



2013 | PAVED RECREATIONAL TRAIL MASTER PLAN



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INTRODUCTION:

The City's paved recreational trail system has been in existence since 1980 and is one of the most used and treasured recreational facilities the City offers to its citizens. Over the years the Parks and Recreation Policy Plan updates have given the community an opportunity to create the vision for our trail system as the community has grown. However, a comprehensive trail planning effort has not been conducted, until now. This plan provides answers to the following questions:

- How well is our trail system meeting the current needs of the community?
- How can the trail system be improved to meet the future needs of the community?

This Paved Recreational Trail Master Plan covers the paved trails managed by the City of Fort Collins Parks and Recreation and Streets Departments. The City also provides many miles of natural surface paths which are managed through the Natural Areas Program.

The Paved Recreational Trail Master Plan focuses primarily on the recreational uses and design of the trail system; however, the City's paved trail system supports a wide range of users and trip purposes. In connection with the City's on-street bicycle and pedestrian networks, the trail system serves an important function in encouraging people to walk and bike for both utilitarian and recreation purposes. Paved trails are included in City planning efforts such as City Plan, Transportation Master Plan, and Natural Area Management Plans. The City's Bicycle Plan and Pedestrian Plan also include the trail system and coordinated connections to the City's on-street bicycle lanes and sidewalks.

The Trail Master Plan project included an extensive outreach effort to obtain information from the community and City Board's and Commissions. The outreach included open houses, questionnaires and interviews of trail users.

The plan was adopted by City Council Resolution No. 2013-096 on November 19, 2013.



CHAPTER ONE:

History of the Recreational Trail System

The recreational trail system was first envisioned by the community in the 1974 Open Space Plan. This Plan was an element of the City's Comprehensive Plan. The Plan's trail map outlined the Poudre River Trail, Spring Creek Trail and the Foothills Trail. The Poudre and Spring Creek Trails were designated for non-motorized uses only such as hiking, bicycling, and equestrian uses. A cleared dirt path separate from the hard surface path was identified for horseback riding.

Construction of the first trail segments started with test sections in Lee Martinez Park, Edora Park, and Rolland Moore Park. The response from the public was very positive and trail segments were added on the Poudre River and Spring Creek Trails in future years. The trails were 8 feet wide and constructed of asphalt or concrete.

The land along the Poudre River and Spring Creek was rural with agricultural uses when the early easements were obtained for the trail. Land for the trail was typically obtained fairly close to the river banks to avoid the agricultural operations. As the City's natural area program developed and the city became more urban, trails were better located to avoid sensitive environmental areas along waterways; while still providing a pleasant experience for trail users.

In the early days of trail development both asphalt and concrete were used to construct trail segments. By the early 1990's the use of asphalt for trails by communities along the Colorado Front Range had fallen out of favor due to the required maintenance resulting from cracking and tree and grass damage. The Americans with Disabilities Act increased the need for the trail surface to be level and smooth with concrete better serving this purpose.

Trail underpasses of major roadways and railroads were an important addition to the trail system. The early trail underpasses included the Poudre Trail at N. Shields Street, Lincoln Avenue, and Lemay Avenue. For Spring Creek Trail early underpasses included east Prospect Road, the railroad just west of College Avenue, and at S. Shields Street. The trail system presently has 32 road and railroad underpasses. See Map One.

The Poudre Trail was in place from Taft Hill Road to its junction with the Spring Creek Trail by 1986. The trail was expanded to Larimer County's Lions Open Space in LaPorte to connect with the Larimer County trail system in 2004. A portion of the trail west of Taft Hill Road is a rails-to-trails conversion accomplished through extensive willing seller negotiations with landowners.

The trail section from the junction with the Spring Creek Trail down river to the Colorado State University's Environmental Learning Center was completed in 1987. The underpass of State Highway # 14 (Mulberry Street) was completed in 1991 while the underpass of north College Avenue, near the Power Plant, was completed in 1995.

The Spring Creek Trail developed over a few years with sections from College Avenue east to Edora Park and west to Rolland Moore Park completed by 1986. The trail underpass of College Avenue was completed in 1988. Sections of the trail west of Drake Road to Spring Canyon Community Park were installed starting in 1994 with the last section in the park completed in 2007.

The Spring Creek Trail east of Edora Park was on-street to Timberline Road until right-of-way was obtained to allow the trail to move off-road in 1997.

The Power Trail along the Union Pacific Railroad line was made possible by a trail easement donated to the City by Platte River Power Authority. Platte River obtained a permanent easement for their power line from the railroad in 1994 and included the trail easement in their acquisition. The trail presently extends from near EPIC at Edora Park some 4.75 miles to its terminus at Trilby Road. Development of the trail began in 2000 with the section from Edora Park south to Drake Road.

The Fossil Creek Trail has 5.87 miles developed at this time. The first section of the trail was installed from Shields Street west to near Taft Hill Road in 1996. The widening of Shields Street occurred at this time and included the trail underpass of the street. The trailhead parking lot at Shields Street was built when the raptor observatory was built on the Cathy Fromme Prairie in 1997.

The Fossil Creek Trail underpass of Taft Hill Road was constructed in 1997 with the parking lot built in 1999. The trail west of Taft Hill Road to Luther Lane was built in 1998 and remained the terminus of the trail until 2011 when the trail was extended north under County Road #38E to Spring Canyon Community Park.

The Fossil Creek Trail at Fossil Creek Community Park was installed when the park was constructed in 2003. Work at this time also included the underpasses of Fossil Creek Drive and Lemay Avenue. The section of trail from the park west to College Avenue was constructed in 2001. The underpass of College Avenue and connection to the Mason Trail were completed in 2006.

The north branch of the Fossil Creek Trail from Ziegler Road East was constructed in segments starting in 2002 with the current trail ending at Strauss Cabin Road completed in 2012.

The Canal Trail has 0.50 miles in place south of Horsetooth Road. This section was constructed in 2003 and improves neighborhood access to Westfield Neighborhood Park. The trail will follow the Pleasant Valley and Lake Canal for a considerable distance.

The Hickory Trail starts at Lee Martinez Park at the

Poudre Trail and travels 0.50 miles north to Hickory Street. This trail and the Redwood Trail, on the north side of College Avenue, were installed in the 1990's to help North College residents access the Poudre Trail and downtown Fort Collins. The Redwood Trail has been mostly replaced with bike lanes and sidewalks as development has occurred east of College Avenue.

The Rendezvous Trail starts at Case Park and proceeds east through the Ridgen Farm Development. The trail will connect with the Poudre Trail east of Ziegler Road. About 0.80 miles of trail has been constructed.

The Mason Trail connects to the Fossil Creek Trail at its south terminus and by 2010 was constructed north to Prospect Road. As part of the MAX Bus Rapid Transit project the trail will extend north from Prospect Road through Colorado State University to Laurel Street.

The trail system has about 4 miles of significant spurs that tie the trail system to the City's street system. These spurs are typically 8 feet wide concrete and allow for trail users, maintenance, and emergency vehicles to access the trail.

Trail system connections to the City's on-street bicycle and pedestrian network have been jointly planned as part of the earliest trail layouts. Connections from trails to streets remain a very important element of the trail planning process and fundamental to the City's goal of increasing opportunities for people to walk and bike. Presently the City's on-street bicycle and pedestrian network is well connected to the recreational trail system throughout the city. There are currently 109 connections from trails to the city on-street network. The most connections occur along the Spring Creek Trail due to the considerable number of residential units. Where the trails traverse more rural areas and areas with more businesses fewer connections exist. See Map Two.

Chapter Summary

The recreational trail system has developed from a few short sections in 1980 to over 34 miles in length and is now a critical recreational amenity serving Fort Collins residents. The trail system will continue to grow to serve our expanding population.

CHAPTER TWO: Recreational Trail Funding

Initial funding for the recreational trail system came from a ¼ cent sales tax established in 1973 and ending in 1983.

In the early 1980's the citizens of Colorado were interested in the establishment of a state wide funding source for recreation facilities. This led to the creation of the Conservation Trust Fund in 1982. Conservation Trust Fund receives a portion of Lottery (scratch games) proceeds constitutionally mandated to be distributed directly to local governments, based on population, for acquiring and maintaining parks, open space and recreational facilities. The funds are distributed and monitored through the Colorado Department of Local Affairs (DOLA). The City received about \$50,000 in Lottery revenue in 1984 and today receives about \$1,200,000 annually.

City Council by Resolution 83-173 on October 4, 1983 adopted a policy that Lottery monies should be utilized primarily for 1) the acquisition and development of Open Space and Trails, and 2) any other project deemed appropriate by City Council. However, due to General Fund shortfalls, Conservation Trust Funding was redirected by Council to parks and trail maintenance beginning in 2001. Currently, \$730,000 is used for maintenance leaving only \$470,000 for trail planning, design, right-of-way, and construction. To help offset the loss of Conservation Trust funding, the Natural Areas Department has contributed about \$350,000 annually to trail construction since 2003. The Natural Areas Program contribution to trails may not be available after 2014 due to program funding needs.

The Conservation Trust Fund has funded the majority of the paved trail system. Historical records indicate the Conservation Trust has contributed about \$18,000,000 since 1984 toward the development of the trail system. The Conservation Trust Fund is scheduled to sunset in 2025 unless renewed by the state legislature.

In addition to Conservation Trust funding, the City has been very successful in securing trail grants. Over the years the City has received 11 grants totaling \$2,731,312, primarily from Great Outdoors Colorado (GOCO) which is also funded by the

Lottery. GOCO trail grants can fund up to 70% of the project construction cost. The trail grants are typically administered by the Colorado State Parks and Wildlife Department. Grants are available in the fall of each year and can be obtained for trail planning, design, and construction.

The trail system received \$140,000 for the development of recreational trails west of Taft Hill Road in the Closing the Gap voter approved ¼ cent tax in 1984. Voters again supported the trail system with the passage of the Building Community Choices ¼ cent tax in 1997 which produced \$1,250,000 for regional trail development.

The Natural Areas Department has contributed approximately \$3.9 M to the recreational trail system since 2000. The Natural Areas Department is funded by a City designated ¼ cent sales tax and a County designated ¼ cent sales tax. The sales tax ballot language provides for the revenues to be used to conserve land and provide public improvements such as trails. The recreational trail system provides 8.5 miles of paved trails across natural areas; provides trail connections to 19 natural areas; and functions as critical wildlife corridors between natural areas. Natural Areas and Park Planning continue to partner to acquire additional lands and rights of way to provide even more important trail connections and wildlife corridors.

Funding for the operation and maintenance of the trail system has primarily been from the City's General Fund. The funding pays to keep the trail surface clean and in good condition, general upkeep of amenities including underpasses, snow removal, mowing and weed control. The operation and maintenance cost for a mile of trail is about \$7,350 per year. The annual operation and maintenance budget for trail maintenance in 2012 is about \$250,000 for 34 miles of trail. Since 2001 some of the Conservation Trust funding has helped with trail operation and maintenance.

The 2008 Parks and Recreation Policy Plan recommends the continued use of Conservation Trust Funds for the development of the trail system. The City's General Fund is recommended as the continued source for operation and maintenance funds for the trail system.

A trail impact fee is another method to fund the expansion of the trail system. The fee would be imposed one-time on each new residential unit in the City. This fee supports the idea of growth paying its way for the expansion of the trail system. This is similar to current park development fees which provide funding for new parks.

Current plans call for the development of another 31 miles of paved trails, including 10 underpasses at a cost of over \$23 million in today's dollars. If the Natural Areas annual contribution of \$350,000 stops after 2014 and is not replaced with another funding source, only \$430,000 annually will be available for trail construction and it will take 53 years to complete the trail system, assuming Conservation Trust revenues keep pace with construction inflation. If a trail impact fee is substituted for the Natural Areas funding (with average annual fee revenue projected at \$500,000) it would take 25 years to complete the trail system with the current level of Conservation Trust funding. If all Conservation Trust funding (currently \$1.2 million) was directed to trail construction it would take 19 years to complete the trail system, again assuming funding increases commensurate with inflation. The trail system could be completed in 15 years utilizing all Conservation Trust funding and trail impact fee revenues.

Chapter Summary

Funding for the recreational trail system has been primarily from the Conservation Trust Fund. This Fund has grown in revenue as the community has grown and is a very reliable and steady funding source for the trail program. However, a significant amount of Conservation Trust funding has been reallocated to park and trail maintenance. Funding help from the community ¼ cent capital taxes, grants, and Natural Areas have been important for trail development to keep pace with needs. At current funding levels, it will take years to build out the trail system, not including underpasses of major arterial streets on the Mason and Power Trails.

CHAPTER THREE:

Recreational Trails in the Parks and Recreation Policy Plan

The recreational trail system has been included in every Parks and Recreation Policy Plan starting with the City's 1988 Plan. During the plan updates in 1996 and 2008 the community was able to provide input into the vision of the trail system as it expands to serve new portions of the City.

The 1996 and 2008 Parks and Recreation Policy Plans reference the expansion of the trail system to include the Fossil Creek Trail, Power Trail, Canal Trail and connections to neighboring communities.

The 2008 Parks and Recreation Policy Plan (The 2008 Plan) contained the goal to "Create an interconnected regional and local trail system". The following objectives are listed:

- Trails are safe and convenient and are connected to residential areas, civic institutions and businesses, and to neighboring communities.
- The trail system will be connected to the on-street bicycle and pedestrian network.
- The trail system is located and designed with the goal of minimizing or eliminating negative impacts or damage to the environment. This guiding principle applies to the location of new trails and to the location of renovated trail sections, including the conversion of the trails from asphalt to concrete.
- During renovation, existing trail placements are reviewed for possible adjustments to lessen impacts to environmentally sensitive areas.
- The City's hard-surfaced trail system connects with the planned natural surfaced trails on open lands.

Public input into the 2008 Plan placed priority on increasing the connections of bike lanes and trails. Residents considered recreational trails as one of their "top 3 most important" outdoor facilities to add to, expand, or improve.

A Geo-Referenced Amenities Standards Program (GRASP) included in the 2008 Plan indicated the City's trail system has a high level of service across the community. The program analyzes the geographic placement of the trail to determine its accessibility.



The 2008 Plan recommendations include the objective to maintain the level of service and connectivity that trails provide to residents. Ideally, all residents would be served by a recreational trail within walking distance of their home. The Plan provides that trails will continue to connect to public areas, neighborhoods, greenways, and employment centers.

Strategies in the 2008 Plan to achieve the trail objectives include:

- Work with the Transportation Planning Department to continue to integrate the trail system into the City's most current Transportation Master Plan. (Status: Trail staff have worked closely with Transportation to integrate trails into the transportation system. An example is the connection of the trails planned with transportation corridors in the Mountain Vista Sub area Plan.)
- Review bicycle parking needs at all park access points, prioritizing parks that connect to side paths, multi-use trails, or greenway trails. (Status: Bicycle parking at parks has been improved and parks are well connected to the trail system.)
- Continue making connectivity a priority in trail construction in the City's trail system. Coordinate with the Transportation Planning and Administration Departments to provide bike and pedestrian connections. (Status: Trail connectivity is a top priority and trail staff has been working with Transportation staff on bike and ped connections. An example is



the connection of the Fossil Creek Trail to the Mason Trail.)

- The City shall continue to fund the development of the trail system through the Conservation Trust Fund. (About 3 miles of trail has been added to the system since 2008.)
- Prioritize land acquisition for trail development and coordinate this effort to include other City departments. (Example: coordinated effort by Water Utility, Natural Areas and Park Planning on trail land needs along east Horsetooth Road.

The 2008 Plan's Capital Improvement Section includes the completion of the Power Trail including underpasses and the completion of the Poudre River Trail including underpasses in the 2008 to 2013 time frame. Significant progress has been made but funding is not sufficient to complete these trails by 2013.

The completion of the Fossil Creek Trail, the Canal Trail, the Boxelder Trail, and the Lake Canal Trail; and the continued work on the Northeast trail system are included in the 2014 to 2018 time frame.

Chapter Summary

Trails have been a part of the City's Parks and Recreation plans since 1988. The 2008 Parks and Recreation Policy Plan outlines the continued development of the recreational trail system emphasizing connectivity with the transportation system, and with strong support for this effort heard through the public outreach process.

CHAPTER FOUR:

Recreational Trails in Plan Fort Collins and Transportation Master Plan

City Plan, the comprehensive plan for the City of Fort Collins was updated through the Plan Fort Collins effort in 2010 and includes a Chapter on Culture, Parks, and Recreation. Within this chapter Policy CPR 4.2 – Interconnect the System notes: "Support an interconnected regional and local system of parks, trails and open lands, and promote community interaction. Where environmentally appropriate, line irrigation ditches and storm drainage ways with trails to connect to destinations such as schools, open lands, and Neighborhood Centers. Special attention must be paid to environmentally sensitive trail design, location and construction."

The City's Transportation Master Plan was also updated with the Plan Fort Collins effort in 2010. The section on Alternative Vehicles and Trails was the third priority selected by the participants at a June public outreach meeting. The Plan notes: "A change that would focus some future investment on adapting the transportation system, including trails, to meeting the changing needs of the future. For example, new trail design standards would be created for commuter trails, new alternative/smaller, slower types of vehicles, and enhanced bicycle use. Emphasis for improvements would be on adapting streets to serve new vehicle types and improving trail linkages and connections between the trail system and key destinations across the City."

The Recommended Changes and Updates associated with the Alternative Vehicle and Trails section included the following Near Term Changes and Updates (2011-2012): "Staff will review the current and future proposed trail network and identify trails and/or trail segments that are more suited for transportation purposes vs. those that should be designed as recreational trails and/or go through sensitive natural areas. Staff will also review changes that need to be made in design standards, regulations and policies, and education and awareness efforts for the different types of trail classifications and locations." (Status: Transportation staff determined through this planning effort that our current trail design standards are suited for transportation purposes.)

The Plan's Integrated Land Use and Transportation section contains Principle T 5: "Coordinated regional transportation solutions will be pursued", and Policy T 5.4 – Regional Trail Connections: "Work cooperatively with regional partners to identify opportunities to provide interregional trail connectivity along the Front Range and to surrounding communities." (Status: Fort Collins has participated in the development of the Fossil Creek Trail to Loveland with Larimer County and the City of Loveland. The Poudre Trail connection to Timnath was included in a successful GOCO Rivers Initiative grant in 2012.)



The Mason Trail is the only trail specifically designed for commuting with its 12' width north of Drake Road, fairly straight alignment, and direct tie to the MAX Bus Rapid Transit corridor. Trail-user data indicates all trail segments are usable by commuters. Widening the narrow sections of the Spring Creek Trail from Shields Street to Lemay Avenue will help commuters and other trail users have a safer experience. The City will continue to make trail connections to neighboring communities .

Since the establishment of the City's Safe Routes to School program in 2006, the paved trail system has become a major point of emphasis for parents needing to identify a safe route for their children to bike or walk to school. Planning for improved connections to schools via the trail system will help drive greater numbers of children to use active transportation to and from school. An example is the planned spur trail from the Poudre Trail to Lincoln Middle School and the Boys and Girls Club. Completion of this spur will provide a much safer alternative for children who now must travel along Vine Drive, which lacks sidewalks and high-quality bike lanes.

CHAPTER FIVE: **Trails in Peer Communities**

Colorado peer communities provided another source of data for the trail study. Locally, Fort Collins' 34 miles of recreation trails puts us about in the middle for the miles of trails per capita compared to Colorado Springs, Denver, Boulder, Longmont, Greeley, and Loveland.

Peer communities on a national level averaged about 0.28 miles of trails per 1,000 people with a median of 0.24 miles. Fort Collins has 0.22 miles of trails per 1,000 people. Trails in these peer communities average between 8 and 12 feet in width and are generally concrete. The national peer communities included Madison, Wisconsin; Portland, Oregon; Seattle, Washington; Eugene, Oregon; Minneapolis, Minnesota; and Tucson, Arizona. It should be noted that some peer communities include trails in parks in their city wide trail distance. Fort Collins only counts our main paved trail system in our mileage.

The mileage of recreational trails varies greatly across the country: Ann Arbor, MI (pop. 115,000) has 55 miles of trails while Chicago, IL (pop. 2.7 million) has only 65 miles of trails. Nationally, cities average 0.20 miles per 1,000 people; which Fort Collins beats with an average of 0.22 miles per 1,000 people.

Chapter Summary

Paved trails have been included in Plan Fort Collins and the Transportation Master Plan emphasizing connectivity with the transportation system, population centers and with regional communities.

Chapter Summary

The length of the Fort Collins' trail system is very comparable with other Colorado communities, peer communities, and communities across the nation on a per capita basis.

CHAPTER SIX:

Recreational Trail Inventory

The existing recreational trail system was inventoried to determine the condition of the trail. See Appendix A for a more detailed inventory. The inventory focused on the condition of the trail surface, problem areas that need improvements, and possible improvements to make the trail more enjoyable and usable by the community.

The **Poudre Trail** starts at Lions Open Space in La Porte and travels 10.1 miles east to Colorado State University's Environmental Learning Center. The trail is in overall excellent condition. The more significant action items include:

- a shade shelter west of Taft Hill Road
- a vault rest room and paving of the parking lot at Taft Hill Road
- a new spur from Vine Drive, near Lincoln Junior High School to the trail
- a new spur from Wood Street to the trail
- improvements for the trail to cross Linden Street
- the realignment of the trail at Lemay Avenue
- signage improvements
- improvements to prevent or diminish flooding of underpasses

The **Spring Creek Trail** starts at the junction with the Poudre Trail near east Prospect Street and travels 6.93 miles west to Spring Canyon Community Park. The trail is in overall excellent condition except for the 8 feet wide sections between Welsh Street and Shields Street. The more significant action items include:

- the widening of the 8 feet wide concrete from Welsh Street to Shields Street to 10 feet or 12 feet
- improving the trail alignment in the section west of Lemay Avenue
- the widening of the BNSF railroad underpass just west of College Avenue
- the replacement of the asphalt with concrete west of the BNSF railroad underpass to Centre Avenue
- an improved underpass of Shields Street with improved street connection
- the construction of a spur to Drake Road on the east side of Taft Hill Road

- signage improvements
- improvements to prevent or diminish flooding of underpasses

The **Fossil Creek Trail** starts at Spring Canyon Community Park and travels south and east for lengths totaling 5.87 miles. The trail is in overall excellent condition. The newness of the trail results in few improvements being needed with the only action items being the need for additional shade and continued signage improvements.

The **North Branch of the Fossil Creek Trail** has a section in place east of Ziegler Road that connects to Radiant Park and Zach Elementary School and presently ends at Strauss Cabin Road. The trail is only a few years old and is in excellent condition.

The **Power Trail** starts at EPIC and travels south for 3.89 miles to its end at Trilby Road. The trail is in overall excellent condition. The more significant action items include:

- the need for shade along the trail
- study to determine if an underpass/overpass is feasible at major road crossings
- investigate if the UP railroad would grant additional easement just south of Harmony Road where the underpass/overpass is planned to allow a missing section of trail to be completed
- signage improvements
- railroad underpass at Keenland Drive

The **Mason Trail** begins at Prospect Street and travels South for 3.85 miles to the parking lot south of Harmony Road. The Fossil Creek Trail west of College Avenue ties to the Mason Trail just south of the parking lot. The trail is in excellent condition. The more significant action items include:

- a need to improve the sight distance where the trail crosses the Spring Creek Trail
- study to determine if an underpass/overpass is feasible at major road crossings
- signage improvements

The **Canal Trail** has a half mile section completed south of Horsetooth Road that is in excellent condition. The only action item for this trail is continued signage improvements.

The **Rendezvous Trail** starts at Stewart Case Park and travels for 0.80 miles east along the Foothills Stormwater Outfall towards Drake Road. The trail is in excellent condition. The only action item for this trail is continued signage improvements.

The **Hickory Trail** starts at Lee Martinez Park and travels north for 0.50 miles to Hickory Street. The trail bridge over the Poudre River is not set above the 100 year flood elevation; but is a break-a-way bridge. The only action item for this trail is continued signage improvements.

The **109 Connections** from the trail system to the on-street bicycle and pedestrian system are well planned and will continue to improve as new trails are added to the system. See Map Two. The Safe Routes to School program also reviews how trails help school children safely access their schools and seeks opportunities to improve these conditions. The 2014 Bike Plan update will analyze opportunities and barriers to improve the on-street to trail connections. The Bike Plan and Capital Improvement Bicycle Project list will prioritize connection gaps.

Signage Improvements

In 2012, an inter-departmental, technical team undertook a comprehensive signage initiative to make it easier and safer for trail users to navigate the trail system. The technical team evaluated existing conditions on the paved trail system as a basis for phasing out antiquated signs and replacing the signs with new, updated information.

Sign planning and placement was determined by closely examining routes and key intersections along the paved trail system. Signs were generally categorized as “destination”, “etiquette” and “safety”.

Destination signs were classified as either Wayfinding or Mile Marker. Wayfinding signs were placed at decision points along the trail and other key locations leading to and along the trail to reinforce to trail users that they are heading in the right direction. Wayfinding signs familiarize trail users with the network of trails, identify the best route to destinations, and increase connectivity between the trail system and existing neighborhoods, Downtown, parks, natural areas, adjacent schools and city facilities.

Mile Marker signs use arterial streets to divide the



trails directionally. Mile Markers were redesigned to better assist trail users with direction, distance, and location. Mile Markers are also an integral component of the Emergency Locator System (ELS). If an emergency occurs, trail users are directed to find the nearest Mile Marker/ELS sign and report that information to proper authorities.

Etiquette and safety signs encourage responsible use of paved trails. Etiquette signs were designed to give a softer tone to regulatory messages, such as encouraging bicyclists to use an audible signal when passing other trail users. Etiquette signs were designed to inform users that the trail system is “multi-use” and shared by bikers, pedestrians and equestrians. Safety signs included messages warning visitors of potential conflict areas and areas where trail users should heed caution. Safety messages included identifying bicycle slow zones and encouraging bicyclists to keep right except to pass.

In 2012, destination, etiquette, safety signs, and new quarter mile marker signs were designed for the trail system and installed on the Poudre Trail. The new signage is being installed on the Spring Creek Trail in 2013 and will be installed on the remaining trails in 2013 and 2014.

Chapter Summary

The existing trail system is overall in excellent condition. The more important action items include the removal of old asphalt and the widening of trails from the old 8 feet standard to the current standard at 10 feet to 12 feet. Studies for trail underpasses/overpasses are needed at several major street crossing. The new signage program will provide a much needed level of service upgrade.

CHAPTER SEVEN: Recreational Trail Design Standards

Introduction:

The following design standards are intended to provide trail planners and designers guidance to produce an enjoyable, safe trail system for all users. The standards also ensure the trail is durable and efficient to maintain.

Right-of-Way:

The recommended right-of-way width is 50 feet. The minimum trail right-of-way width is 30 feet for short distances. These distances allow for the trail to meander and allow for the placement of the adjacent gravel path.

Horizontal Alignment:

The horizontal alignment for the trail is controlled by many factors including the topography, natural and man-made obstacles, and the amount of right-of-way that can be obtained. An alignment that allows for a pleasant horizontal flow to the trail should be the goal. Sharp horizontal corners should be avoided. Where sharp corners are unavoidable, the right-of-way should allow for a minimum 40 feet centerline radius that will accommodate construction and maintenance vehicles.

Vertical Alignment:

Trail grades should be less than 5 % where possible to provide an enjoyable experience for the trail user and to minimize cuts and fills. When grades reach more than 5% and up to 8% for a sustained distance, the trail should have rest areas of 2% grade for a distance of 10 feet for every 2.5 feet of rise/fall along the trail center line. Grades over 8% to 10% should only be used for very short distances (less than 50 feet) and have ADA handrails. Grades over 10% should not be used on the trail.

Trail Placement and Environmental Sensitivity:

Within the urban context of the Fort Collins trail system there is a spectrum from disturbed to less disturbed habitat areas. Waterways are generally considered a critical habitat element and function as movement corridors for a variety of species within Fort Collins. Many of the stream corridors are already highly altered habitats due to the history of agriculture and the urban setting. This however,

does not diminish the importance of streams, rivers and even ditches serving as movement corridors, and critical habitat and refuge areas for wildlife.

Trail placement should avoid high quality and/or sensitive habitat areas. Trail alignments should avoid fragmenting high quality habitat and be aligned along habitat edges to minimize impact. Trails with a wide buffer from the built environment can function as corridors for wildlife between good habitat patches. The number of river, stream and wetland crossings by the trail should be minimized. As well, efforts should be made to minimize disturbances to and find opportunities to restore floodplain function (e.g. allowing the river or stream to periodically over-top its banks). Trail alignment should avoid or minimize or mitigate removing native trees or shrubs, especially in riparian areas. All setbacks and seasonal closures for rare, sensitive, threatened or endangered plants and wildlife should be respected with regard to trail placement. When possible and appropriate, trails should be aligned where there is already an existing disturbance, such as a utility right-of-way or crossing streams at existing roads and bridges. Also careful placement of the trails should be considered to discourage off-trail use in sensitive habitat areas.

As new trails are developed along or extending past the urban core of Fort Collins, more sensitive habitats will be found. Trail planners should work with Natural Areas Department staff and Colorado Parks and Wildlife as necessary to assess potential sensitive habitats and to ensure best or next-best case trail placement options.

Trail Placement in Riparian Buffer Areas:

Many existing trails follow river and stream corridors, which as mentioned above are considered sensitive and important habitat. The condition of this habitat varies greatly throughout the city. Trails are permitted within the development buffers of these waterways. However to alleviate the added pressure on wildlife in these corridors and to help create wildlife refuge areas, the trail should not remain in the riparian buffer for the entire stretch of the corridor. Along river and stream corridors the trail should periodically be pulled toward the edge of the buffer to create areas without constant disturbance from trail users. The trail can then

meander back into the riparian areas to provide that balance of good stewardship and visitor experience. It is difficult to set a determined length to how often and for how far these meanders should occur. When opportunities exist to pull the trail further from the waterway, for example when the trail runs through a natural area, the opportunity should be considered while balancing the environmental value with the recreational trail value. Trail Planners and Natural Areas staff will continue to work in collaboration toward this end.

Opportunities for Restoration:

Construction of new or efforts to widen or realign trails create opportunities for restoration of native vegetation especially within riparian and stream corridors. The City's Stormwater Department recently assessed the habitat along several stream reaches with the goal of restoring many of these reaches. It is imperative that all future trail work within the City's stream corridors include consultation with the Stormwater and the Natural Areas Departments to assess restoration opportunities.

Width:

The trail paved surface should be 10 feet wide - unless in a high congestion area where the width can be 12 feet. The trail thickness should be from 5 to 6 inches, include fiber mesh, light brown color, and have a heavy broom finish. The trail should have a minimum 3 feet wide level shoulder from the trail edge. The trail should be widened at critical areas such as: intersections with other trails; smaller radius curves; underpasses; etc. to allow for safe travel by trail users.

The gravel path should have a surface width of 5 to 6 feet, and a depth of 2 to 3 inches. There should be a 3 feet level shoulder from the path edge. Where possible the gravel path should be separated from the trail by a distance of 3 feet to 5 feet.

Cross Slope:

The trail cross slope should be between 1% and 2%.

Horizontal Clearance:

The edges of the paved trails should have a minimum 3 feet of horizontal clearance from vertical obstructions. The gravel path should also have 3 feet of horizontal clearance on both sides.



Vertical Clearance:

The trail and gravel path should have a minimum vertical clearance of 8 feet.

Design Speed:

The trail does not have a design speed. It is designed to function as a recreation trail that can also be used for commuting. The City Code prohibits bicycle users from riding in a manner that endangers others and riders are encouraged to ride at a controlled speed so they can safely negotiate the trail.

Sight Distances:

Efforts should be made to provide ample sight distances at intersections and at junctions with streets, underpasses, etc. Curves along the trail alignment should not be greater than a 90 degree angle. More pronounced curves require the trail to be placed to avoid any sight distance obstruction being within 30 feet of the trail centerline at the midpoint of the curve. Trail underpasses and bridges should have a straight section of at least 20 feet approaching the structure.

Trail Lighting

The trail system is not lit except at underpasses where "dark sky" friendly light fixtures are used to help trail users enter, travel through, and exit these facilities.

Underpasses:

Trail underpasses should comply with the City's Design Guidelines for Grade-Separated Pedestrian, Cyclist, and Equestrian Structures.

Design Guidelines for Grade-Separated Pedestrian, Cyclist, and Equestrian Structures

Trail underpasses of busy roads often serve to help wildlife get across the roads. Wildlife use of underpasses should be considered when underpasses are planned and designed.

Drainage Structures:

Trail bridges should be rated for a 10,000 lb. vehicle, be a minimum of 10 feet wide, have a railing height of 52 inches, utilize weathering steel and iron wood or concrete deck, have a rub rail, and be break-away if required for City Stormwater approval.

Drainage pipes, box culverts, etc. should be engineered to support the needed construction equipment and the trail loading. Drainage improvements will meet the City's Stormwater Department regulations, design, and construction standards.

All trail crossing and drainage structures will be constructed and placed in a way that does not impede fish passage. Trail designers will work with the City's Stormwater Department, Natural Resource Department, and if needed Colorado Parks and Wildlife for guidance on this item.

Street Connections:

The trail design at street crossings or access points to the street should be determined by City Traffic regulations and design standards.

Signage:

Trail signage should comply with the **Uniform Traffic Control Manual**.

Fencing:

The standard fence along the trail should be the Western two-rail. A non-climb horse fabric can be installed on the fence for animal control. Other types of fencing may be needed depending upon the situation and should be determined site-by-site.

Fencing along the trail should be wildlife friendly and passable. This includes considering height of the fence as well as analysis with Natural Areas Department staff as to where considerations for wildlife should be made. Colorado Parks and Wildlife (CPW) has guidelines that should be followed for

appropriate wildlife fencing for the specific wildlife species found in the area.

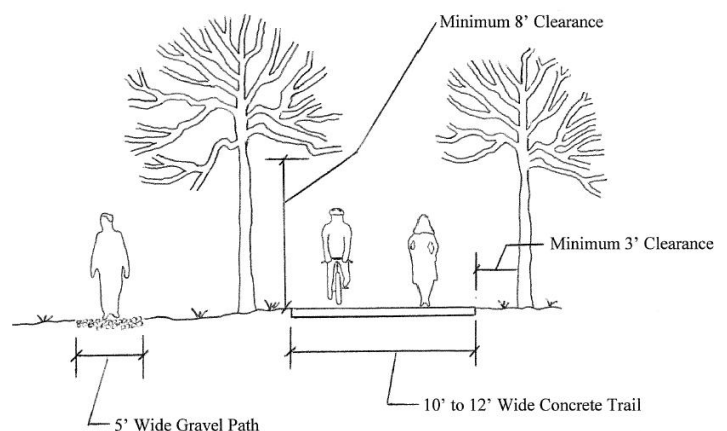
Mesh fabric can greatly impede movement of smaller animals along riparian corridors and has been a problem for snapping turtles. Tall privacy fences have created barriers to deer, forcing them to cross busy streets. CPW guidelines for wildlife-friendly fencing is ideally 16 inches off the ground and a maximum height of 42 inches on level ground. When mesh is needed in key wildlife movement areas, periodic openings can alleviate problems. Elevating the mesh above the ground, where possible, helps create passages for small wildlife. Keeping the fencing height to a minimum allows safe passage for young deer.

Seeding:

The required seed mix for when the trail is not bisecting irrigated turf areas should be a blend of buffalo grass, blue gramma, and little blue stem. These short growing warm season grasses require less water and mowing.

The short grasses should be planted in the 3 foot shoulder area of the paved trail and/or the gravel side path. Any additionally disturbed areas beyond the trail and shoulder width (including staging areas) should be planted with the native seed mixes recommended by the City's Natural Areas Department. In any of the non-turf areas, no exotic species will be allowed to be planted, specifically no smooth brome (*Bromus inermis*) or crested wheatgrass (*Agropyron cristatum*).

TYPICAL TRAIL SECTION



Trail Safety:

As noted in Chapter Eight, the great majority of trail users feel safe on our trails. Relatedly, paved

trails will have an Emergency Locator System for communicating trail location during emergency response situations. Accurate location reporting by trail users helps police dispatchers guide the appropriate responders to the emergency site.

Safety signage identifies such conditions as; slow zones, sharp corners, road crossing, etc. and are installed after careful review of conditions.

Park and Natural Area Rangers patrol trails and can issue misdemeanor citations for riding in a careless manner and warn users who are not abiding by trail courtesy. Rangers also patrol for unleashed dogs who pose a safety hazard to other trail users.

Chapter Summary

The recreational trail design standards developed over the years has resulted in a trail system that is safe, sustainable, cost effective and functional.

CHAPTER EIGHT: **Recreational Trail Use**

Recreational trail use information was gathered in 2012 by a variety of sources, including automatic trail counters and volunteers who counted and interviewed trail users.

See Appendix B for detailed use information.

Methodology:

The volunteer counts and interviews were conducted based on guidance by the National Bicycle and Pedestrian Documentation project (bikepeddocumentation.org). Counts were conducted over two-hour periods at ten different locations. In total, 228 separate counts were taken. The count data included type of user (bicyclist, runner/jogger, walker, other), gender, direction of travel, helmet use, and use of leash with dogs. Similar to the counts, surveys were conducted over two-hour periods at ten different locations. In total, 588 interviews were completed. The survey data included questions on zip code of residence, trip frequency and purpose, reasons for choosing that particular trail, as well as suggestions for improvements. 80 volunteers donated over 300 hours to this data collection effort.

Eleven automatic trail counters were deployed at a variety of trail locations. These counters collected user counts continually but unlike the volunteer count data, the automatic counters did not distinguish the type of user or direction of travel. Where possible, the volunteer count data was used to calibrate the automatic trail counts.

Results:

Staff estimate 1.9 million trail visits in 2012 based on count data. The heaviest use was on the Spring Creek Trail with 650,000 visitors while the Poudre Trail had 474,000 visitors. The Mason Trail, Fossil Creek Trail, and the Power Trail ranged from about 240,000 to 296,000 annual visitors. On a typical day there are about 5,000 visitors on the trails. The highest two hour count was 321 visitors on the Spring Creek Trail.

Bicyclists comprised 70% of trail users while 30% were pedestrians (10% runners/joggers, 19% walkers, and 1% other (e.g., skateboarders)). Pedestrian visitors went up to about 34% of all users on the weekends. Trails in community parks tended to have a higher than average number of pedestrians. Trails closer to the City limits tended to have a higher than average number of bicyclists.

Male trail visitors outnumbered females 61% to 39%. Male bicyclists outnumber female bicyclists 2 to 1. 53% of pedestrians were female. Overall helmet use by bicyclists was just under 60%; this is notably higher than the national average of 25%.

Trail visitors enjoyed bringing along their four-legged companions. About 6% of trail visitors had a dog with them and 95% of those dogs were on a leash. The number of dogs on the trail during a year is estimated at about 114,000, or about 312 each day.

Trail visitors came from every zip code in the community with the most from the southeast and southwest quadrants of the city. Most trail visitors were using the trail for exercising, recreational activities, and commuting. Many trail visitors use the trail daily or between 11 and 20 times per month.

Many use the trails all year long which underscores the need for snow removal on the trails. The average

time pedestrian visitors were on the trail was about 52 minutes with the reported average distance traveled being about 4 miles. Bicyclists spent about 65 minutes and traveled about 17 miles on average.

Pedestrians choose their trail based on accessibility, scenic qualities, and lower traffic volumes. Similarly, bicyclists choose their trail base on accessibility, scenic qualities and separation from vehicle traffic.

Chapter Summary

There are nearly 1.9 million trail visits each year with Spring Creek Trail seeing the heaviest use. Bicyclists make up 70% of trail users and male visitors outnumber females 61% to 39%. Trail visitors come from all areas of the city and use trails primarily for exercise, recreation, and commuting. People use the trails frequently and throughout the year.

CHAPTER NINE:

On-Line Questionnaire and Outreach

The community provided 541 responses to the questionnaire which was available for comments from July to September, 2012.

85% of survey respondents indicated they were “satisfied” or “very satisfied” with how well the trail system meets their needs. Also, 82% were “satisfied” or “very satisfied” with how well the trail system is meeting the needs of the community. Respondents (75%) indicated the City’s paved trails are “very important” to their quality of life while 95% said the paved trails are “important” or “very important” to their quality of life.

When asked about the 10’ wide concrete trail standard 90% of the respondents felt this was the right width. 57% felt that the 10’ trail width was adequate in heavy use sections of the trail, while 42% felt the width needed to be wider.

Respondents were asked to choose their top three new trail projects. The breakdown of projects chosen was:

- Fossil Creek Trail between College Avenue and Shields Street (55.3%);
- Poudre Trail from the CSU Environmental

Learning Center to Arapaho Bend Natural Area (55.1%);

- Poudre Trail from Arapaho Bend over I-25 to Timnath (46.8%);
- Canal Trail from Horsetooth Road to Drake Road near Taft Hill Road (33.5%);
- Trails in northeast Fort Collins (25.9%);
- Fossil Creek Trail near Bacon School in southeast Fort Collins (24.5%).

It was important to respondents that trail improvements include underpasses, that trails are located close to nature, have scenic qualities, and continue to have the snow removed. Respondents were interested in easy detours when trails are closed, drinking fountains and restrooms, and better lighting and trailhead parking.

Respondents (83%) believe other trail users are “courteous” or “very courteous” with 16% indicating they are “somewhat courteous”.

To better understand trail safety the recreational trail on-line questionnaire asked users “how safe do you feel when using the trail system?” 541 responses were generated: 241 respondents felt very safe, 225 safe, 48 somewhat safe and 27 unsafe. Expressed as a percentage, users who felt safe represented 95 % of the total responses and users who felt unsafe represented less than 5% of respondents.

Respondents who felt unsafe were asked to elaborate on their answer and 7 of the 27 respondents provided additional information. Four of the seven respondents felt unsafe at dusk or night, especially on the Spring Creek and Poudre Trail. The other responses were concerns on recreational safety (ie: use of audible signal when passing.)

When respondents were asked where else the trails should go the top responses were:

- More trails to schools, Downtown, and parks;
- Extension of the Power Trail across Harmony Road;
- A trail connecting the Foothills Trail to Overland Trail Road;
- More trails to CSU;
- Extension of the Power Trail to Loveland;
- Trails to the Foothills Mall.

Respondents were asked what one change would make their visit to the trails more enjoyable or more frequent. The top responses were the need for more trails, more underpasses/overpasses; fix the trail by Centre Avenue; new trail along Overland Trail Road; improve running paths, complete missing trail links; Poudre Trail to Windsor; and more trails in southeast Fort Collins.

The online questionnaire asked about e-bikes and their use on the trail system. E-bikes are electric assist powered bicycles that typically have a top speed of 20 miles per hour. Respondents (53%) said e-bikes should not be allowed on the recreational trails while 47% felt they should be allowed on the trails. A similar question was asked in the volunteer interviews of trail users. Of those responses, 36% of bicyclists and 28% of pedestrians supported the use of e-bikes on trails.

Larimer County also conducted an extensive survey in 2012 to better understand how citizens in the County are using trails and open lands. They received 2,170 responses with 60% coming from Fort Collins residents. The most popular household activity was walking, hiking or running on paved trails or roads (73%), followed by walking, hiking or running on natural surface trails and roads (68%), followed by biking on paved trails (67%). These activities were also the most frequent with walking, hiking or running on paved trails or roads 8.8 times per month and biking on paved trails 5.1 times each month. The County survey also found that children (18 and under) walked, hiked or ran on paved trails or roads 4.7 times a month and biked on paved trails 3.9 times each month.

Families with school-age children are an important trail user group. According to feedback through the Safe Routes to School program, parents consider the City's trails to be a critical factor when selecting a safe route to school. The Safe Routes program recommends that families begin their route selection process by finding which off-street trails can be included on their children's trips to and from school. The City's paved trails provide one of the safest route choices for schoolchildren by keeping them away from traffic and facilitating arterial street crossings via trail underpasses.

Chapter Summary

The outreach effort verified that the recreational trail system is very important to resident's quality of life. There is a high level of satisfaction with our trail system. Trails are well used (with approximately 1.9 million annual visitors) but are not generally congested, the 10' wide concrete trail is working well, and trails are well maintained.

People want more trails, gaps in the trail system finished, and more underpasses and overpasses of busy roads. It is important for trails to be scenic and close to nature and the removal of snow is valued by trail visitors. Trail visitors are courteous and people generally feel safe on our trails. The results of the public outreach indicate that the trail system meets the needs of the community. Public input validated the prioritized list of trail projects and improvements needed to ensure the trail system meets the needs of the community in the future.



CHAPTER TEN: **Action Items**

The culmination of gathering input from the community, and examining trail-use, existing trail conditions, connections to the on-street system and to schools, current trail standards, and comparisons to peer communities has resulted in a prioritized list of trail projects and several action items. Pursuant to Resolution No. 2013-096 the order of the construction of projects on page 16 shall be determined by the City Manager, or his or her designee, as the necessary funds for such projects are appropriated by City Council.

TRAIL PROJECTS:

(See Map No. 3)

1. Replace and realign the Spring Creek Trail east of Centre Avenue; (funded)
2. Construct the Trilby Road underpass east of Lemay Avenue and finish the trail from Trilby to Carpenter Road; (funded)
3. Replace and realign the Poudre River Trail on the Woodward Technology Center site; (funded)
4. Complete the Mason Trail from Prospect Street to Laurel Street; (funded)
5. Realign the Poudre River Trail at Lemay Avenue including a new bridge downstream from Lemay in conjunction with the CDOT Mulberry Bridge replacement project; (funded)
6. Extend the Fossil Creek Trail at Shields Street to Trilby Road after the installment of the Xcel pipeline; (funded)
7. Construct the Fossil Creek Trail between College Avenue and Shields Street, including an underpass of the railroad tracks; (funded)
8. Construct the Power Trail railroad underpass at Keenland Drive; (partially funded)
9. Construct the Poudre River Trail from Arapaho Bend Natural Area across I-25 to Timnath; (funded)
10. Construct the Poudre River Trail from CSU Environmental Learning Center to Arapaho Bend Natural Area; (partially funded)
11. Widen, repair/replace the Spring Creek Trail between Welch Street and Shields Street; (unfunded)
12. Construct the Canal Trail from Horsetooth Road to the Spring Creek Trail; (partially funded)
13. Construct the Fossil Creek Trail from Ziegler Road to near the Power Trail; (as R.O.W. is obtained, partially funded)
14. Construct the Boxelder Trail from the Poudre River Trail north to Mulberry Street (unfunded)
15. Construct the new Overland Trail from Drake Road to the Poudre River Trail; (unfunded)
16. Construct the main spur of the northeast trail system from the Poudre River Trail north near Timberline Road to Turnberry Road near Richards Lake Road; (partially funded)
17. Construct the Shields Street Trail from Trilby Road south to Loveland in partnership with Larimer County and the City of Loveland; (partially funded)
18. Construct the south branch of the Fossil Creek Trail east along Carpenter Road to near I-25 and north to Harmony Road; (partially funded)
19. Construct the east-west spur of the northeast trail system, north of Vine Drive from College Avenue to Timberline Road; (partially funded)
20. Construct the south spur of the northeast trail from Timberline Road to Mulberry Street; (unfunded)

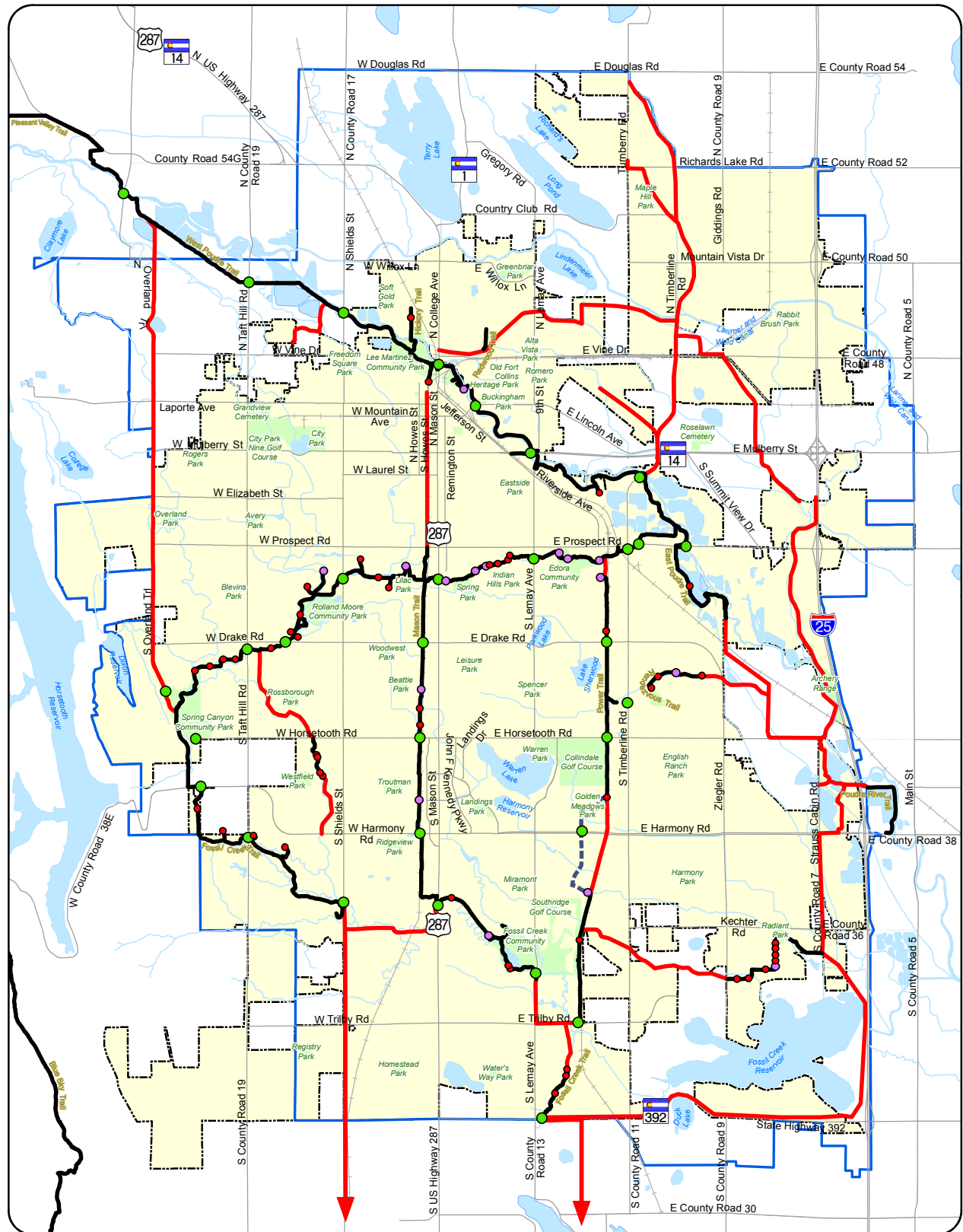
OTHER ACTION ITEMS

- Update this Paved Recreational Trail Master plan as part of future updates to the Parks and Recreation Policy Plan
- Continue to seek additional funding for the trail program to keep pace with future needs
- Construct trail connections to the street system on existing and future trails at no greater than a ½ mile interval in residential and commercial areas
- Continue to employ best practices in locating, building and maintaining trails to avoid, minimize, and mitigate environmental impacts
- Add landscaping and trees to beautify the trails and provide shade for trail users where appropriate
- Continue to improve the trail system by adding such items as: trailheads, restrooms, drinking fountains, benches, etc.
- Connect trails to the brewery industry
- Continue to track trail use and survey trail users to refine project priorities and identify ways to continually improve the trail system
- Incorporate Safe Routes to Schools in future trail expansion projects where appropriate
- Analyze the feasibility and cost of constructing trail underpasses/overpasses of arterial and collector streets and determine priority locations based on feasibility, cost, safety and benefits to greatest number of trail users
- Analyze detour routes and signage around flood prone trail areas to determine if any can be improved
- Complete implementation of trail location, safety, and destination signage
- Maintain or improve best management practices related to trail maintenance

The map displays the City of Chandler, Arizona, with its various neighborhoods and landmarks. Major roads include N. US Highway 287, S. US Highway 287, W. County Road 19, and E. County Road 54. Key landmarks such as the Chandler Municipal Airport, Chandler Community Park, and Chandler Elementary School are marked. The map also shows the city's proximity to the Salt River and the Salt River Reservoir. The city is bounded by N. US Highway 287 to the north, S. US Highway 287 to the south, W. County Road 19 to the west, and E. County Road 54 to the east. Key landmarks include the Chandler Municipal Airport, Chandler Community Park, and Chandler Elementary School. The map also shows the city's proximity to the Salt River and the Salt River Reservoir.



Map 2 Trail-Street Connections



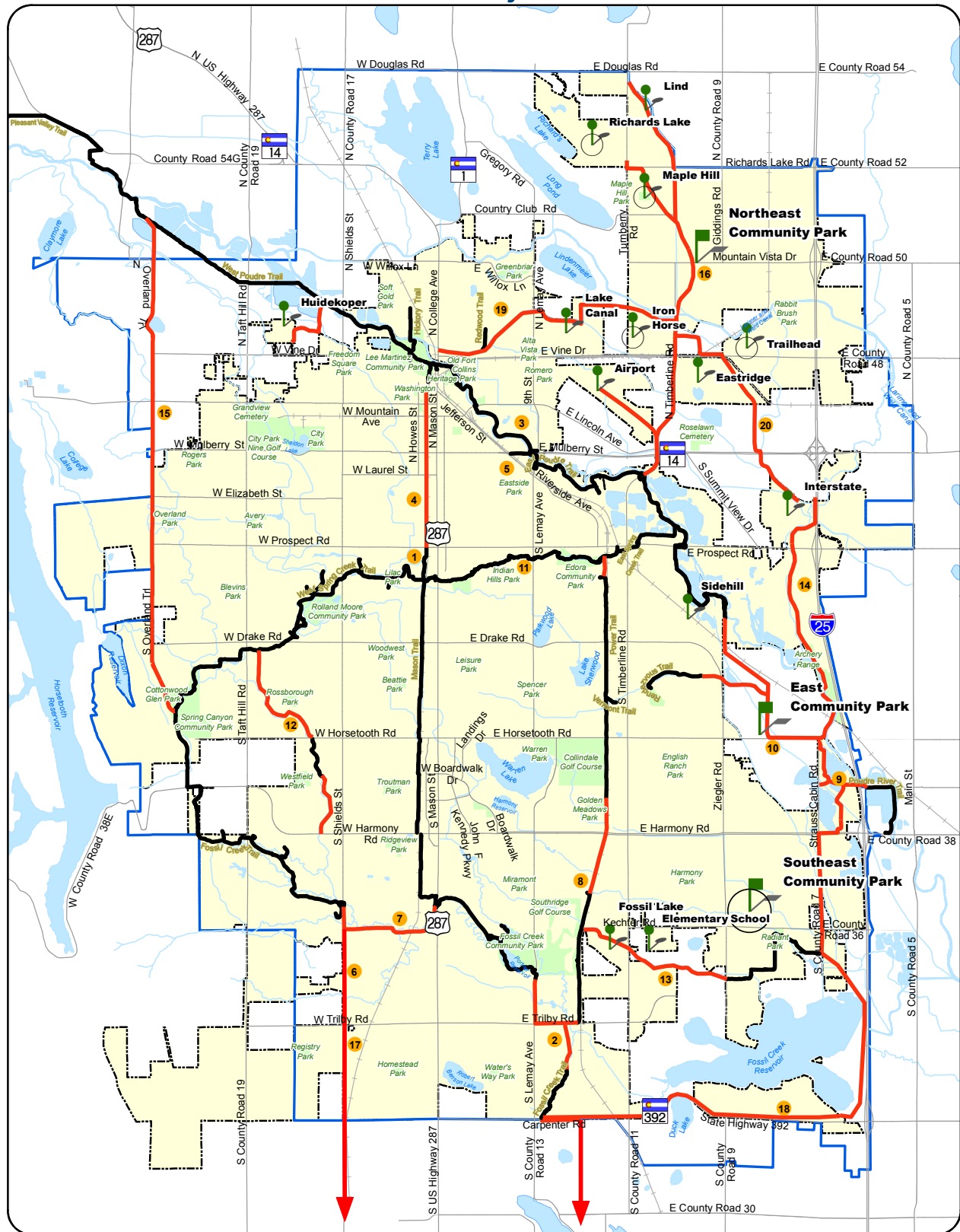
Scale 1:63,360
0 0.5 1 1.5 2 Miles

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- | | | |
|--------------------|-----------------|----------------|
| Connections | Existing Trails | Existing Parks |
| Local | Proposed Trails | Water Features |
| Collector | Suggested Route | GMA |
| Arterial | Major Streets | City Limits |
| | Railroads | |

Map 3 Trail Projects



Scale 1:63,360
0 0.5 1 1.5 2 Miles

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- Proposed Community Parks
- Proposed Trails
- Existing Parks
- Existing Trails
- Water Features
- Proposed Neighborhood Parks
- Major Streets
- GMA
- Park Land Acquired
- Railroads
- City Limits

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