Master Plan

for

Point Douglas Regional Trail and Trailhead

Washington County Parks

April 10, 2012 (Final)

Washington County

Master Plan

for

Point Douglas Regional Trail and Trailhead

Washington County

Introduction and Acknowledgments

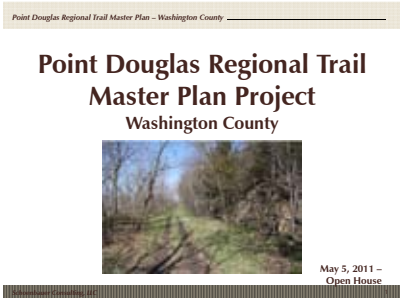
Introduction

In April of 2011, the Washington County Board of Commissioners retained Schoenbauer Consulting, LLC to work with County staff and local citizens to complete a comprehensive master plan for Point Douglas Regional Trail. This document represents the results of the planning process.

Public and Washington County Involvement

Given the notable interest in the development of this regional trail, the general public, special interest groups, and nearby residents were invited to participate in the planning process on numerous occasions. Through formal and informal meetings, adjoining property owners and members of the community had direct access to the consultant team and County staff. The public's input throughout the planning process proved very fruitful and strengthened the findings of the final plan.

In addition to general public involvement, the Washington County Parks and Open Space Commission provided oversight of the planning process. Being familiar with local conditions and public demand for trails, Washington County Parks staff also played an instrumental role in the planning process.



Washington County encouraged public input to help shape the final master plan for Point Douglas Regional Trail.

Technical Advisory Committee Involvement

An eight member technical advisory committee provided project oversight and technical input on critical planning issues. The group represented a cross-section of public officials and staff from agencies affected by the master plan. (A listing of committee members is provided under the acknowledgments.)

Project Partner

Support for this study was provided through the Statewide Health Improvement Program (SHIP) and Living Healthy in Washington County.

Acknowledgments

The consultant team appreciates the opportunity to work with Washington County in undertaking an open and constructive public process for the project. This approach allowed many perspectives to be considered and acted upon.

The consultant team extends a thank you to the Technical Advisory Committee, Washington County Parks and Open Space Commission, and Washington County Board for their input into the project. Their individual and collective insights were instrumental in drawing conclusions that are reasonable, responsible, and insightful.

The consultant team also extends a heartfelt thank you to the Washington staff, especially John Elholm, Parks Director, and Peter Mott, Parks Manager – Planning. Their openness to a constructive public process and direct communication with affected property owners ensured that all opinions were considered to be of equal merit and worthy of due consideration. Their understanding of the larger regional context and how this trail fits into the larger regional picture was also of high value as final conclusions were drawn.

Finally, the consultant team extends a thank you to the citizens who took the time to attend meetings, write letters, and make phone calls so that we could understand the issues first hand and find solutions that seemed reasonable and workable.

Sincerely,

Jeff Schoenbauer, Schoenbauer Consulting, LLC
Principal-in-Charge / Project Manager

Project Participants and Oversight

Washington County Board of Commissioners

District 1 - Dennis Hegberg, Vice-Chair
District 2 - Bill Pulkrabek
District 3 - Gary Kriesel, Chair
District 4 - Autumn Lehrke
District 5 - Lisa Weik

Parks and Open Space Commission Members

District 1 - Ben Meyer / Melissa Lewis
District 2 - Kenneth Heuer / Stan Karwoski
District 3 - Bob Livingston
District 4 - Pauline Schottmuller / Paul Poncin
District 5 - Steve Dornfeld, Chair / Andy Joyce, Vice Chair
At-Large - Joe Moore / Mary Hauser

Technical Advisory Team

John Elholm, Parks Director, Washington County Parks
Peter Mott, Parks Manager – Planning, Washington County Parks
Randy Thoreson, Outdoor Recreation Planner, National Park Service
Joe Moore, Denmark Township Board
Barry Bernstein, Hastings Director of Parks and Recreation
Marc Briese, East Metro Area Engineer, Mn/DOT
Ann Terwedo, Senior Planner, Washington County Public Works

Consultant Team

Schoenbauer Consulting, LLC
5054 Drew Avenue South
Minneapolis, MN 55410 612.578.1975

In collaboration with:

Brauer & Associates, Ltd.
10417 Excelsior Blvd., Suite 1
Hopkins, MN 55343

WSB & Associates, Inc.
701 Xenia Ave. S., Suite 300
Minneapolis, MN 55416

Table of Contents

Section 1 – Planning Context and General Background **1 - 6**

Project Scope 1
Past Planning History 2
Rationale for Developing the Point Douglas Trail 2
Interface with Other Public Trails and Parks 2
Interface with the Mississippi National River and Recreation Area Management Plan 4
Interface with the Lower St. Croix River Cooperative Management Plan 5
Willing-Seller Planning Context 6
Land Use or Other Conflicts 6

Section 2 – Planning Context and General Background **7 - 20**

Overview 7
Vision Statement 7
Active Living By Design – A Complementary Vision 8
Demographic Trends Influencing the Demand for the Trail 9
Recreational Trends Related to the Trail 10
Complementary Research in Support of Trails 13
Local Values (Public Input for Point Douglas Regional Trail 16
Research on Trail Safety and Security 17
Focusing on Quality to Maximize the Value of the Trail 18
Projected Use Level of Point Douglas Regional Trail 20
Leveraging the Trail for Economic Development/Tourism Opportunities 20
Conclusions 20

Section 3 – Regional Trail Master Plan **21 - 52**

Overview 21
Regional Destination Trail Classification 21
Regional Trail Master Plan – General and Detailed Overview 21
Interrelated Highway 61- Related Roadway and Trail Improvements 48
Trail Design Standards 48
Trailside Amenities and Signage 49
Property Acquisition 51

Section 4 –Natural Resources Stewardship Plan **53 - 58**

Overview 53
Natural Resource Inventory 53
Natural Resources Protection Strategy 54
Natural Resources Stewardship Plan 58
Technical Resources in Support of the Natural Resources Stewardship Plan 58

Section 5 –Implementation and Management Plan **59 - 67**

Overview 59
Acquisition and Development Cost Projections 59
Operations and Maintenance Costs 63
Management and Operations 63
Maintenance 65
Interim Stewardship Plan and Public Services 67

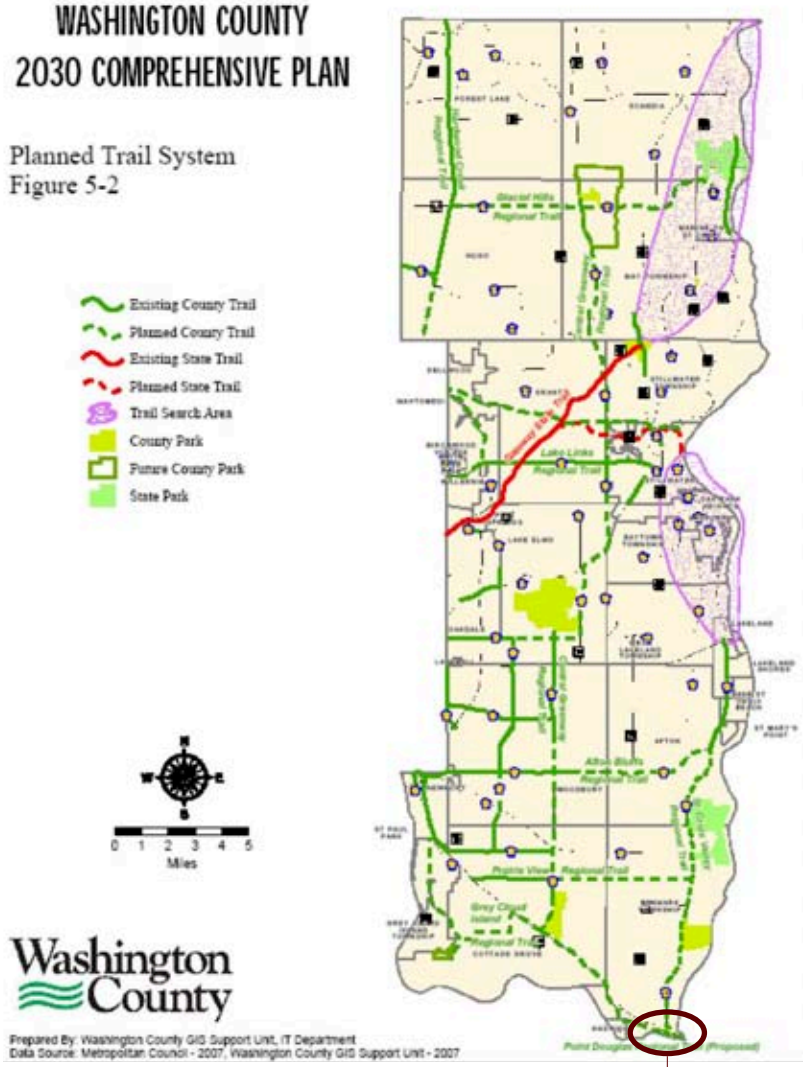
Appendix A – Board Resolution **68**

Once completed, the Point Douglas Regional Trail will provide a compelling outdoor experience for a variety of trail users. It will also serve as a major connection between local cities and regional parks and trails in Washington and Dakota Counties.

Section 1 Planning Context and General Background

Project Scope

The project focused on preparing a comprehensive master plan for the Point Douglas Regional Trail in southern Washington County. The study area extends from Point Douglas Park (and Prescott, WI) on the east to Highway 61 on the west, where it will connect with a trail to Hastings being planned by Mn/DOT as part of a larger roadway and bridge project. The following illustrates the location of the trail within the context of Washington County.



Point Douglas Trail location within Washington County

Washington County is committed to provided high-quality trail opportunities throughout the county.

Past Planning History

Point Douglas Regional Trail has long been recognized as an important part of Washington County's Comprehensive Plan and overall trail system plan. Starting in 2003, trail-specific planning was undertaken to gain support for the trail and position it for acquisition funding. In 2003, Washington County, Denmark Township, Hastings, and Prescott all formally adopted resolutions in support of the trail. Letters of support were also received from Trust for Public Land, Mn/DOT, and Mississippi River Trail.

By 2005, much of the trail corridor associated with the old rail bed had been acquired by Washington County, largely through state and federal grants.

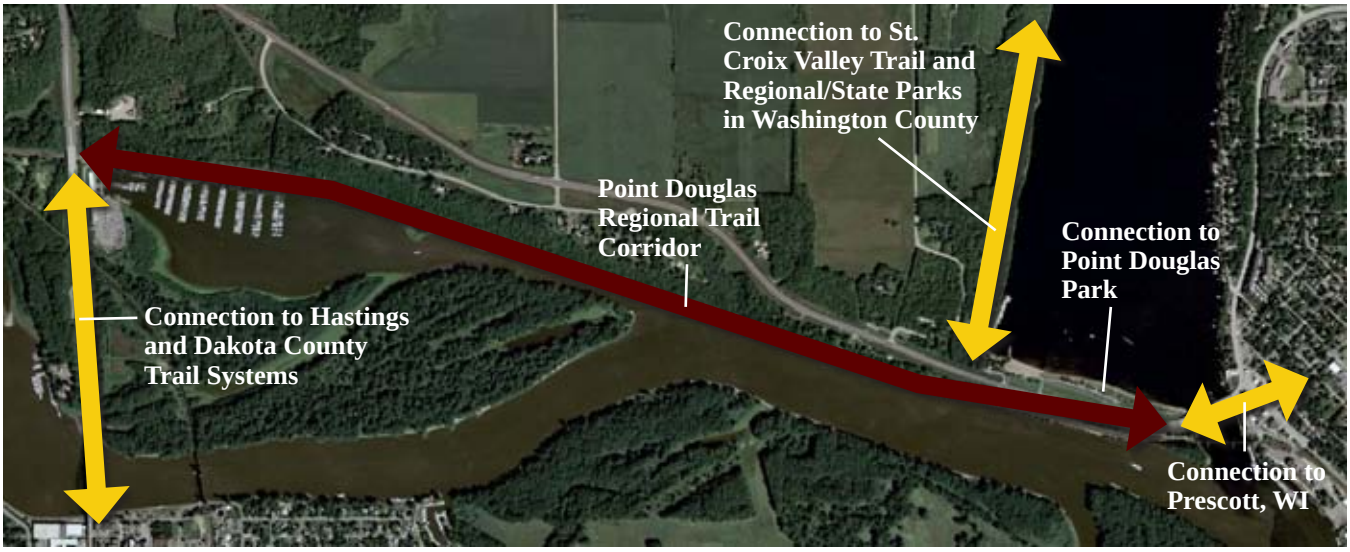
In 2011, Washington County Board of Commissioners authorized the preparation of this master plan, as required under the Metropolitan Council's *2030 Regional Parks Policy Plan.*

Rationale for Developing the Point Douglas Trail

The rationale for developing a trail along this corridor is strong for a couple of key reasons, namely providing:

1) A high recreational value amenity in a scenic setting along the Mississippi River
2) A critical link that ties together numerous local, regional, and state trails and parks and natural areas into a cohesive, interlinked system

Completion of this strategically-important trail is critical to linking Washington County's Parks and Trail System with those in adjoining counties to the south and Wisconsin to the east, as the map illustrates.

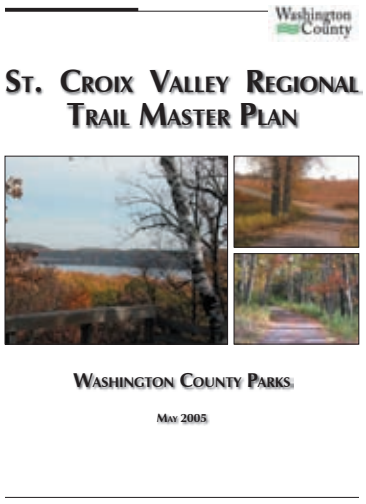


Interface with Other Public Trails and Parks

Specific examples of parks and trails that this trail plays a critical role in linking together with nearby communities include the following.

Point Douglas County Park

This is a small county park on the shore of the St. Croix River. Current amenities include a beach, restrooms, picnic area, and parking lot. As defined in Section 3, this area will be upgraded to serve as a trailhead for both Point Douglas and St. Croix Valley Regional Trails.



St. Croix Valley Regional Trail

This is a 20.4 mile master planned regional trail that runs north-south in Washington County from Afton down to Point Douglas County Park, where it connects with the Point Douglas Regional Trail.

St. Croix Bluffs Regional Park

A nearly 700 hundred acre regional park located on bluff land adjacent to the St. Croix River. Extensive hiking, camping, picnicking, and boating opportunities are currently provided in the park. A variety of other unique existing and planned amenities are also provided or envisioned, including the Conference Cottage, beach area, and group use areas. The park also exhibits a broad cross-section of natural systems.

Afton State Park

The park is 1,695 acres and was established in 1969 to preserve unique natural features and to provide opportunities for nature-oriented recreation. The park is set in a rolling glacial moraine and bluff land. It is cut by deep ravines which drop 300 feet to the river. The ravines display outcrops of sandstone and the rugged terrain affords spectacular views of the St. Croix River Valley. The park also contains a combination of oak openings and woodlands. The forests combine upland hardwoods with some pine plantations. Remnant prairies are being expanded and oak savannas are being restored through an aggressive resource management program that makes extensive use of volunteers. The park offers numerous amenities, including backpacking campsites, picnic grounds, hiking trails, a bike trail, cross-country skiing, visitor center, and group camps.

Carpenter Nature Center (Private)

A private, non-profit nature preserve and environmental education facility established in 1981 under an endowment from the Thomas E. and Edna D. Carpenter Foundation. The site encompasses 720 acres in Minnesota and Wisconsin, with several miles of self-guided and wheelchair accessible trails. The interpretive center offers several hands-on educational exhibits and serves as a classroom for programs. Carpenter Nature Center has an appointed board that oversees all activities and developments. A regional trail easement through the property would require Board approval.

Hastings – Red Wing Trail

This is 20+ mile master planned trail that runs north-south from Hastings to Red Wing, where it connects to the Cannon Valley Trail. This master plan was completed in 2009 through a partnership between the Parks & Trails Council of MN, Goodhue County, Dakota County, City of Hastings, and City of Red Wing. The National Park Service also participated.

Parks and Trails Systems within Hastings, MN and Prescott, WI

Each municipality has or is preparing comprehensive trail system plans. In each case, the Point Douglas Regional Trail will link seamlessly to these systems. This is especially the case with Hastings, where the City's planned trail system is extensive and a terminus for a variety of regional-level trails in Dakota County.

Interface with the Mississippi National River and Recreation Area Comprehensive Management Plan

The Mississippi National River and Recreation Area (MNRRA) was established by Congress in 1988 to (1) protect, preserve, and enhance the significant values of the Mississippi River corridor through the Twin Cities metropolitan area, (2) encourage coordination of federal, state, and local programs, and (3) provide a management framework to assist the state of Minnesota and units of local government in the development and implementation of integrated resource management programs and to ensure orderly public and private development in the area. The area includes 72 miles of the Mississippi River and four miles of the Minnesota River, stretching from the cities of Dayton and Ramsey to just south of Hastings.

The proposed trail is consistent with the values and policies of the MNRRA plan.

Congress directed the commission to assist the secretary, the state of Minnesota, and local units of government to develop policies and programs for:

1. Preservation and enhancement of the environmental values of the area
2. Enhanced public outdoor recreation opportunities in the area
3. Conservation and protection of the scenic, historical, cultural, natural, and scientific values of the area
4. Commercial use of the area and its natural resources, consistent with the protection of the values for which the area was established

A wide range of visitor use (interpretation and recreation) activities are to be encouraged within MNRRA, including a variety of passive and active resource-related recreational activities – which specifically includes hiking, bicycling, jogging, cross country skiing, and nature observation and interpretation. The plan specifically calls for providing a continuous linear open space and trail where practical.

Specific site development polices most pertinent to this project include:

- Policy #6 – Encourage shoreline area preservation and restoration:
  - Preserve native vegetation
  - Use native and other compatible floodplain vegetation
  - Support a comprehensive metropolitan area riverbank cleanup program
- Policy #7 – Provide pedestrian/bicycle paths to connect the river to the downtowns, neighborhood areas, and parks and open spaces
- Policy #8 – Protect views and develop new overlooks at strategic locations offering significant views of the river corridor

The regional trail master plan as presented here is consistent with the principles, policies, and intent of the MNRRA Comprehensive Management Plan. As implementation occurs, Washington County will continue to work cooperatively with other managing partners to ensure that actual trail development remains consistent with the stated policies.

Interface With the Lower St. Croix River Cooperative Management Plan

The Lower St. Croix River National Scenic Riverway, which extends 52 miles from St. Croix Falls/Taylors Falls to Point Douglas Park, is jointly managed by the National Park Service, Minnesota Department of Natural Resources, and Wisconsin Department of Natural Resources. The Lower St. Croix River Cooperative Management Plan and Environmental Impact Statement provides general direction for managing the area for the next 15 to 20 years.

Under the plan, management directives common to all alternative uses and management plans include coordination of:

- Public and private uses
- American Indian treaty rights
- Land use management
- Riverway stewardship
- Natural resources management
- Hunting, fishing, and trapping management
- Interpretive and education
- Recreational use and development

Views of the St. Croix River at the trail's eastern terminus add to its appeal as a destination trail.

The last bullet point relates most directly to the regional trail. Under the cooperative plan, managers would work to promote uses and behaviors that ensure high quality and safe experiences for all users. With regard to trails, existing uses would continue on designated trails of varying types within the riverway. Other than existing state regulations pertaining to trail uses, no additional regulations would be imposed unless they are needed for safety or resource protection.

The riverway managing partners are to work in partnership with user groups, communities, local agencies, and others in development of a comprehensive regional trail network in the study area, as well as links to other areas outside the river corridor. Trail development is to be coordinated with state plans, county comprehensive plans, and other pertinent plans.

Abandoned railroad rights-of-way, if and when available, can be pursued for conversion to trails consistent with the National Rails to Trails Act. Also, when roads along the river are improved, the addition of bicycle lanes is encouraged.

The regional trail master plan as presented here is consistent with the principles and intent of the Lower St. Croix River Management Plan. As implementation occurs, Washington County Parks will continue to work cooperatively with other managing partners to ensure that actual trail development remains consistent with the larger river corridor management objectives.

Willing-Seller Planning Context

Washington County and Denmark Township each take a willing seller approach to land acquisition for parks, trails and greenways. Fortunately, in this case, the vast majority of the land is already owned by Washington County.

Land Use or Other Conflicts

Aside from the need to acquire property on the west end of the trail and addressing the concerns of adjacent residential property owners (which are addressed in this report), no other conflicts with other land uses or proposed projects are envisioned.

Section 2 Vision Statement and Public Values

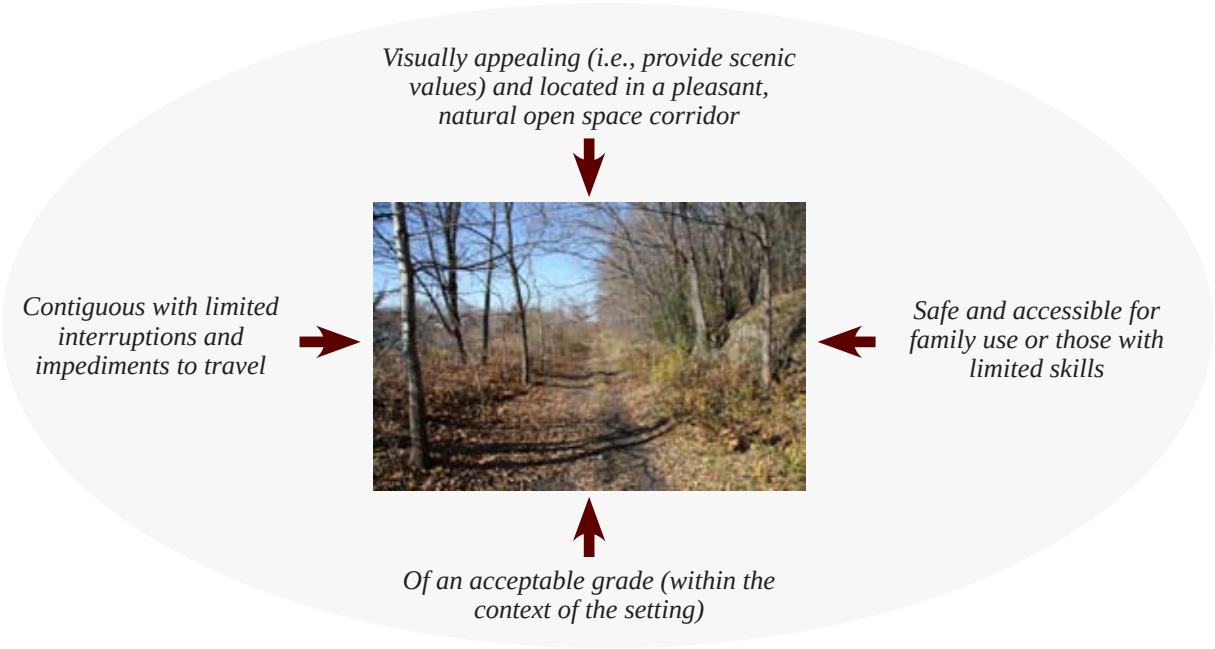
Overview

The undertaking of this planning process was based on the presumption that a regional trail through the study area would be of high regional and local value. Conversely, establishing a trail corridor through any given area poses both direct and indirect impacts to adjoining private properties. It also affects personal values related to residents' perceptions of their community and the quality of life they desire and perceive to exist. Depending on one's perspective, developing a regional trail within the study area may or may not be considered to be of high public value.

To ensure that the perspectives of all interested individuals and stakeholders were considered, Washington County undertook an extensive and inclusive public process. This section defines the findings of that process and how that shaped the vision for the trail corridor and conclusions of the master plan.

Vision Statement

The vision for the master plan is to establish a regional trail corridor of high public value by providing a high quality recreational experience and a critical link between numerous local, regional, and state trails, parks, and natural areas. The following image highlights the vision for the trail at the user level.



Active Living By Design – A Complementary Vision

Note that Washington County, through the SHIP program, has developed the Living Healthy in Washington County *initiative in order to implement policies and practices that create active communities by increasing opportunities for non-motorized transportation and access to community resources and recreation facilities.*

The "active living by design" movement gaining momentum across the country complements the vision for the Point Douglas Regional Trail as previously defined. As stated by one of the initiators of the movement, active living by design "is a way of life that integrates physical activity into daily routines." Key principles of this movement as it pertains to this plan include:

- Physical activity is a behavior that can favorably improve health and quality of life
- Everyone, regardless of age, gender, language, ethnicity, economic status or ability, should have safe, convenient and affordable choices for physical activity
- Transportation systems, should be more diverse and provide safe, convenient and affordable access to housing, worksites, schools, local businesses, and community services
- Parks and trails, should be safe, accessible and part of a transportation network that connects destinations of interest, such as housing, worksites, schools, community services and other places with high population density
- Municipalities and other governing bodies should plan for ongoing interdisciplinary collaboration, promotion of facilities, behavioral supports, policies that institutionalize the vision of active living, and routine maintenance that ensures continued safety, quality and attractiveness of the physical infrastructure

The following provides an overview of pertinent findings from research that supports the active living by design movement and development of trails such as the Point Douglas Regional Trail.

Physical Activity/Preventing Obesity

Physical inactivity causes numerous physical and mental health problems, is responsible for an estimated 200,000 deaths per year in the United States, and contributes to the obesity epidemic. The design of communities and the presence or absence of parks, trails, and other quality public recreational facilities affects people's ability to reach the recommended 30 minutes each day of moderately intense physical activity. A growing number of studies show that people in activity-friendly environments are more likely to be physically active in their leisure time.

For example, research findings clearly indicate that better access to facilities, pleasant surroundings, safe places, walkable neighborhoods, and activity-friendly environments all encourage higher levels of active recreation. Proximity, connectivity, and design quality of trails can be added to this list to encourage more active lifestyles.

This is especially the case with children, where better access to healthy choices is vital to reducing the rate of obesity. Since the 1970s the percentage of obese children 6 to 11 years old has tripled. Obesity has doubled among preschool children and adolescents. Turning these statistics around means increasing children's physical activity and improving what they eat.

The habit of active living is best established at a young age.

Accessibility

Being able to reach or access a variety of destinations (e.g., parks, retail areas, tourist site, workplaces, health services, grocery stores) is critical to many dimensions of a healthy community and healthy personal lifestyle.

Mental Health

A number of studies have demonstrated how being outdoors and in direct contact with nature leads to increased mental health and psychological development. Recent data show that depression and other mental-health disorders will account for some of the world's largest health problems in upcoming decades. People do not have to actively use nature to benefit from it; rather, visual exposure is enough. It is important to consider that different groups of people have differing views of what constitutes nature in the built environment, with variation by education level, age, ethnicity, profession, residential location, etc.

Demographic Trends Influencing the Demand for the Trail

One of the more important trends affecting the region is that the population in the metropolitan area is expected to continue to grow substantially over the next 20 to 30 years. Although the downturn in housing and development that occurred starting in 2008 affected the pace of development on a year to year basis, over time the population in Washington County is still expected to grow significantly, as the following table highlights.

Regional Population Growth Forecast

Population forecast by county. (Source: Metropolitan;Council, July 2011.)

County	Population Numbers and Forecasts 2000	2010	2020	2030	% Increase 2010 to 2030
Anoka County	298,084	357,400	407,670	438,550	22.7%
Carver County	70,205	107,240	162,880	198,500	85.1%
Dakota County	355,904	423,060	484,375	525,475	24.2%
Hennepin County	1,116,206	1,210,680	1,308,415	1,394,660	15.1%
Ramsey County	511,035	546,950	568,280	587,380	7.3%
Scott County	89,498	140,570	182,620	220,870	57.1%
Washington Co.	**201,130**	**254,552**	**318,053**	**362,740**	**42.5%**
Metro Area	2,642,062	3,005,000	3,334,000	3,608,000	

This growth trend in Washington County is important in that the demand for high quality recreational facilities, especially trails, will grow substantially over the next 20 years. Situated between likely growth areas of Hastings and Prescott only add to the long-term demand for this particular trail.

Recreational Trends Related to Trail

Recent findings by the Metropolitan Council, MN DNR, and other agencies suggests that future growth in participation in many areas of outdoor recreation is not as assured as was the case a decade or two ago. In numerous activities, research indicates that participation rates are expected to actually decline as Minnesotans shift their activity patterns based on evolving interests, age, and access to newer forms of recreation. Other key findings pertinent to this plan include:

- Decreasing participation in nature-based activities: fishing, hunting, wildlife-watching, state park attendance, etc.
- Growing disconnection with nature, which impacts personal development, societal well-being, stewardship of natural areas; also contributes to nature-deficit disorder in youth
- Barriers to getting outdoors include time, family obligations, work responsibilities, lack of money, weather, bugs (uncontrollable environment), lack of outdoor skills and equipment, lack of information and knowledge, and concerns about personal safety
- More ethnically diverse population with more widely varying expectations
- Obesity/health issues on the rise, with lifestyle choices a key factor
- Greater diversity in recreation opportunities is available to all ages
- Funding issues – less public dollars for acquisition and capital improvements; suggests greater need for non-traditional approaches
- Technology is competing for people's discretionary time and creating more sedentary activities
- Energy costs are rising and limiting people's willingness to travel very far for recreation

The use of trails for recreation and fitness is expected to remain at the top in terms of participation relative to other forms of recreation.

The shift away from active, programmed sports and activities (like softball) to more passive/informally organized social activities (like walking or biking clubs) is especially noticeable, particularly with older age groups. At the adult level, this can be attributed to an aging population, in combination with changing personal interests.

A 2004 study by MN DNR forecasts participation in outdoor recreational activities out to 2014. The study finds that participation in outdoor recreational activities is expected to decline in virtually all areas of recreational pursuit. Only walking and running are expected to increase in participants and participant hours. Participation in bicycling and in-line skating is projected to decrease over this time period.

From the research, it is clear that changing demographics are an issue and will affect participation in various recreational pursuits over time – with the more active (and aging) boomers giving way to currently less active generations that follow.

On the more optimistic side, a number of regional studies over the last decade have been conducted to determine recreational trends associated with the regional park and trail system. These studies looked at residents' desires for a variety of recreational opportunities and their perspectives on current facilities and future needs. The main generalizations from these studies that have application to the Point Douglas Regional Trail include:

- Walking or biking around the neighborhood, in large natural parks, or along a close by trail corridor remain top activities, with over 85% of respondents being at least interested in this activity
- Individual sports and activities are becoming more and more preferred over organized ones, at least at the adult level
- People value parks and trails even if they do not regularly use them
- There is an especially strong desire to set aside land for nature areas/ open space, bike paths, and general use trails

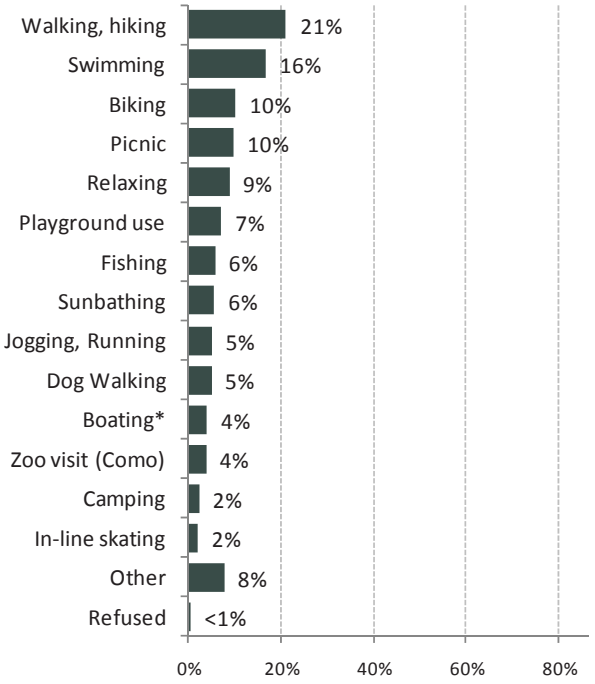
Although participation levels are not expected to show much real growth in the near future, walking and bicycling nonetheless remain by far the most popular recreational pursuits in terms of participation. Further, the projected growth in population in Washington County will still result in an increase in overall trail usage, perhaps substantially.

Another caveat to projecting participation is the uncertainty to which active living campaigns will affect participation trends in trail usage. If people do become more active, walking and bicycling would likely be one of the main forms of recreation that an individual would participate in.

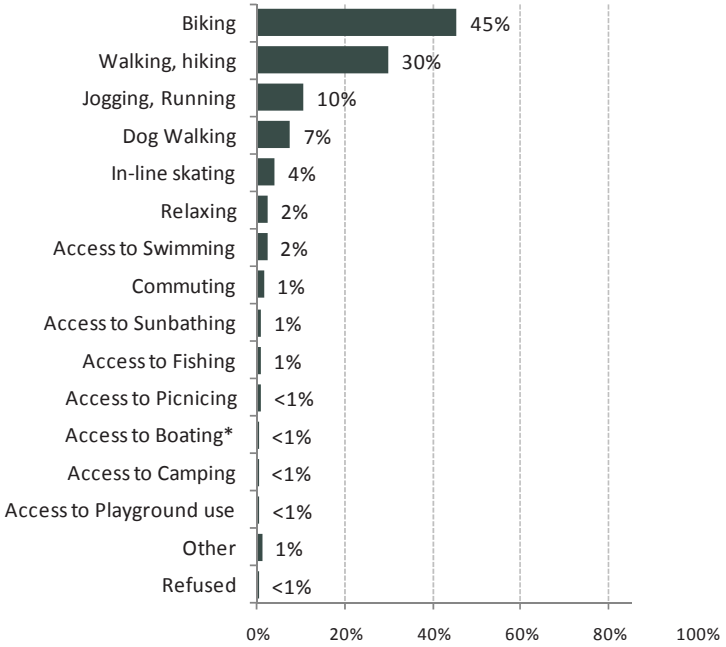
In terms of activities visitors currently engage in when visiting regional parks and trails, bicycling tends to be the predominant use, as Metropolitan Council's *Regional Parks and Trails Survey 2008* findings suggest, as illustrated below.

Activity Patterns, Regional Parks and Trails
(Source: Metropolitan Council Regional Parks and Trail Survey 2008.)

Parks: Primary Activities
Highlights the primary activities park visitors engauge in when visiting a regional park.

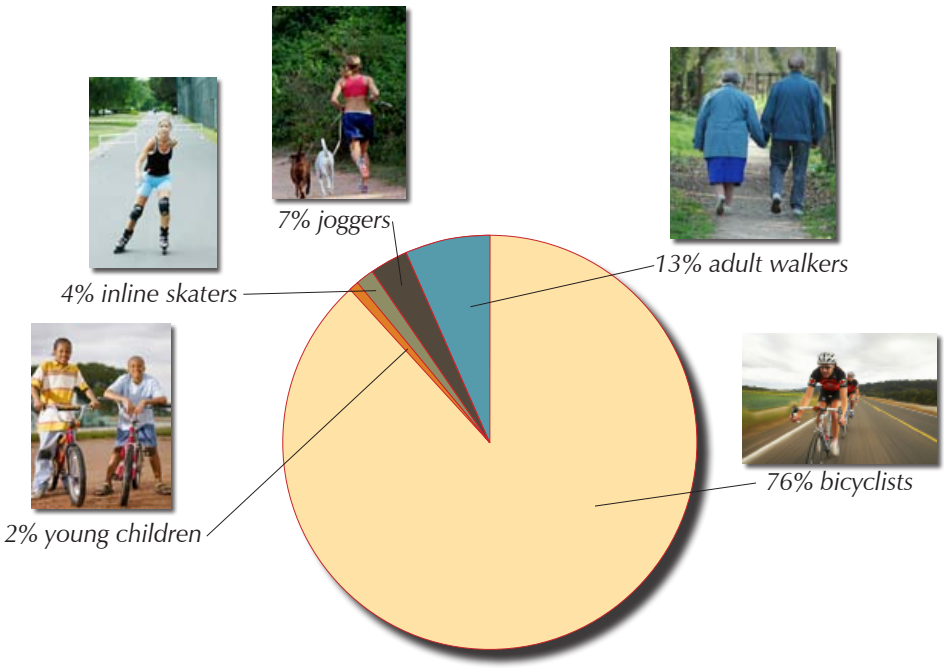


Trails: Primary Activities
Highlights the primary activities park visitors engauge in when visiting a regional trail.



A recent study by Three Rivers Park District finds that bicyclists account for a high percentage of users, as the following illustrates.

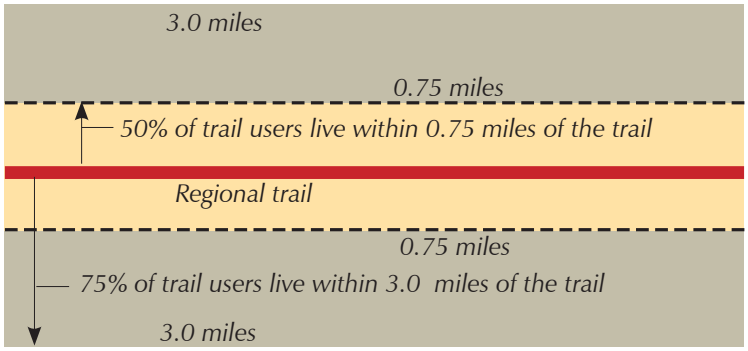
Use Patterns on Three Rivers Park District Trails
(Source: Three Rivers Park District.)



Given these findings, it is relatively clear that bicycling will be a predominate use of the trail, although proximity to Hastings and Prescott may entice more walkers/joggers to use the trail.

With respect to where trail users will come from, recent research by the Metropolitan Council indicates that the majority of trail users live within three miles of the trail they are using, as the following illustrates.

Travel Distances for Trails
(Source: Metropolitan Council.)



Complementary Research in Support of Trails

An increasing body of independent research provides addition support for developing a robust network of local, regional, and state trails, as the following summarizes.

Finding: "Trails: A Scientifically Proven Asset"

Source: Centers for Disease Control and Prevention

Scientific evidence from the *Guide to Community Preventive Services* shows that providing access to places for physical activity, such as trails, increases the level of physical activity in a community.

Finding: Changes in Human Environment Affecting Levels of Activities

An article in the Wall Street Journal asks a provocative question: "Everybody knows they should exercise. So why do so few people actually do it?" Surveys generally find that 60% or so of adult Americans get little or no exercise. Less than 10% of school children walk or ride their bicycles to school. But in the early 1970s, over 60% walked and biked.

One answer is that change in our human environment is a major cause. While people traditionally walked to school or shopping, many contemporary housing areas simply do not provide a system of trails and sidewalks. According to Gregory Heath of the Centers for Disease Control, "Many of these communities are isolated-living communities. They lack connectivity to commerce, education, and entertainment."

Another reason people don't exercise is lack of time. Here is where trails can benefit tremendously: safe and attractive routes to work, to school, to church, and to shopping are all ways that people can combine exercise with necessary trips.

Finding: Health Officials Increasingly Speaking Out in Favor of Trails

(Source: American Trails)

Many health officials believe that modest exercise programs involving trails will encourage more people to walk and ride their way to better health. A broad national program entitled "Healthy People 2010" is gaining momentum in the trails community as opportunities begin to bloom for new partnerships and funding sources with national, state, and local health services organizations.

The focus of the new health initiative is the emphasis on increasing the public's physical activity to help address the US Surgeon General's national concern about our public's sedentary lifestyles and the escalating problems associated with overweight and obesity. America's trails provide the ideal link between physical activity and improved national health.

Increasingly, developers have come to realize that integrating local and regional trails into new development plans adds to the value of properties.

Finding: Main Barriers to Using Trails

Source: Centers for Disease Control and Prevention

There are two sets of variables believed to negatively influence the decision to walk or bike: personal barriers and environmental barriers. In surveys of why people do not walk or bike more frequently, both sets of barriers show up in the results, as the following summarizes.

Personal Barriers:
- Lack of motivation
- Perceived lack of time
- Weather
- Family obligations
- Fatigue

Environmental Barriers:
- Lack of exercise facilities
- Lack of sidewalks, bike lanes on roads, nearby public parks, or hiking/biking trails.
- Topography
- Perceived low levels of safety of one's neighborhood

Whereas removal of personal barriers will remain an ongoing challenge, public health literature has begun to more assertively focus on the creation of walking- and bicycling-supportive environments as a way of reducing or eliminating environmental barriers to physical activity. Which, in turn, will improve quality of life and reduce health care costs.

Finding: Property Value-Related Impacts

(Source: American Trails)

Increasingly, studies are showing that trails add economic value to a region through increased property values, business activities, and the general attractiveness of an area to reside. For example, studies have shown that 70% of landowners felt that overall, an adjacent trail was a good "neighbor," with positive impacts including 1) getting in touch with nature (64%), 2) recreational opportunity (53%), and 3) health benefits (24%).

Furthermore, 70% of real estate agents use trails as a selling feature when selling homes near trails. 80.5% of them feel the trail would make it easier to sell. In Minnesota, 87% of home owners believe trails either increased the value of their homes or had no impact. Additionally, the U.S. National Parks Service notes that increases in property values range from 5 to 32% when adjacent to trails and greenways.

Finding: Macro Economic-Related Impacts
(Source: U of MN Tourism Center)

Recent studies by the U of M Tourism Center considered the economic impact of road, trail, and mountain biking. At more than $1 billion, these studies found that bicycling generates as much revenue in Minnesota as hunting and snowmobiling combined. Estimated economic values is estimated at $686 million per year / 4,148 jobs for road biking and $318 million per year / $1,116 jobs for mountain biking.

Finding: Outdoor Sports Participation Nationally
(Source: National Sporting Goods Association)

A study by the National Sporting Goods Association finds the following levels of participation in an activity, as ranked by those over age 7 who participated more than once during 2009.

Sport	Total (in millions)
Exercise walking	93.4
Camping	50.9
Swimming	50.2
Bicycle riding	38.1
Hiking	34.0
Fishing	32.9
Running/Jogging	32.2
Golfing	22.3
Hunting	18.8
Yoga	15.7
Softball	11.8
Tennis	10.8
Mountain biking (off-road)	8.4
Skiing (alpine)	7.0

Finding: Impact Of Trails On Adjacent Properties
(Source: Lake Wobegon Regional Trail, Stearns County)

The Eppley Institute for Parks conducted a survey for Stearns County to determine the actual impacts that retrofitting a new regional-level trail (following an abandoned rail bed) has had on adjacent properties after the trail was built. Key findings include:

- Usage – 75% of adjacent property owners use the trail (many of which were against the trail being developed).
- Problems – over 95% of the adjacent property owners reported no problems with the trail (such as loitering, litter, and trespassing).
- Economic impacts – vast majority reported that they believed that the trail would have no negative impact on their property values, with many believing that it could even increase values.
- Values – 75% say living near the trail offers distinct advantages, such as ease of access, convenience, exercise, and so forth.

Local Values (Public Input for Point Douglas Regional Trail)

The public process directly associated with preparing this master plan began in April of 2011 with the establishment of the Technical Advisory Committee (TAC). Public input into the planning process began with a public open house in May to uncover issues and concerns specific to the project prior to any formal trail planning commenced.

The public process was structured to allow all interested parties ample opportunity to participate, as the following schedule defines.

Public Process Schedule

May 5, 2011 – Technical Advisory Committee meeting – general review and discussion
May 5, 2011 – Public Open House – general review of project, public input, and questions and answers
May/June – Onsite meetings with adjacent property owners – review of site-specific issues and concerns
August 11, 2011 – Onsite meeting with Technical Advisory Committee meeting
September 14, 2011 – Public Open House – detailed review of alignment and details, questions and answers
September 15, 2011 – Parks and Open Space Commission – presentation
October 11, 2011 – Washington County Board – workshop presentation
December 15, 2011 – Parks and Open Space Commission – final presentation and approval
February 6, 2012 – Denmark Town Board – presentation
April 10, 2012 – Washington County Board – final presentation and approval

Findings from the Public Process

Public comment at each of the public meetings was extensive, with each meeting well attended. The following summarizes the key findings from the open houses and property owner meetings.

Overall Consensus

Overall, support for the trail was strong, with the majority in attendance seeing the trail as positive and adding value to the area. Many also felt that building the trail would diminish the incidence of illegal actively now occurring along the undeveloped corridor. Participants at the open houses also saw much value in the trail as a means to connect with Hasting and Prescott, as well as the various regional and state parks in the area.

Adjacent Property Owner Issues, Concerns, and Perspectives

As part of the process, any interested property owner was given the opportunity to meet with the design team to review site-specific issues and concerns. In total, 6 individual landowner meetings were held, with the following summarizing the findings:

- Overall, the general consensus was in favor of the trail, with many stating that they have been hoping it would be developed sooner than later
- All of those with homes in close proximity to the trail do not want a trailhead near there homes, preferring that access be limited to the east and west end of the trail
- All are hoping that development of the trail will result in fewer vagrants in the area and elimination of illegal shooting, hunting, ATV use, youthful partying, and camping
- All want to see an increase in policing, which was agreed would be easier to do once the trail was paved and police cars could gain better access

- Providing signage and wayfinding information was thought to be important, with an emphasis on trail rules and identifying the location of access points/trailheads
- Desirable amenities along the trail include benches and overlooks, as long as they are placed away from areas where homes are adjacent to the trail corridor

With respect to providing a buffer between the trail and three or four houses that are closest to the trail corridor, the general consensus was that the design should clearly define property boundaries, make it difficult for trail users to inadvertently access private property, and in general provide the visual cues that dissuade people from trespassing. Note, however, that all of the residents wanted to protect their views of the river and do not want the design to be "heavy handed" and take away from the natural character of the area.

Some of the residents also saw this as an opportunity to clarify future uses of any other public lands along the corridor for trailheads and other public uses. To this end, clear consensus was that only the trail corridor should be developed, with the master plan stating that any other public uses will be on the east and west end.

Safety and Crime

Concerns and perceptions about crime (vandalism, trespassing, personal safety of family, etc.) were raised at the public meetings. Safety concerns mostly centered on people using the trail for accessing private property. After considerable discussion, those in attendance at the open houses and nearby residents feel that developing the trail is better than leaving it as is in terms of the propensity for crime. (See also the forthcoming research findings on trail safety and security for complementary information on this issue.)

Technical and Environmental Concerns

Some participants noted concerns about the technical feasibility of developing a trail along the corridor and how it might impact the natural qualities of the area. Limiting the development footprint to the existing rail corridor alleviated the majority of these concerns, with the potential benefits of the trail ultimately thought to outweigh concerns.

Research on Trail Safety and Security

According to Washington and Ramsey County Sheriffs Department, policing issues associated with trails yields the following:

- Incidents of crime associated with trails is so low that local police do not keep track of it separately
- The contention that trail users routinely commit crimes to adjacent properties is not supported by crime statistics and evidence
- Biggest concern is parking lots, where occasionally theft from the cars of trail users occurs; note: this is not unique to trails, but occurs wherever the opportunity for a quick getaway exists

Formal research conducted by Schoenbauer Consulting, LLC in 2010 reinforces these findings in a survey that was designed with input from law enforcement officers. Key results of the survey include:

- Law enforcement officers responding to the survey consider trails to be safe, with the vast majority (87%) reporting that trails account for less than 5% of all unlawful activity in their jurisdiction, and nearly 50% saying that it is actually less than 1%
- Any incidences and unlawful activity that does occur on trails tend to be issues among and between users
- Trail users failing to abide by traffic laws are the most frequent incidents, followed by depreciative behavior toward the trail (i.e., vandalism and graffiti) and trail user injury; these are followed by non-assault conflict between users (i.e., verbal altercation, off leash dogs, and vagrancy)
- Trespassing on adjacent property is considered low incidence, with issues of more serious crimes against persons or property being cited as being very infrequent
- 94% or respondents say that trails are as or more safe than other public recreation areas and public spaces
- Most common injuries are those involving a single person, such as an individual-only accident or a health-related injury

Suggestions for enhancing trail design include better markings, lighting, signage, and crossing design, along with increased maintenance and overall enhanced visibility of the trail.

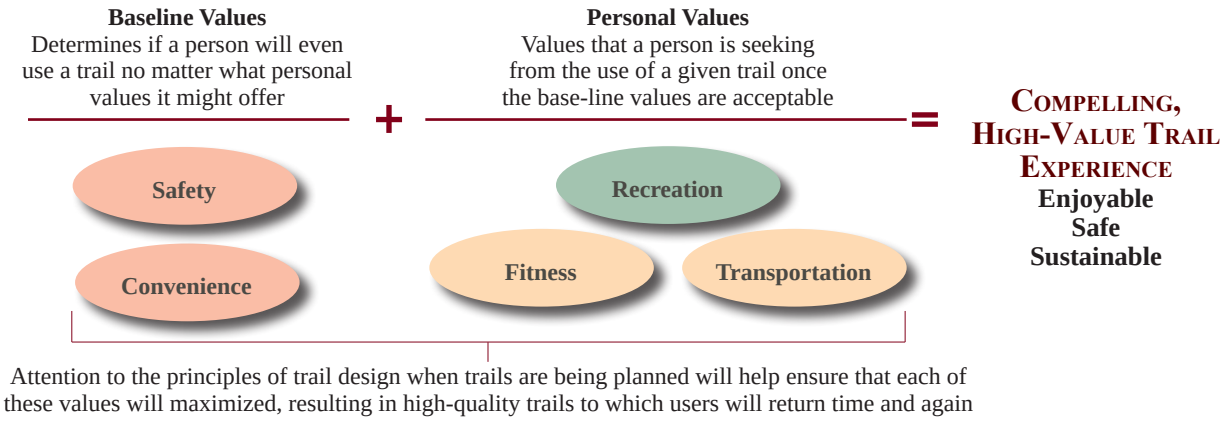
In conclusion, whereas people's concerns about new trail development deserves due respect and consideration, this survey finds that in reality trails are actually quite safe and account for a relatively small percentage of unlawful activity and safety problems.

Focusing on Quality to Maximize the Value of the Trail

Washington County recognizes that a well-conceived, high quality trail can bring lots of enjoyment to trail users. To that end, Washington County is committed to paying attention to the design nuances that matter to ensure that the trail that is ultimately built is consistent with what trail users value, as the following illustrates.

Personal Values Ascribed to Trails

MN DNR's Trail Planning, Design, and Development Guidelines



Attention to the principles of trail design when trails are being planned will help ensure that each of these values will maximized, resulting in high-quality trails to which users will return time and again

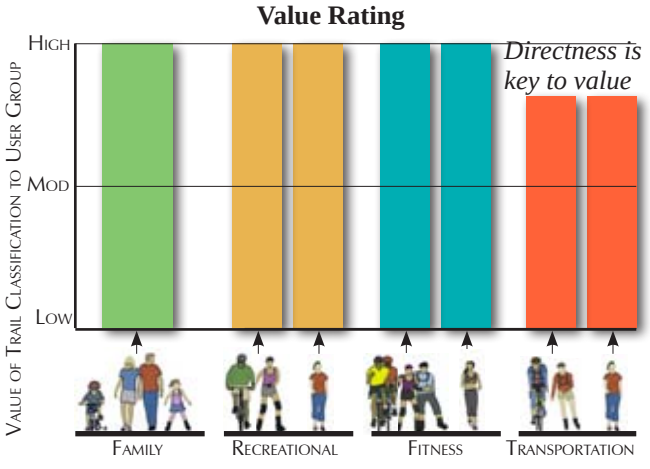
Given its setting and interconnectedness with local communities and other regional parks and trails, the Point Douglas Regional Trail is expected to be a destination-level trail and appeal to the values and preferences of a variety of user groups, as the following table defines and graphic illustrates.

Values and Preferences of Trail User Groups

User Group	Values and Preferences	Symbols
Family Group – Various Modes	Safety and convenience are top priorities, followed by a pleasant recreational experience. Controlled, traffic-free access to sidewalks and trails is preferred. Length of trail is less important than quality of experience. Will typically only use low-volume residential streets when biking or skating, and rarely busy streets even with bike lanes or routes.	 Family
Recreational Walker, Bicyclists, and Inline Skater	Same as family user group, with trail continuity and length also being important for repeated use. 20 miles of connected trails are needed for bicyclists, at a minimum. This user group is also more comfortable with street crossings. Bicyclists and in-line skaters will use roads that are not too busy. Loops are preferred over out-and-back routes for variety.	 Recreational
Fitness Walker/ Jogger, Bicyclists, and In-Line Skater	Length of trail and continuity are most important, although an appealing setting is also desired. Bikers are reasonably comfortable on busier roads, but prefer bike lanes/routes to provide separation from vehicles. Bikers will often use a combination of roads and trails to create a desirable loop, which is much preferred over out-and-back routes.	 Fitness
Transportation Walker, Bicyclists, and Inline Skater	Directness of route is important. Will use a combination of sidewalks, trails, residential streets, and roads that are relatively safe, convenient, and direct. Bike lanes/routes are preferred on busy roads to improve safety. Bicyclists are not overly dependent on trails, but will use them if convenient and not too heavily used by families and recreational users, who tend to slow them down. Walkers need a trail or sidewalk.	 Transportation

Value Statement – To Achieve Destination Trail Quality

Desirable and safe environment for family and recreational outings in appealing setting away from traffic and distractions. Given continuity, trail will also appeal to fitness users, and transportation users living and working in the area.



Projected Use Level of Point Douglas Regional Trail

As previously noted, the majority of the day-to-day use of the trail will be from local residents, although the overall appeal of this trail corridor can be expected to draw users from a larger geographical area – especially on weekends and holidays. Assuming use levels are consistent with other similar trails in the region and trails such as the Cannon Valley Trail, initial yearly visitation to this trail is anticipated to be in the 100,000 and 150,000 range.

Leveraging the Trail for Economic Development/Tourism Opportunities

Although the exact economic impact is hard to discern, development of a high quality trail between the historic town of Hastings and Prescott, WI can only add to the their appeal as tourist destinations.

In an age where the economic vitality of small towns is always a concern, development of the trail brings along with it the prospect of enticing new visitors to these communities during the spring, summer, and fall tourist seasons.

Conclusions

The input gained from the public process, along with other information provided in this section, greatly influenced planning outcomes and points of emphasis in the plan. The overarching principle of the plan is that maintaining a high level of trail quality is essential to enticing high levels of use. This will only occur if the facilities meet or exceed the expectations of targeted user groups as defined in this section.

This requires a steadfast commitment to the use of optimal design standards and maximizing the aesthetic qualities of the trail experience when the master plan is implemented.

Section 3 Regional Trail Master Plan

Overview

The Point Douglas Regional Trail Master Plan is the end result of an extensive public process that allowed property owners, citizens, and public officials to weigh in on trail alignment options and related development issues. After thoughtful consideration of public input, the Technical Advisory Committee (TAC), Washington County Parks and Open Space Commission, and Washington County Board approved and adopted the master plan alignment as presented in this section.

Regional Destination Trail Classification

Destination Trail Description
Source: Metropolitan Council

Use: *Area developed for one or more varying modes of non-motorized recreational travel.*

Size: *Sufficient corridor width to protect natural resources and safely accommodate trail use. Sufficient length to be a destination itself, or to serve as a link between regional park system units.*

The Metropolitan Council's 2030 Regional Parks Policy Plan has two classifications, or types, of regional trails. ***Regional destination trail*** serves as a destination unto itself by providing a high quality recreational experience, preferably within a natural setting (as long as the trail tread way has no adverse impact on the natural resource base). In contrast, a ***regional linking trail*** primarily serves to link two or more regional park units.

The Point Douglas Regional Trail is being proposed as a destination trail due to its natural setting, overall character, continuity, and the high quality of the user experience. The trail interconnection with other regional-level trails – i.e., St. Croix Valley Regional Trail and Hastings – Red Wing Trail – and connection to local trail systems and Point Douglas Park add to its overall appeal and value as a destination trail.

Regional Trail Master Plan – General and Detailed Overview

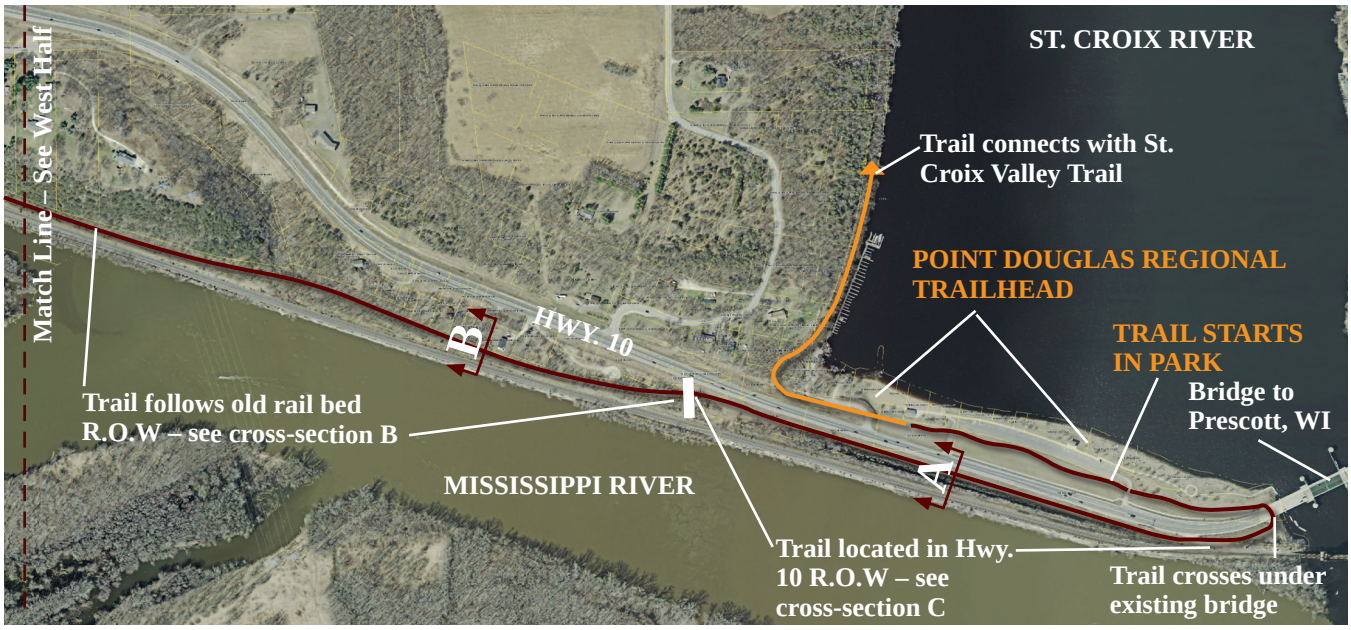
The trail will begin at Point Douglas Park, which is located on the St. Croix River.

The Point Douglas Regional Trail is approximately 2.5 miles long, beginning at Point Douglas Park on the east end, an established Washington County park along the St. Croix River that will become a designated regional trailhead. The trail also connects with the master planned St. Croix Valley Regional Trail and a walkway on the St. Croix River river bridge, which provides a direct link to Prescott's downtown area.

From the regional trailhead, the trail heads west, initially following the south side of the Highway 10 corridor until it ties into an old rail bed right-of-way previously acquired by Washington County. On the west end, the trail terminates at Highway 61, where it would connect with a potential future trail adjacent to the road that would extend to the south and provide a connection to downtown Hastings.

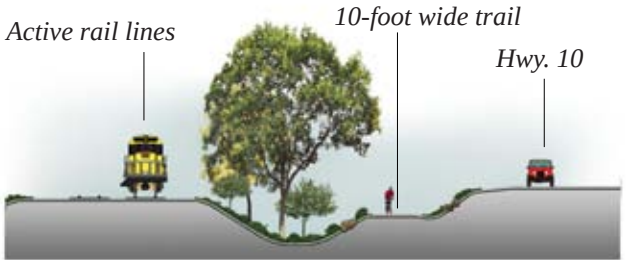
The overall trail corridor is illustrated on pages 22 and 23, along with several cross-sections highlighting the overall design character of the trail as it traverses from *east to west*. A detail description of the regional trailhead and each segment of the trail follow on pages 24 through 47, again in an east to west direction from the trailhead.

Overall Trail Route – East Half



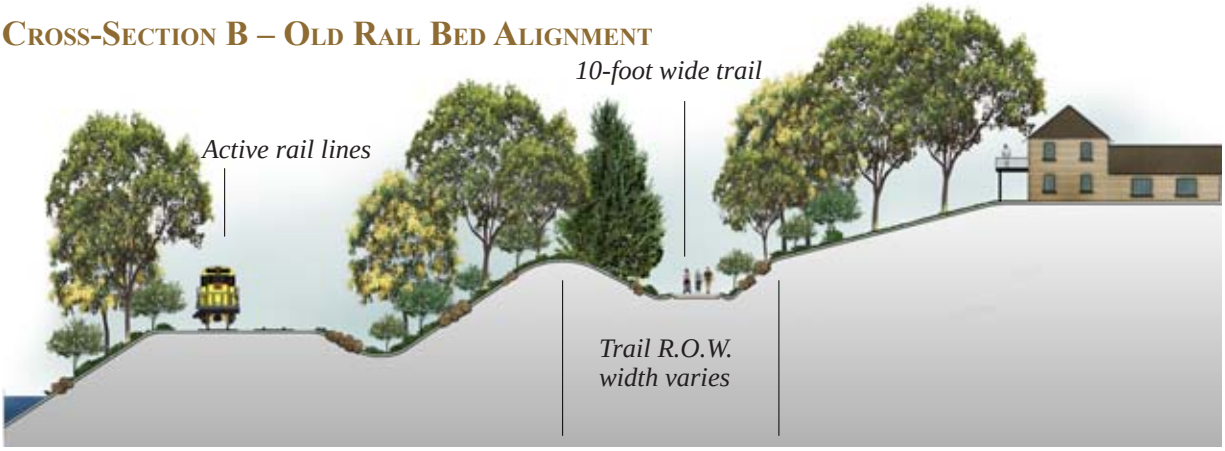
As illustrated, the trail starts at Point Douglas County Park, which will be redefined as a regional trailhead under the master plan and provide a variety of trailhead amenities, including restrooms, picnic tables, beach facilities, etc. From here, the trail crosses under the Hwy. 10 bridge and heads west, initially within the Hwy. 10 R.O.W. until it ties into the old rail bed previously acquired by Washington County.

Cross-Section A – Hwy. 10 R.O.W



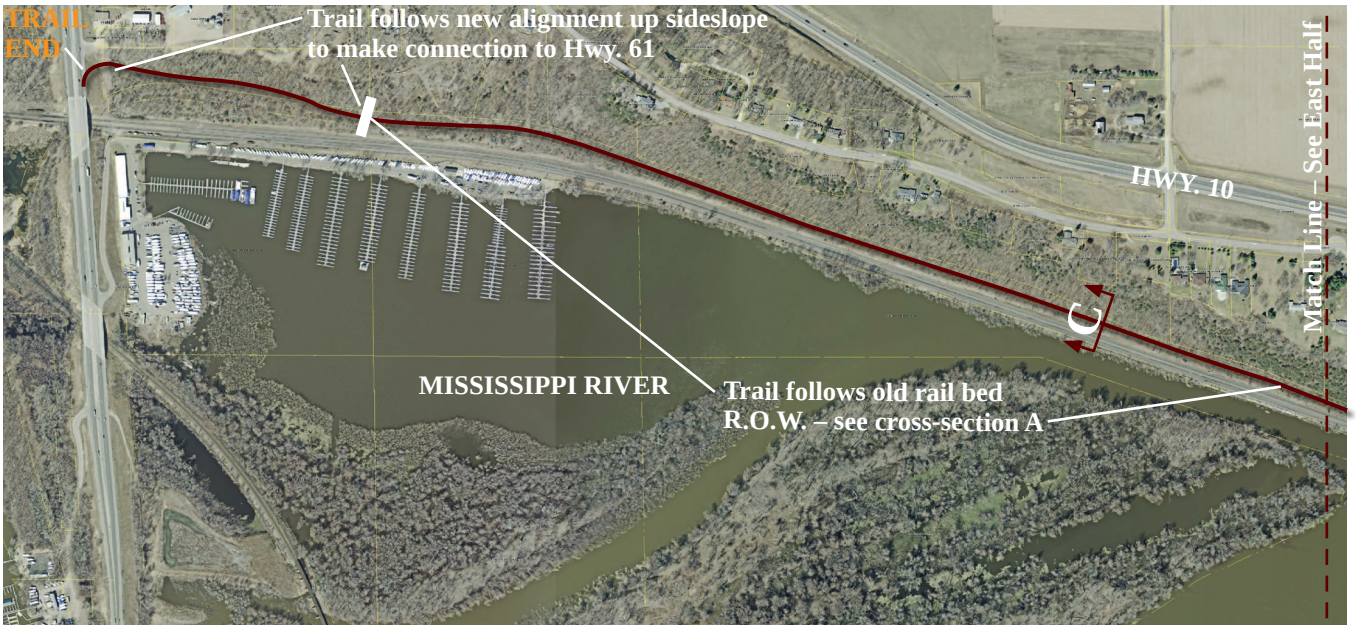
Initially, the trail will be located within the Hwy. 10 corridor R.O.W., where it will be benched in along the existing sideslope.

Cross-Section B – Old Rail Bed Alignment



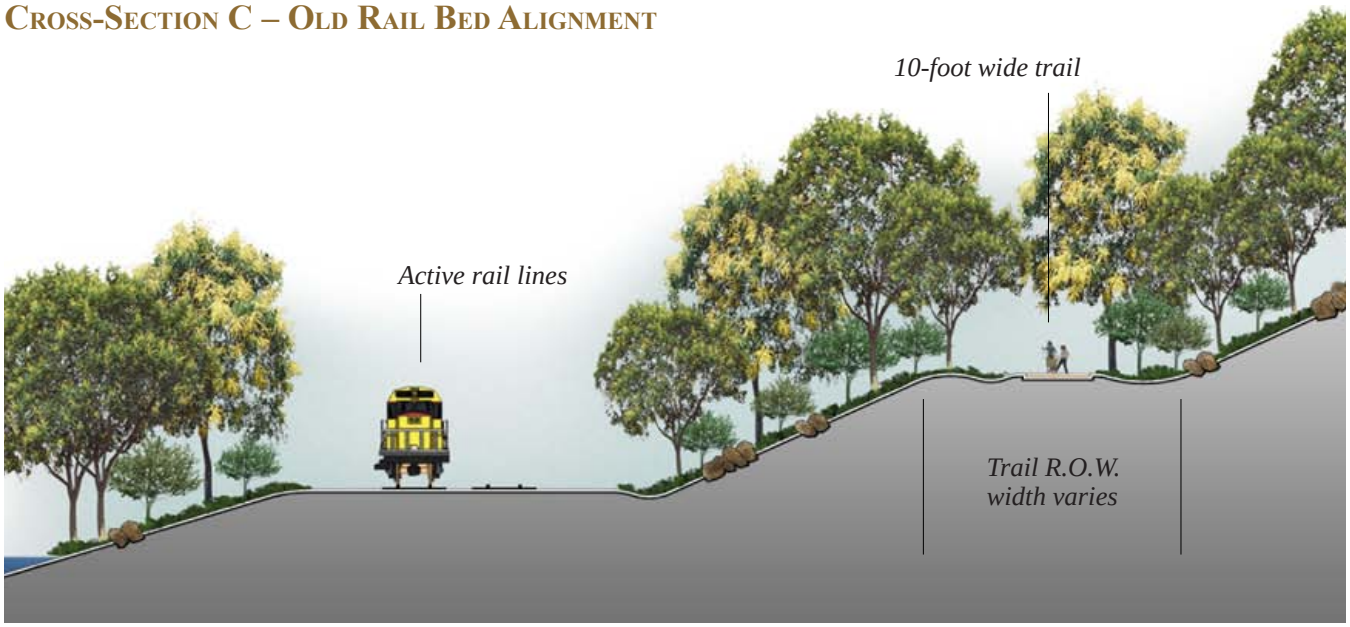
On the east, once the trail leaves the Hwy. 10 R.O.W, it will stay within the R.O.W. of the old rail bed previously acquired by Washington County. Here too, the grade separation between the trail and active railroad tracks helps minimize its visual impacts and leaves open views of the river. In three instances, the trail corridor runs adjacent to existing private properties with homes facing the trail. In these cases, grade changes and vegetation will be used to maintain a buffer.

Overall Trail Route - West Half



As illustrated, the trail ends at Highway 61, where it will connect with a potential future trail adjacent to the road that would extend to the south and provide a connection to downtown Hastings. As shown, approx. 1,000 lineal feet of trail deviates from the old rail bed corridor and traverses up a sideslope to make the connection with the trail along Highway 61.

Cross-Section C – Old Rail Bed Alignment



(Above) On the west end, the trail stays within the R.O.W. of the old rail bed previously acquired by Washington County. As illustrated, the grade separation between the trail and active railroad tracks helps minimize its visual impacts and leaves open views of the river.

(Above) The steep slopes and vegetation on the north side of the trail create a substantial buffer between the trail and residential properties on top of the bluff. (Right) Limestone rock outcrops along the corridor add to the appeal of the corridor and further enhance buffering.

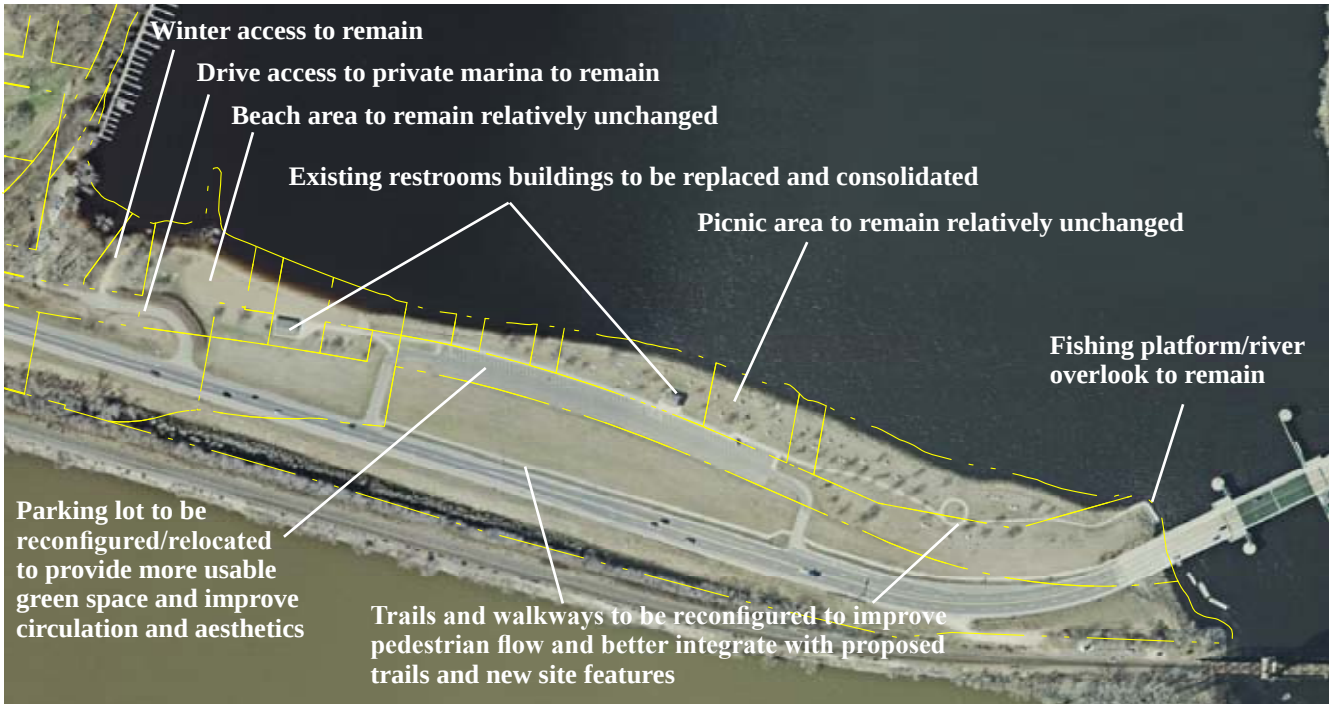
Point Douglas Regional Trailhead – Detail Description (1 of 6)

Under this master plan, Point Douglas County Park will become the designated regional trailhead for Point Douglas and St. Croix Valley Regional Trails. The regional trailhead will continue to provide a swimming beach and picnicking facilities, each of which are expected to remain popular value-added amenities.

Existing Features and Areas of Needed Upgrades

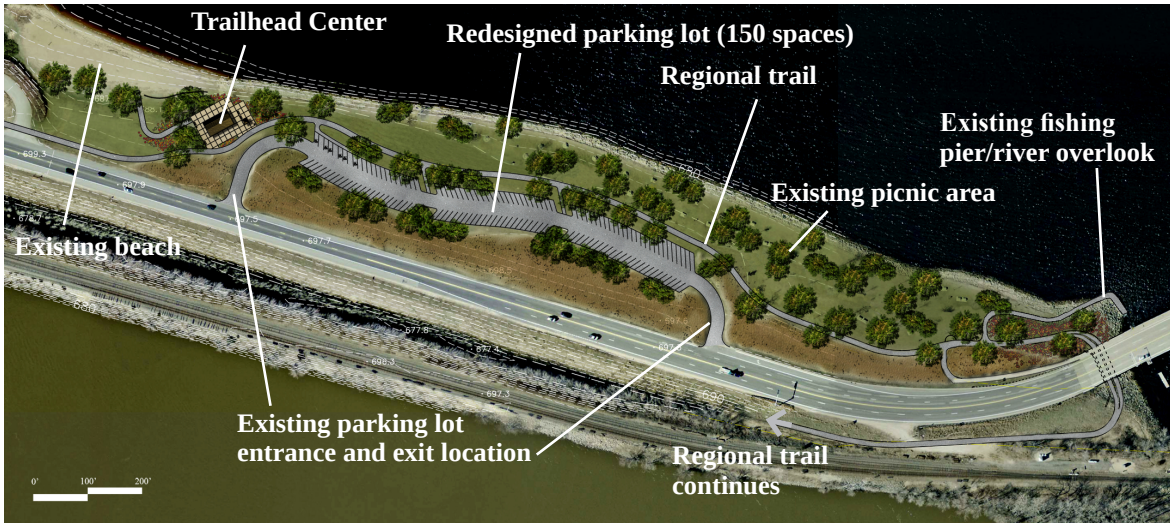
The following provides an overview of existing trailhead features along with proposed improvements to address aging facilities and accommodate new trailhead needs. (With much of the existing infrastructure being over 30 years old, some of the facilities – such as the restrooms buildings – do not meet desirable design standards.) The following aerial image illustrates current park features.

Overview of Key Features of Point Douglas Regional Trailhead



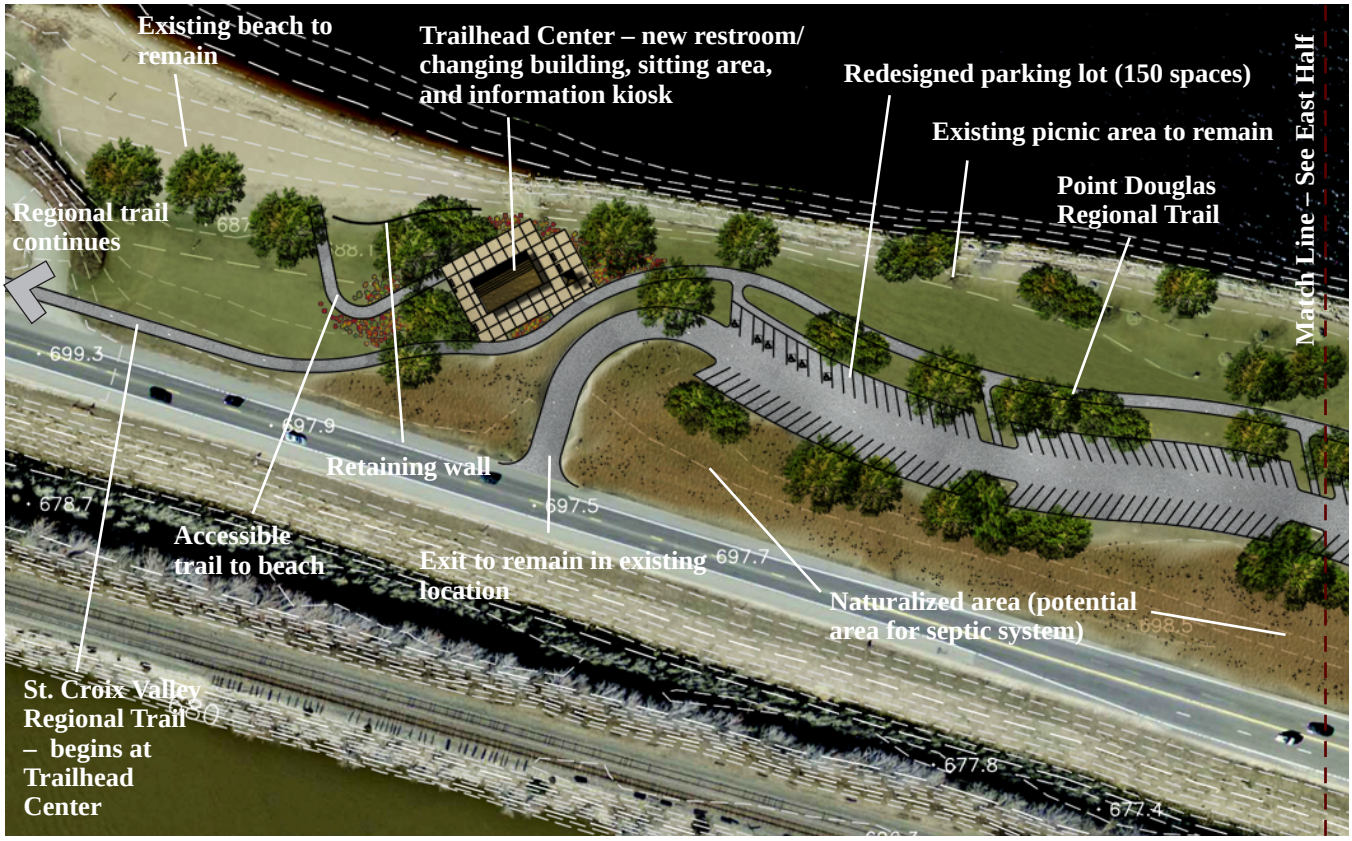
The master plan graphics below and on page 25 illustrate proposed improvements to the trailhead, which are subsequently followed on pages 26 through 29 by a more detailed description of each of the existing and proposed features.

Point Douglas Regional Trailhead - Overall Plan View

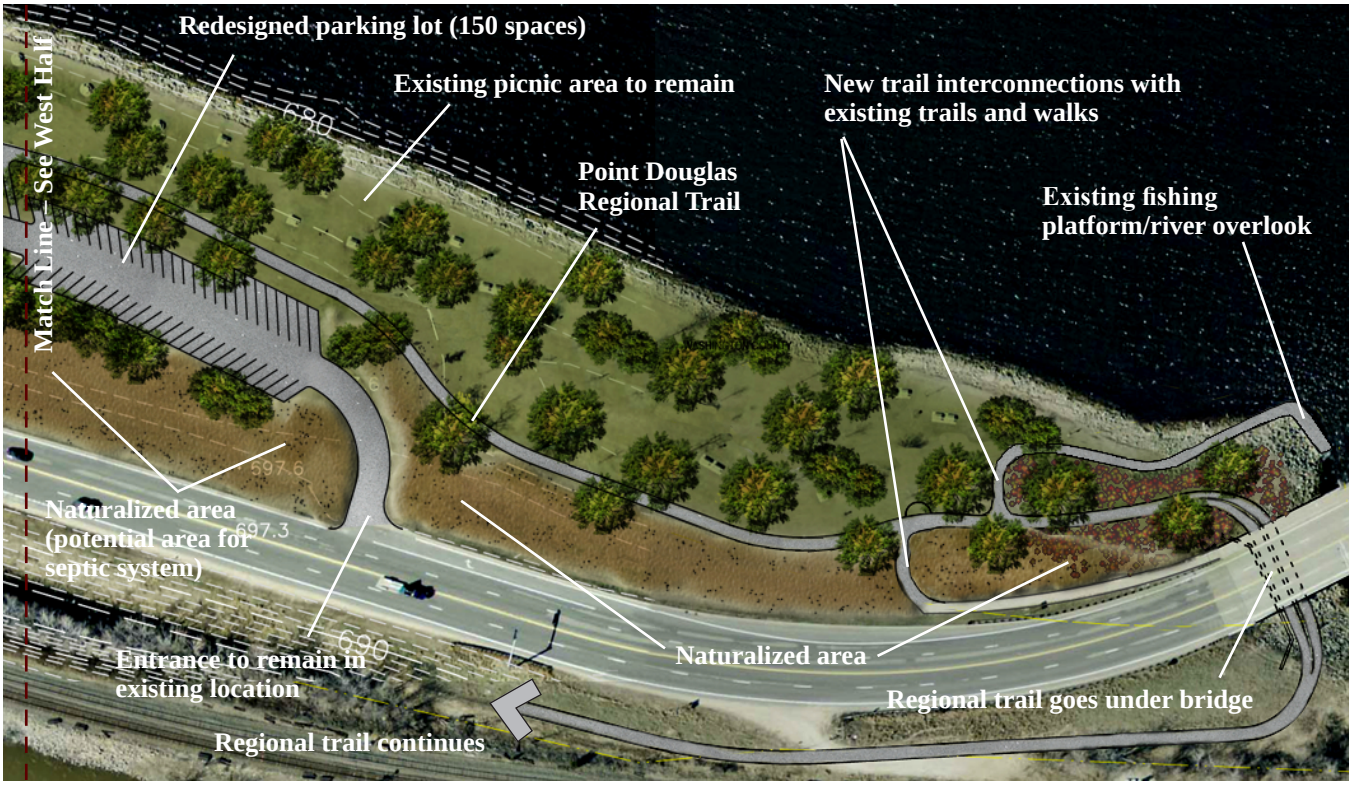


Point Douglas Regional Trailhead – Detail Description (2 of 6)

Point Douglas Regional Trailhead - West Half Plan View



Point Douglas Regional Trailhead – East Half Plan View



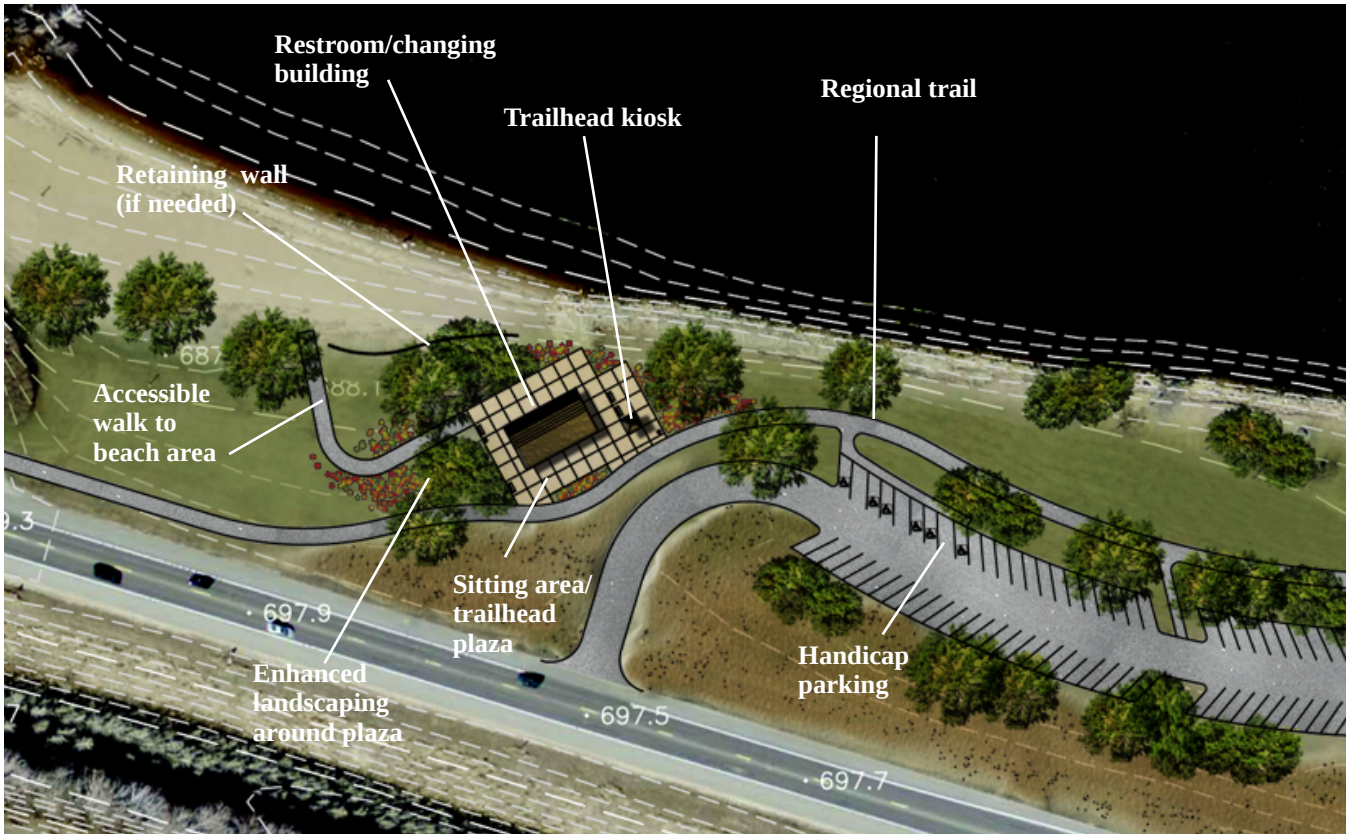
Point Douglas Regional Trailhead – Detail Description (3 of 6)

Trailhead Center

The Trailhead Center, which will consist of a new restroom/changing building, sitting area, and information kiosk, will replace the two existing restroom facilities. Each of these buildings are over 30 years old and in need of upgrading to be more appealing and reduce maintenance. By replacing them with one new restroom/changing room building, visitors will receive much improved service that will also be more cost effective to provide.

Both the existing restroom/changing room building by the beach (left) and the restroom building near the picnic area (right) will be replaced with one new building that will service the entire trailhead.

As the following illustrates, the trailhead center will be located on the western side of the park relatively near the beach.



The following considers the key features of this area.

Point Douglas Regional Trailhead – Detail Description (4 of 6)

Restroom/Changing Building

This facility will be located on the western end of the parking lot, where it will be in close proximity to the existing beach, which will remain. The building will be placed above typical flood elevations to avoid flooding concerns – which is currently a problem. An overall building size of 1,000 s.f. is anticipated and will accommodate:

- Male and female restrooms
- Two to three family-style restrooms/changing rooms
- Storage room, for park and trailhead items that will be stored onsite during the off-season
- Vending area, that can be secured during off hours
- Utility/mechanical room

Since this new building will replace the existing ones, an updated architectural style will be used that is more in keeping with the riverside setting.

Sitting Area/Trailhead Plaza

As illustrated on the last page, a hard-surfaced sitting area and trailhead plaza will be provided adjacent to the building as a place for trailhead users to gather, get information, and take a rest break. This area will include benches, an information kiosk, access to vending, and trash receptacles.

Septic System

One of the more challenging issues associated with the current and proposed restroom facilities is dealing with sewage treatment. Currently, holding tanks are provided for each of the buildings, which are pumped weekly during the season.

Optimally, the holding tank system will be replaced with a septic field system if an appropriate site can be found onsite. As illustrated on the trailhead master plan (pages 24 and 25), an optimal area for a septic field system is shown on the south side of the parking lot, which is as far away from the shoreline and main park use areas as possible. Key factors influencing the feasibility of this approach include suitability of soils, relative cost, and visual impact to the aesthetics of the park.

If a septic system is not reasonably feasible, a holding tank system will again be used, with the tanks sized to reduce the frequency of pumping during the season of use.

Parking Lot

As illustrated on the trailhead master plan (pages 24 and 25), the existing parking lot will be redesigned to provide more park space along the shoreline, which is especially limited on the western end of the current lot. Of equal importance, repositioning the parking lot will provide more room for the trail to be located closer to the shoreline and to avoid trail crossings of the entrance and exit drives. This is especially important here, where motorists coming and going from the parking lot can be distracted by Highway 10 traffic and the view of the river from the park. By avoiding these crossings, trail users will have a safer, more contiguous, and more enjoyable experience.

The overall size of the parking lot, which currently has 150 spaces, will remain close to the same size to avoid changing the location of the entrance and exit. In addition to typical parking stalls, approximately 8 longer spaces will continue to be provided for oversized vehicles, such as RVs.

Redesigning the parking lot will address existing drainage and grade issues. This is especially the case on the western end, where higher spring runoff often flows across the beach and washes away the sand, which then needs to be replaced. Aesthetic improvements will also be made to the parking lot, such as making it more curvilinear and breaking up its mass with landscaped island bump-outs.

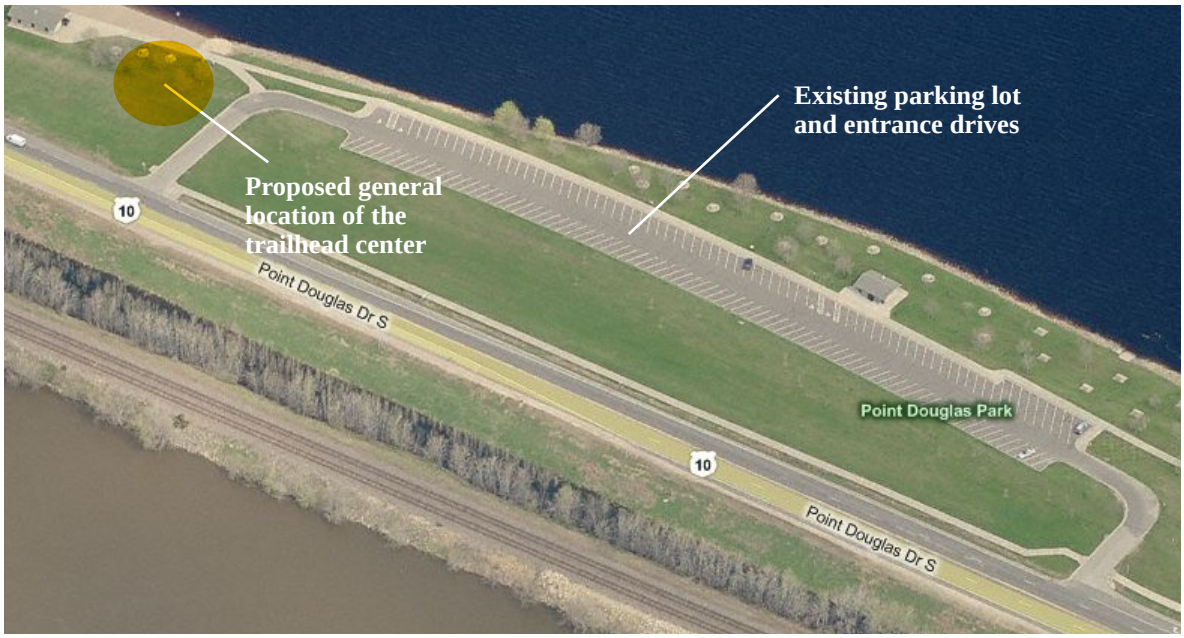
Note that if the site for the septic system is unsuitable or cost prohibitive (as shown on the trailhead master plan), the parking lot can be located even further south to open up more park space on the shoreline side.

Note also that relocation of the parking lot will require acquiring Mn/DOT-owned property along Highway 10. (This is considered in more detail on page 51.)

The existing parking lot is bit monolithic and aesthetically uninteresting. It will be redesigned to be more curvilinear. Planting bays will also be used to breakup its mass.

Point Douglas Regional Trailhead – Detail Description (5 of 6)

Side note: As shown, the new trailhead center building is purposefully located to work with the existing parking lot should phasing be required due to land acquisition or budget issues.



Regional Trail Characteristics

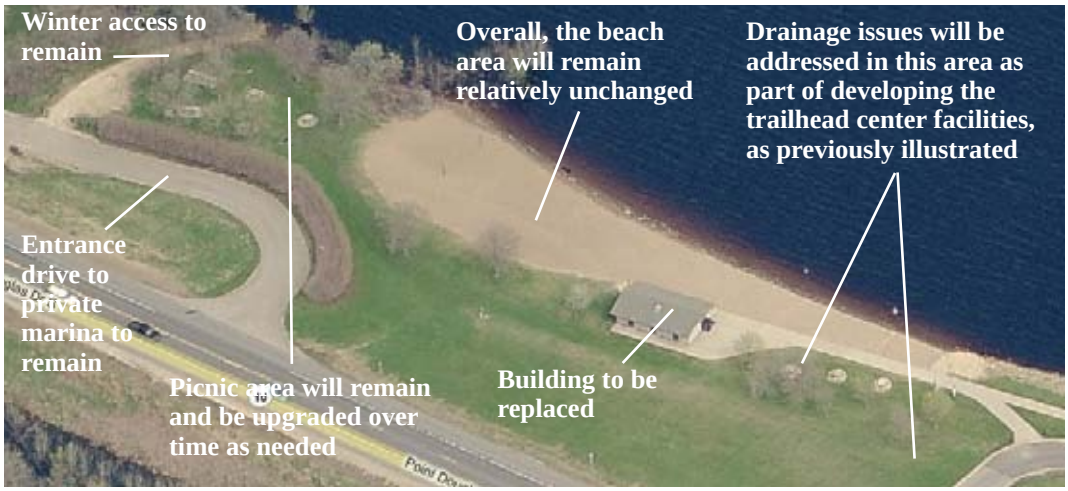
As illustrated on the trailhead master plan (pages 24 and 25), the regional trail will traverse through the park on the north side of the parking lot, assuming it is relocated further to the south than its current location. In this new location, trail users will not have to cross the parking lot drives when traversing through the area from either direction. The trail will also be aesthetically appealing by offering uninterrupted views of the river, beach area, and park.

The design for the trail will be consistent with regional trail standards as defined later in this section. Most notably, it will be asphalt surfaced and 10 feet wide.

Beach Area Improvements

Overall, the beach area will remain relatively unchanged, with the exception of addressing drainage issues from the parking lot and providing an accessible walkway from the trailhead center down to the beach. Otherwise, improvements will include replacing worn-out picnic tables and other site amenities as they occur over time.

As shown on the aerial image, the winter access to the river will remain, as will the entrance drive that services a private marina.



As shown, beach area improvements will focus on drainage issues and accessibility.

Point Douglas Regional Trailhead – Detail Description (6 of 6)

During the summer, the beach has been, and is expected to continue to be, a popular recreational amenity.

Picnic Area Improvements

The picnic area that stretches out along the shoreline has proven very popular on summer weekends and evenings, largely due to the interesting and pleasant views of the river, boating activity, and social setting. Once the regional trails are developed, it is expected that this area will become even more popular. Fortunately, over 30 picnic tables are already provided, which should be adequate to meet day-to-day needs even with the addition of the trail.

As with the beach area, the picnic area will remain relatively unchanged. Over time, picnic tables, grills, and benches will be replaced as they wear out.

The existing picnic area that stretches out along much of the shoreline has proven to be very popular and will remain relatively unchanged.

The great views of the river and boating activity are part of the reason the picnic area is so popular.

Landscaping Improvements

Enhancing landscaping to better frame views of the river and generally improve the overall aesthetic of the trailhead is proposed. Adding more trees and low maintenance shrubs is particularly important to improving the character of the trailhead. Relocating the parking lot further to the south will open up additional green space along the shoreline, which will be landscaped with trees and new turf areas.

If a septic system is provided, trees and shrubs will be used to visually buffer the area. This is especially the case if a mound system were required, which is more visibly intrusive than systems built into the existing grade.

The landscaping scheme will also take into consideration flooding issues, which will affect the type and location of plant materials.

Landscaping will be used to improve the overall aesthetic of the trailhead over time.

Trail Segment #1 – Detail Description and Alignment Information (1 of 4)

Segment Description / Overall Character

As the map illustrates, the Point Douglas Regional Trail route begins at the previously described regional trailhead. As shown (and previously described), the trail will connect with the master planned St. Croix Valley Regional Trail, as well as a walkway on the river bridge that provides a link to Prescott's downtown area.

As previously described, the trailhead will provide parking, restrooms, and other amenities. As the various illustrations highlight, the trail goes under the existing bridge structure to get across Highway 10. As illustrated on page 32, trail-related development under the bridge focuses on providing safe passage for trail users, along with opportunities for casual viewing of the river. The area under the bridge will not be specifically designed as overlook or viewing area due to concerns about congestion and impeding travel.

A key design goal will be to provide the visual cues that alert bicycles to proceed slowly while riding under the bridge, and to respect the fact that other users will be in the area walking and viewing the river. As the illustrations highlight, the deck area under the bridge is widened to allow ample room for trail users to move through the under-bridge area. Pavement patterns defining riding lanes will also be used to enhance safety by encouraging trail users to stay on the proper side of the trail.

Development Issues and Constraints

The most challenging aspect of developing this trail segment is building the under-bridge structure. As the illustrations highlight, the intent is to keep the deck elevation as high as possible to minimize spring-time flooding issues while still maintaining at least a 10-foot clearance under the bridge deck. The other main development issue is constructing the trail within the Highway 10 right-of-way. As the photos and illustrations highlight, space is limited on the south side of the road and sideslope is at 3:1, which will require some additional grading to provide a bench for the trail. The designated wetlands along the corridor will also have to be protected, with any direct impact/encroachment requiring mitigation consistent with local regulatory requirements. Fortunately, the trail will be located in the right-of-way for only about 2,400 feet, where it then starts to follow the old rail bed alignment.

Right-of-Way and Private Property Factors

Locating the trail within the limited right-of-way of Highway 10 will require Mn/DOT approval for final design and construction to ensure trail development is consistent with typical standards. Mn/DOT will also require a limited use permit for trail segments located in the right-of-way. There are no private property issues along this segment of the trail.

Looking west from park exit.

Looking east from park entrance.

Point Douglas County Park is developed, with site amenities including restrooms, picnic shelters, picnic tables, beach facilities, etc. As defined in this section, the park will become a major trailhead with improved facilities.

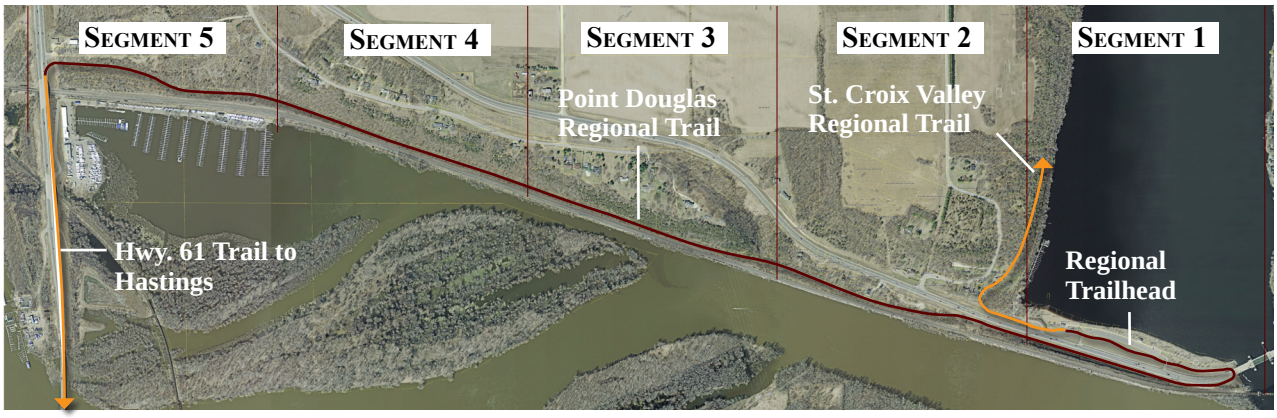
Looking east toward river bridge.

Looking south under bridge.

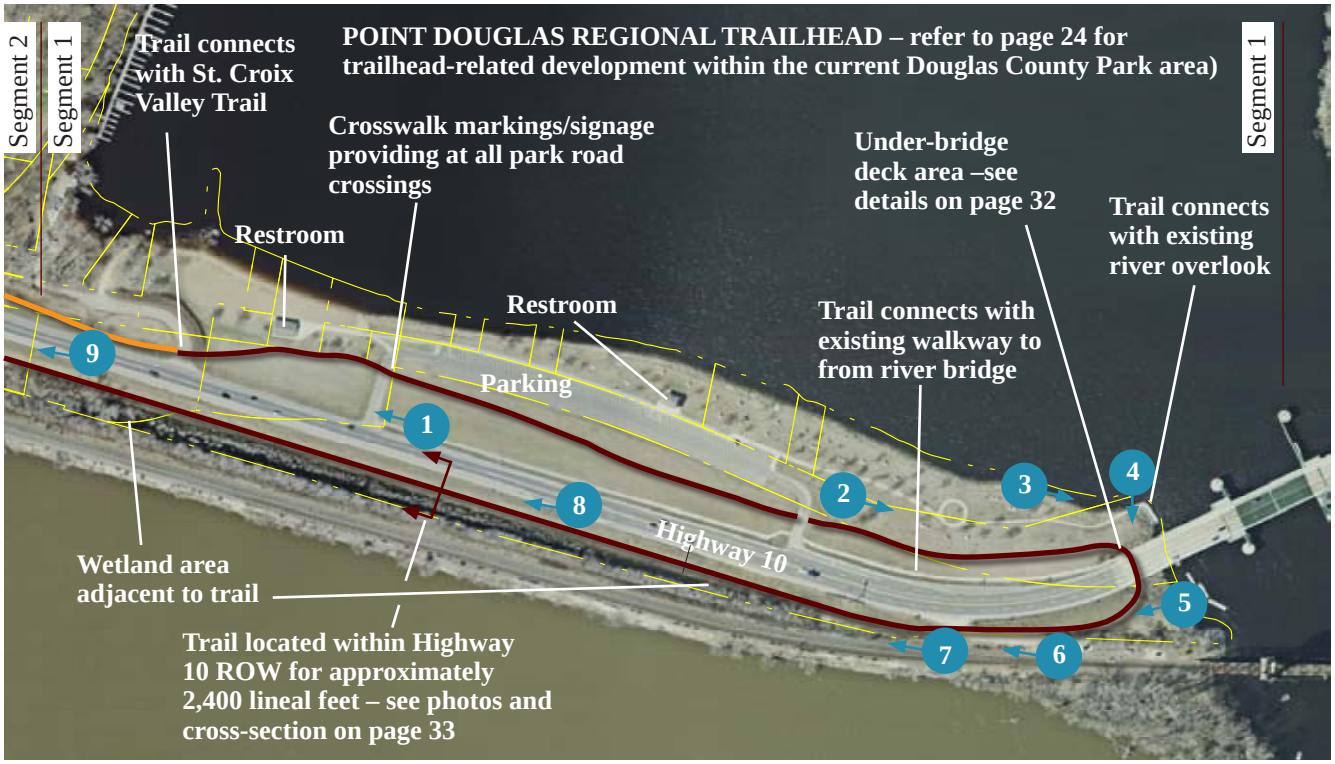
The trail will go under the existing Highway 10 river bridge structure, and connect with a small existing river overlook/fishing platform (photo 3).

Trail Segment #1 – Detail Description and Alignment Information (2 of 4)

Overall Trail Corridor



Segment Map #1



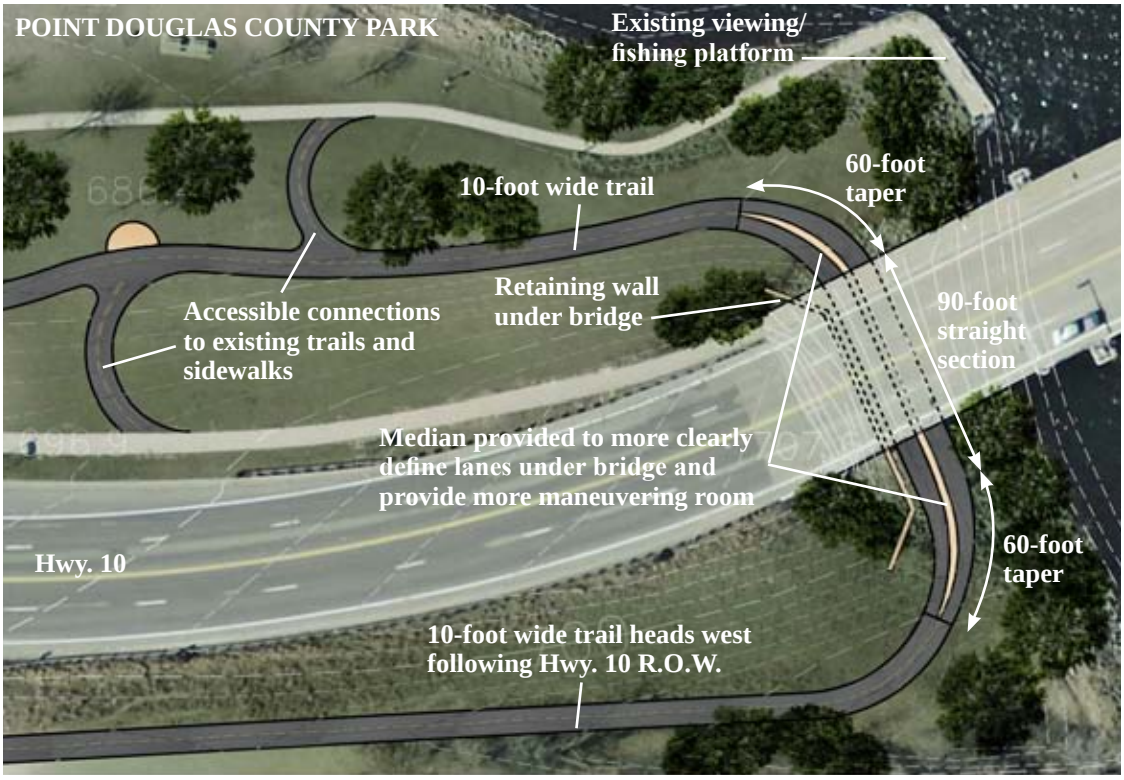
Looking west along ROW.

Looking west along ROW.

Once under the bridge, the trail heads west within the Highway 10 ROW (photo 6). Initially, the trail needs to cross over a utility entrance road (photo 5).

Trail Segment #1 – Detail Description and Alignment Information (3 of 4)

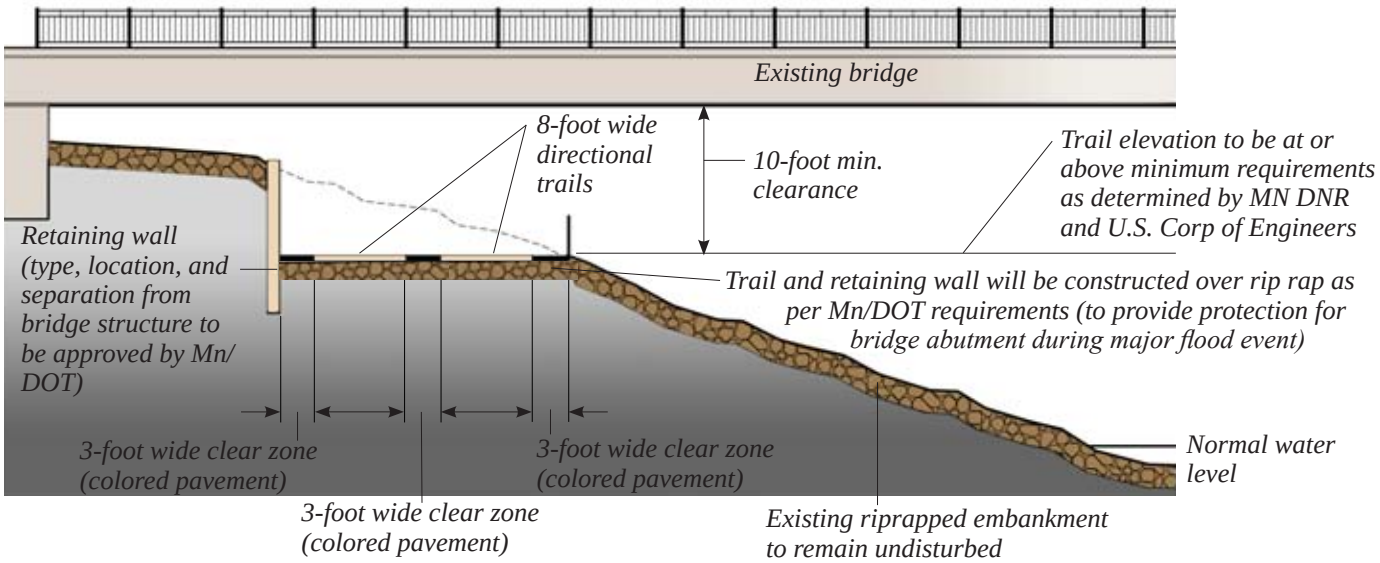
Under Bridge Trail Character Sketch – Plan View



As the plan illustrates, the trail widens under the bridge to provide more maneuvering room and improve safety. (Note: A viewing area is not provided to avoid congestion under the bridge as bicyclists and pedestrians pass through. A connection is made to the existing viewing/ fishing platform for this purpose.)

All trail connections will be at an accessible grade.

Under Bridge Trail Character Sketch – Cross-Section



Important note: *Washington County will meet the requirements of other agencies that have various forms of direct and indirect river-related jurisdiction. This includes, but is not necessarily limited to, the following:*

- **MN DNR** – *river corridor development issues, including disturbing the river shoreline*
- **U.S. Army Corp of Engineers/ U.S. Coast Guard** – *issues related to river navigation and flooding*
- **Mn/DOT** – *issues related to scour protection of bridge embankment and abutment, and stormwater management within Mn/DOT rights-of-way*

Trail Segment #1 – Detail Description and Alignment Information (4 of 4)

Highway 10 R.O.W. Photos

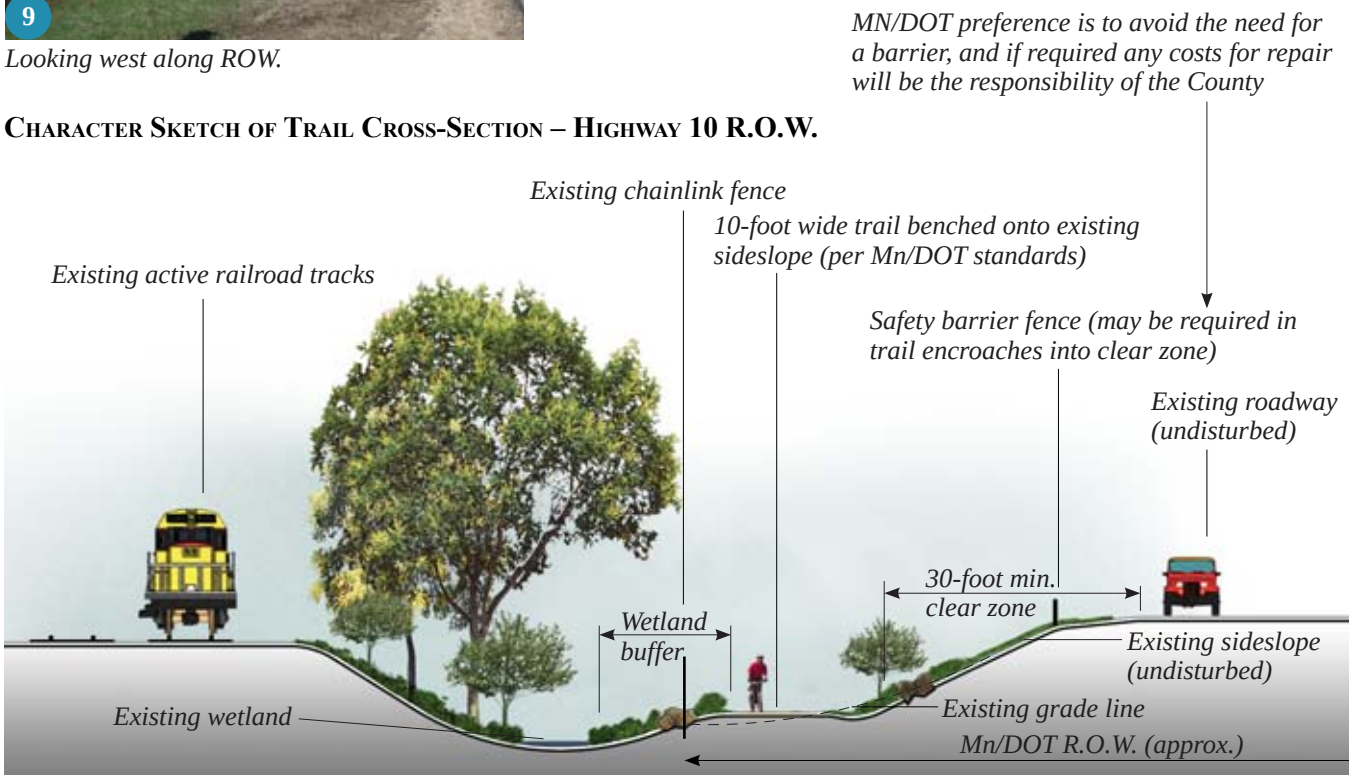
Looking west along ROW.

Looking west along ROW.

Looking west along ROW.

As these photos highlight, the trail would be located in the Highway 10 R.O.W. from the river to the connection with the old rail bed, a distance of approximately 2,400 lineal feet. As photo 8 illustrates, standing water in the ditch is a periodic issue. The lower ditch area is also a designated wetland, and will require protection and/or mitigation if any impacts occur in constructing the trail.

Character Sketch of Trail Cross-Section – Highway 10 R.O.W.



Within the Hwy. 10 corridor, the trail will be benched in along the existing sideslope, as illustrated. As shown, the trail will be placed outside of a 30-foot clear zone, which is from the edge of the outside drive lane (i.e., white line). If this standard cannot be met due to limited R.O.W. or wetland encroachment issues (in select sections, as shown on the segment map), additional measures may be required, including the installation of safety barrier, as shown.

Note that designated wetlands found along the corridor will have to be protected, with any direct impact/encroachment requiring mitigation consistent with local regulatory requirements.

Trail Segment #2 – Detail Description and Alignment Information (1 of 6)

Segment Description / Overall Character

As the map illustrates, the trail route leaves the Highway 10 right-of-way corridor once it reaches the old rail bed right-of-way previously acquired by Washington County. Once onto the old rail bed, the trail heads west virtually uninterrupted until it approaches Highway 61, a distance of approximately 2.5 miles. After leaving the highway right-of-way, the trail separates from the roadway and transitions into a more visually appealing and much less noisy corridor along the river. Although active rail lines lie to the south between the trail and the river, the tracks are at a lower elevation and are, for the most part, not visually distracting unless a train is actually passing through. The steeper sideslopes coupled with vegetation between the trail and the tracks provide an effective buffer between the two for much of this segment.

Initially, the trail passes by several homes that are on adjacent private property. Once past the third home, the sideslopes on the north side steepen and get higher. From this point forward, all of the homes are located high above the trail grade and are visually screened from it by vegetation and topographic change.

Development Issues and Constraints

On the north side of Highway 10, making the connection from the St. Croix Valley Regional Trail to the regional trailhead (at Point Douglas County Park) will pose a few technical and grading issues due primarily to the elevation of the old rail bed and the Highway 10 right-of-way ditch line. Regrading the end of the old rail bed and addressing some drainage issues associated with the road right-of way are the two main development issues, as is the generally limited space available to build the trail in this area. Given these constraints, some use of retaining walls and other structures may be needed to make the transition from the existing rail grade down to and into Point Douglas Park area. The photos and character sketches on page 36 illustrate this issue in greater detail.

Note that one option initially considered was building an underpass or pedestrian bridge across Highway 10 to make the connection between the two trails. However, due to challenging grades, drainage issues, costs, and the potential for disruption of highway traffic, the consensus was that heading east through the park and then going under the river bridge was a more appealing (from a user standpoint), technically viable, and cost effective approach.

On the south side of Highway 10, trail development along the old rail bed corridor is relatively straight forward and unencumbered. The most pressing issue will be effectively buffering the three private homes that are adjacent to the trail corridor to maintain a sense of separation for the benefit of both the trail user and the property owners. Of the three, the first home encountered is the closest to the trail and poses the most challenge in terms of separation and buffering. Although the next two homes are also visible from the trail, maintaining a sense of separation and privacy is less of an issue. The photos and cross-sections on pages 37, 38, and 39 illustrate the relationship between the trail and these three homes.

Once west of these three proprieties, the trail essentially follows the old rail grade, with views of the river to the south and wooded, steeper slopes to the north. Since all of the old rails, ties, and ballast have long been removed, developing the trail along the corridor is relatively straight forward and will require a limited amount of grading. The most important technical concerns will be to ensure proper drainage, which will include upgrading several drainage culverts, and vegetative management, and managing stormwater runoff.

Right-of-Way and Private Property Factors

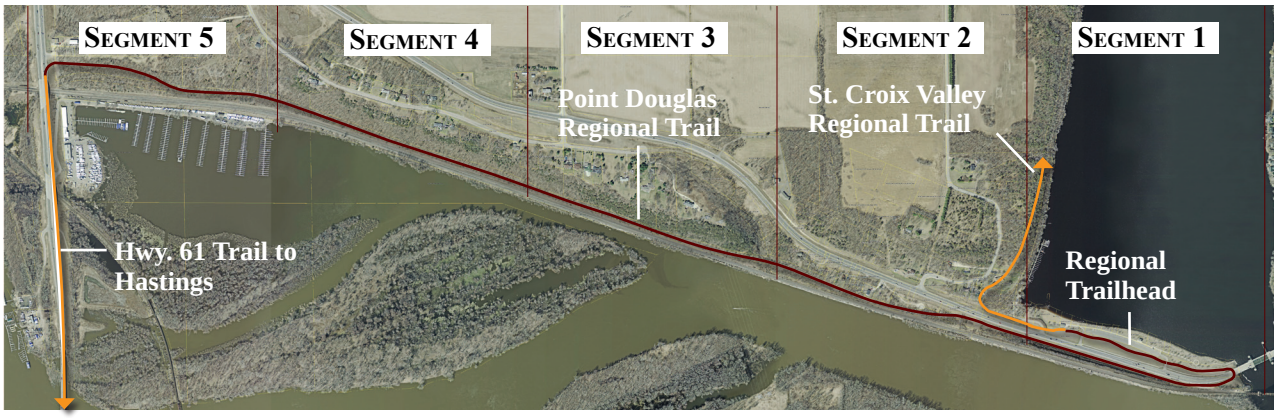
The trail will be built within the right-of-way for Highway 10 or the already acquired old rail bed right-of-way. Otherwise, providing a buffer between the three homes and the trail along this segment is the most pressing private property issue.

Looking east from park entrance.

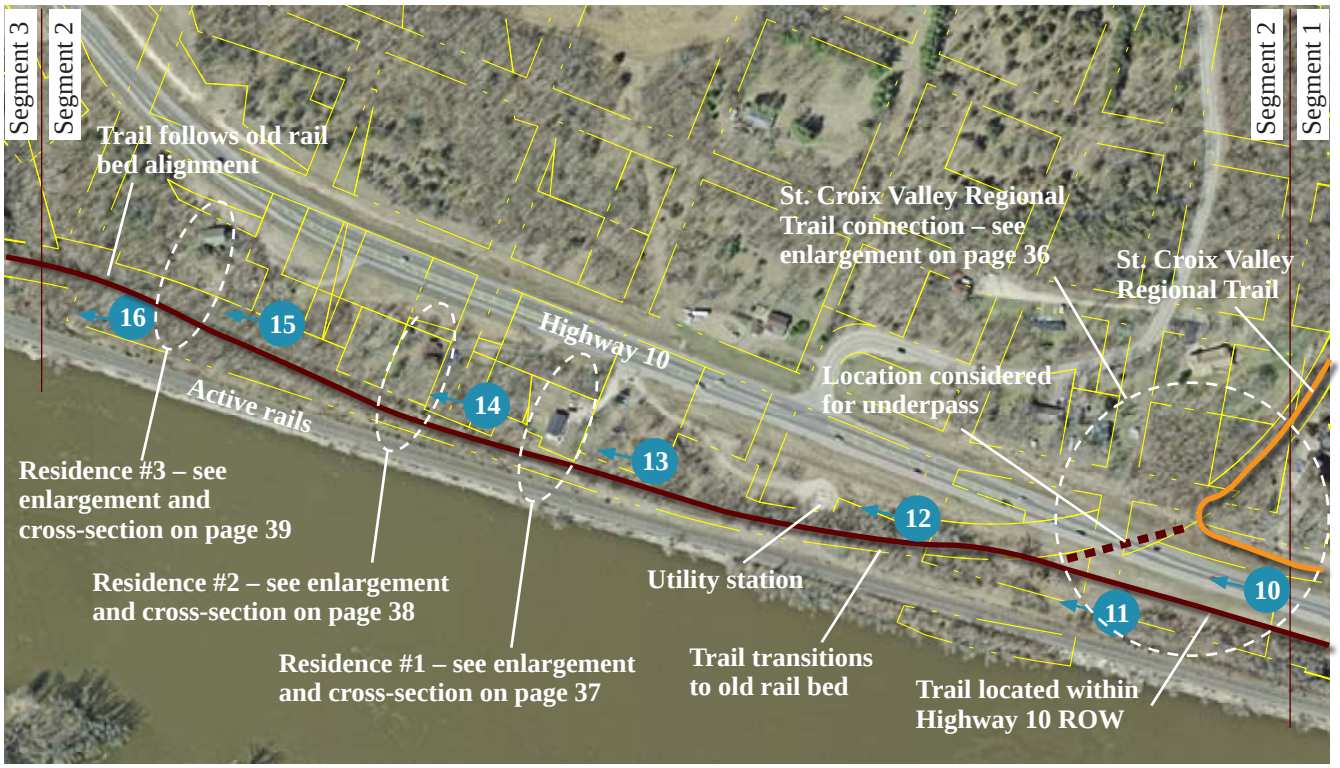
Starting with this segment, the trail follows an old rail bed, all of which already owned by Washington County.

Trail Segment #2 – Detail Description and Alignment Information (2 of 6)

Overall Trail Corridor



Segment Map #2



Looking west along ROW.

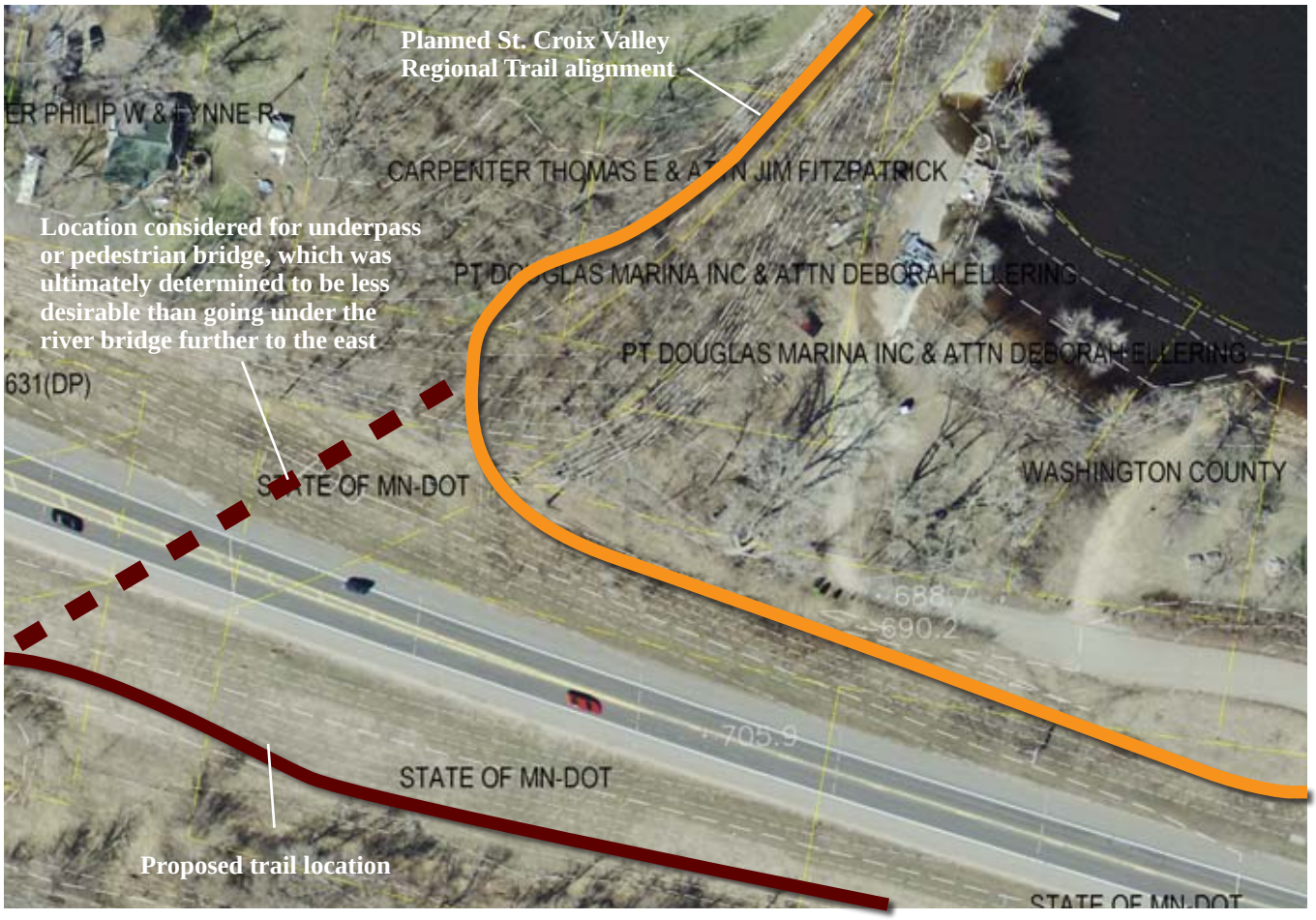
Looking west along ROW.

(Left) The transition from the highway right-of-way to the old rail bed corridor is straight forward and not technically difficult.

(Right) Trail passes along a gas utility station that will not affect its alignment and can be screened with vegetation.

Trail Segment #2 – Detail Description and Alignment Information (3 of 6)

St. Croix Valley Regional Trail Connection – Aerial Image and Site Photos

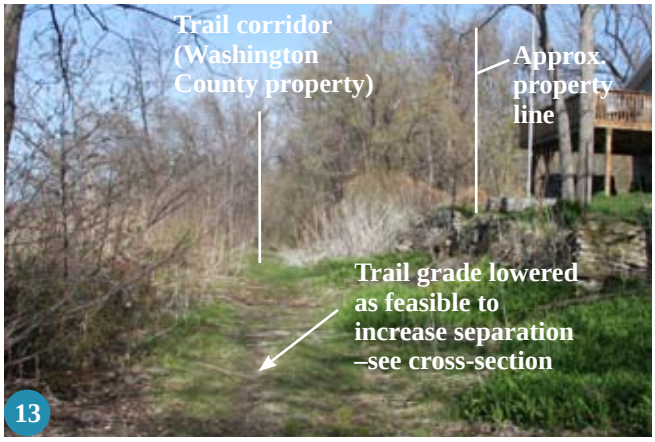


Under this master plan, the St. Croix Valley Trail will be stay on the north side of Highway 10 and connect with this trail in Point Douglas County Park. Other options considered was to construct an underpass or pedestrian bridge across Highway 10 at the location illustrated above to connect the trails. Ultimately, the underpass option was eliminated due to challenging grades, drainage issues, costs, and the potential for disruption of highway traffic. It would also be a less appealing user experience than the planned route under the existing river bridge.

Trail Segment #2 – Detail Description and Alignment Information (4 of 6)

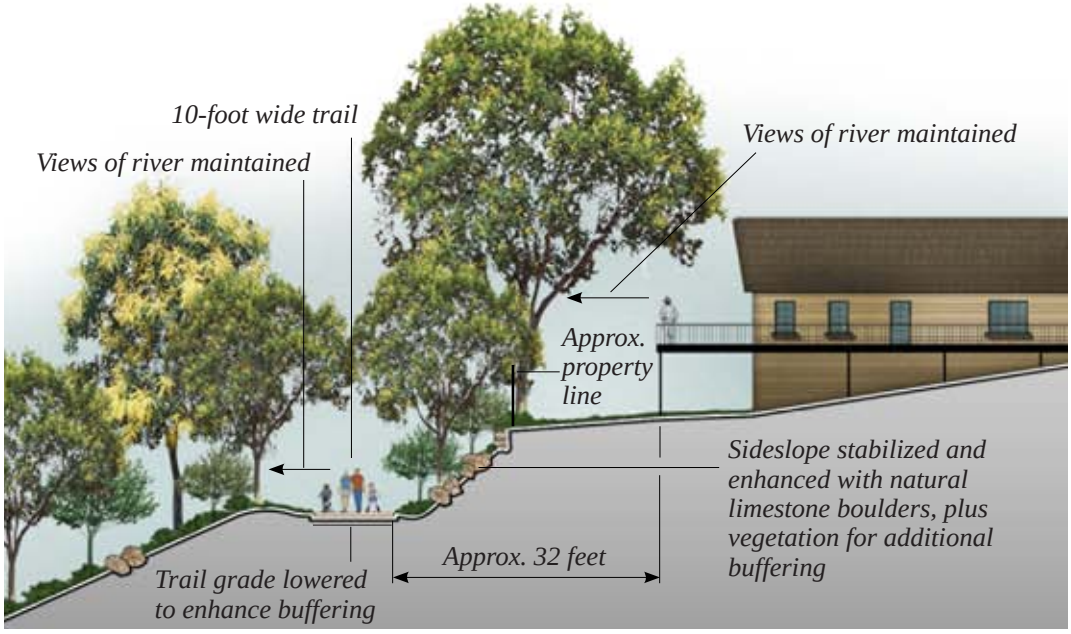
Private Residence #1 – Detail Layout and Photos

View of home from trail, initial view, looking west.



View of home from trail, closer view, looking west.

Private Residence #1 – Character Sketch of Trail Cross-Section

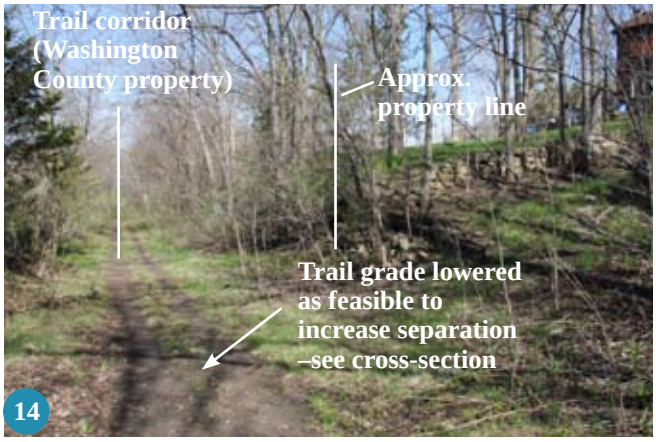


The first home encountered along the trail corridor poses the most challenge in terms of maintaining a sense of separation and buffering. This will be accomplished by lowering the trail grade a couple of feet to create additional vertical separation, stabilizing the sideslope with limestone boulders, and adding select vegetation. (See Trail Design Standards and Features *on page 48 for additional information on trail design.)*

Trail Segment #2 – Detail Description and Alignment Information (5 of 6)

Private Residence #2 – Detail Layout and Photos

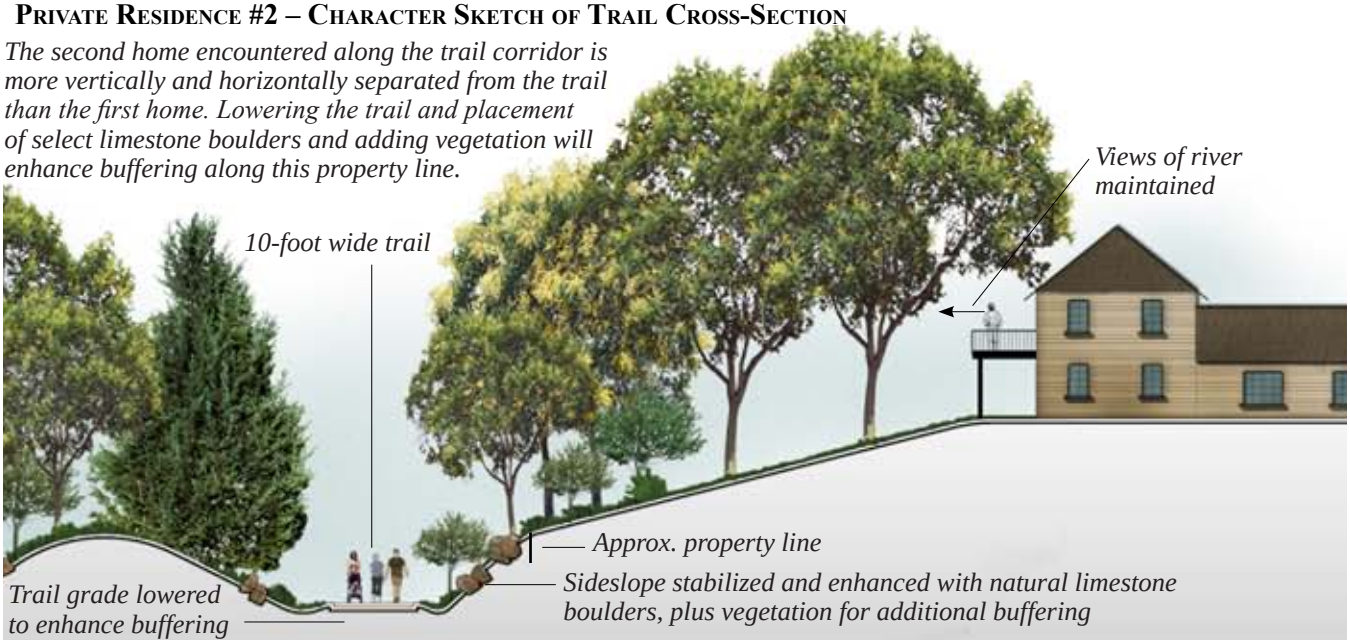
View of home from trail, initial view, looking west.



View of home from trail, closer view, looking west.

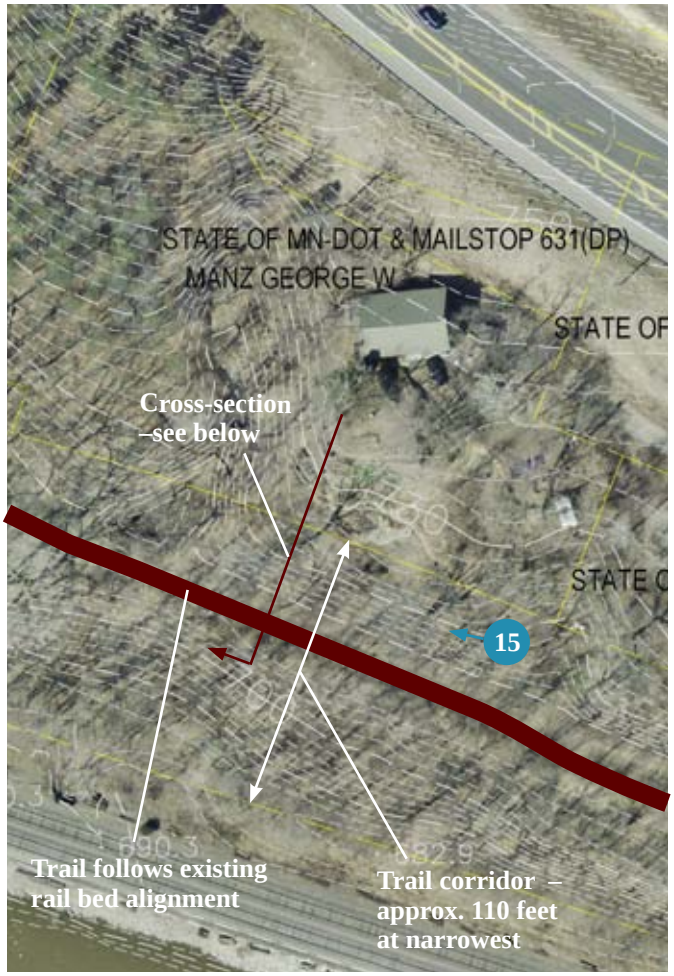
Private Residence #2 – Character Sketch of Trail Cross-Section

The second home encountered along the trail corridor is more vertically and horizontally separated from the trail than the first home. Lowering the trail and placement of select limestone boulders and adding vegetation will enhance buffering along this property line.



Trail Segment #2 – Detail Description and Alignment Information (6 of 6)

Private Residence #3 – Detail Layout and Photos

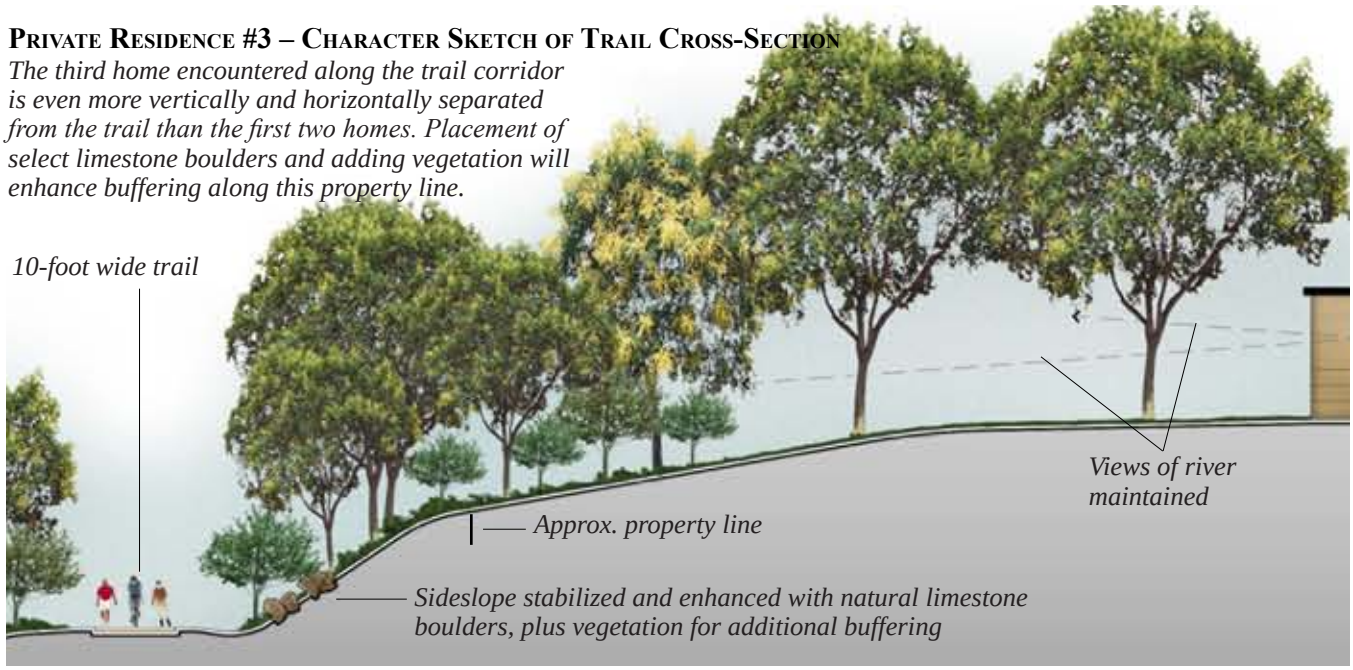


View of home from trail, initial view, looking west.

View of home from trail, closer view, looking west.

Private Residence #3 – Character Sketch of Trail Cross-Section

The third home encountered along the trail corridor is even more vertically and horizontally separated from the trail than the first two homes. Placement of select limestone boulders and adding vegetation will enhance buffering along this property line.



Trail Segment #3 Detail Description and Alignment Information (1 of 2)

Segment Description / Overall Character

As the map illustrates, the trail route continues west along the old rail bed, with the bluff line on the north side continuing to get higher and the homes on top further away from the trail corridor. All of the homes along this segment are visually screened from the trail by vegetation and topographic change.

Several hundred feet of limestone outcrops of varying height are found on the north side of trail corridor along this segment, adding to the visual appeal of the corridor. Although the horizontal separation between the trail and active rail lines is reduced along this segment, the tracks remain considerably lower than the trail elevation. Along with vegetation, the grade difference continues to buffer the trail from the active rails, making it less imposing than might otherwise be the case. Relatively wide open views of the river and backwater areas are available along this segment.

Development Issues and Constraints

From a technical standpoint, improving a number of culverts, making sure that drainage and stormwater management issues are addressed, and verifying that an old bridge abutment structure adjacent to the trail is structurally sound are the key issues. None of these technical issues should pose a major constraint on trail development, although each will require additional evaluation during the design development phase. The photos on page 41 illustrate some of these issues in greater detail.

Right-of-Way and Private Property Factors

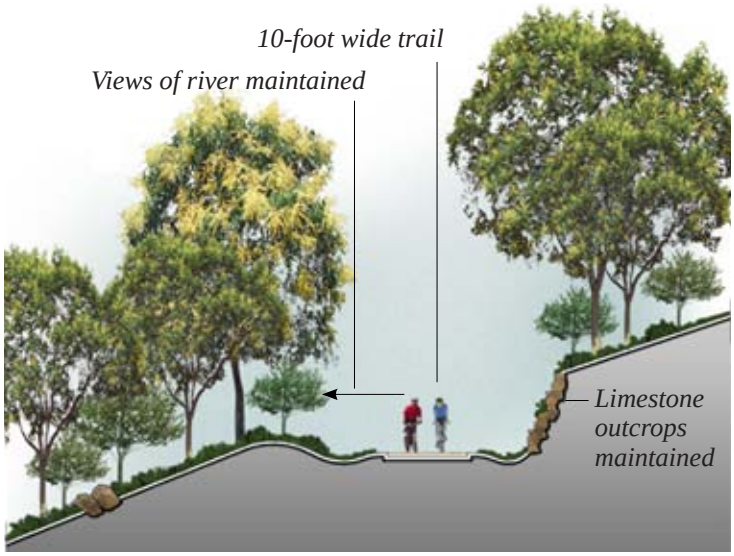
The trail will be built within the old rail bed right-of-way previously acquired. Impacts on adjoining private properties are minimal given that all of the homes are well-away from the trail corridor up on the bluff. The steeper slopes and vegetation on the north side of the trail enhance the buffering between the trail and private homes.

Looking west down the trail corridor

Looking west down the trail corridor

(Left) The limestone outcrops along this segment add to the appeal of the trail corridor. (Right) Although the active rail lines get closer to the trail along this segment, the grade difference and vegetation provide a reasonable buffer while still allowing views of the river.

Character Sketch of Trail Cross-Section – Typical This Segment



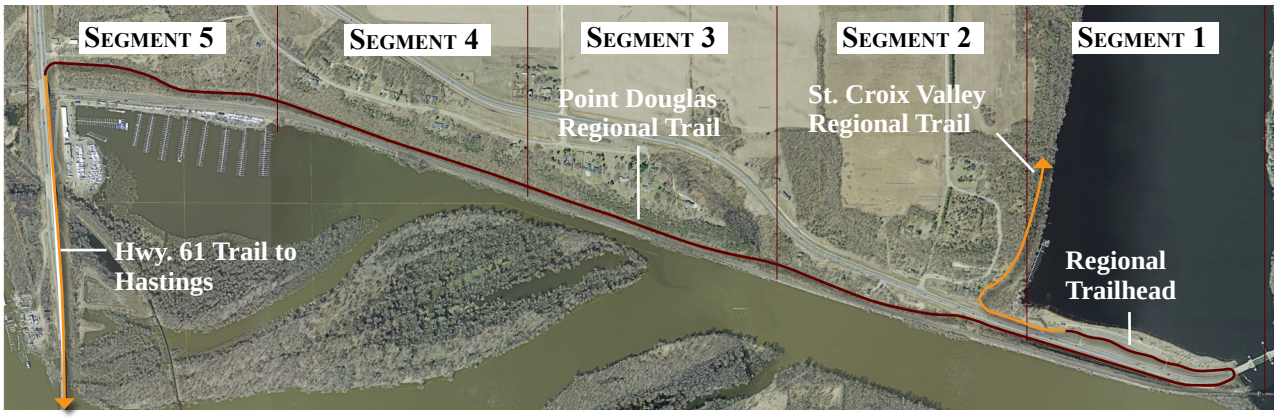
One of the more interesting features of this trail segment are the limestone outcrops, which enhance the natural character of the corridor.

Since the active rail lines are considerably lower than the trail, views of the river will be maintained.

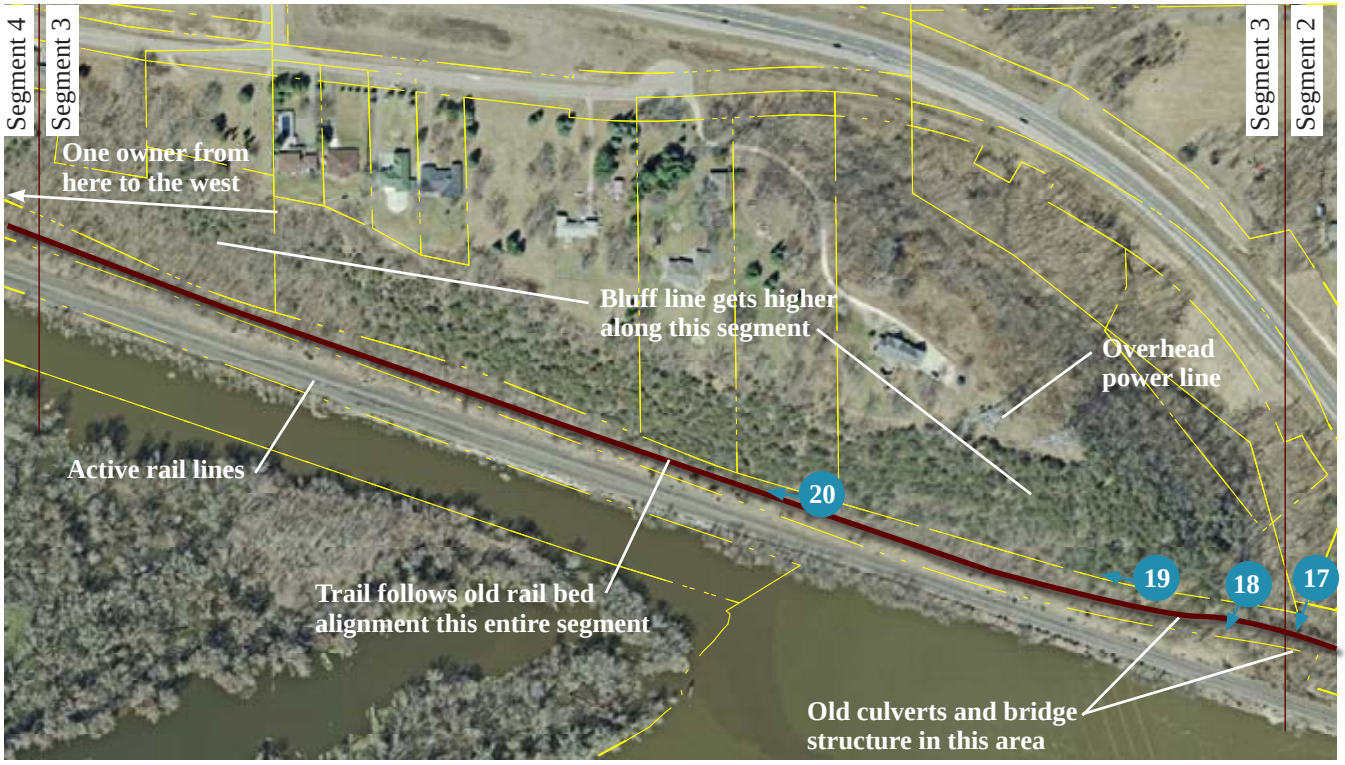
Since the homes along this segment a located on top of the bluff, buffering between the trail is not an issue. Note, however, that maintaining vegetation along the trail was important residents to ensure the area stays natural.

Trail Segment #3 Detail Description and Alignment Information (2 of 2)

Overall Trail Corridor



Segment Map #3



Existing concrete culvert.

Part of old bridge structure adjacent to the trail.

As photos highlight, a number of old drainage or other structures are found along the corridor, none of which pose any major development constraints or cost implications.

Trail Segment #4 Detail Description and Alignment Information (1 of 2)

Segment Description / Overall Character

As the map illustrates, the trail route continues west along the old rail bed, with the bluff line on the north side remaining well above the trail corridor. As with the last segment, all of the homes along this segment are visually screened from the trail by vegetation and topographic change.

Although the limestone outcrops are less frequent than in segment #3, the sideslopes and vegetation on the north side of the trail and views of the river on the south side continue to make this segment visually appealing. The separation between the trail and active rail lines remains the same as segment #3, with the tracks still remaining considerably lower than the trail elevation. Here too, vegetation and grade difference will continue to buffer the trail from the active rails. Relatively wide open views of the river and backwater areas continue to be available, along with view of the large marina further to the west.

Development Issues and Constraints

From a technical standpoint, improving a few culverts and making sure that drainage and stormwater management issues are addressed are the key issues, none of which posing a major constraint on trail development. The photos on page 43 illustrate some of these issues in greater detail.

Right-of-Way and Private Property Factors

The trail will be built within the old rail bed right-of-way previously acquired. Impacts on adjoining private properties are minimal given that all of the homes are well-away from the trail corridor up on the bluff. The steeper slopes and vegetation on the north side of the trail enhance the buffering between the trail and private homes.

Looking west down the trail corridor

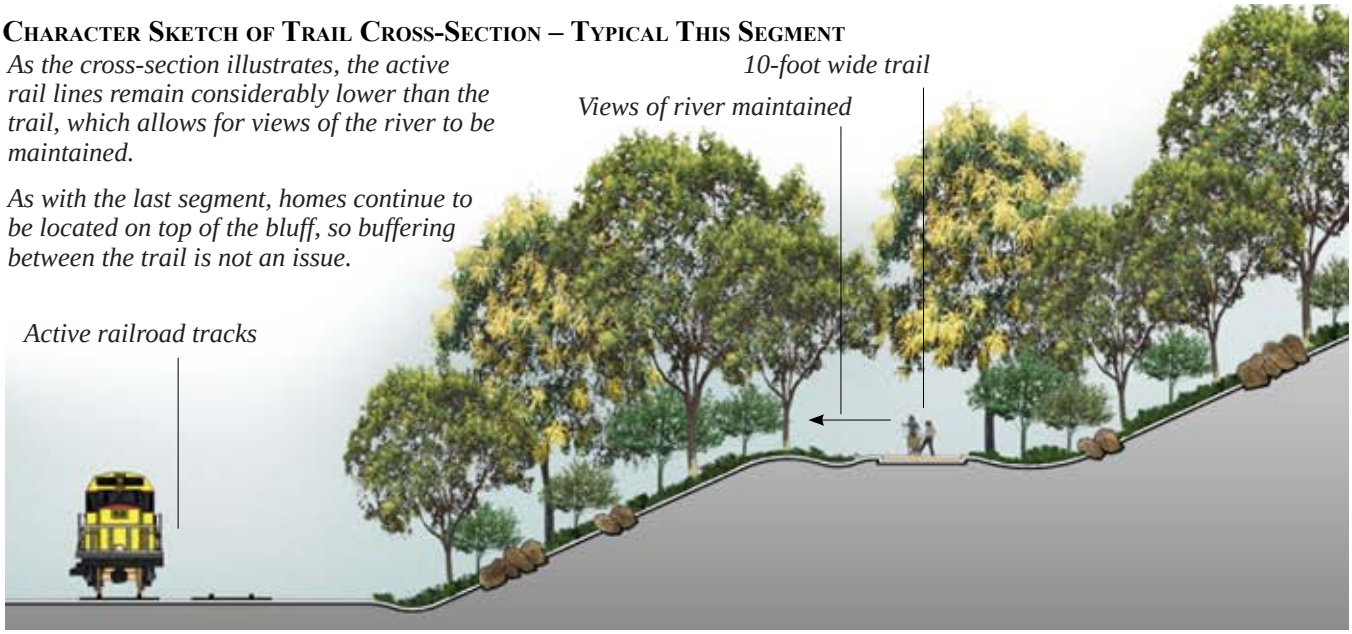
Looking west down the trail corridor

(Left) The grade difference and vegetation continue to provide a reasonable buffer between the trail and the active rails, and allow for views of the river. (Right) Limestone outcrops of segment #3 give way to vegetated sideslopes further along this segment.

Character Sketch of Trail Cross-Section – Typical This Segment

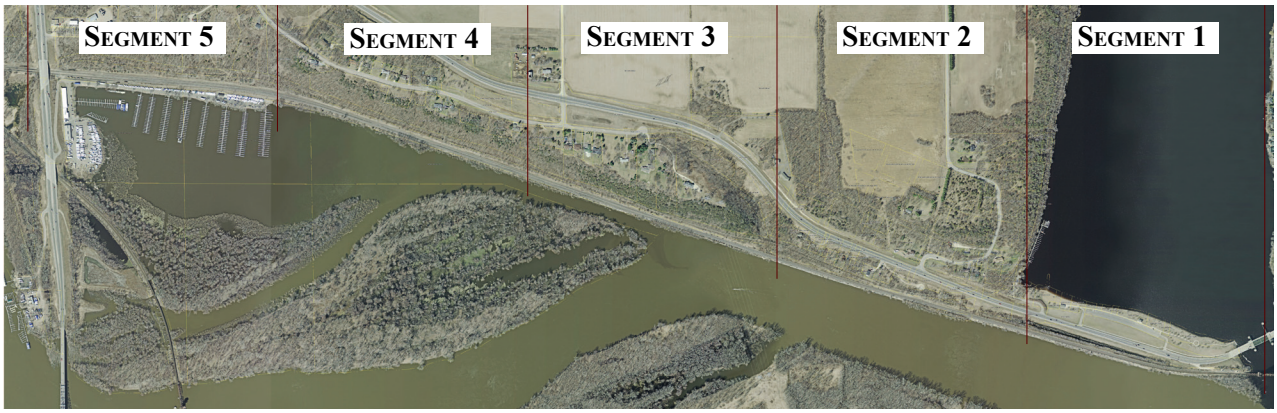
As the cross-section illustrates, the active rail lines remain considerably lower than the trail, which allows for views of the river to be maintained.

As with the last segment, homes continue to be located on top of the bluff, so buffering between the trail is not an issue.

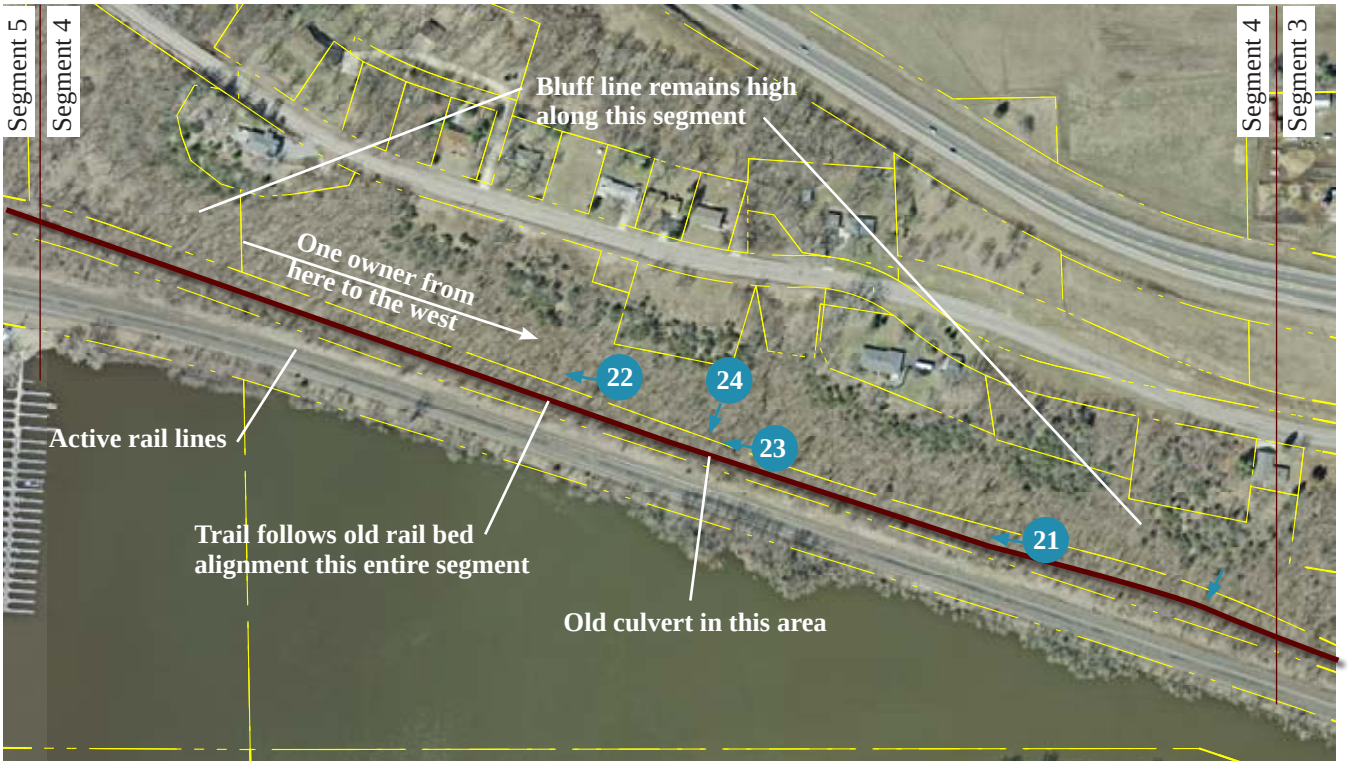


Trail Segment #4 Detail Description and Alignment Information (2 of 2)

Overall Trail Corridor



Segment Map #4



Looking west down the trail.

Looking into old culvert.

As photos highlight, a number of old drainage or other structures are found along the corridor, none of which posing any major development constraints or cost implications.

Trail Segment #5 Detail Description and Alignment Information (1 of 4)

Segment Description / Overall Character

As the map illustrates, the trail route continues west along the old rail bed following the base of the bluff line. As with previous segments, topographic change and vegetation screen the trail from properties on the north side of the trail, although this less of an issue since fewer homes are built on top of the bluff along this segment.

As with the others, this segment continues to be visually appealing. The large marina south of the trail adds interest and diversity to the trail experience. The separation between the trail and active rail lines remains about the same as the last segment. Relatively wide open views of the river and the marina operation are available along this entire segment.

Development Issues and Constraints

Connecting the Point Douglas Trail to a proposed trail along Highway 61 is the most significant development issue on the west end of trail. After considering several options, traversing the side-slope for approximately 1,000 lineal feet as shown on the map was determined to be the most advantageous approach to accommodate the 30-foot grade change between the trail grade and Highway 61 bridge elevation – even though it does require the acquisition of approximately 7 acres of property as show on page 39. Key factors in favor of this approach include:

- Maintaining a desirable trail grade – which, at less than 5 percent, ensures that the trail will meet all accessibility criteria
- User appeal – a linear trail at a modest grade tends to be more appealing to users than a ramp-type structure, which is the other option considered
- Cost-effective – benching the trail into the side hill is more cost-effective than building a structural ramp system, even when factoring in potential costs for land acquisition

The detail plan and trail cross-sections on page 46 illustrate this approach in greater detail.

Constructing a ramp system down the Highway 61 embankment to the trail grade was the other main option considered. Although technically feasible, this approach offered some important limitations:

- Less user appeal – ramp systems tend to be less liked by users (too slow, grades are often steeper, tight corners, limited maneuvering space, etc.)
- Relative cost – ramp systems often require structural retaining walls and handrails, adding considerably to cost

The photos on page 47 illustrate various ramp-type approaches should this option require additional consideration.

Other technical issues are similar to those of previous segments, including improving a few culverts and making sure that drainage and stormwater management issues are addressed. Again, none of these pose a constraint on trail development.

Right-of-Way and Private Property Factors

With the exception of the last 1,000 feet, the trail will be built within the previously acquired old rail bed right-of-way. Impacts on adjoining private properties are minimal along given that any homes or businesses are well-away from the trail corridor up on top of the bluff. The steeper slopes and vegetation on the north side of the corridor continue to effectively buffer the trail from private homes or businesses.

As previously noted, building the last 1,000 feet of trail will require additional acquisition of land with limited development value due to the lack of building pads of usable size (most of the site consists of a sideslope down to the trail corridor).


25

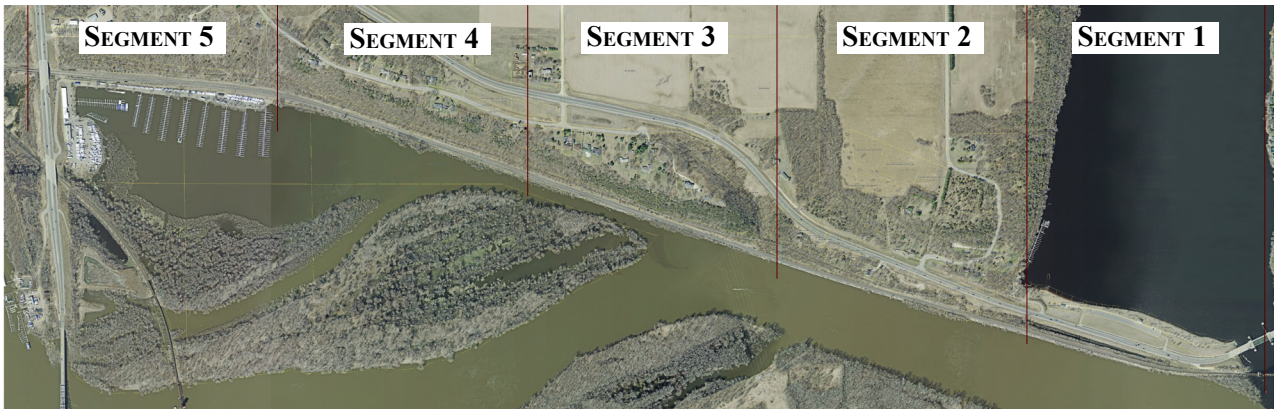
Looking west at Hwy 61 bridge over BNSF, the grade change between the old rail bed and shoulder along Highway 61 is around 30 feet.

26

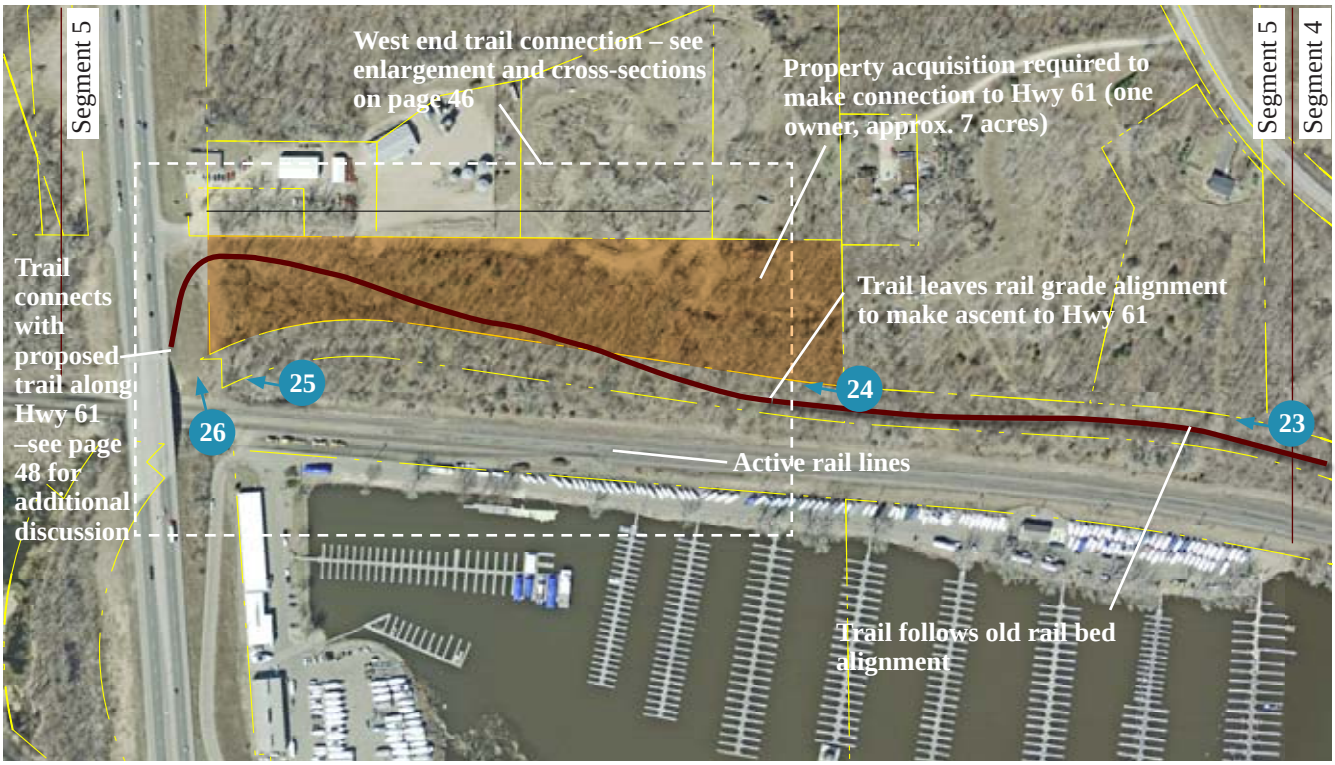
Looking north along Highway 61 from old rail grade highlights grade challenges.

Trail Segment #5 Detail Description and Alignment Information (2 of 4)

Overall Trail Corridor



Segment Map #5

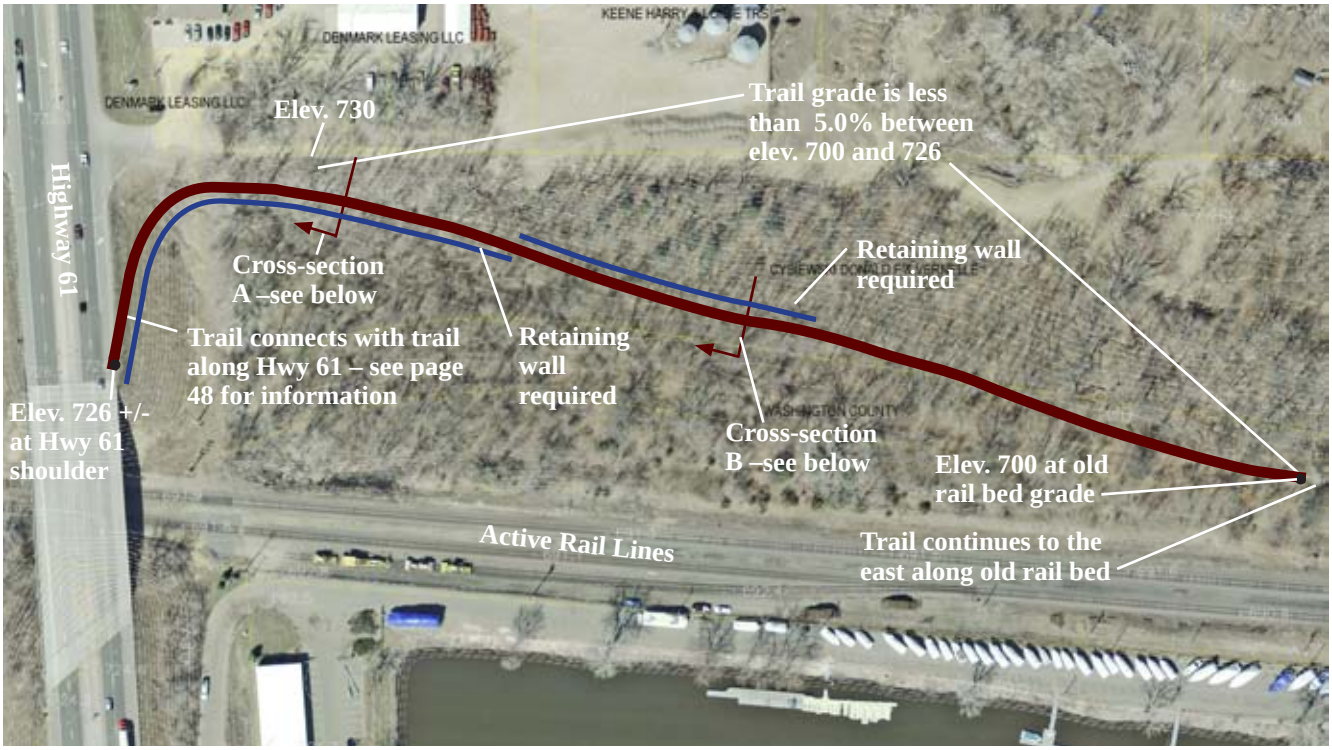


Looking west down the trail.

As photo highlights, the trail will leave the old rail grade in order to make the ascent up to Highway 61, a grade difference of 30 feet.

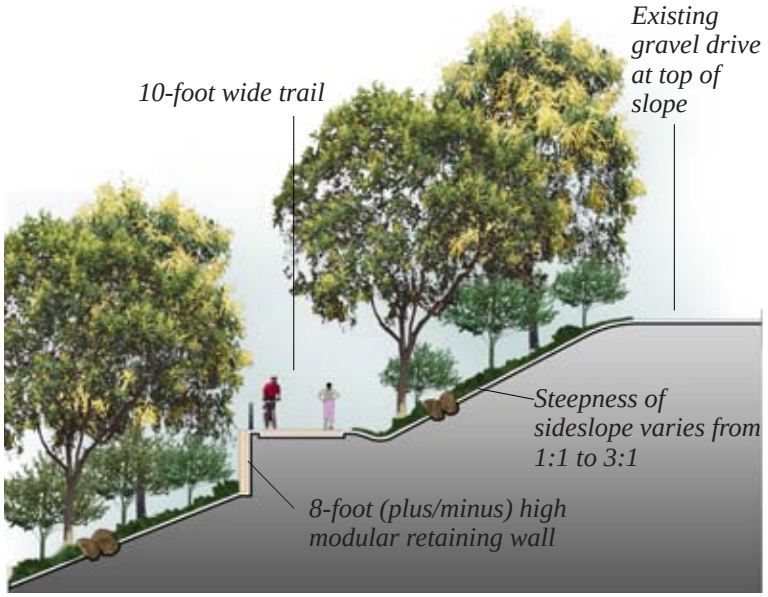
Trail Segment #5 Detail Description and Alignment Information (3 of 4)

West End of Trail Segment #5 – Sideslope Traverse to Make Connection with Highway 61

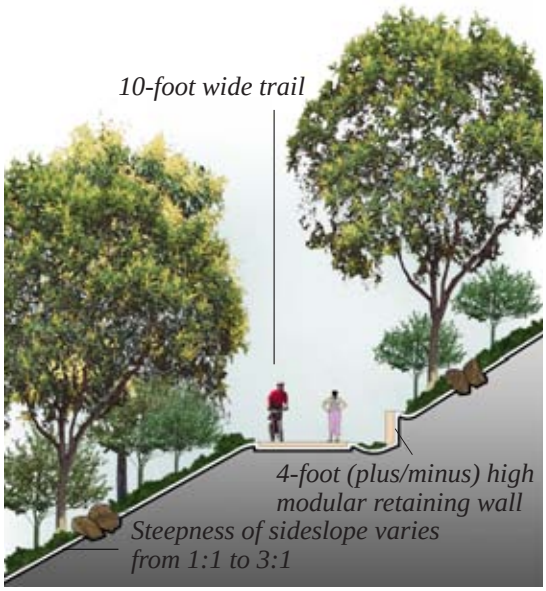


As illustrated, there is approximately a 30-foot grade difference from the old rail bed grade up to the shoulder grade of Highway 61, where the trail will connect to a future trail adjacent to the roadway. As shown, to maintain an accessible grade, the trail will traverse a sideslope from the old rail grade up to Highway 61. This will require a combination of additional fill and retaining walls to create a bench for the trail, as the two cross-sections below illustrate. Should this option prove unfeasible, an alternative approach is to construct a ramp-type system, as the photos on page 47 illustrate.

Character Sketch – Cross-Section A



Character Sketch – Cross-Section B



As the cross-section illustrates, traversing the sideslope from the old rail bed to the shoulder of Hwy. 61 will require retaining walls for the last 700 to 750 feet of the trail.

Trail Segment #5 Detail Description and Alignment Information (4 of 4)

West End of Trail Segment #5 – Alternative Approach to Make Connection with Highway 61

As previously defined, constructing a ramp system down the Highway 61 embankment to the trail grade is an alternative approach, although it offers less user appeal and would be more costly than the sideslope traverse as shown on page 46.

(Top) A switchback ramp-style approach would have the most merit as an alternative on this site.

(Right) More elaborate ramp systems are also possible alternatives, although costs for these structures is significant. Also, these type of structures tend to have less appeal to trail users than the primary option, or the ramp system shown above.

Interrelated Highway 61-Related Roadway and Trail Improvements

Under a separate planning project being conducted by Mn/DOT, a variety of roadway improvements are being considered for the Highway 61 corridor, which is the western terminus point for the Point Douglas Trail. This planning work is occurring in concert with planned replacement/upgrading of the Hastings bridge over the Mississippi River.

As of fall 2011, Mn/DOT is considering three concepts for roadway and trail improvements along this roadway segment. In each case, the trail would either make use of the existing footprint of Highway 61 (by shifting the northbound lanes to the west) or cross over the railroad tracks via new bridges.

In all of the concepts, the trail along Highway 61 would head south and connect to a pedestrian-way on the new Mississippi River bridge, and then continue on into Hastings, where it would connect with local and regional trail systems on the south side of the river corridor.

Note that although planning for the trail along Highway 61 is occurring, a preferred option has yet to be selected. In addition, the actual development of trail is not funded as of November 2011.

Trail Design Standards, Features, and Amenities

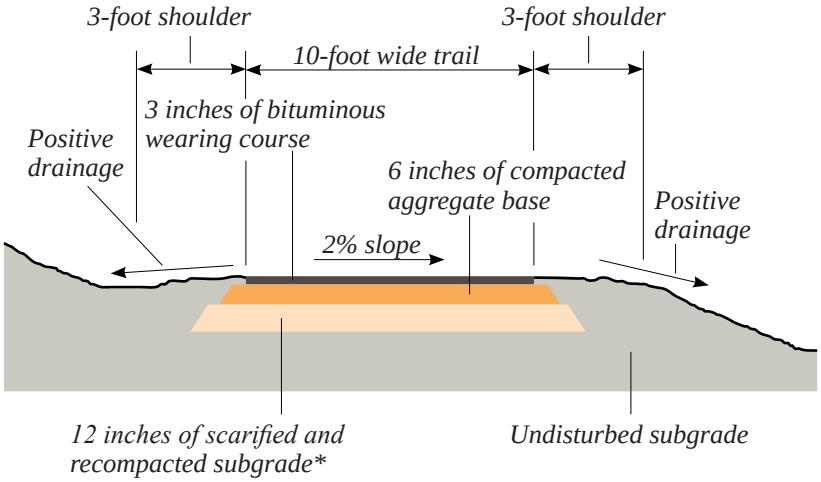
The trail will be designed in accordance with MN DNR's Trail Planning, Design, and Development Guidelines, which also reflects Washington County's and other regional, state, and federal agency's guidelines. The following provides an overview of the key design standards that will be applied to this trail.

Basic Trail Design

As per the MN DNR and regional trail guidelines, the trail will be 10 feet wide and asphalt surfaced, as the following illustrates.

Similar to this existing trail in Washington County, the Point Douglas Trail will be less than a 5 percent gradient and will be fully accessible.

Typical Trail Cross-Section



** The extent to which subgrade will need to be scarified and recompacted will be determined at time of construction and based on detailed evaluation of subsoil conditions.*

Trail Gradients and Accessibility

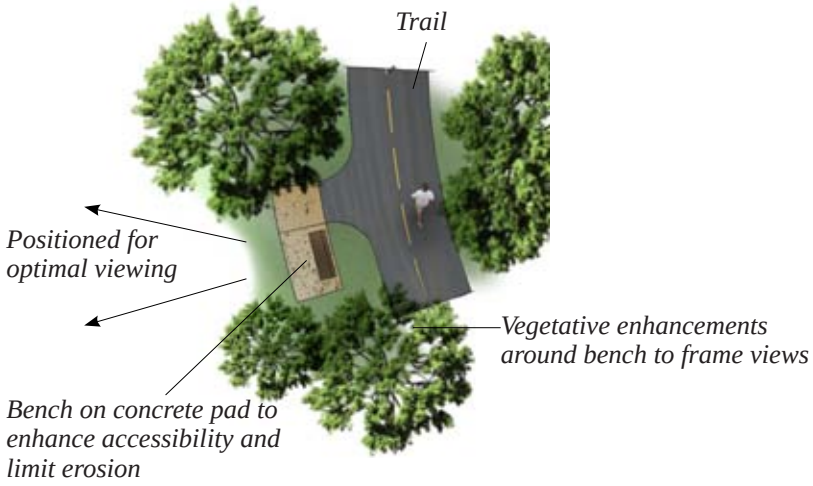
From its start at Point Douglas Park to its junction with planned trails along Highway 61, the trail grade will be at less than 5 percent and meet or exceed all accessibility requirements. This includes the last 1,200 lineal feet of trail on the west end, where it will traverse a sideslope to make the connection from the grade of the old rail bed to the grade of Highway 61 near the existing bridge.

Trailside Amenities and Signage

Trailside Amenities

Site amenities along the trail will be limited to select bench locations that take advantage of views of the Mississippi River, as noted on the trail segment maps. As the following graphic illustrates, bench locations will be simply designed, with the focus being on positioning it for optimal viewing.

Typical Bench Location Design – Plan View



Note that trash receptacles will be provided at trailheads, but not at individual bench locations.

Signage and Wayfinding

The signage program will provide wayfinding information, safety alerts, define appropriate uses, and reinforce the relationship between various users groups. Signing and marking of the trail and bikeway will be uniform and consistent to command the attention of the trail user.

Note that within Mn/DOT right-of-way, trail signage will be compliant with the latest version of the MNMUTCD! →

For uniformity, signage and wayfinding information along the trail and at trailheads will be consistent with Washington County's signage program for parks and trails. It will also take into consideration guidelines defined in the *Minnesota Trail Planning, Design, and Development Guidelines* (MN DNR 2007), as appropriate. In general, trail signage will fall into the following categories:

- Regulatory, traffic control, and warning signs
- Trailhead and orientation signs
- Directional and routes guide signs
- Trail identification and warning signs for motorists

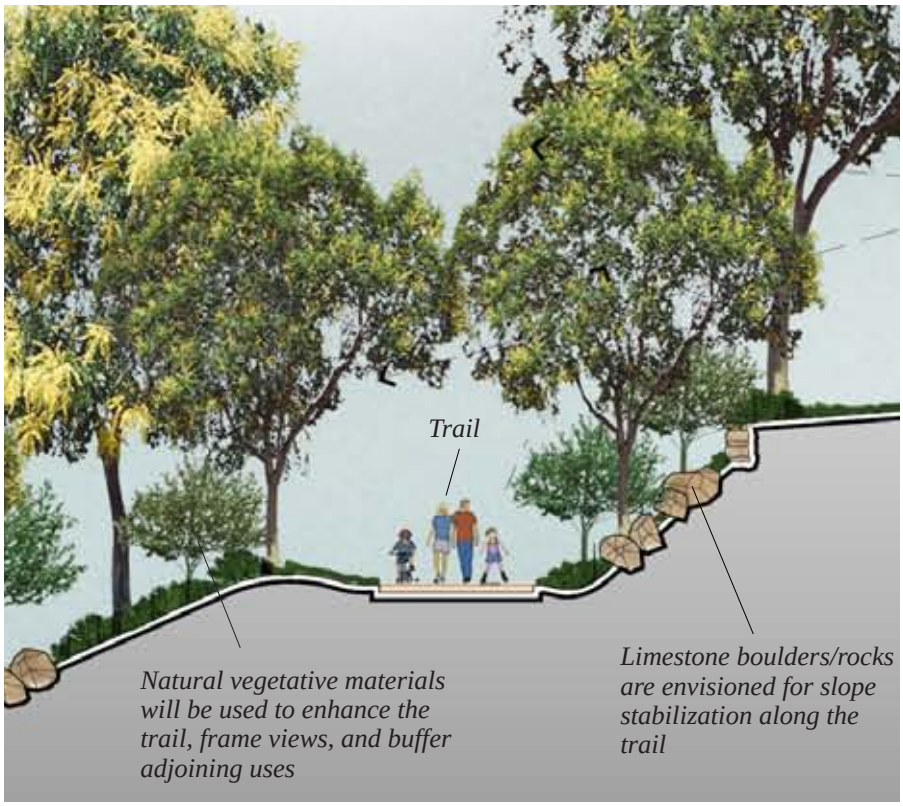
The use of natural character large block-style retaining walls is envisioned in select locations on each end of the trail.

Speciality Site Features

As previously illustrated in various character sketches and cross-sections, materials used along the trail will have a natural character in keeping with the setting. The only exception to this is likely to be the retaining walls under the bridge on the east end and those on the west end near Highway 61. In these cases, an engineered product is envisioned to ensure structural integrity, albeit the character of these features will be as natural looking as possible.

In other instances along the trail, natural materials such as limestone boulders and natural vegetation will be predominant, as the following character sketch illustrates.

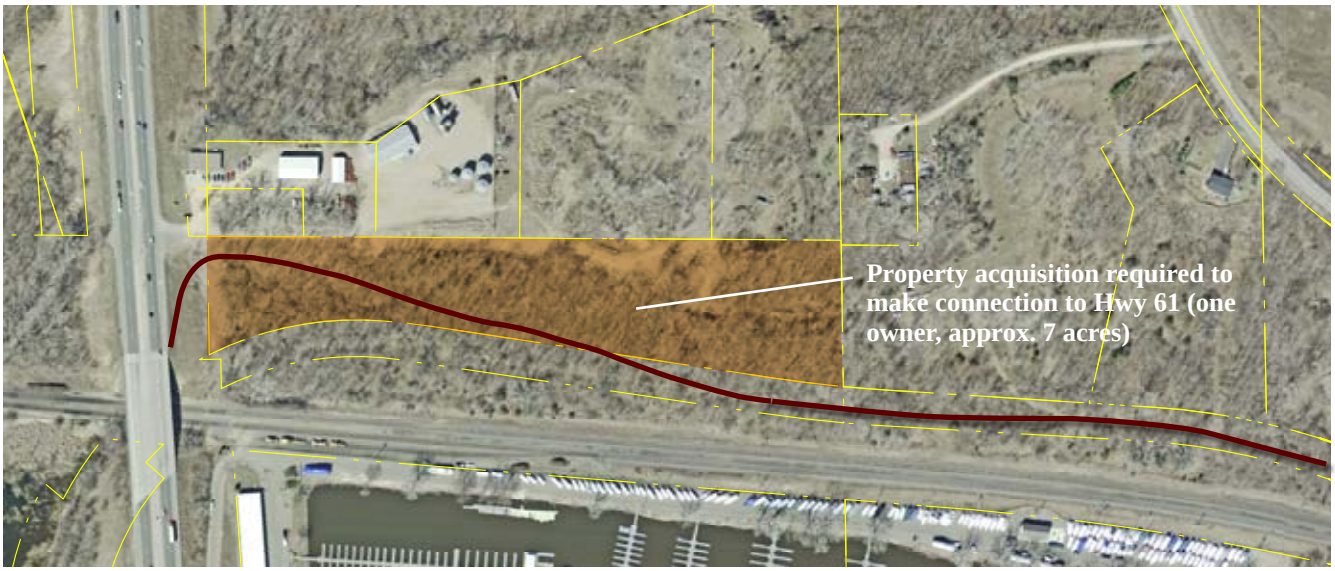
Character Sketch –Trail Cross-Section



Emulating the natural character of the corridor and nearby river is the goal in selecting materials for site features.

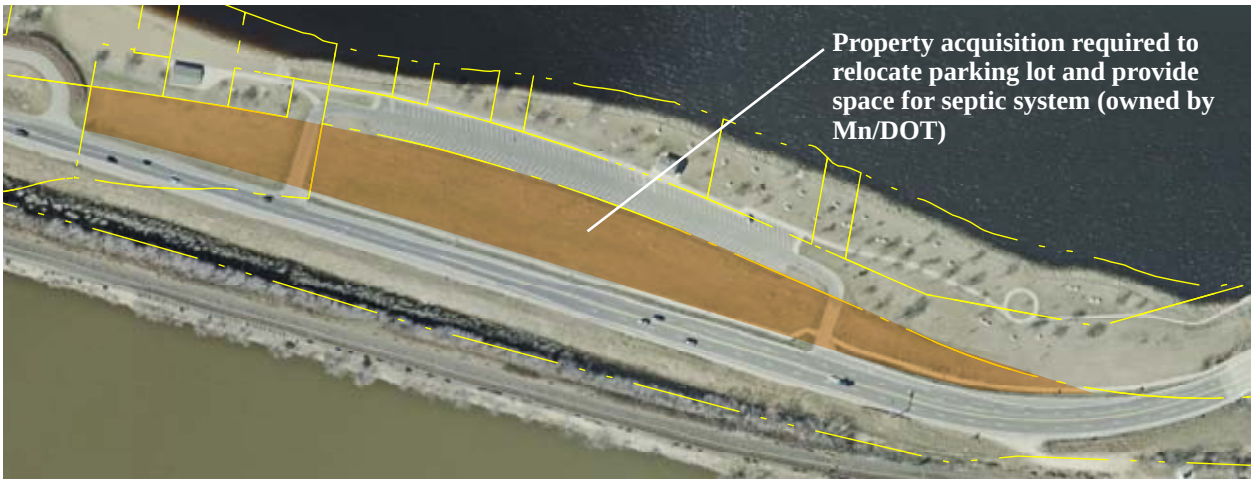
Property Acquisition

As illustrated below (and on pages 39 and 40), approximately 7 acres of land will have to be acquired to make the trail connection to trails being planned along Highway 61.



Note that the steeper side slopes and location of the property to be acquired likely limits its development potential for other purposes. Presumably, this should make acquiring it for this purpose more feasible and cost effective. However, there are other potential issues – such as assuring access to adjoining properties through this or other parcels – that will likely have to be resolved as part of negotiations with the current land owner.

As previously noted, relocating the parking lot and providing space for a potential septic system will require acquiring Mn/DOT-owned property along Highway 10, as the following aerial illustrates.



Refer to *Acquisition Overview and Cost Projection* on page 60 for additional information on acquiring these parcels of land.

End of section. This page is purposefully blank.

Section 4 Natural Resources Stewardship Plan

Overview

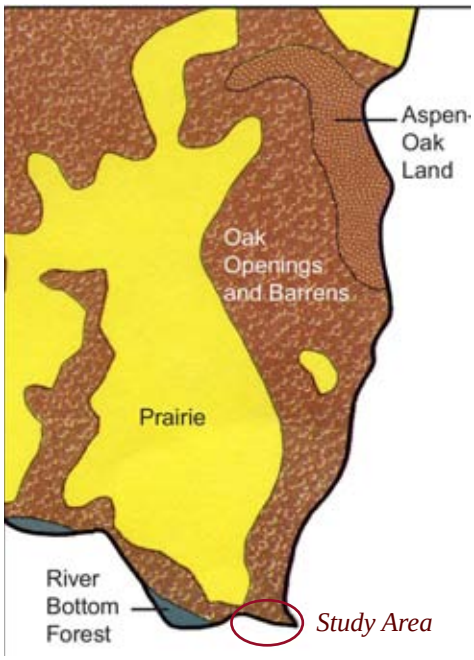
Natural resources stewardship refers to the thoughtful care of ecological systems to preserve or enhance their natural qualities, which are intrinsic to the trail's value as a place of natural scenery and respite from the built form. Although much of the trail follows an old rail bed corridor right-of-way, there are still numerous natural resources and ecological issues that need to be addressed. This section provides a framework for stewardship consistent with those of other parks and open spaces in Washington County.

Natural Resource Inventory

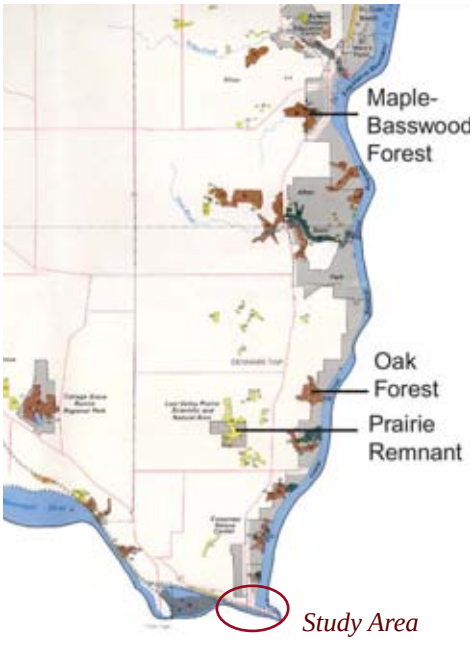
In 2002, Washington County completed an inventory and environmental plan for Denmark Township. Entitled *Maintaining and Enhancing Environmental Quality in Denmark Township,* the plan included an inventory of and general strategies for protecting natural resources. That plan is included by reference as part of this master plan, with the following maps highlighting overarching natural resource findings.

Natural Resources Inventory Mapping

Pre-Settlement – Circa 1845



Remaining Habitats – Circa 1990



As the comparison between habits circa 1845 and 1990 illustrate, virtually no remnant native vegetation remains within the study area.

Natural Resources Stewardship Philosophy

All of the cited natural resource plans promote an ecosystem-based approach to natural resource stewardship. An ecosystem is essentially where things live and represents an interacting group of physical elements (soils, water, plants, animals, etc.) that inhabit a particular place. All of these elements and their interactions need to be considered in developing goals and plans for management. Ecosystem-based management views people as part of the community, and that maintaining a healthy ecosystem is the best way to meet human needs as well as those of other organisms in the community. As it relates to the regional trail, general goals of this philosophy are to:

- Protect or enhance the health of the ecosystems along the trail corridor and throughout the study area
- Enhance the biological diversity of native habitats
- Provide an appropriate balance between resource preservation and recreational use

Natural Resources Protection Strategy

There are two main aspects to the natural resource protection strategy as it relates to the development of the trail. The first is managing stormwater associated with the trail in an ecologically sustainable manner. The second is aligning the trail to minimize disruption to natural systems. The following considers these in greater detail.

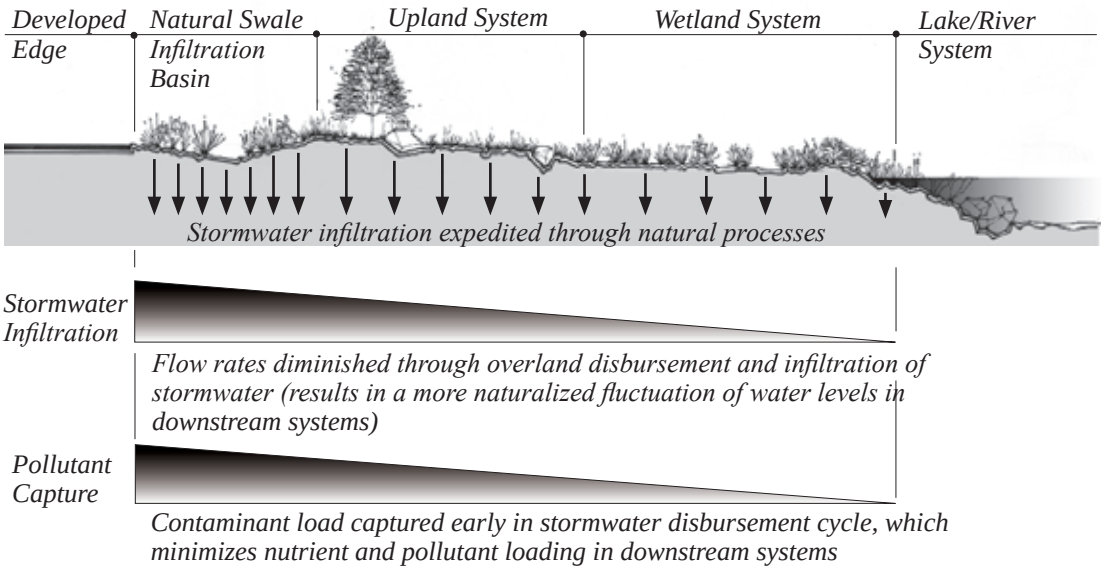
Using Natural Infiltration and Best Management Practices For Stormwater Management

Managing runoff in an ecologically sensitive way is fundamental to creating sustainable trails where impacts to adjacent ecological systems are minimal. Using a natural infiltration approach to stormwater management that relies on passive, overland routing of runoff offers a couple of distinct advantages over conventional systems (i.e., storm sewers, engineered ponds, and other built structures), including:

- Introduced contaminants picked up by runoff are removed at the initial stages of water flowage rather than being transported to downstream locations and accumulating in wetland, lake, and river systems. This greatly reduces degradation to water quality and vegetative health in downstream systems.
- Stormwater flow rates and volumes more closely emulate natural conditions. This greatly reduces unnatural fluctuations in water levels in downstream systems (wetlands and lakes) and therefore reduces impacts to the natural condition of water systems and vegetation.

For these reasons, natural infiltration will be the primary approach used to manage stormwater associated with the development of the regional trail and related support structures. The graphic on the next page illustrates the four primary components of a natural infiltration system.

Natural Infiltration System



The natural infiltration approach to managing stormwater will also be supported by *Best Management Practices* that address common development circumstances likely to be encountered as the trail is developed. These practices define specific techniques that can be applied to different development scenarios to achieve stated environmental protection objectives.

The Metropolitan Council's *Urban Small Sites Best Management Practice Manual* provides the basic underpinning for many of the techniques that will be employed wherever applicable as the trail is developed. Note that emerging ecologically-based techniques will also be applied to achieve desired ecological benefits. Specific techniques envisioned to have application for the trail include:

- Use of infiltration systems (e.g., biofiltration systems, rain gardens, filter strips, swales, and slotted/flat curbs) as part of trail designs
- Use of site grading techniques to achieve naturalized infiltration objectives
- Use of contemporary erosion control techniques to prevent migration of soils during the construction process

In addition to the *Best Management Practices*, the master plan is supported by the Metropolitan Council's *Model Storm Water Management Ordinance*, which defines specific approaches to protecting a site's ecological resources. The provisions of the model ordinance will be applied to the trail's development as applicable.

Old drainage structures found along the corridor will be either improved to meet new standards or formally abandoned to prevent future stormwater management issues.

Minimizing Disruption To Natural Ecological Systems

Since the vast majority of the trail follows either a highway right-of-way or an old rail bed, aligning it to minimize disruption to natural systems is not expected to be a major developmental challenge. The only exception to this is on the far west end, where the trail traverses a wooded sideslope in order to make the grade transition up to the Highway 61 roadway elevation. In this situation, Washington County will work closely with project engineers to minimize disruption to mature trees and vegetation.

Importantly, the trail corridor has limited potential impact on wetland areas, which are only found on the east end of the study area. Otherwise, the landforms along the river and past development of the corridor for railroads effectively limits the occurrence of finding wetlands in the study area today. Nonetheless, should any others be encountered, an adequate buffer will be provided.

Since the majority of the trail follows the Hwy. 10 R.O.W. and an old rail bed, direct impacts to natural resources are expected to be limited. In addition, virtually no remnant native vegetation remains within the study area and within the right-of-way for the trail.

As noted, the trail traverses a wooded sideslope in order to make the grade transition up to the Highway 61. In this situation, Washington County will work closely with project engineers to minimize disruption to mature trees and vegetation.

Meeting the Requirements of Various Agencies Associated with Natural Resources, Stormwater Management, and River-Related Development

In addition to meeting its own standards, Washington County will meet the requirements of other agencies that have various forms of direct and indirect natural resource, stormwater management, and river-related jurisdiction. This includes, but is not necessarily limited to, the following:

- **MN DNR** – ranging from river corridor development issues (i.e., disturbing the river shoreline) to natural resource impacts; also consideration of *Principles of Ecological Sustainability* as defined in *Trail Planning, Design, and Development Guidelines*
- **U.S. Army Corp of Engineers/ U.S. Coast Guard** – issues related to river navigation and flooding; this is especially the case with any development under the river bridge near Point Douglas Park
- **Watershed District** – issues related to stormwater management along the trail, including protection of identified wetlands and the rivers
- **Mn/DOT** – issues related to scour protection of bridge embankment and abutment, and stormwater management within Mn/DOT rights-of-way

The following photos highlight a couple of instances in which the input of the listed agencies will be required.

(Above) A wetland area found along the Hwy. 10 corridor will have to be protected.

(Right, top) Any development under the existing river bridge near Point Douglas Park will require review and approval of most the previously identified agencies.

(Right, bottom) Various techniques will be used to manage stormwater and mitigate the impacts of trail development. This includes, for example, using infiltration basins on both sides of the trail to infiltrate water, and possibly ponding water in select areas along the trail.

Natural Resources Stewardship Plan

Natural resource stewardship relates to restoring, managing, and maintaining ecological systems to enhance their intrinsic values, protect remnant landscapes, and provide ecological benefits. The following provides an overview of the stewardship goals pertinent to this regional trail corridor.

Overall Stewardship Context

Historically, the trail corridor was very ecologically diverse, ranging from aquatic zones along the rivers to upland oak savanna and prairie systems on the top of the bluffs. As previously noted, many changes have occurred over time that have greatly diminished the extent to which historic systems still exist. Given this, Washington County's goal for the corridor is to forestall further decline and, over time, work to reverse current trends in ecological quality consistent with its established approach to other regional parks and trails in the county.

Stewardship Strategy

In general, the stewardship program will be consistent with strategies defined within *Maintaining and Enhancing Environmental Quality in Denmark Township* publication since that plan has already been adopted by Washington County. Consistent with that plan, a multi-phased stewardship program will be used to restore and manage natural resources along the trail corridor. The program would be spread out over a period of time coordinated with funding appropriations and scientific expertise. The program will also be coordinated with the stewardship activities associated with other natural areas and parks in the county to gain program efficiencies and effectiveness.

The baseline strategy for the stewardship program is to segment the trail into management units where natural areas can be sequentially restored to higher quality sustainable systems.

At the technical trail design level, stewardship will focus on four priorities:

- Minimizing potential for erosion during construction
- Buffering adjacent ecological systems
- Enhancing the quality of natural resources within the corridor consistent with ecological prototypes for healthy systems (as established within *Maintaining and Enhancing Environmental Quality in Denmark Township* publication)
- Enhancing the natural scenic qualities of the corridor through native planting in select locations as the trail is developed

Technical Resources in Support of the Natural Resources Stewardship Plan

Maintaining and Enhancing Environmental Quality in Denmark Township (2002) is directly referenced for specific techniques and approaches to natural resource stewardship. In addition, the guidelines for natural resource stewardship defined in two publications from MN DNR are also referenced as part of this master plan. The first is *Guidelines for Managing and Restoring Natural Plant Communities Along Trails and Waterways* (2000) and the second is *Trail Planning, Design, and Development Guidelines* (2006). Both of these provide valuable technical information that support the strategies defined under this master plan.

Section 5 Implementation and Management Plan

Overview

Implementing the master plan for Point Douglas Regional Trail will require significant capital investment for land acquisition and development. Management of the trail will also incur ongoing costs for operations and maintenance. The following provides cost projections for developing the trail, along with an implementation strategy and overview of an operations and management plan.

Acquisition and Development Cost Projections

The forthcoming cost projections define the potential costs associated with implementing the master plan to an optimal level of development. The projections are based on a combination of site-specific development issues and professional judgments based on projects of similar characteristics. The projections are based on 2011 dollars, which will require inflation adjustments over time.

The intended use of the cost projections is to aid implementing agencies in developing an overall funding and implementation strategy, including:

- Defining the potential magnitude of the public investment needed to develop the trail
- Comparing the relative cost of trail development items
- Prioritizing and budgeting for capital improvement initiatives based on funding availability

Implementation costs may vary, perhaps significantly, depending on the actual conditions found out in the field, final design, and economic conditions at the time of bidding and implementation. To remain relevant, the cost projections should be updated on a periodic basis to accommodate cost increases over time.

Acquisition Overview and Cost Projection

Projecting the cost for land acquisition is inherently challenging given the many variables that affect valuation, ranging from location to marketplace conditions. Working with landowners under a negotiated, willing seller context is also a major factor affecting the cost to acquire a right-of-way for the trail. In spite of the challenges, projecting the cost for land acquisition still serves a purpose by setting some baseline parameters for budgeting and starting a dialogue with landowners.

Fortunately, the vast majority of the land needed for the trail has already been acquired by Washington County. The only remaining parcels requiring acquisition are on the far east and west end of the trail, as the aerial images on page 52 illustrated.

On the west end, acquisition of the entire 7 acre parcel is recommended since it is a steeply-sloped piece of property with limited development potential for other uses once the trail is constructed. **Based on County Assessor provided assessment, the property is valued at $71,000.** However, given the changing nature of land values in the marketplace, acquisition cost over time can be quite variable and might be affected by other factors that might be important to the current landowner.

Once the master plan has been adopted, Washington County will establish an open dialogue with the property owner to stay abreast of their concerns and level of interest in selling the property, or perhaps providing an easement. At the time of actual implementation, Washington County will formally negotiate acquisition of the property for review and approval by the Washington County Board and Metropolitan Council. To date, the property owner has not been formally contacted to directly discuss acquisition issues or property valuations.

On the east end, adjoining Point Douglas Park, relocating the parking lot and providing space for a potential septic system will require acquiring Mn/DOT-owned property along Highway 10. As of 2011, it is expected that will occur as a no-cost transfer of title. A final deal will be negotiated and formalized prior to implementation of the master plan in this area.

Development Cost Projections – Point Douglas Trail

Cost projections for developing the *Point Douglas Trail* are on a unit basis based on typical average costs for developing similar trails in Washington County and other counties and local municipalities. The following table defines the projected cost for developing the trail to an optimal level using appropriate design standards for regional trails. The cost projections take into consideration assumptions regarding the basic conditions along the corridor, the most challenging of which is fully understanding the extent to which the old rail bed will have to be scarified and recompacted to provide a stable base for the trail. Timing of development will also affect cost projections – which generally means costs will rise above what is shown the further out into the future development occurs.

Trail Development Cost Projections

The table provides a cost breakdown for major cost items. Costs are based on 2011 dollars.

Item	Cost Estimate
Mobilization – for duration of project	$50,000
Removals – clearing/brushing vegetation; general site prep	$24,000
Grading – scarify/recompact subgrade, grade ROW sideslope, fine grade	$155,000
Storm culverts/structures – improvements/replacements of existing structures	$40,000
Stormwater management (ponding/infiltration systems) and related mitigation	$50,000
Erosion control	$40,000
Asphalt pavement – 3" asphalt, 6" aggregate base, 10 feet wide	$350,000
Site restoration – seeding, natural seed mix; other improvements	$42,000
Planting - to prevent erosion, screening of properties, etc.	$30,000
Misc. improvements along trail – retaining walls/limestone boulders/etc.	$30,000
West end trail connection – retaining walls, misc. stabilization, extra grading	$245,000
East end connection under bridge – retaining walls, pavements, handrail, etc.	$150,000
Misc. site amenities – benches, signage, kiosks, etc.	$40,000
Environmental Assessment Worksheet	$5,000
Subtotal*	**$1,251,000**
15% Design/Engineering Fees (testing, design, surveying, engineering, etc.)	$188,000
10% Construction Contingency	$125,000
Total Development Cost Estimate	**$1,564,000**

** Costs do not include installation of a barrier fence along Highway 10, or any of the trail improvements along Highway 61 as described on page 44.*

If required, the estimated cost of a barrier fence along Highway 10 is $121,000.

Development Cost Projections – Trailhead Facilities

Cost projections for developing the trailhead facilities at Point Douglas Park are also on a unit basis based on typical average costs for developing similar facilities in Washington County and other counties and local municipalities. The following table defines the projected cost for developing the trailhead to an optimal level using appropriate design standards. The cost projections take into consideration assumptions regarding the basic site conditions, the most challenging of which is fully understanding soil conditions that affect development of the building, parking lot, and septic system. Here too, timing of development will affect cost projections – which generally means costs will rise above what is shown the further out into the future development occurs.

Trailhead Development Cost Projections

The table provides a cost breakdown for major cost items. Costs are based on 2011 dollars.

Item	Cost Estimate
Mobilization – for duration of project	$20,000
Removals – old buildings	$15,000
Removals – existing parking lot	$25,000
Grading – rough and fine grading, including stormwater management	$50,000
Storm culverts/structures – parking lot drainage related	$20,000
Erosion control fencing	$7,000
Asphalt pavement for parking lot – 4" asphalt, 8" aggregate base	$140,000
Concrete curb and gutter for parking lot	$35,000
Asphalt pavement for trails within park – 3” asphalt, 6” aggregate base, 10’ wide	$45,000
Concrete paving for plaza area around building	$27,000
Site restoration – seeding, natural seed mix; other improvements	$28,000
Planting - to enhance aesthetics of the park	$30,000
Retaining wall near beach	$20,000
New building – 1,000 s.f.	$300,000
Septic system for building	$25,000
Misc. site amenities – benches, signage, kiosks, trash receptacles, etc.	$20,000
Security lighting, limited to building area	$8,000
Subtotal*	**$815,000**
15% Design/Engineering Fees (testing, design, surveying, engineering, etc.)	$122,000
10% Construction Contingency	$82,000
Total Development Cost Estimate	**$1,019,000**

Note that, if necessary, development of the trailhead could be completed in phases, with the building and related development occurring in one phase and the parking lot and related development occurring in a second phase. Under this scenario, the building-related phase of the cost estimate is approximately $663,000, including design fees and contingency.

Also note that a significant unknown relates to the suitability of the site for a septic system, which is contingent on soil types, space needs, and how many users per day need to be accommodated. The budget assumes construction of an average mound system sized for this use. But the actual design and costs for these systems can vary considerably in response to actual site conditions, especially soils. As such, further testing, detailed design, and cost refinement will be required as the project moves into implementation planning.

Operations and Maintenance Costs

Once the trail is developed, operations and maintenance of the trail will fall under general operations for the Parks Division. **Total cost to operate and maintain this trail is estimated at $15,6000/year initially,** which includes:

- General operation and maintenance – pro-rated, consistent with other parks and trails in system
- Public safety patrols – consistent with other parks and trails in system

Natural Resource Stewardship Cost Projections

The Washington County Parks Division will manage natural resource stewardship for the corridor as part of a larger program associated with trails, parks, and natural areas throughout the county. The annual costs associated with this corridor is anticipated to be up to $5,000, with the primary focus being on controlling invasive species. Volunteer efforts will also be promoted to add value to this program.

Management and Operations

The Washington County Parks Division is charged with the management and operation of the County's park and trail system. This includes Point Douglas Regional Trail as defined under this master plan. The Washington County Board of Commissioners establishes policies and goals for the park and trail system and through an annual budgeting process provides capital and operating funds for parks.

Ordinances

Public use and enjoyment of the County park and trail system, including Point Douglas Regional Trail, is controlled by Ordinance No. 174, Park Ordinance, (the Ordinance) which was last amended on May 23, 2006. 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 Recreation Activity
- Regulation of Motorized Vehicles, Traffic and Parking

A copy of the ordinance is available through Washington County.

Enforcement

Trail users will be informed of trail rules and regulations in a variety of ways. Kiosks and signs will be strategically located to address specific information about allowable trail uses, permitted and prohibited activities, fees, and directions. The Washington County Sheriff's Department responds to emergencies and criminal complaints.

General Operations

The Parks Division has an annual operations and maintenance budget of approximately $2,000,000 to operate and maintain the County's park and trail system with approximately 16 permanent employees. In addition, approximately 70 seasonal employees are hired each year as life guards, maintenance workers and gate attendants.

Outreach and Marketing

Washington County continues to expand its outreach effort, in an effort to improve public awareness of its park and trail facilities, programs, and services. This outreach effort has various components, including the following:

- **Printed Materials:** Washington County has developed and distributes on a regular basis brochures and maps, including trail and park maps and picnic, camping, and other brochures. Park and trail fliers are also distributed to County departments, libraries, community agencies, and other contacts throughout the community.
- **Electronic Communication:** Washington County has a web page to inform citizens about the County's functions and services (trails, park facilities, programs, etc.). In addition, the public can contact the Parks office through the County's e-mail system.
- **Other Outreach:** Other forms of outreach and marketing include displays at the Washington County Fair, articles in the County Commissioners' quarterly newspaper, the production of flyers and brochures and the display of information at County Service Centers and park kiosks. The County also publishes news releases and advertisements in local community and metropolitan area newspapers that highlight upcoming programs and facility openings. The County also promotes park and trail use through feature articles and presentations to other County departments and local agencies. The use of social media is expected to grow and become a more routine aspect of the County's communications strategy.
- **Marketing Initiatives:** Washington County will be developing a comprehensive marketing plan to increase public awareness, understanding, and use of park facilities, services and programs. In addition, the marketing plan will identify the need to expand and diversify marketing and communication efforts to advance park use by minority populations and special needs groups. Here too, the use of social media is expected to grow and become a more routine aspect of the County's marketing strategy.

Public Involvement In Implementing The Master Plan

Public interest in the trail is expected to remain high in the years to come, especially as it relates to the impact the trail will have on individual properties. Public involvement and comment will continue to be sought during the design and construction phase to ensure that every precaution against avoidable impacts is taken in a good-faith manner. In addition, forums for broader public input (e.g., open houses and presentations) are also envisioned as needed to communicate and exchange ideas with interested citizens.

The objectives associated with involving citizens in the implementation process include:

- Determine who the stakeholders are and their interest in a particular segment of the trail
- Understand their needs and unique perspectives
- Identify and understand concerns and problems
- Develop alternatives and find appropriate solutions with input from stakeholders

In addition, Washington County has an appointed Parks and Open Space Commission that advises the County Board on development initiatives within the county. The public is welcome to attend its regularly scheduled meetings. Also, Washington County is continuing to develop numerous tools to provide a consistent level of communication with interested citizens, as previously defined.

Maintenance

Maintenance of facilities and lands is essential to protect public investment, enhance natural resource qualities and achieve the County's goals of providing users clean, safe, enjoyable year round park experiences. Washington County Parks Division has a clearly defined maintenance program. Reporting to the Park Director are the Park Managers of Planning and Operations. Reporting to the Parks Manager for Operations are the Maintenance Supervisor, Parks Coordinator, and office staff. The Maintenance Supervisor oversees five maintenance workers, 12 seasonal maintenance workers, and six park attendants. In addition, the Washington County Public Works Department will provide assistance to maintaining the trail segment located in roadway rights-of-way.

As defined under its master plan, St. Croix Bluffs Regional Park has a maintenance facility that functions as an equipment and supply storage area. The facility also provides an indoor work area to perform minor vehicle and equipment maintenance, as well as serving as a place to conduct park maintenance operations. It is expected that this facility will support maintenance activities for this trail.

As trails and other park land and facilities are further developed, new or expanded maintenance services will undoubtedly need to be provided by Washington County. To that end, Washington County remains committed to performing the maintenance functions necessary to maintain high quality parks and trails in the county. To that end, traditional and non-traditional funding and staffing sources will continue to be pursued to meet the maintenance needs of the county.

In this particular case, however, the additional cost for maintenance is expected to be modest and manageable since the trail is only 2.5 miles long. Further, any trailhead-related enhancements to Point Douglas Park are not expected to result in any significant additional maintenance over what is already provided. In fact, newer facilities, such as restrooms, may actually reduce maintenance costs since the current structures are aging and needing increased levels of maintenance.

Provisions for Trail Maintenance

One of the issues that came up at several open houses is concern about operations and maintenance of the trail once it is built. To that end, the following provides general guidelines for monitoring and maintaining the trail to prolong its life and provide a safe surface to travel on. An important complementary value of a well-maintained trail is that it encourages higher levels of use, which in turn serves as its own deterrent to undesirable activities, such as trespassing.

The guidelines are based on common practices in Minnesota and take into consideration climate and other site conditions. Note that the guidelines will still have to be tailored to site specific conditions once the trail is developed.

Monitoring and Inspections Schedule

Monitoring and inspections of all facilities should occur throughout the year to detect maintenance issues before safety is compromised. The following table provides an overview of inspections that will be completed during each season.

Inspections Schedule Guidelines

A routine inspection schedule is important for staying on top of maintenance issues and taking care of problems at an early stage. The following are guidelines for a seasonal schedule for inspections.

Season	Inspection Focus
Spring	Inspect for damage from winter use and freeze-thaw cycles. Check for erosion, plugged culverts, user and maintenance vehicle–caused damage, slumping, cracking, and other visible signs of surface imperfections. Record problems and schedule maintenance on a priority basis.
Summer	Inspect regularly. In addition to items listed for spring, inspect vegetation growth and encroachment and pay special attention to drainageways and ditches that may have eroded during the spring runoff. Record all problems and schedule maintenance on a priority basis.
Fall	Inspect regularly. Focus on maintenance that should be done before winter to avoid more damage during spring thaw. Pay special attention to culverts and drainageways that will be needed to handle spring runoff. Fill cracks.
Winter	This is a good time of year to check low areas and drainages that cannot be easily accessed during the summer. This includes culverts, ditches, and beaver ponds

General Maintenance Guidelines

Washington County has an established maintenance program for paved trails that includes the following:

- **Vegetation management** – to maintain an acceptable clearance zone and preserve the integrity of the trail surface
- **Asphalt repair** – to maintain quality of trail surface and prolong its lifespan
- **Seal coating** – surface treatments used to cover minor surface imperfections and asphalt deterioration from weathering and oxidation

Routine Maintenance Guidelines

In addition to seasonal monitoring and inspections, routine maintenance will also be undertaken consistent with Washington County's policies. Most notably this includes sweeping to remove loose sand and debris on the surface of all trails (typically at least once a year, normally in the spring).

Interim Stewardship Plan

Currently, the trail corridor is undeveloped. As part Washington County's general operation, the trail corridor will continue to receive periodic review and light maintenance to ensure that it remains ecologically stable prior to development. Washington County will especially pay attention preventing any new stormwater management issues that might, if left unchecked, undercut the integrity of the old rail bed. Overall, no major concerns about the interim stewardship of the corridor are anticipated.

Public Services

Other than what has already been described in this report, no additional public services – such as roads or sewers – are required to develop the trail.

Appendix A Board Resolution

BOARD OF COUNTY COMMISSIONERS
WASHINGTON COUNTY, MINNESOTA

RESOLUTION NO. 2012-042

DATE April 10, 2012

DEPARTMENT Public Works/Parks

MOTION BY COMMISSIONER Lehrke

SECONDED BY COMMISSIONER Weik

POINT DOUGLAS REGIONAL TRAIL MASTER PLAN

WHEREAS, in 2005, Washington County purchased 2.5 miles of abandoned rail bed along the Mississippi River in Denmark Township; and

WHEREAS, a trail master plan is required to address the criteria set forth in the Metropolitan Council's 2030 Regional Park Policy Plan (updated December 8, 2010) for regional destination trails and to become eligible for Metropolitan Council funding; and

WHEREAS, on March 22, 2011, the Washington County Board of Commissioners authorized retaining a consultant to develop a trail master plan connecting the abandoned rail bed trail to Point Douglas Park, the planned St. Croix Valley Regional Trail, and the planned Hastings bridge bike trail; and

WHEREAS, the master planning process has included two public meetings and two Technical Advisory Committee (TAC) meetings that included representatives from Denmark Township, the City of Hastings, the Minnesota Department of Transportation, the National Park Service and Washington County; and

WHEREAS, the draft trail master plan was reviewed and recommended for approval by the Washington County Park and Open Space Commission (POSC) on December 15, 2011; and

WHEREAS, the draft master plan was reviewed by the Washington County Board of Commissioners in a workshop on October 11, 2011; and

WHEREAS, the Washington County Board of Commissioners conducted a public hearing on April 10, 2012 to review and receive comment on the Point Douglas Regional Trail Master Plan; and

WHEREAS, a master plan review has been completed through a public process that meets Metropolitan Council requirements for public input; and

NOW, THEREFORE, BE IT RESOLVED that the Washington County Board of Commissioners approves the Point Douglas Regional Trail Master Plan; and

BE IT FURTHER RESOLVED that the Big Point Douglas Regional Trail Master Plan be forwarded to the Metropolitan Council for review and approval without further action by the County Board.

ATTEST:

COUNTY ADMINISTRATOR

COUNTY BOARD CHAIR

	YES	NO
HEGBERG	X	
KRIESEL	X	
LEHRKE	X	
PULKRABEK	X	
WEIK	X	

July 2002
http://washnet/forms/CountyBd/Resolution.dot

Master Plan

for

Point Douglas Regional Trail and Trailhead

Washington County