Section V

Design Guidance

The Baker/Carver Regional Trail is intended to safely accommodate 183,000 annual visits, an array of non-motorized uses, a variety of skill levels, and persons with special needs. In addition, the regional trail is intended to support both recreation and commuting uses and incorporate trail amenities that enhance trail users' experiences.

Similar to many regional trail corridors, the Baker/Carver Regional Trail corridor includes several challenges associated with constructing a regional trail where trail right-of-way doesn't exist, providing access to and across natural resources areas, and balancing safety, public expectations, natural resource protection, and potential private property impacts.

One of the key elements to constructing the Baker/Carver Regional Trail is to design and construct it in a manner that meets users expectations and needs, meets industry standards and best management practices, and is financially responsible. As such, the Park District utilizes a series of District-wide regional trail practices and guidelines in respect to trail design and support amenities. These practices and guidelines are summarized in this chapter and will serve as the basis for design and construction of the Baker/Carver Regional Trail.

Various images along the Baker/Carver Regional Trail route exemplify rural characteristics and adjacent landscape imagery.

Permitted Regional Trail Uses

The regional trail will be open to the general public. Its intended uses include walking, jogging, in-line skating, bicycling, and other uses mandated by state law including, but not limited to, non-motorized electric personal assisted devices. Motorized vehicle and equestrian uses will be prohibited, except for motorized vehicles used by the Park District and partner cities for maintenance or law enforcement activities or otherwise permitted for ADA access. Equestrian uses are allowed on the Luce Line State Trail Segment B per MnDNR rules.

Access to All

The Park District is committed to providing access and recreational opportunities to all people, including persons with disabilities, minorities, and other special-population groups. The Park District meets this commitment through appropriate facility design, programming considerations, and by actively addressing potential barriers to participation.

All regional trail facilities, including associated trailheads and trail amenities, will be designed to accommodate individuals with disabilities and developed in accordance with Americans with Disabilities Act (ADA) standards and guidelines. Specific design guidelines are discussed on the following pages of this section.

The Park District pursues promotional outreach activities and works with special-interest organizations such as the Courage Kenny Rehabilitation Institute and Wilderness Inquiry to further encourage participation in activities and use of park facilities by persons with special needs. If arrangements are made in advance, interpreters and alternative forms of printed material are available at programmed events.

In addition to accommodating individuals with disabilities, the trail corridor passes through rural underdeveloped areas to small towns, providing access to people with different social and cultural backgrounds and connecting those persons with important local community destinations such as parks, commercial areas, community facilities, cultural destinations, and transit facilities.

On a broader scale, communities adjacent to the trail will not only have access to the Baker/Carver Regional Trail, but also gain direct access to several existing park reserves, regional parks, and regional and state trails. To improve local access, neighborhood trail connections are anticipated at regular intervals.

The Park District does not charge entrance fees for its regional trails; therefore, the regional trail is available for all users to enjoy regardless of financial status.

Design Guidelines

In accordance with its regional designation and associated anticipated use, the Baker/Carver Regional Trail will be designed as an off-road 10-foot-wide, non-motorized paved multi-use trail (Figure 11), with the exception of Segment B owned and operated by the MnDNR and maintained as aggregate in this vicinity. A bituminous trail surface is preferred because it is cost-effective, less prone to erosion than aggregate surfaces, provides a desirable trail user experience, and is more appropriate given the anticipated visitation and connections to other paved facilities. In consideration of the wetlands associated with this regional trail, boardwalks and bridges are anticipated in a few isolated locations along the regional trail corridor.

Curb ramps will be used at all roadway crossings. The preferred maximum trail grade is 5 percent with a 2 percent cross slope for drainage. Much of the Baker/Carver Regional Trail is anticipated to be an independent trail corridor separate from roadways. However, in areas where the trail will be located adjacent to a roadway, the following design considerations apply. Where right-of-way allows, final trail design will attempt to maximize the boulevard width to account for sign placement, snow storage, and possibly trees or other complementary enhancements. In circumstances with limited right-of-way, the trail is still planned to be located off-road, but with less boulevard between the trail edge and back of the curb. In these locations, the trail will be separated from the road by a minimum paved two-foot-wide clear zone. This paved clear

zone between the back of the curb and the trail edge provides a buffer between the trail users and motorists and will be striped to delineate the edge of the trail.

In the event there are instances where the trail will not initially meet the preferred design, trail designers will evaluate a wide variety of design tools to determine the best fit for the unique situation. Unless the alternative trail design is an acceptable long range solution, it is anticipated that noncompliant trail segments would be improved as funding, right-of-way, or other opportunities present themselves.

A number of factors will be considered during the design phase, such as:

- Right-of-way width/acquisition needs
- Topography and drainage impacts
- Existing vegetation
- Driveway/road crossings
- Overhead and subsurface utilities
- Proximity to adjacent buildings, homes, businesses, and industrial facilities
- Wetlands/floodplain locations, potential impacts, and rules
- Wildlife (species, nesting/breeding areas and times, concentrations)
- Existing infrastructure
- Connectivity with other trail/sidewalk/bicycle facilities
- Safety
- Cost
- Obstructions
- Trail user preferences/desired trail user experience
- Opportunities to coordinate with other projects/agencies

In addition to the discussed design considerations, regional trail segments will be designed in accordance with all applicable federal, state, and local codes. More specifically, the following sources will be referred and adhered to when preparing the design and construction plans as appropriate:

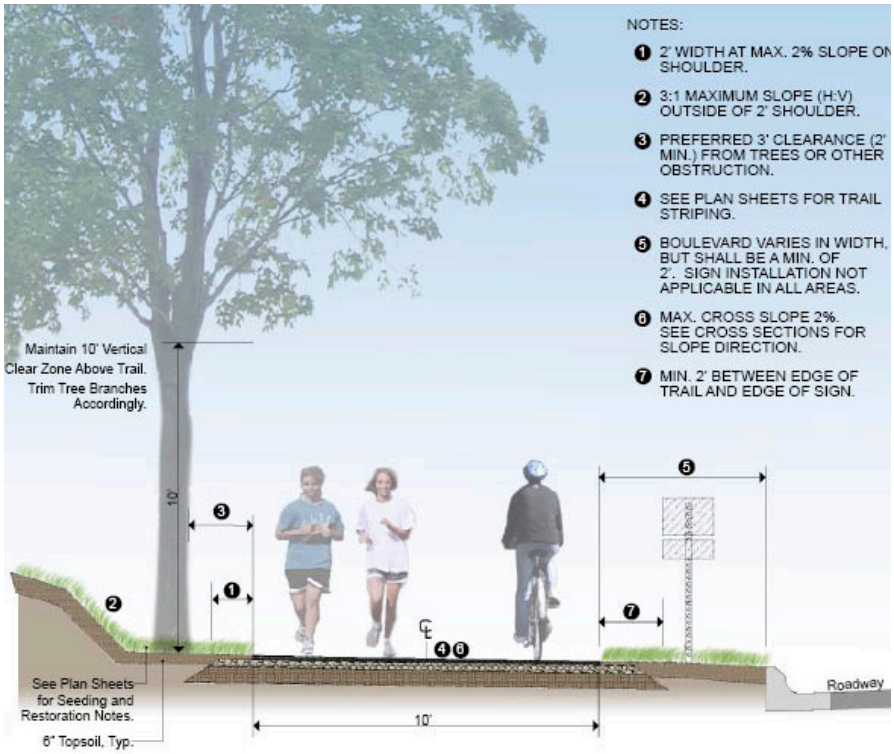

Figure 11

Regional Trail Typical Section

Source: Three Rivers Park District

- *Guide for the Development of Bicycle Facilities*, prepared by the American Association of State Highway and Transportation Officials (AASHTO), 1999.
- *Selecting Roadway Design Treatments to Accommodate Bicycles*, Federal Highway Administration, January 1994.
- *MnDOT Bikeway Facility Design Manual*, Minnesota Department of Transportation (MnDOT), March 2007.
- *State Aid Rule 8820.9995 Minimum Bicycle Path Standards*, State Aid for Local Transportation.
- *Trail Planning, Design, and Development Guidelines*, Minnesota Department of Natural Resources (MnDNR).
- *Manual on Uniform Traffic Control Devices (MUTCD)*, MnDOT, May 2005.

- *Public Right-of-way Access Guidelines* (PROWAG).
- *Best Practices for Traffic Control at Regional Trail Crossings*, *A collaborative effort of Twin Cities road and trail managing agencies*, July 2011.
- *Bicycle and Pedestrian Wayfinding*, Metropolitan Council, October 2011.
- *Designing Sidewalks and Trails for Access, Part I and II: Best Practices Design Guide (FHWA); ADA Accessibility Guidelines for Outdoor Developed Areas* (United States Access Board); and *ADA and ABA Accessibility Guidelines for Buildings and Facilities* (U.S. Access Board).
- *Guidance for Three Rivers Park District Trail Crossings, Determining Effective Trail Crossing Practices in TRPD Parks and Public Rights-of-Way*, SRF Consulting Group, Inc., December 2013.

Throughout the design process of Baker/Carver Regional Trail, the Park District will work closely with the local community to design the trail in a manner that has the greatest public benefit and least amount of private property impacts.

Additional Trail Elements

Trail identity, crossings, wayfinding, traffic signage and devices, rest stops, drainage, and trailheads are important elements of regional trails. Their proper design and placement add both aesthetic and functional value to the trail.

Unifying, Desirable Corridor

As a destination regional trail, a primary design goal is to create a sense of place along the regional trail and an enjoyable trail user experience. Designing the trail with unifying elements and incorporating local parks and adjacent natural resources will help achieve this goal. Unifying elements may include distinctive trail design, wayfinding signage, rest stops, and trail crossings. Where it is not possible to utilize parkland or acquire a wider corridor width, it is desirable to incorporate other enhancements that help evoke a sense of place such as wide tree-lined boulevards and buffers from adjacent land uses.

Trail/Road Crossings

There are several locations where the regional trail crosses roadways and in which careful attention to detail is required to provide a safe and user friendly crossing. The types of trail crossing treatments will be designed in accordance with industry best standards to ensure conflicts between trail users and roadway traffic are minimal.

In all cases, existing roadway configuration, infrastructure elements, vegetation, and other potential visual obstructions will be evaluated so sight lines can be maintained. Special provisions, such as mirrors, may be added to improve trail visibility from driveways if deemed appropriate. As vehicular traffic fluctuates, there may be a need for additional traffic signals or modifications to existing signalized intersections. These type of design considerations and trail enhancements will be addressed during the trail design phase.

Wetland and Floodplain Crossing

There are portions of the regional trail that will traverse wetlands and floodplains. In these instances, the regional trail design may incorporate bridges, boardwalks, and other creative solutions to minimize potential natural resources impacts while maintaining a contiguous and continuous trail corridor. Design and implementation of bridges and boardwalks will be coordinated with the appropriate regulatory agencies to ensure all requirements are met and any potential impacts are minimized.

Wayfinding

Regional trail wayfinding signage provides trail users with orientation and location information for amenities and services. Wayfinding signage typically provides:

- An overview map of the Park District's regional trail system and the specific regional trail.
- Directions and distances to major destinations and points of interest along the regional trail.

- Directions for long-term detours or interim routes when there are gaps within the regional trail.
- Location information for nearby amenities such as local parks and local trails.
- Location information for nearby services, such as drinking water, public restrooms, and public parking.
- Visual identification of the regional trail network through physical kiosk/signage structures.

The Park District employs three types of wayfinding signage structures: system kiosks, regional trail kiosks, and directional signage.

System Kiosks. A free-standing, roofed structure that provides trail users with a map of Three Rivers' Regional Park and Trail System, the regional trail rules, and general information about the Park District.

Regional Trail Kiosks. A free-standing, roofed structure that provides trail users with an aerial map, a description of trail highlights, and a map of the entire regional trail that depicts local trails, amenities, and services near the regional trail.

Directional Sign. A post structure with description blades attached, depicting the direction, the name, and the distance to major destinations and points of interest on the trail. Each post structure has the capability of holding up to 12 description blades.

Placement of wayfinding signage structures along regional trails typically follows one of three configurations listed as Level A, B or C (Table 3).

The Park District wayfinding is intended to complement and work in collaboration with local and regional wayfinding efforts as well as adjacent land uses and development initiatives. There may be conditions along the regional trail corridor where the wayfinding signage is altered or otherwise enhanced to better serve the trail user and appropriately fit the surrounding environment. One example of where flexibility may be appropriate is at the Luce Line State Trail, as this segment of the regional trail is owned/operated by the Minnesota Department of Natural Resources and a modification to the

Table 3

Wayfinding Signage Configurations (2014 dollars)

Level A		
Location	**Components**	**Estimated Cost**
Beginning/end of regional trail and at halfway point if regional trail is greater than 10 miles.*	• System kiosk • Regional trail kiosk • Directional signage	$45,000 *Includes all signage and concrete pad.*

Level B		
Location	**Components**	**Estimated Cost**
Approximately every two miles along regional trail. For new Level B locations, consider establishing on trail's north side.*	• Regional trail kiosk • Directional signage	$28,500 *Includes all signage and concrete pad.*

Level C		
Location	**Components**	**Estimated Cost**
Approximately every mile along regional trail. For new Level C locations, consider establishing at intersections with other regional trails or comprehensive trail systems (not trail spurs).*	• Directional signage	$9,000

*Exact location and content determined in conjunction with local community input.

kiosk recognizing both agencies' interests may be appropriate.

The wayfinding plan for the Baker/Carver Regional Trail includes signage at strategic delineated points (Figure 12). The exact location and content of wayfinding signage will be determined in conjunction with local community input and is often dictated by available public right-of-way.

Traffic Signage & Devices

In addition to wayfinding signage, the regional trail will incorporate traffic control signs and devices, such as trail stop signs and center line pavement markings. These signs and devices will reflect the physical characteristics and usability of individual trail segments and the system as a whole.

The cost to add traffic control signs and devices, including striping, to a regional trail is approximately $1 per linear foot (2014 dollars).

Rest Stops

Rest stops are generally located every mile and provide places for trail users to stop and rest along the trail and an area for amenities such as trash receptacles, benches, and bicycle racks. These simple but important amenities can serve to reinforce the identity of the regional trail route and better support trail users with mobility challenges.

General locations for rest stops are listed in Section IV, Trail Route Description and Development Concept and will be further evaluated during the design phase. The rest stop design may be modified to best meet the available right-of-way, adjacent land use, and complimentary facilities such as a bus stop. The cost per rest stop is approximately $5,600 each (2014 dollars).

Drainage

In locations where the regional trail is adjacent to a roadway, the drainage of the regional trail is similar to that of a typical sidewalk. Stormwater sheet flows over the trail pavement and onto adjacent urban roadways, where it is collected and conveyed by the roadway stormwater drainage system. In areas where the regional trail is on an independent route, such as through parks or other green spaces, or adjacent to rural road segments, alternative stormwater best management practices, such as rain gardens and infiltration swales, may be explored during the design phase of the regional trail. Stormwater must shed rapidly from the surface of the trail and not pool on the trail surface to prevent hazardous situations for the users.

Design of stormwater management practices will be coordinated with regulatory and other affected parties to ensure all requirements are met and any potential impacts are minimized.

Trailheads

Large regional and community parks, as well as public facilities along the regional trail corridor that are easy to locate, will function as de facto trailheads simply by the nature of their existence and their offerings (i.e. water, parking, restrooms, benches, rest facilities, and picnic areas). While no specific improvements are planned to any of the possible Baker/Carver Regional Trail trailhead locations as a part of the Master Plan, this will be furthered evaluated as a part of the design phase as there may be scenarios where additional trailhead improvements are necessary to adequately support the regional trail while not negatively affecting the existing function of facilities. This will be further evaluated if warranted by demand. The Park District will collaborate with local communities where trailhead improvements are necessary.

It is anticipated that the following existing public facilities will serve as key trailheads to the Baker/Carver Regional Trail:

- City of Victoria and Laketown Township:
  Carver Park Reserve
- City of Minnetrista:
  Gale Woods Farm and Kingswood Park
- City of Independence:
  Luce Line State Trail at CR 110 (currently only parking)
- City of Maple Plain:
  Currently no designated facilities
- City of Medina:
  Baker Park Reserve

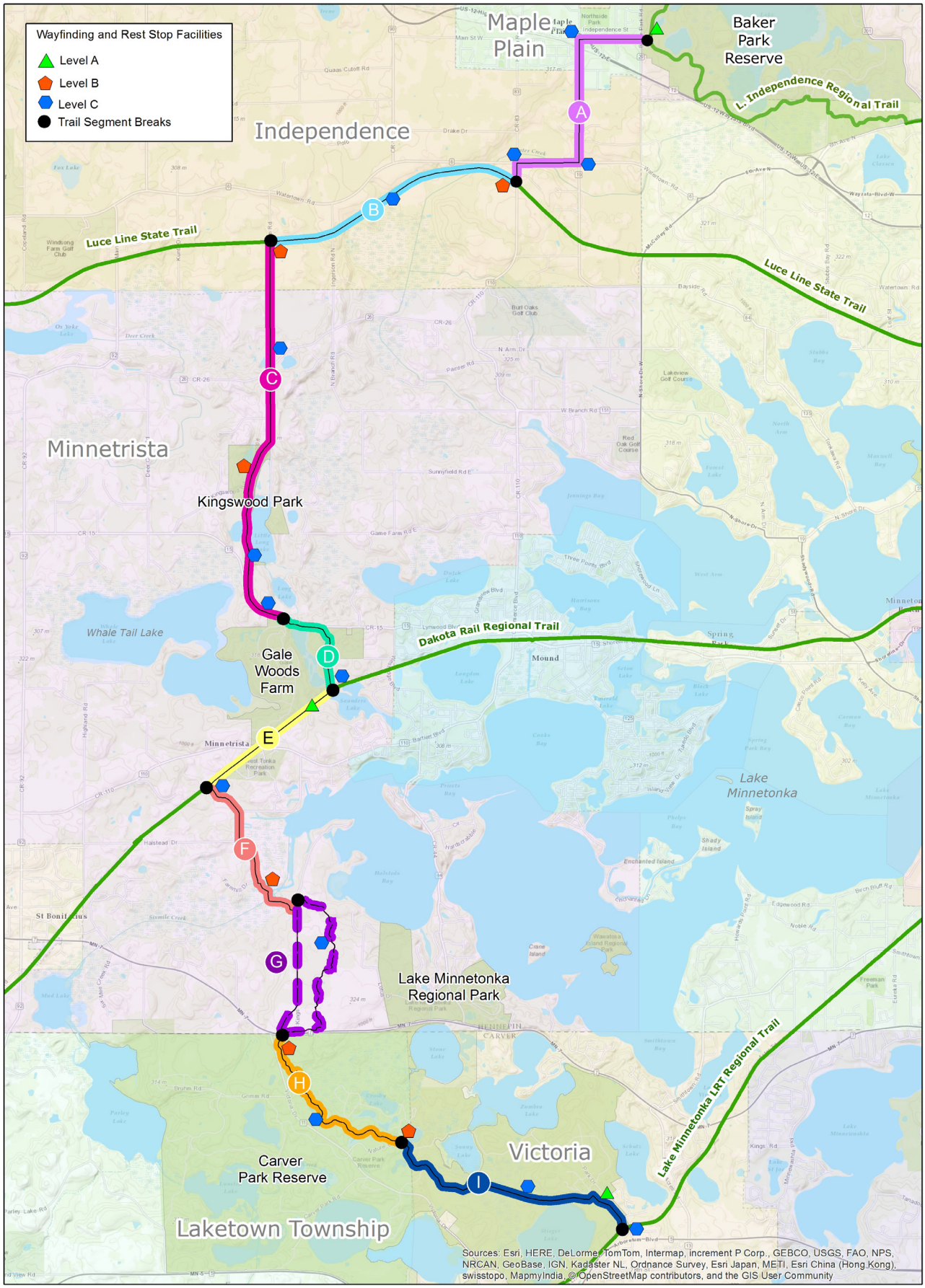

Figure 12

Wayfinding Locations

Source: Three Rivers Park District

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