
Section 8 Trails and Greenways

8.1 Introduction

The City has an adopted Parks, Open Space and Trails Dedication Ordinance. The ordinance defines trail requirements including that a developer must pay for the construction of all trails in a development if they are identified in the Trail Master Plan (TMP). The City’s TMP has been reviewed and amended to reflect the strategic future location of trails along stream and river corridors and through natural areas that contain wetlands, uplands and woods. The City has given good foresight in developing the TMP sooner rather than later. By developing the TMP it has allowed the City to identify a future connected trail system before the land is developed and the opportunity for a connected trail system is lost.

The City’s current trail system contains 40 miles of paved trails. A significant number of these paved trails have been constructed within the last ten years. In order for a connected trail system to occur, it is important that the TMP emphasizes future links that connect existing trails to new trails. Providing connections from existing trails to new trails will promote a system that allows users to travel between older developed areas of the community and new emerging development. It also identifies connections to be made well into the future as new development occurs.

Trails are beneficial to a community. Trails can serve as an alternative method of transportation to more traditional methods such as roads and streets that serve vehicular traffic. Encouraging and providing opportunities to people in the community to walk or bike to work, school, play and retail centers can improve the air quality in the community by reducing vehicle emissions due to less vehicular traffic. Trails provide opportunity for community members to improve and increase health and fitness through walking, in-line skating and biking. Trails can also improve the livability of a community because they attract many different types of users such as children, teens, adults, older adults, people with disabilities and families. Trails provide space for socialization and a safe place to recreate. Trails have a positive economic impact on communities. A well-planned and comprehensive trail system that provides links and connections to Farmington’s amenities will be inviting to visitors from outside the community to come and use the trails and provide a boost to the local economy.

8.2 Types

Trails are classified according to their location in relation to vehicular traffic. There are five types of trails: park trail, connector trail, bikeway, alternative use trail and greenway.

1. Park Trail

These are typically multi-purpose trails located within natural areas, open space and parks. Park trails emphasize a strong relationship with the natural environment within a park setting. The City should place a priority whenever possible on the construction of a park trail due to its desirability of being located away from streets and roads and being located within parks, open space and natural resource areas. The main benefits of park trails are as follows:

- creates a connectedness to the natural environment

- creates a safer trail system since user’s travel through areas like parks, open space and natural areas that are rarely interrupted by traffic
- useful for bringing the entire park, open space, and natural areas together under one comprehensive system
- effective tool in identifying property boundaries for residential, commercial areas and industrial parks from parks, open space and natural areas

Park trails should be developed using the following strategies:

- clearly define the routing of park trails through the creation of a comprehensive trail plan
- it is imperative that land acquisition occur at an early stage either through fee simple or easement so that the City controls the land
- create an assortment of funding mechanisms that provide money for the construction of park trails in new developments as well as new trails in existing subdivisions where there are none
- construct at a minimum width of 10 feet
- develop specifications for design standards that identify how the park trails should be built that not only reflect local standards, but also reflects standards of the Minnesota Department of Transportation (MN DOT), the American Association of State Highway Transportation Organization (AASHTO) and American’s with Disabilities Act (ADA) design guidelines

2. Connector Trail

Connector trails can be defined as trails that provide safe travel for users traveling to and from parks and the community. Connector trails are commonly constructed as a separated trail along the side of streets and roads. They are commonly built within road and street right of ways, boulevards, utility easements or along artificial drainage ways.

The main benefits of a connector trail are:

- uses existing space that sometimes is underutilized
- can provide connections from neighborhoods to the trail system in locations where park trails or greenways are not able to
- keeps trail users off of streets and roadways

Connector trails should be developed under the following strategies:

- construct connector trails as part of a street and utility infrastructure project in areas where no current trail exists
- identify future connector trails on the Trail Master Plan map in order to establish trail right of ways and easements at an early stage of development
- connector trails should be constructed at a width of at least 8 feet



Shown in this photo is an example of how an easement between two homes was acquired during the early stages of development that resulted in an important trail connection having been completed.

A connector trail is constructed either in the boulevard or right of way and is commonly separated from the street.



3. Bikeway

Bikeways are defined as paved segments of roadways that serve to safely separate bicyclists from vehicular traffic. There are two types of bikeways and they are commonly referred to as either a bike lane or bike route. Bike routes are designated streets or roadways that have either paved shoulders or portions of the roadway that separates vehicle traffic from users. A bike lane is a designated portion of a street or roadway that has a painted line that creates separation of bicyclists and vehicular traffic. The striped lane is for the exclusive use by non-vehicular traffic, primarily bicycle use.

The main benefits to creating bikeways are as follows:

- bikeways can play an important role in encouraging commuters to bicycle to work
- can be created at a relatively cheap cost resulting in a the trail network for bicyclists to be expanded
- provides connections from neighborhoods to off-street trails for bicyclists

Bikeways should be developed under the following strategies:

- clearly identify on the Trail Master Plan map locations of bikeways
- establish design standards that define how bikeways are to be built using local, MN DOT and AASHTO standards
- should be considered along collector, minor arterial and when these are not possible, major arterial roads
- develop bikeways when new roads are constructed or upgrades are made
- install proper signage that connects users to either off-street trails or other bikeways

4. Alternative Use Trail

Trails that provide uses for cross country skiing, snowmobiling, horseback riding and mountain biking are considered alternative uses for trails. Like park trails, alternative use trails have

strong ties to the environment albeit a different one. A description of the different types of alternative uses is provided below.

Mountain Biking: Mountain biking is an emerging trail use and appeals to a wide age-range of participants. Since it is such a new and emerging sport, users have a wide range of skill level. Mountain biking utilizes the challenges that the natural environment presents while at the same time degrades it. The City should not provide this type of trail to its residents. The county and regional park systems should be the primary provider of this type of trail.

Cross Country Skiing: Cross country ski trails can be either groomed on unplowed paved surface trails or in locations separate from paved trails. There are two different styles for cross country skiing: diagonal (also called traditional) and skate-ski. A diagonal cross country ski trail requires a groomer, which is a special piece of equipment that is pulled across the snow and lays down tracks for cross country skiing. A skate-ski trail, which is an alternative method of cross-country skiing, requires a wider packed and groomed surface where the skis do not ride in tracks. Cross country ski trails should be designed with a series of longer loops rather than be a continuous linear trail.

Horseback Riding: Created for horses, these types of trails utilize a grass, wood chip or natural soil for its surfacing material. A strategy is to use the same trail for horseback riding in the summer as the trail that is used for cross country skiing in the winter. The City should not provide this type of trail unless it has developed a cross country ski trail system that can be used for skiing in the winter and horseback riding the remainder of the year.

Snowmobiling: The City currently has an adopted ordinance that specifies where snowmobiles may be driven (Title 6, Chapter 8, Section 3). As the City continues to grow, snowmobile trails that currently exist within the rural areas of the City will no longer be available for use because they will become part of the urban area of the City. The City needs to address how future development may impact current snowmobile trails and if there are ways to mitigate the loss of snowmobile trails. The City should examine whether or not it wants to amend its current snowmobile ordinance to allow snowmobiles in trail corridors so long as the use of the snowmobiles in the trail corridors does not infringe on other users such as cross country skiers and pedestrians. Should the City decide to amend its current ordinance it should make sure that it provides trail corridors for snowmobiles to travel from the City to regional and state snowmobile trails. These corridors should be designated and separated from other trails. This may require a trail corridor of 50 feet wide or more to accommodate snowmobile use. Currently local snowmobile trails that are located within the boundary of the City of Farmington limits are maintained by a local snowmobile club called the Farmington Area Sno-Tigers Snowmobile Club.

Alternative use trails should be developed using the following strategies:

- assess the need for alternative use trails before any are constructed
- determine if the need can be better met through county, regional or state park agencies
- alternative trail design should follow the same standards created by county, regional park and state resource agencies

- if needed, provide space for trail corridors that are at least 50 feet wide to accommodate separated trails for different user groups
- develop alternative trails so that they do not negatively impact the natural environment

5. Greenway

A greenway can be defined as a linear corridor that provides uninterrupted travel for alternative forms of transportation (typically non-motorized forms) that provide connectivity between parks, open spaces, natural areas, schools and neighborhoods. Greenways should be looked at as a vital component of a comprehensive trail system.

Greenways main benefits are as follows:

- A reduction in the number of trails crossing roads and streets due to their uninterrupted movement of users through parks, open space and natural areas
- An opportunity for preservation of natural and environmentally sensitive areas
- Control over what natural and open space areas that users are able to travel through and access
- Increased value for adjacent and abutting properties

There are two types of greenways that are recognized, natural and man-made. The following table identifies some of the different physical characteristics that may be found in the two types of greenways.

Table 8.11: *Types of Greenways*

Natural	Man-Made
creek	vacated railroad bed and/or right of way
stream	residential subdivision
river	electrical overhead power line easement or right of way
wooded area	pipeline easement
wetland	engineered drainageways

Greenway trail corridors should be developed using the following strategies:

- whenever possible incorporate natural areas into the trail corridor at a width of at least 50 feet with preference given to a corridor width of up to 200 feet
- utilize man-made corridors when natural area corridors are not feasible or possible
- locate man-made corridors along drainage ways
- improve man-made corridors to include native trees, native grasses, wildflowers and shrubs to create a vegetative buffer along the corridor creating a distinct property edge to the corridor
- develop man-made corridors that are least 50 feet in width to allow proper space for vegetative buffers to be planted and to thrive

- trails should be constructed at a minimum width of 10 feet with an optimum width of 12 feet or wider if funding allows
- trails in greenways should meander through the greenway in order to create interest and mystery
- the construction of paved trails in greenways should have minimal impact on existing vegetation
- as much as possible trails should be constructed out of the floodplain so as to reduce the likelihood of the trail being flooded

8.3 Greenways and Regional Trail Plan

The City of Farmington is fortunate to currently have five natural greenways within the City boundaries. Two greenways, the Vermillion River and South Creek, have been identified as future regional trail corridors through Farmington that will provide connections to the future regional park in Empire Township, to Murphy-Hanrehan Park Reserve and to the Cannon Valley Trail. A trail map is included in the appendix and identifies the locations of the five greenways including the two greenway corridors that have been identified by the Metropolitan Council as future regional trails. The five greenways are as follows:

1. North Creek

North Creek Greenway will provide an important connection from the north edge of Farmington to the Vermillion River Greenway. A significant portion of this greenway will become part of the City with the future Fairhill Development and the recent Riverbend Development projects. Because of the width of this greenway and its connectivity not only to the Vermillion River Greenway but also to the City of Lakeville trail system, trails have been identified to be constructed on both sides of the greenway. Since this greenway extends into the City of Lakeville and beyond that to the City of Apple Valley it is anticipated that the North Creek Greenway will become a heavily used greenway not only by the City of Farmington residents, but also by residents from Lakeville, Apple Valley, and residents from the area surrounding the City of Farmington. The connection of this greenway to the Vermillion River Greenway will provide another connection through Farmington to the new regional park that is currently being planned for in Empire Township. The trail width for the greenway should be constructed at a minimum width of 10 feet with a preferred width of 12 feet in anticipation of it becoming a heavily used trail. Since North Creek flows into the Vermillion River, which is a designated trout stream by the Minnesota Department of Natural Resources (DNR), care must be taken in the planning and design of the trails using Best Management Practices so as to cause no net impact on the creek from storm water run off due to its connection to the Vermillion River. Vegetation along the trail should be restored after construction is completed. An effective strategy to ensure that the natural scenery can be viewed, is that the trail should meander in and out of the greenway so that from time to time, North Creek can be viewed from the trail. Since certain parts of North Creek are prone to flooding, it will also be beneficial that the trail should be located out of the floodplain as much as possible to minimize the impact of flooding on the trail. The City should look for ways to acquire land for parks along the North Creek Greenway in order to improve the connectivity of its parks and open space system.

2. Vermillion River

The Vermillion River Greenway contains a corridor that is rich in wildlife habitat and wildlife resources. Designated as a trout stream by the DNR and identified as a wildlife corridor, the Vermillion River has immense value to the City’s greenway system. All creeks located in and adjacent to the City are tributaries to the Vermillion River. The benefit of this is that the Vermillion River can become the greenway that ties all of the City’s greenways together as part of an interconnected and comprehensive system consisting of parks, open spaces, natural areas and trails. The Vermillion River Greenway extends beyond the borders of Farmington which provides an opportunity for the City’s trails to connect to other communities’ and regional trails and parks to the east, south and west. The Vermillion River Greenway will also provide a viable connection from new emerging growth areas to older parts of the community. A portion of the trail system has already been constructed through the Rambling River Park area. The Vermillion River Greenway trail corridor should be expanded from the existing trails built in Rambling River Park. Existing trails have been constructed at an 8 foot width and any future construction of new trails or reconstruction of existing trails through the Vermillion River Greenway should be constructed at a minimum width of 10 feet with a preferred width of 12 feet in anticipation of it becoming a heavily used trail. Since the Vermillion River provides wildlife habitat and has been designated as a trout stream, care must be taken in the planning and design of the trails along the Vermillion River by using Best Management Practices so as to cause no negative impact on the river from storm water run off. Vegetation along the trail should be restored after construction is completed. An effective strategy to ensure that the natural scenery can be viewed, is to meander the trail in and out of the greenway so that from time to time, the river can be viewed from the trail. Since certain parts of the Vermillion River are prone to flooding, it will also be beneficial that the trail be located out of the floodplain as much as possible to minimize the impact of flooding on the trail.

The Vermillion River Greenway has been identified by the Metropolitan Council to be designated as part of a future regional trail that will serve as an important regional connection from southwestern Dakota County to the new regional park planned in Empire Township. The designated future regional trail will provide a connection from the Cannon Valley Trail past Chub Lake where it will run along the Vermillion River through Farmington to the new regional park in Empire Township. The City should work with Dakota County, Metropolitan Council and adjacent land owners to either acquire land through fee acquisition, park dedication (should development occur along the river), gifting and/or easement. It is important to acquire the land along the river in order for a public trail corridor to be set aside for future generations to enjoy.



The Vermillion River Greenway corridor should be expanded in the future to allow a regional trail connection to the new regional park in Empire Township.

3. Middle Creek

Running through the central part of the community, the Middle Creek Greenway will serve as a major connector from the parks, schools and neighborhoods on the east side of the City to the parks, schools and neighborhoods on the west and northwest side of the community. Currently there has been some development that has occurred along a portion of the Middle Creek Greenway, which has created a missed opportunity to construct trails on both sides of the greenway much like the North Creek Greenway. However, the City should look for ways to work with the property owners adjacent to the north side of the greenway to construct a trail sometime in the future. The Middle Creek Greenway provides an excellent opportunity to provide a trail connection to the Farmington Industrial Park which borders the greenway on the south from Akin Road to Pilot Knob Road. The trails through the Middle Creek Greenway should be constructed at a minimum width of 10 feet with a preferred width of 12 feet in anticipation of it becoming a heavily used trail. The City should look for ways to acquire land for parks along the Middle Creek Greenway in order to improve the connectivity of its parks and open space system.

4. South Creek

Like the North Creek Greenway, the South Creek Greenway presents an opportunity for future connections to the City of Lakeville's trail system. The South Creek Greenway is located south of CSAH 50 and its creek empties into and connects with the Vermillion River Greenway. Because of the width of this greenway and its connectivity not only to the Vermillion River Greenway but also to the City of Lakeville trail system, trails should be constructed on both sides of the greenway. The trails should be built at a minimum width of 10 feet with a preferred width of 12 feet in anticipation of it becoming a heavily used trail. Since South Creek flows into the Vermillion River, which is a designated trout stream by the Minnesota Department of Natural Resources (DNR), care must be taken in the planning and design of the trails so as to cause no negative impact on the creek from storm water run off due to its connection to the Vermillion River. An effective strategy is to ensure that the trail remains as much as possible at least 100 feet from the creek bed in order for runoff from the trail to be filtered and slowed by vegetation before it reaches South Creek. Since the creek may flood from time to time, it will also be beneficial to keep the trail itself on the outer edge of the flood plain as much as possible while still allowing the natural features of South Creek to be viewed and enjoyed. The City should look for ways to acquire land for parks along the South Creek Greenway in order to improve the connectivity of its parks and open space system.

The South Creek Greenway has been identified by the Metropolitan Council to be designated as part of a future regional trail that will serve as an important regional connection between Murphy Hanrehan Regional Park and the new regional park identified in Empire Township. The regional trail will connect the two regional parks by following a route through Lakeville where it will eventually connect to a trail running along South Creek into Farmington. From there the trail will connect to a trail running along the Vermillion River that will connect to the new regional park in Empire Township.

5. Prairie Waterway

The Prairie Waterway is located on the east side of Farmington. Its length is extended from Minnesota T.H. 50 to the Vermillion River. It serves as an area where storm water runoff is filtrated through a series of ponds before it empties into the Vermillion River. Native plants and wild flowers have been planted along the Prairie Waterway in order to assist with the filtration of the water as it moves through this system of ponds. The restored prairie areas provides abundant habitat for wildlife, which is spotted frequently when walking on the trails. The Prairie Waterway was constructed as part of the East Farmington development in the 1990's. Approximately half of the length of the Prairie Waterway has paved trails constructed within it. This greenway will serve as an important connection to the new Dakota County regional park in Empire Township for residents who live on the east side of Farmington. Making the connection from Farmington's trails to the regional park will need to occur in Empire Township and should be reflected in Empire Township's trail plan.

8.4 Design Standards

The City has developed specific design standards as they relate to the construction of paved trails, pedestrian ramps and crosswalk identification. The City's design standards shall be the accepted design format unless there are other Federal or State requirements that would supersede the City's design standards, i.e. American's with Disabilities Act. The City's trail design standards are included as part of its Engineering Guidelines and Standard Plates Document. The following is a summary of the City's basic requirements for trail construction:

- initially remove six inches of subsoil
- install six (6) inches of Class 5 aggregate 100% crushed limestone compacted base
- first lift of bituminous will consist of a 1.5 inch 2331 bituminous base
- final lift shall consist of 1 inch of 2341 bituminous wear course
- when constructing collector trails (trails in the boulevard or right of way) the City allows the base lift to be placed first and then the wear course is only placed after home construction is completed in order to minimize the amount of heavy equipment driving on the finished wear course.
- an alternative construction method that the City has allowed in the past in park trail locations, has been to lay one lift of 2.5 inches of 2341 bituminous wear course, after the base has been properly placed and compacted

8.5 Safety and Security

Once constructed, it is important that trails are maintained to a high standard in order for the trail system to be successful. Trails that are improperly maintained can create potential hazards for users. The safety of trails users should not be compromised. The City needs to create a funding mechanism that provides money for the future maintenance of trails to ensure that they remain safe and don't deteriorate prematurely.

Another critical component of trail maintenance is establishing a regular inspection schedule of the trail system by City staff. Regular inspections should catch maintenance issues that then can be corrected in a timely manner. Regular inspections also provide the opportunity to keep litter picked up, which in turn provides the appearance that the community cares about rather than neglects its trail system. Monitoring of the trails by staff will help to deter vandalism, as the person who is monitoring the trail should catch vandalism in the early stages before it becomes significant. If vandalism is not caught early and either removed or repaired, it could lead to even more vandalism occurring creating a potential hazardous condition along the trail. Littering and vandalism should be recorded in a log book in order to track and identify trouble spots along the trail system. Once these trouble spots are identified, the Police Department should be notified for their support in providing additional surveillance of the trouble spots by either its Community Service Officer or a bike patrol.

The following are items that the City needs to consider when developing a safety plan for its trail system:

1. Rules

In order to create order rather than chaos on the trail system rules need to be identified and users need to be informed of them. Rules should be posted at trailhead and rest area locations. Rules that are appropriate for the City of Farmington’s trail system should include the following:

- Only non-motorized vehicles are allowed on trails.
- Pets must be kept on a leash and domestic animal waste must be picked up and properly disposed.
- Users should stay to the right except to pass.
- When entering onto a trail allow existing users to pass before entering onto the trail.
- When trails intersect, use traffic laws to determine who has the right of way to pass through the intersection first.
- Please keep yours and other’s litter picked up.
- Bicycle riders should yield to pedestrian traffic.
- Provide a warning signal that can be heard prior to passing someone on the trail.
- Follow all traffic laws when riding bicycles on streets.
- When using the trail, wait to rest or socialize with other users until you have come to a rest areas or shelter. If there is not a rest area or shelter nearby, move off of the trail beyond the shoulders to rest or socialize with others.
- Users should be off of trails before dark unless the trail is lit and then users should be off of the trail from 11:00 p.m. until 7:00 a.m.

2. Education

As much as possible, users of the trail system should be educated about safety while using a trail. While it should not be a requirement to receive safety education prior to using a trail, the City nonetheless should do its part in ensuring that trail users understand how to remain safe when on trails. The following strategies are suggested ways to increase trail safety:

- Provide an annual bike safety camp day or program to youth in the community that teaches them about such things as proper protective equipment, trail rules, rules of the road, use of hand signals and a bike safety inspection.
- In the spring of each year, provide a press release that identifies safety topics related to trail use and reminds the community about the trail rules.
- Work with other agencies and organizations in order to make bike helmets available to youths in the community at either a reduced cost or for free.
- Provide safety signage along the trail system and in various locations that reminds users of such things as what side of the trail to ride on, correct manner in which to pass someone and which user groups have the right of way over other user groups.

3. Enforcement

While the City is not always able to provide police staff to patrol the trail system on a daily basis, occasional patrolling could potentially be done by either the Community Service Officer or through a bike patrol. Perhaps however, the most effective and visible enforcement will occur by users of the trail system.

The following are strategies that the City may want to consider when providing enforcement on the trail system:

- Create good visibility to abutting property owners who can provide 24 hour observation of trails by removing some or all of the tall brush or branches in order to provide views to the trail.
- Create a volunteer trail patrol unit that strictly patrols trails and reports criminal or suspicious activity to the City's Police Department. Visibility of the patrol unit is the key to deterring criminal activity.
- Keep law enforcement agencies informed of trouble spots on the trails in the event that they have an opportunity to increase patrol of the area around the trouble spot.
- Make sure that people are reminded to lock vehicles when parking their vehicle at a trail head parking lot.
- Explore costs and options related to emergency call boxes being place in key locations.
- When trouble spots are identified, consider lighting the trouble spots to deter criminal activity.
- When opportunities exist and it is financial feasible, trails should be lit but only in situations that it does not significantly impact of affect property owners adjacent to the trail.

8.6 Amenities

Trail amenities are yet another piece of the comprehensive trail system puzzle. Supporting facilities such as signage, restrooms, shelters and parking areas are important amenities that when provided assist in making the trail system more attractive and successful. Trail amenities identified below are necessary to promote use of the system. Proper care of these amenities means that they will need to be continually maintained and replaced over time.

1. Parking Areas

Adequate vehicle parking space is critical to the trail system’s success. While it is the intent of the trail system to provide an opportunity for residents to gain quick and easy access to a comprehensive trail system, there will be some residents and visitors to the community who wish to drive to a trailhead and park their vehicle. The City should provide parking at designated trail head locations so as to encourage and enable users to drive to and access trails. The City should focus on providing off-street parking areas such as within parks to gain access to a trail and limit the amount of on-street parking. Currently Rambling River Park is one such trailhead location where an off-street parking area is provided. In the development of new parks, parking areas should be constructed in larger parks that have adequate space to accommodate vehicle parking.

2. Bike Racks

Bike racks are important for bicyclists who use trails. It provides a place where bikes can be secured for short periods of time that allow the bicyclists an opportunity to use the restroom, stop and rest on a bench or eat a lunch under the gazebo. The size and number of bike racks will depend on the number of bicyclists using the trails. The City should monitor the need for additional bike racks. Bike racks should be installed close to other amenities such as a restroom, kiosk, playground or ballfield. Bike racks should be securely fastened into a concrete pad that abuts the trail. Color and design are dependent on the location of installation. Bike racks should be inspected and maintained on an as needed basis.

This picture illustrates one example of a bike rack design that can be installed for trail users.



3. Waste Containers

In order to encourage users to properly dispose of their litter, refuse containers need to be provided at rest areas, shelters, trail heads and strategic locations along the trail. Containers should be dumped on a regular basis in order to ensure that litter does not overflow and cause pollution. Refuse containers should be aesthetically pleasing and fit with the natural environment. Refuse containers should have lids that keeps litter inside and animals out. Containers should be secured so that they cannot be tipped over or removed from the premises.

4. Benches

Benches serve as an inexpensive but good resting stop for users or they can provide an opportunity to enjoy a splendid view of nature. Benches should be installed along the trail edge but far enough off of the trail so as not to interfere with the activity that is occurring on the trail. Bench legs need to be securely fastened to a concrete base that does not allow them to be either tipped over or removed from the premises. The concrete base should be poured so that it is contiguous with the trail so as to provide access to all users of the trail. As much as possible benches should have an aesthetically pleasing color and fit with the natural environment. When purchasing benches, serious consideration should be given to purchase recycled plastic benches due to low maintenance and long life. Benches need to be regularly inspected and maintained in order for them to be of any use. Planks should be replaced as soon as possible when they are broken.

5. Gazebo

Small gazebos or shelters should be provided in pre-determined locations along the trail and primarily along park trails. Preference should be given for constructing an all-metal gazebo due to metal having a longer life span than wood. Size should be the main factor considered when purchasing a gazebo for trails. A gazebo should serve as a facility whose main purpose is to provide a place where users can get out of the sun or rain or stop and eat a meal. Gazebos should be constructed off of the trail with a small trail leading from the shelter back to the main trail so that it is accessible to all. Two or three picnic tables should be provided for seating and eating. Picnic tables should be made from recycled plastic material similar to what the benches are made from.

6. Kiosk

Kiosks are decorative structures that are used to provide important information to trail users. The information provided at a kiosk may include: trail rules, a map of the existing City trail system and general safety tips and information related to trails. Kiosks should be constructed out of durable and low maintenance materials. Build a secure case that the informational material may be posted in so that it does not blow away and more importantly so that control can be maintained about what information is posted in the kiosk case. Kiosks should be located at trailhead locations and should be located close to the parking area.

7. Restrooms

Restrooms should be provided at trailhead locations. Restrooms may either be a facility with plumbing or may be a portable toilet. Restrooms with plumbing will need to be cleaned on a daily basis. Restrooms should not be solely constructed for trail users but rather should be constructed in trailhead locations that have other facilities as well such as a playground or ballfield. The reason for this is so that they are built in areas where there is additional traffic for other reasons besides the trail. Increased traffic should deter vandalism in restrooms. The City should contract the portable toilet service from an outside contractor. If using portable toilets,

they should be secured properly so that they cannot be tipped over. The trails should lead to the restrooms in order to make them accessible. The restroom facilities whether they contain indoor plumbing or are portable should be accessible to all users.

8. Signage

In order for trail users to successfully navigate the trail system, a comprehensive sign program should be implemented. Trail signs should indicate distances and provide direction to destinations that are important community landmarks such as parks and schools. Signs should contain their unique and distinctive characteristic such as color, shape and/or style of lettering (branding) that makes them easily identifiable to trail users. Signs should be made from a material that is attractive, requires little or no maintenance and is durable.

8.7 Maintenance Plan

Maintenance plays a critical part in the survival of a trail system. Without an ongoing maintenance program, the pavement will break down and will become unsafe for use. A preventive maintenance program will provide the following benefits:

- effective way to promote the trail system during the budget process
- can deter vandalism, litter and encroachment
- create positive public relations between the City and abutting property owners
- encourages the community to take pride in their trails system and thus helping to make enforcement easier to manage
- keep the surface of the trail in a usable and safe condition
- extend the life of the trail system

Maintenance of trails can mean many different things other than just maintaining and managing the trail surface. **Table 8.12** identifies common issues that should be addressed and strategies that should be implemented for long-term maintenance of the trail system:

Table 8.12: *Long-Term Maintenance*

Issue	Maintenance Strategy
trees	Prune back limbs to at least six feet off of edge of trail. Continually inspect trails for hazardous trees and when identified remove hazardous limbs or the tree itself if needed.
weeds	Mow or apply pesticide in areas that are not environmentally sensitive and only on plants that are harmful to the public
roots	Removal of tree or shrub should occur or it may eventually cause heaving of the trail
cracks	Cracks should be cleaned and then filled with appropriate material.
aggregate breaking away from pavement	Sealcoat with slurry, or if too much aggregate has been lost, and the trail is old, do an overlay on the existing trail.
pothole	Clean out pothole and remove any additional trail surface that has failed or has been undercut by the washout. Replace with class 5 aggregate and patch with hot asphalt.
litter or debris	Remove and dispose of properly. Document location for historical reference. Inform public to get involved by volunteering to clean up trails through the Adopt-A-Park and Adopt-A-Trail Programs.

	Provide garbage containers along the trail for litter and trash to be disposed of by trail users.
dog waste	Install signage that requests owner to scoop up and dispose of the waste. Provide stations that have baggies and a container for disposing of waste.
dumping lawn clippings and leaves	Provide signage that identifies that dumping is illegal. Remove as quickly as possible the dumped material so that it prevents further dumping by other residents.
graffiti	Take photo to document graffiti and retain for future reference. Clean up and remove graffiti as quickly as possible.
drainage issue	Check drain structures nearby to ensure that they are not plugged. Remove water from the trail if possible. Work with Engineering to correct drainage issue.
broken glass	Sweep up glass as quickly as possible and dispose of properly. Document location for historical purposes.
loose sand or gravel	If a significant amount is present, it should be swept from the trail.

The following timeline should be followed for correcting maintenance issues related to the trail surface:

- crackfilling should occur every 5-7 years
- sealcoating should occur every 6-8 years
- if the base of a trail is still stable, but the surface has deteriorated, then an overlay should occur at 13-15 years

Finally, a maintenance and management plan should be created that identifies the trail by location, the year it was constructed, the cost of construction, the years that preventative surface maintenance has been performed (crackfilling, sealcoating and overlaying), the costs associated with preventative surface maintenance, the projected year of reconstruction and the projected cost of reconstruction.

8.8 Issues

While the City of Farmington has created a trail system that it can be proud of, there are still issues with the trail system that need to be resolved in the next 20 or more years. The issues needing to be resolved are as follows:

- 1. Create a safe trail system that provides safe connections and crossings to parks, schools, neighborhoods and commercial and industrial areas.**
- 2. Provide education programs about bike safety to youth and adult so that they can become knowledgeable about trail use.**
- 3. Provide for the construction of trails along natural areas, open space and greenways in the community.**
- 4. Construct trails that are flexible in meeting a variety of user group’s needs, desires and abilities.**

- 5. Provide connections to neighboring communities' trails.**
- 6. Provide trail access in older areas of the community where it does not exist.**
- 7. Create trail construction and on-going maintenance funding mechanisms to ensure that the trail system is a long-term investment.**
- 8. Provide trails with alternative surface types when traditional surfacing is not feasible.**
- 9. Create trail connections and not trail dead-ends.**
- 10. The City should plan for and create a limited number of alternative use trails.**
- 11. Provide signage that informs and directs users to destinations and provides proper warning to potential hazardous conditions.**