The City of Clarksville, Tennessee Parks and Recreation Department

Clarksville-Montgomery County

Greenway and Blueway Master Plan

2014 Update

Prepared by:

LOSE & ASSOCIATES, INC
LANDSCAPE ARCHITECTURE • ARCHITECTURE • ENGINEERING • PLANNING
WWW.LOSEASSOC.COM

THIS PAGE LEFT INTENTIONALLY BLANK.

Acknowledgements

The Lose & Associates, Inc. research and design team would like to thank all elected officials, board members, commissioners, Clarksville staff, Montgomery County staff, and citizens who participated in the development of this document. Through your commitment and dedication to the Parks & Recreation Department, we were able to develop this plan to guide the delivery of recreation services to the citizens of the City of Clarksville and Montgomery County.

Special thanks to:

City of Clarksville Mayor:
The Honorable Kim McMillan

City of Clarksville Staff:
Charlie Gentry
Chief of Administration
Mark Tummons,
Director of Parks & Recreation
Jennifer Byard,
Assistant Director of Parks & Recreation
Hatem Shah,
City Engineer
Brad Workman,
City Project Manager

Montgomery County Mayor:
The Honorable Jim Durrett

Montgomery County Staff:
Jeff Truitt,
Chief of Administration
Jerry Allbert,
Director of Parks & Recreation
Nick Powell,
County Engineer

Trails Task Force Members:

Neil Baggett
Daniel Binkley
Christopher Brown
Brett Burchwell
Sally Castleman
Chris Cowan
Ken Gilman
Bill Harpel
Mark Holleman
Sam Holt
Frank Lombardo
Lawson Mabry
Mike Malham
Mark Riggins
David Ripple
Mitch Robinson, M.A.Ed., C.P.A
Drew Sanford
Lionel Senseney
Hatem Shah
Melinda Shepard
RichardSwift
J.R. Tate

Clarksville City Council:
Richard Garrett, Ward 1
Deanna McLaughlin, Ward 2
James R. Lewis, Ward 3
Wallace Redd, Ward 4
Valerie Guzman, Ward 5
Wanda Smith, Ward 6
Geno Grubbs, Ward 7
David Allen, Ward 8
Joel Wallace, Ward 9
Mike Alexander, Ward 10
Bill Powers, Ward 11
Jeff Burkhart, Ward 12

Montgomery County Commission:
John M. Gannon, District 1
Charles Keene, District 2
Ed Baggett, District 3
Mark Riggins, District 4
Robert Gibbs, District 5
Arnold Hodges, District 6
Brandon Butts, District 7
Ron Sokol, District 8
John Genis, District 9
Martha Brockman, District 10
Joe Creek, District 11
Robert G. Nichols, District 12
Audrey Tooley, District 13
Tommy Vallejos, District 14
David Harper, District 15
Wallace Redd, District 16
Jason A. Hodges, District 17
Monroe Gildersleeve, District 18
Garland Johnson, District 19
Jerry Allbert, District 20
Larry Rocconi, District 21

Clarksville-Montgomery County Regional Planning Commission:
Dr. David Ripple
Executive Director
Mark Kelly
City Mayor Designee
Geno Grubbs
City Council Representative
Richard Swift (Chairman), Linda Rudolph, Wade Hadley
City Appointees
Bill Kimbrough
County Mayor Designee
Russell Adkins, Bryce Powers (Vice - Chairman)
County Appointees
Robert Nichols
County Commission Representative

Table of Contents

THIS PAGE LEFT INTENTIONALLY BLANK.

01 Introduction and Community Profile

THIS PAGE LEFT INTENTIONALLY BLANK.

01 Introduction and Community Profile

Clarksville and Montgomery County has embarked on the development of an update to the greenway master plan. This plan will help guide future improvements in the community for the next 10 years. The City of Clarksville selected Lose & Associates, Inc., to conduct this master plan, which will provide information and recommendations on greenway, bicycle route, and blueway infrastructure. In the development of the master plan, Lose & Associates utilizes demographic research, population projections, assesses current facilities, national standards and conducts a public input process. This document serves as both a strategic plan and an action plan, providing the city and county with guidelines and strategies for future greenway, bicycle routes and blueway efforts.

The information combined in this report can be utilized when seeking funding and implementing the Master Plan. In summary, this report provides the following information:

- Defines greenways and blueways and outlines the benefits
- Provides recommendations for the greenways and blueways network
- Provides recommendations for bicycle routes and sidewalks
- Illustrates routes and provides example cross sections
- Identifies priority projects based on established design criteria
- Provides design standards
- Identifies funding sources

Below is basic information on greenways, bicycle lanes, blueways and the benefits of the each. The Master Plan also includes information on sidewalk and bicycle lane connections as part of the proposed system improvements.

WHAT IS A GREENWAY?

A greenway is a linear open space with a trail established along a natural corridor for non-motorized uses. Greenways can be paved with asphalt or maintained as hard surface, such as compacted gravel fines, that is suitable for bicycles, strollers, wheelchairs, etc. In this master plan report, a greenway is also referred to as a multi-use path, a shared use path or a trail. Greenway trails can vary in width but should be at least 10 feet wide based on the AASHTO Guide for the Development of Bicycle Facilities and the Public Rights-of-Way Accessibility Guidelines (PROWAG). Greenways should comply with the American Disabilities Act (ADA) in order to be accessible to all users. The key features of a greenway include public access points called trailheads. The trailheads should be located in or adjacent to existing or planned

parks so that public amenities such as restrooms, parking, picnic pavilions, playgrounds and general recreation facilities are already available.

When developing a greenway system, corridors should be identified where pedestrians and bicyclists will access the area easily and connect them to various destinations and incorporate the natural resource. Greenways can be located in a variety of settings and can be utilized for active and passive recreation activities. They are typically located along natural environments such as rivers and ridgelines, but can also be located within the right-of-way of public streets or within utility corridors. These trails provide connections to nature, protect and maintain biodiversity, minimize development and provide for wildlife migration across natural and manmade boundaries.

Recreational greenways commonly link elements that have diverse and significant landscapes. Many link rural areas to more urban locales and range from local trails to larger systems. Most are paved trails that accommodate pedestrians, skaters and bicyclists. Another type of greenway is the cultural trail, which connects areas of significant historic value and culture. Economic benefits from these types of trails can be significant if linkages can be directed toward areas of commerce to provide an infrastructure for commuting.

Greenways have become one of the most popular family recreation activities across the country. The value of greenways in terms of recreation, education and resource protection is invaluable. Greenways serve as linkages between cities, parks, schools, commercial areas and neighborhoods. They provide a safe mode of transportation that preserves the environment.

WHAT IS A BLUEWAY?

Blueways are water-based trail systems for paddlers. These systems have designed access points and they are important recreation corridors that both promote conservation and can have economic benefits as well.

In the past, rivers were the main transportation routes for the movement of people and goods; now rivers present an opportunity for recreation and education. They provide a unique recreation experience for paddlers, while protecting priceless biological features.

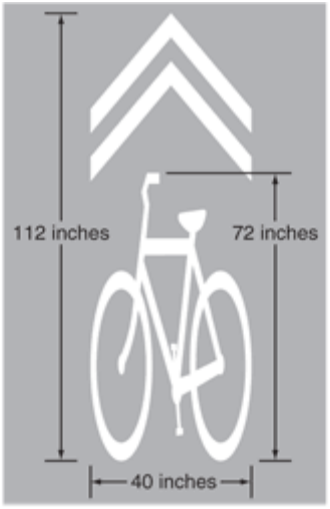
The key features of a blueway include public access points at suitable distances, typically with sites located every 5-6 miles. These access points should have adequate facilities including signage, parking and restrooms. With longer distances, canoe-in campsites may be required. Before developing and advertising a blueway, access points at appropriate intervals along the water trail must be available as well as established standards, rules and maps. Blueway corridor maps also need to be designated by water classes I-VI. A class I is mainly flatwater, meaning they typically have little current and obstructions are easily avoided by trained paddlers. Class IV and V are the most difficult classes and should only be used by experienced paddlers. Class VI is generally considered impassable. Warning information about dams, water levelers and other concerns should be provided.

SIDEWALK AND BIKE LANES

When making connections to places of interest, sometimes the best route is along the existing right-of-way. Sidewalks and bike lanes along existing travel ways can be added and/or utilized along existing routes to allow for a contiguous network. Sidewalks need to be at least five feet wide and wider in commercial areas.

Figure 1.1: Shared Lane Marking

As a general guideline, high volume roadways with average daily traffic counts over 10,000 vehicles and high speed roadways over 45 miles per hour should have raised sidewalks and protected bike lanes or a separated multi-use path (greenway). On roads with lower volume and low speeds, sidewalks are still needed but bikes can general mix with traffic.



Sharrow is a term used for shared lane pavement markings that identifies routes in which motorists should expect to share with cyclists. Across the country, cities have adopted sharrow lanes as accepted practices. Sharrow may be appropriate for some higher volume streets where dedicated bike lanes cannot be used because of right-of-way demands for on-street parking or other context sensitive reasons.

The 2009 Edition Chapter 9C. Markings, Section 9C.07 of the Federal Highway Administration's (FHWA's) Manual on Uniform Traffic Control Devices (MUTCD)[i] provides standards on these markings. See Figure 1.1.

BENEFITS OF GREENWAYS AND BLUEWAYS

Communities throughout the nation are building greenway and blueway infrastructure. The many benefits of greenways, bicycle lanes and blueways include economic, health and social benefits, which are summarized to the right.

Summary of Benefits:

- Connects people to places and activities
- Promotes healthy lifestyles
- Enhances local economies
- Provides recreational opportunities
- Protects the environment
- Provide transportation options

CONNECTS PEOPLE TO PLACES AND ACTIVITIES

At the basic level, connectivity is the key component to linking people to places and activities. Greenways, bicycle lanes and blueways allow users alternative transportation modes and routes throughout the larger community. On foot, bicycle or boat, users are connected to destinations such as community parks, natural areas, schools, retail centers, and other places of interest. They link people to places and provide enjoyable experiences within the corridor itself.

According to national surveys by the Federal Highway Administration as well as based on Lose & Associates own community surveys in the southeast, a majority of respondents say they are willing to walk as far as two miles to a destination and bike as far as five miles. As we design and implement a greenway system, we understand that destinations such as community parks, schools, residential areas and commercial centers should link together through a combination of bicycle and pedestrian facilities.

PROMOTES HEALTHY LIFESTYLES

According to the Center of Disease Control (CDC), one in every three U.S. adults and nearly one in five children age 6–19 years old are obese. The CDC also report that obesity has been linked to increased risk for heart disease, high blood pressure, type 2 diabetes, arthritis-related disability and some cancers. As the obesity epidemic grows, we find southern states, in particular, are at the highest risk. Over time, our community development patterns have become auto-centric, with a lack of pedestrian and bicycle infrastructure that makes it difficult to be physically active. The burden of addressing inactivity in communities often falls on our local public recreation departments. Now more

than ever, communities need system-wide strategic planning that includes infrastructure to support healthy lifestyle choices.

Studies show that exercising as little as 30 minutes, can have multiple benefits including reducing your risk of heart disease, maintaining body weight and lowering the risk of obesity. Regular physical exercise such as walking can also enhance mental well-being.[ii]

ENHANCES LOCAL ECONOMIES

Communities across the country have started to see the benefits of blueways as part of ecotourism. Given the scenic quality of the Cumberland River, the Red River, and their tributaries in Clarksville and Montgomery County, residents have compelling reasons to support blueways including conserving natural resources, increasing tourism, jobs and related spending that generates additional tax revenue.

State data - Outdoor recreation in Tennessee generates $535 million state and local tax revenue each year - *U.S. Travel Association*

National data - Bicycling activity alone supports 1.1 million jobs and generates $17 billion in annual federal and state tax revenue - *Outdoor Industry Foundation*

Greenways also benefit the local economy. In Tennessee, we find that outdoor recreation is particularly strong, "generating $8.2 billion annually in direct consumer spending, sustaining 83,000 direct jobs and generating $535 million in state and local tax revenue" according to the U.S. Travel Association reported.[iii]

Nationally, we find that the "bicycling industry is a $133 billion business in the US, generating $17 billion in taxes, sustaining 1.1 million jobs and during bike trips and tours, $46.9 billion is spent by bicyclist on meals, transportation, lodging, gifts and entertainment" according to a 2009 report from the League of American Bicyclists.

While results vary depending on project and location, the data shows that cities that invest and promote their pedestrian and bicycle infrastructure see a positive return. Other financial benefits include a reduction in direct medical costs, increases in property values and improved economic opportunities for local businesses.

PROVIDES RECREATIONAL OPPORTUNITIES

A lack of access to pedestrian and bicycle infrastructure can be a major impediment to an active lifestyle. For example, the National Policy & Legal Analysis Network to Prevent Childhood Obesity reported on a study in southern California that found children living near parks had lower body mass indexes than those without easy access to parks. Access to locations for physical activity plays a role in health factors. Although identifying root causes

of poor health can be a complex issue, providing access to residents helps improve recreation opportunities.

Opportunities for new trails can occur along streams, roadways, utility easements and other locations including railroad corridors. In a recent report by America's Rails-with-Trails, they find a growing trend of rail-with-trail development alongside local and regional transit corridors. Fifteen percent of the active rails-with-trails identified in the study are located adjacent to mass transit corridors. The trend has growing support from both the agencies and the users.[iv]

PROTECTS THE ENVIRONMENT

Greenways and Blueways can protect important wildlife habitat. For example, bird migration patterns often follow water corridors. By preserving the environment along stream corridors, we protect these habitats. In addition, appropriate wildlife buffers along the corridor can protect waterways and sensitive aquatic environments. Buffers protect water quality by filtering pollutants from runoff and provide flood control zones, stream bank stabilization, stream temperature control and room for lateral movement of the stream channel.

Linking buffers to create a network of green infrastructure provide benefits for wildlife corridors. Buffers can protect rivers and streams from future development with conservation easements; thus, conservation easements are a strong marketing tool that helps guarantee the protection of scenic views and our precious natural resources.

CREATES MORE LIVABLE COMMUNITIES

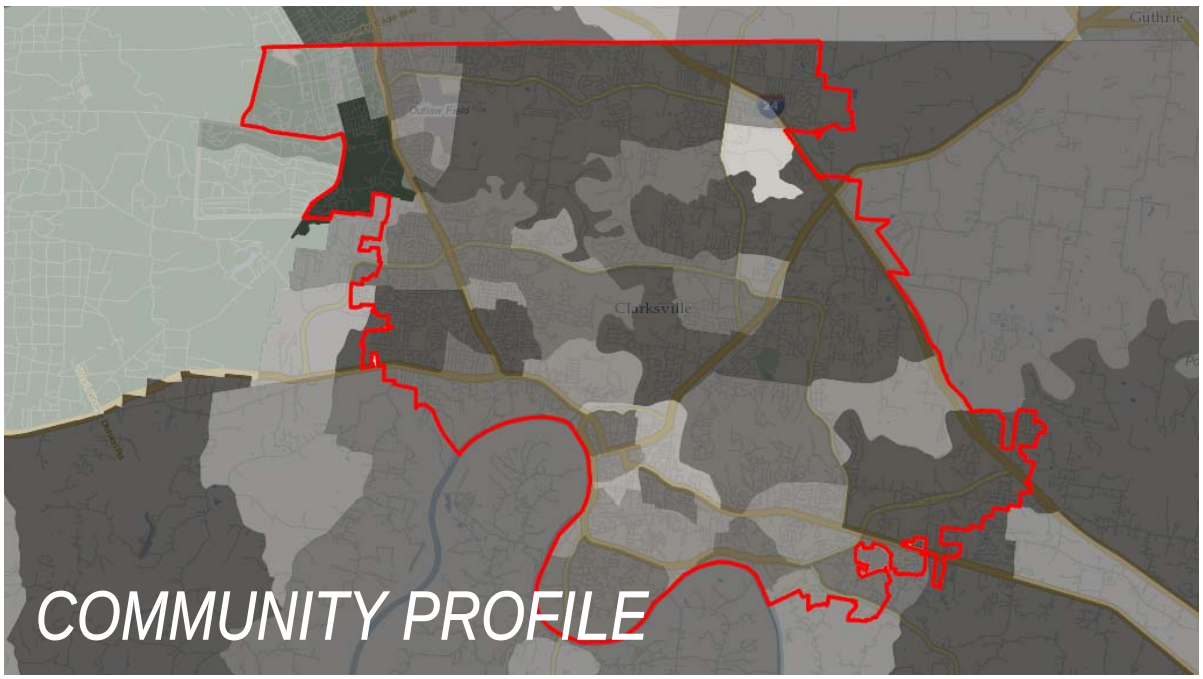
Copenhagen frequently tops rankings of the world's happiest and the most livable cities due in part to its focus on pedestrian and bicycle infrastructure. The result is that almost 40% of the residents commute by bike.[v] Initiatives include over 215 miles of bike paths, a free bike-sharing program for tourists and residents and a goal to be one of the world's best city in which to cycle. While cycling by commuters in this capital city is higher than the entire United States, we can learn a lot about livable from Copenhagen. The first step is having the infrastructure, but they also have a culture of biking and pedestrian friendly community as more and more residents use and support the facilities.

Recent studies on livable report that most Americans would rather walk and they support policies creating a safer pedestrian environment. Greenways provide alternative transportation that can reduce vehicle traffic. More of us could walk or bike given that nearly half of automobile trips are within a three miles radius of home[vi], which can help improve the air quality in the process. Understanding the benefits can help us create more livable communities that preserve resources for the next generation.

PROVIDES TRANSPORTATION ALTERNATIVES

As the population of Clarksville/Montgomery County continues to increase, so has traffic congestion. By providing transportation alternatives, Clarksville/Montgomery County will give residents and visitors options that can help relieve traffic congestion and improve the region's air and water quality while promoting a healthier lifestyle. Greenways provide alternative transportation links where individuals do not have to worry about drivers of automobiles because it is in a separate corridor. Once greenways reach more urban areas, protected lanes or share bikeways can be provided to connect users. These users of alternative transportation can save money by avoiding costs associated with car use including gasoline and parking fees.

Cities can increase the number of individuals using alternative transportation by providing pedestrian and biking infrastructure, which includes the sidewalk, bike lanes, greenway trails and bike racks, as well as other associated elements. Over the years, Lose & Associates has conducted numerous parks and recreation surveys in various communities throughout the southeast, and we find a majority of respondents would walk or bike to a park if the options were available. For example, in 2014, we conducted a survey in the community of Crossville, Tennessee. When asked how many would walk or bike to a park, 72% of respondents said they would walk, and 66% were willing to bike. When we asked the reason why they would not walk or bike, we found a majority had safety concerns.



Studying the community profile helps us all to better understanding the needs of Clarksville/Montgomery County and will help provide a basis for greenway and blueway system improvements. For those not familiar with the community, it is important to note that it is home to Austin Peay State University and its economy largely depends on neighboring Fort Campbell, United States Army base. Clarksville is the county seat of Montgomery County and is one of the fastest growing cities in the nation with populations over 50,000. To gain a better understanding of the community, the planning team researched the following topics in more depth as part of this section:

- Demographic characteristics
- Economic characteristics
- Health trends
- Transportation characteristics

Serving the community's needs is the central purpose of this master plan. By having a framework guided by community demographics, population projections, research and public input, the city can make well-planned, long-term decisions for the community.

DEMOGRAPHIC CHARACTERISTICS

According to the United States Census Bureau data[vii] (2013 estimates), Clarksville has a total population of 142,357 residents within a boundary of 97.60 square miles. This averages to 1,361.9 persons per square mile. Using data obtained through Demographics

Now[viii] and the United States Census Bureau, we find, overall, the city and county have experienced a high growth rate (27.8% to 29.2%) from 2000 to 2010. While Clarksville-Montgomery County has grown significantly from 2000 to 2013, we found in recent reports that the population number declined slightly from 2012 estimates to 2013 estimates. Reasons for the decline could be due to several economic factors but are likely to be a temporary decrease. Montgomery County has a total population of 184,119. Within the county is roughly two-thirds of Fort Campbell, which is approximately 105,000 acres total; however, the post office is in Kentucky. The US Census does not provide recent population estimates but in 2010 the population was 13,685.

Table 1.1 provides a summary of the population trends for Clarksville and Montgomery County as well as trends in communities similar to Clarksville. Cities were chosen based on population size, location and other similar characteristics. For example, Columbus, Georgia has Fort Benning nearby, Columbus State University and other similar characteristics such as river and interstate access as well as bordering another state. The community also has an extensive greenway/riverwalk. Columbia, South Carolina has a population and land area size similar to Clarksville. Huntsville, Alabama was selected because of its similar economic characteristics and has the Redstone Arsenal Military Base. It also has seen a significant increase in growth in recent years like Clarksville. In addition, the table includes two cities in Tennessee: Chattanooga, which is similar in size and could be considered as peer cities as well as Nashville because of its proximity to Clarksville. We find that both Chattanooga and Nashville are growing at a much slower rate than Clarksville as shown.

Table 1.1 Population Trends

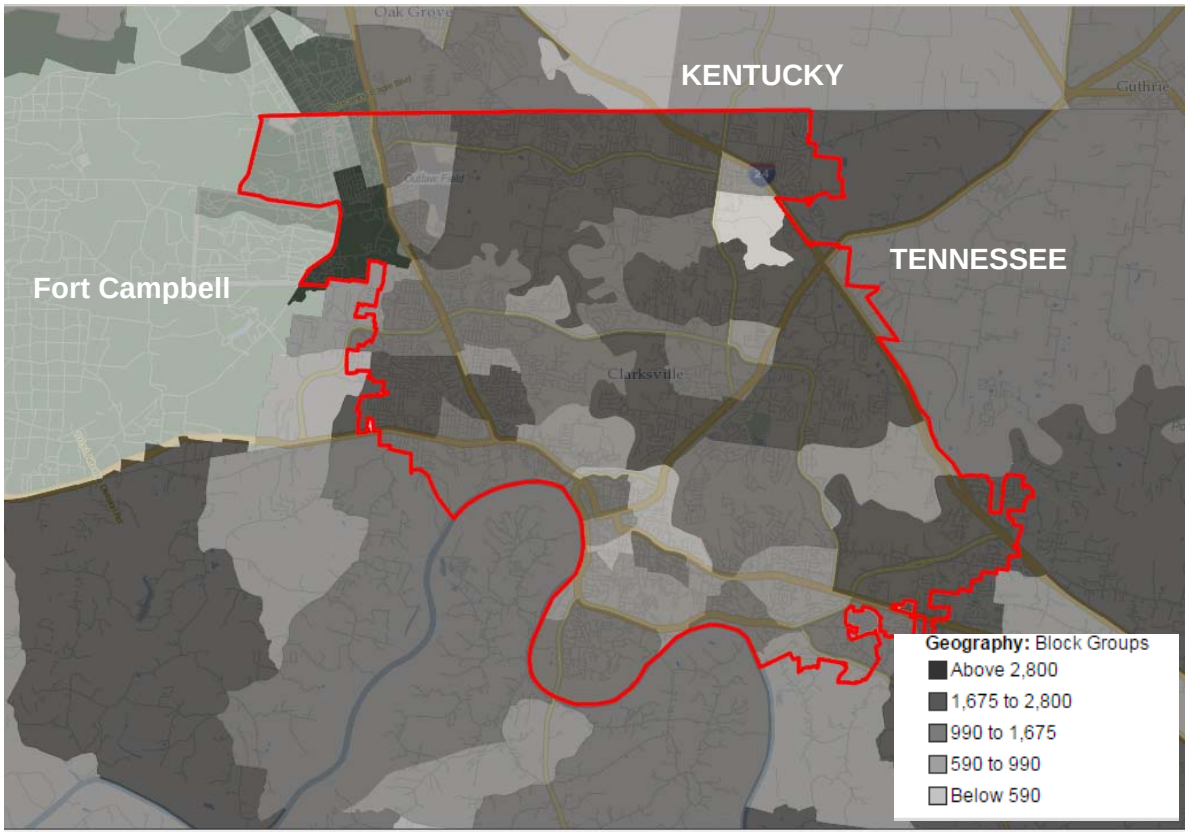
Area	2000	2010	2013	2018 Projection	Percent 2000 to 2010	Percent 2013 to 2018	Land Areas Square miles, 2010	Persons per square mile, 2010
Clarksville, TN	102,641	132,711	146,946	160,947	29.2%	9.5%	97.60	1,361.9
Columbus, GA	186,235	189,829	202,139	208,645	1.9%	3.2%	216.38	877.5
Columbia, SC	123,714	129,743	131,960	133,968	4.8%	1.5%	132.21	977.8
Huntsville, AL	160,933	180,173	183,839	190,188	11.9%	3.4%	209.05	861.5
Chattanooga, TN	156,137	167,743	174,411	178,858	7.4%	2.5%	137.15	1,222.5
Nashville, TN	545,611	601,244	632,686	655,739	10.1%	3.6%	475.13	1,265.4
Montgomery County	134,777	172,331	191,221	208,409	27.8%	8.9%	539.18	319.6

Source: Demographics Now and US Census Bureau.

In 2000, Clarksville is the smallest of the cities listed but outpaces Columbia, South Carolina by 2010. In relationship to Montgomery County, Clarksville has approximately 76% of the population in 2000. This rate stays roughly the same as both the county and city grow by 2013 and projected growth by 2018.

The city limits of Clarksville is approximately 97.6 square miles according to the United States Census Bureau, which is roughly 18% of the total Montgomery County area. In figure 1.1, the location of residential density is shown. Most of the residential development is along Fort Campbell Blvd (Alt 41) with the high density in the residential area of Fort Campbell.

Figure 1.1: Population by Census Block Groups 2014 Estimates



Source: *Demographics Now (http://www.demographicsnow.com/)*

An analysis of Clarksville's racial and ethnic makeup reveals the majority of the population (66%) identifies themselves as white, alone with, 22% of the population identify themselves as black or African American, alone. (Source: US Census Bureau)

Figure 1.2: Population by Race and Ethnicity 2010

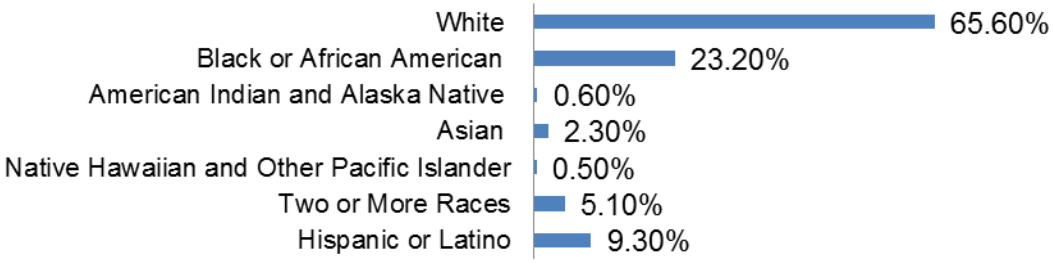
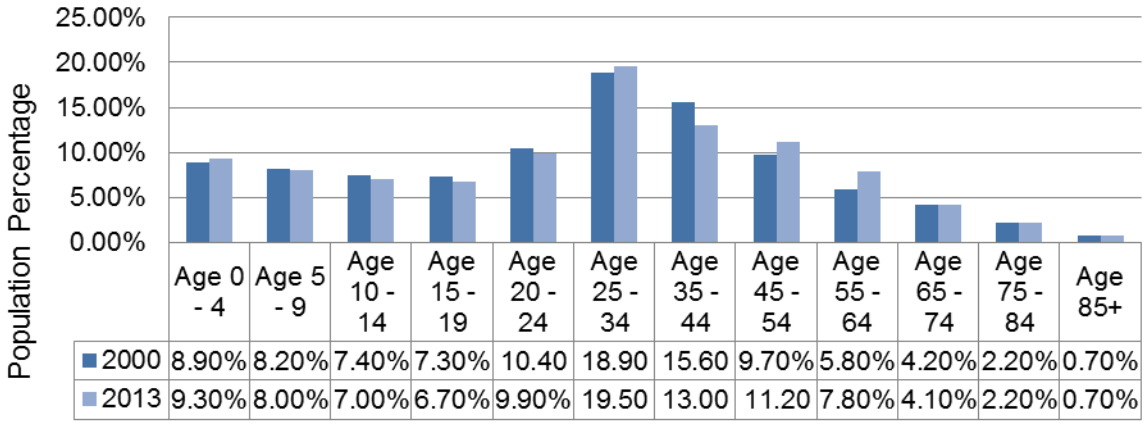


Table 1.2 Race and Ethnicity Trends from 2000 to 2010

Race/Ethnicity	2000	2010	Change
White	67.90%	65.60%	-2.30%
Black	23.20%	23.20%	0.00%
American Indian or Alaska Native	0.50%	0.60%	0.10%
Asian/Native Hawaiian/Other Pacific Islander	2.30%	2.30%	0.00%
Some Other Race	2.60%	0.50%	-2.10%
Two or More Races	3.20%	5.10%	1.90%
Hispanic Ethnicity	6.00%	9.30%	3.30%

Next, we researched the gender ratio, which is split at 51.3% female to 48.7% male and the median age is 29 in 2013. According to the US Census Bureau, we do not see the national trend of a large growing senior population. We see the largest increase in 55 to 64 year olds but 65 to 85+ stays almost the same. We do see the number of children, ages 0-4, increasing as shown in Figure 1.3.

Figure 1.3: Population by Age 2000 and 2010



This information on age groups can be helpful when studying the national trends, which indicate that certain age groups are more likely to commute to work by bicycle if facilities are available. In general, the majority of bicycle riders are ages 5-15 and we find that this age group has the highest level of bicycle injuries. For adults, men are more likely to bike to work than women are, although, some studies suggest that when bike lanes are safer (i.e. protected or separated from the roadway), women are just as likely as men to commute by bicycle.

ECONOMIC CHARACTERISTICS

Economic characteristics, such as the homeownership rate, median household income and the poverty rate, are important to compare to the county, state and national levels.

On average, Clarksville has a lower homeownership rate than Montgomery County. Both the city and county are lower than the state and the national average. The median household income in Clarksville is slightly lower than the county but still above the state level. When reviewing the poverty rate, we find that Clarksville has a similar poverty rate to the state average estimate from 2008-2012, which is slightly higher than the county average (see Table 1.3.).

Table 1. 2: Economic Characteristics

Economics	Clarksville	Montgomery County	Tennessee	USA
Homeownership rate, 2008-2012	57.00%	63.10%	68.40%	65.50%
Median household income, 2008-2012	$47,305	$49,459	$44,140	$53,046
Persons below poverty level, percent, 2008-2012	17.90%	16.20%	17.30%	14.90%

Source: US Census Bureau.

An indicator of walking and biking commuting is the number of vehicles per household. As shown in table 1.3, we do not find an increase in the average of vehicles own per household projected for 2018 despite populations projected to continue to increase.

Table 1.3: Vehicles Available

Size of Household:	2000 Census	2010 Census	2013 Estimate	2018 Projection	2000 to 2010	2013 to 2018
0 Vehicles	2,527	2,181	2,416	2,544	-13.7%	5.3%
1 Vehicle	12,059	15,305	16,994	18,613	26.9%	9.5%
2 Vehicles	16,508	21,587	24,007	26,700	30.8%	11.2%
3 Vehicles	6,309	10,309	11,475	12,902	63.4%	12.4%
Avg Vehicles Per Hhld	1.7	2.0	2.0	2.0	18.2%	0.4%

Source: Demographics Now

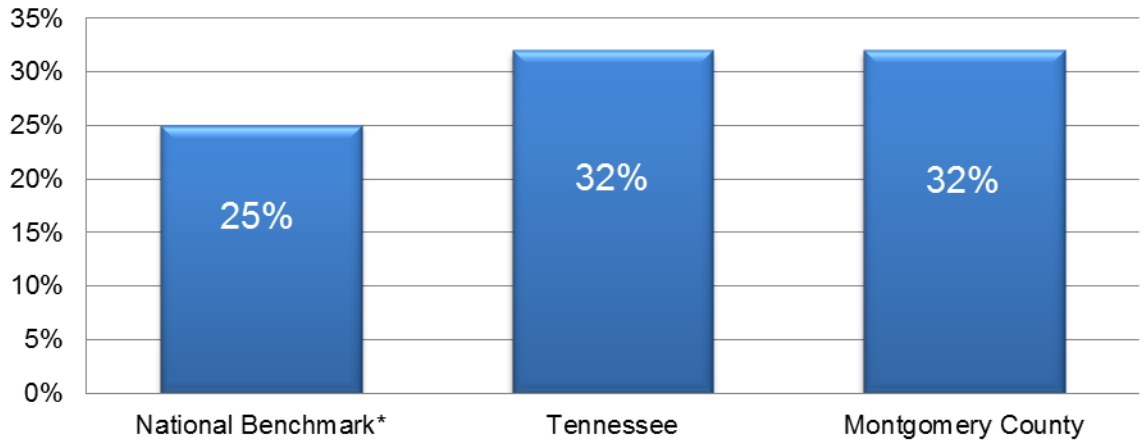
Notably, "Workers with no available vehicle walked four times more and biked three-and-a-half times more than workers with one available vehicle", according to the U.S. Census' American Community Survey.

HEALTH TRENDS

As part of the research, it is important to review heath factors related to inactivity. In general, Americans are less active than in the past due to sedentary lifestyles. This inactivity has led to an obesity epidemic, which continues to grow with the most dramatic increases seen in the South. According to the Center of Disease Control, one in every three U.S. adults and nearly one in five children aged 6–19 years are obese nationwide. Obesity has been linked to increased risk for heart disease, high blood pressure, type 2 diabetes, arthritis-related disability, and some cancers.

With concern growing nationally, it is important to look at the health statistics for the Clarksville. City officials as well as residents of Clarksville need to understand these risks because strong action at the community level is critical to addressing chronic disease trends. Data available for Montgomery County reveal obesity rates consistent with the state – both are higher than the national benchmark by 7%.

Figure 1.4: Adult Obesity Rate



Source: www.countyhealthrankings.org *90th percentile, i.e., only 10% are better.

As shown in figure 1.4, the adult obesity rate is 32% in Montgomery County. While the rate includes the entire county, the numbers are still troubling. We know that people's environment has an enormous impact on their choices. Having access to parks, recreation amenities, sidewalks and greenways can help to improve a community's overall health. For example, the National Policy & Legal Analysis Network to Prevent Childhood Obesity reported on a study in southern California that found children living near parks had lower body mass indexes than those without easy access to parks. Access to locations for physical activity plays a role in health factors. Although identifying root causes of poor health can a complex issue, the many benefits of greenways, trails and sidewalks include positive effects on improved health.

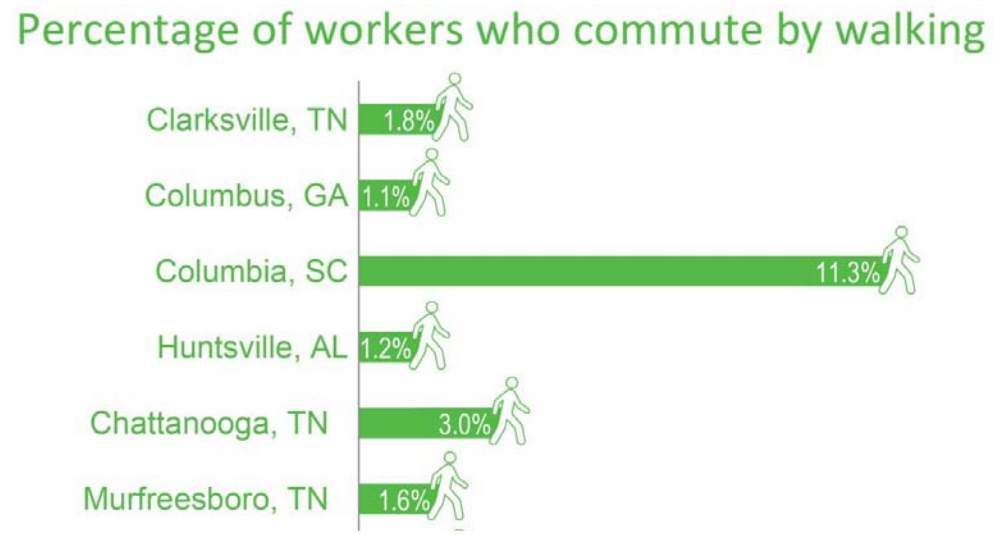
TRANSPORTATION CHARACTERISTICS

An important baseline to understand regarding transportation characteristics is how many residents are currently commuting by various transportation options. The predominate mode of travel and investment in Clarksville/Montgomery County is automobile transportation, which is typical across the country. On the following pages is a summary of the various modes of travel in Clarksville.

According to the U.S. Census' American Community Survey, most residents commute in Clarksville by automobile (81.3% drive alone and 12.4% carpool). The mean travel time to work is 24.3 minutes, which is near the national average of 25.4 minutes. Longer commutes can effect workers' free time and can contribute to health problems such as increased blood pressure. The U.S. Census' American Community Survey also provides data that gives us an estimation of how many people walk and bicycle to work regularly. Using data from the American Community Survey, we can understand the rates of active transportation and compare to other communities.

The figure below shows the percentage of workers who commute by walking. Clarksville at 1.8% is slightly higher than Columbus, Georgia and Huntsville, Alabama. Columbia, South Carolina has a surprisingly high rate (11.3%), which could be due to the large student population.

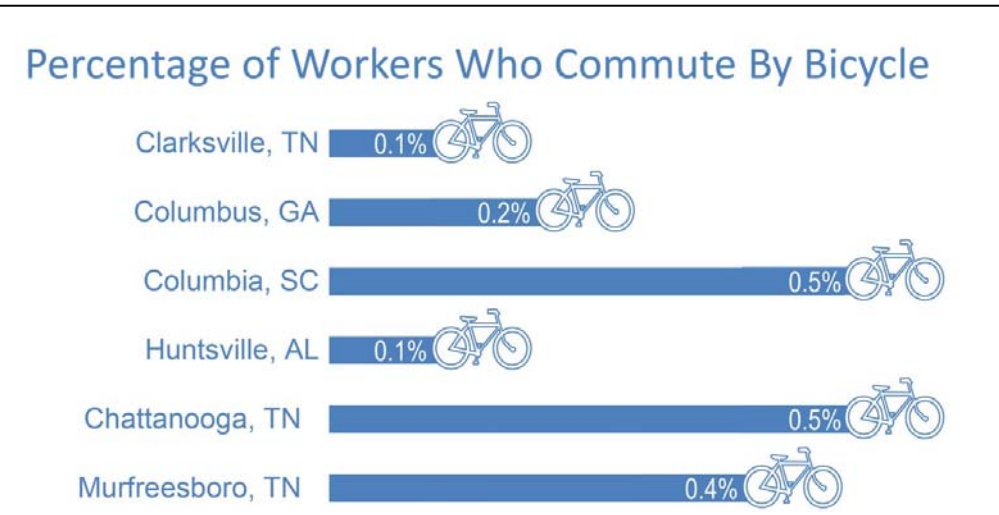
Figure 1.5: Percentage of Workers Who Commute By Walking 2008–2012



Source: US Census Bureau, American Community Survey 2008-2012

U.S. Census' American Community Survey also provides information on the percentage of workers who commute by bicycle. Clarksville has few residents who commute by bicycle as a percentage of the overall commuters. Compared to other cities such as Columbia, South Carolina, Clarksville has a much lower percentage.

Figure 1.6: Percentage of Workers Who Commute By Bicycle 2008–2012



Source: US Census Bureau, American Community Survey 2008-2012

Given the higher percentage of workers who commute by walking and bicycling in other similar cities, we anticipate that if similar supporting trails and facilities are provided and available for commuters in the area, Clarksville-Montgomery County would experience an increase in these alternative transportation modes.

SUMMARY OF THE COMMUNITY PROFILE

The demographic review of Clarksville/Montgomery County revealed several interesting trends about the current and future status of the population. Overall, the population has experienced significant growth over the past ten years and, we found that the 55 -64 age group is growing the fastest. We also found that the predominantly Caucasian population has been gradually diversifying over the last two decades. Both of these trends are prevalent in other communities similar to Clarksville/Montgomery County and researchers see this following the national trend.

Another national trend occurring in the county, particularly in southern states, is the increasing rate of obesity. Studies have speculated that obesity rates in low-income areas could be the result of limited opportunities for daily walking as well as access to good nutrition. Recognizing low-income areas that lack greenways and access to parks is important. This master plan will help to identify opportunities to connect to existing destinations such as parks. The increased access to trails and trail facilities could also help to promote good health.

Greenway trails appeal to a wide range of users at various fitness levels. The trend across the United States for more trails will likely continue as populations in cities become more intense. The community profile reveals a low percentage of workers walking and biking as compared with Clarksville's peer-cities. The planning team anticipates that if Clarksville/Montgomery County invested in more trails and facilities that provide residents

options of walking and bicycling to their destinations rather than using an automobile, the community would experience an increase in these alternative transportation modes.

---

[i] Federal Highway Administration. (2009). "Markings". In *Manual on Uniform Traffic Control Devices. (*9C, Section 9C.07). Retrieved from http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part9.pdf

[ii] "The Benefits of Walking," *http://www.startwalkingnow.org/whystart_benefits_walking.jsp, a*ccessed January 2015.

[iii] "Tennessee Adventure Tourism Program Now Accepting Applications for Community Certification," *news.tn.gov,* February 13, 2014, https://news.tn.gov/node/11998.

[iv] Rails-to-Trails Conservancy. *America's Rails-with-Trails Report: A Resource for Planers, Agencies and Advocates on Trails Along Active Railroad Corridors*, railstotrails.org, September 1, 2013, http://www.railstotrails.org/resource-library/resources/americas-rails-with-trails/

[v] Sood, Suemedha. "What Copenhagen Can Teach the World," *Beyond the Headlines,* bbc.com, April 13, 2012, http://www.bbc.com/travel/blog/20120412-travelwise-what-copenhagen-can-teach-the-world

[vi] "Complete Street Fundamentals: Gas Prices," smartgrowthamerica.org, http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/factsheets/gas-prices,accessed January 2015.

[vii] United States Census Bureau. http://www.census.gov/, Accessed January 2015.

[viii] Demographics Now. SRC, LLC. Web. 2015. http://www.demographicsnow.com, Accessed January 2015.

02 Previous Planning Efforts

THIS PAGE LEFT INTENTIONALLY BLANK.

02 Previous Planning Efforts

The planning team reviewed multiple resources and data sets for Master Plan development. These included cultural and natural resources, land use compatibility analyses, land value records, geographic proximity analyses, population density records, and infrastructural information. Additionally, specific planning studies were referenced:

- *Clarksville-Montgomery County Greenway Master Plan (1999)*
- *Clarksville Parks And Recreation Master Plan (2002)*
- *Clarksville Urbanized Area Metropolitan Planning Organization (CUAMPO) 2040 Metropolitan Transportation Plan*

A brief summary of these studies as they relate to this Master Plan document is provided on the following pages.

CLARKSVILLE-MONTGOMERY COUNTY GREENWAY MASTER PLAN (1999)

Beginning in 1998, the City of Clarksville and Montgomery County Planning Commission embarked on the process of the first county-wide greenway master plan. Research of the natural and cultural assets of the county was conducted to determine possible greenway routes and trailheads. The process also included a series of public meetings, workshops, and surveys. Research and findings were documented in the *Clarksville-Montgomery County Greenway Master Plan* report that was submitted to the City and County in the summer of 1999.

The 1999 document was utilized in this Master Plan document as a tool for identifying trends that have emerged since the turn of the century and a reference point for continued greenway planning. Land corridors originally identified in 1999 study were reassessed and incorporated accordingly within updated/new planning efforts.

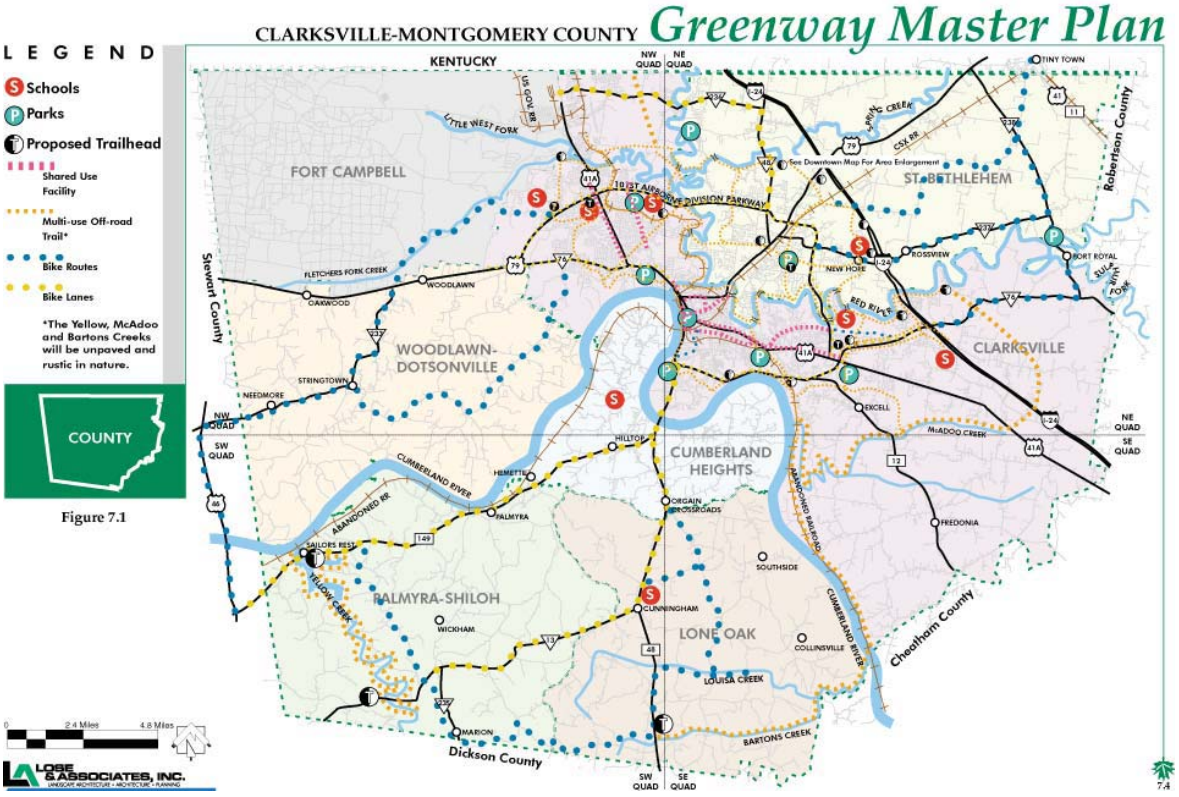


Figure 2.1: Overall Master Plan

(Courtesy *Clarksville-Montgomery County Greenway Master Plan*)

CLARKSVILLE PARKS AND RECREATION MASTER PLAN (2002)

Completed in 2002, the *Clarksville Parks and Recreation Master Plan* presented a comprehensive study of the City's parks and recreation system, including a facility assessment of all parks within the city. At the time, the City was still recovering from a major tornado that struck in 1998. Original studies subsequently addressed recreational programming needs, management, maintenance, and funding over the next ten years.

Research also included a needs assessment survey that was facilitated by Lose & Associates, Inc. This effort examined whether the facilities, programs, and events being provided by the department were of the type and quality desired by the community. A total of 6,000 surveys were mailed throughout the entire county (at the time, county park facilities were included within the City service boundary). A survey response of 9% was received, providing a 95% sampling accuracy. Following common trends of the time, the study revealed a desire for more individual- and family-based activities, rather than youth sports. A top ten list of programs cited by individuals and families as activities in which they had participated in the previous two years (1999-2001) included:

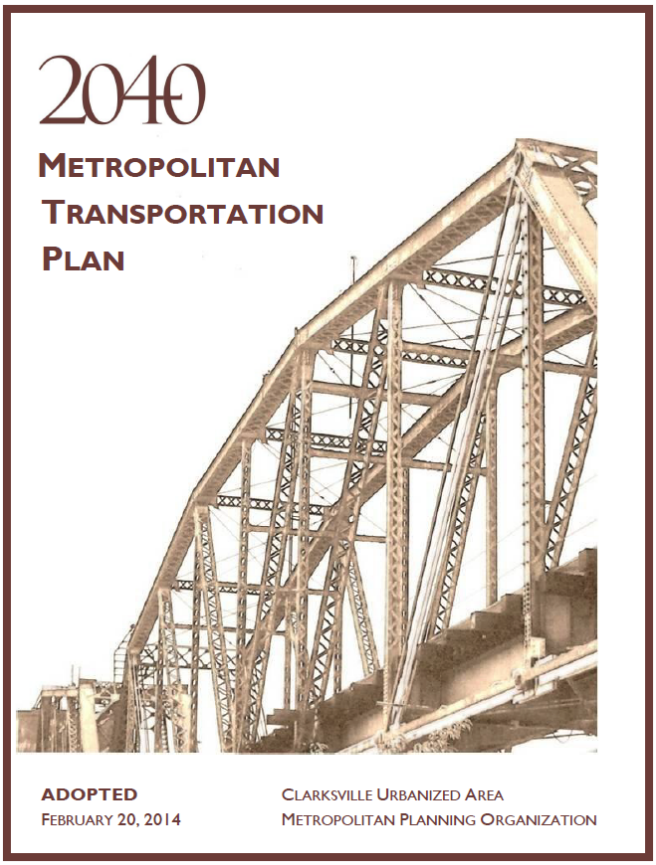
- Riverfest Festival
- Running / walking
- Visiting playgrounds
- Concerts in the parks
- Swimming
- Fishing
- Hiking
- Boating
- Bicycling
- Golf

Within the 2002 document, Lose & Associates forecasted that Clarksville's greenways would likely be constructed over a 25-year period, beginning with a 5.5-mile connection between the existing River Walk at McGregor Park to Heritage Park along the West Fork of the Red River. Lose & Associates also recommended that Clarksville capitalize on its park locations along Cumberland River to provide for fishing, boating, and other recreation opportunities.

This Master Plan document utilizes the *Clarksville Parks and Recreation Master Plan* to examine progress since 2002 and help shape current planning recommendations for the future. For example, while approximately 80% of the aforementioned connection from McGregor Park to Heritage Park has been implemented, approximately one-mile of trail and a bridge connection over the Red River are still needed to complete the link. Also, the connection recommended in 2002 between McGregor Park and Fairgrounds Park [Liberty Park] has yet to be completed. By identifying these incompletions, this updated Master Plan establishes a historic basis for providing recommendations. This updated document also recognizes recent initiatives that have emerged since 2002 to help guide planning recommendations – e.g. investments made within the past ten years to renovate Liberty Park and expand McGregor Park.

CLARKSVILLE URBANIZED AREA METROPOLITAN PLANNING ORGANIZATION (CUAMPO) 2040 METROPOLITAN TRANSPORTATION PLAN

The Clarksville Urbanized Area Metropolitan Planning Organization's (CUAMPO's) *2040 Metropolitan Transportation Plan* (*2040 MTP*) was adopted in February 2014, providing "a 25-year blueprint for transportation investments in the region."[i] The plan addresses multiple modes of travel (streets and highways, bikeways and walkways, public transportation, aviation, rail, and waterways) and analyzes a range of regional data (population and employment trends, land development patterns, travel characteristics, and current and future transportation system performance) in planning for the future of transportation in Clarksville.[ii]



Building off of Moving Ahead for Progress in the 21st Century (MAP-21), the most recent national legislation providing guiding

principles for transportation decision-making in metropolitan areas throughout the United States, the CUAMPO *2040 Metropolitan Transportation Plan* establishes seven specific local goals. These include: [iii]

1) Enhance and maintain an efficient, safe, and secure highway and street network.
2) Manage the local thoroughfare system to minimize congestion.
3) Promote the use of alternative transportation modes.
4) Improve transit service and accessibility for all citizens.
5) Develop an integrated multi-modal transportation system that serves the needs of both passenger and freight traffic.
6) Develop a transportation system that preserves the natural and cultural environment.
7) Maintain and enhance the region's economic vitality.

This updated Master Plan document utilizes the *2040 MTP* as a guide for greenway and blueway planning in relation to Clarksville's larger transportation plans for the future. For example, an objective of Goal 1, noted above, is to cooperate with school officials and the Clarksville Transit System to improve accessibility, roadway efficiency, safety, and security along transit routes and in school zones. School locations and multi-modal connections between them have subsequently been identified on maps included in Section 5. [iii]

Additionally, an objective of Goal 3, also noted above, includes the review of proposed roadway work during early development phases to ensure that alternative transportation modes are accommodated. Figure 4-10 of the *2040 MTP* and corresponding Tables 4-8, 4-9, and 4-10 (see below) identify these projects and have informed the prioritization of recommended land corridors highlighted in Section 5 of this document. [iii]

An objective of Goal 3 also includes the incorporation of bicycle and pedestrian facilities into public rights-of-way and easements, including the preservation of abandoned railways and utility easements for pedestrian and bicycle trails. This provides the basis for implementation of multi-use paths, shared-lane bike paths, and separate-lane bike paths also recommended within Section 5 of this document as well as the connections linking Woodlawn Park and northwestern Cheatham County to the Clarksville network. [iii]

Lastly, the *2040 MTP* identifies a future network of multi-use paths focused on connecting neighborhoods and existing and future parks. These facilities are identified in Figure 4-21 and corresponding Tables 4-17 and 4-19 (see below) of the *2040 MTP* and served as a critical resource in identifying recommended land corridors highlighted in Section 5 of this document. [iii]

THIS PAGE LEFT INTENTIONALLY BLANK.

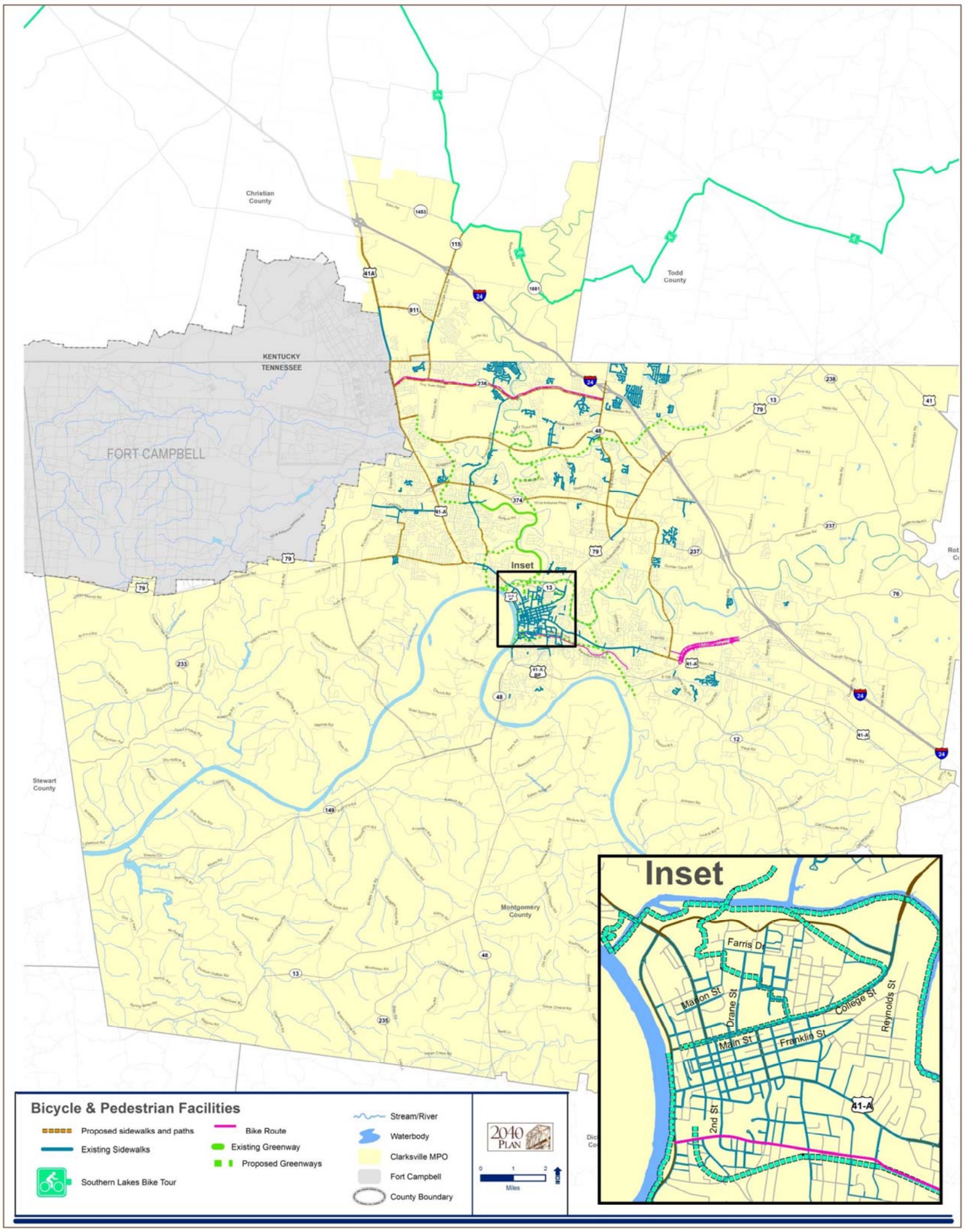


Figure 2.2: Bicycle and Pedestrian Facilities
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Figure 4-21)

Street Name	From	To	Proposed Improvements
Short-Term Recommendations (First 5 Years)			
8th Street	College Street	Kraft Street	Stripe shared lanes for autos and bikes and allow on-street parking on west side
Farris Drive	Drane Street	8th Street	Stripe shared lanes for autos and bikes and allow on-street parking on either north or south side
2nd Street	College Street	Commerce Street	Replace western travel lane with angled back-in on-street parking and mark eastern travel lanes as shared lane for autos and bikes
	Commerce Street	Madison Street	Replace western travel lane with parallel on-street parking and mark eastern travel lanes as shared lane for autos and bikes
3rd Street	Madison Street	Commerce Street	Replace western travel lane with angled back-in on-street parking and mark eastern travel lanes as shared lane for autos and bikes
	Commerce Street	College Street	Restripe to include parallel on-street parking on east side, one northbound travel lane, and a 5' bike lane.
College Street	2nd Street	Riverside Drive	Stripe 7-foot bike lane on both sides
Marion Street	1st Street	8th Street	Stripe 4-foot bike lane on both sides
Future Improvements (More than 5 Years)			
Residential Sidewalk	All	All	Construct sidewalk on residential streets where none exist
Main Streetscape	Riverside	2nd Street	Construct sidewalk (Riverside to 1st), add bulbouts with trees and/or bioswales (Public Sq to 2nd)
Commerce Streetscape	3rd Street	University	Implement cross-section with on-street parking and sidewalks
Spring Streetscape	Adams	Union	Implement cross-section with on-street parking and sidewalks
Spring Streetscape	Commerce Street	Riverside Drive	Implement cross-section with on-street parking and sidewalks
Jefferson/West/Home Streetscape	Riverside	College Street	Implement cross-section with on-street parking and sidewalks
1st Streetscape	Commerce Street	Franklin	Implement cross-section with on-street parking and sidewalks
1st Streetscape	College Street	Marion	Implement cross-section with on-street parking and sidewalks
Union Streetscape	2nd Street	Madison Street	Implement cross-section with on-street parking and sidewalks
Kraft Streetscape	College Street	Riverside Drive	Reconstruct roadway including median and urban curb and gutter drainage with bike lanes and sidewalk.
College Streetscape	Ford	2nd Street	Implement cross section with wide outside shoulders

Table 2.1: Bicycle and Pedestrian Facilities recommended in Clarksville Downtown Parking, Streets and Network Study (Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Table 4-17)

Street Name	From	To	Miles	Roadway	Transit Route?	Build with Roadway Project?	Notes
KY-911 (Thompsonville Ln.)	US-41A	KY-115 (Pembroke-Oak Grove Rd.)	1.8	State		Yes; 2017-2026	
KY-115 (Pembroke-Oak Grove Rd.)	Nick Ln.	KY-400 (State Line Rd.)	0.4	State	Yes	Yes; 2017-2026	
KY-400 (State Line Rd.)	US-41A	KY-115 (Pembroke-Oak Grove Rd.)	1.5	State	Yes	Yes; 2017-2026	
KY-115 (Pembroke-Oak Grove Rd.)	KY-911 (Thompsonville Ln.)	Oak Grove City Hall	0.8	State		Yes; 2017-2026	
SR-236 (Tiny Town Rd.)	US-41A (Fort Campbell Blvd.)	SR-48 (Trenton Rd.)	7.0	State	Yes		Incorporate sidewalks as development occurs
US-41A (Fort Campbell Blvd.)	US-79 (Dover Rd.)	KY-400 (State Line Rd.)	6.7	State	Yes		
Peachers Mill Rd.	US-41A (Providence Blvd.)	Dale Terrace	1.4	Local	Yes		South of Peachers Ridge Rd., use proposed Heritage Park Trail
Jack Miller Blvd. Extension	Tobacco Rd.	Peachers Mill Rd.	2.0	Local		Yes; 2017-2026	Link to proposed Heritage Park Trail
East-West Connector Phase 1	US-79 (Wilma Rudolph Blvd.)	SR-48 (Trenton Rd.)	2.5	Local		Yes; 2017-2026	Link to proposed Spring Creek Trail
Providence Blvd.	Market St.	Quarry Rd.	0.2	State	Yes	No	Gap in existing sidewalk
Providence Blvd.	US-41A (Fort Campbell Blvd.)	Cedar Ct.	0.3	State	Yes	No	
KY-115/Pembroke Rd.	SR-236 (Tiny Town Rd.)	KY-400 (State Line Rd.)	0.8	State	Yes	No	Explore building in Fort Campbell rail right-of-way
US-41A (Fort Campbell Blvd.)	KY-911 (Thompsonville Ln.)	KY-117 (Herndon-Oak Grove Rd.)	2.2	State		No	Incorporate sidewalks as development occurs
US-41A (Madison St.)	Alfred Dr.	SR-76	0.9	State	Yes		
East-West Connector Phase 2	SR-48 (Trenton Rd.)	Peachers Mill Rd.	3.7	Local		Yes; 2027-2035	
SR-374 (101st Airborne Div. Pkwy.)	US-79 (Wilma Rudolph Blvd.)	US-41A (Fort Campbell Blvd.)	6.3	State	Yes *	No	* Express route, limited stops
SR-374 (Warfield/Richview Blvd.)	US-79 (Wilma Rudolph Blvd.)	US-41A (Madison St.)	5.5	State		No	
SR-48 (Trenton Rd.)	SR-374 (101st Airborne Div. Pkwy.)	Tylertown Rd.	4.0	State		Yes; 2027-2035	
US-79 (Wilma Rudolph Blvd.)	SR-374 (101st Airborne Div. Pkwy.)	I-24/Alfred Thun Rd.	2.5	State	Yes	No	
SR-48 (Trenton Rd.)	SR-374 (101st Airborne Div Pkwy.)	US-79 (Wilma Rudolph Blvd.)	1.0	Local	Yes	Yes; 2036-2040	
KY-115 (Pembroke-Oak Grove Rd.)	I-24	KY-1453 (Elmo Rd.)	1.3	State		Yes; 2017-2026	
Donna Dr./Cunningham Ln.	US-79 (Dover Rd.)	Lafayette Rd.	1.8	Local	Yes		
US-79 (Dover Rd.)	Liberty Church Rd.	Dover Crossing Rd.	3.0	State	Yes		
New Connection	SR-76	SR-374 (Richview Rd.)	0.5	Local		No	

Table 2.2: Proposed Sidewalks or Multi-Use Paths
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Table 4-19)

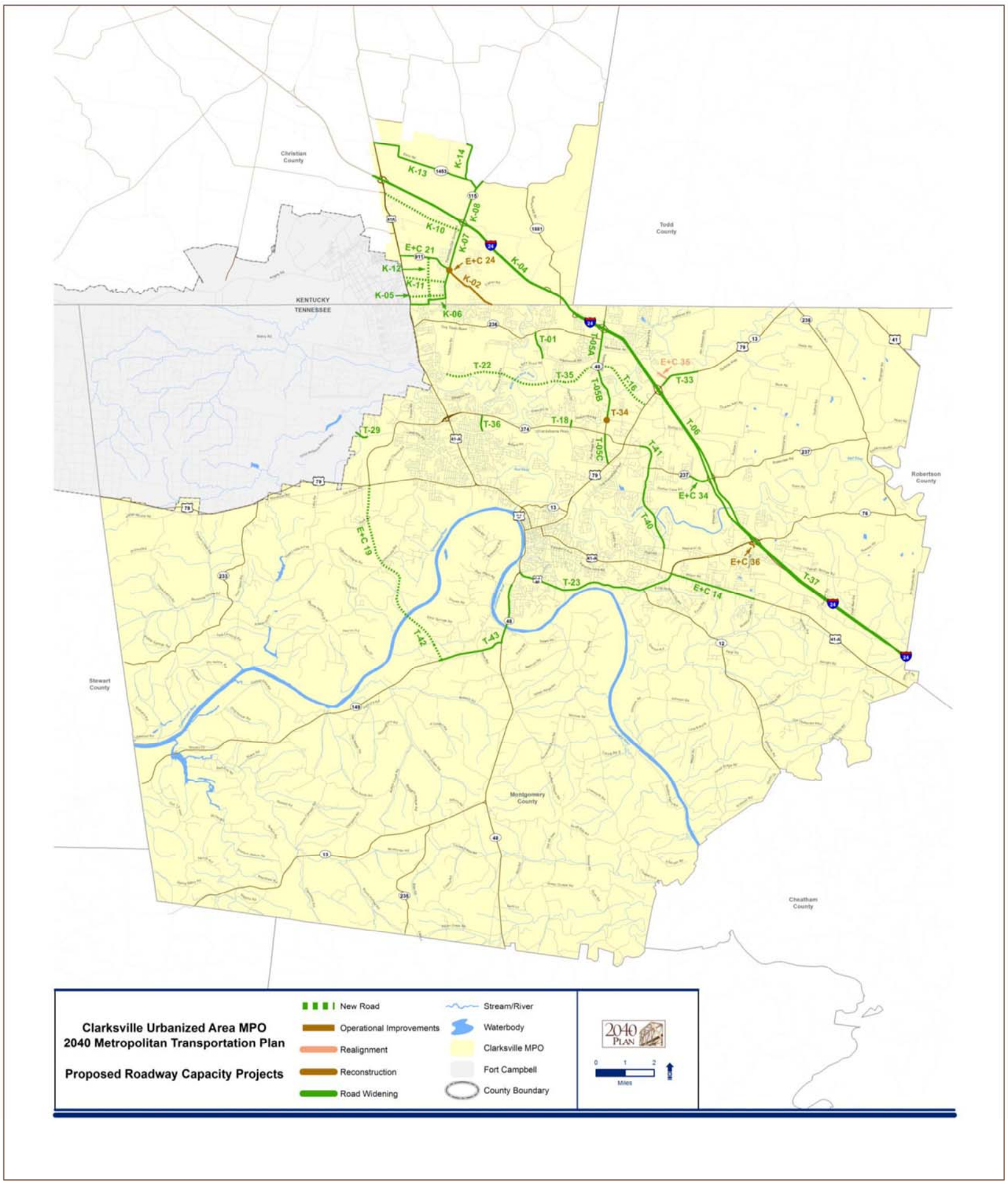


Figure 2.3: Bicycle and Pedestrian Facilities
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Figure 4-21).

Project Number	Roadway	From	To	Length (Miles)	Jurisdiction	Federal Functional Classification	Type of Improvement	Current Lanes	Future Lanes
T-43, TIP #4 and 5	SR-149/SR-13	Proposed SR-374	Zinc Plant Rd	3.8	Clarksville, Montgomery Co.	Minor Arterial	Widening	2	5
T-41, TIP #2	SR-374 (North Pkwy)	Dunbar Cave Rd	Stokes Rd. (US-79/SR-13)	1.7	Clarksville	Minor Arterial	Widening	2	4/5
T-05A	SR-48 (Trenton Rd.)	Hazelwood Rd.	Tylertown Rd. (SR-236)	2.0	Clarksville	Minor Arterial	Widening	2	5
T-16	East-West Connector Phase 1	US-79 (Wilma Rudolph Blvd.)	Trenton Rd. (SR-48)	2.5	Clarksville	Minor Arterial	New Road	0	4
T-22	Jack Miller Blvd. Extension	Tobacco Rd.	Peachers Mill Rd.	2.0	Clarksville	Minor Arterial	New Road	0	4
T-29	Lafayette Rd	Walnut Grove Rd	Gate – Fort Campbell	0.4	Clarksville, Fort Campbell	Minor Arterial	Widening	2	5
T-33	US-79/SR-13/Guthrie Hwy.	I-24	Solar Way / International Blvd.	1.1	Clarksville, Montgomery Co.	Minor Arterial	Widening	2/3	5
T-34	SR-48/Trenton Rd. at Needmore Rd.	-	-	-	Clarksville	Urban Collector	Intersection improvements	-	-
K-06	KY-400 (State Line Rd)	US-41A (Fort Campbell Blvd)	KY-115 (Pembroke-Oak Grove Rd)	1.4	Oak Grove	Urban Collector	Reconstruct /Add Turn Lane	2	3
K-07	KY-115 (Pembroke-Oak Grove Rd)	KY-400 (State Line Rd.)	I-24	2.9	Oak Grove	Urban Minor Arterial	Reconstruct/Add Turn Lane	2	3
K-08	KY-115 (Pembroke Rd.)	I-24	KY-1453 (Barker's Mill Rd.)	1.9	Oak Grove	Rural Minor Arterial	Reconstruct /Add Turn Lane	2	3
K-12	Oatts-Riggins Rd (New Roadway)	KY-400 (State Line Rd)	KY-911 (Thompsonville Ln)	1.5	Oak Grove	Urban Collector	New Road	0	3
K-13	KY-1453 (Elmo Rd) Rehabilitation	US-41A (Ft. Campbell Blvd)	KY-115 (Pembroke-Oak Grove Rd)	4.1	Christian Co.	Local	Reconstruct /Add Turn Lane	2	3

Table 2.3: Roadway Projects Proposed for Completion in 2017-2026
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Table 4-8)

Project Number	Roadway	From	To	Length (Miles)	Jurisdiction	Federal Functional Classification	Type of Improvement	Current Lanes	Future Lanes
T-40	SR-374/Richview Rd/Warfield Blvd	Memorial Dr.	Dunbar Cave Rd	2.1	Clarksville	Principal Arterial	Widening	2	4
T-42	SR-374 Extension (Alternate C)	SR-149	Dotsonville Rd	4.3	Montgomery Co.	Principal Arterial	New Road	0	2
T-05B	SR-48 (Trenton Rd.)	Hazelwood Rd.	Needmore Rd	2.2	Clarksville	Minor Arterial	Widening	2	5
T-23	US41A Bypass (Ashland City Rd.)	US41A/SR-112	SR-13	5.5	Clarksville	Principal Arterial	Widening	2/3	5
T-35	East-West Connector Phase 2	SR-48 (Trenton Rd)	Peachers Mill Rd.	3.7	Clarksville	Minor Arterial	New Road	0	4
T-36	Peachers Mill Rd.	Pine Mountain Rd.	Stonecrossing Dr.	0.4	Clarksville	Minor Arterial	Widening	3	4
K-02	Hugh Hunter\Gritton Church Rd.	KY 911 (Thompsonville Ln)	Allen Rd.	1.9	Oak Grove, Christian Co.	Local	Reconstruction	2	2
K-05	Gate 4 Extension - Fort Campbell	US-41A (Fort Campbell Blvd)	KY-115 (Pembroke-Oak Grove Rd)	1.2	Oak Grove	Urban Collector	New Road	0	2
K-10	KY-117 (New Roadway)	US-41A (Ft. Campbell Blvd.)	KY-115 (Pembroke-Oak Grove Rd)	3.0	Oak Grove	Urban Collector	New Road	0	5
K-11	Gate 5 Extension - Fort Campbell	US-41A (Fort Campbell Blvd)	KY-115 (Pembroke-Oak Grove Rd)	1.5	Oak Grove	Urban Collector	New Road	0	2
K-14	KY-109 (Bradshaw Rd) Rehabilitation	KY-1453 (Elmo Rd)	Bradshaw-Fidelio Rd.	1.0	Christian Co.	Rural Minor Collector	Reconstruct/Add Turn Lane	2	3

Table 2.4: Roadway Projects Proposed for Completion 2027-2035
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Table 4-9)

Project Number	Roadway	From	To	Length (Miles)	Jurisdiction	Federal Functional Classification	Type of Improvement	Current Lanes	Future Lanes
T-06	I-24	Eastern terminus of Project K-04 (KY/TN State Line)	SR-76	10.7	Montgomery Co.	Interstate	Widening	4	6
T-37	I-24	SR-76	SR-256 (Robertson County)	8.6	Montgomery Co., Robertson Co.	Interstate	Widening	4	6
T-01	Needmore Rd.	Hazelwood Rd.	SR-236 (Tiny Town Rd.)	0.9	Clarksville	Urban Collector	Reconstruct/Add Turn Lane	2	3
T-05C	SR-48 (Trenton Rd.)	SR-13/US 79 (Wilma Rudolph Blvd.)	SR-374/101st Airborne Division Pkwy.	1	Clarksville	Minor Arterial	Widening	2	5
T-18	Whitfield Rd./Old Trenton Rd.	Needmore Rd.	SR-374/101st Airborne Division Pkwy	0.2	Clarksville	Urban Collector	Reconstruct/Add Turn Lane	2	3
K-04	I-24	US-41A (Fort Campbell Blvd)	TN State Line	7.8	Oak Grove, Christian Co.	Interstate	Widening	4	6

Table 2.5: Roadway Projects Proposed for Completion in 2036-2940
(Courtesy CUAMPO *2040 Metropolitan Transportation Plan*, Table 4-10)

[i] Clarksville Urbanized Area Metropolitan Planning Organization. *2040 Metropolitan Transporation Plan*. (2014). 1.1.

[ii] Clarksville Urbanized Area Metropolitan Planning Organization. *2040 Metropolitan Transporation Plan*. (2014). 1.2.

[iii] Clarksville Urbanized Area Metropolitan Planning Organization. "Chapter 3: Goals and Objectives" in *2040 Metropolitan Transporation Plan*. (2014). 3.1-3.6.

THIS PAGE LEFT INTENTIONALLY BLANK.

03 Public Input Process

THIS PAGE LEFT INTENTIONALLY BLANK.

03 Public Input Process

Public input is a critical component in developing a community supported master plan. The citizens are the end-users of the greenway and blueway system. Without strong support and avid usage, the system becomes ineffective. For the master plan to be effective, it must accurately reflect the facilities most desired by the citizens of the community. The recommendations made in this master plan were driven by public input gathered through a variety of methods, including input from stakeholders, a trails task force workshop and focus group sessions.

SUMMARY OF PUBLIC OUTREACH:

Citizens Workshop – conducted June 10, 2014

Trails Task Force Meeting – conducted August 13, 2014

Trails Task Force Meeting – conducted October 29, 2014

Meeting with County Representatives – conducted November 10, 2014

Overall, researchers found a strong desire for greenways and blueways in the community and this desire is following the state and national trend. According to the *National Survey on Recreation and the Environment*, walking for pleasure is the number-one recreation activity among Tennesseans. Given the desire for more access, researchers facilitated meetings and provided maps to engage residents on their ideas. The following pages provide information on the process and outcomes.

TRAILS TASK FORCE WORKSHOP

JUNE 10, 2014

On June 10, 2014, Lose & Associates facilitated a Trails Task Force Workshop in a meeting room at Liberty Park. Approximately twenty citizens attended the meetings. We began by providing a brief introduction with information about past studies and the characteristics of greenways and blueways. The presentation included a review of existing plans and policies, preliminary analysis and opportunities and an overview of potential routes.

Next, we divided the group into four tables with a different section of the city at each table. Participates were asked to sit at the table with the map that they were most familiar with. During the table exercise, the participants indicate where new greenways, blueways, sidewalk and bike lanes should be located. Once the groups were finished discussing their area, we gathered all the participants together and had a person from each table present their plan ideas.

The images to the right are from the first trails task force meeting.

TRAILS TASK FORCE MEETINGS

AUGUST 13, 2014

A Trails Task Force meeting was held at the Crow Community Center to review initial routes for off-road multi-use greenway trail, combination of on road routes with sidewalks and blueway routes on local streams. An overall map was presented to the task force along with enlarged maps dividing the city into four sections. The primary greenway trails begin and end at either existing greenways or major destinations including parks, schools or major destinations, such as Fort Campbell. The task force was happy with the overall direction of the master plan with respect to greenway trails. During the discussion, a few new greenway trail routes were identified and noted on the maps for further analysis. The quotes to the right are feedback we received from some of the committee members.

The next topics of discussion were the blueway trails and trailhead locations. Like the greenways, many of the blueway routes begin at existing parks. Other blueway trailheads were identified at the first trails task force meeting and these were reflected on the maps. The blueways generally follow tributary streams that flow into the Red River which eventually flows into the Cumberland River. The task force described the flow characteristics of each stream. The following are some of the stream descriptions.

"Infill Sidewalks are of the highest priority along Ft. Campbell Boulevard, Wilma Rudolph Boulevard and Madison Street."

"There is a possible greenway connector to state Hwy 76. This greenway has not been mentioned, but would extend the city along Passenger Creek from the new park to the Passenger Creek Bridge at Hwy 76."

"A bicycle/pedestrian connector from Sango to downtown/Riverside Drive should be designed."

Cumberland River

The Cumberland River is a navigable stream for all types of boats including commercial barge traffic. The Red River empties into the Cumberland near the heart of historic downtown Clarksville. While there will be some canoe and kayak use on this river, it will be much lower than other smaller streams in the city.

Red River

The Red River is slow as it nears the Cumberland River. It would be good for kayakers who like to fish as it has good fishing through the deeper, slower moving water. Because it is slow, trailheads with launch ramps should be located every three to four miles.

Little West Fork and West Fork Rivers

These rivers are tributary streams to the Red River and are more robust streams for canoeing and kayaking. Existing blueway access points exit on the West Fork River and this is probably the most desirable stream for recreational paddling.

Spring Creek

Spring Creek is a tributary of the West Fork River and is floatable during the spring when flows are higher. When floatable, it is also more robust than the Red River.

Several key discussion comments that were made are listed below:

- Dunbar Cave State Park is being expanded and there could be potential to place a trailhead in the new section of the park
- Space blueway trailheads every 3 to 4 miles based on river flow rates
- Like the idea of connecting to the rail line on the southwest end of the city to Fort Campbell through downtown
- Like the east-west corridor along Spring Creek
- Either show both potential new park sites or take the one site off the map
- Stressed that sidewalks are needed for pedestrians along major commercial center where off-road greenway trails or dedicated bicycle lanes can't be provided

Following the discussion, each trails task force member was given a set of maps to be used to prioritize the various routes. Trails Task Force members were asked to rank routes on a scale of 1 to 5 with 5 being the highest priority. A copy of the maps was given to staff in an electronic version so they could be sent to task force members who were unable to attend the meeting.

OCTOBER 29, 2014

The next trails task force meeting was held at the Crow Community Center to review the prioritization of the various trail, bicycle and blueway routes. The overall map of the city and the four section maps had been color coated to reflect the trail development priority in the categories of high, medium and long term. The overall rankings for the system were received favorably by the task force. A discussion followed relating to the priorities as well as the overall routes and where additional routes or modification to routes were needed. Key commits are listed below:

- Modify the off road greenway route to Fort Campbell to follow Jack Miller Boulevard and enter the based further south than shown
- Extend blueways along Spring Creek beyond city limits
- Look at a trail connection from Liberty Park running south and west along agricultural properties
- Look at an off road trail running west from Trice Landing
- Look for addition connection over the Red River even if it means more bridges
- Once the master plan is adopted, need to do a better job working with developers and property owners to secure donations of easements or rights-of-way to build greenways and trailheads
- Need to look at regulatory tools to obtain easements or rights-of-ways through the development process

MEETING WITH COUNTY REPRESENTATIVES

NOVEMBER 10, 2014

In early November, the county decided they wanted to study several major trail opportunities that would allow city greenways to extend out into the county. A meeting was held on November 10, 2014 with representatives from Montgomery County and representatives from the Administrative, Engineering and Parks and Recreation Divisions to review the greenway routes that were to be studied in the city and to explore opportunities to extend these routes out into the county. During the meeting, three primary corridors extending into the county were identified. These corridors are described below:

Abandoned Rail Corridor

An abandoned rail corridor picks up just south of the city boundary and extends to Cheatham County. Much of this rail corridor is still in tack and one railway bridge exists along the corridor. With the exception of one area, the trail could follow the old rail bed to the county line. In Cheatham County, most of the rail corridor is owned by the Town of Ashland City which has already developed several miles of paved trail on the old rail bed.

Along this corridor there will be opportunities to develop loop trails, trailheads and to connect with existing US Army Corps of Engineers campgrounds. One potential park site located on the corridor is the Matlock Property which has a nice lake on it.

Spring Creek Corridor

Spring Creek, which has been identified for both a greenway trail and a blueway trail within the city limits, continues into the county on the northeast side of the city. This corridor can be extended easily into the county to serve future development. The city also owns a piece of property in the county on this corridor that could easily be developed as a trail head and blueway access point. The county also owns a future school site that could be connected by this trail.

Woodlawn Park Corridor

The last corridor that was identified was an over-land route to connect Woodlawn Park back to city greenways. Located in the northwest side of the county, Woodlawn Park is home to major sports facilities and county sports leagues. Routes to be explored will include a major overhead power transmission line that runs through the park and back into the city.

04 Design Standards

THIS PAGE LEFT INTENTIONALLY BLANK.

04 Design Standards

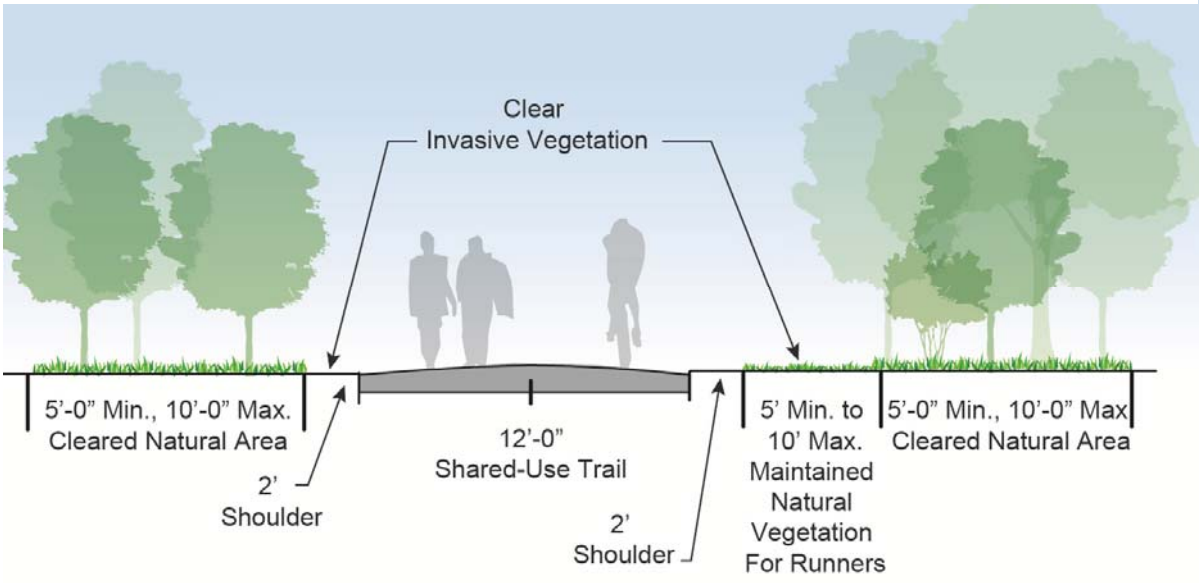
TRAIL CLASSIFICATIONS AND STANDARDS

SHARED-USE TRAILS

Shared-use trails follow linear corridors such as rivers, abandoned railroads, utility rights-of-way and other linear elements in the landscape. Shared-use trails can be within road rights-of- way; however, they are completely separated from vehicular traffic. The trail is typically 12 feet wide to accommodate several users traveling in both directions. This width can vary according to the anticipated number of users and the location of the trail.

To accommodate all types of activities, including bicycles, strollers and roller bladers, asphalt or other hard surfacing materials are used to pave a smooth surface. In areas of regular flooding or wetlands, boardwalks are constructed to protect the sensitive environment and maintain a year-round usable trail.

Figure 4.1: Typical Shared-Use Trail Section



To avoid conflict among different users, different design features can be added to trails. A painted centerline can separate persons going in opposite directions. A two-foot cleared shoulder on both sides of the trail allows for maneuverability and emergency pull-offs. Signage is installed to inform users of trail alignments and special conditions. Many of these design features and standard requirements included in the American Association of State Highway Transportation Officials (AASHTO) regulations are briefly highlighted in the following text. These standards are developed to accommodate all levels of bicycle travel at a maximum speed of 20 miles per hour. To ensure proper maintenance, trails are also constructed to accommodate a 6.5-ton vehicle travelling at 15 miles per hour.

Shared-use trails traverse many different elevations and natural elements. Accommodations are made when possible to minimize steep grades or to access interesting landscapes. Access through some of the terrain in Clarksville may be difficult; however, regulations require that a certain portion of trails be accessible by all users despite physical ability. The guidelines established by the Americans with Disabilities Act (ADA) should be followed during the design and construction of shared-use trails to ensure safety and accessibility to all users. ADA guidelines establish a maximum trail slope of 5 percent and a maximum cross slope of 2 percent. Any slope higher than 5 percent and up to 8.3 percent is considered a ramp, which requires hand rails and landings every 30 feet. Trails will not be considered accessible if they contain slopes greater than 8.3 percent.

Figure 4.2: Minimum 50 FT Shared-Use Trail Section through Riparian Area

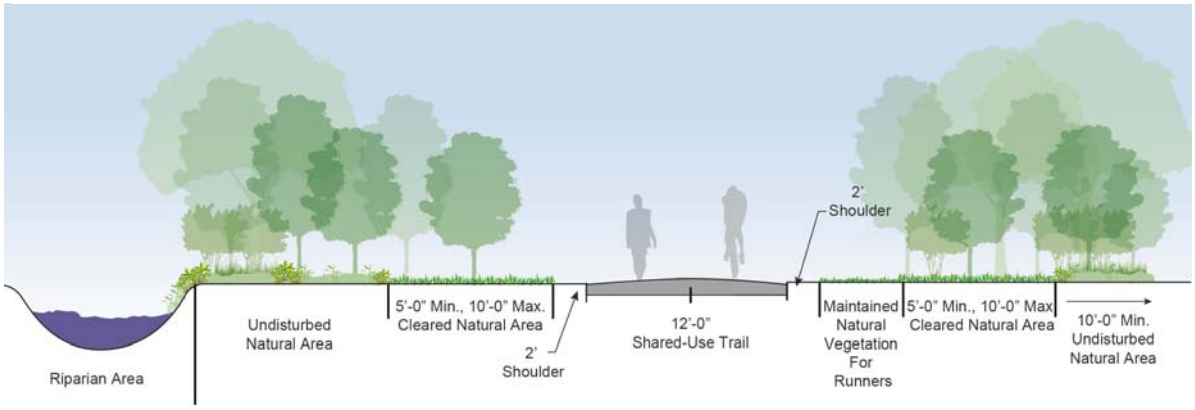


Figure 4.3: Minimum 100 FT Shared-Use Trail Section through Riparian Area

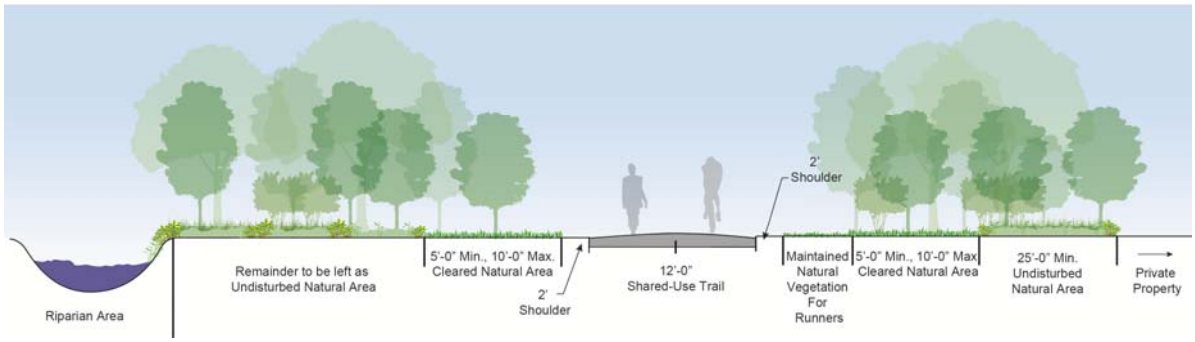
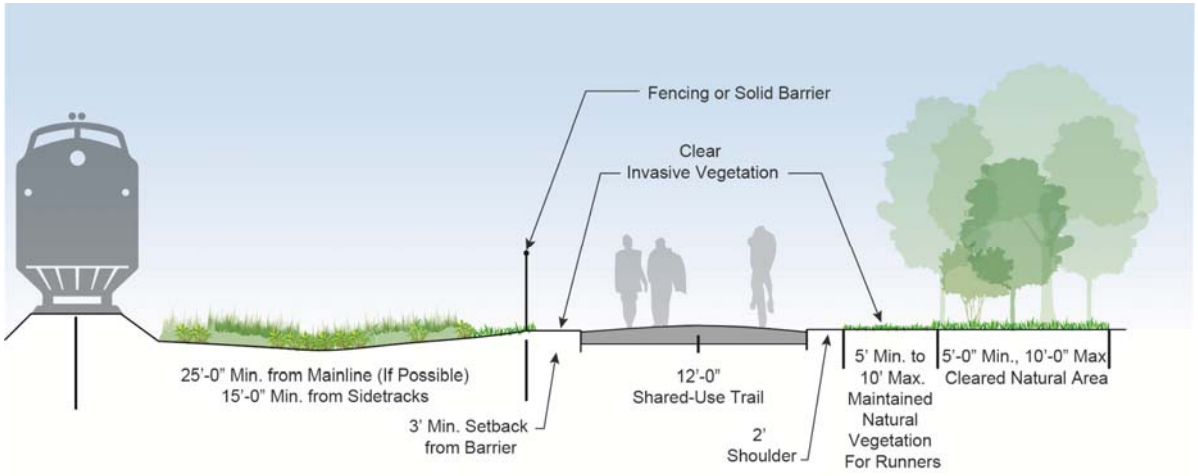


Figure 4.4: Rail-with-Trail Section



Shared-use trails can be in the floodplain of rivers, streams and creeks. Such trails should avoid the state-required buffers and any wetlands. Figures 4.2 and Figure 4.3 are two examples of the types of trail sections recommended along riparian areas. Each provides additional land between the riparian area and private property in order to create a more natural setting for trail users.

Trails can also parallel an active rail line, shown in Figure 4.4, known as rails-with-trails. The setback from the centerline of the rail to the barrier may vary depending on the speed of the active rail line. Pedestrian access through the fencing or barrier should be prohibited.

Rail-trails are another type of shared-use trail created from an abandoned railroad corridor. The current Clarksville Greenway follows an abandoned rail bed. Rail-trails are a suitable retrofit of the land and can be used to inform users of the trail's history as a previous railroad.

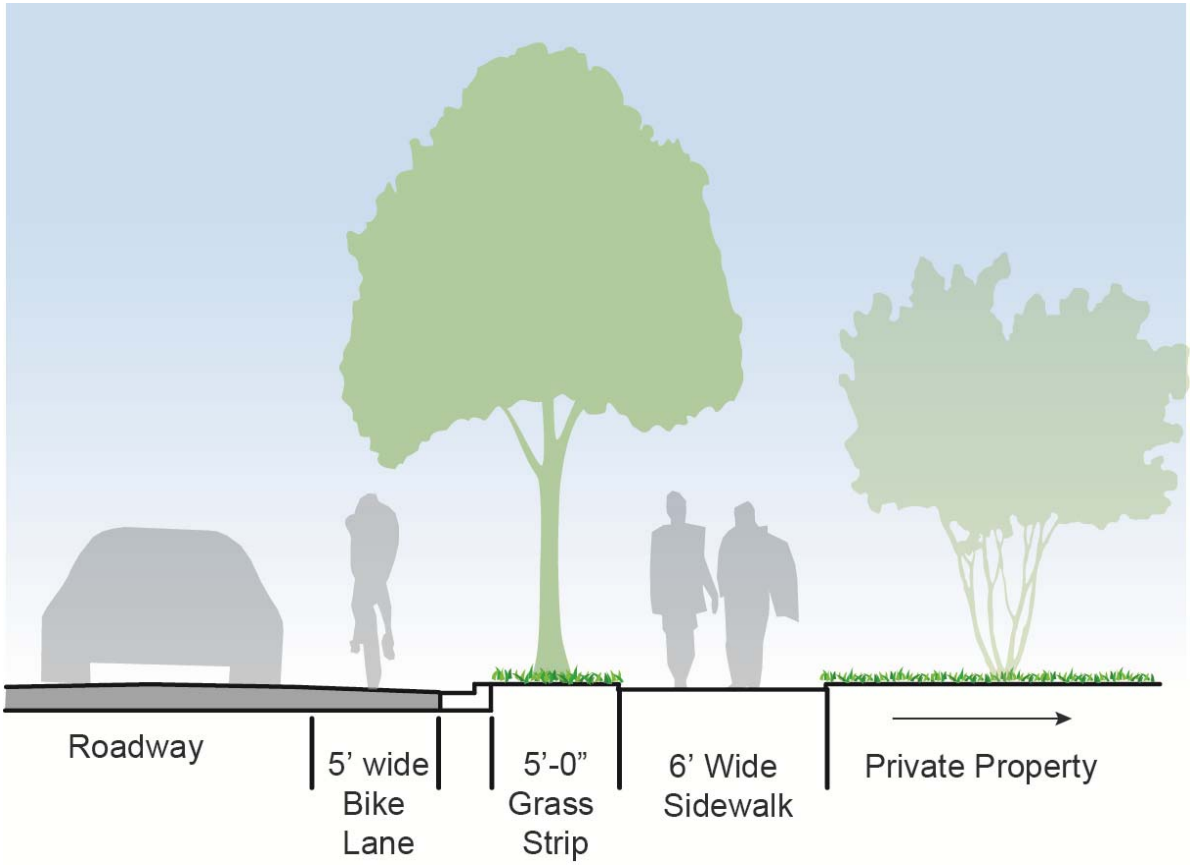
PEDESTRIAN WALKS AND TRAILS

Pedestrian walks and trails include the incorporation of both new sidewalks and existing sidewalks with needed repairs and improvements to provide safe connections and links between neighborhoods, schools, parks and other community activity centers. These routes should be developed to accommodate all pedestrians, including children, senior citizens and individuals with disabilities.

VEHICULAR / PEDESTRIAN / BICYCLE ROUTES

Vehicular / pedestrian / bicycle routes include provisions for travel routes for pedestrians, pedestrian routes in combination with vehicular routes, and also bicycling routes in combination with vehicular routes. Designated bicycle routes identify a specific route that has been signed for a bicyclist to get from a point of origin to a point of destination. Streets with standard 12-foot wide lanes do not necessarily have to be physically widened to become designated as a bike route if certain conditions are met. Where conditions along major streets and commercial districts prevent bike lanes or multi-use trails, it is imperative that sidewalks be provided. In other instances, a designated and restricted segment of a shared street or roadway for use by cyclists can be indicated by the use of a colored stripe as separation between vehicles and bicycles. The stripe provides psychological rather than physical protection. However, where space is available, physical separation can be created through the use of plant materials, guardrails or low curbs. As an added reinforcement to the designated bicycle route, bicycle route signs should be posted at all areas where new traffic enters the roadway, denoting the multiple use of the shared street or roadway. The distance between signs should not be greater than two miles. In urban areas, directional arrows should be used at intersections to indicate whether the bicycle route continues through the intersection or turns right or left. Bicycle route signs help encourage use and warn motorists that bicyclists may be using the road. These signed routes are considered appropriate for basic and proficient bicyclists.

Figure 4.5: Bike Lane and Sidewalk Section for Neighborhood Connector Trails



In a typical urban setting where bicycles share a single lane with vehicles, in conjunction with speed limits under 35 mph, and with traffic lanes between 11 and 12 feet, the bicycle lane is recommended to be a minimum of four feet wide from the front of the curb and gutter; however, a five-foot width is preferred. Where road rights-of-way are greater than the normal 40 to 50 feet or where land acquisition will be required for trail construction, bicycle lane widths should be expanded beyond minimum standards to increase safety. The actual bicycle lane width for specific locations should be determined after evaluating vehicular operating speeds, traffic volume and composition, on-street parking, number of turning movements, number of businesses and residences, and the degree of public awareness of the bicyclist presence. A protected bike lane with a painted buffer strip, curb or bollards also provides additional comfort and safety for the bicyclist. When the posted vehicle operating speed exceeds 45 mph, it is preferable for bicycles to travel on a bicycle lane separated by a physical barrier from the motor vehicle travel lane or be on an independent bicycle path outside the motor vehicle travel way.

An additional concern for safety within the bicycle lane is the potential problem caused by drainage grate inlets and utility covers. In new road construction, it is recommended that all

inlets and covers should not be located within bicycle lanes; the use of curb inlets is suggested and would eliminate grate inlet safety issues. It is also recommended that grates and utility covers be installed flush with the road surface, whether in new road construction or resurfacing. Existing parallel bar drainage grate inlets located within bicycle lanes are potential traps for the front wheel of a bicycle that can slip between the bars, causing serious damage to the bicycle and bodily injury to the cyclist. It is highly recommended that these grates be replaced with bicycle-safe and hydraulically efficient grates.

Vehicular/Pedestrian/Bicycle Routes should be designed to accommodate pedestrians, including children and senior citizens with varying degrees of physical and mental capabilities, and individuals with disabilities.

CORRIDOR TYPES

Greenway

A greenway is a shared-use path used by pedestrians and cyclists that is typically 10'-15' wide. It is independent of roadways and often follows natural and manmade corridors such as waterways or utility easements.

Multi-Use Path

A multi-use path is a shared-use path for pedestrians and cyclists. Also typically 10'-15' wide, multi-use paths are differentiated from greenways by being located within rights-of-way. However, they maintain a meandering layout that does not align parallel to roadways.

Shared-Lane Bike Path

A shared-lane bike path utilizes an existing road lane to provide a transportation route for both motor vehicles and bicycles. Signage and pavement markings are utilized to delineate sharing of the lane.

Separate-Lane Bike Path

A separate-lane bike path establishes a distinct lane for bike traffic along a roadway. This lane is typically 5' wide, runs parallel to an adjacent vehicular lane, and is delineated through signage and pavement markings.

Sidewalk

A sidewalk is a linear paved pathway that runs parallel to roadways. It typically varies from 5'-10' wide and is intended for pedestrian use only.

Blueway

A blueway is a designated travel route that follows an aquatic corridor and is most commonly used by canoers and kayakers. Signage is often utilized to identify routes.

TRAIL HIERARCHY

PRIMARY TRAILS

Regardless of the type of trail being developed, there is a hierarchy, or priority, of trail use. A primary trail makes connections to several different elements within the community. The design elements included in a primary trail should accommodate a greater number of users and include a greater number of support facilities. Ideally, primary trails should close upon themselves or make a looped system. More specifically, a primary shared-use trail will be a 12-foot wide paved pathway with a two-foot wide shoulder on both sides. Small rest areas that include benches, trash cans and signs will be provided every mile and at intersections with other trails. Vegetation should be cleared a minimum of five feet on both sides, and limbs should not hang lower than 10 feet. Trailheads should be located at strategic access points along the trail to provide parking areas for motor vehicles and restroom facilities In addition to the amenities found at smaller rest areas.

SECONDARY TRAILS

Secondary trails connect one element, such as a neighborhood or school, to another element or primary trail. Secondary trails typically will not need to accommodate as many users, but they are important to providing access to primary trails. Secondary trails generally are not a part of a closed, or looped, system. A secondary shared-use trail is similar to a primary trail except it is only 10 feet wide with an one-foot wide shoulder on both sides. The same clearances and paving materials are needed. Depending upon the length of the trail, benches may not be necessary, but they should be added at all intersections with primary trails. The secondary trail should begin where off-street parking is available or at least on-street parking is possible.

TERTIARY TRAILS

Rustic trails are typically located in areas that will not draw a large number of users or in areas that are rural. These types of trails are typically eight feet wide and are surfaced with a porous material such as wood mulch, compacted gravel or other types of fines. Vegetation should still be cleared five feet on both sides and 10 feet above the trail.

INTERSECTIONS

Intersections between trails and roadways are the most dangerous points of access for trail users. When designing trail crossings, careful consideration of predictability and the orderly operation between modes of traffic should be taken. Because each scenario is unique, some items to consider when designing vehicular / pedestrian intersections include features such as multiple vehicular lanes, divided or undivided roadways, number of approach legs,

speeds and volumes of traffic, accessibility and traffic controls. Four types of crossing designs will be discussed in more detail; mid-block crossings, crossing islands, grade-separated crossings and railroad crossings. [i]

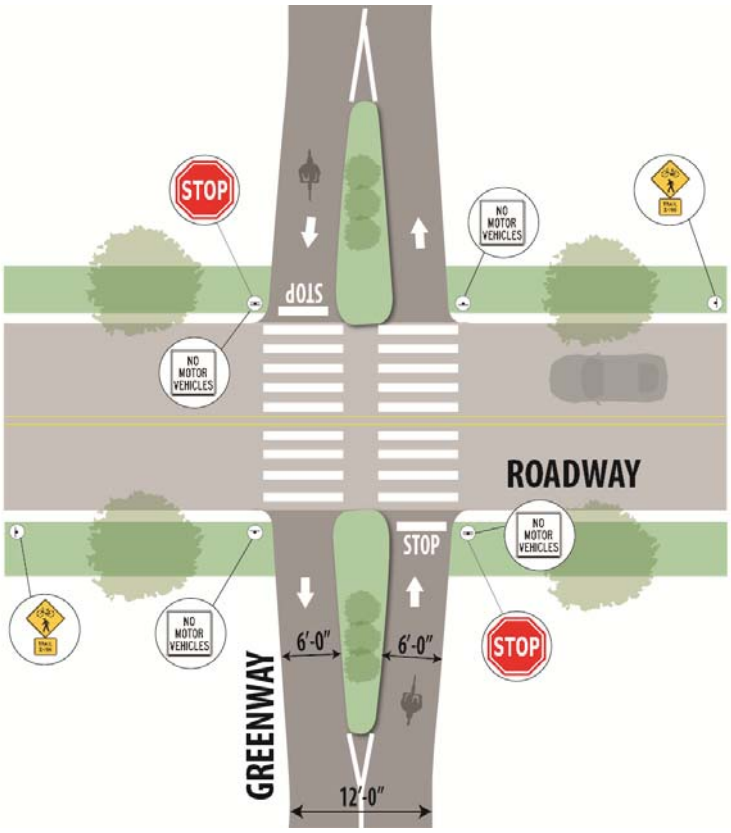
APPROACH TREATMENTS

When preparing to attempt a roadway crossing, the approach treatment should be on flat grades. If a ramp is provided, it should be the full width of the trail and provide a smooth and accessible transition between the road and the trail. Detectable warnings should be placed across the full width of the ramp. A 5 foot flare may be considered for turning ease of bicyclists. [i]

RESTRICTING MOTOR VEHICLE TRAFFIC

Traditional methods of using bollards or fencing to restrict motor vehicle use are not the most desirable solutions for traffic control. These barriers create permanent obstacles for trail users and can cause serious injury. Those who are determined to use the trail illegally with their motor vehicles will typically do so without hesitation, and in turn, end up damaging the trail and adjacent vegetation. Signs restricting motor vehicle entry should be posted. An example, “No Motor Vehicles” sign should be placed at entry locations. [i]

Figure 4.6: Split Entry Trail with Landscape Median



A preferred method of visually restricting motorists is to split the entry into two sections separated by low landscaping. Each section should be half the nominal path width. Emergency vehicles can still access the path by straddling the landscaping. The split should be marked with solid line pavement markings to guide the user around the split.

Where the need for bollards or other vertical barriers exceeds the risk and access issues posed, AASHTO has provided a list of measures that should be taken to make them compatible with the pathway users:

- Bollards should be marked with a retrorefelctorized material on both sides or with appropriate object markers, per Section 9B.26 of the MUTCD (7).
- Bollards should permit passage, without dismounting, for adult tricycles, bicycles, towing trailers, and tandem bicycles. Bollards should not restrict access for people with disabilities. All users legally permitted to use the facility should be accommodated; failure to do so increases the likelihood that pathway users will collide with the bollards.
- Bollard placement should provide adequate sight distance to allow users to adjust their speed to avoid hitting them.
- Bollards should be a minimum height of 40 in. and min. diameter of 4 inches. Some jurisdictions have used taller bollards that can be seen above users in order to reinforce their visibility.
- Striping an envelope around the approach to the post is recommended to guide path users around the object.
- One strategy is to use flexible delineators, which may reduce unauthorized vehicle access without causing the injuries that are common with rigid bollards.
- Bollards should only be installed in locations where vehicles cannot easily bypass the bollard. Use of one bollard in the center of the path is preferred. When more than one post is used, an odd number of posts spaced at 6ft is desirable. However, two posts are not recommended, as they direct opposing path users towards the middle, creating conflict and the possibility of a head-on collision. Wider spacing can allow entry to motor vehicles, while narrower spacing might prevent entry by adult tricycles, wheelchair users, and bicycles with trailers.
- Bollards should be set back from the roadway edge a minimum of 30 ft. Bollards set back from the intersection allow path users to navigate around the bollard before approaching the roadway.
- Hardware installed in the ground to hold a bollard or post should be flush with the surface to avoid creating an additional obstacle.
- Lockable, removable (or reclining) bollards allow entrance by authorized vehicles.

TRAFFIC CALMING DEVICES

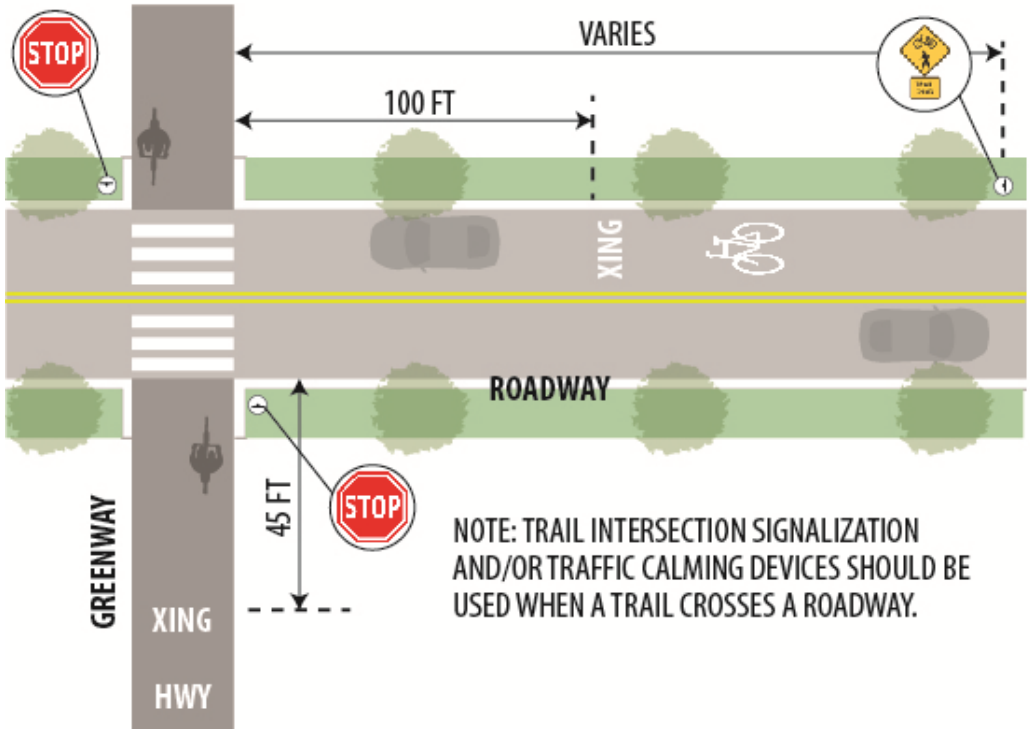
Where speed of vehicular traffic is a concern – these solutions may be helpful. Types that may be appropriate include a raised crosswalk, chicanes, curb extensions, speed cushions, crossing islands, and curb radius reduction at corners. These measures should not make trail travel more difficult or inconvenient for entering or exiting pathway users.[i]

CROSSING TYPES

MID-BLOCK CROSSINGS

Mid-block crossings are characterized as four-legged intersections. For continuity of the trail, and where crossings near signals are not ideal, mid-block crossings may be used. It is best to use a mid-block crossing in locations that provide adequate spacing between vehicular lane transitions, intersections, etc. for safety of the user. Typical mid-block crossings are perpendicular to the road and create a 90 degree right angle. The approach to the road should be at the same grade as the road and on flat grades. A clear intersection with sight lines of the oncoming traffic, as well as the crossing traffic, will provide a safe crossing. Even though mid-block crossings are not as desirable as crossing at a controlled intersection, signals such as pedestrian hybrid beacons (HAWK) or warning beacons may be used to stop and/or inform vehicles of oncoming pedestrian traffic. These types of warning systems are discussed further in this section. [i]

Figure 4.7: Mid-Block Crossing

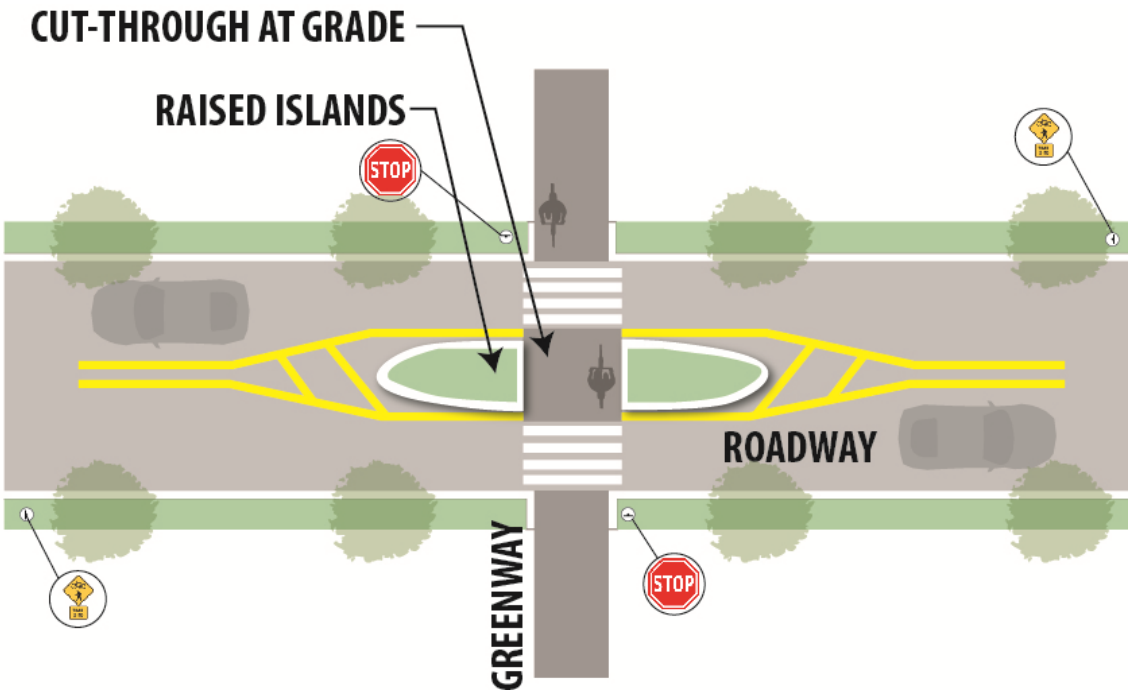


Some trails may not follow the 90 degree rule and are skewed when accessing a roadway. These scenarios are not ideal and can increase motorist delays, doubling the time a user takes to cross the vehicular paths. Skewed paths are also twice as long as perpendicular crossings. Where possible, additional trail length may be added to the trail in order to obtain a perpendicular crossing.

CROSSING ISLANDS

Crossing islands, commonly referred to as crosswalk refuges, are another type of trail intersection design. Crossing islands are primarily used in situations where high volumes of traffic make it difficult to cross, roadway width is excessive, or the roadway crossing is three or more lanes in width. Crossing islands should be at the same grade as the roadway and should be deep enough not to crowd the users. They are beneficial for children, elderly, disabled and others who travel slowly.[i]

Figure 4.8: Crossing Islands



GRADE-SEPARATED CROSSINGS: BRIDGES AND UNDERPASSES

Grade-separated crossings are commonly used when roadway travel speeds and volumes are excessive and a signalized crossing or crossing island would not be

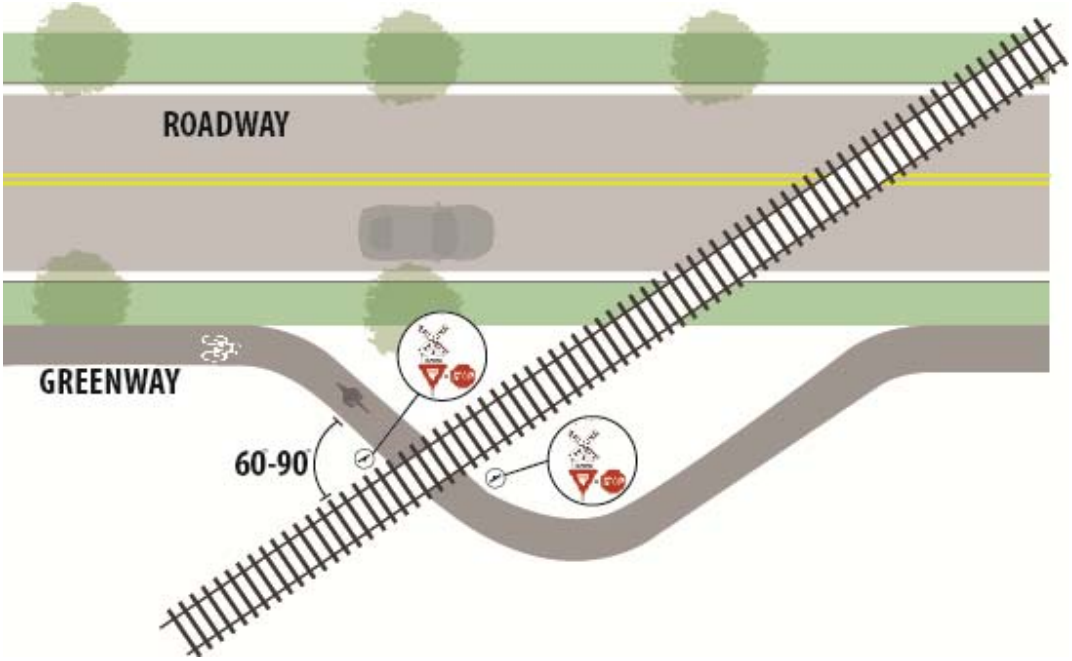
sufficient. When constructing a bridge or underpass, emergency vehicle access should be considered when establishing clearances. A minimum of 10 feet is desirable. The adjacent topography is the greatest factor when choosing the best option, but bridges are typically preferred to underpasses because of fewer drainage issues.

Bridge deck lips should be avoided whenever possible. They can cause tire blowouts, bent wheels, crashes and injuries. These obstacles can be eliminated by placing a transitional layer of asphalt between the two layers.

RAILROAD CROSSINGS

All railroad crossings will require the approval of the operator of the rail line. Obtaining this approval can be a difficult and lengthy process. Railroad crossings should be at right angles and at the same elevation as the rails. Instances where the crossing angle is less than approximately 45 degrees, an additional paved shoulder should be provided to allow the user to cross the track at a safer angle. Where this is not possible, and where train speeds are low, commercially available compressible flangeway fillers can be used. The flangeway filler will prevent the bicyclists front wheel from being trapped, causing loss of steering control. [i]

Figure 4.9: Railroad Crossing



TRANSITION ZONES

Transition zones are the areas where the trail meets the roadway. These zones should be clearly marked with the appropriate signage warning bicyclists and motorists of the transition area. Care should be taken to treat each transition as an entrance and exit point of the trail. The design of the transition area should also consider the movement of the user to and from the roadway.[i]

TRAIL CROSSINGS

When two trails converge, there is the potential for encountering users from a variety of directions. One design technique often used is the use of several T-intersections offset from one another as opposed to using one four-way intersection. By off-setting the trail intersections, potential conflicts are minimized. Trails should intersect at 90 degrees and have clear sight lines from both a seated and a standing position. Signage should be provided to avoid conflicts between user groups.[ii]

Figure 4.10: Trail T-Intersection

SAFETY AND SECURITY

Safety and security are fundamental for all public facilities, which include community greenways.

The greenway is being developed to accommodate the general public, with special emphasis given to pedestrians, including children and senior citizens with varying degrees of physical and mental capabilities, and individuals with disabilities. The main trail will also accommodate two-way travel, serving a variety of users, including walkers, joggers, runners, bicyclists, and skaters; it will also accommodate emergency and maintenance vehicles.

With the Clarksville Greenway being a public facility developed for the general public, a basic level of safety must be maintained. This level of safety does not end in the design efforts of the greenway, but extends to the maintenance and security policies to be implemented by the city. These policies will require safety patrols, routine maintenance of the trails and be recognized as high priorities by the city. Signage, both temporary and permanent, must be immediately in place from the beginning of construction to its completion. The signage system must include regulatory, warning and guidance signage.

An emergency plan should be developed and put in place by the city. This plan can respond to emergency situations from the common to the most unlikely accidents. Public agencies that should be involved include, but are not limited to, Parks, Fire, Emergency Services and Police Departments, Utility and Public Works Department and any other group that is tasked with emergency planning for city facilities.

In addition to public agencies, support from private groups and/or adjacent property owners along the greenway could be formed and become a major resource in both policing and maintaining the greenway system. This resource will have a strong bond of public ownership and will make a special effort to see that the greenway, with its built facilities and natural resources, is protected and used as per city rules and regulations.

ADDITIONAL COMPONENTS

THE FOLLOWING IS A SUGGESTED LIST OF ADDITIONAL COMPONENTS FOR THE SAFETY AND SECURITY OF THE GREENWAY:

- Installation of distance markers at .25 mile intervals to aid in identifying trail location in the event of an emergency
- Establishment of a safety committee or coordinator
- Preparation of a trail safety manual for employees and agencies
- Establishment of user rules and regulations
- Development of greenway and trails emergency procedures
- Preparation of a safety checklist
- Preparation of a trail user response form
- Development of a system for reporting accidents
- Development of a regular maintenance and inspection program
- Development of a site review program
- Development of a public information program
- Implementation of an employee training program for safety and emergency response
- Conducting ongoing research and evaluation of program objectives

Because the Clarksville-Montgomery County Greenway will be built in multiple phases, policies and emergency procedures should be expanded accordingly to deal with all of the greenway sections as a whole.

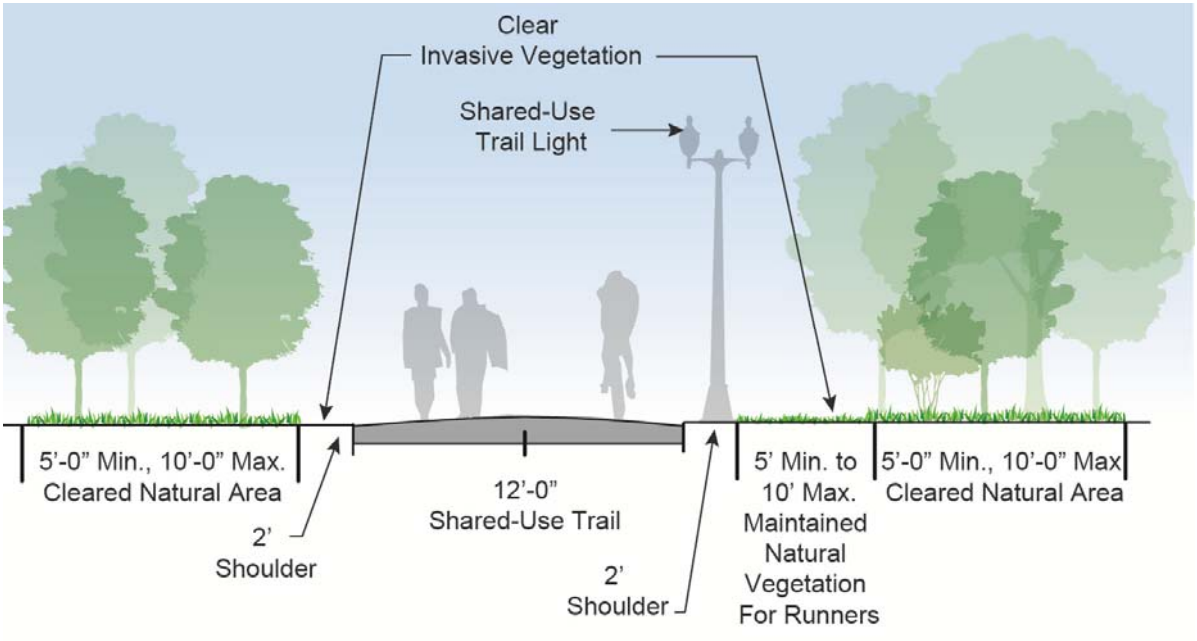
As construction phases are completed and opened for use by the public, a new construction phase will begin. It is highly recommended that public use not be allowed until the current construction phase is completed and that any use will be considered a violation of the posted rules and cited accordingly. This recommendation should minimize, if not avoid, unnecessary vandalism and damage to the greenway during construction. It will also reduce or prevent accidents during subsequent construction phases.

LIGHTING

Lighting along a shared use path can increase visibility and provide safety when nighttime use is permitted. Pedestrian scale lighting is preferred, characterized by shorter light poles, lower levels of illumination (except at crossings), closer spacing standards and high pressure sodium vapor or metal halide lamps. Depending on local guidelines and

regulations, trail lighting may need to comply with “dark sky” regulations, as well. Lighting should also be provided in tunnels and underpasses for added safety and security.

Figure 4.11: Trail Section with Lighting



SIGNS AND SIGNALS

The primary purpose of trail signs is to aid and instruct users of the greenway system. Signs fall into four categories: regulatory, warning, guidance and educational.

REGULATORY SIGNS

Regulatory signs provide operational requirements, and are used for traffic control. This category includes stop and yield signs, right-of-way signs, speed-limit signs and exclusion signs. They are normally installed where specific regulations apply.

High-Intensity Activated Cross Walk (HAWK)
Source: http://www.achdidaho.org/

There are many types of regulatory signs for pathways and roadway users that can be used. The MUTCD provides a list detailing size, color, font, etc. Most importantly for trail

users are those indicating pedestrian crossing. Trail crossings that experience frequent conflicts between motorists and pedestrians, or multi-lane roadways where a sign on the right-hand side of the road is not visible, an additional sign should be installed on the opposite side of the road.

WARNING SIGNS

In addition to regulatory signs, some trail crossings may need additional signalization.

Warning signs identify existing or potentially hazardous conditions on or near the trail. Like those on roadways, warning signs on trails identify steep grades, intersections, stop or yield signs, changes in paving materials and speed limits for bicycles. These warnings are included to provide safe conditions for all users. Warning signs function as their name implies-they identify existing or potentially hazardous conditions on or near the trail, and they caution users to reduce speed or dismount a bicycle for safety reasons. They are typically used near intersections, bridges, crossings and tunnels. Following the rules and heeding the warnings identified by these signs is necessary because of the interaction of different trail user groups and unavoidable intersections with roadways.

Warning Beacon
Source: http://alexandriava.gov/

Pedestrian Hybrid Beacon (HAWK)

Active warning crossings should be operated so the slowest user type can be accommodated. Activation of these signals can be in the form of a push button or automated detection, such as an inductive loop in the pavement. In instances where vehicle traffic delay is a concern, a pedestrian hybrid beacon known as a HAWK (High-intensity Activated Cross Walk), may be used. This type of crossing will allow pedestrians to cross safely, stopping roadway traffic only as needed. These devices are in the form of a suspended arm, much like a typical traffic signal, and use a combination of red and yellow signal lenses.

Warning Beacon

A warning beacon is another type of device that can be considered. These warning signals are most effective if they only flash when users are present; however, according to AASHTO, “flashing beacons have shown little or no effectiveness in many crosswalk or crossing situations.”

GUIDANCE SIGNS

Guidance signs instruct-they provide trailside information to orient users geographically. The typical "you are here" map is an excellent example of this category of sign. Guidance signs can be both directional and informational. Directional signs point out nearby support facilities and points of interest, such as historic sites and unique natural resources. In this respect, guidance signs are often referred to as interpretive signs.

EDUCATIONAL SIGNS

Elements in the landscape or along the trail can be identified and their significance explained with educational signs. These signs can inform trail users of historical events that took place on a hillside, the geologic forces that created the waterfall on the other side of the river, the type of wildlife inhabiting the woods in which they are walking or the importance of the trees in maintaining the water quality of the stream paralleling the trail. Hundreds of elements can be highlighted and illustrated though signage to provide trail users with a fuller understanding of their community and the events that have taken place.

Figure 4.12: Barren Fork Greenway Bio-Indicator Signage – McMinnville, Tennessee

Trails are transportation corridors, and for that reason, recognizable transportation signs can be adapted for trail use. However, an independent sign "package" that coordinates all greenway-related signage should be developed in succeeding phases of the citywide trail system design, as shown in Figure 4.13.. The sign package facilitates several goals; most importantly, it reinforces an overall aesthetic image that incorporates the greenway logo and colors. With consistent application of greenway sign standards, trail users will quickly

learn to recognize and comprehend trail components. The trails will be more user-friendly, easier to navigate and safer.

Figure 4.13: City of Cary, North Carolina Greenway Signage Standards

RULES AND REGULATIONS

Public safety is a key element for the success of a greenway system. It is important to establish and implement a standard set of trail rules and regulations to facilitate the safety of all trail users. The trail rules should identify both expected user conduct and actions that are in violation of trail policy. Public notification is key for trail user awareness of the trail rules and regulations, which should be posted at all major access points to the greenway and also be available in a handout form.

The rules and regulations below represent those of the current Clarksville Greenway System.

CLARKSVILLE GREENWAY RULES AND REGULATIONS:

1. Stay on designated trails.
2. Keep to the right, pass on the left.
3. Keep pets on leashes and clean up after your pet.
4. Do not remove plants or feed / disturb wildlife.
5. Put trash in receptacles.

SAFETY IS OUR HIGHEST PRIORITY

- Bicyclists and skaters must yield to pedestrians and give audible signal when passing.
- Exit immediately during heavy rain.
- Leave valuables at home and take your car keys with you.

PROHIBITED

- Drugs and Alcohol
- Horses
- Firearms and Hunting
- Motorized Vehicles

MAINTENANCE

Developing a greenway system requires both capital and operational funding to implement and maintain the system. A community can employ many techniques to maintain the trail system. One technique is to design the system with proper trash receptacles and clearly state rules of conduct for greenway users. The proper location and spacing of trash receptacles provides ample opportunity for people to dispose of refuse. Posted signs inform users of fines for littering. These regulations need to be enforced if they are to work. Another technique is to create public ownership of the trails. The community can be encouraged to assist with trail maintenance by establishing an "Adopt a Greenway" program. Similar to the "Adopt A Highway" program, a section of the trail would be kept clean by a group or organization.

Volunteer organizations and groups should not be expected to do regular routine maintenance. Regular maintenance tasks include the following:

- Trash removal
- Signs and traffic markings for motorists and trail users must be inspected regularly and kept in good condition. Pavement markings must be kept clear and legible.
- Sight distances, especially those leading to crossings and curves, should not be impaired by vegetation. Trees, shrubs and tall grass should be trimmed to meet sight-distance requirements based on a 20-mile-per-hour design speed. Adequate clearance must also be maintained overhead and on both sides of trails.
- Trail surfaces should be patched on a regular basis. Patches must be flush with the finished surface of the trail.
- Trail damage from seasonal washouts and silt or gravel washes must be repaired as soon as possible after they occur. Recurring drainage problems should be identified and remedied. Culverts, catch basins, and other drainage structures should be cleaned at least once a year.
- Regular sweeping and cleaning will be required to keep the trail free of debris, including broken glass, loose gravel, leaves, and trash.
- Structures such as pavilions and restrooms should be inspected annually to ensure they are in good condition. Special attention must be paid to wood foundations and posts to determine if rot or termites are present. At the same time, site furniture and other support facilities should be inspected.
- Mow trail shoulders and other selected areas on a scheduled basis depending upon season, species and rate of growth.
- Remove storm-tossed limbs and fallen trees as soon as possible. Inspections should also occur after significant storms to determine if any potential danger exists from tree damage.
- Habitat enhancement and control
- Graffiti removal

AQUATIC CORRIDORS

PURPOSE OF A BLUEWAY

Blueways are water-based trail systems for paddlers. These systems have designed access points and they are important recreation corridors that both promote conservation and can have economic benefits, as well.

In the past, rivers were the main transportation routes for the movement of people and goods; now rivers present an opportunity for recreation and education. They provide a unique recreation experience for paddlers, while protecting priceless biological features.

CORRIDOR PROTECTION

Establishing a blueways system and becoming a Scenic River can help protect and improve the water quality of the Red River and the Little West Fork. Opening river access can promote water quality improvements. Improvements might include utilizing low impact development techniques in future construction, adding rain gardens and other stormwater best management practices to existing developments and agricultural uses.

Engaging nonprofits in assisting with cleanups, education and outreach is an important partnership that benefits the river and its paddlers. Other potential sources for assistances include the statewide organization Tennessee Scenic Rivers Association (TSRA), Boy Scouts of America, Girl Scouts of the U.S.A., Americorps and possibly corporate sponsorships.

SCENIC RIVER PROGRAM

The Red River and Little West Fork may be eligible to participate in the Tennessee Scenic Rivers Program. Currently, there are thirteen rivers designated as State Scenic Rivers. The program seeks to preserve sections of rivers within the state and they are managed according to the Rules for the Management of Tennessee Natural Resource Areas. (Source: www.tn.gov/environment/na/scenicrivers/#rivers). For example, the Duck River in Maury County is a member of the Scenic Rivers Program. The 37-mile section designated as a state scenic river enhances the ability to protect its “scenic, ecological, cultural and historical values.” It also provides guidelines for the protection for species of rare and endangered plants and animals through protection of water quality and adjacent lands.

PARK AND FLOAT PROGRAM

The Tennessee Department of Transportation (TDOT) began the Park and Float program in 2010. The program is a partnership between TDOT and the Tennessee Wildlife Resources Agency (TWRA) that helps provide access to Tennessee streams and rivers at bridge crossings on state highways. By recognizing the economic benefits of providing access, the state capitalizes on this existing asset.

(Learn more at www.tdot.state.tn.us/environment/ecology/accomplishments.htm).

BANK STABILIZATION

Erosion along banks causes land loss, habitat destruction and other adverse effects to water quality and aquatic biodiversity. Designing bank stabilization requires a careful analysis of what is causing the erosion. Applied incorrectly, bank stabilization techniques may cause more erosion downstream.

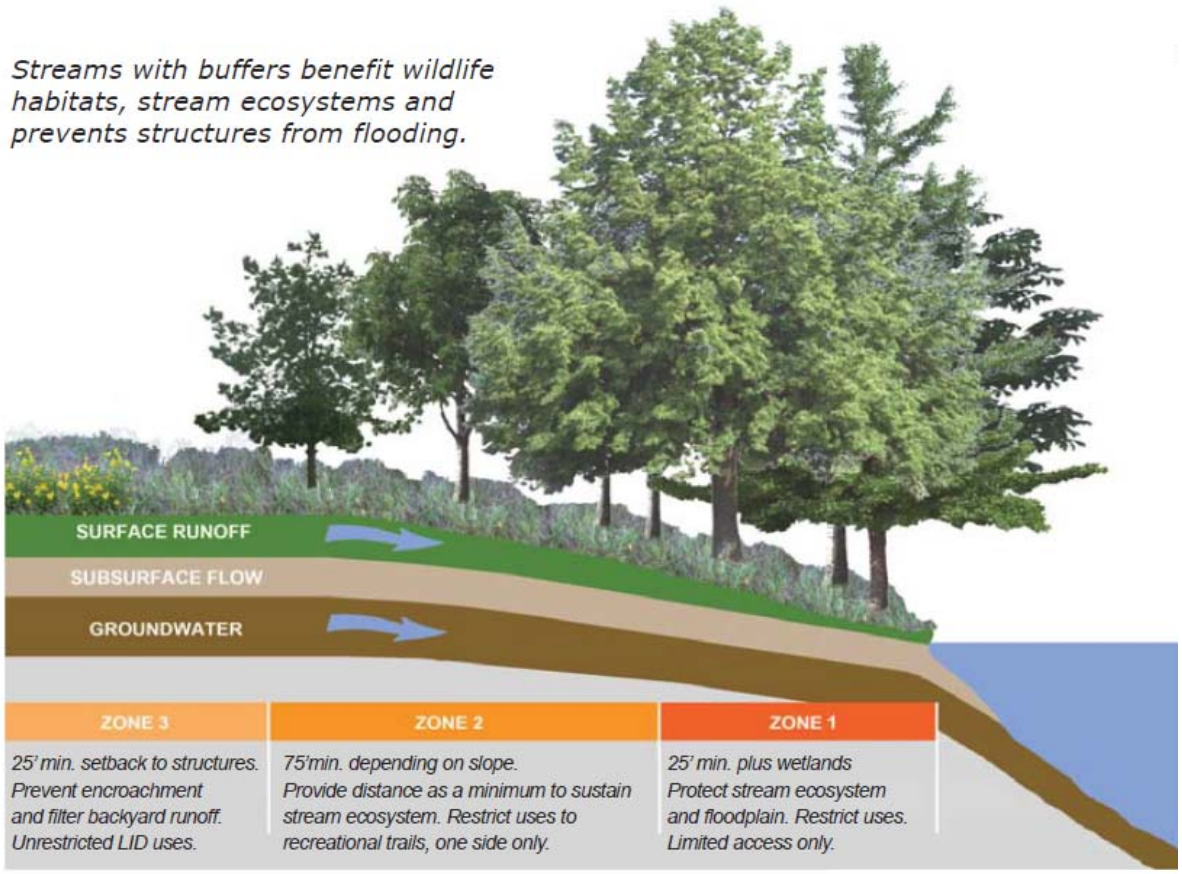
When determining where to apply bank stabilization, first begin with addressing the most severe sites and working from upstream to downstream. Tributaries should also be evaluated. Verify land use on site and determine if there is a link between the erosion and the land use. For example, cattle access may be a source of soil erosion. Limiting access would be the first step in stabilizing the bank. In general, the first step is to assess the amount of erosion (e.g. minor, moderate or severe) then determine the method for bank stabilization and calculate costs. One of the more difficult steps in bank stabilization is the ability to implement improvements (i.e. garnering public participation and cooperation from the landowner).

It is important to utilize experts who understand river morphology and who can determine the best method to stabilize the bank as well as what time of year is best to implement the proposed measures. Often, vegetative methods can be used that, long-term, can withstand major storm events as well as more expensive methods, such as costly gabion retaining walls. However, without proper expertize, these methods could also fail. For example, planting trees as a bank stabilization method should not be implemented during the rainy seasons when a large storm event could wash away installations before they have an opportunity to take root.

AQUATIC BUFFERS

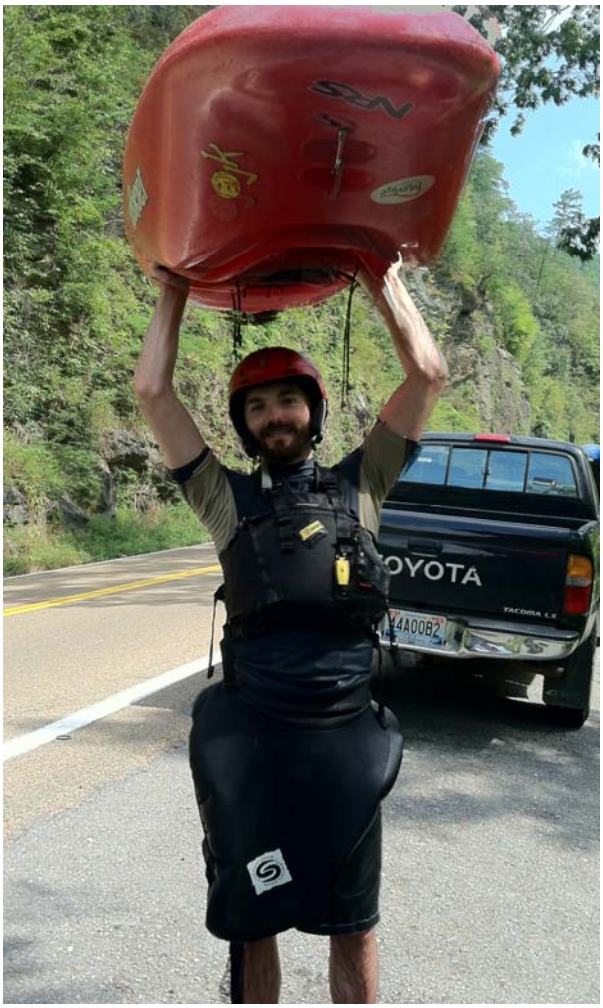
Aquatic buffers along the corridor can protect waterways and sensitive aquatic environments. Buffers protect water quality by filtering pollutants from runoff and provide flood control zones, stream bank stabilization, stream temperature control and room for lateral movement of the stream channel. Linking buffers to create a network of green infrastructure provide benefits for wildlife corridors. Buffers can protect rivers and streams from future development with conservation easements; thus, conservation easements are a strong marketing tool that helps guarantee the protection of scenic views and our precious natural resources while providing the land owner with tax advantages.

Figure 4.14: Aquatic Buffer with Zones



USERS OF A BLUEWAY

In general, the proposed blueways are mainly flatwater, meaning they have slow moving water and experienced paddlers can easily avoid obstructions. Blueway users may be experienced or inexperienced paddlers who utilize a variety of non-motorized watercraft, which may include canoes, kayaks and stand-up paddling (SUP) boards. The user experience may vary based on the blueway classification system. This system is pertinent knowledge for all users of a blueway and is discussed in more detail in this section.



TYPES OF USER EXPERIENCE

Fishing is a common passive blueway user experience to this region because of the numerous species of fish found in the Red River and Little West Fork. By providing access points, signage and other blueway infrastructure, this recreational sport can continue to expand and encourage tourism.

Along with passive blueway experiences such as fishing, there are also several active types of blueway user experiences. These four basic experiences each relate to the universal classification system and are as follows: gateway experience, recreational experience, challenge experience and wilderness experience.

Gateway Experience Segments

These segments of the blueway are categorized as flatwater or Class I Rapids. At normal conditions, these segments provide the most predictable experiences for paddlers. They typically have higher use levels and are tailored for beginners and those wanting shorter trips. Launch construction includes stable surfaces, such as concrete, and often are characterized with gentle slopes.

Recreational Experience Segments

These segments are categorized as Class II Rapids and require more skill and experience. During normal flow conditions, some boat maneuvering around hazards may be needed. Launch locations may be more difficult to access from parking facilities.

Challenge Experience Segments

These segments are categorized as Class III, IV, V and VI Rapids and are not meant for beginners. At normal conditions, paddlers will experience a moderate to high number of hazards including logjams, rapids or other elements such as larger lakes with long open-water crossings and the potential for high waves or limited egress.

Wilderness Experience Segments

Minimal human-made distractions and amenities are characteristics of this type of experience. This blueway user is prepared for a multiple-day experience where overnight primitive camping facilities may be present. Launch design and spacing between blueway access points assume above-average physical conditions. [iii]

BLUEWAY CLASSIFICATIONS

UNIVERSAL CLASSIFICATION SYSTEM

The classification system detailed in this section is an American version of a rating system used to compare river difficulty throughout the world. Rivers do not always fit easily into any one category and paddlers attempting difficult runs in an unfamiliar area should proceed with caution. Difficulty may change each year due to fluctuations in water level, downed trees, recent floods, geological disturbances or bad weather. River ratings should take into account

many factors including the difficulty of individual rapids, remoteness, hazards, etc.. According to www.americanwhitewater.org, the classifications are as described below.[iv]

Class I Rapids:

These rapids are identified by fast moving water with riffles and small waves. They have few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.

Source: Friends of the Clarksville Blueway <https://www.facebook.com/FriendsOfTheBluewayClarksvilleTN>

Class II Rapids: Novice

Class II rapids are fairly straightforward with wide, clear channels which are evident without scouting. Occasional maneuvering may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured, and group assistance, while helpful, is seldom needed. Rapids that are at the upper end of this difficulty range are designated “Class II+”.

Source: Nashville Whitewater ;https://www.facebook.com/groups/158719900864701/photos/ ; photo credit: Philip Byard

Class III Rapids: Intermediate

Class III rapids are identified by moderate, irregular waves which may be difficult to avoid and which can swamp an open canoe. Complex maneuvers in fast current and good boat control in tight passages or around ledges are often required; large waves or strainers may be present but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-volume rivers. Scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy but group assistance may be required to avoid long swims. Rapids that are at the lower or upper end of this difficulty range are

designated “Class III-” or “Class III+” respectively.

Class IV Rapids: Advanced

Source: Nashville Whitewater ;https://www.facebook.com/groups/158719900864701/photos/ ; photo credit: Boyd Ruppelt

Class IV rapids are identified by intense, powerful but predictable rapids requiring precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast maneuvers under pressure. A fast, reliable eddy turn may be needed to initiate maneuvers, scout rapids or rest. Rapids may require “must” moves above dangerous hazards. Scouting may be necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong eskimo roll is highly recommended. Rapids that are at the lower or upper end of this difficulty range are designated “Class IV-” or “Class IV+” respectively.

Class V Rapids: Expert

Class V rapids are identified by extremely long, obstructed, or very violent rapids which expose a paddler to added risk. Drops may contain large, unavoidable waves and holes or steep, congested chutes with complex, demanding routes. Rapids may continue for long distances between pools, demanding a high level of fitness. What eddies exist may be small, turbulent, or difficult to reach. At the high end of the scale, several of these factors may be combined. Scouting is recommended but may be difficult. Swims are dangerous, and rescue is often difficult even for experts. A very reliable eskimo roll, proper equipment, extensive experience, and practiced rescue skills are essential. Because of the large range of difficulty that exists beyond Class IV, Class 5 is an open-ended, multiple-level scale designated by class 5.0, 5.1, 5.2, etc… each of these levels is an order of magnitude more difficult than the last. Example: increasing difficulty from Class 5.0 to Class 5.1 is a similar order of magnitude as increasing from Class IV to Class 5.0.

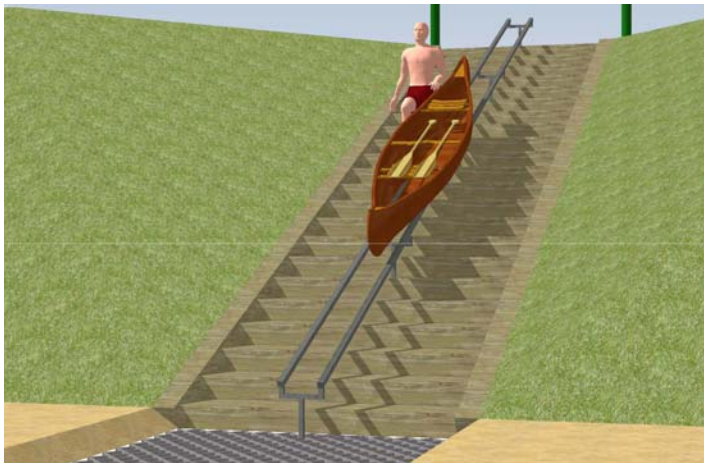
Class VI Rapids: Extreme and Exploratory Rapids

These runs have almost never been attempted and often exemplify the extremes of difficulty, unpredictability and danger. The consequences of errors are very severe and rescue may be impossible. For teams of experts only, at favorable water levels, after close personal inspection and taking all precautions. After a Class VI rapid has been run many times, its rating may be changed to an appropriate Class 5.x rating.

BLUEWAY STANDARDS

Blueways are constantly shifting and changing and can be difficult to plan, design and maintain. Users might encounter different types of experiences along the blueway, and design for each of these experiences might vary; however, key elements can be found in almost every blueway such as access in the form of launches, parking, walking trails and water access campsites.

Figure 4.15: Canoe / Kayak Launch with Double Rail



BLUEWAY ACCESS POINTS

Blueway access points, also known as launches, provide facilities for recreational use of waterways. These facilities allow for ease of launching canoes, kayaks and other small recreational watercraft. Proposed access points along the river vary from a short distance of two miles, and span distances up to six miles (with a median of 2.2 miles between access points). For flat water canoeing, a paddler can average about two miles an hour. Access points shown on the overall blueways master plan with short distances may be eliminated to provide greater distances, but they are included for overall planning purposes. Each site will need to be evaluated for access, distance from the next access point and site-specific attributes.

LAUNCHES

Location Considerations:

1. Route of the stream across the land
2. Shape of the streambanks and bottoms
3. How accessible will it be for users and maintenance

Selection Criteria:

All launches require attention to five elements regardless of launch type or location:

1. Armoring – in the form of riprap is generally used. Used to protect the bank from erosion.
2. The slope steepness of the ramp – should be as close to 8% as possible.
3. A push-in section – steeper than launch ramp, bottom most section of the transition zone. Should be made of concrete.
4. Height of the water at the launch location – hardened section of ramps and the armoring should extend between the bankfull and baseflow elevations. This is critical to minimize future maintenance.

TRANSFER ASSISTANCE

Whether on a bank of a lake or on a rocky slope, it is difficult to transfer to a moving boat. When possible at the landing/loading area, provide a grab bar and other grab points to assist in the procedure of getting into a boat seat. If possible, provide a surface that will limit the amount of movement of the boat when entering the craft. Several examples of handicap accessible landing/loading areas are shown to the right.

Source: Nelson's EZ Dock <http://www.nelsonsezdock.com/gallery.html>

LANDING/LOADING AREA

A leveled boat slip space that is at least 60"x60" should be provided adjacent to the loading area. In a back country canoe launch, this might be constructed using large relatively flat boulders approximately a foot under water. This leveled area should be designed to allow transfer from a wheelchair to a rock then into a floating canoe.

Source: Bladensburg Waterfront Park; Adriane Clutter (Maryland-National Capital Park and Planning Commission <http://www.bayjournal.com/article/bladensburg_waterfront_park_adds_universally_accessible_dock_for_paddlers>

PARKING FACILITIES

At a minimum, blueway access and parking areas should include a paved access path to natural staging and launching areas. In some situations, a minimal amount of shotcrete or concrete may be required to improve footing and access within natural rock outcrops. In other situations, a system of large steps or terraces can be constructed of recycled plastic (textured, not slippery when wet) and wood timbers to facilitate launches at varying water levels. Ideally, access points should be provided every two to four miles.

Source: The new launch ramp at Grebe Lake in the Rifle River State Recreation Area. Photo: MDNR <http://howardmeyerson.com/2013/05/23/state-recreation-areas-add-handicap-canoe-kayak-launches/>

These access points should, wherever possible, take advantage of existing park facilities or proposed trailheads for parking, picnicking, restrooms and other amenities. In some situations, access points may be independent of park facilities and will require dedicated parking and signage. In a few cases, roadway pull-offs with adequate room for two or three vehicles may be appropriate. In other cases, more developed parking amenities will be required.

Source: Harpeth River Watershed Association – Harpeth River Blueway <http://www.harpethriver.org/programs/recreation/>

Road construction to access points should be carefully planned to minimize impact on the river and surrounding buffer. Access and parking areas should be limited to the minimum necessary and should employ low impact techniques such as porous pavement, where possible, to reduce stormwater runoff.

In general, parking areas should be located close to launch areas and should have a loading/unloading zone for heavy equipment. When designing parking areas, utilize low impact designs and provide best management practices when constructing to minimize disturbances to the site and soil erosion. Riverbanks with a slope greater than 15% will create difficulty transitioning from land to water and will require handrails, steps and/or a boat launch. Bank stabilization should also be provided to protect streams from soil erosion.

The American Disabilities Act (ADA) of 1990 requires that people with disabilities be provided equal access to public programs and services. At a minimum, provide at least one accessible launch along the route as the blueway system develops.

Construction of ramps and steps will need to be designed to withstand heavy storm events and may require permits from the U.S. Army Corps of Engineers, Tennessee Department of Environment and Conservation (TDEC) and other regulating authorities.

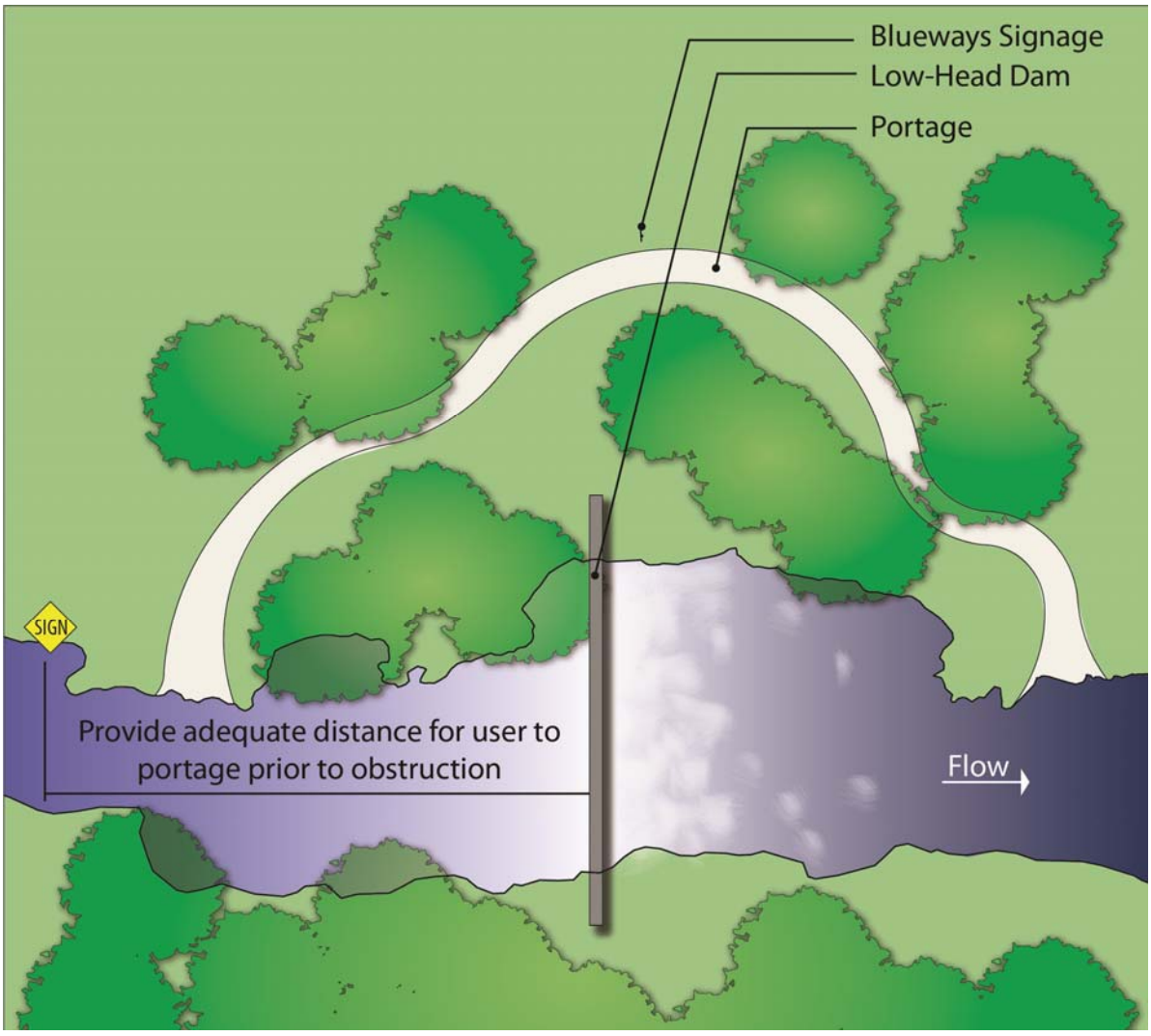
WALKING TRAILS

In situations where parking cannot be located near access points, pathways to the water should be constructed at a minimum of 5' wide to allow adequate space to carry watercraft to the water's edge. As stated above, all access should adhere to current ADA standards.

Portages

Walking trails in the form of portages are also instrumental to the design of blueways. Portages are land-based alternative routes for blueway segments used to avoid in-stream hazards such as dams. They should be clearly marked from the water body and signage should occur at the location of the portage. Portages should be on public-owned property, if possible, and should be accessible for all users. Re-entry points should be clearly marked.

Figure 4.16: Portage



Route Surface and Slope

The access route to the boat launch site should have a smooth slope surface and be as level as possible. To meet ADA guidelines, the slope should be less than 8.33% and have a cross slope of under 2%. The ADA accessible route should also be clearly marked.

WATER ACCESS CAMPSITES

Campsites along blueways, like portages, should be on public-owned property, if possible, and should only be located in areas difficult to reach except by water and not near dwellings. Campsites should be located ¼ mile or more from all roads, or on the opposite side of the river. [v]

Desirable sites include:

- A short hike up a ridge via a sustainable designed trail can provide a drier site with breezes, fewer insects and a nice view
- Low terraces outside of the active floodplain can offer spots for large clusters
- View and sound of water
- Floods infrequently

SAFETY CONCERNS AND MEASURES

LOW HEAD DAMS

While there are many benefits to blueways, they can pose safety concerns for users. These risks are not always apparent, as conditions can change rapidly due to weather conditions, water level or changes in route due to fallen trees or other water hazards.

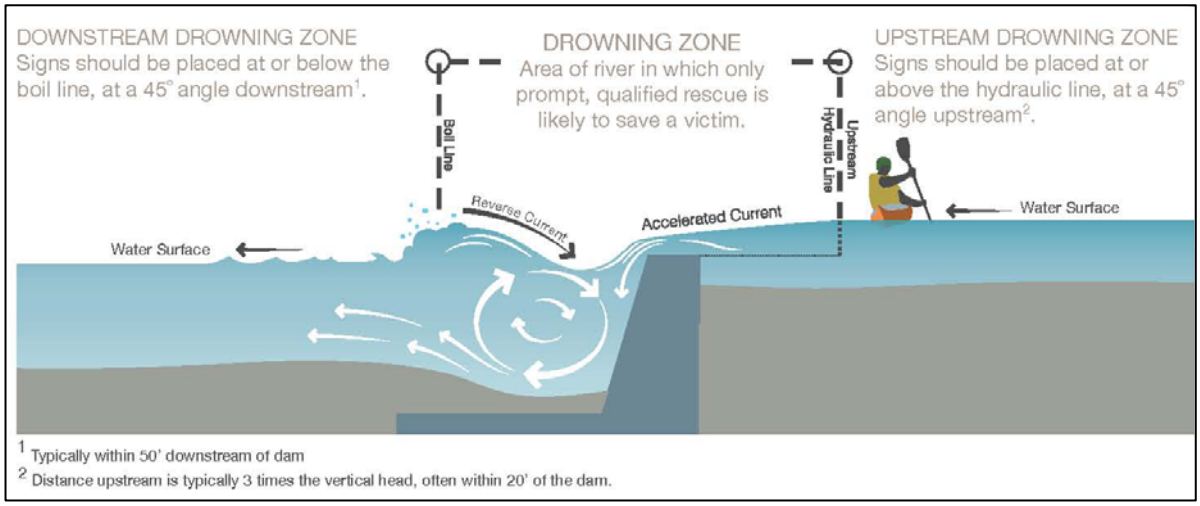
Low-water levels at certain times of the year also create unfavorable conditions for paddlers. Information on available water data, current water levels and other safety information is a critical component to providing a successful blueway system.

In addition, small low head dams currently exist along some of the streams and pose a serious risk. When water flows over the top of these low head dams, they produce churning currents on the downstream side that may not appear dangerous, but recirculating water can pin someone against the downstream side, making it difficult to escape. If possible, these low head dams should be removed along blueway routes.

An ongoing study by the University of Tennessee states that there have been 204 deaths at low-head dams in 30 states over the past 50 years. Half of those deaths have occurred

since 2000. As more people use rivers for recreation purposes, these unsuspecting "drowning machines" (as they are sometimes called) present a significant health risk to paddlers. Removing low-head dams will not only improve river safety, but also improve aquatic habitats by allowing fish passage.

Figure 4.17: Low Head Dam Hydraulics Diagram



Source: Developing Water Trails in Iowa. Chapter 6: Signage
<http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx

DROWNING

All paddlers, whether experienced or beginner, need to be prepared for emergencies. Posting rules for paddlers and providing a safe access point are two important elements, but citizens should be advised that rivers pose many dangers.

According to the Centers for Disease Control and Prevention, drowning ranks fifth among the leading causes of unintentional injury death in the United States. Tennessee State Law requires that each person on board a watercraft have an approved Personal Flotation Device (PFD); children 12 years old or younger are required to wear a PFD at all times while on the water. For state regulations regarding Personal Flotation Devices, refer to the *Tennessee Boating Safety Guide.*

SAFETY CHECKLISTS

The Tennessee Wildlife Resources Agency (TWRA) provides the *Safety Checklist for Canoeing and Paddle Sports* manual. They also have a Boating Safety Education website with important safety information.

GENERAL GUIDELINES FOR USERS INCLUDE:

- Be prepared and always wear a PFD on and in the river. Paddlers should be prepared for any situation.
- Know your skill level and never paddle alone. Although the blueway may be considered as Class I rivers, paddlers of any skill level should check both weather conditions and water level prior to departure. Always tell someone where you are going and when you expect to return.
- Bring plenty of drinking water, regardless of the season. Bring necessary allergy medications and emergency supplies such as a first aid kit, prescription medications, a change of clothes, flashlight, whistle, compass, rain gear, cell phone, sunscreen, insect repellent, snacks, etc., and a waterproof “dry” bag to hold these items. Secure items.
- Check weather conditions and water levels before your trip. Do not attempt a trip if the forecast indicates severe weather such as a thunderstorm. Do not attempt a trip during flood conditions.
- Wear clothes and shoes suitable for conditions. Avoid flip-flops or other shoes that can slip off the foot easily.

If sponsoring a float trip, leaders should provide participants with a legal waiver to sign and require participants under the age of 18 be accompanied by an adult who has legal responsibility.

Below is an example of a safety checklist for canoeing and paddle sports.

REQUIRED BY LAW:

- An approved, wearable life jacket for each person must be readily accessible. Throw cushions do not meet this requirement.
- Persons 12 and under must wear a life jacket while underway. Drifting is considered underway.
- Do NOT overload your boat.
- Boaters must use running lights after sunset or during restricted visibility if boat is propelled by motor (gas or electric). Canoes and paddlers must exhibit a white light or lantern after sunset or during times of restricted visibility.
- Boater's state registration card must be on board if boat is propelled by motor (gas or electric).
- A fishing license is required by all persons 13 years or older attempting to take fish.
- Do not litter. It is unlawful to throw or sink litter from a boat. In the event that a boat turns over, all contents must be retrieved.
- It is unlawful to use or be in possession of drugs or controlled substances while boating or paddling.
- Use or possession of alcohol by individuals who are underage is prohibited.

OTHER:

- It is extremely dangerous to climb rock bluffs or trees and jump or dive into the water. Serious injury or death may occur.
- On rivers, stay clear of trees that have fallen and extend into the water. These are called strainers and are very dangerous.
- Stay clear of low head dams with water flowing over the top. These produce life-threatening churning currents on the downstream side.

Additional items may be added to this checklist. We may also recommend changing the title from Safety Checklists to Rules and Regulations with information regarding restrictions on swimming at these access locations.

FLOW GAUGE

Access points should have a clearly visible flow gauge that indicates the degree of safety for canoeing. Shown in the picture on the right is a simple flow gauge. Larger signs and information may be needed. Some examples include gauges painted on bridges or rock outcroppings near the access point. Links to the *USGS National Water Information System* with information on current water levels should be provided on blueway websites.

Source: USGS
<http://water.usgs.gov/edu/photos-measure.html#4>

SIGNAGE

A blueway signage system may consist of navigational signs, rules and regulations, hazard signage and travel distance markers along blueway routes. Signage may also include interpretive panels at access areas that educate the visitors about wildlife and habitats found in the streams.

NAVIGATIONAL SIGNAGE

There are two types of navigational signage: those viewed on-land, which can be in the form of wayfinding, and those viewed from the water.

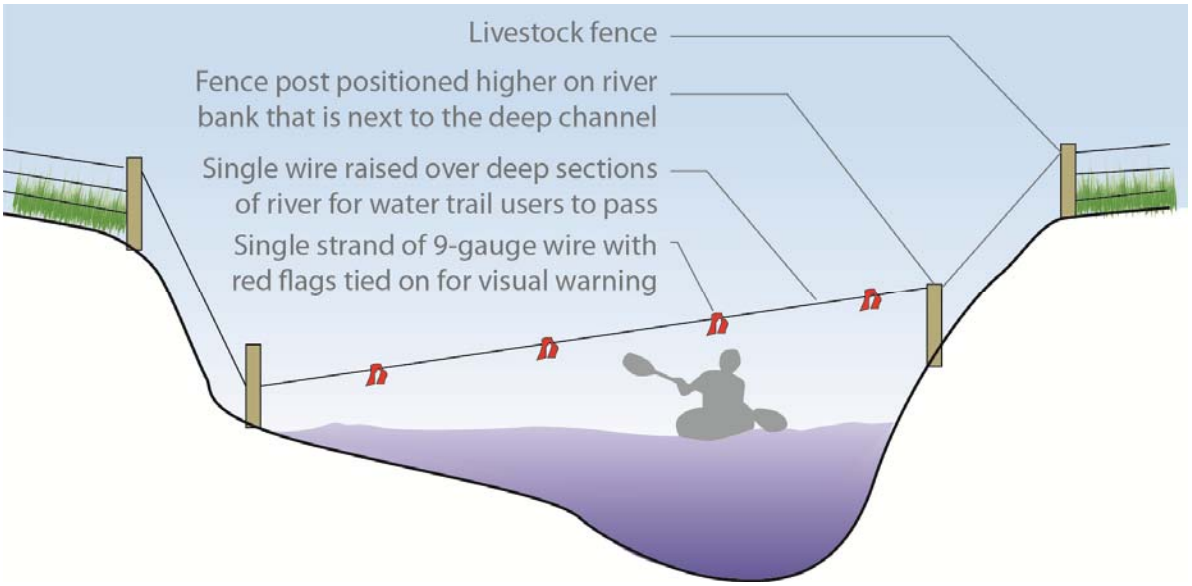
On-Land Navigational Signage

Wayfinding for blueways may be simple signage that guides visitors to the launch locations, Often, paddlers are experiencing routes for the first time and wayfinding will assist them in locating these areas. For this reason, wayfinding signage should be located along the entry road to blueway access sites. This example shown of the brown sign with paddlers in a canoe is a commonly recognized sign standard already in use in Metro Nashville along several waterways. [vi]

On-Water Navigational Signage

On-water navigational signage is helpful to the blueway user in many ways. For example, if emergencies arise, take-out locations may need to be identified quickly. Users may also encounter obstacles such as logjams, over-head dams, or even livestock. Barbed-wire fencing running across the stream to contain the animals may be an unlikely occurrence, but poses a risk to the blueway user if not properly identified. Use of a single strand of 9-gauge wire with red flags tied on for visual warning may be used to alert the blueway user. [vi]

Figure 4.18: Passable High Fence



Source: Developing Water Trails in Iowa. Chapter 6: Signage
<http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx

Recommendations for on-water signage include the following:

- All signs viewed from the water are typically sited on the bank at a 45 degree angle facing upstream
- Depending on local conditions, alternative mounting systems such as buoys, overhanging cables or bridges may be used and signs may face directly upstream or downstream
- Locate information visible to the user by:
    - Identification of the next upcoming launch
    - Bridge identification
    - Portage trail wayfinding
    - Boat navigation arrow
    - Blueways rules

BLUEWAY RULES

The following are rules and regulations posted near blueways in Clarksville, TN:

- Know your abilities and limits. Operation of kayak/canoe solely at the operator's own risk.
- Show courtesy and respect for all water trail users. Lookout for other boaters, swimmers, debris and fishermen.
- Enter and exit the water at designated areas only, except in life threatening circumstances.
- Always wear a USCG approved life jacket when on the water.
- All users must obey federal, state and local boating rules and regulations.
- No camping on park lands. Camping or stopping on private property may also be subject to trespassing laws.
- Do not climb rocks, bluffs, trees or jump or dive into the water. Serious injury or death could occur.
- Blueway is subject to flash flooding. Exit immediately during heavy rain or lightning. Check current water conditions / weather forecast before departure.
- Tell someone your plan and when you expect to return. Carry a cell phone in case of an emergency situation.
- Leave No Trace – Do not bring glass containers in or near the river. NO STYROFOAM PLEASE! Always leave with more trash than you brought.

HAZARD SIGNAGE

Signage should identify areas where additional caution may be necessary due to adverse conditions such as waterfalls. Hazard signs should be located adjacent to the hazard. The example to the right indicates to the blueway user there is a low-head dam ahead.

Any signs identifying drowning zone limits surrounding a hazard must allow a boater to reach shore before being carried by currents over the hazard.

Source: Iowa Whitewater Coalition <www.iowawhitewater.org/lhd/images/BooneLowHeadDam.JPG.>

TRAVEL DISTANCE MARKERS

Distance markers along the blueway shall be calculated by using river mile designations as measured from its downstream confluence. These markers shall be placed at every full mile along the blueway and at each access point and portage. [vi]

MAINTENANCE

Similar to the maintenance of trails, a blueway system requires both capital and operational funding to implement and maintain the system. Designing the system with proper trash receptacles and clearly stated rules of conduct for blueway users can help reduce litter. As with greenways, these regulations need to be enforced if they are to work. "Adopt a Stream" programs, where an organization volunteers to keep a section of the blueway clean can also help with maintenance.

Regular maintenance tasks include the following:

- Removal of trash
- Signs and traffic markings for paddlers must be inspected regularly and kept in good condition
- Following heavy storm events, blueways should be inspected for water hazards and those hazards should be removed.

- Structures such as ramps, access points, pavilions and restrooms should be inspected annually to ensure they are in good condition. Special attention must be paid to wood foundations and posts to determine if rot or termites are present. At the same time, site furniture and other support facilities should be inspected.
- Mow launch areas and other selected areas on a scheduled basis depending upon season, species and rate of growth.
- Habitat enhancement and control
- Removal of graffiti
- Repaint/repair flow gauge
- Bank stabilization repair measures

SUPPORT FACILITIES

A large part of creating an attractive and safe greenway system is incorporating support facilities along the trail. These facilities should provide relaxation, education, orientation and recreation opportunities. Anticipating the needs and wants of all users is important to developing a successful greenway system, and incorporating the appropriate support facilities is necessary for this to be accomplished.

GENERAL CRITERIA

1) Circulation. Adequate, efficient and safe space must be provided for vehicles and pedestrians to maneuver.
2) Parking. Adequate number of spaces for the anticipated level of use of the particular facility including, where appropriate, spaces for RVs, buses, small trailers for boats and canoes, and bicycles.
3) Structures. Again, depending on the anticipated level of use, buildings may be required. Structures may include gazebos, picnic shelters or pavilions, restrooms, maintenance and storage facilities, information booths and kiosks.
4) Emergency telephones.
5) Site furnishings, including benches and trash receptacles.

6) Signs.
7) Fences and lockable security gates.
8) Security lighting.
9) Landscaping.
10) Connector trails to the main trail.
11) River access where appropriate.

POINTS OF INTEREST

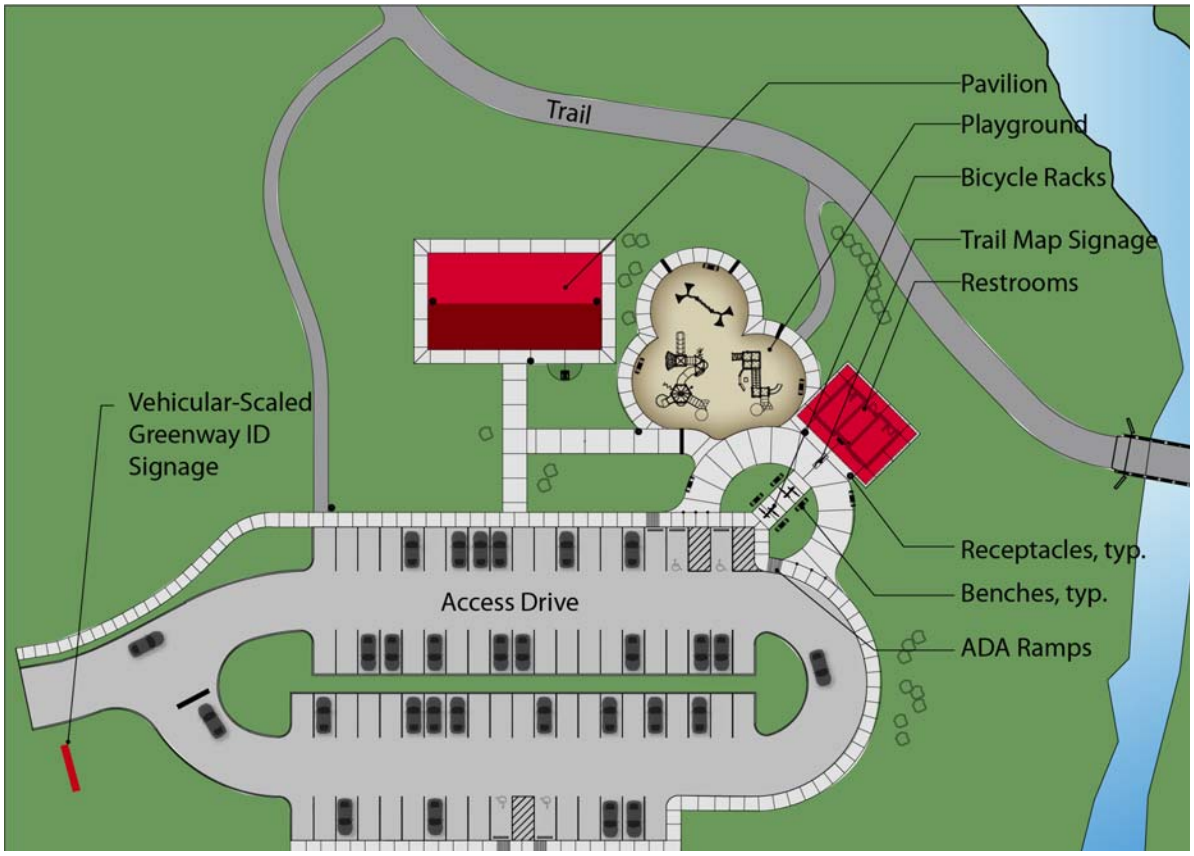
TRAILHEADS

In simple terms, trailheads are trail access points; however, in terms of available facilities, they can be extremely diverse. Trailheads will establish the trail user's first impression of the greenway network; therefore, their detailed design will be critical as construction documents are developed for implementation.

Major Trailheads

The size of a trailhead depends upon its location and anticipated amount of use. The basic facilities included at a trailhead are parking, trail map and access to the trail. More extensive trailhead facilities, such as major ailheads, include restrooms, security lighting, signage, landscaping, site furnishings, and telephones.

Figure 4.19: Example Trailhead and Parking Layout for Major Trailhead

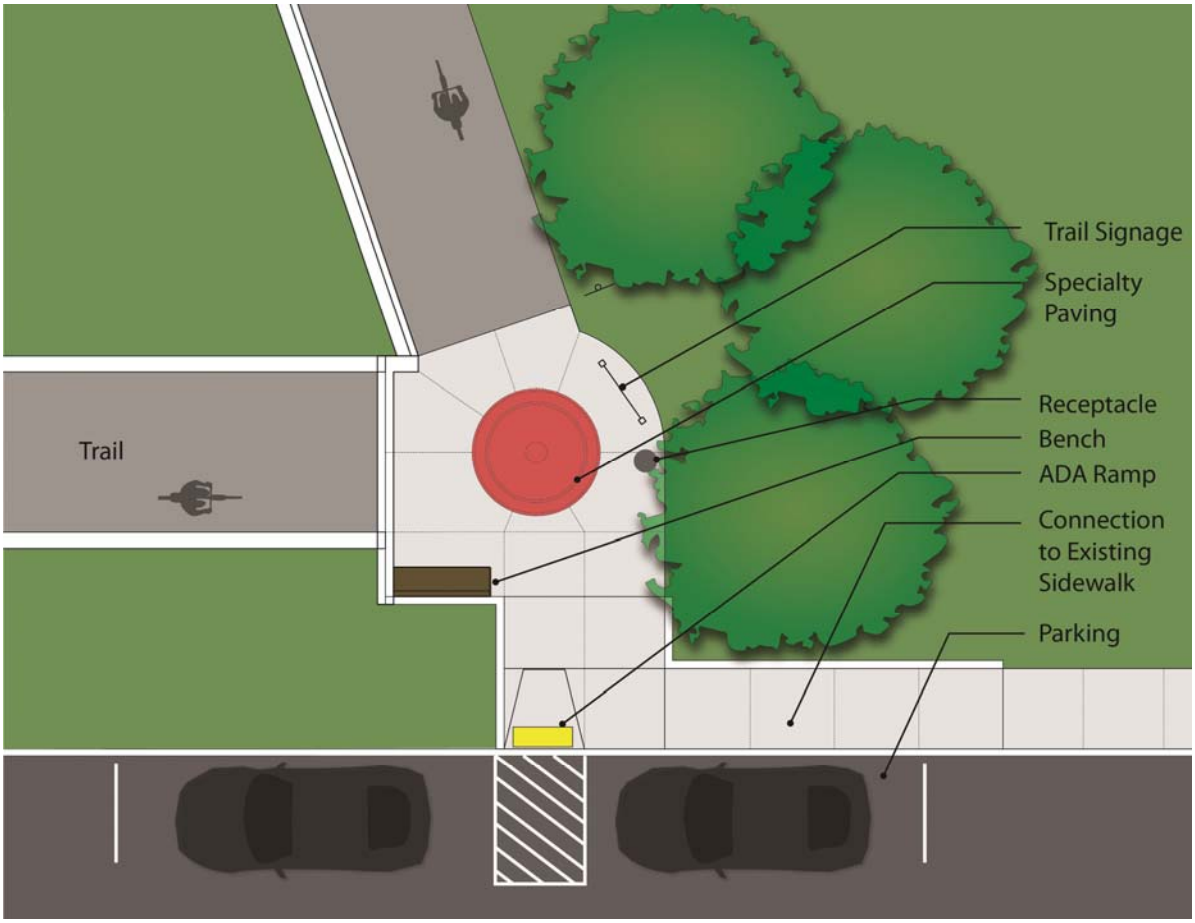


Existing facilities, such as schools and parks, can also be utilized as trailheads. Existing parking can easily be supplemented with the addition of a trail map and entrance. Many other amenities typically included at trailheads are already available, including phones, lighting and restrooms. Utilizing these existing facilities as trailheads minimizes construction costs and creates important connections to the greenway system.

Minor Trailheads (Walk-Up Trailheads)

Minor trailheads, also known as walk-up trailheads, are typically smaller and are intended to provide trail access at more frequent intervals. They usually include a map of the trail network, connections to adjacent sidewalks or bicycle facilities and parking, as shown in Figure 4.20. These trailheads should be constructed where there are long stretches of trail with no public access points. Amenities such as benches, receptacles and signage should be included in the design.

Figure 4.20: Example Trailhead and Parking Layout for Minor Trailhead



Trailhead Design

Simply stated, trailheads are trail access points for the general public. However, in terms of available facilities and amenities, the various types of trailheads can be extremely diverse. Trailheads will establish the trail user's first impression of the greenway system; therefore, attention to details of design will be critical as construction documents are developed. Where possible, trailheads should be located in or adjacent to existing or planned parks so that public amenities such as restrooms, parking, picnic pavilions, playgrounds and general recreation facilities are already available. In addition, educational facilities should also be considered as a prime location for trailheads. Frugal use of economic resources is a strong component in determining location. However, economy of means is not the only factor in this reasoning. By combining recreational opportunities, the Clarksville community will have a greater range of choices to improve its health, quality of life and leisure time.

In general, trailhead design criteria should consist of the following components, regardless of the level of development:

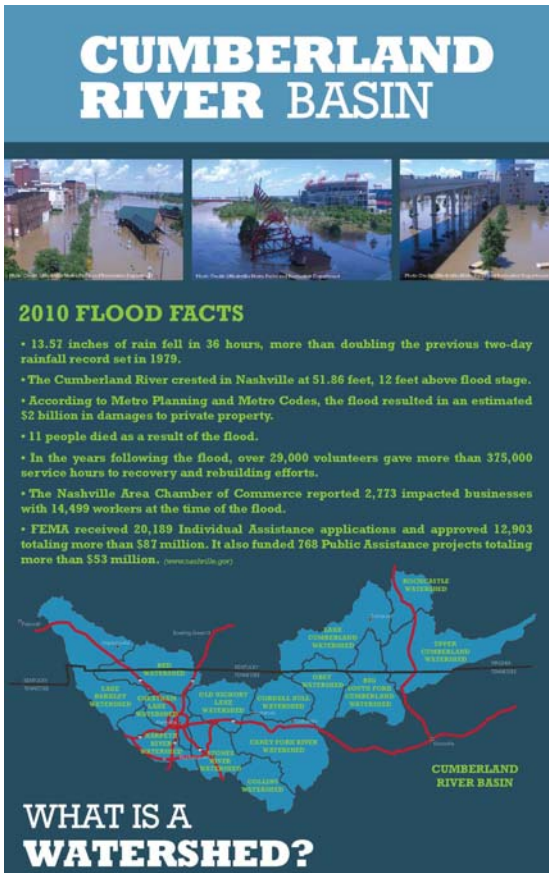
- Circulation: Adequate, efficient and safe space allocations must be provided for vehicles, bicycles and pedestrians to maneuver
- Parking: There must be an adequate number of parking spaces for the anticipated level of use of the particular facility including, where appropriate, spaces for RVs, small trailers for boats and canoes, buses and bicycles
- Structures: Again, depending upon the anticipated level of use, buildings may be required. Structures may include gazebos, picnic shelters or pavilions, restrooms, maintenance and storage facilities, information booths and kiosks.
- Site furnishings including benches, picnic tables, trash receptacles, bike racks, bollards and playgrounds
- Signs
- Fences and lockable security gates
- Emergency telephones
- Security lighting
- Landscaping
- Connector trails to the main trail
- River or waterway access where appropriate

WAYSIDES

Wayside exhibits are built adjacent to trails or at the terminus of a connecting trail and do not contain parking facilities. These areas contain interpretive signs that provide information on the natural environment or on cultural and historic points of interest in the vicinity. They also provide small areas where people can sit, relax and enjoy a quiet moment.

EDUCATIONAL OPPORTUNITIES

In addition to signage, hands-on educational opportunities can be developed with the greenway system. These experiences can be informal, such as access to the water's edge, or more structured, such as a nature center or guided tour along a significant portion of the trail. A combination of these different educational opportunities can exist at different locations and different seasons of the year.



MAINTENANCE

Another best practice is the implementation of a maintenance management system. A maintenance management system seeks to quantify and describe the amount and nature of the maintenance needs of an agency so that the agency can then prioritize and assign maintenance tasks. Begin with identifying the scope (i.e. trails, blueway access points, etc.) establishing standards for the levels of service. Information will need to be gathered such as trail maps, inventories and site surveys. Online systems that are easy to update can be an efficient way to collect data. The system will require regular inspections, reporting and updating of data. By establishing a reporting method, the system provides the framework for analyzing the level of efficiency of the staff and trends in maintenance issues. This type of system is not only important for identifying and budgeting the cost of maintenance but can help the agency in determining future maintenance costs as it expands the greenway and blueway system.

[i] American Association of State Highway and Transportation Officials (AASHTO). Guide for the Development of Bicycle Facilities. (2012) Fourth Edition.

[ii] Federal Highway Administration. (2001). "Trail Crossings" In *Part 2, Best Practices Design Guide. (*Section 16.1). Retrieved from https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/contents.cfm

[iii] Iowa Department of Natural Resources. "Water Trails in Iowa". *Developing Water Trails in Iowa: Practical Guidelines and Templates for Planning, Site Design, Signage, and Construction in the State of Iowa*. Ed. Mimi Wagner, Ed. Nate Hoogeveen. (2010). http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx Accessed December 2014.

[iv] Singleton, Mark and Charlie Walbridge. "International Scale of River Difficulty". *Safety Code of American Whitewater.* (2005). www.armericanwhitewater.org Accessed December 2014.

[v] Iowa Department of Natural Resources. "Design Development". *Developing Water Trails in Iowa: Practical Guidelines and Templates for Planning, Site Design, Signage, and Construction in the State of Iowa*. Ed. Mimi Wagner, Ed. Nate Hoogeveen. (2010). http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx Accessed December 2014.

[vi] Iowa Department of Natural Resources. "Signage". *Developing Water Trails in Iowa: Practical Guidelines and Templates for Planning, Site Design, Signage, and Construction in the State of Iowa*. 2010). http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx Accessed December 2014.

THIS PAGE LEFT INTENTIONALLY BLANK.

05 Proposed Plan

THIS PAGE LEFT INTENTIONALLY BLANK.

05 Proposed Plan

The City of Clarksville maintains approximately 11.6 miles in existing paved trails located along the Little Red River and the downtown riverfront along the Cumberland River. The longest continuous stretch of trail is the 4.6-mile Clarksville Greenway that follows the Red River and connects the trailhead located at the Clarksville Wastewater Treatment Plant to Heritage Park. Additionally, the City also maintains approximately 24.6 miles of separate-lane bike paths. These are focused primarily in the downtown area and also include segments along Lafayette Road, Crossland Avenue, and Old Ashland City Road. At this time the county does not have any developed multi-use greenways.

This section examines how a regional network of multi-modal transportation corridors and nodes might be organized in Clarksville and Montgomery County. It is informed by previous planning efforts, standard practices, and original analyses, presenting recommendations in the form of a series of regional maps and related data sets (see Appendix for complete presentation of data spreadsheets).

TYPES OF CORRIDORS

A range of natural and human-made corridors are utilized to support shared-use paths and blueways. The more commonly used corridor types are described below:

ABANDONED RAILROAD CORRIDORS

The City of Clarksville was an active railroad center in the 19th and early 20th centuries. Rail cars still travel through the area daily, but many of the once active railroads have been abandoned and the tracks removed. Many of the corridors remain intact, providing excellent opportunities for greenway development. However, many of these railroad corridors have returned to private ownership, and trestles that once crossed steep terrain or waterways have been destroyed. The overall potential for conversion of rail corridors to trails is very high both in the city and county.

TVA RIGHTS-OF-WAY

The Tennessee Valley Authority, which provides much of the power for the residence of Clarksville and Montgomery County, requires a large right-of-way (R.O.W.) under all wires and towers. No vertical structures such as buildings and tall vegetation are permitted within this R.O.W.; however, the building of roadways and trails for recreation use is an acceptable practice. The TVA R.O.W was studied closely when developing our trail network to help make key connections throughout the community.

RIVER CORRIDORS

River corridors present natural opportunities for trail planning and design. While limited in their potential for residential and commercial development due to flooding, these drainage ways often provide ideal areas for trail systems. While trail buffers hold potential to assist in ecological preservation, appropriately designed facilities may be utilized for trail construction to minimize impacts on natural flooding processes within floodplains. Where the floodplain is found on only one side of the river, access may require the construction of pedestrian bridge crossings. These not only create additional links between neighborhoods and commercial centers but also create links that are often more convenient that existing vehicular crossings.

ROADWAYS

Roadways also create a network of corridors that can provide pedestrian and bicycle circulation. Identifying which roadways are safe and connect the most elements help determine which roads should be renovated to accommodate pedestrian and bicycle travel.

LAND CORRIDOR DATA

Nearly 100 miles of off-road trails and 19 new trailheads have been recommended for development over the next 25 years. The routes focus on improving connectivity between schools, large community parks, neighborhoods, commercial areas, and currently underserved segments of the population. In conjunction with bike lanes and multi-use paths, proposed greenways provide for a system that encompasses the entire perimeter of Clarksville as well as several long segments that extend into the county. Greenway connector routes penetrate the central corridors of the city, linking community parks, downtown, and APSU to the perimeter. The longest potential corridor is an old rail bed that connects Montgomery County to Cheatham County, offering a potential regional greenway attraction.

Trailheads are strategically placed along primary vehicular corridors for ease of access and wayfinding to the trail. They are intended to provide parking, restrooms, picnic facilities, and other amenities similar to existing trailheads found along the existing Clarksville Greenway.

ROUTE TYPES AND NAMES

Routes have been grouped according to five categories (see descriptions in Section 4):

- Greenway
- Bike (shared lane)
- Bike (separate lane)
- Bike (separate lane along sidewalk)
- Sidewalk

Each route has been given an identification number and name (the former is presented on section and extension maps and can be referenced in the appendix). Bike routes located within rights-of-way and sidewalks have been identified according their corresponding roadways while greenways have been named according to their respective loop or connector function.

AQUATIC CORRIDORS

Clarksville and Montgomery County have many rivers and streams that meander throughout the region, providing ample opportunity for not only ecological preservation but also water recreation activity. The Red River, Little West Fork Red River, and Little Red River all provide opportunities for paddle sports and as noted in the Existing Conditions Inventory, currently support five locations for public river access in and around the City of Clarksville. Additionally, the Parks and Recreation Department maintains approximately 5.29 miles of partially developed blueway, including a put-in at Billy Dunlap Park.

This section examines how a regional network of aquatic corridors and nodes might be organized in Clarksville and Montgomery County. Similar to the Land Corridors section, it is informed by previous planning efforts, standard practices, and original analyses, presenting recommendations in the form of a series of regional maps and related data sets (see Appendix for complete presentation of data spreadsheets).

AQUATIC CORRIDOR DATA

Over 50 miles of blueway have been included in this Master Plan (32 miles of which are located within Clarksville city limits). Routes include 12 access points identified by the Friends of the Blueway and selected for their ease of access as well as proximity to trailheads previously identified. Some of these locations will only be seasonally accessible due to low-flow conditions during different times of the year. As a result, the City will need to monitor river levels throughout the year and close those locations that are not navigable during certain periods.

Five of the 12 access points are existing and City-owned, providing the greatest near-future opportunity to develop further river access. The remaining seven are controlled by various other entities – those controlled by other public agencies present the greatest opportunity for easement negotiation while those held in private ownership will require land acquisition or easements to permit trailhead development. Additional land acquisitions will also be necessary for the development of canoe portages around the existing low head dam found on the Little West Fork River.

ROUTE TYPES AND NAMES

Each blueway route has been given an identification number, visible on section maps and referenced in the appendix. Blueways have also been identified according their corresponding waterway.

SYSTEM IMPROVEMENTS

As the City and County look to expand its blueway system, common design elements to be implemented throughout the network include:

- Signage (wayfinding, safety/rules, maps, interpretive, mileage markers, etc.)
- Parking
- River access points (concrete launches, steps, slide rail for small boats, etc.)
- Amenities (trash cans, benches, pavilions, access gates, security lighting)
- Portages around dam structures and other obstacles in the river

Regional blueway development shall follow a design approach that addresses riparian sensitivities. Responsible environmental design strategies, such as low impact development and utilization of stormwater best management practices, shall be employed. Additionally, design efforts shall account for the limitations of flood-prone areas and recommend features that can withstand heavy rain events when floodwaters exceed baseline river levels.

MAP INDEX

Maps show a range of information based on similar legends and include the following:

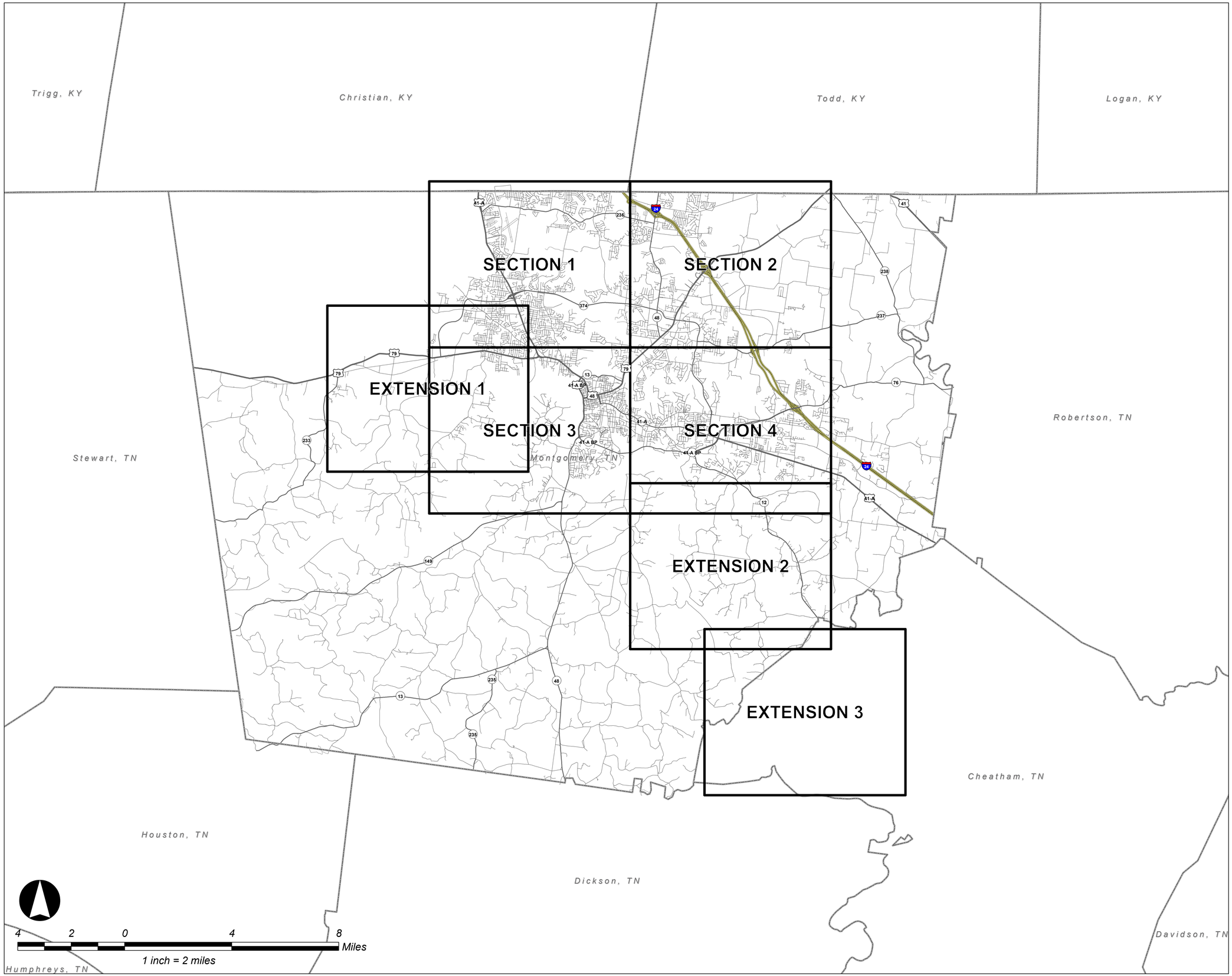
- Key Map – Presents a regional map identifying the position of enlargement maps; a similar graphic is presented as a key in the lower-left corner of subsequent maps to regionally orient readers.
- Overview A – Presents all nodes and route types (proposed/existing, land/aquatic) located within the entire regional corridor system; while the map presents a nearly overwhelming amount of information, it does so to depict a comprehensive view of the system.
- Overview B – Presents only nodes and greenway and blueway routes located within the entire regional corridor system; all bicycle routes positioned in Rights-of-Way have been hidden for graphic simplification purposes.
- Overview C – Presents only nodes and bicycle routes positioned in Rights-of-Way for the entire regional corridor system; all greenways and blueways have been hidden for graphic simplification purposes.
- Section 1A – Presents an enlarged view of all nodes and route types (proposed/exiting, land/aquatic) located in northwestern Clarksville.
- Section 2A – Presents an enlarged view of all nodes and route types (proposed/exiting, land/aquatic) located in northeastern Clarksville.

- Section 3A – Presents an enlarged view of all nodes and route types (proposed/exiting, land/aquatic) located in southwestern Clarksville.
- Section 4A – Presents an enlarged view of all nodes and route types (proposed/exiting, land/aquatic) located in southeastern Clarksville.
- Extension 1 – Presents an enlarged view of a proposed greenway as it extends regionally to Woodlawn Park.
- Extension 2 – Presents an enlarged view of a proposed greenway as it extends regionally along an old rail bed toward Cheatham County; all parcels impacted by this proposed route have been highlighted (including an accompanying identification table).
- Extension 3 – Presents an enlarged view of the proposed greenway as it extends regionally along an old rail bed and penetrates Cheatham County; all parcels impacted by this proposed route have been highlighted (including an accompanying identification table).

THIS PAGE LEFT INTENTIONALLY BLANK.

Key Map

Clarksville/Montgomery County
Greenways & Blueways - Master Plan



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSEE & ASSOCIATES, INC.

Oveview A

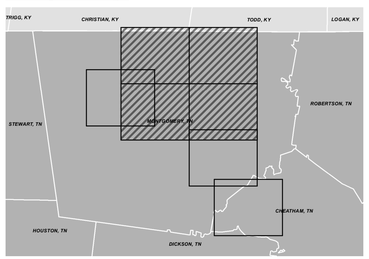
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

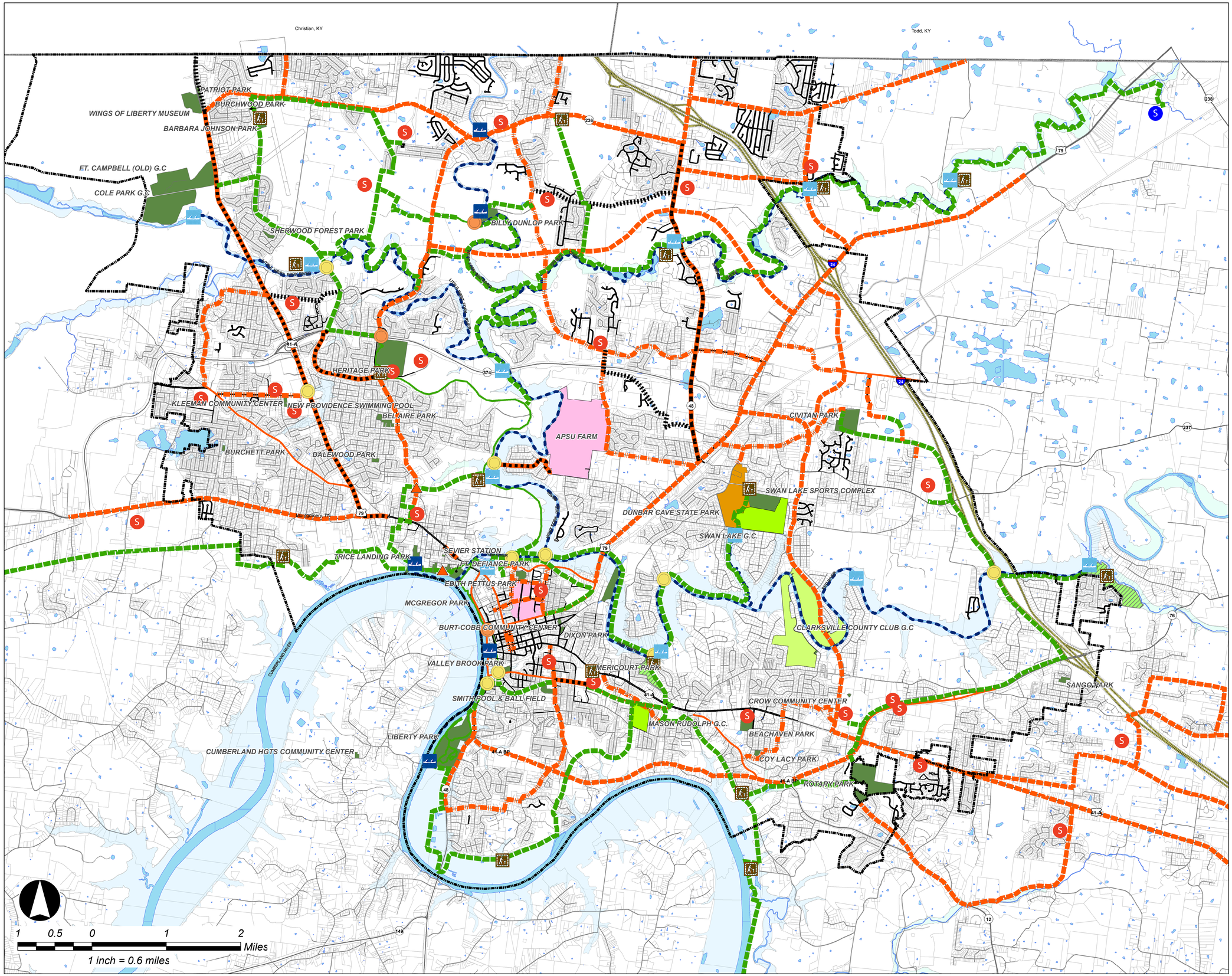
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.



Oveview B

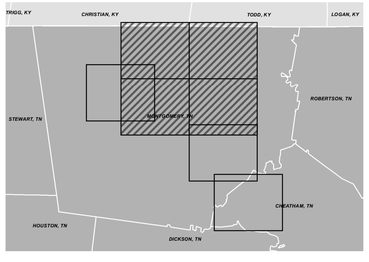
Greenways & Blueways

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Greenway
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.

1 0.5 0 1 2 Miles

1 inch = 1 miles

Oveview C

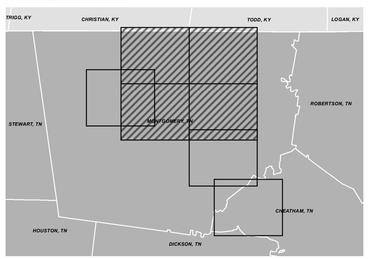
Bike Lanes & Shared Routes

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

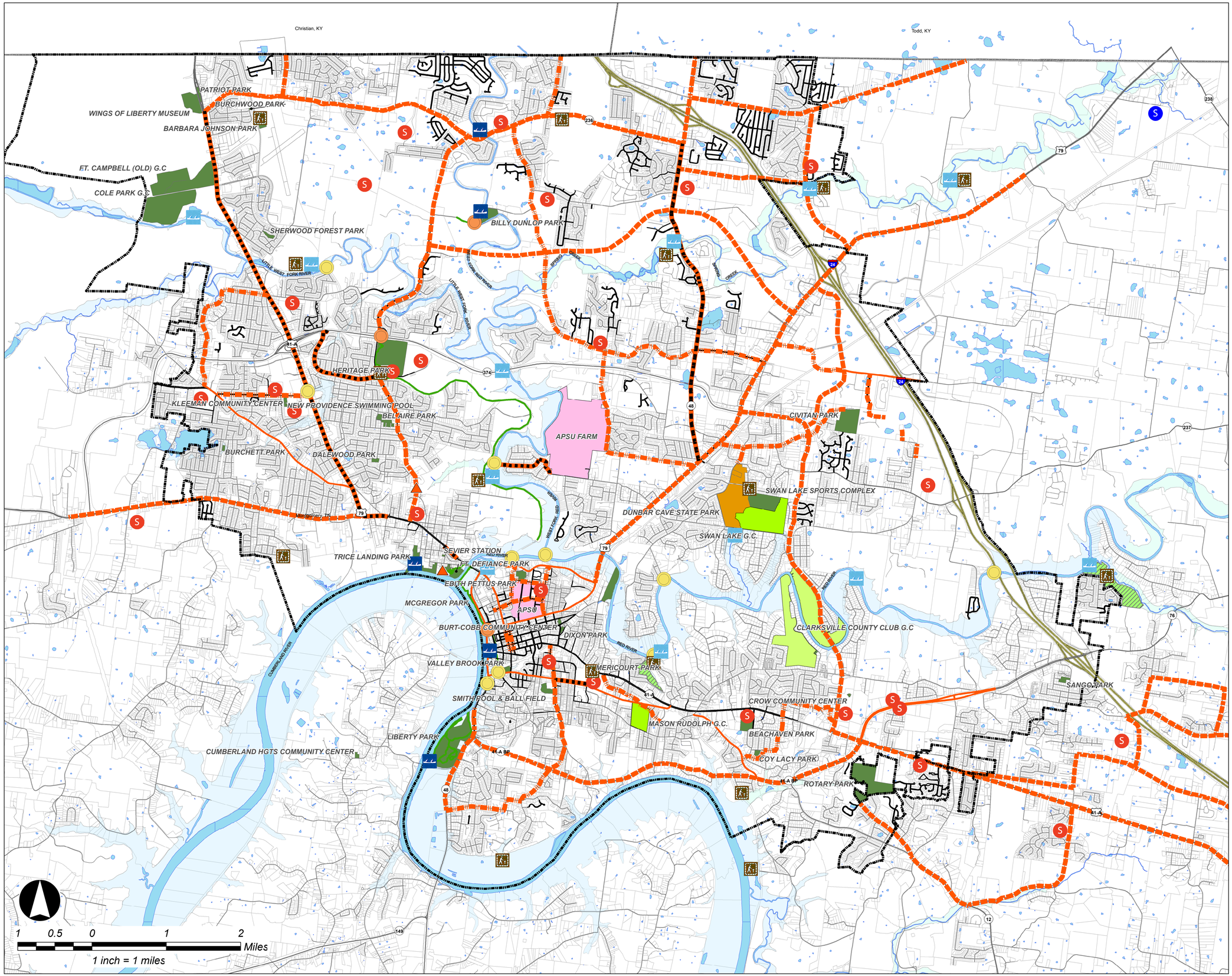
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Bike (shared lane)
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOGUE & ASSOCIATES, INC.



Section 1A

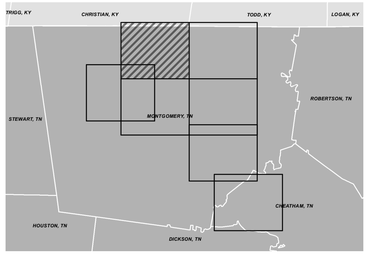
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

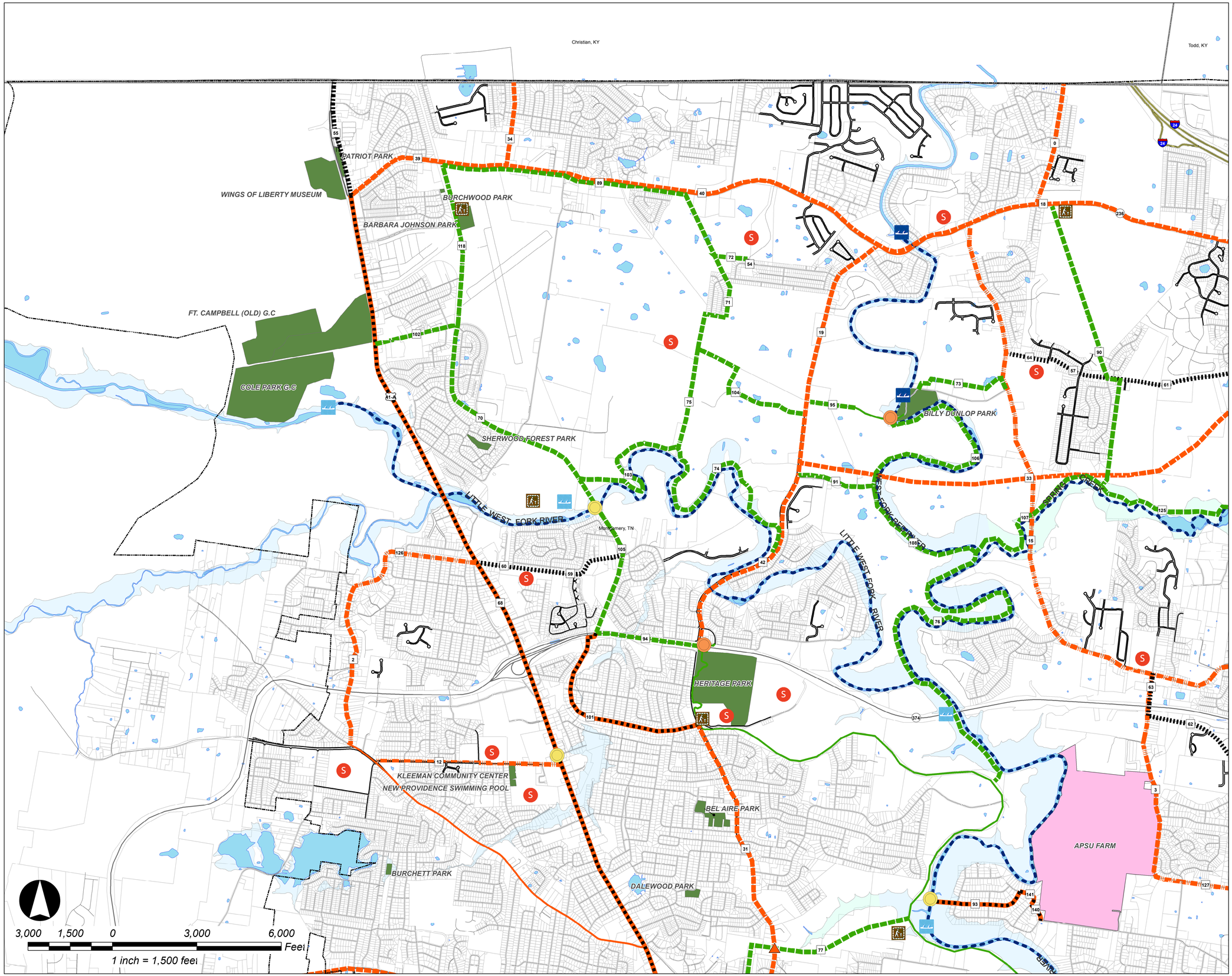
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.



Section 2A

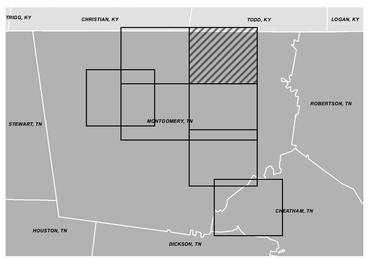
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

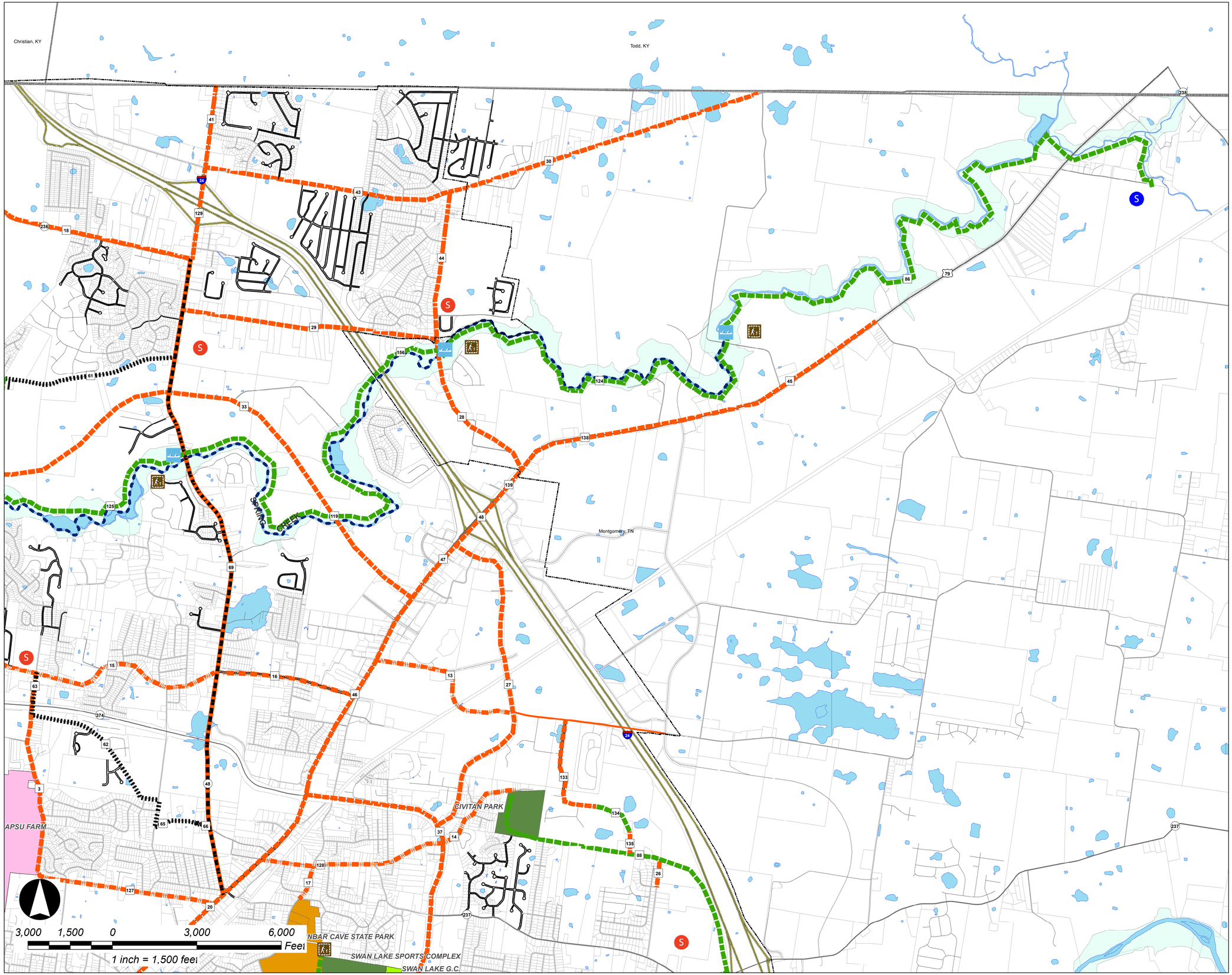
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSEE & ASSOCIATES, INC.



Section 3A

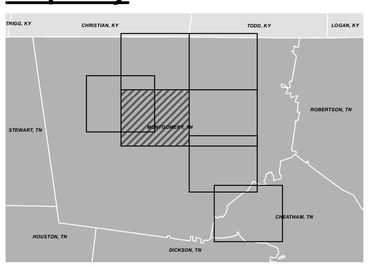
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

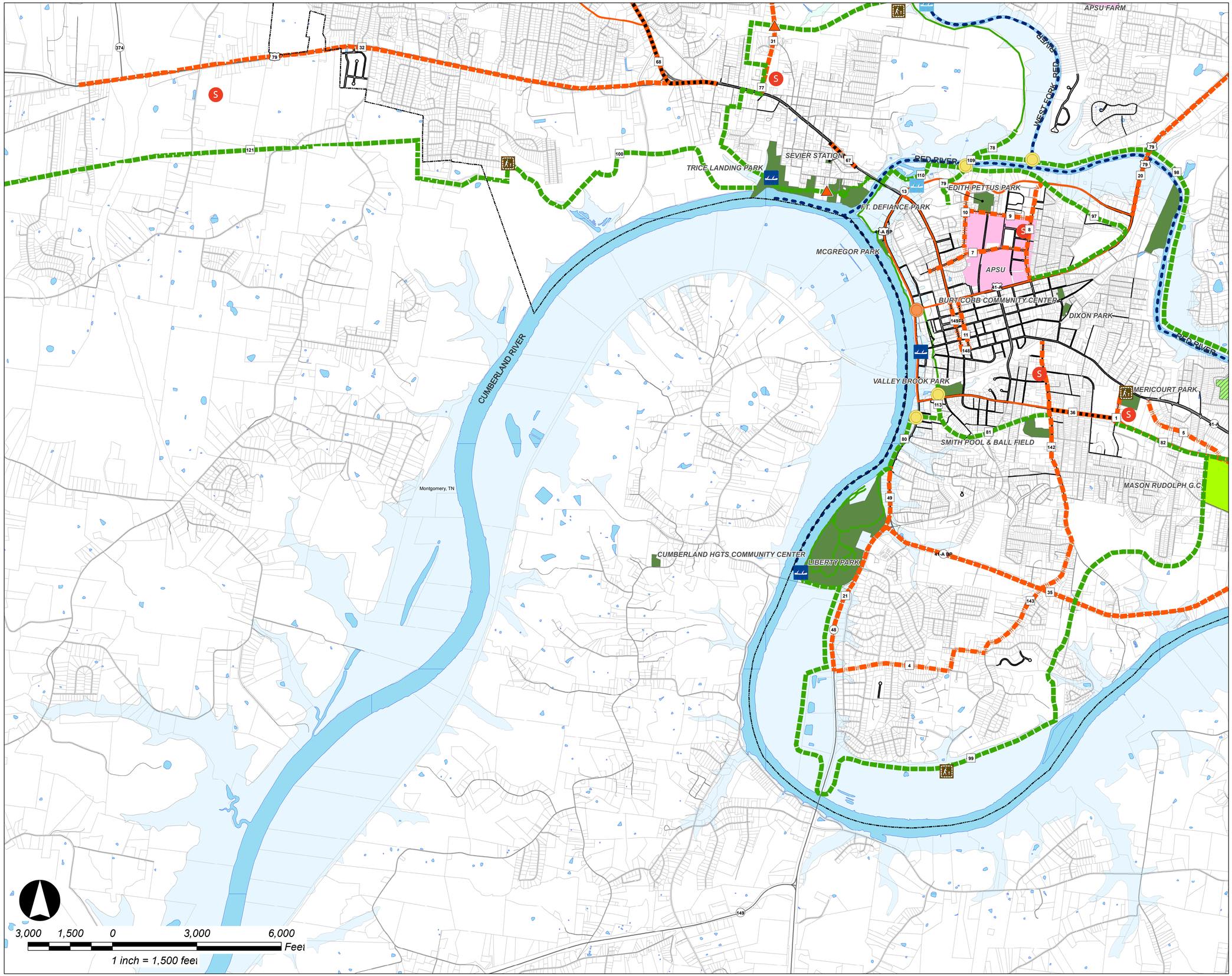
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.
www.loseassoc.com



Section 4A

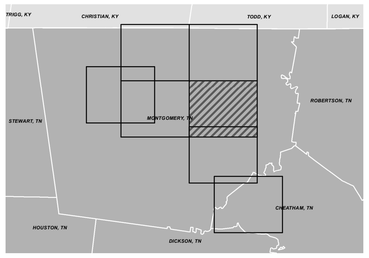
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

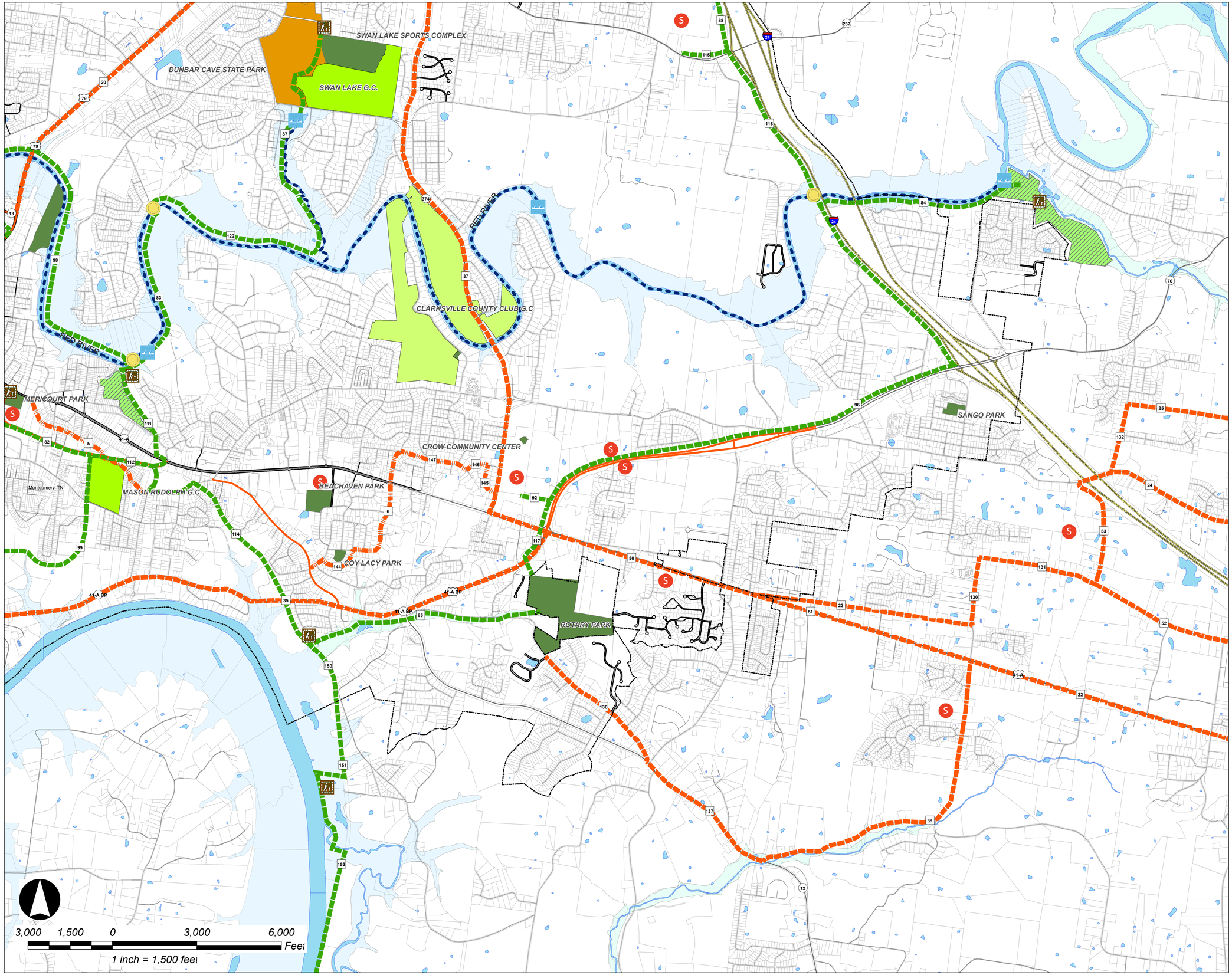
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.



Extension 1

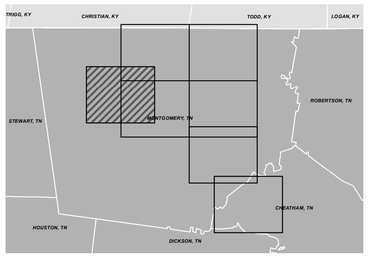
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Impacted Parcel (Montgomery)
- Impacted Parcel (Cheatham)

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSEE & ASSOCIATES, INC.

KLEEMAN COMMUNITY CENTER
NEW PROVIDENCE SWIMMING POOL
BURCHETT PARK
WOODLAWN PARK
CUMBERLAND HGTS COMMUNITY CENTER
CUMBERLAND RIVER

3,000 1,500 0 3,000 6,000 Feet
1 inch = 1,500 feet

Extension 2

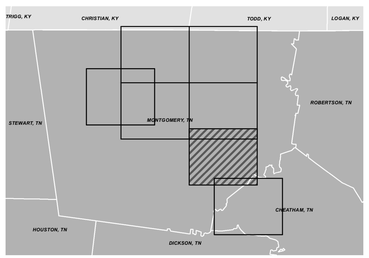
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.

3,000 1,500 0 3,000 6,000 Feet

1 inch = 1,500 feet

Extension 3

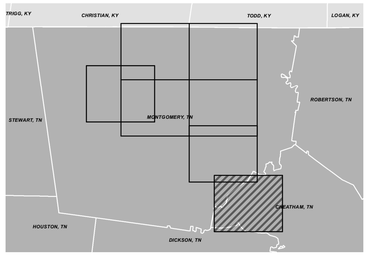
All Route Types

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

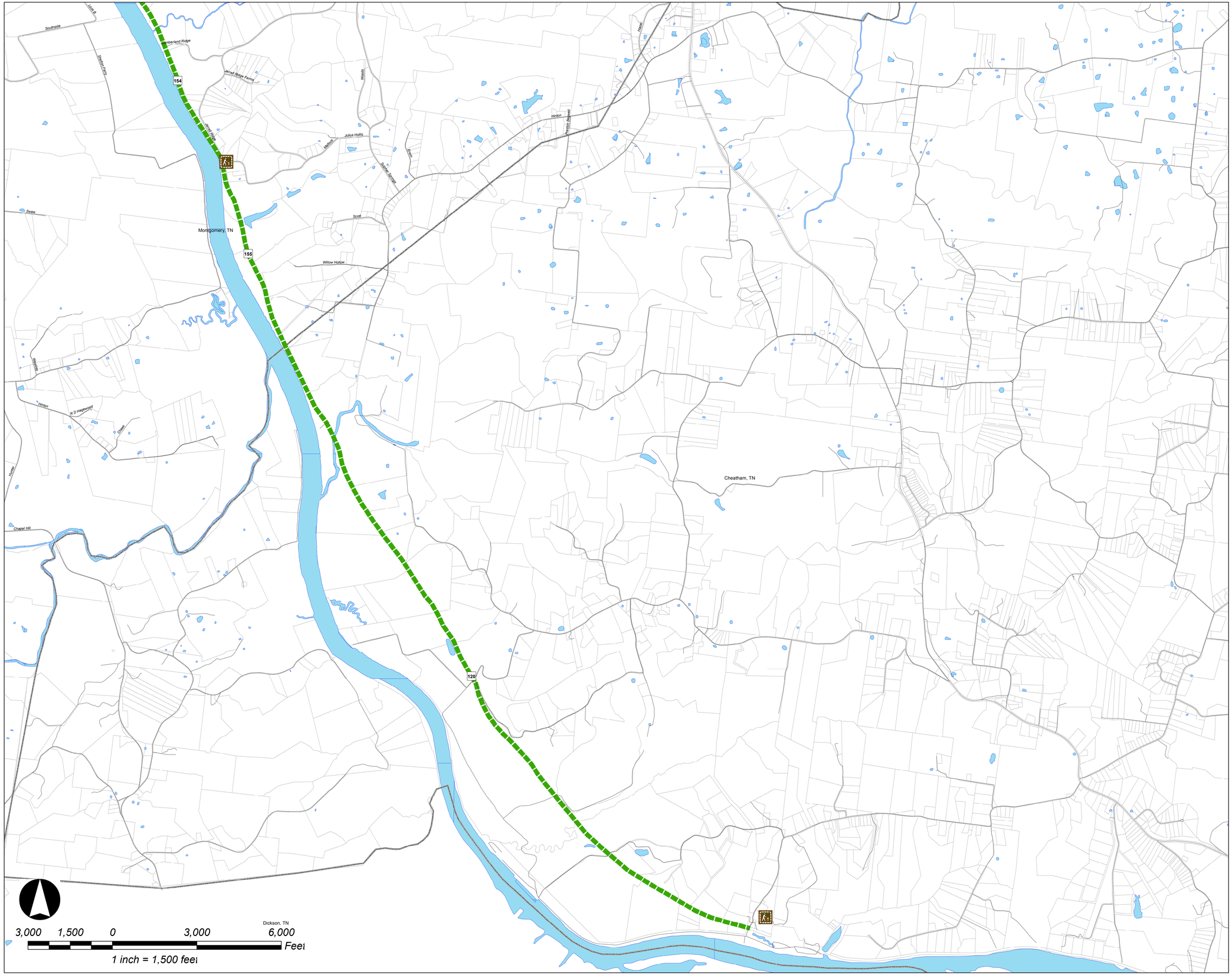
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- Clarksville City Limits
- Proposed Bike (sep. lane w/ sidewalk)
- Proposed Bike (separate lane)
- Proposed Bike (shared lane)
- Proposed Greenway
- Proposed Sidewalk
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.



06 Implementation Strategies

THIS PAGE LEFT INTENTIONALLY BLANK.

06 Implementation Strategies

Updates to the Clarksville-Montgomery County Greenways and Blueways Master Plan have identified over 200 miles of new corridors throughout the region. Trails task force members, city/county staff, and citizens have been united during the planning process in their support for expanding facilities to promote more recreation and transportation options throughout the City and County. Key items relating to development were identified and are listed below.

CITY PRIORITIES

- Continued addition of new greenway sections that connect to existing greenways
- Fort Campbell connection
- Creation of a north/south greenway corridor within City limits
- Implementation of sidewalk connections to existing greenways, especially where off-road greenways and/or dedicated on-road bicycle lanes cannot be developed
- Bicycle signage improvement along existing roadways that are primary cyclist routes

- Inclusion of sidewalks and bicycle facilities in all road expansion projects
- Establishment of more local stream access points (every 3-4 miles)
- Creation of more stream crossings that improve connectivity and access to residential neighborhoods on opposite sides of streams

COUNTY PRIORITIES

- Continuation of primary City greenway and blueway corridors into the County
- Creation of a regional greenway corridor by utilizing the north/south rail corridor that connects to the Bicentennial Trail in Cheatham County
- Creation of a major east/west greenway corridor along Spring Creek
- Creation of an overland greenway corridor, connecting northwest Montgomery County to the City
- Bicycle signage improvement on county roads

CITY PRIORITIES

As part of the planning process, the planning team worked with the trails task force and staff to prioritize City corridors based on the aforementioned priorities. The following outline presents the decisions of that effort.

PRIMARY CONSIDERATIONS

The four greenway sections described below comprise a corridor that would connect northwestern Clarksville with a regional trail that extends south to Cheatham County. This corridor would begin at Fort Campbell and connect six park facilities. It would cross three major streams, but existing railroad bridges over one of the waterways would reduce the overall cost for development. Additionally, due to its utilization of abandoned, moderately-sloped rail beds, the corridor would require minimal earthwork for ADA compliance and prove the most feasible and cost effective for development.

Heritage Park to Fort Campbell Greenway (FID #70, #101, #102, #105)

This section of greenway would begin in Heritage Park, where the existing Clarksville Greenway terminates, and would continue to Fort Campbell. As the trail exits the park, it would be a combination of sidewalks and on-road bicycle facilities through an existing neighborhood until it reaches an abandoned rail bed. It would then follow an old rail bed up to Jack Miller Boulevard. At this location, it would transition back to sidewalks and on road bicycle facilities over to Fort Campbell Boulevard. The trail would then run on the west side

of Fort Campbell Boulevard up the proposed Wings of Liberty Museum. The overall length of this corridor would be approximately 4.70 miles.

McGregor Park Connector (FID #78, #109, #110)

The City is currently pursuing a grant to construct this section of greenway that would connect the southern terminus of the existing Clarksville Greenway with the existing greenway extending north from McGregor Park. This is a critical connection as it would connect the two largest existing City greenway sections as well as two major parks. This corridor would be approximately 0.69 miles in length.

Liberty Park Connector and Loop (FID #36, #80, #81, #82, #99)

The Liberty Park Loop would connect five City park facilities – Valley Brook Park to Liberty Park (via an abandoned rail bed); Liberty Park to Mason Rudolf Golf Course; Mason Rudolf Golf Course to Valley Brook Park (utilizing a combination of rail bed trails and sidewalks with on-road bicycle facilities); as the trail loops back to Valley Brook Park, it would also link to Mericourt Park and pass through the Smith Pool & Ball Field Complex. The Liberty Park Loop would serve a section of the City that currently has no greenways and would advance the municipal greenway system southward, ultimately linking to the rail bed that would serve as the basis for the Cheatham Rail Trail. This entire loop is approximately 8.49 miles in length.

Cheatham Rail Trail (FID #112, #114, #150)

Starting at Mason Rudolf Golf Course and running southeast, the Cheatham Rail Trail would initially comprise a small section of sidewalk and on-road bicycle facilities. It would then follow an abandoned rail corridor before reaching the municipal boundary. This section of trail would be approximately 2.73 miles in length. Refer to County Priorities (see below) for a description of the trail outside of city limits.

SECONDARY ROUTES

Providing connectivity throughout the city is important to promoting equal access to greenways for all residents. With the completion of the primary routes described above, east/west connector trails would begin to provide balanced multimodal transportation services and a true citywide greenway system. Two major east/west corridors are recommended for development and are described below.

Rotary Park (FID #85) and CIVITAN Park (FID #88, #96, #116, #117) ConnectorS

Located in southeastern Clarksville, a series of corridors would connect Rotary Park and Civitan Park to the Cheatham Rail Trail. These corridors would run through the Sango

Community and provide access to many residential areas. The Rotary Park Connector would follow a wooded stream corridor from the Cheatham Rail Trail to the park. This section of greenway would be approximately 1.61 miles in length.

The Civitan Park Connector would begin north of the park by following Rotary Park Drive. It would then run along Highway 41A Bypass to the Madison Street intersection where existing signals enable a safe at-grade potential crossing of both streets. The greenway would then be constructed parallel to the north side of Martin Luther King Parkway within the existing right-of-way. It would continue to Interstate 24 where it would redirect north and parallel the interstate. After crossing the Red River, the greenway would continue north to Civitan Park. The total length of this greenway section would be approximately 8.38 miles.

Billy Dunlop Connector (FID #76, #106, #108) and Spring Creek Trail (FID #107, #119, #125)

Two stream-based trail corridors would combine to provide an east/west connection to the Clarksville Greenway. The Billy Dunlop Connector would connect Billy Dunlop Park with the Clarksville Greenway. This corridor would follow West Fork Red River from the park to the Clarksville Greenway and would be approximately 6.11 miles in length, passing through areas of heavy forest and open pastures.

Midway along the Billy Dunlop Connector, Spring Creek intersects the West Fork Red River. At this location, a bridge crossing the West Fork Red River would be required to begin the Spring Creek Trail. The latter would run along the north side of Spring Creek for approximately 6.73 miles before coming to the municipal boundary. Refer to County Priorities (see below) for a description of the trail outside of city limits.

Connector Trails

Numerous other sections of connector trails have been identified on the accompanying maps. Development of these connectors should occur as the main corridors are completed. Readers should refer to the priority maps included in this document to see where connector trails are rated for development.

COUNTY PRIORITIES

As part of the planning process, the planning team worked with the trails task force and staff to also prioritize County corridors based on the aforementioned priorities. The following outline presents the decisions of that effort.

PRIMARY CONSIDERATIONS

Cheatham Rail Trail (FID #151, #152, #153, #154, #155)

Development of the Cheatham Rail Trail is the highest County priority. From the Clarksville city limit, the trail would continue along an abandoned rail corridor (as noted above, the old rail bed provides an ADA-compliant route that can be developed at the lowest cost per mile). It would leave this strip near Appleton Lane where a public street has been constructed on the old rail bed. The trail would instead follow the Cumberland River and cross the Big McAdoo Creek via a new pedestrian bridge before reconnecting to the old rail bed and continuing to the Montgomery/Cheatham County boundary. The route would be approximately 9.18 miles in length from the Clarksville city limits to the Cheatham County boundary. It would continue for an additional 5.18 miles within Cheatham County to a point where the Bicentennial Greenway has been developed by the Town of Ashland City.

The development of a greenway for the full length of the rail corridor would be one of the longest greenways in middle Tennessee, if not the longest. This greenway would be a destination greenway that would not only serve City and County residents but would also attract users from across the region, the state, and surrounding states.

Spring Creek (FID #86, #124, #156)

The Spring Creek Trail is another County priority that would also serve both City and County residents. One implementation strategy could involve beginning greenway development at the municipal boundary – the City could continue trail development to the west while the County developed to the east. This would maximize the amount of constructed greenway until the entire corridor was completed.

Woodlawn Park Connector (FID #100, #121)

A third major greenway that would serve County residents is the Woodland Park Connector. This trail would connect to the City greenway system immediately south of Trice Landing. It would follow a large overhead power transmission line for most of its length and pass numerous residential developments. The connector would be approximately 8.84 miles in length and terminate at Woodlawn Park, one of the County's largest park facilities.

SECONDARY ROUTES

Spring Creek Trail (FID #86, #124, #156)

From the municipal boundary, the Spring Creek Trail would continue to Oakland Road, where it would cross the creek to a nearby proposed trailhead. The trail would then continue to an additional trailhead near Jim Johnson Road. It would end at a proposed

school site located on Arkadelphia Road. This additional County portion of the trail would be approximately an additional 12.00 miles in length.

OTHER BIKE ROUTE / SIDEWALK CONSIDERATIONS

As noted in several of the aforementioned greenway corridor descriptions, numerous locations exist where sidewalks and on-road bicycle facilities would be needed to maintain continuous connectivity within a given corridor. These facilities would have to be designed to meet the specific conditions at each location and would be dependent on the available road rights-of-way widths. Where adequate right-of-way exists, wide sidewalks with a minimum 8-foot width are preferred. Connections where dedicated bicycle lanes can be added would be preferred over shared lane roads. In all cases, proper regulatory and directional signage would be needed to accompany bicycle facilities and direct users to the next section of off-road greenway. Readers should refer to Section 4, Design Standards, for additional information on sidewalks and bicycle facilities and Section 5, Proposed Routes, for route maps presenting the location of sidewalk and bicycle sections.

Sidewalk and bicycle facilities should be considered standard elements to accompany future roadway projects. Whether projects involve new roadways or existing roadway expansions, sidewalks and bicycle facilities should be provided as shown in the design standards section of this report. Sidewalks are critical to creating connectivity within a community and can provide safe routes to reach multi-use greenway corridors, parks, schools, and commercial districts. They also provide opportunity for a variety of choice, reducing dependency on motorized vehicles as the only mode of transportation and promoting occasions for an active, healthier lifestyle.

BLUEWAY PRIORITIES

WEST FORK BLUEWAY (FID #0, #1, #5, #8, #9, #10)

The West Fork of the Red River is a popular paddling stream and is said to have the best water of all the regional streams; therefore, the planning team recommends that this stream be the first to implement additional water access points and signage to expand the user experience. An existing water access point is located at Billy Dunlop Park. Two new access points are recommended along this stream – one near State Highway 374 (101st Parkway) and a second immediately downstream from the APSU farm. Depending on water levels, these new access points would allow for a greater variety of trip options on this stream.

LITTLE WEST FORK BLUEWAY (FID # 6, #7)

The Little West Fork River is said to have the second best paddling water. Currently, no developed public access points exist along its banks. Two new access points are recommended – the first is immediately south of the Cole Park Golf Course at Creek Road

while the second is at the intersection of Old Mill Road and Highway US 41A (Fort Campbell Boulevard). These two access points would provide the public greater access to the water on public property with proper supporting parking and launch facilities. Signage along the corridor would also be installed to enhance the user experience.

RED RIVER BLUEWAY (FID #11, #12, #13, #14, #19)

The Red River is the largest waterway of all the blueway routes. As it empties directly into the Cumberland River, it is impacted by the latter's water levels that are controlled for barge traffic. Four new access points are recommended along the Red River Blueway. The easternmost access point is proposed at a newly acquired park property located near Drum Lane. Continuing west, the next access point would be located on agricultural land near Pond Apple Road / Stonemeadow Road. Depending on the amount of acquired acreage, this location could become a small park. The next access point would be developed near Inglewood Drive while the westernmost access point would be located just before the Red River empties into the Cumberland River. These four access points would provide river access at locations with different water conditions, providing a greater variety of recreation opportunities.

SPRING CREEK BLUEWAY (FID #2, #3, #4)

Spring Creek is the smallest of all the waterways and is subject to seasonal access based on water conditions. During periods with adequate water flow, Spring Creek would provide a long corridor for paddling as it empties into the West Fork Red River, described above. Beginning in the County, the first access point would be at Jim Johnson Road where a new trailhead is proposed. A second access point / trailhead would be near the intersection of Meriwether Road and Oakland Road. A final access point / trailhead would be located near the intersection of Stillwood Drive and Trenton Road.

CUMBERLAND RIVER BLUEWAY (FID #15, #16, #17)

The largest of all the blueway corridors, the Cumberland River would offer appropriate canoeing and kayaking opportunities at selective times and locations; this is due to significant pleasure motorboat traffic and skiing on weekends, barge traffic at all times, and high-speed current in mid-stream The new Red River access point would allow users to paddle from the Red River to Liberty Park.

PRIORITY LEVELS

Routes have been color-coded in a separate map series to present priority levels. These levels may be understood as follows:

- High Priority (Red)
  - Land Corridors – Top-priority land routes include greenways located near major destinations (e.g. downtown) or select land uses (e.g. schools and parks). Top-priority land routes also include those that connect to existing greenways, providing for longer continuous pathway sections. Lastly, shared-lane bike routes are given high consideration as system implementation would require minimal construction measures.
  - Aquatic Corridors – Top-priority aquatic routes include waters that maintain consistent flows that are appropriate for navigation. These routes also support a greater user experience (e.g. clean water, fitting aesthetics, etc.).
- Medium Priority (Yellow)
  - Land Corridors – Moderate-priority land routes include greenways that create neighborhood loops or are more expensive to develop because of bridge crossings or higher development costs. Separate-lane bike routes located along roadways slated for near-term improvements are

also given moderate consideration. These scenarios present situations where implementation could accommodate bike lanes pending front-end planning and design efforts.

- Aquatic Corridors – N / A

- Long-term Priority (Green)
  - Land Corridors – Low-priority land routes, while important, comprise all remaining corridors that do not provide initial connectivity to developed areas of the City or County.
  - Aquatic Corridors – Long-term (low priority) routes, while scenic, have been categorized based on their fluctuations in water levels and flows. In some instances, flows are ephemeral and disappear during dry periods; in other instances, they are high, primarily due to controls for barge traffic along the Cumberland River.

MAP INDEX

Priority maps include the following:

- Overview D – Presents all blueways within the entire regional corridor system, color-coded according to priority level; all nodes are also provided for reference.
- Section 1B – Presents an enlarged view of all routes in northwestern Clarksville, color-coded according to priority level; all nodes are also provided for reference.
- Section 2B – Presents an enlarged view of all routes in northeastern Clarksville, color-coded according to priority level; all nodes are also provided for reference.
- Section 3B – Presents an enlarged view of all routes in southwestern Clarksville, color-coded according to priority level; all nodes are also provided for reference.
- Section 4B – Presents an enlarged view of all routes in southeastern Clarksville, color-coded according to priority level; all nodes are also provided for reference.

THIS PAGE LEFT INTENTIONALLY BLANK.

Oveview D

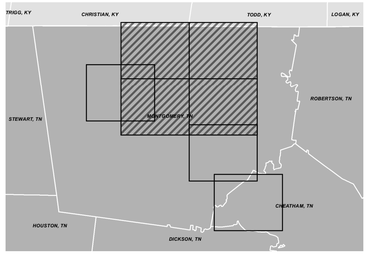
Blueway Priorities

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

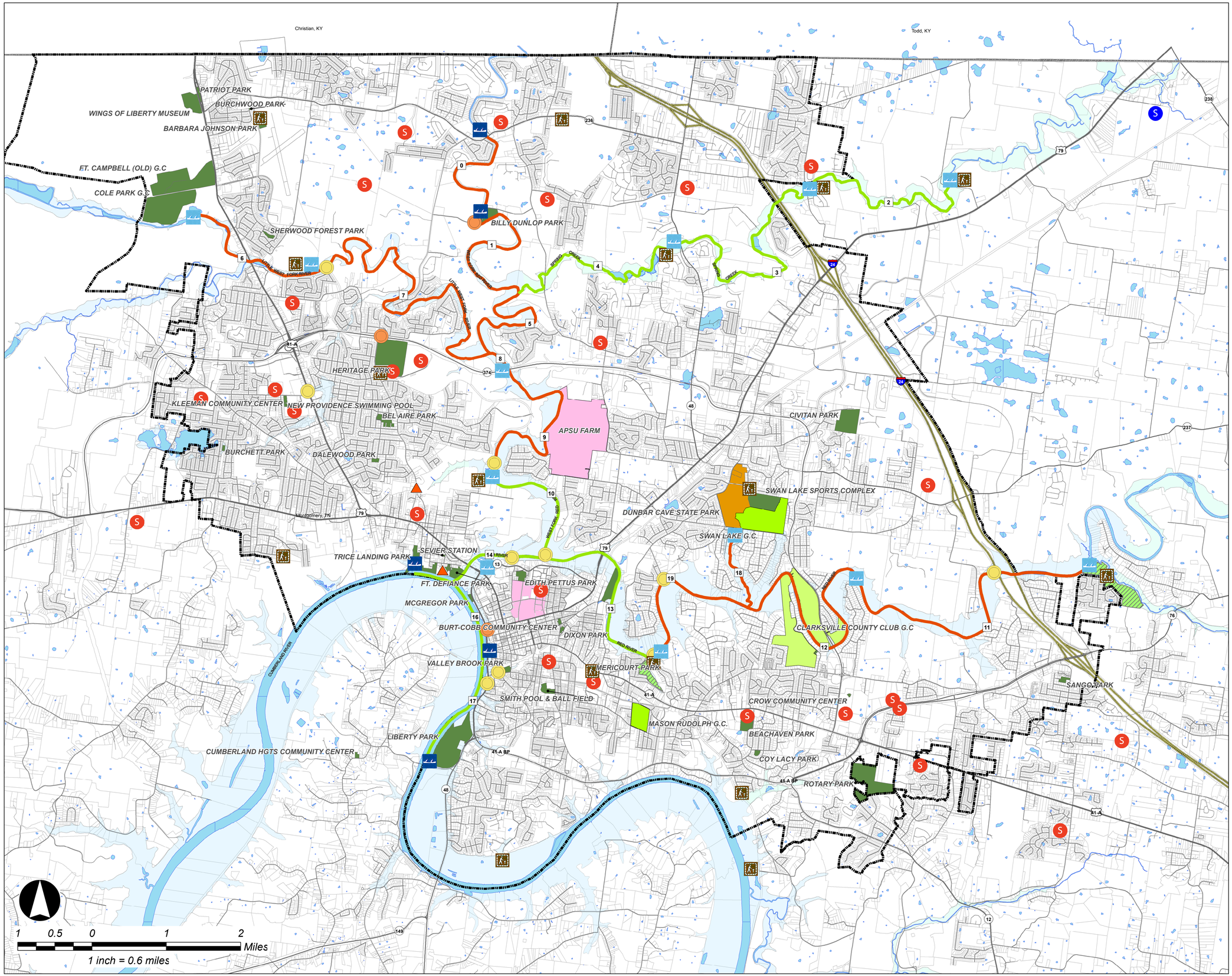
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing
- Proposed
- Proposed Grade Separated Crossing
- High Priority Blueway
- Low Priority Blueway
- Clarksville City Limits
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.
WWW.LOSEASSOC.COM



Section 1B

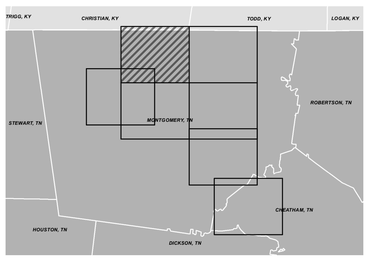
Route Priorities

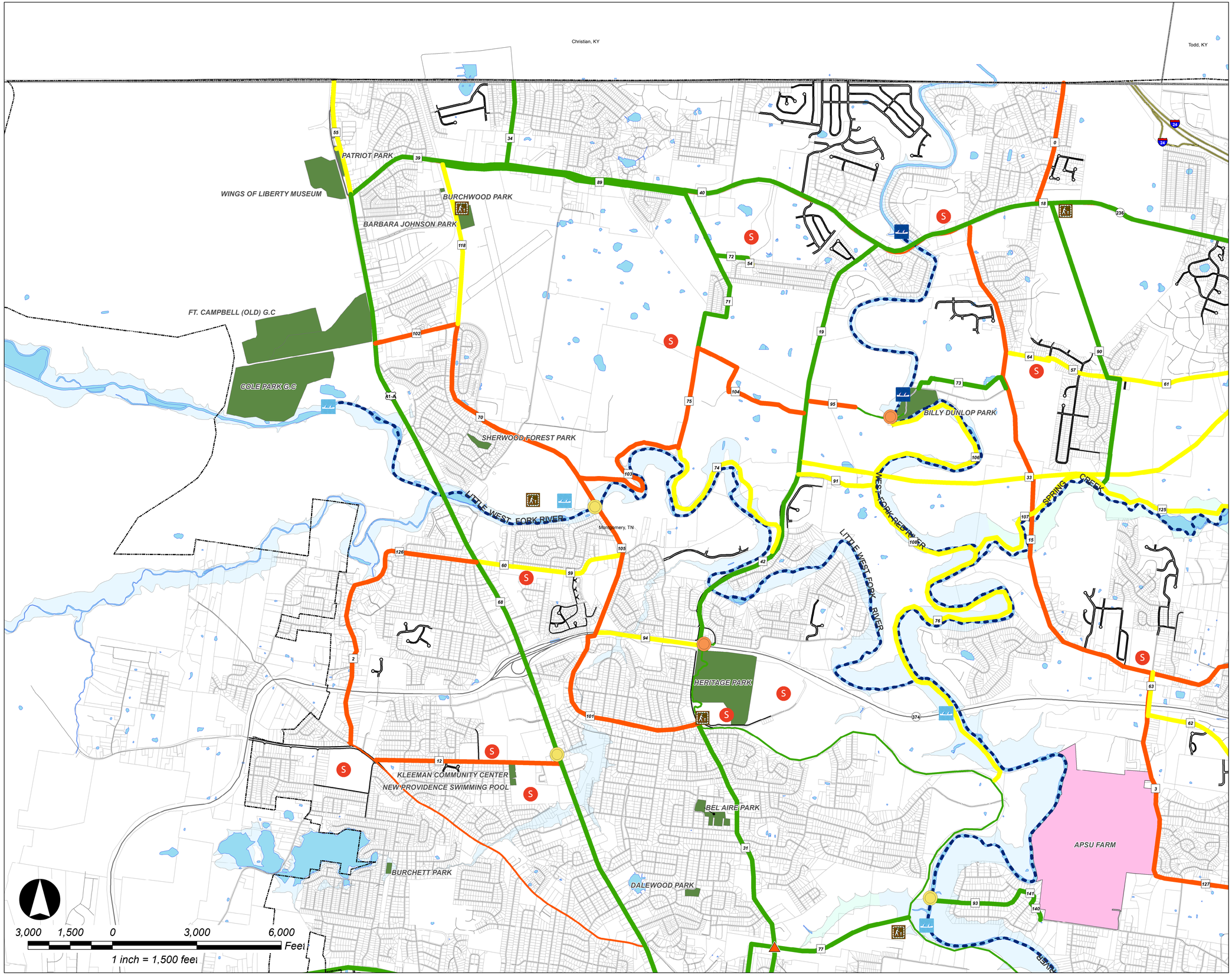
Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing School
- Proposed School
- Proposed Grade Separated Crossing
- Clarksville City Limits
- High Priority Route
- Medium Priority Route
- Long-term Priority Route
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key





THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.

Section 2B

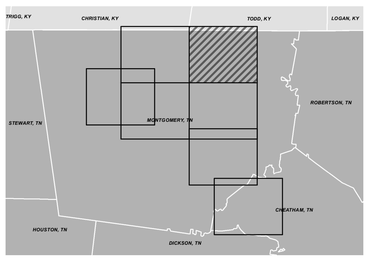
Route Priorities

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing School
- Proposed School
- Proposed Grade Separated Crossing
- Clarksville City Limits
- High Priority Route
- Medium Priority Route
- Long-term Priority Route
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOGUE & ASSOCIATES, INC.

Christian, KY
Todd, KY
Montgomery, TN
SPRING CREEK
APSU FARM
CIVITAN PARK
SWAN LAKE SPORTS COMPLEX
SWAN LAKE G.C.
NBAR CAVE STATE PARK
3,000 1,500 0 3,000 6,000 Feet
1 inch = 1,500 feet

Section 3B

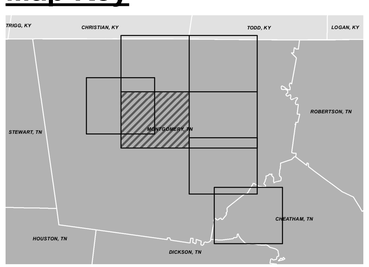
Route Priorities

Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

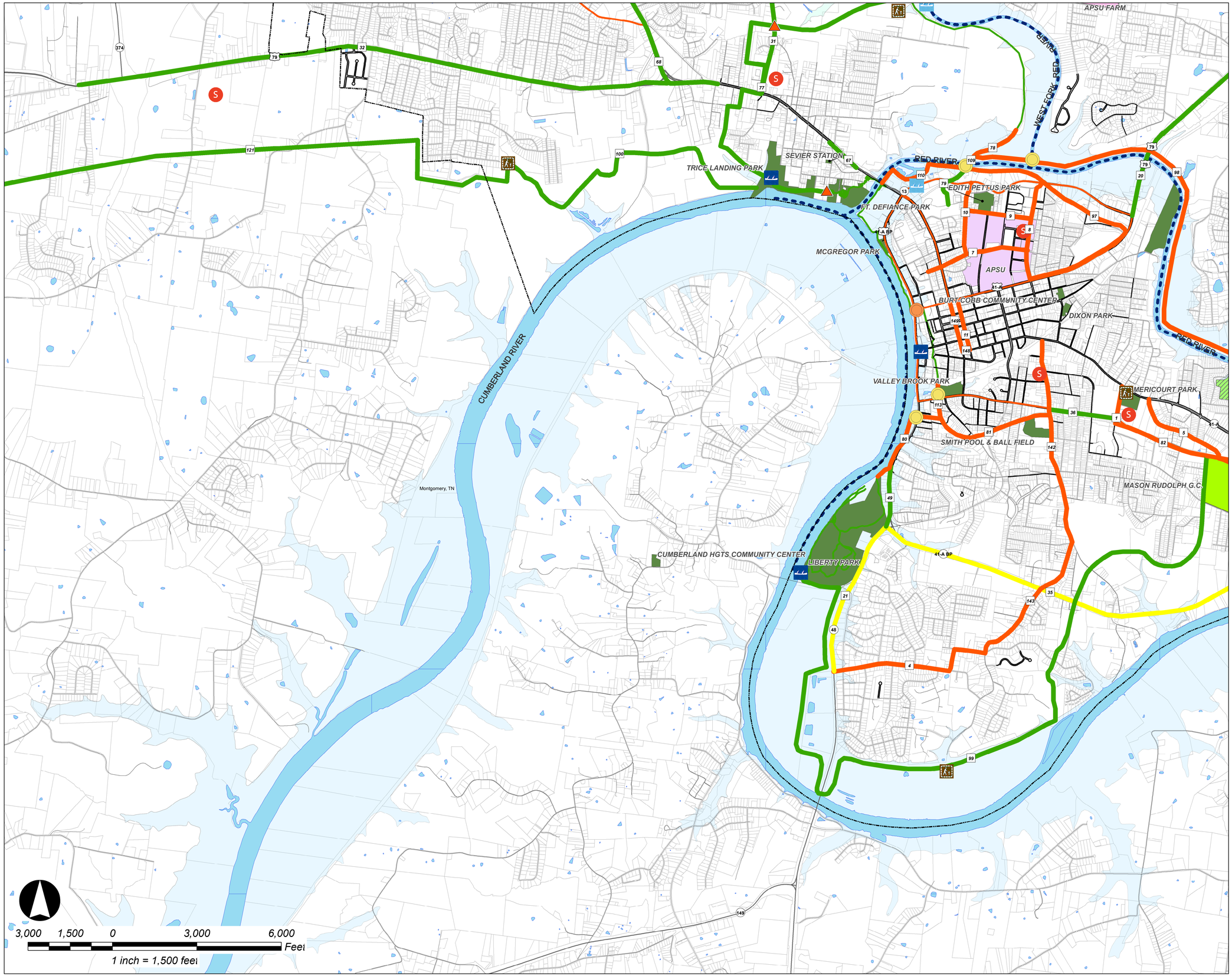
- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing School
- Proposed School
- Proposed Grade Separated Crossing
- Clarksville City Limits
- High Priority Route
- Medium Priority Route
- Long-term Priority Route
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key



THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOSE & ASSOCIATES, INC.
www.LOSEASSOC.com



Section 4B

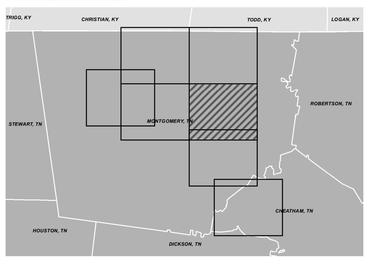
Route Priorities

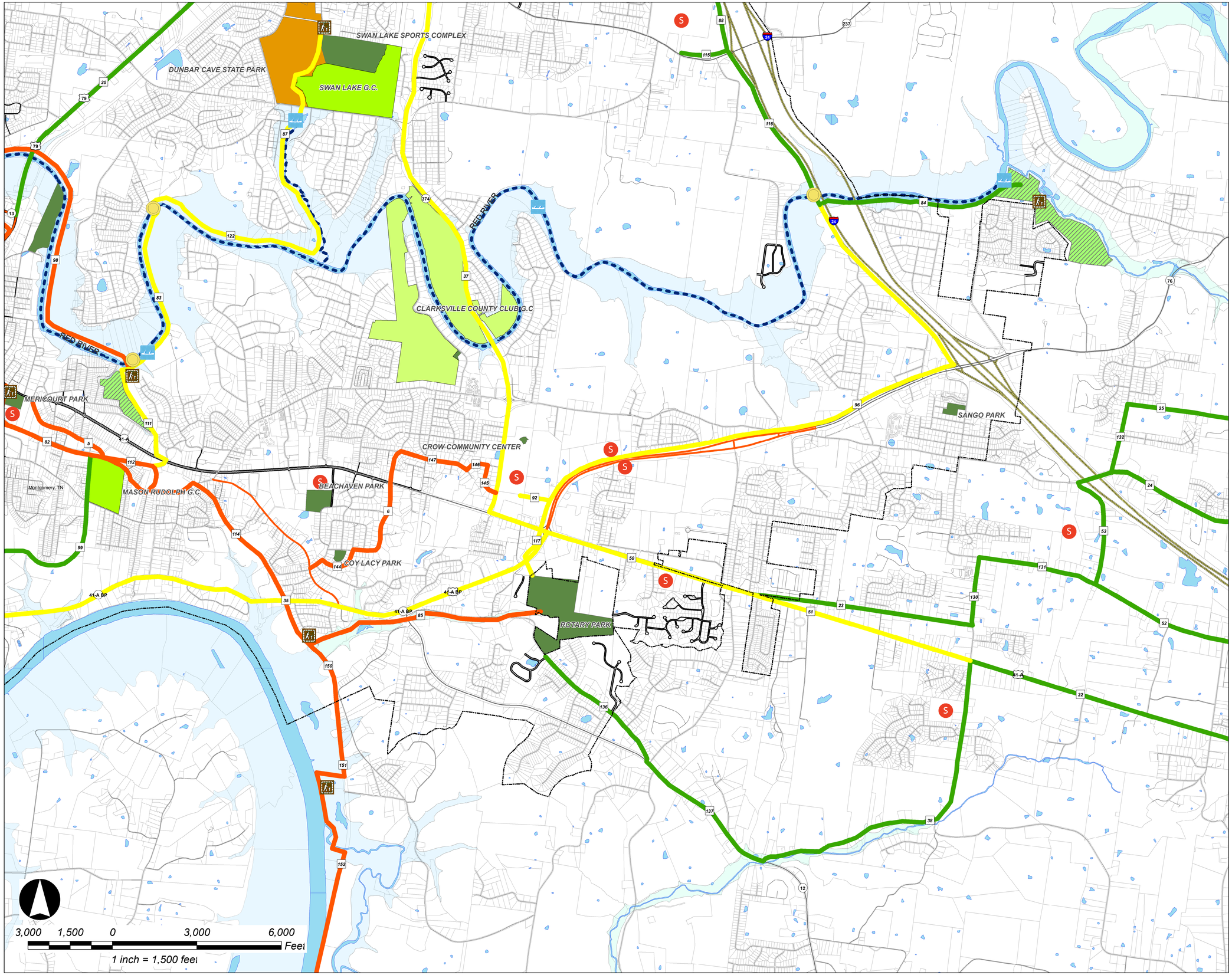
Clarksville/Montgomery County
Greenways & Blueways - Master Plan

Legend

- Existing Blueway Access
- Proposed Blueway Access
- Proposed Trailhead
- Existing Pedestrian Bridge
- Proposed Pedestrian Bridge
- Existing School
- Proposed School
- Proposed Grade Separated Crossing
- Clarksville City Limits
- High Priority Route
- Medium Priority Route
- Long-term Priority Route
- Proposed Blueway
- Existing Bike (separate lane)
- Existing Sidewalks
- Existing Greenway
- Proposed New Park
- APSU Farm
- Golf Course (private)
- Golf Course (municipal)
- State Park
- City/County Park

Map Key





THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT

LOGUE & ASSOCIATES, INC.

FUNDING OPTIONS

GRANTS

In the state of Tennessee, the two largest sources of grant funds that can be used for greenway and blueway development are the Tennessee Department of Transportation and the Tennessee Department of Environment and Conservation. Both of these agencies have several grant programs that can be used for trail and transportation related projects.

TDOT GRANTS

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) program provides funding for transportation projects that reduce mobile source air emissions (e.g., cars, trucks, construction equipment) in areas that do not meet federal air quality health standards for ozone, microscopic particles or carbon monoxide. Federal CMAQ funds are apportioned to the Tennessee Department of Transportation (TDOT) to be invested by the state and local metropolitan planning organizations in projects and programs that help achieve and maintain federal air quality health standards. Lose & Associates is currently working on a major greenway project in Goodlettsville that was funded with a CMAQ grant.[i]

Enhancement Grants

There have been a lot of improvements in our Tennessee communities since the former Federal Transportation Enhancement Program, now known as Transportation Alternatives, began providing funds to local governments in 1991. More than $287 million in grants have been distributed by the Department. The money has gone to 245 communities across the Volunteer State to build sidewalks, bike and pedestrian trails and to renovate historic train depots and other transportation related structures. Enhancement grants are 80% state funded and 20% local funded.[i]

Multimodal Access Grant

TDOT's Multimodal Access Grant is a new state-funded program created to support the transportation needs of transit users, pedestrians and bicyclists through infrastructure projects that address existing gaps along state routes. [i]

Multimodal facilities play an important role in providing transportation choices for people across Tennessee. With half of all trips in the United States three miles or less, good walking, biking and transit facilities are essential to the continued growth and success of our towns and cities. Multimodal Access projects are state-funded at 95 percent with a 5 percent local match. Total project costs must not exceed $1 million.[i]

Safe Routes to School

The Safe Routes to School (SRTS) program is a federally-funded grant program (now part of the Federal Transportation Alternatives program) focused on increasing levels of walking and bicycling to school among elementary and middle school students. In addition to improving children's safety and health, the program is designed to reduce traffic and air pollution in the vicinity of schools. Building on local initiatives, the SRTS program will fund the planning, development and implementation of infrastructure projects, as well as education and outreach activities.[i]

One good thing about these TDOT grants is there is no prohibition for applying for all of them in a given year. The one catch on the CMAQ grant is you have to have air quality issues and demonstrate air quality benefits to qualify. The other good thing about these grants is the city and the county can both apply for the grants.[i]

TDEC GRANTS

Local Parks and Recreation Fund (LPRF) Grants:

The Local Parks and Recreation Fund (LPRF) provides grants to eligible local government entities for the purchase of lands for parks, natural areas, greenways and recreation

facilities. The funds may also be used for trail development and capital projects in parks, natural areas and greenways. At least 60 percent of the funds allocated will go to municipal governments as authorized by TCA 67-4-409. All grant projects must be on publicly owned land.[ii]

Recreation Educational Trail Program (RTP) Grants

The Recreation Educational Trail Program (RTP) is a federal funded, state administered grant program. RTP provides grant funding for land acquisition for trails, trails maintenance and restoration/rehabilitation, trail construction and trailhead support facilities. All grant projects must be on publicly owned land.[ii]

Like the TDOT grants, there is no prohibition for applying for both of these grants and both the city and the county can apply for these grants.

REGULATORY DEVELOPMENT OPTIONS

Many communities around the country use regulatory tools to help expand their parks and greenway systems. Regulatory tools are tied to development of land within a community and are built into the zoning and land use requirements. Some examples of Tennessee communities that use regulatory tools are provided below.

GREENBELT LAND DEDICATION AND IMPROVEMENT POLICY

Collierville, Tennessee utilizes a mandatory land dedication for multi-use greenway development that is outside of the roadway system. A description from the Collierville policy is provided below:

> *Developers of undeveloped property(s) containing sections of, or abutting, drainage ways and/or Wolf River and Nonconnah Creek Laterals designated as linear greenbelts as outlined in the Town of Collierville's Linear Parks and Greenbelt Plan shall provide for dedication and improvement in accordance with the standards set forth in the Plan at the time of development of the effected property(s).*
>
> *Dedication and improvement of designated linear greenbelt areas shall not constitute meeting parkland dedication requirements as set forth in the Town's Subdivision Regulations.*
>
> *Greenbelt dedication along drainageways as specified in the Linear Parks and Greenbelt Plan shall be determined by the width of the ditch with dedication equal to*

five times the width of the ditch as measured from top of bank. Such dedication shall allow adequate area for access and maintenance along both sides of the ditch.

The Development Staff and Parks and Recreation Advisory Board shall determine the suitability of any proposed land dedication beyond the normal greenbelt dedication as it applies to meeting the parkland dedication requirements of the Town's Subdivision Regulations. Suitability of any land dedication shall be based on but not limited to such factors as shape, accessibility, topography, subsoils, location, utility or compatibility with the Town's Master Park Plan.

STREAM BUFFERS

Many communities mandate stream buffers to protect water quality and wildlife corridors along streams. As part of the stream buffer process, communities must decide if they will allow greenways to be developed within or adjacent to these buffers. Metropolitan Nashville Davidson County mandates stream buffers as part of the land development and storm water management processes. Nashville requires developers to provide buffers along streams when any undeveloped land is developed or when major redevelopment or renovation of a previously developed site is proposed. Buffer widths are determined based on the streams drainage area with large streams requiring a 75 buffer. Uses of the land within the buffer zones vary, but in Nashville, they allow greenways in the outer 25 ft. of the 75 ft. buffer. Nashville does not have a mandatory requirement to dedicate a greenway easement in the buffer, but through the plan review process, many times it is a concession made by the developer to grant an easement, particularly when a greenway has been master planned along the stream. Clarksville and Montgomery County should explore buffer requirements that would allow greenway development in stream buffers as part of the land development process.

MULTI-PURPOSE EASEMENTS

One avenue that would promote greenway development would be to incorporate right of public access into all new city and county utility easements. As utilities are expanded throughout the city and county, the right of public access within these linear corridors is a great way to connect new neighborhoods and commercial areas with multi-purpose trails. These trails can also be used by the utility companies to access their systems when maintenance is required.

These three regulatory processes illustrate how communities are securing land for greenway development. Collierville's is the most demanding, but it has allowed the city to develop and extensive greenway system at a much lower cost when compared to communities that have to purchase greenway corridors though fee simple purchases or purchase of easements. The use of regulatory tools to help promote greenway development is strongly encouraged.

PROJECTED COSTS

GREENWAY, BICYCLE, & BLUEWAY DEVELOPMENT COST

As a community transitions from master planning to actual construction of greenway, bicycle, or blueway projects, a development budget is critical. Many variables impact development and providing set costs for constructing off-road greenways, on-road bicycle improvements, bicycle/sidewalk improvements, and blueways is difficult. Some of the variables that impact cost include:

- Land acquisition
- Terrain/site conditions/clearing required
- Construction access
- Availability of utilities
- Construction season

At the master planning level, it is more difficult to project cost for urban locations, which utilize a combination of trail types, as compared to off-road greenways, including those utilizing abandoned rail beds. Despite the unknowns for stream crossing and overall clearing costs, the remaining development cost can be projected. A cost summary

spreadsheet has been presented at the end of this section for several sections of greenway development on abandoned rail beds.

Review of this cost summary reveals an average cost of approximately $685,000 per mile for greenway development. The most expensive section is the area between Trailheads 2 and 3 along the Cheatham Rail Trail where a bridge is needed to cross Big McAdoo Creek. As a general rule, $685,000 per mile for off-road greenway development is a reasonable unit price to use for budgeting purposes. Additional cost will need to be included for greenway sections that cross the Red River or other rivers where longer bridges will be needed. These costs do not include bringing water, sewer, or electric utilities to trailhead sites where restrooms will be installed.

The trailhead cost included in the spreadsheet at the end of this section is the same for blueway trailheads but will also need to include pricing for stream access ramps and any blueway-specific signage. For on-road bicycle facilities, cost can vary greatly, depending on the roadway cross section. Lowest cost sections would occur where sidewalks currently exist and sufficient room is available to reclaim a 4-5' bicycle lane from existing pavement by reducing roadway lanes. In these situations, the cost would be limited to pavement restriping and adding proper bicycle signage to the roadway. Highest cost sections would occur where roadway pavement and drainage systems must be redesigned to accommodate pavement expansions for bike lanes and new pedestrian sidewalks. Costs for these items are difficult to ascertain since so many site variables must be considered in the planning of these facilities.

Moving forward, the City of Clarksville and Montgomery County should include sidewalks and bicycle facilities in all major roadway projects. Accommodating all forms of transportation within public right-of-ways promotes healthy lifestyle choices, provides transportation options, and expands recreation opportunities. In addition to adding bicycle and pedestrian facilities to roadways, the City and County should also review regulatory tools that require these elements in new developments. Cities and counties across America have tasked developers to provide bicycle and pedestrian facilities as new development occurs. If Clarksville and Montgomery County are going to improve in livability and health studies that compare communities across the country, development standards should include all transportation choices as basic parts of the infrastructure.

Table 6.1: Cost Summary Spreadsheet

Item	Description	Quantity	Unit	Unit Price	Total
	Municipal Boundary to Trailhead 1				
	19,641 feet 12 apsphalt trail with base stone	19641	lf	$ 75.00	$ 1,473,075.00
	Gradinng assumed 1'	727	cy	5.00	$ 3,635.00
	Erosion Control	1	ls	$ 50,000.00	$ 50,000.00
	Clearing and Grubbing 25' corridor	11.2	acre	$ 4,000.00	$ 44,800.00
	Drainage improvements	1	ls	$ 500,000.00	$ 500,000.00
	Landscape improvement	1	ls	$ 40,000.00	$ 40,000.00
	Trailhead 100 cars, site improvement and signage	1	ls	$ 250,000.00	$ 250,000.00
	Composting Restroom	1	ls	$ 150,000.00	$ 150,000.00
	Signage	1	ls	$ 5,000.00	$ 5,000.00
	Mobilization, Fees and Bonds at 5%				$ 105,575.50
	Subtotal				$ 2,622,085.50
	Trailhead 1 to Trailhead 2				
	14,942 feet 12 apsphalt trail with base stone	14942	lf	$ 75.00	$ 1,120,650.00
	Gradinng assumed 1'	550	cy	$ 5.00	$ 2,750.00
	Erosion Control	1	ls	$ 45,000.00	$ 45,000.00
	Clearing and Grubbing 25' corridor	8.5	acre	$ 4,000.00	$ 34,000.00
	Drainage improvements	1	ls	$ 50,000.00	$ 50,000.00
	Landscape improvement	1	ls	$ 30,000.00	$ 30,000.00
	Trailhead 100 cars, site improvement and signage	1	ls	$ 250,000.00	$ 250,000.00
	Composting Restroom	1	ls	$ 150,000.00	$ 150,000.00
	Signage	1	ls	$ 7,500.00	$ 7,500.00
	Mobilization, Fees and Bonds at 5%	1	ls		$ 84,120.00
	Subtotal	1	ls		**$ 1,774,020.00**
	Trailhead 2 to Trailhead 3				
	12,515 feet 12 apsphalt trail with base stone	12515	lf	$ 75.00	$ 938,625.00
	Gradinng assumed 1'	463	cy	$ 5.00	$ 2,315.00
	Erosion Control	1	ls	$ 40,000.00	$ 40,000.00
	Clearing and Grubbing 25' corridor	7.1	acre	$ 4,000.00	$ 28,400.00
	Drainage improvements	1	ls	$ 50,000.00	$ 50,000.00
	Landscape improvement	1	ls	$ 30,000.00	$ 30,000.00
	Trailhead 100 cars, site improvement and signage	1	ls	$ 250,000.00	$ 250,000.00
	Composting Restroom	1	ls	$ 150,000.00	$ 150,000.00
	Stream crossing preengineered bridge	200	lf	$ 2,000.00	$ 400,000.00
	Signage	1	ls	$ 7,500.00	$ 7,500.00
	Mobilization, Fees and Bonds at 5%	1	ls		$ 94,467.00
	Subtotal	1	ls		**$ 1,991,307.00**
	Trailhead 3 to Trailhead 4				
	11,436feet 12 apsphalt trail with base stone	11436	lf	$ 75.00	$ 857,700.00
	Gradinng assumed 1'	664	cy	$ 5.00	$ 3,320.00
	Erosion Control	1	ls	$ 40,000.00	$ 40,000.00
	Clearing and Grubbing 25' corridor	6.5	acre	$ 4,000.00	$ 26,000.00
	Drainage improvements	1	ls	$ 50,000.00	$ 50,000.00
	Landscape improvement	1	ls	$ 30,000.00	$ 30,000.00
	Trailhead 100 cars, site improvement and signage	1	ls	$ 250,000.00	$ 250,000.00
	Composting Restroom	1	ls	$ 150,000.00	$ 150,000.00
	Signage	1	ls	$ 5,000.00	$ 5,000.00
	Mobilization, Fees and Bonds at 5%	1	ls		$ 50,351.00
	Subtotal	1	ls		**$ 1,462,371.00**
	Trailhead 4 to Trailhead Cheatham County Line				
	6,945feet 12 apsphalt trail with base stone	6945	lf	$ 75.00	$ 520,875.00
	Gradinng assumed 1'	257	cy	$ 5.00	$ 1,285.00
	Erosion Control	1	ls	$ 20,000.00	$ 20,000.00
	Clearing and Grubbing 25' corridor	4	acre	$ 4,000.00	$ 16,000.00
	Drainage improvements	1	ls	$ 25,000.00	$ 25,000.00
	Landscape improvement	1	ls	$ 30,000.00	$ 30,000.00
	Signage	1	ls	$ 5,000.00	$ 5,000.00
	Mobilization, Fees and Bonds at 5%	1	ls		$ 30,658.00
	Subtotal	1	ls		**$ 648,818.00**
	Total				**$ 8,498,601.50**

GREENWAY, BLUEWAY, AND BICYCLE COORDINATOR

To more effectively coordinate initiatives that implement alternative forms of transportation, many communities employ a greenway coordinator position. The City of Clarksville and/or jointly with Montgomery County is in a prime position to employ a full-time Greenway, Blueway and Bicycle Coordinator. Job duties would include (but are not limited to):

- Implements projects identified in the GMP.
- Assesses the feasibility of greenway projects and identifies necessary changes.
- Prepares graphic and narrative reports on greenways data, including land area maps overlaid with geographic variables.
- Advises Parks and Recreation staff on greenways project feasibility, cost-effectiveness, regulatory conformance, and possible alternatives.
- Conducts field investigations, greenways surveys, impact studies or other research to compile and analyze data on economic, social, regulatory, and physical factors affecting greenways project.
- Prepares program statements and preliminary and conceptual designs for the development or renovation of various projects.
- Keeps informed about economic and legal issues involved in zoning codes, building codes, and environmental regulations that may affect the GMP.
- Assists in consulting with property owners and developers concerning inclusion of property in the GMP.
- Assists in preparation of grants for greenway development and park enhancements.
- Develops construction bid packages.
- Works with contractors, reviews drawings and specifications of construction projects.
- Recommends changes to GMP, departmental policies and procedures and other processes as appropriate.
- Practices continuous learning through individual study, classroom training, seminars, and conferences.
- Holds public meetings as necessary, and confers with developers, the public, and special interest groups to formulate and develop specific site plans.

[i] Tennessee Department of Transportation. http://www.tdot.state.tn.us/ Accessed January 2015.

[ii] Tennessee Department of Environment & Conservation. http://www.tennessee.gov/environment/ Accessed January 2015.

THIS PAGE LEFT INTENTIONALLY BLANK.

A1 Appendix: Workshop Materials

THIS PAGE LEFT INTENTIONALLY BLANK.

A1 Appendix: Workshop Materials

SIGN-IN SHEETS AND WORKSHOP COMMENTS

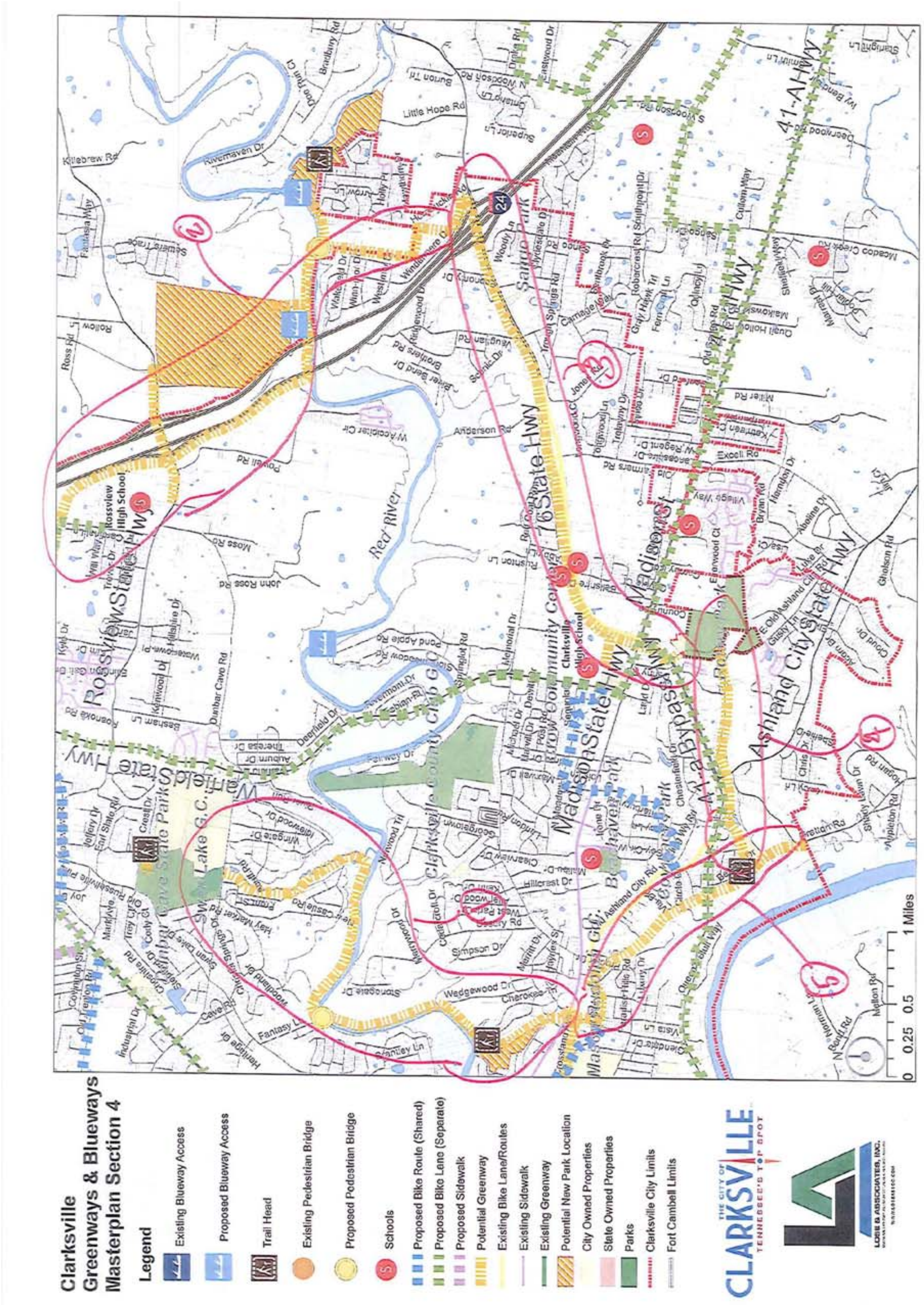
Clarksville Greenway and Blueway Master Plan

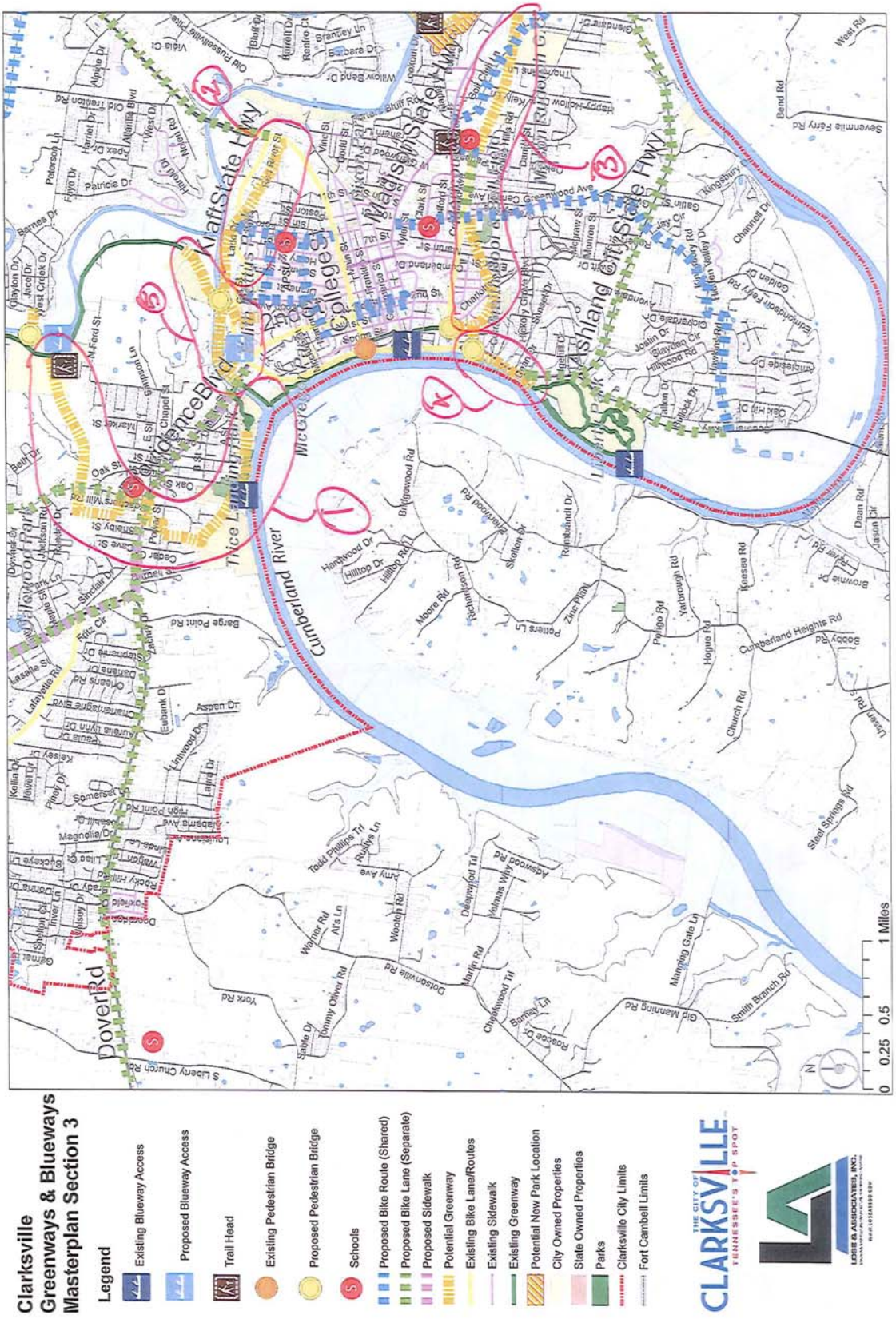
Steering Committee Workshop

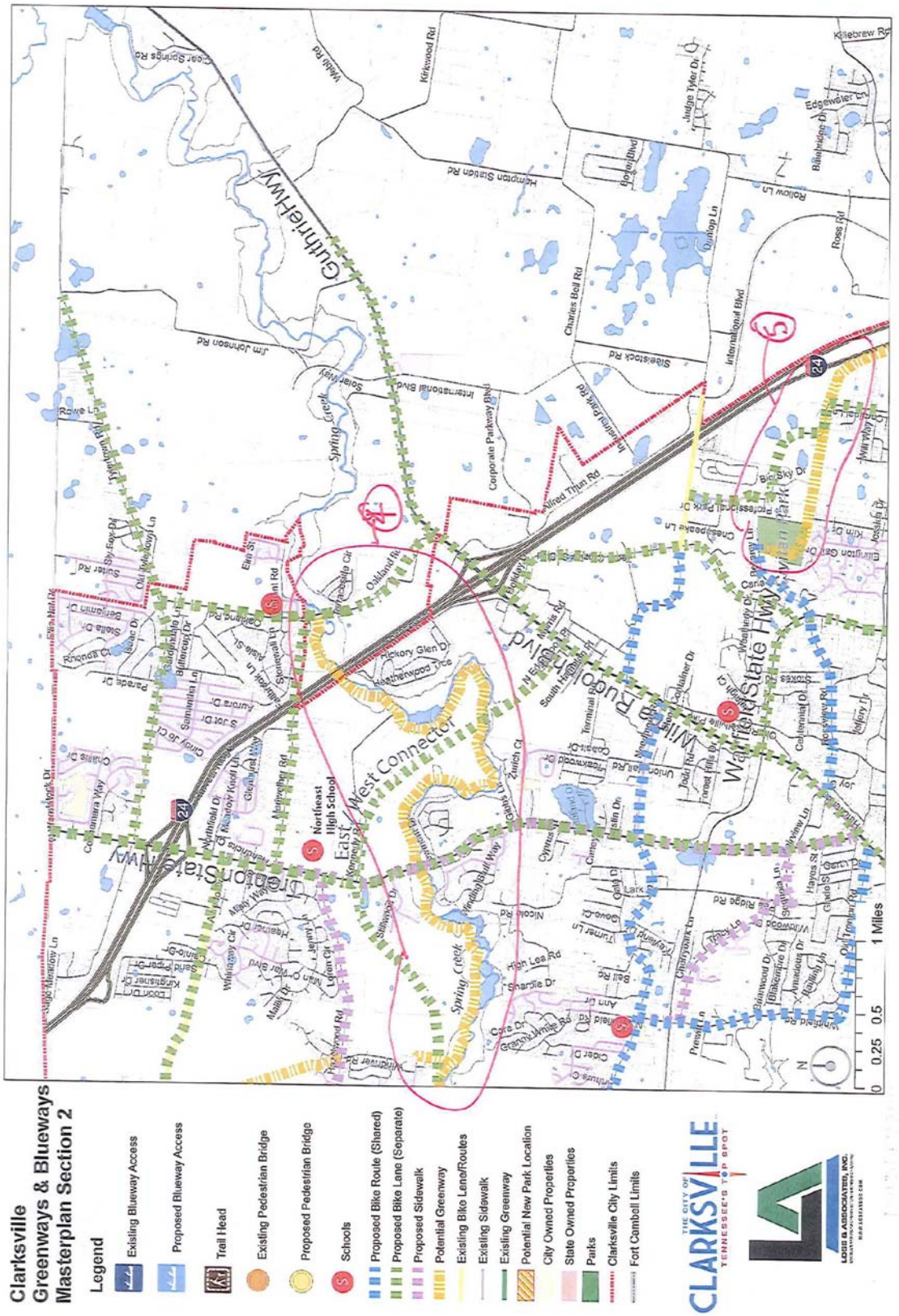
August 13, 2014

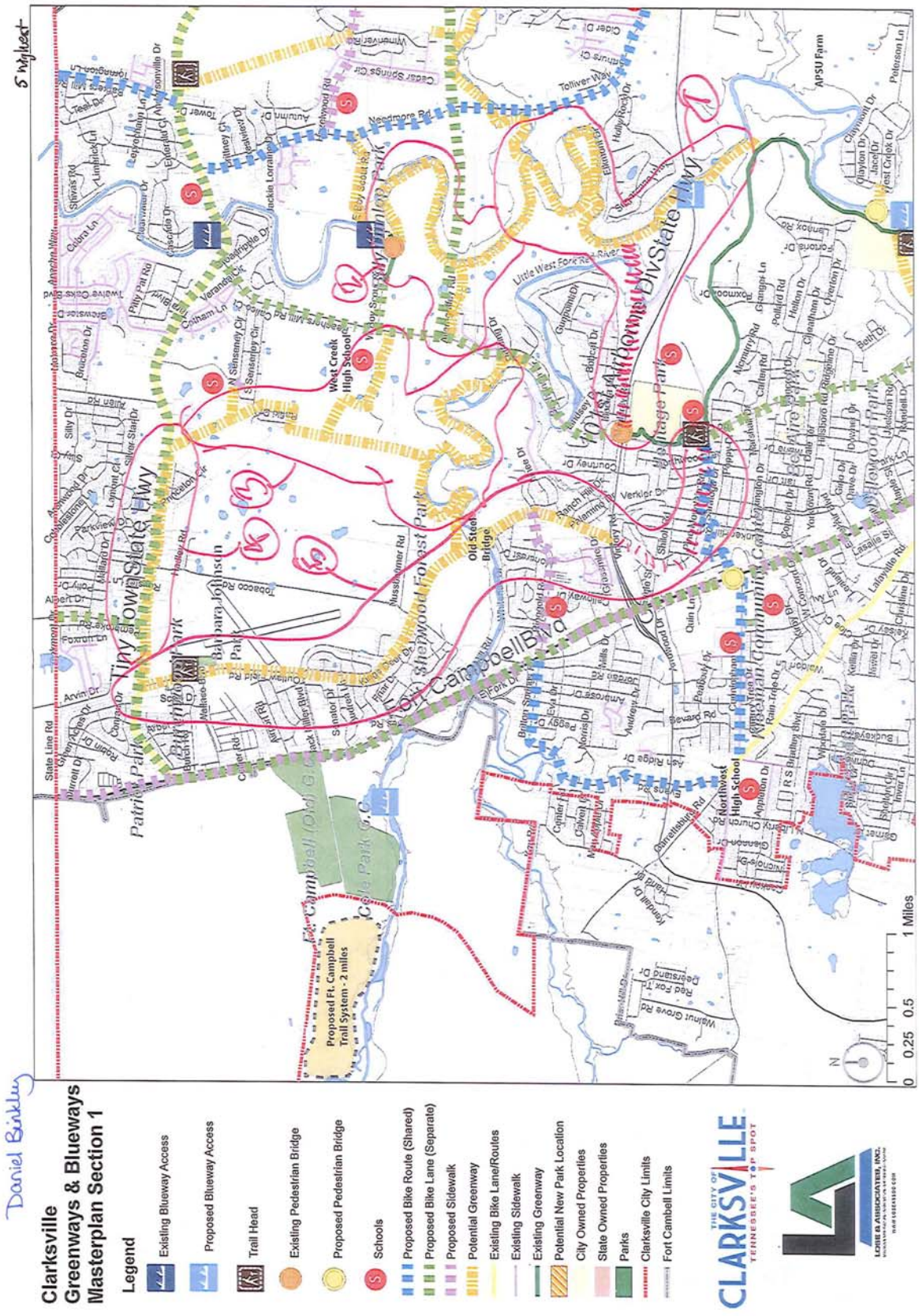
Please provide your information in the spaces below. Thank you for your information.

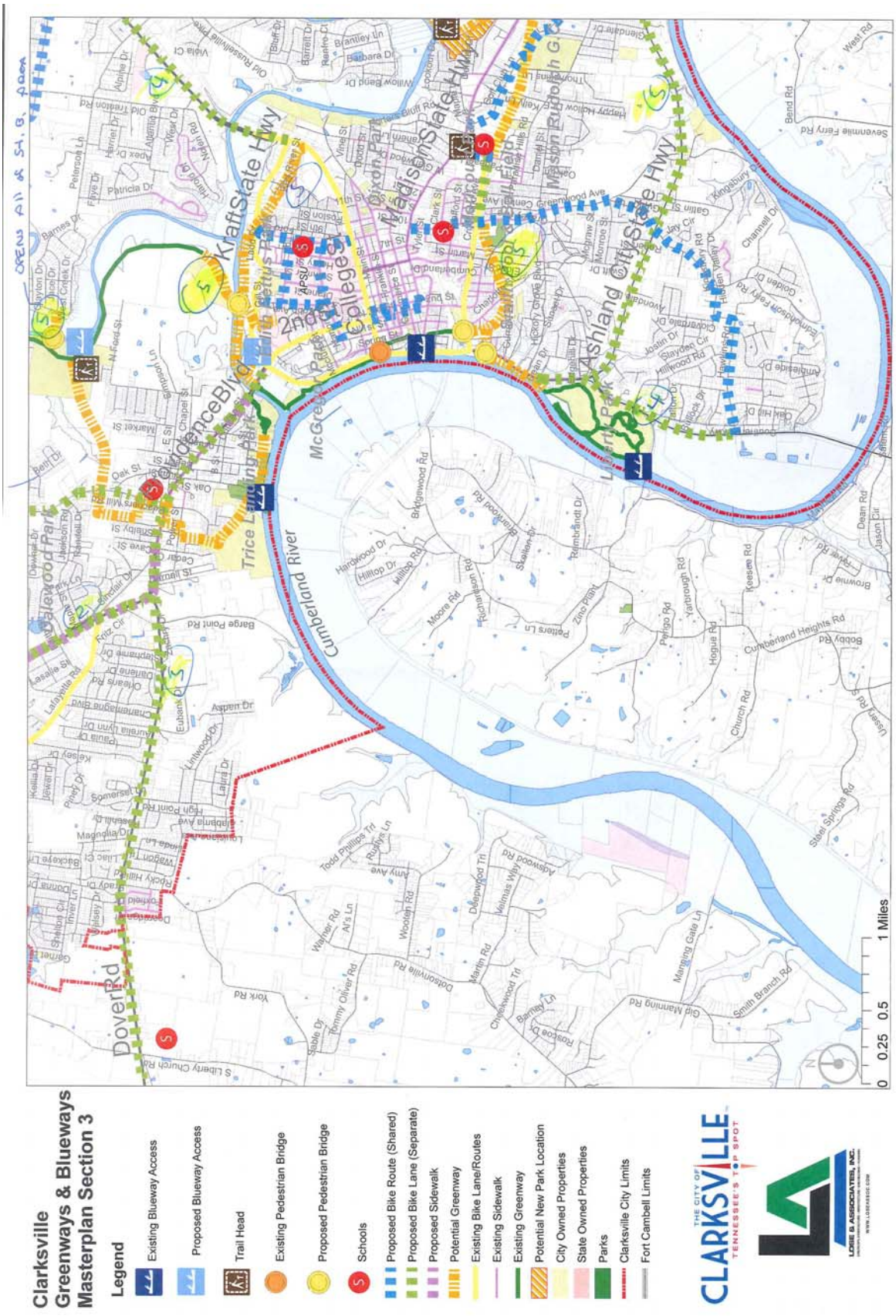
NAME	RESIDENT AND/OR ORGANIZATION	EMAIL
Michelle Austin	Parks + Rec	michelle.austin@cityofclarksville.com
FRANK LOMBARDO	FRIENDS OF THE BLUEWAY	FRANKLOMBARDO@CHARTER.NET
Mitch Robinson	APSU	ROBINSONM@APSU.edu
Melissa Adkins	Parks & Rec	MELISSA.ADKINS@cityofclarksville.com
Lawson Mabry	cyclist	lawsonmabry@gmail.com
Lionel Senseney	Friends of Dunbar Cave	lsenseney@bellsouth.net
J. R. Tate	Tennessee Trails	modelt@charter.net
Daniel Binkley		dbinkley7@gmail.com
Mark Hollemon		mhollemon@coldwellbanker.com
David Ripple	CMCRPC	david.ripple@cityofclarksville.com

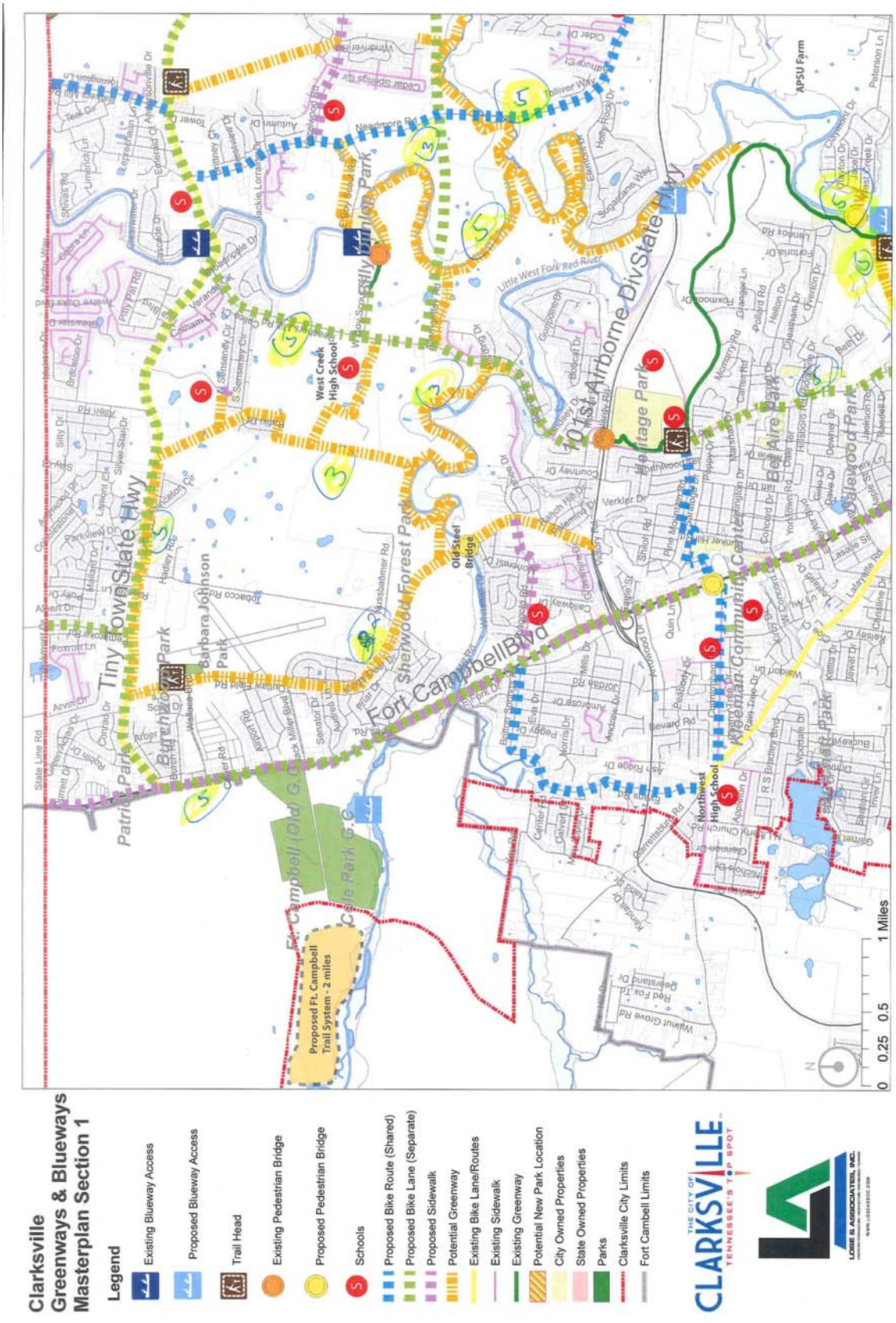

Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
0 0.25 0.5 1 Miles
Red River
Rossview State Hwy
Warfield State Hwy
Madison State Hwy
41-A Bypass
Ashland City State Hwy
76 State Hwy
41-A Hwy


Clarksville
Greenways & Blueways
Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
Cumberland River
Austin Peay State University
Madison Street
Dover Rd
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.

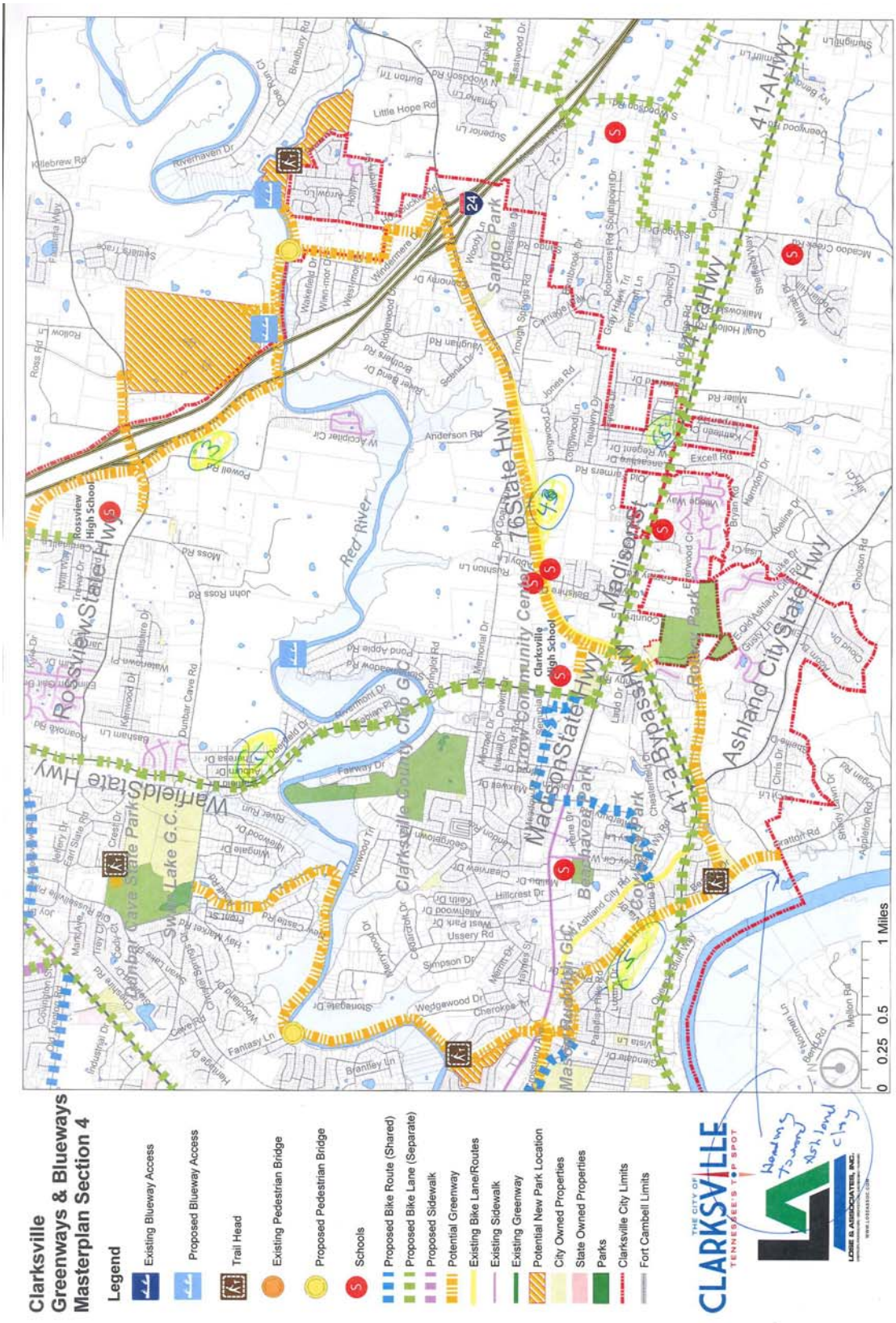

Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Guthrie Hwy
Wilma Rudolph Blvd
Warfield Memorial Blvd
Dunbar Cave Rd
Spring Creek
Northeast High School
East West Connector
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSS & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Proposed Ft. Campbell Trail System - 2 miles
Tiny Town Park
Patriot Park
Ft. Campbell Blvd
Sherwood Forest Park
Old Steel Bridge
West Creek High School
Northwest High School
Northeast Community Park
Liberty Park
Heritage Park
APSU Farm
Tiny Town Rd
Wilma Rudolph Blvd
Needmore Rd
Trenton Rd
Dunlop Ln
Rossview Rd
Madison St
Clarksville By-Pass
Ft. Campbell (Old) G.C.
Eagle Park G.C.
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Cumberland River
Dover Rd
Madison St
College St
Ashland City Hwy
Kraft
Trice Landing Park
McGregor Park
Dixon Park
Liberty Park
Mason Rudolph Park
0 0.25 0.5 1 Miles
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOGE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Tiny Town State Hwy
Barbara Johnson Park
Sherwood Forest Park
Fort Campbell Blvd
101st Airborne Div State Hwy
Old Steel Bridge
West Creek High School
Northwest High School
APSU Farm
Proposed Ft. Campbell Trail System - 2 miles
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Guthrie Hwy
Trenton State Hwy
Wilma Rudolph Blvd
Warfield State Hwy
East / West Connector
Northeast High School
Spring Creek
Civitan Park
0 0.25 0.5 1 Miles
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
0 0.25 0.5 1 Miles
Red River
Sango Park
Madison Park
Ashland City State Hwy
Madison St
41-A Hwy
Warfield State Hwy
Rossview State Hwy
Clarksville High School
Rossview High School
Swan Lake G.C.
Clarksville Country Club G.C.
Bay Creek Park
Dunbar Cave State Park
Ashland City Bypass
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.

Austin, Michelle

From: Lawson Mabry <lawsonmabry@gmail.com>
Sent: Monday, August 18, 2014 10:20 AM
To: 'John Simmons'
Cc: Tummons, Mark; Ripple, David; Austin, Michelle
Subject: RE: Clarksville Greenways
Attachments: Trails Task Force Maps 8.18.2014.pdf

John,
I have attached a set of marked up maps to this email. I had already started working on them prior to receiving your email, so I'll synopsize some general conclusions below in order of my perceived priorities:

1. Local governmental (city and county) park and transportation planning authorities should immediately begin reviewing all commercial, residential and governmental development proposals for bicycle, greenway and blueway opportunities in the absence of a formal planning document.

2. Bicycle, greenway and blueway development should be formally addressed by the CMCRPC and incorporated into the various development regulations.

In terms of prioritizing development of specific routes, I would suggest the following:

1. Development of existing city owned park at Little Hope Rd. for a blueway access. There is a possible greenway connector to state highway 76. This greenway has not been mentioned but would extend city along Passenger Creek from the park to the Passenger Creek bridge at Highway 76. This extension would involve the county's participation. This park should already be in the pipeline for funding, and the blueway access will provide for a popular float trip from Port Royal State Park. Please look at the greenway idea and let me know what you think.

2. Existing roadways should be marked for bicycle travel where possible. This should be low hanging fruit.

3. The connector from the existing north Clarksville Greenway across the Red River should move ahead as planned, and a connection to Riverside Dr. and Liberty Park should be a top priority. This is labeled number "1" on my plats.

4. A bicycle/pedestrian connector from Sango to downtown/Riverside Dr. should be designed, labeled number "2" on my plat.

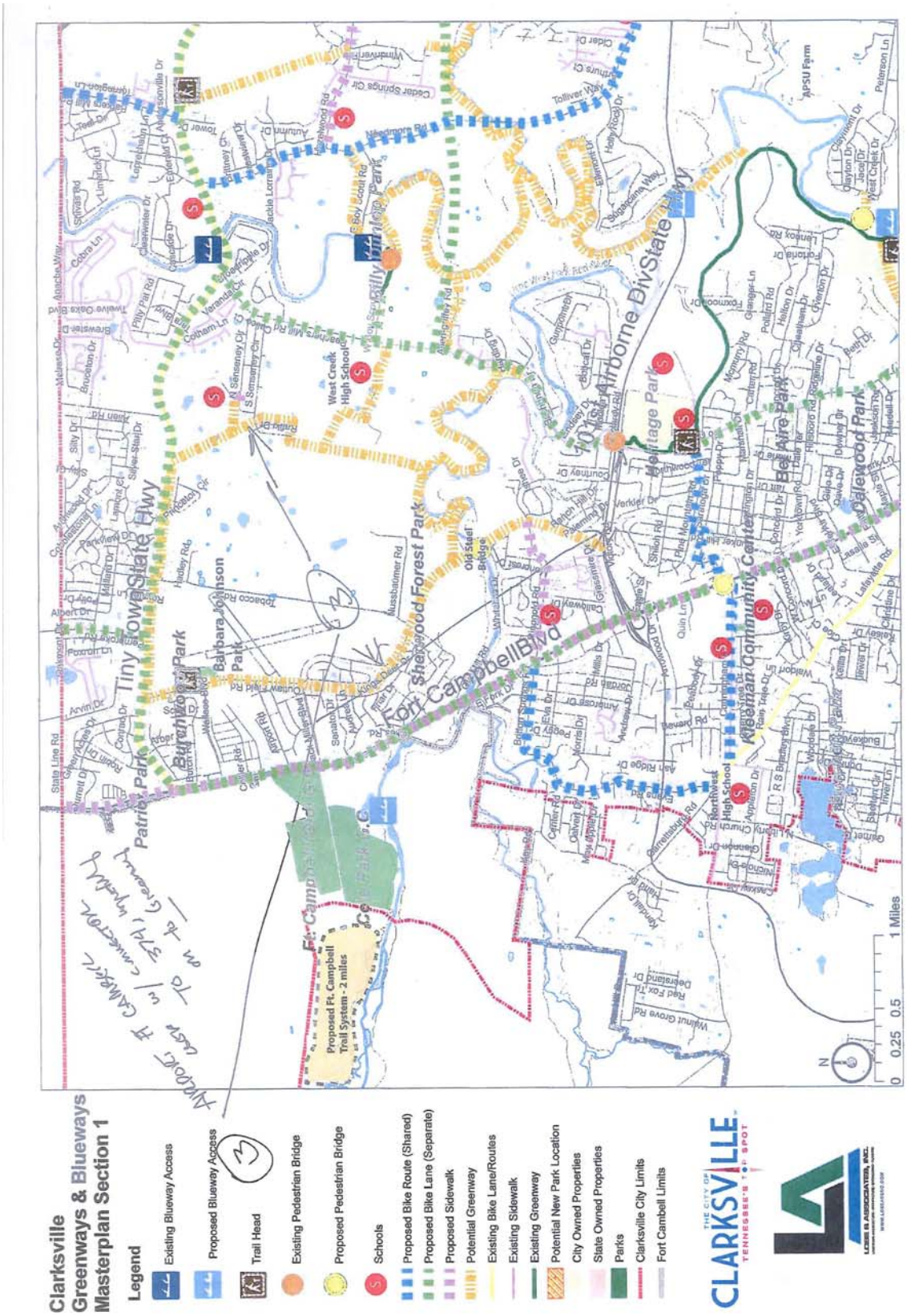
5. The greenway near the Clarksville Airport, labeled number "3" on my plats, will provide a connection between the existing greenway and Ft. Campbell and should come next in my opinion.

6. The routes along the creeks and rivers are intriguing, but will require significant capital and will be long term projects. ROW should be acquired on these projects, which ties in with item "1" at the top of this email.

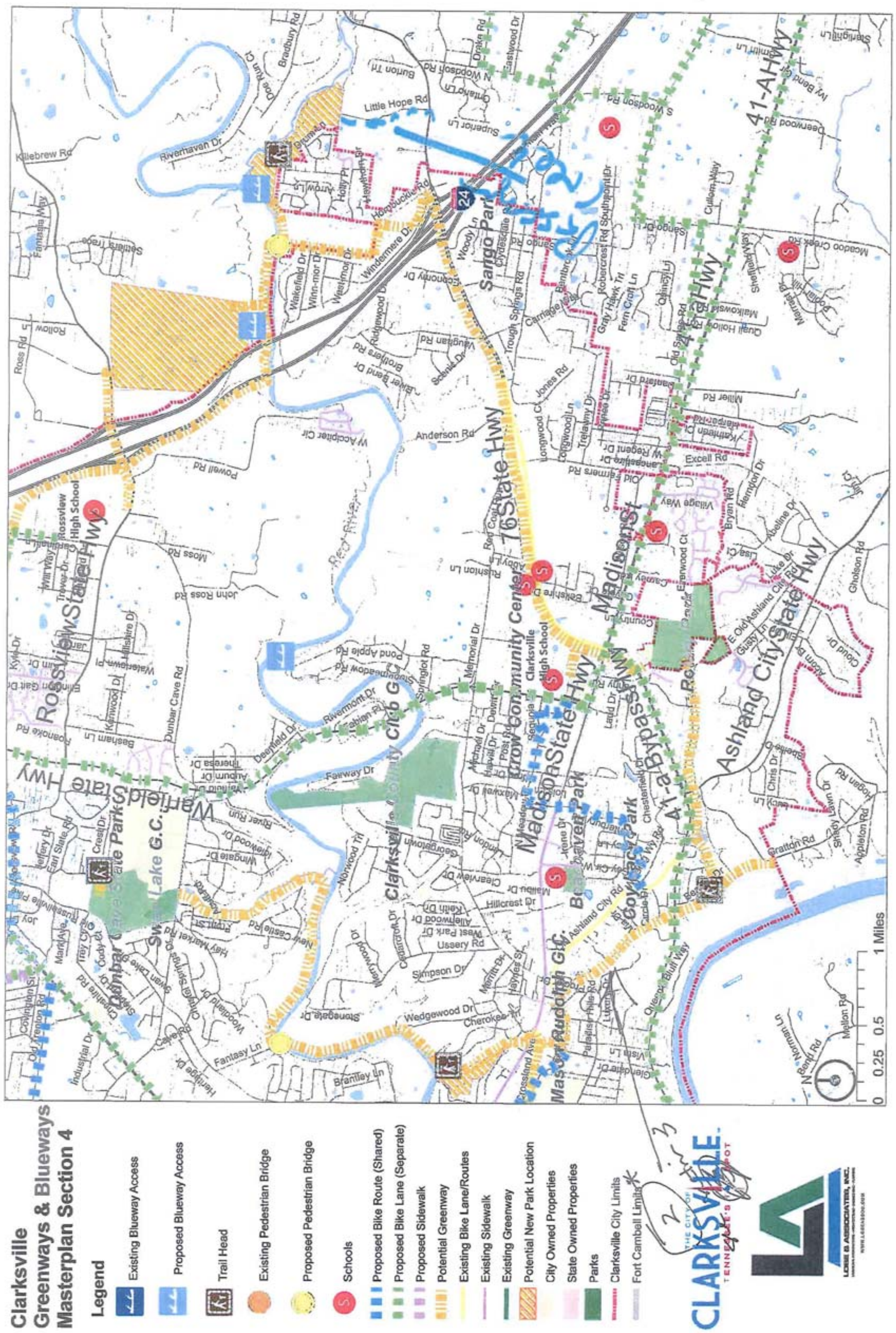
I'll send more thoughts as I have them. Thanks very much.

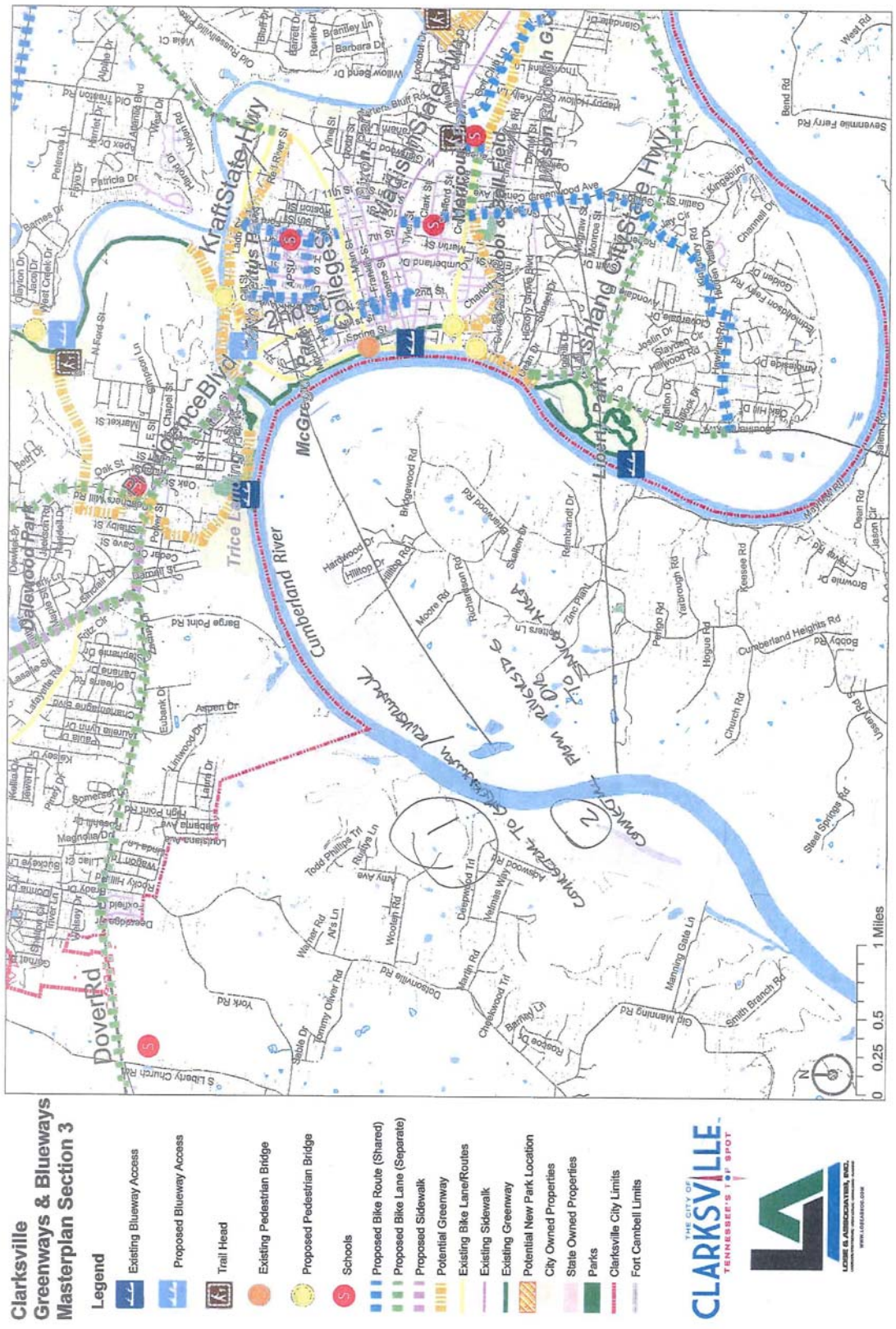
Lawson

Lawson Mabry
Coldwell Banker Conroy, Marable & Holleman, Inc.
111 S. Riverside Dr.
Clarksville, TN 37040-0388
O 931.920.9229
F 931.645.9122


Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
Proposed Ft. Campbell Trail System - 2 miles
Fort Campbell Blvd
Fort Sherwood Forest Park
Tiny Town Park
Barbara Johnson Park
Burchwood Park
Patriot Park
Heritage Park
Bellaire Park
Dalewood Park
Kleeman Community Center
Tiny Town State Hwy
101st Airborne Div State Hwy
West Creek High School
Northwest High School
APSU Farm
Billy Kimbro Park
Old Stief Bridge
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
Guthrie Hwy
Trenton State Hwy
Warfield State Hwy
Wilma Rudolph Blvd
Northeast High School
East West Connector
Spring Creek
0 0.25 0.5 1 Miles


Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
0 0.25 0.5 1 Miles
Rossview State Hwy
Warfield State Hwy
76 State Hwy
Madison State Hwy
Madison St
41-a Bypass
Ashland City State Hwy
41-A Hwy
Sango Park
Rossview High School
Clarksville High School
Dunbar Cave State Park
Swan Lake G.C.
Clarksville Country Club G.C.
Mason Rudolph G.C.
Crow Community Center
Heritage Park
Red River

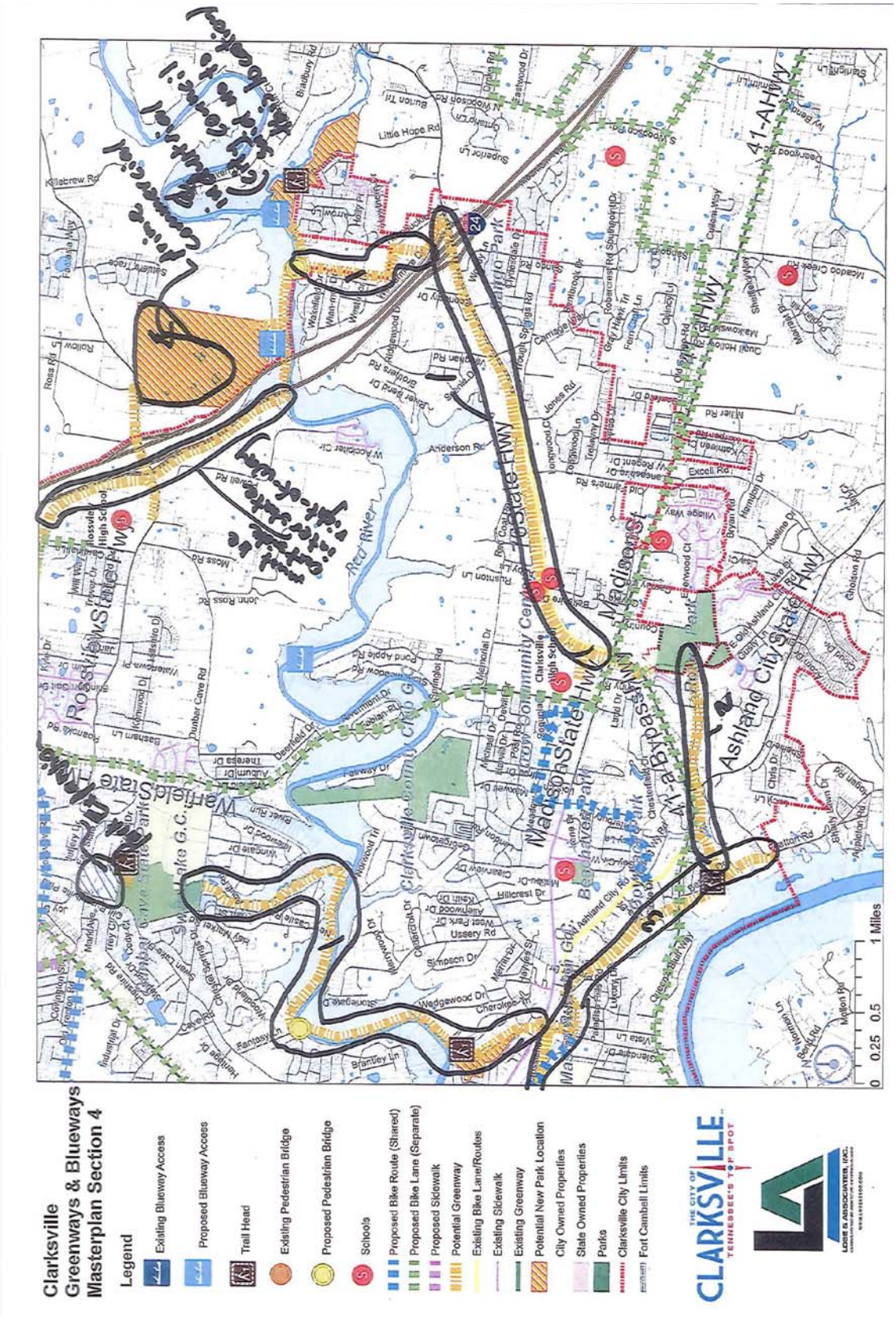

Clarksville Greenways & Blueways Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
Cumberland River
Liberty Park
Dover Rd
Trice Lane
McGregor Park
Governors Square Mall
Austin Peay State University
Clarksville High School
Kraft State Hwy
Shand Office State Hwy
Cumberland Heights Rd
Church Rd
Steel Springs Rd
Smith Branch Rd
Mannling Gate Ln
Dotsonville Rd
Martin Rd
Woolen Rd
Wafner Rd
York Rd
Tommy Oliver Rd
Deepwood Trl
Ashwood Pl
Todd Phillips Trl
Rustys Ln
Hogue Rd
Perego Rd
Yarbrough Rd
Moore Rd
Richardson Rd
Hilltop Dr
Hardwood Dr
Bridgewood Rd
Rembrandt Dr
Zinc Plant
Xeesee Rd
Booby Rd
Usery Rd
Jason Dr
Dean Rd
Severnville Ferry Rd
West Rd
Bend Rd
Barge Point Rd
Aspen Dr
Eubank Dr
Lakeland Dr
Somerset Dr
Magnolia Dr
Deerfield Dr
Oxford Dr
Valley Dr
Shelby Dr
Oak St
Chapel St
Main St
Franklin St
Spring St
Commerce Blvd
Riverside Dr
Greenwood Ave
Madison St
Clark St
Crossland Ave
Gallatin St
Channel Dr
Kingsbury Dr
Golden Ferry Rd
Tennessee Ave
Dunbar Cave Rd
Old Russellville Pike
Barnes Dr
Petersack Ln
Patricia Dr
Floyd Dr
Jacob Dr
Clayton Dr
West Creek Dr
Kenfield Dr
Trenton Rd
Old Trenton Rd
Alpine Dr
Bluff Dr
Barbara Dr
Brantley Ln
Rosalee Dr
Willow Bend Dr
Lookout Dr
Glendale Ct
Thompsons Ln
Bluff Rd
Happy Hollow Rd
Valley Dr
Hillcrest Dr
Hillwood Dr
Avondale Dr
Cloverdale Dr
Joslin Dr
Slayden Rd
Hillwood Rd
Hawkins Rd
Meadow Valley Dr
Sandra Dr
Dan Hill Dr
Sunset Dr
Jamison Dr
Ashbrook Dr
Bellamy Dr
Bellamy Rd
Mayfield Dr
Brownie Dr
Lafayette Rd
Lassiter St
Orleans Dr
Chantilly Lane Blvd
Laurelia Dr
Lakeside Dr
Kelsey Dr
Wellia Dr
Jewell Dr
Pearl Dr
Lakeland Dr
Linwood Dr
Louisiana Ave
Alabama Ave
Pecan Ln
Pecan Point Rd
Poplar Hill Rd
Deerfield Dr
Oxford Dr
Valley Dr
Shelby Dr
Wagon Trl
Lilac Ct
Bayberry Ln
Dogwood Ln
Holly Ln
Cedar Ln
Pine Ln
Maple Ln
Oak Ln
Willow Ln
Ivy Ln
Rose Ln
Lily Ln
Daisy Ln
Tulip Ln
Iris Ln
Violet Ln
Sunflower Ln
Peony Ln
Orchid Ln
Fern Ln
Moss Ln
Vine Ln
Leaf Ln
Branch Ln
Root Ln
Stem Ln
Flower Ln
Petal Ln
Seed Ln
Fruit Ln
Berry Ln
Nut Ln
Grain Ln
Wheat Ln
Corn Ln
Rice Ln
Barley Ln
Oat Ln
Rye Ln
Millet Ln
Sorghum Ln
Quinoa Ln
Amaranth Ln
Buckwheat Ln
Teff Ln
Fonio Ln
Kaniwa Ln
Chia Ln
Flax Ln
Hemp Ln
Sesame Ln
Poppy Ln
Mustard Ln
Canola Ln
Rapeseed Ln
Soybean Ln
Peanut Ln
Almond Ln
Walnut Ln
Pecan Ln
Hazelnut Ln
Chestnut Ln
Acorn Ln
Beech Ln
Birch Ln
Cedar Ln
Cypress Ln
Douglas Fir Ln
Fir Ln
Hemlock Ln
Juniper Ln
Larch Ln
Pine Ln
Redwood Ln
Spruce Ln
Yew Ln
Aspen Ln
Cottonwood Ln
Elm Ln
Hackberry Ln
Hickory Ln
Maple Ln
Oak Ln
Poplar Ln
Sycamore Ln
Willow Ln
Ash Ln
Basswood Ln
Beech Ln
Birch Ln
Buckeye Ln
Catalpa Ln
Chestnut Ln
Dogwood Ln
Elm Ln
Hackberry Ln
Hickory Ln
Honeylocust Ln
Ironwood Ln
Locust Ln
Magnolia Ln
Maple Ln
Mulberry Ln
Oak Ln
Osage Orange Ln
Persimmon Ln
Pine Ln
Redbud Ln
Sassafras Ln
Serviceberry Ln
Sourwood Ln
Sweetgum Ln
Tulip Tree Ln
Walnut Ln
Willow Ln
Yellowwood Ln
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.

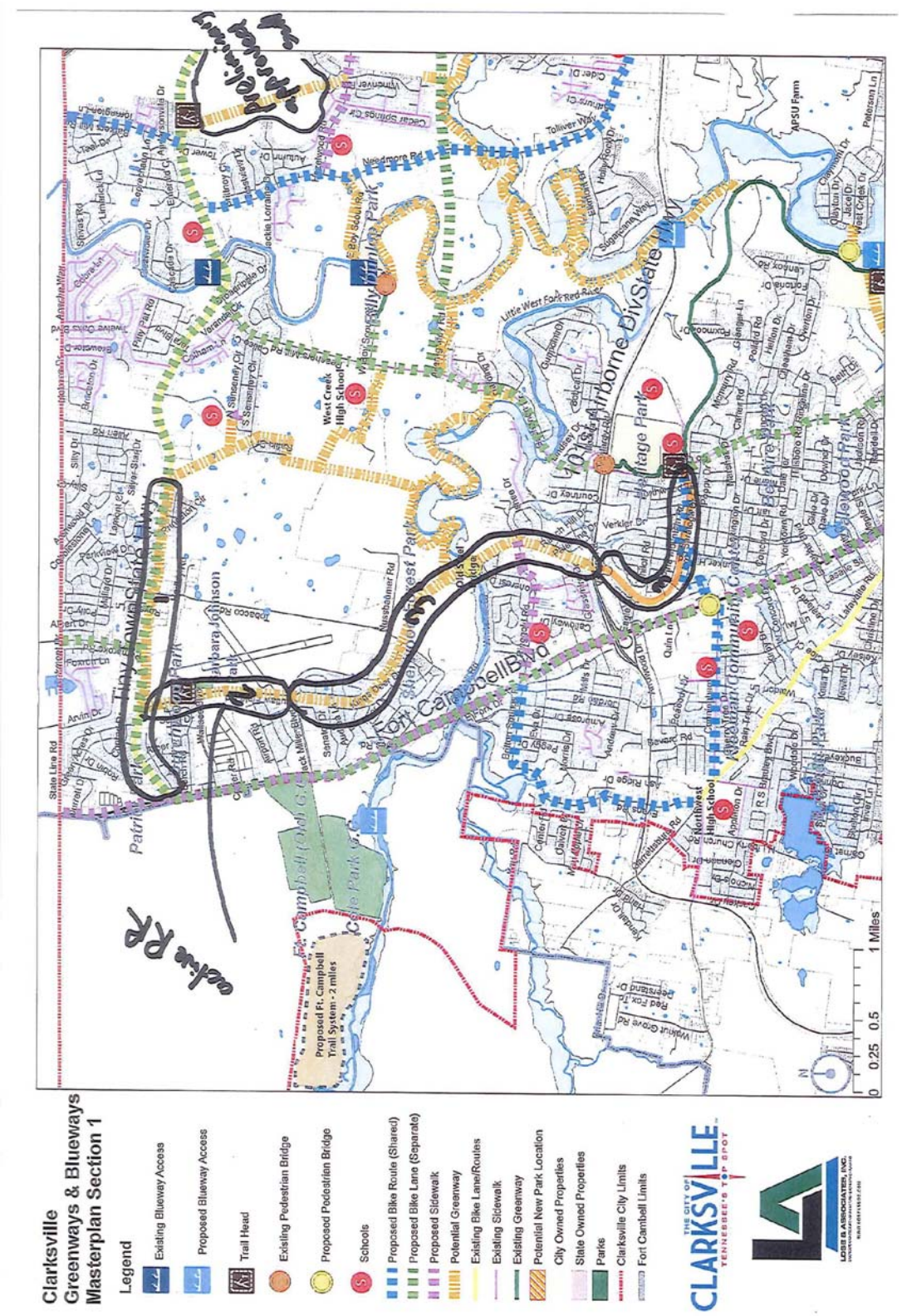
Austin, Michelle

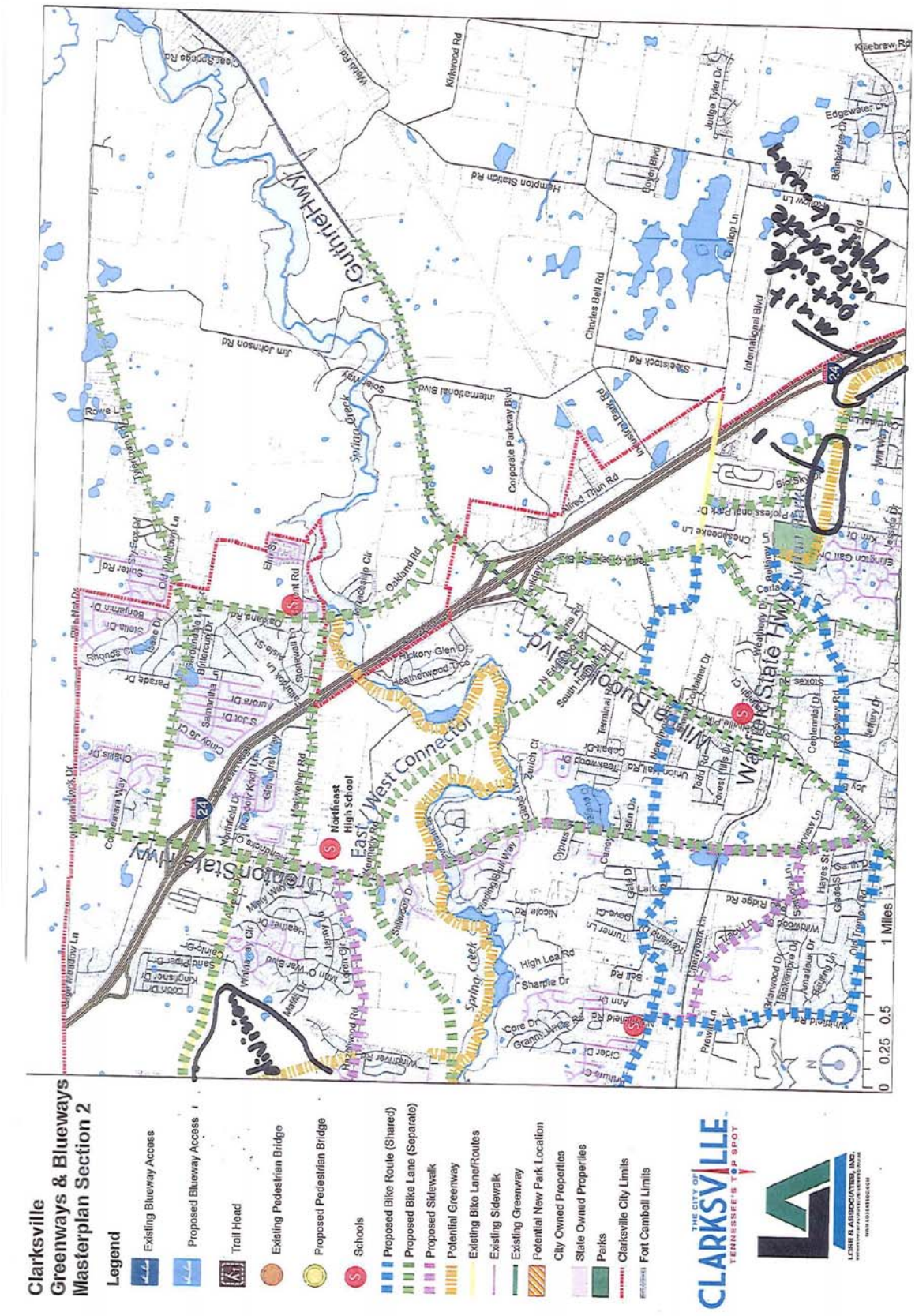
From:	Ripple, David
Sent:	Thursday, August 14, 2014 4:06 PM
To:	DL_web Parks and Recreation; Austin, Michelle
Cc:	ccamp@LoseAssoc.com; Tummons, Mark; Williams, Stan; Richard Swift (rhswift@naiclarksville.com)
Subject:	Greenways and Blueways Priorities
Attachments:	Priorities.pdf

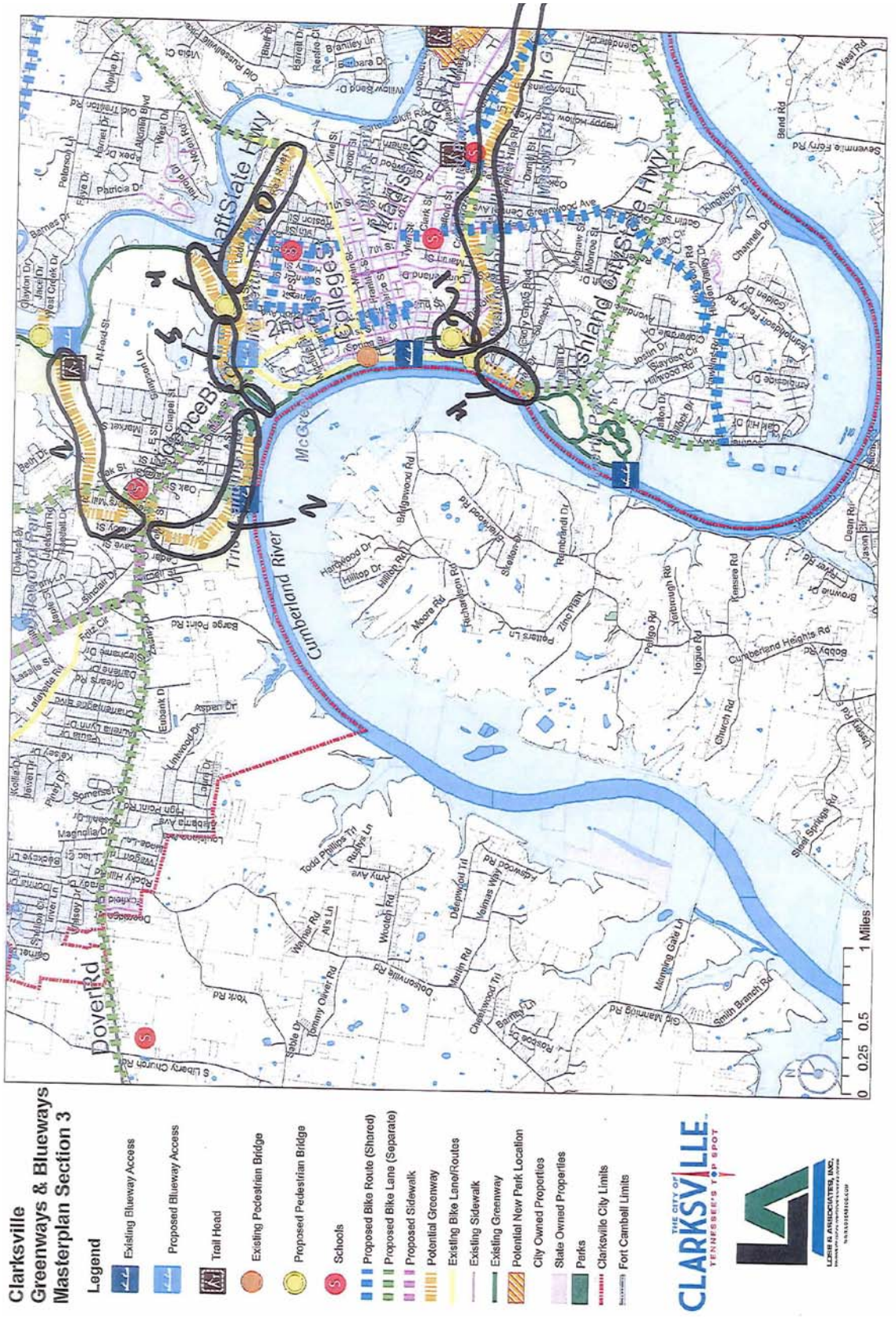
Dear Michele and Chris:
Stan Williams (the MPO Director) and I sat down today to set priorities for the Greenways & Blueways Masterplan. We have the following comments relative to our prioritization (attached):

1) The scoring is across the entire community.
2) We focused the priorities on the Cumberland Riverwalk extensions and the abandoned Illinois Central Railway corridor because this is the backbone of our present and future trail system and because other sources of funding other than Federal Transportation Enhancement and Interior Water & Recreation Conservation Funds may be used on other facilities. Please add the Illinois Central Rail bed westward from Peachers Mill Road (just south of Pine Mountain Road) to the 101st Parkway with an underpass of the 101st Parkway.
3) Sidewalks are of the highest priority along principal arterials because these are the primary transit and commercial corridors. Infill sidewalks are of the highest priority along Ft. Campbell Boulevard, Wilma Rudolph Boulevard and Madison Street. This can be accomplished with general federal, state and local transportation dollars, and if the City Sidewalk Ordinance were updated, we would expect that new and redeveloped commercial properties over the next two to three decades (commercial building obsolesce in20 years) would result in sidewalks along these three major commercial corridors. Please add the sidewalk designation to Madison Street and Wilma Rudolph Boulevard. (In the case, Madison Street existing sidewalks run roughly from downtown to Memorial. In the case of Wilma Rudolph, sidewalks exist in St. Bethlehem from Trenton Road to the 101st Parkway (SR 374). Establishing priorities along these three major corridors for infill sidewalk should be in accordance with the City Sidewalk Ordinance that establishes the legal mechanism for sidewalk priorities.
4) Whether or not one side of these three major corridors (Ft. Campbell, Wilma Rudolph and Madison) can be a multi-use trail (i.e., shared bicycle-pedestrian trail) is highly dependent upon the amount of right-of-way available in the border area outside the motor vehicle travelway. The purchase of additional right-of-way for shared bicycle-pedestrian trails will prove cost prohibitive. (We know this due to efforts to provide sidewalks in the vicinity of Governor's Square Mall outside the utility poles – rather between the curb and utility poles.)
5) Any major widenings (additional lanes) of existing arterials on State routes requiring additional right-of-way will involve the construction of sidewalks in the incorporated area (e.g., Madison Street US 41A/SR 112 from MLK to McAdoo Creek Road). The City of Clarksville has also committed to including sidewalks on any new or major widenings initiated by the City. Thus, priorities for sidewalks (and possible bikeways) are driven by the roadway construction priorities established by the Metropolitan Transportation Plan.
6) The East-West Connector runs from Jack Miller Boulevard along the north side of Little West Fork along the south edge of the West Creek High School Complex to Peachers Mill Road; continues eastward between Boy Scout Road and Allen-Griffey Road over the West Fork of the Red River; lies along the north side of Spring Creek to Trenton Road at Kennedy Lane; and runs southwest over Spring Creek to Wilma Rudolph at Edgewood Place. This five-lane divided facility will have a bicycle-pedestrian trail on one side and a sidewalk on the other. It will be built with federal, state and local transportation dollars, but not federal Transportation Enhancement dollars. Priorities will be in accord with the Metropolitan Transportation Plan.
7) We would note that many roads marked for "shared bike routes" or sidewalks (such as Hazelwood) have inadequate pavement width to accommodate most bicyclists, have rural cross-sections with very narrow shoulders and ditches next to the pavement, and lack right-of-way for pavement or shoulder widening. The widening of pavements or shoulders on Collectors (and some Minor Arterials) is cost prohibitive when the existing roadway is a


Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
0 0.25 0.5 1 Miles
Red River
Madison St
Ashland City Hwy
41-A Hwy
Warfield Blvd
Rossview Rd
Wilma Rudolph Blvd
Fort Campbell Blvd
Trenton Rd
Dunbar Cave Rd
Clarksville Country Club
Clarksville Community Center
Clarksville G.C.
Swan Lake G.C.
Dunbar Cave State Park
Beachaven Park
Liberty Park
Woodlawn Park
Rossview High School
Clarksville High School
Northeast Middle School
Kenwood Middle School
Richview Middle School
Montgomery Central Elementary School
Barkers Mill Elementary School
Glenellen Elementary School
Sango Elementary School
Woodlawn Elementary School
Rossview Elementary School
Kenwood Elementary School
Richview Elementary School
Northeast Elementary School
Oakland Elementary School
Minglewood Elementary School
Montgomery Central Elementary School
Barkers Mill Elementary School
Glenellen Elementary School
Sango Elementary School
Woodlawn Elementary School
Rossview Elementary School
Kenwood Elementary School
Richview Elementary School
Northeast Elementary School
Oakland Elementary School
Minglewood Elementary School
THE CITY OF CLARKSVILLE TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Proposed Ft. Campbell Trail System - 2 miles
Fort Campbell Blvd
Tiny Town Park
Heritage Park
West Creek High School
Northwest High School
Clarksville Community Park
Cedar Park
Cedar RR
APSU Farm
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSS & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
Northeast High School
East West Connector
Wilma Rudolph Blvd
Warfield Dr
Guthrie Hwy
Trenton Rd
Spring Creek
Red River
0 0.25 0.5 1 Miles
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LESLIE A. ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Route
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
Cumberland River
Dover Rd
College St
Madison St
Riverside Dr
Ashland City Hwy
0 0.25 0.5 1 Miles
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LORING ASSOCIATES, INC.

8/19/2014

Junius R. Tate

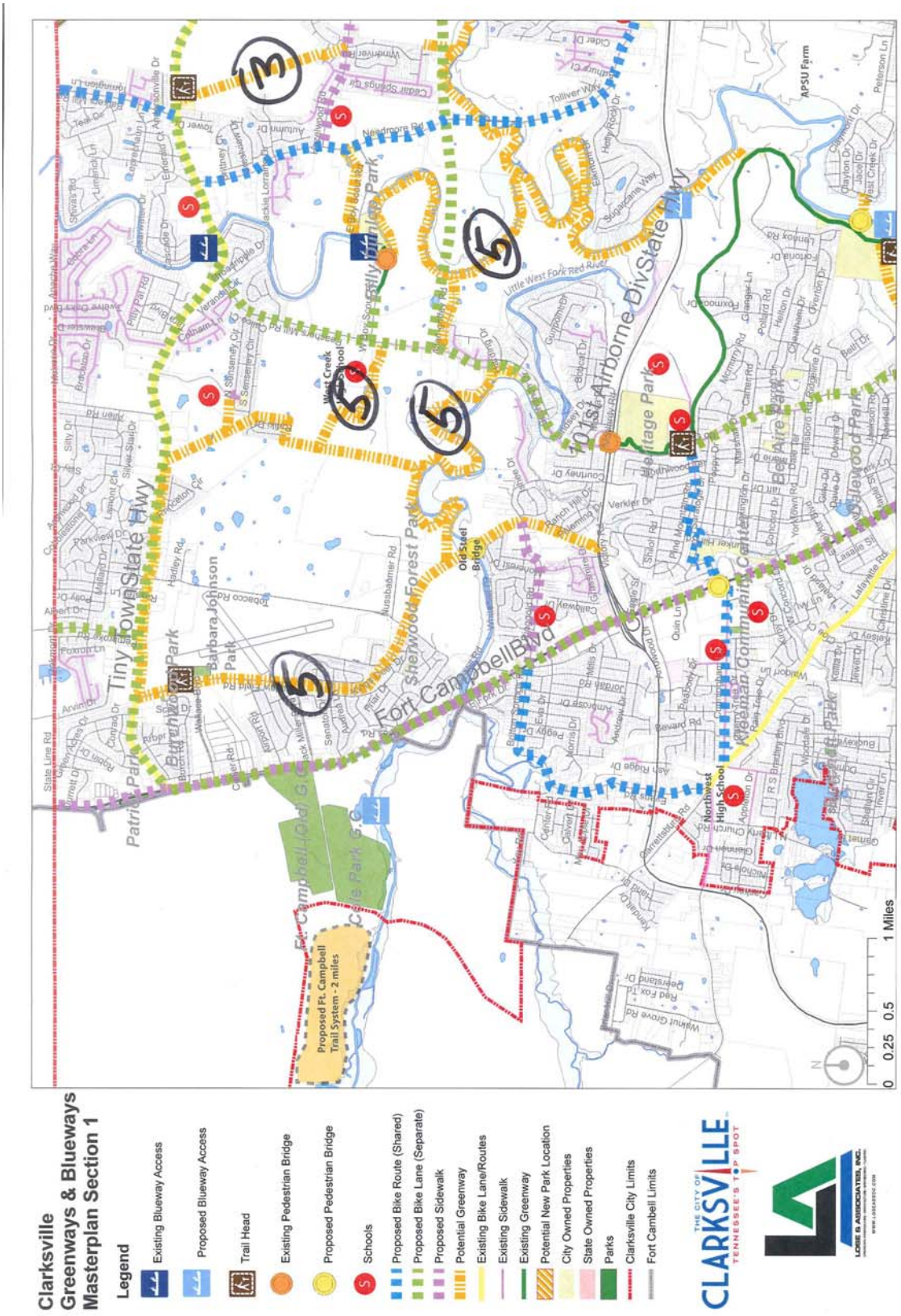
Since I am not a bicyclist or canoeist but am a hiker, I have only treated to the hiking trails. I would NOT want to influence and decision-making efforts concerning bicycle trails or Blueways since I don't feel qualified to make judgement calls in these two areas.

I am happy and honored to be a part of the task force and look forward to helping - within my limited qualifications

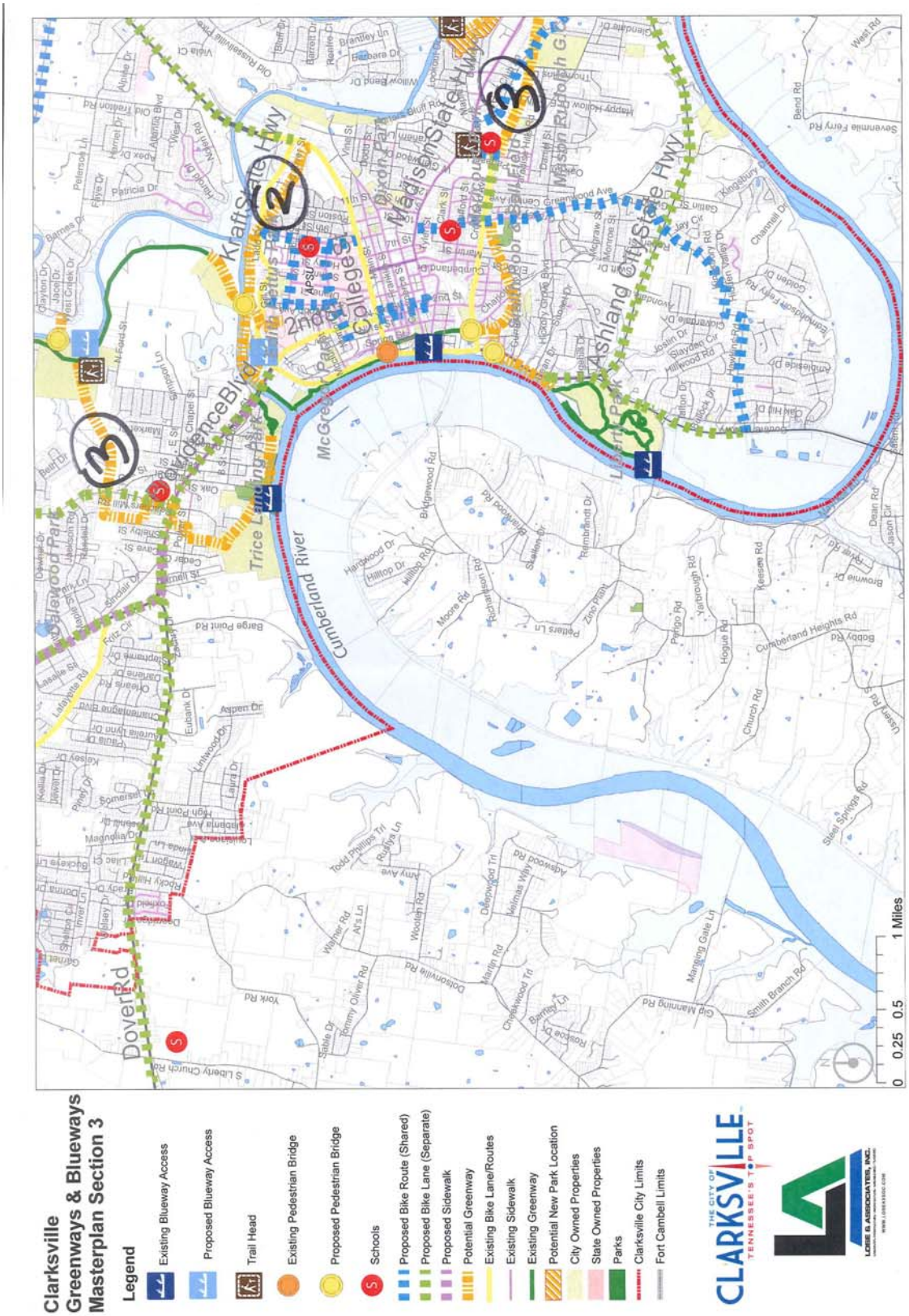
J.R. Tate
Tennessee Trails

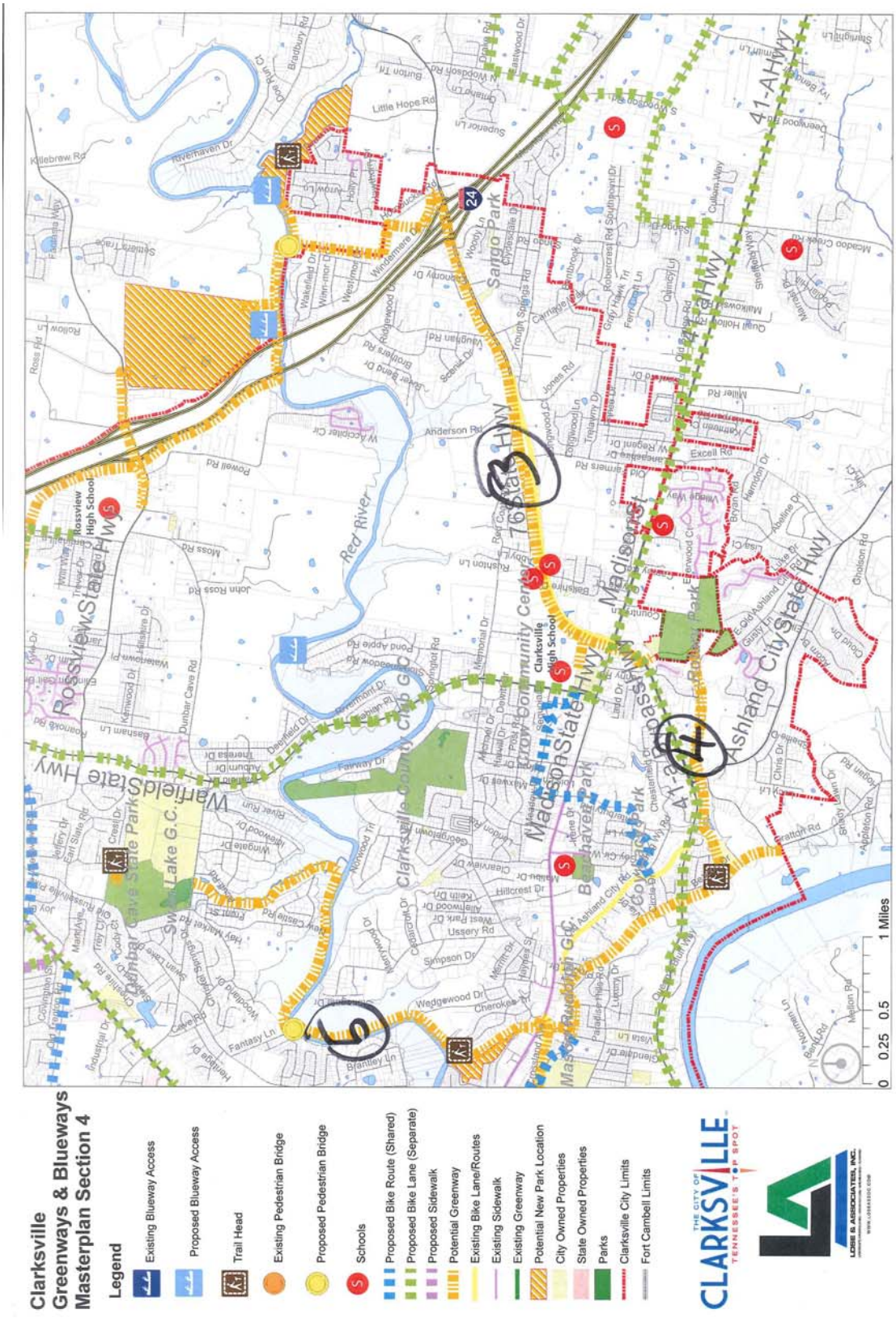
"Once A Marine, Always A Marine"

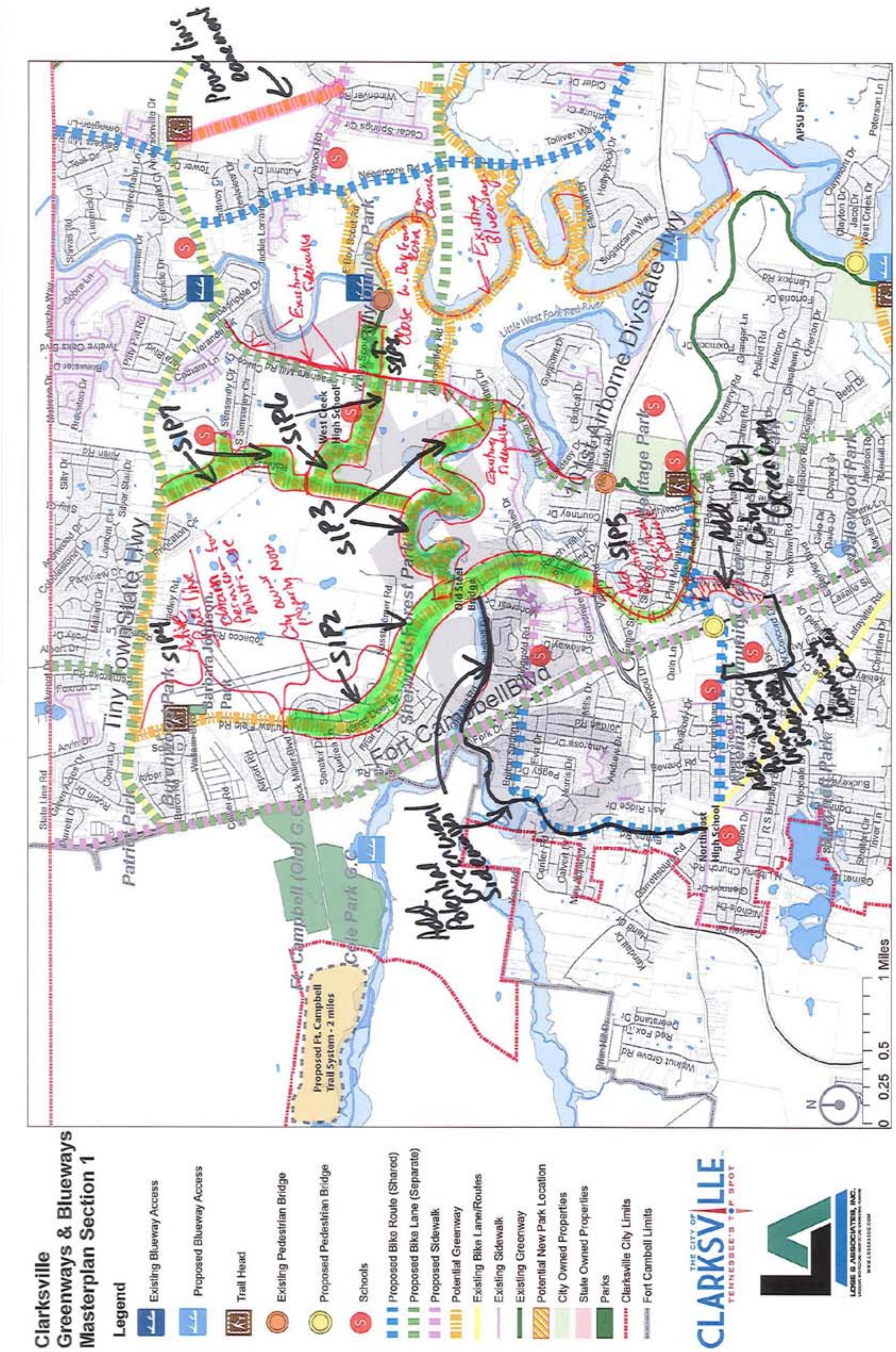
28418NP1 A35451

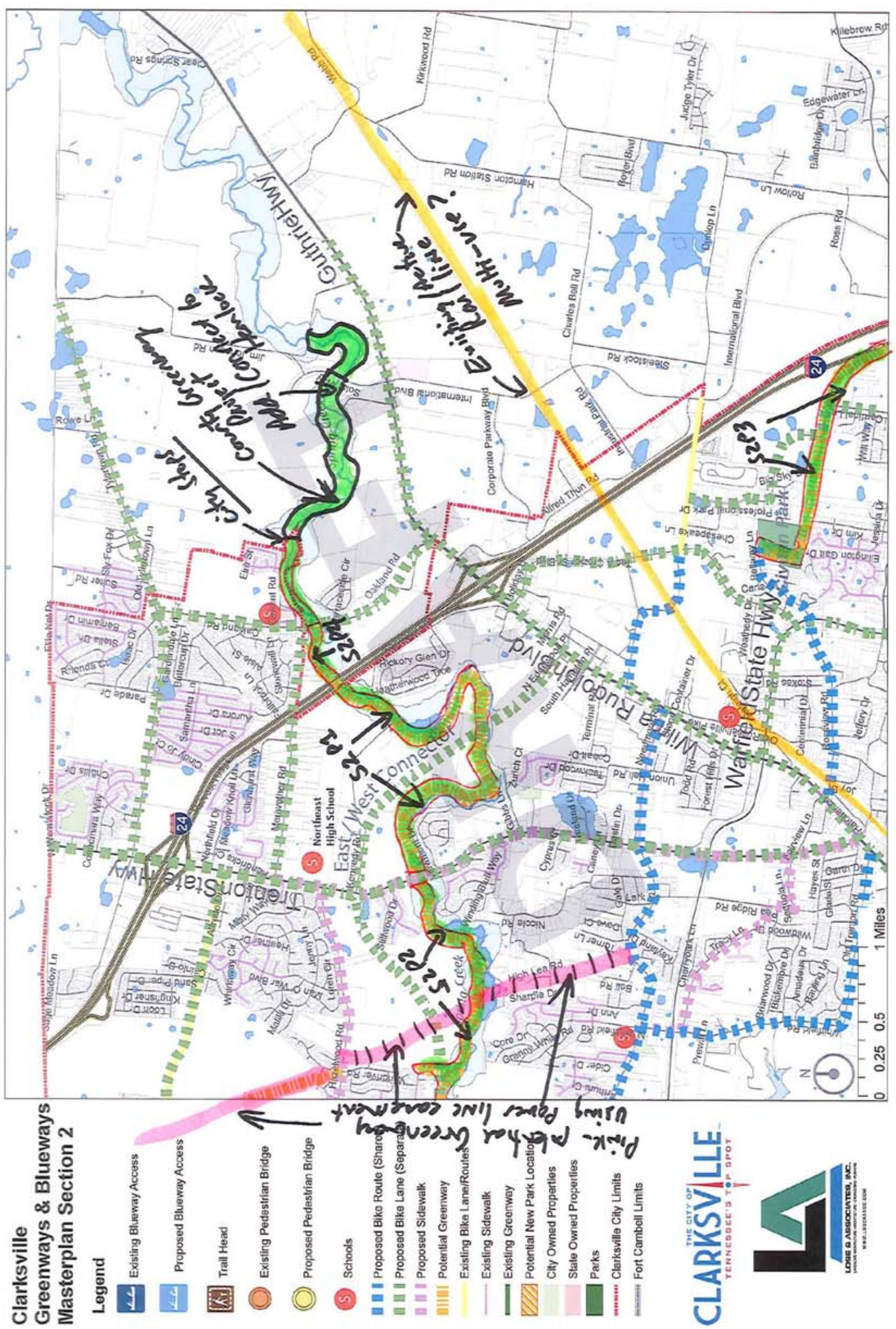

Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
Proposed Ft. Campbell Trail System - 2 miles
Tiny Town Park
Barbara Johnson Park
Sherwood Forest Park
Old Steel Bridge
Fort Campbell Blvd
101st Airborne Div
State Hwy
Northwest High School
Kleeman Community Center
Bellwood Park
Bel Aire Park
Heritage Park
APSU Farm
West Creek Elementary School
Fort Campbell Golf Course
Fort Campbell G.C.
0 0.25 0.5 1 Miles
N
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.

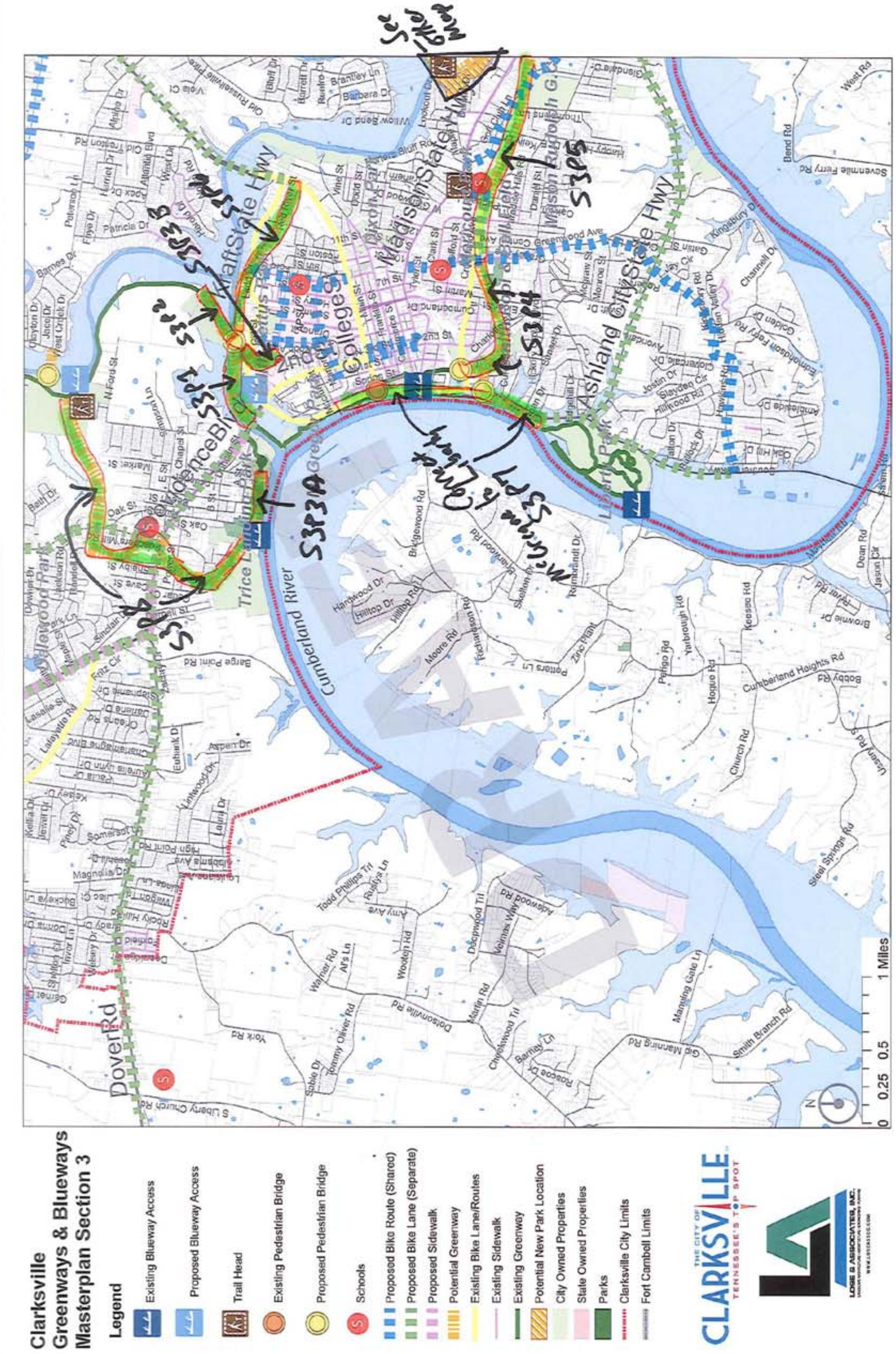

Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
0 0.25 0.5 1 Miles
N
Guthrie Hwy
Trenton State Hwy
Wilma Rudolph Blvd
Warfield State Hwy
East / West Connector
Northeast High School
Spring Creek
Sportsplex Park
Veterans Park

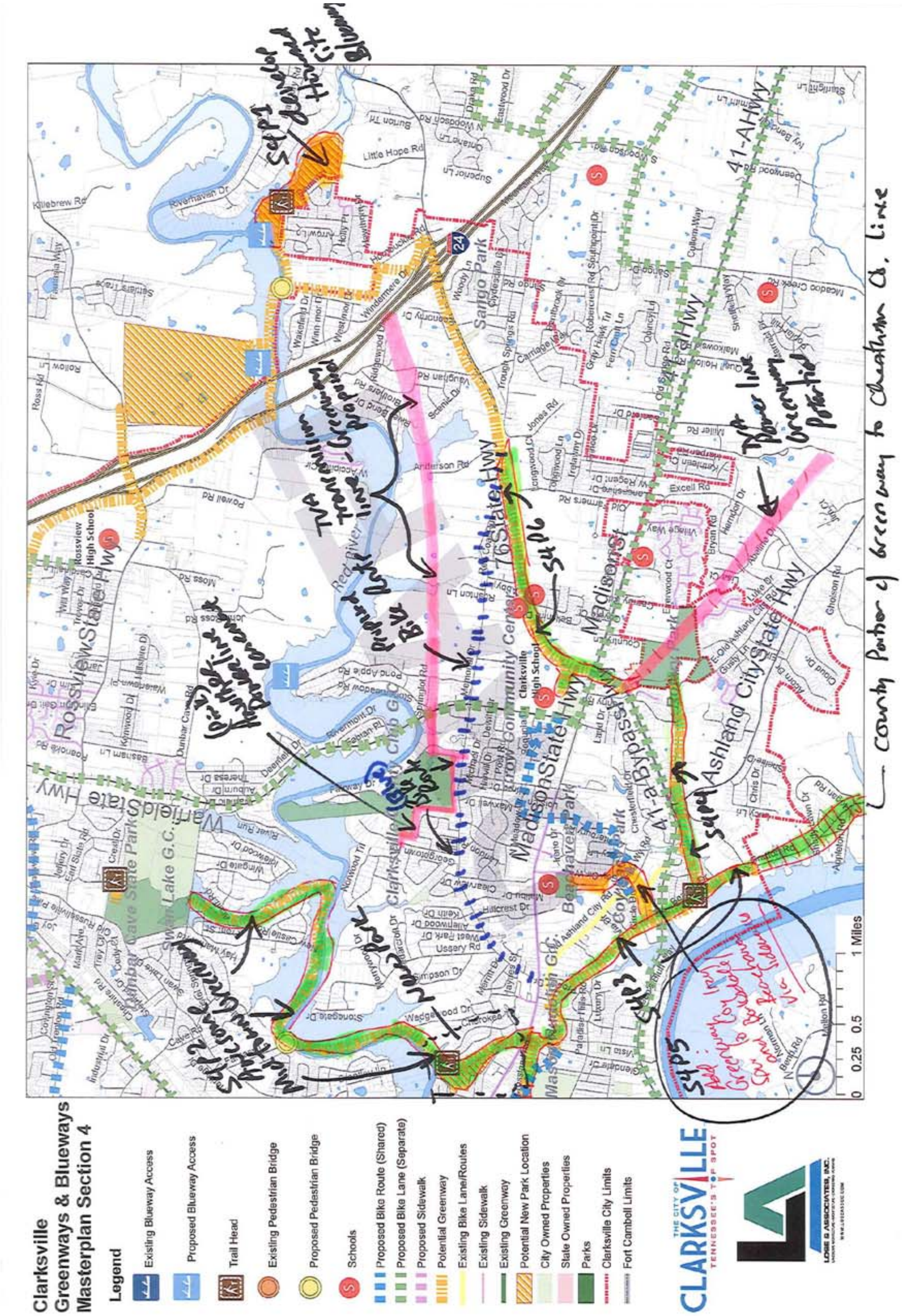

Clarksville
Greenways & Blueways
Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
0 0.25 0.5 1 Miles
Cumberland River
McGregor Park
Trice Landing Park
Dover Rd
Madison St
College St
Ashland City Hwy
Kraft St
Providence Blvd
Marion Ridley Pkwy


Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Campbell Limits
0 0.25 0.5 1 Miles
Red River
Madison St
Ashland City Hwy
Rossview High School
Clarksville High School
Sango Park
Liberty Park
Beachaven Park
Swan Lake G.C.
Clarksville Country Club G.C.
Mastin Riverbend G.C.
Fort Campbell Blvd
Warfield State Hwy
Rossview State Hwy
41-A Hwy
76 Star Hwy
Ashland City State Hwy
Madison State Hwy
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.


Clarksville
Greenways & Blueways
Masterplan Section 1
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
Proposed Ft. Campbell Trail System - 2 miles
APSU Farm
West Creek High School
Northwest High School
Old Steel Bridge
0 0.25 0.5 1 Miles
N


Clarksville
Greenways & Blueways
Masterplan Section 2
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Share
Proposed Bike Lane (Separa
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Locatio
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
GuthrieHwy
TrentonStateHwy
Warfield State Hwy
Wilma Rudolph Blvd
East/West Connector
Northeast High School
Webb Rd
Kirkwood Rd
Hampton Station Rd
Charles Bell Rd
International Blvd
Steelstock Rd
Corporate Parkway Blvd
Alfred Thun Rd
Professional Park Dr
Killebrew Rd
Edgewater Ln
Judge Tyler Dr
Rollow Ln
Ross Rd
Dunlop Ln
Rowe Ln
Oakland Rd
Hickory Glen Dr
High Lea Rd
Sharpia Dr
Union Hall Rd
Pea Ridge Rd
0 0.25 0.5 1 Miles
Existing (Potential) Rail line Multi-use?
Add / Connect to County Greenway Plan
City Steps
S2P1
S2P2
S2P3
S2P4
S2P5
Pink - potential Greenway Using Power line easement


Clarksville
Greenways & Blueways
Masterplan Section 3
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
Cumberland River
0 0.25 0.5 1 Miles
N


Clarksville
Greenways & Blueways
Masterplan Section 4
Legend
Existing Blueway Access
Proposed Blueway Access
Trail Head
Existing Pedestrian Bridge
Proposed Pedestrian Bridge
Schools
Proposed Bike Route (Shared)
Proposed Bike Lane (Separate)
Proposed Sidewalk
Potential Greenway
Existing Bike Lane/Routes
Existing Sidewalk
Existing Greenway
Potential New Park Location
City Owned Properties
State Owned Properties
Parks
Clarksville City Limits
Fort Cambell Limits
THE CITY OF CLARKSVILLE
TENNESSEE'S TOP SPOT
LOSE & ASSOCIATES, INC.
0 0.25 0.5 1 Miles

A2 Appendix: Map Indices

THIS PAGE LEFT INTENTIONALLY BLANK.

LAND CORRIDOR INDEX

FID	ROUTE TYPE	ROUTE NAME	LENGTH (FT)	LENGTH (MI)	PRIORITY LEVEL	FROM	TO
0	Bike (shared lane)	Barkers Mill Road	4341.09	0.82	High	City Limits	SR-236 (Tiny Town Road)
1	Bike (shared lane)	Pageant Lane	1336.55	0.25	High	US-41A (Madison Street)	Crossland Avenue
2	Bike (shared lane)	Evans Road	5822.45	1.10	High	Britton Springs Road	Garrettsburg Road
3	Bike (shared lane)	Whitfield Road	8276.35	1.57	High	Needmore Road	Single Tree Drive
4	Bike (shared lane)	Hawkins Road	6047.20	1.15	High	Edmondson Ferry Road	SR-48 / SR-13
5	Bike (shared lane)	Golf Club Lane	5620.65	1.06	High	US-41A (Madison Street)	Highland Circle / Robert S. Brown Drive
6	Bike (shared lane)	Maxwell Drive / Dogwood Lane / Canterbury Road	4545.89	0.86	High	Lacy Lane	Meadow Drive
7	Bike (shared lane)	Marion Street	3700.52	0.70	High	1st Street	8th Street
8	Bike (shared lane)	8th Street	3515.67	0.67	High	US-79 (College Street)	SR-13 (Kraft St.)
9	Bike (shared lane)	Farris Drive	2293.56	0.43	High	Robb Avenue	8th Street
10	Bike (shared lane)	Robb Avenue	2589.81	0.49	High	SR-13 (Kraft Street)	Marion Street
11	Bike (shared lane)	3rd Street	1853.33	0.35	High	US-41A / SR-48 (College Street)	Madison Street
12	Bike (shared lane)	Cunningham Lane	6576.69	1.25	High	Lafayette Road	US-41A (Fort Campbell Boulevard)
13	Bike (shared lane)	Dunlop Lane	5849.87	1.11	High	US-79 (Wilma Rudolph Boulevard)	Ted A. Crozier Sr. Boulevard
14	Bike (shared lane)	Bellamy Lane	6153.29	1.17	High	Rossview Road	SR-374 (Warfield Boulevard)
15	Bike (shared lane)	Needmore Road	25951.25	4.92	High	SR-236 (Tiny Town Road)	SR-48 (Trenton Road)
16	Bike (shared lane)	Needmore Road	4807.66	0.91	High	SR-48 (Trenton Road)	US-79 (Wilma Rudolph Boulevard)
17	Bike (shared lane)	Old Russellville Pike	1280.44	0.24	High	Rossview Road	Sanders Road
18	Bike (separate lane)	SR-236 (Tiny Town Road)	15970.21	3.02	Long-term	Peachers Mill Road	SR-48 (Trenton Road)
19	Bike (separate lane)	Peachers Mill Road	8606.84	1.63	Long-term	SR-236 (Tiny Town Road)	SR-374 (101st Airborne Division Parkway
20	Bike (separate lane)	US-79 (Wilma Rudolph Boulevard)	16403.82	3.11	Long-term	SR-13 (Kraft Street)	SR-374 (101st Airborne Division Parkway
21	Bike (separate lane)	SR-48 / SR-13	5654.80	1.07	Medium	US-41A BP (Ashland City Road)	Hawkins Road
22	Bike (separate lane)	US-41A	14412.88	2.73	Long-term	McAdoo Creek Road / Sango Drive	Durham Road
23	Bike (separate lane)	Old Sango Road	7863.16	1.49	Long-term	US-41A (Madison Street)	Sango Drive
24	Bike (separate lane)	Trough Springs Road	10116.45	1.92	Long-term	Woodson Road	Durham Road
25	Bike (separate lane)	Drake Road	8662.06	1.64	Long-term	Woodson Road	Trough Springs Road
26	Bike (separate lane)	Cardinal Lane	986.03	0.19	Long-term	Civitan Park Connector	Lucas Wayne Drive
27	Bike (separate lane)	Holiday Drive / Ted A. Cozier Sr. Boulevard	12293.69	2.33	Long-term	US-79 (Wilma Rudolph Boulevard)	SR-374 (Warfield Boulevard)
28	Bike (separate lane)	Oakland Road	5870.56	1.11	Medium	Meriwether Road	US-79 (Guthrie Highway)
29	Bike (separate lane)	Meriwether Road	9118.07	1.73	Long-term	SR-48 (Trenton Road)	Oakland Road
30	Bike (separate lane)	Tylertown Road	11490.60	2.18	Long-term	Oakland Road	Jim Johnson Road
31	Bike (separate lane)	Peachers Mill Road	11024.09	2.09	Long-term	Pine Mountain Road	US-41A / US-79 (Providence Boulevard)
32	Bike (separate lane)	US-79 (Dover Road)	21164.85	4.01	Long-term	Butts Drive	US-41A (Fort Campbell Boulevard)
33	Bike (separate lane)	East-West Connector	30191.85	5.72	Medium	Peachers Mill Road	US-79 (Wilma Rudolph Boulevard)
34	Bike (separate lane)	Pembroke Road	2973.82	0.56	Long-term	City Limits	SR-236 (Tiny Town Road)
35	Bike (separate lane)	SR-41A BP (Ashland City Road)	29683.05	5.62	Medium	SR-48 / SR-13	US-41A (Madison Street)
36	Bike (separate lane along sidewalk)	Crossland Avenue	2321.77	0.44	Long-term	Greenwood Avenue	Pageant Lane
37	Bike (separate lane)	SR-374 (Warfield Boulevard)	30155.03	5.71	Medium	US-41A (Madison Street)	US-79 (Wilma Rudolph Boulevard)
38	Bike (separate lane)	McAdoo Creek Road	12370.13	2.34	Long-term	US-41A (Madison Street)	SR-12 (Ashland City Road)
39	Bike (separate lane)	SR-236 (Tiny Town Road)	6019.36	1.14	Long-term	Pembroke Road	US-41A (Fort Campbell Boulevard)
40	Bike (separate lane)	SR-236 (Tiny Town Road)	14026.93	2.66	Long-term	Pembroke Road	Peachers Mill Road
41	Bike (separate lane)	Trenton Road	2947.40	0.56	Long-term	City Limits	Tylertown Road
42	Bike (separate lane)	Peachers Mill Road	8049.59	1.52	Long-term	East-West Connector	SR-374 (101st Airborne Division Parkway)
43	Bike (separate lane)	Tylertown Road	8843.91	1.67	Long-term	SR-48 (Trenton Road)	Oakland Road

FID	ROUTE TYPE	ROUTE NAME	LENGTH (FT)	LENGTH (MI)	PRIORITY LEVEL	FROM	TO
44	Bike (separate lane)	Oakland Road	5296.31	1.00	Long-term	Meriwether Road	Tylertown Road
45	Bike (separate lane)	US-79 (Guthrie Highway)	7915.13	1.50	Long-term	International Boulevard / Solar Way	Hampton Station Road
46	Bike (separate lane)	US-79 (Wilma Rudolph Boulevard)	7984.66	1.51	Long-term	SR-374 (101st Airborne Division Parkway)	East-West Connector
47	Bike (separate lane)	US-79 (Wilma Rudolph Boulevard)	2447.51	0.46	Long-term	East-West Connector	Holiday Drive / Westfield Court
48	Bike (separate lane)	US-79 (Wilma Rudolph Boulevard)	2134.03	0.40	Long-term	I-24	Holiday Drive / Westfield Court
49	Bike (separate lane)	US-41A BP (Riverside Drive)	2170.37	0.41	Long-term	SR-48 / SR-13	Dean Drive
50	Bike (separate lane)	US-41A (Madison Street)	7637.21	1.45	Medium	US-41A BP / SR-76	Old Sango Drive
51	Bike (separate lane)	US-41A (Madison Street)	8057.59	1.53	Medium	Old Sango Drive	McAdoo Creek Road
52	Bike (separate lane)	Sango Road	8510.22	1.61	Long-term	Woodson Road	Sango Commons Way
53	Bike (separate lane)	Woodson Road	4081.53	0.77	Long-term	Sango Road	Trough Springs Road
54	Sidewalk		207.89	0.04	Medium		
55	Sidewalk		4078.27	0.77	Medium		
56	Sidewalk		124.02	0.02	Medium		
57	Sidewalk		2265.45	0.43	Medium		
58	Sidewalk		176.07	0.03	Medium		
59	Sidewalk		4142.34	0.78	Medium		
60	Sidewalk		1251.83	0.24	Medium		
61	Sidewalk		6599.71	1.25	Medium		
62	Sidewalk		5742.32	1.09	Medium		
63	Sidewalk		1557.03	0.29	Medium		
64	Sidewalk		1412.36	0.27	Medium		
65	Sidewalk		2621.56	0.50	Medium		
66	Sidewalk		602.01	0.11	Medium		
67	Bike (separate lane along sidewalk)	US-41A (Providence Boulevard)	1306.69	0.25	Long-term	Walker Street / Market Street	B Street
68	Bike (separate lane along sidewalk)	US-41A (Fort Campbell Boulevard)	32957.80	6.24	Long-term	SR-236 (Tiny Town Road)	Cedar Court
69	Bike (separate lane along sidewalk)	SR-48 (Trenton Road)	23321.47	4.42	Medium	US-79 (Wilma Rudolph Boulevard)	SR-236 (Tiny Town Road)
70	Greenway	Ft. Campbell Loop	8040.16	1.52	High	Jack Miller Boulevard	Heritage Loop
71	Greenway	Ft. Campbell Loop	4348.26	0.82	Long-term	Ft. Campbell Loop Connector	Billy Dunlop Connector
72	Greenway	Ft. Campbell Loop Connector	1176.80	0.22	Long-term		
73	Greenway	Billy Dunlop Connector	3739.00	0.71	Long-term		
74	Greenway	Heritage Loop	9389.54	1.78	Medium	Ft. Campbell Loop	Peachers Mill Road
75	Greenway	Ft. Campbell Loop	3625.30	0.69	High	Billy Dunlop Loop	Heritage Loop
76	Greenway	Billy Dunlop Connector	18292.22	3.46	Medium	Existing Greenway	Spring Creek Corridor
77	Greenway	Trice Landing Park Connector	16656.28	3.15	Long-term	Trice Landing Park	Existing Greenway
78	Greenway		1818.89	0.34	High		
79	Greenway		1826.13	0.35	Long-term		
80	Greenway	Liberty Park Loop	3626.10	0.69	High		
81	Greenway	Liberty Park Loop	4265.64	0.81	High		
82	Greenway	Liberty Park Loop	3454.51	0.65	High		
83	Greenway	Red River Trail	6382.77	1.21	Medium		
84	Greenway		7398.42	1.40	Long-term		
85	Greenway	Rotary Park Connector	8490.37	1.61	High		
86	Greenway	Spring Creek Corridor	26968.71	5.11	Long-term	Jim Johnson Road	Arkadelphia Road
87	Greenway	Swan Lake Connector	9182.97	1.74	Medium		
88	Greenway	Civitan Park Connector	11851.58	2.24	Long-term		
89	Greenway	Ft. Campbell Loop	11148.43	2.11	Long-term	Outlaw Field Road	Ft. Campbell Loop Connector

FID	ROUTE TYPE	ROUTE NAME	LENGTH (FT)	LENGTH (MI)	PRIORITY LEVEL	FROM	TO
90	Greenway	Spring Creek Connector	10758.14	2.04	Long-term	Spring Creek Corridor	State Hwy. 236
91	Greenway		2748.42	0.52	Medium	Preachers Mill Road	Billy Dunlop Connector
92	Greenway		1074.01	0.20	Medium		
93	Bike (separate lane along sidewalk)	Jace Drive	3227.28	0.61	Long-term	West Creek Drive	Claymont Drive
94	Greenway	Heritage Loop	3669.15	0.69	Medium	---	Peachers Mill Road
95	Greenway	Billy Dunlop Connector	1610.70	0.31	High	Peachers Mill Road	Existing Greenway
96	Greenway	Civitan Park Connector	22991.10	4.35	Medium		
97	Greenway	APSU Connector	10132.60	1.92	High		
98	Greenway	Red River Trail	16581.01	3.14	High		
99	Greenway	Liberty Park Loop	33469.68	6.34	Long-term		
100	Greenway	Woodlawn Park Connector	11539.84	2.19	Long-term	Trice Landing Park	---
101	Bike (separate lane along sidewalk)	Pine Mountain Road	7662.61	1.45	High	Peachers Mill Road	SR-374 (101st Airborne Division Parkway)
102	Greenway		2998.11	0.57	High	US Hwy. 41A	Ft. Campbell Loop
103	Greenway	Ft. Campbell Loop	6356.21	1.20	High	Heritage Loop	Heritage Loop
104	Greenway	Billy Dunlop Connector	5308.67	1.01	High	Ft. Campbell Loop	Preachers Mill Road
105	Greenway	Heritage Loop	6100.68	1.16	High	Ft. Campbell Loop	State Hwy. 374
106	Greenway	Billy Dunlop Connector	8965.35	1.70	Medium	---	BIlly Dunlop Park
107	Greenway	Spring Creek Corridor	6670.38	1.26	Medium	Billy Dunlop Connector	Spring Creek Connector
108	Greenway	Billy Dunlop Connector	5015.59	0.95	Medium	---	Spring Creek Connector
109	Greenway		496.79	0.09	High		
110	Greenway	McGregor Park Connector	3619.51	0.69	High		
111	Greenway		4579.87	0.87	Medium		
112	Greenway		2237.10	0.42	High		
113	Greenway		1228.51	0.23	High		
114	Greenway	Cheatham Rail Trail	9897.36	1.87	High		
115	Greenway		1653.84	0.31	Long-term		
116	Greenway	Civitan Park Connector	6442.64	1.22	Long-term		
117	Greenway	Civitan Park Connector	2949.01	0.56	Medium		
118	Greenway	Ft. Campbell Loop	5758.51	1.09	Medium	Jack Miller Boulevard	State Hwy. 236
119	Greenway	Spring Creek Corridor	17369.54	3.29	Medium	State Hwy. 48	Clarksville City Limits
120	Greenway	Cheatham Rail Trail	27348.03	5.18	High		
121	Greenway	Woodlawn Park Connector	35127.87	6.65	Long-term	---	Woodlawn Park
122	Greenway	Red River Trail	6379.78	1.21	Medium		
123	Greenway		2838.70	0.54	High		
124	Greenway	Spring Creek Corridor	16344.24	3.10	Long-term	Oakland Road	Jim Johnson Road
125	Greenway	Spring Creek Corridor	8834.89	1.67	Medium	Spring Creek Connector	State Hwy. 48
126	Bike (shared lane)	Britton Springs Road	5106.76	0.97	High	Evans Road	US-41A (Fort Campbell Boulevard)
127	Bike (shared lane)	Old Trenton Road	5325.49	1.01	High	Single Tree Drive / Old Trenton Road	SR-79 (Wilma Rudolph Boulevard
128	Bike (shared lane)	Rossview Road	3964.54	0.75	High	Bellamy Lane	US-79 (Wilma Rudolph Boulevard)
129	Bike (separate lane)	SR-48 (Trenton Road)	3315.54	0.63	Medium	SR-236 (Tiny Town Road)	Tylertown Road
130	Bike (separate lane)	Sango Drive	2438.49	0.46	Long-term	Old Sango Road	Sango Road
131	Bike (separate lane)	Sango Road	4277.46	0.81	Long-term	Sango Drive	Woodson Road
132	Bike (separate lane)	Woodson Road	2497.99	0.47	Long-term	Trough Springs Road	Drake Road
133	Bike (separate lane)	Professional Park Drive	4129.96	0.78	Long-term	Dunlop Lane	Proposed Greenway
134	Greenway		1604.37	0.30	Long-term		
135	Bike (separate lane)	Cardinal Land	800.35	0.15	Long-term	Proposed Greenway	Civitan Park Connector

AQUATIC CORRIDOR INDEX

FID	ROUTE TYPE	ROUTE NAME	LENGTH (FT)	LENGTH (MI)	PRIORITY LEVEL	FROM	TO
0	Blueway	West Fork Red River	10514.90	1.99	High	Billy Dunlop Park	State Hwy. 236
1	Blueway	West Fork Red River	15296.57	2.90	High	Spring Creek	Billy Dunlop Park
2	Blueway	Spring Creek	15927.51	3.02	Low	Oakland Road	Jim Johnson Road
3	Blueway	Spring Creek	22028.97	4.17	Low	State Hwy. 48	Oakland Road
4	Blueway	Spring Creek	17519.74	3.32	Low	West Fork Red River	State Hwy. 48
5	Blueway	West Fork Red River	13159.73	2.49	High	Little West Fork River	Spring Creek
6	Blueway	Little West Fork River	11160.62	2.11	High	---	Cole Park
7	Blueway	Little West Fork River	33867.44	6.41	High	Red River	---
8	Blueway	West Fork Red River	1838.74	0.35	High	State Hwy. 374	Little West Fork River
9	Blueway	West Fork Red River	16623.38	3.15	High	---	State Hwy. 374
10	Blueway	West Fork Red River	9634.29	1.82	Low	Red River	---
11	Blueway	Red River	23524.69	4.46	High	---	Potential Park
12	Blueway	Red River	19544.82	3.70	High	Stream Intersection	---
13	Blueway	Red River	15069.72	2.85	Low	West Fork Red River	---
14	Blueway	Red River	7491.84	1.42	Low	Cumberland River	West Fork Red River
15	Blueway	Cumberland River	2725.07	0.52	Low	Red River	Trice Landing Park
16	Blueway	Cumberland River	5433.60	1.03	Low	Commerce Street	Red River
17	Blueway	Cumberland River	9240.92	1.75	Low	Liberty Park	Commerce Street
18	Blueway	---	6293.40	1.19	High	Spring Creek	Swan Lake Golf Course
19	Blueway	Red River	12071.41	2.29	High	---	Stream Intersection

FID	ROUTE TYPE	ROUTE NAME	LENGTH (FT)	LENGTH (MI)	PRIORITY LEVEL	FROM	TO
136	Bike (separate lane)	Old Ashland City Road	5294.05	1.00	Long-term	SR-12 (Ashland City Road)	Cedar Valley Drive
137	Bike (separate lane)	SR-12 (Ashland City Road)	5544.35	1.05	Long-term	Old Ashland City Road	McAdoo Creek Road
138	Bike (separate lane)	US-79 (Guthrie Highway)	6102.31	1.16	Medium	International Boulevard / Solar Way	Oakland Road
139	Bike (separate lane)	US-79 (Guthrie Highway)	1430.98	0.27	Medium	Oakland Road	I-24
140	Bike (separate lane along sidewalk)	Barnes Drive	694.44	0.13	Long-term	Claymont Drive	Peterson Lane / West Creek Drive
141	Bike (separate lane along sidewalk)	Claymont Drive	841.51	0.16	Long-term	Barnes Drive	Jace Drive
142	Bike (shared lane)	Greenwood Avenue	7307.85	1.38	High	US-41A (Madison Street)	Edmondson Ferry Road
143	Bike (shared lane)	Edmondson Ferry Road	5309.34	1.01	High	Hawkins Road	Greenwood Avenue
144	Bike (shared lane)	Lacy Lane	2057.61	0.39	High	Old Ashland City Road	Canterbury Road
145	Bike (shared lane)	Chicksaw Drive	1215.98	0.23	High	SR-374 (Richview Road)	Sequoia Drive
146	Bike (shared lane)	Sequoia Drive	827.60	0.16	High	Chicksaw Drive	Meadow Drive
147	Bike (shared lane)	Meadow Drive	2449.28	0.46	High	Sequoia Drive	Maxwell Drive
148	Bike (shared lane)	Madison Street	263.08	0.05	High	2nd Street	3rd Street
149	Bike (shared lane)	2nd Street	1860.35	0.35	High	US-41A / SR-48 (College Street)	Madison Street
150	Greenway	Cheatham Rail Trail	2296.47	0.43	High	Beacon Drive Trailhead	Clarksville City Limits
151	Greenway	Cheatham Rail Trail	4180.05	0.79	High	Clarksville City Limits	Appleton Road Trailhead
152	Greenway	Cheatham Rail Trail	13407.68	2.54	High	Appleton Road Trailhead	Johnson Road Trailhead
153	Greenway	Cheatham Rail Trail	12515.89	2.37	High	Johnson Road Trailhead	Lock B Road Trailhead
154	Greenway	Cheatham Rail Trail	11436.54	2.17	High	Lock B Road Trailhead	Matlock Road Trailhead
155	Greenway	Cheatham Rail Trail	6945.14	1.32	High	Matlock Road Trailhead	Montomery/Cheatham County Line
156	Greenway	Spring Creek Corridor	2669.26	0.51	Medium	Oakland Road	Clarksville City Limits

THIS PAGE LEFT INTENTIONALLY BLANK.

Prepared by:

LOSE & ASSOCIATES, INC
LANDSCAPE ARCHITECTURE • ARCHITECTURE • ENGINEERING • PLANNIN
WWW.LOSEASSOC.CO