



Veterans Memorial Greenway

(formerly the Rich Valley Greenway)

MASTER PLAN

Dakota County Board of Commissioners Adopted September 26, 2017

Dakota
COUNTY



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The Veterans Memorial Greenway (formerly the Rich Valley Greenway) passes by a lake in the Southern Lakes Neighborhood



Introduction

1



OVERVIEW

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) is a proposed regional trail and open space corridor that will provide a link between Lebanon Hills Regional Park and the Mississippi River in central Dakota County. The greenway will provide linear recreation for residents of Eagan and Inver Grove Heights and serve as a destination trail for the larger surrounding area. The five mile corridor stretches east and west within the cities of Eagan and Inver Grove Heights. The greenway trail and associated amenities will utilize a short section of existing trail in Inver Grove Heights, while the rest will be newly constructed. The proposed corridor's surrounding land use includes primarily single-family residential neighborhoods and rural, undeveloped open space.

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) Master Plan

- ▶ identifies the preferred trail and greenway alignment;
- ▶ envisions improvements to water quality, habitat, recreation, and non-motorized transportation along the corridor;
- ▶ provides strategies for interpretation, resource stewardship, development, land acquisition, and operations;
- ▶ estimates project costs;
- ▶ and satisfies requirements for Metropolitan Council regional destination trail and greenway planning.



The Veterans Memorial Greenway (formerly the Rich Valley Greenway) is shown in red on the map above.

Dakota County Parks, Lakes, Trails and Greenways Vision, 2030

What's New?

GREAT PLACES: Destination Parks

- New Regional Park in Vermillion Highlands
- More things to do in parks
 - Winter activity area
 - Gathering and celebration areas
 - Swimming and water play areas
- More popular "park basics"
 - Enhanced picnicking
 - Biking and accessible trail loops

CONNECTED PLACES: Greenway Trails

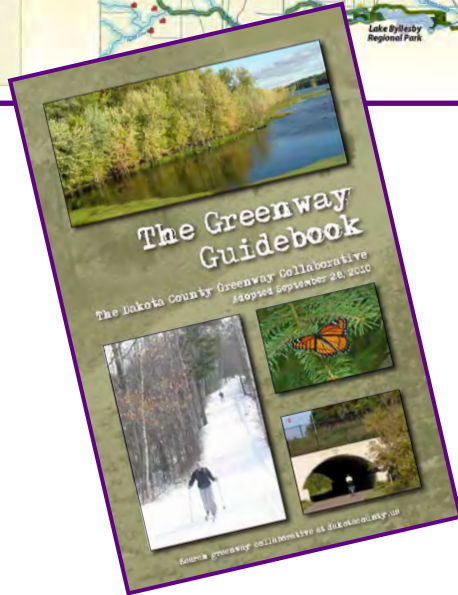
- "Bring parks to people" – Linear parks connect parks, schools, lake trails, playgrounds, libraries, and the Minnesota and Mississippi Rivers.
- Walking, biking, and in-line skating
- Public agencies work together to create 200 miles of greenways using mostly publicly-owned land.

PROTECTED PLACES: Green Infrastructure

- Enhance and protect park resources
- Protect stream corridors in public/private partnerships
- Protect natural areas and open space in public/private partnerships

DAKOTA COUNTY PARK SYSTEM and COLLABORATIVE OPEN SPACE PROTECTION

- Dakota County Parks
- Federal, State, and Other Regional Open Space
- Existing and Planned Regional Greenways
- Regional Status Discussion with Metropolitan Council
- Example City Greenways (route concepts)
- Stream Conservation Corridors and Greenways
- Destinations: City Parks, Schools, Lakes, Libraries
- Privately-Owned Protected Farmland (FNAP)
- Private/Public Protected Natural Areas (PNAP)
- Potential Rail to Trail Opportunities



Dakota County Greenway Vision

In the 2008 Dakota County Park System Plan and the 2010 Dakota County Greenway Guidebook, the County has established a progressive vision for an interconnected system of open space corridors – greenways. Minneapolis’ Grand Rounds system of parks and trails serves as an example and an inspiration for the Dakota County greenway vision.

Dakota County Park System Plan

The 2008 Dakota County Park System Plan established the foundation for a county-wide greenway network by envisioning regional greenways that connect parks, schools, local trails, and libraries through the nonrural portions of the county. Dakota County’s greenway vision suggests 200 miles of regional greenways, 2/3 of which are on land currently in public or semipublic ownership. A priority is to implement more than 50 miles of greenways by 2020.

Dakota County Greenway Collaborative: The Greenway Guidebook

In 2010, Dakota County adopted the Dakota County Greenway Guidebook as a framework for greenway development. The guidebook establishes a framework for a collaborative approach to governance, stewardship, design, and operation of greenways.



PLANNING CONTEXT

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) travels through the cities of Eagan and Inver Grove Heights. Several planning efforts guide the greenway's development:

- ▶ Metropolitan Council 2040 Regional Parks Policy Plan
- ▶ Dakota County Park System Plan, 2008
- ▶ Dakota County 2030 Transportation Plan
- ▶ Dakota County Greenway Guidebook, 2010
- ▶ City of Eagan 2030 Comprehensive Plan
- ▶ City of Inver Grove Heights 2030 Comprehensive Plan
- ▶ Dakota County Pine Bend Arterial Connector Study
- ▶ Dakota County Visitor Services Master Plan, 2017

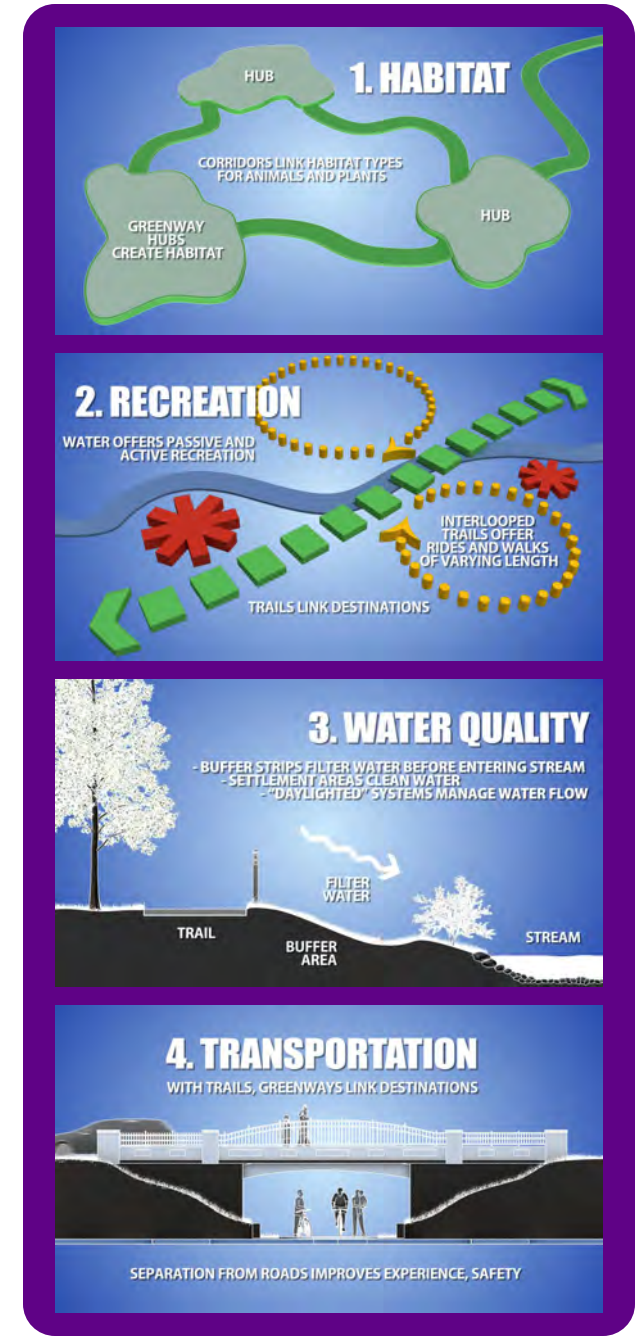
Multi-cultural Outreach and Input

Concurrent to the greenway planning process, Dakota County completed an in-depth multi-cultural outreach process as part of its Visitor Services Master Plan (see full outreach report here: <https://www.co.dakota.mn.us/parks/Planning/VisitorServices/Documents/ParkVisitorSurveyReport.pdf>), which resulted in valuable information regarding recreational interests and preferences from minority cultural groups, non-native English speakers, and immigrants.

Influence of Input on the Plan

Some of the information obtained through the Visitor Services Master Plan influenced this greenway plan, such as: the County will provide marketing information about regional park and recreation facilities, safe and accessible facilities, and clear signage and other amenities along trails and in parks. Additional input from minority and low income residents and potential trail users in the area was sought by contacting the Emerald Hill Neighborhood mobile home park in Inver Grove Heights, the Major Taylor Bicycle Club in Saint Paul, and School District #196. The contacts were informed of the process and directed to the website and online survey to provide input. None of the contacts responded to the inquiries for focused meetings.

The greenway alignment near St. Thomas Becket Church was adjusted to be along the northern property line after meeting with church representatives. The desire was for the trail to stay out of the restored prairie on the property. The proposed trail alignment was located along the south side of the Xcel corridor east of Hwy 3 in order to accommodate desires from the utility company. The proposed crossing location of Hwy 3 and the alignment near the Southern Lakes Neighborhood was adjusted to stay out of residential yards after gaining input from home owners.



Technical Advisory Group

A technical advisory group met regularly, including representatives from:

- ▶ City of Eagan
- ▶ City of Inver Grove Heights
- ▶ Dakota County Office of Planning

GREENWAY MASTER PLANNING PROCESS

The planning process was a collaborative effort of multiple agencies and jurisdictions. Dakota County led the process with advice from a technical advisory group formed to guide the master plan. Key stakeholders were engaged during the process to inform planning decisions and recommendations. Public outreach included open houses, online questionnaires, and targeted efforts. Following is a summary of the input process.

Technical Advisory Group

A technical advisory group met during each phase of master planning to provide guidance, provide insight into technical questions, explore options, identify partnership opportunities, and discuss concurrent projects. In addition to providing specific guidance, the TAG institutionalized a collaborative planning process and established relationships across agencies with a stake in implementing the master plan. TAG meetings were held on December 8, 2015, January 27, 2016, and April 12, 2016.

Stakeholder Input

Specific outreach was made to engage and get input from key land owners within the corridor area. A questionnaire was distributed at several locations asking for feedback on the greenway alignment, trail accessibility, connections, and amenity enhancements. The following outreach efforts were made:

- ▶ Online questionnaire distributed to Pinewood Community School
- ▶ St. Thomas Becket Church
 - ▶ Meeting with church leadership on March 9, 2016
 - ▶ Online questionnaire distribution
- ▶ Xcel Energy
 - ▶ Meeting with representative on March 29, 2016
- ▶ Inquiries were made to Emerald Hill Neighborhood in Inver Grove Heights, School District # 196, Major Taylor Bicycle Club, and others.

More detailed feedback can be found in the Appendix A of this report.



Public Open Houses

Two open houses were held as part of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) Master Plan process.

The first open house was held on Feb. 16, 2016, at the Rosemount Community Center. The purpose of the open house was to gather input on the draft recommendations for trail alignment alternatives, greenway features, the approach to interpretation, the approach to natural resources, and draft water quality improvements. Over 40 people attended the open house with interest in different aspects of the greenway planning. Most of the comments were positive and attendees were generally in favor of the greenway recommendations. Comments and questions received at the open house and on the comment forms include the following topics and issues:

- ▶ An interest in school and park connectivity and desire for near term implementation of the trail
- ▶ Concerns about safety if trail is built along Cliff Road; desire for northern alignment through neighborhoods
- ▶ Concerns about funding, eminent domain, and private property disturbance if trail is built through neighborhoods
- ▶ A desire for more environmental initiatives and natural resource protection as part of these projects
- ▶ Support for pedestrian and bicycle infrastructure that is off-road

A second open house was held on May 16, 2017. The purpose of this open house was to present the draft master plan contents. General input and comments from the public attendees included support and enthusiasm for trails in natural areas and trails that connect to parks and destinations; as well as some concern by property owners adjacent to the trail that the construction of the trail may affect their property and privacy.

Project Website

A project website at www.hkgi.com/projects/dakota was established for the North Creek and Minnesota River greenways in 2010 and was continued as a resource for the Veterans Memorial Greenway (formerly the Rich Valley Greenway). Materials from the open houses were posted online and an online questionnaire was available as a way to provide feedback for those interested.

Public Review

The public review draft master plan was posted on Dakota County's website and the greenway website from May 31 through July 31, 2017. The second open house, held on May 16, 2017, gave the public the opportunity to talk to county staff and voice concerns.

The public review draft was also available to all project stakeholders: City of Eagan, City of Inver Grove Heights, and the Metropolitan Council. In addition, a summary presentation was prepared for technical advisory group members to present to their organizations. The Dakota County Board adopted the master plan on September 26, 2017.



VISITOR SERVICES PLAN MULTICULTURAL OUTREACH

A concurrent project to the Veterans Memorial Greenway (formerly the Rich Valley Greenway) master planning process, the Dakota County Visitor Services Strategic Operational Plan, conducted detailed multicultural outreach, which provided the following input that can be associated with general recreation, trails, and Dakota County park facilities:

- ▶ Lack of awareness is a major factor in people not using Dakota County park facilities
- ▶ Lack of time to visit parks is an issue, people tend to visit neighborhood parks that are close to where they live before visiting larger County parks and facilities
- ▶ Concerns about personal safety, which would especially be a concern if walking or biking alone along a secluded trail
- ▶ Lack of transportation precludes people from visiting parks and facilities far from their homes
- ▶ Informational and welcome signage and safety amenities, such as lighting, were cited as items that could be added to parks and park facilities to attract more visitors

RECREATION NEEDS

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will enhance access to natural areas, trails, and cultural resources. These resources are important for quality of life and accommodate the high-demand recreational activities of walking, biking, jogging, inline skating, dogwalking, and more. Respondents to Dakota County's 2006 park survey cited these among the top activities residents would like to see in the County's park system. Current recreation and demographic trends suggest these needs will increase well into the future.

A concurrent project to the Veterans Memorial Greenway (formerly the Rich Valley Greenway) master planning process, the Dakota County Parks Visitor Services Plan, conducted detailed multicultural outreach regarding parks, facilities, and open spaces. Dakota County worked with a community engagement specialist, *Putting Change in Motion*, in order to reach out to diverse stakeholders. The following underrepresented groups were engaged in nine dialogues and six interviews: two (2) Hispanic/Latino groups (one immigrant and one US born); Somali; Vietnamese; Indian/South Asian; African American; Youth; Seniors; and Persons living with Disabilities. The groups represented all ages from elderly individuals to youth and couples plus several children; a broad range of income levels. Many had a rich breadth of knowledge, wisdom and much experience, and easily offered very creative ideas for the Parks System. A series of questions was used to guide the conversations. Some of the questions included: asking the meaning of the term "park," asking how participants choose which parks and facilities to visit, asking about awareness of parks and facilities, and asking about barriers to visiting and using parks and facilities. The sidebar to the left includes some of the input received from this process. This input influenced the planning of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) by providing rationale for the following recommendations: welcoming and informative signage and wayfinding to provide awareness and accessibility along the trail; frequent access points along the trail to provide convenience and alleviate safety and security concerns; connections to community destinations such as schools, parks, and commercial areas so the greenway can serve as an alternative transportation route.

Visitors

A broadly generalized profile of greenway visitors was created based on input from existing visitors to Dakota County parks and trails, from stakeholders in the master planning process, and from demographics of the population within 30 miles of Dakota County (see sidebar on page 7).



The following observations can be made about potential visitors based on comparative census data from 1990, 2000, and 2010.

- ▶ The people served by Dakota County parks and trails are becoming increasingly diverse. As recreation, interpretation, and education are developed, outreach should be considered.
- ▶ There are more than half a million children enrolled in schools in the area served by Dakota County parks; more than one-quarter of the population is younger than 17. Schoolchildren and families are a large group of potential greenway users.
- ▶ At the 2010 U.S. Census, 10 percent of the population in Dakota County was older than 65, and this age group is projected to increase dramatically in number and proportion in the next 20 years. The influx of baby boomers into this age category will influence interpretive and education program development.
- ▶ Based on the 2011 American Community Survey, the average per capita income for the U.S. was \$26,708. The average per capita income for Dakota County was more than 23 percent higher, at \$32,935. Higher incomes have historically been associated with greater participation in recreation activities.

Trends

Active living, popularity of trail-based activities, interest in nature, history, and culture, transportation and connectivity, aging actively, and population growth are all current trends that indicate that interest in and visits to Dakota County greenways are likely to increase.

Trail Use

Trails are the number one desired recreation facility in poll after poll. Trails can be enjoyed by people of all ages and abilities, they are inexpensive for users, and they are often close to home. The Minnesota Statewide Comprehensive Outdoor Recreation Plan notes that the interest and demand for more trails is being felt at all levels of government. According to the 2008 Metropolitan Council Regional Parks and Trails Survey, biking and walking are the most common recreation forms, while running, inline skating, and dogwalking also were popular.

Active Living

In 2010, 60 percent of adults in Dakota County were either overweight or obese. If the current trend continues,

In 2010 members of the Greenway Collaborative identified the following groups as current visitors to Dakota County Parks:

- ▶ Wildlife/bird watchers
- ▶ School groups
- ▶ Senior citizens
- ▶ Non-motorized commuters
- ▶ Hikers, walkers, runners, cyclists
- ▶ Regional users
- ▶ Anglers
- ▶ Park users (Athletics and community events/activities)
- ▶ Residents
- ▶ Families
- ▶ Disabled users
- ▶ Bicycle racers
- ▶ Boaters

Stakeholders also identified groups of visitors they would like to see as greenway users in the future:

- ▶ Groups needing increased activity
- ▶ Corporate users
- ▶ Foragers (fruit, flowers)
- ▶ Commercial and business connections
- ▶ Art community



the percentage is expected to be 76 percent by 2020. Nationally, the obesity rate in children has tripled over the past 30 years. Today about 20 percent of school-age children are overweight or obese (Source: Dakota County Public Health).

Regular moderate physical activity can help prevent a host of disorders, including heart disease, obesity, high blood pressure, Type 2 diabetes, and osteoporosis. More physical activity at a population level can reduce health care costs and other costs to society.

Walking and biking are two of the simplest and most popular ways to integrate regular physical activity into daily routines, referred to as active living. Places that have physical infrastructure such as trails and programs to promote walking and biking tend to have more physical active and healthier populations.

Interest in Nature and Sustainability

Increased sensitivity to ecological issues and the benefits of healthy ecosystems has led to people seeking more natural experiences. There also is increased interest in and opportunities for environmental stewardship such as stream and riparian restoration and the removal of invasive species. People also desire educational and interpretive programs and seek a balance of environment and recreation.

Transportation and Connectivity

Health benefits, concerns about climate change, and rising energy costs have increased demand for trails and bikeways as preferable transportation options. Regional trails with grade-separated crossings offer cyclists the advantages that motorists enjoy on freeways.

Connectivity to local trails is essential. The more connected the trail system, the more use it will see. Connecting trails reduce the need for vehicle parking at trailheads. In 2008, half of all regional trail users arrived by bicycle or on foot (Metropolitan Council Regional Parks and Trails Survey).

Engaged Aging

Trail users tend to be older than park users. In 2008, 54 percent of Big Rivers Regional Trail users polled were between the ages of 45 and 64. Trail use likely will remain high as the baby boomer generation ages and remains physically active — or gets more physical activity with increased leisure time — by walking, hiking, or biking on trails.

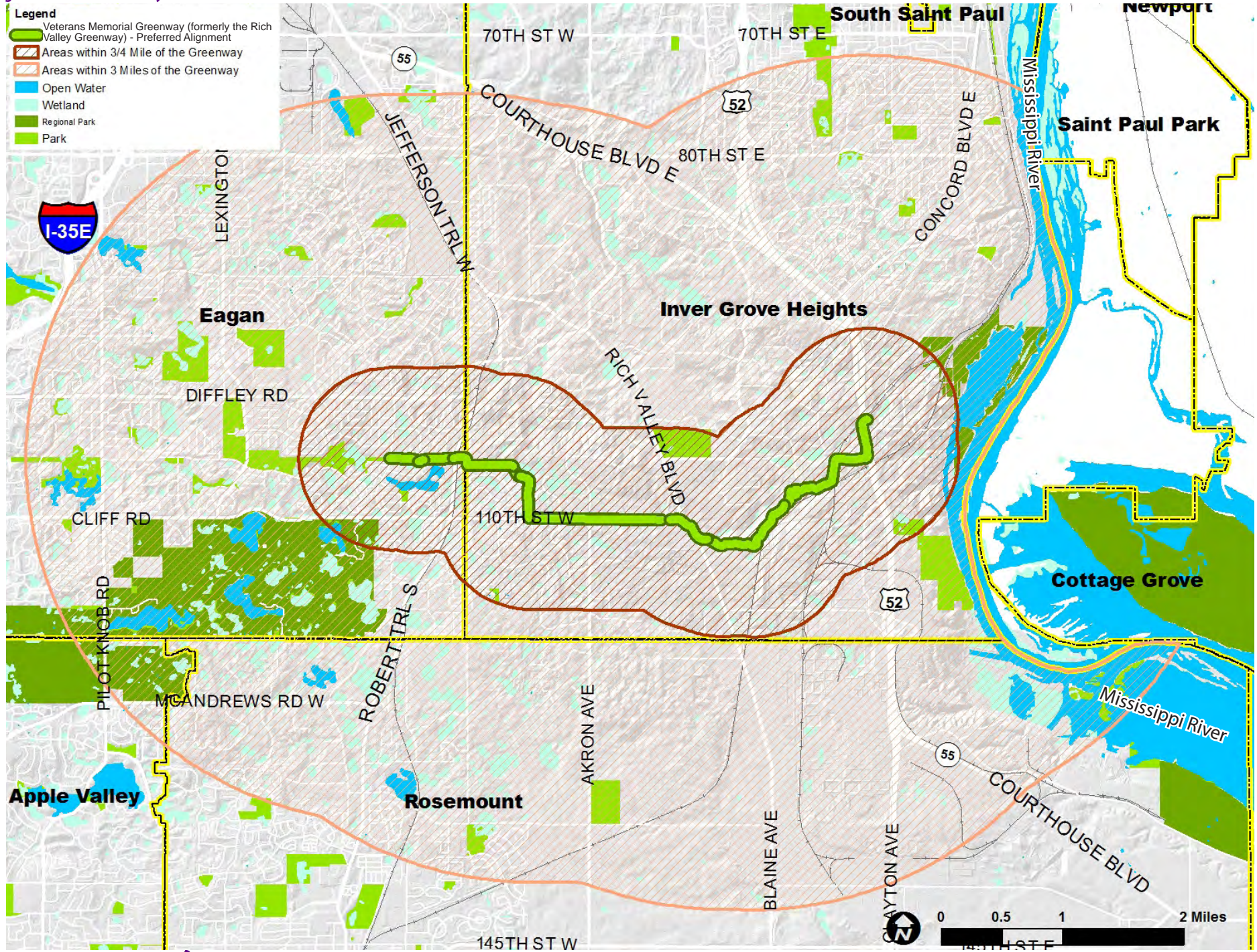
Table 8. Population forecasts for communities adjacent to the Veterans Memorial Greenway (formerly the Rich Valley Greenway)

Source: Metropolitan Council Community Profiles, <http://stats.metc.state.mn.us/profile>

MUNICIPALITY	2014 ESTIMATE	2030 FORECAST	% CHANGE
<i>Core Service Area (areas within 3/4 mile of greenway)</i>			
Eagan	66,810	69,800	4%
Inver Grove Heights	34,831	42,000	21%
Total Core	101,641	111,800	10%
<i>Primary Service Area (areas within 3 miles of greenway)</i>			
Rosemount	22,490	31,700	41%
Apple Valley	50,330	59,200	18%
Total (Core + Primary)	174,461	202,700	16%
Dakota County	411,507	474,670	15%



Figure 9. Core and Primary Service Areas



Interest in History and Culture

As society has become more mobile, interest in local culture and history has increased. The ability to integrate cultural, historic, and environmental interpretation into the greenway will add richness to the greenway experience.

Population

Metropolitan Council studies indicate half of regional trail users live within 3/4 mile of a trail, and 75 percent of trail users live within three miles of the trail used. The 3/4 mile area around the trail is considered the core service area and the three-mile area the primary service area. Communities that fall within the Veterans Memorial Greenway's (formerly the Rich Valley Greenway) core and primary service areas are all expected to see growth within the next 20 years, including significant growth in Inver Grove Heights and Rosemount.

Use Forecasts

According to the Metropolitan Council's 2015 report, "Annual Use Estimate of the Metropolitan Regional Parks System for 2014," an estimated 136,500 visits were made in 2014 to the Big Rivers Regional Trail. The Veterans Memorial Greenway (formerly the Rich Valley Greenway) Trail, if opened today, could expect approximately 54,500 annual visits. This estimate was calculated based on Metropolitan Council 2014 visit estimates for the Big Rivers Regional Trail (136,500 estimated visits for 4.5 miles of trail) and adjusting for the lower population of the cities in the primary service area of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) trail.

The 2030 population of the communities touching the greenway's three-mile service area is expected to be 16% percent greater than in 2014. Assuming use rates are stable – a conservative assumption – in 2030, annual visitation can be expected to be at least 63,300. The estimate does not take into account increased use based on population increases in communities outside the primary service area, current recreation trends, and increased use resulting from better connectivity to other regional and local trails.



Existing Conditions

2



OVERVIEW

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) travels five miles from the suburban residential landscape of southeastern Eagan through the rural agricultural and residential landscape of southern Inver Grove Heights to the Mississippi River Regional Trail. The greenway links destinations including: Lebanon Hills Regional Park, Lakeside Park in Eagan, St. Thomas Becket Church, Rich Valley Athletic Complex in Inver Grove Heights, and Pine Bend Bluffs Scientific and Natural Area.

The greenway area contains a rich cultural history with stories of industry, agriculture, transportation corridors, and geologic features.

This chapter presents:

- ▶ Existing Greenway corridor character and land use
- ▶ Relationship to the larger transportation system
- ▶ Existing cultural resources
- ▶ Existing natural resources

GREENWAY CHARACTER AND LAND USE

Today the land along the greenway corridor consists of rural residential property, suburban residential neighborhoods, agricultural lands, railroad and power line corridors, and open space. The land most likely will maintain the rural and suburban character well into the future. The greenway can be broken into two segments; a brief description of each segment follows.

Segment 1: Dodd Road/Mendota-Lebanon Hills Regional Greenway to Rich Valley Blvd (2.79 miles)

At the intersection of Dodd Road and the Highline corridor, the Veterans Memorial Greenway (formerly the Rich Valley Greenway) will connect to the Mendota-Lebanon Hills Regional Greenway and follow an east-west path within the Highline corridor. The greenway will pass through Lakeside Park, a City of Eagan neighborhood park, and along the north property line of St. Thomas Becket Church. After crossing TH 3, the greenway will circumnavigate the Southern Lakes neighborhood to meet up with Cliff Road, which it will follow east to Rich Valley Blvd.



Highline Trail leading west from Dodd Road



Intersection of Dodd Road and Crimson Leaf Trail (north of Highline corridor) looking west



St. Thomas Becket prairie restoration within Highline corridor



Lakeside Park, City of Eagan



Southern Lakes neighborhood trail looking south toward its outlet at Cliff Road



Cliff Road



Segment 2: Rich Valley Blvd to the Mississippi River Regional Trail (2.5 miles)

From Rich Valley Blvd, the greenway corridor leads through gently rolling rural terrain on Flint Hills Resources' buffer lands. The greenway connects up to a rail corridor and follows the north edge of the rail lines to 105th Street E. There, the greenway crosses the railroad tracks at an existing at-grade crossing. Then the greenway heads northeast toward an existing rail underpass of Hwy 52. After crossing under Hwy 52, the greenway trail will connect to the Mississippi River Regional Trail.



Rich Valley Park and Athletic Complex



Gently rolling hills in southern Inver Grove Heights



At grade railroad crossing at 105th Street East



Railroad underpass of Hwy 52



TRANSPORTATION SYSTEM

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will support nonmotorized transportation by providing a regional corridor for bicycle and pedestrian transportation. The greenway will intersect with existing regional trails in Eagan and Inver Grove Heights that connect residential areas, commercial destinations, schools, and employment destinations. The Mississippi River Regional Trail provides links south to Hastings and north to Saint Paul, which connect to many more destinations in the Twin Cities metropolitan area.

EXISTING CULTURAL RESOURCES

Our connection with the places we live and recreate are emotional bonds that endure. The resources that reside within these places are the foundation for these bonds. Within the greenway corridor, there are parks, historical and cultural features, and many recreational resources, both historical and current, that have provided people with access to nature for generations. Though few of these resources are considered historic by state or federal definitions, or simply have yet to be evaluated, they are an important part of the landscape to the people along the greenway corridor.

There are other cultural resources recognized by the State Historic Preservation Office within and around the Veterans Memorial Greenway (formerly the Rich Valley Greenway). Of particular note is the Pine Bend Village Marker. Though the marker has been removed, the site still holds importance. The Holz Family Farmstead is another site of historical note. There does not appear to have been many architecture/history evaluations within the corridor, but much of the housing stock is of a sufficient age to be evaluated and the possibility remains that further investigations could uncover some additionally intriguing resources.

There are few known archaeological sites along the greenway likely due to few archaeological studies being completed within and around the proposed greenway. The area's rich resources have attracted people for thousands of years: additional sites likely remain undiscovered in the corridor.

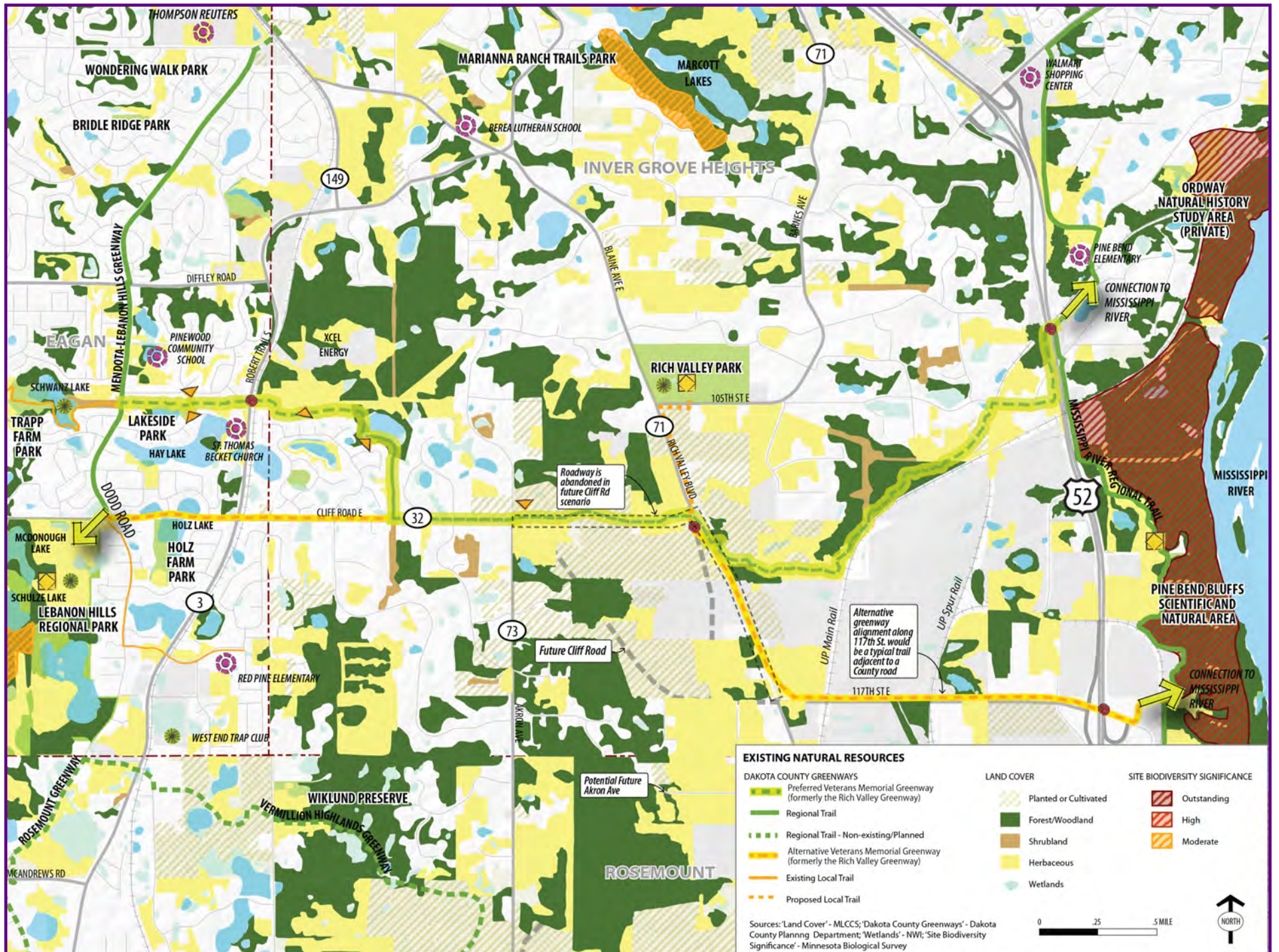
The interpretation section of this plan identifies strategies to share the cultural resources of the area while protecting them.

Existing Natural Resources Map Sources (next page):

Forest / Woodland – Minnesota Land Cover Classification System (MLCCS); Prairie / Herbaceous – MLCCS; Shrubland – MLCCS; Wetland – NWI; Open Water / Streams – MLCCS and Dakota County; High ecological condition – Minnesota County Biological Survey (MCBS) high biological diversity areas and native plant communities combined with MLCCS high quality plant communities; Moderate ecological condition – MLCCS moderate condition plant communities



Figure 15. Existing Natural Resources (MLCCS & MCBS)



EXISTING NATURAL RESOURCES

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) corridor connects forested and prairie/herbaceous parks and open spaces through rural and suburban areas. The overall quality of plant communities within the corridor is moderate to outstanding quality, as identified by the Minnesota County Biological Survey (MCBS) and the Minnesota Land Cover Classification System (MLCCS).

Vegetative Cover – Minnesota Land Cover Classification System (MLCCS)

Moderate condition plant communities exist in Lebanon Hills Regional Park and along the Mississippi River, south of Pine Bend Bluffs Scientific and Natural Area. Most of Pine Bend Bluffs SNA and the area to the north of it is identified as an outstanding quality plant community. It is important to link these core habitat areas with habitat corridors, such as the Veterans Memorial Greenway (formerly the Rich Valley Greenway), which will provide a wide linking corridor of conserved open space and habitat.

The land cover along the greenway corridor consists of wooded patches, restored prairie areas, preserved open space, and agricultural land.

Water Resources

Several lakes are found along the west side of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) corridor. Schwarz Lake, Hay Lake, and Holz Lake, as well as several other unnamed lakes and ponds, dot the surface of the land between residential property.

The MN DNR identifies Hay Lake as containing the following aquatic species: black bullhead, black crappie, bluegill, hybrid sunfish, largemouth bass, pumpkinseed, and golden shiner. Holz Lake is identified as containing largemouth

bass. Water quality and depth are not listed on the DNR website. The lakes are likely shallow with moderate to high water quality, due to their location adjacent to residentially developed areas and a moderate level of impervious surfaces.

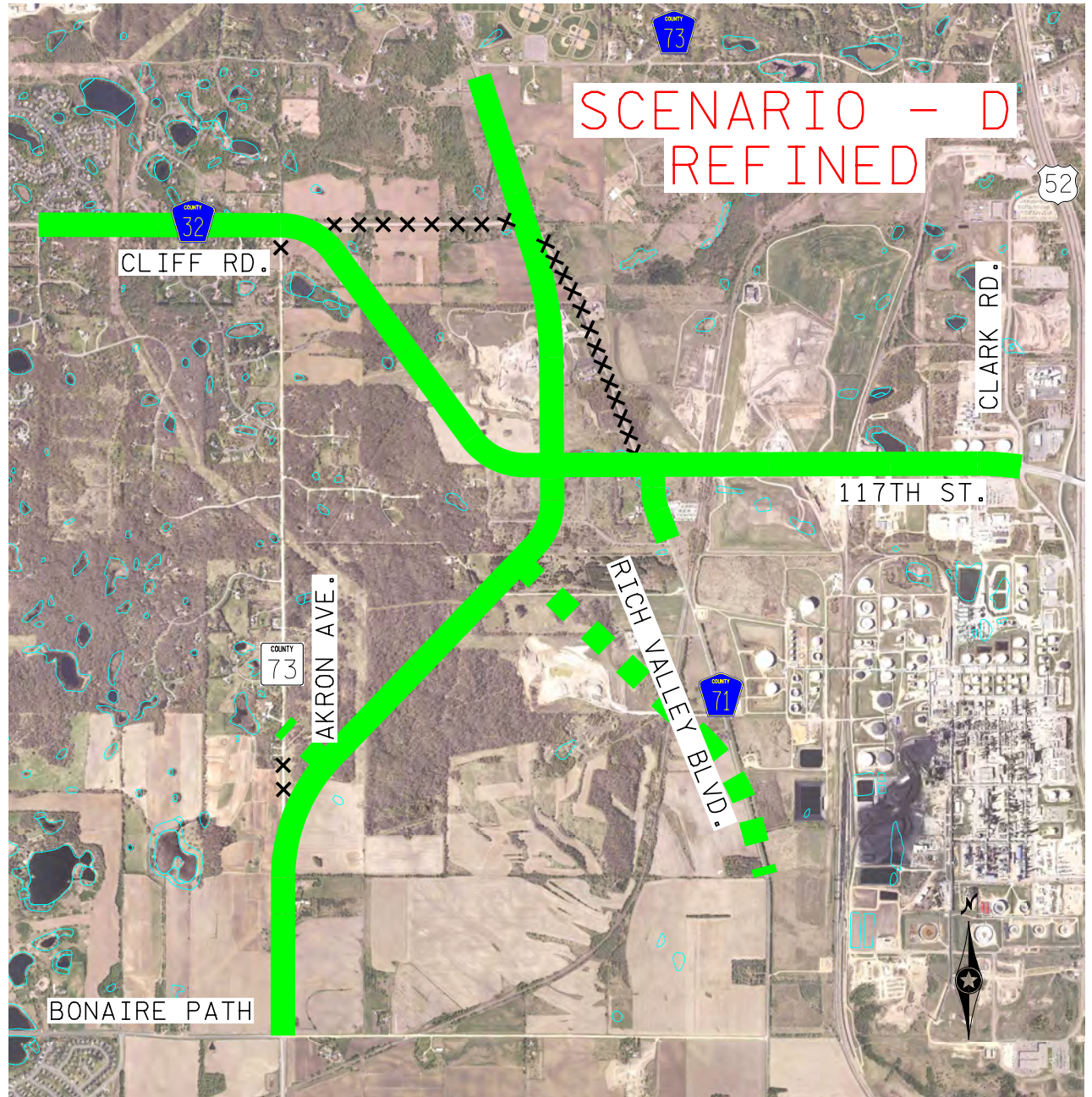
The eastern end of the greenway is part of the Mississippi River watershed. The Mississippi River Critical Area Program is a DNR coordinated planning effort to collaborate and report on local land and water management that affects the Mississippi River. The latest report was published in 2008 and addresses the status of plans and ordinances, community plans for revisions to their plans and ordinances, the types of variances sought and issued, and perceptions of the state of the Corridor. It also includes options and recommendations for changing how the Mississippi River Corridor Critical Area is managed. The report can be found on the DNR website at the following link: http://files.dnr.state.mn.us/waters/watermgmt_section/critical_area/mississippi_river_corridor_critical_area_report.pdf



PINE BEND ARTERIAL CONNECTOR STUDY

The graphic on the right, taken from the Dakota County Pine Bend Arterial Connector Study (Draft August 2016), shows the staff recommended future road alignments for Cliff Road and Akron Avenue. These plans have been reflected in the concept plans for the Veterans Memorial Greenway (formerly the Rich Valley Greenway) in the following chapters. Scenario D-Refined supports the Veterans Memorial Greenway (formerly the Rich Valley Greenway) segment adjacent to Cliff Road and the Rich Valley underpass.

In the event that the road is realigned, the right of way will not be abandoned but transferred to local jurisdiction. In this location, the trail will either be located on Flint Hills property to the north or within the public right of way, owned by either Dakota County or Inver Grove Heights.



The Plan



OVERVIEW

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will integrate linear recreation, non-motorized transportation, water quality improvements, habitat preservation, and interpretation. The corridor today is mostly undeveloped, agricultural land, and large lot, single-family housing. The plan identifies the preferred greenway alignment, alternative alignments, trailheads, gateways, and grade separated crossings.

This chapter includes four sections:

- A. Development plan — Outlines the defining recreation and transportation features of the greenway
- B. Key initiatives — Describes specific development and natural resource projects for each greenway segment
- C. Interpretive plan — Identifies interpretive themes and subthemes for the greenway and provides a framework for cultural and environmental interpretive elements
- D. Stewardship Plan — Addresses habitat stewardship and water resources

DESIGN FRAMEWORK

The Greenway Guidebook provides the framework for the greenway enhancements:

- ▶ Has regional trail for recreation and transportation that follows water and natural features
- ▶ Is maintained as a year-round facility
- ▶ Provides frequent trailheads and access points
- ▶ Has grade-separated crossings of major roads
- ▶ Has a consistent design with natural signature and high quality support facilities
- ▶ Has lighting for evening use
- ▶ Links recreation destinations and activity centers
- ▶ Acts as a spine for loop trails
- ▶ Maximizes borrowed views
- ▶ Uses wayfinding as a system-wide unifying element
- ▶ Is universally accessible
- ▶ Incorporates sustainability by using recycled materials, pervious pavement, energy efficient lighting and enabling non-motorized transportation

A. Development Plan

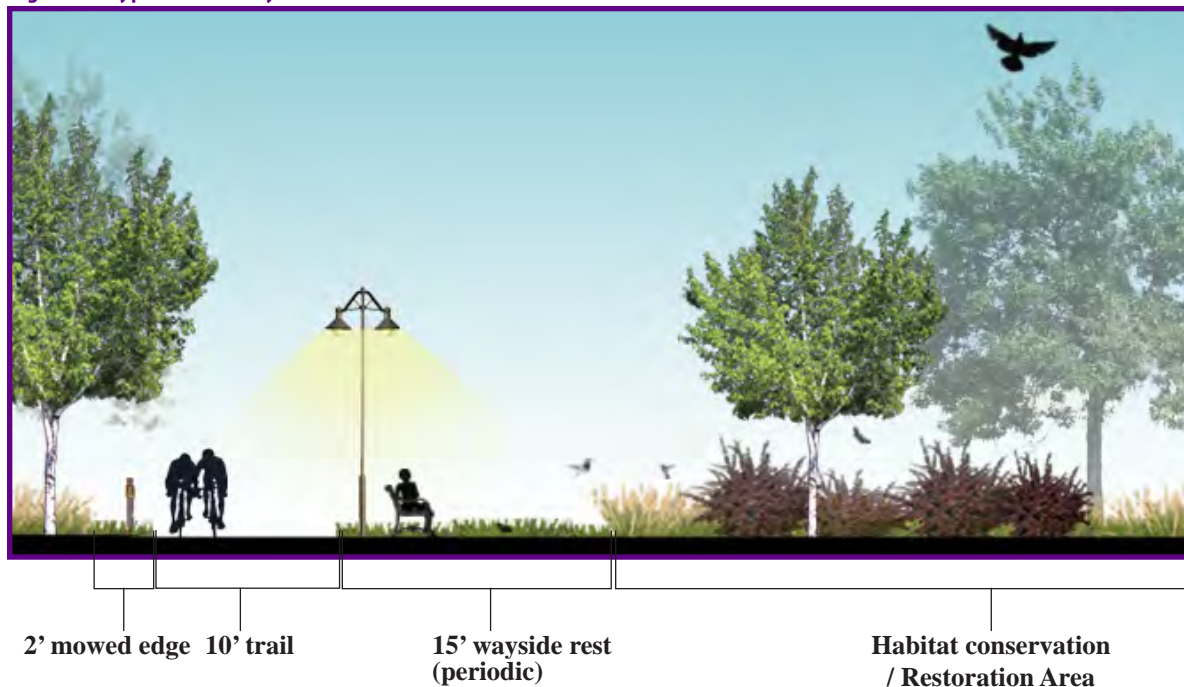
Access to recreation and nonmotorized transportation are two of the four foundational elements of Dakota County greenways. The primary recreation/transportation feature of the greenway is a continuous regional destination trail. While the greenway varies in width from 100 feet to more than 300 feet throughout the corridor, this section focuses on the design of the 30-foot trail corridor to create a safe, amenity-rich trail for year-round use.

Design consistency is critical in developing Dakota County greenways to create a high-quality, unified, and legible system. The Greenway Guidebook identifies the elements that will be signatures of the greenway system, listed in the sidebar on the previous page. How the Veterans Memorial Greenway (formerly the Rich Valley Greenway) addresses each of these topics is discussed in this chapter.

TRAIL CORRIDOR FEATURES AND DESIGN

This section addresses design features that are signatures of Dakota County’s greenway system. Design touches many facets of the trail alignment, including: the relationship of the trail alignment to the larger greenway corridor; the ability to connect destinations; the presence and location of grade separated crossings, trailheads, and support facilities; the style and location of furnishings and wayfinding; accessibility; and sustainability. Consistent, high-quality design will elevate the greenway experience above that of a utilitarian trail to a first-class regional destination.

Figure 20. Typical Greenway Trail Corridor Section



TRAIL CORRIDOR

The regional trail within the greenway corridor will be a continuous multipurpose bituminous trail designed in accordance with applicable American Association of State Highway Transportation Officials guidelines, Minnesota DOT bicycle design guidelines, and Dakota County trail standards. The trail will be a minimum of 10 feet wide with a two-foot grass clear zone on each side.

Anticipated uses include walking, jogging, inline skating, and bicycling. The trail will be maintained as a dry surface for winter use and, where appropriate, lit for evening use.



Figure 21. Regional and Local Trail Connections

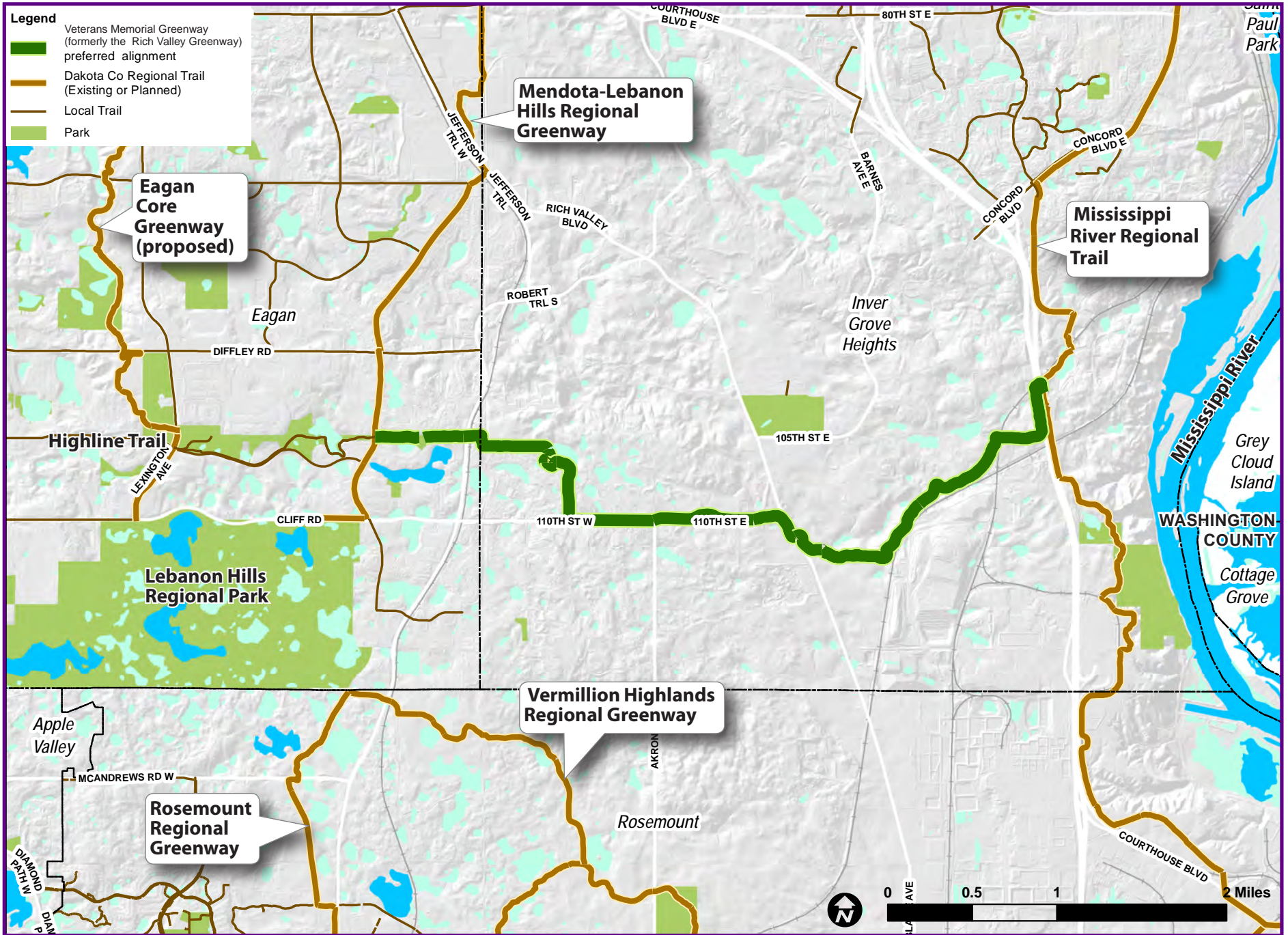
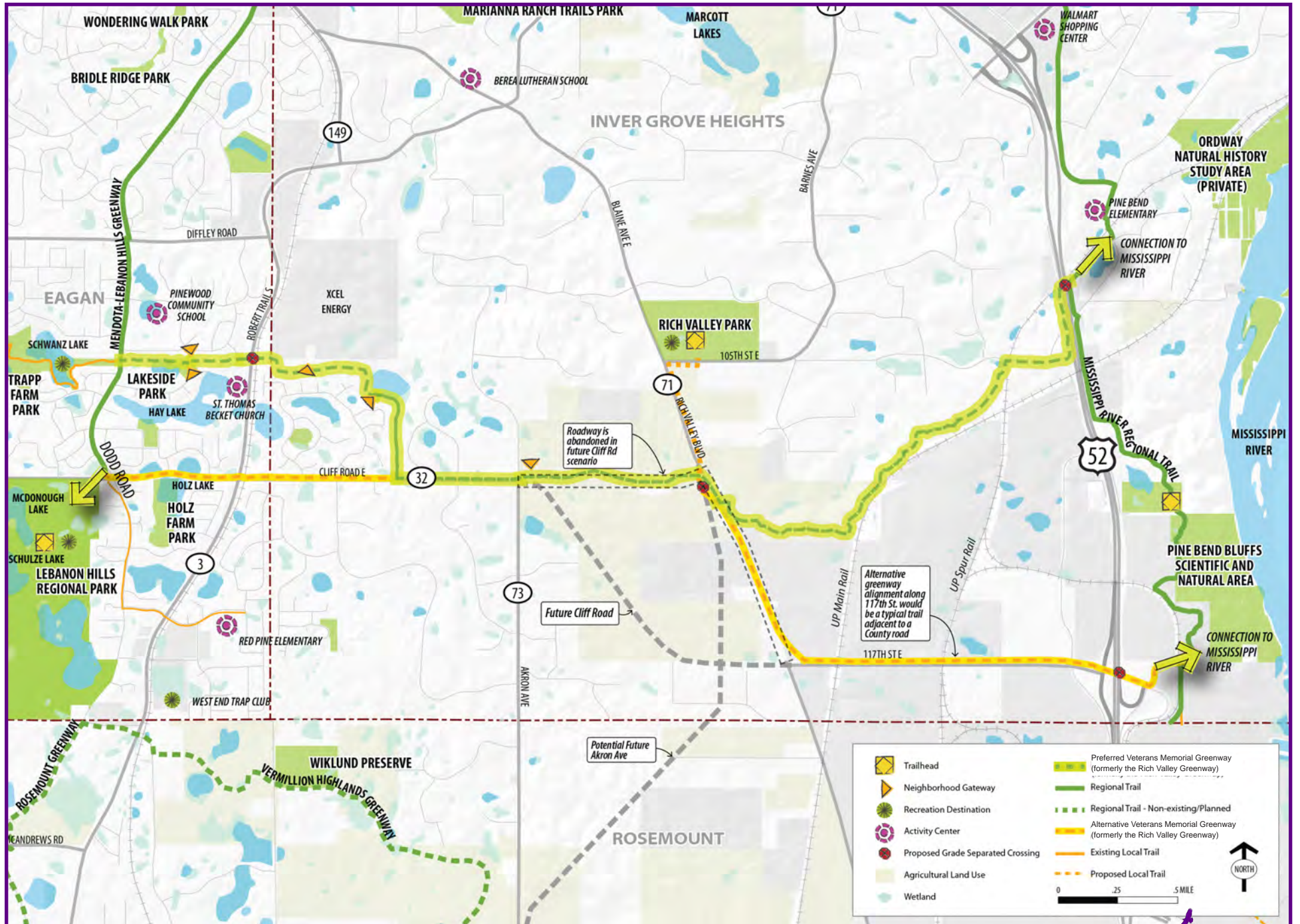


Figure 22. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Concept Plan



RECREATION DESTINATIONS



Rich Valley Park



Lakeside Park



Lebanon Hills Regional Park

ACTIVITY CENTERS



St. Thomas Becket Church



Pinewood Community School

80/20 TRAIL ALIGNMENT

A primary goal of the greenway trail alignment is to be at least 80 percent in an off-street greenway corridor with a maximum of 20 percent of the greenway adjacent to roads. Since the corridor today is mostly undeveloped, the preferred Veterans Memorial Greenway (formerly the Rich Valley Greenway) alignment exceeds the 80% goal for off-road trail. About one half mile of the greenway will parallel Cliff Rd, where efforts will be made to ensure an enjoyable greenway experience through the placement of the trail as far from the road edge as possible and the addition of landscaping to increase buffer space and slow traffic. Historic interpretation and trail amenities will also add to the greenway experience.

Table 23. Parallel to Road, Off-Road Trail Alignment

	Parallel to Road	Off-Road	Total
Segment 1	.56 miles (20%)	2.23 miles* (80%)	2.79 miles
Segment 2	0 miles (0%)	2.5 miles (100%)	2.5 miles
Veterans Memorial Greenway (formerly the Rich Valley Greenway)	11%	89%	5.29 miles

*Assumes .66 miles on abandoned Cliff Rd right-of-way

RECREATION DESTINATIONS, ACTIVITY CENTERS, AND TRAIL CONNECTIONS

Inherent to greenways are the trails linking recreation destinations and activity centers, the social gathering places along the trail. Opportunities to stop along the trail to fish, observe wildlife, or eat lunch are some of the features that will make the Veterans Memorial Greenway (formerly the Rich Valley Greenway) a regional destination drawing people from a broad area. The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will be a spine for loop trails, connect to regional and local trails and roads, and will itself serve as an important transportation route. Recreation destinations, activity centers, and connections are shown in Figure 22.



TRAILHEADS AND NEIGHBORHOOD GATEWAYS

Frequent access is a priority for the Veterans Memorial Greenway (formerly the Rich Valley Greenway). Two generalized types of greenway and trail access points are recommended: trailheads are intended for regional and local access; neighborhood gateways primarily are for local access at opportune locations. Typically, access points will be at recreation destinations, activity centers, and trail intersections. Here trail users will find support facilities such as water and restrooms as well as greenway information.

Trailheads are the primary greenway access points and will serve people who drive, walk, bike, or take transit to the greenway. They will occur every three to five miles and share facilities such as parking and restrooms with other facilities. Neighborhood Gateways are more frequent, local access points. They will be at convenient intervals between primary trailheads (two-to-three miles apart or closer at logical locations). Wherever possible, facilities are shared with other uses and ideally are located where there is a complementary recreation destination or activity center.

Trailheads will include:

- ▶ Water
- ▶ Motor vehicle parking
- ▶ Secure bicycle parking
- ▶ Picnic areas and/or facilities
- ▶ Wayfinding and traffic control
- ▶ Restrooms
- ▶ Interpretation
- ▶ Benches
- ▶ Food where opportune
- ▶ Shelter and shade
- ▶ Local and/or regional trail connections

Neighborhood gateways will include the following elements:

- ▶ Benches
- ▶ Local and/or regional trail connections
- ▶ Secure bicycle parking
- ▶ Wayfinding and traffic control
- ▶ Water
- ▶ Interpretation

Neighborhood gateways may also include as shared facilities:

- ▶ Restrooms
- ▶ Picnicking
- ▶ Food
- ▶ Motor vehicle parking

TRAILHEADS



NEIGHBORHOOD GATEWAYS



ROAD AND RAILROAD CROSSINGS

Grade separated crossings are a critical component of Dakota County’s greenway system. Grade separation promotes safety by reducing conflicts with motorized traffic and allows for more efficient and enjoyable trail experience for users of all abilities. To that end, grade-separated crossings are suggested at the major intersections along the Veterans Memorial Greenway (formerly the Rich Valley Greenway), shown in Figure 26 and described in Table 25. The existing rural landscape of the corridor means that there are few roads to cross overall, but the roads that do cross the greenway are high traffic roads.

Grade separations on the greenway system should be of the highest quality possible to ensure safety and security and to establish the greenway system as a truly special and high-quality destination.

Three potential grade-separated crossings were evaluated along the Veterans Memorial Greenway (formerly the Rich Valley Greenway). Two of the crossings are along the preferred greenway alignment, and the third is along an alternative alignment. The evaluations were based on topography, utility information, existing infrastructure, and land ownership. The concept level cost estimate includes grading, retaining walls, traffic control, turf establishment/erosion control, and mobilization. Engineering, administrative costs, and contingencies are also included in the estimate. Overall system drainage costs are not.

In order to accomplish the overall greenway trail goal to provide a fluid and safe off-road user experience for all user levels and ages, the existing Highline corridor is an ideal off-road trail setting. This route requires the grade separation at S. Robert Trail. The plan identifies a grade-separated crossing of TH3 / S. Robert Trail as the preferred alignment. Robert Trail is a State Highway with a traffic volume of 11,000 vehicles per day. While a grade-separated crossing of TH3 is preferred, the plan also identifies an alternate alignment which would cross TH3 at the existing intersection with Cliff Rd., should it be determined that the grade-separated crossing is prohibitively expensive or is infeasible.



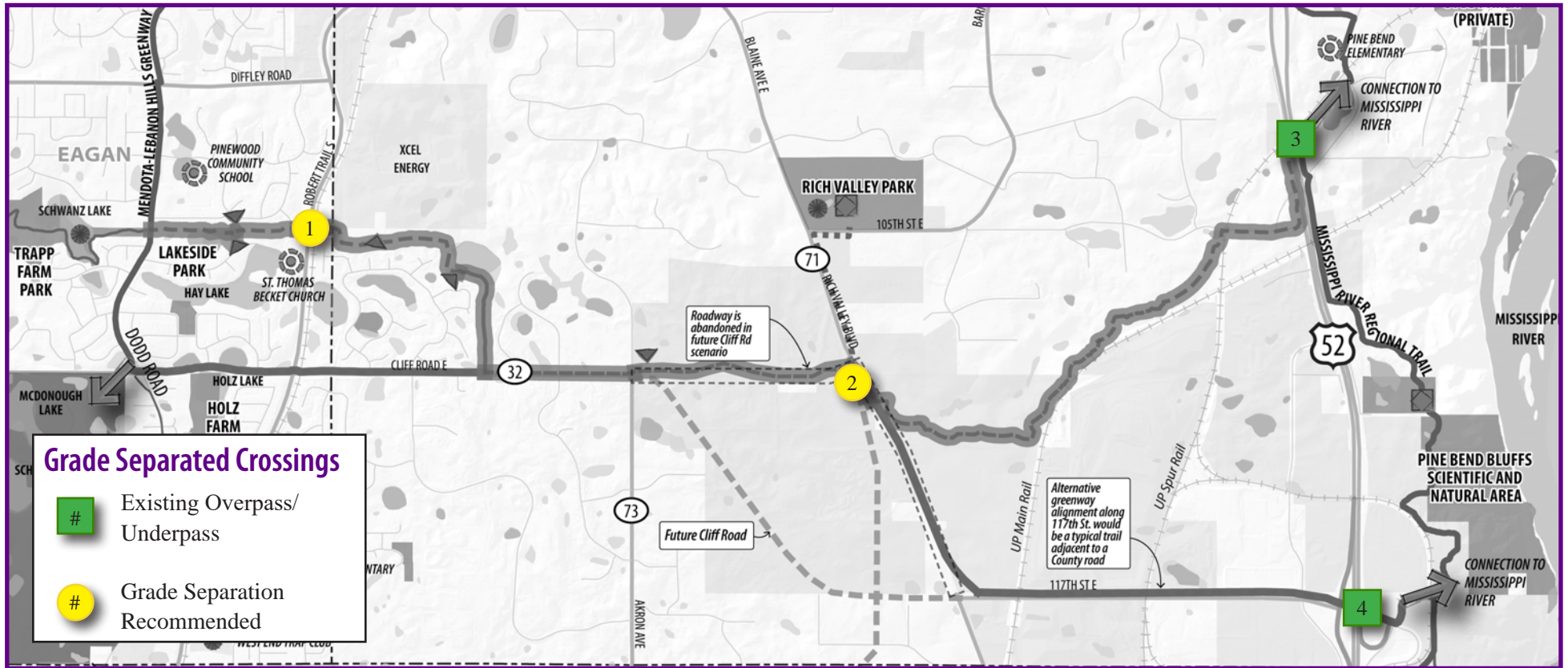
Table 25. Grade Separated Crossings

ID*	LOCATION	RECOMMEN- DATION	IMPORTANCE FOR USER SAFETY AND EXPERIENCE	ESTIMATED CONSTRUCTION COST	DESCRIPTION
1	TH3 / S Robert Trail at the Highline	Bridge	High	\$1.7 million Note: opportunities for lower cost bridge construction in coordination with future road or rail project will be sought	See pages 33-34 and Appendix B
2	Rich Valley Blvd Notes: Coordination needed with future realignment of Akron Ave and Cliff Rd	Tunnel	High	Cost not evaluated	This crossing would be planned with the future road realignments of Akron Ave and Cliff Rd. The trail would potentially cross under Akron Ave/ Rich Valley Blvd with a tunnel.
3	Railroad underpass of Hwy 52, just north of Inver Grove Trail	Retrofit existing tunnel	High	\$800K	See pages 38-39 and Appendix B
4	Existing 117th St bridge over Hwy 52	Add trail to bridge	Low (alternative route)	\$350K	See page 39 and Appendix B

*See Grade Separated Crossings Map on following page.



Figure 26. Grade Separated Crossings Map



#1: The Highline corridor crosses TH3 just north of St. Thomas Becket Church. Today, there is no pedestrian crossing at this location. The closest pedestrian crossing is at the Cliff Road intersection, which is half a mile south of the site. In order to provide a seamless greenway experience, a pedestrian and bicycle bridge is proposed over TH3. The existing terrain, as well as railroad tracks along the east side of the road and underground utilities in the area, make a bridge more feasible than a tunnel. One or more of the existing power poles and lines would need to be relocated in order to fit a bridge at this site, which makes the proposed crossing more expensive than a typical condition. The County will note this location as the preferred site for a pedestrian and bicycle bridge with the anticipation that it will likely need to occur in combination with another infrastructure improvement, such as reconstruction of TH3 or removal of the railroad tracks, in order to mitigate the high cost. A more detailed analysis of this crossing can be found in Appendix B of this report.

#2: This crossing is needed in order to provide a seamless trail experience and avoid an at-grade crossing of Rich Valley Blvd / future Akron Ave. The crossing would be planned with the future road realignments of Akron Ave and Cliff Rd. The trail would potentially cross under Akron Ave/Rich Valley Blvd with a tunnel.

#3: This crossing is needed to provide a pedestrian/bicycle crossing of Hwy 52. An existing railroad corridor passes under Hwy 52 just north of Inver Grove Trail. The Hwy 52 bridges have sufficient space underneath to add a retaining wall and ten foot wide paved trail on the south side of the rail tracks. See page 38 for detailed graphics.

#4: The greenway plan includes an alternative alignment east of Rich Valley Blvd, along 117th Street East. The trail would follow 117th Street if the land in the preferred northern alignment could not be secured with easements or purchases. The 117th Street trail is not the preferred route because it would be adjacent to a county road and not an ideal greenway experience or natural resources corridor. The 117th Street trail would require a lane retrofit of the 117th Street bridge over Hwy 52 in order to accommodate the trail. This retrofit is described in more detail in Appendix B.



AT-GRADE CROSSINGS

When grade separated crossings are not possible on collector roads or higher, crossing should occur at controlled intersections with road users stopping at traffic lights or stop signs. In some instances, mid-block crossings may be appropriate and should be designed with pedestrian/cyclist safety and visibility in mind, as shown in Figure 27. On lower volume local roads, crossings might not be controlled with traffic lights or stop signs. In these cases, features such as pavement marking, refuge islands, and bumpouts should be applied to reduce crossing distances for trail users and increase visibility for trail users and road users.

ACCESSIBILITY

Dakota County is committed to offering universal accessibility at all trail facilities. The primary paved trail and all access points suggested in the master plan are located and planned for universal accessibility to provide all visitors with a meaningful experience.

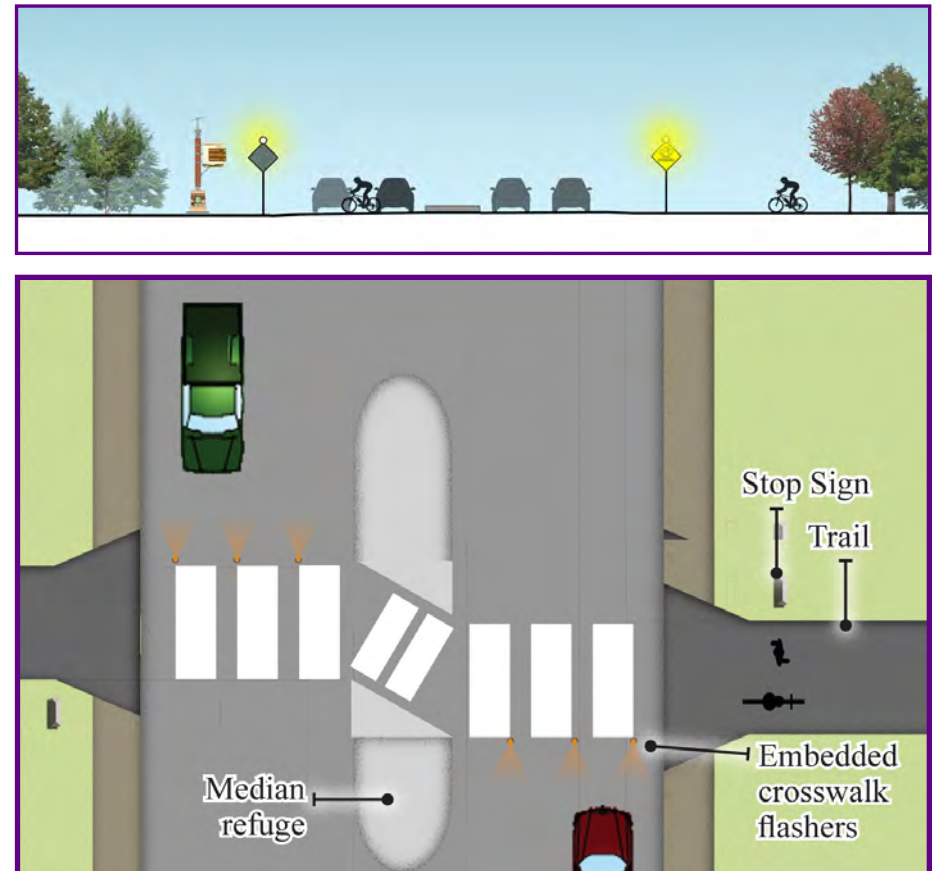
SUSTAINABILITY

Environmental sustainability is at the core of the greenway concept. Improving ecological function, habitat creation, wildlife movement, stormwater infiltration, and carbon sequestration, as well as facilitating non-motorized recreation and transportation, are all greenway objectives.

Greenways will be assembled in environmentally sustainable ways and designed to minimize impact on natural systems. Recommended strategies include:

- ▶ Protecting and restoring natural systems
- ▶ Emphasizing native plant species
- ▶ Energy-efficient lighting and use of timed lighting
- ▶ Use of recycled materials and pervious pavement
- ▶ Reducing maintenance costs by promoting self-sustaining wildlife and plant communities and treating stormwater on-site

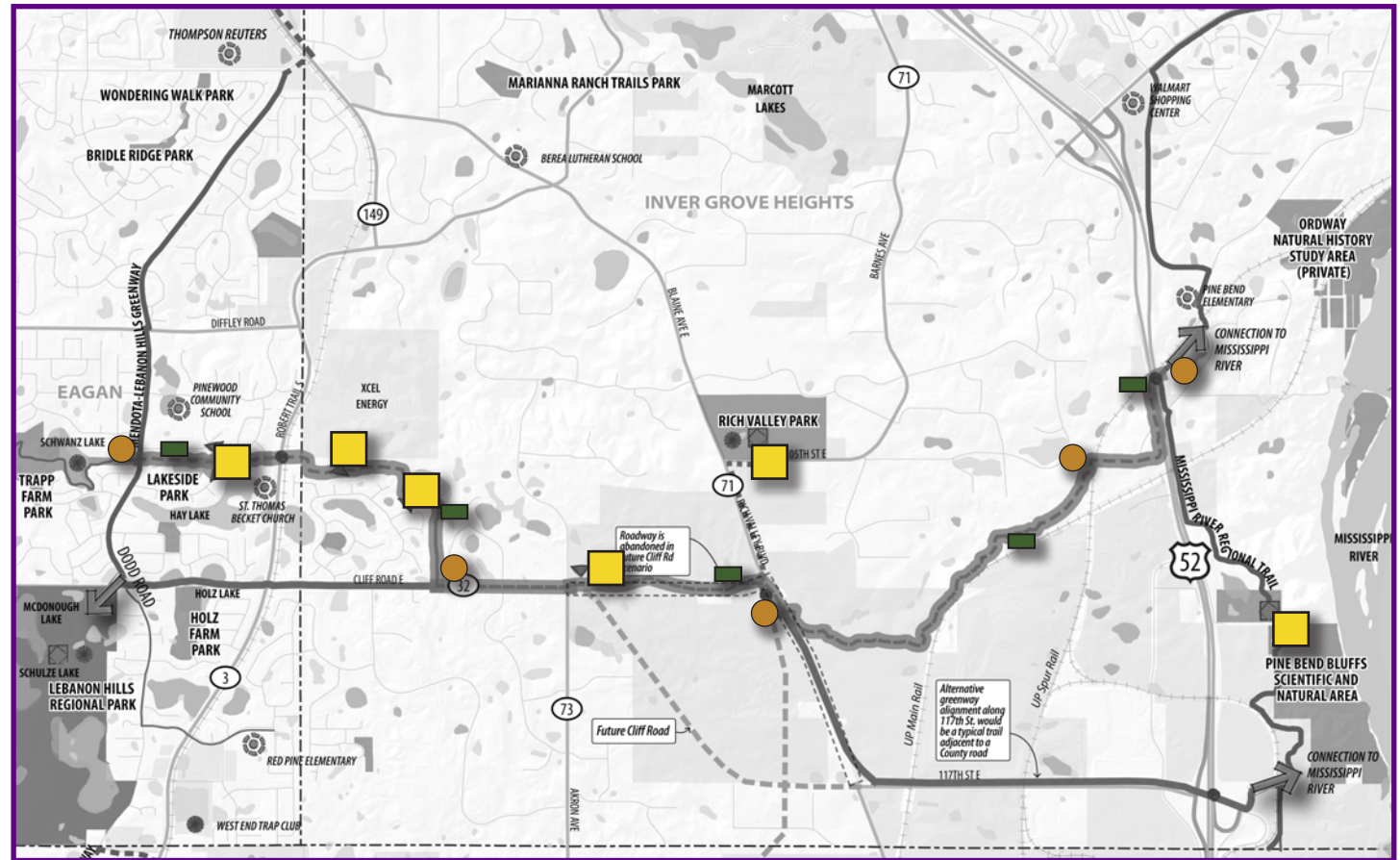
Figure 27. Typical At-grade, Mid-block Road Crossing with Median Refuge



LIGHTING

Lighting is an essential component for safety and to make the greenway functional as a transportation corridor in the winter and fall months when the days are short. For safety and navigation, lighting is paramount at all greenway access points, trailheads, neighborhood gateways, and trail connections. In these places, it is recommended that lighting be incorporated into initial design and construction. In areas with potential for high use because of population density, trail connections, and destinations, it is recommended that continuous trail lighting be installed.

Figure 28. Wayfinding Signage Plan



Sign Types

- Kiosk
- Directional Sign
- Mile Marker



SITE FURNISHINGS

One of the key features of the greenway system is having a consistent design signature for site furnishings. On the right are examples of site furnishings (benches, bike racks, lighting, and trash receptacles) that show the desired character of facilities at trailheads, neighborhood gateways, and other resting areas along the greenway.

WAYFINDING

Wayfinding is the way people navigate from place to place. For the Dakota County greenway system, a consistent wayfinding system is essential for orientation, navigation, and safety. Signage should be consistent across the system and should guide greenway users to local services, cultural destinations, transportation connections, activity centers, recreation destinations, cities, neighborhoods, and other landmarks.

Greenway Site Furnishings Examples

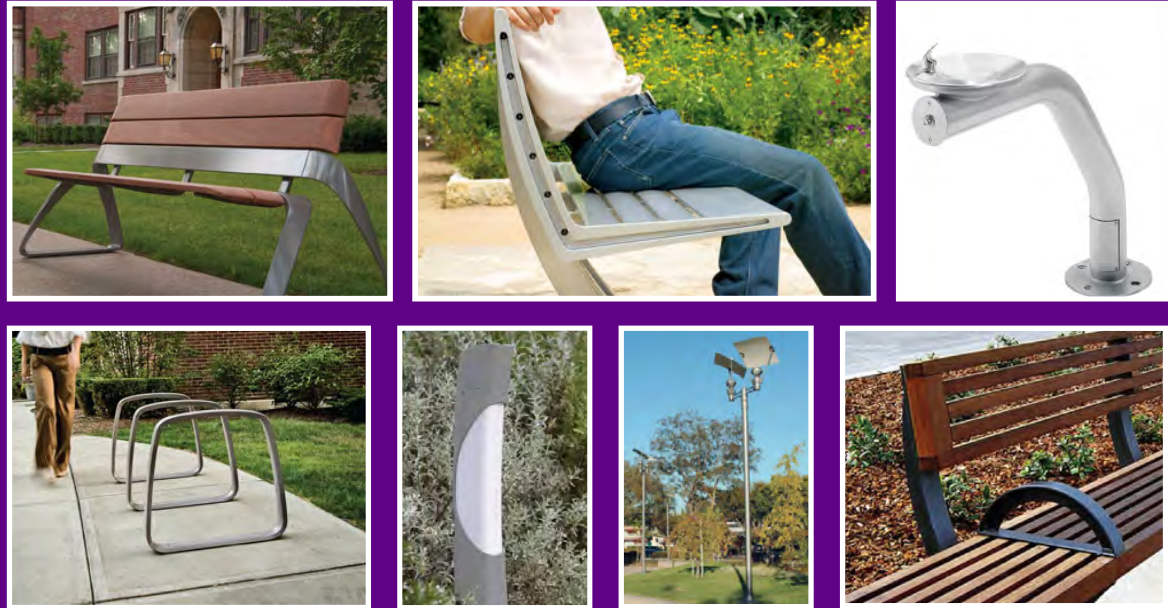
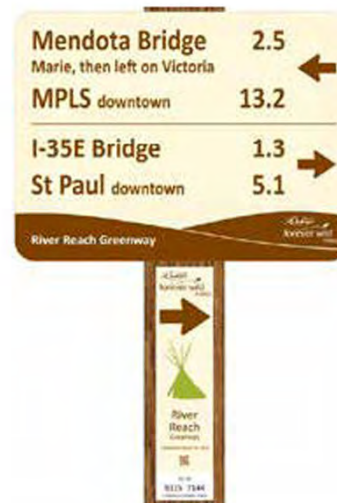


Figure 29. Wayfinding Examples



Mile Marker



Directional Sign



Kiosk

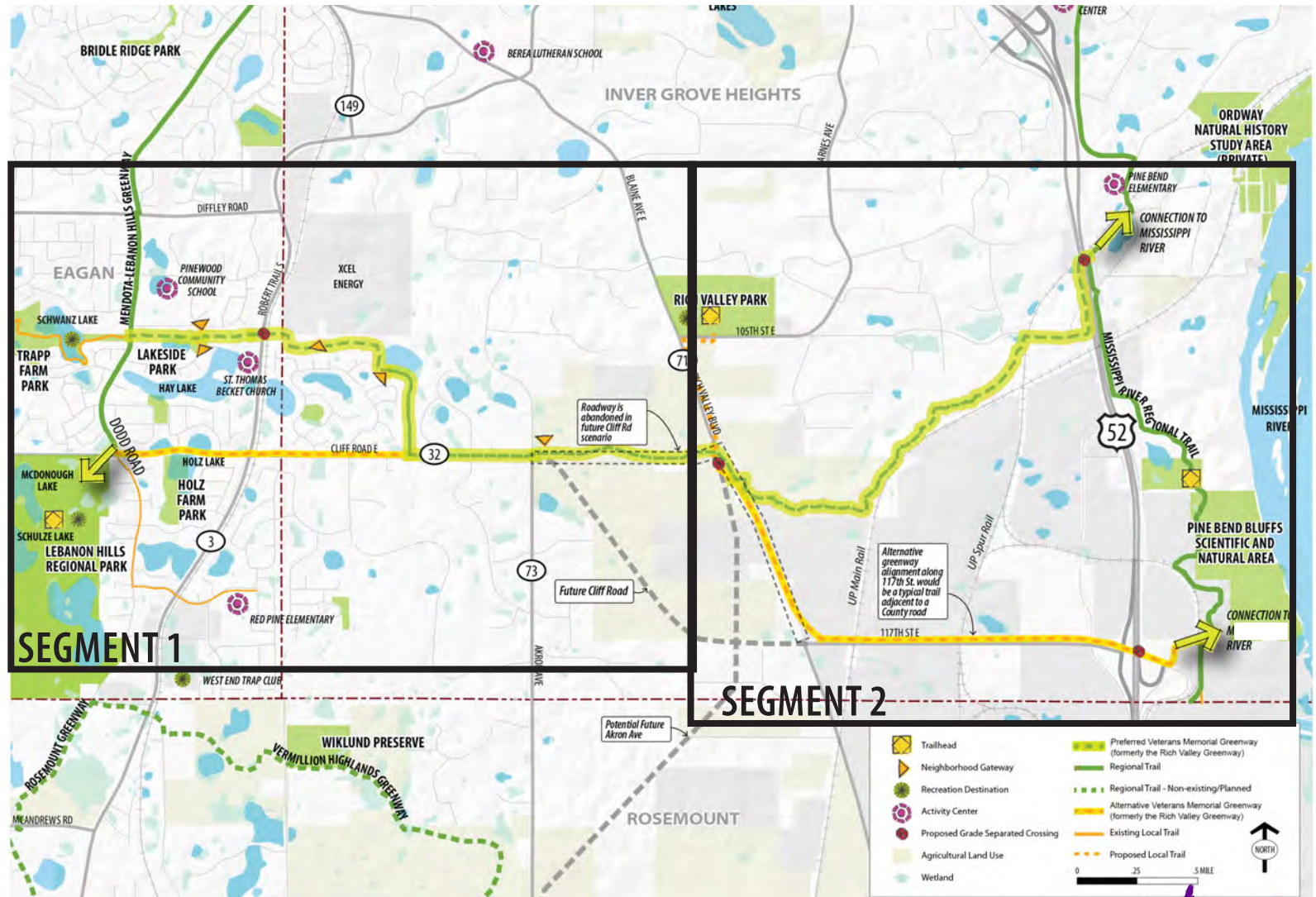


B. Key Initiatives

TRAIL ALIGNMENT

This section summarizes, by segment, specific development and natural resource projects and issues. A zoomed-in view of the greenway map is provided for each segment with a summary of features and discussion of initiatives needed to complete the greenway.

Figure 30. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Trail Alignments and Segments



Dodd Road to Rich Valley Blvd

Letters correspond to map on page 32.

Recreation Destinations

- (A) Trapp Farm Park
- (B) Lebanon Hills Regional Park
- (C) Lakeside Park
- (D) Rich Valley Park

Activity Centers

- (E) Pinewood Community School
- (F) St. Thomas Becket Church

Trailheads

- (B) Visitor Center at Lebanon Hills Regional Park
- (D) Rich Valley Park with trail connection along Rich Valley Blvd

Neighborhood Gateways

- (C) Lakeside Park
- (G) North Cliff Road
- (H) Pinewood neighborhood
- (I) Southern Lakes Neighborhood north access
- (J) Southern Lakes Neighborhood east access

Loop and Connection Trails

- (K) Mendota-Lebanon Hills Regional Greenway
- (L) Dodd Road trail

Grade Separated Crossings

- (M) TH3 / S. Robert Trail Blvd

Segment 1: Dodd Rd / Mendota-Lebanon Hills Regional Greenway to Rich Valley Blvd (2.79 miles; 20% parallel to road, 80% off-road)

The west segment of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) starts at Dodd Road and the Highline corridor. It continues to the east along the Highline corridor, crossing TH3 / S. Robert Trail, and connecting up to the existing Southern Lakes neighborhood trail that leads to Cliff Road. The greenway will then parallel Cliff Road for about half a mile where it will then follow the future abandoned Cliff Road right-of-way until reaching Rich Valley Blvd.

Trailhead – Lebanon Hills Regional Park

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will connect to the planned Mendota-Lebanon Hills Regional Greenway that runs north and south along Dodd Road connecting to Lebanon Hills Regional Park to the south. The Eagan Core Greenway is proposed to continue along the Highline corridor to the west through Eagan to connect to the Minnesota River Greenway. The Visitor Center at Lebanon Hills Regional Park contains ample parking, a visitor center building with restrooms and vending machines, picnic areas, Schulze Lake beach, and connections to nature trails in the park. The trail connection from the Visitor Center to the Mendota-Lebanon Hills Greenway still needs to be planned and constructed.

Lakeside Park

Lakeside Park is a City of Eagan neighborhood park with a basketball court, playground, open fields, and trails along the pond and the Highline corridor. The Veterans Memorial Greenway (formerly the Rich Valley Greenway) trail will traverse the north side of Lakeside Park and connect to the existing paved trail in the park. The park is called out as a neighborhood gateway location with access points on the north and south sides of the park. Vehicle parking is available along Atlantic Hills Drive.

St. Thomas Becket Church

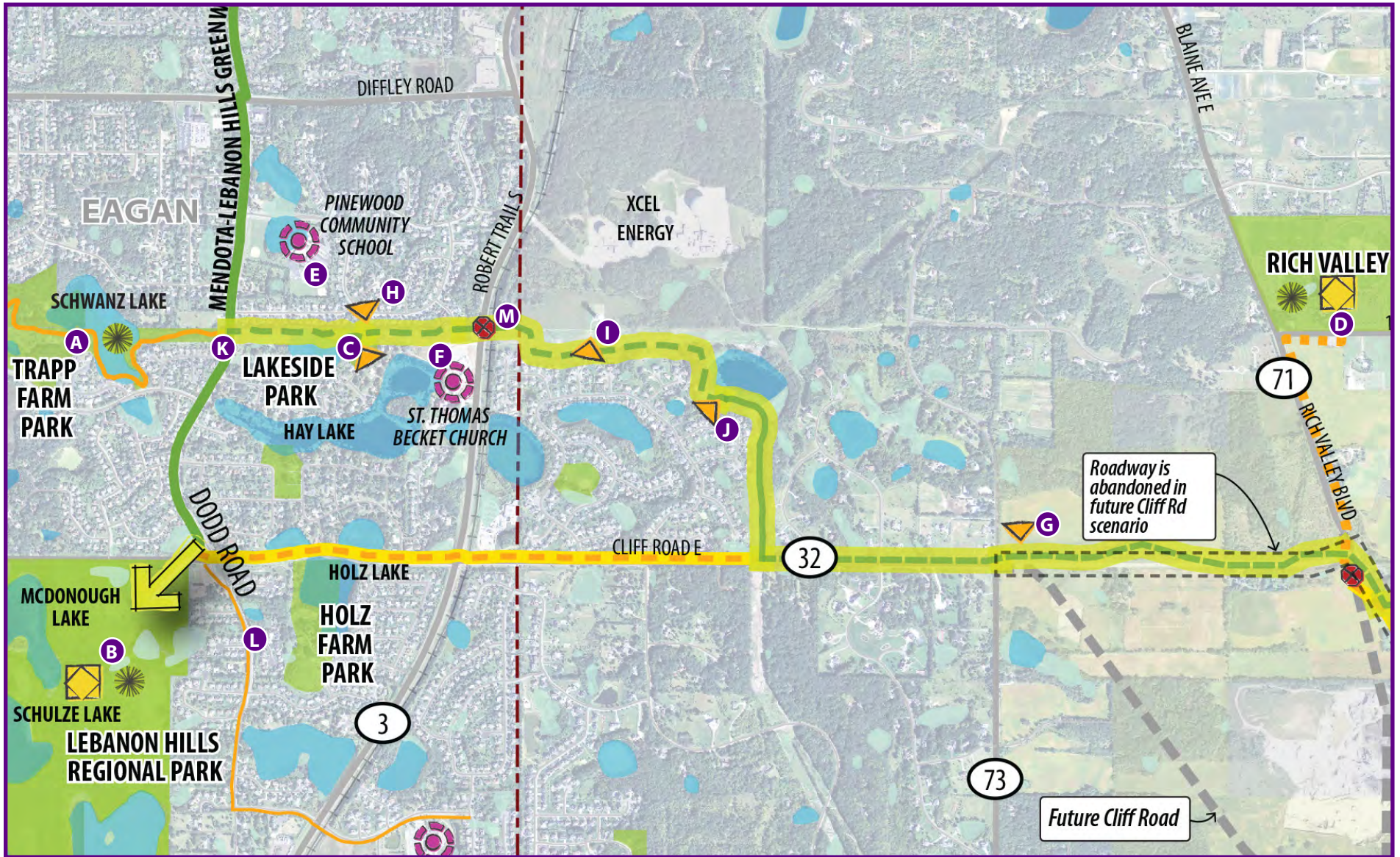
East of Lakeside Park, St. Thomas Becket Church owns part of the Highline corridor and greenway alignment. The existing site is restored prairie, which is maintained by members of the church. A stakeholder meeting with church leadership revealed the desire for the trail alignment to run along the north property line in order to keep the prairie area intact. Figure 33 shows how the greenway could traverse the church property.



The existing trail through the Southern Lakes Neighborhood follows a powerline corridor and ends at Cliff Rd.



Figure 32. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Segment 1 Concept Plan

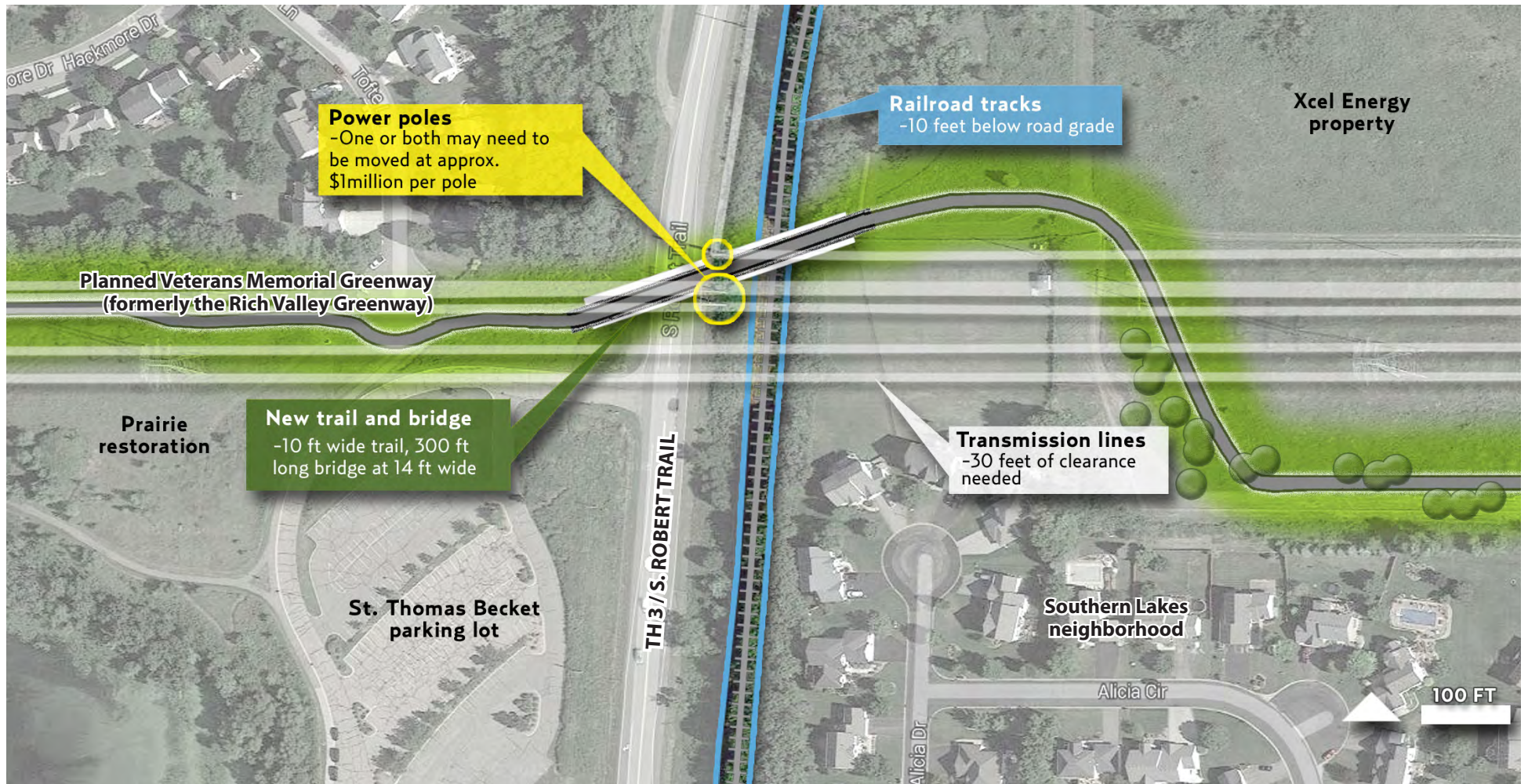


In the event that Cliff Road is realigned, the right of way will not be abandoned but transferred to local jurisdiction. In this location, the trail will either be located on Flint Hills property to the north or within the public right of way, owned by either Dakota County or Inver Grove Heights.

A See sidebar on page 36 for description of letter labels



Figure 33. TH3 / S. Robert Trail and Highline Corridor Area Detail Diagram





Looking from the St. Thomas Becket parking lot to the east, the Highline corridor crossing of TH3 / S. Robert Trail sets up topographically well for a bridge, but the numerous power poles and lines provide a challenge to work around.



Looking from the St. Thomas Becket parking lot to the east, the Highline corridor crossing of TH3 / S. Robert Trail sets up topographically well for a bridge, but the numerous power poles and lines provide a challenge to work around.

Grade Separated Crossing at TH3 / S. Robert Trail

The Highline corridor crosses TH3 just north of St. Thomas Becket Church. Today, there is no pedestrian crossing at this location. The closest pedestrian crossing is at the Cliff Road intersection, which is half a mile south of the site. In order to provide a seamless greenway experience, a pedestrian and bicycle bridge is proposed over TH3. The existing terrain, as well as railroad tracks along the east side of the road and underground utilities in the area, make a bridge more feasible than a tunnel. One or more of the existing power poles and lines would need to be relocated in order to fit a bridge at this site, which makes the proposed crossing more expensive than a typical condition. The County will note this location as the preferred site for a pedestrian and bicycle bridge with the anticipation that it will likely need to occur in combination with another infrastructure improvement, such as reconstruction of TH3 or removal of the railroad tracks, in order to mitigate the high cost. A more detailed analysis of this crossing can be found in Appendix B of this report.

Xcel Energy

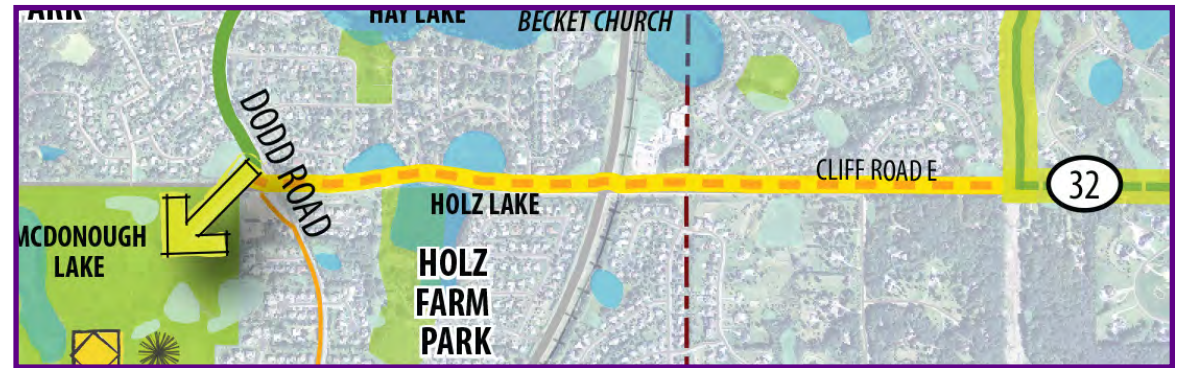
The Highline corridor east of TH3 is owned by Xcel Energy. The corridor, at over 300 feet wide, is already preserved open space, and fits with one of the greenway goals to preserve and connect habitat corridors. The corridor is not high quality native or restored vegetation, but it is undeveloped open space. Xcel Energy is also working toward an initiative to provide vegetation for pollinators. Guidelines for planting under powerlines include the prohibition of tall trees.

Southern Lakes neighborhood

An existing trail along the east side of the Southern Lakes neighborhood is heavily used by residents. The trail would be integrated into the Veterans Memorial Greenway (formerly the Rich Valley Greenway) alignment and connected to the Highline Trail and Cliff Road. Two trail connections in the neighborhood will serve as neighborhood gateways to the greenway.



Figure 35. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Segment 1 Alternative



Cliff Road Gateway

A newly constructed gateway facility is proposed just north of Cliff Road and about a half mile west of Rich Valley Blvd. This gateway would be located on Flint Hills Resources' property and include a small parking lot, portable restroom facility, and signage.

Alternative Alignment along Cliff Road

An alternative alignment for Segment 1 of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) follows Cliff Road from Dodd Road to the existing outlet of the Southern Lakes neighborhood trail. This alignment may be used if the grade separated crossing over Hwy 3 is not feasible. This stretch of road is planned to be reconstructed with a adjacent trail in the next 10 to 20 years.

The Cliff Road corridor is not an ideal natural resource preservation corridor. Suburban residential lots back up to the road right of way, and grassy ditches are on either side of the road pavement.

The average daily traffic (ADT) on Cliff Road near Robert Trail is 7,900 cars per day, while the Robert Trail ADT is 11,000 cars per day. This makes the intersection of Cliff Road and Robert Trail a busy area and a safety concern for pedestrians and bicyclists. There is an existing traffic light at the intersection, which would be recommended to be enhanced for a greenway trail crossing.



Cliff Road is a two lane, rural road with high traffic levels. This photo shows the view looking west toward Dodd Road. There are single-family suburban homes on either side of the road. This is the alternative alignment from Lebanon Hills Regional Park to Rich Valley Blvd.



Rich Valley Blvd to Mississippi River Regional Trail

Letters correspond to map on page 37.

Recreation Destinations

- (A) Rich Valley Park
- (B) Pine Bend Bluffs SNA

Activity Centers

- (C) Walmart shopping area
- (D) Pine Bend Elementary School

Trailheads

- (A) Rich Valley Park with trail connection
- (E) Pine Bend Bluffs SNA

Neighborhood Gateways

none

Loop and Connection Trails

- (F) Mississippi River Trail

Grade Separated Crossings

- (G) Rich Valley Blvd
- (H) Hwy 52 Railroad underpass
- (I) 117th Street bridge

Segment 2: Rich Valley Blvd to Mississippi River Regional Trail (2.5 miles; 100% off-road)

At Rich Valley Blvd, the trail will cross the road, with a proposed grade separated crossing, to continue east through Inver Grove Heights. The greenway will be located on Flint Hills Resources' property, where possible, and follow the north edge of the rail corridor up to 105th Street E. There is an existing at grade rail crossing that the greenway will use. A rail underpass of Hwy 52 will provide a grade separation for the greenway trail to get to the Mississippi River Regional Trail.

Rich Valley Park

Rich Valley Park is located one half mile north of the preferred greenway alignment. A proposed local trail connection will parallel Rich Valley Blvd from the greenway to the south entrance to the park. A proposed Veterans Memorial Greenway (formerly the Rich Valley Greenway) trailhead will be located at the park. Existing park facilities include vehicle parking, play area, basketball courts, restrooms, tennis courts, ball fields, and paved park trails. Recommended improvements include wayfinding and interpretive signage and bicycle parking.

Pine Bend Arterial Connector Study

Dakota County Transportation Department is currently working on a study to determine future vehicle transportation needs in southern Inver Grove Heights.

Proposed realignments for Akron Avenue and Cliff Road are shown on the greenway concept plan graphics. These roads won't be constructed for many years, but with the abandonment of existing portions of County road right of way, the greenway trail has the opportunity to follow the old road corridor for a portion of its alignment.

Flint Hills Resources buffer land

Portions of the proposed greenway corridor will be located on Flint Hills Resources' property. This property mainly serves as buffer lands between the active industrial uses and surrounding residential areas. Some of it is conserved open space and some is agricultural. The trail will be located in the best possible location with regard to Flint Hills Resources's desires, topography, water resources, and vegetation.



Figure 37. Segment 2 Concept Plan

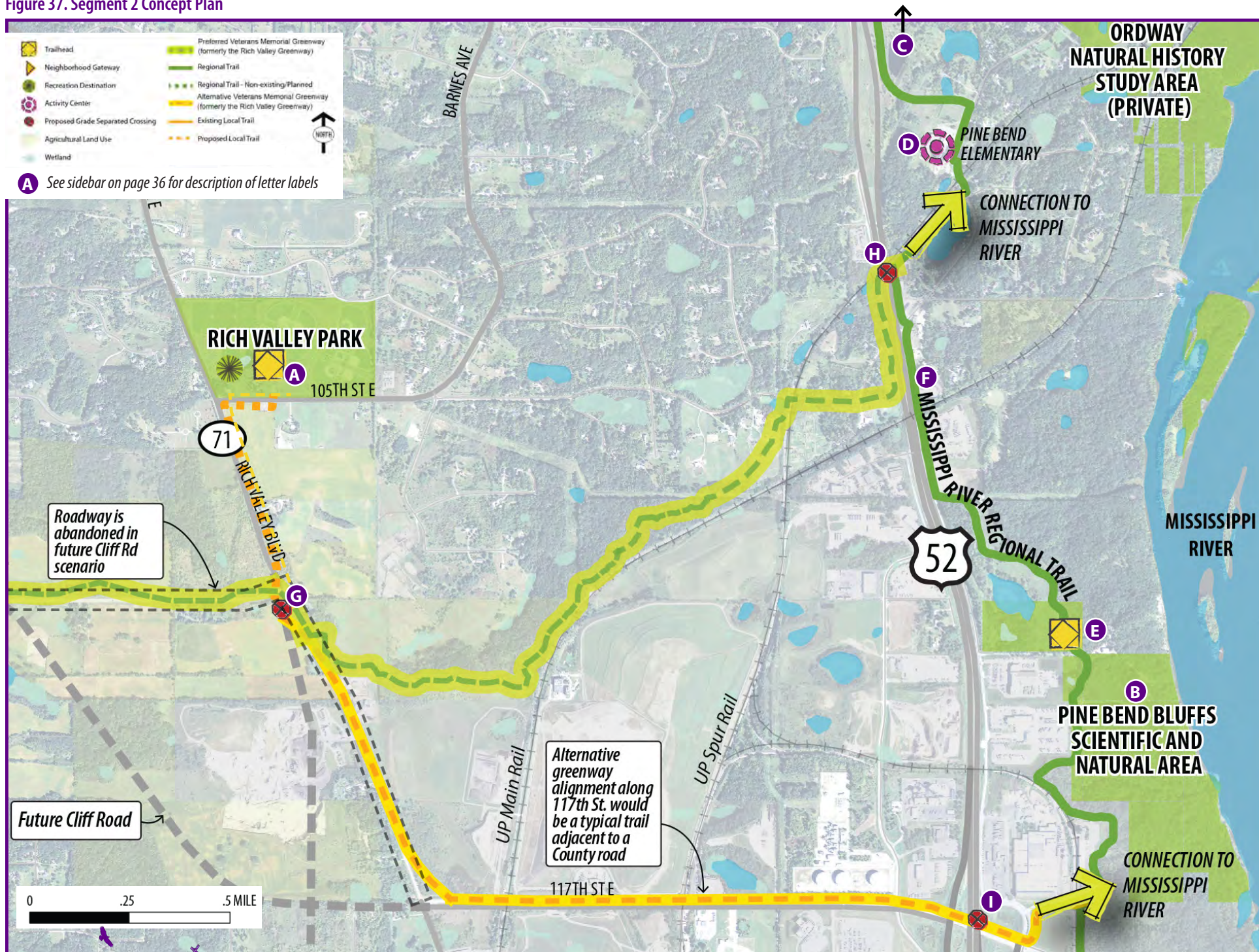


Figure 38. Hwy 52 Railroad Underpass Detail Diagram



Railroad corridor

The greenway alignment will follow the rail corridor through southern Inver Grove Heights. The trail will be located at a reasonable distance from the rail tracks to provide a safe user experience. Potential fencing or other barriers will be used to keep trail users separated from the train tracks. The rail corridor provides an existing continuously owned corridor with suitable topography for the trail construction.

Hwy 52 Railroad Underpass

An existing railroad corridor passes under Hwy 52 just north of Inver Grove Trail. The Hwy 52 bridges have sufficient space underneath to add a retaining wall and ten foot wide paved trail on the south side of the rail tracks. Figure 38 and the graphic to the right show how the trail could be constructed to fit in this space.

Pine Bend Bluffs SNA Trailhead

An existing gravel parking serves as an access to Pine Bend Bluffs SNA and the Mississippi River Regional Trail. The site concept on page 40 is currently under construction and will be complete in 2017 or 2018. Additional enhancements beyond this concept may include greenway signage.

Alternative Alignment along 117th Street & Grade Separated Crossing

On Figure 37, an alternative alignment is shown along 117th Street East. The trail would follow 117th Street if the land in the preferred northern alignment could not be secured with easements or purchases. With future road reconstruction and expansion, a paved trail will be constructed by Dakota County along this road anyway. The 117th Street trail would be adjacent to a county road and not an ideal greenway experience or natural resources corridor. If the greenway is constructed in the preferred northern corridor, the future 117th Street county trail will provide a roughly five-mile loop trail with the Mississippi River Regional Trail. Loop trails have been identified as desired recreational amenities by Dakota County residents. The 117th Street trail would require a lane retrofit of the 117th Street bridge over Hwy 52 in order to accommodate the trail. This retrofit is described in more detail in Appendix B.



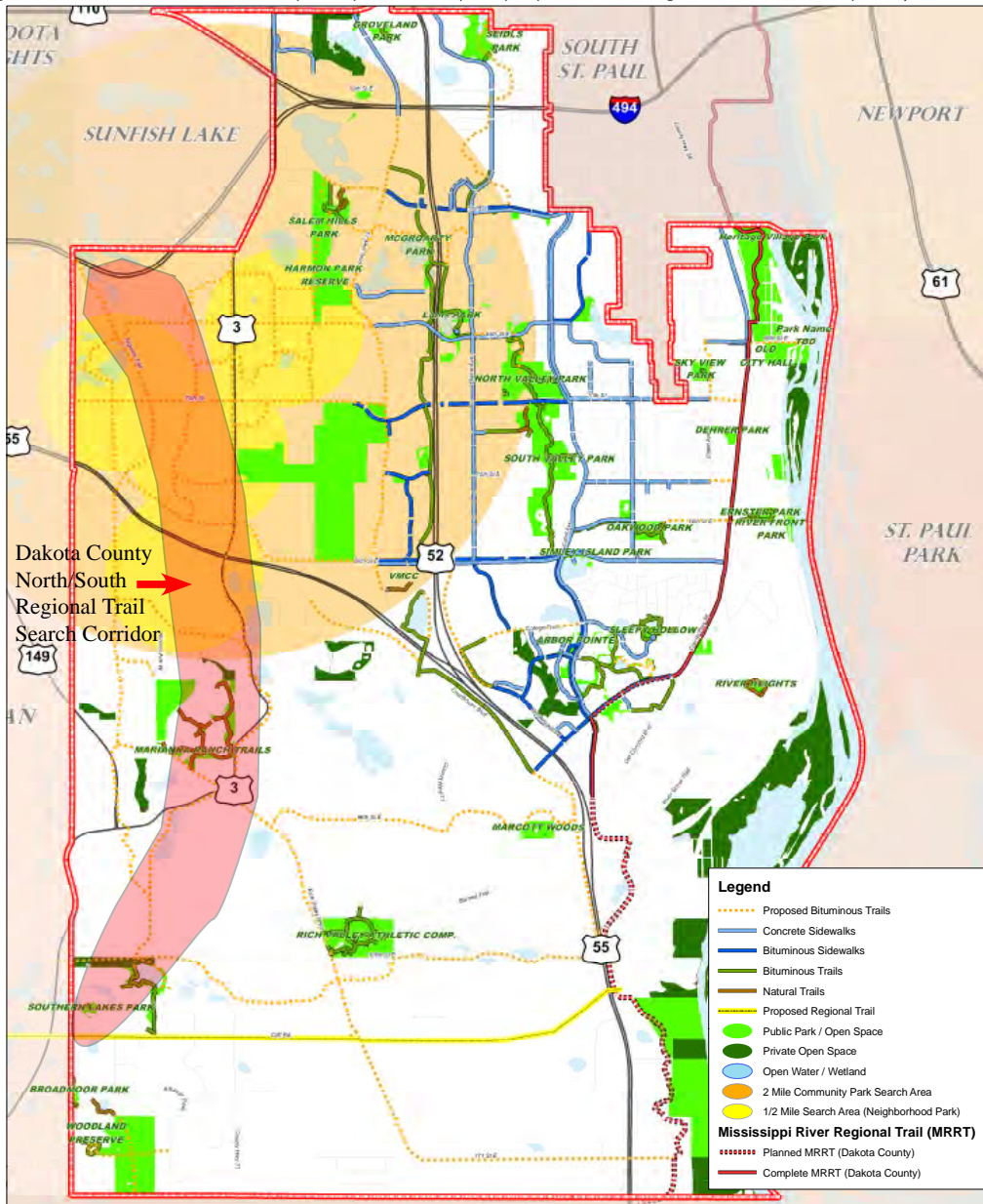
Existing at grade rail crossing on 105th Street East in Inver Grove Heights



Visualization of proposed retaining wall and trail under existing Hwy 52 bridges

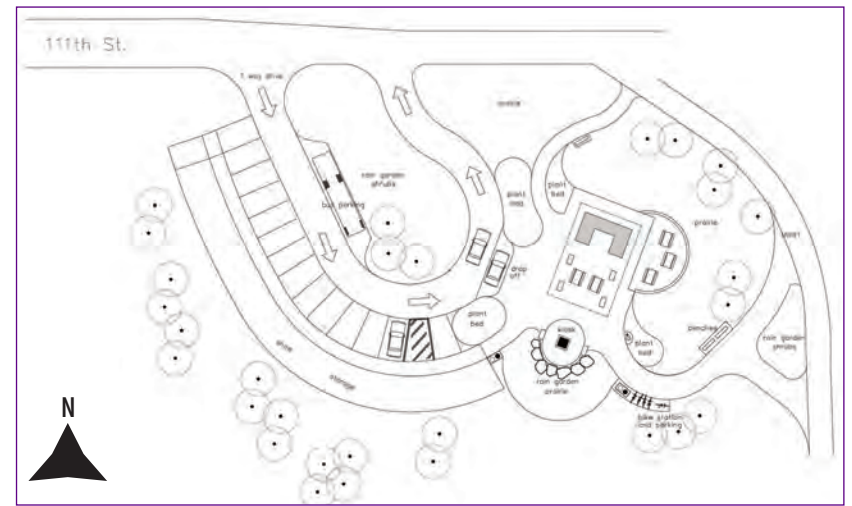


Figure 6.7: 2030 Parks, Trails & Open Space Plan (The proposed trail alignments are conceptual.)



The map on the left from the Inver Grove Heights 2030 Comprehensive Plan identifies several east-west trail corridors in the southern part of the city. The Veterans Memorial Greenway (formerly the Rich Valley Greenway) trail fulfills the goal of an east-west trail connection between the Southern Lakes neighborhood, southern Egan, and the Mississippi River.

Pine Bend Bluffs Trailhead - Site Concept



C. Interpretive Plan

OVERVIEW

In today's world, people's connections to culture, land, nature, and community are often detached. We sometimes cannot imagine the prairie before the metropolis, the wheat before the bread, or the world before Columbus. We forget, or never learn, the stories that define the significant places in our lives. Place-based interpretation seeks to “re-story” places, or reveal the connections between social and natural systems distinctive to each site. It is an approach rooted in the belief that people seek to understand the stories of the places they visit.

Dakota County has long been committed to sharing the stories of special places that comprise the county's parks and trails. Through interpretative programs and exhibits, Dakota County strives to create awareness and appreciation of the county's history, culture, and environment. As the county expands its greenway system, interpretation for each greenway is a goal for the planning and development process.

Interpretive planning designs educational experiences that support an organization's vision and mission. The planning process considers the place-specific historical, cultural and natural resources to be interpreted and the demographics and interests of the people who use the site in order to develop relevant messages and media in support of an organization's mission. In the case of Dakota County, interpretation ought to support Dakota County Park's mission: to enrich lives by providing high-quality recreation and education opportunities in harmony with natural resource preservation and stewardship.

In the context of the Dakota County greenways, it is important to note that fostering an understanding of the relationships between social and natural systems can lead to environmental stewardship. In other words, helping visitors understand the connections between history, culture, and nature is at the core of fostering stewardship of these resources and awareness of the connections between people and nature.

RESOURCES

In considering what is special and unique about the Veterans Memorial Greenway (formerly the Rich Valley Greenway), it is helpful to identify key resources found along the greenway corridor. These resources create a unique setting, or sense of place, and are places where stories of nature, history, and culture intersect in ways that are meaningful to visitors.

Historical resources along the corridor include the site of the Dakota Pine Bend Village and the NRHP listed Holz Family Farm. Natural resources include a number of small lakes and ponds on the western end of the alignment, greenspaces associated with agriculture or ranching, and rolling hills associated with the glacial outwash at the end of the last ice age. Some of these cultural, historical, and natural resources are located on Dakota County property, but many others are located on adjacent properties. Therefore, continued partnerships with adjacent property owners will be important to developing interpretation along the greenway.



Cultural, historical, and natural resources may be vulnerable and potentially compromised with increased traffic and human interaction. Resources such as unexcavated archaeological sites are culturally sensitive and susceptible to looting or vandalism if care is not taken to protect them. Therefore, interpretation of these resources should be sensitive to these potential impacts and Dakota County should work with necessary stakeholders, such as Minnesota Indian Affairs Council (MIAC) for burials, to determine an appropriate approach to both preservation and interpretation.

KEY MESSAGES

While each individual greenway within Dakota County’s system will have a theme that is based on the specific resources associated with the greenway corridor, it is recommended that Dakota County undertake a system-wide interpretive planning effort to identify overarching themes for the greenway system. These overarching themes would represent broader messages that span the system and weave together specific themes for each individual greenway.

In the absence of a system-wide interpretive plan, this master plan suggests one central message, or theme for the greenway corridor. Supporting subthemes are also identified in order to further develop the central theme and provide organization for interpretation.

It is recommended that the subthemes be interwoven throughout the trail to provide both a richly layered and consistent interpretive experience. If a system-wide interpretive plan is developed, the themes presented below should be revisited and revised as necessary.

THEME-BASED INTERPRETATION

A theme is the central or key message of all interpretation at a site or along a corridor such as a trail or greenway. It may or may not appear in writing, exhibits, and programming, but all interpretive efforts should fall within the scope of the interpretive theme. A theme provides organizational structure and clarity to the main message that visitors encounter when they visit a site or travel the corridor. After experiencing a site, visitors should be able to summarize the main point of interpretation in one sentence—this is the interpretive theme.

A theme is different from a topic in that it expresses a complete idea or message. A topic is a broad general category, such as the river, settlements, and development. A theme should answer the question, “So what?” It should tell visitors why a specific place, story, or resource is important. A theme should:

- ▶ Be stated as a short, simple, complete sentence.
- ▶ Contain only one main idea, if possible.
- ▶ Reveal the overall purpose of the site.
- ▶ Be specific.
- ▶ Connect tangible resources to universally understood concepts.

In this case, we look to use interpretation to encourage people to think about their impact on society and the environment.

Supporting subthemes will develop the central theme and provide organization for interpretation. The subthemes will be used throughout the trail to provide a richly layered and consistent interpretive experience.



INTERPRETIVE THEME: *Contemplating our place: Thinking about our destination by understanding our past.*

Subthemes:

Who influences this place? - People and their culture have intertwined with this place. From Native Americans, to early Irish settlers, to the present day melting pot. Think about what type of legacy we want to leave for future generations.

The story of numerous individuals who have left their mark on the landscape provide compelling stories for greenway users. Stories could include:

- ▶ The different migrations of indigenous peoples culminating with the last known settlement at Pine Bend (also known as Medicine Bottle Village).
- ▶ European settlements, particularly, the Irish at Rich Valley. The nearby cemetery highlights the different Irish families that have lived in the area for many generations.
- ▶ Other families or individuals of note are:
 - » McGoarity's
 - » Brian McGoarity united the township in the early 1900s
 - » Holz Family

Modes and nodes - Before the car, trails marked our transportation corridors. As transportation trends changed, we built rails for trains, and roads for trucks and cars. How will transportation change as our society adapts to new technology?

The corridor highlights the many different ways we depend on transportation networks. As visitors power themselves through the greenway, we can also take time to think about how raw materials reach manufacturing hubs via rail or how goods are carried by trucks to reach stores on the highway. Stories could include:

- ▶ Union Pacific rail corridor
- ▶ Pine Bend truck center
- ▶ The history of the connection between St. Paul and Hastings. From early unpaved roads, to Courthouse Boulevard, and most recently the development of the state highway.

Powering our place - Travelling past the Flint Hills refinery, transmission lines, and recycling centers, the Veterans Memorial Greenway (formerly the Rich Valley Greenway) shows the power supply chain from different perspectives. How will our landscape change as we use different resources to power our lives?

Energy is an integral part of our society. It powers our cars as we travel the roads, it powers our homes and work places, and it is at the forefront of the discussion about climate change. Stories could include:

- ▶ How can people use energy most efficiently?
- ▶ How can our actions incite changes in our environment?
- ▶ Flint Hills Refinery
- ▶ Transmission corridors
- ▶ Union Pacific rail corridor as it brings crude oil to Flint Hills
- ▶ Recycling center on 117th St E.
- ▶ Underground pipelines

Discerning the Landscape - Through geology, we understand how erosion, wind, and glaciers have shaped in the rolling hills we see now. The landscape may not change significantly in our lifetime, but will our actions today alter the landscape 1,000 years from now?

We can accept our surroundings as an unchanging constant, but the physical landscape has been changing for millennia. The visitors of the greenway can gain an appreciation for these forces through interpretive nodes explaining geologic processes. Stories could include:

- ▶ Glaciation
- ▶ Erosion from wind
- ▶ Erosion from water



RECOMMENDATIONS

- ▶ Prepare a system-wide greenway interpretive plan that:
 - ▶ Establishes guiding principles for interpretation throughout the greenway system;
 - ▶ Evaluates visitor preferences and needs related to interpretation;
 - ▶ Establishes system-wide goals and objectives for interpretation;
 - ▶ Develops system-wide interpretive themes through a process of staff and stakeholder engagement;
 - ▶ Identifies the locations where these system-wide interpretive themes will be expressed;
 - ▶ Identifies interpretive themes for each greenway within the system and establishes a framework for interpretive planning and development;
 - ▶ Establishes consistent design standards for non-personal interpretive media throughout the system;
 - ▶ Identifies appropriate system-wide media for interpretation (e.g., website, geocaching, tours of multiple greenways);
 - ▶ Assesses current interpretive staffing levels and makes recommendations over the short- and long-term;
 - ▶ Identifies and fosters potential partnerships for interpretive programs within the greenway system;
 - ▶ Develops a framework for ongoing planning and evaluation of interpretation throughout the greenway system.
- ▶ Establish a system-wide approach to managing interpretation and education. Recreation, education, and interpretation are not mutually exclusive activities, and collaboration and consistency are important across the greenway system.
- ▶ Establish a community advisory group to build relationships with the agencies and organizations that own adjacent property; facilitate an inclusive interpretive planning process; engage community members knowledgeable about history and culture; and ensure that interpretation along the greenway is thematically and aesthetically cohesive.



INTERPRETIVE MEDIA RECOMMENDATIONS

- ▶ Interpretive media should not impinge on the natural landscape. As much as possible, Dakota County should adopt the National Park Service's Wayside Exhibit approach (<http://www.nps.gov/hfc/products/waysides/index.htm>) to interpretation along the greenways. In this approach, the focus is on experiencing the landscape first-hand; interpretation is an enhancement, not the primary focus.
- ▶ Based on this approach, interpretive signs should be minimal, low profile, accessible to all, and purposefully placed.
- ▶ Interpretation should be integrated into orientation signs at key locations along the greenway (such as trailheads and neighborhood gateways). This interpretation should serve to orient the greenway user thematically to the greenway and introduce the visitor to the experiences they can expect along the greenway. Interpretation at these locations could also be artfully integrated into trailhead or gateway facilities such as benches, picnic tables, pavement, fencing, or structures (e.g., restrooms).
- ▶ Interpretive signs along the greenway should be considered a caption to distinct or important landscape features that a greenway user may not understand by looking at the feature on its own. In other words, interpretive signs should only be installed along the greenway if they explain or describe something that is visible along the greenway. These signs should have brief but engaging text. More detailed or lengthy information should be delivered through another form of media.
- ▶ Dakota County should consider developing multimedia interpretation. Audio tours provide an opportunity for unobtrusive interpretation along the greenway for interested users. Self-guided MP3 tours could be developed and made available on the Dakota County Parks website for downloading to iPods or other personal MP3 devices. Initially, a greenway-wide audio tour should be developed based on the greenway theme. As staff time and resources allow, additional tours could be developed for the subthemes or for different age groups.
- ▶ Dakota County should work closely with community partners to ensure that interpretation along the greenway enhances but does not overlap interpretative experience in adjacent or collaborating public spaces.



Each greenway will have the interpretive theme expressed in an artful way, integrating interpretation with corridor design, interpretive stops and overlooks at key corridor locations.



Environment: A deliberately designed environment can support communication of the desired message.



Audio tours: Sound can be delivered in many different ways including handheld audio tours, downloadable podcast tours delivered by RSS feeds or your website, mobile phone tours, and on-site installations at the touch of a button or motion triggered.



Publications: Brochures, maps, scavenger hunts, and a variety of printed materials can serve interpretive purposes.



Personal: Personal interpretation includes guided tours, programs, and special events. Programs are regularly scheduled recurring activities such as classes, talks, or workshops that are held frequently—for example, every Saturday afternoon. Special events are generally activities that are scheduled on an annual basis, or on a one-time basis.



Interpretive signs



Objects: These could be functional objects such as benches, picnic tables, sidewalks, or purely ornamental objects that convey the desired message.



D. Stewardship Plan

The linear nature of the greenway will require natural resource management strategies that are geographically targeted, cooperative, and realistic. Restoration and protection efforts should be focused near trailheads, as these locations will provide the greatest opportunity for greenway users to see the results of stewardship and provide a high-quality user experience. Given the linear nature of the greenway, stewardship activities should be in cooperation with adjoining landowners, public and private. Cooperative stewardship activities likely will be easier with other public agencies, but this should not preclude the possibilities of stewardship work on adjoining private lands. All stewardship actions should be evaluated through the lens of sustainability — determine if the stewardship effort is economically and ecologically sustainable over the long term.

HABITAT INVESTMENT AREAS

Given the length of the greenway corridors, efforts to manage and restore the natural resources and native plant communities would be a daunting task — well beyond the ability of any one agency. In order to provide for realistic and sustainable restoration and management of the resources, key habitat investment areas were identified for natural resource management. These habitat investment areas were prioritized and targeted to areas associated with high-quality ecological resources and greenway use patterns. These areas are identified in Figure 48.

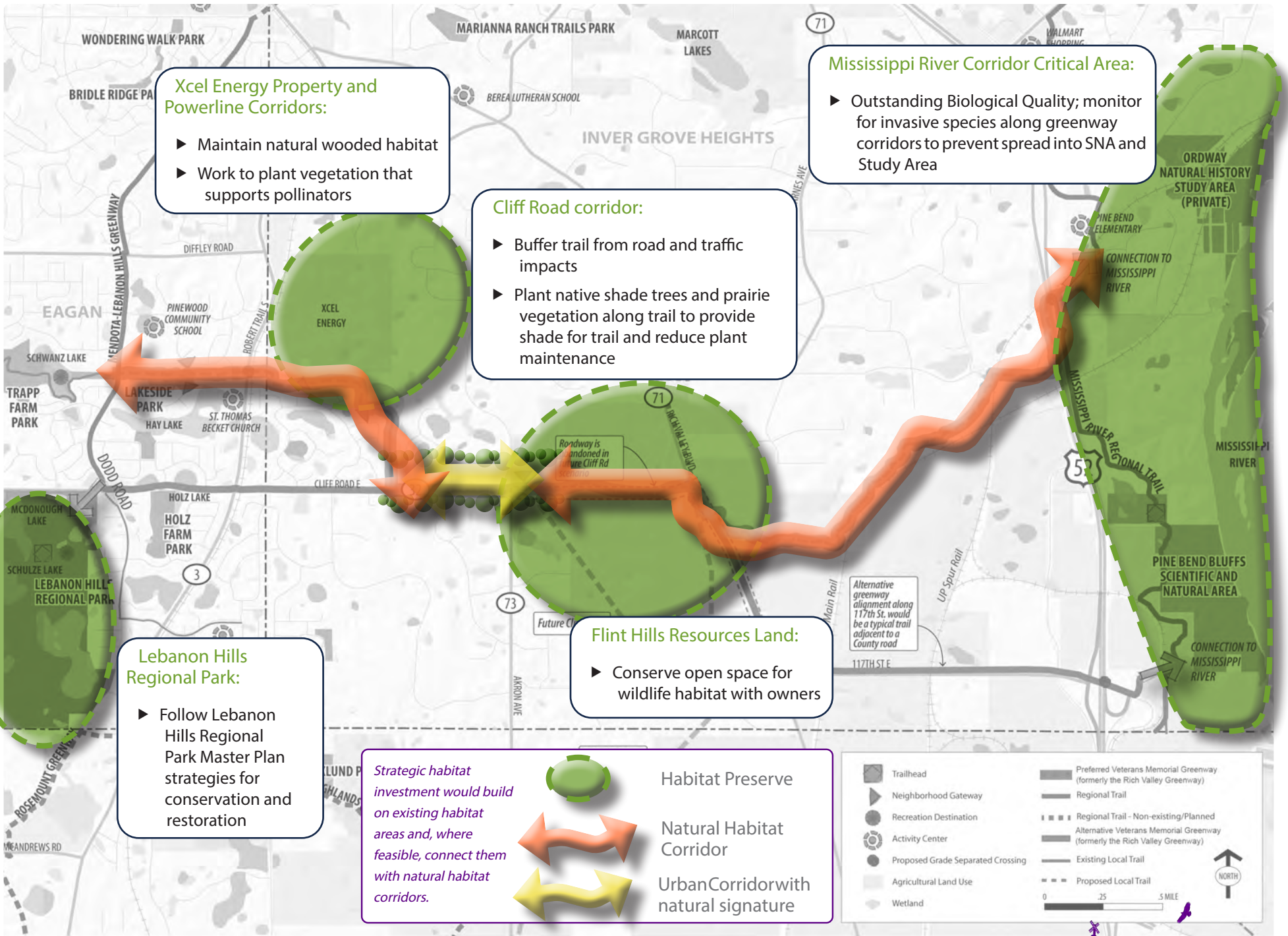
As most of the area along the Veterans Memorial Greenway (formerly the Rich Valley Greenway) is currently undeveloped, it is possible to conserve large areas of open space and establish a continuous ecologically functioning habitat corridor. General recommendations are made for overall corridor preservation, while targeted natural resource and water quality improvements are recommended at key locations, such as trailheads and parks.



Table 47. Natural Resource Conservation & Habitat Investment Strategies

	
HABITAT PRESERVE	HABITAT CORRIDOR
Top priority habitat restoration/management	Second priority habitat management
<ul style="list-style-type: none"> Has adequate patch size/shape to sustain native plant community Contains existing remnant of native plant community Has interpretive potential Has benign surrounding uses Buffers or contains natural waters 	<ul style="list-style-type: none"> Provides connection between habitat preserves Has adequate width to sustain native plant ground layer Grades allow for rainwater infiltration Buffers natural waters
	
NATURAL LANDSCAPES	DESIGNED LANDSCAPES
Lowest landscape investment priority	High landscape investment
<ul style="list-style-type: none"> Primary task is to control invasive plants Managed as a natural, low-maintenance landscape 	<ul style="list-style-type: none"> Managed urban landscapes Limited habitat value Relatively small area

Figure 48. Natural Resource Recommendations



STEWARDSHIP RECOMMENDATIONS

General considerations for stewardship activities within this investment hierarchy are organized around ecological quality, landscape position, and future uses and are described on page 47.

Vegetation management and water quality improvements

In native plant communities — prairie, woodlands, and wetlands — invasive species removal, buffer protection, or establishment and re-establishment of disturbance regimes will be the key activities. Oak savannas may need to be supplemented with tree plantings, and all of the grassland systems will likely need supplemental seeding.

Site Specific Actions

Lebanon Hills Regional Park Trailhead at the Visitor Center:

Existing conditions: The existing Lebanon Hills Regional Park Master Plan outlines several natural resources goals and strategies that include projects on the site. The parking lots at the Visitor Center include innovative stormwater infiltration and filtration areas to keep pavement runoff from entering the lakes in the park and native landscaping to provide habitat and filter stormwater runoff.

Recommendations: Continue to implement the strategies listed in the Lebanon Hills Regional Park Master Plan. When the trail connection from the greenways to the Visitor Center is designed and constructed, ensure sensitive construction methods and stormwater management best practices to mitigate runoff from the increased impervious surface.

Highline corridor:

Existing conditions: The Highline corridor consists of mainly herbaceous

plant material, some native and some non-native. St. Thomas Becket Church has a prairie restoration on their section of the Highline corridor.

Recommendations: Prairie restoration is recommended to be continued along other areas of the Highline corridor where appropriate and feasible. Low growing trees and shrubs may also be planted within the power line corridor to meet the guidelines of Xcel Energy. Pollinator supporting plant materials are recommended in line with Xcel Energy’s initiative.

Cliff Road corridor:

Existing conditions: Along Cliff Road, turf grass and disturbance species fill the area outside the road edges. There are few trees or shrubs adjacent to the road.

Recommendations: Native tree and shrub species should be planted along the trail to provide shade on the future trail paved surface to reduce the heat effect cause by bituminous surfaces, to provide slope stabilization for the ditch areas, and to encourage groundwater infiltration.

Flint Hills Resources land:

Existing conditions: These areas contain agricultural crop land, herbaceous areas, wooded areas, and some shrub lands. The land is undeveloped and provides the opportunity for conservation of open space and restoration of native habitats in areas where feasible.

Recommendations: With development of the trail, plant native trees along the trail to provide shade for the paved surface. Include native plant restorations in areas close to the trail to provide interpretation and education. Remove invasive species where they exist. Prioritize areas that are easily accessible and which will provide the most habitat improvement.



Mississippi River Corridor Critical Area:

Existing conditions: Several areas with the Pine Bend Bluffs Scientific and Natural Area and to the north of it along the river are considered to be outstanding biological quality. It is important to preserve and protect these plant communities for habitat.

Recommendations: Provide interpretation along the trail about high quality plant communities and why it is important to protect them. Plant buffer trees and shrubs along the Mississippi River Regional Trail to prevent trail users from veering off the trail into the high quality plant communities.

SURFACE AND GROUND WATER MANAGEMENT/ PROTECTION

Stormwater Management Options at Trailheads

Trailhead parking lots typically are small: 10- to 20-stall lots within green space. This means that stormwater can be directed to drain off the paved surface onto surrounding ground, where it can infiltrate. The best place to manage stormwater (regardless of where one is within the corridor) is at the point it runs off a hard surface – i.e. near every street, driveway, and parking lot. Water is a valuable resource that should be used to water plants rather than run off into pipes to a natural water body where it causes problems. Directing surface water onto the ground rather than into a pipe aids the following important functions:

- ▶ Filter pollutants such as phosphorus, grease, and oil through plants and soil that mitigate their effects
- ▶ Protect downstream water bodies by preventing the influx of large amounts of water — it is best to have water slowly reach a stream or lake underground via subsurface flow

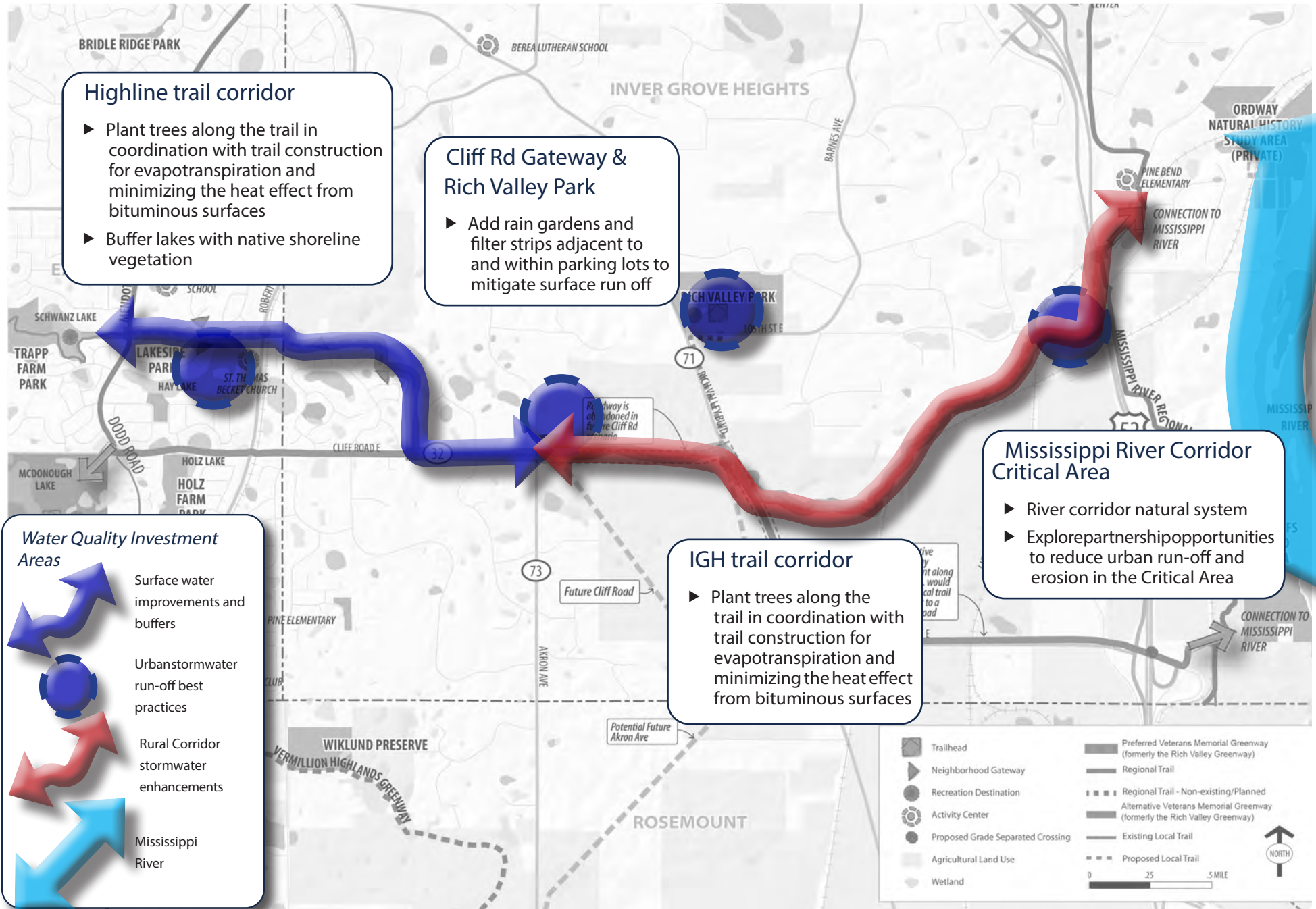
- ▶ Protect natural water bodies by capturing pollutants at their source
- ▶ Cool surface water before reaching trout streams
- ▶ Recharge groundwater and eventually aquifers
- ▶ Water trees and other plants at the source, allowing for vigorous growth and shaded parking lots



Native vegetation shoreline buffer



Figure 51. Water Quality Improvements





Urban rain gardens in boulevard



Rain gardens in suburban setting



Pervious pavement and rain garden in a parking lot

Opportunities for Stormwater Management

Many practices are available to manage surface water at trailheads. Some make more sense than others and provide greater return on investment.

Practical surface water management practices include:

- ▶ Creating shallow depressions (raingardens) alongside parking lots and grading the parking lot to tip in that direction.
- ▶ Creating planted depressed parking lot islands to capture surface water.
- ▶ For small parking lots surrounded by greenspace, running the water onto the surrounding grass (ideally prairie).
- ▶ Around parking lots, planting trees to capture and evaporate rainwater on their leaves and creating pores in the soil with their roots to allow water to soak in. Trees also shade pavement to keep it cooler in the summer.
- ▶ Planting prairie plants around parking lots — they function much like trees (minus the shading). They are especially useful on clay soils, where they drive roots deep and facilitate surface water infiltration.

Lake, Wetland, and Stream Restoration Considerations

Lake, wetland, and stream restoration should be considered along the greenway. Restoration should be designed by multidisciplinary teams that include expertise in engineering, hydrology, aquatic and restoration ecology, geomorphology, soil science, and policy/permitting.

The lakes, wetlands, and streams along the Veterans Memorial Greenway (formerly the Rich Valley Greenway) corridor along with the Mississippi River are valuable water resources. With every greenway construction project, opportunities to implement water quality enhancement strategies will be found.

These strategies will include:

- ▶ Plant native shoreline vegetation along Hay Lake and ponds in the Southern Lakes neighborhood
- ▶ Plant oak savannah treeline to shade trail, absorb stormwater, and buffer trail from Cliff Road
- ▶ Maintain and preserve existing moderate quality plant communities in Lebanon Hills Regional Park
- ▶ Maintain and preserve existing outstanding quality plant communities in Pine Bend Bluffs SNA and along the Mississippi River



- ▶ Plant native trees and grasses along all future trail projects in order to shade the trail and absorb stormwater
- ▶ When possible, locate recreation development away from water
- ▶ Manage stormwater on-site to protect downstream water by preventing the influx of large amounts of water and capturing pollutants
- ▶ Create rain gardens in proposed trailhead along Cliff Road, in Rich Valley Park, adjacent to parking lots, and where possible to capture run-off
- ▶ Plant trees and native/prairie plantings
- ▶ Interpret water quality enhancements and educate users of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) on water-related issues along the corridor



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Implementation

4



OVERVIEW

This master plan is a long-range vision for recreation, transportation, water quality and habitat improvements for the Veterans Memorial Greenway (formerly the Rich Valley Greenway). Accomplishing this vision depends on multi-agency collaboration. Without continued coordination between the communities it is unlikely the greenway could be realized as envisioned. Working corroboratively will enable Dakota County, cities, and other agencies to leverage resources to build, operate, and maintain the greenway.

While the 30-foot regional trail corridor will be the jurisdictional and operational responsibility of Dakota County, the larger greenway corridor will be governed in many ways, depending on the situation. Similarly, responsibilities for land acquisition, construction, stewardship, operations and maintenance will depend on the particularities of each segment.

This Chapter outlines approaches for greenway implementation, including:

- ▶ Phasing and priorities
- ▶ Land protection and stewardship
- ▶ Operations
- ▶ Funding
- ▶ Capital and operational budgets

PHASING AND PRIORITIES

The Veterans Memorial Greenway (formerly the Rich Valley Greenway) will be implemented in phases. Greenway segments have been prioritized into first priority and second priority projects (Table 56). It is anticipated that first priority projects will be built in advance of second priority projects, but the master plan remains flexible so that any project can be implemented as partnership or funding opportunities arise.

First priority projects are those that will build on existing trails in the western part of the corridor and provide recreation facilities for the more dense neighborhoods along the trail. Of foremost importance is securing land or easements for the 30-foot corridor as opportunities arise. After land has been secured, improving the portions of existing trail to regional standards is the first priority. This includes re-routing and/or reconstructing segments of trail that do not meet standards for condition or safety, improved street crossing conditions, and continuous wayfinding signage. Recreation, water quality, non-motorized transportation, and natural resource elements should be integrated into the greenway at the time of other improvement projects and as opportunities and needs arise.

Second priority projects will complete the full trail build out along the entire corridor and provide amenities that will enhance the greenway experience. These are things, such as trailhead development and enhancements to existing trails, such as landscaping, habitat restoration interpretation, wayfinding, benches, trash receptacles, etc.

Grade separated crossings will be installed as funding, partnership, or construction opportunities arise.

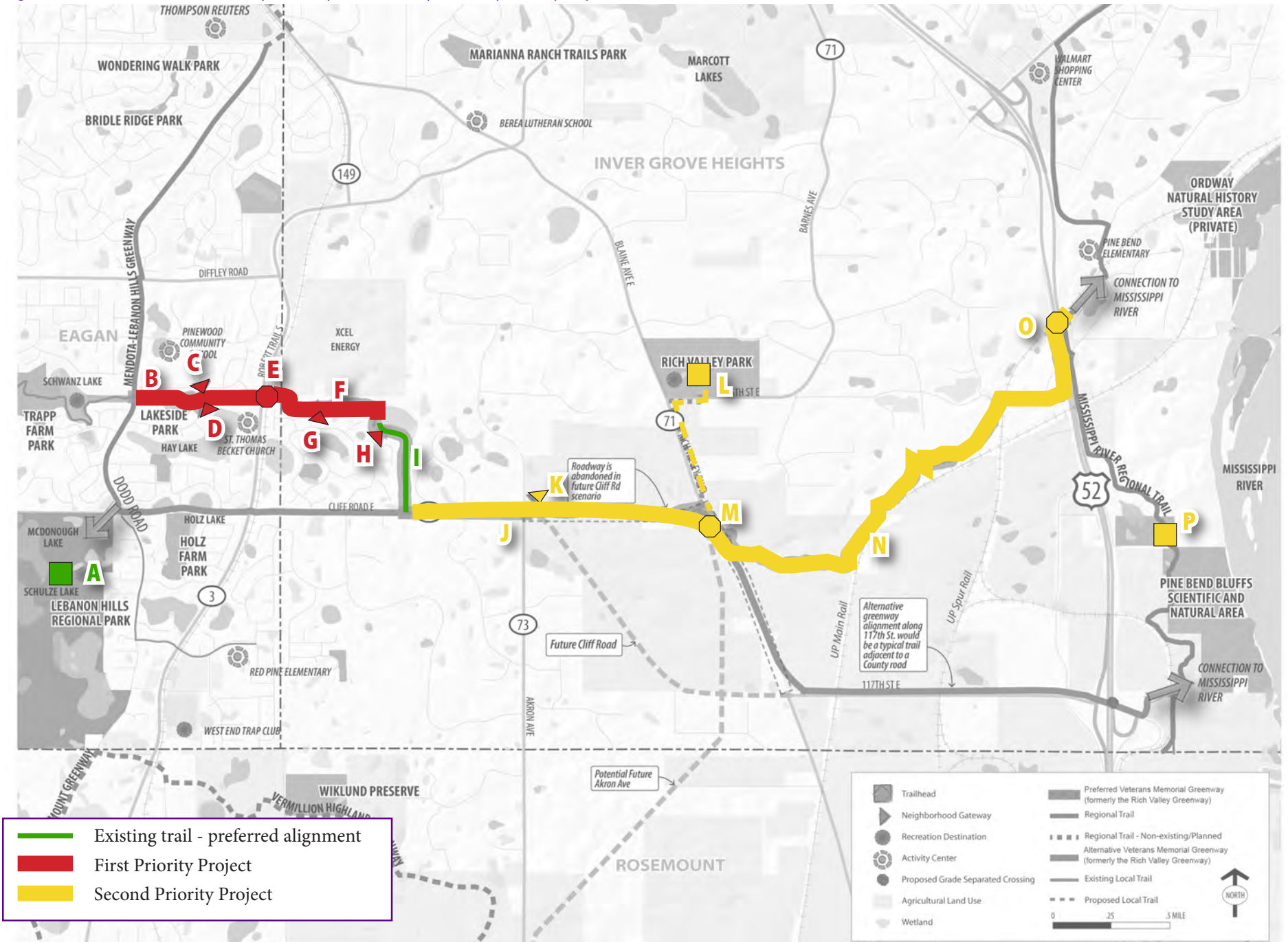
In cases where alternative trail alignments are identified, these will be lower priority than the preferred route, but they will be constructed as opportunities and partnerships arise.

Table 56. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Priority Projects

	Project Description	Priority	Potential Partners/ Triggers
A	Trailhead at the existing Visitor Center at Lebanon Hills Regional Park - A trail connection is needed from the end of the Mendota-Lebanon Hills Regional Greenway at Dodd Rd and Cliff Rd to the Visitor Center	Existing	
B	Greenway Trail from Dodd Rd to TH 3/S. Robert Trail	1st	
C	Neighborhood Gateway from Pinewood Community School neighborhood	1st	
D	Neighborhood Gateway from Lakeside Park	1st	
E	Trail Bridge over TH 3/S. Robert Trail	1st	
F	Greenway Trail from TH 3 to connect to existing Southern Lakes neighborhood trail	1st	
G	Neighborhood Gateway from Southern Lakes neighborhood - north	1st	
H	Neighborhood Gateway from Southern Lakes neighborhood - east	1st	
I	Existing Southern Lakes neighborhood trail - add greenway amenities	Existing	
J	Greenway Trail from end of Southern Lakes neighborhood trail to Rich Valley Blvd along Cliff Rd	2nd	Reconstruction of Cliff Rd
K	Gateway north of Cliff Rd on Flint Hills Resources' land	2nd	
L	Trailhead at Rich Valley Park with trail connection from greenway	2nd	
M	Grade separated crossing of Rich Valley Blvd - needs to be evaluated at time of trail construction	2nd	
N	Greenway Trail from Rich Valley Blvd to Hwy 52	2nd	Land protection is of highest importance
O	RR underpass alterations to provide greenway grade separation from Hwy 52	2nd	
P	Trailhead at Pine Bend Bluffs Scientific and Natural Area	2nd	



Figure 57. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Priority Projects



LAND PROTECTION AND STEWARDSHIP

Dakota County’s greenway concept incorporates recreation, transportation, ecological and water quality components in a 100- to 300-foot corridor secured through two approaches:

Land protection — protecting land essential to make the greenway usable. For the Veterans Memorial Greenway (formerly the Rich Valley Greenway), this means securing land needed for the trail corridor, grade separated crossings, and trailheads.

Land stewardship — the care of native landscapes and habitat within the greenway.

Land Protection

It is essential that Dakota County secure lands for the minimum 30-foot trail alignment and trailheads. Sections of the Veterans Memorial Greenway (formerly the Rich Valley Greenway) corridor where protection is needed are shown on Figure 59. Four categories of land are shown: publicly owned land (City of Eagan, City of Inver Grove Heights, and road right of way), land within Xcel Energy ownership or easements, Flint Hills Resources’ land, and other privately owned land. For land owned by other public agencies, Dakota County will need to permanently protect the trail corridor and trailheads for regional trail use with easements or joint powers agreements. For land that is privately owned, the County will need to secure the land with a trail easement or acquire the trail corridor for public use. Table 59 summarizes the approximate number of acres of land needed for protection. Land protection strategies include: park dedication, direct purchase with resale of land not required for the trail, permanent easements, land donation, bargain sale, life estate and negotiations with cities and developers. Table 58 highlights several techniques for protecting land in different ownership scenarios.

Land Stewardship

The natural resource objective for the greenway system is to maintain or create a healthy context within which nature can thrive. The first stewardship priority is restoring continuous habitat within the greenway corridors. The second is habitat restoration and protection of the most sensitive lands, including uplands that link greenways to the broader landscapes. Generally, Dakota County will not be the lead agency in stewardship activities outside the 30-foot trail corridor and trailheads, but will work as steward partners with local jurisdictions, agencies, and private landowners and provide funding and expertise.

Table 58. Land Protection and Stewardship Tools

TOOL	DAKOTA COUNTY RIGHT OF WAY		OTHER PUBLIC LAND		CURRENT PRIVATE LANDS	
	30' Regional Trail Easement or Trailhead	100'-300' Greenway	30' Regional Trail Corridor or Trailhead	100'-300' Greenway and Neighborhood Gateways	30' Regional Trail Easement or Trailhead	100'-300' Greenway
County Easement			✓	✓	✓	✓
County Fee Title			✓		✓	
Other Public Agency Acquisition						✓
Use Agreement	✓	✓	✓	✓		
Stewardship Partnerships				✓		✓



Table 59. Protection & Steward Partnership Lands (for 30 ft wide trail corridor)

SEGMENT	PUBLIC & XCEL ENERGY EASEMENT	PRIVATE & FLINT HILLS RESOURCES	TOTAL	EST. COST
1	10.6 acres (2.91 miles)	--	10.6 acres	\$1,382,832
2	1.3 acres (.35 miles)	7.5 acres (2.07 miles)	8.8 acres	\$1,149,984

Table 59 summarizes the approximate length and number of acres of land needed for protection for the trail. Land protection strategies include: park dedication, direct purchase with resale of land not required for the trail, permanent easements, land donation, bargain sale, life estate and negotiations with cities and developers. An average amount of \$90 per lineal foot for a 30 foot wide corridor was used to calculate the estimated cost of securing the corridor.

Figure 59. Property Ownership

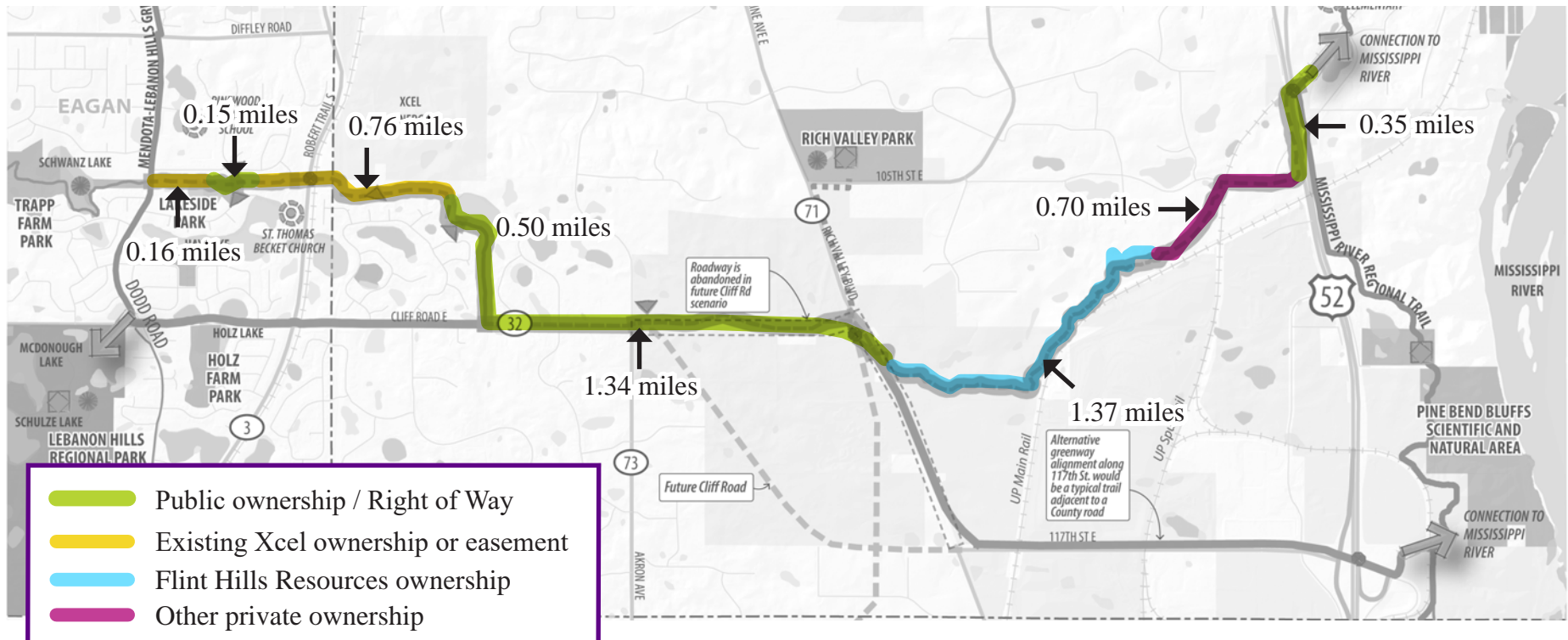


Figure 60. Acquisition Parcels & MPCA Remediation Sites

- Legend**
- Veterans Memorial Greenway (formerly the Rich Valley Greenway) - preferred alignment
 - MPCA remediation sites
- Acquisition Parcels**
- Railroad
 - CITY OF EAGAN
 - CITY OF INVER GROVE HEIGHTS
 - FLINT HILLS RESOURCES LP
 - NORTHERN STATES POWER CO
 - CH OF ST THOMAS BECKET
 - Other Private Owners

This diagram highlights all the parcels that the Veterans Memorial Greenway (formerly the Rich Valley Greenway) corridor may cross when it is constructed. When the trail is constructed, exact placement within the right of way or on private property will be analyzed again. Estimated costs of acquiring trail easements or securing land for the corridor are listed in the table on page 59. Estimated land value of each parcel in whole that the greenway may touch is listed in the table on the following page along with the owner name. It is assumed that all securing of the greenway lands will occur as opportunities arise.

There are a few MPCA contamination sites within 500 feet of the trail corridor, but these sites are not anticipated to impact the trail or require additional funds for remediation. The MPCA does not identify these sites as “active,” and two sites are listed as “closed.” The site locations are identified on the map on this page and listed on Table 61a on the following page.

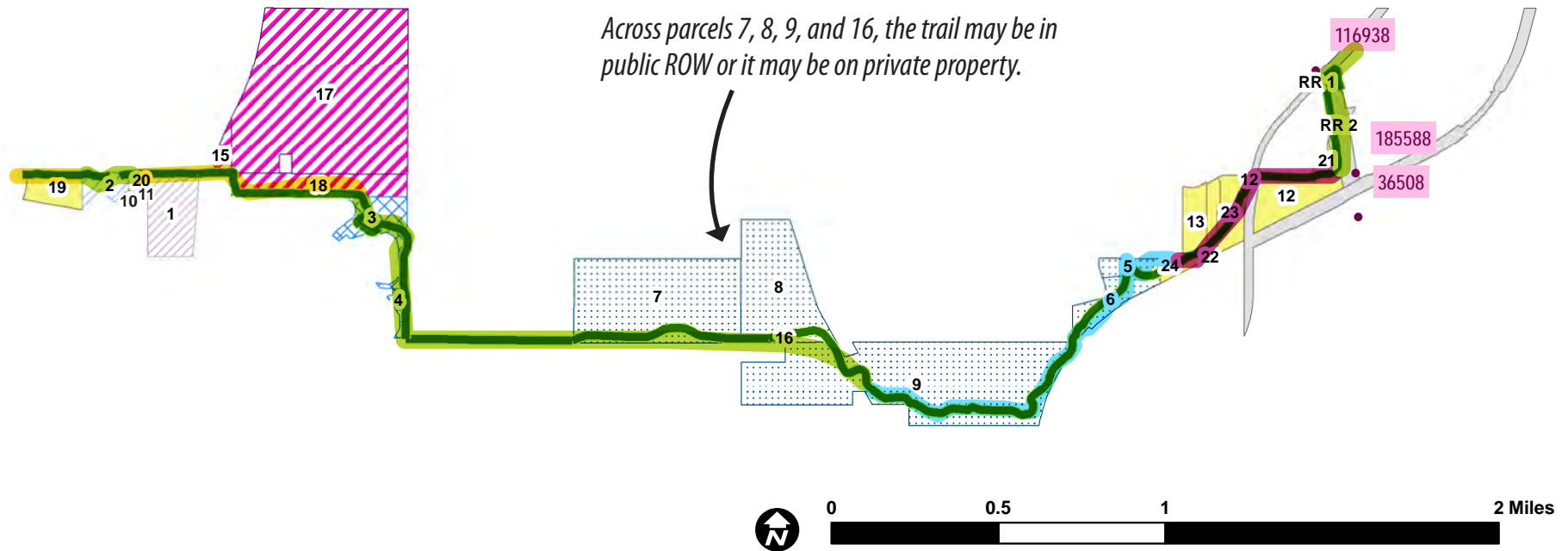


Table 61. Acquisition Parcels

**This table shows the Estimated Land Value of all the parcels that the greenway corridor touches. In order to accommodate the ideal 100 foot wide trail corridor, it is not anticipated that the County will purchase the entire parcels. It is expected that securing easements on portions of these parcels will cost less than the amount shown in this table.*

OWNER NAME	ESTIMATED LAND VALUE* (Source: Dakota County Property Tax Data)	ID (label on Figure 60)	NOTES
CH OF ST THOMAS BECKET	\$1,955,400	1	Work with St. Thomas Becket to gain easement for greenway trail.
CITY OF EAGAN	\$457,000	2	Work with cities to provide improved amenities and services in exchange for using existing public trails.
CITY OF INVER GROVE HEIGHTS	\$120,400	3	
CITY OF INVER GROVE HEIGHTS	\$32,000	4	
FLINT HILLS RESOURCES LP	\$66,600	5	
FLINT HILLS RESOURCES LP	\$85,600	6	Work with Flint Hills Resources to establish an easement for the trail.
FLINT HILLS RESOURCES LP	\$950,500	7 (trail may be in public ROW)	
FLINT HILLS RESOURCES LP	\$605,000	8 (trail may be in public ROW)	
FLINT HILLS RESOURCES LP	\$1,605,300	9 (trail may be in public ROW)	
HALDORSON DANIEL W	\$67,700	10	Purchase trail easement from private land owners or reroute greenway alignment.
HEUER GEORGE R & MARILYN	\$64,500	11	
JEFFRIES JOHN HENRY	\$177,000	12	
JOHNSON MARK C & CATHERINE M	\$156,400	13	
MITBO DAVID A	\$10,400	14	
NORTHERN STATES POWER CO	\$63,500	15	Work with Xcel Energy to meet natural resource goals with construction of the greenway and associated landscaping in exchange for trail easement.
NORTHERN STATES POWER CO	\$7,300	16 (trail may be in public ROW)	
NORTHERN STATES POWER CO	\$3,004,100	17	
NORTHERN STATES POWER CO	\$383,600	18	
SCHIELA HEIDE U	\$277,500	19	Purchase trail easement from private land owners or reroute greenway alignment.
SNYDER ROBERT	\$64,500	20	
SUNTRUST MORTGAGEINC	\$45,700	21	
VEGA JOSE	\$116,900	22	
VEGA JOSE	\$193,900	23	
WISCONSIN TOWN LOT CO	\$23,700	24	
	\$-	RR 1	Work with railroad to build trail in ROW.
	\$-	RR 2	

Table 61a. MPCA Remediation Sites

AI_ID	AI_NAME	SITE_TYPE	SITE_ID	SITE_NAME	ADDRESS	CITY	ZIP	ACREAGE	ACT_DESC	LEAK_DISC	LEAK_REPOR	RECEIVED	SITE_CLOSE
116938	Amoco Oil Co #2394	Leak Site	LS0003844	Amoco Service Station #2394	10347 Courthouse Blvd	Inver Grove Heights	55076	0	Leak Site Investigation	3/5/1991	3/5/1991	<Null>	5/12/2010
185588	Quality Collision	Brownfield Site	VP6100	Quality Collision	10500 Courthouse Blvd	Inver Grove Heights	55077	2.9	Brownfield Site	<Null>	<Null>	6/22/1995	12/12/1996
36508	Industrial Service Inc	Brownfield Site	PB3715	Ravine Stormwater Ponds Site	10620 Courthouse Blvd	Inver Grove Heights	55077	2	Brownfield Site	<Null>	<Null>	<Null>	<Null>



Management and operations

Like other aspects of the greenway, management and operations will be a collaboration between the County, cities and other partners. Responsibilities will vary by greenway segment. While this master plan defines general responsibilities for each greenway segment, formal joint powers agreements between Dakota County and collaborating agencies will be needed to outline specific agency responsibilities. These agreements will outline who has control of the trail right-of-way as well as who will operate and maintain the trail and how they will do it.

Management

The Dakota County Parks Department will be the lead agency for coordinating greenway and management operations. The Dakota County Board of Commissioners establishes policies and goals for the park system and through an annual budget provides capital and operating funds for the department. The Planning Commission, appointed by the Board of Commissioners, advises the County on park and recreation trail issues.

General operations

Dakota County Parks Department will be responsible for the operation of the 30-foot regional trail corridor. Where there are opportunities for operational partnerships, Dakota County will enter a joint powers agreement with partner agencies. The Parks Department employs a staff of permanent employees and seasonal employees adequate to maintain the system. Volunteers assist with outdoor education programs, patrol, park clean-ups and special events. Contractual agreements also are in place with outside agencies for some maintenance and natural resource work. Dakota County recognizes that as facilities expand, it will need to increase staffing. Based on operations and maintenance staffing for current Dakota County regional trails, it is anticipated that when the regional trail within the Veterans Memorial Greenway (formerly

the Rich Valley Greenway) is complete, an additional 0.15 full time employee park keeper (300 hours of labor) and 0.15 seasonal FTE (300 hours of labor) will be needed.

Operating hours

The regional greenway hours will be open according to local jurisdiction ordinance or policy.

Maintenance

Maintenance of facilities and lands is essential to protect public investment, enhance natural resource quality and achieve the County's goals of providing recreational users clean, safe, enjoyable year-round experiences. The Dakota County Parks Department has a clearly defined maintenance program and reporting hierarchy led by the manager of park development and maintenance, who reports to the parks director.

Regular maintenance activities for the greenway will include:

- ▶ Sign maintenance
- ▶ Trash collection
- ▶ Sweeping and blowing
- ▶ Trail repair
- ▶ Bridge repair
- ▶ Trailhead facility repair and maintenance
- ▶ Mowing
- ▶ Tree trimming
- ▶ Winter trail clearing



Pavement Management

Pavement deteriorates as it ages. Regular pavement maintenance can prolong the life-span of the greenway trail in a cost effective manner. See Table 61 for an outline of recommended activities.

Ordinances

Public use and enjoyment of the County park system is controlled by Ordinance 107, Park Ordinance, which was last revised June 3, 1997. The ordinance incorporates pertinent Minnesota statutes and addresses the following issues:

- ▶ Regulation of public use
- ▶ Regulation of general conduct
- ▶ Regulations pertaining to general parkland operation
- ▶ Protection of property, structures and natural resources
- ▶ Regulation of recreational activity
- ▶ Regulation of motorized vehicles, traffic and parking
- ▶ Enforcement and security

Visitors are informed of park and trail rules and regulations through strategically located kiosks and signs that address specific information about hours, trails, permitted and prohibited activities, fees and directions. Dakota County Parks, Lakes and Trails officers will patrol the park in motor vehicles, on bicycles and on foot. Officers will also educate visitors and enforce ordinances. Local law enforcement and public safety agencies will be responsible for emergency and criminal complaints within the greenway.

Public Awareness

Dakota County’s Parks Department will continue working with Dakota County’s Communications Department to promote awareness and use of the County’s parks and greenway system. Many tools are available to promote awareness of Dakota County parks and greenways including, but not limited to, websites, direct mail, press releases, brochures, on-site promotion, monument signage along roads, wayfinding within greenways and parks and paid advertising. Dakota County also collaborates with cities, businesses, the Metropolitan Regional Parks System and others to promote its facilities, programs and services and educate the public about its resources.

YEAR	MAINTENANCE ACTIVITY
0	Original construction of the paved trail
3	Seal coating
7	Routine maintenance – crack filling, minor patching, minor curb repairs
11	Routine maintenance – crack filling, minor patching, minor curb repairs
13	Seal coating
18	Routine maintenance – crack filling, minor patching, minor curb repairs
21	Routine maintenance – crack filling, minor patching, minor curb repairs
25	Total reconstruction



Conflicts

The surrounding land uses and the greenway are generally compatible and no conflicts outside of norm affect the viability of master plan recommendations. Minor conflicts will occasionally arise from private encroachment or neighboring residents' sensitivity to greenway, recreation or maintenance uses. Dakota County will work with individual landowners to resolve these issues case by case.

Public Services

No significant new public services will be needed to accommodate the greenway. Proposed trailheads and neighborhood gateways are served by the existing road network. If utilities are not accessible at gateways and trailheads, options such as solar powered lighting, self-composting toilets or wells will be considered. Stormwater will be treated on site. Accommodations for later installation of continuous trail lighting will be considered at initial trail construction.

Affordability and Trail Access

The greenway trail will be provided for public use with no user fees or direct costs. Information will be provided on the Dakota County website and on signs in public parks that are adjacent to or connected with the greenway trail. The trail provides an accessible and cost free recreation facility that encourages and promotes safe active living with access to natural resources.

FUNDING

Funding for initial capital cost and ongoing operations and maintenance costs is essential for a successful greenway. Funding will be a collaboration among the County, cities, and other agencies, with an emphasis on seeking outside funding. Cost share roles will be determined by the strengths of each agency and circumstances of each project. In-kind contributions of land, easement, design, engineering, construction and maintenance and operations are encouraged and will be outlined in joint powers agreements among agencies.

- ▶ Federal Transportation Grants (MAP-21 / TAP)
- ▶ Metropolitan Council
- ▶ National Park Service Rivers, Trails and Conservation Assistance Program
- ▶ Minnesota Department of Transportation
- ▶ Minnesota Department of Natural Resources
- ▶ Minnesota Pollution Control Agency
- ▶ The Environment and Natural Resources Trust Fund
- ▶ Clean Water, Land and Legacy Amendment funds
- ▶ Watershed management organizations
- ▶ Foundations and non-profits
- ▶ Statewide Health Improvement Program or similar



It is anticipated that most future capital projects will be well positioned to secure regional, state and federal funds for recreation, transportation, water, and habitat and that these sources will account for a majority of capital construction costs. In many cases, but not all, Dakota County, as the regional agency, will be in the best position to pursue outside funding. Examples of outside funding sources include:

Funding for operating and maintaining the 30-foot regional trail easement and trailheads primarily will be Dakota County's responsibility. Annual operating costs are funded through the County's general fund and from regional park allocations from the Metropolitan Council. In situations where there are efficiencies in local jurisdictions performing maintenance and operations, Dakota County will enter a joint powers agreement outlining responsibilities and cost sharing.

CAPITAL BUDGETS

Estimated costs in 2017 dollars for land protection, development costs and annual operations and maintenance are included in Tables 66 and 67a.

Land protection costs are included by segment in Table 59a. Because land protection strategies might include direct purchase with resale of land not required for the trail, permanent easements, land donation, bargain sale, life estate and negotiations with cities and developers, it is very difficult to accurately project total acquisition costs. Estimated costs assume land protection of a 30-foot trail corridor on land that is currently privately owned with an average cost of \$90 per lineal foot.

Table 66 includes budgets for capital investments, the priority of the investment and possible project partners. The table identifies the full anticipated construction costs of the plan elements. It is not anticipated that Dakota County will be responsible for the full cost of improvements outlined; funding will be a collaboration between the County and partner agencies. Habitat restoration within the greenway corridor is also included in these tables under the item landscaping/habitat management. It is assumed that along with greenway construction an average of 200 trees and 12.5 acres of prairie will be needed per mile along with basic water management. Natural Resource project opportunities beyond the greenway corridor that the County may choose to partner with other public or private entities are identified in Table 67. Most capital projects will be well positioned to secure regional, state and federal funds for recreation, transportation, water and habitat.

While the table identifies priorities for capital projects, development will occur as funding becomes available and at the discretion of the Dakota County Board.



Table 66. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Capital Development Cost Estimates

Project ID	Project Description	Priority	Potential Partners/Triggers	Estimated cost (Construction, Engineering, and Administration)	
				1st Priority	2nd Priority
A	Trailhead at the Visitor Center at Lebanon Hills Regional Park This is existing. A trail connection is needed from the end of the Mendota-Lebanon Hills Regional Greenway at Dodd Rd and Cliff Rd to the Visitor Center	Existing		-	
B	Greenway Trail from Dodd Rd to TH 3/S. Robert Trail	1st		\$316,000	
C	Neighborhood Gateway from Pinewood Community School neighborhood	1st		\$45,000	
D	Neighborhood Gateway from Lakeside Park	1st	facilities combined with C above	-	
E	Trail Bridge over TH 3/S. Robert Trail	1st		\$1,700,000	
F	Greenway Trail from TH 3 to connect to existing Southern Lakes neighborhood trail	1st		\$365,000	
G	Neighborhood Gateway from Southern Lakes neighborhood - north (smaller than typical Neighborhood Gateway due to proximity to second neighborhood gateway in the neighborhood)	1st		\$25,000	
H	Neighborhood Gateway from Southern Lakes neighborhood - east	1st		\$45,000	
I	Existing Southern Lakes neighborhood trail - add greenway amenities	Existing		\$54,000	
J	Greenway Trail from end of Southern Lakes neighborhood trail to Rich Valley Blvd along Cliff Rd	2nd	Reconstruction of Cliff Rd		\$820,000
K	Gateway north of Cliff Rd on Flint Hills Resources' land	2nd			\$45,000
L	Trailhead at Rich Valley Park with trail connection from greenway (Note: <i>Dakota County will work with Inver Grove Heights to develop a cost sharing approach as the trailhead features will also serve the local park. Additionally, the connection trail is not part of the regional trail corridor and cannot be paid for with regional parks funds.</i>)	2nd	City of Inver Grove Heights		\$640,000
M	Grade separated crossing of Rich Valley Blvd - needs to be evaluated at time of trail construction	2nd			TBD
N	Greenway Trail from Rich Valley Blvd to Hwy 52	2nd	Land control is highest priority		\$1,440,000
O	RR underpass alterations to provide greenway grade separation from Hwy 52	2nd			\$800,000
P	Trailhead at Pine Bend Bluffs Scientific and Natural Area	2nd	currently under construction as part of MRRT - will be complete in 2017 or 2018		
				1st Priority Total	\$2,550,000
				2nd Priority Total	\$3,745,000
				Total cost of recommended improvements	\$6,295,000



Table 67. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Natural Resources Collaborative Project Opportunities

Location	Description	Partner Opportunities
Lebanon Hills Regional Park Trailhead at the Visitor Center		
	Existing stormwater filtration and native landscaping around parking lots and Visitor Center building	
Highline corridor		
	Prairie restoration; plant low growing trees and shrubs along the trail; plant pollinator supporting plants in line with Xcel Energy's initiative	Xcel Energy
Cliff Road corridor		
	Plant native trees and shrubs along the road and trail to prevent the heat effect from paved surfaces, to provide shade for trail users, and to provide evapotranspiration for stormwater	Dakota County Soil and Water Conservation District, Dakota County Transportation Department
Flint Hills Resources land		
	Prairie and wetland restorations	Flint Hills Resources
Mississippi River Critical Area corridor		
	Provide natural resources interpretation; Preserve high quality plant areas and reduce access to these areas	MN DNR

OPERATIONS AND MAINTENANCE BUDGETS

Annual operations and maintenance (O&M) for the 30-foot trail corridor including gateways, are shown in Table 67a. Grade separated crossings will be inspected and maintained annually as part of the County's existing inspection and maintenance programs. Trailheads for the Veterans Memorial Greenway (formerly the Rich Valley Greenway) are joint use facilities located at regional trail intersections and existing parks. Trailhead facilities such as restrooms, picnic shelters, and parking will be open to trail users, park users, and the general public and be maintained according to joint powers agreements between Greenway Collaborative partners. The County's annual operations and maintenance costs will vary based on joint powers agreements and facilities needed at each location. Similarly, natural resource restoration projects in the larger greenway corridor will be coordinated with Greenway Collaborative partners who, in most cases, will be responsible for on-going stewardship.



Table 67a. Veterans Memorial Greenway (formerly the Rich Valley Greenway) Estimated Annual Operations and Maintenance Costs

Task	Annual Per Mile Cost	Total Trail Length Cost
10' trail pavement maintenance (includes blowing, sweeping, and plowing)	\$1,750	\$9,328
30' trail corridor maintenance (includes trash pick up, mowing and trimming, sign maintenance)	\$1,500	\$7,995
10' patching and mill and overlay of trail surface (per year, based on 20 year life-cycle)	\$5,250	\$27,983
Total Annual O & M	\$45,306	

**VETERANS MEMORIAL GREENWAY
(FORMERLY THE RICH VALLEY GREENWAY)
GREENWAY MASTER PLAN**

2017



Appendix: Public Input



Comments were received at two open houses on February 16, 2016, and May 16, 2017. Comments were also received online and by email.

EXACT COMMENTS RECEIVED ONLINE (MAY-JULY 2017)

1. Adding these paths will be great for getting to Lebanon Hills Visitor Center and Shulze beach safely! Today anyone living to the east of the park on the east side of Robert has to use the shoulder of Cliff Road.
2. Our family would use the new trailhead going into the park from Dodd Road very often. Having this be paved would be ideal so we can walk, run, bike, or rollerblade.
3. We would definitely use the proposed trail that heads east all the way to the Mississippi, however if it ran all the way along Cliff Road (starting at Dodd Road), we would use it more often.
4. We highly prefer the proposed route that heads northeast (to Pine Bend Elementary) to the river versus the one that goes southeast to 117th street (we would not use this as often since it goes so far south).

We would use this every week! This will be such a great way for our family to be able to connect to the park and the trails east of Inver Grove Heights. In terms of getting into the park, there are no paved trails to get to the Visitor's Center from Cliff or Dodd Road, so if the new trailhead goes to Hay Lake road it would be important to have either a path added or a lane just for pedestrians/bikes. In terms of going to the trails east toward the river, the "alternative route" that goes to 117th takes you too far south, so we do not support that option. The recommended route that takes you north/east is much better. We are excited to see this new trail construction begin!

We support there new trailhead and trails that go east (we would use these for walks and biking), but do not support closing down Cliff Road.

Please seriously consider leaving Cliff road open to Rich Valley Blvd! We use this to go to IGH, Saint Paul, and the park by car for work and on weekends.

I'm against this trail segment. We moved here for the location, privacy and security. The segment proposed goes through our backyard in Southern Lakes, eliminates our privacy and provides a safety concern for our children. Additionally, construction of the trail will move the wildlife that has found a home here. I 100% do NOT support this trail segment going through Southern Lakes.

We DO NOT support the plan which goes through the Southern Lakes development. Families in this community moved here for the quiet neighborhoods and privacy. This bike path would directly affect the quality of life our families enjoy. We will loudly protest if this plan moves forward!

Our family does not support the trail going through the Southern Lakes community. We want and deserve our privacy. We specifically moved here for our privacy and were told that nothing can ever be developed where



the proposed trail is going.

The wildlife that live back there deserve to live on the land uninterrupted. They continue to be pushed out and end up dead along to streets. Protect our wildlife, protect our right to privacy. We don't want the trail to disrupt our community.

OPEN HOUSE #1

February 16, 2016 5:00-8:00pm, Rosemount Community Center

Comment Cards

- ▶ 9 comment cards received: 60% from Eagan, 30% from IGH, 10% from Rosemount
- ▶ 40% heard about the meeting from the mailer, 20% from Wilderness in the City group, 40% other

Supportive:

- ▶ Would also like to see connection/access to Whitetail Woods
- ▶ Like water quality and habitat focus
- ▶ Concern for safety on Cliff Road in current condition
- ▶ Southern alternatives on the east side look more logical than northern alternative, especially with new road construction.
- ▶ Cliff road option should be avoided due to limited ROW
- ▶ Wilderness Run Road is the best option to connect greenways.
- ▶ 117th street option is not desirable in terms of experience.
- ▶ Would like to see more natural resource/environmental staff/authority on these projects
- ▶ Cliff Road needs crosswalk at Hay Lake with button-activated lights, and further enforcement to



reduce traffic violations

- ▶ Design features would be nice but priority should be on expanding the basics first.
- ▶ Residents need more education about water quality and pesticides.
- ▶ We like interpretive experiences.
- ▶ Northern-most route looks best for recreational biking
- ▶ Would like connecting link to IGH softball fields
- ▶ Would like connecting link to route near Pinewood Elementary.
- ▶ Don't think interpretation/information is worth the money, except for wayfinding.
- ▶ Please have stops along the way, not just point A to B

Unsupportive:

- ▶ Do not want more trails/Do not think it is wise use of taxpayer money
- ▶ Do not think trails are utilized enough to justify the cost
- ▶ Eminent Domain compensation is usually not fair

Board Comment Summary

St. Thomas Becket Church Impacts

- ▶ Don't add additional trails thru private prairie restoration
- ▶ Grade-separated crossing of Hwy 3 north of the church would have negative impacts on the church's north entry

Some concern about spending, eminent domain takings

Support for more ped/bike infrastructure

Support for Barnes Ave connection to 52



OPEN HOUSE #2

May 16, 2017, Rosemount Community Center

Written Comments

- ▶ My property would have 400-500 ft bordering the proposed trail. We are near the pedestrian bridge. We want to be very involved/informed as the decisions/process moves along. We have concerns regarding trespassing/security, privacy, whether or not you will build on our property. –Stacey Zorn 651-216-9210
- ▶ I like the plans for the Lebanon Hills and Rich Valley areas. I am an avid road cyclist, mountain biker and runner. The number of trail options today is very good and further improvements being contemplated are outstanding! Keep up the good work. – Dan Coyle, Rosemount
- ▶ I am looking forward to the development of this trail.
- ▶ I am looking forward to more excellent bike trails. I especially like that the trails will take us to natural areas. Thank you.



**CITY OF INVER GROVE HEIGHTS
DAKOTA COUNTY, MINNESOTA**

RESOLUTION NO. 17-133

**RESOLUTION SUPPORTING THE
RICH VALLEY REGIONAL GREENWAY**

WHEREAS, the City of Inver Grove Heights has been working with Dakota County on the development of a master plan for a regional greenway project that would bring new recreational and open space opportunities to the City; and

WHEREAS, the unique approach to trail design outlined in the master plan integrates functional use, scenic value, historic and environmental interpretation, water quality improvements, and ecological restoration; and

WHEREAS, the proposed greenway is an identified unit of the Metropolitan Regional Park System Plan and will establish a link between the Lebanon Hills Regional Park and the Mississippi River Regional Trail through the communities of Eagan and Inver Grove Heights, and

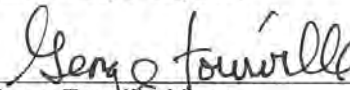
WHEREAS, the master plan was developed in accordance with the 2030 Regional Parks Policy Plan; and

WHEREAS, the alignment identified in the master plan was developed in accordance with the City of Inver Grove Heights 2030 Comprehensive Plan; and

WHEREAS, the development and operation of the regional greenway will be a cooperative effort between Dakota County and the communities through which it extends;

NOW, THEREFORE, BE IT RESOLVED the City of Inver Grove Heights adopts a resolution supporting Dakota County's Plan for the Rich Valley Regional Greenway.

Adopted by the City Council of Inver Grove Heights this 24th day of July 2017.


George Tourville, Mayor

ATTEST:


Michelle Tesser, City Clerk



CITY OF EAGAN

RESOLUTION NO. 17-72

RESOLUTION SUPPORTION DAKOTA COUNTRY RICH VALLEY GREENWAY MASTER PLAN AND TRAIL DEVELOPMENT

WHEREAS, The City of Eagan has been working with Dakota County on the development of a master plan for a regional greenway project that would bring new recreational and open space opportunities to the City of Eagan; and

WHEREAS, the unique approach to trail design outlined in the master plan integrates functional use, scenic value, historic and environmental interpretation, water quality improvements, and ecological restoration; and

WHEREAS, the Master Plan was developed in accordance with the 2030 Regional Parks Policy Plan; and

WHEREAS, the alignment identified in the master plan was developed in accordance with the City of Eagan's 2030 Comprehensive Plan; and

WHEREAS, the detailed design and maintenance of specific public right-of-way crossings will be reviewed for consistency with established transportation and maintenance policies; and

WHEREAS, the development and operation of the regional greenway will be a cooperative effort between Dakota County and the communities through which it extends; and

NOW, THEREFORE, BE IT RESOLVED, the City of Eagan adopts a resolution supporting Dakota County's plans for the Rich Valley Greenway Regional Trail.

ADOPTED this 15th of August, 2017

BY:



Mayor

BY:



City Clerk





Appendix:



Grade Separated Crossings Analysis



BOLTON & MENK, INC.

Consulting Engineers & Surveyors

12224 Nicollet Avenue • Burnsville, MN 55337

Phone (952) 890-0509 • Fax (952) 890-8065

www.bolton-menk.com

MEMORANDUM

Date: April 13, 2016

To: Gabrielle Grinde, ASLA, PLA, Hoisington Koegler Group, Inc.

From: Dena King, P.E., PTOE, Bolton & Menk, Inc.

Subject: Rich Valley Greenway - Evaluation of Potential Grade Separated Crossings

To improve safety and convenience for trail users on future potential greenway routes, grade separated crossings were evaluated at three locations within the Rich Valley Greenway area. Two of the locations are options for crossing TH 52 north of Flint Hills Resources and one of the locations is a crossing of TH 3 near St. Thomas Becket Church.

A brief site visit was completed at each location to assess existing conditions and provide high-level planning recommendations based on general observed feasibility for a grade separated crossing. Other information including photos, existing bridge plans, and/or private utility information was obtained for each location.

The costs provided in this memorandum are high level and include construction and engineering.

TH 3 at St. Thomas Becket Church

TH 3 is a 2-lane rural section in this location and the grade separated crossing would be located just north of the church parking lot. If the greenway were placed at this location, existing trails to the west would have an opportunity to connect to the greenway trail. Bolton & Menk took site photos and performed a Gopher State One Call for utility maps.

Overpass Option:

The terrain in this area is more conducive to an overpass installation. Existing railroad tracks parallel TH 3 at the crossing site and are approximately 10 feet lower than the road. In addition, the terrain on either side of TH 3 is much higher than the road.

The presence of major overhead utility lines is a big factor in determining feasibility of an overpass. Direct coordination with Xcel Energy is essential to understand required clearances and possibility for utility line adjustments, in both physical and financial terms.

Dakota County and Hoisington Koegler Group met with a representative of Xcel Energy in March 2016 to understand the feasibility of utility relocation or adjustments. After that meeting, it was learned that 30 feet of clearance is needed between transmission lines and any other structure. Since the current transmission lines have only 42 feet of clearance from the surface of TH 3, an overpass cannot fit under the lines in their current location. An overpass would also not be able to fit in between the two transmission lines because they are too close to one another. It would be possible to replace the towers with taller ones that would raise the lines high enough to fit an overpass, but the cost to the County would be very high at approximately \$1 million each, based on a similar project that Xcel

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Energy had in Hastings. A detailed estimate for this specific site would need to be prepared by Xcel Energy if this option is pursued further.

Underpass Option:

With the terrain being much higher on either side of TH 3 and the rail line already being significantly lower than the road, an underpass installation would be very deep and would require significant grading, retaining walls, and long trail segments to reach existing ground elevation at acceptable grades. The scope and size of the project would need to be determined based on additional information including grading contours to see how far trail grades would go and if switchbacks should be considered. If overhead transmission lines were not present, making the overpass installation more difficult, the underpass option would likely not be evaluated in this location.

The presence of the railroad tracks is another concern. More information would be needed to determine the potential impacts to the UP line if an underpass is selected including amount of rail traffic, service schedules, material/construction specifications, flagging requirements, etc. Coordination with UP for construction will likely be difficult. Approval will be needed to close the track for construction, the track closure may be limited, track removal and replacement will need to be performed by UP, and permits will be required for working in railroad right of way. Discussion with UP is needed to better understand what would technically be involved with an underpass installation as well as timing for construction.

Recommendation:

Both the underpass and overpass options are complex at this location. The notable constraint with the overpass is the transmission line and needed clearance. If the line can be raised, an overpass is likely the more appropriate based on terrain and ability to also better avoid rail line impacts. Further coordination with both Xcel Energy and UP railroad is needed to further evaluate feasibility and cost. Both options will be more costly than “typical” due to site conditions.

Assuming the overpass option is pursued, the high level cost estimate is:

Estimated Cost of Overpass: \$1.5 to 2 million

A transmission line adjustment not included in the above cost. High level estimates based on information from Xcel Energy are approximately \$1 million per tower. It is unclear how many towers would need to be raised without further evaluation.



TH 52 Under Railroad Bridge

An existing trail segment runs along the east side of TH 52 and connects to the Inver Grove Trail roadway at two locations. TH 52 has two railroad bridges just west of the trail near Total Construction & Equipment. Bolton & Menk visited the site to assess how a trail connection could be made from the existing trail to the bridges and also if the greenway trail could utilize space under the bridges for a grade separated crossing of TH 52. Site photos were taken and bridge plans were obtained from MnDOT.

Upon review of the bridge plans, it appears there is sufficient clearance under the bridges to accommodate a trail on the south side. If a trail were placed under the bridge, it would need to go behind the piers to provide enough operation and maintenance space for the railroad. If a retaining wall were built at or next to the bridge piers, it could support the trail and not impact the abutment slope. The trail could be placed adjacent to the 2:1 abutment slope at a location that would provide for the required trail width of 14 feet (10 foot trail with 2 foot shoulders) and minimum trail vertical clearance

requirement of 10 feet. The retaining wall would be approximately 10 feet tall above ground. See attachments for bridge drawings with trail sketch.

It is important to note that since these are bridges owned by MnDOT, coordination with MnDOT would be needed to verify this approach is acceptable. This discussion would also need to include what type of retaining wall is built. Wall options include modular block, cast in place between pier columns, and cast in place wall with footings. For the purposes of this evaluation and cost estimate, a cast in place wall with footings has been applied as it is the most expensive.

How a new trail segment could connect from the existing trail to the railroad bridge will need to be further evaluated in a feasibility study or preliminary design. A large sheet pile wall with fencing exists between the trail and the bridge. The trail may be able to go around this wall, but it would need to cut through a large berm area that exists between the railroad and trail. Alignment options should be evaluated with topographic survey information to determine associated impacts and costs. In addition to the sheet pile wall, there is an overhead power line that runs along the east side of TH 52 that will likely be impacted by trail grading.

The high level cost estimate for building retaining walls under the bridges and constructing this segment of trail and associated fencing is:

Estimated Cost to Place Trail Under Bridges: \$700,000 to \$900,000



117th Street Bridge Over TH 52

The evaluation at this location included reviewing the existing typical section on the bridge to determine if a trail and barrier could be added on the north side of the bridge to accommodate two-way pedestrian/bicycle traffic. Bridge plans were obtained to aid in this analysis along with a site visit to observe general conditions.

117th Street is a four-lane divided roadway in this area and experiences significant heavy truck traffic. The roadway section on the bridge includes 12 foot thru lanes, 12 foot outside shoulders, a 6 foot raised concrete median, a 4 foot inside shoulder on the south side and a 14 foot left turn lane on the north side. The County is planning for an extension of Cliff Road from the west to realign and connect to this segment of 117th Street. Both Cliff Road and 117th Street are classified as minor arterials and 117th Street at TH 52 has a posted speed limit of 45 mph.

The above information was used to research State Aid Standards to identify potential flexibility in the typical section for accommodation of a pedestrian/bike trail facility and concrete barrier within the available space on the bridge. Minimum design standards for reconstruction of a 4-lane arterial roadway with an over 40 mph design speed include a minimum lane width of 12 feet and a minimum curb reaction distance of 2 feet.

Based on the typical section in the bridge plan, a pedestrian facility and concrete barrier could be placed on the north side by shifting lanes to the south and reducing shoulder widths. 12 feet of space is needed for the pedestrian/bike trail facility and 22 inches of space is needed for the physical concrete barrier. This adds up to approximately 14 feet of space that needs to be taken from existing lanes and shoulders. One way this could be done is illustrated on the attached sketch – see plan for Bridge 19R01.

If the section is shifted south, the County should consider where the roadway crown lines on the bridge structure fall in relation to the lanes. The attached sketch shows a shift of the WB thru lanes of 4 feet, which would place the roadway crown one-third into the lane. Other considerations include where curb line drainage structures will fall with a median relocation and/or the potential to move them, where concrete joint lines in the abutment areas will fall in relation to relocated lane lines, and the extent of re-

striping and median realignment that will need to occur on both side of the bridge to tie to existing lane configurations. All of these need to be considered in determining if this an acceptable solution to accommodating the pedestrian/bike trail facility on the existing bridge.

The high level cost estimate for concrete barrier installation, median relocation, and other associated improvements is:

Estimated Cost to Accommodate Concrete Barrier on Bridge: \$300,000 to \$400,000



Rich Valley Greenway
Planning Level Costs
April 2016

	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Cost</u>	
TH 3 Overpass					
Overpass - bridge structure	4200	SF	\$235	\$987,000	(Reviewed State Aid Average Bridge)
300' length to clear railroad and road (300' x 14' = 4,200 sf)					
Cost to adjust large power line structures is not included - est \$1 mill per structure to raise					
Cost does not include trail at either side of underpass					
Mobilization (10%)				\$98,700	
Contingencies (25%)				\$271,425	\$1,357,125
Engineering, etc. (25%)				\$339,281	
				\$1,696,406	\$1.5 to 2.0 million
TH 52 RR Bridge - Trail Under Bridge					
Retaining Wall (at Bridges)	2240	SF	\$75	\$168,000	
Retaining Wall (taper down after bridges to 3' above ground, 5% trail grade)	3150	SF	\$75	\$236,250	
Trail (\$40/LF equates to \$200,000 per mile)	460	LF	\$40	\$18,400	
8' tall fence along RR at walls - epoxy coated black chain link	460	LF	\$30	\$13,800	
Mobilization (10%)				\$43,645	
Contingencies (25%)				\$120,024	
Engineering, etc. (25%)				\$150,030	
				\$750,148	\$700 to \$900K
TH 52 at 117th Bridge - Typical Section Modifications					
Concrete traffic barrier - 8309 Type A	500	LF	\$80	\$40,000	
Impact attenuator	1	EA	\$25,000	\$25,000	
Reconstruct median	800	LF	\$75	\$60,000	
Pavement patching (at relocated median)	600	SY	\$100	\$60,000	
Relocate drainage structures (at least 2)	4	EA	\$5,000	\$20,000	
Mobilization (10%)				\$20,500	
Contingencies (25%)				\$56,375	
Engineering, etc. (25%)				\$70,469	
				\$352,344	\$300 to \$400K

