

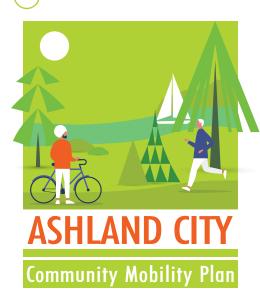
FINAL DRAFT • November 2019 ASHLAND CITY Community Mobility Plan

Kimley »Horn



U.S. Department of Transportation Federal Highway Administration





A C K N O W L E D G M E N T S

This planning effort would not be possible without the hard work and dedication of Ashland City and the Tennessee Department of Transportation staff. Thank you.

The Town of Ashland City

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INTRODUCTION

A SHLAND CITY

Community Mobility Plan

BACKGROUND

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Tucked between the Cumberland River and rolling hills of Middle Tennessee, the Town of Ashland City is located approximately 17 miles northwest of Downtown Nashville. The town was incorporated in 1859, a few years after the creation of Cheatham County. Serving as the county seat since its incorporation, the town prides itself on its sense of community and small-town feel. One of the many amenities that the Town offers are the many parks located within the town limits. These parks do not only serve the residents of Ashland City, but also attract individuals from surrounding areas. With the town positioned for rapid growth in the future given its close proximity to Nashville, residents and town officials would like to ensure that the town take the next steps necessary in creating a plan for the future in terms of being walkable, bikeable, encouraging economic growth, and promoting beautification.

Community Transportation Planning Grant

The preparation of this plan has been financed in part by the Tennessee Department of Transportation's (TDOT) Community Transportation Planning Grant, which is made available by State Planning and Research funds through the Federal Highway Administration (FHWA), a division of the U.S. Department of Transportation (USDOT). The contents of this report do not necessarily reflect the official views or policies of the USDOT, FHWA, and/or TDOT. It is the policy under Title VI of the Civil Rights Act of 1964 that TDOT prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance.

In 2018, the town applied to develop a community mobility plan through the CTPG program, which is administered by the Long Range Planning Division of TDOT, to identify deficiencies and opportunities in the current transportation network and recommend improvements that could be implemented in the future. A mobility plan focuses on all modes of transportation including motor vehicles, rail, freight, bicycles, pedestrians and public transportation; however, the Town wanted to emphasize bicycle and pedestrian improvements. This plan focuses on improving or constructing sidewalks, bike lanes, and shared-use paths (greenways) to connect residences to parks, businesses, schools, and other attractions along with operational improvements that will allow traffic to flow more smoothly and improve safety. These improvements are in line with the CTPG program goals which include the following:

- Assist rural municipalities with planning efforts that define transportation cohesiveness between multimodal transportation systems and local land use objectives that achieve the statewide transportation goals.
- Aid in rural municipalities with the creation of planning documents that support improvements in traffic flow, safety, and overall efficiency of the transportation system.
- Provide rural city governments with planning resources to achieve community visions as related to transportation and land use needs that promote future economic growth.





PROJECT PROCESS

The process to develop a Community Mobility Plan follows certain guidelines in order to realize a successful final comprehensive plan. Without all the proper steps in place, progress and future facility development would be difficult and possibly disjointed. The proper process for the successful development and construction of recommended facilities through the CTPG are as follows:

Step 1: Project Development

Leadership Commitment: Community leaders must demonstrate a clear commitment to support the project.

• Ashland City's mayor, police, and various other town departments have been involved in the creation of this mobility plan from it's inception, and all agree they want smart, sustainable growth that supports all modes of transportation.

<u>Visioning & Consensus:</u> Establishing a shared vision and consensus allows the community to set project goals and objectives. Understanding needs and developing support from the community is vital to start the planning, design, and implementation process.

 An important component to this project is the involvement of the community. Their input was key in determining needs and prioritization.

<u>Planning & Design:</u> Communities should leverage local resources and knowledge to assist in guiding project activities to best meet the needs of their community. Tailoring best practices to meet local conditions and desires will assist in developing an implementable, successful planning study.

 Once needs have been identified, the appropriate solution for each location was evaluated. Projects were prioritized based on need, connectivity, and complexity.

Step 2: Project Implementation

<u>Funding for Implementation:</u> Communities should seek diverse funding sources to implement their project plans such as partnering with private industry as well as seeking funding from other state and federal sources.

TDOT offers the following competitive programs to assist with implementation:

Federal-Aid

- <u>Multimodal Access Grant (MMAG)</u>: Provides funding to support the transportation needs of transit users, pedestrians and bicyclists through infrastructure projects that address existing gaps along state routes
- <u>Surface Transportation Block Grant (STBG)</u>: Targets improvements and new infrastructure to sidewalks, shared-use paths, safe routes to school, complete streets, and bridge enhancements
- <u>Transportation Alternatives Program (TAP)</u>: Functions as the main funding source for general pedestrian and bicycling infrastructure projects

(See Funding Alternatives on page 38 for additional municipal grant opportunities)

Source: Community Transportation Planning Grant Fact Sheet; TDOT Long Range Planning Division. 2019

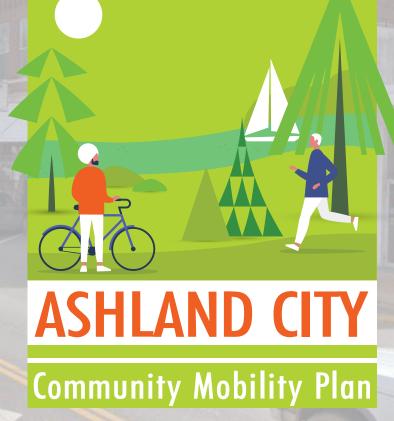
PROJECT DEVELOPMENT <u>STEPS:</u>

- 1. Leadership Commitment
- 2. Visioning & Consensus
- 3. <u>Planning and Design</u>

Chapter 1: Introduction —(



EXISTING CONDITIONS (2)



AREA OF STUDY

The study area mostly lies within the downtown limits of Ashland City and consists of the following primary corridors: SR 12 (Main Street) from SR 455 (Tennessee Waltz Parkway) to SR 455 (McQuarry Street), SR 455 (Tennessee Waltz Parkway / McQuarry Street) from SR 12 (N. Main Street) to SR 12 (South Main Street), and SR 49 (Cumberland Street / Frey Street) from SR 455 (Tennessee Waltz Parkway) to Oak Street. The limits encompass approximately one square mile. Locations adjacent to these corridors were also included. Those locations include Ashland City Elementary, Riverbluff Park, and J.W. Johns Jr. Park. Additionally, a connection to the Cumberland River Bicentennial Trail was also examined as it is a popular destination for bicyclists located less than a mile north of downtown Ashland City.





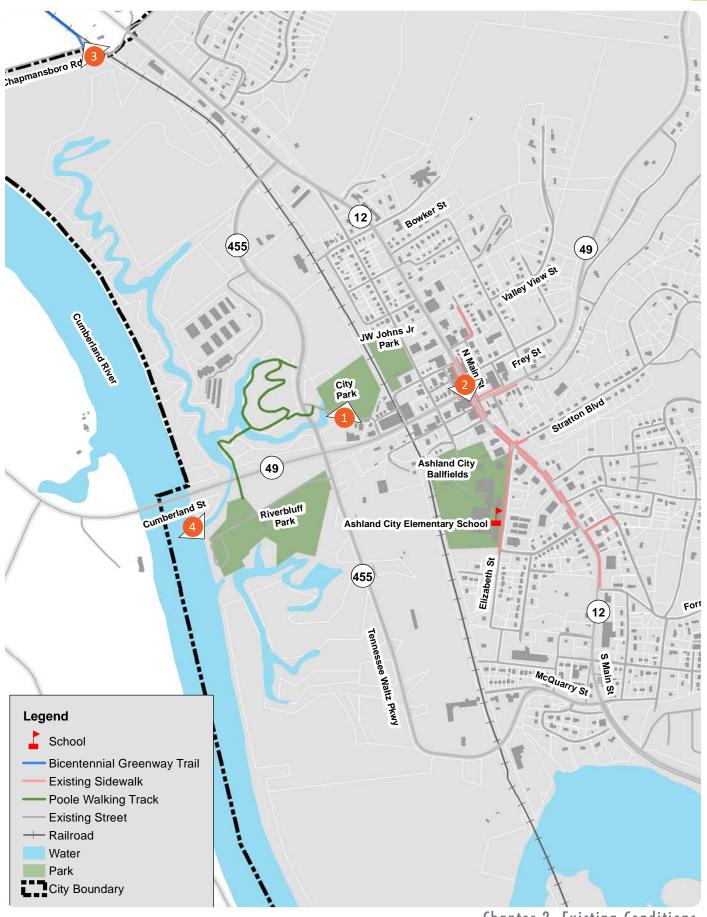
ASHLAND CITY





Area of Study





EXISTING CONDITIONS

There are a number of opportunities for improvements including the need for sidewalks on many streets, improving sidewalks that are not ADA compliant, traffic calming measures, traffic flow improvements, and safety improvements. The following photos outline some deficiencies that should be corrected once funding is available.

- 1. Access Management: Cumberland Street has a number of locations in which there is open frontage and no defined parking or driveways. (See #1 below)
- 2. Route Discontinuity: Drivers that want to continue on SR 49 must briefly turn onto SR 12 in the middle of downtown. The offset signalized intersection at SR 12 creates traffic congestion.
- 3. Pedestrian Infrastructure: There are a number of locations in which sidewalks should be constructed to provide an alternative from walking in the street or shoulder.
- 4. ADA Compliance: It is important to make sure curb ramps and sidewalk cross slopes meet the requirements outlines in TDOT's standard drawings. (See #2 below)
- 5. Sight Distance: Obstacles such as vegetation, roadway geometry, signs and buildings inhibit the ability of drivers to see oncoming cars at certain intersections. The curve and tree growth at SR 12 and McQuarry Street limit the sight distance of the westbound approach of McQuarry Street. (See #3 below)
- 6. Geometric Configuration: The intersection of SR 12, Harris Street, and Elm Street is a five-legged intersection in which Harris Street intersects at a skewed angle. (See #4 below)
- 7. Bicycle Connectivity: Paved shoulders along SR 12 and SR 455 would allow for the striping and signing of bicycle lanes.





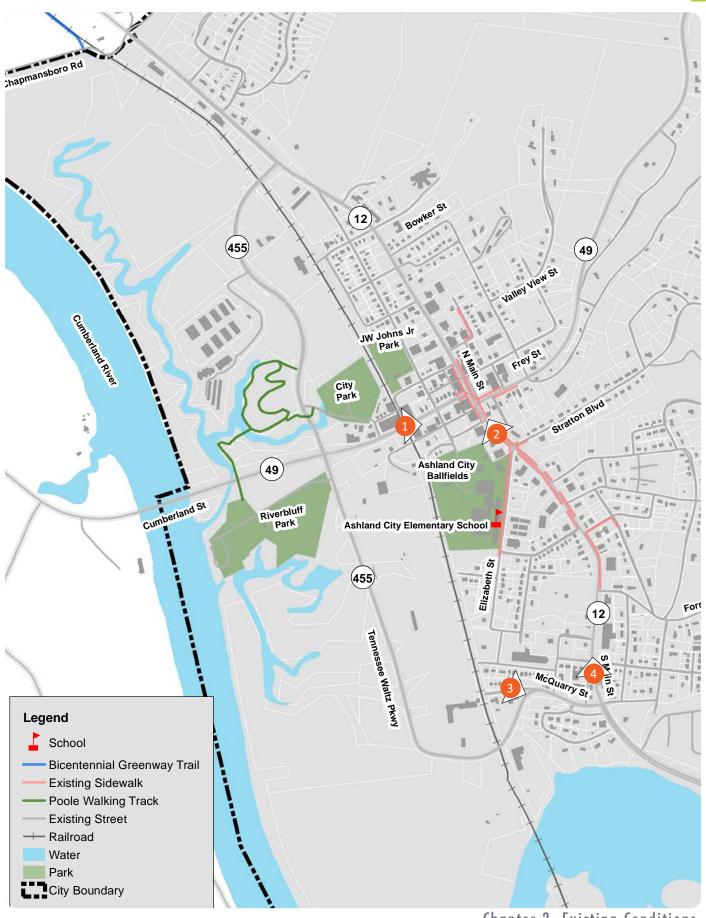


ASHLAND CITY



Existing Conditions





TRIP GENERATORS

Within the study area, there are a number of attractors that draw residents, visitors, and employees to the Town of Ashland City. Continued growth within the downtown core and surrounding areas of Ashland City will contribute to the need to make infrastructure improvements for all modes of transportation. The following is a list of key trip generators within the study area:



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Ashland City Elementary and Baseball Fields – Ashland City Elementary houses pre-school through fourth grade with a student population of nearly 550. Directly adjacent to the school is a park that has baseball fields for recreational leagues, a football field, picnic areas, and two playgrounds.



Riverbluff Park – This park's amenities include playgrounds, picnic tables, a boat ramp and dock, soccer fields, and an observation deck



The Braxton/Harpeth Shoals Marina – A residential community of twin high-rise buildings that include condominiums along with access to the Cumberland River through private docks.



J.W. Johns Jr. Park – Located adjacent to City Park, this park includes a playground, basketball courts, batting cages, and baseball fields.



Ashland City Medical Center – The Town's and County's primary hospital provides emergency and non-emergency services to the surrounding areas.



Cheatham County Courthouse – On the National Register of Historic Places, the courthouse contains the county courts, the sheriff's office, and the county mayor's office.



A.O. Smith Corporation – Manufacturing water heaters, A.O. Smith is the Town's largest employer and generates a number of heavy truck trips.



City Park – Located adjacent to J.W. Johns Jr. Park, this park includes a walking trail that crosses SR 455 via a tunnel, tennis courts and restrooms. A connection from this park to Riverbluff Park has also been constructed under the SR 49 bridge over the Cumberland River.



Dillion Transportation – A trucking company that transports goods and services across the country.

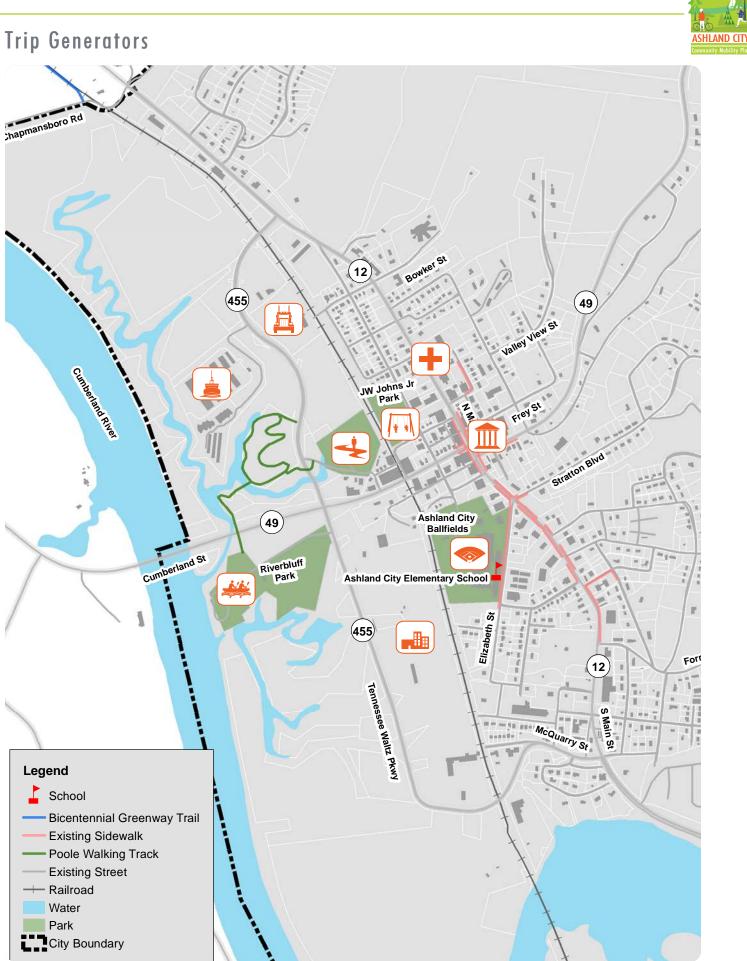
Additional Generators

Just outside of the project area, there are several attractors that draw individuals to the study area or cause individuals to pass through the study area to reach their destination. Those trip generators include a Walmart on SR 12 nearly two miles south of downtown, the Cheatham County Public Library located approximately one mile northeast of downtown along SR 49, the Cumberland River Bicentennial Trail (a popular trail just north of town which includes four miles that are paved and over two miles of gravel trail), The Cheatham County Fairgrounds just southeast of downtown, and the Riverview Restaurant and Marina just across the Cumberland River west of downtown. Additionally, several new developments are planned just south of downtown including a 280-unit apartment complex, a hotel, and expansion of a boat manufacturing facility and a concrete plant.

Future Growth

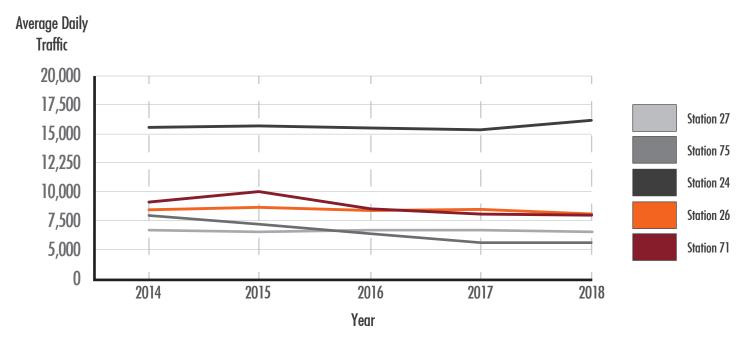
It is envisioned by Town leaders that Ashland City's growth could be shaped and molded from other forms of transportation. The Town has the potential to flourish via passenger water transport along the Cumberland River. Tourists from Nashville could take a boat ride to the Town to shop, dine, or recreation, and residents could theoretically travel to Nashville for work or play. Another form of transportation that would benefit the Town of Ashland City is the Nashville to Clarksville Commuter Rail (also known as the Northwest Corridor) along the Nashville & Western rail corridor. A feasibility study was completed in 2008 that examined the viability of connecting Clarksville to Nashville utilizing one of three existing rail lines. Not much progress has been made on the implementation of the Northwest Corridor; however, if the route through Ashland City is chosen, the Cumberland River Bicentennial Trail would be affected as it was constructed along this rail line. To promote growth, the Town also passed a Downtown Overlay District in February 2017 to allow denser development that promotes growth with the establishment of mixed-use buildings. This proactive step coupled with the unique possibilities of alternative transportation options afford the Town many opportunities to thrive as it grows.





TRAFFIC ANALYSIS

Ashland City has experienced economic and residential growth in recent years, and the overall traffic counts along the major corridors over the last ten years support that trend. The graph below depicts the trends at the TDOT count stations. The ten-year growth rate of traffic is 0.7 percent, and the three-year growth rate is three percent.



A signal warrant analysis was conducted at the intersection of SR 12 and SR 455 (McQuarry Street). The analysis of the study intersection was performed using the methodology provided in Chapter 4C of the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition published by the Federal Highway Administration (FHWA). The MUTCD provides the following standard, among others, regarding justification for traffic control signals:

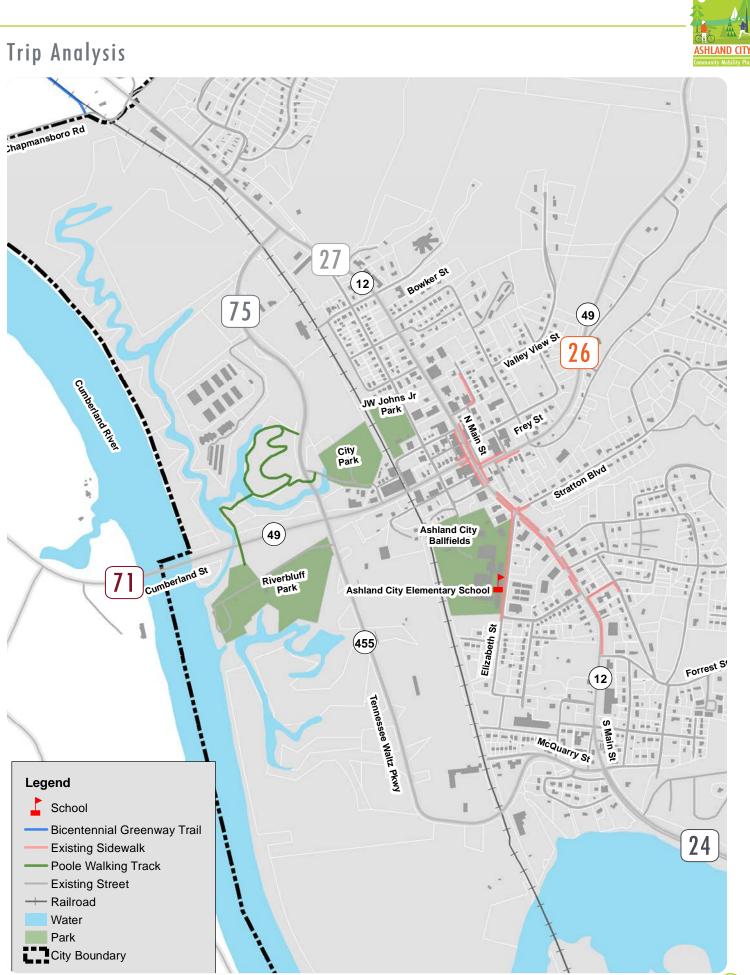
• "The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." (Source: MUTCD 2009, Section 4C.01, Paragraph 03)

There are eight total signal warrants within the MUTCD. The following three were analyzed to determine if a traffic signal was warranted at the above-referenced intersection:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour

Although the intersection did not meet signal warrants at the time of the study, the installation of a signal should still be considered due to poor sight distance issues on the McQuarry Street approach as well as proposed increase in truck traffic along SR 455 from A.O. Smith.





TRAFFIC ANALYSIS SR49 AT SR12

The intersection of SR 12 and SR 49 in the heart of Ashland City has caused traffic issues for quite some time. Congestion and crashes have occurred at this intersection due to its geometric configuration as an offset intersection. Drivers that would like to continue straight on SR 49 from either the westbound or eastbound direction must make a right turn onto SR 12 for approximately 125 feet and then turn left onto SR 49. This can create confusion for drivers and contributes to traffic delays as each signalized approach of SR 49 at SR 12 must be served independently instead of concurrently. The Town approached TDOT in an effort to align SR 49 in the center of town. The proposed realignment would allow SR 49 (Cumberland Street) on the west side of SR 12 to be directly across from the existing location of SR 49 (Frey Street), which would have involved removing some of the oldest buildings within downtown Ashland City. To avoid this, an alternate alignment for SR 49 was recommended. This alternative realigns SR 49 beginning approximately at the intersection with SR 455 and curves southeastward eventually following the existing alignment of Chestnut Street to SR 12. The new SR 49 would then continue northeastward past SR 12 (south of its current alignment) and eventually rejoin its existing alignment just east of Oak Street. This option would reduce the number of impacts on existing structures compared to the other alternative. A conceptual drawing of the proposed change is on the following page.

Analysis was conducted using Synchro 9, a traffic microsimulation software, to model existing conditions and future conditions. Control delay and level of service were obtained for the following ten (10) conditions:

- AM & PM Existing
- 2025 AM & PM No-Build
- 2025 AM & PM Build
- 2045 AM & PM No-Build
- 2045 AM & PM Build

Control Delay:

 "Control delay – the delay brought about by the presence of a traffic control device – is the principal service measure in the HCM for evaluating LOS at signalized and unsignalized intersections. Control delay includes delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed" (Source: Highway Capacity Manual 2010, Chapter 4).

LOS:

 "LOS is a quantitative stratification of a performance measure or measures that represent quality of service. The measures used to determine LOS for transportation system elements are called service measures. The HCM defines six levels of service, ranging from A to F, for each service measure, or for the output from a mathematical model based on multiple performance measures. LOS A represents the best operating conditions from the traveler's perspective and LOS F the worst. For cost, environmental impact, and other reasons, roadways are not typically designed to provide LOS A conditions during peak periods, but rather some lower LOS that reflects a balance between the individual travelers' desires and society's desires and financial resources. Nevertheless, during low-volume periods of the day, a system element may operate at LOS A" (Source: Highway Capacity Manual 2010, Chapter 5).

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LEVEL OF SERVICE CRITERIA

The LOS criteria for signalized intersections are summarized in the table below.

Signalized Intersection Level of Service				
LOS	Control Delay (Seconds/ Vehicle)	Comments		
A	≤10	Volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.		
В	>10-20	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.		
C	>20-35	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.		
D	>35-55	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.		
E	>55-80	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.		
F	>80	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.		

Source: Highway Capacity Manual 2010, Chapter 18



LEVEL OF SERVICE RESULTS

Signalized Intersection LOS:

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- Control delay alone is used to characterize LOS for the entire intersection or an approach.
- Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group.
 Delay quantifies the increase in travel time due to traffic signal control. It is also a surrogate measure of driver discomfort and fuel consumption.

The Existing and No-Build alternatives include the roadway conditions as they are today with no geometric improvements being made to the existing intersection. The Build alternative includes the realigned SR 49; intersecting with SR 12 approximately 220' south of the existing intersection. The traffic was increased at a rate of two percent per year to obtain the 2025 and 2045 volumes. Below are the results of the traffic analysis in terms of LOS and the corresponding delay in parentheses for all scenarios:

Intersection Capacity Analysis Results - AM Peak Hour							
Intersection	Approach	Existing 2019 Conditions	No-Build 2025 Conditions	Build 2025 Conditions	No-Build 2045 Conditions	Build 2045 Conditions	
S Main Street at Cumberland Street	Eastbound: Southbound: Overall:	C (24.5) C (28.8) B (18.6)	C (24.7) C (32.2) C (20.4)		C (24.4) F (118.1) E (58.9)		
S Main Street at Frey Street (SR49)	Westbound: Northbound: Overall:	C (31.9) B (16.6) B (16.2)	D (41.4) B (17.6) C (20.4)		F (147.8) C (20.4) E (59.8)		
S Main Street at Proposed (SR49)	Eastbound: Westbound: Northbound: Southbound: Overall:			C (32.5) C (26.9) A (9.1) B (17.8) C (20.7)		C (34.3) D (42.9) B (13.0) C (25.8) C (29.8)	
	Intersection Capacity Analysis Results - PM Peak Hour						
Intersection	Approach	Existing 2019 Conditions	No-Build 2025 Conditions	Build 2025 Conditions	No-Build 2045 Conditions	Build 2045 Conditions	
S Main Street at Cumberland Street	Eastbound: Southbound: Overall:	C (24.6) C (20.6) B (10.9)	C (24.8) C (23.5) B (12.5)		C (25.2) D (37.7) B (17.0)	-	
S Main Street at Frey Street	Westbound Northbound Overall	C (24.3) B (17.0) B (14.4)	C (25.6) C (20.6) B (17.0)		C (32.0) C (38.6) C 29.2)	- -	
S Main Street at Downtown Connector	Eastbound: Westbound: Northbound: Southbound: Overall:			C (34.6) C (28.0) B 12.9) B (11.4) B (18.7)		C (34.0) C (31.6) B (19.6) B (18.3) C (23.8)	

The analyses show that the LOS for the 2045 AM No Build conditions is an E or F for the southbound and westbound approaches as well as the overall intersections; however, for the 2045 AM Build condition, all approaches and the overall intersection LOS perform at a D or better. For the PM peak period, the 2045 No Build and Build conditions all operate at a LOS D or better. Additional analysis may need to be completed to determine the full impact of a realigned SR 49.







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CRASH ANALYSIS

Study Area Crash Statistics							
	1/1/2016 - 12/31/2018						
Condition	Number of Crashes	Percentage of Total					
Lighting Conditions							
Daylight	109	73%					
Dark - Not Lighted	5	3%					
Dark - Lighted	25	17%					
Dusk/Dawn	7	5%					
Not Indicated	3	2%					
Crash Se	everity						
Property Damage	117	79%					
Suspected Minor Injury	29	19%					
Suspected Serious Injury	3	2%					
Fatality	0	0%					
Manner of	Collision						
Rear-End	56	38%					
Lane Departure	30	20%					
Angle	29	19%					
Sideswipe	15	10%					
Head-On	3	2%					
Overturn	0	0%					
Animal	5	3%					
Other/Unknown	11	7%					
Weather Conditions							
Clear	99	66%					
Rain	16	11%					
Snow	2	1%					
Sleet/Hail	2	1%					
Cloudy	25	17%					
Foggy	2	1%					
Not Indicated	3	2%					

Historical crash data for the study area was obtained from TDOT's Enhanced Tennessee Roadway Information Management System (E-TRIMS) for the most recent three years (January 1, 2016 to December 31, 2018). There were a total of 149 crashes along the three primary corridors in the Town of Ashland City; SR 49 (Cumberland Street and Frey Street), SR 12 (Main Street), and SR 455 (Tennessee Waltz Parkway). More than three-quarters (115) of the total number of crashes occurred along SR 12. Of those 115 crashes on SR 12, 91 were property damage only crashes. Along the three corridors, there were three suspected serious injury crashes; all of which were also on SR 12.

All the reported crashes were plotted on the map to the right. The table on this page provides a summary of crash types and condition associated with those crashes. The majority were rear-end crashes and property damage only. Although the crashes are scattered along all three major corridors, there are four segments in which clusters of crashes are evident. The cluster sections along SR 12 include Harris Street to Forrest Street, near Helen Street, and Turner Street to Boyd Street. These segments have clusters of property damage, suspected minor injury, and suspected serious injury crashes. Additionally, there is a cluster near the intersection of SR 12 and SR 49 (Frey Street). After reviewing the crash reports, it seems as though some safety measures can be implemented to help reduce crashes at these locations. Most of the reports involve crashes in which a vehicle was rear ended while stopped or slowing to make a turn into a driveway or side street in addition to vehicles exiting side streets or driveways and colliding with vehicles on the main roadway. Below are a few relatively low-cost safety measures that can be installed to help reduce the number of crashes.

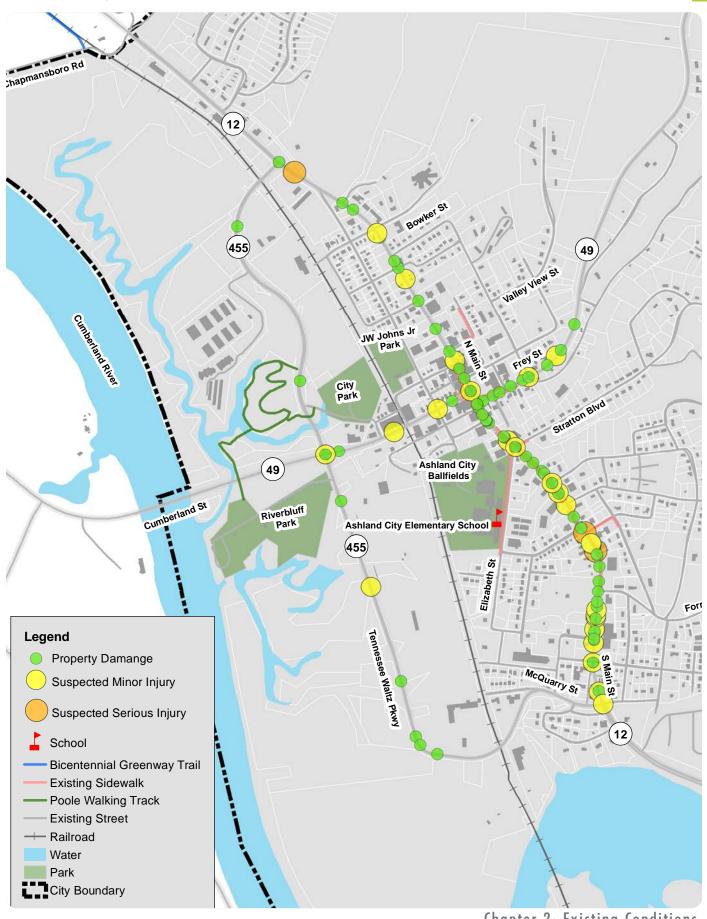
- Access management techniques such as driveway closures or the installation of curbs should be implemented to reduce the open road frontage and number of driveways along SR 12 between Harris Street and Forrest Street, along Frey Street west of Oak Street, along SR 12 between Mulberry and Jefferson Street, and SR 49 (Cumberland Street) between Park Street and SR 12.
- Install retro-reflective material on objects within the clear zone of the roadway including on utility poles, lamp posts, and mailboxes.
- Install side road warning signs on the main roadway to warn drivers that vehicles may be entering the roadway or slowing to turn onto the side road.
- Delineate culverts along SR 49, SR 12, and SR 49 with object marker signs.
- Ensure faded roadway striping is refreshed including centerline, edge lines and stop bars.
- Replace existing regulatory and warning signs that are faded and lost their retro-reflectivity.

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ASHLAND CITY Community Mobility Plan

Crash Analysis







RECOMMENDATIONS (3)

Ashland City Community Mobility Plan

COMMUNITY OUTREACH

Community involvement and input is crucial to the success of any planning process. It guides the project team in understanding the desires of city officials and citizens. It allows citizens to have a voice in shaping the future of the community, giving the project team the ability to discover concerns that may not be readily apparent from field visits, crash reports, or traffic analysis. The outreach event broadened the project team's understanding of Ashland City and the surrounding area as well as the project limits. These findings led to the identification of the route recommendations identified later on in this chapter.

Project Kickoff & Steering Committee Meeting

To help establish the goals, objectives, and the overall direction of the Ashland City Community Mobility Plan, the project team met with Town staff and TDOT. This meeting helped establish the project time frame, determine what information was crucial to gather from the community, and what contextual information regarding the existing bicycle, pedestrian and roadway network was important to gather and analyze. After the meeting, the design team conducted a field visit with the Town and TDOT staff to review vehicular, pedestrian and bicycle conflicts, infrastructure conditions, and safety issues. This helped the design team begin the analysis process and preliminary route recommendations that ultimately were shown in the community meeting.

Community Meeting

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The community meeting, held at the Ashland City municipal building, focused on gathering information from Ashland City residents based on existing conditions and proposed improvements. The project team showcased potential bicycle, pedestrian, and roadway improvements and asked for resident input on preferred design scenarios and priorities. A series of exercises were conducted with meeting attendees to help the design team better understand needs of residents and additional safety issues around schools, parks, and other routes around the Town.





Exercise #1 - What Makes a Great Place?

Featuring three boards of streetscape images collected from across the country, the "What Makes a Place Great?" exercise provided a setting where participants could place stickers on images that they felt were great places to visit, experience, live, work, and play. Without having to provide a written verbal explanation, they were able to respond to the visual cues and aesthetics in the photographs. The images below represent the four most popular choices during the exercise.

Based on the photos that were chosen, it is clear that Ashland City residents are passionate about implementing a variety of transportation options, reliable pedestrian networks, and a sense of place in the downtown core.

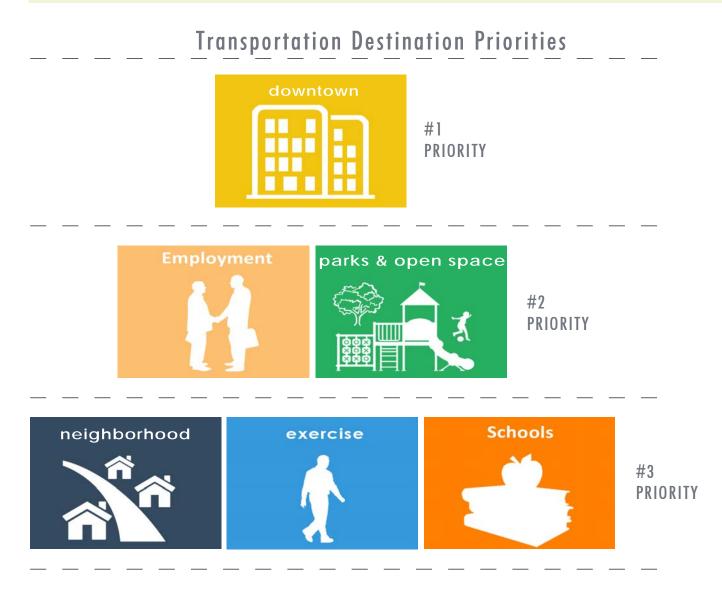


COMMUNITY OUTREACH

Exercise #2 - Priority Pyramid

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This exercise allowed participants to prioritize a list of planning themes as shown on the following page. Each participant received a board displaying a pyramid and eight cards representing a destination within the Ashland City community. They were challenged to place the themed cards on the pyramid based on the destination's importance to them, the top being the most important. The project team collected the pyramids and placed them in view of participants for discussion.



Results

Pedestrian Priorities

Enabling residents to provide their feedback during the public meeting was essential to understanding their needs and desires in relation to important connections in the City. Through the priority pyramid exercise, the design team discovered the high importance of transportation connectivity to downtown, places of employment, and parks and open space. This feedback helped the design team recommend necessary and appropriate transportation connections throughout the Town of Ashland City. Additionally, sidewalk was requested to be proposed on Stratton Boulevard.







EXERCISE

One of the biggest benefits of providing alternative modes of transportation, such as walking and bicycling, is creating a healthy environment for residents and visitors.



PARKS AND OPEN SPACE

Throughout Ashland City, parks and open space provide places of recreation and solitude. Special attention was made to parks and open space connectivity based on the strong priority comments from residents.



PLACES OF WORSHIP

There are several places of worship within the Community Mobility Plan area of study. In addition, it was noted during the public meeting that these connections are important and should be included.



EDUCATION

Providing safe and reliable connectivity to and from schools for children is vital to creating a strong pedestrian and bicycle network. These projects are typically of highest priority for cities, and Ashland City is no exception. Both City staff and Ashland City residents expressed the importance for these connections.



RETAIL

Retail opportunities are present within the study area that are close in proximity to residential neighborhoods. Providing access to and from these places of business are important to allow residents a safe, alternative mode of transportation to coffee shops, grocers, restaurants, and more.



DOWNTOWN

Ashland City's downtown district is continuing to change and grow, making it important for multimodal connections to be created to and from it's shops, restaurants, and public spaces.

NEIGHBORHOOD

There are several neighborhoods within the area of study. Connecting these residences, especially school children to schools, parks, businesses and public spaces should be considered and implemented.



EMPLOYMENT

Considering bicycle and pedestrian connections to places of employment is sometimes overlooked, but a large number of people utilize nonmotorized transportation to get to and from work.

CASE STUDIES

As the design team conducted site visits and analyzed the pedestrian connectivity needs and desires of the Ashland City community, the team also looked at similar studies, helping them to visualize the purpose and intent of the Ashland City Community Mobility Plan.

Waynesboro Corridor Study - 2016

A corridor study was completed in 2016 for the City of Waynesboro that focused on improving pedestrian and vehicular conditions along Dexter L. Woods Memorial Boulevard, while also looking at citywide bicycle and pedestrian networks, trailhead opportunities, and neighborhood sidewalk concepts.

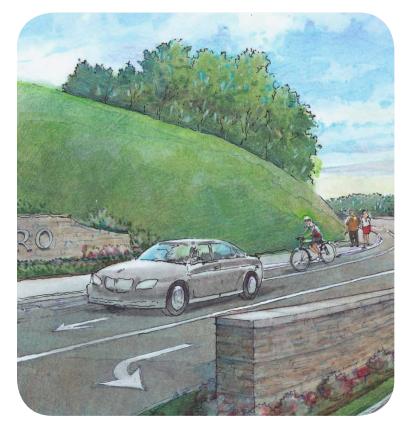
The Waynesboro community has seen little development and growth over recent years. Due to this trend, as well as health concerns of the community, it was Waynesboro's desire to establish a vision to aid the promotion of economic development, safety and health throughout the Waynesboro community. Wayne County ranks below the U.S. average and Tennessee average in several key health categories, including adult smoking, adult obesity and physical inactivity.

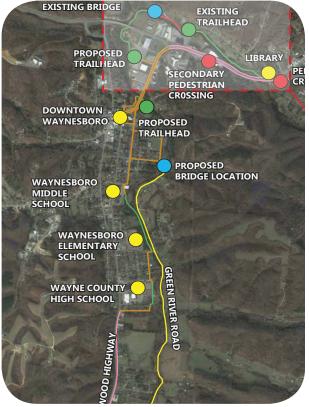
This was a cause for concern among residents and public officials within the City of Waynesboro. The recommended implementation strategies, when constructed, will provide pedestrian safety, promote economic vitality, and increase the health of individuals throughout the community.

Recommended Improvements:

ASHLAND CITY Community Mobility Plan

- Implement new greenway connections to downtown Waynesboro, City Park, local schools and the community Sportsplex
- Improve sidewalk network from Dexter L. Woods Memorial Boulevard to downtown Waynesboro
- Introduce bike lanes and implement a "road diet" on Dexter L. Woods Memorial Boulevard
- Provide pedestrian "safe zone crossings" along Dexter L. Woods Memorial Boulevard while improving inner neighborhoods sidewalk systems to link important destinations





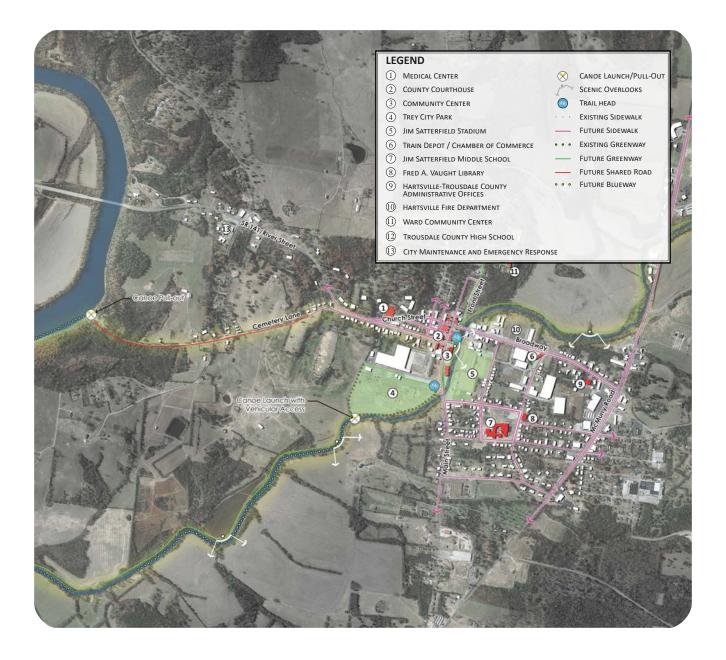


Hartsville Connectivity Plan - 2017

A connectivity plan analyzes a community's alternative modes of transportation and generates a plan that works to link and connect the network with the inclusion of new trails and routes. Connectivity plans are often used to inspire the use of multi-modal transportation options for work and recreation, while leading the community to take an active approach to health and fitness.

The connectivity plan for Hartsville, as shown on the following page, depicts the network of existing sidewalks and greenways paired with future connections to blueways, new sidewalks, greenway trails, and shared streets. The plan strives to build a network of connectivity around Downtown Hartsville, connecting the community's resources together and allowing them to be more accessible to its residents. In addition to downtown circulation, the plan also connects downtown to the Cumberland River through a series of greenways and blueways running with Little Goose Creek. The greenway trail would also provide many opportunities for scenic overlooks along the trail.

Resource: Hartsville Connectivity Plan; Kimley-Horn. 2017



PROPOSED IMPROVEMENTS

Upgrading Facilities

Providing safe and accessible bicycle and pedestrian facilities for residents and visitors is vital to the livability of any community. Those individuals that rely on facilities that follow the American Disabilities Act (ADA) must be taken into consideration when planning city-wide bicycle and pedestrian connections. There is a demand for ADA facilities in Ashland City that must be addressed in order to give everyone an equal opportunity to safely access public buildings and areas throughout Ashland City. In addition to the following proposed bicycle and pedestrian facilities, the City must review all existing sidewalks and shared-use paths to ensure they comply with ADA. Doing so will heighten the overall accessibility and enjoyment of public spaces that Ashland City has to offer.

The following is a list of projects that was developed to address safety concerns, traffic congestion, connectivity, and alternative modes of transportation. These recommended improvements are a result of the traffic and safety analysis, field observations of existing infrastructure, Town staff and public input, and future needs as the Town continues to grow. The proposed projects are divided into short-term and long-term implementation. Short-term are projects that can be completed within a three to five-year timeframe depending on the availability of funding, time to design, constructability, and phasing. Long-term are projects that would generally take longer to design and construct due to right-of-way issues or funding. These long-term projects would likely take at least five years to complete.

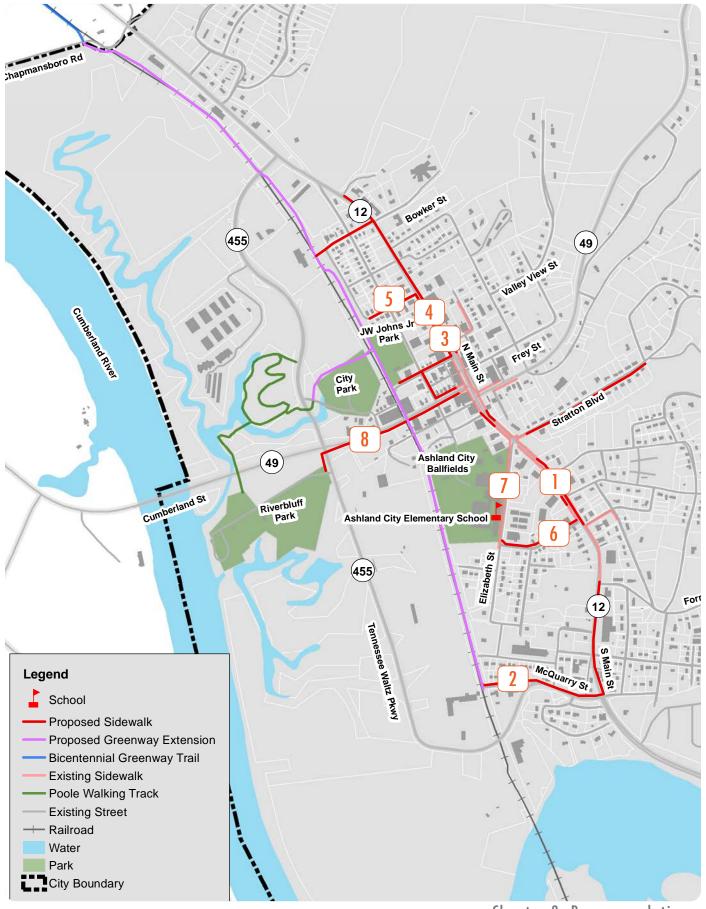
Pedestrian Facilities - Short-Term

- 1. <u>South Main Street (SR 12) Sidewalks Phase I</u> From just south of Forrest Street to Chestnut Street, this project will construct new sidewalk and reconstruct existing sidewalk along the northbound shoulder of SR 12. This will provide a connection from downtown to the shopping center located just north of Elm Street.
- South Main Street (SR 12) Sidewalks Phase II New sidewalk along the northbound shoulder of SR 12 from McQuarry Street to connect with Phase I just south of Forrest Street. Additionally, with the proposed signal at McQuarry Street, this project will install a crosswalk across SR 12 and sidewalk along McQuarry Street to where McQuarry ends at the abandoned railroad. This will connect to a proposed future extension of the Cumberland River Bicentennial Trail. (See image next page)
- 3. <u>North Main Street (SR 12) Sidewalks Phase I</u> New sidewalk along the northbound shoulder of SR 12 from Mulberry Street to north of Pemberton Drive.
- 4. <u>North Main Street (SR 12) Sidewalks Phase II</u> New Sidewalk along the southbound shoulder of SR 12 from Mulberry Street to Pemberton Drive with a crosswalk across SR 12 at Pemberton Drive, Jefferson Street, and Mulberry Street.
- 5. <u>Main Street Connectors</u> New Sidewalk along Pemberton Drive, Jefferson Street and Mulberry Streets to connect North Main Street to Riverbluff Park with pedestrian signals installed at the intersection of SR 455 and SR 49 (Cumberland Street).
- 6. Lowe Street Connector New sidewalks along the westbound shoulder of Lowe Street to connect SR 12 with Elizabeth Street. This project would also include an updated crosswalk at the intersection of Lowe Street and SR 12.
- 7. <u>Elizabeth Street Sidewalk Reconstruction</u> Replace the existing sidewalk along the southbound shoulder of Elizabeth Street from Main Street to Lowe Street.
- 8. <u>Cumberland Street Sidewalk</u> New Sidewalk along SR 49 (Cumberland Street) from SR 12 to Tennessee Waltz Parkway.



Pedestrian Facilities





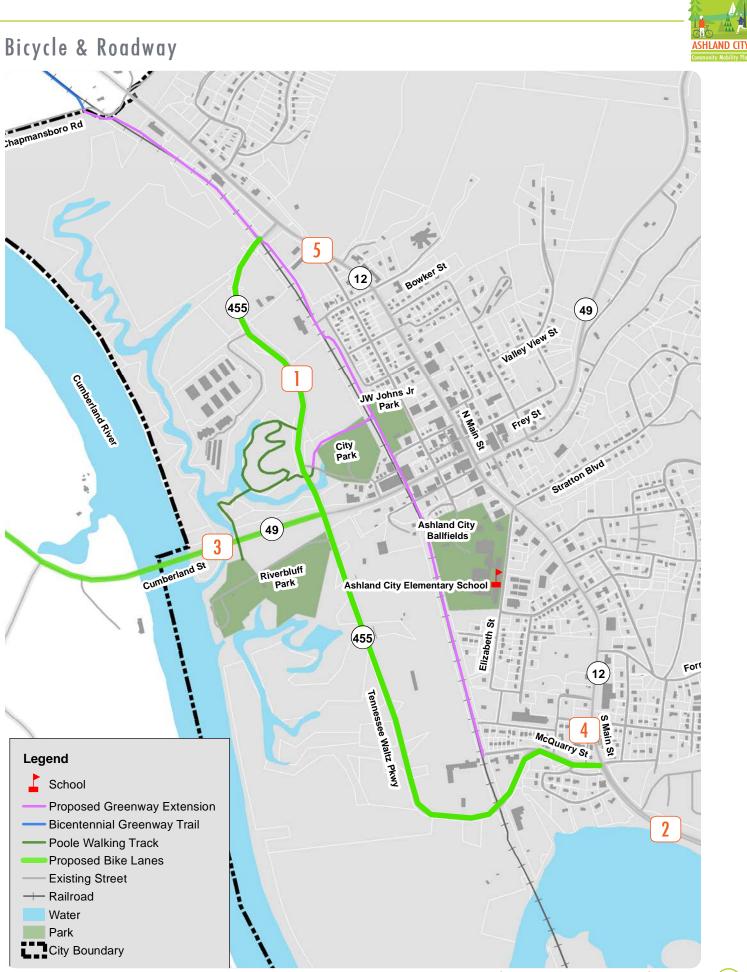
PROPOSED IMPROVEMENTS

Bicycle Facilities & Roadway Improvements - Short-Term

- 1. <u>SR 455 Bike Lanes</u> Sign and stripe bike lanes along the northern portion of SR 455 from SR 49 (Cumberland Street) to SR 12.
- 2. <u>SR 12 Bike Lanes</u> Sign and stripe bike lanes along the existing paved shoulders of SR 12 from the Davidson County line to just south of McQuarry Street.
- 3. <u>SR 49 Bike Lanes</u> Sign and stripe bike lanes along the existing paved shoulders of SR 49 from SR 455 to just west of SR 249 (River Road).
- 4. <u>Harris Street One-Way Conversion</u> Convert Harris Street to one-way southbound to eliminate conflict points at the intersection of SR 12, Elm Street, and Harris Street.
- 5. <u>Vine Street Realignment</u> Convert the intersection of SR 12 and Vine Street from a skewed angle to 90 degrees to allow for better sight distance for drivers on Vine Street.



ASHLAND CITY



PROPOSED IMPROVEMENTS

Long-Term Bicycle Facilities & Roadway Improvements

- 1. <u>Bicentennial Trail Extension</u> Extend the Bicentennial trail from its current terminus near Chapmansboro Road along the abandoned railroad corridor to McQuarry Street south of downtown Ashland City. (See image below)
- 2. <u>SR 49 Realignment</u> Realign SR 49 just south of the current alignment through downtown Ashland City from approximately SR 455 to approximately Oak Street. This improvement will remove the offset intersection that exists between SR 12 and SR 49.
- 3. <u>SR 455 Paved Shoulders</u> Add eight- to ten-foot paved shoulders along SR 455 south of SR 49 to SR 12 to match the cross section of the northern section. This will allow the inclusion of bike lanes along this section.
- 4. <u>SR 455/McQuarry Street Realignment</u> Lengthen the horizontal radius of the curve along McCurry Street and SR 455 near Adkisson Street to improve sight distance and reduce the sharpness of the existing curve. Realign the intersection of the existing skewed intersection at McQuarry Street to 90-degrees.





Long-Term Projects ASHLAND CITY Chapmansboro Rd Bowker 5 12 (455) (49 Valley View St Cumberland River JW Johns Jr Park Frey St Main St City Park Stration Blvd 2 理 Ashland City Ballfields (49) 3 Cumberland St Riverbluff Park Ashland City Elementary School Elizabeth St 1 -(455) For 12 Tennessee Waltz PKWY S Legend McQuarry St Main School S Proposed Sidewalk Proposed Greenway Extension I **Bicentennial Greenway Trail Existing Sidewalk** Poole Walking Track Proposed Bike Lanes **Existing Street** - Railroad Water Park

City Boundary

PROPOSED IMPROVEMENTS

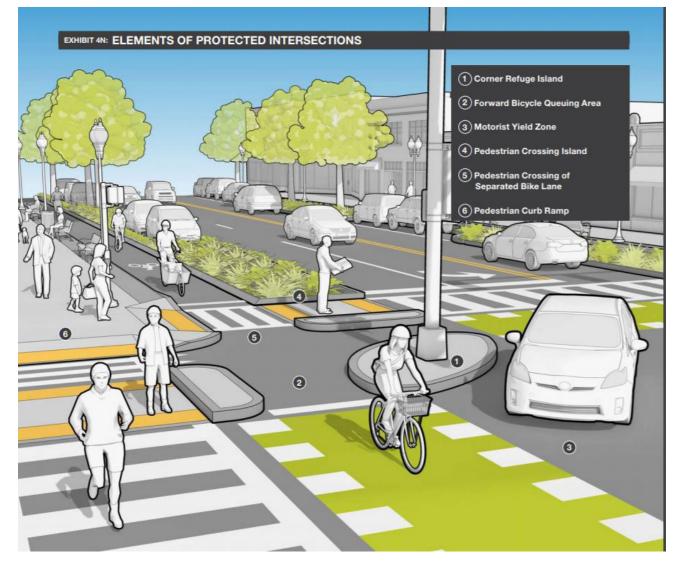
Citywide Connectivity

Joining all of the proposed improvement maps and analyzing them together provides a look at the holistic network of connections throughout the City. It is important the City understands that in order for the network to operate most efficiently, both facility types must be built. The implementation plan, as shown on page 50, helps put these projects on a timeline to make it easy to see what steps need to take place.

Integrating Facilities

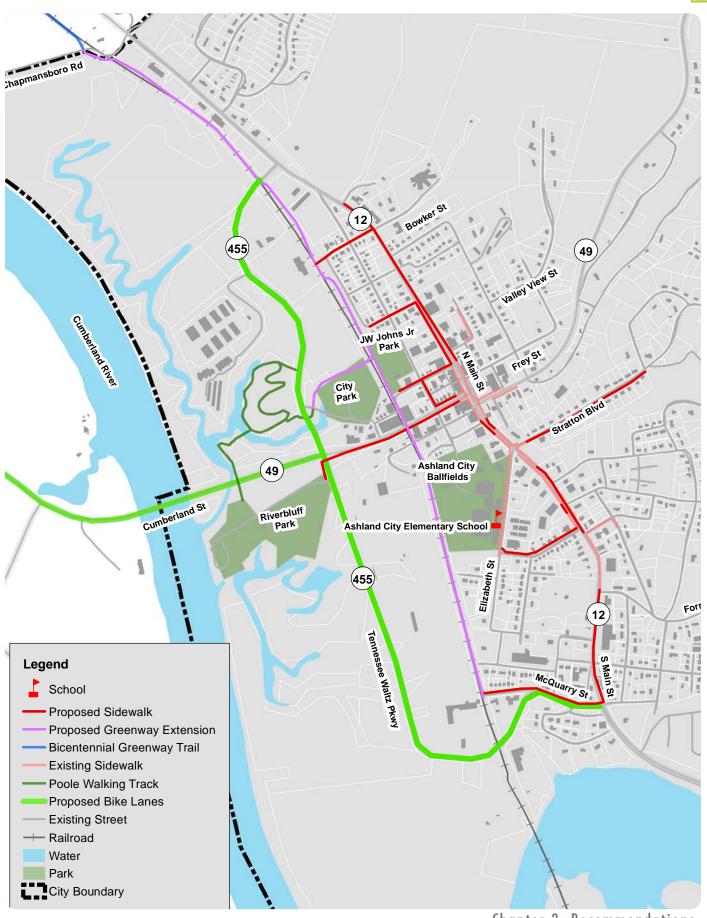
Ensuring the integration of facility types throughout the City is vital to providing a reliable and safe transportation network. In addition to making important connections to get users from point A to point B, the use of protected intersections should be considered when planning for future facilities to create safe interchanges between vehicular, bicycle, and pedestrian travel. The image below shows the typical elements of a protected intersection, which help provide safer movements for all modes of transportation. Protected intersections increase visibility and promote predictability of movement for each user group.

Source: MassDOT Separated Bike Lane Planning and Design Guidelines, 2015



All Facilities





FACILITY TYPES

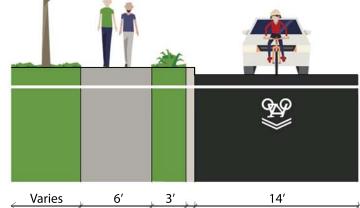
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When planning the implementation of public bike facilities, there are important elements to consider to ensure they are designed for all ages and abilities. Vehicular speeds and volumes, operational uses, and sensitivity to vehicular-pedestrian conflict areas are vital to the safety and overall functionality of the bikeway network. The following cross sections are considered best practices for walkways and bikeways. These sections are the minimum that should be attained in order for Ashland City to become a more walkable and bikeable community.

SHARED ROUTE

Shared routes are a type of bikeway that are typically implemented on a low-volume, low-speed road. Signage and pavement markings indicate shared routes, for there is no separation between the bicyclist and vehicular traffic.

Six-foot sidewalks should be implemented where shared routes are recommended. Pedestrians should be separated from bicycle and vehicular traffic by a minimum of a three-foot landscaped buffer and a six-inch vertical curb.



ROW Sidewalk Buffer Travel Lane



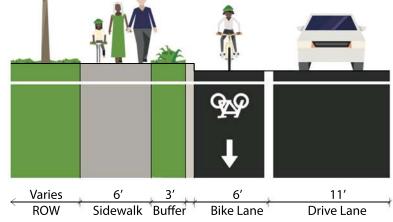




BIKE LANE

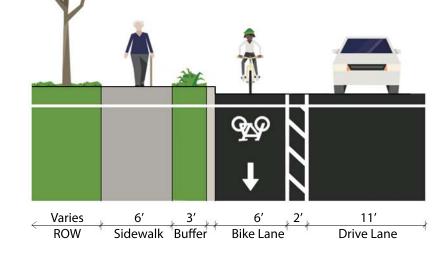
Bike lanes enable bicyclists to ride at their preferred speed without interference or concern for vehicular traffic. Bike lanes are typically not separated from the vehicular travel lane, and are distinguished by signage, pavement markings, and sometimes a change in pavement color.

Six-foot sidewalks should be implemented where bike lanes are recommended. Pedestrians should be separated from bicycle and vehicular traffic by a minimum of a three-foot landscaped buffer and a six-inch vertical curb. Motorists are required to provide bicyclists at least three feet of seperation when passing.



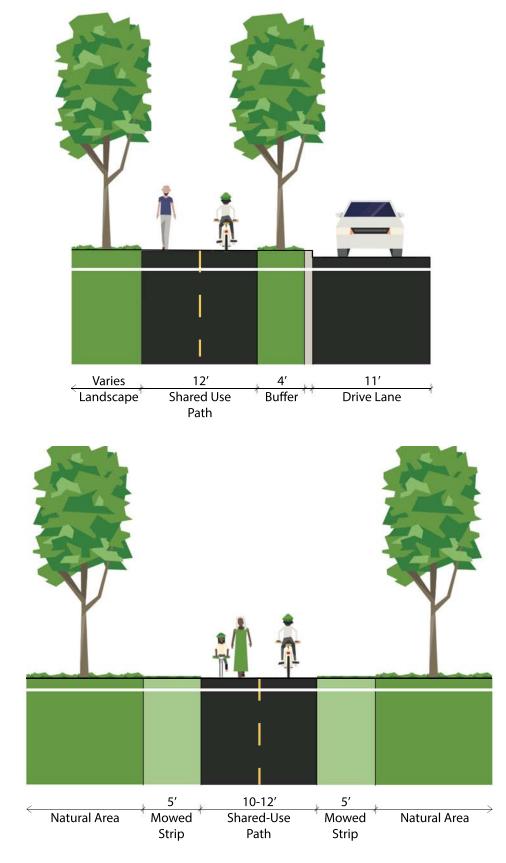


Streets that have additional ROW, excess parking, or potential for a road diet are good candidates for buffered bike lanes. They provide space for bicyclists to pass one another without vehicular conflict, appeal to a wider bicycle user group, and encourage bicycling by providing a more comfortable ride with perception of increased safety (NACTO).



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FACILITY TYPES



SHARED-USE PATH TWO-WAY

Shared-use paths are often used in rural and suburban areas adjacent to existing streets. These facilities provide a physical separation between the vehicular travel lanes with the use of landscape buffer and a vertical curb. Shared-use paths are best suited where there is little conflict with driveways, utility poles, and steep areas. These types of pathways are typically pleasing to the eye and provide a safe and comfortable ride for users.

PAVED SURFACE GREENWAY

Greenways may be the most important means of alternative transportation for all ages and abilities. Greenways are typically away from vehicular travel wavs. traveling through open public space such as parks, natural areas, and abandoned railroad corridors. They appeal to families and casual bicyclists since there are usually very few interactions or conflicts with vehicles. Greenways are an excellent choice for areas of a city where the streets have little additional right-of-way or physical constraints for roadway facilities. A minimum of ten feet in width is recommended to allow users to pass one another comfortably. The five-foot mowed strip along each side minimizes maintenance and provides a clear and safe greenway.

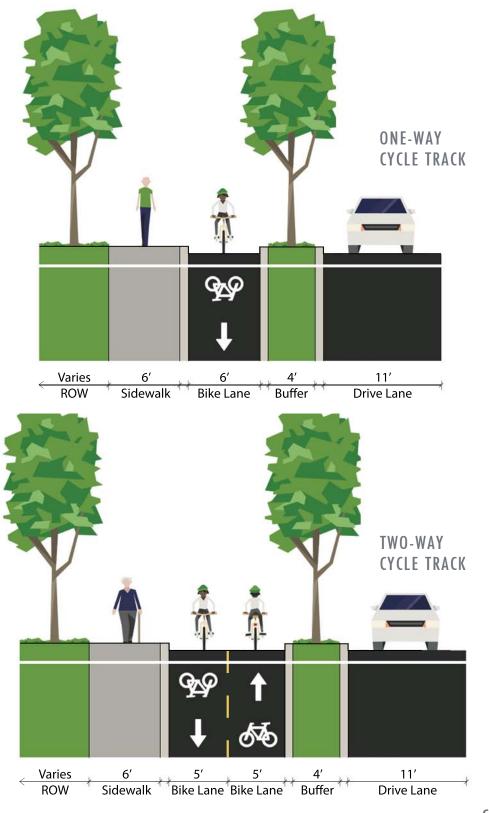
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ASHLAND CITY Community Mobility Plan



CYCLE TRACKS

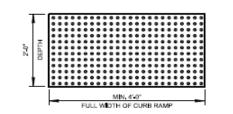
Separated bike lanes are bikeways that physically protect bicyclists from the vehicular travel lanes using a landscape buffer and vertical curb. It combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane (NACTO). Separated bike lanes can be one-way or two-way and have many benefits. They dedicate and protect space for bicyclists in order to improve perceived comfort and safety, generally provide overall low-implementation costs by making use of existing pavement and drainage, and are more attractive for bicyclists of all levels and ages.



DESIGN STANDARDS

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Ashland City has developed an American with Disabilities (ADA) transition plan that evaluates all the sidewalks and curb ramps within the entire city to determine if they need to be improved to meet ADA standards. While the transition plan focuses on the entire city, this Community Mobility Plan focuses on improvements within the project limits that make important connections to trip generators and attractors. Below are examples of elements of pedestrian improvements that should be considered when planning, designing, and constructing roadway and sidewalk projects. Images are from TDOT standard drawings, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design and Operation of Pedestrian Facilities, The Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), and the U.S. Access Board's Public Right of Way Accessibility Guidelines (PROWAG).



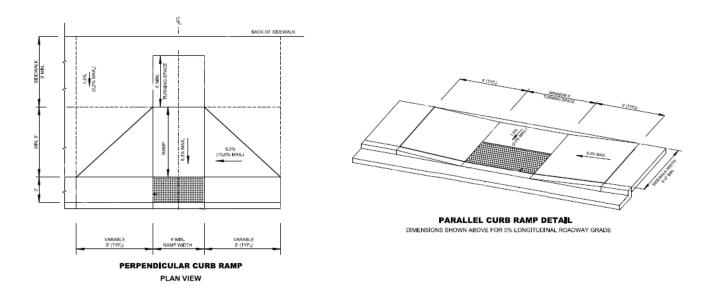
DETECTABLE WARNING SURFACE DETAIL

DETECTABLE WARNING SURFACE ELEVATION VIEW (TYP.)

1.6" 2.4

0.65 MN TOP DIAMETER SHALL BE 50%-65% OF THE BASE DIAMETER

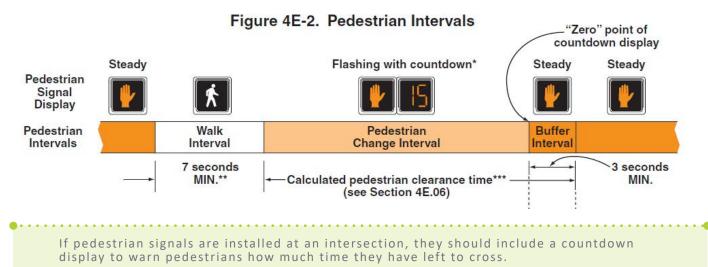
Detectable warning surfaces are used to warn pedestrians with low or no vision that they are entering the street, railroad crossing, or transit stop/platform. The color of the surface must contrast visually with the adjacent ramp, gutter, sidewalk, or street.



Depending on the geometry of the intersection, there are several types of curb ramps that can be used to allow pedestrians to cross a street. Perpendicular ramps work best when there is a grass strip between the sidewalk and the back of curb, and parallel ramps are best for sidewalk adjacent to the back of curb.









The pedestrian access route (sidewalk) should be at least four feet in width (preferably five to six feet) and kept clear of obstructions such as doors, table/benches, signs, and vegetation. The pedestrian access route is typically accompanied by a frontage zone adjacent to the building face, providing room for benches, cafe tables, lighting, and signage.

45

DESIGN STANDARDS

46

Although some of the proposed bicycle recommendations may require the alteration or reconstruction of existing roadways, there are low-cost measures that can be implemented to improve the roadway environment for cyclists. The MUTCD provides a number of signs and pavement markings to alert drivers of the possibility of cyclists within or adjacent to the roadway. Those improvements include striping bike lanes on existing shoulders of at least four feet in width, installation of signs and pavement markings to inform drivers that they must allow space for cyclists within the travel way, and directional signs for cyclists along designated bike routes.









Traffic Calming Measures

There are techniques that can be implemented to help calm traffic in key locations within the Town. The examples below are some of the most effective ways of reducing vehicle speed, automobile collisions and improve aesthetics.



Neighborhood Traffic Circle

Advantages:

- Effective in reducing vehicle speed
- Can reduce severity of motor vehicle collisions
- Opportunity for landscape and improved aesthetics

Disadvantages:

- Difficult for left-turning emergency vehicles
- Possible need for right-of-way, depending on size of raised island
- Increased cost for maintenance of landscaping



Chicane

Advantages: • The chan

- The change in vehicle movement slows traffic
- Well designed chicanes have a positive aesthetic value
- Opportunity for landscape and improved aesthetics

Disadvantages:

- Possibility of vehicles mounting the landscaping areas
- May interrupt driveway access to adjacent properties
- Increased cost for maintenance of landscaping



Speed Table

Advantages:

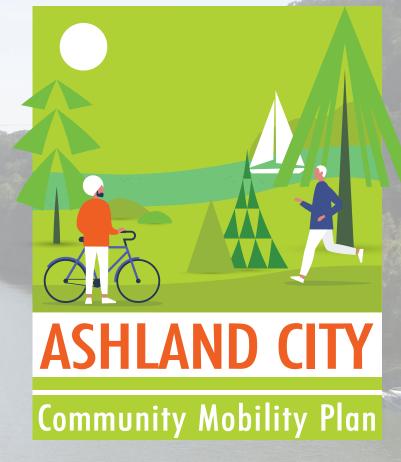
- Quicker response time for emergency vehicles than speed humps
- Effective in reducing vehicle speed
- Addition of brick or textured materials can improve aesthetics

Disadvantages:

- More expensive than speed humps
- Increases noise and air pollution in neighborhood
- May be damaged by snow plows



CONCLUSIONS(4)

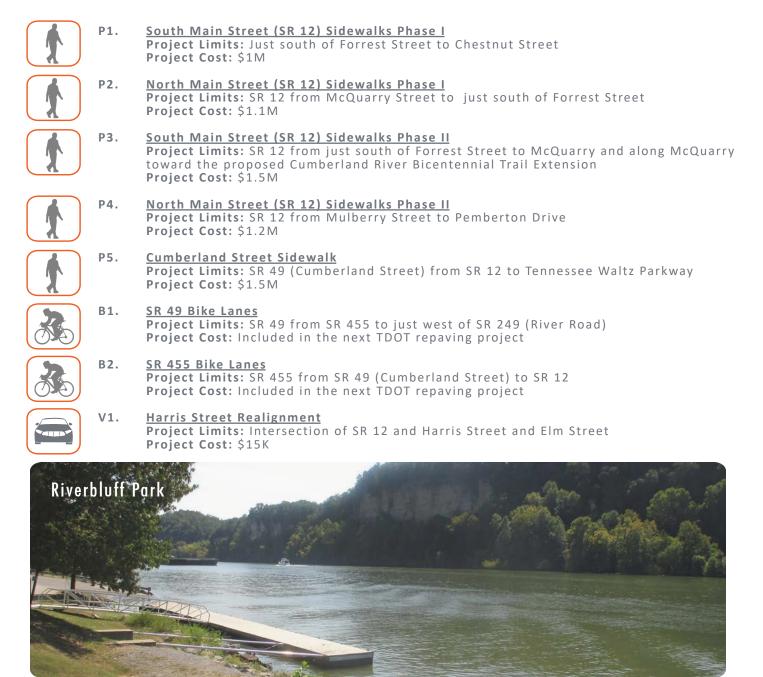


IMPLEMENTATION

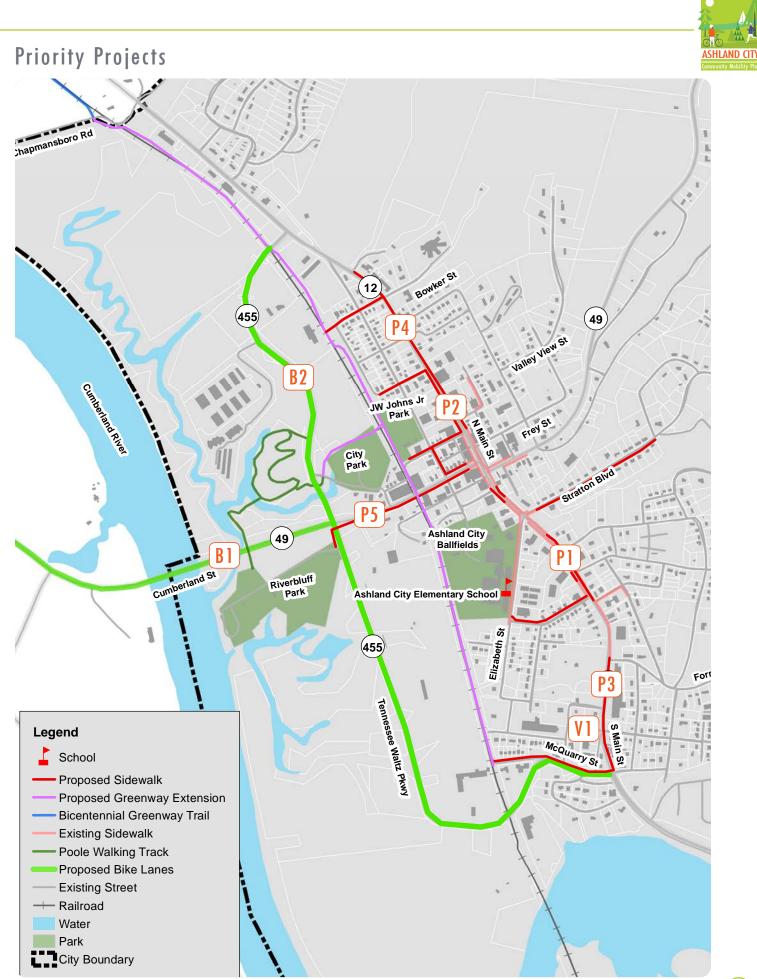
Community Partnership

50

The projects outlined in the route recommendation section of this report are considered the most important projects for Ashland City. The following project list narrows the list of recommended projects and presents them in order of implementation based on input from Ashland City staff and the public meeting as well as field observations, engineering judgment, and cost analysis. Information such as estimated costs and timeframe are provided for these priority projects to assist the City in planning and budgeting. The timeframe for implementation includes short-term (zero to three years), mid-term (three to ten years), and long-term (more than ten years). While the Ashland City Bicycle and Pedestrian Master Plan represents the contribution of the City staff and local community, successfully implementing the recommended projects will require cooperation among government entities, stakeholders, private developers, and people that live, work and visit the Town.



ASHLAND CITY Community Mobility Plan



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FUNDING OPPORTUNITIES

Funding Mechanisms

52

The recommendations from the Ashland City Bicycle and Pedestrian Master Plan will not be implemented through a single source, but a combination of multiple sources, including all or some of the following. The appropriate funding sources will depend on the project type and location.

- Public/Private Investment and Partnerships
- Ashland City Capitol Improvement Projects
- Grant Opportunities
- Imposing an Additional Tax

Public/Private Investment and Partnerships

Public/private partnership is a popular source for funding of parks, trails, and other recreational facilities. These partnerships can result in significant positive outcomes by bringing revenue, labor, and other resources for projects. Some typical examples of funding partnerships include park or amenity sponsorship, trail segment adoption, and organization-driven fundraisers. While these partnerships sometimes result in the investment in the parks and recreation system, they can also include shared-use or greenway facilities.

Ashland City Capitol Improvement Projects

Ashland City should continue planning at least five years out for future infrastructure enhancement projects that help with the safety and efficiency of bicycle and pedestrian transportation.

Grant Opportunities

In addition to self and private funding or partnership agreements, Ashland City can pursue a variety of local, state and federal grant options that best fit their needs based on project and location. Current grant options are highlighted on the following page, and the City should take advantage of these opportunities to help build better bicycle and pedestrian facilities.

Imposing Additional Taxes or Fees

Another way the City could be increasing funds to help build bicycle and pedestrian infrastructure is imposing additional taxes and fees. These could include park or facility fees, utility-type fees, solid waste fees, and food and beverage tax. Adding new or increasing fees can help improve Ashland City's operational cost-recovery. Operational cost recovery is calculated by dividing total non-tax revenue by total operational expense. The operational cost recovery is a critical performance indicator that measures how well each department's revenue generation covers the total cost of operations. Increasing the City's cost recovery ultimately means more money the City can put back into its infrastructure, potentially improving bicycle and pedestrian infrastructure.





GRANT OPPORTUNITIES

Multimodal Access Grant	 Pedestrian Crossings Sidewalks Bike Lanes ADA Improvements Pedestrian Lighting Bus Shelters Separated Bicycle Facilities Park and Ride Facilities Traffic Calming Measures Utility Relocation
Surface Transportation Block (STBG)	 Sidewalks Shared-Use Paths Safe Routes to School Complete Streets Bridge Enhancements
Transportation Alternatives Program (TAP)	 Pedestrian Facilities Shared-Use Paths Bike Lanes Safe Routes for Non-Drivers Safe Routes to School Historic Preservation Sidewalks Signage Crosswalks
Recreational Trails Program (RTP)	 Hard/Natural Surface Trail Shared-Use Paths Land Acquisition Maintenance Trailheads
Bridge Replacement and Rehabilitation Program (BRR)	 Every two years, the Tennessee Department of Transportation inspects all bridges in the State using National Bridge Inspection Standards. Bridges with a rating of 15 tons or less are prioritized from worst to best and then added to either the rehabilitation list or the replacement list.
High Priority Project (HPP)	 This program provides designated funding to the state (HPP) and Local Agencies (HPP-L) for specific projects identified by Congress.
Highway Safety Improvement Program (HSIP)	 Signage Improvements Roadway Re-striping Intersection Enhancements
Local Parks and Recreation Fund (LPRF)	 Land Acquisition Indoor/Outdoor Recreational Facilities Trail Development

