Jefferson City Area Greenway Master Plan

April, 2007

DRAFT

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Staff responsible for the development of this plan:

Jefferson City Community Development Department Planning Division:

Janice McMillan, AICP, Deputy Director - Planning and Transportation

Alan Morrison, AICP, Senior Transportation Planner, (Lead Planner)

Steve MacIntyre, Planner I, (photography, graphics, content)

Jefferson City Department of Parks and Recreation:

William Lockwood, CPRP, Director of Parks and Recreation and Forestry

J.J. Gates, Park Resources Division Director

Ryan Atkinson, Planner I, (Photography, mapping, graphics, content)

City of Jefferson Parks and Recreation Commission:

Larry Vincent, President	Steve Duncan	Martin Miller
Gene Bushmann, Vice President	Anne Lock	Jane Smith
Michael Couty	Linda McAnany	Karl Staub

Parks and Recreation Commission Long Range Planning Committee:

Gene Bushmann, Chairman	R.G. Palmer	Mark Towner
Bill Case	John Pelzer	Nancy Vostal
Glenda Fry	Steve Rollins	Gilman Wommack
Martin Miller	Kay Toft	

City of Jefferson Mayor and City Council:

Mayor:	John Landwehr			
Ward 1:	Kenneth Ferguson (2006, 2007)	Mike Harvey (2006, 2007)		
Ward 2:	Richard Koon (2007)	Jim Penfold (2007)	Pete Oetting (2006)	Edith Vogel (2006)
Ward 3:	Brian Crane (2006, 2007)	Jane Smith (2007)	Brian Pope (2006)	
Ward 4:	Kevin Brown (2006, 2007)	Cindy Layton (2006, 2007)		
Ward 5:	Dan Klindt (2006, 2007)	Ron Medin (2007)	Michael Berry (2006)	Dean Martin (2006)

City of Jefferson Planning and Zoning Commission:

Mike Berendzen, AIA, Chairman	David Hagan	David Nunn
Ralph Robinett, Vice Chairman	Rhonda Hoskins	John Deeken, Alternate
Randy Bickel	Richard Koon	Chris Jordan, Alternate
Bob George	John Lake	Chris Yarnell, Alternate

City of Jefferson Greenway Focus Group:

Carol Blaney	Mark Hohengasser	Martin Miller
Charlie Brzuchalski	Jill Johnson	Roger Randolph
Michael Couty	Celeste Koon	Julie Shiery
Paula Diller	John Lake	Jane Smith
Steve Duncan	Eric Landwehr	Karl Staub
Sheila Gassner	Cindy Layton	Mark Sullivan
Caryn Giarratano	Larry Lewis	Larry Vincent
Kris Hilgedick	Dean Martin	Bob Weber

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EXECUTIVE SUMMARY

Increasing popularity and desirability of greenways, bicycle/pedestrian routes and trails, open space for recreation, alternative travel modes and natural environments is generating a need for systematic planning, design and development of greenways and multi-use trails within the city and nearby parts of Cole and Callaway counties (now considered to be parts of a "metropolitan" region).

The quality of life aspect of these public amenities strongly influences the perceived value of properties and locations and the desirability of living in a particular neighborhood or area of the city.

Building on previous plans, current trends and public input, staff from the Community Development Planning Division and Department of Parks and Recreation for the City of Jefferson developed a revised Greenway Plan as an update to previous plans and studies.

Based on the original 1991 Greenway Master Plan, 8.7 miles of greenways were built between 1991 and 2007, with 7.8 miles built West of US 54 and .9 miles built East of US 54.

These Greenways have been built primarily with Federal Transportation Enhancement Program funds and the half cent City Capital Improvements Sales Tax providing the local matching funds. Other funding sources have been the Parks Fund, Recreational Trails Grant Program and Local Landmark Park grants. Virtually all of the greenways have been built on donated lands or easements, on existing city right-of-way or on City park lands.

A great deal of public involvement was required for the city staff to do their part in updating the Greenway Master Plan. Previous greenway and park planning involved many people throughout the community over several years and provided a large pool of interested individuals organizations and associations to draw information from. In addition to City staff, interested public was invited city-wide to participate in updating the plan. Planning and Parks and Recreation staff coordinated two focus group meetings and an open house over several months time.

Previously funded greenway trails under development between 2006 and 2008 include Wears Creek East Branch Greenway Extensions from East Elm Street to East McCarty and from Lafayette to Chestnut Streets; a West Edgewood Drive to County Park Trail project; a neighborhood connector from Scarborough Way to County Park Trail; and an extension from Leslie Boulevard to Ellis Boulevard.

The proposed updated Greenway Network includes several components:

- A Missouri River Bridge crossing to the recreational areas North of the river
- the "Emerald Necklace" downtown greenway component
- Projects in the Northwest, Southwest and Eastside areas
- Binder Park Connectors
- East Branch/McKay Park/Frog Hollow Branch Connectors
- Regional Greenways
- Highway or on-street routes when necessary to complete linkages

The implementation strategy was separated into three general categories with projects linked to each category.

Category one recommends routes that contribute to the existing core network. Category two recommends routes that connect to major destinations and link to residential neighborhoods. Category three recommends routes that have a general "loop" form for connectivity and "new opportunity" routes which would make key additions to the network, but are not currently identified.

Worth noting in this plan are trail design guidelines and standards and a discussion on possible funding sources for leveraging local funding.

INTRODUCTION

What are Greenways?

Greenways are linear parks that connect recreational, cultural and natural areas. The term "greenway" is a derivation of "greenbelt" – an area of largely undeveloped wild or agricultural land surrounding or neighboring an urban area and "parkway" – a general designation of a type of limited-access highway.[1] While they serve as connectors for non-motorized transportation users, greenways can themselves be considered destinations for a wide variety of recreational, athletic and educational pursuits. Greenways typically share three characteristics:

- they have a linear spatial configuration
- they maintain some character of the natural environment
- they act as transportation corridors

Greenway Benefits

Greenways offer safe, cost effective and close-to-home links to natural, cultural, historic, commercial and recreational amenities. They offer convenient opportunities for people to exercise recreationally and to walk or bicycle for utility trips (e.g. to local stores), thereby improving health and reducing automobile dependence.

The benefits associated with greenways extend beyond the provision of recreation and transportation opportunities. Significant economic and community development can also result from the construction of and proximity to a greenway network as demonstrated along West Edgewood Drive

Numerous studies have documented the high importance placed on access to parks and trails by prospective home buyers. All else being equal, homes located adjacent to parks and greenways are consistently worth more than homes located farther away. Increased property values can increase local tax revenues and, in turn, help offset greenway acquisition costs.[2]

BACKGROUND

In October, 1991, the City of Jefferson, Parks and Recreation Commission formed the Jefferson City Greenway Advisory Committee to guide the development of the City's first greenway system plan, the **Proposal for Development of the City of Jefferson Greenway System**. The input provided by members of the Committee led to the following key determinations:

The greenway should be a comprehensive system or network that assembles the open green spaces of the community. It should include land that cannot be profitably used for anything else. It should include on- and off-street components and unused railroad rights-of-way.

The greenway should link and provide access to city parks, schools, the riverfront, the Capitol, the Moreau River, the Katy Trail - a 225-mile long Missouri state park, which runs from St. Louis, through North Jefferson City, to Clinton and occupies the former Missouri-Kansas-Texas (MKT) rail corridor – and places where people work. It can be an alternative transportation system for safe commuting.

The greenway can be an economic boon to the community. It should be a sufficiently large network to encourage people to leave the Katy Trail and spend time touring the capital city.[3]

The Advisory Committee identified greenway routes based on availability of land, access to destinations, development efficiency, safety and enjoyment potential.[4]

The resulting plan was adopted by reference in the Parks and Recreation Master Plan component of the 1996 City Comprehensive Land Use Plan Update.

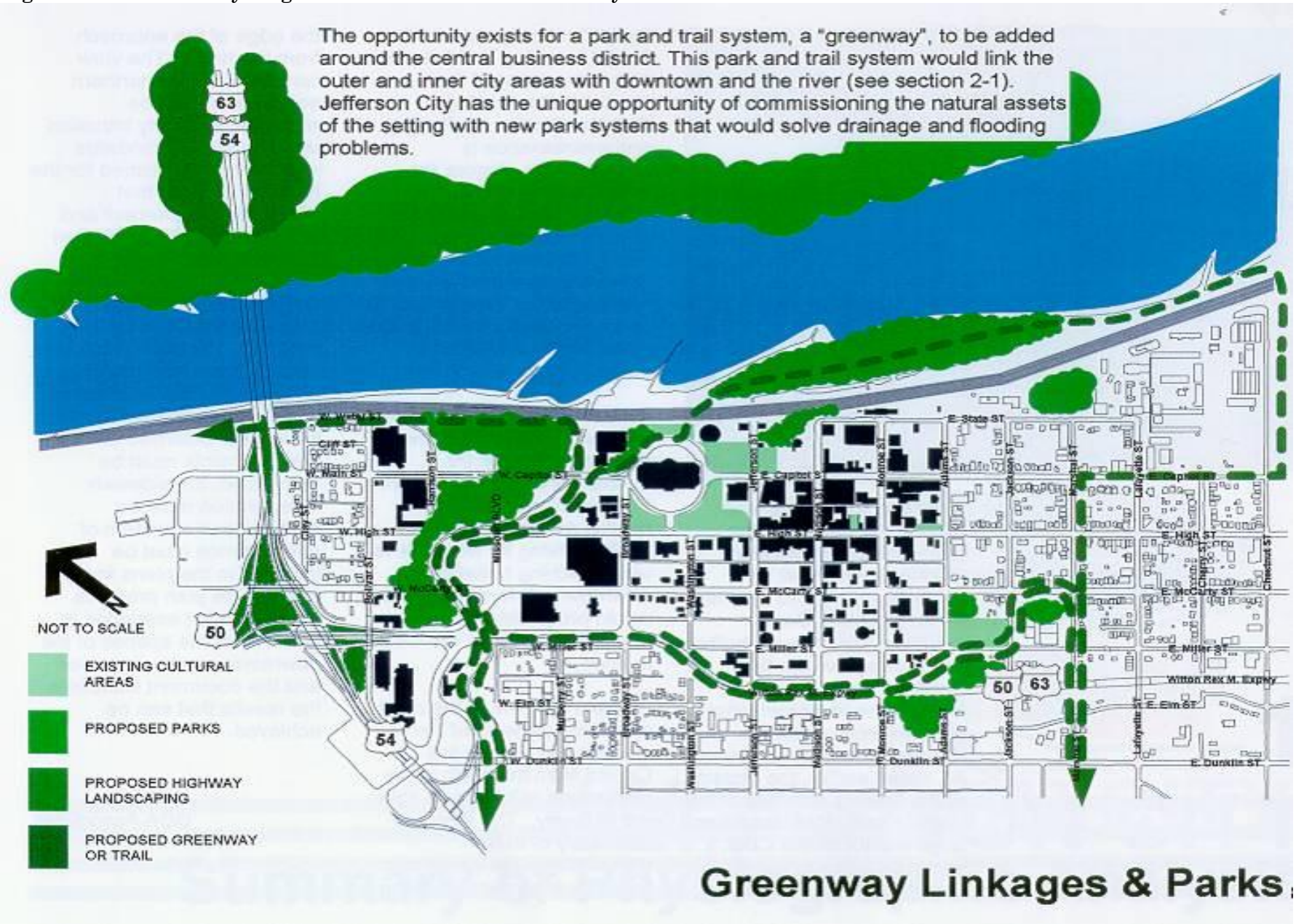
Between 1991 and 1996 more routes were formally identified for addition to the Greenway Plan to increase connectivity between parks and residents. Noteworthy additions include extensions along West Truman Boulevard and Country Club Drive, connecting the greenway to Joseph Miller and Binder Parks, as well as proposed new park development on Adrian Island, a route along the Missouri

River; trails in old Cedar City on the north side of the river; and extensions along Wears Creek near the intersection of Frog Hollow Road and West Edgewood Drive on the west side of the city.

Furthermore, the 2001 Jefferson City Beautification Plan calls for additional pedestrian linkages within and surrounding the downtown to create a "Emerald Necklace" that would connect the Greenway system to an inner city trail system linking historic sites, parks, the Missouri River and the Capitol (See Figure 1).

In 2002 other future extensions of the greenway system connecting the Missouri State Capitol to Bolivar Street and the Missouri River Bridge were approved by the Parks and Recreation Commission. The main section of trail would parallel East Capitol Avenue on the North side of the street and run from Madison Street, around the north side of the Missouri State Capitol and then along Main Street to the Centennial Park Overlook on Bolivar Street continuing westward along Main Street to the Missouri River Bridge exit ramp at Highway 54/63

Figure 1 Greenway diagram from the 2001 Jefferson City Beautification Plan



PURPOSE AND GOALS OVERVIEW

The purpose of this plan is to create a cohesive greenway network to serve both recreation and transportation needs of Jefferson City area residents. Keeping in mind the key determinations of the 1991 Greenway System Plan, the primary goal is to update the 15-year-old plan by

- tracking the progress of greenway development to date
- revisiting the existing plan and goals of the greenway system
- plotting the future course of greenway development in the Jefferson City Area

The first activity; tracking progress, is accomplished by providing a complete inventory of greenway projects that make up the existing system. Greenway construction is chronologically described with the aid of photos and maps, offering a clear and concise view of progress from 1991 to present. Funded but not yet constructed projects are also documented.

The second activity; revisiting goals, is achieved by holding a series of stakeholder focus group meetings to gather input about what goals should guide future greenway development and where new greenways should be constructed to meet present and future community needs. This was done in April, 2006. The processes, results and analyses are documented and incorporated into recommendations for future greenway development goals, objectives, strategies and projects, thereby fulfilling the third activity of this study; plotting future greenway development.

The end result is a strategic plan to guide the next 10 to 15 years of greenway development in Jefferson City.

1991-2007 CHRONOLOGICAL GROWTH OF THE GREENWAY SYSTEM

This chapter provides a synopsis of greenway network expansion since its inception in 1991. It includes both completed projects and those that have been funded for completion by 2009, but not yet started.

There are currently 8.7 miles of multi-purpose trails in Jefferson City. 0.9 miles of multipurpose trails are located east of US 54 and 7.8 miles are west of US 54. This disparity in trail service is largely attributable to the extent of development and coincident availability of land along the city's waterways. An additional 3.0 miles of trail is in planning and development and should be completed near the end of 2007.

The following trails have been built since the adoption of the 1991 Greenway Development Plan.[5] They are chronologically organized into 5-year periods, from 1991 to 2005, showing construction year, length and cost for each project.

1991-1995

Between 1991 and 1995, 1.9 miles of trail were constructed, connecting facilities in Washington Park. Links were established from Dunklin Street to Kansas Street, Duensing Field to Linden Drive and from the Ice Arena to Lion's/Eagle's Fields. Additionally, a 0.8 mile segment was built to connect the Katy Trail State Park to the picnic shelter/commuter lot at the Highway 54/Cedar City Drive interchange, north of the Missouri River.

The total cost of these projects was $310,000 (Costs are rounded to the nearest $1,000). Construction was completed in the following phases:

- Dunklin Street to Ohio Street (Pilot Project) – 0.2 linear miles in 1993, at a cost of $69,000.
- Ice Arena to Lion's/Eagle's Fields – 0.2 linear miles in 1992, at a cost of $43,000.
- Duensing Field to Linden Drive – 0.4 linear miles in 1994, at a cost of $30,000.

- Ohio Street to Kansas Street – 0.3 linear miles in 1995, at a cost of $142,000.
- North Jefferson City Spur – 0.8 linear miles in 1995, at a cost of $26,000.

1996-2000

2.8 miles of greenway were built from 1996 to 2000. The construction focused on extending the trail system to the west by building segments between Lion's Field and Stadium Boulevard, along Wears Creek and from the intersection of Stadium Boulevard and West Edgewood to Wildwood Drive. Construction costs totaled $946,000. The projects were completed in the following phases:

- Stadium Boulevard to Wildwood Drive – 1.7 linear miles in 1996, at a cost of $269,000.
- Wears Creek, from Stadium Boulevard to Heisinger Road -- 0.8 linear miles in 1999, at a cost of $254,000.
- Lion's/Eagle's Fields to MoDOT District 5 offices 0.1 linear miles in 2000, at a cost of $70,000.
- East side of McDonald's to west side of MoDOT District 5 -- 0.2 linear miles constructed in 2000, at a cost of $65,000.

2001-2007

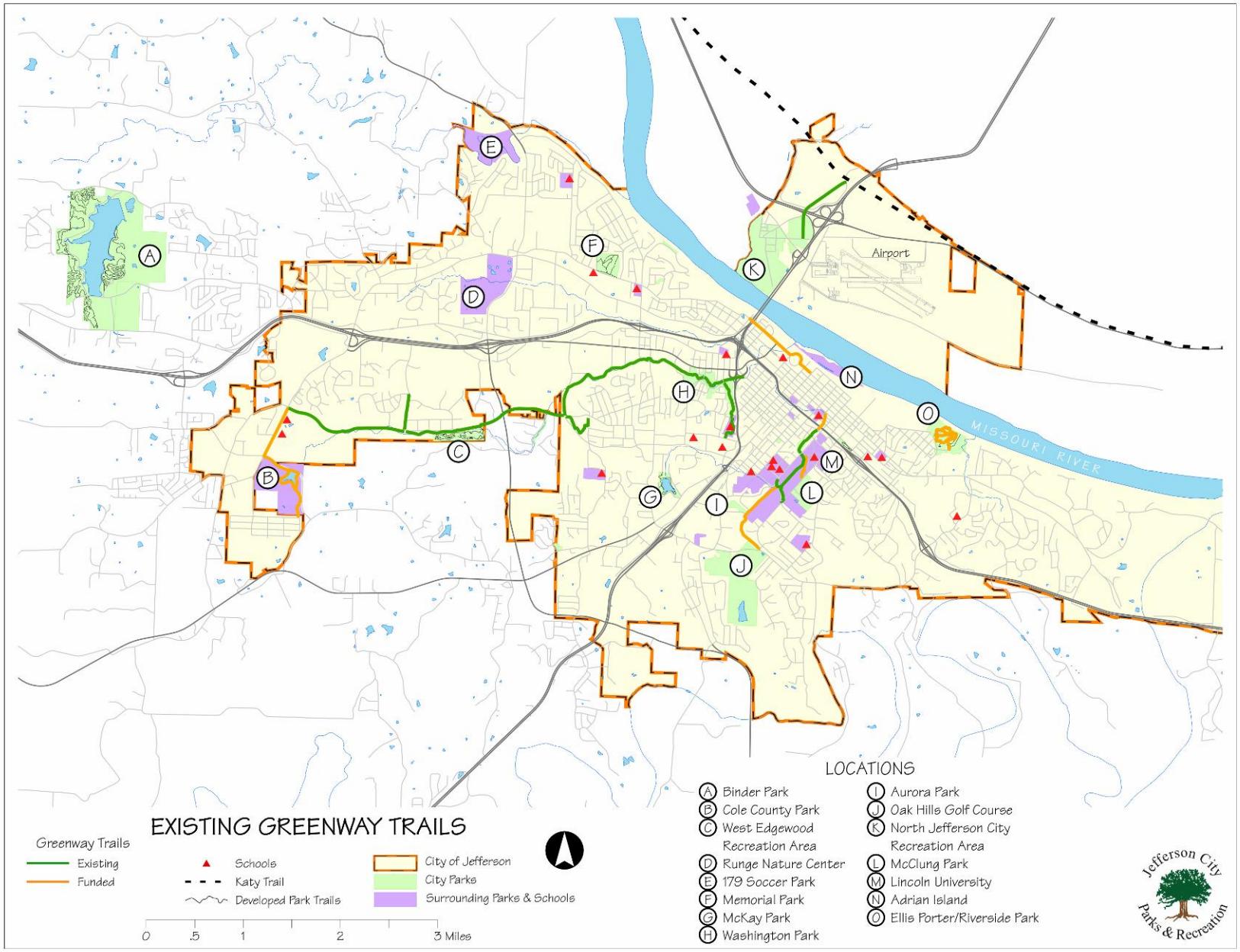
3.4 miles were added to the trail system between 2001 and 2005. Spur extensions were added from the main west-side Wears Creek/Frog Hollow Branch corridor to provide connections to South School, Satinwood Drive and Sherman's Hollow Road. The West Edgewood main trail was extended westward from Wildwood Drive to Fairgrounds Road. The main west-side trail was also extended from Heisinger Road to Wicker Lane and from MoDOT District 5 to Southwest Boulevard, along Wears Creek. In 2006, the section from Wicker Lane to Southwest Boulevard was completed. This 0.3 mile trail segment completed the "missing link" in the main greenway corridor from Dunklin Street to Fairgrounds Road.

On the east side of the city, a 0.3-mile trail segment was built between Lafayette Street and Elm Street, through Community Park along the East Branch of Wears Creek, near the Lincoln University campus. In early 2007, the completion of the trail from Lafayette Street to Chestnut Street extended the East Branch section to 1.0 mile in length.

Construction costs for these projects totaled $1,831,000. Projects were broken into the following phases:

- Stadium Boulevard/West Edgewood Drive intersection to Satinwood Drive -- 0.5 linear miles in 2001, at a cost $228,000.
- Wildwood Drive Spur, from West Edgewood Drive to Shermans Hollow -- 0.4 linear miles in 2002, at a cost of $159,000.
- Heisinger Road to Wicker Lane -- 0.2 linear miles in 2002, at a cost of $144,000.
- Along West Edgewood Drive, from Wildwood Drive to Fairgrounds Road -- 1.3 linear miles in 2002, at a cost of $222,000.
- South School Extension, Linden Drive to Swifts Highway -- 0.3 linear miles in 2003, at a cost of $148,000.
- MoDOT District 5 to Southwest Boulevard -- 0.1 linear miles in 2003, at a cost of $89,000.
- Lafayette Street to Elm Street on the East Branch of Wears Creek -- 0.3 linear miles in 2003, at a cost of $122,000.
- Wicker Lane to Southwest Boulevard – 0.3 linear miles in 2006, at a cost of $345,000.
- Lafayette Street to Chestnut Street – 0.7 linear miles in 2007, at a cost of $374,000 (in cooperation with Lincoln University)

Figure 2 Existing Greenway Trails - 2007



COMPLETED PROJECTS NARRATIVE

This section describes each completed greenway project in terms of its geographic location, characteristics and service contribution to the overall system. The current network consists of the following segments:

- Dunklin Street to Ohio Street (Pilot Project)
- Duensing Field to Swifts Highway
- Ohio Street to Southwest Boulevard
- Southwest Boulevard/ Dix Road to West Edgewood Drive
- West Edgewood Drive to Satinwood Drive Spur
- Stadium Boulevard to Fairgrounds Road
- Wildwood Drive Spur
- The North Jefferson City Spur
- Wears Creek East Branch (Elm Street to Chestnut Street)

Dunklin Street to Ohio Street Pilot Project

This segment was completed in 1993 and runs through a general commercial zoning district. It is the only existing greenway corridor piece to connect the east and west sides of the city via a sub-grade crossing of US 54. Its terminus at Dunklin Street is at the heart of the city's greenway trail system, with existing and future network branches easily accessible from this central location.

Subsequent extensions have expanded service to the west and south areas of the city.

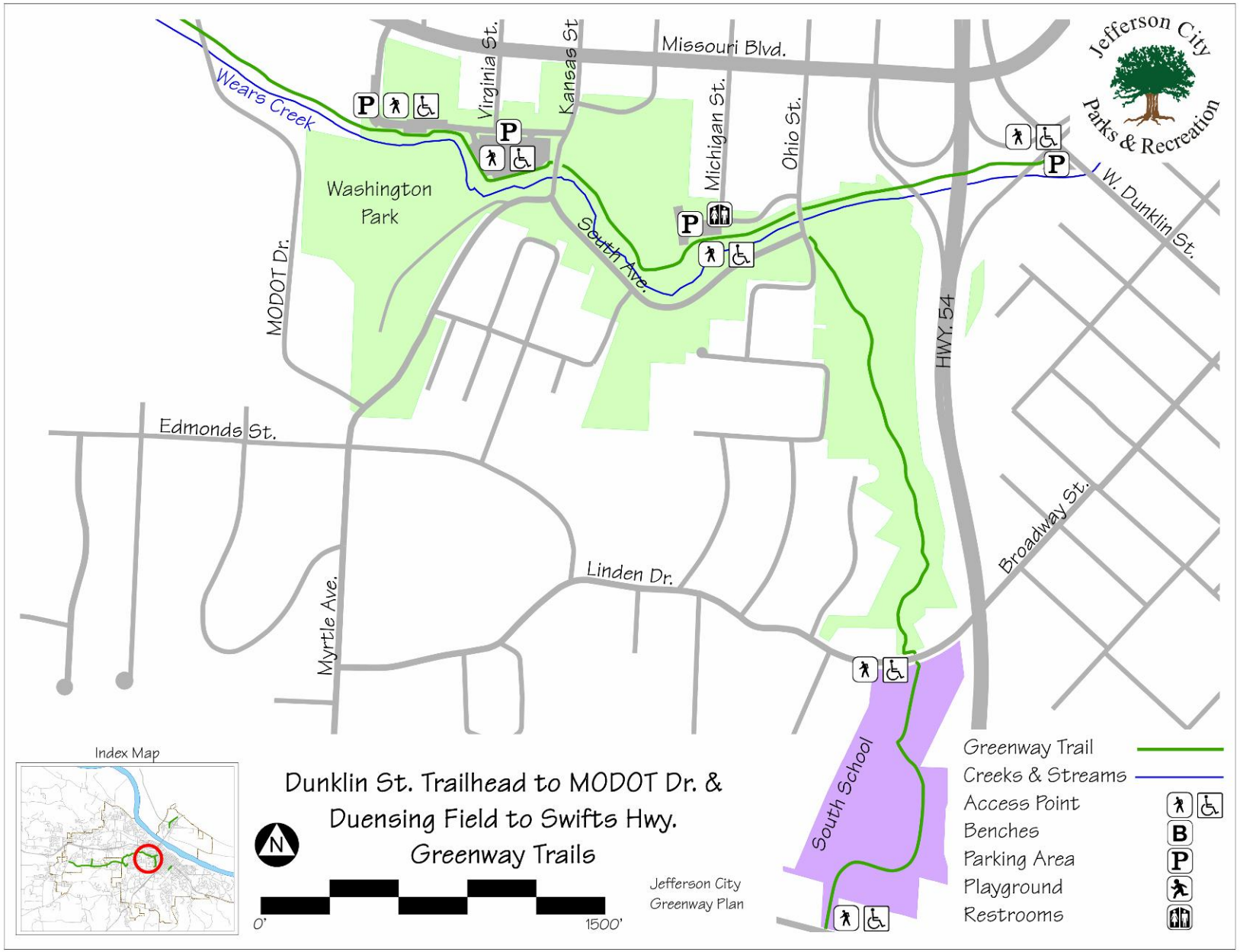
Duensing Field to Swifts Highway

The Duensing Field to Linden Drive segment extends south from the Ohio Street access point at Duensing Field and winds through dense forest before rising approximately 20' to intersect Linden Drive. Duensing Field amenities include a baseball field, restrooms, water fountain, seasonal concessions stand, outdoor picnic tables and a 60-space parking lot.

The pathway crosses Linden Drive and continues up the relatively steep slope to South Elementary School. It passes through the school grounds and ascends another hill to its current terminus at Swifts Highway.

Greenway path adjacent to Duensing Field

Figure 3 Dunklin Street Trailhead to MODOT Drive



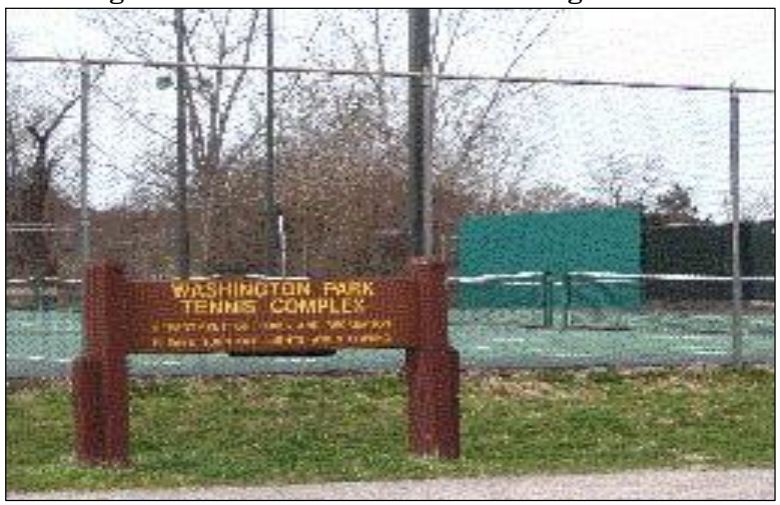
Ohio Street to Southwest Boulevard

The trail continues along Wears Creek, through Washington Park. Washington Park has seven tennis courts, restrooms, drinking fountains, the Ice Arena and Ernie Vivion baseball Field. Lion's Field is located in the park, directly north of Vivion Field. There is parking available here for park users to access both the sports facilities and the trail with a 125-space parking lot located between the baseball field and the Ice Arena. An additional 70 on-street spaces exist along Washington Park Drive. Fifty more spaces are provided in the park at the southern terminus of Michigan Street next to the trail and tennis courts. The parking lot on the north side of the Ice Arena has space for about 60 cars. Since there are few linkages connecting this section of the greenway to residential neighborhoods, trail users are likely to drive to trail access points and require parking while they enjoy the multi-use trail.

Private land adjacent to the path is primarily zoned for commercial land uses. Existing uses abutting Washington Park include an automobile repair shop, thrift store, auto parts store, restaurant, home furnishings store and tanning salon.

Just west of Vivion Field, the trail passes by Eagles Field, a privately owned baseball field. This facility has a seasonal refreshment stand and a picnic shelter that are conveniently accessible to trail users. The trail passes behind a fast food restaurant, under the MoDOT Drive overpass and continues west between a car/truck dealership and a super market, to Southwest Boulevard.

Washington Park restrooms and drinking fountain



Washington Park tennis courts

Washington Park Ice Arena bordering the Greenway Trail

Picnic shelter at Eagles Field

Bridge to Vivion Field

Tight gap between the car/truck dealership and the supermarket

Figure 4 Washington Park to West Edgewood Drive

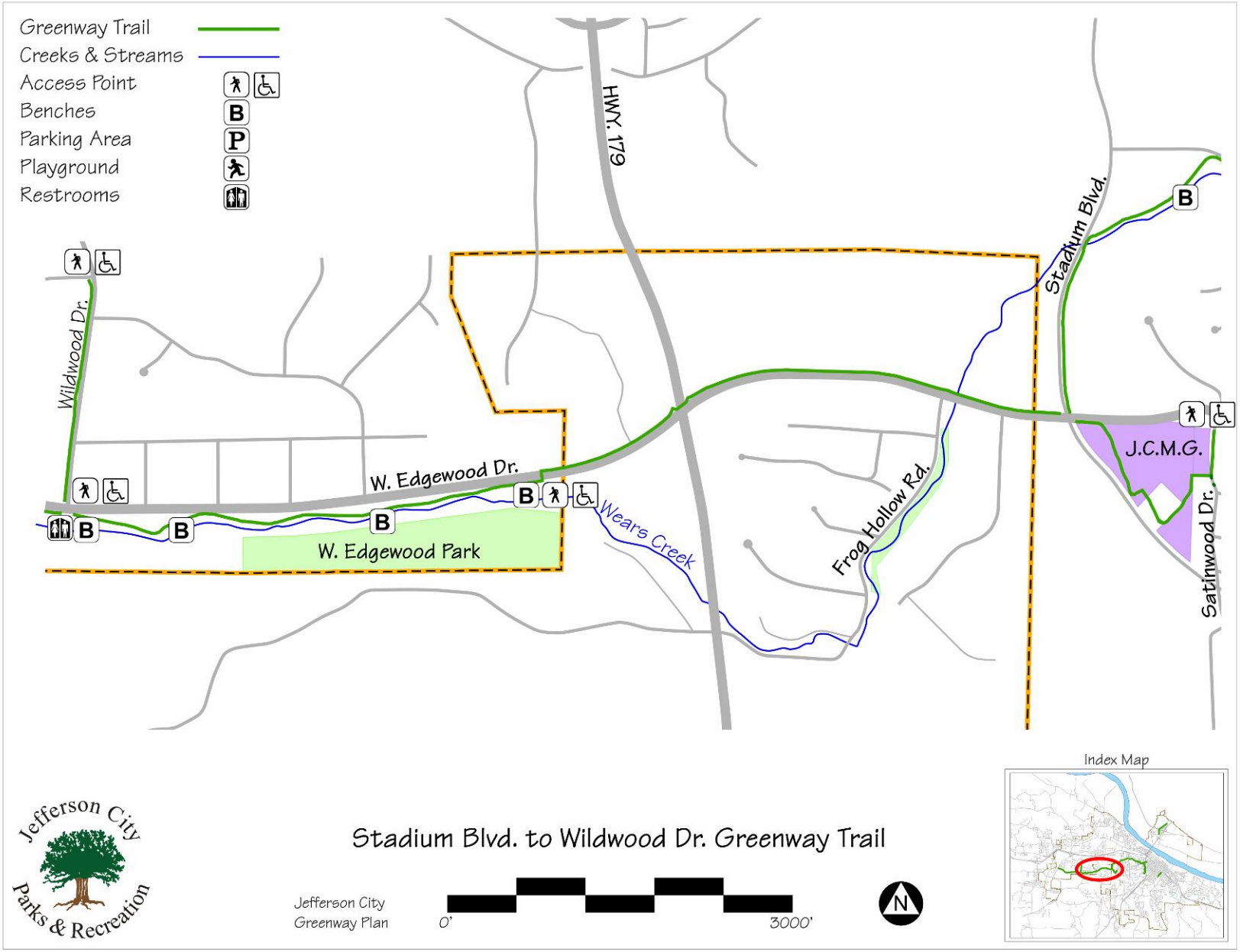
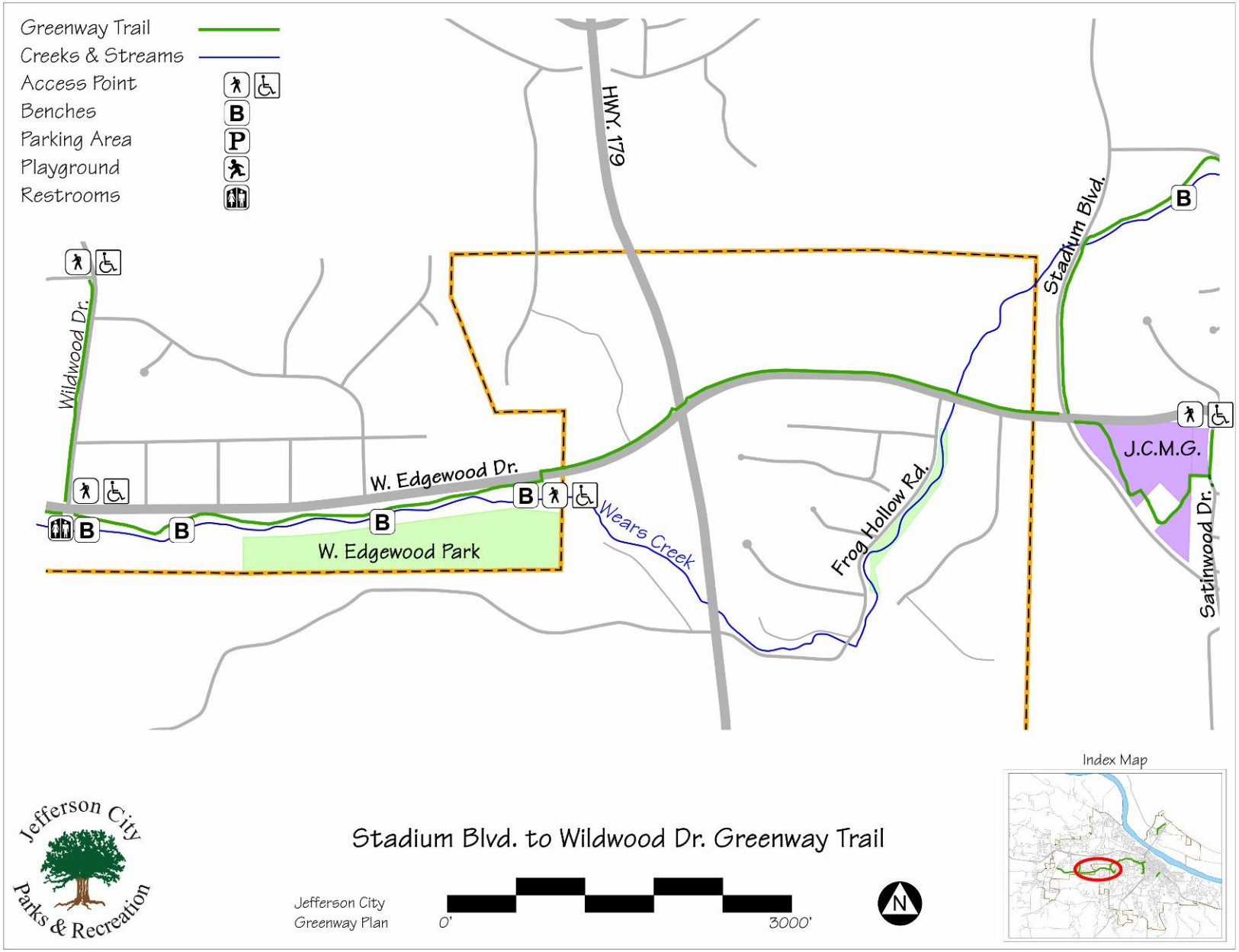


Figure 5 Stadium Boulevard to Wildwood Drive



Southwest Boulevard/Dix Road to West Edgewood Drive

From Southwest Boulevard and Dix Road to Heisinger Road the trail is characterized by heavy commercial uses along the north side of the trail and a floodplain area along Wears Creek buffering the south side of the trail from a single family residential neighborhood. Next, the trail passes an open field (former site of a drive-in theater), Jefferson City Fire Department outdoor training facility and finally, the Hyde Park office/commercial center before reaching West Stadium Boulevard and following it south to its intersection with West Edgewood Drive.

A portion of greenway along West Edgewood Drive

West Edgewood Drive to Satinwood Drive Spur

The Satinwood Drive Spur extends from the intersection of West Stadium Boulevard and West Edgewood Drive, through the Jefferson City Medical Group property, then up a hill (maximum 15% grade) behind the JCMG building, where it connects into Satinwood Drive and the adjacent Buehrle/Melody and West Edgewood/Satinwood-Primrose neighborhoods. There are picnic tables and trash barrels situated throughout the JCMG grounds.

Stadium Boulevard to Fairgrounds Road

Heading west from West Stadium Boulevard, the trail follows the north side of West Edgewood Drive for approximately one mile, before crossing to the south side of the roadway about ¼ mile west of Highway 179. There is a substantial hill leading to the Highway 179 intersection, followed by a downhill that levels out near the trail's north-to-south crossing point. There is a small parking area located on the south side of West Edgewood Drive at the point of crossing, for trail users. This parking area is also the access point to 2.3 miles of single-track mountain bike trials in the rugged terrain south of the creek. The greenway continues west past Wildwood Drive and climbs a gradual slope to its current terminus at Fairgrounds Road.

The eastern portion of this segment, from just west of West Stadium Boulevard to just east of the trail's West Edgewood Drive crossing, was outside the city's corporate boundaries when the trail was constructed. Recent annexations in this area have led to most of the land north of West Edgewood Drive and a few major parcels to the south being incorporated into the City of Jefferson. Although a large part of the annexation area to the north of West Edgewood was designated as commercial use, the current use is a large rock quarry operation.

In anticipation of future development of a Frog Hollow Creek Spur to the south and west, the Parks and Recreation Foundation secured a donation of land along Wears Creek on the south side of West Edgewood Drive, between Creek Trail Drive and Frog Hollow Road. A small parking area and trailhead was built, with a crosswalk access providing connection to the main pathway along West Edgewood Drive.

A connector along the West side of the proposed Stone Ridge Parkway from West Edgewood Drive to Missouri Boulevard has been tentatively agreed to by the developer and the City. This connection will provide access to commercial development as well as providing a currently non existent pedestrian and bicycle link from the existing greenway trail to the business district along Missouri Boulevard.

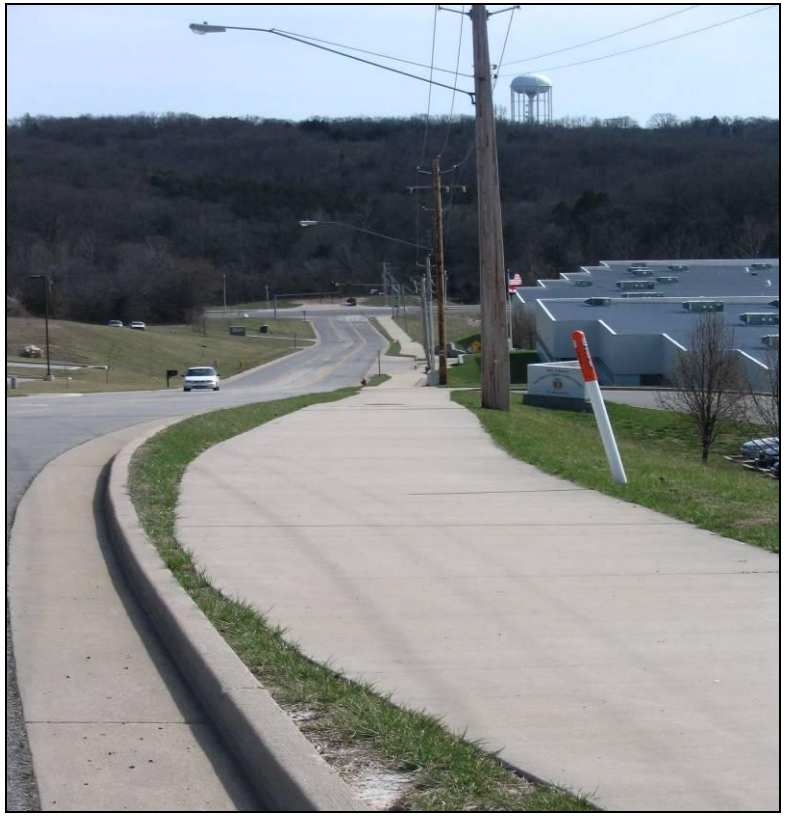
The zoning and existing land use along West Edgewood Drive is primarily commercial in nature. Most existing developments along Edgewood could be classified as low intensity commercial office uses. There is a High Density Residential zoning district to the west of Highway 179, on the south side of West Edgewood Drive. This is the only residentially zoned land abutting West Edgewood Drive between West Stadium Boulevard and Fairgrounds Road.

Amenities along this portion of the greenway include a restroom facility, water fountain, benches and memorial trees.

Trailhead parking lot on West Edgewood Drive

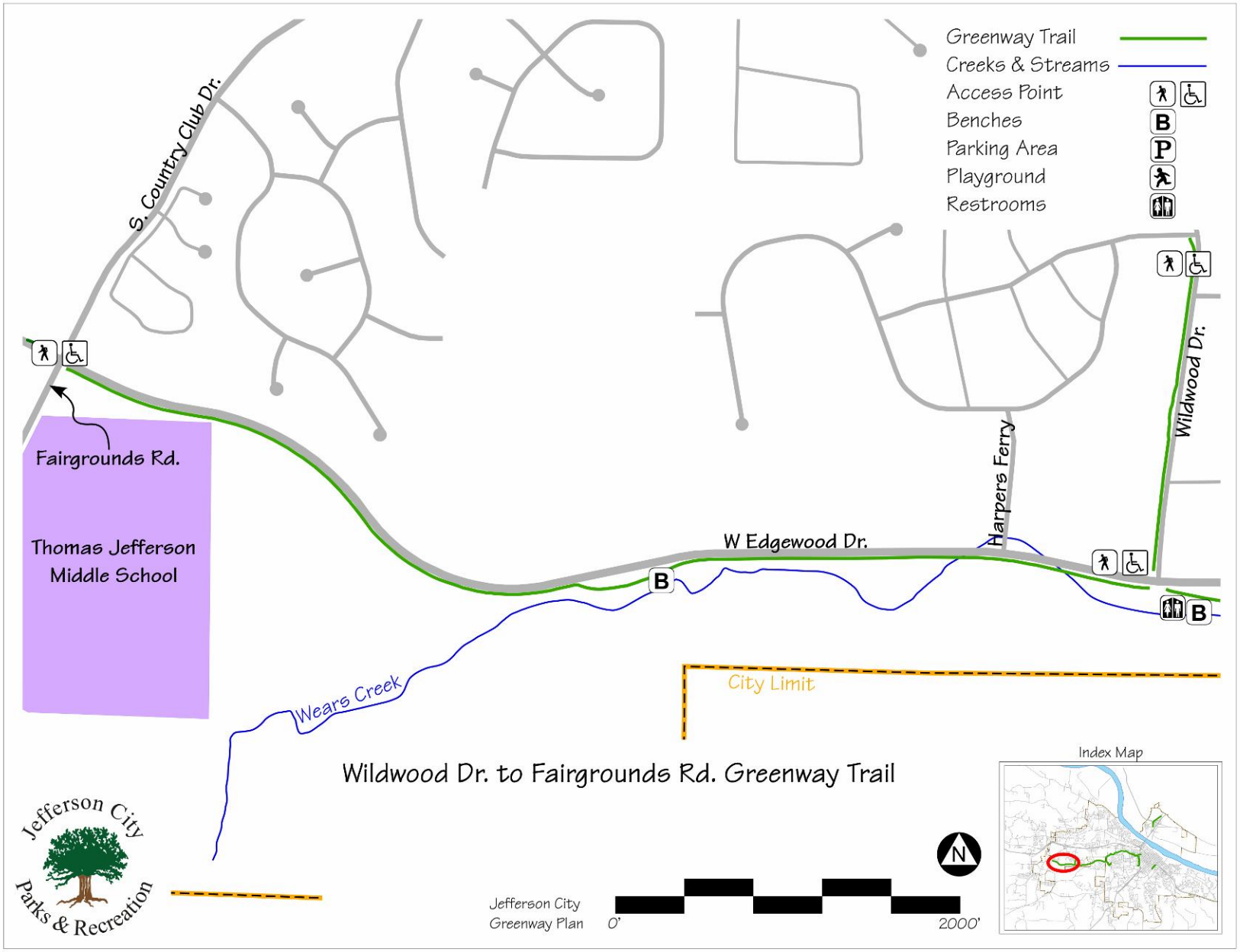
Wildwood Drive Spur

This branch reaches north from West Edgewood Drive to Shermans Hollow Road residential area. Most of the spur has a 9% grade. The Missouri Department of Health headquarters are located in three vast buildings on the west side of Wildwood Drive. The zoning districts along this stretch of Wildwood Drive include varying degrees of commercial and Planned Unit Development (PUD).



Looking south toward West Edgewood Drive, from Wildwood Drive Spur

Figure 6 Wildwood Drive to Fairgrounds Road



The North Jefferson City Spur

The 4,285-foot North Jefferson City Spur extends from the picnic shelter parking lot on 4th Street North in old Cedar City to the Katy Trail State Park parking area. The state-operated access point offers automobile parking, restrooms, drinking fountain, bicycle racks and information kiosk.

The trail connector starts at the northwest corner of the Highway 54/Cedar City Drive/Airport Drive interchange, passes under the Highway 63 North overpass and crosses Oilwell Drive/Katy Road on its way to the Katy Trail. The trailhead at 4th Street offers a picnic shelter, restrooms, a drinking fountain and approximately 160 parking spaces.

Katy Trail Spur Highway 63 underpass at Oilwell Road/Katy Road

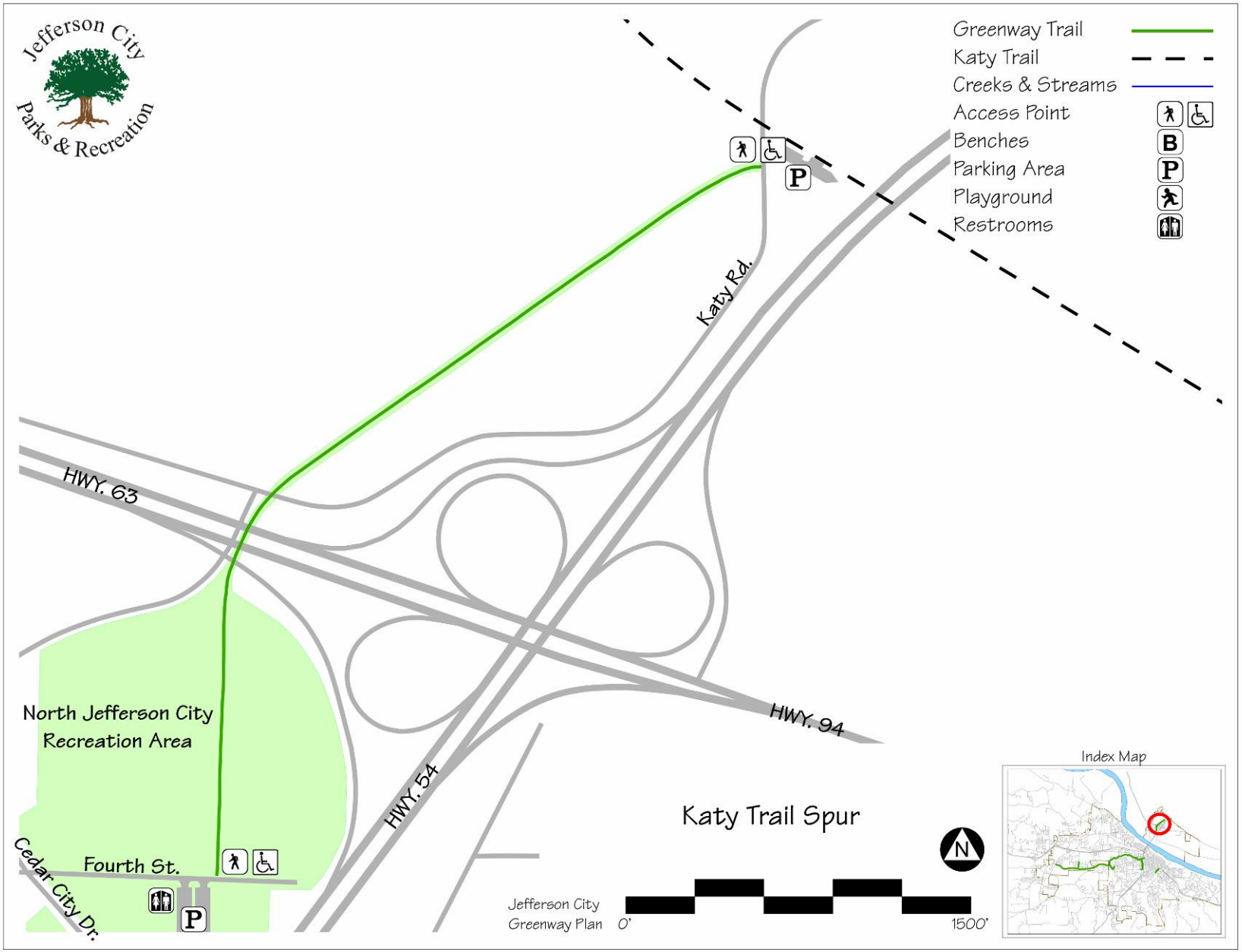
An unofficial trail connects to the Katy Trail on the east side of Highway 54 and leads to a small service road which provides access to State Highway AC and Holts Summit. The spur also extends around the southern edge of the parking lot and accesses Cedar City Drive opposite the Missouri Farmers' Association driveway. These pathways are evidence of a demand for further bicycle and pedestrian connections from the Katy Trail across the Missouri River into Jefferson City.

Sheltered picnic area, restroom facility and trailhead parking area.

Facilities at Katy Trail State Park Trailhead, in North Jefferson City

Information kiosk and sheltered bench rest area at Katy Trailhead

Figure 7 Katy Trail Spur



East Branch - (Elm Street to Chestnut Street)

This segment follows a channeled portion of Wears Creek through land owned by Lincoln University, Jefferson City Community Center Association and Jefferson City Parks and Recreation Department. The primary purpose of this trail is to provide a bicycle and pedestrian friendly connection between several existing neighborhoods, four Jefferson City public schools, Lincoln University, a registered historic district on the Lincoln University Campus, a vocational technical school and public park. Amenities include tennis courts and baseball and softball diamonds, belonging to Lincoln University; the historic Community Center and Community Park. Benches and trash barrels are available along this segment. Street crossings are painted and curbs are ramped for wheeled access.

In addition to general bicycle and pedestrian use, the trail will be used as an educational resource for Lincoln University's walking fitness class and it is planned that the University will add fitness stations along the pathway. These stations will enhance the fitness aspect of the trail while educating its users about associated health activities.

The extension of the trail from Lafayette Street to Chestnut Street is being constructed through the partnership of Lincoln University, Jefferson City Community Development Department and the Jefferson City Parks and Recreation Commission.

Zoning is low-intensity neighborhood commercial between East Elm Street and East Dunklin Street and residential from East Dunklin Street to Lafayette Street. A barber shop on the north side of East Elm Street, west of Wears Creek is the only existing commercial use near this trail segment.

Greenway adjacent to Wears Creek

East Dunklin Street crosswalk, with historic community center in background

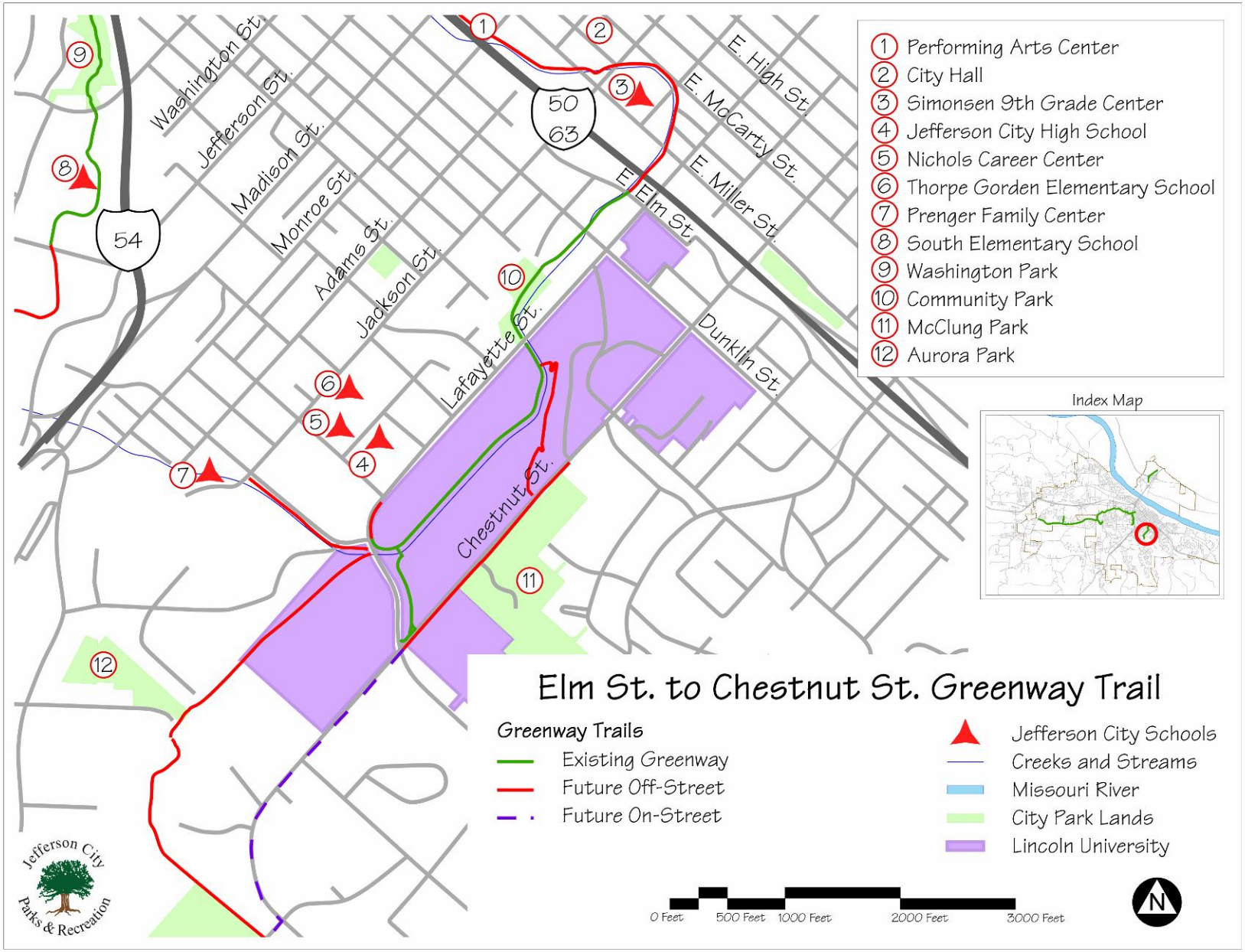
Dunklin Street crossing

Beginning of the route extension at Lincoln University

Lafayette Street terminus of existing greenway

Route through Lincoln University campus

Figure 8 Elm Street to Chestnut Street



PROJECTS IN PLANNING AND DEVELOPMENT

The following projects are part of the City's Greenway Trail master plan, which was developed with citizen input and has regularly received high community support.

These projects have been funded for completion within the years 2007 to 2010.

- East Branch Greenway Extension – East Elm Street to McCarty Street
- East Branch Greenway Extension - Leslie Boulevard to Ellis Boulevard
- East Branch Greenway Lincoln University Campus Loop – Connection from Lafayette Street through campus to previously completed Chestnut Street to Leslie Boulevard section
- Frog Hollow Branch Extension - Fairgrounds Road to County Park Bicycle & Pedestrian Facility
- Neighborhood Connector - Scarborough Way to County Park Lake
- Downtown Connection - Katy Trailhead Park to the Missouri River Bridge
- Ellis Porter Riverside Park Connection – Riverside Drive through the park to Optimist Court

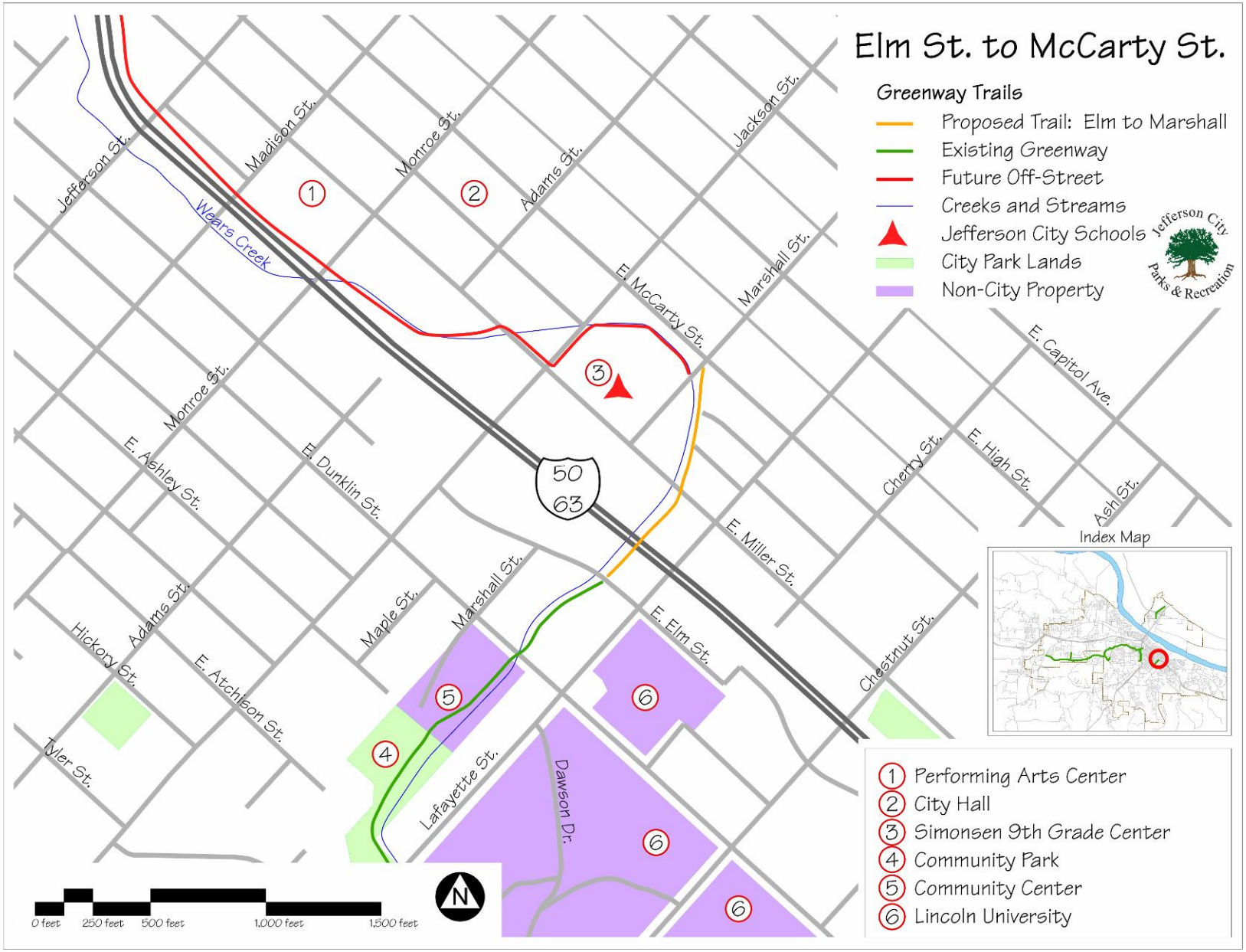
East Branch Greenway Extension – East Elm Street to East McCarty Street

The project is located north and west of Lincoln University. From the existing Wears Creek Bicycle/Pedestrian path, it will parallel the East Branch of Wears Creek. Beginning at East Elm Street, west of Lafayette Street, the segment will extend north to East McCarty Street at Marshall Street. The segment will provide a pedestrian and bicycle transportation link between existing neighborhoods and several schools, McClung Park and neighborhood parks, as well as connecting to Jefferson City's historic downtown and business district, Lincoln University's historic district and several other community destinations.

East Elm Street, starting point for new trail segment

New path location, looking north from East Elm Street

Figure 9 Elm Street to McCarty Street



East Branch Greenway Extension - Leslie Boulevard to Ellis Boulevard

This project is located in central Jefferson City, approximately one mile south of the central business district and immediately south of the Lincoln University Campus and Jefferson City High School. The linear greenway connection will extend from the intersection of Leslie Boulevard and Stadium Boulevard, south to Hough Park at Ellis Boulevard near Rosewood Drive and will be composed of a 10-foot wide concrete trail approximately 6,500 feet in length. The neighborhood surrounding the proposed greenway was developed prior to the adoption of City ordinances requiring sidewalks and consequently has no existing sidewalk network in place. The connection will improve access by increasing connectivity and access for non-motorized transportation users. The project will connect Jefferson City High School, Lincoln University, Aurora Neighborhood Park and Oak Hills Golf Course at Hough Park, with the city's existing East Branch Greenway.

Increasing pedestrian and bicycle trips has the potential to reduce the number of automobile trips, thereby decreasing traffic congestion, air pollution and parking demand in densely developed downtown commercial areas and school zones where these issues are particularly harmful to health, safety and the economic viability of downtown commercial districts.

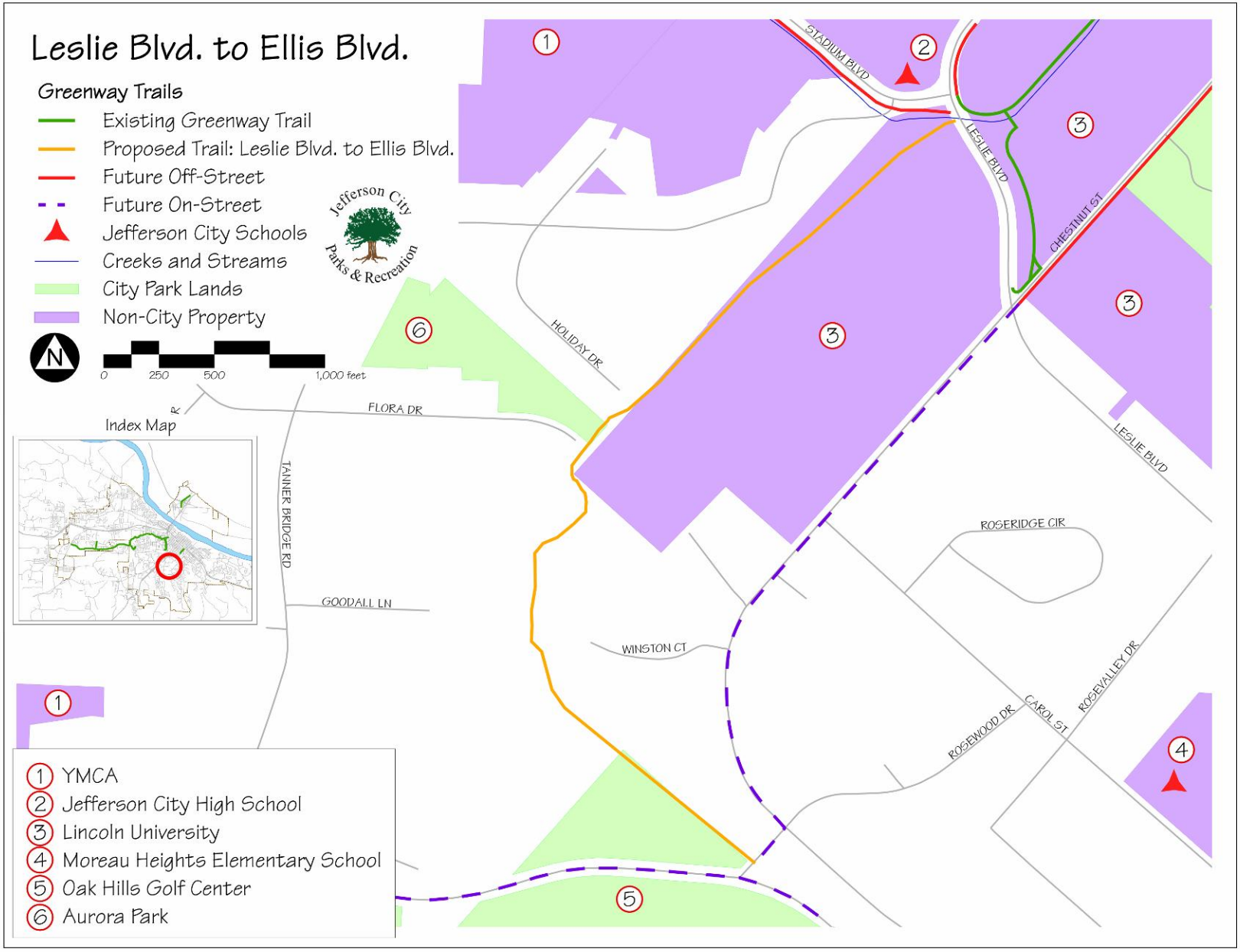
Jefferson High School on Lafayette Street, near north end of new trail.

Wooded area, at north end of trail segment

Aurora Park, at midway point of trail extension

Existing mowed grass path, south of Aurora Park

Figure 10 Leslie Boulevard to Ellis Boulevard



East Branch Greenway Lincoln University Campus Loop – Connection from Lafayette Street to Chestnut Street section to Chestnut Street

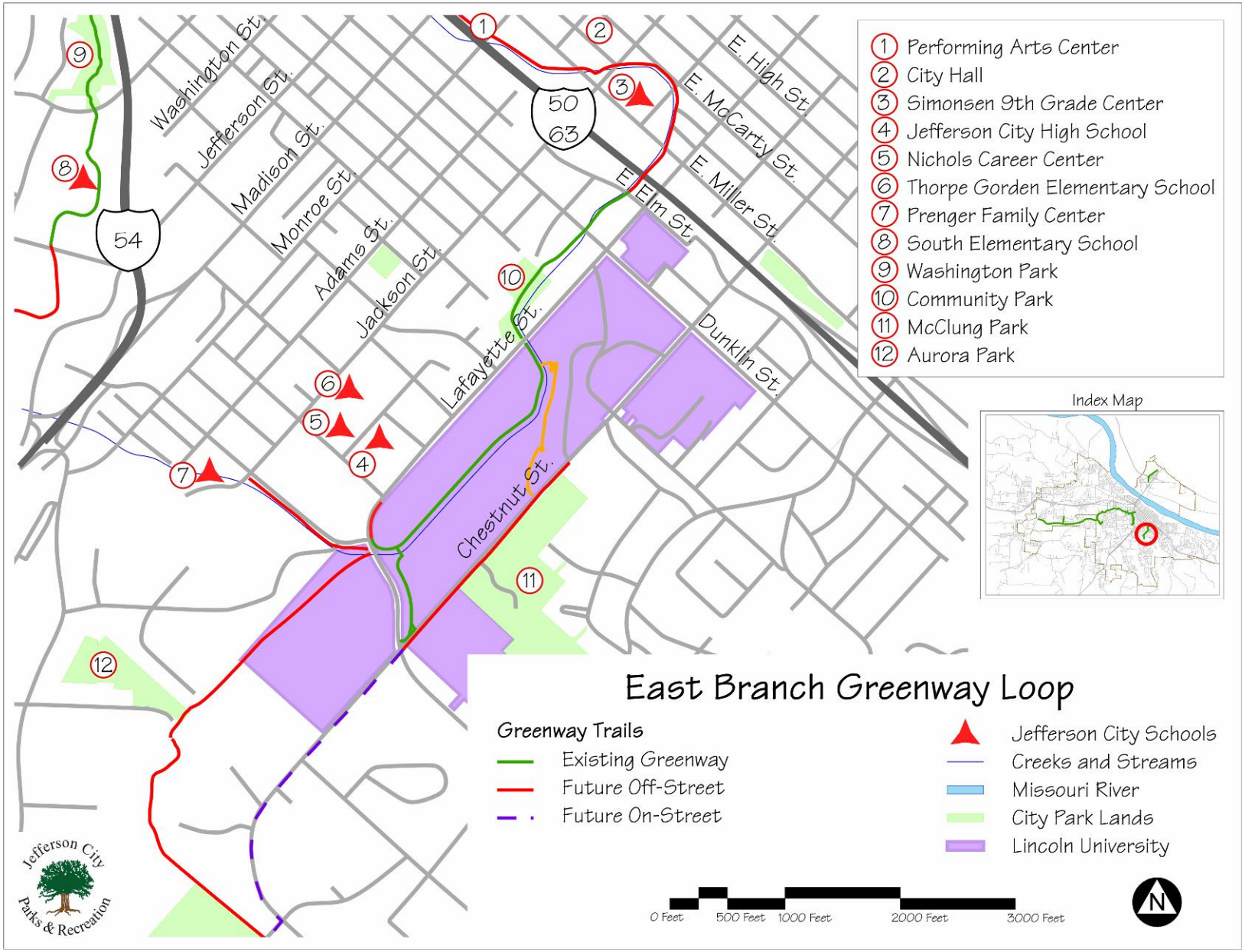
Located on the Campus of Lincoln University, this section of trail creates a loop with the recently finished Lafayette Street to Chestnut Street section and the currently existing sidewalk along Chestnut Street. The project will connect the Historic District known as the "Lincoln Hilltop Campus and the nine buildings listed on the National Historic Register, with the parking lots, athletic fields, stadium and other public areas of Lincoln University. The project will be funded by Lincoln University

Along parking lot to Chestnut Street

View along portion of existing trail that will be expanded

Bridge connecting the proposed trail to the East Branch Extension

Figure 11 East Branch Greenway Loop



Frog Hollow Branch Extension - Fairgrounds Road to County Park

This segment is located on the west side of Jefferson City and extends the greenway approximately 4,500 feet, beginning at West Edgewood Drive and connecting to the County Park recreation area. The Project proceeds in a southwesterly direction from West Edgewood Drive, approximately 2,900 feet to County Park Road and continues another 1,600 feet to the northwest corner of County Park Lake and trail within the park. Right-of-way currently exists as City of Jefferson and Cole County street right-of-way.

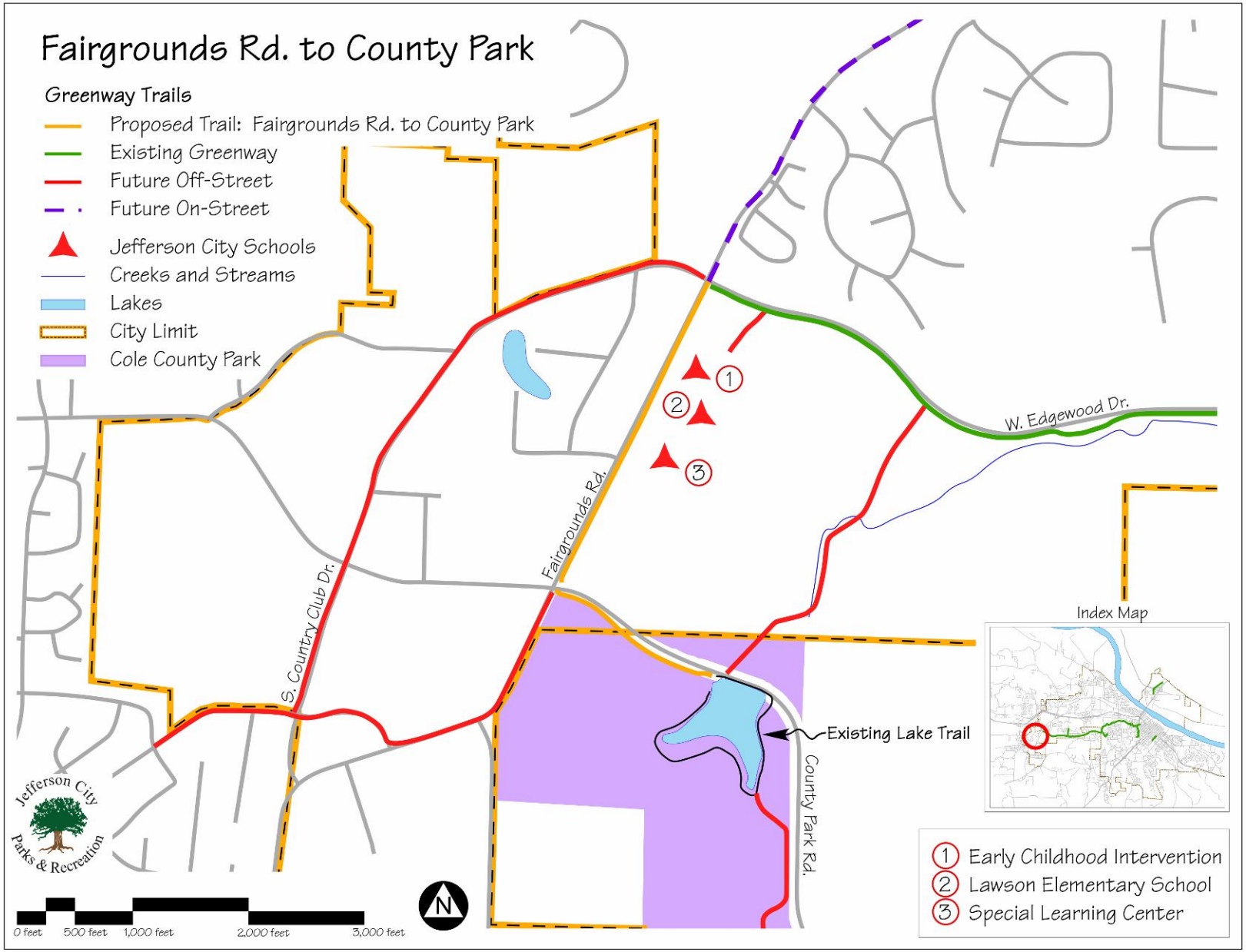
The proposed project extends walkway facilities from the greenway along West Edgewood Drive, past the Lawson Elementary School, the Special Learning Center and the Thomas Jefferson Middle School, continuing to County Park Road and then to the park itself. Pedestrians and bicyclists do not currently have safe, adequate facilities for travel into and out of the park to the area near the middle school. Sidewalks currently end part way through the West Edgewood Drive to County Park Road section of the project. There are also no pedestrian or bicycle facilities on County Park Road and pedestrians and bicyclists are forced to travel in the street or on the shoulders of the roadway.

This is an area undergoing increasing development. There is still significant open space and a low level of urbanization except for scattered developments. Extending the Greenway in this area enhances the use of open space and exercise opportunities and provides better access to a large residential neighborhood which has substandard or non existent sidewalks. As development continues, the trail should become an integral part of the design and lifestyle of the neighborhood.

Proposed greenway route along Fairgrounds Road, with service to three schools

Looking south along Fairgrounds Road

Figure 12 Fairgrounds Road to County Park



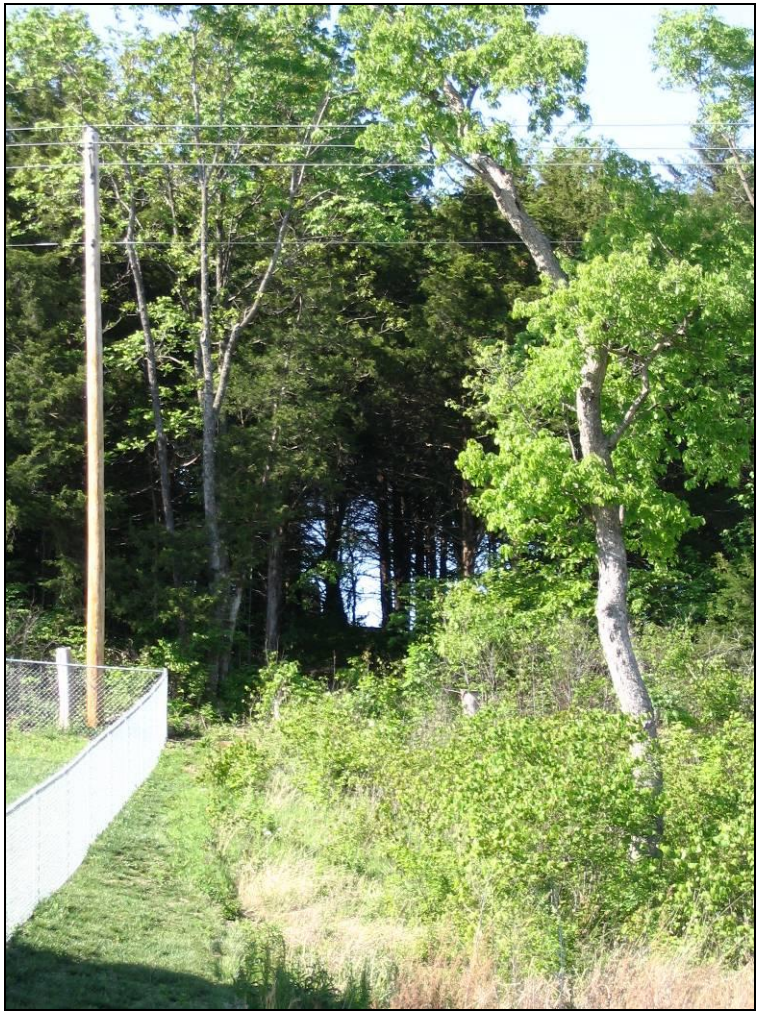
Neighborhood Connector – Scarborough Way to County Park

This project is at the boundary of the City of Jefferson and Cole County, extending from Scarborough Way in the Covington Gardens subdivision to the walking trail surrounding the 8-acre lake, located within the 80-acre Cole County Park.

This will be a 10-foot wide concrete trail that extends approximately 1,720 feet from a newer city subdivision south of County Park, to a major recreation site containing walking trails, fishing and athletic fields. The Jaycees fairground site which hosts fairs, sporting events and numerous activities is adjacent to the park. The project will connect to the loop trail at the County Park Lake, which connects to the County Park/Fairgrounds Road bike pedestrian path.

Scarborough Way, in Covington Gardens Subdivision

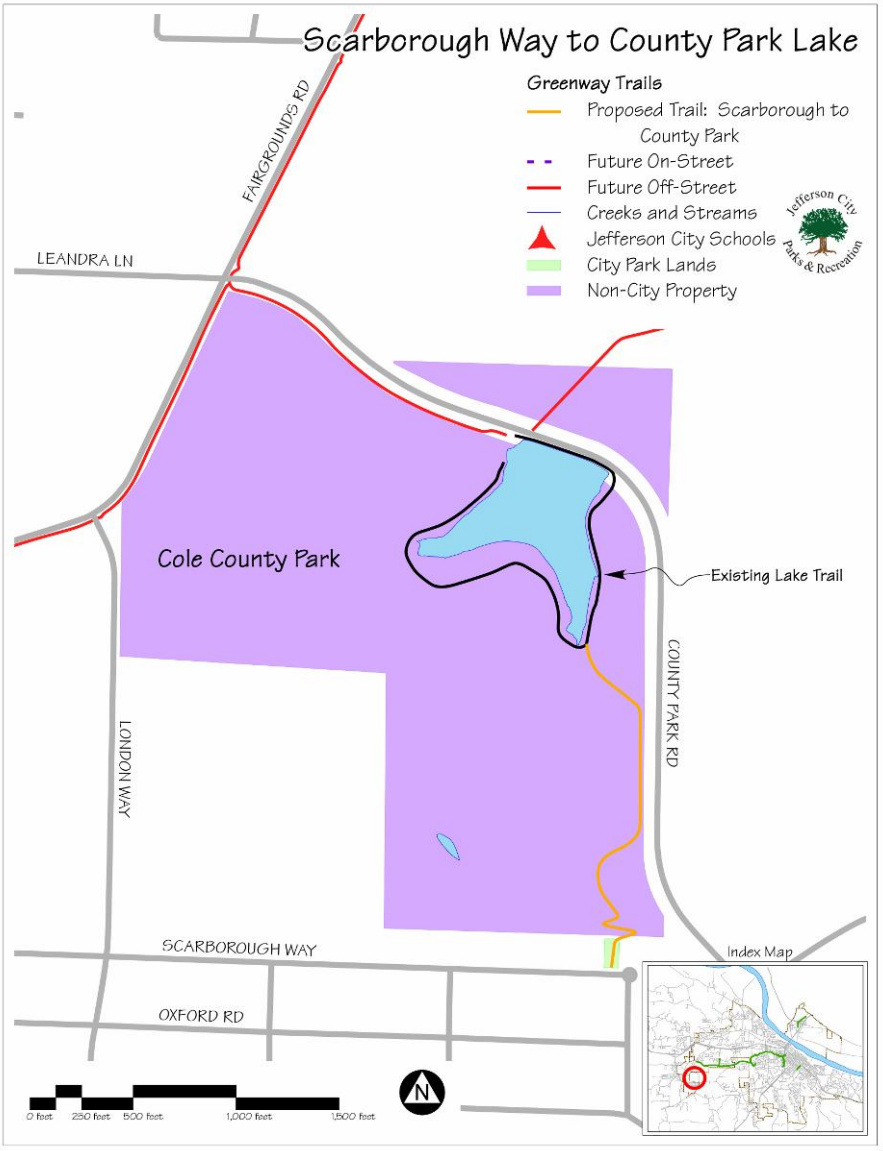
The County Park Loop currently receives a great deal of use and it is expected that this project will add to the area attractions, make the park and the events more accessible from the neighborhoods, will not cause conflict with current traffic on County Park Road and even more importantly, the trail will not inhibit future improvements on County Park Road as local development continues.



Access through a lot owned by Parks Dept, at the east end of Scarborough Way

County Park pedestrian loop, along County Park Road

Figure 13 Scarborough Way to County Park Lake



Downtown Connection – Katy Trailhead Park to the Missouri River Bridge

This project is located along Capitol Avenue from Jefferson Street, around the Missouri State Capitol building on the north and eastern sides and then running along West Main Street to the Missouri River Bridge. The Trail is anchored by Katy Trailhead Park at the corner of East Capitol Avenue and Jefferson Street in the Missouri State Capitol Historic District. From this point, the trail will run adjacent to the Jefferson Landing State Historic Site and the Governor's Mansion and Garden. The Trailhead site sits at the crossroads of a major transportation hub within sight of the seat of Missouri State Government and is a key connection between the downtown, state and local attractions and the West Main Street entryway to Jefferson City.

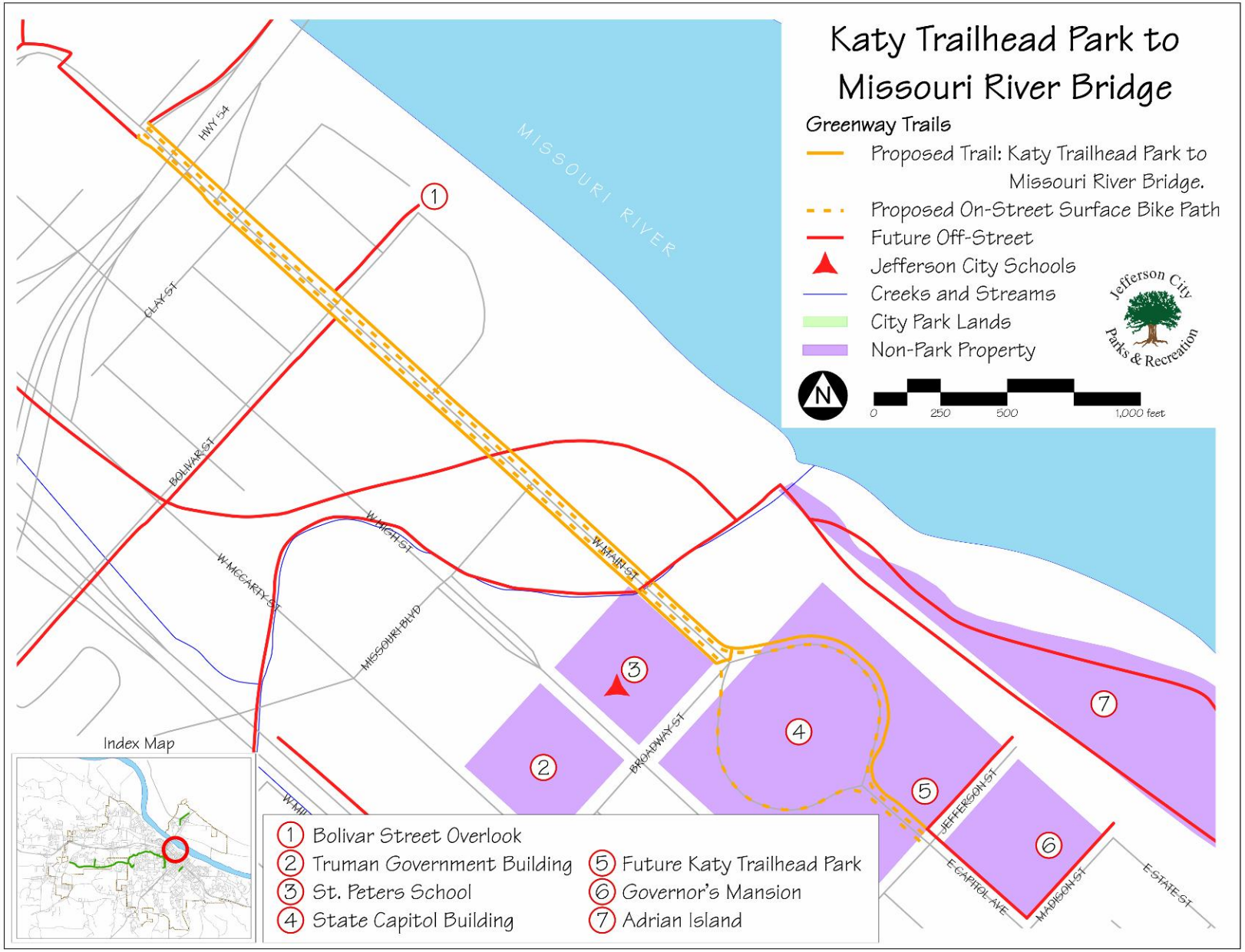
The bridge access route will encompass the eight-tenths of a mile from the Katy Trailhead Park to the merging of three major U.S. highways at the Missouri River Bridge. It will end within one mile of the North Jefferson City trail spur to Katy Trail State Park, the longest rails-to-trails conversion in the country. The trail will also provide side access to Rotary Centennial Park, located on Bolivar Street. Rotary Centennial Park, formerly the location where the old Missouri River Bridge came into Jefferson City is now a small neighborhood park and a scenic river overlook.

Due to right-of-way space limitations, the existing sidewalks on West Main Street will be designated as A greenway with share-the-path signs designating it as such. Share-the-road signs will also be placed along Capitol Avenue and Main Street, designating the road surface as a shared use automobile/bike route.

View of existing sidewalk and businesses along West Main Street

View of Capitol along proposed West Main Street Route

Figure 14 Katy Trailhead Park to Missouri River Bridge



Ellis Porter Riverside Park Connection – Riverside Drive to Optimist

This proposed trail connection will link many park facilities, historic, cultural and natural features, within Ellis Porter/Riverside Park. In addition to traditional park facilities, the trail will follow near the Missouri River along the northern border of the park and connect with a scenic overlook of the Missouri River showcasing historic interpretative signage of the Lewis and Clark Expedition.

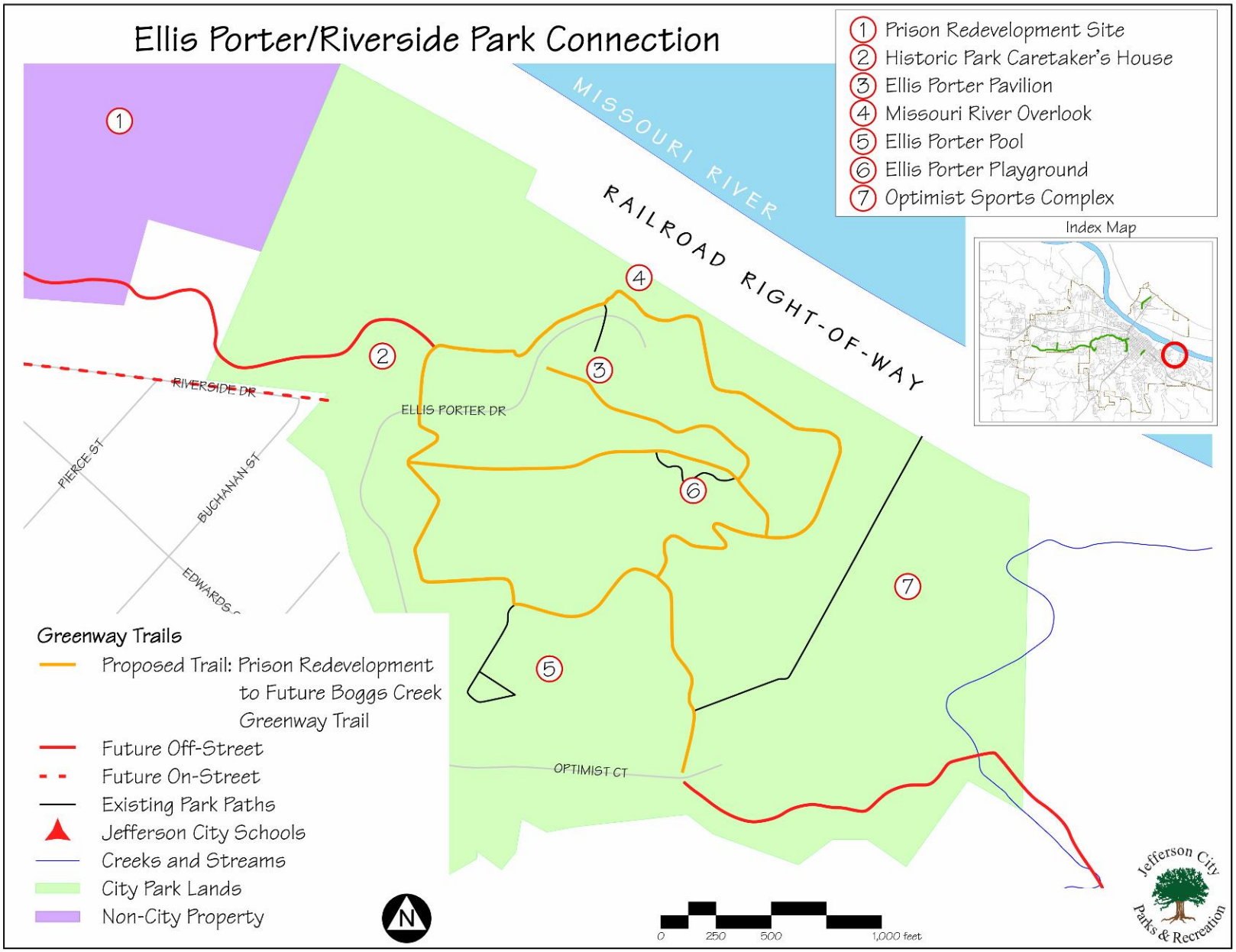
Upon completion, the trail will provide a link and help facilitate safe, non-motorized transportation from the prison redevelopment site, through Ellis Porter/Riverside Park to the future connection along Boggs Creek.

Playground and existing concrete path in Ellis Porter Riverside Park

Location proposed trail to the Missouri River Overlook

Existing connection to proposed trail

Figure 15 Ellis Porter/Riverside Park Connection



PUBLIC PARTICIPATION

A stakeholder focus group process was held to gather input from interested citizens representing a wide variety of backgrounds and organizations within the city. The aim of these meetings was to gain insight into public opinions about what aspects of the city's greenway system should be emphasized in future improvement efforts. The resulting public input was considered by relevant steering and planning committees, culminating in strategic recommendations to guide greenway growth.

One of the primary interests for the development of the Greenways plan is early and continuing involvement by City staff, private individuals and organizations, neighborhood residents, public agencies and development entities.

To achieve this involvement, the City sought out participants for a stakeholder's focus group to meet and provide recommendations, advice and opinions on the locations of possible greenways, a variety of goals and the contents of the plan itself.

Two focus group sessions were conducted; the first on April 11, 2006 and the second on April 22, 2006 (see Appendix 1 for focus group results). The Parks and Recreation Department then held an open house on May 9, inviting the public to visit and comment on the initial greenways discussions and displays.

Focus Group Points

The comments from the focus groups are classified into five major discussion topics:

I. Funding
II. Promotion
III. Partnerships
IV. Land and Easement Acquisition
V. Access

The following discussion highlights the major topics, rationale and strategies recommended upon contemplation of public input. Results are presented as succinct strategies.

I. Funding

Funding the plan is a major issue for successful greenway development and management. Costs include land acquisition, trail construction and maintenance.

Intermodal Surface Transportation Efficiency Act (ISTEA), Transportation Equity Act of the 21st Century (TEA-21) and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) grants have been the primary source of greenway funding for the past 15 years. Since these funds may not be as available in the future, alternate funding sources should be pursued.

Another option is to pursue private sponsors. This technique is already being used to furnish the greenways with shade trees (Memorial Trees Program) and benches (Memorial Benches Program), but might be expanded to fund sections of future trail construction as well. Another possibility is to organize community fundraising events by hosting trail events through Parks or private club to finance trail improvement projects. Finally, continued dedication of a portion of the City's Capital Improvement Funds will be critical.

Further funding sources are noted in Appendix 2, Greenway Development Funding Survey.

II. Promotion

Public promotion of the greenway system is vital for advancing its popularity and justifying further expansion. Promotion can be accomplished by a variety of means. One strategy is to focus on the provision of information that improves public awareness and usage of the greenway. This can be done by providing clear and relevant information on kiosks and signs along greenways to let users know where they lead, what amenities, points of interest or access obstacles exist and where they are located. Trail maps with greenway etiquette and safety tips should also be created and made available to trail users. They could be distributed to local bike shops and tourist sites.

Further promotion strategies could include community programs that educate the public about the important benefits and opportunities for recreation, environmental protection, education, physical fitness and transportation provided by greenways. Organized events such as bike rides, running races, bike to work week, walk to school programs, school field trips and a greenway festival, could build awareness, usage and community support for greenways.

Promotion Strategies:

Develop a comprehensive public information and education program to raise the community's awareness of Greenways and trails.

Improve promotion of trails and paths through information, maps, activities and as recreation and travel options.

III. Partnerships

Building partnerships involves forming alliances and coordinating efforts between organizations (government and Non Governmental Organizations) to further a common goal.

The City should partner with the following entities for greenway development:

- MoDOT
- Cole County
- Callaway County
- Surrounding municipalities (members of CAMPO)
- Developers/Consultants
- Landowners
- Citizens
- Other Stakeholders

By partnering with surrounding counties and municipalities, the City can work toward expanding the long-term greenway network to those areas that are currently outside the City's corporate boundaries. Other benefits include the possibility of sharing project costs, gaining in-kind support, coordinating regional greenway planning activities to promote complementary projects and improving communications to realize more opportunities for land acquisition and development.

Missouri statutes allow the City to exercise extraterritorial jurisdiction over zoning, subdivisions and buildings in unincorporated territory up to two miles outside city boundaries. This action is allowed in counties not having a planning commission and official master plan, such as Cole County. The affected county commission must be in agreement with this type of action.[6]

Continued involvement of citizens and developers can ensure that the greenway development plan remains consistent with the shifting priorities of public and private stakeholders. Successful planning relies on continued buy-in of all stakeholders groups.

Interdepartmental Cooperation (within city government)

City departments should develop policies and procedures that will ensure that opportunities are not missed (e.g. Streets Department should notify Parks of upcoming roadway widening projects so Parks could build greenway into design if desired). The City should continue to identify and discuss greenway routes as part of regular developers plan review meetings involving multiple city departments.

Public Participation

The public should be involved in the planning process. This may take place in a number of ways:

- focus groups
- public hearings
- charrettes
- surveys
- neighborhood meetings

To ensure the plan's continued relevance, formalized public input processes should be ongoing.

Possible Partnership Strategies:

- Develop agreements with Cole and Callaway County Public Works to cooperate and collaborate with City on trail initiatives outside city limits.
- Work with MoDOT to negotiate development of greenway routes within MoDOT right-of-way, where alternative routes are not feasible.
- Develop processes to improve internal cooperation & coordination between City Planning, Parks, Public Works, & Streets Departments, to ensure no opportunities for greenway development/ improvement are missed.
- Partner with local Bike/Pedestrian clubs to establish ongoing greenway support programming
- Provide broad community involvement and communication in plans and activities.
- Consider forming or participating in a new alternative mode transportation committee for greenways, bicycle and pedestrian program planning and include civic and private interests in the membership.
- Participate in intercity, metropolitan and regional planning of greenways, trails and alternative transportation modes.
- Promote participation in planning, development and improvement activities with businesses, private and civic organizations.

IV. Land and Easement Acquisition

City Code Provisions

Land acquisition is imperative to the successful implementation of this plan. Existing provisions of the City's Subdivision and Zoning provide limited leverage for City staff to negotiate access easements along stated routes of interest. The Subdivision Code restricts private streets from crossing or interfering with an existing or future public pedestrian pathway, greenway trail or park as shown on the City's Parks & Recreation Master Plan. (Section 33-11A.1.b.(5). Streets and alleys; rights-of-way, design.)

There are no existing provisions in the Zoning Code that require conventional subdivisions to accommodate greenways. However, open space standards have been established under the Cluster Subdivision and Compact Housing section to require that common open space be provided and linked to existing and planned public open space and greenways wherever possible. Where open space improvements are provided, a safe, secure and barrier-free system of trails, paths, walkways and bikeways shall be designed. Walkways and bikeways may link with recreation areas, schools, commercial areas and public facilities. Improvements may include paved pedestrian paths located in public rights-of-way, pedestrian easements, paved bikeways or other agreed-upon improvements. (Sec. 35-54. Cluster subdivision and compact housing provisions.)

Planning Division review criteria requires applications to demonstrate that proposed developments comply with adopted plans and policies, including the Greenway System Plan (Sec. 35-72. Staff approval - development permits).

Proposed Additions to the Subdivision Code

Additional provisions to the Subdivision Code would strengthen the City's ability to negotiate greenway corridors prior to platting new subdivisions. Proposed amendments to the City's Subdivision Code include the following items addressing greenways:

- Define Greenway Trail Easement as "perpetual interest in land as described and dedicated on a subdivision plat, which gives the following rights:
  - Constructing or maintaining a permanent hiking or bicycle trail or path with accessory facilities or accommodation.
  - The right of entry of the city to maintain and develop hiking or bicycle trails or paths.
  - The right of entry of the public for pedestrian or bicycle use of the trails or paths which have been constructed within the easement.
  - The right to construct public street, bridge and utility crossings as needed.

- Portions of a proposed subdivision or development that cannot be prepared properly for development may be set aside with a greenway conservation easement.
- Where there is a need for non-vehicular public access to a school, park, trail or other area of public use, the City may require the dedication of a greenway trail easement for connections from a street.
- Whenever such dedication and public improvements are required or offered and the land owner conveys fee title instead of an easement, the City shall accept ownership and maintenance.

Missouri State Statute

Landowners may be more likely to grant easements due to a relatively new statute that limits the liability of landowners abutting trails to unintentional mishaps or other harm befalling greenway users.

Land Acquisition

While some proposed routes are more important to the overall network than others, the strategy for completing the greenway plan hinges on a dual strategy. This involves both actively seeking land and easements in areas of predicted future development and effectively reacting to unexpected opportunities as they arise through land sales, subdivision and site plan submittals.

The City Parks and Recreation Commission must have the ability to take advantage of opportunities to acquire land or access easements as they become available along proposed routes. Land acquisition is dependent on knowing what routing opportunities exist or are required to make a future greenway connection to a desired destination and the availability of adequate funds to purchase this land. Therefore, securing sufficient funding for land acquisition should be the top priority of the Parks Commission.

There are several means available by which the City may acquire land for greenways. A listing of common methods is included in the Appendices

Determining in what order to actively pursue land for greenways should be influenced by the following factors:

- The direction of predicted future new development, as land may become unavailable or prohibitively expensive as development encroaches and
- the need to serve areas of expanding residential population

Current Feasibility of Acquisition Processes.

These factors, combined with the stated preferences revealed through a greenway stakeholder focus group mapping exercise, were used to develop the prioritized listing of greenway routes.

Land and Easement Acquisition Strategies:

Preferred land or easements for greenway trails are generally located in natural areas (greenbelts – creeks & rivers) that are likely to be developed in the near future (e.g. NW of city, towards Binder Park. All other land and easement acquisitions should continue along all identified routes, as possible, with focus placed first on major (backbone) corridors, followed by minor routes.

V. Access

Access or accessibility is defined as the ability to reach goods, services and activities. Central to the provision of good non-motorized access is the availability of direct connections to desired destinations.

Access goals resulting from the 2006 stakeholder focus group sessions include providing linkages to specific destinations (e.g. Katy Trail and Capitol Complex), destination types (e.g. schools and parks) and general network design goals (e.g. creation of a loop system).

Continuity is imperative to the success of a multi-use path network. Several opportunities exist to create loops

within the system. These loops would offer alternative routes to users and ensure that trail segments connect to as many destinations as possible. This will be done wherever possible to maximize the number of opportunities available to users.

Access Barriers

The need for improved non-motorized connectivity across Highway 50 to Downtown was also raised as an important barrier issue in the discussion period of the April 25th focus group meeting. The city is predominantly spread along Highway 50 which parallels the Missouri River and serves as an east-west axis for development. The corporate boundary stretches over 13 miles along this east-west axis – more than twice the horizontal distance of its north-south footprint. Highway 50 bisects the city and acts as a major access barrier to non-motorized modes, as crossings are widely spaced and primarily devoted to automobile movement, with pedestrian and bike accommodation as an afterthought.

Focus group participants suggested three additional crossings of Highway 50 to improve access between neighborhoods, existing Wears Creek Greenway, Downtown and McClung Park:

- Dix Road – Wears Creek Greenway to West Main Street
- Clark Avenue/Moreau Drive/Oakwood Drive – McCarty Street to McClung Park
- Bolivar Street - Wears Creek Greenway (West Dunklin Street) to Missouri River Bridge
- Wears Creek – Sub grade crossing at Dunklin Street

Access Strategies

- Connect to North Jefferson City and the Katy Trail.
- Develop and promote a system of on-street bicycle routes to connect greenways and neighborhoods.
- Increase trails and paths in city neighborhoods that have a shortage of these facilities.
- Increase Greenway and on-street connections in established neighborhoods and areas east of US 54.
- Reclaim Wears Creek as a wetland system, with bicycle and pedestrian paths and develop the Wears Creek segment along the Whitton Expressway as a landscaped floodplain with native plantings.
- Develop a pedestrian access to the Missouri River and develop Adrian Island as a city environmental park.
- Support and participate in the development of greenways along the Missouri Riverfront from the Missouri River Bridge through the Capitol environs, the State Department of Natural Resources grounds to Ellis Porter Riverside Park, continuing to the Moreau River.
- Extend greenways or on-street routes to Ellis Porter/Riverside Park from the south and east and restore the river views.
- Evaluate the potential use of previous railway corridors, utility corridors and floodplain areas for greenway and trail corridors.
- Integrate bicycle and walking networks with the transit system.
- Provide access to greenways from on street routes.
- Provide bike racks or space for bicycles on buses.
- Provide storage and racks for bicycles at government and business locations
- Provide for security and safety for users and neighborhoods.
- Provide information kiosks and signage on the greenways and trails.
- Provide police patrols and neighborhood watch programs.
- Provide adequate lighting, landscape design and visual planning on the greenway.

RECOMMENDED NETWORK PLAN

Below is a listing of proposed additions to the current network, based on major access goals extracted from stakeholder input. Projects are organized into the following geographic areas:

I. Missouri River Bridge Crossing / Katy Trail Connection
II. Downtown Area ("Emerald Necklace")
III. Northwest Quadrant
IV. Binder Park Connectors
V. Southwest Quadrant
VI. East Branch/McKay Park/Frog Hollow Branch Connections
VII. East Side Greenways
VIII. Regional Greenways
IX. Highway & On-street Routes

Many of the possible additional routes and greenway options listed were obtained through the public involvement and focus group activities during the development of this plan. The listing is in the Future Greenway Route Mapping Exercise in Appendix 1. This listing should also be considered when future greenway routes are evaluated.

I. Missouri River Bridge / Katy Trail Connection

This project scored highly in both the written goals and the future routes mapping exercise. It would include improved access across the Missouri River Bridge and construction of a trail between the north side of the Bridge and the Fourth Street picnic shelter/commuter parking lot thereby providing the final missing link to reach the Katy Trail.

Missouri River Bridge: Existing bicycle/pedestrian shoulder

A safe non-motorized way to cross the bridge has been a top priority since the initial Ad Hoc Greenway Advisory Committee made their recommendations for the 1991 Greenway System Plan.

Since then, the City Parks and Recreation Department, MoDOT and various community groups have been working together to find a solution to this inadequate and unsafe situation. Most recently, a plan to construct a five-foot wide cantilevered addition to the west side of the south-bound (west) bridge has been proposed. Efforts to raise funds for this plan are underway.

On-street share-the-road bike lanes should be signed and marked in paint on Main Street and pedestrian/bicycle share the path signage should be installed along sidewalks on both sides of Main Street from the bridge to the Katy Trailhead Park just east of the Capitol.

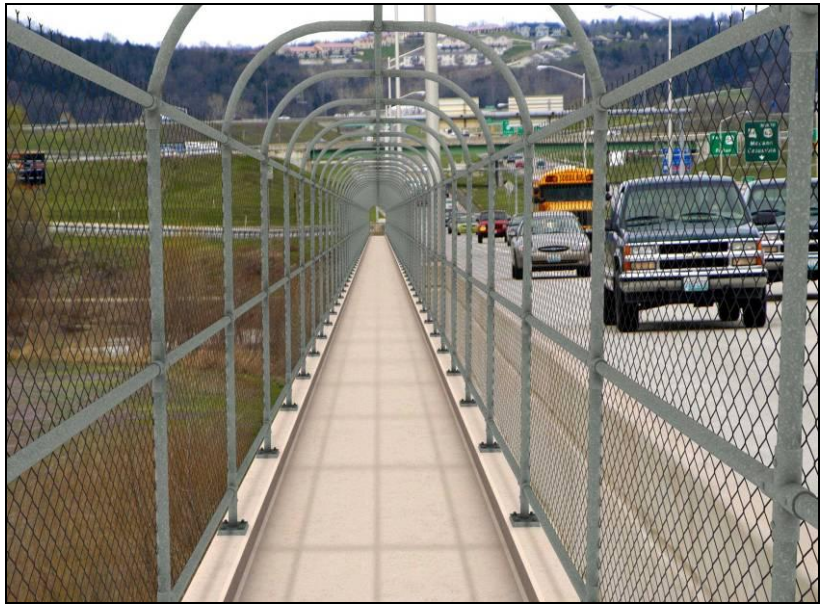
Rapidly expanding use of the North Jefferson City Recreation Area has further increased latent demand for safe and comfortable bicycle and pedestrian access across the bridge.

From the north side of the Missouri River Bridge the trail could divide to provide access to the Community Gardens to the west and the picnic shelter/commuter lot to the north. The picnic shelter is already linked via the Greenway to the Katy Trail.

Northbound lanes - to the right is the seven foot wide shoulder no longer legally accessible to pedestrians and bicyclists

Conceptual Missouri River Bridge greenway connection

Possible location for a cantilevered bike/pedestrian addition to the west bridge



Conceptual 5 feet wide bridge addition, looking north

Existing Mokane Road, an unimproved road that passes under the northern end of the Missouri River Bridge could provide an access route to the North Jefferson Recreation Area and Riverfront

II. Downtown Area ("Emerald Necklace")

Missouri Riverfront – Boonville Road to Ellis Porter Riverside Park

The Downtown commercial district and Capitol Complex received the second highest importance as a general access goal at focus group meetings. During the future route mapping exercise participants confirmed this goal by highly ranking greenway connections between Downtown and the Missouri State Prison Redevelopment site, Ellis Porter/Riverside Park, MoDNR's Lewis & Clark Building, Adrian Island/Missouri Riverfront and the Missouri River Bridge. Additionally, a riverfront greenway from Highway 54, along the south side of the River to Boonville Road, received moderate support from stakeholders.

None of the mapped routes suggested tying the east-side riverfront trail to the west-side riverfront by passing underneath the Missouri River Bridge along the south bank of the Missouri River. This option would create an uninterrupted riverfront corridor extending from Boonville Road to Ellis Porter Riverside Park. Despite obvious challenges associated with topography and both Union Pacific and MoDOT rights-of-way this linkage could be explored. The route would provide several scenic viewpoints and offer an excellent opportunity to enjoy nature.

Provision of access across the Union Pacific railway to Adrian Island presents a major development challenge. A plan was prepared in 1990 for the recommended development of Deborah Cooper Riverfront Park.[7] The plan showed a trail traversing the length of the island and crossing the railway at the mouth of Wears Creek, just north of the Capitol Building. The 2001 Jefferson City Beautification Plan shows a similar trail location. These documents should be considered in future greenway development plans affecting the island.

A new study in cooperation with the Jefferson City Area Chamber of Commerce Riverfront Development Committee is designed to select the best access point and method to cross the railroad. The study is planned for completion in the spring of 2007.

West Dunklin Street to Adrian Island

This segment would cross West Dunklin Street from the existing greenway trailhead and follow Wears Creek under Highway 50, before continuing along Wears Creek to the Missouri River.

The first portion, between the West Dunklin Street trailhead and Highway 50 is challenged by narrow access along portions of the Wears Creek bank, but a shared roadway agreement with St. Mary's Health Center provides access to near Highway 50. With the possible relocation of St. Mary's Health Center, the City could consider acquiring all of the property between Missouri Boulevard and Wears Creek, from West Dunklin Street to Highway 50 for green space beautification and greenway.

To access the east side of Wears Creek from the existing Dunklin Street trailhead, the sidewalks located on the Dunklin Street Bridge should be widened and/or the trail should be extended under Dunklin Street in conjunction with a future replacement of the Dunklin Street bridge.

Commercial properties abut the creek directly north of Dunklin Street, where a small footpath passes between buildings on this property and the creek. There may be enough room for a narrow greenway access, dependent on easements from the property owners. The route could be an on-street route, going east on Dunklin Street, turning north on Mulberry Street, then west on Elm Street to reach the Walnut Street right-of-way which parallels Wears Creek. Aside from a utility sub-station, the west side of Walnut Street between Elm Street and Highway 50 is clear of development.

Wears Creek flows through a 250-foot twin box culvert under the intersection of Highway 50 and Missouri Boulevard and reemerges at a State parking lot. The height and width of one side of the culvert is enough to

comfortably accommodate pedestrians and bicyclists, but there is periodic standing water in the west side culvert.

Crossing Highway 50 and other primary highways in the city was cited as a major obstacle for pedestrians and bicyclists in addressing downtown and the riverfront by stakeholders. Other cities have worked successfully with MoDOT to extend trails thought similar culverts and should be thoroughly explored at this location.

Sidewalk on bridge on West Dunklin Street, across from Dunklin Street Trailhead

A minimal water diversion barrier could possibly be installed to divert the creek flow into one side of the box culvert, thereby providing a dry route at all times, except during flood events.

The route would continue from Highway 50 along the Wears Creek Frog Hollow Branch to the crossing at McCarty Street, High Street, Missouri Boulevard, Main Street and the railroad en-route to Adrian Island.

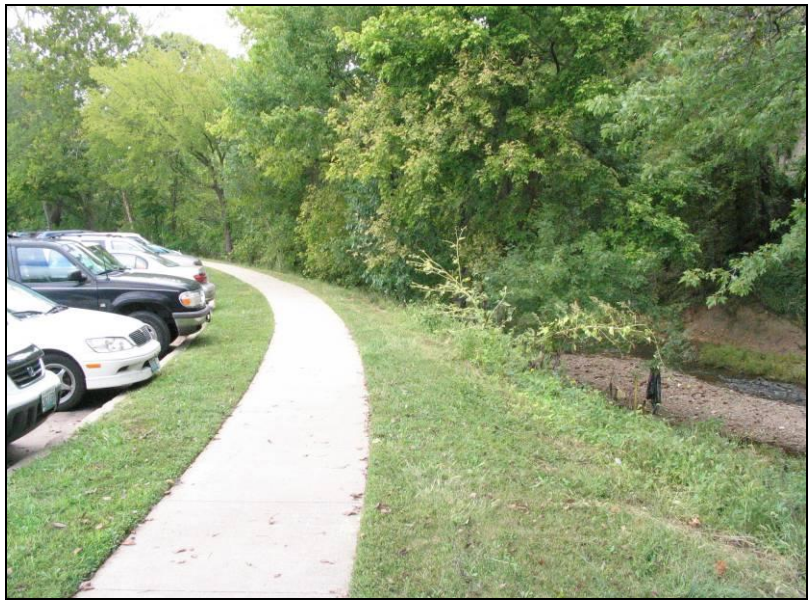
The box culvert under Highway 50 and Missouri Boulevard

West side of Walnut Street, adjacent to Wears Creek

Aside from the Ameren UE facility located at the north end of the route, adjacent to Wears Creek, the surrounding low-lying land is used for parking lots to accommodate State employees.

The Ameren UE facility is being phased out. The 2001 Downtown Beautification Plan calls for this four and a half acre site to be acquired and developed as a part of the "emerald necklace" of open space and greenway trails around the central business district and linking outer areas of the city with downtown and the riverfront. The site would provide parking for greenway users and serve as the gateway to the riverfront.

Sidewalks already skirting the parking lots along Wears Creek are not well connected to each other and should be replaced and widened to greenway standards.



The sidewalk between the state employee parking lot and Wears Creek

Dunklin Street Trailhead along Bolivar Street to Centennial Park (Wears Creek route alternative)

This alternate route would start at the Dunklin Street Trailhead and would follow West Dunklin Street west, then cross Missouri Boulevard and follow Bolivar Street past St. Mary's Health Center, over Highway 50 and across West High and West Main Streets to the newly constructed Centennial Park at the street's terminus overlooking the Missouri River, railway and downtown. Large setbacks along much of Bolivar Street would aid an effort to widen sidewalks.

Bolivar Street Bridge over Highway 50

Missouri Boulevard/Bolivar Street intersection

Centennial Park, at Bolivar Street Bridge site

At West Main Street, the trail would split, with the option of continuing along Bolivar Street to Centennial Park or turning west on Main Street and accessing the Missouri River Bridge to reach the north side of the River and Katy Trail State Park. Alternatively, following Main Street to the east offers access to the Capitol Building, Katy Trailhead Park and the downtown commercial district.

There are several historic buildings in the area, especially centered on the intersection of Main Street and Bolivar Street. Attractions include a pub and a couple of historic bed & breakfast establishments.

Jackson Street to Missouri Boulevard

This segment follows the East Branch of Wears Creek and passes between Highway 50 and developed downtown commercial lots, with variable widths of right-of-way available for greenway development. Most of the potential greenway site lies below roadway grades, in the drainage adjacent to Highway 50. The feasibility of this route would depend heavily on the ability to use MoDOT right-of-way. There exists a pedestrian tunnel from the Performing Arts Center, to the south side of Highway 50 which could be incorporated into the route connecting to the Frog Hollow Branch trail near Missouri Boulevard.

The City, County and State are currently cooperating in a Highway 50 route study to access the prison redevelopment site. This study may help clarify greenway routing opportunities in this area.

Marshall Street to Ellis Porter Riverside Park, via East McCarty Street and Grant Street

This route would connect the Elm Street to McCarty Street segment, which follows the East Branch of Wears Creek to Ellis Porter/Riverside Park. Sidewalks exist along McCarty Street and on-street bike lanes would likely be feasible. Grant Street has no sidewalk but could accommodate a walkway on one side.

This section would contribute to completion of a downtown "Emerald Necklace" greenway loop.

Madison Street and Jefferson Street Spurs

This segment of the trail is rich in historic buildings, landmarks, parks and cultural sights. Beginning at the north end of Madison Street, a serene pocket park sits atop a bluff overlooking the Missouri River. The widened sidewalk leads uphill, past the front of the Governor's Mansion, to East Capitol Avenue. The entire block between Madison and Jefferson Streets and East Capitol Avenue and the Missouri River, is dedicated to the Governor's Mansion and public gardens.

Jefferson Street has five foot wide sidewalks on both sides and terminates at the railway tracks and station at the bottom of the hill adjacent to the Missouri River. The Lohman Building, which houses the Visitor Center and the Union Hotel, which is home to the Amtrak Railroad Station and the Elizabeth Rozier Gallery, are both situated adjacent to the railroad and part of the Jefferson Landing State Historic Site. Katy Trailhead Park will be built on the west side of Jefferson Street, up the hill from the Lohman Building.

Several historic buildings and sites are located on Jefferson Street from East Capitol Avenue to Union Pacific Railway. This street offers a first impression to many visitors who enter Jefferson City by train, as residents and visitors from Kansas City and St. Louis take advantage of convenient Amtrak service to the State's Capitol.

Madison Street, from East Capital Avenue to the Missouri River Overlook at the Governor's Mansion

This block of Madison Street features street trees and furniture such as benches, trash receptacles and light poles along a 10-foot wide sidewalk. The Governor's Mansion fronts on this portion of Madison Street, making it a frequently visited tourist site. A pocket park overlooks the Missouri River at the northern terminus of Madison Street.

Pocket park at north end of Madison Street

III. Northwest Quadrant

North Branch of Wears Creek – Highway 54 to Alameda Drive

This segment is proposed as an alternate to the Industrial Drive railway corridor. The route would pass between Highway 50 and the rear yards of several heavy industrial properties. It would pass through the Runge Nature Center and several residential neighborhoods. It follows an existing overhead power line right-of-way and would serve as a major east-west connector in the northwest quarter of the city.

West Truman Boulevard to Runge Nature Center

The proposed spur would connect a future east-west trail route on West Truman Boulevard to the Department of Conservation's Runge Nature Center and to future greenway trails immediately to the south of the Nature Center site.

Belair Drive, from West Main Street to Belair Elementary School

This segment would connect students and neighborhood residents to the proposed northwest greenway corridor along Main Street. It would provide a sidewalk connection along Belair for area residents to reach Memorial Park and Belair School, thus accomplishing the greenway goals of connecting to schools, parks and neighborhoods.

Industrial Drive, from Highway 179 to West McCarty Street

The Industrial Drive corridor is one of three potential parallel routes planned for the northwest section of the city. While only one of the routes is likely to be constructed, three were selected to ensure that if any one opportunity becomes available, it could be pursued by the City without delays caused by making formal amendments to the Greenway Plan. This particular route is intended to secure an interest in the railway right-of-way, should it ever be abandoned. The potential also exists to construct a trial parallel to the railroad in Industrial Drive right of way

The character of existing development along Industrial Drive is consistent with its namesake, with some commercial and residential access as well. Most large industrial activities are located on the south side of Industrial Drive and most adjacent residential areas located to the north side do not have direct street access across the railroad to Industrial Drive.

The Industrial Drive railway spur runs underneath Highway 54 and High Street on its way to the Missouri River mainline

The small number of street crossings and vegetative buffer yards between residential developments are desirable characteristics.

The railway runs along the north side of Industrial Drive and merges with McCarty Street, eventually tying into the main line along the Missouri River and intersecting with other planned greenway routes near the Capitol Building downtown. The McCarty Street underpass offers one of only a few opportunities for the trail to pass through the otherwise impervious Highway 54 access barrier.

Railway line along Industrial Drive

IV. Binder Park Connectors

Grays Creek – Highway 179 Soccer Park to Binder Park, following rail right-of-way and Grays and Dickinson Creek waterways to Sycamore Valley

This portion of trail would stretch from the Grays Creek railway bridge northeast of the Highway 179 and Boonville Road intersection. The trail would run adjacent to the railway, through the 179 Soccer Park and roughly follow the creek watershed and railway to the north side of Binder Park at Sycamore Valley Drive.

In addition, undeveloped green fields outside of flood zones should be considered more desirable locations for greenways than right-of-way corridors or other built-up land. The Ellis Boulevard to Leslie Boulevard trail section, which was recently funded by Federal Transportation Enhancement monies, is an example of this type of scenario.

Fairgrounds Road and South Country Club Drive to Binder Park, via Big Horn Drive overpass

This route would be primarily off-street, passing through large undeveloped tracts of land and following drainage ways to the south side of Binder Lake. The main obstacle is Highway 50, which might be passable by Big Horn Drive overpass.

V. Southwest Quadrant

West Edgewood Drive/Frog Hollow Road to LeCar Drive, returning to West Edgewood Drive.

The Frog Hollow branch of Wears Creek dips south of West Edgewood Drive, winds around a residential neighborhood and passes under Highway 179 before curving northwest to rejoin West Edgewood Drive.

The Jefferson City Parks and Recreation Foundation already owns a strip of land along the Frog Hollow Branch of Wears Creek, extending from West Edgewood Drive to Cedarwood Court. The remaining land necessary to complete this segment is privately owned and most of the land is undeveloped.

West Edgewood Drive to City Storm Detention Site on Knipp Drive, via Harpers Ferry Road

The spur would follow Harpers Ferry north from West Edgewood Drive to Gettysburg Place and continue north, crossing Shermans Hollow Road before ending at the terminus of Knipp Drive. The spur would link several residential neighborhoods to the main trail.

West Edgewood Drive to Cole County Park

This spur would begin at West Edgewood Drive, approximately ½ mile east of Fairgrounds Road and head south along the County Park Lake overflow drainage path, through undeveloped land to provide an additional connection to Cole County Park.

Wildwood/West Edgewood Drive to Rockridge Road

This would be an off-street corridor to provide access to natural areas by climbing up a drainage way to a high point near the Water District #2 tower at the intersection of Frog Hollow and Rock Ridge Roads.

The project matches the alignment of a proposed extension of Wildwood Drive to Rockridge Road identified in the County-wide Thoroughfare Plan.

Fairgrounds Road to Bagnall Drive, via County Park Road, Maytag Road, & Scruggs Station Road

The segment extends the Fairgrounds Road greenway westward to a large residential cluster located in Cole County immediately west of the Jefferson City corporate boundary.

Future trail opportunities stemming from this extension could include following the old Bagnall Branch Railway Line to Lohman and extending a branch along Old Lohman Road and Big Horn Drive to Binder Park.

South Country Club Drive Greenway Extension – Fairgrounds Road to Scruggs Station Road

The north and west side of South Country Club Drive is already graded for a greenway. Very little development exists along this side of the roadway. The route would provide a greenway connection to residential subdivisions located in Cole County, just outside the Jefferson City limits.

Southwest Boulevard and Dix Road to Heisinger Road

There are no access points or trail user parking areas along this section. Residential development to the north is separated by approximately ¼ mile of heavy commercial uses. Residents who wish to access this portion of the trail from the north are challenged by the prospect of crossing Missouri Boulevard and passing through an unattractive commercial district with few or no sidewalks.

Sidewalks are frequently absent, limiting greenway access as in this automobile dealership, shown straddling Southwest Boulevard south of Wears Creek and the greenway.

To the south, the trail is bordered by a vast single-family neighborhood. This portion of the greenway is only accessible to this south-side single-use district via bridges at Southwest Boulevard and West Stadium Boulevard – two major arterial roadways. Southwest Boulevard does not have sidewalks and both sides of Southwest Boulevard, immediately south of Wears Creek between the trail and neighborhood access streets, are currently used as car lots. In fact, the only direct access point to the greenway from this neighborhood, which is loosely delineated by West Stadium Boulevard, Southwest Boulevard and Wears Creek,

is from West Edgewood Drive at Satinwood Drive. Future development of the Julie Lane area might provide an opportunity to connect the neighborhood to the trail through the RC Conservation District immediately south of the point where West Stadium Boulevard intersects Wears Creek. Pedestrian greenway access to residents would be greatly improved by such a linkage. Currently, the city does not own the land in the floodplain that could accommodate such a spur.

Missouri Boulevard to West Edgewood Drive

This section would begin at Missouri Boulevard and head south along the west side of the future Stoneridge Parkway. The trail would connect with the West Edgewood branch near Frog Hollow Road. This connection would provide access from West Edgewood Drive to the commercial district along Missouri Boulevard. The route has been tentatively agreed upon by the City and the developer of the property.

VI. East Branch/McKay Park/Frog Hollow Branch Connectors

McKay Park to Lafayette Street, via Wears Creek along Stadium Drive

This route would start at Lillian Drive and follow a wooded drainage northeast to Stadium Boulevard. It would become sidewalk along Stadium Boulevard and cross underneath Highway 54, at which point the trail would follow Wears Creek along the south side of Stadium Boulevard to its juncture with Leslie Boulevard.

Swifts Highway to Stadium Boulevard, via Trinity Lutheran School

This section would complete the connection from Washington Park to Stadium Boulevard, which presently terminates at Swifts Highway, by extending it behind the Lutheran School.

McKay Park to Stadium Boulevard (linking to Satinwood Drive Spur), via Sunrise Lane, Southwest Boulevard, Cedar Hill Road to Stadium Boulevard

The segment would follow Cedar Hill Road west from McKay Park and veer north before reaching Timber Trail. The City has acquired a strip of land through the Cedars Subdivision for greenway purposes. Capital Region Medical Center owns a large tract of land north of this route, which is currently undeveloped, but designated for a future health care related use.

VII. East Side Greenways

Ellis Porter Riverside Park to Brookdale Drive

The segment would start at the southeast corner of Ellis Porter Park and follow Boggs Creek south, crossing East McCarty Street and Eastland Drive, then heading east along the south side of East McCarty Street across Landwehr Hills Road to Brookdale Drive.

VIII. Regional Greenways

Katy Trail Extension to Holts Summit, via Highway Route AC and Summit Drive

This route would begin at the Katy Trail State Park access point at the terminus of Katy Road and provide a link to Holts Summit via existing roadway through a high density residential area. Next, the route would connect to Highway AC and Summit Drive, a major collector road lined with houses, which eventually reaches the heart of Holts Summit.

An alternative access option to Holts Summit may exist from the Katy Trail on the east side of Highway 54. There is a dirt access road that follows the edge of the Highway 54 right-of-way for approximately one eighth of a mile and connects to a gravel service road with access to Summit Drive (see photo on page 59).

This section of highway right of way near this field access may provide the short connection required to join the Katy Trail to Summit Drive.

Abandoned Bagnall Branch rail line - Bagnall Road. to Lohman

This route would follow the abandoned Bagnall Branch railway line from Bagnall Road, approximately five miles west to the town of Lohman.

Boggs Creek to Lewis & Clark Historic Site (@ Missouri River / Osage River Confluence)

Originating at the eastern extent of the proposed Boggs Creek greenway, this trail would parallel Algoa Road and the Missouri River passing through Osage City before reaching the Lewis & Clark Historic Site near the juncture of the Missouri and Osage Rivers.

Moreau River Nature Trail

This route could serve as a major regional recreational trail. It would extend along the Moreau River from the Missouri River to either Route B or Tanner Bridge Road on the central south side of the city.

Hough Park to Moreau River

This route would extend south from Ellis Boulevard to the proposed Moreau River Nature Trail, creating a continuous north-south greenway corridor from McCarty Street downtown.

Osage River Regional Recreation Trail

Similar to the Moreau River trail, this segment would extend along the Osage River area from the Missouri River to Route B and potentially further. This route could offer regional recreational opportunities.

Rising Creek

Rising Creek could offer an interesting diversion from the proposed corridor between Boggs Creek and Lewis & Clark Historic Site.

IX. Highway and On-Street Routes

These projects follow both City streets and state highways. Some right-of-way is likely wide enough to accommodate the addition of off-street greenways along the edges of highways. However, where right-of-way is not sufficient, on-street routes should be designated.

While on-street routes are lower priorities than off-street corridors, these portions of the network are relatively inexpensive to implement. Bike lanes, where re-striping of traffic lanes are necessary and changes to on-street parking may be affected, should be completed in conjunction with roadway maintenance such as overlay and resurfacing projects. On-street routes such as paved shoulders and signed shared roadways, which only require designation, should be marked with appropriate signage as soon as possible.

Main Street

This route stretches from the Capitol Building to Highway 54 (Missouri River Bridge)/Main Street, from Missouri River Bridge to Highway 179/West Truman Boulevard, from Highway 179 to Highway 50, including a link to Runge Nature Center/South Country Club Drive and from Highway 50 to West Edgewood Drive.

There is a significant demand for this route to become a second main east-west corridor reaching from the Capitol Building to the intersection of South Country Club Drive and West Edgewood Drive where it would merge with the existing east-west greenway corridor. This corridor formation is supported by the third-ranked access goal – to provide connections to additional neighborhoods.

It is a logical route that would serve as the main greenway arterial for a large residential area that encompasses most of the northwest quadrant of the city.

The route is relatively flat, provides the least exposure to industrial land uses and maximizes service to residents of the northwest quadrant. Land uses become increasingly commercial as the route continues westward along West Truman Boulevard and South Country Club Drive. In addition to the excellent residential connections that would be provided by this route, it would also connect two parks (Memorial & Runge Nature Center), two schools, the main commercial center for west Jefferson City (including the mall) and the Missouri Farm Bureau's future Heritage Museum and Historic Log Cabin Site.

This route would likely be an on-street route through much of the built-up residential area along West Main Street, with possible pedways (widened sidewalks) along segments where enough right-of-way exists. Sufficient right-of-way may exist along less densely developed and un-built portions of West Truman Boulevard.

Henwick Lane, from Rainbow Drive to Binder Park

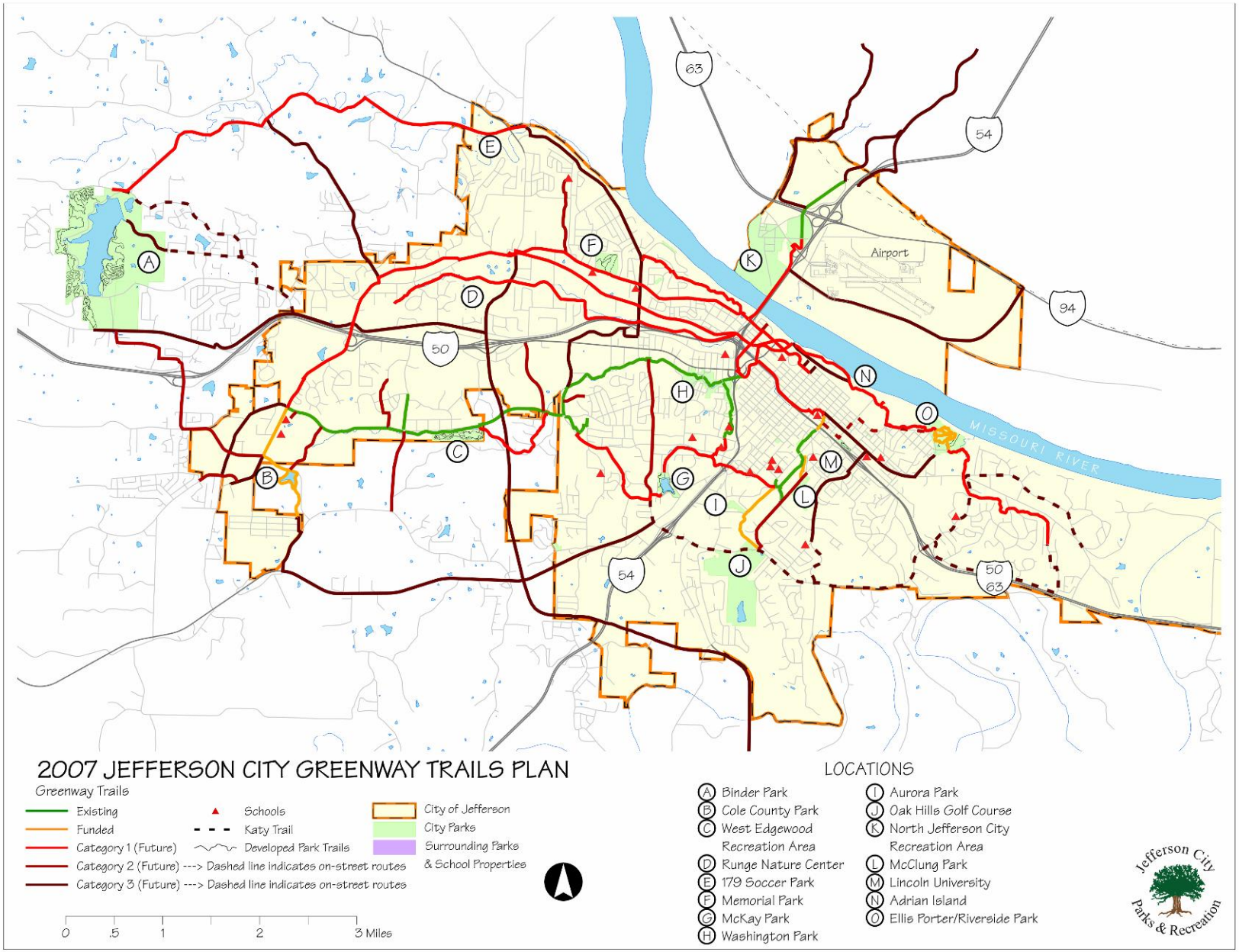
This would be an on-street route from Rainbow Drive to the north side of Binder Lake, intended to provide a central access to the numerous residents surrounding this roadway.

Various off-street connections may be possible from Henwick Lane to the east side of Binder Park, dependent on land owner cooperation.

Other corridors of interest include the following routes:

- Wears Creek Greenway to McCarty Street, via Southwest Boulevard/Ellis Boulevard/Seven Hills Road/Eastland Drive
- McCarty Street to Ellis Boulevard, via Clark Ave/Moreau Drive, with Oakwood Drive connection to McClung Park
- Highway 179/Rt B/Clover Hill Road 3 – Highway 50 to Moreau River
- Highway 179 Soccer Park to West Main Street, via Boonville Road
- Dix Road to Hyde Park Road, via William Street/St Marys Boulevard/West Stadium Boulevard
- Southwest Boulevard to County Park, via Route C/Rockridge Road/County Park Road
- Highway 179 to Binder Park, via Country Club Drive/Business 50 West
- Country Club Drive to Binder Park, via Rainbow Drive/Henwick Lane
- West Truman Boulevard to proposed Binder Park/Soccer Park connection, via Scott Station Road

Figure 16 2007 Jefferson City Greenway Trails Plan



IMPLEMENTATION

The implementation strategy considers current planning activities, recommendations of previous plans and suggestions from recent stakeholder meetings. Previously funded but not yet constructed projects are not included in this future implementation strategy listing.

It is important to keep in mind that land acquisition priorities do not necessarily coincide with trail construction priorities. For example, land may be acquired in fragments as opportunities present themselves. It may take years to acquire a complete corridor. Trail construction might proceed in small pieces as the land is acquired or it may occur as one large project once the entire corridor is secured.

The type of greenway route is defined by its location. The route definitions are as follows:

- Type A: Separated off-street routes
- Type B: Parallel on/along street, in right of way
- Type C: Shared use sidewalk (typically less than 10 feet in width)
- Type D: On-street surface (bike route)

Future routes are divided into three implementation categories, according to the following prioritization criteria:

Category 1:

Routes contributing to the existing core network

Preferably off-street (rather than on-street)

Category 2:

Routes connecting to major destinations or linking to residential neighborhoods

Category 3:

Routes forming loops or links to outlying areas

The probable type of facility required for completion of each trail segment is identified in brackets following each alignment description. The Parks and Recreation Commission will be primarily responsible for development and maintenance of separated off-street and parallel on-street right of way projects (Type A & B). Shared use sidewalks and on-street surface routes should be the primary responsibility of the Community Development Department Street Division (Type C & D). Cooperative efforts will be required to coordinate many projects.

Category 1 Projects

1. Katy Trailhead Park to Missouri River Bridge, via Capitol Avenue & West Main Street (Type C & D)
2. Missouri River Bridge, pedestrian/bike lane addition (Type B)
3. Katy Trail Connection, from Missouri River Bridge to Katy Trail Spur (Type B)
4. West Main Street to Adrian Island, via Wears Creek (Type A)
5. Adrian Island at Wears Creek to Prison Redevelopment Site at Chestnut Street, via Adrian Island (Type A)
6. West Dunklin Street to West Main Street, via Wears Creek (Type A) OR West Dunklin Street to West Main Street, via Bolivar Street (Type B)
7. Prison redevelopment site at Chestnut Street to Ellis Porter/Riverside Park (Type A & B)
8. Frog Hollow Road to LeCar Drive, looping back to West Edgewood Drive (Type A)
9. Jackson Street at East McCarty Street to Missouri Boulevard, via East Branch Wears Creek (Type B)
10. McKay Park to Satinwood Drive Spur, via Cedar Hill Road/Sunrise Lane (Type A & B)
11. Ellis Porter Riverside Park to Brookdale Drive (Type A)
12. Highway 54/63 to Alameda Drive, via North Branch Wears Creek (Type A & B) OR Katy Trailhead Park to West Edgewood Drive, via Main Street/West Truman Boulevard/South Country Club Drive (with link to Runge Nature Center; Type C & D) OR Highway 179

to West McCarty Street, via Industrial Drive (Type B, in case of rail bed availability)

13. Lincoln University to McKay Park, via Wears Creek along Stadium Boulevard (Type A & B)
14. Stadium Boulevard to Swifts Highway, via Trinity Lutheran School (Type A)
15. Highway 179 Soccer Park to Binder Park, via railway right-of-way/Grays Creek/Dickinson Creek (Type A)
16. Along the Missouri River – Boonville Road to Highway 54, via Hayselton Drive, Cole Drive, the Missouri River bluff and then running along Main Street (Type A & C)

Category 2 Projects

17. West Main Street to Rotary Centennial Park, via Bolivar Street (Type C)
18. West Edgewood Drive to Knipp Drive, via Harpers Ferry Road (Type B)
19. West Edgewood Drive to Cole County Park (Type A)
20. Fairgrounds Road to Bagnall Drive, via County Park Road/Maytag Road/Scruggs Station Road (Type B)
21. Dix Road to Glenwood Drive, via Southwest Boulevard (Type B)
22. Fairgrounds Road to Binder Park, via Big Horn Drive/Highway 50 overpass (Type A & B)
23. Wildwood Drive to Rockridge Road (Type B)
24. West Edgewood Drive to Missouri Boulevard, via Stoneridge Parkway (Type B)
25. West Stadium Boulevard to Julie Lane (Type A)
26. West Main Street to Belair Elementary School, via Belair Drive (Type B & C)
27. Ellis Porter/Riverside Park to East Branch Wears Creek, via Riverside Drive/Rivera Street/East Capitol Avenue/Chestnut Street/East Miller Street (Type B & C)
28. Leslie Boulevard to Ellis Boulevard, via Chestnut Street/Winston Drive (Type B)

Category 3 Projects

29. Madison Street & Jefferson Street Spurs (Type C)
30. Fairgrounds Road to Scruggs Station Road, via South Country Club Drive (Type B)
31. Highway 179 to Binder Park, via Country Club Drive/Business 50 West (Type B)
32. Highway 50 at Highway 179 to Industrial Drive/ West Truman Boulevard, via Highway 179 (Type B)
33. Highway 50 at Highway 179 to the Moreau River at Wardsville Road, via Highway 179/Route B/Clover Hill Lane (Type B)
34. Wears Creek Greenway at Southwest Boulevard to East McCarty Street, via Southwest Boulevard/Ellis Boulevard/Seven Hills Boulevard/Eastland Drive (Type B & D)
35. Highway 179 Soccer Park to West Main Street, via Boonville Road (Type B & C)
36. Brookdale Drive connection to Eastland Drive, via Brookdale Drive/Ridgemont Drive/Eastwood Drive/Highway 50 right of way/Expressview Drive/Woodlander Road (Type B & D)
37. Country Club Drive to Binder Park, via Rainbow Drive/Henwick Lane (Type B & D)
38. West Truman Boulevard to proposed Binder Park/Soccer Park connection, via Scott Station Road (Type B)
39. Katy Trail to Holt Summit, via Katy Road or along Highway 54 right-of-way to overpass and then to Summit Drive (Type B)
40. Dix Road to Hyde Park Road, via William Street/St. Marys Boulevard/West Stadium Boulevard (Type B & C)
41. East McCarty Street to Ellis Boulevard, via Clark Avenue/Moreau Drive with connection to McClung Park, via Oakwood Drive (Type B & D)
42. Marshall Street to Ellis Porter Riverside Park, via East McCarty Street and Grant Street (Type B & C)

43. Missouri River Bridge Connection to Katy Trail, via Olde Mokane Road (Type B & D)
44. East McCarty Street to Tomahawk Drive, via St Louis Road/East McCarty Street (Type D)
45. County Park Road to Maytag Drive, via Fairgrounds Road (Type B)
46. Southwest Boulevard to County Park, via Route C/Rockridge Road/County Park Road (Type B)
47. Wears Creek to Southeastern Terminus of Adrian Island trail, via railroad right of way (Type A)
48. Katy Spur to Katy Trail, via Oilwell Road and then northeast along Oilwell Road (Type B)

Figure 17 Category 1 Future Greenway Trails

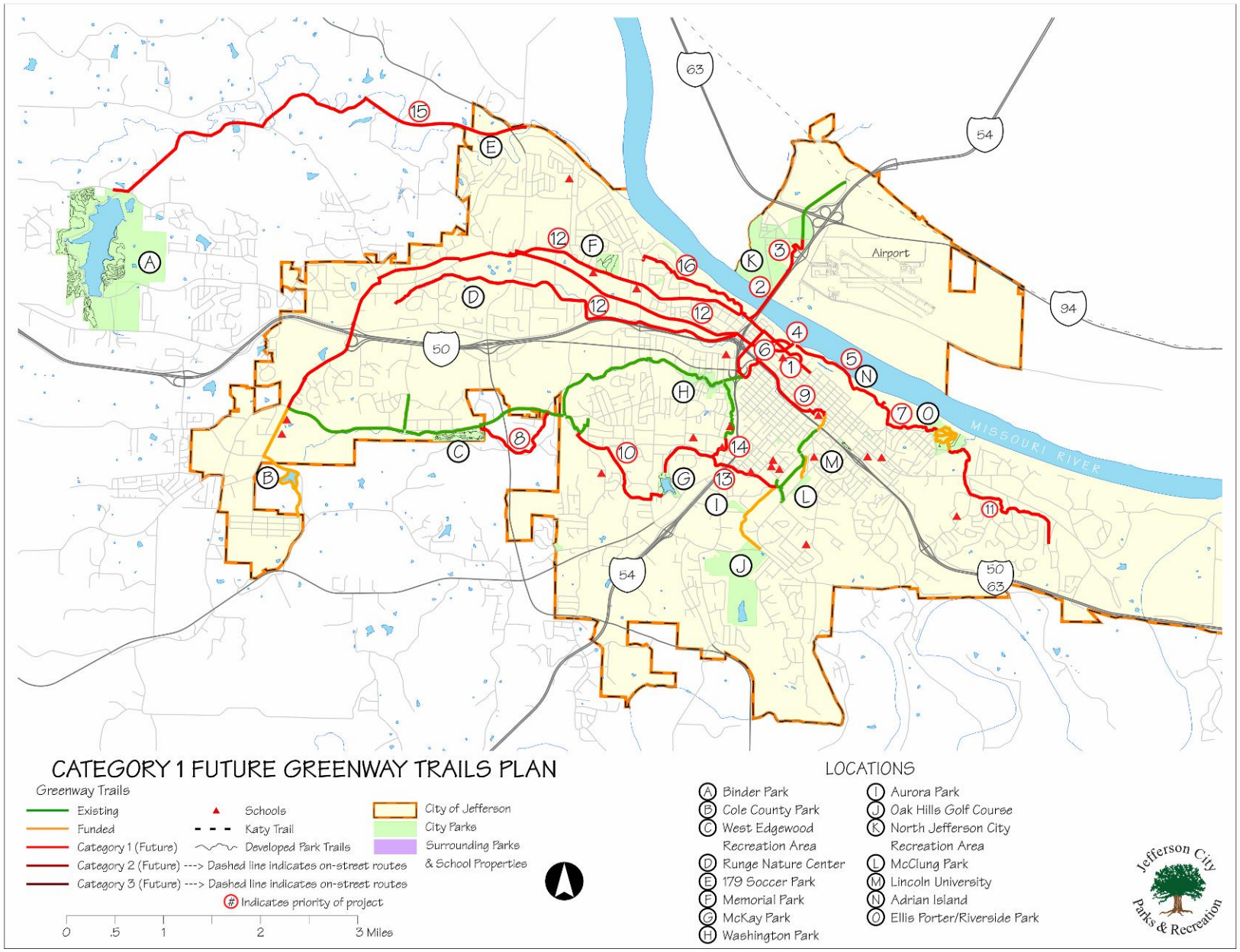


Figure 18 Category 2 Future Greenway Trails

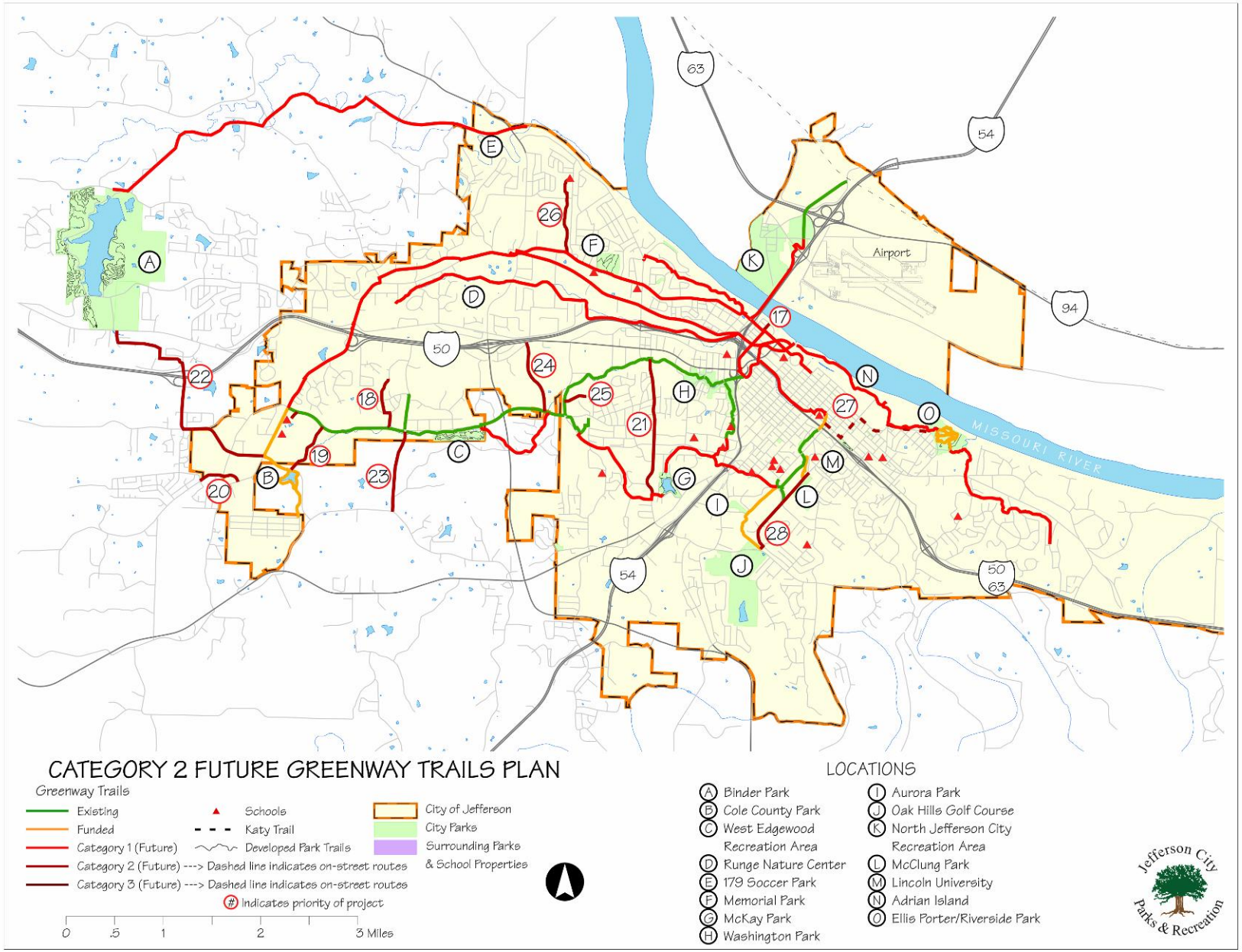
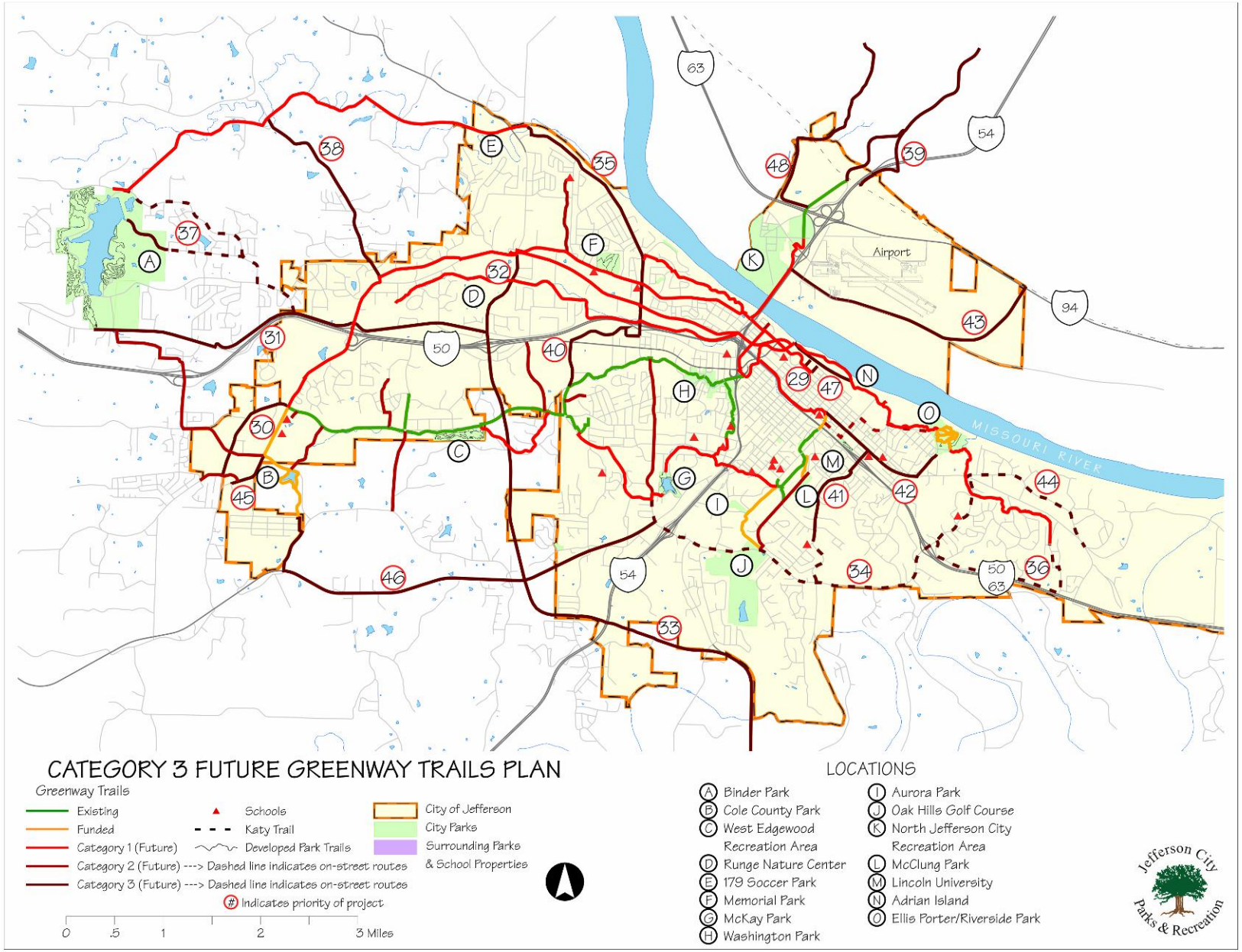


Figure 19 Category 3 Future Greenway Trails



SPECIAL PROJECTS AND ACTIVITES

These projects are to be pursued in conjunction with the above phasing.

Regional Trail Projects

Many of these future routes are inter-jurisdictional since they cross political boundaries and serve surrounding counties and communities. The following projects should be considered for long term completion:

- Katy Trail to Holts Summit, via Highway AC/Summit Drive
- Bagnall Drive to Lohman, via abandoned Bagnall Branch railroad
- Boggs Creek to Lewis & Clark Historic Site (at Missouri River & Osage River junction)
- Moreau River Nature Trail
- Hough Park to Moreau River
- Osage River
- Rising Creek

Support Programs

- Post informational kiosks and signage for both off- and on-street routes.
- Install bike racks on buses and at bus nodes to promote bike-transit integration. Promote this option.
- Create & Distribute a Greenway Network Map.
- Reestablish a Citizen Advisory Committee and charge them with the specific goal of organizing a community fundraising/promotion event to support greenways, in cooperation with Parks.

It is recommended that the Parks and Recreation Department gather the following data as part of implementation of the network plan:

- specific trail locations
- appropriate facility types
- cost estimates

This information may significantly impact the above proposed implementation schedule.

GREENWAY DESIGN & STANDARDS

The goal of the Parks and Recreation Department is to design trails that are accessible and safe for all users. The greenways are intended to provide access to pedestrians, joggers, bicyclists, in-line skaters and individuals with disabilities.

While the primary focus of the greenway system is to provide a separated off-street recreation and transportation network that is closely tied to ecologically sensitive natural areas, this is not always possible to achieve due to existing development. In order to provide a well-linked and comprehensive network that serves all citizens, it is sometimes necessary to consider trails parallel to streets in the right of way, shared use sidewalks and on-street surface alternatives.

This section covers the general physical structure of each trail type and presents the standards used in trail development. It contains guidelines and standards for both separate off-street and on-street right of way greenway facilities.

Greenbelts & Riparian Zones

A greenbelt is "an extensive area of largely undeveloped or sparsely occupied land set aside to contain development, preserve the character of the community and provide open space."[8] In Jefferson City, greenbelts often result from flood zone regulations which restrict the issuance of flood insurance to locations outside the 100-year flood zone, thereby discouraging development in these areas.

A riparian zone is defined as an area of trees and/or shrubs located adjacent to and up-gradient from water bodies. They help to improve habitat for aquatic organisms by lowering water temperature, providing a source of detritus and wood debris, reduce amounts of sediment, pesticides and other chemicals in shallow ground flow and runoff and reduce freezing of winter aquatic habitats. These zones also create a corridor for wildlife and help to mitigate flood damage.

The EPA recommends a 100 feet wide buffer on either side of a stream to adequately provide stream protection.[9] Many entities have adopted a 50 foot wide buffer on major streams and 25 foot wide buffer on intermittent streams to provide protection for the stream and adjacent properties. In developing the greenway system, whenever possible, construction design will strive to maintain a 25 foot buffer between natural streams and greenway trails, to preserve natural vegetation where it exists and to ensure that appropriate techniques are employed to protect riparian zones and help control storm water and erosion. Greenway trails developed along the riparian buffer zones help to protect habitat and provide scenic walkways for the public with opportunity for environmental education.

Riparian zone practices should apply to areas that are adjacent to permanent streams, intermittent streams, lakes, ponds, wetlands and areas with ground water recharge that are capable of supporting woody vegetation.[10]

Multi-use Paths

Shared-use trails intended for two-way pedestrian and bicyclist traffic must be designed for both safety and comfort. These goals are achieved by accommodating for "shy distance" – the space that must be maintained between a trail user and other users or obstacles on or along the pathway. Greater shy distances should be offered where user speeds are faster. Furthermore, path designers must consider various combinations of users, such as side-by-side pedestrian usage and passing scenarios.[11]

In keeping with the best practices for shared use trail design,[12] the City typically builds a ten-foot wide, six-inch thick, concrete path within their greenway system, whenever possible. Ten feet is the recommended minimum width for a two-way, shared use path on a separate right of way. However, eight feet may be used where bicycle traffic is expected to be low at all times. Where heavier use occurs

and where grades are steep, a 12-foot wide facility is recommended.[13]

Further standards include vertical and horizontal clear zones to provide for safety and visibility. Features include two foot wide shoulders on each side, with a grade of 2-3% to facilitate proper drainage without impeding wheelchair access. Three feet of horizontal clearance is also recommended between the edge of the trail and lateral obstructions such as trees or walls. To prevent interference from overhanging obstructions such as tree limbs, ten feet of vertical clearance should be maintained. In tunnels, twelve feet of vertical clearance should be provided if possible to accommodate emergency response vehicles and to increase the comfort of users.

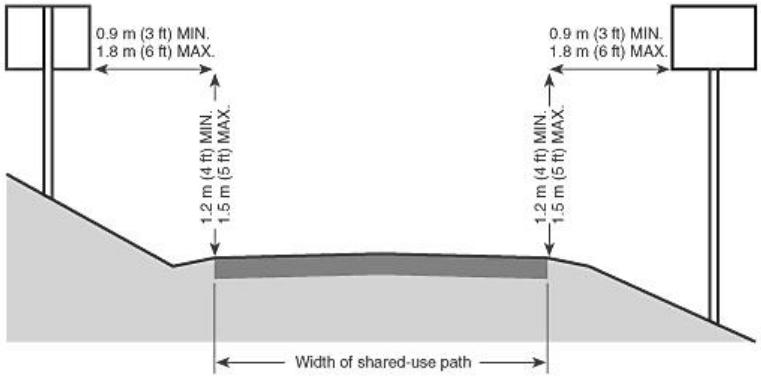


Figure 20 Typical Multi-Use Trail section[14]

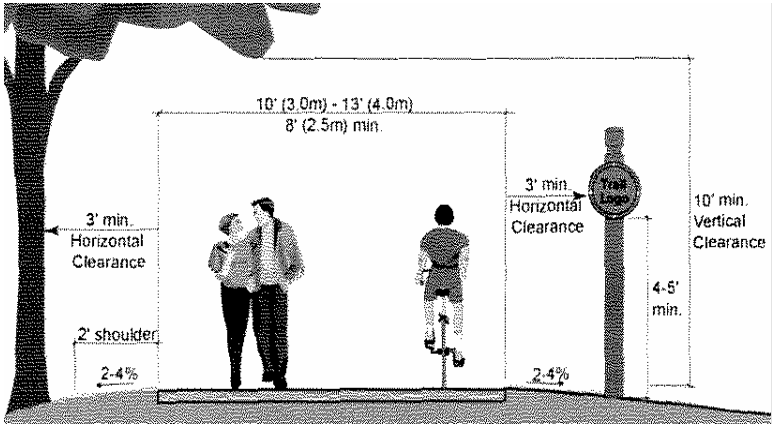


Figure 21 Cross section of a shared use path

Surface Material

Concrete or asphalt surface materials are preferred for shared-use paths in high-traffic urban environments. These surfaces provide maximum durability and make trails more accessible for wheelchairs, bicyclists, in-line skaters. Paved surfaces should always be provided in areas prone to flooding, with steep terrain and where the primary users are bicyclists and inline skaters. Crushed stone may be appropriate for trails located in areas of low use or secondary neighborhood trails.

Deciding whether to use concrete or asphalt depends on the trail design, cost - both initial and long term, maintenance needs and user preference. Many pedestrians and joggers prefer the softer surface of asphalt to harder concrete surfacing. Also, the seamlessness of asphalt provides a smoother surface for wheeled users. These advantages may be short-lived, however, as concrete typically outlasts asphalt. In terms of cost, initial investment is greater for concrete pathways than asphalt. However, asphalt requires more frequent maintenance. Concrete tends to last longer, but when it does require maintenance, it is usually more expensive to repair than asphalt.

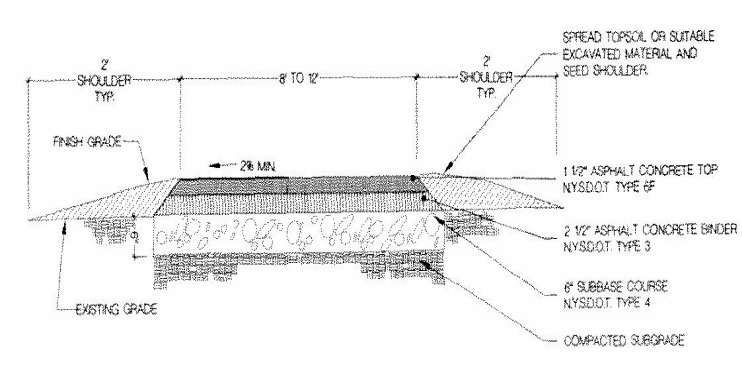


Figure 22 Typical asphalt trail construction section[15]

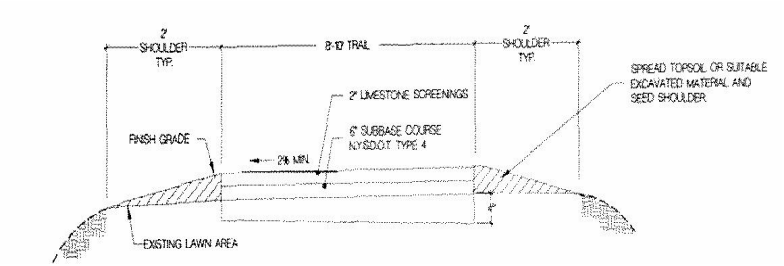


Figure 23 Typical crushed stone trail; Katy Trail Spur, North Jefferson City, MO

Typical stone dust trail construction at the Katy Trail

Typical concrete trail segment

Design Speed

Design speeds for shared use paths are meant to protect the safety of all users by ensuring that the horizontal and vertical alignment can simultaneously accommodate both the fastest users (bicyclists) and the slowest (pedestrians). To help designers meet the tolerances of bicyclists, the American Association of State Highway and Transportation Officials (AASHTO) recommends designing paved paths for a minimum cycling speed of 20 miles per hour and 30 miles per hour where grades exceed 4%. Unpaved paths should be designed for speeds of 15 miles per hour since cyclists cannot stop as fast without skidding or sliding on a loose surface and tend to ride more slowly. The speed design standards are mainly based on the minimum curve radii needed to safely accommodate bicyclists at the various speeds.

Gradient

Another critical factor in trail design is the grade or slope of the path. "Grade" – or "gradient", refers to the change in vertical distance relative to horizontal distance. For example, a 5% grade indicates a change of one vertical unit per 20 horizontal units (1/20 = 0.05). Jefferson City street gradients commonly exceed 10%.

Grades greater than 5% are hard for bicyclists to climb and may cause riders to lose control when traveling downhill. The Regulatory Negotiation Committee for Outdoor Developed Areas (RNCODA) developed a set of grade recommendations that are more stringent than those in the AASHTO bicycle facility guide, since bicycle facility grade standards do not meet the access needs of many wheelchair users. The following standards are appropriate when steep grades are unavoidable:

- 8.3 % for a maximum of 200 feet
- 10% for a maximum of 30 feet
- 12.5% for a maximum of 10 feet[16]

Rest intervals should be provided within 25 feet of the top or bottom of a maximum grade segment. The trail should gradually taper to less than 5% as it approaches a rest interval.[17]

Where the above distance maximums for steep grades cannot be met, they may be somewhat mitigated by adding four to six feet of additional width to the trail to allow sufficient space for a cyclist to dismount and walk their bicycle without blocking the trail or to allow cyclists to pass each other.

Other design precautions may include:

- Posting signs with recommended descent speeds
- Exceeding minimum stopping sight distances
- Exceeding minimum thresholds for providing shoulders and railings
- Using a series of switchbacks

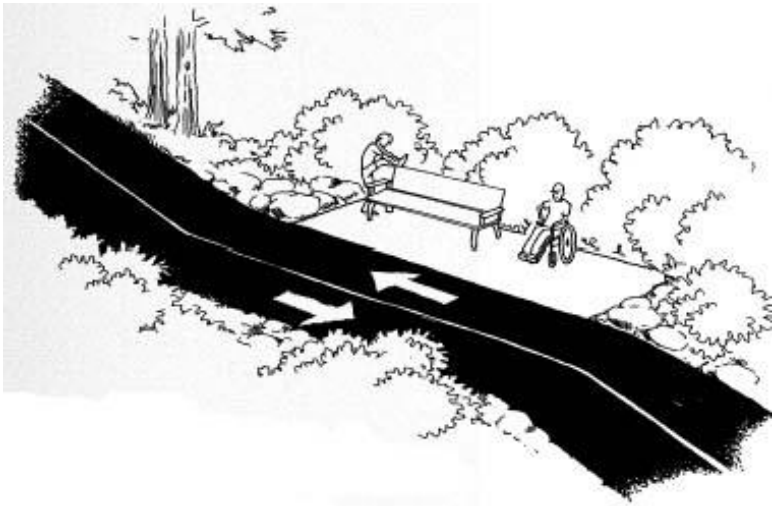


Figure 24 Rest interval and rest area[18]

The RNCODA identified four prerequisite features or conditions that may lead to a low priority for accessible trail design:[19]

- A segment of trail where the total of the grade and cross slope measurements exceeds 40% for 20 feet or more;
- An obstacle 30 inches in height or higher that extends across the full tread width;
- A section of soft or unstable surface which continues for 45 feet or more; and
- A tread width that is less than 12 inches for 25 feet or more.

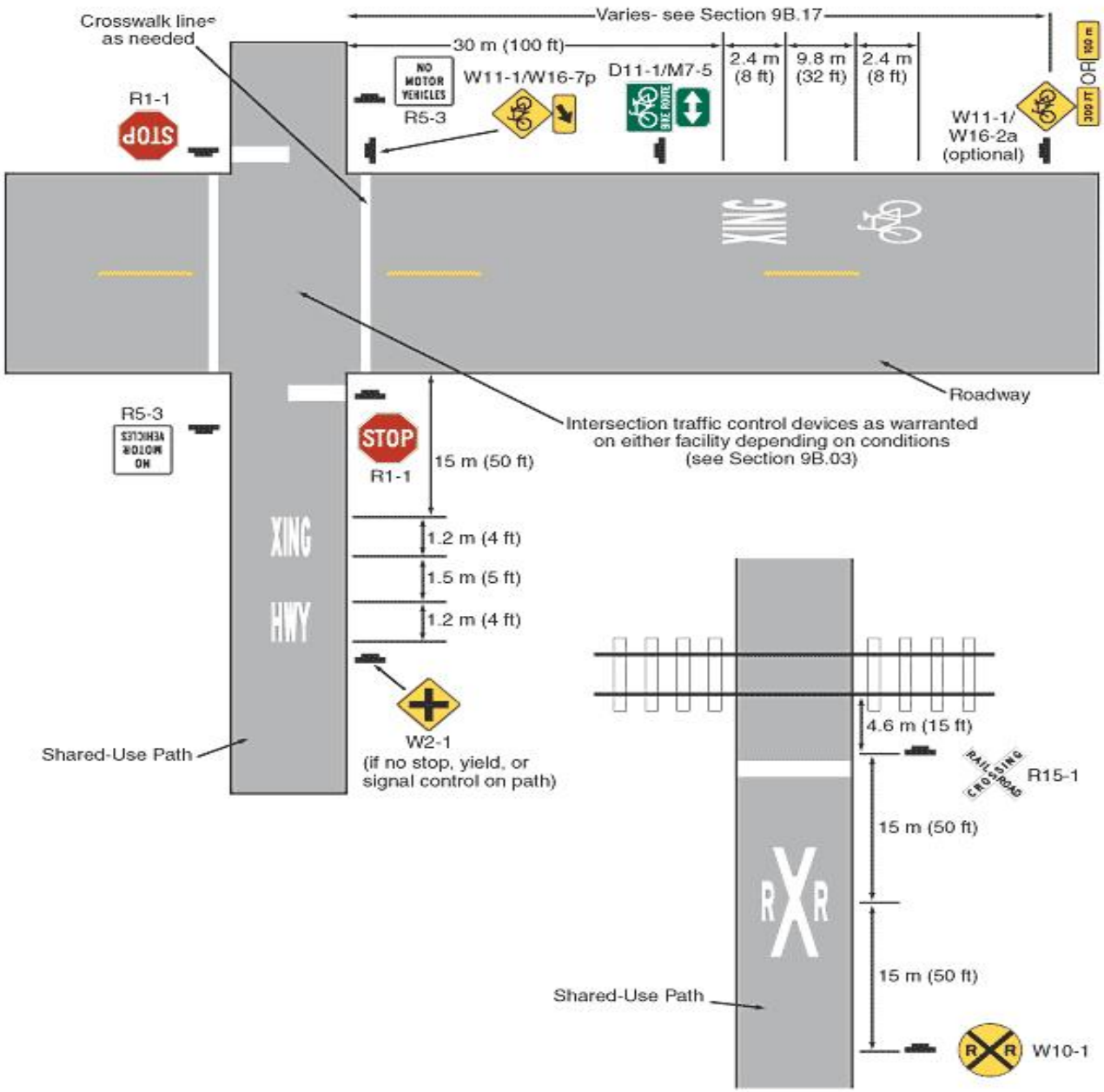
Signage

Signage should conform to the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for font size, font type and contrast requirements. Information on signs at trailheads and access points should clearly and objectively describe trail conditions. This allows path users to make informed decisions regarding their ability to cope with challenging aspects such as steep grades before they commit to using the trail, thus increasing the overall safety and satisfaction of their greenway experience. Appropriate signage should be used to convey the following information:[20]

- Shared-use path name
- Permitted users
- Path length
- Change in elevation over the total length and maximum elevation obtained
- Average running grade and maximum grades that will be encountered
- Average and maximum cross slopes
- Average tread width and minimum clear width

Typical hill signage on East Elm Street

Figure 25 Shared-use Pathway crossing signage at roadways and railways



Trail Access

Providing access to shared use paths means ensuring that all access points, intersections and surrounding facilities meet Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) requirements.[21] All trailhead entrances and facilities at these sites should meet accessibility standards and pathways leading up to multi-use paths should be as accessible as the path itself. It is important to provide access to the most limited user type throughout the shared-use trail, since trail users may switch between transport modes and thus require more than one type of facility during the course of a single visit. For example, a bicyclist may wish to park his bicycle and walk, in which case he may require a secure bicycle rack.

Linden Drive crossing at South School

Highway 179 greenway crossing with curb cuts

Access Restriction

Structures at trailheads may be used to restrict access to unintended users such as automobiles. It is important that these devices do not inhibit intended users and emergency or maintenance vehicles from entering the trail. A minimum lane width of 60 inches should be maintained to accommodate bicyclists where bollards or center medians are used to restrict trail access.[22]

Collapsible bollards can be unlocked and lay flat to permit access of maintenance and emergency vehicles. Center medians with low curbs and plantings may also be used to discourage automobile traffic, but allow emergency vehicles to enter. Vegetation, boulders, bollards or other obstacles may be used along the edges of trailheads to discourage prohibited vehicles from simply driving around bollards to access the trail.[23]

Figure 26 Collapsible/foldable bollard[24]

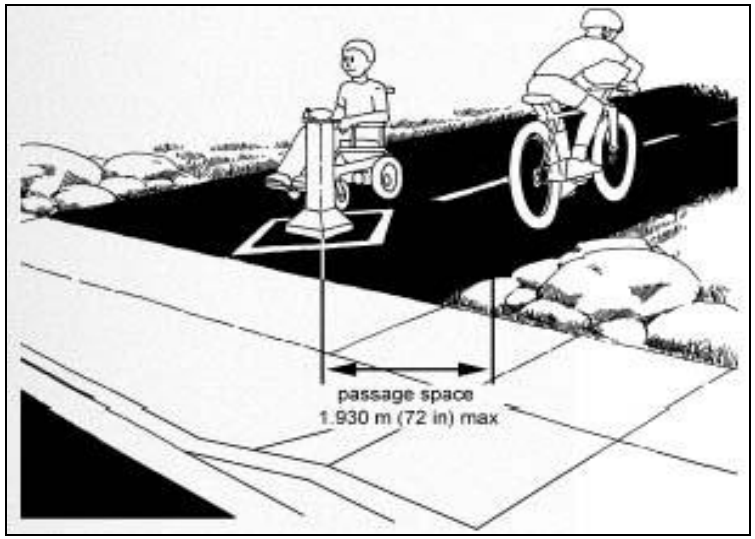


Figure 27 Typical trailhead bollard placement[25]

A staggered gate at the entrance of the trail usually discourages motor vehicle drivers from entering the greenway and encourages bicyclists to slow down when approaching streets. This may help to prevent trail users from dangerously entering roadways and may be particularly effective at intersections with poor sight distances. In locations where sight distances are good, however, gates disrupt legitimate greenway user flow by creating a narrow choke point.

In a gate-style barrier, such as on the Katy Trail spur, the elaborate structure's design may be intended to slow users as they approach roadway intersections, but may present a safety hazard when two or more users converge on it simultaneously in opposite directions or when passing in the same direction. A single bollard in the center of the path, in conjunction with bollards or landscaping at the path's edges, could mark the intersection, improve circulation and effectively discourage automobile use on the greenway.

Installing a center barrier (see diagram below) decreases the chance for collisions between trail users by splitting traffic into directional flows rather than funneling users through a narrow central gap.[26]

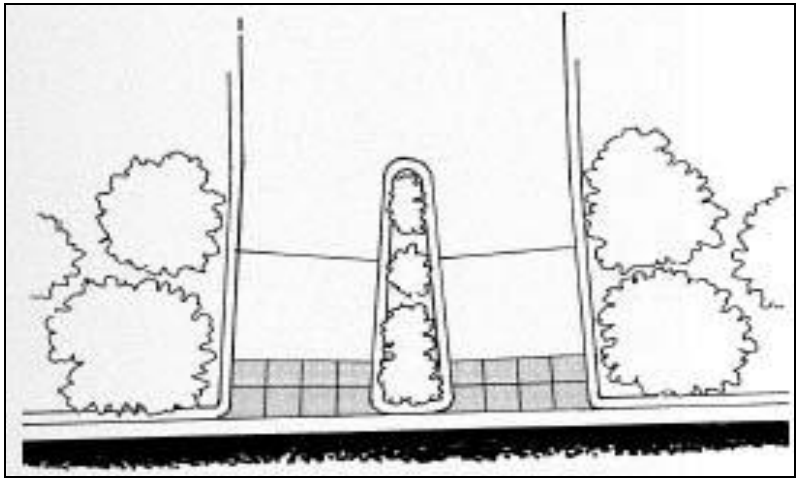
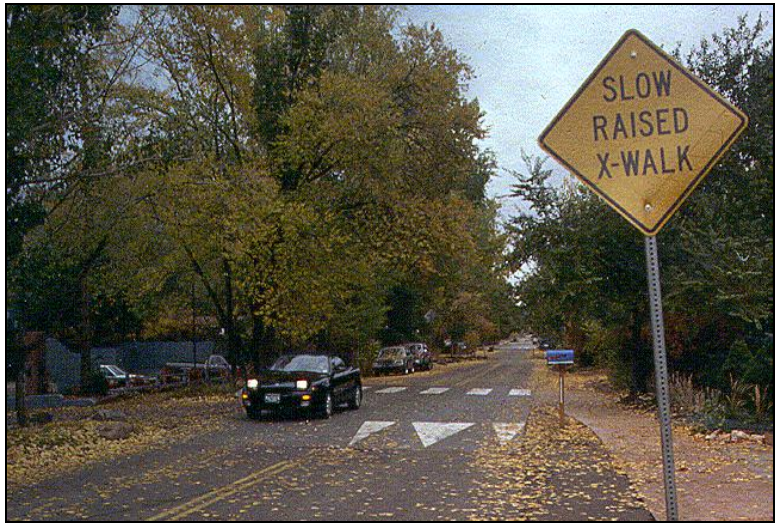


Figure 28 Center median with low landscaping[27]

Several traffic calming design features may be used in conjunction with signage at trail-roadway intersections to further improve safety by slowing automobile traffic. Examples include speed tables, center-island narrowing and chokers.[28]

Center-Island "Narrowing" example[29]



Speed Table example[30]

Chicane example[31]

Structures

Bridges are common structures along greenways and should meet the same standards as the rest of the trail. The following characteristics should be incorporated into the design of all shared-use trail bridges:[32]

Changes in levels - Bridges should be flush with the trail surface and should not be arched but have flat grades if possible.

Handrails - Handrails should be considered to protect all bridge users and provide a gripping surface to maintain balance or support. If handrails are provided, they should be designed according to ADAAG 4.26; the top rail should be at least 43 inches above the ground;

Alignments - Bridges should be aligned so that users can adequately see and prepare for the transition between the trail and bridge. Steep ramps or steps should be avoided at the bridge approach;

Dimensions - On shared-use paths, bridges should be as wide as the path with a 2-foot buffer on either side. Ideally, bridges on recreation trails should also be as wide as the paths leading up to them; however, a minimum width of 36 inches is critical.

Tunnels may be preferred or required in certain situations where going over an obstacle is not economically or practically feasible. In such cases, the following design guidelines should be observed.

- Drainage culverts under roadways may be successfully adapted to pathway use.
- The ten-foot trail width should be maintained through the structure, with two-foot side clearance
- A minimum of eight feet of vertical clearance should be maintained
- Emergency and maintenance vehicles should be able to pass through trail tunnels if possible

Under-crossings may be less expensive in some instances than overpasses since they typically require less change in grade, however, visibility and drainage issues must be carefully addressed in tunnel design to avoid the need for expensive repairs.[33]

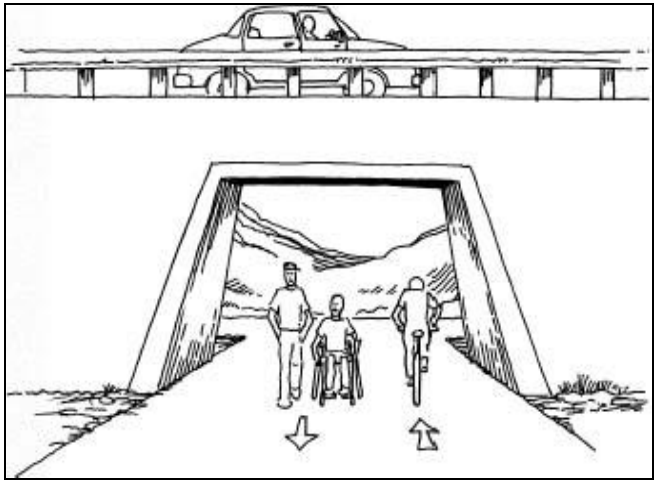


Figure 29 Good trail under-crossing design[34]

Amenities

Typical facilities may include restrooms, drinking fountains, benches, trash barrels, bicycle racks and lighting. Amenities should be provided at trail entrances and along the trail where possible to meet the needs of all trail users.

The Parks Department currently funds some of the need for benches and trees along the greenway through a memorial program that allows people and organizations to donate the money for these items in exchange for a small sign or plaque of recognition being mounted on or near the facility.

There is a sign at the Dunklin Street Trailhead access point that identifies the greenway and its hours. Other amenities include a bench, trash barrel and parking lot. Similar amenities should be considered at more locations along the trail system.

On-street routes

On-street routes are used where roadways exist and there is not enough right-of-way to accommodate off-street greenway trails. This type of greenway includes routes that run parallel to the road and shared use sidewalks that have been designated as greenway trails.

Bike Lanes

Bike lanes delineate preferential use of a portion of the road for bicyclists. They provide more predictable movements by bicyclists and motorists, resulting in fewer conflicts between the two modes. Bike lanes should be one-way facilities that carry bicycle traffic in the same direction as adjacent automobile traffic. They should be placed on the right side of the street.[35]

Basic bike lane standards

On roads without curb and gutter, lanes should be a minimum 4 feet wide

If parking is permitted, the lane should be positioned between the travel lane and parking area and be at least 5 feet wide

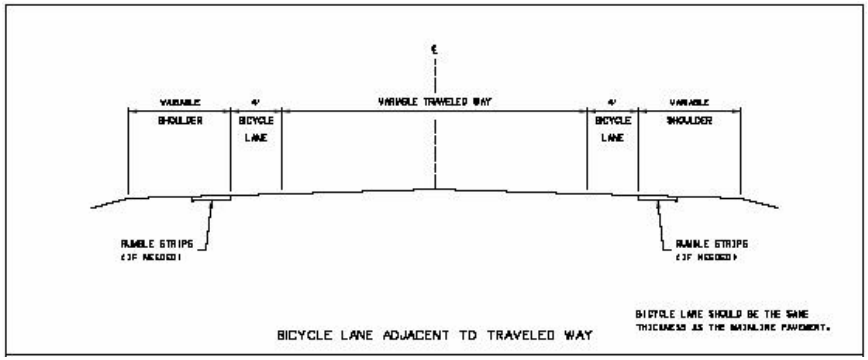
Where there is no delineation between parking and the bike lane, provide a minimum of 11 feet (without curb) and 12 feet (with curb) to accommodate both uses

Add 1-2 feet where parking volume or turnover is high[36]

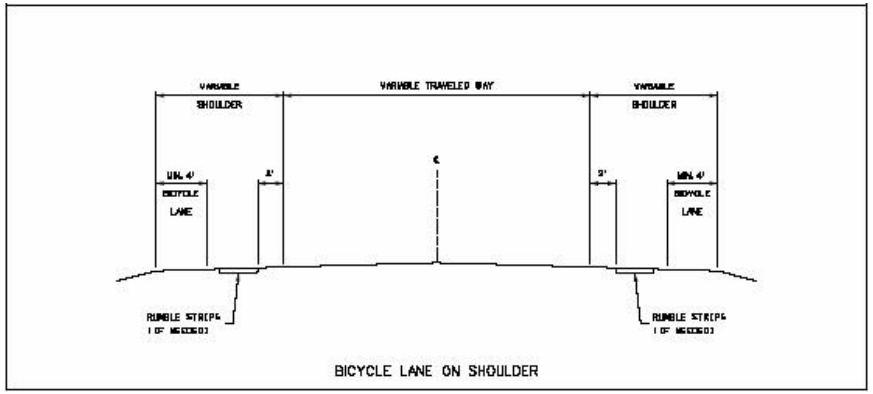
For more detailed information concerning bike lanes and markings, refer to AASHTO's Guide to the Development of Bicycle Facilities (1999).

Shared Roadway [37]

Cross section example of an on road bikeway[38]



MoDOT Bicycle Lane[39]



Shoulder Bicycle Lane[41]

Paved Shoulders

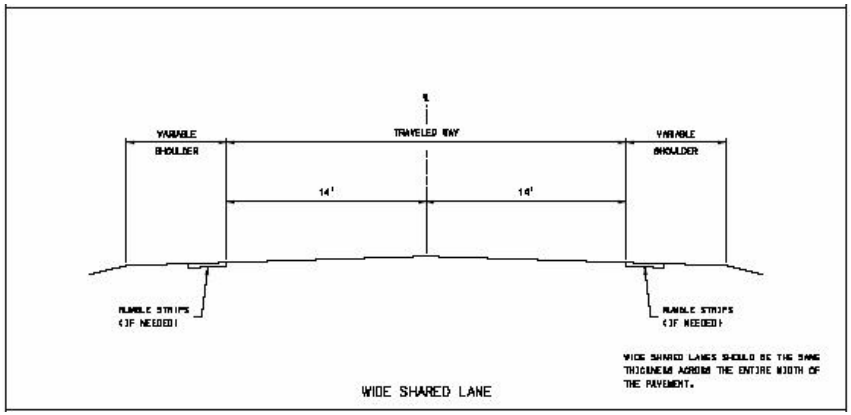
Paved shoulders are useful in rural areas and on urban roadways without curb and gutter. The following standards apply:

- Minimum 4 feet wide, not including width of gutter pan, unless the gutter is at least 4 feet wide.
- 5 feet wide shoulder is recommended where there is a roadside barrier such as a guardrail or curb.
- Shoulder wider than 5 feet is recommended where motorized traffic volumes are high, speeds exceed 50 mph, high percentage of trucks, buses or recreational vehicles use the road or where there are obstructions on the roadside.
- Rumble strips or raised pavement markers should not infringe on the minimum clear paths described above.[40]

Wide Curb Lanes [42]

Useful where shoulders are not provided (e.g. restrictive urban areas):

- 12 feet wide is the minimum, allowing most motorists to pass bicyclists without changing lanes.
- 14 feet wide is recommended
- 15 feet wide lanes are recommended on steep grades
- Lane widths in excess of 14 feet should not be continuously extended, as they might be used by cars as an additional lane.
- Consider striping bike lanes or shoulders where 15 feet wide pavement exists.[43]



Shared Lane[44]

On-street Parking

At least 12 feet should be provided as a minimum width for combined on-street parallel parking and bike lanes.[45]

Signed Shared Roadway

Signage may be added along shared roadways to indicate that a route is commonly used by bicyclists, offers a connection to a particular destination or facility (e.g. downtown or a school) or is a preferred route due to low traffic volume or paved shoulder availability.

Signed shared roadways should meet the following criteria:

- Provide through and direct travel in bicycle-demand corridors.
- Connect discontinuous segments of shared use paths or other bike routes.
- Where possible, adjust traffic control devices to give priority to cyclists.
- Remove or restrict on-street parking to ensure minimum travel lane widths are provided to cyclists.
- Provide a smooth roadway surface.
- Prevent accumulation of debris.
- Provide wider curb lanes than what is available along parallel roads.
- Meet or exceed minimum curb lane or shoulder width requirements.[46]

Typical Shared Roadway Signage[47]

APPENDIX 1 PUBLIC INVOLVEMENT IN THE DEVELOPMENT OF THIS PLAN

The first focus group activities centered on orientation to the objectives and processes of the focus group meetings and on meeting the participants.

The first task was compiling a strengths, weaknesses, opportunities and threats or "SWOT" analysis. The second task given to the focus group was identification of possible goals to guide greenway route planning. At the end of the first meeting maps were distributed, with the request that stakeholders go out into the city and draw possible routes for greenways and bring back the maps to the next meeting.

The second focus group meeting started with a recap of the previous meeting. Then the possible routes that the participants brought in on their maps were transferred to large scale maps placed throughout the meeting room. Participants reviewed the various routes that were displayed and then had the opportunity to discuss why they selected their routes.

A general discussion on the routes placed on the maps and strategies for developing greenway projects ensued.

Following this discussion, each member was asked to place 5 markers on any of the routes that they thought should have priority (using one marker per route).

The results of the goals, the SWOT analysis and the routes identified through this vote of the participants of the second meeting, along with their priorities are all included in this appendix.

Focus Group Meeting # 1

Part 1: SWOT Analysis – Strengths, Weaknesses, Opportunities, Threats

The Focus Group was asked to list things that were strengths of the greenway system.

Strengths

Alternative to Missouri Boulevard
Attractively designed
Connects businesses, schools, neighborhoods
Connects homes and schools
Continued growth
Convenient to many
Covers diverse areas
Doable by most people
Family relationships
Feels safe
Flat for Jefferson City
Flat most of the time
Good place to exercise and walk with family & friends. Many walk with dogs.
Good public support
Good use of city parks/city property
Good use of stream corridor
Hard surface
Health benefits
Healthy for families to exercise together
Increased use
Length
Length continuous
Links city together (schools, parks)
Located in center of city
Looks good
Makes use of memorial benches/trees
Observing nature
Off-street aspect
Parks & Recreation Dept. staff
Parts are very scenic
Physical health
Progress & momentum
Provides non-motorized transportation
Recreation & exercise
Runs through the middle of town, which is good for continued connectivity
Safety from motor vehicles
Tangible result for community expenditures that benefits all
Variety of terrain
Very popular
Well constructed
Well maintained
Well used most hours of day
Wide enough & long enough for real exercise

The Focus Group was then asked to list things that were weaknesses of the greenway system.

Weaknesses

No bicycle/pedestrian bridge across the Missouri River
Needs a broader user group
No call boxes for emergencies
Cleanliness
No commercial activity directly related to greenway
Not enough connections into neighborhoods/city parks
No connection to East High Street area
More cooperation with civic groups
Crosses too many busy intersections
Difficult topography
Not directly connected to places of work - i.e. State government complex - commuter use
Discontinuous
Diversity of trail locations (lack of)
Doesn't go to river/doesn't cross river
Doesn't go where it needs to go
Doesn't loop (linear)
No eastside component
Existence is not high enough on the radar screen
Getting across river to Katy Trail, safely!
Lack of downtown & capitol complex access
Lack of east side access
Lack of signage
Lack of sustained support from city
Lacks access to north Jefferson City
Lacks connection to all schools
Lacks connection to Katy Trail
Lacks connection to larger city parks (Memorial, Binder)
Lacks connection to on road routes
Lawns can be improved (more weeds than grasses)
Linkage to neighborhoods (lack of)
Maps of where system goes (lack of)
More traffic lights to get across major intersections
Need better lighting, more restrooms
Need more miles
Need occasional cleaning
Need transportation resource - provide access to shopping
Needs maps & signage
Needs promoting
Needs to connect more residential areas and destinations
Neighborhood connectivity (lack of)
No connection to Katy Trail
Not multimodal - bicyclists & pedestrians don't mix well
Not used enough
Ongoing funding for maintenance
Parking!
Parking
Seek other funding
Signage & maps at trailheads (lack of)
Some areas need more lighting
Needs spurs into neighborhoods & business districts to connect the two better
User maps for public (lack of)
Want closer to my house

The Focus Group was asked to list things that they saw as Opportunities of the greenway system.

Opportunities

Additional use adjacent or nearby resources

Better health

Better promotion

Bike pedestrian walkway across Highway 50

Build in undeveloped natural areas

Build on current momentum (non-motorized pilot)

Buy easements early for greenway

Call boxes for emergencies in remote areas

Community development/neighborliness

Connect east, west, north, south

Connecting greenways to neighborhoods so users can start at home without driving to greenway

Connect to downtown

Connect to Katy Trail

Connect to retail areas

Create stationary maps to show where greenway goes

Cultural and other parks & recreation activities on the greenway

Each new residential & commercial development designate an easement

Economic development

Enhance relationship with county & MODOT

Expand access to east

Expand downtown capitol complex

Expand neighborhoods

Fix the weaknesses above

Get out ahead of future development

Getting over the bridge & connecting to Katy Trail

Go more places across the river, to river, schools, parks, destinations

Good base to build on

Good planning. Opportunities now for long-term development

Improved funding opportunities

Improve dilapidated areas

Improve on weaknesses

Incentives for right-of-way donors

Interpretation of natural & cultural features in Jefferson City

Land or easement acquisition

Links between parks

Litter policing

Make sure there is connectivity along the development of the 179 corridor with existing & new neighborhoods surrounding that area - plus all the way to the 179 soccer fields

More publicity

More restrooms

More use would lead to more $

MSP site development with waterfront trail to Missouri River Bridge

Newly annexed areas could have Greenways built before development

Occasional police bike patrol (including across river @ Katy trailhead. Cars are being broken into)

Physical exercises along Greenways

Provide opportunity to commute to Work - especially downtown via greenway

Opportunities (Continued)

Recreation/Health/Nature

Seek corporate funding

Take advantage of "Safe Routes to School"

TE funding availability

Trail along riverfront

Transportation option to get to work, school and Shopping

Use of federal money to match City

Use popularity to develop funding stream

Would like to see more people use the Greenway for commuting to work or the store. Could be promoted as such.

Work with planning partners (MODOT, County, DNR, City, State O.A.)

The Focus Group was then asked to list things that they saw as threats to the greenway system.

Threats

Builders & developers resist (in the short run) granting easements

Community disinterest

Couch potato

Crime in east side neighborhoods

Crossing Highway 50

Development with no consideration to greenway easements

Difficulty obtaining right-of-way

Federal enhancement funds going away

Funding

Funding

Funding & maintenance

Grade crossings

Lack of cooperation from property owners

Lack of courtesy by people using adjacent facilities

Lack of understanding on the benefits of a greenway – greenway promotion

Lack of funding

Lack of money

Lack of public support

Lack of use / lack of support

Land acquisition

Low priority to city officials

Maintenance

Notion that greenways are a waste of money

Physical restraints (terrain/other natural barriers; US 50/63, 54; existing structures; union pacific)

Physical land features that prevent connecting through the city

Public safety concerns/perceptions

Right of way difficulties

Some areas need more security

Some residents fear nearby greenways

The trees are nice but as they grow the canopy will make the walkway darker

Uninformed citizens

Part 2: Identifying Goals

The focus group members were asked to identify potential goals for the Greenway Plan. This table shows the potential goals and the importance of the goals to the focus group.

Goals	Votes
Make a good Long Range Plan	16
Cross the River/Connect to Katy	8
Secure ongoing funding/Fund the plan	7
Connect to commercial areas and Capitol complex	6
Engage broad community involvement	6
Public education (maps, signs, etc.)	5
Developers will include consideration of greenways (easement)	5
Create a loop system	5
Expand into additional neighborhoods	4
Connect all schools	4
Connect to parks	2
Promote its use	1
Connect to on-road routes	1
Maintain the greenway	0
Increase publicity	0

The overriding theme that emerged from the goal setting part of the first focus group meeting was the desire for a good long range greenway plan, a map for the future development of greenways. This could be considered as the primary goal of the greenway plan.

The following items could be considered to be plan objectives and strategies:

Objective #1- Provide connectivity and function.

- Cross the River and connect to the Katy Trail
- Connect all schools, parks, commercial areas and the Capitol Complex
- Expand into additional neighborhoods
- Create a loop system
- Connect to on-street routes

Objective # 2 – Engage the public with broad community involvement. Citizens are interested and want to be involved, encourage public involvement.

- Improve public education and promotion of greenways through a promotional plan, maps and activities
- Encourage developers and neighborhoods to provide easements and facilities for greenway development
- Encourage businesses and organizations in the planning, maintenance and development of greenways

Objective # 3 – Provide the financial resources for development, maintenance and promotion of greenways

- Encourage private and public funding for greenways and greenway elements
- Identify and secure adequate funding in a consistent, planned program identifying sources and fund acquisition.
- Establish a budget item in the capital improvements plan.

Focus Group Meeting # 2

The second focus group meeting took place on April 22, 2006.

This second meeting had participants return with maps that the participants had drawn potential routes on, between the first and second meeting.

Each participant drew their potential greenway routes and connections on large city maps. Each attending participant then voted for their five favorite projects throughout the city (and even outside the city), by attaching sticky dots adjacent to the route on the maps.

After marking their priority routes, each person reviewed the maps and discussed them with other attending participants and then all attendees discussed their selections and preferences in an open discussion.

The following table lists the number of votes for the proposed routes from the route mapping exercise and indicates the importance that they place on these potential routes.

Proposed Greenway Route Mapping Exercise Results

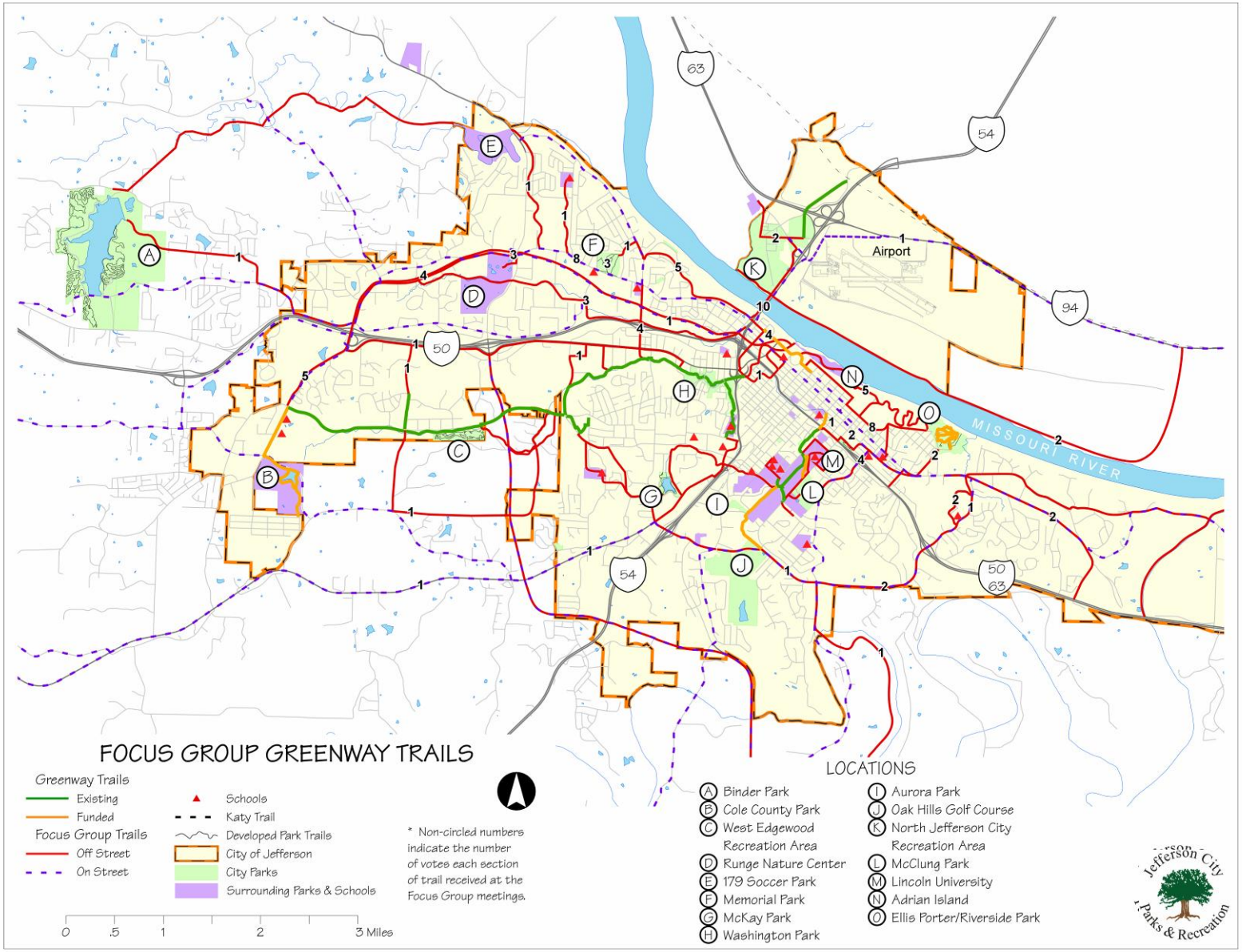
Route Description	Votes
Missouri River Bridge Crossing	10
West Main Street - Highway 179 to Highway 54 (MO R Bridge)	8
East Capitol Avenue/MO Prison Redevelopment Site to Missouri Riverfront, Ellis Porter Park, & Capitol Complex	8
Riverfront - MO R Bridge to Boonville Road	5
South Country Club Drive - Highway 50 to West Edgewood Drive	5
Missouri Riverfront - Adrian Island to Lewis & Clark Bldg (DNR)	5
Main Street - Highway 54 (MO R Bridge) to Capitol Bldg.	4
West Truman Boulevard - Highway 179 to Highway 50	4
Dix Road - Wears Creek Greenway to West Main Street	4
Ellis to Leslie (via Aurora Park)	4
Clark Avenue/Moreau Drive/Oakwood Drive - McCarty Street to McClung Park	4
Highway 179/Rt. B/Clover Hill Road 3- Highway 50 to Moreau River	3
McKay Park to Satinwood	3
West Truman Boulevard connection to Runge Nature Center	3
North Branch Wears Creek - Highway 54 to West Truman Boulevard	3
Lincoln University Campus Loop	3
Bolivar Street - Wears Creek Greenway (West Dunklin Street) to MO R Bridge	3
East Branch Wears Creek - McKay Park to Lincoln University (Leslie Boulevard)	3
Memorial Park Loop Paths	3
Seven Hills Road/Ellis/Eastland - Highway 50 to Highway 54	3
Grays Creek - Highway 179 Soccer Park to Binder Park	2
MO R Bridge to Katy Trail Spur, 4th Street and Teal (old Cedar City)	2
Lafayette Street to Clark Avenue	2

Grant Street - McCarty Street to Ellis Porter Park	2
Lewis & Clark Middle School - Loop from Eastland Drive around west side	2
East McCarty Street - Eastland to Highway 50	2
North side of MO R. - Turkey Creek to Katy Trail, East of city	2
Rt. C - Southwest Boulevard to west	2
Moreau R. - Green Berry Road to south	1
Eastland Drive - McCarty Street. to Highway 50	1
MO R. Bridge - Hibernia/Wehmeyer/Highway 94 to east	1
Sharon/Rainbow/Country Club Drive - Binder Park to West Truman Boulevard	1
West Main Street to Highway 179 Soccer Park - along East side of Highway 179 (including Hoover Ct. & Ihler Drive)	1
West Main Street to Belair Elementary School – West side of Belair Drive	1
Boonville Road	1
Meadow Lane/Forest Hill Avenue - Boonville Road to Memorial Park	1
Wildwood Drive - Shermans Hollow Road to MO Boulevard	1
MO Boulevard - Country Club Drive to Highway 179	1
Stadium Greenway to Target & shopping centers on MO Boulevard	1
Creek Trail Drive/Frog Hollow Road/Lecar Drive to West Edgewood Park & Greenway	1
West Edgewood Drive & Wildwood, south to Rockridge Road, east to new St Mary's Hospital site, & north to Frog Hollow Road & West Edgewood Drive	1
Industrial Drive - Dix Road to Highway 54	1
Wears Creek - Dunklin Street Greenway Trailhead to Adrian Island	1
Dunklin/Mulberry/Schroeder/Broadway – West Dunklin Street Greenway Trailhead to Catholic School	1
Lafayette Street – East Elm to East State Street	1

** This list of proposed greenway routes may include routes along streets, creeks, rivers and any natural or man-made facility.

This exercise was designed to propose routes, without limiting the imaginations of the participants and may or may not be selected by the City for inclusion in this or future plans.

Figure 30 Focus Group Mapping Exercise



Focus Groups participating in the development of this plan identified approximately 86 miles of greenway trails. This map illustrates these routes.

APPENDIX 2 GREENWAY DEVELOPMENT FUNDING SURVEY

The following funding strategies were identified by stakeholders at the focus group sessions:

- Implement long-term funding strategies (e.g. pursuing untapped funding sources, lobby for increased public and private local funding commitment)
- Seek private and public funding to leverage City funding.
- Make use of local, state and Federal grant and development programs. Make applications for grants and demonstration projects whenever possible.

Some sources of funding are eligible only to governmental agencies, some private individuals and some not-for-profit agencies may be eligible.

The potential funding resources and methods resulting from this survey are listed below:

A. Local Funding Sources

Over the past 15 years, primary funding for greenway development in Jefferson City has been from Federal Highway Administration Transportation Enhancement Funds, with the local match being provided primarily from the 1/2 cent Capital Improvements Sales Tax.

The Parks and Recreation Department has provided some match from the Parks Fund and has received some smaller grants from the Recreational Trails Program and the Missouri Local Landmark Parks program which has been phased out.

Virtually all the greenway has been built on donated property or easements, in existing city right of way or on city park land. Donations should continue to be a major emphasis for the Parks and Recreation Commission.

Local park funding sources:

- Parks Fund - ½ Cent Local Park Sales Tax may be used for some greenway development.
- Volunteer Assistance and Small-Scale Donation Programs
- Property Donations - Property donated by private owners, developers, trusts and corporations for the purpose of trail development.
- A sponsorship program for greenway amenities
- Volunteer Work – in-kind contributions of labor or materials

B. Federal Funding Sources

National Recreational Trails Program

The **Recreational Trails Program** (RTP) is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). It's funded by a Federal tax of approximately 18 cents per gallon on fuel for off-road recreational vehicles. These funds are apportioned to the states, which are responsible for distributing them to eligible trail projects. The following types of projects are eligible for these funds:

- maintenance of existing trails;
- development of trails and certain trailhead facilities;
- new and replacement trail infrastructure, including bridges and signs;
- acquisition of trail corridors (from willing sellers);
- certain state trail program costs;
- trail safety and environmental mitigation projects[48]

Projects require a minimum match of 20 percent and all projects must be maintained for a period of 25 years. Grant requests up to $100,000 are eligible. Eligible applicants

include cities and counties, schools and private non-profit and for-profit businesses.[49]

National Scenic Byways Program – (Administered Through the Federal Highway Administration)

The program recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities and provides for designation of these roads as National Scenic Byways, All-American Roads or America's Byways.

Grants and technical assistance are provided to States and Indian tribes to implement projects on highways designated as National Scenic Byways, All-American Roads, America's Byways, State scenic or Indian tribe scenic byways; and to plan, design, and develop a State or Indian tribe scenic byway program.

National Highway System (NHS)[50] - (Administered Through the Federal Highway Administration)

The program provides funding for improvements to rural and urban roads that are part of the NHS, including the Interstate System and designated connections to major intermodal terminals.

National Highway System funds may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway on the National Highway System, including Interstate highways. These might be considered for portions of the future greenway network that are shown along Highway 50 right-of-way.

Surface Transportation Program (STP) funds – (Administered through the Federal Highway Administration)

The Surface Transportation Program provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities.

Surface Transportation Program (STP) funds may be used for both construction of bicycle and pedestrian transportation facilities and non-construction projects such as maps, brochures and public service announcements related to safe bicycle use and walking.

Ten percent of State STP funds are dedicated to the Hazard Elimination and Railway-Highway Crossing programs that address bicycle and pedestrian safety issues. Each State is required to implement a Hazard Elimination Program to identify and correct locations which may constitute a danger to motorists, bicyclists and pedestrians. Funds may be used for surveys of hazardous locations, projects on publicly owned bicycle or pedestrian pathway or trail or safety-related traffic calming measures.

Job Access and Reverse Commute Grants are available to support projects, including bicycle-related services, designed to transport welfare recipients and eligible low-income individuals to and from employment.

High Priority Projects and Designated Transportation Enhancement Activities identified by Section 1602 of TEA-21 include numerous bicycle, pedestrian, trail and traffic calming projects in communities throughout the country.

Transportation Enhancement Funds - (Administered Through the Federal Highway Administration)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its subsequent update, (TEA-21), and the most recent transportation act, SAFETEA-LU, provide federal funds for the implementation of the following types of transportation enhancement (TE) activities:

- Provision of facilities for pedestrians and bicycles.
- Provision of safety and educational activities for pedestrians and bicyclists.
- Acquisition of scenic easements and scenic or historic sites.
- Scenic or historic highway programs (including the provision of tourist and welcome center facilities).

- Landscaping and other scenic beautification.
- Historic preservation.
- Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals).
- Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails).
- Control and removal of outdoor advertising.
- Archaeological planning and research.
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.
- Establishment of transportation museums.[51]

The TE funding program provides 80% of approved project expenses, with the state or municipality being responsible for the remaining 20%. Activities that are integral to the above qualifying projects, such as environmental analysis, project planning, design, land acquisition and construction enhancement activities are eligible for funding.

As a sub-component of the Surface Transportation Program (STP), TE activities are subject to the same procedural requirements. While funding for TE activities can be attained directly through STP, the TE activities list ensures adequate funding is dedicated to improve transportation experiences in and through local communities. Greenway projects are very compatible with this goal. They contribute to mobility, protection of human and natural environments and community preservation, sustainability and livability.[52]

Congestion Mitigation and Air Quality Improvement (CMAQ) Program [53] – (Administered through the Federal Highway Administration)

The Congestion Mitigation and Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide (CO), and particulate matter (PM-10, PM-2.5) which reduce transportation related emissions.

Land and Water Conservation Fund (LWCF) Grants - Administered through the U. S. Department of Interior

The LWCF is a federal program that was developed to help states preserve wildlife habitat while providing opportunities for recreation. Projects must meet the criteria set forth by both the state's overall recreation plan and the local recreation master plans. Furthermore, facilities should be designed to serve the broadest and most diverse spectrum of age groups, minority and special populations.[54]

Land and Water Conservation Fund grants are available to cities, counties and school districts to be used for outdoor recreation projects. Projects require a 55 percent match. All funded projects are taken under perpetuity by the National Park Service and must only be used for outdoor recreational purposes. Development and renovation projects must be maintained for a period of 25 years or the life of the manufactured goods. The grant cap has been set at $50,000.[55] Continuation of this grant program is currently being jeopardized by Congress.

Other Federally Funding Options include:

Wetlands Reserve Program - Administered through the U.S. Department of Agriculture (USDA)

Watershed Protection and Flood Prevention (Small Watersheds) Grants - Administered through the USDA Natural Resource Conservation Service (NRCS)

Urban and Community Forestry Assistance Program - Administered through the U.S. Department of Agriculture (USDA)

Small Business Tree-Planting Program - Administered through the Small Business Administration

Economic Development Grants for Public Works and Development of Facilities - Administered through the U. S. Department of Commerce, Economic Development Administration (EDA),

C. State Funding Sources

Adopt a trail programs[56]

Missouri Landmark Local Parks Program

Starting in 1997, the Missouri General Assembly provided annual funding for the renovation and restoration of regional parks deemed to be "landmark parks" in Missouri and also to other local parks throughout the state. Nearly $19 million was appropriated for such projects through the Landmark Local Parks Program (LLPP), before funding was cut off in 2001 due to budgetary restrictions. [57]

D. Private Sector Funding

- Donations of cash - to a specific greenway segment
- Donations of services - by large corporations to reduce the cost of greenway implementation, including equipment and labor to construct and install elements of a specific greenway.
- Reductions in the cost of materials - purchased from local businesses that support greenway implementation and can supply essential products for facility development
- Estate Donations

APPENDIX 3 LANDS ACQUISITION OPTIONS

The following provides a brief description of the potential mechanisms for acquisition.

- Fee Simple Acquisition: Outright purchase of the full property rights at the value of the property on the open real estate market or receipt by donation of the property's full rights. This practice provides for the greatest protection and freedom of use of the acquired. It may also be expensive due to the cost of the land on the open market and the seller may want compensation for the value of their proposed development.
- Bargain Sale: Acquisition of the property at less than the fair market value. The seller is then essentially donating part of the land to the buyer. Since the transaction is part purchase and donation, the seller can use the difference of the bargain price and the fair market value of the land as a tax deduction.
- Outright Donation: The landowner gives their property and all associated rights, directly to the land trust and gains tax benefits depending on the market value of the land. The agency takes on all responsibilities for property liability and management.
- Installment Sale: Using a series of payments over a long period of time to purchase large or expensive parcels of land that may be unattainable through other methods of acquisition. This allows a purchase to be seller financed and may be negotiated if a seller is sympathetic to land preservation.
- Options and Rights-of-First-Refusal: Allows the potential buyer the right to make the first bid on a property without being obligated to purchase the land. The right-of-first refusal is an agreement that provides that if a property owner decides to sell a specific piece of land, the agency with the right-of-first refusal will have a certain amount of time to raise money to purchase the land before it is sold to another party.
- Purchase and Lease-Back: A buyer may purchase property and then lease it back to the seller with restrictions on use. This is most compatible with land which is being used as open space and is under threat of being developed.
- A Conservation Easement is an agreement with the landowner that restricts the usage and development of the property or a portion of it. It is a voluntary agreement between the owner of the property and the entity requesting the easement. Easements are usually donated but can occasionally be purchased if there are compelling reasons. Future buyers of the land will be bound by the easement's terms but the do not prohibit the sale, lease, mortgage, farming of or building on a property so long as the action is consistent with the terms of the easement. Landowners granting easements may be eligible for tax benefits, ranging from lowered property taxes to deductions for charitable donations.
- Typical restrictions included under easements along greenways include prohibitions of building, industrial or commercial activity, prohibition of removal or disturbance of vegetation and trees and prohibition of dumping or excavation.
- Remainder Interest with Life Estate: The Landowner donates the property to a nonprofit or public agency and continues to live on/use the property. Upon the death of the donator or the death of specified heirs, the ownership of the property is transferred to the specified nonprofit or public agency. The act of making the donation now, to take effect after death, is called the gift of a remainder interest; the retained right of use is called a life estate. If the land is given for conservation purposes, tax deductions for the value of the land can be made at the time of

designation of the property as a donation to the nonprofit or public agency.

- Controlled Development: An agency may purchase a large parcel of land and then sell off portions of if for development with specified limitations. This usually includes restrictions on the number of units to be developed, their sitting, landscaping and the building materials used in construction. The cost of purchasing and maintaining the land is offset by the profits from selling the smaller parcels. The entire property is protected from future development by deed restrictions.

A Note on Easements:

Easements may be an option for greenway development. This provides only for access and permission for crossing property for greenway use. Ownership and title do not change.

Recent state legislation provides liability protection to land owners who provide access easements for dedicated greenways or who own land adjacent to greenways, declaring that "immunity from civil liability [will be granted to] adjoining landowners" along dedicated greenway trails.[60]

APPENDIX 4 MISSOURI STATUTE LIMITING LIABILITY OF ADJOINING LANDOWNERS

Missouri Revised Statutes, Chapter 258 Outdoor Recreation, Section 258.100 (August 28, 2005)

Trail, definition--immunity from civil liability for adjoining landowners, when

258.100. 1. As used in this section, the word "trail" means any land which was acquired or utilized by the state for use as a public hiking, biking or recreational trail or any land or interest therein acquired or utilized hereafter by a political subdivision for use as a public hiking, biking or recreational trail. However, a trail not acquired by the state must be designated by the governing body of the political subdivision as a greenway system of trails or part of a dedicated system of trails, the acquisition conveyance whether by deed, easement agreement, grant, assignment or reservation of rights to the political subdivision must state the interest in the land is being granted for such purposes, the greenway system or dedicated system of trails must be designed exclusively for the purposes herein designated and shall not include roads or streets nor sidewalks, walkways or paths which are intended to connect neighborhoods for pedestrian traffic, such as common sidewalks or walkways.

2. Any person owning land adjoining the trail shall be immune from civil liability for injuries to person or property of persons trespassing or entering on such person's land without implied or expressed permission, invitation or consent where:

(1) The person who was injured entered the land by way of the trail; and

(2) Such person was subsequently injured on lands adjoining the trail.

(3) The immunity created by this section does not apply if the injuries were caused by:

(4) The intentional or unlawful act of the owner or possessor of such land; or

(5) The willful or wanton act of the owner or possessor of such land.

(L. 1990 H.B. 1669 § 1, A.L. 1993 S.B. 221, A.L. 1994 H.B. 1115, A.L. 2004 S.B. 810)

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