

# SECTION 4 TRAIL SYSTEM PLAN

## OVERVIEW

As with parks, athletic facilities, and open spaces, the trail system is underpinned by the common vision defined in Sections 1 and 2. The overarching goals of the trail system are to:

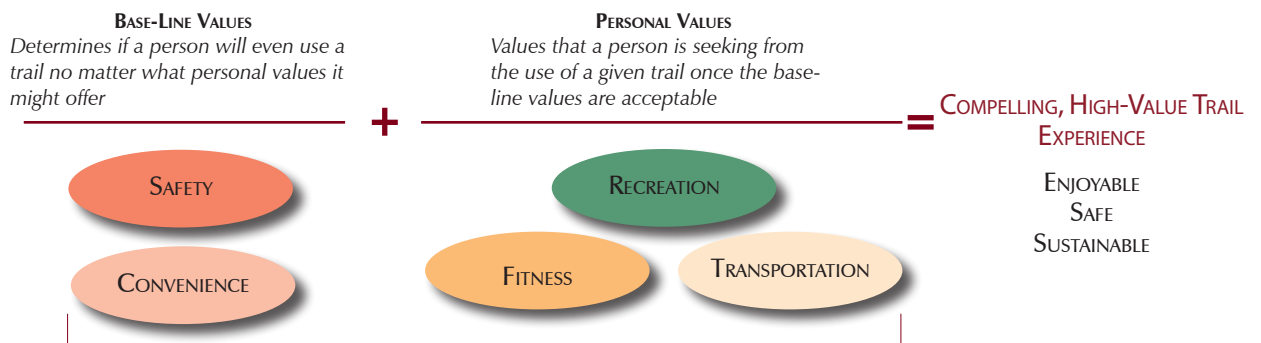
- Develop an interlinking system of high value trails throughout the city that connect with adjoining communities and the state trail
- Provide reasonable trail access to the natural resource amenities within the community without unduly compromising their integrity and natural qualities
- Provide an appropriate level of universal accessibility to trails throughout the system

## GENERAL TRAIL PLANNING, DESIGN, AND DEVELOPMENT GUIDELINES

The trail system plan is consistent with MN DNR's *Trail Planning, Design, and Development Guidelines* (2007) for designing and developing sustainable trails. The DNR guidelines are recognized as the most comprehensive standards for trails and address trail planning, design, and development. All trail development should be consistent with these guidelines as applicable to the classifications used in Northfield.

A key concept of the trail guidelines is maximizing the value of trails to local residents. The values ascribed to trails are important because they are at the core of why a person uses a particular trail on a repeat basis. Studies clearly indicate that trail users make a distinction between trails based on their perception of value, as figure 4.1 illustrates.

FIGURE 4.1 – PERSONAL VALUES ASCRIBED TO TRAILS  
Source: MN DNR's *Trail Planning, Design, and Development Guidelines* (2007)

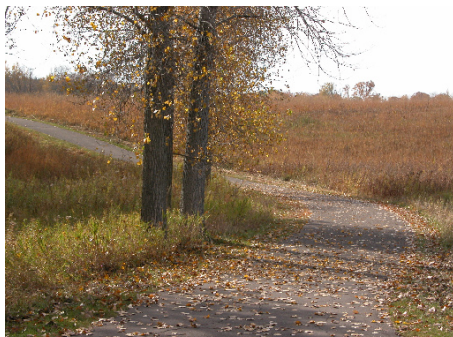


Attention to the principles of trail design when trails are being planned will help ensure that each of these values will be maximized, resulting in high-quality trails to which users will return time and again

As the graphic illustrates, safety and convenience are base-line determinants for whether a person will even use a trail irrespective of its quality. Once these two values are perceived as being acceptable, then the personal values will be given more consideration by a trail user. The following considers each of these values in greater detail.



**Safety and convenience are critical to the success of a trail.** This photo illustrates how open sightlines help improve the perception of safety for trail users. This is especially important when a parent is using the trail with young children.



**High value trails are most often scenic and away from traffic.** This photo illustrates a trail through a greenway system that interlinks with neighborhood parks, making the trail itself a major part of the recreational experience.

## SAFETY

A sense of physical and personal safety is the most important trail value in that without it people are disinclined to use a trail irrespective of how many other values it might provide. Physical safety can be relatively assured through good trail design. Personal safety, which relates to a sense of well-being while using a trail, is a less tangible yet still important factor that cannot be taken lightly.

## CONVENIENCE

Convenience is important to day-to-day use of a trail. As defined in Section 1, studies have shown that the vast majority of shared-use paved trails are used by those living within a few miles of the trail they use most frequently.

Although convenience is important, its influence is still tempered by recreational value. No matter how convenient, a poorly designed trail in an uninteresting setting will have limited recreational value. Alternatively, a well-designed trail in an interesting setting might draw users from some distance. The point is that trails should be located where they are both convenient and offer the recreational amenities that users are seeking.

## RECREATION

Of all the values ascribed to a trail, its recreational value is the most important in terms of predicting its level of use, assuming that safety and convenience are not issues. In general, trails offering a high-quality recreational experience are those that:

- Are scenic and located in a pleasant park-like setting, natural open space, or linear corridor away from traffic and the built environment
- Provide a continuous and varying experience that takes visitors to a variety of destinations and is a destination unto itself
- Offer continuity with limited interruptions and impediments to travel

This underscores that trail planning must be based on criteria that go beyond simply providing miles of trail – with considerable emphasis on the quality of the trail experience as much or more than quantity.

In Northfield, creating trails with high recreational value inherently affects community planning and development. Planning for trails that follow greenways that seamlessly traverse public open spaces and private developments alike is considerably different than planning for trails that follow road rights-of-way. While greenway-based trails often pose more challenges to plan and implement, the value of these trails to the community has proven to be very high and worth the investment. Cities that have successfully integrated these types of trails often highlight them as key aspects of the community's quality of life.

## FITNESS

Fitness is a growing value that cannot be overlooked. Fortunately, this value is generally achieved if safety, convenience, recreational, and transportation values are met. Most critical to accommodating this value is developing an interlinking trail system that provides numerous route options with trail lengths necessary for the types of uses envisioned.

## TRANSPORTATION (COMMUTING)

The transportation (commuting) aspect of trails is valuable to a growing subset of the user population. This is especially the case with shared-use paved trails, where bicycling, in-line skating, and walking are viable means of transportation, especially for people in urban and suburban settings.

## TRAIL CLASSIFICATIONS

On-road bikeway facilities are also viable and important means of transportation if developed to acceptable standards. Importantly, promoting the use of trails and on-road bikeways for transportation will only be successful if the system is perceived as safe and convenient relative to a user's skill level. Without such a system, residents will simply use their vehicle.

The system plan consists of a variety of trails, bikeways, and sidewalks defined under various classifications. Each classification serves a particular purpose in meeting local trail needs. The distinction between trail types is important due to the variability in their recreational value, which greatly affects the value of the system to residents and the degree to which a trail or system of trails will be used.

The classifications applied to Northfield's trail system are consistent with the MN DNR's *Trail Planning, Design, and Development Guidelines* (2007). The following table provides an overview of the classifications for trails in Northfield. Each of these classifications are further defined later in this section.

### TRAIL CLASSIFICATIONS

Classification	Common Guidelines	Application to Northfield
<b>Destination Trails</b>	Destination trails are paved trails for walking, jogging, bicycling, and in-line skating located within a greenway, open space, park, parkway, or designated trail corridor.	Destination trails will be the backbone of the greenway-based trail system that loops the city and connects to adjoining communities and college campuses.
<b>Linking Trails</b>	Linking trails emphasize safe travel for walking, jogging, bicycling, and in-line skating to/from parks and around the community. Linking trails are most often located within road rights-of-way or utility easements.	Linking trails will be primarily used as a means to connect neighborhoods and developed areas to the destination trail system, and provide safe routes to schools.
<b>Sidewalks</b>	Sidewalks emphasize safe travel for walking and jogging within residential areas and business districts and to/from parks and around the community. Although biking and in-line skating are allowed on sidewalks, the narrower width and concrete surface limit their use for this purpose. Sidewalks are most often located within road rights-of-way of a local street.	Sidewalks work in concert with linking trails and are primarily used as a means to connect neighborhoods and developed areas together and to the destination trail system, as well as provide safe routes to schools.
<b>Natural Trails</b>	Nature trails are commonly used in areas where natural tread is desired and harmony with the natural environment is emphasized. Use is limited to hikers and joggers in Northfield.	Natural trails will be primarily used in nature areas and as secondary connections to the destination trail system, especially within a preserved natural area or conservation easement.
<b>On-Road Bikeways</b>	Bike routes and lanes are on-road facilities that primarily serve fitness and transportation bicyclists and in-line skaters, as well as recreationalists with a higher skill and comfort level being around automobiles.	Bikeways augment, but do not take the place of, the trail and sidewalk system.

### CHARACTER AND VALUE COMPARISON BETWEEN TRAIL CLASSIFICATIONS

Each of the trail classifications defined above:

- Accommodate specific types of trail users
- Provide a certain type of recreational experience and value to pedestrians, bicyclists, in-line skaters, and wheelchair users
- Are located in a specific type of setting appropriate for the activity
- Follow design guidelines that allow for a safe and enjoyable use of the facility

The following table considers the expectations of the most common types of trail users in Northfield, and the values and preferences that are likely to be of most importance.

VALUES AND PREFERENCES OF TRAIL USER GROUPS





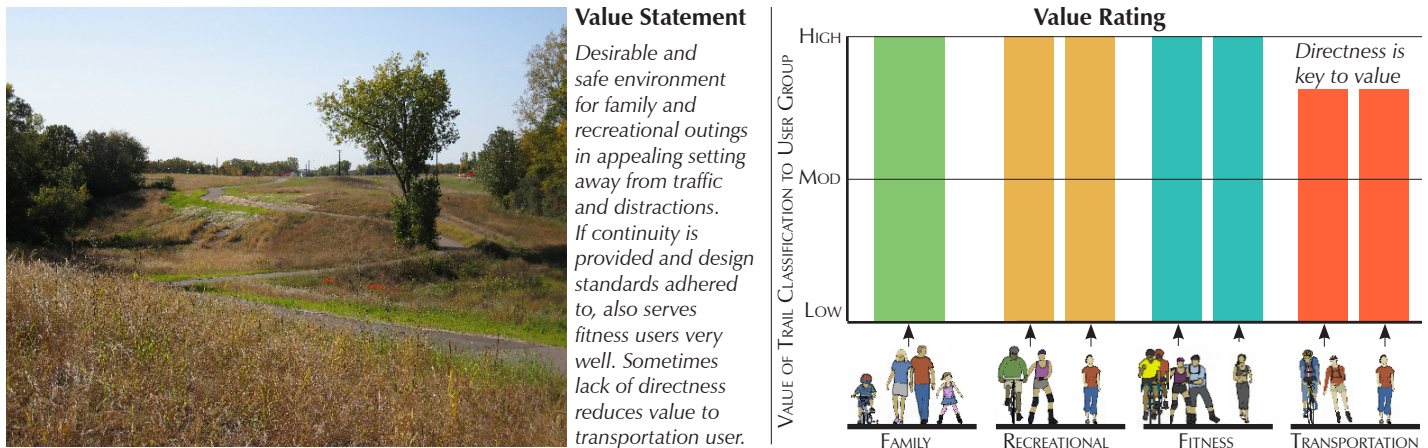
User Group	Values and Preferences	Symbols
<b>Family Group – Various Modes</b>	Safety and convenience are top priorities, followed by a pleasant recreational experience. Controlled, traffic-free access to sidewalks and trails is preferred. Length of trail is less important than quality of experience. Will typically only use low-volume residential streets when biking or skating, and rarely busy streets even with bike lanes or routes.	 FAMILY
<b>Recreational Walker, Bicyclists, and In-Line Skater</b>	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
<b>Fitness Walker/Jogger, Bicyclists, and In-Line Skater</b>	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
<b>Transportation Walker, Bicyclists, and In-Line Skater</b>	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

Figure 4.2 provides a comparative analysis of each of the trail classifications highlighted in the table on the previous page relative to the values and preferences of the various user groups defined in the above table.

FIGURE 4.2 – COMPARATIVE ANALYSIS OF TRAIL CLASSIFICATIONS RELATIVE TO USER GROUP VALUES AND PREFERENCES

Source: Brauer & Associates, Ltd. –Trail Values and Preferences Handbook

DESTINATION TRAIL – GREENWAY SETTING



DESTINATION TRAIL – PARKWAY SETTING

