cove Road	C	C
	I-240 Ramps/ Car Wash Driveway	B	B
	White Pine Drive	C	C
	South Tunnel Road/I-240	D	B
South Tunnel Road	Asheville Mall/N Peaks Center Lane	B	E
	Asheville Mall/Whole Foods N	A	B
	Asheville Mall/Whole Foods S	B	B
	Best Buy/Overlook Village	C	D
	Lowes Driveway	A	A
	Swannanoa River Road	D	D
	Wood Avenue/River Hills Center	B	B
Interchange on Tunnel Road	I-240 EB Off Ramp	B	A
	I-240 EB On Ramp	B	B
	I-240 WB Off Ramp	D	B
	I-240 WB On Ramp	B	A

Efficient traffic operations are also affected by the way that signals are able to manage turning movements, pedestrian crossing and user conflicts at intersections.

Existing Signal Timing

For many signalized intersections along the corridor, the existing lane geometry creates opposing intersection legs that do not directly align with one another. As a result, a split phase signal timing pattern is required at these locations whereby each leg has its own phase and green time. Rather than complementary movements being accommodated at the same time, long cycle lengths are required, causing travelers, both motorists and pedestrians, to wait for longer periods of time before receiving a green signal. Capacity is currently being lost due to the necessity of these split phases, adding to overall travel delay, reduced system efficiency, and potentially more risky travel behavior as discussed below.

Safety Concerns

On Tunnel Road, frequent crashes emphasize the need for solutions to address prevalent safety concerns. The North Carolina statewide average crash frequency on similar roads is 313 crashes per 100 million vehicle miles, while the frequency on Tunnel Road is 1342 crashes per 100 million vehicle miles, more than four times higher than average for this road type.

Figure 12, below, shows the total number of crashes by segment along the corridor occurring between September 2015 and August 2020. The highest crash segments on Tunnel Road have direct access to and from I 240 ramps between Chunns Cove Road and Kenilworth Road and between White Pine Drive and the Tunnel Road/S Tunnel Road intersection.

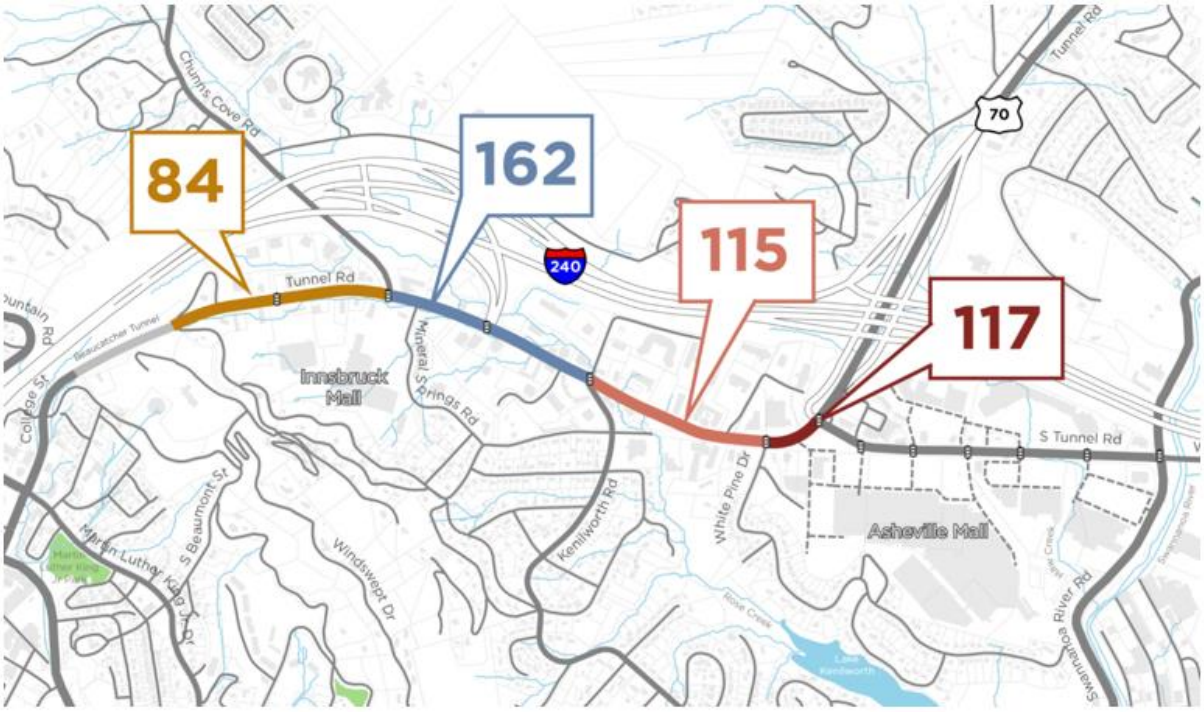


Figure 12: Total Cashes by Segment on Tunnel Road (September 2015 to August 2020)

The top five crash types by segment for the same time period are depicted below. Rear end crashes were the most common type, followed by angle, left turn, and sideswipe crashes.

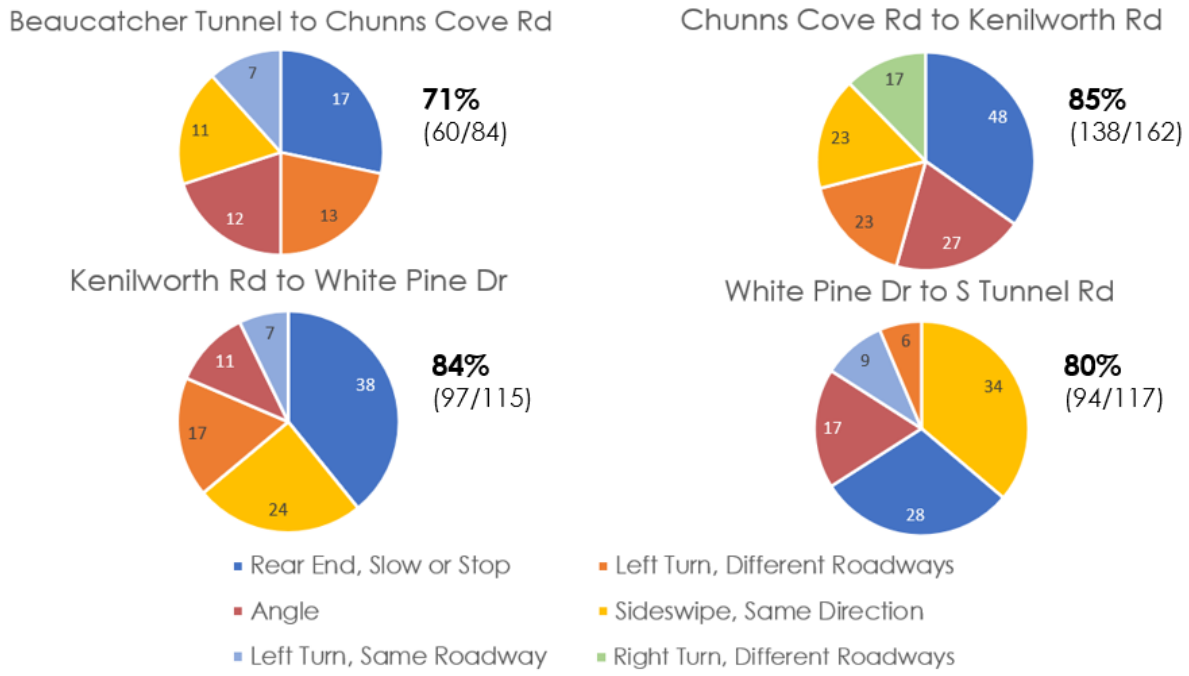


Figure 13: Top Five Crash Types by Segment on Tunnel Road (September 2015 to August 2020)

These crash types are typical of suburban arterials with the levels of activity and operating conditions found on Tunnel Road. The high frequency of commercial driveways, the lack of protected space and controlled locations for traffic entering and exiting the road, travel speeds associated with frequent free flow conditions, distances between signals and lack of crossing accommodation for pedestrians all contribute to these crash types. Figure 14 shows the number and locations of conflict points at a single driveway along the corridor contributes to the higher potential for vehicle crashes.

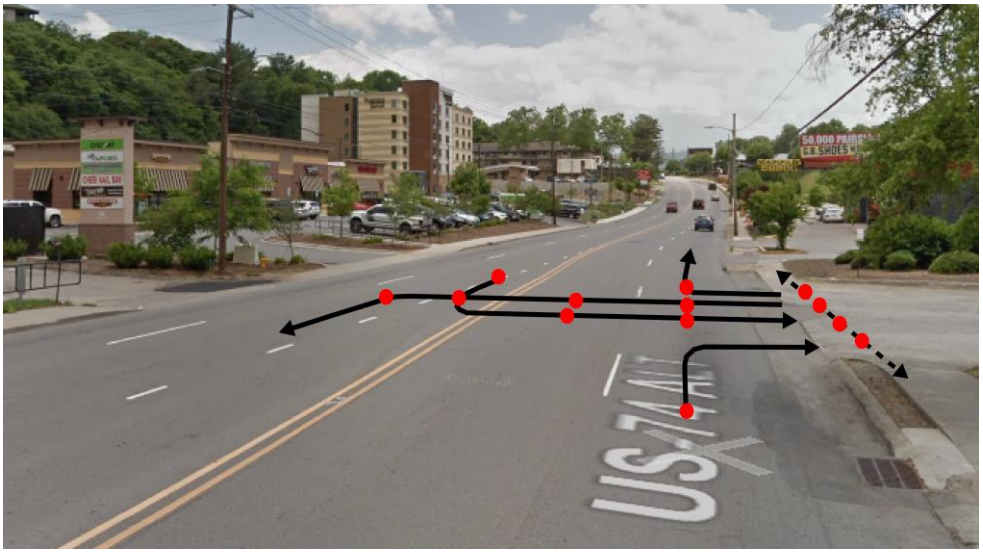


Figure 14: Driveway Conflict Points

Pedestrian & Bicycle Conditions

The corridor's lack of sidewalks and comfortable bicycle facilities creates a large gap in Asheville's non-motorized network. The corridor lacks continuous sidewalks on both sides of the street and the sidewalks that are available are narrow with frequent driveway cuts adding vehicle conflict points and increasing the potential for crashes. Figure 15 shows that signalized crossings can be up to 1,000 feet apart on Tunnel Road between the Tunnel and South Tunnel Road, and some signals do not have crossings on all four approaches. These distances encourage pedestrians to cross midblock without a signal or against the light at controlled crossings due to the long signal cycle lengths serving through traffic on the street. Signal spacing on South Tunnel Road is more frequent, about every 400 feet. However, crosswalks are not present at all signals or on all approaches of the intersections.

Bicycle infrastructure is non-existent along Tunnel Road and lack of connectivity between developed parcels does not provide a low-stress network alternative. The corridor's travel speeds, traffic volumes, and frequent driveways make use of Tunnel Road uncomfortable and unsafe for anyone wishing to bike. The corridor also lacks pedestrian and bicycle connections to the adjacent to the communities on both sides of I-240. The topography and limited width of the Beaucatcher Tunnel limit the potential for a direct connection to Downtown Asheville. Similarly, only Chunns Cove Road and US 70 provide a connection across the barrier of I-240 to neighborhoods to the east.

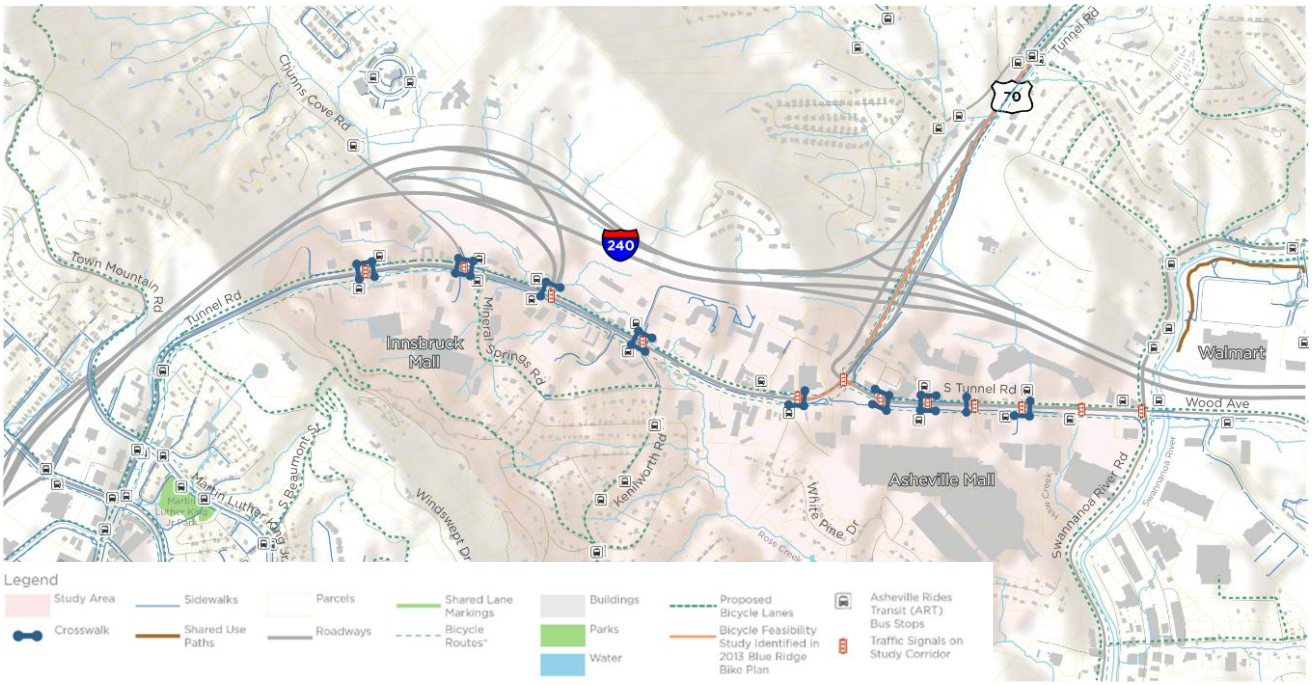


Figure 15: Pedestrian & Bicycle Conditions

Transit Conditions

Transit stops along Tunnel Road have some of the highest ridership in the region and Tunnel Road is a priority corridor for current and increased service frequency by ART). **The high average ridership is also not limited to weekdays but is equally high on the weekend.** The low-wage employment opportunities characteristic of the businesses on the corridor suggest that transit is a vital and affordable way for workers to reach their places of work and customers to reach needed goods and services. Nearby neighborhoods with relatively low private automobile ownership suggest that transit also supports non-work-based travel.

Bus Stop by the Ingles Parking Lot on Tunnel Road

The transit experience along the corridor is challenged by the limited pedestrian facilities and, in some cases, limited space for a comfortable stop to wait for the bus. The corridor's few managed crossing locations also present challenges for transit riders. In addition to the few safe crossing places which cause considerable out of direction travel, the relative infrequency of buses can cause pedestrians to make high risk decisions to reach a bus that, if missed, will cause a 30-minute delay at best. The resulting crashes reflecting safety issues are shown in the map provided in Figure 16. **Pedestrian crashes are particularly prevalent in the vicinity of higher ridership bus stops along the corridor.** Two fatalities were reported as of April 2020 since January 2001: at Chunns Cove Road and on South Tunnel Road.

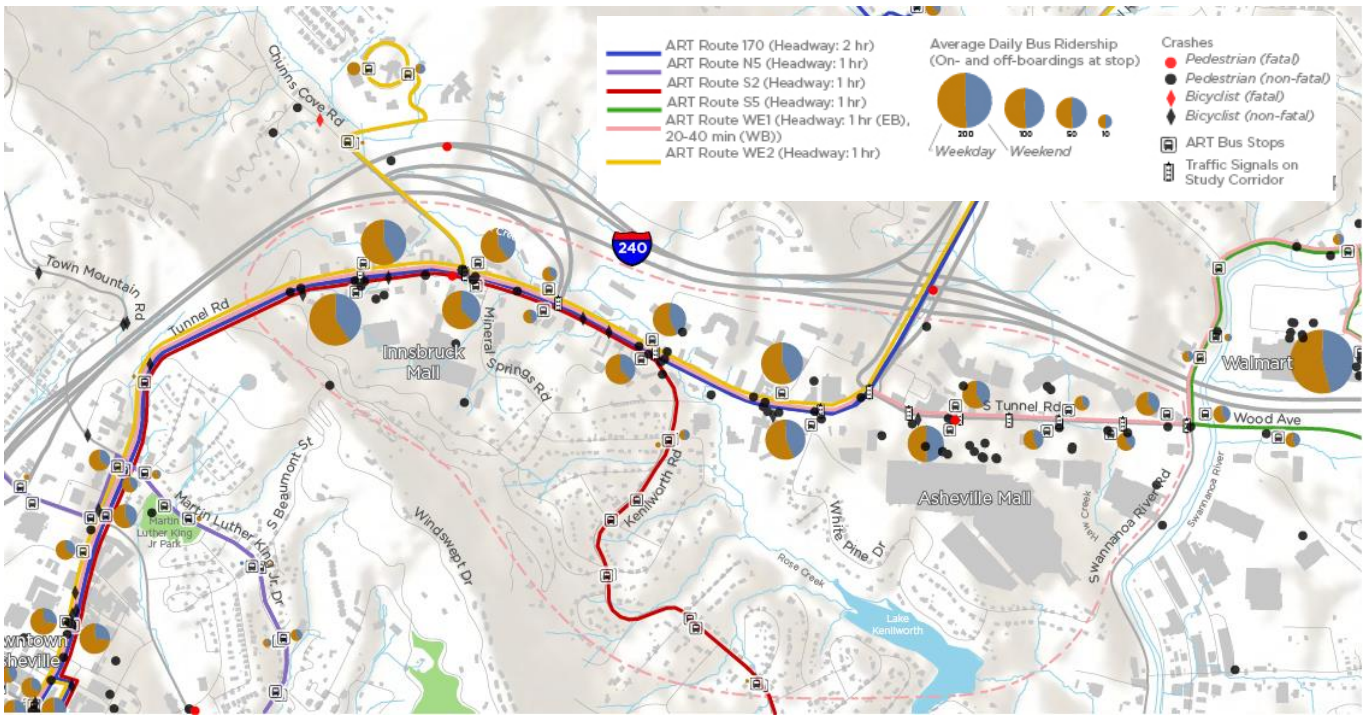


Figure 16: Transit Ridership and Pedestrian Bicycle Crashes along the Corridor
(Source: Crash Data, NCDOT, Jan 2007-April 2020, Transit Ridership: Asheville Regional Transit)

MARKET ASSESSMENT

To gain insight into the pace of change possible on the corridor, the project team analyzed market and economic factors impacting redevelopment. This included completing a value assessment of the land and evaluating locations of possible "catalytic sites" whose redevelopment could produce the mixed-use walkable vision for the corridor.

Assessed Value

The value per acre was assessed for all parcels within the study area to create a fair, or apples-to-apples, comparison of each parcel's value and is shown in Figure 17. The value per acre demonstrates how efficiently and productively each parcel generates property value for its owner, and sufficient taxes to provide services and infrastructure for the public. **The leading uses for the highest value per acre are currently hotel uses**. This is likely due to the fact that hotel sites maximize the use of smaller parcels which create the most productivity. This includes wrapped or garage parking and higher building heights. Conversely, **the Asheville Mall's high value is diluted over a large area of parking.**

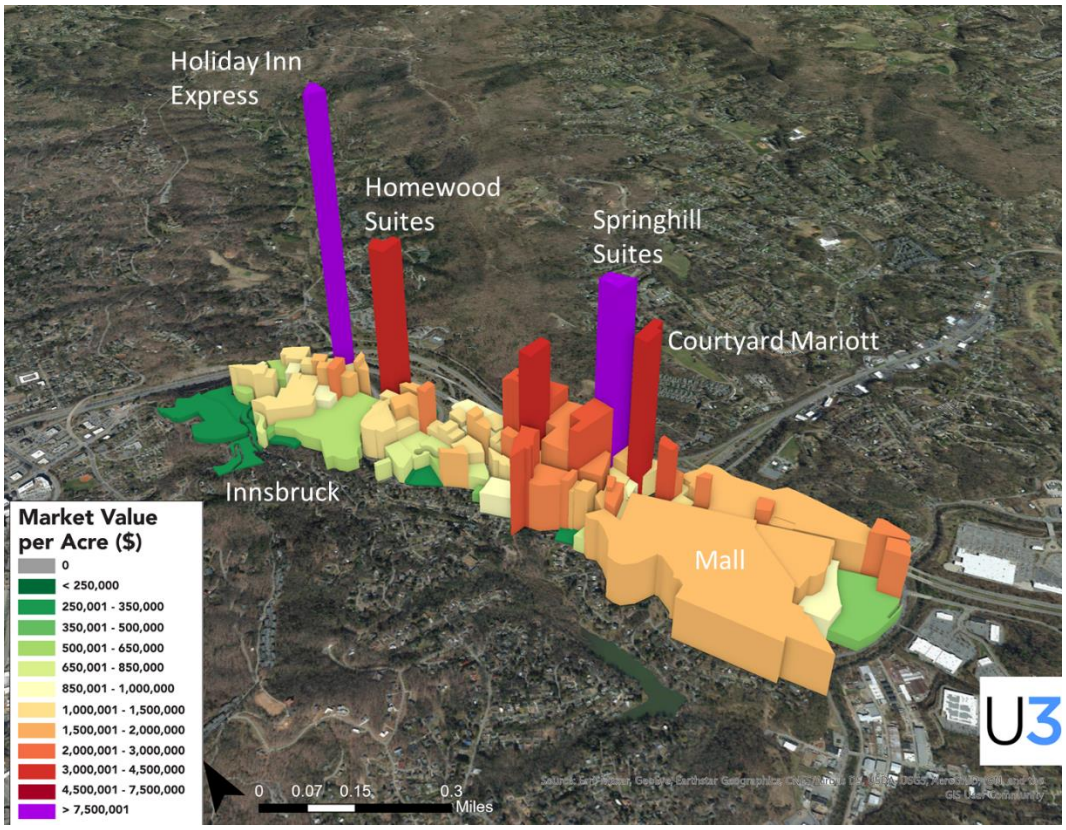


Figure 17: Value Per Acre for Parcels Along Tunnel Road & South Tunnel Road (Source: Buncombe County)

The increased efficiency of parcels improving the value per acre creates a "chicken-and-egg" scenario. If the intended vision for the corridor is to see the area transition to more of the high efficiency uses, with

less parking (offset by walkability and transit), more public and private money is needed for the additional infrastructure investment. The ability to build this infrastructure up front is more likely to allow expected returns for developers to risk building more intensively and the community down the line. This investment in additional infrastructure allows for the inefficient, surface parking areas to be redeveloped and can be leveraged to pay for additional multimodal infrastructure. This type of change will likely require investments and partnerships from multiple parties to catalyze change along the corridor.

Potential Catalytic Sites

One indicator of potential to change is when the land becomes more valuable than the building on it. This creates a condition where the developer is more likely to tear down a building and redevelop the entire site as opposed to renovate or invest in infill redevelopment. The areas where the land value exceeds in the building values (yellow parcels in Figure 15) reveals how valuable smaller, intensely used parcels can be.

Opportunities to add high value infill to larger sites, such as the Asheville Mall and Innsbruck Mall sites, are outlined in grey in Figure 15. The property and building values of these sites indicate developers may gain a better return if redevelopment included adding infill buildings where there are currently surface parking lots.

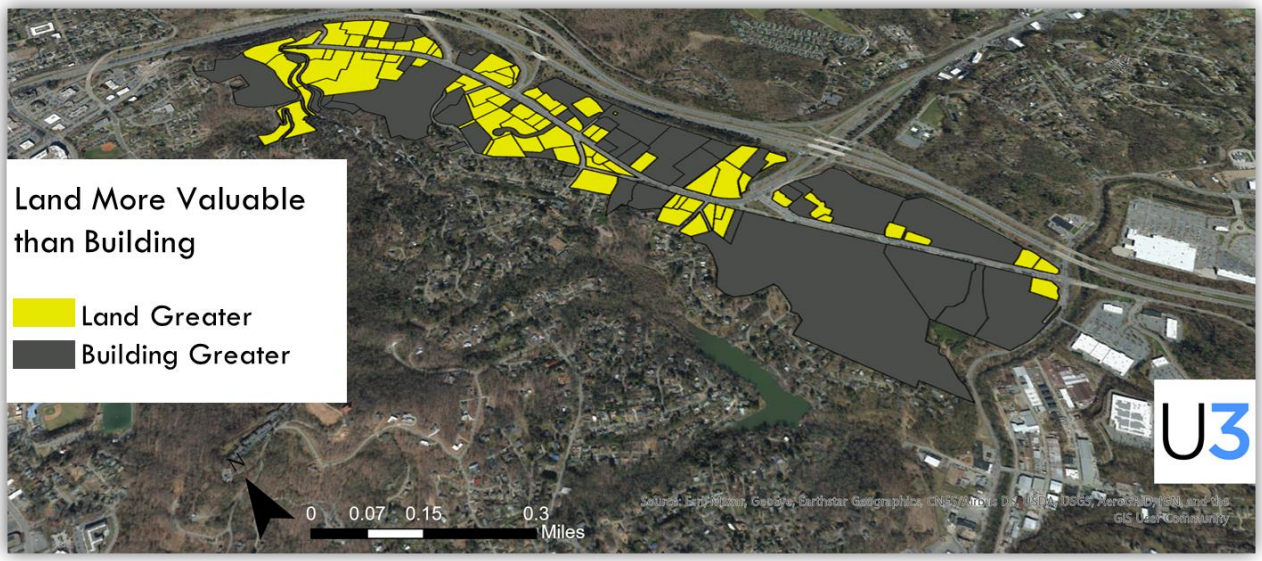


Figure 18: Land More Valuable than the Building for Parcels Along Tunnel Road & South Tunnel Road (Source: Buncombe County)

ISSUES & OPPORTUNITIES

The existing conditions analysis is synthesized to include the following issues and opportunities categorized by land use and multimodal transportation topics.

Land Use

Transportation System Needed to Support Land Use

The proposed zoning along the corridor seeks to create a more urban setting and feel along the corridor. However, the corridor's development has primarily depended on roadway access from Tunnel Road due the lack of connectivity between parcels and lack of comfortable multimodal facilities along the corridor.

Figure 19 gives a comparison of the density of Downtown Asheville, which supports dense, urban, mixed use development patterns at approximately 2.2 acres per a block while the Innsbruck Mall site, has a much more limited network. Including some of the internal roads between parcels, the network density is closer to 11.2 acres per block. In order for the level of density desired to be achieved, street connections off of Tunnel Road and South Tunnel Road likely need to be formalized or developed. A depiction of the level of street connectivity needed is provided in Figure 20.

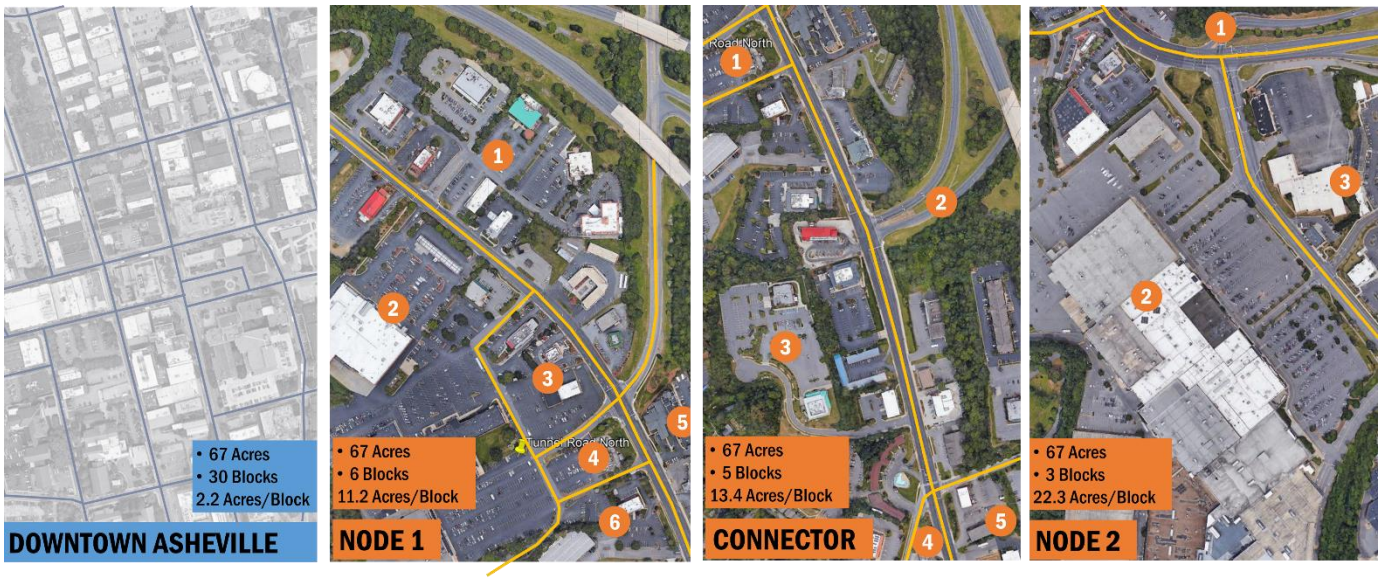


Figure 19: Comparison of Network Density in Downtown Asheville and the Innsbruck Mall Site Along Tunnel Road

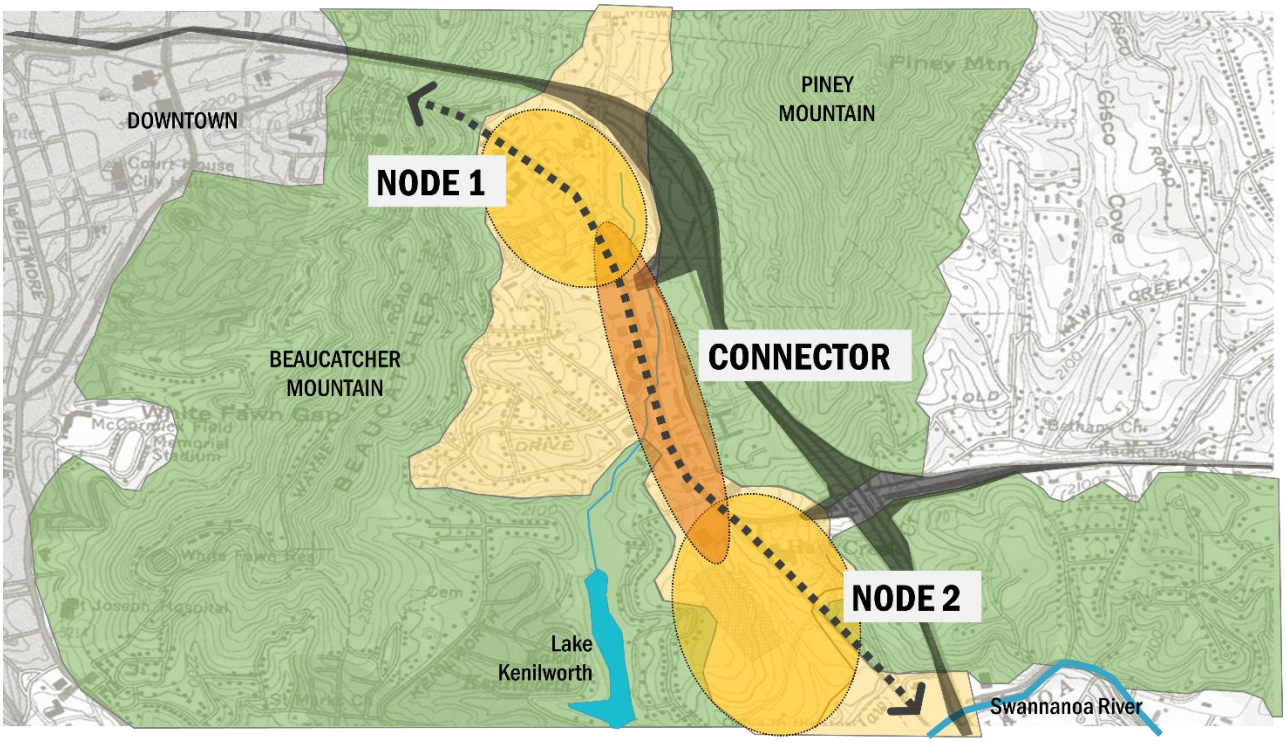


Figure 20: Graphical Depiction of Level of Network Connectivity Needed to Match Network Density in Downtown Asheville

Creation of an internally connected street network along Tunnel Road could be focused at the two nodes of developable land that are joined with a connector through the more topographically constrained area. These two nodes can be positioned to become centers of mixed-use activity with the most impactful redevelopment potential. Addressing topographic issues and existing infrastructure depicted in Figure 21 through Figure 24, below should be the focus of change and help to determine priority path and street connections, their network and building service functions, and range of alignment opportunities as sites in the nodes and connector are planned and designed for reinvestment.

Figure 21: Existing Topography and Infrastructure Along Node 1

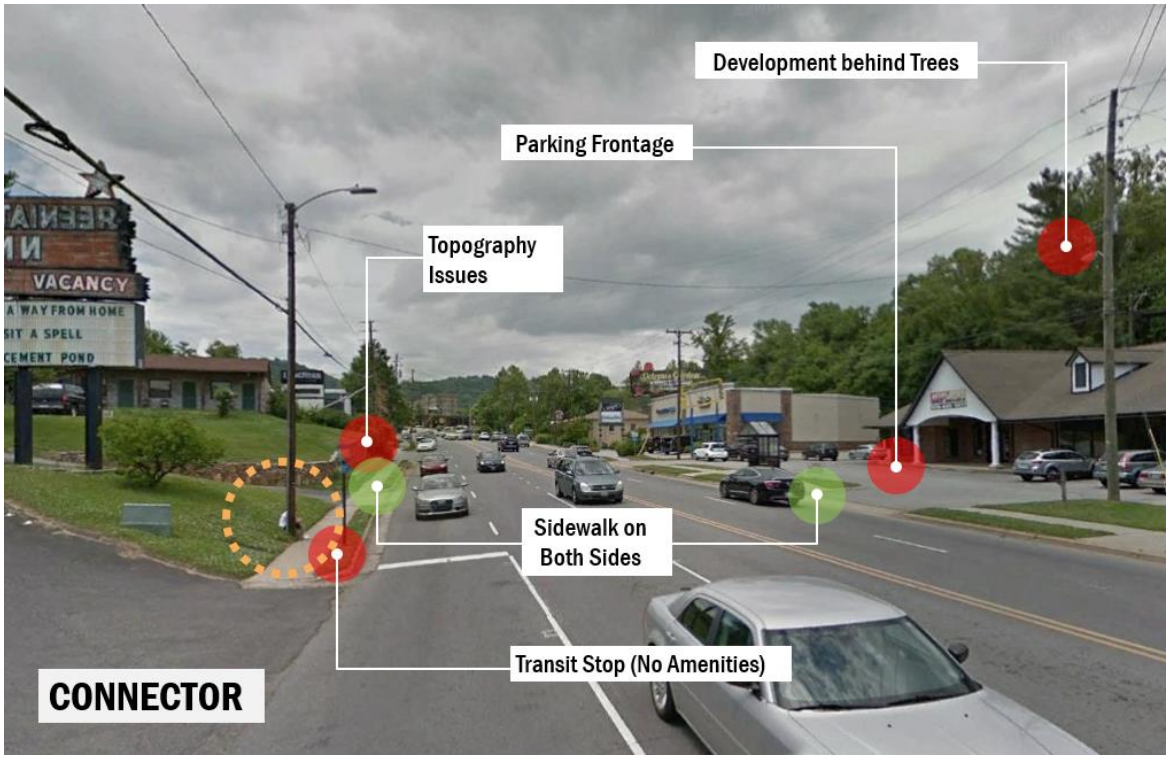


Figure 22: Existing Topography and Infrastructure Along Connector

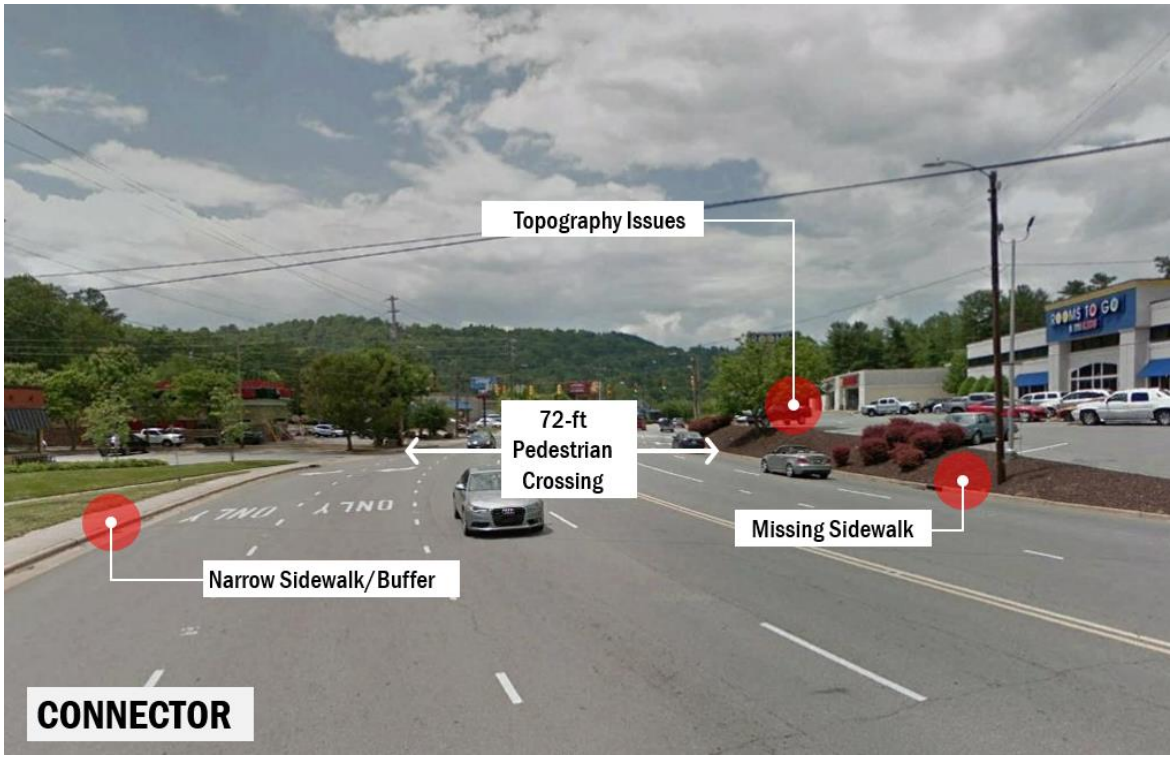


Figure 23: Existing Topography and Infrastructure Along Connector, Continued

Figure 24: Existing Topography and Infrastructure Along Node 2

Multimodal Transportation

The greatest issues for pedestrian and bicycle infrastructure are rooted in a lack of comfortable designated space along Tunnel Road and that the lack of roadway connectivity limits access from the nearby neighborhoods and creates out-of-direction travel between parcels. The key challenges along the corridor include:

- Long wait times to cross the street and long distances between crossing opportunities **encourage spontaneous and dangerous crossings.**
- Traffic is fast-moving (over 35 mph) and the numerous curb cuts for driveways **create dangerous and uncomfortable conflicts.**
- There is only a continuous, narrow sidewalk on the west side. There are **obstructions and pavement issues** along the entire length of the corridor.
- Most intersections are **not ADA compliant**.
- Deep surface parking lots create an uncomfortable "frontage" for pedestrians to walk along.
- There are **no dedicated or low-stress bicycle facilities** along the corridor.

Despite these challenges. There are some potential opportunities, which are outlined below.

- On Tunnel Road between Beaucatcher Tunnel and South Tunnel Road, the capacity of the road is currently exceeding demand. This presents a potential opportunity to reconfigure and reassign road space to include a shared use path or wider sidewalks on Tunnel Road. Additional network connections could create more intersections and more frequent crossing opportunities.
- Many existing intersections could be modified to add new crosswalks to improve pedestrian convenience and visibility. Managed crossing opportunities should be added to allow crossing every 400 to 500 feet. These crossings could be managed as full signalized intersections, high-intensity activated crosswalk beacon (HAWK) signals or, rectangular rapid flashing beacons (RRFBs).
- There is an existing, 8-foot-wide sidewalk along the south side of Tunnel Road that crosses the I-240 interchange. The potential to widen this sidewalk to be a more comfortable shared use path could be considered.
- Existing surface parking lots and internal roads could be re-imagined to add new street connections with pedestrian and bicycle accommodations.

CORRIDOR CONCEPTS FOR FURTHER STUDY

Based on the existing conditions assessment and input from stakeholders and the community, the following infrastructure concepts were developed to support the proposed vision for the corridor. All alternatives were evaluated based on the following key criteria:

- **Traffic Safety**
- **Traffic Operations**
- **Pedestrian & Bicycle Safety and Comfort**
- **Connectivity**
- **Supports Living Asheville Plan**
- **Access Management**
- **Supports Transit**
- **Cost/Feasibility**

All alternatives were evaluated based on how they performed in each of the above categories. Table 3 summarizes the performance definition for each of the criteria.

Table 3. Definition of Performance Level for Evaluation Criteria

Criteria	High Performing	Medium Performing	Low Performing
Traffic Safety	Has a high impact on reducing travel speeds and reducing conflict points	Has a medium impact on reducing travel speeds and reducing conflict points	Has low or no impact on reducing travel speeds and reducing conflict points
Traffic Operations	Maintains or improves existing traffic operations	Decreases traffic capacity from existing LOS but maintains acceptable LOS	Substantial impact to traffic operations
Pedestrian and Bicyclist Safety and Comfort	Provides safe and convenient pedestrian/ bicycle facilities for all ages and abilities	Provides safe and convenient pedestrian/ bicycle facilities for most ages and abilities	Does not provide adequate pedestrian and bicycle facilities
Connectivity	Supports a comprehensive and connected, street network	Supports some new street connections	Maintains existing levels of limited connectivity
Supports Living Asheville Plan	Supports the full vision for a more walkable, bikeable urban corridor	Partially supports the full vision for a more walkable, bikeable urban corridor	Does not support an urban corridor conditions and maintains suburban, auto-oriented characteristics
Access Management	Leverages existing/new intersections to access parcels adjacent to the corridor, removes most driveways	Improves access to adjacent parcels through existing intersections, removes some driveways	Maintains existing driveway cuts for parcel access and applies limited access management strategies
Supports Transit	Improves conditions at bus stops and supports high quality multimodal connections to transit	Improves conditions at some bus stops	Maintains existing bus stop conditions and access
Cost/Feasibility	Low-cost	Medium Cost	High Cost

Street Network Alternatives

The proposed land use and development vision will require a supporting street network that provides connectivity among sites for all travel modes as well as additional street frontage for new buildings. The street network is critical to provide shared street access to parcels and possible shared parking and remove the need for single serving driveways that line Tunnel Road. A proposed street network is provided in the series of images that are combined in Figure 25 and move from north to South in Figures 26 through Figure 29. A street running parallel to Tunnel Road would provide a connected north-south alternative for circulating among properties on the west side. Cross sections could vary in width and mode accommodation from a narrow trail to a two-way street with parking, pickup and drop-off/loading space at the curb, wide sidewalks and space for bicycling. An example cross section for this connection is shown in Figure 30 and will depend on City development guidance and private development negotiations. The proposed network would also provide a set of "A" streets that would provide the primary access points from Tunnel Road. These streets are also prioritized for wider sidewalks, on-street parking and bike lanes. The different network scenarios are evaluated, below, in Table 4 summarizes how each of the street network scenarios perform based on the criteria identified above.

Table 4. Alternatives Analysis for Network Scenarios

Alternative	Traffic Safety	Traffic Operations	Ped/Bike Safety & Comfort	Connectivity	Supports Living Asheville Plan	Access Management	Transit	Cost/ Feasibility
No Build	○	◐	○	○	○	○	◐	●
Build Parallel Connection Only	◐	◐	◐	◐	◐	●	◐	◐
Build Parallel connection & "A" Streets	●	●	●	●	●	●	●	◐

○ Low performing
◐ Medium performing
● High performing

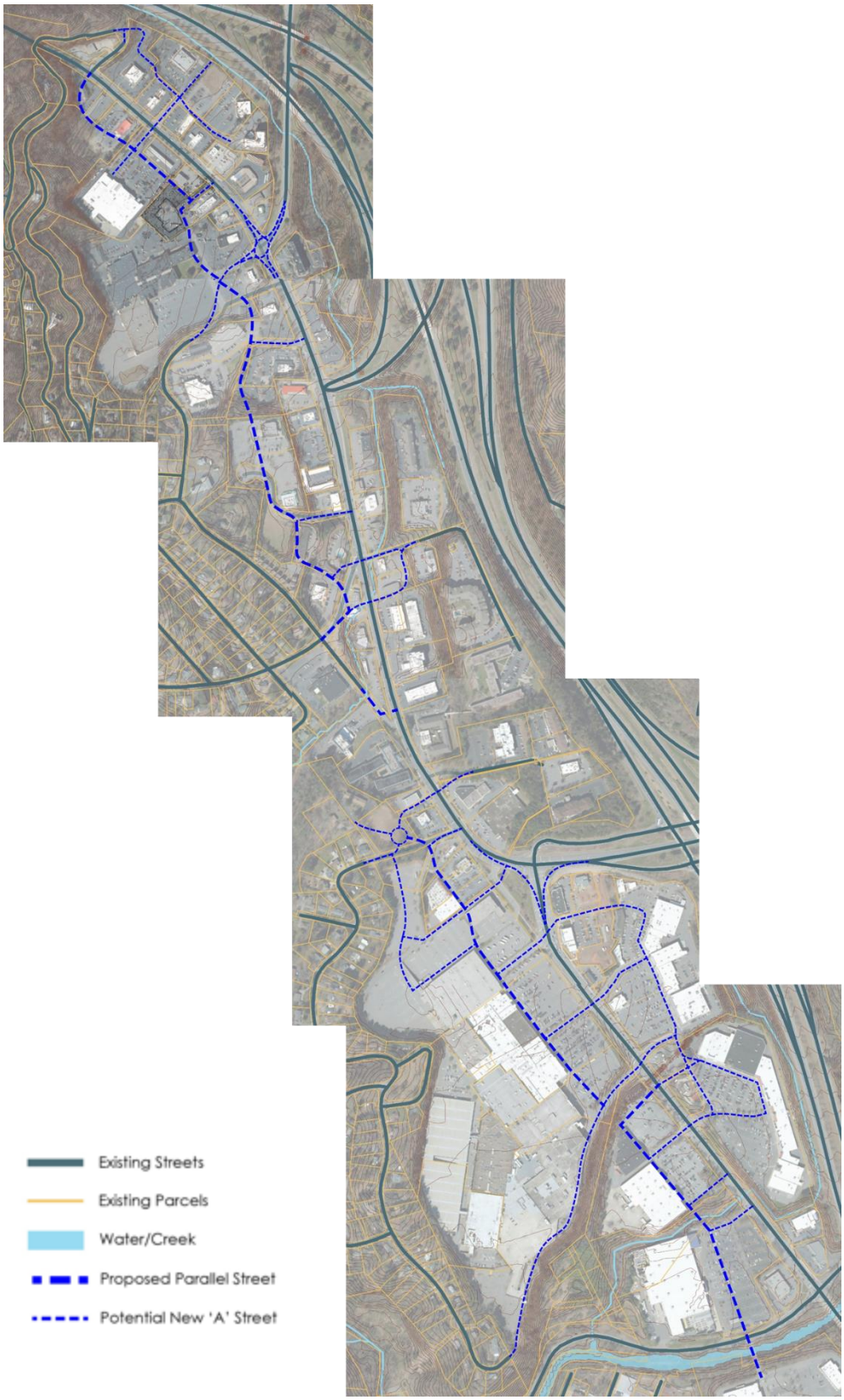


Figure 25: Proposed Street Network Overview

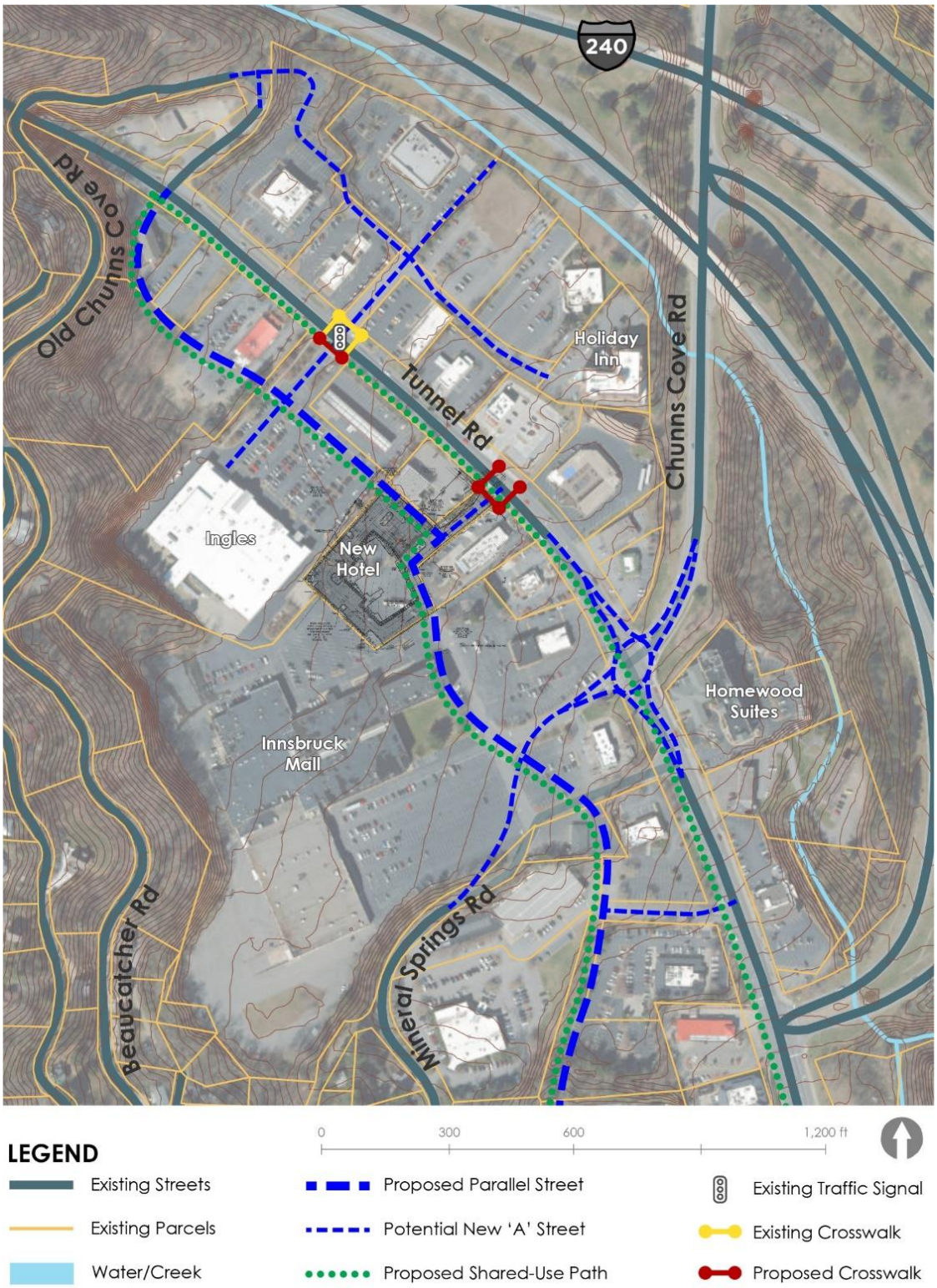


Figure 26: Proposed Street Network: Tunnel Road from Old Chunns Cove Road to I-240 Ramps

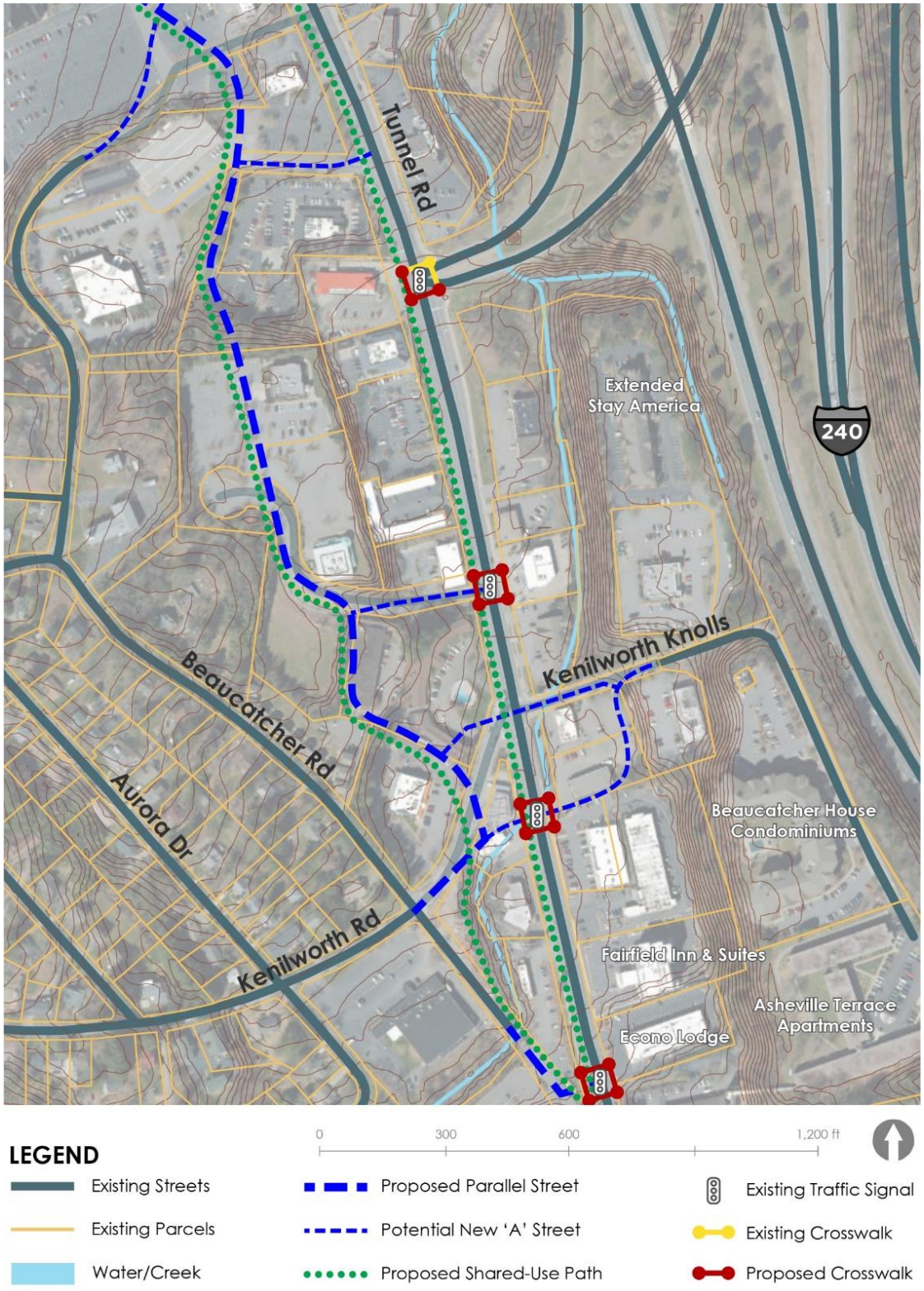


Figure 27: Proposed Street Network: Tunnel Road from I-240 Ramps to Beaucatcher Road

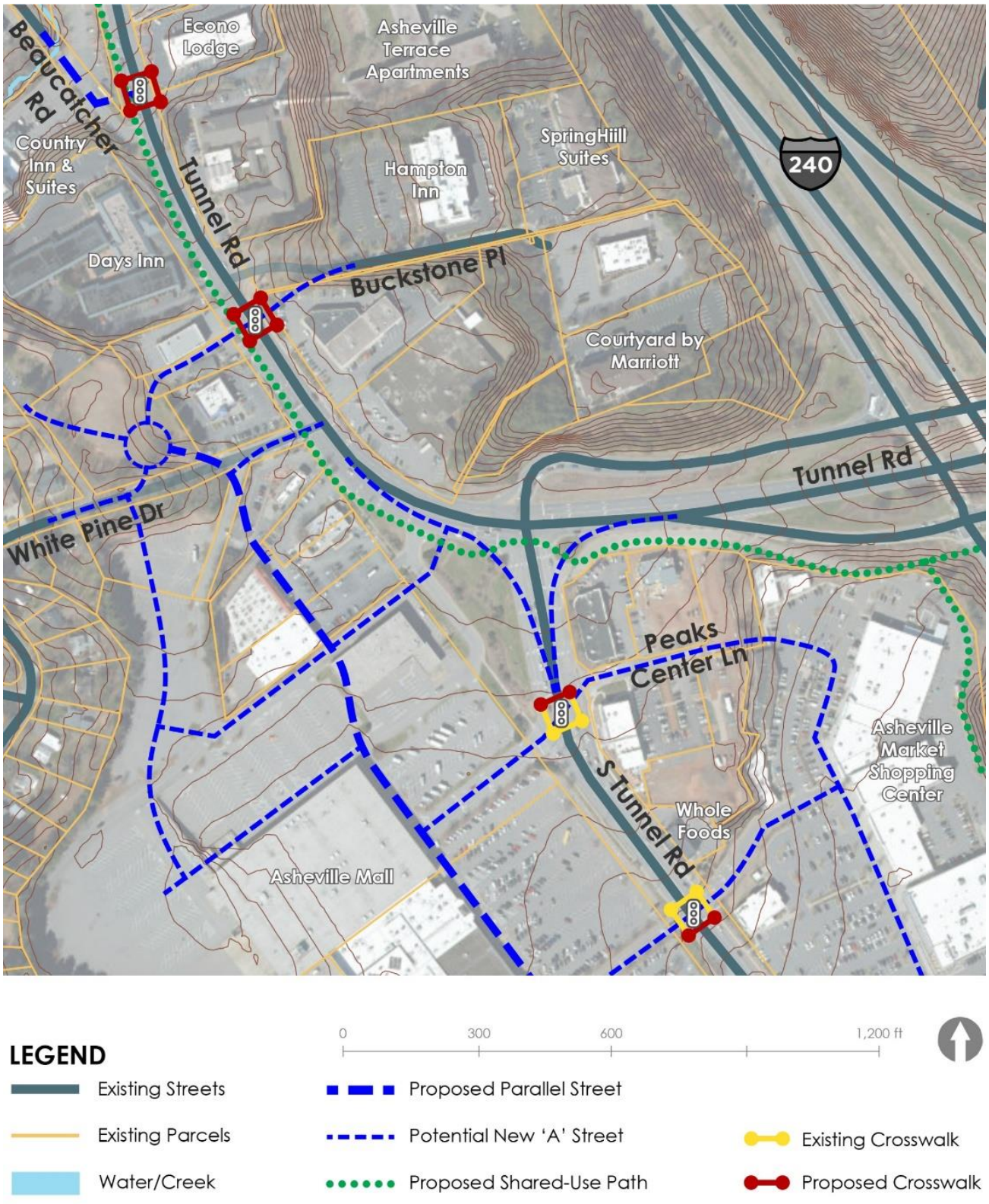


Figure 28: Proposed Street Network: Tunnel Road from Beaucatcher Road to South Tunnel Road

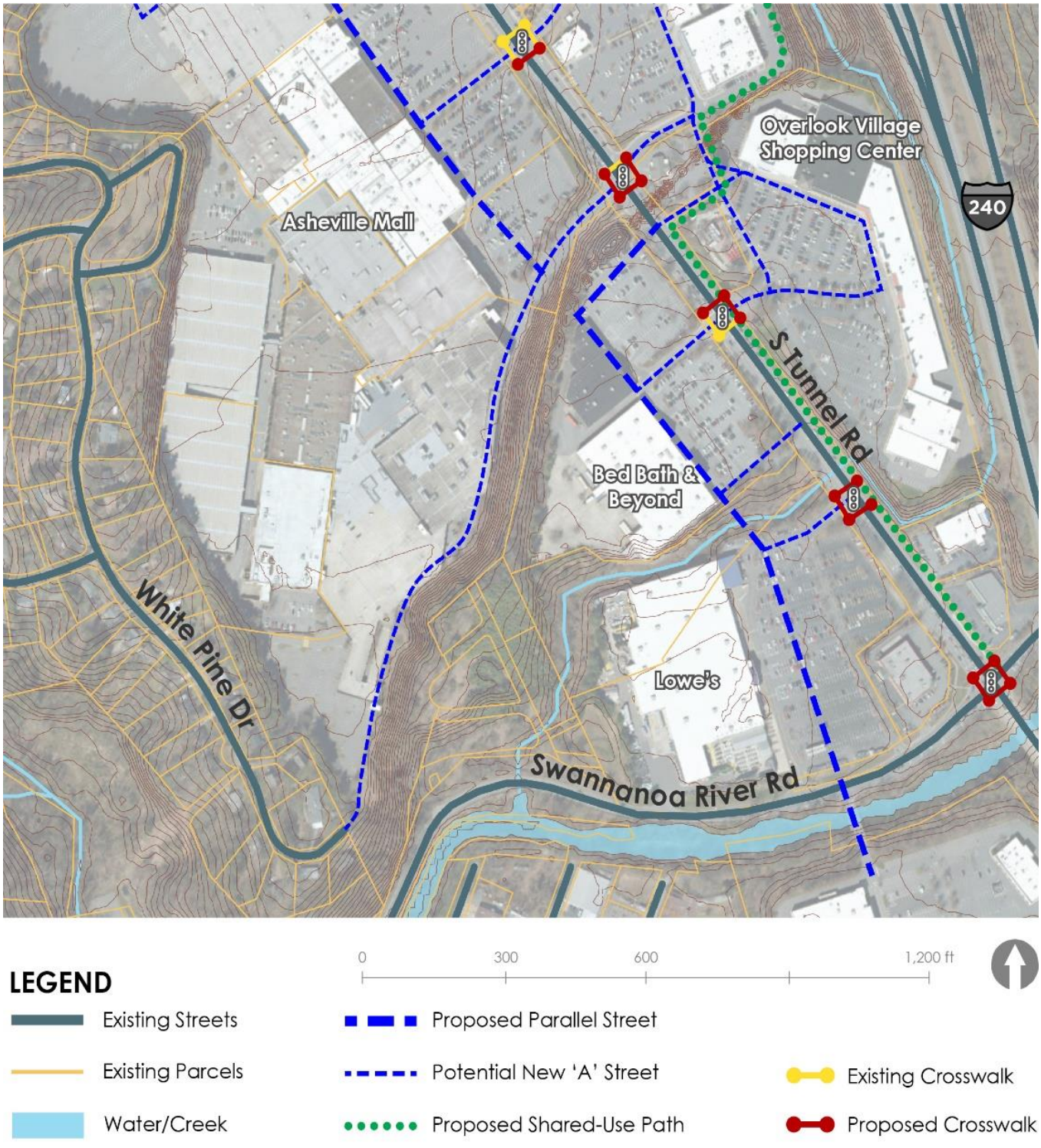


Figure 29: Proposed Street Network: South Tunnel Road from Tunnel Road to Swannanoa River Road

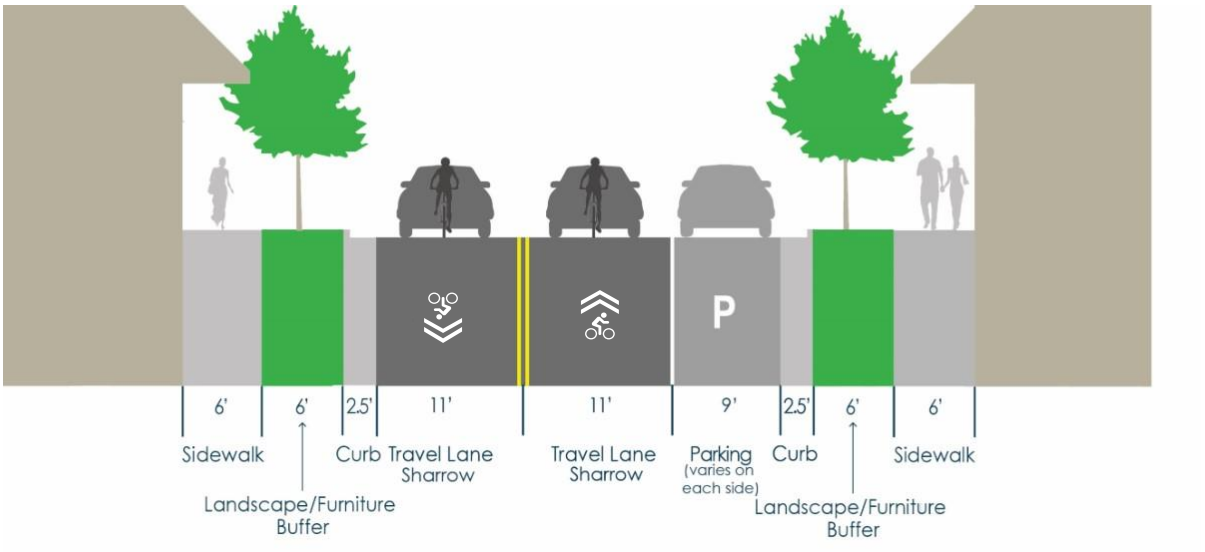


Figure 30: Proposed Parallel Street Cross Section

Tunnel Road Cross Sections Alternatives

The corridor's traffic analysis indicated that, while the section of the corridor along South Tunnel Road experiences substantial congestion, traffic volumes on Tunnel Road between Beaucatcher Tunnel and South Tunnel Road are below capacity and Average Annual Daily Traffic (AADT) along the corridor has been historically fading. City plans for growth and market conditions suggest that redevelopment will introduce new hotels and housing to the mostly retail uses currently present. These trends present an opportunity to reallocate the existing roadway space as well as reconfigure access points, thereby addressing the corridor's current traffic safety and multimodal challenges.

With a reduction in the number of travel lanes in key areas along the corridor, the result would be reduced lane shifting by drivers (i.e., less weaving, which would increase safety). An increase in the number of center turn lanes along Tunnel Road would increase operational efficiency, as capacity is currently being lost when drivers stop in the middle of travel lanes to make turns.

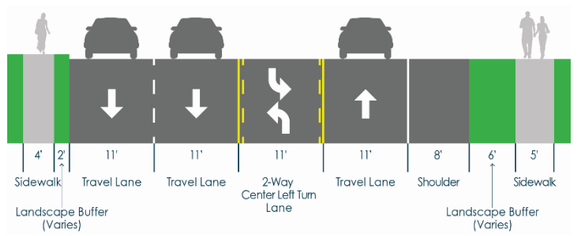
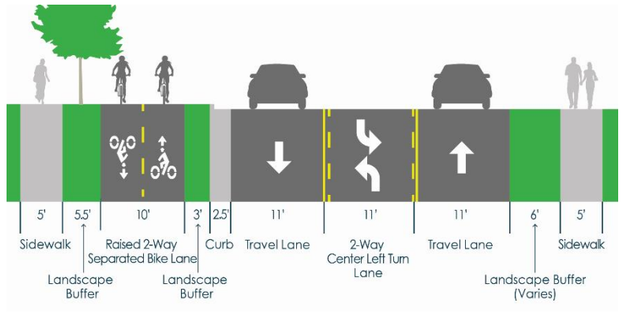
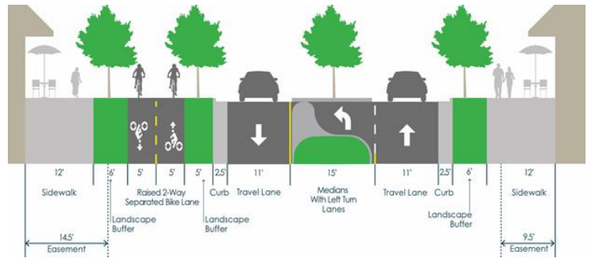
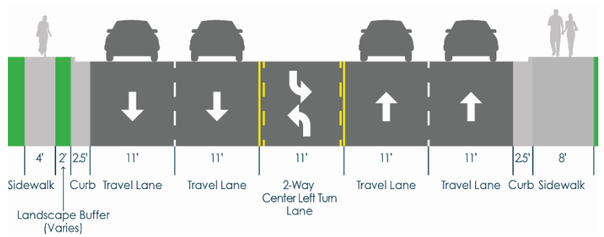
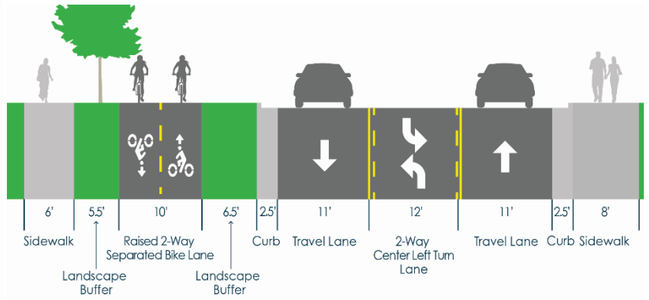
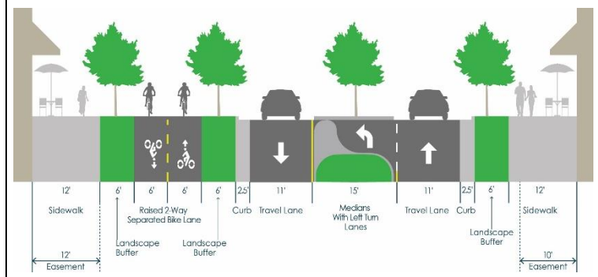
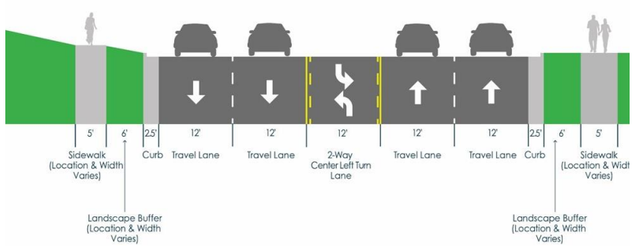
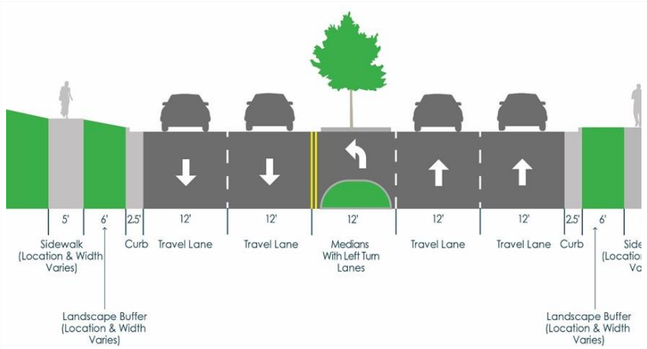
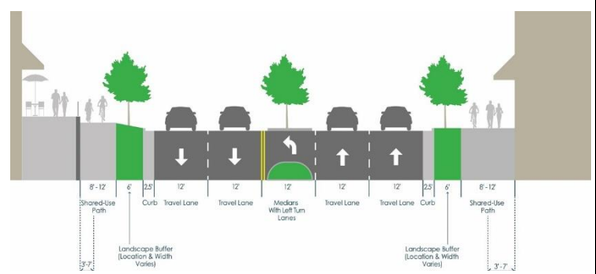
Road space reassignments were evaluated using the Synchro files and data provided by NCDOT Division 13 for the PM peak hour, the weekend midday peak hour and the holiday peak hour. The analysis summary focuses on reporting the weekend midday peak hour as this timeframe yielded the highest traffic volumes of the 3 scenarios. Based on this analysis, two alternatives were prepared: one within the existing right-of-way and a second requiring redevelopment and frontage easements. Table 5 shows the various road space reassignment configurations. To test the worst-case scenario, the configurations were developed using the traffic level of service for the worst performing movement to demonstrate how the removal of a travel lane could accommodate a shared use path along the west side of the corridor. This analysis incorporated the following assumptions and mitigations:

- This was a high-level planning exercise to identify fatal flaws and potential mitigation strategies for reassigning road space along the corridor. The analysis did not include a detailed re-timing or evaluation of the signal timing or a full geometric concept sketch.

- Synchro files provided by Division 13 were utilized and the analysis did not include reviewing or fixing any base model issues that may be present.
- There were no changes to clearance times, pedestrian or RTOR timings and settings.
- The only modifications made included lane configurations, timings and cycle lengths (adjusted splits and offsets, etc.).
- Mitigations for reassigning road space on Tunnel Road included making spot improvements for most side street approaches, including separate left-turn lanes and thru-right lanes and re-aligning the side street approach so that split phasing could be removed to provide more green time to the main street phase.
- Right-turn auxiliary lanes at Chunns Cove and I-240 were maintained where the right-turn volumes were high.
- At the Tunnel Road/South Tunnel intersection, the eastbound dual signal-controlled right-turns were adjusted to a single right-turn slip lane with a yield onto South Tunnel Road that will improve flow and lane utilization. This removes the right lane that becomes a right-turn lane drop that currently creates driver confusion.

Note, that the movement with the worst LOS score is reported and the analysis focused on the weekend midday peak, as that was the most congested condition. In the road space reassignment scenario, all intersections north of Kenilworth Road maintain or improve in LOS for the main movements on Tunnel Road.

Table 5. Road Space Reassignment Alternatives and Traffic Operations Summary Along Tunnel Road

Segment	Intersection	Existing Weekend Peak LOS*	Road Space Reassignment Weekend Peak LOS*	Existing Typical Cross Section	Proposed Typical Cross Section: Road Space Reassignment within Existing Right-of-Way	Proposed Typical Cross Section: Road Space Reassignment (with Development)
Beaucatcher Tunnel to Chunns Cove Road	Ingles Driveway	E (EB Left)	E (EB Left)			
	Innsbruck Mall/ Chunns Cove Road	E (EB approach and WB Thru)	F (EB Left)			
Chunns Cove Road to I-240 Off Ramp	I-240 Ramps/ Car Wash Driveway	D (WB Thru and EB Thru/Left)	E (WB Thru and EB Left)			
I-240 Off-Ramp to South Tunnel Road	Kenilworth Road	D (EB/WB Thru)	E (EB Left and SB Thru)			
	White Pine Drive	E (EB Left)	F (SB Thru)			
	South Tunnel Road/I-240	F (SB Thru-left)	F (SB Thru-left)			

*Note, movement with the worst LOS is reported.

Each of the street cross section alternatives was evaluated against the criteria identified and summarized in the below table. While the road space reassignment does create a slight increase in delay, strategies can be applied to mitigate the traffic impacts while the reallocation of roadway space will likely reduce weaving, provide safer and more comfortable bicycle and pedestrian facilities, increase multimodal connectivity and support the urban development proposed as part of the Living Asheville Plan.

Table 6. Alternatives Analysis for Road Space Reassignment Scenarios Along Tunnel Road

Alternative	Traffic Safety	Traffic Operations	Ped/Bike Safety & Comfort	Connectivity	Supports Living Asheville Plan	Access Management	Transit	Cost/ Feasibility
No Build	○	◐	○	○	○	○	◐	●
Road Space Reassignment - Within existing ROW	◐	◐	◐	◐	◐	◐	◐	◐
Road Space Reassignment - With redevelopment easements	●	◐	●	●	●	◐	◐	◐

○ Low performing
◐ Medium performing
● High performing

Key Intersection Alternatives

Tunnel Road/Chunns Cove Road Intersection

Chunns Cove Road provides the most immediate access between the commercial assets along Tunnel Road and the Chunns Cove neighborhood north of I-240. It also provides on/off access to I-240. The intersection is a major access point for the Innsbruck Mall site and is adjacent to one of the most highly utilized bus stops along the corridor. Pedestrians crossing Tunnel Road have long wait times and stakeholders shared anecdotes that they see pedestrians crossing against the light to make an arriving bus, as missing a bus could result in over an hour wait for the next bus.

Stakeholder engagement and community comments inquired about the feasibility of a roundabout here. Based on this input, 2 alternatives were evaluated:

- **Option A: Road space reassignment with minor intersection improvements to improve existing pedestrian crossings.**
- **Option B: Single Lane Roundabout.**

Option A: Reassignment of road space with minor intersection improvements to improve existing pedestrian crossings.

In this alternative, the reassignment of road space would reduce crossing distance for pedestrians across Tunnel Road. The re-alignment of the west eastbound approach could also straighten the crosswalk at the intersection and provide opportunities for bump outs and reducing crossing distances across Chunns Cove Road.

Option B: Single Lane Roundabout

For this alternative, the current signalized intersection would be converted to a single lane roundabout. This would provide staged crossing opportunities with reduced crossing distances for pedestrians. It would also reduce traffic speeds while providing continuous flow through the intersection. The roundabout also provides an opportunity for traffic to make U-turns in the absence of a parallel street network and helps ensure business access is maintained along Tunnel Road if a median were to be built in future years. Figure 31 provides a diagram of the estimated footprint and lane configuration of the proposed roundabout.

The concept demonstrates one potential roundabout layout for the intersection. The concept shown is intended to minimize impacts to the adjacent parking lot and site circulation, while demonstrating the potential feasibility of a roundabout alternative. Alternative size, shape, and placement options are possible and should be further explored if the roundabout alternative is advanced. A potential roundabout at this location is compatible with all currently proposed Tunnel Road typical section alternatives. However, alternate typical sections may require adjustment to the roundabout shape and position as well as the configuration of the facilities for people walking and biking.

Figure 31: Footprint Diagram of a Single Lane Roundabout at Chunns Cove Road (Note, this is not a concept design, but shows the estimated footprint and space likely needed)

Table 7 summarizes the traffic operations for the existing conditions at the intersections as well as Option A and Option B alternatives. While Table 8 summarizes how each alternative performs against the criteria identified above.

Table 7. Weekend Peak Traffic Operations Summary for the Existing Conditions, Road Space Reassignment and Single Lane Roundabout at Tunnel Chunns Cove Road (Weekend Midday peak)

	Northbound		Southbound		Eastbound		Westbound	
Alternative	**Approach LOS**	**95th Percentile Queue (ft)**	**Approach LOS**	**95th Percentile Queue**	**Approach LOS**	**95th Percentile Queue**	**Approach LOS**	**95th Percentile Queue**
No Build	B	150	C	290	E	125	E	165
Road Space Reassignment	B	180	C	440	F	200	E	150
Single Lane Roundabout	D	585	D	640	C	80	D	185

*Note, operations for the worst turning movement is reported and queue lengths are rounded up.

Table 8. Alternatives Analysis for the Chunns Cove Road/Tunnel Road Intersection

Alternative	Traffic Safety	Traffic Operations	Ped/Bike Safety & Comfort	Connectivity	Supports Living Asheville Plan	Access Management	Transit	Cost/ Feasibility
No Build	○	◐	○	○	○	○	◐	●
Road Space Reassignment	●	◐	◐	◐	◐	●	◐	◐
Single Lane Roundabout	●	◐	◐	◐	●	●	◐	○

○ Low performing
◐ Medium performing
● High performing

White Pine Drive/Tunnel Road/South Tunnel Road Intersection

The intersections of White Pine Drive/Tunnel Road and Tunnel Road/South Tunnel Road/I-240 off ramp are a clear "pinch-point" along the corridor that has a lot of traffic volume and turning movement activity going through the intersections. The Tunnel Road/South Tunnel Road intersection does not currently have any pedestrian, bicycle or transit accommodations. However, it is a gateway intersection to the South Tunnel Road commercial area for all modes of travel, and for pedestrians and bicyclists traveling east of the intersection. The closest pedestrian crossing to continue along Tunnel Road across South Tunnel Road is Peaks Center Lane to the south of the intersection. The crossing requires almost 1,000 feet of out of direction travel to cross three legs of the Peaks Center Lane intersection. This creates over four minutes of delay for a pedestrian traveling east-west along the corridor.

Since the intersections are spaced at about 400 feet, these alternatives were evaluated as a "system" also able to address the pedestrian and bicyclists needs. Stakeholder engagement and community comments requested that a roundabout be considered here. Based on this input, 3 alternatives were evaluated:

- **Option A:** In conjunction with the road space reassignment, spot intersection improvements to improve existing pedestrian crossings
- **Option B:** A 2-Lane Roundabout
- **Option C:** Quadrant Plan with I-240 Interchange

Option A: In conjunction with the road space reassignment, provide near-term intersection improvements to improve existing pedestrian crossings.

This alternative would provide a marked pedestrian connection across South Tunnel Road and on the west leg of the intersection across Tunnel Road. The re-alignment of the west eastbound approach could also provide more green or placemaking space for a multiuse path on the southwest corner and a continuous eastbound, northbound and southbound right turn lane through a channelized lane. A challenge to this alternative is the need to re-align White Pine Drive to connect with Buckingham Place. The re-alignment would increase the distance between the signals to provide additional queue storage capacity for the eastbound approach and relocate to the signal to a safer intersection for pedestrians crossing to bus stops located there.

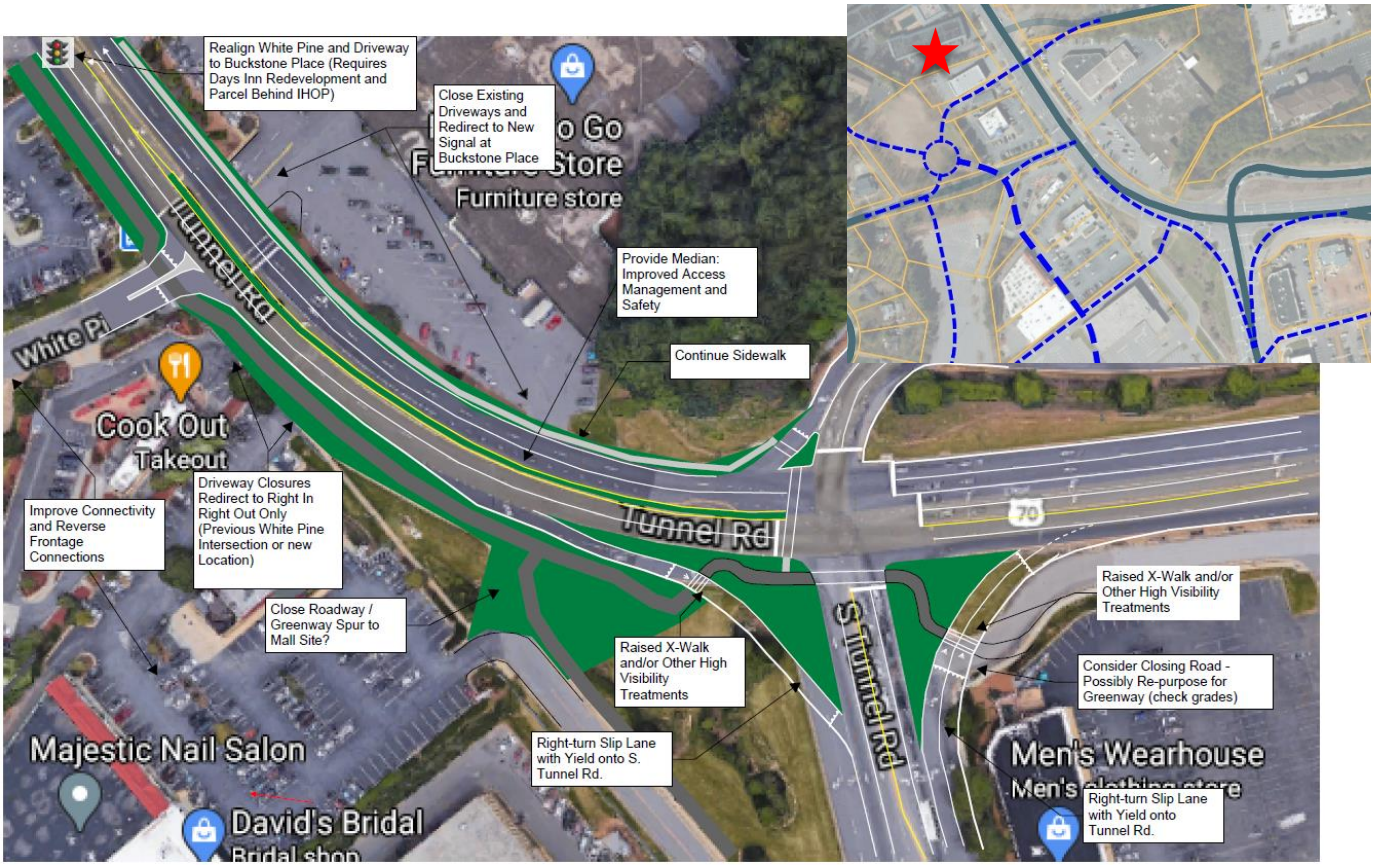


Figure 32: Diagram of Road Space Reassignment Concept at Tunnel Road/South Tunnel Road

(Note, this is not a concept design, just a depiction of the estimated footprint and potential mitigations)

Option B: A 2-Lane Roundabout

For this alternative, the current signalized intersection would be converted to a two-lane roundabout. This would provide staged crossing opportunities with reduced crossing distances for pedestrians. It would also reduce traffic speeds while providing continuous flow through the intersection. The roundabout also provides a structured opportunity for U-turns However, the roundabout footprint is large and while it provides staged crossing for pedestrians, is does not reduce the number of potential conflict points. The roundabout would also require metering the South leg, where a signal would permit vehicles to enter the roundabout, to manage queues on the north leg so that queues did not spill back onto I-240.

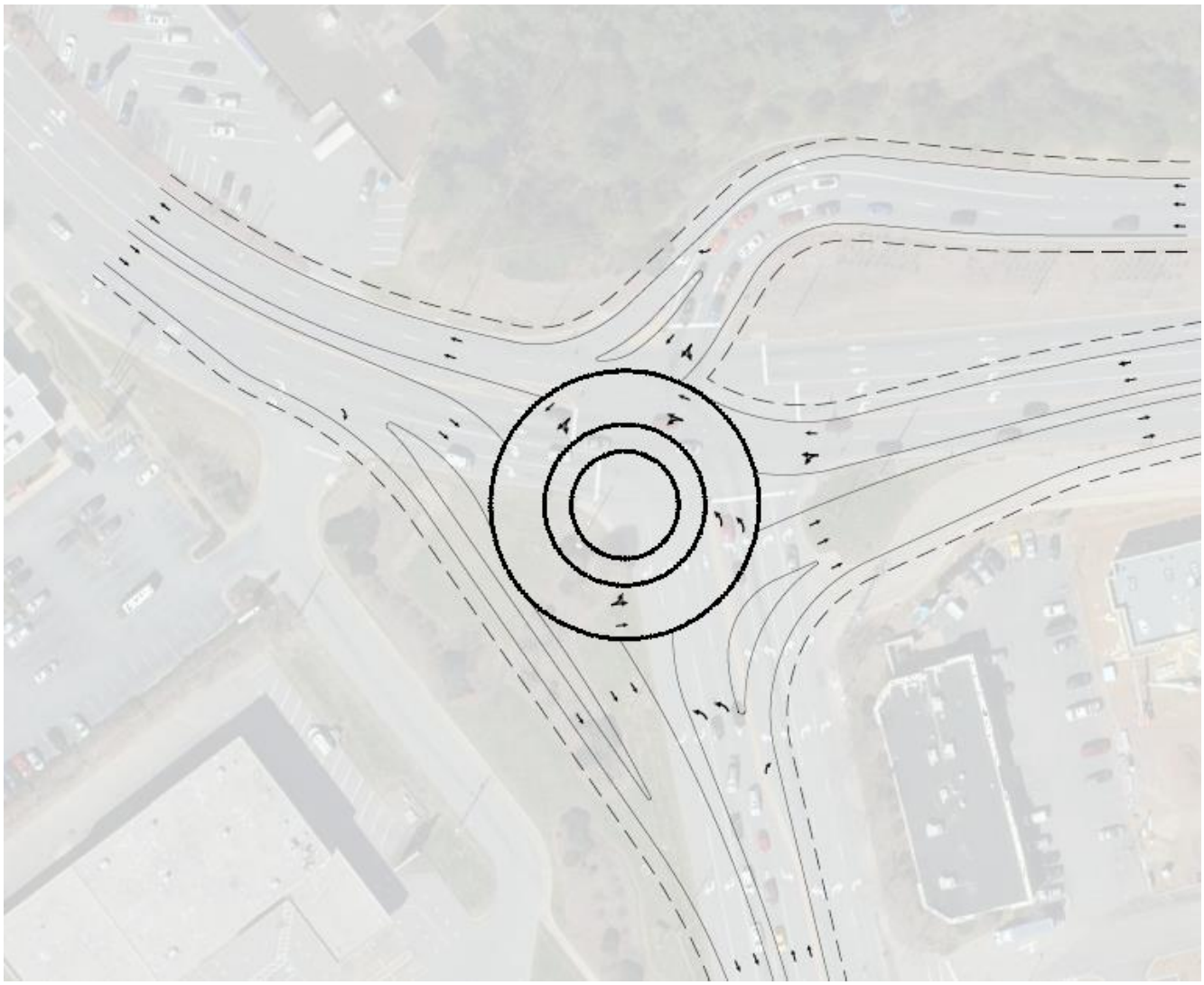


Figure 33: Footprint Diagram of a 2-Lane Roundabout at Tunnel Road/South Tunnel Road
(Note, this is not a concept design, just a depiction of the estimated footprint and lanes needed)

Option C: Quadrant Plan with I-240 Interchange

The intersection of Tunnel Road/South Tunnel Road point-loads a lot of traffic and turning movements due to high volumes on multiple approaches. This requires one intersection to accommodate heavy turning movements, while providing sufficient through green time and allowing for traffic flow on and off I-240. This condition also makes it difficult to accommodate a pedestrian or trail crossing, particularly one that would provide through connection to communities east of I-240. The interchange, itself, also provides multiple options for traffic to travel eastbound and westbound, including the ramps and the through portion of Tunnel Road. In conjunction with the proposed network plan, there is an opportunity to develop a quadrant plan that simplifies the interchange movements and disperses the high demand turning movements at Tunnel Road/South Tunnel Road over several intersections.

In this alternative, depicted in Figure 34, The I-240 Interchange with Tunnel Road could be simplified by leveraging the on/off ramps as one-way pairs. Tunnel Road to South Tunnel Road could then be straightened out and the on/off ramps, which would also accommodate the eastbound/westbound through Traffic on Tunnel Road, could be re-aligned into a series of T-intersections. This would create a more direct through movement from Tunnel Road to South Tunnel Road (currently the eastbound right turns accommodated with a double right) and provide additional green time for traffic coming off of I-240 onto South Tunnel Road. The quadrant plan would also eliminate the underutilized through lane that currently goes under the interstate.

The below figure depicts the new network connections and re-routes the weekend midday peak hour traffic volumes. Assuming similar Peak Hour Factors and coordinated signal timing with Tunnel Road, the anticipated LOS is also depicted in Figure 34.

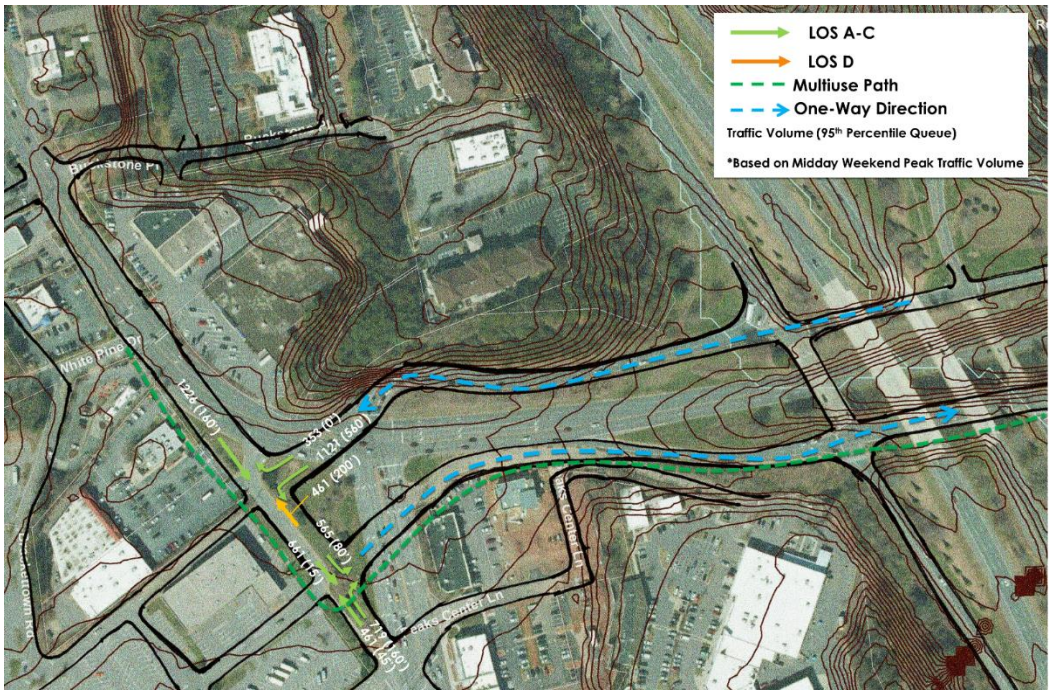


Figure 34: Tunnel Road/South Tunnel Road Quadrant Plan & Weekend Midday Peak Traffic Operations Summary

Table 9 summarizes the traffic operations for the existing conditions at the intersections as well as Option A and Option B alternatives. While Table 10 summarizes how each alternatives perform against the criteria identified above.

Table 9. Traffic Operations Summary for Alternatives at Tunnel Road/ South Tunnel Road Intersection (Weekend Midday peak)

	Northbound		Southbound		Eastbound		Westbound	
Alternative	**Approach LOS**	**95th Percentile Queue**	**Approach LOS**	**95th Percentile Queue**	**Approach LOS**	**95th Percentile Queue**	**Approach LOS**	**95th Percentile Queue**
No Build	D	210	F	665	D	335	D	110
Road Space Reassignment	E	250	F	675	B	225	E	110
2- Lane Roundabout	D	390	E	345	C	100	A	35

*Note, operations for the worst turning movement is reported and queue lengths are rounded up.

Table 10. Alternatives Analysis for White Pine Drive/Tunnel Road/ South Tunnel Road Intersection

Alternative	**Traffic Safety**	**Traffic Operations**	**Ped/Bike Safety & Comfort**	**Connectivity**	**Supports Living Asheville Plan**	**Access Management**	**Transit**	**Cost/ Feasibility**
No Build	○	◐	○	○	○	○	◐	●
Road Space Reassignment	●	◐	◐	◐	●	●	◐	◐
2- Lane Roundabout	○	○	◐	○	◐	◐	○	○
Quadrant Plan	●	●	●	●	●	●	◐	◐

○ Low performing
◐ Medium performing
● High performing

Public Engagement

A community meeting was held on April 14, 2021, to present existing conditions findings, goals and needs for the corridor, stakeholder and public input previously received, transportation recommendations, and next steps, followed by a time of discussion and commenting by attendees. A total of 43 community members attended the meeting. The purpose of the Tunnel Road Corridor Study is to examine an approximate 1.8-mile section of Tunnel Road that parallels I-240 to the west and propose strategies relating to congestion, pedestrian and cyclist safety, and connectivity along and across the road. The Tunnel Road Corridor study area is between Beaucatcher Tunnel to Swannanoa River Road. Tunnel Road has few residents but there are approximately 4,300 corridor jobs. Asheville Rides Transit (ART) serves the corridor, and the amount of average annual daily traffic (AADT) varies from 12,500 vehicle per day (vpd) to 19,000 vpd.

The Corridor Study team has taken an initial deep dive into the transportation network, met with numerous stakeholders and evaluated existing conditions.

A Virtual Community Meeting was held on April 14, 2021, to go through the existing conditions, transportation including bicyclists and pedestrians, land use, traffic safety, access, and enable early conversations with the public about potential transportation projects before they reach design. The Corridor Study Team covered the ideas and needs from the public for the corridor that had been received to date. Below is a summary of the recommendations presented by the Corridor Study Team and the public comments on the recommendations.

Summary of Recommendations

- Proposed new network – new streets and path connect to Tunnel Road and S. Tunnel Road.
- New parallel street along the west side.
- Intersection Realignments.
- Lane Reduction (Shared Use Path).
- Improve pedestrian facilities and crossings.
- Vehicle Access improvements

Summary of Public Comments, Issues and Concerns

- Traffic volumes along the corridor.
- Additional pedestrian traffic.
- Pedestrians crossing Tunnel Road where there are no cross walks or dangerous spots.
- Transit routes and stops along Tunnel Road.
- Stormwater runoff and sedimentation issues with Kenilworth Lake.
- Pedestrian walking areas can be crime escape routes from the mall area.
- Driveway access to businesses should be maintained.
- Intersection alignment at Kenilworth Road / Kenilworth Knolls and Tunnel Road.
- Reducing lanes could slow traffic down.
- Traffic conflicts exiting businesses along Tunnel Road.
- White Pine is a way that the homeless walk into neighborhoods.
- Greenway tie-in.
- Entry and access into Kenilworth Forest.
- Traffic backs up frequently from I-240 onto Tunnel Rd, Chunns Cove Rd also backs up into Tunnel Road during AM and PM times.
- Benefit of the new connector to the south end of White Pine.
- Traffic circle at White Pine.
- Corridor lines through established neighborhoods-all of Kenilworth Forest, all around Kenilworth Lake, and way up into the Kenilworth neighborhood.
- Preserve beauty of the Kenilworth Forest community.

IMPLEMENTATION PLAN

Creating a compelling vision plan is the first step in transforming the Tunnel Road corridor into a place that will develop in the way the community envisions. A series of coordinated and facilitated steps turn the vision into reality. Through the market assessment and focused discussions with developers, several potential implementation tools were explored to fund and catalyze the desired changes along the corridor. **The high potential for redevelopment along Tunnel Road in coming years provides a unique opportunity to offset and leverage any private investment that might not otherwise be available to build Living Ashville's vision of a walkable inviting district.**

Figure 35, below, depicts the typical implementation process that the corridor redevelopment could undergo, starting a planning phase (current), followed by an identification of funding sources, design, construction, and maintenance.

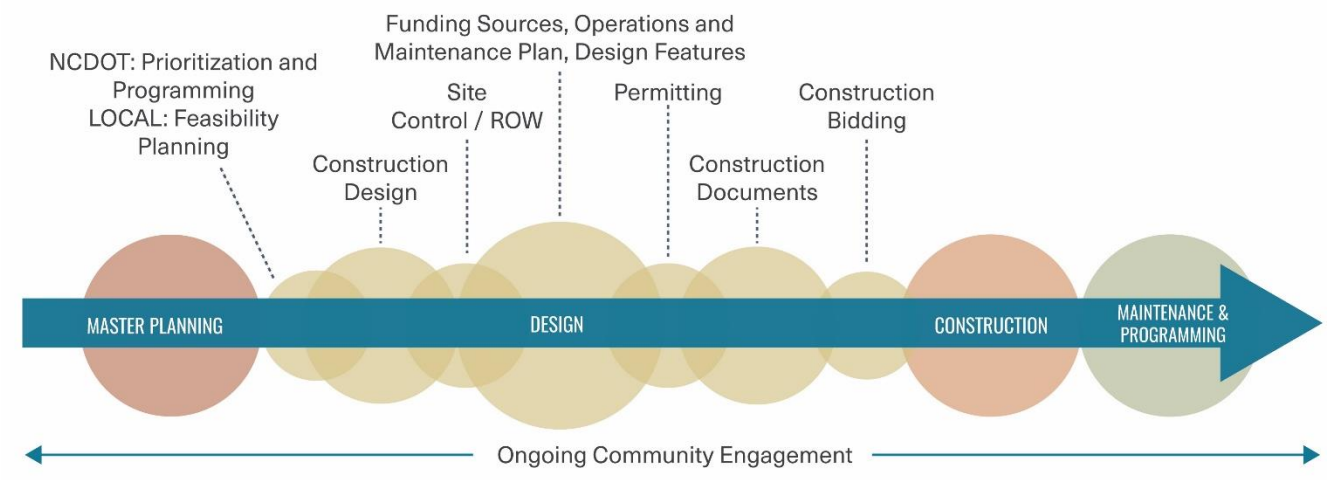


Figure 35: Life Cycle of a Transportation Project

Pilot: White Pine Drive Relocation

The intersection of Tunnel Road with White Pine Drive has been selected as a pilot site for realignment, through coordination with local agencies and NCDOT. This location would realign White Pine Drive as shown in Figure 36, allowing for this key location to serve as a preliminary redevelopment site to prime agencies for future redevelopment and to prepare for continued changes as the corridor continues to evolve.

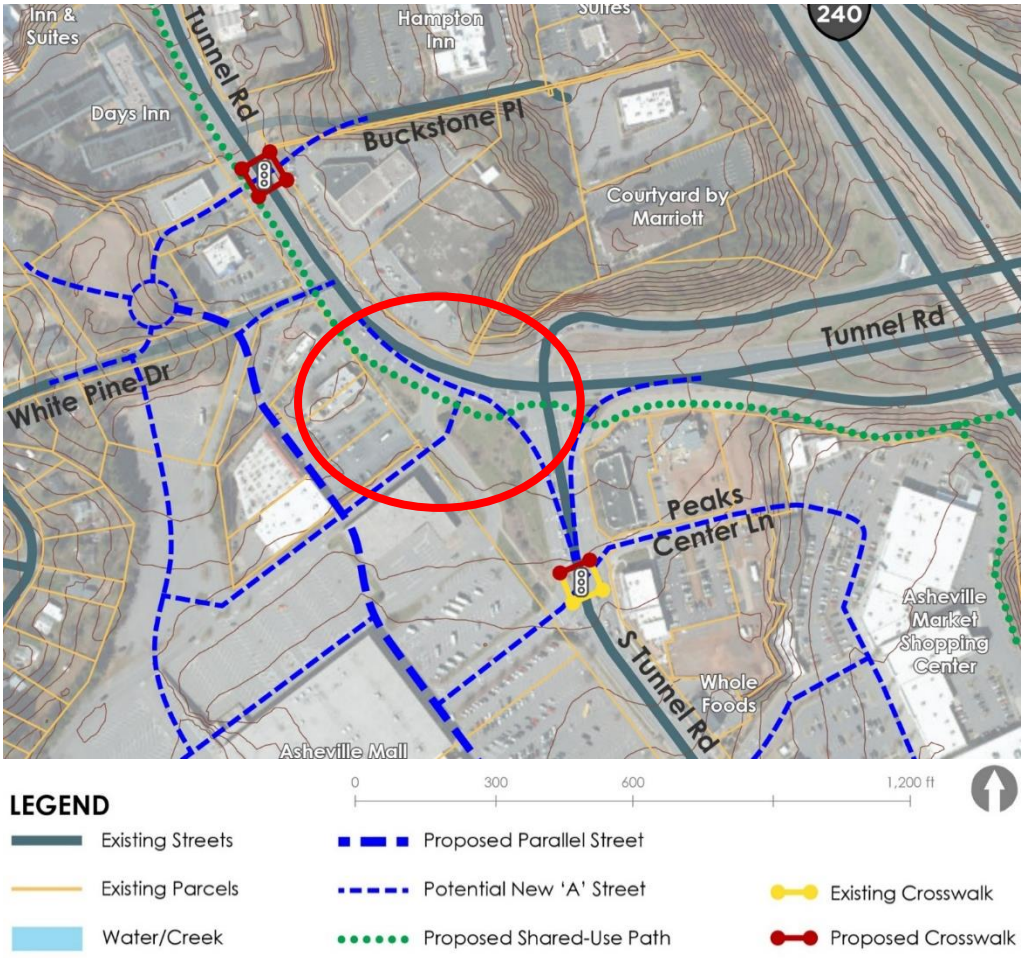


Figure 36: ***White Pine Drive Relocation Pilot***

Street Network Development Process

The development of the parallel street, grid street network, and access management strategies are expected to take place incrementally through a series of new connections with future redevelopment. Alignments may change over time as development challenges and site constraints present themselves.

Public-private partnerships and creative strategies for coordination between local officials and developers, including a capitalization of key site for change, are necessary for successful implementation of the proposed changes in this plan. This will require a working relationship between development partners, city staff and funding agencies. Potential funding opportunities are discussed in the next sections.

Opportunities for Private-Public Partnerships

Plans come to life when the public and private sectors work together to invest in the community. The most robust transformations happen when public and private players go beyond their conventional roles and adopt a more dynamic strategy for getting things done.

The typical regulatory role of local governments in the land development process is to create a general plan and zone property to the desired use. The role of private developers is to acquire real estate and develop (or redevelop) it according to prescribed zoning and market demands. Sticking to these norms might result in development happening in an orderly fashion, but is unlikely to create a coordinated, transformational outcome. Even under favorable market conditions, achieving an ambitious vision requires a broad range of tools to supplement the authority provided by zoning.

The Tunnel Road Corridor Plan emerging here addresses the full range of elements needed to change the corridor according to the community's vision. These elements include:

- Land use
- Real estate market conditions
- Street connectivity
- Walking, bicycling, and transit conditions
- Accessibility
- Urban design
- Traffic conditions
- Safety

The ideas in the plan, which were developed through conversations with the community and key stakeholders, can make a difference in this part of Asheville. The next step is to explore how the plan gets built.

Infrastructure Funding

Local governments in North Carolina have financing options available for building infrastructure needed to support development prior to development occurring. Those options generally can be described in the matrix below:

Table 11. Infrastructure Funding Options in North Carolina (in addition to negotiated development mitigation)

Funding Mechanism	Application	Support required
General Obligation Bonds	Capital Improvement Program	Referendum required: Asheville currently using 2016 referendum funding of $74 million
Project Development Financing (TIF)	Used to stimulate private investment in infrastructure (streets, parking, utilities) and amenities with development	Requires detailed plan. County and Local Government Commission approvals
Synthetic TIF/Grant	City reimbursement of agreed upon developer funded "public purpose" improvements	City Council Resolution Developer agreement
Municipal Service Districts (MSD), Business Improvement District (BID) or Innovation Districts	Contractor use for branding, marketing, events, install, repair or extend infrastructure; Raise private funds	80 special districts in NC; Added property tax of $0.0100 to $0.7771/$100; City authority over funding
Special Assessment	Streets and sidewalks, water and sewer services, storm water	Cost sharing through petition from property owners

General Obligation Bonds

General Obligation (GO) bonding is a mainstay of local government infrastructure financing. It provides debt financing secured by the "faith and credit" of the local government's ability to repay the bonds through its taxing authority. GO bonds are repaid from local governments' general funds. Issuing GO bond debt requires a referendum approved by voters and approval from North Carolina's Local Government Commission. The governing body approves capital funding and debt repayment into its annual budget.

Asheville voters approved a $74 million bond package in 2016 that is being used for a variety of projects. The city's triple A bond rating translates into low-cost borrowing. Given the high potential for redevelopment along Tunnel Road, this funding mechanism would help to offset and leverage any private investment toward Living Ashville's vision for this area.

Project Development Financing (Tax Increment Financing)

North Carolina statutes authorize tax increment financing (TIF) as a way for local governments to issue debt secured by incremental growth in property tax revenue within a designated district. The purpose is to stimulate and benefit private investment.

Before using the tool, local governments must create a project development financing plan documenting conditions within the district and how projects being financed will stimulate growth.

Project development financing provides opportunities for partnerships between local governments and with land developers. A city and county may jointly finance projects within the districts and may pledge revenue from other sources. Local governments may enter agreements with property owners to set a minimum assessed tax value to guarantee value and revenue growth.

Project development bonds have a time limit of 30 years or until the bonds are satisfied, whichever is earlier. Interest on the bonds may be capitalized during construction and up to seven years after completion. Tax increment bonds typically carry higher interest costs than GO bonds due to the perception of higher risks.

The NC Local Government Commission must approve the project development financing plans and the county has 28 days to disapprove of the plan. No voter approval is required.

Only two tax increment finance projects have been established in NC, one was in the Town of Woodfin in Buncombe County in 2008.

Tax Increment Grant/Synthetic TIF

Tax increment grants or synthetic TIFs can be powerful tools for working with land developers to deliver infrastructure as part of targeted development proposals. They are designed to imitate project development financing under the presumption that the increased property tax revenues will cover project costs. **The tool works best when local governments have planned ahead for the desired development pattern and the infrastructure needed to support it,** such as through the proposed improvements in this study.

The local government jurisdiction typically enters into a developer agreement that outlines benefits to both the developer and the general public. The developer usually builds the infrastructure, and the city reimburses all or a portion of the cost based on the increased tax revenue. The arrangement may be funded through general obligation bonds although more commonly it is treated as installment purchase financing.

Tax increment grants or synthetic TIFs are less involved than project development financing since they rely on available financing methods. It does not require establishing a separate district or a prescribed financing plan. It can be established through simple resolution by the governing body.

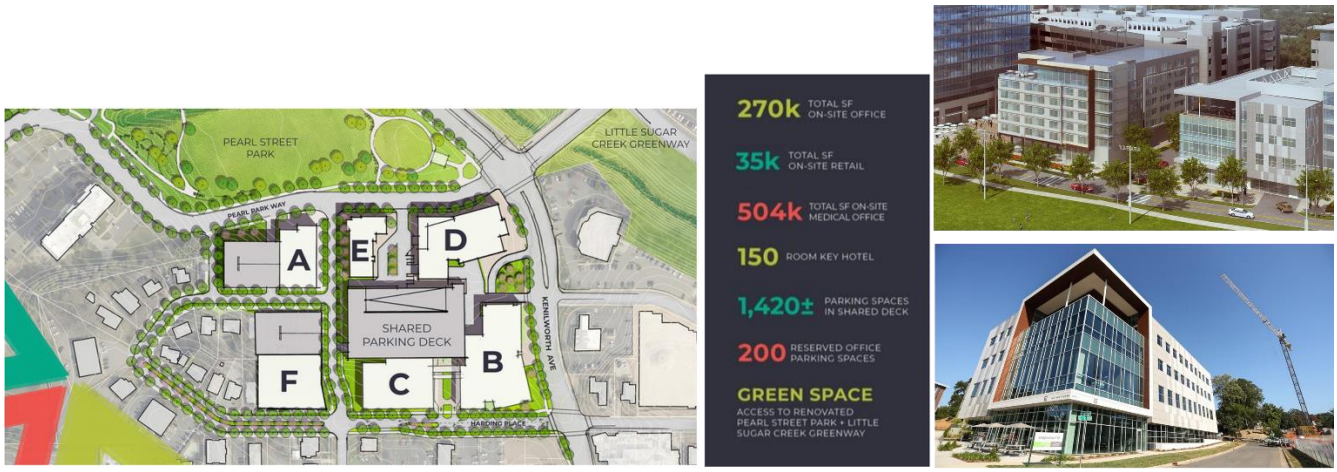


Figure 37: Midtown/Pearl Street Park Tax Increment Grant Example

Municipal Service Districts

Municipal service districts are defined areas where governing boards levy an additional property tax above the jurisdictions' general tax rate. They can be used to fund projects or to provide extra services that benefit properties within the district. Municipal service districts are sometimes called business improvement districts (BIDs), special districts or in Asheville, innovation districts. Approximately 80 special districts for various purposes are established in NC, not including fire districts.

Municipal service districts can be used for a wide range of uses such as urban revitalization, marketing and promotion, transit-oriented development, streets, sidewalks, parking, flooding, erosion control, façade improvements, etc. The city must demonstrate that the proposed district is in need of identified projects or services "to a demonstrably greater extent" than other areas within the municipality. Services and projects may be provided by the municipality, through contract with another government agency, through contract with a private entity, or any combination.

A local government may establish a municipal service district by ordinance. The local government may enter a contract with a third party to operate the municipal service district but maintains final authority for use of funds generated within the district. The district has no borrowing authority apart from the municipality.

Added property tax districts within municipal service districts in NC range from $0.0100 to $0.7771 per $100 valuation. Maximum additional tax rate permitted is $1.50/$100 valuation unless approved by voters residing in the district.

Special Assessments

Local governments may charge special assessments directly to property owners to fund targeted infrastructure that provides a direct benefit to adjacent properties. Projects may include streets and sidewalks, water and sewer services, storm water and other improvements.

Assessments are available only by petition from property owners who own a majority of linear frontage for streets and sidewalks. Up to 50% of cost of the project may be assessed unless all property owners subject to assessment agree to a higher percentage. The assessment process includes public hearings and governing body resolutions.

An assessment may be based on frontage, land area served, increased land value due to improvements, number of lots served or combination. Assessment revenue may not be pledged as security for loans.

The local government must complete public improvements before imposing assessments. Assessment may be paid in annual installments up to 10 years with no more than 8% annual interest rate. Unpaid assessment liens may be foreclosed as unpaid property taxes.

It's a Team Sport

Transformational projects involve both public and private sectors using a mix of planning and financing tools, in partnership, to bring about the desired outcomes. A case Study of North Tryon Street from Charlotte demonstrates how bringing public and private sector partners together and using various financing approaches bolstered development and provided high quality public infrastructure. In this case, the City of Charlotte created partnerships and negotiated win-win strategies with NCDOT, the County and developers to implement denser mixed-use development to support transit-oriented development along the North Tryon Street Blue Line Light Rail extension. This included building a network of streets that added connectivity to and parallel street connections to the Tryon Street corridor while also addressing traffic mitigations needed from the interchanges of I-85. The city, NCDOT, CATS and the developers created an action plan together, which created a basis for a developer memorandum of understanding (MOU) to spur re-development along the corridor and cost-share needed infrastructure to support it.

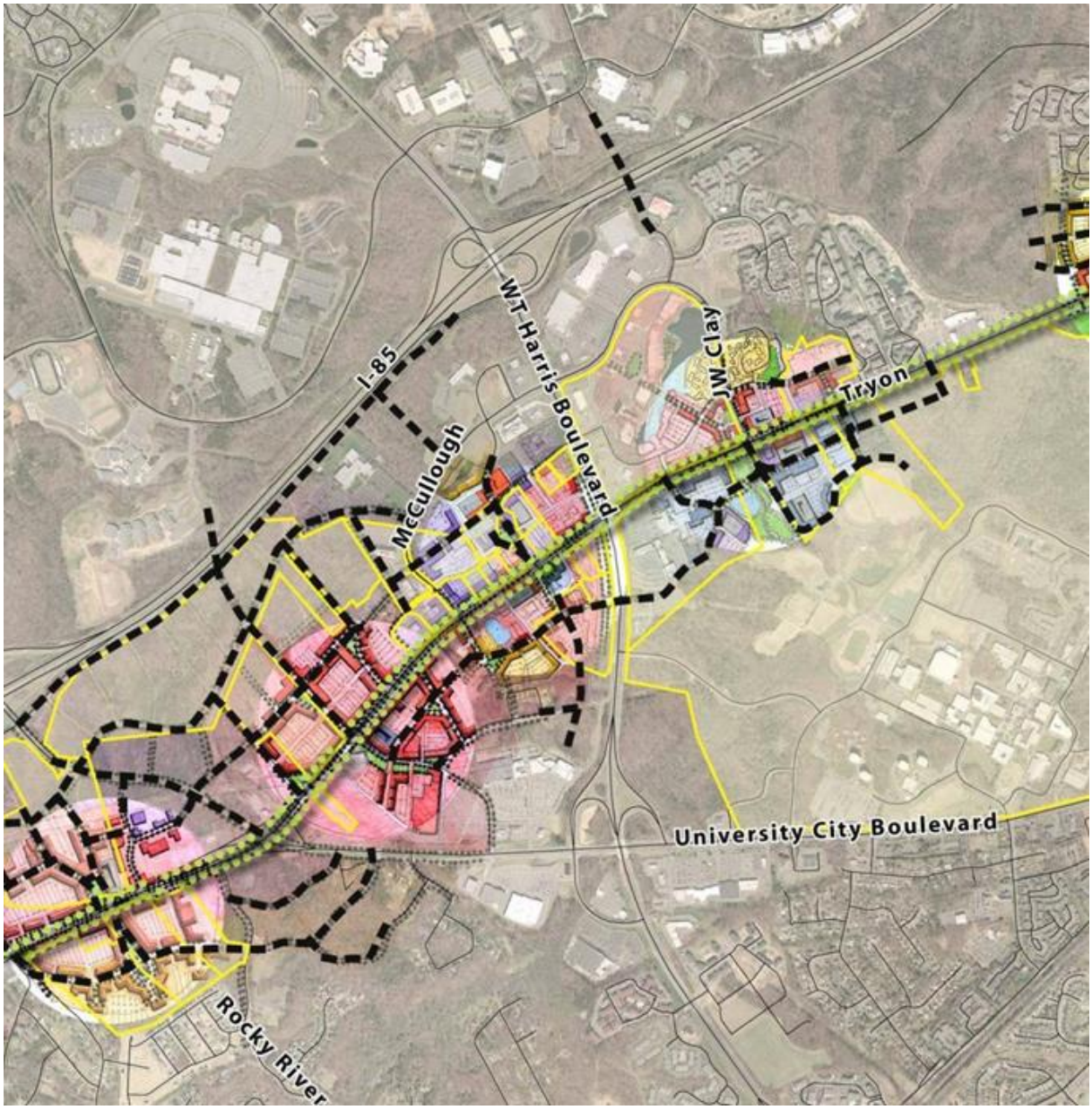


Figure 38: North Tryon Street 'Network of Streets' Plan, created with developers in 2005 over a 2-day workshop (Source: City of Charlotte)

Funding Next Steps

The Tunnel Road Corridor vision will take a series of steps to implement and achieve the full potential and vision for the corridor. Table 12 summarizes a series of next steps for projects to be implemented and the resources needed to complete that phase.

Table 12. Summary of Next Steps for Implementation

Project Category	Project	Next Phase	Lead Agency	Resources* for Next Phase
Short Term Pedestrian Mobility Projects	*Increase crossing clearance time for existing crosswalks across Tunnel Road*	Evaluate corridor wide feasibility for re-timing	NCDOT	$100-250k
	Add new crosswalks and ADA ramps/signal equipment to existing signalized intersections	Add locations to existing work program		Varies per ADA needs @ upgrade location
	Evaluate opportunities for new pedestrian crossings (e.g. PHB, RRFB w/ Refuge Island or Signals)	Conduct pedestrian crossing studies and analysis to determine locations and possible treatment options for implementation		$100-200k
Key Intersection Projects	*White Pine Drive/Buckstone Place Re-Alignment*	• Feasibility study (preliminary engineering) including corridor operational evaluation and environmental investigations • Alternative's evaluation and ROW needs evaluation • Begin property owner coordination • Limited topographic survey	City/ NCDOT	$100-150K
	Tunnel/South Tunnel Road			$150-200k
	Kenilworth Road Re-Alignment			$75-100k
	Chunns Cove Road Intersection Alignment/Roundabout			$50-75k
Tunnel Road-Road Diet (Require Key Intersections Improvements)	*Road Diet with Minimal Right-of-Way Needs*	• Feasibility study (preliminary engineering) including corridor operational evaluation and environmental investigations • Alternative's evaluation and ROW needs evaluation • Begin property owner coordination • Limited topographic survey	City/MPO / NCDOT	$100-150k
	Road Diet with Redevelopment and Widening for Ideal Pedestrian Zone	• Adopt proposed street network as master plan • Conduct a detailed implementation study (identify the cross section and geometry along the corridor) • Use plan to guide private development (adopted through ordinance)	City	$450k-600K
Development Partnership Projects	*Parallel Connector Street, West of Tunnel Road*	• Adopt proposed street network as master plan • Conduct a detailed implementation study involving developer stakeholders • Use plan to guide private development (adopted through ordinance)	City	$500k
	Supporting "A" Street Network			
	Investigate shared parking & access opportunities			

APPENDIX A: STAKEHOLDERS ENGAGED

Agency representatives & Stakeholders Engaged in Topical Focus Group Discussions

Focus Area	Names/Organizations		
Hotel Owners/ Tourism	HP Patel, Best Western and Glow Hotel, Comfort Inn and True by Hilton Glenn Cox, Explore Asheville	Robert Foster, Virtelle Hospitality Monark Patel, HI Express, Comfort Inn & Suites, Fairfield Inn, Quality Inn Troy Ferguson, Homewood Suites	Pat Kappes, Explore Asheville Chris Cavanaugh, Explore Asheville, Interim Executive Director; Magellelon Consulting
Affordable Housing	Russ Davis, market rate apartment developer Rich Olejniczak, Mountain Housing, affordable rental development Aaron Green, Mountain Housing, Rose Architectural Fellow	Aaron Ryba, architect, design affordable and market rate, mixed use housing Geoffrey Barton, Mountain Housing Margie Rhinehardt-Bukowski, Weaver Cooke Robert Stevenson, Homeward Bound Robin Merrell, managing, attorney at Pisgah Legal, AH advocate	Nikki Reid, City of Asheville, City Community Eco Dev Director Paul D'Angelo, City of Asheville, Program Director Community Development Division Sage Turner, Chair, Affordable Housing Committee
Business Owners	Spencer Dawkins, Asheville Mall Sam Cerniglia, Asheville Mall	Kate Bannasch, Copper Crown Avl Corey Atkins, Chamber Gabe Jonas, Taco Bell Franchise Group	Chris Boyhan, Align Life Chiro Debby & Trent Thomas, Black Dome Mountain Shop Ruth Sieber Johnson, SAI Int. Music Fraternity
Developers/ Real Estate	Chris Day, CDC Brian Walker, Vanoy Matthew Fogleman, ECS Bob Oast McGuire, Wood and Bisset	John Spake, Spake Real Estate Margie Bukowski, Weaver Cooke Construction Peter Sprague, 3 Mountaineers	James Wilson, Pulliam Properties James Harrison, Whitney Commercial and CIRA William Jameson, Ingles Karl Koon, SEA NIC, LLC Bruce lynch, Zapolski Real Estate
Multimodal Interest Groups	Mike Sule, Asheville on Bikes Till Dohse, City of Asheville Bike Ped Task Force Janet Barlow, City of Asheville Bike Ped Task Force	Lucy Crown, City of Asheville Eunice Lovi, City of Asheville Claudia Nix, Greenway Committee	Joe Archibald, Multimodal Transportation Committee Marcela Moreno, City of Asheville Carmen Ybarra, JustEconomics
Partner Agencies	Steve Cannon, NCDOT Anna Henderson, NCDOT Brenden Merithew, NCDOT Bucky Galloway, NCDOT	Mark Gibbs, NCDOT Paul Roberts, NCDOT Stacy Merten, City of Asheville Todd Okolichany, City of Asheville Barb Mee, City of Asheville	Sasha Vrtunski, City of Asheville Vaidila Satvika, City of Asheville Dan Baechtold, City of Asheville Brenda Mills, City of Asheville Jessica Morris, City of Asheville William High, Buncombe County
Neighborhood Representatives	David Bailey, Redwood Forest Betsy Nesbitt, Oakley	Katie Douglas, Chunns Cove Barber Melton, Haw Creek, CAN	Rick Freeman, Kenilworth Forest, Coalition of Asheville Neighborhoods (CAN)
Other Interest Groups	LeeAnn Tucke, Land of Sky / AAA	Rebecca Chaplin, AARP	