

PARKS AND OPEN SPACE MASTER PLAN



**AUGUST
2017**



**City of
Thornton**

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The Parks and Open Space Master Plan establishes goals, objectives, recommendations and implementation strategies for the planning and development of new parks, recreation facilities/programs, trails, and open space in the city of Thornton. The Master Plan

- serves as a detailed supplement to the Thornton Comprehensive Plan,
- responds to the goals and policies related to parks, recreation, trails and open space stated in the plan. The Plan, and
- serves as a guide for continued improvements and expansion resulting in a safe, high quality, citywide system of parks, recreation facilities/programs, trails and open space that will meet the needs of Thornton citizens now and in the future.

In the spring of 1998, the Thornton City Council formed the Parks and Open Space Advisory Commission (POSAC) in response to the passage of a November 1997 ballot initiative allowing for a .25% sales and use tax increase. The proceeds of this tax increase are divided into thirds; one third for parks, one third for open space and one third to be determined by city council based on recommendations of an open space and parks advisory commission appointed by the city council. POSAC worked diligently to develop a vision, goals and objectives for the city's parks, trails and open space system, to identify and evaluate parks, trails and open space opportunities, and to develop recommendations on park, trail and open space acquisition and development.

In November, 2000, Thornton voters also approved a \$22.4 million bond issue, to finance the costs of acquiring 116 acres of open space, 5.5 miles of trails, and 53 acres of parkland. The bond issue also provided for development of various facilities, including the Gravel Lakes Fishing Facility, Thornton Sports Complex, Croke Lake Park north of Thornton Civic Center, and other projects.

In November, 2013, Thornton voters approved the extension of the existing .25% sales and use tax for open space and parks purposes from its current termination date of December 31, 2018 to December 31, 2038. Voters also approved allocation of no more than 20% of the total annual revenues from the tax to be spent on or reserved for maintenance costs.

The vision established by the Parks and Open Space Master Plan is one in which parks, recreation facilities and open space are linked by a citywide trail system to form a "string of pearls." The "pearls" include opportunities for both active and passive forms of recreation. The plan gives considerable attention to protecting and utilizing the city's environmental and historical assets as part of the parks and open space system, including existing wildlife habitat, vegetation, historical buildings, the South Platte River, Niver Creek and Big Dry Creek and their tributaries, and existing irrigation ditches and reservoirs that were built when the Thornton area was a farming community.

In order to implement this "string of pearls" concept, the Parks and Open Space Master Plan includes the following goals and objectives for developing the system:

- Goal 1: Plan and develop an interconnected citywide system of parks, recreation facilities, trails, parkways, boulevards, and open space that provides for a diversity of recreational opportunities within the community. The park and open space system, where appropriate, should be integrated with other community facilities, including schools.*

EXECUTIVE SUMMARY

- Goal 2: *Distribute park, recreation and open space resources, to the extent possible, on an equitable basis.*
- Goal 3: *Develop the parks and open space system as a major component of Thornton’s community image and identity, and promote an overall design theme that is unified, consistent and committed to quality.*
- Goal 4: *Recognize the recreational needs of all Thornton’s citizens in providing parks, recreation facilities, and recreation programs in the community.*
- Goal 5: *As the city of Thornton grows, apply a consistent, fair, and rigorous set of park planning and design standards to all development. These standards shall cover pocket parks, neighborhood parks, community parks and trails.*
- Goal 6: *Develop parks and recreation facilities to preserve and emphasize significant features of the city of Thornton’s natural environment.*
- Goal 7: *Recognize and respond to passive, as well as active, recreational needs in the design of the park and recreation system.*
- Goal 8: *Create and connect recreational opportunities through a well connected trail system.*
- Goal 9: *Provide long open space trail corridors.*
- Goal 10: *Provide trail connection to other modes of transportation.*
- Goal 11: *Incorporate “Complete Street” projects into the trails network.*
- Goal 12: *Promote the city of Thornton’s unique environmental, cultural, and historical resources.*
- Goal 13: *Support a variety of trail users.*
- Goal 14: *Raise awareness and educate trail users.*
- Goal 15: *Preserve the city of Thornton’s unique environmental and visual resources in a natural condition.*
- Goal 16: *Provide recreation opportunities in natural areas for the enjoyment residents and visitors in Thornton.*
- Goal 17: *Open space acquisition, either by purchase or land dedication, shall contain resources that warrant protection.*
- Goal 18: *Protect/preserve open space in the most cost-effective manner possible.*
- Goal 19: *Use open space lands in a manner that allows for reasonable use by the public while protecting environmental resources.*
- Goal 20: *Incorporate lands that have development or geologic constraints as part of the city’s open space system, if appropriate, and in the interest of public health, safety, and welfare.*
- Goal 21: *Coordinate and cooperate with surrounding jurisdictions so that the open space system is allowed to follow natural systems across jurisdictional boundaries.*
- Goal 22: *Preserve historical and cultural sites in their traditional condition for the benefit of future generations.*
- Goal 23: *Prepare and regularly update the Parks and Open Space Master Plan to guide the development of the parks, trails, open space system, and recreation for the city of Thornton.*
- Goal 24: *Provide for the funding of the proposed parks, recreation, trails and open space system by using a variety of funding sources.*
- Goal 25: *Acquire and preserve park and/or open space lands using available mechanisms.*
- Goal 26: *Assure that the park and open space system is realistic and affordable, and that the costs required for long term, quality management and maintenance are recognized.*

Goal 27: Assure that parks, open space, recreation, and trails are managed and maintained in an environmentally responsible and cost-effective manner that preserves the underlying resources while being attentive to public enjoyment and safety concerns.

This fifth update to the Parks and Open Space Master Plan (preceding plans were approved in 2000, 2004, 2009 and 2012) retains the over-arching vision, goals, and policies summarized above, but also responds to changes that have taken place or issues that have emerged since the original plan was drafted. Among these are population growth and demographics, ward redistricting, the distribution of facilities throughout the city, public sentiment regarding completion of major trail corridors, suggestions for specialized facilities, public safety on open lands and the unique challenges associated with installing vehicular and pedestrian lighting at parks, trailheads and along trails adjacent to both residential development and open space.

This plan update presents an assessment of needs and specific plan proposals for parks, trails, and open space, with an emphasis on short-term actions that can be implemented within the next five years. The plan update also describes actions that may be undertaken over a longer term planning horizon, although these actions are developed with much less specificity. The plan update has again benefited from the active participation of city staff from a variety of departments, POSAC, and city of Thornton residents.

Recommendations carried forward from prior Parks and Open Space Master Plans include:

- Review annually the action plan for connecting existing trail segments into continuous routes and incorporate plan proposals into the capital budget.
- Continue to require dedication of trail easements in all developments affected by the trail system shown in the Parks and Open Space Master Plan Map (Exhibit 4.1).
- In park-deficient areas of the city, identify specific park development opportunities with other partners. Continue to explore the opportunities for joint development with landowners.
- Continue to implement specific maintenance and management guidelines to achieve effective stewardship of the city's open lands. Provide staffing necessary to carry out responsibilities relative to these guidelines.

The Master Plan also addresses recreation programming and facilities, the use of parkways and boulevards to create linkages between parks and open spaces, and the value of the parks, open space and trails system for enhancing community identity and quality of life for Thornton citizens.



Thornton Youth Programming



Cherrywood Park

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INTRODUCTION

Purpose of the Plan

The Parks and Open Space Master Plan is designed to serve a variety of purposes. These include:

1. *Implementing the goals and policies regarding parks, recreation, trails, and open space included in the Thornton Comprehensive Plan.*
2. *Assessing current and future needs for parks, trails, recreation, and open space in Thornton.*
3. *Defining the community's vision for a citywide parks and open space plan, and establishing goals and policies to move this vision forward.*
4. *Providing strategies to assist city officials in determining where to locate new parks, construct new and/or extend existing trails, construct new recreation facilities, acquire open space, and prioritize improvements to existing parks and recreation facilities.*
5. *Coordinating the location of parks, recreation facilities, trails, and open space with other land uses in the city to avoid potential land use conflicts.*
6. *Establishing standards for the types and sizes of parks, open space, trails, and recreation facilities and the amenities to be included in each area/facility.*

This Master Plan uses the all encompassing term “Parks and Open Space” when referring to Thornton’s citywide system of parks, recreation programs, recreation facilities, designated open space, open lands, and trails.

Plan Update

The Parks and Open Space Master Plan is intended to be updated every three years to respond to changing or emerging needs, to update the strategies for acquisition and preservation of parks, open space, trail corridors and facilities, and to update priorities and action steps. Plan updates were completed in 2003, 2007, 2009 and 2012. This fifth update to the 2000 Parks and Open Space Master Plan was initiated in January 2016, and presented to City Council in 2017.

Relationship to Thornton Comprehensive Plan

The Thornton Comprehensive Plan establishes goals, major strategies, and key policies for Thornton’s neighborhoods, future jobs, and potential amenities for city residents, and serves as an advisory document for development in the city. The Plan gives a broad overview of how the city will grow, and where future development or redevelopment will occur. This document is not regulatory in nature similar to the city’s Code or zoning map, but provides an overall vision of how development should take place within Thornton in decades to come.

The city currently uses the 2012 Comprehensive Plan, adopted by City Council at a public hearing on September 11, 2012. Thornton City Council may periodically approve minor amendments to the Plan to bring private development proposals into compliance with the Plan’s vision. In March of 2015, City Council approved an amendment to the Future Land Use Map.

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While the 2012 Comprehensive Plan provides the ‘big picture’ vision, the city also uses more detailed plans to supplement the broader goals, strategies and actions of the Comprehensive Plan. The Parks and Open Space Master Plan is a supplement of the city’s Comprehensive Plan and outlines the key environmental corridors, comprehensive trail network and future parks, open space, and recreational facility expansion recommendations. A complete list of the goals, policies, and recommendations from the recent 2012 Comprehensive Plan Update related to parks, open space, recreation, and trails have been included in the Technical Appendices – Appendix 1.

PLANNING PROCESS

The Thornton Parks and Open Space Master Plan is the result of sustained effort by the Parks and Open Space Advisory Commission (POSAC), public input received from interested citizens, and research and analysis by city staff and consultants. This process benefited from earlier work done by the Parks, Recreation and Open Space Committee (PROS) during development of the original Thornton Comprehensive Plan. The planning process used to create this Master Plan update addresses current conditions as well as needs driven by the city’s growth.

Parks, Recreation and Open Space Committee (PROS)

The Parks, Recreation and Open Space Committee was one of four citizen committees formed by the Thornton City Council to assist with development of the original Thornton Comprehensive Plan. This committee identified issues that needed to be addressed and developed goals, policies, objectives and actual projects related to recreation needs in the community. Based on the work of the committee, a Parks, Recreation, Trails and Open Space Opportunities Map was developed that identified 47 opportunity sites throughout Thornton. This map was included as Exhibit 6.3 in the original Thornton Comprehensive Plan, and provided a valuable starting point for the work on the original Parks and Open Space Master Plan. The PROS Committee also recommended that City Council place a .25% sales tax increase on the November 1996 ballot to fund approximately 8.5 million dollars worth of park and trail improvements. Thornton voters did not pass this ballot measure.

Passage of the 1997 Parks and Open Space Tax

In 1997, citizens concerned with the preservation of wildlife habitat formed the Wetland-Eagles group (WE). They approached the Thornton City Council about purchasing land on the northeast corner of 104th Avenue and Colorado Boulevard, which had served as a winter feeding ground for hawks and eagles. City Council advised the WE group that the city would need an additional revenue source, such as an open space tax, to consider purchasing wildlife habitat. In response, the WE group along with other interested citizen groups worked to prepare and support a new sales tax initiative on the November 1997 ballot.

The 1997 initiative provided for a .25% sales tax increase. The proceeds of this tax increase are divided into thirds; one third for parks, one third for open space and one third to be determined by City Council based on recommendations of an open space and parks advisory commission appointed by the City Council. (The specific ballot language for this initiative is stated in the Technical Appendices - Appendix 2.) Thornton voters passed this initiative, which provided impetus for the formation of the Parks and Open Space Advisory Commission and preparation of a Parks and Open Space Master Plan. In November, 2013, Thornton voters approved the extension of the existing .25% sales and use tax for open space and parks purposes from its current termination date of December 31, 2018 to December 31, 2038. Voters also approved allocation of no more than 20% of the total annual revenues from the tax to be spent on or reserved for maintenance costs.

Passage of the 2000 Parks and Open Space Bond Issue

In November 2000, Thornton voters also approved a \$22.4 million bond issue, to finance the costs of acquiring

116 acres of open space, 5.5 miles of trails, and 53 acres of parkland. The bond issue also provided for development of various facilities, including the Gravel Lakes and West Sprat Platte Fishing Facilities, Thornton Sports Complex, Croke Lake Park, Mountain View Park, Lambertson Lakes Park, McAllister Field, and the Margaret W. Carpenter Recreation Center Master Plan. (The specific ballot language for this initiative is stated in the Technical Appendices - Appendix 3.)

Parks and Open Space Advisory Commission (POSAC)

In spring 1998, the Thornton City Council formed the Parks and Open Space Advisory Commission (POSAC) and provided the Commission with a specific outline of its responsibilities. (The actual charge from the City Council to POSAC stating its responsibilities is included in the Technical Appendices - Appendix 5.) One of POSAC's primary tasks is to prepare recommendations for the Parks and Open Space Master Plan and forward them to City Council. During 1998-1999, POSAC undertook this task with diligence, reviewing previous work done on the Thornton Comprehensive Plan, receiving the results of city staff and consultant research, conducting field trips, identifying and evaluating parks, trails and open space opportunities, and receiving public input. POSAC formulated its vision for parks and open space in Thornton, proposed goals, policies and action steps, and made recommendations for achieving a citywide system of parks, trails and open space. In March 2000, the Thornton City Council received POSAC's recommendations regarding the Parks and Open Space Master Plan.

In October 2002, the city commissioned the first update of the Parks and Open Space Master Plan. POSAC members participated in over a dozen meetings with staff and the consulting team. In July 2003, the Thornton City Council received POSAC's recommendations regarding the Parks and Open Space Master Plan Update.

In August 2006, the city commissioned the second update of the Parks and Open Space Master Plan. POSAC members met with City staff and the consultants in a dozen meetings to revisit the recommendations they made in the previous Plan Update. POSAC continued its focus on identifying the city's current and future needs for parks and active recreation facilities, examining the geographic distribution of facilities within the city, identifying needs for recreation and senior programming, identifying "missing links" in the trails system, and identifying and evaluating potential opportunities for acquisition or improvements. Phasing and financing of acquisitions and improvements were also discussed and evaluated.

In April 2009, the third plan update was commissioned. POSAC members toured existing facilities and opportunity sites with city staff and consultants, and were briefed on potential needs and opportunities for open space acquisition, park and recreation facility development, and build-out of the trails system.

In August 2012, the city commissioned the fourth Master Plan update. POSAC members met with city staff and the consultants in a series of meetings to evaluate the city's current parks and open space system and distribution throughout the city, identify future needs for recreation programs and facilities, identify primary trail corridors and prioritize missing links in the system, and to evaluate and identify open space acquisition opportunities.

In January of 2016, the City commissioned the 2015 update to include updated data through 2015. As part of the process, two public meetings were conducted to evaluate current park and open space distribution, trails and recreation facilities, and a survey was distributed to solicit feedback on parks, open space, recreation and trails. Six POSAC meetings were conducted to review process, public comments, survey results and the draft master plan update.

Research and Analysis

City staff and consultants assisted POSAC in their analysis of Thornton's current and future needs for parks, recreation facilities, trails, and open space. Key tasks included estimating the city's current and future population

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and the current levels of service provided by the City's existing parks and recreation facilities, as well as parks that are currently in progress by developers. The consultants also completed an extensive inventory of recreational and environmental resources in the community and developed profiles, design standards and service areas for the different types of parks proposed as part of the citywide system. City staff created a list of parks, trails, recreation activities and facilities that community members have identified as needed or desired based on contact with the community. In addition, a list of city-owned land was created from the city's Geographic Information System (GIS). POSAC considered all of this information in making its recommendations on the 2000 Parks and Open Space Master Plan.

For each update, the existing parks and open space inventory was reviewed and amended, census and population projections were reviewed, levels of service for parks and recreation facilities were analyzed and for the majority of updates, neighboring municipal and multi-jurisdictional parks and recreation facilities were inventoried as a means of comparison to assist in understanding potential needs and/or expansion of Thornton facilities. (A listing of all of the projects recommended by Thornton residents since 1998 is included in the Technical Appendices - Appendix 6B)

Public Input

From 1996-1997, during the development of the Thornton Comprehensive Plan, the PROS Committee held a number of public meetings in each Council Ward of the City. The purpose of the meetings was to obtain input on park, trail, and open space issues throughout the community. Attendees were asked to complete a questionnaire regarding their opinions on park, recreation and open space issues. This information was used in the formulation of the Parks, Recreation and Open Space section of the Thornton Comprehensive Plan. This information was also used by POSAC in the development of this Parks and Open Space Master Plan.

During regularly scheduled quarterly meetings, POSAC often hears from citizens on a variety of topics related to parks, trails and open space issues. POSAC allocates time at each meeting for public comment and gives careful consideration to public comment in the Parks and Open Space Master Plan update process.

2015 Parks and Open Space Master Plan Update Process

The following list summarizes the methods used by City staff and consultants to solicit public input during the 2015 update process. A complete Summary of Public Comment is included in the Appendices - Appendix 6A.

- **POSAC MEETINGS** - A series of POSAC meetings were conducted to review existing and updated inventory and data. These meetings were open to the public.
- **PUBLIC OPINION SURVEY** - An electronic survey was developed and links were provided on the city's website. Hard copies were distributed at the Margaret W. Carpenter Recreation Center, the Thornton Community Center and the Senior Center. There was a total of 280 responses. A copy of the survey and the survey results are included in Appendix 17.
- **STAKEHOLDER INTERVIEWS** - Interviews were conducted with Thornton youth sports organizations in order to have a better understanding of current and future needs and program participation for each of the individual user groups and sports leagues. A Stakeholder Interview Summary is included in the Appendix 6A.
- **PUBLIC MEETINGS** - Two public meetings were conducted to solicit input from Thornton residents regarding the master plan update and parks, open space, trails and recreation facilities and programs. Public meeting summaries are included in Appendix 6A.
- **PRIOR PUBLIC OUTREACH EFFORTS facilitated in conjunction with other PLANS/UPDATES** - *Public comments sought during previous plan updates were revisited as many comments were still relevant to this plan update (See Master List of Recreation Projects for the Parks and Open Space Master Plan - Appendix 6B).*

Adoption

The first Parks and Open Space Master Plan was adopted on June 26, 2000, and the second plan update was adopted by City Council on May 11, 2004. The third plan update was presented to City Council in Fall/Winter of 2007 and adopted in January 2009. The fourth update was adopted in August 2013, and the current update was adopted by City Council in August of 2017.

PARKS AND RECREATION FACILITIES: HISTORICAL OVERVIEW

In October 1955, the citizens of Thornton created a non-profit corporation known as the Thornton Recreation Association. The Association was comprised of a number of non-profit agencies and was the precursor of the existing Community Services Department. The Thornton Recreation Association had a \$1,500 annual budget and no facilities. Both winter and summer programs were offered at area school sites. No fees were charged, and although instructors were paid, many non-paid volunteers assisted them.

The first recreational amenity constructed in Thornton was the outdoor swimming pool located at Community Park at 94th Avenue and Gaylord Street. The pool was constructed by Sam Hoffman in 1957 and dedicated to the city in 1958. The pool has been renovated many times, and it remains in use today serving Thornton citizens each summer.

In the mid 1960's, the city established its own Parks and Recreation Department and in 1973 the Thornton Youth Activity Association (TYAA) was formed. TYAA consisted of a number of youth sports groups operated by the parents of the children in the group. Today, many of the original sports groups remain in operation and are an integral part of recreational programming in the community.

In 1974, the city commissioned its first formal master plan for parks and recreation and, in 1980 the Thornton City Council adopted an update of the original master plan. Over the years, parks and recreation facilities have been added to the Thornton system as opportunities arose. Existing facilities are described in more detail in the following sections. (A more detailed community overview and historical sketch of Thornton is included in the Technical Appendices - Appendix 7.)

RECREATION AND TOURISM USES ELEMENT

In 2001, Colorado lawmakers adopted House Bill 1006, which requires master plans to include a recreation and tourism uses element. Chapters 2, 3, 4, 5 as well as this chapter of the Thornton Parks and Recreation Master Plan, meets the requirements of HB 1006 by detailing uses located throughout the city. These amenities are available to residents, employees, visitors and tourists alike. The city's existing and planned parks and open space system provides diverse recreational opportunities, including team sports, fishing, skateboarding, golfing, trails for hiking, walking, jogging, and bicycling, as well as indoor activities such as dancing, swimming, basketball, fitness classes, and crafts.

PLAN ORGANIZATION

The Thornton Parks and Open Space Master Plan is organized into the following chapters:

- 1. Introduction** - Describes the process used to develop the Parks and Open Space Master Plan, and its relationship to the Thornton Comprehensive Plan.
- 2. Existing Conditions** - Describes types of parks, open space, trails, recreation facilities, and recreation

1. INTRODUCTION

programs that are currently available to Thornton citizens. This background provides a useful context for understanding the overall vision presented in Chapter 3.

3. **Vision, Goals and Policies** - Describes the vision, goals and policies, for a connected citywide system of parks, open space, trails, recreation facilities and recreation programs.
4. **Plan Overview: Citywide Parks and Open Space System** - Describes the importance of the Parks and Open Space Master Plan Map, how to use the map, and understanding the methodology used to create the map.
5. **Parks, Recreation and Recreation Facilities Element** - Examines current and future needs for parks, recreation and recreation facilities, and provides recommendations for areas of acquisition and design standards for parks.
6. **Trails Element** - Examines current and future needs for trails in Thornton and the significant opportunities presented by the South Platte River, Big Dry Creek, Niver Creek, drainages, and irrigation ditches for establishing trail corridors. This element also expands the master plan's focus to include promoting Thornton's heritage and the 2012 Heritage Trails Plan (See Appendix 12), incorporates "Complete Streets" policies, and establishes a network-based approach for implementation.
7. **Open Space Element** - Examines current and future needs for open space in Thornton and identifies and evaluates sites in the city and its planned growth area that have high value historical and natural resources. It presents specific recommendations for preserving certain sites as part of an open space system.
8. **Implementation** - Describes the tools, resources available, and proposed action steps and strategies necessary to implement the vision of the Thornton parks and open space system.

Because this is a plan update, the analysis and recommendations as presented in the Parks and Open Space Master Plan, adopted in 2000, 2004, 2007, 2009 and 2013 have been carried forward in their entirety where appropriate and have been modified where updates have been necessary. The original Master Plan organization has been retained. Updated Technical Appendices and Glossary provide additional information and more detailed data related to this Master Plan update.

LOCAL AND REGIONAL CONTEXT

Community Character

The city of Thornton is located in the northern Denver metropolitan area in Adams County and adjacent to the cities of Westminster, Broomfield, Northglenn, and Federal Heights, as well as areas of unincorporated Adams County. The first construction in the area that is now Thornton began in 1952 as a result of the need for post-war lower cost housing. Thornton incorporated in 1956 with 10,000 residents and an area of 1.5 square miles. Between 1960 and 1970, Thornton grew by a modest amount from 11,353 to 13,326 residents. By 1980, however, the population had grown to 42,054 and by 2000 to 82,384 (Source: Thornton Comprehensive Plan). As of December 2015, the population of Thornton was 131,761* residents in an area of 36 square miles. Thornton continues to grow in a deliberate and conscious manner. The city is anticipating an additional 32,987 residents to move into Thornton over the next ten years for a total projected population of 154,198 residents by 2023. (A more detailed community overview and historical sketch of Thornton is included in the Technical Appendices - Appendix 7.)

At the time Thornton incorporated, much of the surrounding land was irrigated farmland. Irrigation ditches and reservoirs provided much needed water for growing crops and raising livestock, and promoted a rich diversity of vegetation, wildlife habitat, and area for future trail corridors. The South Platte River and its tributaries shape the land within Thornton and its future growth area. The South Platte River runs north from approximately 84th Avenue. Its tributaries, Big Dry Creek, Todd Creek, Brantner Gulch, Niver Creek and Grange Hall Creek, help form the rolling topography and tree-lined drainages that characterize Thornton and offer significant opportunities to create trail and open space corridors.

The rural character that is part of Thornton’s heritage, its environmental resources and recreational amenities are very much prized by Thornton residents. Farmland, a characteristic of this once rural community, is now being developed into residential neighborhoods, shopping centers, and commercial and industrial business areas. Thornton’s growth highlights the need for regular updates of the city’s Parks and Open Space Master Plan to ensure that valuable recreational and open space opportunities - which are so important to the quality of life in the community - are not lost as the city continues to develop.

*City of Thornton 2015 Year End Housing and Population Report



*Hoffman Homes open house in Original Thornton. Homes were priced at under \$10,000.00 in the 1950s.
(Photo source: city of Thornton Facebook Page)*



*Thornton Festival Days float: 1960s
(Photo courtesy city of Thornton Facebook Page)*



Signal Ditch Corridor



Historic Lamberston Lakes Farmstead

2. EXISTING CONDITIONS

Regional Setting

In planning for a citywide system of parks, trails and open space, the larger regional context must be considered.

Exhibit 2.1 Regional Context Map illustrates resources and facilities that are in close proximity to Thornton, including:

- » **South Platte River Trail:** Rich, fertile, and proximate to a reliable water source, the land along the South Platte River was recognized immediately as good farmland and a great agricultural asset. Today, its role as an enormous recreation and open space resource for the region and the Thornton community is being realized. A regional trail system has also been developed along the river that connects Thornton to neighboring municipalities.
- » **Big Dry Creek Corridor:** Big Dry Creek flows through the city of Thornton and provides an important stream and riparian corridor. Many ecologically valuable vegetation types, including wetlands, riparian forests, and mesic grasslands, occur within the Big Dry Creek drainage. The vegetation communities attract a diverse wildlife population including numerous birds, mammals, reptiles, and amphibians. The creek corridor also provides nesting or migration habitat for raptors, waterfowl, wading birds such as the great blue heron, and migratory shorebirds.
- » **Niver Creek Corridor:** Big Dry Creek flows through the city of Thornton and provides an important stream and riparian corridor. Many ecologically valuable vegetation types, including wetlands, riparian forests, and mesic grasslands, occur within the Big Dry Creek drainage. The vegetation communities attract a diverse wildlife population including numerous birds, mammals, reptiles, and amphibians. The creek corridor also provides nesting or migration habitat for raptors, waterfowl, wading birds such as the great blue heron, and migratory shorebirds.
- » **Adams County Regional Park:** The Adams County Regional Park is located immediately east of Thornton, between 120th and 136th Avenues. This 1,200-acre facility includes a 40-acre natural preserve, a 25-acre groomed park, the Adams County Fairgrounds, Riverdale Dunes and the Knolls Golf Courses, picnic areas, trails, playgrounds, the Adams County Historical Museum, and an 80-acre fishing pond. Adams County is currently in the process of updating the Regional Park and Fairgrounds Master Plan to ensure stewardship of natural resources and meet the recreational needs of increased regional population.
- » **Hyland Hills Park & Recreation District:** The Hyland Hills Park & Recreation District includes a portion of the most southern and western sections of Thornton and extends westward from Thornton into unincorporated Adams County, Federal Heights, and Westminster. Among the resources available through the District are Water World, the 27-hole Hyland Hills Golf Course, racquetball, disc and miniature golf, and the new 80+ acre Clear Creek Valley Park in Arvada.
- » **Federal and State Resources:** Such regional resources as the **Rocky Mountain Arsenal National Wildlife Refuge**, **Barr Lake State Park**, and **Standley Lake Regional Park** further enhance Thornton. The Arsenal consists of some 17,000 acres of federal land that is currently being transformed into a national wildlife refuge. The area serves as an extraordinary open space and park resource complete with interpretive areas, nature trails, and picnic areas. Barr Lake State Park and Standley Lake offer residents boating, fishing, hiking, and other outdoor recreational activities, and both are in close proximity to Thornton.
- » **Future North Metro Rail Line - RTD FasTracks:** An 18.4 mile long commuter rail line will bisect the city of Thornton and provide a direct connection to downtown Denver at Union Station. Trail connections are currently in progress in anticipation of the 2018 completion date. The North Metro Line has a temporary end at Eastlake, and the first phase of the line is scheduled to be operational in 2018.
- » **Rangeview Library District & Anythink:** Rangeview Library District is the public library system serving the residents of Adams County through its seven Anythink libraries located in the communities of Bennett, Brighton, Commerce City, Thornton and the Perl Mack neighborhood in Denver. The library district also offers outreach services through its Bookmobile, Anythink in Motion, visiting area neighborhoods and community stops.

In addition to these specific resources, municipalities adjacent to the city of Thornton have planned and developed trail systems and open space corridors that offer potential linkages to the system of parks, trails, and open space described in this Master Plan. By coordinating with these communities, the city of Thornton has the opportunity to extend and enhance its system for the benefit of residents living within the city and in adjacent communities.

See 11x17
Regional Context MAP
Exhibit 2.1

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PARKS AND OPEN SPACE INVENTORY OVERVIEW

In 2012, categories were created to allow classification of each existing park and open space parcel, joint use facility, or park planned in approved developments. The four primary classifications include:

- » **Park (Pocket, Neighborhood, Community)** - This classification includes all parks and irrigated detention areas within residential areas.
- » **Designated Open Space** - Designated open space areas are parcels intentionally protected from development and set aside for unstructured recreation and the appreciation of natural surroundings.
- » **Open Land** - This classification includes all trail corridors outside of designated parks and open space, irrigated or non-irrigated detention areas maintained by the city, and undeveloped future park, recreation and open space land currently owned by the city.
- » **Golf Course** - The Thorncreek Golf Course is owned and maintained by the city of Thornton.

Thornton residents currently enjoy 2,457 acres of city-owned parks, open land, designated open space, and golf course acreage, which equates approximately to 18.7 acres per 1,000 residents. The following sections in this chapter will provide further description of existing facilities in Thornton's parks and open space system.

EXISTING PARK LAND

Thornton's existing parks have been developed over the last four decades. Some parks have been designed and built by the city, while others were dedicated to the city through the development of residential subdivisions.

Existing city-owned parks vary in size and amenities. The smallest facilities are the pocket parks, which range in size from one quarter to five acres and generally accommodate play areas serving children from the surrounding neighborhood. The largest facilities are community parks, which are generally a minimum of 25 acres in size and provide for a variety of active, passive, and programmed recreational uses. Exhibit 2.2 shows the current distribution of existing and planned Thornton parks by type and by Ward while Exhibit 2.3 shows the distribution of recreation facilities by Ward. Exhibit 2.5 is an existing conditions map of all recreation facilities in the city of Thornton. (A detailed inventory and map of Thornton parks and other recreational resources by Ward, including park acreage and amenities, is included in the Technical Appendices.)

The current city-owned parks system consists of a total of 88 existing parks, including parks that are under a joint use agreement with schools or other public/private entities. These total resources include 50 pocket parks, 31 neighborhood parks, and 7 community parks. Another 19 parks are planned in approved developments that range in size from approximately one-half



Park Example: Homestead Hills Park & Open Space provides park users with magnificent 360 degree views of the Denver metro area and the Front Range.



Designated Open Space Example: Big Dry Creek Open Space

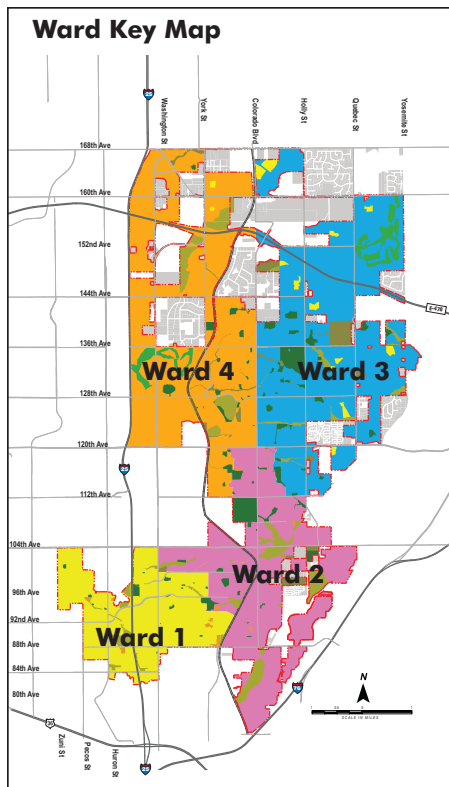


Open Land Example: Aylor Open Land



Golf Course Example: Thorncreek Golf Course

2. EXISTING CONDITIONS



acre to nineteen acres. Thornton does not currently have a regional park, but residents are served by the Adams County Regional Park and Fairgrounds, Water World, Barr Lake State Park, and other nearby regional facilities.

The totals below do not include designated open space or open lands, the Senior Center, or the Thorncreek Golf Course, or parks and recreation facilities provided through the Hyland Hills Recreation District.

Exhibit 2.3 shows the current distribution of city-owned recreation facilities (includes joint use facilities) and recreation facilities planned in approved developments. Existing facilities are reasonably well distributed throughout the community.

Exhibit 2.4 summarizes the quantity of existing park acreage within each Ward, the number of park acres provided per 1,000 residents, and the number of recreation facilities of each type provided per 1,000 residents. The table does not include private parks and recreation facilities operated by the Hyland Hills Park and Recreation District (see page 2-27)).

Thornton currently owns and maintains 735 acres of parks providing approximately 5.6 acres of dedicated park land for each 1,000 people. Another 164.5 acres of neighborhood-scale parks are currently planned in approved developments. Based on the projected population increase of 22,239 residents and the proposed additional park acreage in these new neighborhoods, the city of Thornton anticipates providing 6.2 acres of parkland for each 1,000 residents when those planned parks are developed; however, not all new parks will be city-owned and maintained, some will be Metro District owned and maintained, but open to the public. (See Parks

Exhibit 2.2: Existing Parks and Parks Planned in Approved Developments in the city of Thornton, by Classification

Existing city of Thornton Parks (includes Joint Use Facilities)		Ward 1		Ward 2		Ward 3		Ward 4		TOTAL	
Classification	Size	#	AC	#	AC	#	AC	#	AC	#	AC
Pocket Park	¼ to 5 AC	13	15.7	16	34.2	7	16.8	15	29.2	50	95.9
N’hood Park	5 to 25 AC	5	35.2	6	55	14	197.6	6	61.9	31	349.7
Community Park	25+ AC	2	31.5	4	174.8	1	50	2	33.5	7	289.8
TOTAL		20	82.4³	26	264	22	264.4	23	124.6	88	735.4

Planned Parks in Approved Developments in Thornton ²	Ward 1		Ward 2		Ward 3		Ward 4		TOTAL	
	#	AC	#	AC	#	AC	#	AC	#	AC
Planned Parks in HOAs	0	0	0	0	5	38.3	7	26.7	12	65
Planned Parks - city owned	0	0	1	5	6	72.5	0	0	7	77.5
TOTAL									19	164.5

1. Source: See Technical Appendices - Appendix 8

2. Not all of the Parks Planned in Approved Developments will be city-owned and maintained. See Inventory Matrix - Appendix 8 - the parks listed under “Parks Planned in Approved Developments” identifies which parks will be city-owned and maintained and which parks will be owned and maintained by a Metro District.

3. Excludes Hyland Hills Park & Recreation District.

EXISTING CONDITIONS. 2

Planned in Approved Developments Inventory information in Technical Appendices - Appendix 8). Exhibit 2.5 shows the locations of these existing facilities within city of Thornton boundaries, as well as the approximate locations of the parks planned in approved developments. (Larger scale maps of existing facilities by Ward are also included in Appendix 8.)

Exhibit 2.3: Distribution of Existing Recreation Facilities and Recreation Facilities Planned in Approved Developments in the City of Thornton, by Ward										
Facility ⁴	Number of Existing Facilities by Ward (includes Joint Use Facilities)					Planned Park Facilities in Approved Developments in Thornton ² by Ward				Existing plus Planned
	Ward 1	Ward 2	Ward 3	Ward 4	TOTAL	Ward 1	Ward 2	Ward 3	Ward 4	
Baseball/ Softball Field	6	11	5	8	30	0	0	0	0	30
Basketball Court (Outdoor Full & 1/2 Court)	4.5	7	3	7	21.5	0	0	5	3	29.5
Multi-Purpose Field	4	17.5	24	5.5	51	0	0	5	2	58
Tennis Court	0	9	0	8	17	0	0	0	2	19
Volleyball Court	0	4	0	2	6	0	0	0	0	6
Playgrounds	13	19	20	19	71	0	1	11	7	90
Swimming (Outdoor)	1	0	1	0	2	0	0	0	0	2
Swimming (Indoor) ³	0	1	1	0	2	0	0	0	0	2
Gymnasium	0	2	0	0	2	0	0	0	0	2
Skate Park	1	2	1	0	4	0	0	0	0	4
Roller Hockey Rink	0	2	0	1	3	0	0	0	0	3
Disc Golf	0	0	2	0	2	0	0	0	0	2
Dog Park	0	0	1	0	1	0	0	0	0	2
Horseshoe Pit	4	2	0	2	8	0	0	0	0	8
Shuffleboard	0	2	0	0	2	0	0	0	0	2
Bocce	0	2	0	0	2	0	0	0	0	2
Pickeball (Indoor Striping)	0	2	0	1	3	0	0	0	2	5

1. Source: See Technical Appendices - Appendix 8
2. Not all of the Parks Planned in Approved Developments will be city-owned and maintained. See Inventory Matrix - Appendix 8. The parks listed under "Parks Planned in Approved Developments" identifies which parks will be city-owned and maintained and which parks will be owned and maintained by a Metro District.
3. Indoor swimming facilities includes joint-use Adams 12 Five Star Schools Veterans Memorial Aquatic Center (VMAC), and is not a full use pool for the general Thornton public.
4. Highland Hills Park & Recreation District is excluded from Ward 1 information.



Pocket Park - Playground equipment and picnic tables located at Croke Drive Park located west of I-25 in Ward 1



Horseshoe pits, basketball courts and group picnic area at Margaret W. Carpenter Park & Open Space located in Ward 2



Park Village Pool located in Ward 3

2. EXISTING CONDITIONS

COMMUNITY-WIDE PARKS & RECREATION FACILITIES

- Margaret W. Carpenter Park & Open Space**, centrally located within the city, is the crown jewel of the city of Thornton park and open space system. The 150+ acre park includes Margaret W. Carpenter Recreation Center, six multi-purpose fields that are used for football, soccer, rugby and lacrosse as well as functioning as a “great lawn” for community festivals such as Thorntonfest and WinterFest. Recent improvements to the site include a skate park, tennis courts, shuffle board and bocce courts, horseshoe pits, playground, splash park, carousel, boating, boardwalk and pier, amphitheater, and plumbed restrooms.
- Thornton Trail Winds Park & Open Space**, located in the mid-eastern part of the city, is a highly recognized and valued recreation facility. The 140 acre park currently includes nine football/soccer fields, including a lighted multi-use artificial turf field, a dog park, skate park, playground, picnic shelters and plumbed restrooms. Future build-out plans of the park include six additional football/soccer fields, a non-potable irrigation pond and community lawn, water park, and future recreation center site.
- Community Park**, located in the southern part of the city, includes the Thornton Community Center and provides a variety of recreation opportunities for residents living in the original city of Thornton neighborhoods. The 45 acre park includes the popular City Pool, a skate park, three baseball fields, two football/soccer fields, two playgrounds, a basketball court, two tennis courts, a volleyball court, roller hockey rink and two pavilions for group picnics. Holy Cross Ballfields, a joint-use facility adjacent to Community Park, provides two additional baseball fields.

Exhibit 2.4: Current Parks and Recreation Facilities Level of Service Acreage in Thornton, by Ward and Estimated Level of Service for Parks Planned in Approved Developments

Summary of Park Acreage by Ward						Planned Parkland in Approved Developments	Existing plus Planned
	Ward 1	Ward 2	Ward 3	Ward 4	TOTAL	-	TOTAL
Population ¹	33,366	33,784	30,868	33,743	131,761	13,442	145,203
Park Acreage	82.4	246.4	262.3	124.6	735.4	164.5	899.9
AC/1,000 residents	2.45 ²	7.31	8.51	3.69	5.58	-	6.19

1. Source: city of Thornton 2015 Year End Housing and Population Report

2. Excludes Hyland Hills Park & Recreation District facilities.



Skate park and Thornton Community Center located in Community Park, Ward 2

See 11x17
Existing Conditions MAP
Exhibit 2.5
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Community Park also hosts the city of Thornton's annual Harvest Fest, a popular event for the community.

- **Sports Complexes** - The city of Thornton has several other community parks that can accommodate multiple teams and sporting events. Thornton Sports Complex, located in the southeast part of the city, provides four baseball and four soccer/football fields. Northern Lights Ball Fields, located in the northwest part of the city, include eight baseball/softball fields. Riverdale Road Sports Complex, a future community park located in the north central part of the city, is anticipated to include eight baseball/softball fields.
- **Golf Courses** - The city owns and operates the 165 acre Thorncreek Golf Course. Another golf course located within the city of Thornton, however not city-owned or maintained, is the Heritage at Todd Creek Golf Course. This 246 acre semi-private course was constructed by developers in the northeast quadrant of the city. Other nearby public golf courses include Riverdale Golf Course adjacent to Adams County Regional Park, The Greg Mastriona Golf Courses at Hyland Hills, and Legacy Ridge Golf Course in Westminster.
- **Skate Parks** - There are four skate parks in the city of Thornton. One is located adjacent to the Thornton Community Center in Community Park, one is located at the Margaret W. Carpenter Park & Open Space, one is located at Thornton Trail Winds Park & Open Space, and one is located at Pecos Park west of I-25, and includes an at-grade skate area with urban skate components.
- **Disc Golf Course** - The city's first disc golf course opened in 2012 at Springvale Park and is a popular place for disc golf enthusiasts. The course is 18 holes for a course par of 54, and includes nine holes as a skills course where beginner players can learn to play and experienced players can hone their skills, and nine holes with longer distances for more advanced players.
- **Dog Park** - The city has one dog park located at Thornton Trail Winds Park & Open Space with separate areas for large and small dogs.



Playground and carousel at Margaret W. Carpenter Park & Open Space



Community Park pavilion



Thorncreek Golf Course



Baseball field at Thornton Sports Complex

2. EXISTING CONDITIONS



Skate Park at Thornton Trail Winds Park & Open Space



Thorncreek Golf Course



Thornton Trail Winds Park and Open Space Dog Park



Margaret W. Carpenter Recreation Center

RECREATION CENTERS & POOLS

City of Thornton Recreation Centers & Pools

The city of Thornton Recreation Division of the Community Services Department runs the day-to-day operations of the two year-round recreation facilities and the two seasonal outdoor swimming pools.

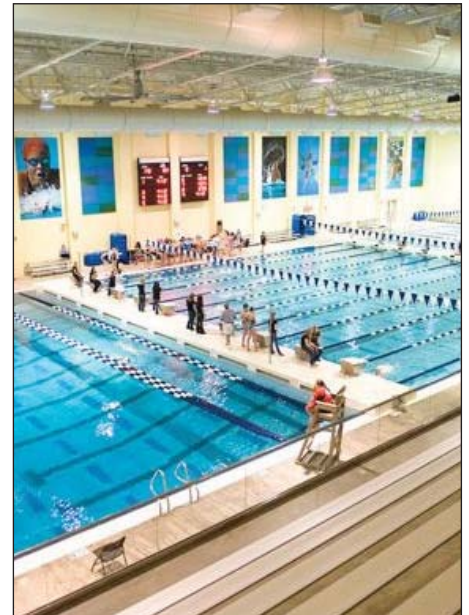
- The **Margaret W. Carpenter Recreation Center** opened in October of 1994 at 11151 Colorado Boulevard, and is the primary recreation hub for the city of Thornton. This 78,780 square foot full-service facility has two swimming pools including one with a wave function, a whirlpool/steam/sauna area, a full size gymnasium, a gymnastics studio, a fitness/dance room, three racquetball courts, two weight rooms, a running/walking track, a preschool childcare area, family locker rooms, and a multi-purpose room that can be divided into separate meeting rooms. In 2015, 296,429 visits to the center had been recorded. Current drop-in daily facility use fees for city of Thornton residents (Adult) is \$4.00 and non-residents is \$5.50.
- The **Thornton Community Center**, constructed in 1973, is located at Eppinger Boulevard and Gaylord Street within to Community Park. This facility function as a “community” center primarily serving residents in the immediate neighborhood. The 27,000 square foot facility provides limited recreation amenities and includes a two-court gymnasium, a small weight room, a dance room, a senior billiards room, and a classroom/conference room. A multi-purpose room that once served as a branch location for the Adams County Library System was converted into a Teen Center in January 2004. In 2015, 19,538 visits to the Community Center were recorded. Current drop-in daily facility use fees for city of Thornton residents (Adult) is \$.50 and non-residents is \$2.50.
- **Seasonal Pools** - The city operates two seasonal outdoor pools. Each provide swim lessons, lap swim, aqua fitness, and recreational swimming opportunities. **City Pool**, the larger of the two facilities, is located in the southern part of the city. It was renovated in 2004 with water slides, a lazy river, play structure, and a three lane lap pool which resulted in a significant increase in annual attendance. Hitting capacity on 22 different days in 2015, City Pool recorded a total of 22,548 visits in 2015. Current City Pool daily pass fees for residents (Adult) is \$3.75 and non-residents is \$5.50. Park Village Pool, a smaller facility located in the northern part of city, received 11,965 visits in 2015. Current Park Village Pool daily pass fees for residents (Adult) is \$2.75 and non-residents is \$3.50.

Joint Use Aquatic Center

- **Adams 12 Five Star Schools Veterans Memorial Aquatic Center (VMAC)** - Completed in August 2010, VMAC is a state-of-the-art indoor pool facility that includes a 50-meter Olympic-size pool as well as one 3-meter and three 1-meter spring diving boards. VMAC, home to the Five Star District's boys and girls swimming and diving teams, has bleacher seating for approximately 842 spectators making it an ideal location for hosting State swimming and diving meets as well as other major competitions. Located within Thornton Trail Winds Park & Open Space, this joint use facility is owned and operated by Adams 12 School District, and offers opportunities for pool use for the city's CARA and Masters swim programs. The city's recreational swim and lessons programs do not use this facility due to the cold temperature of the water.



Park Village Pool



Adams 12 Five Star Schools Veterans Memorial Aquatic Center (VMAC)



Thornton Community Center



Paws for a Dip at City Pool



City Pool



Pool at Margaret W. Carpenter Recreation Center

2. EXISTING CONDITIONS



Thornton Active Adult Center

OTHER CITY OF THORNTON PROGRAMS AND SERVICES

Thornton Senior Center

The Senior Center Division of the Community Services Department provides recreation opportunities for Thornton’s senior population. The **Thornton Senior Center**, located at 9471 Dorothy Boulevard, opened in 1984. The building itself has served a variety of purposes over the years, including city administration, library, and public safety functions. The facility was updated in 2013 and currently provides space for a multipurpose room, three classrooms, a book room, fitness room, and a kitchen. In 2015, 50,919 visits to the Senior Center were recorded, which is a 7.5 % increase from the 47,328 visits recorded in 2012.



Thornton Arts & Culture Center

The **Thornton Active Adult Center** is one of Adams County’s largest meal providers and serves lunch to thousands of seniors each year. The Senior Center also provides transportation services for the nutrition program, and works very closely with the Thornton Police Department to teach seniors to better protect themselves and their property.

In early 2008, with the continued growth of the Thornton senior population, City Council recommended that the Senior Citizen Advisory Board create a Senior Services Master Plan and in 2010, the Board developed the 2010 Senior Services Master Plan for the Thornton Senior Center.

Thornton Arts & Culture Center (TACC)



Young Artists Chorale at TACC

The Arts and Culture Division of the Community Services Department coordinates the programming and promotion of arts and humanities in the community and is responsible for a variety of city sponsored programs such as art exhibits, concerts, and Funtaztikidz. It is the goal of the Arts and Culture Division to identify and cultivate support, interest, and involvement not only in the visual and performing arts, but in historical preservation and volunteering.

The **Thornton Arts & Culture Center** (TACC, pronounced ‘Taxi’), at 9209 Dorothy Blvd., is home to performances, classes, art exhibits in the Oz Gallery, and the Volunteer Thornton program. TACC is shared by the Senior and Arts & Culture Divisions. Programming includes senior fitness classes, line dancing, Tai Chi, Funtaztikidz (the children’s entertainment series), rotating art exhibits, Thornton Community Chorus and community band concerts, and a new community theatre project called Break a Leg!



Community Garden at Good Shepherd United Methodist Church

In 2008, the Thornton Arts, Sciences and Humanities Council (TASHCO), a citizen board appointed by City Council, developed the Thornton Arts, Sciences and Humanities Council Master Plan for the cultivation and promotion of arts and humanities in the city of Thornton.

Community Gardens

The city currently has five community gardens, but the number and locations may change from year to year. The community gardens began in 2009 as a

partnership with the Adams Community Gardens CO-OP and Keep Thornton Beautiful. Community gardens are located at churches and schools around the community. To be considered a community garden, the garden must be located within the city limits, open to any Thornton resident who wants to garden, donate a substantial amount of the produce to area food banks/pantries, and adhere to the city of Thornton Community Garden Ordinance and other related ordinances. The Adams Community Gardens CO-OP offers technical assistance for gardeners through its partnership with the CSU Extension Master Gardener Program.



Preschool classroom at Thornton Community Center

CITY OF THORNTON RECREATION PROGRAMS

The city of Thornton Recreation Division of the Community Services Department offers a variety of recreational programs for people of all ages. From toddlers to seniors, the city provides recreational programming to challenge the young and the young-at-heart. Programs include swim lessons, gymnastics, teen activities, preschool classes, special events, fitness/wellness classes, as well as youth and adult sports. A complete list of the Recreation Division Program's Participation is included in the Technical Appendices.

Preschool Program

The Preschool Program is a fee-based, state licensed program for children ages 2.5 to 6 years offering a curriculum in a play-based environment with emphasis on socialization. Activities include arts and crafts, reading, music, and dramatic play. The preschool program is offered year-round at the Margaret W. Carpenter Recreation Center and during the school year at the Thornton Community Center. This program has a very positive reputation that results in full classes and waiting lists. In 2015, the Preschool Program reported 911 participants at the Thornton Community Center and 1,383 at Margaret W. Carpenter Recreation Center.



Childcare at Margaret W. Carpenter Recreation Center

Dance Program

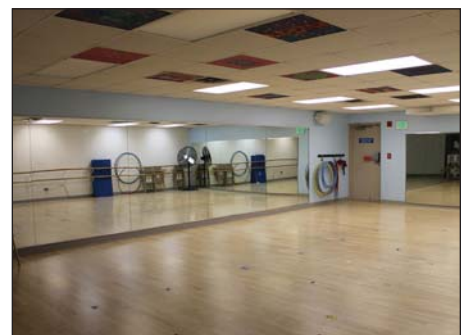
The dance program is a very strong and popular, fee-based, recreation program for students of all ages. All of the classes are conducted in the dance room at the Thornton Community Center. The most popular classes are those geared to preschool age students, but the program does offer classes for older children, teens and adults. Performances are held twice a year at city of Thornton festivals. The performances involve choreography and costuming for each group. In 2015, the dance program reported 1,819 participants.



Dance group on stage at Harvest Fest, held at Community Park

Youth Programming

The Thornton City Council has made youth recreational programming one of its highest priorities for a number of years. City-operated youth programs include swim lessons at the Margaret W. Carpenter Recreation Center and both outdoor pools; other programs include gymnastics, racquetball, girls' softball, tennis, track, and swim team.



Dance room at Thornton Community Center

2. EXISTING CONDITIONS



Gymnastics at Margaret W. Carpenter Recreation Center

Portable Playground is a free 9-week summer recreation program where Recreation Division staff take a “portable playground” into the neighborhoods of participants, usually high-density housing projects, to promote activity and interaction. There are no age restrictions for the Portable Playground program, however participants are typically elementary school age or younger. In 2015, there were 1,225 participants.

Adventure Club is an affordable day program offered 11 weeks each summer for ages 5-11 out of the Thornton Community Center. Activities include crafts, games, sports, and various field trips throughout Thornton and the greater metro area. This program is licensed each year through the State of Colorado.



Adventure Club at Thornton Community Center

Teen Escape is the teen version of Adventure Club geared toward ages 11-14, but offered at the same time as Adventure Club. In 2015, the Teen Escape and Adventure Club had a combined 226 participants.

A variety of other teen programs are also offered through the city of Thornton.

- **Teen Nights** - Typically, six Teen Nights are offered during the school year for youth aged 11-16. Four are held at the Thornton Community Center and two are held at the Margaret W. Carpenter Recreation Center. In addition, one outdoor movie and pool party is held in the summer at City Pool. In 2015, Teen Nights had 137 participants.
- **Teen Advisory Council** - This is an advisory group of Thornton teens ages 11-18 who have the desire to create opportunities for a better world for the youth who live and play in Thornton. New members are recruited twice a year and the Council can have up to 15 members, with typically 6 to 10 members at any given time. The group’s primary goals are to advise Recreation Division staff on what is important to the city of Thornton’s youth and to help create opportunities to volunteer and give back to their community.
- **Volunteer Corps** - This is a summer volunteer program designed to cultivate responsibility in Thornton youth aged 11-18. These volunteers can visit nursing homes, participate in park clean-ups, help build trails and assist in special events. The participants are guaranteed at least one volunteer opportunity per week. The city provides the staff supervision and transportation to volunteering opportunities. In 2015, 94 youth and teen volunteers participated in this program and generated 3,711 volunteer hours.



Teen Center at Thornton Community Center



Youth Sports Programming

Youth Sports

In addition to city-sponsored youth recreational programming, other third party providers assist in sponsoring recreational activities in the community. These third party providers include an extensive list of youth sports organizations that utilize Thornton facilities including:

- **Thornton Boys Basketball**
- **YMCA Sports - Soccer, Basketball, Baseball/T-Ball, Flag Football**
- **North Area Rush Soccer**
- **Colorado Storm Soccer**
- **Northern Thornton Baseball and Softball Association**
- **Northern Lights Little League**
- **Thornton Baseball Association**
- **Thornton Junior Football League**
- **North Metro Junior Football League**
- **Thornton Tennis Association**
- **Northside Youth Rugby**

Since 2013, growth rates vary by sport, but are generally holding steady. Across all teams, baseball and football participation held steady, and soccer grew at a rate of 20%. Rugby has increased its participation rate by 69% in 2012, but recent growth has also remained steady. Basketball participation declined by 10%. (See Technical Appendices - Appendix 14 for Recreation Division program participation.)

Adult Programming

Adult programming includes active recreation programs, as well as general interest activities that vary from season to season. Active programs include swimming and scuba, personal training for fitness, racquetball, weight training and conditioning, as well as monthly Community Walks. General interest activities include programs such as CPR, astronomy, parenting, financial workshops, hunter safety, and dog obedience.

The Recreation Division offers the following adult sports: basketball, softball, and racquetball. In 2015, each sport reported the following participation:

- **Basketball:** 6 teams with 77 participants. Basketball leagues are held at the Thornton Community Center.
- **Softball:** 18 teams with 243 participants. Adult leagues are only offered in the fall due to limited field availability.
- **Icy Blast Racquetball Tournament:** 42 participants. The racquetball lesson program is conducted year-round at Margaret W. Carpenter Recreation Center.



Basketball in gymnasium at Margaret W. Carpenter Recreation Center



Thornton Boys Baseball at Northern Lights Ball Fields



Fitness class at Margaret W. Carpenter Recreation Center



Adult Programming: Active Adult Outing

2. EXISTING CONDITIONS



Silver Sneakers® Fitness Program

Programming for Active Adults

Recreational programming offered for active adults includes volleyball, skiing, fitness (including the popular Silver Sneakers® Fitness Program offered to Medicare-eligible participants), aqua fitness, yoga, and seasonal activities such as softball, golf, and hiking. General classes and drop-in activities include cards, bingo, billiards, computer classes, porcelain doll making, woodshop, dancing, writing, ceramics, and a variety of trips and tours. Other services provided include assistance with income tax preparation, massage therapy, health screenings and nutrition, and educational classes that deal with legal and health related issues.

Special Events and Festivals

The city of Thornton Community Services Department provides a variety of special events on an annual basis, including three large community festivals each year - Thorntonfest, Harvest Fest, and WinterFest. The city does not have a recognized downtown, so these unifying festivals are held at different locations and generate tremendous community pride.



Thorntonfest at multi-purpose fields, Margaret W. Carpenter Recreation Center

The Margaret W. Carpenter Park & Open Space is home to Thorntonfest and WinterFest. Each event attracts approximately 35,000 - 50,000 people annually. Harvest Fest is held at Community Park and attracts approximately 7,000 residents, annually. The 4th of July Celebration, also held at Margaret W. Carpenter Park & Open Space, is another large event that offers live music and attendance is estimated to have exceeded 50,000 in the last three years. Other special events include the Easter Egg Scramble, Trunk or Treat, and the Summer Concert Series. A complete list of the Recreation Division Program's Participation including special event and festivals is included in the Technical Appendices - Appendix 14.



Harvest Fest at Community Park



WinterFest at multi-purpose fields, Margaret W. Carpenter Recreation Center



WinterFest ice-skating rink and Christmas tree farm

PRIVATELY OWNED AND MAINTAINED RECREATION FACILITIES

There are a number of pocket and neighborhood parks not included in the city's existing inventory that serve individual residential subdivisions that are maintained exclusively by private entities and Homeowners' Associations (HOAs), not by the city. These parks typically range in size from one quarter to five acres in size and provide a level of service to residents living within the subdivision or residential development with recreational amenities such as playgrounds, basketball courts, open play areas, and in some cases, outdoor pools. The following maps illustrate the approximate locations of non-city owned parks, playgrounds and pools throughout the city of Thornton.

The city has initiated mapping of all non-city owned facilities and is in the process of developing an inventory of parks and recreation facilities including parks, swimming pools, playgrounds and basketball courts. These facilities play an important role in providing both public and private recreation facilities to Thornton residents. These maps are included in Chapter 2, Existing Conditions, Exhibits 2.6, 2.7 and 2.8.

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See 11x17
Privately Owned Facilities- Playgrounds
Exhibit 2.6

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See 11x17
Privately Owned Facilities-Pools
Exhibit 2.7

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See 11x17
Schools
Exhibit 2.7

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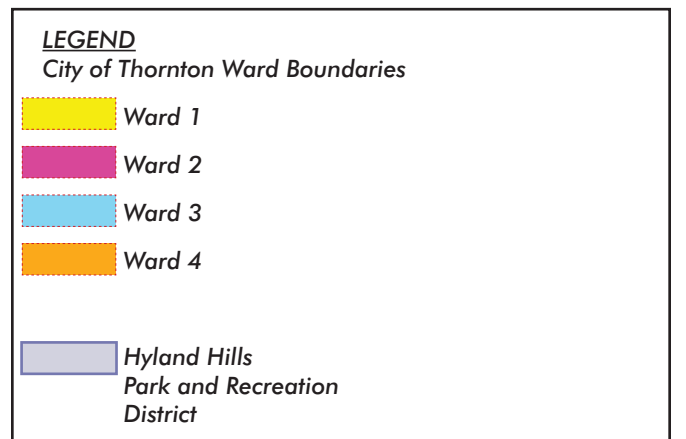
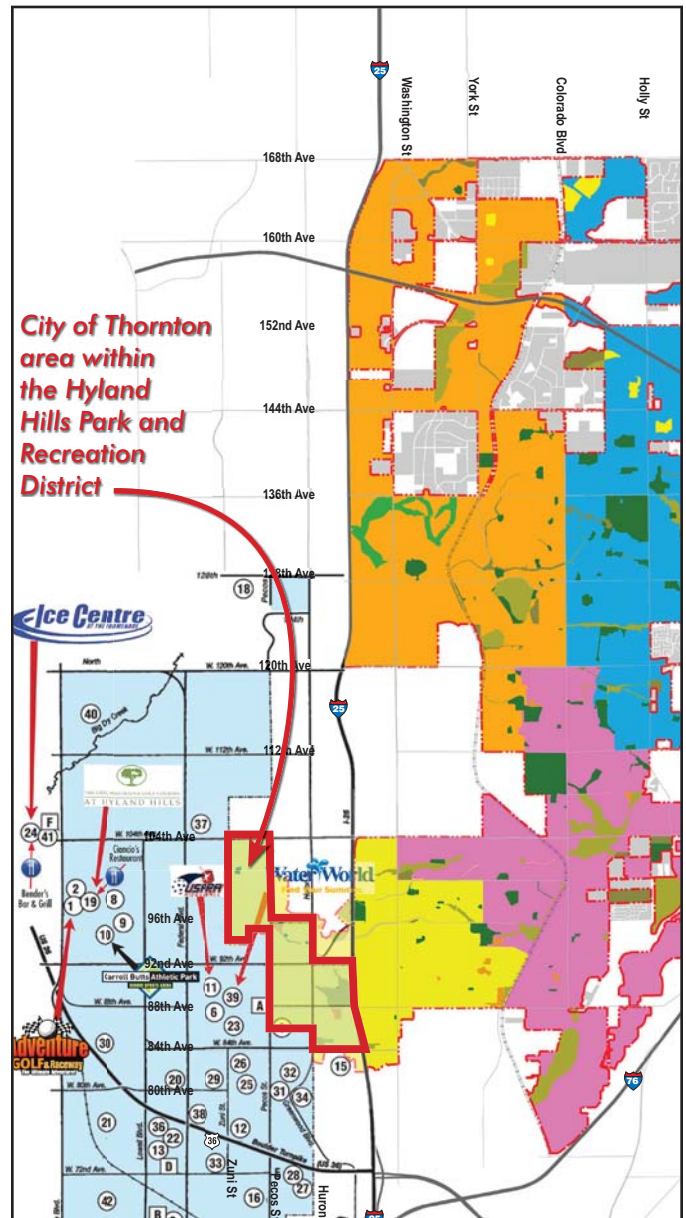
HYLAND HILLS RECREATION DISTRICT

Approximately 15,000¹ Thornton residents in the southwestern section of the city, west of I-25 (see map to the right, area outlined in bold red line) live within the **Hyland Hills Park and Recreation District**, and are serviced by recreational facilities in that District as well as the city of Thornton.

Hyland Hills Park and Recreation District, established in 1955, has the honor of being the first park and recreation district in the state of Colorado. Today, Hyland Hills serves nearly 125,000 residents in a 25 square mile area located in southwest Adams County, including areas of Westminster and Arvada located in Adams County, parts of Northglenn, Thornton and unincorporated Adams County, and the city of Federal Heights.

Hyland Hills maintains 27 parks with a total of 505 acres, 29 sports fields, 3 community centers, 8 racquetball courts, 15 tennis courts, 3 outdoor swimming pools, a disc golf course, a skate park and batting cages at the Sports Complex. Additional facilities include Water World, Greg Mastriona Golf Courses, the Ice Centre at the Westminster Promenade (a joint endeavor with the city of Westminster), Adventure Golf and Raceway, the Donald E. VanArsdale Gymnastics Center and The MAC (a center for active adult lifestyles - jointly owned with the city of Westminster).

1. Source: *Hyland Hills Park and Recreation District Master Plan. The 2002 District Report includes district demographics including the city of Thornton. Projections in the report are based on 1999 data (12,028 Thornton population) with an expected growth rate of 2.4% that was provided by the city of Thornton estimating Thornton population in the District at 16,078.*
2. *The Hyland Hills Park and Recreation District planner estimates that the number of Thornton residents within District boundaries on 12/31/15 was 15,000.*



2. EXISTING CONDITIONS

DESIGNATED OPEN SPACE AND OPEN LAND

Designated Open Space and Open Land are city of Thornton classifications for properties that have been acquired or preserved in the public interest. They serve a variety of functions, including conservation and protection of natural, cultural, historic or scenic resources, providing future opportunities for recreation, shaping the pattern of growth and development, and preserving wildlife corridors, habitat, and agricultural resources.

This plan update defines Designated Open Space and Open Land as follows:

- » **Designated Open Space** - Designated open space areas are parcels intentionally protected from development and set aside for unstructured recreation and the appreciation of natural surroundings. Open Space is not a temporary designation for vacant lands.
- » **Open Land** - This classification includes all trail corridors outside of designated parks and open space, irrigated and non-irrigated detention areas and undeveloped future park, recreation and open space areas owned by the city.

The Open Land concept is similar to a “land bank” where desirable properties are acquired where possible and uses are determined at a future time based on the underlying resource value of the property and need for passive or active recreation facilities.



Designated Open Space at Grandview Ponds Open Space & Prairie Dog Habitat



Open Space signage at Big Dry Creek Open Space



98th and Riverdale Open Land

Exhibit 2.6: Existing and Future Approved Designated Open Space and Open Land in Thornton by Ward

Existing City of Thornton Open Land and Designated Open Space

	Ward 1	Ward 2	Ward 3	Ward 4	TOTAL
<i>Classification</i>	AC	AC	AC	AC	AC
Designated Open Space	87.2	396.1	116.3	351.3	950.9
Designated Open Space (Not Open to the Public)	17.5	0	0	0	17.5
Open Land	35.1	65.6	151.7	85.7	338.1
Open Land (Not Open to the Public)	0	70.8	139.2	14	224
TOTAL	139.8	532.5	407.2	451	1530.5
<i>City of Thornton Approved Future Development</i>	AC	AC	AC	AC	AC
Designated Open Space/Open Land In Progress	0	13	40.7	32.9	86.6

Several of the larger city-owned Designated Open Space and Open Land properties include:

- *Big Dry Creek Open Space between 144th and Highway 7: 221.3 acres*
- *Aylor Open Land: 139.2 acres*
- *Riverdale Open Space & Prairie Dog Habitat and Grandview Ponds Open Space & Prairie Dog Habitat: 119.9 acres*
- *Eastlake #3 Park & Nature Preserve: 106.8 acres*
- *West Gravel Lakes Fishing Facility: 104.2 acres*
- *West Sprat Platte Lake Fishing Facility: 102.7 acres*
- *Thornton Trail Winds Park & Open Space (open lands/designated open space area only): 90.7 acres*
- *Signal Ditch Park & Open Space (open lands/designated open space area only): 60.5 acres*
- *Niver Open Space: 63.3 acres*
- *Niver Tributary L Open Space: 8.8 acres*
- *Margaret W. Carpenter Park & Open Space (open lands/designated open space area only): 47.4 acres*
- *Lambertson Lakes Park & Open Space: 31 acres designated open space + 9.8 acre farmstead*
- *Badding Open Space and Badding Detention: 28 acres*
- *Eastlake Uplands Open Space: 14 acres*

These properties are described in more detail on the following pages and listed according to Ward. Note that the following descriptions do not include every Designated Open Space and Open Land property in Thornton, but rather the larger properties.



Eastlake #3 Park & Nature Preserve - The city of Thornton has been successful at preserving the city's natural ecological features and expansive views.

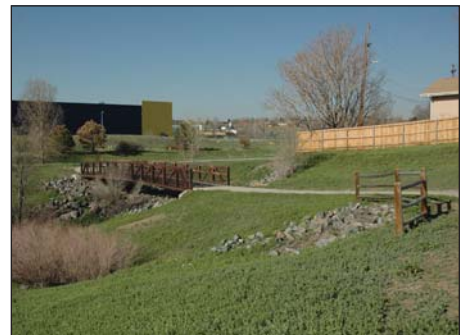
2. EXISTING CONDITIONS

WARD 1: City-Owned Designated Open Space and Open Land

- **Niver Open Space**, located on the west side of I-25 and extending from 88th Avenue to 92nd Avenue, is an asset of considerable value, and is a significant visual feature for the area and viable habitat for wildlife that provides a mosaic of drainageway and upland habitats, including wetlands and riparian trees and shrubs along the creek and areas with substantial amounts of native grasses and forbs. This open space serves as a buffer from I-25, a gateway to an established residential neighborhood, and is a destination on the Niver Nature Heritage Trail, a loop on the city’s Heritage Trail system.
- **Niver Tributary L Open Space**, located on the west side of I-25 north of 84th Avenue and east of Huron Street, provides an open space trail connection through the drainage corridor. The open space provides a buffer between residents to the north and the commercial area along 84th Avenue.
- **Badding Open Space**, located north of Thornton Parkway and directly west of I-25, was expanded with the purchase of 11 acres in December 2010 and includes the dry reservoir to the north. This property provides a buffer along Thornton Parkway and I-25 both visually and physically, and protects environmental resources and wildlife habitat. (Dry reservoir area to the north is not open to the public).



Niver Open Space



Niver Tributary L Open Space Trail

WARD 2: City-Owned Designated Open Space and Open Land

- **Riverdale Open Space & Prairie Dog Habitat** and **Grandview Ponds Open Space & Prairie Dog Habitat** includes 119.9 acres of open space north and south of 104th Avenue, between Colorado Boulevard and Riverdale Road. The highly visible **Riverdale Open Space & Prairie Dog Habitat** site north of 104th Avenue has a mature stand of native cottonwood trees that line portions of the Colorado Agricultural Ditch as well as Grange Hall Creek. Excellent wildlife habitat provides food and shelter for prairie dogs, song birds, raptors, beavers, turkey, coyote and the occasional deer. Trails provide excellent access from neighborhoods to adjacent parks including the **Margaret W. Carpenter Park & Open Space** and **Grandview Ponds Open Space & Prairie Dog Habitat**.

Grandview Ponds Open Space & Prairie Dog Habitat, located south of 104th Avenue, was acquired in June 2002. The open space area has four small ponds and provides opportunities for fishing, hiking, and picnicking. Improvements include the addition of fish habitat in one of the ponds, crusher fines and concrete trails, an ADA accessible fishing pier, shade/picnic pavilions, benches, educational signage, and a paved parking lot.

- **West Gravel Lakes** and **West Sprat Platte Lake Fishing Facilities** have been designed to serve as parks and fishing areas without compromising the lakes’ function as one of the city’s sources for raw water storage. Located at 88th Avenue and Colorado Boulevard and 100th Avenue and Holly Street respectively, each site has four primary functions: recreational fishing, environmental education, aquatic and wetland habitat restoration/re-creation, and water storage. Amenities include:



Riverdale Open Space & Prairie Dog Habitat



West Gravel Lakes Fishing Facility

EXISTING CONDITIONS. 2

Lamberston Lakes Park & Open Space



Loop trail at Margaret W. Carpenter Park and Open Space



Park signage at Thornton Trail Winds Park and Open Space



Aylor Open Land

fishing piers, toilet facilities, picnic shelters, and trails that thread through constructed wetlands and upland habitats.

- **Lambertson Lakes Park & Open Space** and **Lamberston Lakes Farmstead**, located between 104th and 100th Avenues just east of Washington Street, provides a rich corridor for wildlife habitat and accommodates the popular Grange Hall Creek Trail. The lakes provide safe and accessible fishing opportunities for all ages and abilities. The 9.8 acre farmstead, south of the ponds, is not currently open to the public, but will provide a future opportunity to access and explore an historic farm in the middle of the city.
- **Margaret W. Carpenter Park & Open Space**, centrally located at the southwest corner of 112th Avenue and Colorado Boulevard, includes open space to the west of the ponds. Grange Hall Creek bisects the park providing a long corridor for urban wildlife as well as residents travelling along the Grange Hall Creek Trail. The open land to the south of the multi-purpose fields provides an area for overflow parking during community-wide special events and festivals. The total open space and open land area totals approximately 47 acres.
- **Riverdale Open Lands**, located at 98th Avenue and Riverdale Road, includes approximately 50 acres of community parks and open space. Proposed improvements include baseball and softball fields with a community park component that contains a playground, shade structure, restrooms, walking trails and a connection to the West Sprat Platte Fishing Facility and the South Platte River Trail.

WARD 3: City-Owned Designated Open Space and Open Land

- **Thornton Trail Winds Park & Open Space**, located at 136th Avenue and Holly Street, was acquired in 2002. Located in northeast Thornton, the entire property is 145 acres, providing opportunities for passive and active recreation, as well as preserving riparian and grassland habitat as open space. In April 2007, the Site Master Plan for this property was approved by City Council. The first phase, completed in August 2009, occupies approximately one-third of the site and includes athletic fields and supporting facilities as well as a dog park and skate park. An additional 10 acres of multi-purpose fields will be constructed in the project's second phase. The Adams 12 Five Star Schools Veteran's Memorial Aquatic Center is located in the northwest corner of the park and a future city recreation center and outdoor water park are also planned. The remaining one-third of the property will continue to be designated as open space.
- **Aylor Open Land** was acquired in 2003. Located at the northwest corner of 136th Avenue and Quebec Street, it may provide opportunities for both passive and active recreation and preserve important ecological habitat. The eventual mix of uses has yet to be determined, and for purposes of this plan is considered open lands. This area is not currently open to the public.
- **Signal Ditch Park & Open Space**, located along the Signal Ditch east of Colorado Boulevard and south of 152nd Avenue, was purchased in 2009.

2. EXISTING CONDITIONS

Of the 60.5 acres that was acquired, 10 acres have been designated as open space including a future regional trail connection along the Signal Ditch. Anticipated future active park improvements include lighted ballfields. This property is currently not open to the public and is being leased for farming.

WARD 4: City-Owned Designated Open Space and Open Land

- **Eastlake #3 Park & Nature Preserve**, between 124th Avenue and 128th Avenue, and York Street and Colorado Boulevard, is picturesque, includes open water, large cattail marsh, and breeding island provide vital habitat for waterfowl and other water-loving species.
- **Eastlake Uplands Open Space** was acquired in May 2007 and provides a needed buffer between *Eastlake #3 Park & Nature Preserve* and future development. The buffer helps ensure continued use of the area by wildlife associated with riparian environments and helps preserve the visual and recreational quality of *Eastlake #3 Park & Nature Preserve*. This area is currently not open to the public.
- **Big Dry Creek Open Space**, located along the Big Dry Creek between 144th Avenue and Highway 7 is currently comprised of multiple properties totaling 221.3 acres that were acquired starting in 2006. These properties are a significant acquisition as part a regional greenway and open space system. (See Chapter 7 – Open Space Element for a description of the Special Ecological Value of the Big Dry Creek Corridor.) Big Dry Creek Open Space provides passive recreational opportunities, future regional trail connectivity, and protection of wildlife habitat and natural ecological features.



Eastlake #3 Park and Nature Preserve



Historic barn at Big Dry Creek Open Space



Expansive views at Aylor Open Land



Aylor Open Land



Big Dry Creek Open Space

TRAILS

The city of Thornton trail system has evolved over a number of years and is comprised of regional and local trails as well as bike lanes and bike routes. Currently, per the city's 2015 GIS database, there are 29 miles of regional trails, 103.7 miles of local trails, miles 42.8 miles of striped on-street bike lanes, and 12 miles of paved roadway shoulders in the existing Thornton trail system. An additional 19.2 miles of trails are planned in approved developments.



A soft-surface trail loops around the Eastlake #3 Park and Nature Preserve, a popular destination along the Brantner Gulch Trail

Popular trail corridors include:

- **Brantner Gulch Trail (4.2 miles):** This trail connects the 107-acre Eastlake #3 Park & Nature Preserve to Northaven Park near Holly Street and will eventually connect further east to Adams County Regional Park.
- **Farmers' High Line Canal Trail (1.8 miles):** This multi-use trail provides regional connection to Northglenn and Westminster, and is approximately 10.5 miles from the trail at 128th Avenue and Lafayette Street west to Standley Lake Regional Park. At 120th Avenue, the trail connects to the Signal Ditch Trail heading north.
- **Grange Hall Creek Trail (8.5 miles):** This multi-use trail provides a wonderful east/west corridor through the city linking large parks and open space areas to the South Platte River Trail and the city of Northglenn.
- **Horizon Tributary Trail (2.9 miles):** This trail connects Springvale Park to Marshall Lake Park and Glen Eagle Open Space. When the corridor is complete, it will connect the northern portion of Thornton to Adams County Regional Park and to the South Platte River Trail.
- **Lee Lateral Trail (4.3 miles):** This east/west trail corridor comes off the Signal Ditch Trail at York Street and provides connection to Eastlake #3 Park & Nature Preserve and Thornton Trail Winds Park & Open Space. The trail serves as part of the Eastlake Heritage Trail Loop.
- **Parkridge Village Trail (.69 miles):** This north area trail corridor connects the Lee Lateral Trail, Eagleview Park, and Thornton Trail Winds Park & Open Space to the Brantner Gulch Trail via Woodbridge Station and Sage Creek Parks.
- **Niver Creek Trail (2.5 miles):** The southernmost Thornton trail corridor connects Pecos Park to the 65-acre Niver Open Space, then connects to Adams County's Niver Creek Trail and to the South Platte River Trail in unincorporated Adams County.
- **Plains Tributary Trail (1.1 miles):** This corridor will eventually connect Thornton Trail Winds Park & Open Space to the Brantner Gulch Trail.
- **Signal Ditch Trail (3.2 miles):** This trail corridor takes off from the Farmers' High Line Canal Trail at 120th Avenue and ultimately heads northeast to the city limits. The trail connects Cherrywood Park, Fallbrook Farms Park, Lake Village Park, and Eastlake #3 Park & Nature Preserve. The Northern Lights Ball Fields are accessible from the Signal Ditch Trail through local connector trails. The Signal Ditch Trail also connects into the Lee Lateral Trail.



Grange Hall Creek Trail at Margaret W. Carpenter Park and Open Space



Lee Lateral Trail is part of the Eastlake Heritage Trail



This bridge provides a connection from Niver Open Space to the Niver Creek Trail.

2. EXISTING CONDITIONS

- **South Platte River Trail (2.1 miles):** The South Platte River corridor is a significant natural feature that defines the city of Thornton’s eastern boundary. The multi-use trail connects the city of Thornton to downtown Denver and Chatfield or Cherry Creek Reservoir. The trail also connects to Adams County Fairgrounds, and will eventually connect to Brighton and the Front Range Trail.
- **Union Ditch Trail (2.2 miles):** This central east/west corridor provides regional connectivity into Northglenn, and connects Woodglen Brookshire Park to Skylake Ranch Open Land.
- **Big Dry Creek Trail (1.5 miles):** This multi-use regional trail along Big Dry Creek provides opportunities to view wildlife such as deer, coyotes, fox and raptors, and experience a variety of landscapes, while enjoying expansive views of the Front Range. An underpass at I-25 west of Thorncreek Golf Course provides connectivity to the Big Dry Creek Trail in Westminster and further downstream to Standley Lake Regional Park (approximately 11.5 miles).



South Platte River Trail



E-470 Trail

Heritage Trail System

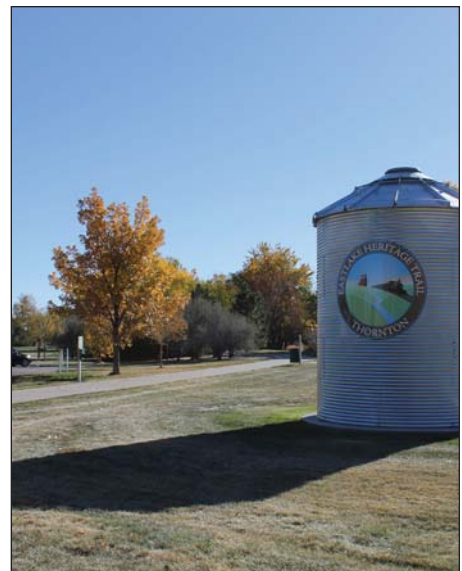
The 2012 City of Thornton Comprehensive Plan Update includes the identification of a conceptual alignment of a secondary trail system that celebrates the local heritage and historic sites of Thornton:

Seven potential trail loops have been identified with lengths that range from one-mile to 7.0 miles, thus appealing to a variety of trail users with varying levels of physical ability. The trails are proposed to be interspersed throughout the city in order to enable use by residents of all geographic areas of the city. Trail themes differ by location to highlight existing conditions, environmental features, historical ambiance, and recreational uses. While the loops are physically separated from each other, they will be linked by regional and neighborhood trails to form the Heritage Trail system.

Each loop of the Heritage Trail system will contain educational signage at story nodes, public art and themed site amenities which will identify each location as part of the Heritage Trail system.

- 2012 Heritage Trail Plan (See Appendix 12)

Several segments of the Heritage Trail have been completed, including a portion of the Eastlake Heritage Trail along the Lee Lateral Trail between York Street and Colorado Boulevard, north of 128th Avenue. Additional Heritage Trail amenities and educational signage celebrate the railroad and irrigated agricultural influence of the historic Town of Eastlake, which was established in 1911. (See Chapter 6 Trails Element for recommended future Heritage Trail alignments.)



Eastlake Heritage Trail celebrates the agricultural history of the Town of Eastlake.



This story node along the Eastlake Heritage Trail includes educational signage, themed site amenities and public art.

OVERALL VISION: “A STRING OF PEARLS”

An essential element of this Master Plan is an overall vision for parks and open space in the city of Thornton. This vision describes the desired future character and features of the city’s parks and open space system and serves to guide decisions about the locations of parks and trails, the amount and types of recreation facilities, types of recreation programming, safety and lighting, and the preservation and protection of open space.

The overall vision is to create an integrated system of safe parks, recreation facilities, trails, and open space that will:

- *Provide recreational and cultural opportunities for all residents,*
- *Be equitably distributed, to the extent possible, throughout the community,*
- *Connect neighborhoods, parks, schools, recreation facilities, and business districts,*
- *Preserve the heritage and quality of life in Thornton,*
- *Enhance and build upon Thornton’s environmental assets, and*
- *Enhance the community’s identity.*

The phrase “string of pearls” has been adopted to convey a powerful visual image that readily communicates the city’s vision for the Parks, Recreation, Trails, and Open Space System. Rather than the patchwork quilt of green spaces that characterizes many communities’ systems, city of Thornton parks, recreation facilities, open spaces, and other civic and community places such as schools, would be linked by a system of off-street and on-street trails and pedestrian and bicycle friendly streets. A system of parkways and boulevards would reinforce these connections, visually and physically.

This vision has been further developed for the major components of the system: parks, recreation facilities, trails, and open space.

VISION FOR PARKS, RECREATION FACILITIES, AND TRAILS

The city of Thornton’s parks, recreation facilities, and trails are a city-wide amenity that enhances residents’ quality of life, promotes a healthy sense of civic pride, and enhances the city’s overall image.

The city of Thornton’s parks, recreation facilities, and trails will be planned, developed, maintained, and linked as part of a city-wide system that provides for a diversity of recreational opportunities. From tots to active adults, the system will provide for the active and passive recreation needs of all. Safe places for family gatherings, informal play, organized sports, healthy exercise, and restful contemplation will be found throughout the system. Attention will be given to achieving this city-wide system at each step in the development review and capital improvement process.

The system of parks, recreation facilities, and trails will be accessible, safe, and equitably distributed throughout the community. The system will include parks of all sizes, from pocket parks to community parks. These parks shall be linked by trails and well designed parkways and boulevards. The land on which the parks are built shall not be burdened with developmental problems or unusual long-term maintenance liabilities. The design of each park should be of the highest quality, respectful of local environmental conditions, and responsive to local needs, but it

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must also be related to, and clearly a part of, the broader system. All components shall collectively be recognizable as parts of the city of Thornton system. The system will be carefully cared for and maintained.

The city of Thornton’s system of parks, recreation facilities, and trails will be a source of civic pride, and will demonstrate that the community provides for the needs of its citizens and encourages citizens to care for their community.

VISION FOR OPEN SPACE

Open space is an integral part of the city of Thornton’s heritage and legacy for future generations. Designated open space areas are parcels intentionally protected from development and set aside for unstructured recreation and the appreciation of natural surroundings. Open space is not a temporary designation for vacant lands.

Desirable open space will contain one or more of the following: broad open areas with unobstructed views, wildlife habitat, multiple types of vegetation, water features, and historic agricultural land to preserve the cultural heritage of the city.

The protection of open space is intended to:

1. *Preserve natural areas*
2. *Provide for passive recreation*
3. *Contribute to a unique community identity and quality of life*

In general, lands that are formally designated as open space shall be preserved in, or returned to, their natural, sustainable state, free from intrusive structures. Enhancements to vegetation, drainage corridors, and other natural features may be considered when such enhancements can be demonstrated to provide positive environmental benefit, such as improved wildlife habitat or improved wetland function.

Open space is intended to create a balance between developed and undeveloped areas throughout the city of Thornton, and to allow residents and visitors the to opportunity to enjoy nature. The vision for open space is to provide residents and visitors a feeling of freedom and separation from the rigors of urban life styles—providing solace in a hectic world.

GOALS AND POLICIES

A second essential element of the Parks and Open Space Master Plan is a series of goals and policies that take the ideas set forth in the community's vision and translate them into specific direction that will help implement the vision. Goals identify a desired state of affairs in the future. They describe broad public purposes towards which the policies and implementation programs in this Master Plan are aimed. Policies provide more immediate guidance when decisions are being made that affect the implementation of this Parks and Open Space Master Plan.

The goals and policies stated below have been grouped by topic. These topics are as follows:

- *Overall System and Community Image*
- *Parks, Recreation Facilities and Recreation Programs*
- *Trails*
- *Open Space*
- *Historical and Cultural Resources*
- *Planning*
- *Acquisition, Funding, Management, and Maintenance*

Goals and Policies: Overall System and Community Image

Goal 1: Plan and develop an interconnected city-wide system of parks, recreation facilities, trails, parkways and boulevards, and open space that provides for a diversity of recreational opportunities for the community. The park and open space system, where appropriate, should be integrated with other community facilities, especially schools.

Policies:

- 1.1 Parks, recreation facilities, and open space should be clearly integrated into a system and not appear as separate or distinct.
- 1.2 Parks, recreation facilities, and open space should be connected via local and/or regional trail systems. Where it is not possible to connect facilities directly with off-road trail facilities, routes should align and be integrated into existing street corridors. Designated, striped bike lanes will be provided for cyclist use and wide, detached sidewalks will be provided for safe, pedestrian walking routes.
- 1.3 External connections from the city's trail system to regional trails that are located beyond the city limits should be provided.
- 1.4 Where appropriate, neighborhood parks may be constructed adjacent to school sites.
- 1.5 Where possible, water reservoirs should be considered for recreational uses such as picnic sites, trail usage, fishing, nature study, and wildlife habitat.

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- 1.6 The city should cooperate with adjacent municipalities, school districts, and other government agencies to ensure Thornton's system of parks, recreation facilities, open space, and trails are located so as to maximize coordination with these neighboring facilities.
- 1.7 The city of Thornton's system of specially designated parkways, boulevards, and Heritage Trail system should be defined and developed to connect with the park, recreation, and open space system, enhance the image of the city and provide for an orderly and visually distinguishable expansion of the community. The design of these streets and Heritage Trail loops need not be identical, but design themes that are approved and coordinated should be reasonably repeated in order to enhance community identity.

Goal 2: *Distribute park, recreation and open space resources, to the extent possible, on an equitable basis.*

Policies:

- 2.1 The city should cooperate with adjacent churches, municipalities, school districts, and other similar government agencies to ensure that a broad range of accessible parks and recreation facilities are equitably provided to Thornton citizens.
- 2.2 Where deficiencies exist in the more developed areas of Thornton, highest priority should be given to cooperating with the school districts to provide park development and recreational opportunities at existing school sites.
- 2.3 New developments and redevelopment should provide for park and open space needs generated by the proposed land uses via dedication of property and/or payment of appropriate cash-in-lieu of land dedication, improvements to parks, or other such mechanisms as might be appropriate, and shall be consistent with the Parks and Open Space Master Plan.

Goal 3: *Develop the parks and open space system as a major component of Thornton's community image and identity, and promote an overall design theme that is unified, consistent, and committed to quality.*

Policies:

- 3.1 High points throughout the planned growth area provide beautiful mountain vistas that have high public value and should be maintained for public purposes. New park sites, open space, and recreation facilities should take advantage of the city's high ground, ridgelines, and interesting views and vistas to the extent possible.
- 3.2 The design of the parks and recreation facilities should reflect certain consistent design principles, elements, and themes. Components, such as signage, benches, lighting standards, trash receptacles, and site furnishing elements should be standardized throughout the system.

Goals and Policies: Parks, Recreation Facilities and Recreation Programs

Goal 4: *Recognize the recreational needs of all city of Thornton citizens in providing parks, recreation facilities, and recreation programs in the community.*

Policies:

- 4.1 Recreational opportunities should be maintained at the current level of service and equally distributed, to the extent possible, throughout the city of Thornton.
- 4.2 Recreation programming and facilities should be routinely monitored to provide equity of distribution and adequate allocation of resources.
- 4.3 The city's parks should, where practical, be designed and constructed to accommodate the needs of citizens of diverse age groups, interests and physical abilities.
- 4.4 The design of community parks and recreation facilities should be completed in cooperation with civic groups, clubs, special interest groups and sporting organizations to ensure proactive planning for needed amenities. Information on existing levels of programming and projected future needs provided in the Parks and Open Space Master Plan and related updates should also provide guidance in designing new facilities.

Goal 5: *As the city of Thornton grows, apply a consistent, fair, and rigorous set of park planning and design standards to all development, and these standards shall include the types of parks listed in Policies 5.1 through 5.3.*

Policies:

- 5.1 Pocket Parks: Ranging from 1/4 up to 5 acres in size, pocket parks should include multi-use lawn areas for picnics and open play areas, hardscape play areas, pavilion, playground and site furniture. An example includes Aspen Park. The city of Thornton typically will not maintain parks less than 5 acres.
- 5.2 Neighborhood Parks: Ranging from 5 up to approximately 25 acres in size, neighborhood parks should include programmable multi-purpose sports fields, playgrounds, hardscape sports court areas, pavilion, gathering space, trail and site furniture. Neighborhood parks should be designed to be within walking distance of a given service area without crossing arterial streets or other barriers, and provide formal and informal recreational opportunities. Design should allow for adequate parking, either on-street around the park or in a parking lot. Additional amenities should respond to the specific park size, special site opportunities, and the local demographics. Examples include Yorkborough Park, Pecos Park, and King Ranch Park.
- 5.3 Community Parks: At generally a minimum of 25 acres in size, community parks should include multiple programmable sports fields, hardscape sports court areas, playgrounds, and other amenities such as pavilions that accommodate large groups and gatherings, shade structures, and rest rooms. They may be constructed with recreation centers or other civic buildings and may include cultural amenities such as amphitheaters, gardens, and public art. Adequate parking facilities should be provided. Examples include Community Park and Margaret W. Carpenter Park and Open Space.

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Goal 6: *Develop parks, open space, and recreation facilities to preserve and emphasize significant features of the city of Thornton’s natural environment.*

Policies:

- 6.1 Environmental attributes should be considered in making decisions about the location of parks and facilities.
- 6.2 Neighborhood and community parks should be built to preserve, enhance, and appropriately utilize the community’s significant natural features and views where at all possible.
- 6.3 To the greatest extent possible, parks should be located proximate to, and integrated with, environmentally significant areas such as water bodies or wetlands.
- 6.4 Where possible, significant stands of trees and shrubs and unique forms of vegetation, existing or proposed, should be incorporated into the master plans and designs for new parks.
- 6.5 Mitigate impacts to wildlife by minimizing light pollution.

Goal 7: *Recognize and respond to passive, as well as active, recreational needs in the design of the park and recreation system.*

Policy:

- 7.1 Where possible, new park sites should be located and designed to preserve or be sensitive to critical ecosystem components, including wetlands and wildlife habitats, and should be designed to accommodate both passive as well as active recreational uses.



Aylor Open Land

Goals and Policies: Trails

Goal 8: Create and connect recreational opportunities through a well connected trail system.

Develop a trail system that provide safe access to and from neighborhood parks, open space areas, community-wide recreation centers, schools, and regional facilities. The trail system is a recreation facility offering a diverse system of long and short routes for walkers, joggers, and cyclists. A needs-based assessment of key missing gaps shall guide the completion of a system of primary corridors designed to provide geographic coverage across the city in a realistic time frame. Over time, additional projects will be constructed to complete a finer-grain network of local connections that feed into the long, cross-town routes.

Policies

- 8.1 The trail system should include on- and off-road facility types to meet the needs of advanced Type A bicyclists, less-experienced Type B/C basic and child cyclists, and a diverse group of pedestrians who seek trails for recreation and fitness activities. *(For trail facility types and definitions of Type A, B, C cyclists, see Chapter 6 Trails Element.)*
- 8.2 A combination of grade-separated crossings and enhanced roadway intersection designs should facilitate safe crossing of major roadway, railroad, and natural barriers to provide trail system connectivity. *(For trail crossing types see See Chapter 6 Trails Element.)*
- 8.3 The trail system should clearly identify routes with wayfinding signage as necessary.
- 8.4 Trail projects should continue to be cost-effectively implemented as opportunities allow through ongoing land development processes and roadway resurfacing and widening projects.
- 8.5 Additional need-based trail projects should move forward independently. Priority shall be placed on completing missing links in the identified network of primary corridors.
- 8.6 The city shall continue to compile requests for neighborhood and site-specific trail projects that are located outside of the primary corridor network. These requests for local trail connections should be annually prioritized for the implementation of select linkages, as feasible.

Goal 9: Provide long open space trail corridors.

The city of Thornton is situated within several irrigation ditch, creek, and drainage corridors, and is adjacent to the South Platte River. Develop the interconnected system of trails with a landscape buffer in the corridor. Consider opportunities for trail development within linear corridors through multi-purpose use of utility easements, rail and road rights-of-way, and landscape buffers located along property boundaries.

Policies

- 9.1 Priority should be placed on developing a system of primary corridors that are at least 2.5 miles in length (average distance of a bicycle trip), and geographically distributed across the city to form a grid spaced 1-2 miles apart. This network should be comprised primarily of off-road trails, with connecting segments of on-street facilities where needed for system continuity.
- 9.2 Trail alignments and design should reveal interesting views of landscape features and should take advantage of ridge lines, water features, wetlands, and stands of trees.

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- 9.3 Where possible, trail corridors that run through private property should be incorporated into easements and rights-of-way reserved for utilities and transportation facilities.
- 9.4 Development proposals for annexation, rezoning or subdivision should be required to dedicate easements for trails in all developments affected by the trail system shown on the Parks and Open Space Master Plan Map - Exhibit 4.1.

Goal 10: Provide trail connection to other modes of transportation.

Offer a feasible commuting alternative to driving, designed to make safe and direct connections to local trip destinations and connect to RTD “park and rides”, and to North Metro Rail Line stations in the FasTracks corridor.

Policies

- 10.1 The FasTracks corridor through the city of Thornton should include a trail corridor with trailheads and connections to neighborhood on-street trails, off-street trails, and bike lanes as appropriate.
- 10.2 Safe and secure bicycle parking and appropriate pedestrian amenities should be provided at FasTrack stops.

Goal 11: Incorporate “Complete Street” projects into the trails network.

Create additional opportunities to accommodate bicycle and pedestrian travel along arterial streets to expand the off-road trail system.

Policies

- 11.1 All facility designs shall incorporate American Association of State Highway and Transportation Official (AASHTO) Guidelines and all other applicable federal, state, and local regulations, as required.
- 11.2 Where trails cross arterial streets, I-25 and E-470, railroad rights-of-way, and other barriers to uninterrupted travel, underpasses or overpasses should be provided to provide a continuous route for trail users.
- 11.3 At-grade intersections throughout the trail/bike network should include highly-visible marked crosswalks and bicycle lane intersection treatments as defined by AASHTO, the National Association of City Transportation Officials (NACTO), and the Manual on Uniform Traffic Control Devices (MUTCD).

Goal 12: Promote the city of Thornton’s unique environmental, cultural, and historical resources.

Develop the city of Thornton 2012 Comprehensive Plan’s Heritage Trail concept of linked loops to create a sense of cultural identity by bringing specific arts, education, heritage, and environmental experiences to trail users.

Policies

- 12.1 A consistent signage and wayfinding program should be implemented to identify the Heritage Trail loops, including systematic placement of ¼-mile markers to enable recreational users to track distances traveled.
- 12.2 At least one Type I trailhead with parking should be provided for each Heritage Trail loop project. (*For Trailhead Types see Appendix 13.C Trail Amenity Specifications.*)
- 12.3 The design of each Heritage Trail loop should include distinct materials and furnishings, interpretive exhibits, and signage that reflect the assigned Heritage Trail theme.

Goal 13: Support a variety of trail users.

Provide trails for use by people of all ages, interests, and abilities. By city code, equestrians are not permitted on the city of Thornton’s trails for recreation use.

Policies

- 13.1 The city’s trail system shall, where practical, be designed and constructed to accommodate the needs of and be accessible to citizens with various physical abilities, including pedestrians who use mobility devices.
- 13.2 Only non-motorized uses shall be allowed on the off-road trails system and trails shall be signed to prohibit motorized uses, except for users with certain disabilities.
- 13.3 The off-road network should be developed to include a system of stacked loop trails to provide a diverse variety of travel options, trip lengths, and user experiences. A mixture of paved and soft-surface trail types should be provided to compliment Thornton’s natural environments and accommodate various recreational activities.

Goal 14: Raise awareness and educate trail users.

Educate the public on etiquette between trail users, rules of the road governing bicycle/motor vehicle interaction, and overall knowledge of alternative transportation options and destinations that can be accessed by the trails system.

Policies

- 14.1 A comprehensive, accessible signage and wayfinding program should be developed for the trail system including trail identification, system maps, mile markers, interpretive exhibits, wayfinding/directional routing, and temporary signage that announces and celebrates the opening of new projects.
- 14.2 Printed maps and brochures, web sites, electronic media, and public events should be used to supplement signage to educate trail users and non-users on bicyclist/pedestrian/motorist etiquette and to raise public awareness of Thornton’s trails and connections to regional destinations.

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Goals and Policies: Open Space

Goal 15: *Preserve the city of Thornton’s unique environmental and visual resources in a natural condition.*

Policies:

- 15.1 Open space should be located, configured, and designed to preserve indigenous wildlife habitats and native plant species, irrigation ditches, ridges and hilltops that provide long range views and vistas, areas of visual significance such as stands of mature trees and shrubs, large expanses of prairie grasses or wetlands, and unique land features such as enclosed valleys, rock outcroppings, steep slopes, and drainages.
- 15.2 Native animal and plant life should be perpetuated as part of the natural ecosystem on open space lands. Native plant and animal populations shall be protected from removal or destruction, unless such populations begin to exceed the carrying capacity of the land and/or become a public health concern, in which case, management actions may be undertaken. Natural processes shall be used to the greatest extent possible to control native species. Non-native species will be managed to prevent the displacement of native species.
- 15.3 Aquatic environments and the abundance and distribution of native aquatic species, including fish, should be preserved or restored. The city shall seek to restore, maintain or improve the quality of all surface and ground water resources on open space lands. Activities with high potential for point or non-point source water pollution shall be avoided. Streams and reservoirs may be stocked with non-native species only when non-natives are already present or would not diminish native populations.
- 15.4 Existing native vegetation should remain undisturbed in areas where no development has yet been approved by the city, except in cases of agricultural cultivation or noxious weed control.
- 15.5 Open space land may be improved after acquisition to protect or provide passive recreation use, to provide enhanced habitat for native plant or wildlife species, to control erosion, to screen out incompatible adjacent uses or views, and to permit continuation of agriculture. Vegetation enhancements shall use native, noninvasive plant material. Selected non-natives may be approved if they will not displace native species and there may be ecological benefit to encouraging species diversity.
- 15.6 The South Platte River valley is an important open space resource for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving this resource, and linking the city’s park and open space system to it using trails and other means.
- 15.7 The Big Dry Creek corridor is an important open space resource for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving this resource, and linking the city’s park and open space system to it using trails and other means.
- 15.8 The Gravel Lakes are an important open space resource for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving this resource, and linking the city’s park and open space system using trails and other means.
- 15.9 The Niver Creek Corridor is an important open space resource for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving this resource, and linking the city’s park and open space system using trails and other means.

- 15.10 Historical irrigation ditches are an important open space resource for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving these resources, and linking the city's park and open space system using trails and other means.
- 15.11 Historical drainageways to the South Platte River, Big Dry Creek and Niver Creek are important open space resources for the city of Thornton, as well as for surrounding communities. A high priority shall be given to preserving these resources, and linking the city's park and open space system using trails and other means.

Goal 16: Provide recreation opportunities in natural areas for the enjoyment of residents and visitors in Thornton.

Policies:

- 16.1 Open space included in the city-wide system shall include a variety of parcel sizes.
- a) Areas of natural open space should be interspersed with development to provide respite from urban life. These areas may have paths, bikeways, and opportunities for observing wildlife. Visitors are expected to walk to these areas.
 - b) Large tracts of land should include a combination of hills and flatlands, wildlife, water, trees, etc. They should include corridors for trails as well as wildlife, and should connect with other open spaces, parks, recreation facilities, and civic destinations. Visitors are expected to drive to these areas or reach them via regional and local trail connections.
- 16.2 Open space shall generally be open for passive public use and enjoyment. Occasionally, open space areas may be closed to public use seasonally or when necessary for protection or restoration of habitat, or during nesting or breeding seasons for wildlife. Development of active recreation facilities, such as athletic fields, swimming pools, tennis courts, and formal picnic areas shall be precluded unless the land has been acquired as open lands or for both open space and park purposes.
- 16.3 Where compatible with habitat, trails shall be developed to provide access to open space parcels. Open space parcels shall be connected to each other and to parks, schools, and other logical destinations via local and/or regional trail systems.

Goal 17: Open space acquisitions, either by purchase or by land dedication, shall contain resources that warrant protection.

Policies:

- 17.1 Land offered to the city to meet public land dedication requirements shall be consistent with the Parks and Open Space Master Plan or, in the opinion of the city, shall contain sufficient open space values as to warrant protection.
- 17.2 New developments shall be planned to preserve and protect open space identified in the Parks and Open Space Master Plan Map - Exhibit 4.1.
- 17.3 New development proposals shall be evaluated by the city to determine what, if any, impact the development will have on ecosystems, cultural and visual resources, and environmental hazards. Development proposals should include an analysis and recommendations by competent experts regarding the impact of a particular proposal on ecosystem components.

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- 17.4 The Thornton City Council shall consider recommendations from the Parks and Open Space Advisory Commission (POSAC) in making decisions on expending funds for acquiring open space. POSAC shall make its recommendations based on the city of Thornton Comprehensive Plan, the goals, policies, implementation strategies, and maps included in this Master Plan, and an evaluation of the open space needs of the community.
- 17.5 Potential acquisitions shall be evaluated according to the Evaluation Criteria in this Master Plan. (See *Chapter 7 Open Space Element*). Generally, areas with multiple attributes shall be considered to have a higher value than those with single attributes.
- 17.6 Decisions to acquire land for open space shall consider the costs required for long term, quality maintenance.
- 17.7 Volunteers are a valuable resource to city staff. The city shall make an organized effort to utilize volunteers in managing and maintaining the open space system to achieve a cost-effective use of city resources.

Goal 18: Use open space lands in a manner that allows for reasonable use by the public while protecting environmental resources.

Policies:

- 18.1 Open space lands shall be generally usable by the public in a variety of ways, which may include viewing, hiking, nature education, and other passive recreation, etc. It is important, however, to balance recreational access with protection of natural resources. It is possible, for example, that a parcel may include an area with general public access and another area with only limited or no public access.
- 18.2 Generally, property acquired for open space shall not be disposed of or converted to another use except in extraordinary circumstances with the approval of city council. The open space fund shall be reimbursed for the value of any property disposed of or converted to other uses in accordance with city policy.
- 18.3 Open space lands may not be used for road rights-of-way unless these roads have been identified in the city's Transportation Plan. Water, sewer, and other below ground utilities may be installed on open space lands only with adequate assurance that the disturbed area will be restored to a natural appearance.
- 18.4 Open space properties may be leased for continued agricultural uses such as farming and grazing. When not precluded by safety considerations, agricultural leases shall afford public access for passive use.
- 18.5 Open space properties including water bodies may be closed temporarily in order to protect a natural resource or to make the property safe for public enjoyment.
- 18.6 The city shall maintain the integrity of water delivery and storage structures on its open space lands. It shall manage water responsibly for beneficial uses to ensure the protection of water rights.

Goal 19: Incorporate lands that have development or geologic constraints as part of the city's open space system, if appropriate, and in the interest of public health, safety, and welfare.

Policy:

- 19.1 The city shall incorporate land that is subject to 100-year frequency flooding and geologic constraints as part of its open space system, if appropriate.

Goal 20: *Coordinate and cooperate with surrounding jurisdictions so that the open space system is allowed to follow natural systems across jurisdictional boundaries.*

Policies:

- 20.1 Future open space plans should be coordinated with other communities, governmental and private agencies to ensure that regional linkages exist for ecosystem components.
- 20.2 The city shall cooperate with adjacent municipalities, school districts, and other similar government agencies to ensure the city of Thornton's open space system is located logically and integrated regionally.

Goals and Policies: Historical and Cultural Resources

Goal 21: *Preserve historical and cultural sites in their traditional condition for the benefit of future generations.*

Policies:

- 21.1 The park and open space system should recognize, respond to, protect, and incorporate the city of Thornton's unique historic, archeological, ethnographic, and cultural resources. Candidates for preservation include:
 - Working farms and irrigation ditches
 - Sites containing archeological and ethnographic artifacts
 - Sites with buildings or artifacts that are on, or qualify for, the State or National Register of Historic Places
- 21.2 The city shall seek to incorporate historically significant areas or features in the parks and open space system. Such elements as historic structures or other vestiges of Thornton's rich agricultural past can add exciting and unique recreational and educational qualities to Thornton's park system.
- 21.3 Potential resources will be evaluated according to local, state and National Register standards. (More specific guidelines regarding disposition of historic, archeological and ethnographic resources are included in the Technical Appendices - Appendix 10.)
- 21.4 The city shall comply with the Historic Recognition Code (Chapter 19 of the Thornton City Code).

3. VISION, GOALS AND POLICIES

Goals and Policies: Planning

Goal 22: *Prepare and regularly update a Parks and Open Space Master Plan to guide the development of the parks, trails, open space, and recreation system for the city of Thornton.*

Policies:

- 22.1 The Parks and Open Space Master Plan shall provide an overall vision, goals, and policies for the development of the parks, trails, recreation, and open space system in the city of Thornton. The Master Plan shall identify proposed levels of service, existing and future needs for parks, trails, recreation, and open space, and an implementation program.
- 22.2 The city shall update the Parks and Open Space Master Plan at least every three years.
- 22.3 The city shall identify trail connection priorities at least annually. (Note that trail alignments delineated in this Parks and Open Space Master Plan are conceptual. Actual trail alignments may vary depending on landowner negotiations, site investigations, soils, and terrain constraints.)
- 22.5 Land that is acquired for open space to be held as a conservation easement shall be inventoried in detail i.e. the city shall collect existing data, create a photographic record, and conduct specific studies as warranted to document unique conditions and thereafter, its condition shall be monitored at least annually.

Goals and Policies: Acquisition, Funding, Management and Maintenance

Goal 23: *Provide for the funding of the proposed parks, recreation, trails, and open space system by using a variety of funding sources.*

Policy:

- 23.1 Possible funding sources to be pursued include, but are not limited to, the following:
- Lottery funds and grants distributed by the State
 - Thornton’s Capital Improvement Plan
 - Grants awarded by public and private foundations
 - Impact fees collected from private developers
 - Cash-in-lieu of land dedication collected from private developers
 - Sale of surplus parkland owned by the city
 - Bond
 - Donations and gifts

Note: In 2013, Thornton residents voted to extend the existing parks/open space sales and use tax through 2038, and allowed up to 20% of the total annual revenue to be spent or reserved for maintenance costs.

Goal 24: *Acquire/preserve park and/or open space lands using available mechanisms.*

Policy:

- 24.1 Acquisition for preservation of property or property interests necessary to carry out goals and objectives

set forth in this Parks and Open Space Master Plan may be achieved through a variety of mechanisms, including but not limited to, donation, dedication, gift, bequest, trust, intergovernmental agreement, purchase, deed reservation or restriction, development condition or restriction, easement, lease, exchange, Purchase of Development Rights (PDR), Transferable Development Rights (TDR), and the exercise of the city's power of eminent domain.

Goal 25: *Assure that the park and open space system is realistic and affordable, and that the costs required for long term, quality management and maintenance are recognized.*

Policies:

- 25.1 Development of new parks and recreation facilities should be implemented at a pace commensurate with the city's ability to provide proper maintenance.
- 25.2 Specific park designs shall consider on-going maintenance costs and water costs.
- 25.3 Where feasible, the city should make use of water wise landscape principles, such as limiting high water use turf areas, exploring bluegrass conversion opportunities, using low water demand plants, installing efficient irrigation systems, and improving soil with adequate organic material.
- 25.4 Prior to the dedication or acquisition of any land to the city for park or open space purposes, a site assessment shall demonstrate that the land is free of any toxic or hazardous waste and/or that the city will not be liable for any future cleanup.

Goal 26: *Assure that parks, open space, recreation, and trails are managed and maintained in an environmentally responsible and cost-effective manner that preserves the underlying resources while being attentive to public enjoyment and safety concerns.*

Policies:

- 26.1 The city shall develop guidelines for managing and maintaining parks, open space, recreation facilities, and trails that meet the performance objectives stated above. These guidelines should be reviewed on a regular basis and revised as necessary.
- 26.2 Maintenance staffing levels shall be evaluated against requirements provided in the staffing benchmarks, and appropriate adjustments made where necessary as inventory of open lands and facilities increases.

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PLAN OVERVIEW
CITYWIDE PARKS, RECREATION, TRAILS AND OPEN SPACE SYSTEM**4****ELEMENTS OF THE PLAN**

Specific recommendations of the Master Plan are presented as follows:

1. *The overall Parks and Open Space Master Plan Map presented in this Chapter (Exhibit 4.1);*
2. *Specific plan proposals related to parks, recreation facilities, recreation programs, open space, and trails contained in Chapters 5, 6, and 7; and*
3. *Implementation strategies presented in Chapter 8.*

The Park and Open Space Master Plan Map is of particular value to the community in understanding how proposed acquisitions and park or facility improvements will help achieve the vision and contribute to “the string of pearls.” The map depicts the system as a whole and provides a physical road map for implementation. The map is also especially valuable to planners and those charged with development review, as it provides a basis for determining whether sensitive areas are being protected, whether parks are being provided in areas where they are most needed, and whether roadway corridor improvements are being linked with proposed trail connections and crossings.

The Park and Open Space Master Plan Map has updated and expanded some of the recommendations for parks, open space, and trails presented in the previous plans adopted in 2000, 2004, 2007, 2009 and 2012. This update reflects input from POSAC, the community, and staff as well as changes in population projections.

In keeping with the goals and policies presented in Chapter 3, a number of sites are designated as open lands, and may provide both park and open space opportunities. The actual mix of uses on each site is expected to be determined as the city grows and as future needs for facilities become apparent.

USING THE PARKS AND OPEN SPACE MAP

The Parks and Open Space Master Plan map depicts one possible way of achieving the city’s vision and goals for a citywide parks and open space system. It is expected that over time, as the city acts to implement this system, some opportunities delineated on the map will not be realized and other unanticipated opportunities will emerge that fit with the vision and goals of this Master Plan.

One of the purposes of the Parks and Open Space Master Plan is to provide a basis for city council’s decisions on the use of the Parks and Open Space Sales and Use Tax. In that regard, the Parks and Open Space Master Plan is more than the map shown in Exhibit 4.1. The city council may undertake parks, recreation facilities, trails, and open space projects consistent with the vision and goals contained in this plan, but not necessarily shown on the map in its efforts to implement this plan. Property or property interests not specifically designated on the map may also be acquired by the city in any manner, in the event the city council deems such property or property interests necessary in implementing this Master Plan.

4. PLAN OVERVIEW

METHODOLOGY AND MAPPING

In generating the Parks and Open Space Master Plan map, attention was given to Thornton's environmental resources. Several sources of information were used to identify these resources as noted below:

1. *A Natural Resource Evaluation of Potential Open Space in the city of Thornton prepared by Walsh Environmental, Inc. in 2012.*
2. *Suggestions from the general public and from members of the Parks and Open Space Advisory Commission.*
3. *Previous work completed in conjunction with development of the Thornton Comprehensive Plan as well as previous updated Parks and Open Space Master Plans.*

Natural Resource Evaluation Methods from Prior Updates

Site evaluations began with the compilation and mapping of sites that had been identified by public comment, POSAC meetings, and/or by city staff based on their familiarity with the city, development trends and activities in and by neighboring and/or overlapping jurisdictions. The locations of existing city of Thornton and Adams County open space, relative to the open space opportunity sites, were noted. The consultant reviewed the final draft of the Adams County Open Space, Parks, and Trails Master Plan (December, 2012), to ascertain locations of proposed future county open space. Using a desktop-level review of available GIS data and aerial imagery, the consultant then researched and identified additional sites and corridors to be evaluated as open space opportunities within the Thornton city limits and Urban Growth Boundary.

Evaluation criteria that was used in previous Master Plan updates was reviewed and revised to better reflect the goals of the current POSAC group and then applied by the consultants. The consultants evaluated the natural resource value for each site and corridor segment, as well as the functional values and value relating to special features. For each site, the summary natural resource rating was obtained by averaging the ratings for the natural resource criteria. The Special Ecological Areas Map in Chapter 7 Open Space Element (Exhibit 7.1) illustrates the ecological value - high, medium, or low - of each of the sites that were observed by the consultant.

Natural Resource Evaluation Methods

The natural resource evaluation for the 2015 Update relies on the Natural Resource Evaluation generated in 2012. As the city continues to grow and additional opportunities for open space and open land acquisition increases, the city may consider initiating an update to the 2012 evaluation.

Resource Maps

The following maps inform the Open Space Element in this Master Plan:

1. ***Topography***
2. ***Hydrology***
3. ***Vegetation***
4. ***Special Ecological Areas***

Maps 1-3 are included in the Technical Appendices-Appendix 9, while the Special Ecological Areas Map is located in Chapter 7 - Open Space Element. When using these maps, there are four important points to keep in mind:

1. ***The maps show general patterns, not exact locations.***

The lines on the maps do not represent exact boundaries. Only the general locations of characteristics are indicated, and the boundaries shown are relative. Ultimately, specific parcels will be identified within the general areas identified in the maps.

2. ***The maps are dynamic.***

The maps are the result of current information and technology and will need to be periodically updated as new information is desired and/or becomes available.

3. ***On-site analysis and field verification are absolutely necessary.***

When evaluating and prioritizing specific parcels of land for acquisition, detailed site analysis and field verification must be conducted.

4. ***The maps are one component of the decision-making process.***

The maps are not an absolute predictor or determinant for decision-making. Rather, they are tools that in combination with common sense, good judgment, current economic and market conditions, and long-range planning goals and policies contained in the city of Thornton Comprehensive Plan (located on the city's website), can be used to enhance decisions for acquisition or preservation and to communicate the basis for those decisions. Final decisions about specific acquisitions will be made by the city council with input from the public, city staff, and the Parks and Open Space Advisory Commission. The maps are an important tool that indicate where to look, what questions to ask, and what connections to other components of the system can be made.

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See 11x17
Parks and Open Space Master Plan MAP
Exhibit 4.1

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This chapter examines current and future needs for parks, recreation and recreation facilities, and also recommendations for acquisition and design standards. Chapter 8 describes the resources available and proposed action steps and strategies necessary to implement the vision.

NEEDS FOR PARKS, RECREATION PROGRAMS AND RECREATION FACILITIES

Current and future needs were examined using quantitative data compiled by city staff, including the Recreation Program Manager, qualitative observations of Recreation staff regarding changes in leisure trends and participation in program activities, and the 2016 Parks and Open Space Master Plan Update Survey results. Also considered were public comments and suggestions, which appear in Appendix 6B.

Two different measures for assessing the need for additional parks and recreation facilities have been considered:

- The first considers existing park acreage as well as the number of playing fields and related facilities. Thornton's existing level of service for parks of varying sizes and adjacent municipalities levels of service are used as a point of reference. For outdoor playing fields, existing demand and existing level of use by organized leagues and teams and projected growth in participation were applied to assess future need.
- The second measure considers access to neighborhood and community scale facilities. The city's service standards stipulate that neighborhood parks should be provided within a half-mile radius of all households and community parks provided within a two-mile radius of all households. (See Exhibit 5.4)

PARK ACREAGE AND RECREATION FACILITIES

Park and Recreation Facilities Level of Service

In preparing this update, the existing inventory of Thornton's park acreage and number and type of recreation facilities was updated. (This inventory appears in Appendix 8.) The updated inventory was used to assess the current level of service being provided to Thornton residents.

Thornton's existing inventory of parks and recreation facilities was compared with the city's prior level of service standards from the 2012 Parks and Open Space Master Plan and with the National Recreation and Park Association (NRPA) 2015 Field Report and PRORAgis (Park and Recreation Operating Ratio) custom reporting tool. Using these level of service measures is one way of identifying if Thornton has an existing shortage or surplus of park acreage and/or recreation facilities. These standards were then applied to Thornton's projected future populations, near-term and in ten years, to estimate the park acreage and recreation facilities required to meet future needs.

As shown in Chapter 2: Existing Conditions, as of December 2015, the city of Thornton had 5.6 acres of developed park land per 1,000 people, compared with the city's level of service goal of 10 acres for every 1,000 people. Established standards for each type of park is as follows: .5 ac/1,000 residents for pocket parks, 2.0 ac/1,000 residents for neighborhood parks, and 7.5 ac/1,000 residents for community parks. Thornton meets or exceeds the established standard for pocket and neighborhood type parks, however, falls short to meeting the 7.5 ac/1,000 residents standard for community type parks.

5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

Exhibit 5.1: Current Park and Recreation Facilities Level of Service (LOS) in Thornton

Current Population and Future Population Projections

Year	2015	2016	2018	2023
Population/ Projections ²	131,761	135,061	140,961	154,000

Future Needs for Parks

Park Type/Size	City-Owned: Current Achievement ³ (2015)		Future AC totals if City Maintains Current LOS for Parkland			AC Needed by 2023 to Maintain Current LOS
	AC	AC/1,000 ⁴	2016	2018	2023	
Pocket Park	95.9	0.7	94.5	98.6	107.8	11.9
Neighborhood Park	349.7	2.6	351	366.3	400.4	50.7
Community Park	289.8	2.2	297	310	338.8	49
TOTAL Park Acres³	735.4	5.5	742.5	774.9	847	111.6

Recreation Facilities Summary

Recreation Facility Type	City-Owned: Current Achievement ³ (2015)		Future Recreation Facility Totals if City Maintains Current LOS for Each City-Owned Facility			City-Owned Public Facilities Needed by 2023 to Maintain Current LOS
	Qty	Qty/1,000 ⁴	2016	2018	2023	
Baseball/ Softball Field	30	0.22	30	31	34	4
Basketball Court (Outdoor Full & 1/2)	21.5	0.16	22	23	25	3.5
Multipurpose Field	41	0.31	42	44	48	7
Tennis Court	17	0.13	18	18	20	3
Volleyball Court	6	0.05	7	7	8	2
Playgrounds	71	0.53	72	75	82	11
Swimming (Outdoor)	2	0.02	3	3	3	1
Swimming (Indoor)	2	0.02	3	3	3	1
Recreation Center	2	0.02	3	3	3	1
Gymnasium	2	0.02	3	3	3	1
Skate Park	4	0.03	4	4	5	1
Roller Hockey Rink	3	0.02	3	3	4	1
Disc Golf	1	0.01	1	1	1	0
Dog Park	1	0.01	1	1	1	0
Pickleball (Indoor)	3	0.02	3	3	3	0
Horseshoe Pit	8	0.07	9	9	10	2
Shuffleboard	2	0.02	3	3	3	1
Bocce	2	0.02	3	3	3	1

1 - Existing facilities data taken from city of Thornton Inventory data compiled in this Master Plan Update. Includes all existing parkland and joint-use facilities. Does not include parks and recreation facilities in planned in approved developments. (See Technical Appendices – Appendix 8).

2 - Current and Projected Population Estimates come from the city of Thornton 2015 Housing and Population Report. Future Population estimate for 2023 is the same estimate that is used in the Thornton Comprehensive Plan, updated September 2012 and higher density development at Fastracks.

3 - Current Achievement numbers for Park Acreage and Recreation Facilities includes Existing Parks and Joint Use Facilities.

4 - Arces or Quantity per 1,000 residents = Level of Service (LOS)

Exhibit 5.1 projects anticipated needs for parks in the near-term and in 2023, based on maintaining existing levels of service parks. Existing levels of service for community parks is significantly below established standard of 7.5 ac/1,000 residents, and providing an additional community park should be recognized as a primary goal in the future expansion of the Thornton park system. Future needs were also assessed assuming that the current level of service for playing fields was maintained into the future. Using this method suggests a need for a moderate level of facility expansion through 2023.

Exhibit 5.2 demonstrates how Thornton’s current level of service for parkland and recreation facilities compares to national and regional municipalities of similar size and scale. National comparison data was derived from the *National Recreation and Park Association (NRPA) - 2015 National Database*.

Projections for future athletic facility needs based on Thornton organized sports participation

Existing organized sports leagues, as well as the city’s field scheduling staff provided historic information on participation by residents and nonresidents, information on the number of teams participating, the length of their seasons, the number of hours of playable time necessary each week to accommodate practices and games, fields currently scheduled and utilized for these purposes, and current scheduling methods used by Thornton staff.

Projections of future growth in participation were derived from analysis of this information. It was assumed that existing

Exhibit 5.2: City of Thornton Existing Parkland and Recreation Facilities Comparisons to NRPA 2015 Benchmarks and 2012 Regional Communities			
Parkland Comparison			
	City of Thornton¹ (December 2015)	NRPA 2015 National Database	Regional Municipalities 2012 Average: Broomfield, Westminster, Arvada, Ft. Collins, Lakewood
Population	131,761	100,000 - 200,000 ²	112,404
Total Park Acreage/1,000 residents	5.6	2.7	7.8
Recreation Facilities Comparison (Public Facilities only or City provided)			
Recreation Facility Type: City Owned	Population/Facility	Population/Facility	Population/Facility
Playground (71)	1,856	5,104	3,557
Rectangular Multi-Purpose Fields (41)	3,213	3,743	2,927
Outdoor Swimming Pool (2)	65,881	58,825	70,253
Indoor Swimming Pool (2)	65,881	118,750	51,093
Rec Center/Community Center (2)	65,881	41,000	40,144

1 - Existing facilities data taken from city of Thornton Inventory matrix data compiled in this Master Plan Update. Includes all existing park land and joint-use facilities. Does not include parks and recreation facilities planned in approved developments. (See Technical Appendices – Appendix 8).

2 - PRORAGIS National Database Custom Report generated for cities with population ranging from 100,000 to 200,000 in Colorado, Wyoming, Utah, Kansas.

5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

levels of service would be maintained to 2023, and that there would be incremental growth in sports participation and associated facility demand on top of that.

Anticipated need for facilities for each sports is as follows:

- » **Football/Soccer** - In the past three years, football league participation has remained steady while soccer registration has almost tripled. Soccer fields at Trail Winds Park and Open Space continues to be sought after as it offers one of the few illuminated turf fields in the region. Thornton football programs report that the city is currently meeting their immediate needs, but require more illuminated fields to meet growing demand. The North Metro Junior Football League has had to turn away teams because of lack of fields. The second phase of development for Trail Winds Park and Open Space anticipates an additional 10 acres of multi-purpose fields and should be sufficient to accommodate current and projected needs for the next 5-10 years.

A recent mandate issued by the U.S. Soccer Association to competitive leagues resulted in the need for 11v11 fields, which decreases the need for 8v8 field configurations. Several leagues depend on Trail Winds playing fields, but there is a fear that some residents are leaving leagues due to geographic location of practices and games, which are predominately in the northern tier of the city. Soccer seasons have extended into late fall and have started in early spring resulting in a need for more illuminated turf fields that can accommodate weather and daylight savings schedules.
- » **Rugby** - In the past two years, Rugby has seen its participation hold steady, but regionally, the sport is seeing an upward trend in participation. A rugby field, often referred to as a “pitch”, requires goal posts that are narrower than football goal posts. This suggests a need for 1-2 fields with the ability to change goal post widths for hosting weekend games and tournaments.
- » **Baseball/Softball** - Baseball participation has increased in the past three years by 11%. There is an increasing demand for more baseball field time for games and practices. Local clubs indicate increasing competition for field time and the need for year-round facilities due to the increase in population and interest in the sport. The North Thornton Baseball & Softball Association noted that they need to limit current league enrollment due to lack of available fields/practice areas, and that Thornton youth are now having to join clubs outside the city.
- » The YMCA Sports program approximates the need for three more ball fields to accommodate their current demand. Future improvements to the baseball complex on Riverdale Road anticipate additional lighted ball fields and should be sufficient to accommodate current and projected needs. Phase I (4 fields) is scheduled for construction in 2017 and will serve both baseball and softball teams.
- » **Indoor Basketball/Volleyball** - Currently, the YMCA basketball and volleyball programs and Thornton Boys Basketball rent various school gymnasiums for their programs’ practices and games. Both programs need additional gym time. The city has a new joint use agreement with the Mapleton School District, which allows free gym space for YMCA and Thornton Boys Basketball programs. The city should continue to seek out other joint use facility opportunities with school districts and other entities. Approximately 2-3 additional indoor courts are needed.
- » **Tennis**- The Thornton Tennis Association has reported an increasing need for additional tennis courts due to the fact that several schools are not able to provide courts for use other than school leagues. This indicates that there is an increase in younger players learning the sport, which could result in future increased demand for courts. Currently, there are 17 city courts, but these are spread throughout the city and it’s difficult for the club to conduct tournaments without a concentrated number of courts in one location (ideally four or more). The club has stated a desire for a year-round indoor facility and a need for brighter lights to allow for nighttime events.

These analyses suggest that Thornton should strive to maintain existing levels of service for parks and athletics, and provide for modest growth, with a realistic and affordable investment in new facility infrastructure.

See 11x17
Service Areas for Parks
Exhibit 5.3

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See 11x17
Levels of Service: City & Non-City Owned Facilities
Exhibit 5.4

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ACCESS TO NEIGHBORHOOD AND COMMUNITY SCALE FACILITIES

The City of Thornton has stipulated that, where feasible, pocket parks should be provided within one quarter mile of residents' homes when neighborhood parks are not available, and that neighborhood parks should be provided within one half mile. Moreover, these guidelines further recommend that residents should be able to walk or bicycle to these types of parks without crossing a major arterial, rail line or other barrier. Finally, the city's guidelines recommend that community scale parks be provided within two miles of residential areas, though it is assumed that these parks will be reached primarily by vehicle. In the 2016 Parks and Recreation Survey, which was conducted as part of the 2015 Parks and Open Space Master Plan update, 84% of survey respondents indicated that they live within walking distance of park.

Exhibit 5.3 shows current performance relative to these accessibility guidelines, and highlights future areas where residential development is projected to occur. The map illustrates that Thornton is close to meeting demand in developed parts of the city. The most significant need for new facilities occurs within Wards 3 and 4, which possess substantial undeveloped lands and offers significant build-out potential.

On October 27, 2015, City Council approved a budget amendment to move forward with the design of the Trail Winds Recreation Center (TWRC). The TWRC will be constructed on city-owned property inside of the city of Thornton Trail Winds Park and Open Space complex at 136th Avenue and Holly Street. Once completed, the TWRC will be the city's second full-service recreation center. The new recreation center will be approximately 70,000 square feet and include a life long learning component, indoor aquatics, gymnasium, and fitness components, among other amenities. It is currently scheduled to open in late 2019.

A new stand-alone Active Adult Center to be located on the southwest corner of 112th Avenue and Colorado Boulevard on the Margaret W. Carpenter Park and Open Space site is planned to begin design in 2017. The meal program will be run from this location. Construction is anticipated to begin in 2018 and the new facility open in 2021. The existing Thornton Active Adult Center, 9471 Dorothy Boulevard will be repurposed for other uses once the new facility is open to the public.

The Margaret W. Carpenter Recreation Center, 11151 Colorado Boulevard will also undergo improvements including a new natatorium to replace a pool that is at the end of its useful life. A new gymnasium and other interior building modifications to improve and maximize space are planned. Design of the improvements is planned to begin in 2018 with the new facility open in 2021.

NEEDS FOR RECREATION PROGRAMS AND FUTURE TRENDS

Current and future recreation programming needs were examined using quantitative data compiled by the Recreation Program Manager and qualitative observations of Recreation staff regarding changes in leisure trends and participation in program activities, as well as recommendations from the public.

- » **Dance Program** - Participation in the dance program has remained steady in the past three years, with 5,668 dancers participating in dance programs in 2015. Space is limited at the Thornton Community Center and this is currently the only location that programs youth dance classes through the city. Participants in the dance program reside in all areas of the city. This suggests a need for an additional dedicated dance room in a future recreation facility and/or expansion/renovation of the existing Community Center to accommodate additional participants.
- » **Aquatics Programs** - The city of Thornton currently provides one indoor pool and two seasonal outdoor pools that can be used for recreational swim programs or lessons. (The indoor pool at the Adams 12 Five Star

5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

Veteran’s Aquatic Center is kept at a cooler temperature for competitive swimming purposes and is too cold for recreational swimming.) In 2015, 19,881 residents participated in aquatics programs. The Master Swim Team had 2,624 participants, resulting in an 10% increase in participation from 2014. The city should consider long term future needs for these types of programs as Thornton continues to develop to the north. Staff has indicated that the swim lesson program is consistently at capacity.

- » **Preschool Programs** - Classes for preschool age children are at capacity and typically have waiting lists. New facilities and programming should incorporate day-care programs whenever possible.

Projected population increases for Adams County and the State of Colorado in the next ten years are approximately 39% and 24% respectively, resulting in the need to anticipate future recreation demands and plan for increased populations. Current recreation trends include:






- » **The Social Component** - In a technology-driven society, people are seeking opportunities to connect with their community. Recreation programming such as the Silver Sneakers® Fitness Program, Community Walkers® and facilities such as the dog park at Thornton Trail Winds Park and Open Space provide opportunities for social interaction and recreation in safe, accessible group settings. The city of Thornton has developed a

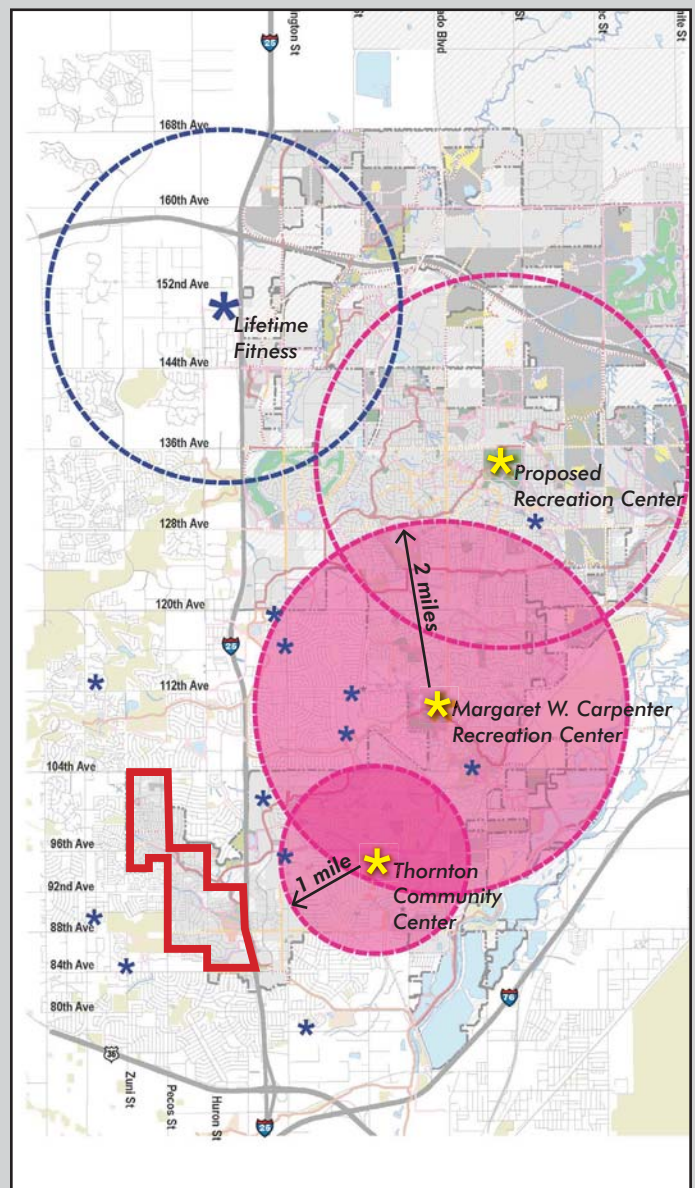
SERVICE AREAS FOR RECREATION CENTERS

Thornton currently has the Margaret W. Carpenter Recreation Center that serves residents throughout the city. The Thornton Community Center primarily serves the adjacent neighborhoods and isn’t as far reaching. A recreation center is currently proposed at the Thornton Trail Winds Park and Open Space site.

Private recreation facilities near Thornton include Life Time Fitness in Westminster, which is a full service fitness facility as well as a number of smaller fitness facilities. Approximately 15,000 Thornton residents living west of I-25 have access to three community centers (Carl Park Community Center, Perl Mack Community Center, and the MAC) through the Hyland Hills Recreation District. Transportation to these facilities presents a major challenge for residents who reside in Thornton west of I-25.

LEGEND

-  City of Thornton Current or Proposed Recreation Center
-  Private Full Service Recreation Center
-  Private Fitness Facility
-  Thornton residents in the Hyland Hills Park & Recreation District
-  Service Area



series of community events and festivals that have experienced increases in attendance and provide seasonal opportunities for community engagement and celebration throughout the year. (See Appendix 14).

- » Youth, teen and general interest programs range from skateboard lessons, teen volunteer corps and will/estate planning to financial workshops, and participation in these programs continued to see increases in participation from 2014 through 2015.
- » **School-Age Programs** - The city has seen an increased demand for structured play opportunities. Reduced after-school athletic programs and the elimination of physical education by some school districts has led to a need for families to explore other options to ensure children have a dedicated exercise program integrated into their daily schedules, and working parents need alternatives to childcare after school, during the summer and over school vacation periods.
- » **Rugby** - The interest and participation levels in this sport have increased exponentially throughout the Denver metro region in the past few years. The city of Thornton now has a youth Rugby team.
- » **Lacrosse** - Lacrosse has seen an annual increase in youth enrollment. Challenges include the needs for the specialized lacrosse goals, and the logistics of moving, storing and delivering the goals to non-dedicated fields.
- » **Disc Golf** - Thornton is now serving residents with a Disc Golf course at Springvale Park. This sport has seen a consistent increase in popularity throughout the Denver metro region. Disc golf enthusiasts throughout the metro region are familiar with the Thornton course.
- » **Skateboard Clinics** - Municipalities throughout the metro area that have skate parks are conducting skateboarding clinics to help promote awareness, community and stewardship.
- » **BMX Track / Mountain Bike Skills Track** - The city of Denver and the city of Boulder currently have a skills track facility. Some respondents to the 2016 Parks and Recreation Survey expressed a desire to see bike tracks/skills courses constructed in the city, and attendees at the 6/29/16 public meeting brought photographs of pump tracks, which are prefabricated concrete or wood components that can be arranged to form a single course or track.
- » **Cricket** - In Thornton, there continues to be a desire by local cricket enthusiasts to construct a dedicated cricket field, which would serve both local teams and other regional clubs due to the lack of regional facilities.
- » **Pickleball** - This new and emerging sport is unique in its ability to attract a diverse age group of players. Similar to tennis and racquetball, pickleball is played both indoors and outdoors on small courts. Survey respondents expressed the desire for more pickleball courts and identified a desire for illuminated courts that could be used during evening hours.
- » **Electric Bikes** - *E-bikes, or electric bicycles, use a small electric engine to boost riders' speeds. One of the most popular varieties is the "pedal assist," which combines the riders' muscles with the motor's hustle. Colorado already treats these pedal-assist e-bikes like normal bicycles, meaning you don't need a license or a helmet to ride them – but that only applies if you're on the road or in a bike lane. It's illegal to turn on the electric engine on Thornton's trails, including the South Platte River Trail.*
- » **...and more!** - Winter sports skills areas such as the Railyard at Ruby Hill in Denver, climbing walls (indoor and outdoor), co-ed softball resurgence, programs for residents with special needs, and programs for Thornton's growing senior population are a few examples of emerging trends that will warrant exploration as the Thornton parks and recreation programs expand both formal programming and existing facilities.

5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

NEEDS FOR SPECIALIZED FACILITIES

Also considered were needs for specialized recreation facilities, based on analysis conducted by staff and recommendations from the public.

- » **Indoor pool** - The city of Thornton currently provides one indoor pool for its residents at the Margaret W. Carpenter Recreation Center. Given increased demand, the city partnered with Adams 12 Five Star School District to construct a 50-meter Olympic-sized pool at Thornton Trail Winds Park and Open Space. This facility is owned and operated by Adams 12 School District and offers joint use opportunities for the city's CARA and Masters swim programs; however, it is not used for the city's recreational swim programs or lessons. A 14% increase in aquatics programs in the past three years illustrate a need for additional indoor pool space for these types of programs, including group swim lessons.
- » **Outdoor pools** - The city of Thornton currently provides two outdoor pools for its residents - City Pool at Thornton Community Park and Park Village Pool. Both pools have reached free swim capacity on multiple days in the summer. Future improvements at Trail Winds Park and Open Space propose an outdoor water park, and a splash park was recently constructed at Margaret W. Carpenter Park and Open Space. While not open to the public, privately owned and operated pools serve a significant number of Thornton residents; there are 68 outdoor pools located within Thornton city limits, which implies that a significant percentage of residents have access to pool facilities that are not city-owned or operated. Third party amenities will be verified to ensure that they are operational and contribute to the city's evolving inventory of privately owned facilities that serve Thornton residents.
- » **Recreation/community center** - Commonly-used benchmarks recommend one recreation/community center facility per 25,000 people. Thornton's current level of service provides for one center for every 65,881 people. As a full-service recreation center, there were 296,429 visits to the Margaret W. Carpenter Recreation Center in 2015. The Thornton Community Center primarily serves the adjacent neighborhoods and recorded 19,538 visits that reflects a 27% increase since 2012. A majority of residents living west of I-25 (approximately 15,000 residents) live within the Hyland Hills Recreation District, and have the ability to use those facilities as well as facilities in the city of Thornton. The Thornton Trail Winds Park and Open Space Master Plan has been approved by City Council and includes a new recreation center that will include a active adult component in the Life Long Learning Wing. The Thornton Trail Winds Parks & Open Space Recreation Center is currently being programmed and designed with a targeted construction date of 2018.
- » **Gymnasium** - Two gymnasiums are presently provided, one at the Margaret W. Carpenter Recreation Center and one at the Thornton Community Center. Programmed uses have these gyms completely scheduled, leaving limited opportunity for drop-in use. The Intergovernmental Agreement (IGA) with the Mapleton School District provides access to multiple gymnasiums after school hours, which supplement Thornton youth and adult programming.
- » **Active Adult Facilities** - Due to the growing Thornton senior population, the Active Adult Board developed the *2010 Senior Services Master Plan* that identified a master list of issues such as affordable senior housing, centralized referral services, caregiving challenges, and programming availability for seniors in all areas of the City. Development of benchmarks for each issue were given detailed action steps. And active adult component is currently being considered at the planned recreation center at Thornton Trail Winds Park and Open Space.

- » **Off Leash Dog Park** - Thornton currently has one off leash dog park at Thornton Trail Winds Park and Open Space. Many residents have voiced support for another off leash dog park in the southern portion of the city. An important component to the success of dog parks is the education of local and regional users regarding personal responsibility for the care and upkeep of the park. Neighboring municipalities have experienced maintenance challenges that have resulted in both temporary and permanent closures of dog parks.

SPECIFIC PLAN PROPOSALS

This section presents specific recommendations on the type and location of future parks and recreation facilities. Sites were selected based on the availability and suitability of vacant land, the desire to select sites with multiple environmental resources, and their relationship to the trail system and roadway network. The Exhibit 4.1 Parks and Open Space Master Plan Map illustrates potential opportunity sites.

Community Parks

Thornton's original Community Park continues to serve the southern section of the community quite well. However, given the demand for additional playing fields, consideration should be given to identifying sites that could meet this need as well as provide for additional community park features. One area that could potentially meet these requirements is the 98th and Riverdale Open Land, acquired in 2004. (Located north of 98th Avenue and east of Riverdale Road) with plans to initiate Phase I (4 lighted baseball/softball fields) in 2017.

In the northern portion of the City where development is occurring, a community size park has been identified to be located at 150th and Colorado - Signal Ditch Park and Open Space. The conceptual site plan for this facility includes eight baseball/softball fields as well as an open space area. Opportunities for community parks or joint park/open space might be provided in the Big Dry Creek floodplain at the Big Dry Creek Open Space south of E-470, which could potentially be joined east of Big Dry Creek, or further north along the Big Dry Creek corridor.

Neighborhood and Pocket Parks

An area that might be considered as a joint parks/open space opportunity might be the area at 119th Avenue and Holly Street that would enable walkable access to a neighborhood park for residents living east of Holly Street.

Opportunities for neighborhood parks in the City's growth area north of E-470 reflect recommendations of the North Washington Subarea plan along the Big Dry Creek as well as guidelines for walkable access to neighborhood facilities. Many neighborhood-sized parks are currently planned in approved developments and will provide recreational services to citizens in those areas.

Thornton has been extremely successful at partnering with developers to ensure that pocket parks are provided within walkable access from residents' homes if a neighborhood park is not available. The level and standards of service established for pocket parks should be maintained into the future when neighborhood parks are not available.

Regional Parks

There are no regional parks within Thornton, but the Adams County Fairgrounds are immediately east of Thornton's city limits. Thornton's proximity to other regional park opportunities such as Water World, the Rocky Mountain Arsenal Natural Wildlife Refuge, Barr Lake State Park and the Adams County Fairgrounds suggests that the regional park need is being met, and the focus of Thornton's park development efforts should be in securing land and developing neighborhood parks, community parks and recreation centers. Hyland Hills Park and Recreation District is currently contains Clear Creek Valley Park, an 81 acre multi-use park available to district residents (currently under construction).

5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

Specialized Recreation Facilities

While it is anticipated that a recreation center will be constructed at Thornton Trail Winds Park and Open Space, sites for an additional recreation center should be identified at the north end of the community to respond to the anticipated expansion of Thornton into its planned growth area.

New facilities should respond to needs for additional indoor pools and gymnasiums, as well as staff input regarding additional programming. The new facility should contain amenities directed at children twelve and under after school.

Unique Challenges

The Master Plan recognizes that the southern end of the city faces unique challenges associated with future improvements to the city's parks and recreation system. The southern end of the city is predominantly built out with little remaining vacant land. I-25 bifurcates the southwestern portion of the community creating unique transportation and programming challenges for children. Partnerships with schools, churches and other governmental and non-governmental entities should be considered to help meet increased programmatic needs. As land vacancies occur, the city should explore opportunities for acquiring land for future facilities.

DESIGN STANDARDS FOR PARKS

If the "String of Pearls" concept is to be fully implemented, adequate design standards must be applied to assure development of a coherent park system. This section presents design standards for each type of park provided within Thornton's system, including pocket parks, neighborhood parks and community parks.

The design standards should be used when parkland is acquired in order to evaluate the suitability of its terrain, natural features, and location, and should also be used when designing the layout and facilities for new parks and in the redevelopment and improvements to existing parks. Standards help establish consistency in design and construction of facilities, and ensuring accessible, barrier-free play and recreation opportunities, which in turn contribute to a positive community image. Additional design standards are provided within the city of Thornton's "Standards and Specifications for the Design and Construction of Public Improvements." The following pages include descriptions of each type of park and the corresponding design standards.

1. Pocket Parks

Pocket parks can serve the needs of surrounding neighborhood residents for playgrounds and informal gathering spaces when a neighborhood park is not available. Pocket parks should include multi-use lawn areas for picnics and open play area, shelters and playgrounds. A pocket park shall be constructed in each new subdivision unless covered by the ¼ to ½ mile service radius from an existing or proposed neighborhood park, or when a major arterial or some other barrier compromises access to a neighborhood park. Using trails to connect this type of park to Thornton’s overall park system is beneficial, but not necessarily expected.

Minimum Design Standards for Pocket Parks

Acreage	<i>from ¼ to 5 acres</i>
Service Area	<i>¼ mile radius</i>
Level of Service	<i>.5 acres per 1,000 population</i>
Arterial Crossings	<i>No</i>
Surrounded by Streets	<i>As much as possible</i>
Open Play Area	<i>Preferred. 225’ x 300’ playfield; site specific</i>
Softball/Baseball Fields	<i>No</i>
Sport Court	<i>Preferred</i>
Playground	<i>Ages 5 to 12 with accommodations for 2 to 5 years with multiple elevated and ground level, upper body, spinners, swings (4 minimum), slides (2 minimum - 1 slide must be 8’ in height) and climbing play components with overall shade</i>
Site Furniture	<i>Picnic tables (2 minimum), benches (2 minimum), trash receptacles (4 minimum for parks greater than 2 acres), dogs waste stations, bike racks</i>
Natural Area	<i>Optional</i>
Water Features	<i>No</i>
Trail Connections	<i>Access to neighborhoods</i>
Pavilion	<i>Preferred; required for parks greater than 2 acres</i>
Signage	<i>Optional</i>
Fencing	<i>3-rail fence when adjacent to residential lots</i>
Lighting	<i>LED with steel poles at playgrounds and along trails</i>



5. PARKS, RECREATION AND RECREATION FACILITIES ELEMENT

2. Neighborhood Parks

The workhorse of any park system is the neighborhood park. These parks should be designed and located so they are easy for residents to use on a daily basis. Providing spaces for both active as well as passive experiences, the neighborhood park should safely accommodate playgrounds, multi-use lawn areas for picnics, children’s play areas and playgrounds, pavilions with gathering spaces, free play areas, picnic tables and benches, programmable sports fields, and basketball courts. Ideally they should be integrated with natural features such as a pond, mature vegetation, wetlands, or an irrigation ditch.

Neighborhood parks should be centrally located to the neighborhood they serve and be designed to be within walking distance of a given service area. Designs shall allow adequate parking on surrounding streets or, if necessary, in a parking lot. Neighborhood parks should be bordered by local streets and not backed up directly against the backyards of individual homes. In order to promote public safety, dwelling units should face the park so residents are able to view activities in the park and provide some oversight. In the final analysis, the specific design of each neighborhood park should carefully consider both environmental factors, as well as the needs of the potential users and the nature of the surrounding community.

Minimum Design Standards for Neighborhood Parks

Acreage	from 5 to approximately 25 acres
Level of Service	Minimum 2 acres per 1,000 population
Service Area	¼ to ½ mile radius uninterrupted by non-residential roads or physical barriers
Arterial Crossings	No
Surrounded by Streets	Required, with homes facing park
Open Play Area / Programmable Field	400’ x 400’ playfield required
Softball/Baseball Fields	Optional
Sport Court	Full Court Basketball Required
Playground	Ages 5 to 12 with accommodations for 2 to 5 years with multiple elevated and ground level, upper body, spinners (2 minimum), swings (6 minimum), slides (3 minimum - 1 slide must be 8’ in height) and climbing play components with overall shade
Site Furniture	Picnic tables (4 minimum), benches (6 minimum), trash receptacles (6 minimum), dog waste stations and bike racks. Picnic tables should be ADA accessible
Rest Room	ADA accessible with enclosure
Walking/Jogging Path	8’ wide minimum concrete walks throughout park
Tennis Courts	Optional
Natural Area	Preferred; wetland, pond, mature vegetation, irrigation ditch
Trail Connections	Access to neighborhood/community wide system/appropriate regional trail system
Pavilion	Required, 24x24 or as approved by city, attached to hardscape gathering area
Parking	Required: On-street parking or parking lot
Signage	Required
Fencing	3-rail fence when adjacent to residential lots
Lighting	LED steel pole at playgrounds and along trails and as needed for security

3. Community Parks

Community parks are the places where the community can come together for more intense types of activities such as festivals, large family or corporate gatherings, and organized sports. Noise, traffic, access, lighting, and parking must be considered in the site selection process for a community park and managed carefully in the design. Dwellings should not back up directly to community parks, but should be separated by a local roadway. As with neighborhood parks, the surrounding residential areas should face the park, thereby providing “eyes on the park,” and improved neighborhood safety.

Community parks should include multi-use lawn areas for group picnics, pavilions, permanent restroom facilities, playgrounds, hard sport court areas, and a variety of recreational opportunities (multiple playing fields, swimming pools, recreation centers, and tennis, basketball, horseshoe pits, and volleyball courts, etc.). Community parks may be integrated with high schools and middle schools where feasible, and should be placed in locations that connect to Thornton’s natural amenities. Community parks should connect to local/regional trail systems, and adequate parking facilities should be provided.

Minimum Design Standards for Community Parks

Acreage	Minimum of 25 AC service area within a two mile radius
Level of Service	7.5 acres per 1,000 population
Arterial Crossings	No
Surrounded by Streets	Yes
Open Play Area / Programmable Field	Multiple areas required
Softball/Baseball Fields	Four field complex; 90’ baseline; 250’ outfield with dugouts and benches
Basketball Court	Multiple
Playground	Ages 5 to 12 with accommodations for 2 to 5 years with multiple elevated and ground level, upper body, spinners, swings, slides and climbing play component with overall shade
Other Play Areas	Skate park, volleyball, dog park, disc golf, horseshoe pits, climbing wall, etc.
Lighting	LED lighted play courts, fields, playground, and trails as needed for security
Site Furniture	ADA accessible picnic tables, benches, trash receptacles, dog waste stations, bike racks, drinking fountains
Rest Room	Flush toilets
Walking/Jogging Path	Internal; 8’ to 10’ concrete
Tennis Courts	Multiple
Swimming Pool	Outdoor, 25 meter with bath house, splash park
Natural Area	Preferred including wetlands, pond, mature vegetation, irrigation ditch
Water Feature	Stream, pond, fountain
Trail Connections	Regional and neighborhood connections are required
Pavilion	Multiple attached to hardscape gathering areas integrate with picnic areas or high points
Parking Lots	Room to accommodate high impact uses and keep cars out of adjacent neighborhoods
Signage	Required
Fencing	3-rail fence when adjacent to residential lots
Shade	Shade at playground is required
Special Features	Preserve natural features, such as a superb vantage point overlooking the city, wetlands, ponds, and streams with historic attributes, or areas of mature trees and natural vegetation.

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TRAILS ELEMENT 6

This chapter examines current and future needs for trails in Thornton and the significant opportunities presented by the South Platte River, Niver Creek, Big Dry Creek, other creeks, drainages, and irrigation ditches for establishing trail corridors. This chapter incorporates the Master Plan goals and objectives for “connecting the pearls” and the 2011 Thornton Complete Streets Policy, integrates the Heritage Trail as presented in the Thornton Comprehensive Plan, and establishes a network-based approach for implementation.

CONNECTING THE “PEARLS”

The Master Plan Trails Element performs a very important function in achieving the Thornton vision for an interconnected system of parks, recreation facilities, and open space. Trails are intended to be the primary means by which these connections are made. Since 2012, the city of Thornton has added over 16 miles of trails to the city’s existing local trail system. Trail connection highlights since the previous 2012 Master Plan update include:

- New underpass at Holly Street at the Brantner Gulch Trail
- Trail Winds Trail: 134th Avenue to 136th Avenue
- New underpass at 104th Avenue at Grandview Ponds Open Space
- Eastlake Heritage Trail: Lee Lateral Trail from York Street to Colorado Boulevard

While the city has begun to link east/west trails to the regional system along the South Platte River and to trails in adjacent jurisdictions, the Trails Element focuses on identifying gaps in the current system and improving north/south travel connections.

TRAILS ELEMENT: EXPANDING THE FOCUS

Currently, the overall goal remains to develop a trail system that connects the city’s parks and open space system, responds to Thornton’s environmental resources, and provides for a wide variety of trail users (see *Understanding the Trail Users* on page 6-6) in the most cost-effective manner possible. As discussed in Chapter 3: Vision, Goals and Policies, the following priorities have been carried forward from the previous Parks and Open Space Master Plan:

- Create and connect recreational opportunities
- Provide long open space corridors
- Offer connections to other modes of transportation
- Support a variety of uses
- Promote Thornton’s unique, historic resources
- Raise awareness and educate users
- Complete key missing links

INTEGRATING PLANNING APPROACHES



Underpass at 104th Avenue connects Grandview Ponds Open Space & Prairie Dog Habitat to Riverdale Open Space & Prairie Dog Habitat



Silo at Eastlake Heritage Trail section along the Lee Lateral Trail

6. TRAILS ELEMENT

To accomplish the above objectives, the Master Plan update of the Trails Element identifies activities and policies undertaken by various city departments, surrounding jurisdictions, and private stakeholders.

Thornton Existing Trail System

Thornton's existing trail system includes four types of facilities (See Exhibit 6.1):

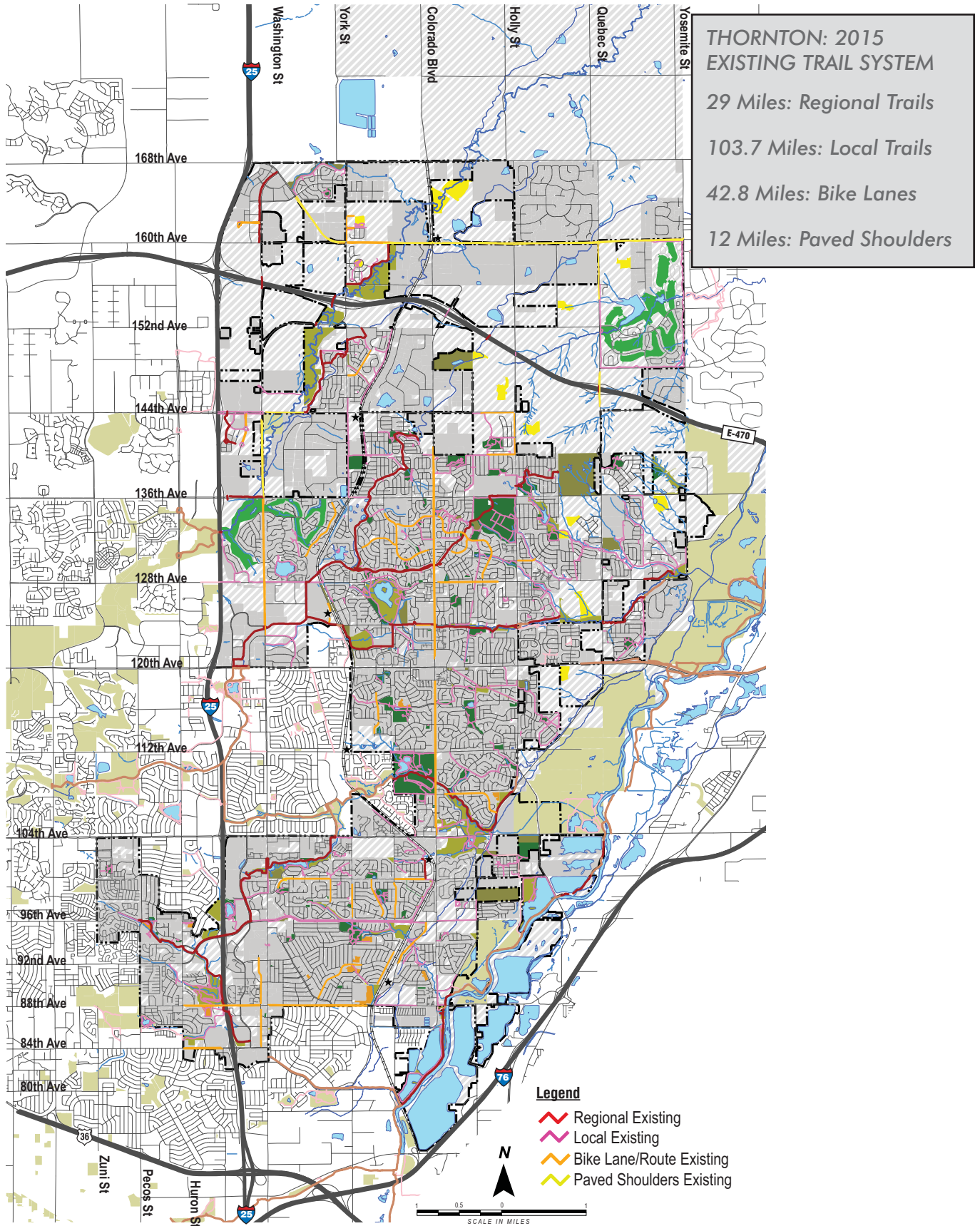
- **Regional Multi-Use Trails**, which are the primary "arterials" of the system and provide connections to major metro-area greenways and adjacent jurisdictions' trails systems;
- **Local Trails**, which provide links from individual neighborhoods to recreational, cultural, and employment destinations, as well as connections to the regional system;
- **Dedicated Bike Lanes**, which are striped lanes located within the right-of-way to create a separate lane for cyclists, which provide on-street opportunities for recreational and commuter cycling; and
- **Paved Shoulders**, which are located at the far edge of the road and are wide enough to safely accommodate on-street cycling.

PARKS AND OPEN SPACE RECREATIONAL TRAIL PLANNING

- **Goal** – *To develop a trail system that connects the city's parks, recreation facilities and open space, responds to the city's environmental resources, and provides for a wide variety of visitors in the most cost effective manner possible.*
- **Implementation Strategy** – *To develop off-road trails along natural drainageway and irrigation ditch features as the primary means of making connections.*
- **Status** – *Completed project segments include 132.7 miles of off-street local and regional multi-purpose trails, and 42.8 miles of on-street bike lanes and 12 miles of paved*

The off-road facility types comprise the majority of Thornton's existing trail system, generally following natural drainage and irrigation ditch systems. Regional multi-purpose trails are typically wider and longer than local trails. Various proposed on-street routes have been mapped in previous planning efforts, but implementation of route identification and directional signage has generally not occurred. With the adoption of a "complete streets" policy (a policy that ensures that transportation improvements integrate walking, bicycling, transit, and motor vehicle use while promoting safe and efficient operations for all modes), additional bicycle lanes have begun to be striped on area streets.

Exhibit 6.1 Existing Trail System



6. TRAILS ELEMENT

2011 Thornton Complete Streets Policy

Street rights-of-way are a critical component of public space and play a major role to establish the image and identity of a city, provide a key framework for current and future development, and contribute to the success and vitality of adjoining private uses and neighborhoods. In April 2011, the Thornton City Council adopted a policy to ensure that transportation improvements integrate walking, bicycling, transit, and motor vehicle use while promoting safe and efficient operations. For non-motorized users, particularly bicycle commuters, this includes using updated thoroughfare cross-sections that provide 6-foot bicycle lanes as part of new street construction projects. For retrofit and resurfacing projects, implementing complete streets policies may mean re-assessing street space allocation when repaving in an effort to narrow or eliminate motor vehicle travel/turning lanes to accommodate on-street bicycle lanes. However, Thornton's build-out street plan calls for widening several existing four-lane arterial streets to six lanes. If that occurs, any corridors with six-lanes of traffic will not be suitable for bicyclist use, and a parallel alternative should be created at the time of the arterial widening.

Incorporating the philosophies that bicyclists and pedestrians are legitimate users of the street network, and that enhanced "complete street" corridors may serve as extensions of a community's off-road trail system, represent major additions to the scope of the city of Thornton Parks and Open Space Master Plan. This comprehensive approach to trails planning better accommodates and incorporates the diverse needs of various trail user groups, as defined on page 6-6.

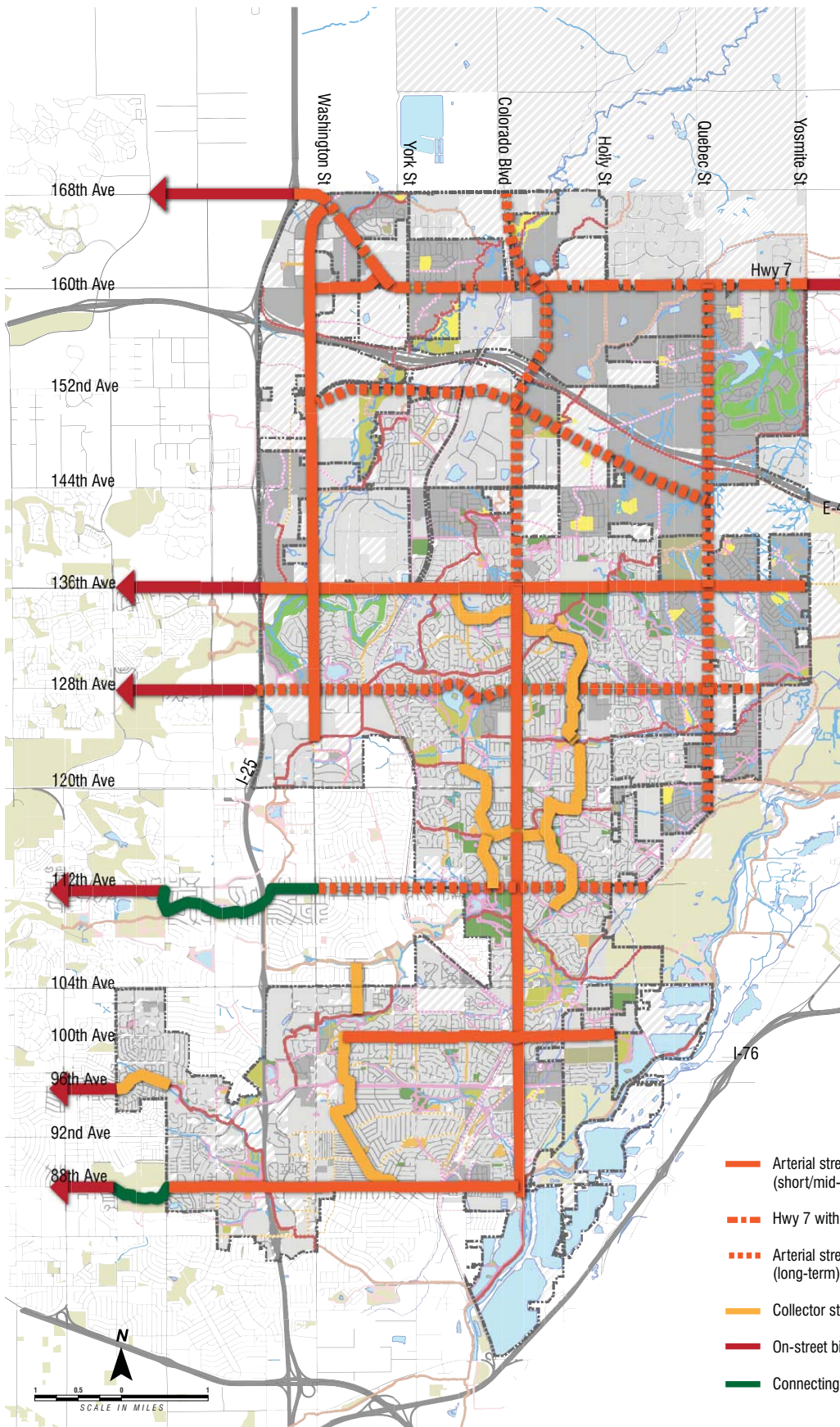
As a result, one of the major challenges to the development of a well-connected trail system – how to cross the arterial street network – can become less of a barrier to non-motorized travel once the park and street networks are thought of as an integrated system. Locations where on- and off-street facilities intersect have traditionally posed opportunities for conflicts between vehicles, pedestrians, and cyclists. Past trail planning efforts have therefore focused on providing grade-separated overpasses and underpasses of major roadway corridors. With the adoption of complete streets policies, the interface between corridors may also include enhanced designs for at-grade roadway/trail intersections as discussed at the end of this chapter.

Multi-Jurisdictional Plans

Plans and projects of adjacent jurisdictions and key stakeholders were reviewed for regional system integration and connectivity. Key planning initiatives incorporated into the Master Plan update include:

- Several short trail projects funded by Denver Regional Council of Governments (DRCOG), which are designed to provide neighborhood sidewalk and trail connections to the RTD FasTracks rail stations in Thornton;
- Connections to facilities in various open space, park, and trail plans developed by the adjacent jurisdictions of Westminster, Federal Heights, Northglenn, Broomfield, and Adams County;
- Extensions of on-street bikeways into Thornton in alignment with the network established in the Westminster 2030 Bicycle Master Plan and other neighboring jurisdictional plans; and
- Recommendations of the Thornton Comprehensive Plan to develop a Heritage Trail system of loops to highlight unique historical, cultural, and environmental features of the community. (See Appendix 12 for the Heritage Trail Concept Plan, which was adopted as part of the 2012 Master Plan update).

Exhibit 6.2 Multimodal Thoroughfares



CITY OF THORNTON COMPLETE STREETS POLICY

- **Goal** – To improve access and mobility for all users of streets in the community by improving safety through reducing conflict and encouraging non-motorized transportation and transit.
- **Implementation Strategy** – To systematically add on-street bicycle lanes and sidewalk enhancements to Thornton streets in conjunction with street reconstruction and repaving, as well as new development construction.
- **Status** – Current and proposed non-motorized projects focus on striping bicycle lanes on arterial streets to link with bicycle facilities in adjacent jurisdictions, combined with wider sidewalks for pedestrians.
- Select local/collector streets will be additionally designated to complete key missing links in the City’s 2025 primary bike system.

- Arterial streets with bicycle lanes (short/mid-term)
- Hwy 7 with existing paved shoulders
- Arterial streets with planned bicycle lanes (long-term)
- Collector street connections
- On-street bike lanes in adjacent communities
- Connecting trail segments

6. TRAILS ELEMENT

UNDERSTANDING THE TRAIL USERS

Key to the expanded focus of the Master Plan is an understanding that people use trails and bike facilities for different purposes and have varying comfort levels and expectations for their trail experiences. In general, the Master Plan uses the nationally recognized “design bicyclist” concept in which the planning and design of facilities considers the needs of three distinct classifications of users:

- **Type A: Advanced Bicyclists** – These are experienced riders who can operate under most traffic conditions. They comprise the majority of the current users of collector and arterial streets and are best served by the following:
 - Direct access to destinations usually via the existing street and highway system.
 - The opportunity to operate at maximum speed with minimum delays.
 - Sufficient operating space on the roadway or shoulder to reduce the need for either the bicyclist or the motor vehicle operator to change position when passing.
- **Type B: Basic Bicyclists** – These are casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles. Some will develop greater skills and progress to the advanced level, but there will always be many millions of basic bicyclists. They prefer:
 - Comfortable access to destinations, preferably by a direct route, using either low-speed, low traffic-volume streets or designated multi-use facilities.
 - Well-defined separation from motor vehicles by providing space for bike lanes or separate multi-use trails.
- **Type C: Child Bicyclists** – These are pre-teen riders whose roadway use is initially monitored by parents. Eventually they are accorded independent access to the system. They and their parents prefer the following:
 - Access to key destinations surrounding residential areas (schools, recreation facilities, shopping, etc.)
 - Residential streets with low motor vehicle speed limits and volumes.
 - Well-defined separation from motor vehicles on arterial and collector streets or separate multi-use trails.

Most bikeway and trail planning initiatives combine Type B/C riders into a single user group that prefers access to off-road trails, a network of lightly traveled neighborhood streets, and bicycle lanes on streets with moderate traffic volumes and speeds. By contrast, Type A cyclists are generally best served by designing all roadways to accommodate shared use by bicycles and motor vehicles, with select corridors enhanced with wide outside lanes, paved shoulders, striped bicycle lanes, and/or multi-use trails designed to bicycle facility standards. In addition, different types of pedestrians enjoy Thornton’s trails system, and may generally be classified as:

- **Utilitarian Pedestrians** – People who use portions of the trail system to walk to work, to school, to shopping, or to take mass transit. These pedestrians make short trips and prefer direct routes of travel on hard, all-weather surfaces.
- **Athletes in Training** – This pedestrian group includes runners, joggers, and some walkers who use trail facilities for their workouts. Many athletes prefer a soft-surface, low-impact trail tread, designated mileage markers, and minimal roadway crossings or similar start/stop elements that disrupt timed exercise routines. Length of facility desired varies widely by skill and endurance level.
- **Social/Recreational Pedestrians** – Social activities conducted on multi-use paths include people walking dogs, meeting neighbors, hanging out with their families, enjoying nature, and exploring different parts of a community on foot. Due to the great diversity of pedestrians and uses, a system of stacked loop trails of varying lengths is often desired to be provided from a common starting point to offer multiple experiences.
- **Wheeled Pedestrians** – Wheeled pedestrians include a diverse group of people using in-line skates, kick scooters, skate boards, baby strollers, wheel chairs, etc. Such users generally prefer paved and maintained, all-weather surfaces and relatively flat grades.
- **E-Bikes** – Electric bikes are part of a wide range of Light Electric Vehicles (LEVs) that provide convenient local transportation. Generally designed for one person and small cargo capacity, the range and speeds of electric bikes are moderate. Most trips are less than 20 miles, although the latest advances in affordable lithium batteries may allow e-bikes to travel further distances. E-bikes are clean, quiet, and efficient LEVs, and offer many advantages.

IMPLEMENTING AN ACTION PLAN FOR 2025 AND 2040

The Trails Element chapter focuses on identifying a proposed primary network of trail and street corridors for implementation by 2025, consistent with regional DRCOG planning horizons, to provide a system of continuous cross-town routes of non-motorized travel, as identified in Exhibit 6.3. Additional proposed segments of local trails and roadway enhancements will occur off of, and feed into the primary network as part of the 2040 Trails Plan presented as a fold-out at the end of this section, Exhibit 6.7.

The 2040 Trail Plan unites the planning efforts of the Infrastructure, City Development, and Community Services Departments, and represents complete build-out of Thornton's trails system through a combination of opportunity-based and need-based initiatives.

Opportunity-Based Projects

To date, implementation of specific trail segments has been primarily opportunity-based. Many trails have been built as part of land development and large infrastructure projects, others have been the result of securing open space funds and matching grant opportunities from regional, state, and federal agencies. Trail projects shall continue to be cost-effectively implemented as opportunities allow through ongoing development processes and roadway resurfacing and widening projects.

The 2040 Trails Plan, Exhibit 6.7, includes projects that have been proposed and are included in zoning and plat documents submitted to the city by developers; however, they have not been built. They are included in the planning process because they show intended and desired connectivity between specific trail segments. The City Development Services Department will continue to review and require land dedication and/or trail construction as part of urban growth in Thornton to promote safe and convenient connections within and outside of the development boundaries.

New street construction in developments will follow the Thornton Transportation Plan that requires on-street bike lanes and/or wide sidewalks on collector and arterial streets. The 2025 and 2040 Trails Plans will be referenced for street corridors targeted for 6-foot bicycle lanes. For pedestrian needs, targeted trail corridors along street rights-of-way will provide a 10-foot sidewalk on one side of the roadway and a narrower sidewalk on the other side.

Additionally, the Infrastructure Department will systematically implement numerous complete streets projects concurrent with their ongoing street maintenance program, which will provide on-street bicycle lanes and attention to non-motorized user needs at intersections as part of several upcoming roadway resurfacing projects. Projects programmed within the 2025 horizon are included as key components of the primary corridor system. Additional, shorter bicycle lane segments may also be constructed, connecting into and providing enhanced access to the larger, citywide system from various neighborhoods.

Comments received from attendees at public meetings and contained in the survey results indicate a desire for sidewalk improvements that also serve as links to important trail corridors. This requires ongoing coordination between city departments to ensure that missing links are integrated into future budget allocations.

Coordination and partnerships with other municipalities, Adams County, RTD, and irrigation ditch companies are viewed as additional strategies for opportunity-based development of regional trail projects.

Need-Based Projects

Several important projects have been identified that will require targeted funding outside of opportunity-based projects. The Trails Element chapter focuses on a needs-based assessment of key missing gaps in a system of primary corridors designed to provide geographic coverage across the community.

Criteria for determining the designation of the primary corridors include:

6. TRAILS ELEMENT

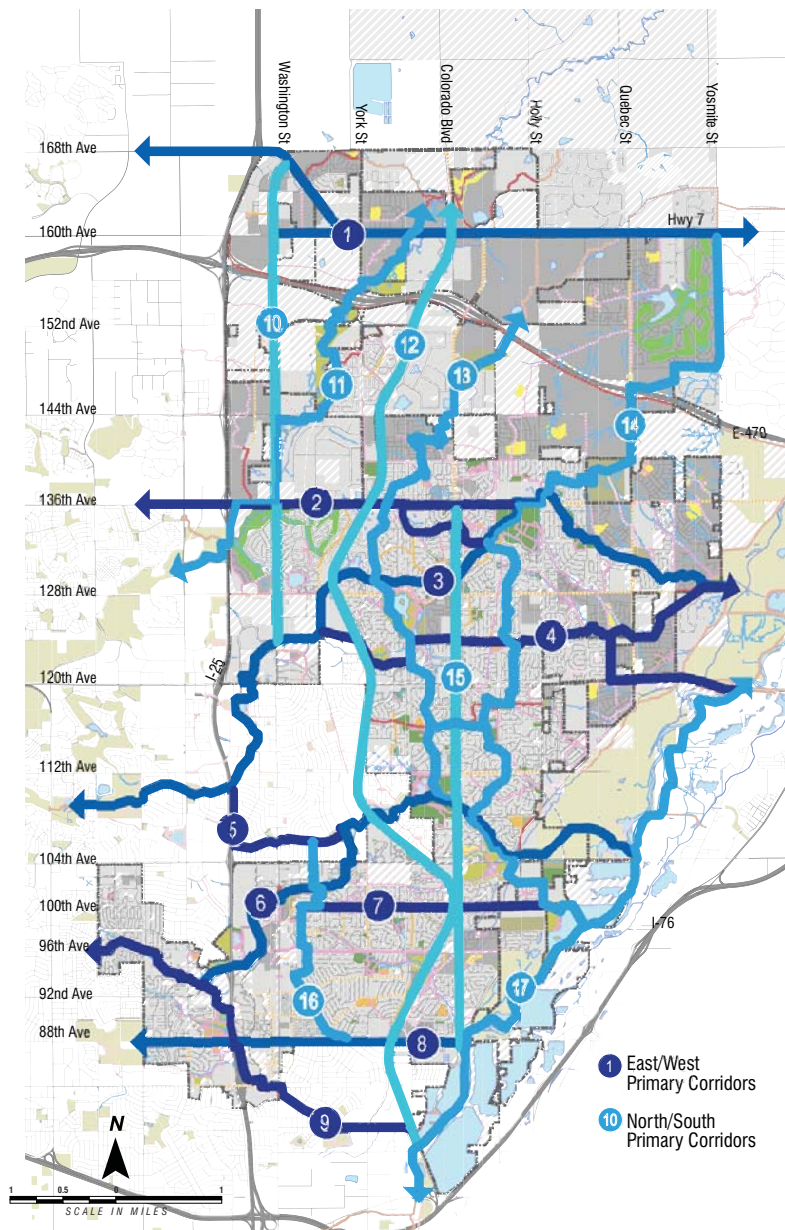
- Cross-town routes at least 2.5 miles in length;
- Initial network spacing every 1-2 miles;
- Network laid out to maximize use of regional trails and existing facilities combined with proposed projects with near-term implementation schedules;
- Seamless transition between facility types (on-road to off-road) to provide continuous routes of travel; and
- Alignment with connections to bike/trail facilities in the surrounding jurisdictions of Westminster, Federal Heights, Northglenn, Broomfield, Commerce City and Adams County.

The resulting system, which comprises the 2025 Trails Plan, provides nine primary corridors for east-west travel and eight corridors for north/south travel, as identified below in Exhibit 6.3. Missing links in the identified primary corridor network, as depicted in Exhibit 6.4 and detailed in Appendix 13.A, should receive priority for completion. These identified need-based projects should move forward independently of land development and roadway

Exhibit 6.3 2025 Trails Plan: Primary Corridor Network

2025 TRAILS PLAN: COMPLETE A SYSTEM OF PRIMARY CORRIDORS

- #1: Highway 7
- #2: E. 136th Avenue/Cottonwood Lakes Blvd/Summit Grove Pkwy
- #3: Farmers' High Line Canal Trail, Signal Ditch, and Lee Lateral Trail
- #4: Brantner Gulch Trail
- #5: Northglenn trail connections
- #6: Grange Hall Creek Trail
- #7: E. 100th Avenue
- #8: E. 88th Avenue
- #9: Niver Creek Trail
- #10: Washington Street
- #11: Big Dry Creek Trail
- #12: Trail along FasTracks corridor
- #13: Signal Ditch Trail/Madison Street and Woodglen Boulevard
- #14: Yosemite/Todd Creek/Summit Grove Pkwy/Fairfax St/Birch Dr
- #15: Colorado Blvd
- #16: Marion St/Downing St/Dorothy Blvd/Hoffman Way
- #17: South Platte River Trail



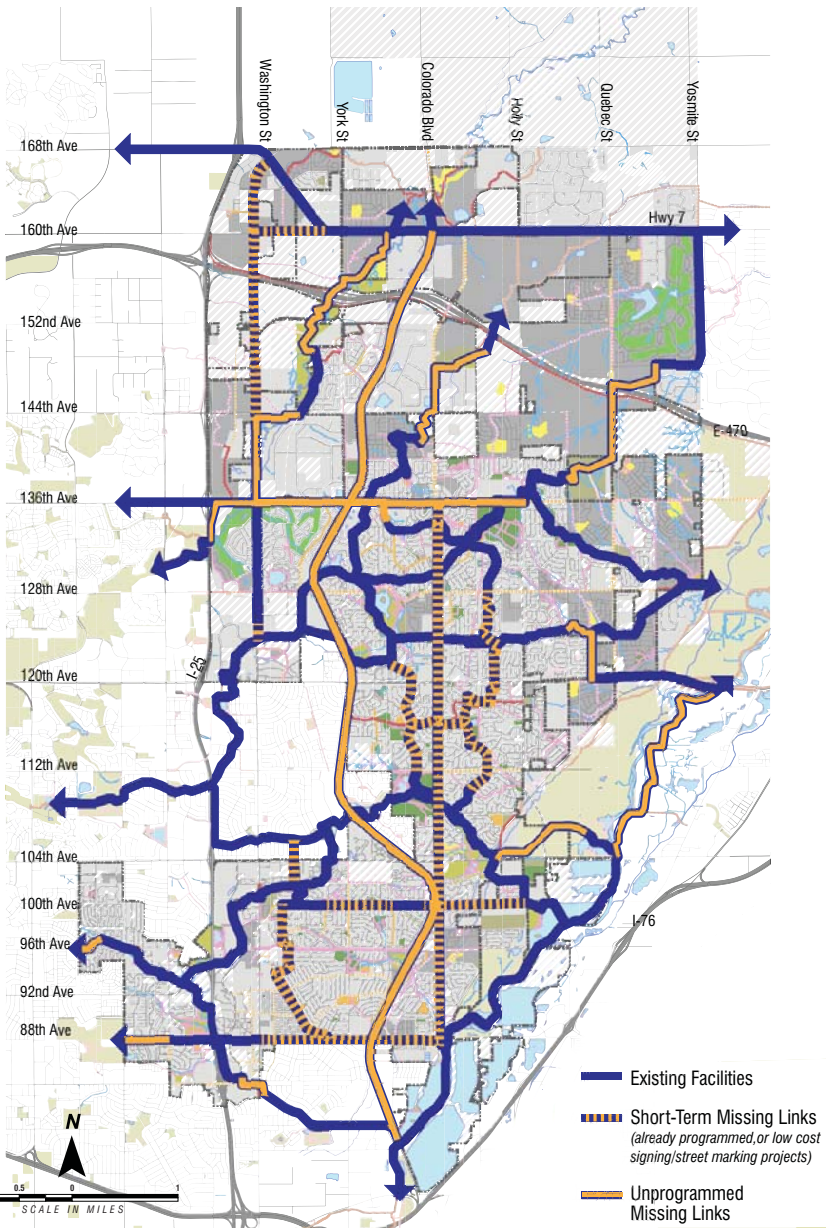
The 2025 Trails Plan System of Primary Corridors includes connections in adjacent jurisdictions to illustrate the complete desired connections of trail visitors regardless of jurisdiction. The city of Thornton would only be charged with completing the missing links within the city limits and within the planned growth area.

resurfacing projects if they are to be implemented within the targeted 2025 timeframe.

Working with POSAC, Community Services Department staff annually reviews unprogrammed system gaps and prioritizes missing links for annual capital improvements, leveraging outside funding support wherever feasible. Key missing segments to be completed by 2025 include the following, with an itemized listing contained in Appendix 13.B:

- Northeast extensions of the Big Dry Creek, Signal Ditch, and Lee Lateral/Todd Creek trails into growth areas and jurisdictions to the north;
- Development of the trail along an easement parallel to the FasTracks North Metro corridor;
- Accelerated programming of roadway restriping along E. 136th Avenue;
- Extension of the South Platte River Trail, and associated local trail connections, to link to the Adams County Regional Park and Fairgrounds; and
- Completion of short gaps in the Niver Creek Trail system.

Exhibit 6.4 2025 Trails Plan: Priority Missing Links



**2025 TRAIL PLAN:
PRIORITIZED MISSING LINKS**

- 60% of Thornton’s targeted primary network is currently built
- 20% is comprised of Complete Street projects currently programmed for implementation by Infrastructure Department within the 2025 horizon, and/or represent low-cost designation of local streets as bicycle routes
- 20% remains as unprogrammed missing links to be completed by 2025
- Missing links outside of Thornton city limits and planned growth area are not included in the above percentages

The 2025 Trails Plan System of Primary Corridors includes connections in adjacent jurisdictions to illustrate the complete desired connections of trail visitors regardless of jurisdiction. The city of Thornton would only be charged with completing the missing links within the city limits and within the planned growth area.

6. TRAILS ELEMENT

The result will be a continuous trails network that overcomes existing north/south travel barriers and completes existing gaps in key east/west routes. As illustrated in Exhibit 6.5, approximately 63% of this system will route on off-road facilities that follow environmental corridors, while 37% is proposed to follow street right-of-ways to make key connections and fill unmet needs for bicycle commuters.

Once the 2025 Plan is completed, remaining unbuilt trail segments shall be reprioritized as secondary corridors and neighborhood connections. Future priority should be placed on local trail segments that can complete connections between primary corridors, thereby creating a finer grid of secondary facilities spaced 1/2 to 1 mile apart. The fold-out map that follows, Exhibit 6.7, depicts all existing and proposed facilities desired to be constructed by 2040 – including additional local trail connections, proposed trails approved for development, long-term roadway restriping projects to include on-street bicycle lanes, trailhead locations, and proposed grade-separated crossings.

Exhibit 6.5 2025 Trails Plan: Facility Types

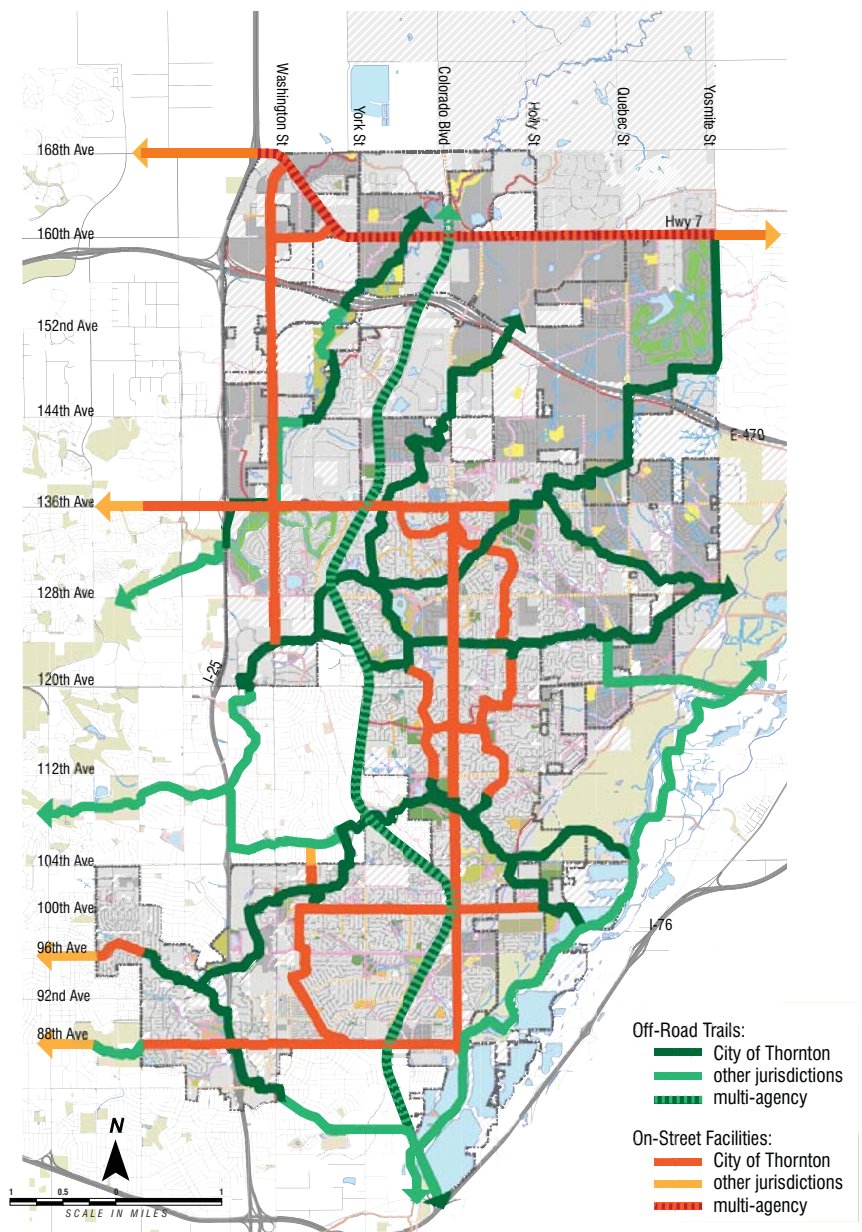
2025 TRAIL PLAN: BREAK-OUT BY FACILITY TYPE

- 63% of the primary network is comprised of off-road multi-use trails, located primarily along streams, drainages, and irrigation ditches

These facilities are either multi-jurisdictional regional trails or segments of local trails that provide important network connectivity.

- 37% of the primary network follows Thornton street corridors

These facilities typically include striped, on-street bicycle lanes on arterial and collector streets, and designation of key local street segments as bicycle routes, with pedestrian accommodation provided on sidewalks.

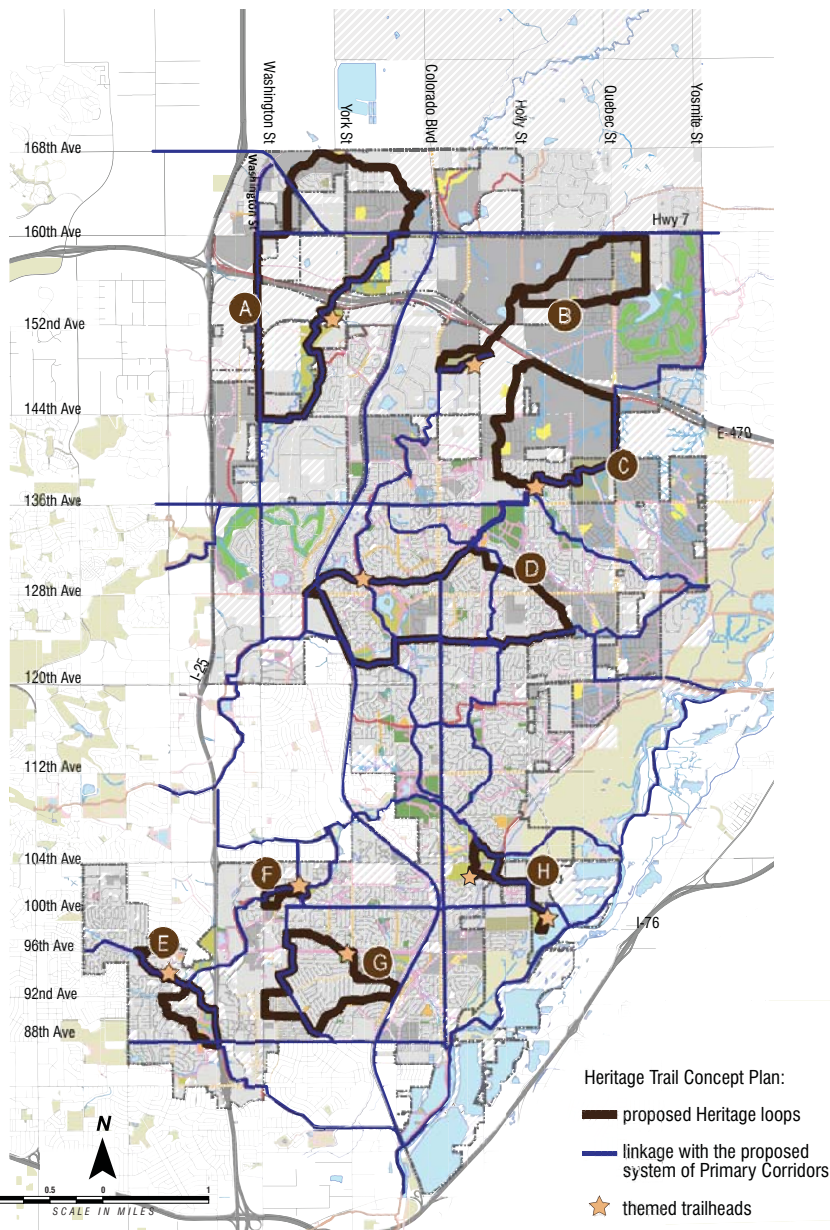


PROMOTING THORNTON'S HERITAGE

A final component of the 2025 Trails Plan integrates Thornton's Heritage Trail linkage concept. The Heritage Trail system is a series of loops that traverse culturally-significant zones within the city and create special educational and interpretive experiences for users. Multiple loops, each with a distinct historical, cultural, or environmental theme, were identified. The routes have been fine-tuned to connect and overlap with the primary corridor system, as illustrated below.

The Heritage Trail loops are differentiated from other city trails through a consistent signage and wayfinding program, including placement of ¼-mile markers to enable recreational users to track distances traveled. The design of each Heritage Trail and associated trailhead include distinct materials and furnishings, interpretive exhibits, and signage that reflect the project's assigned heritage theme. Additional details of the trail themes are contained in the Heritage Trail Plan document. (Appendix 12).

Exhibit 6.6 2025 Trails Plan: Heritage Trail System



HERITAGE TRAIL LINKAGE CONCEPT

Goal – To convey Thornton’s spirit, character, and uniqueness by highlighting a diverse spectrum of regional themes pertaining to the community’s history, culture, and environment.

Proposed Themes –

- A. Big Dry Creek Heritage Trail**
- wildlife corridors, oil and gas
- B. Signal Ditch Heritage Trail**
- original families, irrigation ditches
- C. Vista Heritage Trail**
- mountains, plains, environment, weather
- D. Eastlake Heritage Trail**
- railroad, agricultural commerce, irrigation
- E. Niver Nature Heritage Trail**
- native plant and animal life
- F. Lambertson Lakes Heritage Trail**
- agriculture
- G. Original Thornton Heritage Trail**
- 1950s Suburbia and Thornton’s Hollywood roots
- H. Anglers Heritage Trail**
- evolution of landscape, animals, and human settlement

See 11x17
Existing Trails Network and Proposed 2040 Trail Plan
Exhibit 6.7

FACILITY CLASSIFICATIONS AND STANDARDS

An additional benefit of a coordinated inter-departmental planning approach is consistent use of design standards for all facilities regardless of the entity charged with implementation. The trail design guidelines that follow have been updated for consistency with established national and local transportation standards. Recommended design manuals include the following:

- ***The American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition, 2012*** – the go-to design resource for on- and off-street bicycle facilities that are used for non-motorized transportation and/or constructed with state and federal funding.
- ***The Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition*** – the standard for signs, signals, and pavement markings in the United States. Applies to roadways, on-street bikeways, trails, and intersections of different facility types.
- ***The National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, 2nd Edition, 2012*** – a publication addressing design details for different types of bicycle lanes, cycle tracks, intersection designs, signals, signs, colored pavement markings, and other innovations not covered in the AASHTO or MUTCD manuals.
- ***City of Thornton Standards & Specifications: Typical Thoroughfare Cross Sections, revised August 2012*** – a series of roadway cross-sections outlining required dimensions for rights-of-way, motor vehicle travel lanes, bicycle lanes, on-street parking provisions, medians, landscape buffers, and sidewalks.
- ***City of Boulder: Pedestrian Crossing Treatment Installation Guidelines*** - state-of-the-art guidance for enhanced at-grade crossings, including pedestrian crossing location criteria, specific crossing design treatments, technical literature research, and an evaluation of the effectiveness and safety of various treatments being tested at crossing locations in the city of Boulder.

The following table summarizes design standards to use when developing new trail connections. First presented is an overview of the various facility types, consistent with AASHTO and NACTO design guidelines. Second is a series of tables organized into regional, local, and on-street classifications. The design standards should act as a tool for city staff to evaluate trail connections in development proposals and plan for new trails within the city.

Updates to the original Master Plan trail standards include recommending use of detached sidewalks for the pedestrian component of trails that route within street corridors (elimination of attached sidewalks as a trail type except adjacent to on-street park parking), adding Heritage Trail loops and paved roadway shoulders as trail types, and expanding trail crossing guidance to address not only overpasses and underpasses, and various types of at-grade pedestrian crossing treatments.

6. TRAILS ELEMENT








Exhibit 6.8 Trail Types			
Facility Type	Typical Width	Typical Surface	Characteristics
Detached Sidewalks 	6'-10'	Concrete or asphalt	<ul style="list-style-type: none"> Separated from curb by landscape buffer Follows arterial and collector streets with moderate to high volumes of traffic Designed for low speed users (pedestrians)
Multi-Use Trails 	8'- 12'	Concrete or asphalt	<ul style="list-style-type: none"> Located along drainages and/ or irrigation ditches in parks, and through open space lands Continuous routes with limited vehicular conflicts and frequent directional signage Designed for low and moderate speed users (walkers, runners, cyclists, in-line skaters, etc.) Lighting is required per city specifications
Soft-Surface Trails 	2'- 10'	Crusher fines or compacted organic material	<ul style="list-style-type: none"> Located in open space in areas not prone to flooding Continuous routes with limited vehicular conflicts and frequent directional signage Designed for a variety of users (cyclists, hikers, runners, etc.)
Heritage Loop Trails 	8'- 12'	Any of the above	<ul style="list-style-type: none"> Special loops within the overall trails system designated with unique signing and mile markers Tell the story of unique cultural, environmental, or historical themes Designed for a variety of users (cyclists, hikers, runners, etc.)

Exhibit 6.8 Trail Types			
Facility Type	Typical Width	Typical Surface	Characteristics
Paved Roadway Shoulders (or clear zones) 	4'-6'	Asphalt	<ul style="list-style-type: none"> • Continuous routes of travel on rural condition roads with no curb-and-gutter • Should use bicycle lane pavement markings at intersections to minimize vehicular conflicts • May use "Share-the-Road" warning signs to alert motor vehicles to potential bicycle traffic • Designed for a variety of users (cyclists, hikers, runners, etc.)
On-Street Bicycle Lanes 	6'	Concrete or asphalt	<ul style="list-style-type: none"> • Continuous routes with striped on-street lanes on urban condition roads with curb-and-gutter • Located between gutter and travel lane, or parking and travel lane • Should continue presence of pavement markings at intersections to minimize vehicular conflicts • Use "Bike Lane" signs • Designed for high speed users (cyclists)
On-Street Bicycle Routes 	12-14' of usable lane width	Concrete or asphalt	<ul style="list-style-type: none"> • Shared lane with vehicles • Designated and mapped, ideally using "sharrow" pavement markings to indicate cyclist lane placement • May use "Bike Route" signs • Designed for low volume streets that connect to other trail facilities • Designed for high speed users (cyclists)

6. TRAILS ELEMENT

Regional Multi-Use Trail Facilities

Regional trails provide connections to trail systems that cross jurisdictions (e.g. the South Platte River Trail) to neighboring jurisdiction trail systems (e.g. Grange Hall Creek Trail in Northglenn). The required facility type is a 10'-12' multi-use trail or a set of parallel trails (10' multi-use and 2' - 10' soft surface). The decision to construct a single or parallel trail facility is based on the anticipated trail use.

Regional trails typically use natural drainages or irrigation ditches as the basis for their routes. Development of some corridors will involve a major commitment to acquisition of trail easements or rights-of-way, design, and construction. Additional links are proposed that will connect these major trails to each other and to other destinations. Regional trail corridors need to incorporate grade separations or enhanced pedestrian crossing improvements to mitigate conflicts with motorized vehicle traffic.

Regional Multi-Use Trail Facilities Specifications	
Surface Type	Paved
Width	10-12'
Shoulders	2-5'
Cross Slope	1% min / 2% max
Vertical Clearance	10'
Maximum Grade	8.3%
Amenities	Signage, Lighting, Trash Receptacles, Benches, Dog Waste Stations

Local Trail Facilities

Local trails serve as important links between branches of the regional trail system, components of the parks and open space system, and specific destinations in the community. As such, they provide a series of interconnected recreational loops of varying lengths, which are appropriate for a wide range of users. The predominant facility is a 6'-10' multi-use path that provides clear directional signage to regional trail facilities and local destinations, but can also include detached sidewalks and soft-surface trails. Attached sidewalks were formerly considered to be a local trail type, but have been removed from the Master Plan in favor of sidewalk facilities separated from vehicular traffic by a landscape buffer. Attached walks adjacent to neighborhood parks are preferred for on-street parking access.

Segments of local trails that are mapped as part of the 2025 Trails Plan primary corridor network shall be constructed to wider standards at 8' minimum. Local trails need signed crossings and marked crosswalks when intersecting with motor vehicle traffic.

Local Trail Facilities Specifications			
	Detached Sidewalk	Soft Surface Trails	Multi-use Trails
Surface Type	Paved	Unpaved	Paved
Width	6'-10'	2' to 10'	8' to 12'
Shoulders	2-5'	2'-5'	2'-5'
Cross Slope	1% min / 2% max	1% min / 2% max	1% min / 2% max
Vertical Clearance	10'	10'	10'
Maximum Grade	8.3%	8.3%	8.3%

Heritage Trail Facilities

Segments of Heritage Trails that are mapped as part of the 2012 Heritage Trails Plan shall be constructed to wider standards, consistent with regional trail facilities. At minimum, Heritage Trails need signed crossings and marked crosswalks when intersecting with motor vehicle traffic.

Local Trail Facilities Specifications			
	Detached Sidewalk	Soft Surface Trails	Multi-use Trails
Surface Type	Paved	Unpaved	Paved
Width	8'-10'	2' to 10'	8' to 12'
Shoulders	2-5'	2'-5'	2'-5'
Cross Slope	1% min / 2% max	1% min / 2% max	1% min / 2% max
Vertical Clearance	10'	10'	10'
Maximum Grade	8.3%	8.3%	8.3%

Bike Lanes and Bike Routes

On-street bike lanes and bike routes can provide safe methods of travel between segments of off-street trails. Improvements may include striping bicycle lanes on both sides of the street where the road right-of-way can accommodate such a designation, or consistent signage and use of shared lane pavement markings (“sharrows”) that identify the street segment as part of a comprehensive routing system and indicate desired cyclist roadway position. Paved shoulders may serve as the bicycle travel lane on rural roadways without curb and gutter. In all locations, attention should be given to intersection designs to minimize potential conflicts between through-cyclists and right-turning motor vehicles.

Bike Lane And Route Specifications		
	Bike Lane	Bike Route
Surface Type	Paved	Paved
Width	6' min.	12'-14'
Shoulders	4'-6'	N/A
Cross Slope	2% min / 4% max	2% min / 4% max
Vertical Clearance	N/A	N/A
Maximum Grade	N/A	N/A

STREET CROSSING GUIDANCE

The decision on what type of design treatments are appropriate at trail/roadway intersections requires balancing user safety and personal comfort needs with prudent traffic engineering principles and project cost and budget considerations.

Exhibit 6.9 provides guidance in determining where different types of trail crossings are needed. Desired crossing types shown in Exhibit 6.10 depend on the types of intersecting facilities – both vehicular and non-motorized – and may be a grade-separated or at-grade crossing design.

Grade Separations

Grade separations are desirable when a trail passes either over or under another trail, a water feature, a roadway, or a railroad. Grade separations help to minimize conflicts between motorized and non motorized users by providing a safe buffer between travel ways.

6. TRAILS ELEMENT

A goal for Thornton’s regional trail system is to provide uninterrupted connectivity. Overpasses and underpasses are therefore desired along all regional trails to provide continuous routes of travel removed from motor vehicle conflicts, especially when crossing major arterial streets. However, this may not be possible in some cases and enhanced at-grade crossing treatments can effectively be used as an alternative. When grade-separated structures are provided over/under a street corridor with on-street bicycle lanes, design of the structure should include appropriate connecting trails, ramps, and curb cuts to allow for cyclists to seamlessly transition between the intersecting on-road and off-road facilities. The decision to provide underpasses along local trails following various streams, drainages and irrigation ditches will depend on opportunities for cost-effective implementation, most likely in association with infrastructure improvements.

Existing and proposed grade separations are mapped on the Exhibit 6.7 2040 Trails Plan. This map is to be used as a long-range planning guideline that represents the vision for 2040 and will change based on actual trail alignments, developer negotiations, Capital Improvement Project (CIP) feasibility, etc.

At-Grade Crossings

Intersections with streets and roadways are important considerations in the design of both trail and bike lane facilities. When intersections occur at-grade, a major design consideration is the establishment of right-of-way for various users. CDOT, AASHTO, NACTO, and MUTCD have usage warrants and design standards regulating various types of at-grade crossings.

A marked crosswalk is a pedestrian crossing that is delineated by white crosswalk pavement markings. It is important to note that legal crosswalks exist at all public street intersections whether marked or unmarked. However, the only way a crosswalk can exist at a mid-block location is if it is marked. All traffic control devices, including crosswalk markings and signs, must conform to the federal and state regulations for dimensions, color, wording, and graphics. To create highly visible roadway crossings for trail facilities, it is recommended to use ladder-style crosswalk markings in all locations along Thornton’s trail system.

Various crossings may be further enhanced by using a combination of the following, based upon site-specific needs, opportunities, traffic counts, and usage warrants:

- **Enhanced mid-block crossings** on arterials and collectors may include use of raised speed tables, colored and textured pavements used within the crosswalk area, retroreflective marking materials, landscape enhancements, or other traffic calming strategies.
- **Raised medians and center pedestrian refuge islands** should be considered for mid-block crossings on multi-lane roadways in urban and suburban areas to allow non-motorized users to find an acceptable gap in traffic for one approach direction at a time. Median refuge islands are appropriate where there are mixtures of a significant number of pedestrians, high volumes of traffic (more than 12,000 vehicles per day) and intermediate or high travel speeds. Crosswalks should cross perpendicular to travel lanes, but angle within the median refuge area to face oncoming traffic, then continue perpendicularly across the remainder of the street.
- **Curb extensions** should be considered for mid-block crossings on streets with on-street parking to enhance pedestrian visibility and shorten the distance and time required to cross the street. Curb extensions, or neckdowns, are created when the curblines are bulged out toward the middle of the roadway to narrow the width of the street.
- **A pedestrian traffic signal** may be used in a mid-block location after careful study of traffic characteristics. This is a conventional traffic signal with circular red, yellow, and green displays for motorists and Walk/Don’t Walk signals for pedestrians that is applied at a pedestrian crossing.
- **A pedestrian hybrid beacon** is a relatively new type of crossing treatment used to both warn and control traffic at a pedestrian crossing. Often called a HAWK Beacon, it is a hybrid between a pedestrian traffic signal and a stop



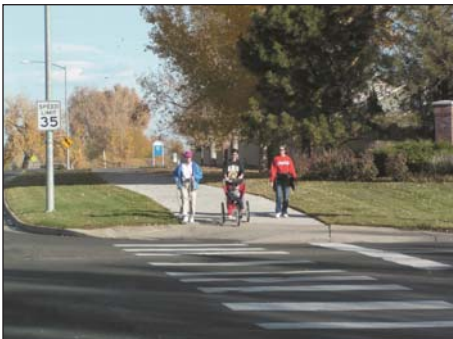

sign. It is actuated by a pedestrian push button, and uses a combination of circular yellow and red traffic signal displays to first warn motorists of a pedestrian that is about to cross the street, then require the motorist to stop for the pedestrian crossing, and then release the motorist to proceed once the pedestrian has cleared the crossing.

- **Pedestrian Activated Flashing Lights** are small rectangular yellow flashing lights that are deployed with pedestrian crossing warning signs. They are typically actuated by a pedestrian push button and flash for a predetermined amount of time, to allow a pedestrian to cross the roadway, before going dark. RRFBs are warning devices. They may be used on pedestrian actuated flashing signs, or embedded within the pavement of travel lanes as in-roadway warning lights.
- **Enhanced crosswalk signing** may be used to draw further attention to the crossing area. Techniques used in other communities include signs and bollards stating “State Law–Yield to Pedestrians” (used at 2 or 3-lane crossings) and pedestrian activated flashing signs (used primarily at multi-lane crossings).

For bicycle lane intersection design, NACTO is the most current and comprehensive resource for implementation guidance on colored lanes, bike boxes, median refuge islands, through bike lanes, combined bike/turn lanes, and other innovative treatments.

Exhibit 6.9 Crossing Type Criteria						
TRAIL FACILITY TYPES						
Intersecting Corridor Type	All Regional Multi-Use Trails	Local Trails on Primary Network	Local Trails off Primary Network	Connecting Neighborhood Trails	On-Street Bicycle Lanes	On-Street Bicycle Routes
Freeways & Active Rail Lines	<ul style="list-style-type: none"> • Provide bicycle/pedestrian underpass or overpass 		<ul style="list-style-type: none"> • May route to closest existing street crossing if separate bike/pedestrian structure is cost prohibitive 		<ul style="list-style-type: none"> • Use street crossings and structures 	
Arterial Streets without Bike Lanes	<ul style="list-style-type: none"> • Provide bicycle/pedestrian underpass or overpass • Or enhanced mid-block crossing with pedestrian signal may be acceptable 		<ul style="list-style-type: none"> • Route to closest traffic signal • Or provide enhanced mid-block crossing with pedestrian signal, or a grade-separated structure if feasible 		<ul style="list-style-type: none"> • Cross arterial streets at intersections with vehicular traffic signals • Continue bike lane markings to and through intersections 	
Arterial and Collector Streets with On-Street Bicycle Lanes	<ul style="list-style-type: none"> • Enhanced at-grade crossings are preferred for linkage between on- and off-road facilities • If grade-separated structures are provided, include ramps from trail grade to street grade 		<ul style="list-style-type: none"> • Provide highly visible ladder-style crosswalks, possibly with some form of pedestrian crossing light 		<ul style="list-style-type: none"> • Cross arterial streets at intersections with vehicular traffic signals • Continue bike lane markings to and through intersections 	
Local and Collector Streets without Bike Lanes	<ul style="list-style-type: none"> • Provide at-grade crossings with highly visible ladder-style crosswalks • May include elements of enhanced pedestrian crossings 		<ul style="list-style-type: none"> • Provide highly visible ladder-style crosswalks 		<ul style="list-style-type: none"> • Streets with bike lanes should have right-of-way over intersecting local streets 	

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Exhibit 6.10 Crossing Types			
Facility Type	Typical Width	Typical Surface	Characteristics
Bicycle/Pedestrian Bridge or Overpass 	10' - 14'	Wood, composite, concrete, or metal decking	<ul style="list-style-type: none"> • Min. clear width same as approaching path, ideally including an additional 2' clearance on either side of trail • 5% max. grade on approach ramps • Railings/fences on both sides shall be a min. height of 42" for pedestrian facilities and 54" for bicycle facilities
Bicycle/Pedestrian Underpass 	10' - 14'	Concrete	<ul style="list-style-type: none"> • Min. clear width same as approaching path, ideally including an additional 2' clearance on either side of trail • 10' min. vertical clearance • 5% max. grade on approach ramps • Railings/fences on both sides shall be a min. height of 42" for pedestrian facilities and 54" for bicycle facilities • Lighting is required per city specifications
Standard At-Grade Crossing 	8' - 10'	Thermoplastic or tape	<ul style="list-style-type: none"> • Trail crossings of all streets should use highly visible continental crosswalk markings • Crosswalk and associated curb ramps should be same width as approaching trail • Acceptable for mid-block locations on local streets. Optional to include pedestrian-actuated signals based on needs
Enhanced At-Grade Crossing 	8' - 10'	Thermoplastic or tape Optional to apply crosswalk markings over colored or textured pavements	<ul style="list-style-type: none"> • Recommended for mid-block locations on arterials and collectors • Consider use of median refuge islands on multi-lane roadways • Consider use of curb extensions on streets with on-street parking • Optional to include raised speed table crossing treatments and/or pedestrian-actuated signals based on needs

OPEN SPACE ELEMENT 7

This chapter examines current and future needs for open space in Thornton, and identifies and evaluates sites in Thornton and its planned growth area that have high value historical and natural resources. The chapter presents specific recommendations for preserving certain sites as part of an open space or open lands system.

Thornton residents have indicated that open space is one of the important elements of the community's appeal and quality of life. The value that residents place on open space was confirmed by passage of the Park and Open Space Sales and Use Tax in November 1997 and 2013 extension. The ballot language for this tax measure included a definition of open space that is summarized below:

- » Natural areas for the preservation of wildlife, and their habitats that support existing populations of bald eagles, other birds of prey (raptors), deer, beaver, waterfowl, and numerous other native species.
- » Wildlife corridors to support the movement and migration of wildlife species currently using undeveloped areas.
- » Wetlands that support important wildlife ecosystems and provide hydrologic benefits.
- » Areas with significant view corridors and buffers.

(The actual ballot language for the parks and open space sales and use tax is included in the Technical Appendice 2 and 4.)

EXISTING CONDITIONS

For a variety of reasons, much of Thornton has developed in a manner that has left pockets of open land throughout the community. Some of this land is still actively farmed, giving Thornton residents a continual reminder of the agricultural heritage of the area. In addition, the Thornton Planned Growth Area that extends north and east from the urbanized part of the community is mostly undeveloped, with land that is either lying fallow or in active agriculture.

As Thornton grows, these lands are being developed for residential, commercial, and office uses that are a part of an expanding community. Responsible growth and development have benefits for Thornton's residents: jobs are created, services and shopping opportunities are increased, and tax revenues needed to provide municipal services to residents are generated.

Thornton's total open lands and designated open space acreage is 1,546.4 acres (which includes properties that are currently not open to the public). Based on the City's 2015 population (131,761), this represents

Several of the larger city-owned designated Open Space and Open Land properties include:

- » *Big Dry Creek Open Space: 221.3 acres*
- » *Aylor Open Land: 139.2 acres*
- » *Riverdale Open Space & Prairie Dog Habitat and Grandview Ponds Open Space & Prairie Dog Habitat: 119.9 acres*
- » *Eastlake #3 Park & Nature Preserve: 106.8 acres*
- » *West Gravel Lakes Fishing Facility: 104.2 acres*
- » *West Sprat Platte Lake Fishing Facility: 102.7 acres*
- » *Thornton Trail Winds Park & Open Space (open lands/ designated open space area only): 90.7 acres*
- » *Signal Ditch Park & Open Space (open lands/designated open space area only): 60.5 acres*
- » *Niver Open Space: 63.3 acres*
- » *Niver Tributary L Open Space: 8.8 acres*
- » *Margaret W. Carpenter Park & Open Space (open lands/ designated open space area only): 47.4 acres*
- » *Lambertson Lakes Park & Open Space: 31 acres designated open space + 9.8 acre farmstead*
- » *Badding Open Space and Badding Detention: 28.5 Acres*
- » *Eastlake Uplands Open Space: 14 acres*

7. OPEN SPACE ELEMENT



Views from Homestead Hills Park and Open Space

approximately 11.8 acres of designated open space and open lands per 1,000 people. If the same level of service were to be maintained for the next 7 years, roughly 1,817.2 total acres of designated open space and open lands would be needed to accommodate the city’s projected 2023 population of 154,000 persons (270.8 additional acres would need to be acquired).

The remainder of this section provides a summary of the important physical and environmental resources within Thornton and its planned growth area. Supporting mapping and analysis is provided in the Technical Appendix 9.

Topography and Views

Some areas of Thornton have substantial topographic relief. A central ridge extending north-south through the city provides a number of opportunities for long distance views, with especially dramatic views of the mountains to the west, the Denver skyline to the south, and the South Platte River valley to the east. This and other ridges also form valleys that have a pleasant sense of enclosure.

Water Features and Floodplains

In addition to its ridgelines, Thornton contains a variety of water features, including ponds, irrigation ditches, reservoirs, creeks, and the South Platte River. A number of natural drainages traverse Thornton and its planned growth area. These drainages collect runoff and channel it to the South Platte River. While larger streams such as Big Dry Creek, Brantner Gulch, Grange Hall Creek, and Niver Creek provide most of the major resource values, a number of smaller tributary drainages add to the amount, diversity, and connectivity of these features within Thornton. Areas subject to flooding along these drainages are indicated by floodplain designations on special maps. Importantly, floodplains provide storage space for excess floodwater, allow for groundwater recharge, and attenuate floodwater surges. Floodplains and riparian areas also support diverse wildlife habitats, serve as wildlife movement corridors, and are appreciated for their aesthetic qualities.



Fishing Deck at Grandview Ponds Open Space & Prairie Dog Habitat



Grange Hall Creek at Margaret W. Carpenter Park & Open Space

Vegetation

Thornton’s current land cover is mostly agricultural and urban lands, though important remnants of native vegetation communities remain. The dominant vegetation types found across all properties are dryland farmland and introduced grasslands. The highest quality vegetation types for wildlife habitat are riparian or wetland vegetation types and native grasslands.

The most important areas of natural vegetation are the riparian corridors along the South Platte River, Big Dry Creek, Niver Creek, and their tributary drainages. Smaller areas of native plant communities, or of non-native communities that provide similar ecological and visual values, are found in small pockets throughout Thornton.



Big Dry Creek

The primary vegetation associations in Thornton are:

- » Agricultural pasture, active cropland, and abandoned cropland;
- » Aquatic habitats associated with streams, ditches, stock ponds, detention ponds, and reservoirs;
- » Grasslands composed of both native and non-native species;
- » Herbaceous wetlands, including cattail marshes, along ditches, lakes, and creeks;
- » Riparian cottonwood woodlands and willow shrublands along Big Dry Creek, Niver Creek and the South Platte River, smaller drainages, irrigation ditches, and lakes;
- » Weedy areas dominated by non-native grasses and forbs (broadleaf plants); and
- » Landscaping with both native and non-native vegetation in developed areas.

Two plant species listed as Threatened under the Endangered Species Act - the Ute Ladies'-Tresses orchid and Colorado Butterfly Plant - are potentially present in wet meadow and riparian habitats along the South Platte River and other drainages, but no known populations occur in Adams County.

Wildlife Habitat

Use of an area by wildlife is influenced primarily by type and quality of vegetation, distance to water, habitat size and shape, and type and intensity of human uses. Each combination of these components represents suitable habitat for distinct assemblages of wildlife. For example:

- » **Aquatic areas** provide habitat for fish (including native non-game species), amphibians (salamanders, frogs, true toads, and spadefoot toads), wading birds and shorebirds (herons, sandpipers), waterbirds (ducks, geese, pelicans), and mammals (beavers and muskrats). Raptors also use these habitats: bald eagles may feed on fish in open water areas, while peregrine falcons may hunt for waterfowl. Areas of surface water, whether standing or flowing, are also important as sources of drinking water by many terrestrial wildlife species.
- » **Herbaceous wetlands (wet meadows) and cattail marshes** may occur along the edges of ponds and lakes and along the floors of even minor drainages. Wetlands serve a number of ecological functions, including flood control, water storage, water treatment, and erosion protection, in addition to providing habitat for a variety of wildlife. Pools of open water within the wetlands may support small native fishes and breeding by amphibians and waterfowl. The fish or amphibians in open pools in turn attract predators such as the great blue heron and black-crowned night-heron, while waterfowl nests are a favorite food source for raccoons.



Signal Ditch Park and Open Space



Cottonwoods along Signal Ditch Corridor



Eagle's nest along the South Platte River Corridor



Wetland along Niver Creek at Niver Open Space

7. OPEN SPACE ELEMENT

Cattails provide nesting and hiding habitat for a variety of specialized birds, including Virginia and sora rails, bitterns, common yellowthroats (a wetland warbler species), and both yellow-headed and red-winged blackbirds. When the cattails are associated with sandbar willows, song sparrows may also occur in abundance. Water shrews may also occur among the cattails, as may northern chorus frogs.

- » **Riparian woodlands and shrublands** provide year-round and seasonal habitat for white-tailed and mule deer, which are attracted by the presence of water for drinking, lush forage, thermal cover (shade), and hiding cover (shelter). The same conditions, and the abundance of prey, attract carnivores such as coyotes, red foxes, and raccoons. Among the prey are fox squirrels, cottontail rabbits, and myriad native rodents.

One of the most important qualities of riparian habitats is the structural diversity provided by the presence of trees of varying heights and age classes, both tall and low shrubs, and an understory of grasses, forbs, and vines. The trees support nesting or winter roosting by several raptor species, including both hawks and owl, and a large array of songbirds, woodpeckers, and other small bird species, as well as native turkeys. Because of their linear configuration, riparian corridors also provide vital linkages between different types of habitats needed to meet the life requirements of individual species, as well as between areas that otherwise would be too small to support a certain species.

- » **Grassland habitats** in Thornton are generally fragmented by farming or suburban development or disturbed by grazing and other land uses. Nevertheless, grasslands provide food and den sites for several species of native small mammals (including rabbits, ground squirrels, prairie dogs, voles, and pocket mice); den sites and prey for predators such as the coyote and red fox as well as several snake species, breeding and feeding habitat for ground-nesting songbirds and one prairie raptor (the northern harrier), and hunting habitat for hawks and owls nesting or perching in nearby trees. While prairie songbirds such as the western meadowlark, horned lark, vesper sparrow, grasshopper sparrow, and lark bunting (the Colorado state bird) may prefer more extensive stands of grassland, other species such as the western kingbird, eastern kingbird, loggerhead shrike, and lark sparrow are more common in grasslands interspersed with trees.

Although grasslands are often evaluated primarily on the basis of the wildlife they support or their visual or recreational quality for humans (shade is a premium in the prairie), an important quality of native grasslands can be the window they provide into the region's pre-settlement environment. Except for major drainages, most of the region was once treeless plain. Nearly all of that environment has either been lost to plowing or development or was significantly altered by introduction of domestic livestock, subsequent seeding with non-native pasture grasses, or invasion by non-native weeds. The few, small islands of native grassland—prairie remnants—in Thornton provide opportunities for residents and visitors to observe native grasses and wildflowers that otherwise are nearly lacking from the present day landscape.

- » **Agricultural fields**, primarily found in the northern portion of the study area, support few native wildlife species and fewer still native plant species. However, unmown vegetation along fences, shelterbeds, stockponds, and irrigation ditches provide some patches of wildlife habitat. Agricultural areas also function as movement corridors and receive some hunting use by raptors, coyotes, and foxes, especially in pastureland. Agriculture is also responsible for most of the irrigation ditches and ponds that dissect or dot the landscape and that provide much of the ecological and visual diversity of Thornton—as well as ecological corridors and trail alignments.
- » **Landscaping in developed areas** supports a variety of native (and some notable non-native) wildlife that enrich the daily lives of urbanites and suburbanites in locations removed from or lacking natural habitat. Areas of mature vegetation, especially areas with large trees, not only serve to connect otherwise isolated areas of

natural habitat, they also attract use by some surprising wildlife species. Great horned owls, eastern screech-owls, Cooper’s hawks, sharp-shinned hawks, and American kestrels are quite at home in parks, cemeteries, and older neighborhoods, as other species such as the northern flicker, downy woodpecker, Say’s phoebe, American crow, blue jay, American robin, black-capped chickadee, house wren, Bullock’s oriole, Brewer’s blackbird, common grackle, yellow warbler, warbling vireo, house finch, American goldfinch, and lesser goldfinch. During spring migration, numerous additional birds pass through these areas. Recently, predators such as the coyote and red fox have joined the raccoon, striped skunk, fox squirrel, and cottontail rabbit as species willing to share the landscaped environment with humans.

Wildlife

- » **Federally Listed Threatened or Endangered Wildlife:** There are no Threatened, Endangered or Candidate wildlife species listed by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act known to occur in Thornton.

The bald eagle, formerly listed as Endangered under the Endangered Species Act, was delisted on July 9, 2007, and is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Thornton lies in the migration path for a large number of bald eagles that use large cottonwood trees along the South Platte River (and other drainages) and surrounding lakes for perching, and search for their preferred prey—fish and waterfowl—in the open water. During winter, bald eagles use the river and lakes but, wander farther afield in search of prairie dogs, rabbits, or carrion. Bald eagle nesting undoubtedly occurred historically along the South Platte River and Big Dry Creek and this habitat could support nesting in the future. In recent years, bald eagles have nested in nearby areas, including Barr Lake and Standley Lake. The continued presence of bald eagles in Thornton will depend on the availability of perching and hunting habitat in areas relatively free from human disturbance.

Preble’s meadow jumping mouse (*Zapus hudsonius preblei*), listed as Threatened under the Endangered Species Act, has not been found in Thornton. It occurs in nearby areas of the Front Range, and major riparian corridors in Thornton provide potentially suitable habitat.

The piping plover (*Charadrius melodus circumcinctus*), listed as Threatened under the Endangered Species Act, is a potential migrant or nester on sandbars, shorelines, and islands in the South Platte River and associated lakes, although the species is not currently known to occur in or near Thornton.

- » **State Listed Threatened, Endangered, or Special Concern Species:** The Colorado Parks & Wildlife (CPW) maintains a list of species which, while not threatened or endangered at the national level, are given a special designation in Colorado. The only state listed species known to occur in the Thornton area is the burrowing owl, which nests in prairie dog towns.

Not given a special statutory status but also considered rare or imperiled in Colorado are a variety of “State Special Concern” species. Among these are several species known to occur or be potentially present in the Thornton area: black-tailed prairie dog, swift fox, Townsend’s big-eared bat, ferruginous hawk, peregrine falcon (previously federally listed as threatened), western snowy plover, common garter snake, and northern leopard frog. Big Dry Creek provides potential habitat for three special-concern non-game fishes—the brassy minnow, common shiner, and plains killifish (also called plains top minnow, but not a member of the minnow family). The black-tailed prairie dog, swift fox, ferruginous hawk, and snowy plover are prairie species, while the other species are associated with aquatic, wetland, or riparian habitats.

7. OPEN SPACE ELEMENT



The black-tailed prairie dog is a State Species of Special Concern due to habitat loss, disease, poisoning, and recreational shooting.



Brochures at Eastlake #3 Park & Nature Preserve provide information to park users about how to avoid human-coyote conflicts.



Nesting habitat is an important wildlife resource exhibited throughout the city's open space system.



Coyotes have been observed in Thornton's open space holdings.

» **Other Sensitive or Locally Important Species:** These include species that occur infrequently or in small numbers due to limited habitat availability, are adapted to a narrow range of habitats, or otherwise are of special interest to Thornton residents. Examples include white-tailed and mule deer, predators such as the coyote and red fox; waterbirds such as the American white pelican and great blue heron; raptors such as the golden eagle, red-tailed hawk, Swainson's hawk, Cooper's hawk, sharp-shinned hawk, northern harrier, great horned owl, eastern screech-owl, and barn owl; and amphibians such as the tiger salamander, Woodhouse's toad, Great Plains toad, plains spadefoot toad, and northern chorus frog.

Although too numerous to list, several species of arboreal songbirds are essentially limited to areas of mature cottonwoods, which they use for nesting, resting, and feeding. Among these are "Neotropical migrant" songbirds that winter in Central or South America and either nest in riparian forests along the Front Range or pass through on their way north or to higher elevations. These species, along with raptors and waterbirds, are of special interest to "birders" or other nature-lovers. Without Thornton's riparian cottonwoods and large lakes, opportunities to observe and enjoy these species would be greatly diminished.

In 2009, Thornton adopted a Coyote Management Plan to address human-coyote conflicts on city-owned public lands. The plan, which is incorporated as Appendix 15 to this document, provides guidelines for responses to conflicts with coyotes, particularly to resolve and reduce human-coyote conflicts in a consistent and expedient manner. Public safety is the number one concern of the city and coyotes will be managed with human safety as a priority.

The city's Animal Control Division of the Police Department is the primary contact for response and information regarding coyotes. The Colorado Parks and Wildlife (CPW) also provides guidance and education to residents and the city in managing nuisance coyotes. CPW personnel will respond to reports of dangerous coyotes and help make a management decision based on the interest of public safety.

Education and awareness are pro-active tools to avoiding human-coyote conflicts. Animal Control Officers, Parks & Open Space and Neighborhood Services staff, the city website, Inside Thornton magazine and Channel 8 are in-house resources to facilitate outreach.

Farmland

Farms are located throughout the Thornton area. Although a historical evaluation has not been conducted, some of these have a long history and represent Thornton's agricultural heritage, which contributes to the expanding agri-tourism industry throughout the Front Range. Besides historical considerations, preserving farms and farm land may have an educational value as potential development continues to push active farming far beyond where it can be easily observed by the general public. Farm lands offer visual open space and a counterpoint to areas having suburban or urban development. Farms also provide feeding and hunting sites for a variety of wildlife that use nearby riparian corridors for cover, movement, or nesting/denning.



Historic barn at Big Dry Creek Open Space

MECHANISMS FOR OPEN SPACE PROTECTION

Certain types of land within Thornton currently have limits on development that either completely or partially protect the land as open space or open lands without further public action.

Public Ownership (City-Owned Land)

The city owns several undeveloped parcels of land that have planned or intended uses, and several also have potential for open space or parks, or both. The fact that they are in city ownership makes them less vulnerable to development as long as the city establishes internal procedures to ensure they are evaluated for open lands preservation before being considered for other uses.

Floodways and Floodplains

Areas subject to 100-year frequency floods are identified on maps prepared by the Federal Emergency Management Agency (FEMA). Based on these maps, the city imposes development restrictions, and FEMA restricts flood insurance. Floodways, the channel where floodwater is projected to move with velocity, are strictly precluded from development. Land outside the floodway but within the 100-year floodplain can be developed subject to specific engineering restrictions. Even though these restrictions are expensive, they are not prohibitively so, and therefore the floodplain is considered only partially protected.

Floodplains that cross development sites have been restricted from development in various ways such as dedication of land or of easements to assure that part or all of the floodplain remains undeveloped. These restrictions are usually imposed when land is subdivided for lots. Once these restrictions are in place, the land remains protected as open space for drainage and floodplain purposes.

Tracts and Easements

Property owners seeking to subdivide their land into lots must obtain approval from the city. As part of this process, land that is either unsuitable for or restricted from development is placed in a tract rather than a lot. This designation on a subdivision map prevents development of the land unless the restriction is lifted. Easements may also be used to restrict the use of land and prevent development. Property owners grant easements to either the city or some other entity for a specific purpose. In Thornton, for example, tracts and easements have been used to protect floodplains and trail corridors.

7. OPEN SPACE ELEMENT

Parks and Open Space Zoning

The city of Thornton has a Parks and Open Space (POS) Zoning District. (See Development Code, Article III, Zoning, Section 18-201 Parks and Open Space (POS) District.) The following language from the Development Code provides the purpose of Zoning Districts:

There are areas within the city which need a designation of parks and open space in order to preserve them for the present and future recreational enjoyment of the residents of the city. The Parks and Open Space District is intended to preserve and enhance public and private open space, natural and improved parks and other recreational areas in locations consistent with the Comprehensive Plan and other adopted Master Plans. These areas serve many functions including providing opportunities for outdoor recreation; providing contrasts to the built environment; preserving scenic qualities; protecting sensitive or fragile environmental areas; and preserving the capacity and water quality of the storm water drainage system.

Wetlands

The U.S. Army Corps of Engineers regulates and permits impacts to waters of the U.S. and wetlands that are determined to be within their jurisdiction. While Federal regulations allow some impacts, these must be minimized and mitigated. Wetlands are not typically mapped in advance and have not been mapped in any detail in the Thornton area. Thus, the degree to which Federal regulations protect specific wetland areas from development is identifiable only on a project-by-project basis and is difficult to predict accurately or map it in advance. The Vegetation Map included in the Technical Appendix 9 contains three types of communities that may consist of wetlands or contain significant wetland areas. They are:

- » **Herbaceous wetland (wet meadow)**
- » **Cattail marsh**
- » **Cottonwood/willow forest (riparian woodland and shrubland)**

CRITERIA FOR OPEN SPACE PROTECTION

It has been important for Thornton to preserve natural features with significant or unique value that contribute to community identity and character. This plan identifies remaining undeveloped resources within the community and assesses their value according to a number of environmental, functional and feasibility criteria. Opportunities judged to have significant value to the community that fit into a logical, overall open space and open lands system have been included in the Parks and Open Space Master Plan Map (Exhibit 4.1). They are also discussed in this Chapter under the Specific Plan Proposals.

For this master plan update, four types of criteria were considered to assess open space potential, as described below.

Natural Resource Values

This set of criteria received the highest importance rating by POSAC in 2012, and reflects the underlying importance of four significant Thornton resources, and relate directly to the Park and Open Space Sales and Use Tax ballot language.

- **Natural vegetation communities, including riparian/wetland areas and native grasslands**
- **Wildlife habitat and wildlife corridors**
- **Scenic quality, including views of the surrounding community afforded from the area as well as unique landforms**
- **Presence of water resources or water features**

Functional Values

This set of criteria was considered the second most important. These criteria reflect attributes that make an area more or less desirable from the standpoint of public use.

- **Visibility:** *is the area viewable from surrounding locations, and are desirable views presented?*
- **Uniqueness:** *does the area possess a special character not found in other locations within Thornton, or is it one of the last remaining examples of a landscape type?*
- **Size:** *is the area large enough to offer significant opportunities for wildlife or human use?*
- **Connectivity:** *does the area provide important links to other open lands?*
- **Recreation value:** *does the area provide opportunities for public use and enjoyment?*

Special Features

This set of attributes includes special site features that are a function of natural or cultural resources or geographic context.

- **Accessibility:** *is the area accessible via multiple transportation modes (vehicle, bus, multi-purpose trail)?*
- **Historic or cultural features:** *does the area possess significant historic or cultural resources?*
- **Floodplain:** *is the area located in the 100 year floodplain?*
- **Buffer:** *does the area offer the potential to provide a “green buffer” between Thornton and surrounding communities?*

Feasibility Of Acquisition

The final set of criteria reflect economic and feasibility considerations. It is assumed that the natural resource, functional values, and special features will all be considered and present, before applying this last set of criteria.

- **Motivated seller**
- **Potential to share costs**
- **Urgency** – *area is threatened by development*
- **Citizen support**
- **Identified on Parks and Open Space Master Plan Map**
- **Liability** *(for example, due to presence of environmental hazards)*

This approach reflects the fact that environmental resources create open space and open lands values. These resources exist in context, tied to the geography of the community. The amount of land that should be preserved depends in part on the availability of environmental resources worthy of preservation rather than a fixed ratio of land-to-population. Availability of resources must then be balanced against the means available for preserving them—the financial resources, regulatory tools, philanthropy, volunteer effort, and other means.

7. OPEN SPACE ELEMENT

SPECIAL ECOLOGICAL OPPORTUNITIES

The Open Space Element of this Master Plan is based on an inventory of the existing open lands and environmental resources in Thornton and its planned growth area through fieldwork and map analysis completed by Walsh Environmental in 2012. A number of areas in Thornton were identified that have noteworthy wildlife habitat, quality native vegetation, water resources, floodplain, scenic quality, or ecological uniqueness. These are referred to as “Special Ecological Opportunities” - Exhibit 7.1. Supporting mapping and analysis is found in the Technical Appendices - Appendix 9.

Integrity of habitat, connections to corridors or natural areas, structural diversity, and presence of one or more special ecological features (e.g., such as water, or large trees) are the most important factors influencing the priority value assigned to each parcel. While these factors affect habitat quality and wildlife use in different ways, they all contribute to preserving rare or important species and providing opportunities for nature study and visual aesthetics.

Areas evaluated for their potential as future open space parcels—as well as one recently acquired parcel for which final management and land use decisions have not been made—are described below and shown in the Special Ecological Opportunities Map Exhibit 7.1.

Based on the results of the ecological resource assessment, areas were divided into three broad categories: “Higher Priority”, “Medium Priority”, and “Lower Priority.” This assessment took into account the following characteristics: area size, connectivity, native vegetation presence, quality, structure and diversity, presence of water, habitat or movement corridors capable of supporting a variety of locally or regionally important species, scenic quality, uniqueness, and location adjacent to existing open spaces. The Lower Priority areas offer some of these qualities, but generally are smaller, more isolated, less natural, or less diverse.

It is important to note that the opportunities described in the next section are not the only special ecological areas in Thornton, but instead are areas that may not have yet been acquired and offer one or more high-quality characteristics.

See 11x17
Special Ecological Opportunities MAP
Exhibit 7.1

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SPECIFIC PLAN PROPOSALS

Higher Priority Areas

South Platte River corridor including the Gravel Lakes area - The South Platte River corridor is the most significant natural feature in the Thornton vicinity, and one of the most important ecological resources in the Front Range region. While no “Special Ecological Opportunities” have been designated along the river as part of this assessment, any future uses in which Thornton might participate—such as parks and recreational or alternative mode transportation trails—should be developed in a way that is sensitive to the considerable ecological qualities of the corridor.

The corridor consists of a mosaic of riparian and wetland areas, croplands, gravel excavations and lakes, numerous canals and irrigation ditches, and scattered uplands. It contains cottonwood trees and willows, native riparian shrub thickets, and native and non-native grasses and forbs. Herbaceous wetlands and cattail marshes are interspersed throughout the corridor.

Human activities and disturbances have altered the wildlife habitats along the river such that they bear little resemblance to a natural prairie riverine ecosystem. Nevertheless, even these altered habitats provide the highest overall wildlife value within or adjacent to Thornton. The river valley supports a bald eagle winter roost and nesting by bald eagles, supports nesting and perching by a variety of other raptors, provides habitat and a wide movement corridor for white-tailed and mule deer, coyotes, and red foxes, supports important prey species for raptors, and is the most extensive unbroken area of habitat for myriad small mammals, songbirds, wading birds, shorebirds, waterfowl, reptiles, amphibians, and fish. In summary, the South Platte River floodplain has the highest value wildlife habitat in the Thornton area.

Big Dry Creek (Corridor #1) - The Big Dry Creek corridor is the second-highest ranked ecological resource in Thornton and provides an outstanding opportunity for preservation and enhancement. The Big Dry Creek corridor is a natural stream bordered by an undeveloped natural floodplain and provides for wildlife movement between I-25 and the residential developments to the east. The corridor forms a relatively wide swath along a regionally important drainage within the Thornton city limits. This portion of Big Dry Creek links the more heavily wooded corridor in urbanized Westminster to the relatively undeveloped downstream reach in Weld County, before it flows into the South Platte River near Ft. Lupton.

Vegetation along Big Dry Creek consists of grasslands, cattail marshes, wet meadows, cottonwoods, and willows, with abundant non-native Russian Olive, now considered a noxious weed due to its invasiveness. The creek and its associated floodplain support deer, coyotes, foxes, raptors (including bald eagles), and a variety of woodland, wetland, and grassland small mammals, birds, and reptiles. The wildlife value of Big Dry Creek is due to its large size (especially its width) and the diversity of habitats. The overall ecological



The South Platte River Trail runs along the southeastern edge of Thornton in the South Platte River corridor.



Big Dry Creek



Big Dry Creek: cattail marsh



Big Dry Creek: grassland, cottonwoods, and willows

7. OPEN SPACE ELEMENT



Big Dry Creek corridor north of 160th Avenue and east of Colorado Boulevard



Big Dry Creek floodplain west of Colorado Boulevard and south of 168th Avenue



Aylor Open Space

quality of the corridor could be increased further by gradual recovery from prior agricultural impacts and selected use of weed management and enhancement/expansion of riparian woodland communities.

While the entire Big Dry Creek corridor presents a special ecological opportunity within Thornton, the following segments were rated highly:

- » The rural area of Big Dry Creek just east of Colorado Boulevard and south of 168th Avenue. The relatively undeveloped parcel contains mixed-age riparian trees and shrubs that provide nesting, roosting, and migration cover for raptors and songbirds. Intact meander bends with hill slopes above provide additional structural diversity and habitat types. Overall, the creek corridor and adjacent features contain high-value wildlife, natural vegetation, scenic, and water resource values.
- » The segment of Big Dry Creek that extends between I-25 and E-470 and includes Area #A Big Dry Creek Open Space. Remaining undesignated areas include a reach between 136th and 144th Avenues (in the rear of approximately 12 separate, developed parcels) and a section that is immediately north of 144th Avenue. Although parts have limited natural vegetation, the main values of this reach include connectivity with other open space segments of Big Dry Creek, the functioning as a wide floodplain, and water resources.
- » Portions of this segment between Colorado Boulevard and existing Big Dry Creek Open Space on the north side of 156th Avenue. This reach of Big Dry Creek is devoid of native trees and shrubs but contains several intact meander bends. Adjacent prairie dog towns may provide foraging opportunities for raptors.
- » The segment between Colorado Boulevard north of Preble Creek and south of 168th Avenue. This section has been moderately to heavily impacted by past agricultural use. One section is in good condition and native riparian trees and shrubs are present in isolated patches. Another section appears to have been straightened. Near 168th Avenue the extension of corrals to the creek edge and placement of concrete rip rap on banks has reduced the value as a wildlife movement corridor.

German Ditch (Corridor #2) - The German Ditch corridor includes different types of wildlife habitat. Noteworthy areas include:

- » In the segment north of 160th Avenue and west of Holly Street, the German Ditch is winding, with a well-developed gallery forest of large trees and a diverse herbaceous understory. This area also includes four small reservoirs linked by the ditch, providing aquatic habitat and nesting/feeding areas for water birds. The northernmost reservoir at 168th Avenue and Holly Street has a moderately well-developed herbaceous wetland fringe, but also areas of invasive weeds. The southern reservoirs support some large trees but little other vegetation. Besides its intrinsic qualities, the proximity of this area to Big Dry Creek increases its use by more wide-ranging species such as raptors and predators. With a pastoral landscape in the foreground and a mountain backdrop, the scenic quality is excellent.
- » The area directly adjacent to the German Ditch and north of 160th Avenue includes two ponds, large cottonwood trees, a marsh, and a heron rookery. After the Big Dry Creek segments, this area contains the highest-rated natural resource values of all the sites evaluated in 2012.

Signal Ditch (Corridor #3) - The Signal Ditch corridor reflects the higher quality of contiguous, rather than isolated areas. Future development is shown bisecting the corridor. However, if there are sufficient development setbacks or adjustments to the development plans, a viable corridor with diverse habitat is still attainable.

The ditch itself, although narrow, supports riparian cottonwoods and aquatic habitat and provides a wildlife movement corridor as well as habitat for a variety of species. Signal Ditch Pond, contained in a future development area, only adds to the diversity of habitats—and opportunities for nature study and visual quality—along the ditch.

Large cottonwood trees provide perches and potential nesting habitat for raptors in the northern property. The northern property has a disturbed area at the northeast end but has no development within or around it. The southern property is edged by rural residential properties. Reservoirs and small ponds create additional wildlife habitat along the length of this ditch corridor. Dryland farmland occurs throughout this property.

Three segments of the Signal Ditch corridor contain high natural resource values:

- » North of 160th Avenue and east of Quebec Street, the corridor is mostly intact with few breaks, and contains large cottonwood trees and native willow shrubs.
- » At Richards Pond, north of 152nd Avenue and west of Holly Street, this segment combines mature cottonwood trees along the ditch and open water. The pond provides some resting habitat for waterfowl and the cottonwoods that grow on the edge of the reservoir and along the ditch provide roosting areas for raptors.
- » Between 144th Avenue and E-470, this segment winds through an existing large lot development and the city-owned future Signal Ditch Park and Open Space. Native trees and shrub willows are present, but are patchy, and not continuous. In addition to its function and value as a corridor, this segment is scenic, with long views and a relatively undeveloped nature.



Aylor Open Land



Richard's Pond along the Signal Ditch Corridor

Open Space South of E-470 between Quebec Street and Yosemite Street (Area #8) The area does not contain flowing water, and has a completely different character than the previously-described sites and corridor segments. This agricultural tract containing a prairie ridge also includes topographic relief on the east side as the land transitions to the South Platte River floodplain. The intact grassland, upland shrubs, and topographic breaks are unique features in Thornton. Although existing fragmentation by agriculture and development has reduced the wildlife value, this area is one of the last vestiges of the native shortgrass prairie, once predominant in this area. While larger or more wide-ranging prairie wildlife (e.g., pronghorn) are no longer present, small prairie wildlife such as native grassland mice, ground-nesting grassland songbirds, and prairie reptiles probably are present.

The ecological quality of this grassland area is enhanced by its proximity to the southern branch of Todd Creek, with the prairie providing hunting habitat for raptors and predators nesting/denning or moving along the drainage. A portion of the southern branch of Todd Creek crosses the northwest corner of this property, providing riparian habitat and a wildlife movement corridor. Prairie dogs and introduced grasslands are found in the southwest corner of the property.

7. OPEN SPACE ELEMENT

Medium to Lower Priority Areas

These sites include creek and irrigation ditch segments and sites with natural resources of medium to lower quality, yet they have value in their adjacency to existing open space and provision of buffers, their function as corridors, or their potential to provide open space buffers between developed areas.

Aylor Open Land (Area #C) - This area is city-owned and currently closed to the public. Already acquired, this area is included because final decisions about future management and use have not been made. This property has three major ecological qualities: (1) the combination of habitats present, including ponds, wetlands, cottonwoods, and native grassland; (2) its location between the prairie remnants and a northern tributary to Brantner Gulch; and the potential for enhancement that accompanies any area of active agriculture after it is acquired for open space.

The property features a mix of dryland farming and a riparian corridor with several small ponds or reservoirs. The site is within ring-necked pheasant overall range and has suitable habitat. The property is bordered to the east and west by residential development. The large trees within the riparian area provide perches and potential nesting opportunities for raptors.

Remnant Native Grassland (Area #7) - This large area located just north of Homestead Hills Park and Open Space includes a remnant native grassland. The site contains below average wildlife and habitat qualities, but has promontory views of the Front Range backdrop. Similar to The Bluffs Area #8 previously described, the primary values are scenic qualities and uniqueness.

Todd Creek Branches (Corridor #5 and #6). The two branches of Todd Creek flow northeastward from their headwaters south of E-470 to their confluence just east of Yosemite and thence to the South Platte River. Recently, development has occurred in the vicinity of the northern branch; however, riparian and wetland habitat, wildlife movement corridors, and ecological connectors were maintained. The herbaceous margins of the creeks, while currently only partially native, would gradually improve in response to withdrawal of grazing and targeted management. Additional qualities are the outstanding views of the Front Range and open plains.

Riverdale Road (Areas #12 and #14) - Area #12 is on the west side of Riverdale Road. It contains a remnant agricultural ditch, and is in close proximity to the McIntosh Dairy Conservation easement in the South Platte River floodplain. Area #14 combines four small areas on the east side of Riverdale Road. While it does not have high intrinsic natural resource value, it provides connection between existing preserved areas.

Dryland Pasture, Big Dry Creek Corridor (Area #1) - Located on the southwest corner of Colorado Boulevard and 168th Street, this is a large area of open dryland pasture, and it contains an active prairie dog colony, a marsh, and Preble Creek, a tributary to Big Dry Creek. Native vegetation consists as remnant grasslands, and the site does provide potential grassland habitat for burrowing owls. The main values include the old farmstead, large size, adjacency to Big Dry Creek, and some scenic qualities.

Upland Area adjacent to Eastlake #3 Park and Nature Preserve (Area #9) - This small area has few ecological qualities but would provide a buffer that would help ensure continued use by water birds and other aquatic species as well as by wildlife associated with cattails and cottonwoods. Encroachment toward this open space by future development could reduce the current types and levels of wildlife use significantly. Acquisition would also preserve the visual and recreational quality of the site and preserve options for future habitat enhancement.

Niver Drainage (Area #15) - This area is bounded by Thornton Parkway, I-25, and Niver Open Space. Small natural drainages provide some topographic interest, and there are patches of native grasses. The site contains limited ecological values, but its location is important visually as it is adjacent to I-25 and as a buffer to the Niver Open Space.

SUMMARY

The Big Dry Creek corridor contains all of the resources identified as important natural resource values to the city, including an historic bald eagle nest and foraging areas, wildlife movement corridors, native vegetation, water, and floodplains. It should be considered a priority for open space acquisition to preserve the natural resource values and maintain the continuity of the wildlife corridor. As the Big Dry Creek properties are acquired, the majority of the sites should be maintained as a natural open space area, and recreational development should be minimized and placed outside the riparian area along Big Dry Creek. With its year-round water flow, the Big Dry Creek corridor also presents an opportunity to protect existing mature cottonwood trees and to also plan and provide for the continued presence of cottonwoods into the future.

The German Ditch north of 160th Avenue contains several features that, in combination, provides high wildlife and other open space value. The ditch and adjacent ponds are important open space opportunities. Other wildlife corridors, including along Todd Creek or Signal Ditch, are important to acquire for open space to maintain an open wildlife travel corridor.

In looking toward the future, Thornton should protect its considerable environmental assets and link them as part of its open lands system. The historic irrigation ditches and reservoirs, natural drainages, and stands of mature cottonwoods should become, to the maximum extent possible, the backbone of the Thornton system. These generally linear areas represent most of the ecological diversity and important wildlife uses (including movement corridors) still available for acquisition. They also provide excellent potential as trail corridors, although trails should be designed and routed to minimize adverse ecological impacts. Finally, they offer opportunities to provide current and future residents with functional natural areas within a rapidly growing urban/suburban environment.

Although less dramatic, the remnants of prairie grassland in the eastern part of the study area have high ecological value and are worthy of preservation. Even casual observers can appreciate the progression of flowers through the summer and the attractive autumn hues of many native grasses. Others may appreciate knowing that native prairie songbirds (e.g., lark bunting, vesper sparrow), small mammals (e.g., prairie vole, plains pocket mouse, silky pocket mouse), and reptiles (e.g., lesser earless lizard, short-horned lizard, and western hognose snake) continue to be part of the natural landscape. Future generations of Thornton residents, and of nature enthusiasts from throughout the region, will applaud steps taken by Thornton to preserve these ecological windows to the past.

It is important to recognize that many, indeed most, of the opportunities described above are in a somewhat degraded condition. Much of this degradation reflects prior heavy use by domestic livestock, which tended to concentrate around water or in areas with shade. Other degradation may have resulted from abandonment of agriculture, cessation of irrigation, or activities related to development. Whatever the reason, these areas often contain pockets or larger concentrations of non-native, invasive weeds. Although natural recovery may occur in a degraded area after the source of the disturbance (e.g., livestock grazing) has stopped, this process can be slow—often requiring several decades to see significant process. This is especially true in drier sites, but less of an issue where water is present.

To hasten this recovery, and thus improve the ecological and visual quality sooner rather than later, some habitat enhancement or restoration is advisable. These measures can include improvement of soil health, management of noxious weeds, and reseeded with native or (where desirable) selected non-native species.

Finally, it is likely that not all of the Special Ecological Opportunities acquired by Thornton will be purchased solely for their ecological qualities. Many of the areas are appropriate for acquisition to meet multiple purposes, such as for preservation and trails, or for preservation and a park site. In these cases, trail or park planners should bear in mind that ecologically important areas, whether because of a particular wildlife use, movement corridor, or undisturbed native vegetation, must be provided with a sufficient buffer to ensure that these functions continue.

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This chapter discusses a variety of tools available to implement the Master Plan goals and vision.

TOOLS FOR EXPANDING THORNTON'S PARK AND OPEN SPACE SYSTEM

The Master Plan proposes an expanded parks and open space system that will contribute to preserving Thornton's environmental resources, its historical and cultural heritage, and its quality of life. Residents involved in the public outreach component of the update process repeatedly cited Thornton's parks and recreation facilities as a tremendous community asset. For this reason, it is important to ensure that a strategy is in place to maintain and/or expand the existing parks and open space system. The following tools are currently available to the city of Thornton to allow timely, efficient response to system expansion opportunities as they arise.

This Master Plan uses the all encompassing term "Parks and Open Space" when referring to Thornton's citywide system of parks, recreation programs, recreation facilities, designated open space, open lands, and trails.

Public Land Dedication (PLD) Requirement

One of the resources available for acquiring and developing parkland and open space is the city's Public Land Dedication requirement. This requirement is part of the city's Development Code and applies to residential and commercial development at the time that the land is subdivided. The Code requires developers to dedicate land and construct improvements for parks, open space, and trails OR to pay a cash-in-lieu fee. All provisions in the existing PLD requirement remain unchanged, except for:

- The number of people per household be changed from 2.87 to 2.86 per the 2010 census findings.
- The current Public Land Dedication cash-in-lieu requirement will be adjusted to reflect current market values and the needs of the community.

The expectation is that the public land dedication requirement is sufficient to provide the pocket parks and neighborhood level parks shown in the Parks and Open Space Plan (Exhibit 4.1).

Parks and Open Space Taxes

On January 1, 1998, the city of Thornton began collecting a one-quarter percent sales tax for the purpose of funding park and open space projects. The Parks and Open Space Tax generates approximately \$6,100,000 each year. In 2000, voters approved a \$22.4 million bond issue, which is in effect a loan funded by recurring tax revenues. Further, Adams County has administered a tax for parks and open space, a portion of which is refunded directly to the city of Thornton and another portion that is available on a grant basis to the municipalities.

In 2018, the parks and open space tax sunsets. During the 2012 update process and in discussions with POSAC in 2012, participants expressed an interest in gauging public support for extending this tax. To highlight the impact that the tax has had on the parks and open space system, a diagram entitled "Projects Completed/In Progress since 1998" was generated, which served as an important tool to educate and celebrate the community's commitment to the parks and open space system and will be used in subsequent discussions and public outreach efforts.

8. IMPLEMENTATION

It was decided on June 3, 2013, by Thornton City Council to put the parks and open space tax up for renewal on the November 2013 ballot, which passed with a 69% vote and extends the parks and open space tax through 2038. Specific information pertaining to the extension can be found in Appendix 4.

Other Preservation Tools

A number of specific tools are available for preserving open lands. Not all of these tools require cash payment. The most common tools are listed below, and are described in the Technical Appendices-Appendix 11.

- Conservation Easement
- Cluster Development
- Deed Restrictions/Covenants
- Reserved Life Estate
- Cash Purchase
- Donation or Gift
- Land Exchange
- Purchase of Development Rights (PDR)
- Transferable Development Rights (TDR)
- Estate Planning
- Land Preservation Development
- Intergovernmental Agreements (IGAs)
- Eminent Domain

The city does not currently have enough local dedicated funding to acquire acreage to implement the Parks, Recreation, Trails, and Open Space System envisioned by this Master Plan Update. Thus, the city must exercise a high degree of creativity in its use of preservation tools and collaborate with partners to leverage all available resources. Suggested ways of leveraging funds and creating partnerships are noted below.

- Work with landowners to find win/win solutions. Often, by engaging landowners early in the process and exploring a variety of options with them, new ways or new combinations of ways can be found to meet the objectives of the public and the landowner. In many cases, the options available and their implications are not known by landowners. For example, a below-market sale can generate tax credits that might be extremely valuable to a corporate seller. Estate considerations can be very significant to others. Even the designation (without purchase) of parkland or open space will increase the value of the remaining land in a subdivision.
- Use the most appropriate preservation tools and combine tools, where feasible. Many of these tools will allow property to be preserved at no cost or acquired at prices favorable to the city. They also allow the city to structure transactions that will address the varying tax and estate conditions of the sellers.
- Purchase land only when necessary. Local funds will purchase a relatively few acres per year. Thus, direct purchase of land should be a tool used when other options have been exhausted. Even then, the city should consider strategic, “catalyst” purchases first. These are purchases that might, for example, preserve a key parcel (around which other strategies can be used to tie in adjacent parcels) and where the city will provide matching funds for public and private grants.
- Prioritize open lands and open space acquisitions using a uniform set of criteria. It is important to focus on the most important opportunities and urgencies in any given budget year. The use of a standard set of criteria reduces subjectivity, helps the public to understand the basis for decisions and brings continuity from year to year. The criteria are outlined in Chapter 7.
- Work with partners whenever possible to leverage other resources. There are other agencies and organizations that could be coordinated to achieve many of the park and open space system objectives. These cooperative actions can range from intergovernmental agreements such as with Adams County and adjacent municipalities. Land trusts and conservancies will occasionally purchase properties outright but more often prefer to facilitate acquisition of properties by government entities.

See 11x17
Public Land Dedication Requirements
Change Recommendations
TABLE
Exhibit 8.1

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CAPITAL BUDGETING

Each year, the city prepares a one-year operating budget and five-year capital improvement plan. The city council reaches its decisions about how to spend capital funds through the development of these budgeting tools. In the context of the Master Plan, the city will make decisions on land acquisitions for park or open space purposes, and on improvements to and/or construction of new park and recreation facilities as part of the capital budget. These decisions should be consistent with the vision, goals, and policies set forth in the Master Plan and with the Parks and Open Space Master Plan Map (Exhibit 4.1).

The Master Plan was prepared and updated, in part, to fulfill a requirement of the ballot language that established the parks and open space sales tax. This language states that a comprehensive open space and parks master plan shall be developed and updated every three years, and that city council shall determine how the sales tax proceeds are to be spent based on recommendations from the Parks and Open Space Advisory Commission (POSAC) regarding parks and open space projects referenced in the master plan.

STAFFING REQUIREMENTS FOR MANAGEMENT AND MAINTENANCE

The Open Space and Project Management Division in the Community Services Department oversees the planning for purchase of parks and open space parcels. The Capital Projects and Planning Manager oversees the parks and open space planning and implementation of the Park and Open Space Master Plan. The Parks and Golf Manager oversees parks operations and maintenance. The Recreation Manager oversees recreation facilities and programming.

Initially, the city's parks and open space responsibilities included public awareness, intergovernmental coordination and acquisition planning. As the city has acquired land and/or easements and the parks and open system has evolved and expanded, the Community Services Department has incurred expanded responsibilities, including environmental stewardship, public education, and design and construction of improvements throughout the parks and open space system.

The Parks and Golf Division has a stand alone management plan that highlights staffing requirements for management and maintenance of the parks and open space system, as well as city-owned vacant land, some medians, and some rights-of-way. Responsibilities include turf management, irrigation/water conservation, mowing, and amenity maintenance and management of lakes, fishing facilities, and urban forestry programs.

8. IMPLEMENTATION

PLAN AMENDMENTS AND REVISIONS

Regular updates to the city's Parks and Open Space Master Plan allow the city to assess whether the vision, goals, and policies for the parks and open space system remain current, whether the needs of the community have changed, what action steps have been accomplished, and what new actions are needed to assure that this Master Plan is realized.

Of utmost importance is an evaluation of whether the overall parks and open space system envisioned by the Master Plan in Exhibit 4.1 is being achieved. Adjustments may need to be made in the park and open space opportunities included in the system, to take into account the possible loss of certain sites because of development, prohibitive costs, or other reasons, as well as the emergence of new opportunities and acquisitions.

Amendments and revisions to the parks and open space system must remain consistent, however, with the overall vision of the Master Plan.

The overall vision is to create an integrated system of parks, recreation facilities, trails and open space that will:

- *Provide recreational and cultural opportunities for all residents*
- *Be equitably distributed, to the extent possible, throughout the community*
- *Connect neighborhoods, parks, schools, recreation facilities, and business districts*
- *Preserve the heritage and quality of life in Thornton*
- *Enhance and build upon Thornton's environmental assets*
- *Enhance the community's identity*

Reviewing the progress on the plan also allows for an assessment of pressing current issues and how to address them. Attention should be given to the general demographic conditions in each Ward, whether adjustments are needed with a comparison evaluation of the park and open space resources necessary to best address the needs and desires of Thornton citizens. Master plans, without such an updating process, may become out-of-date or irrelevant to the needs and desires of the community.

RECOMMENDED ACTION STEPS

The action steps related to parks, recreation facilities and trails are listed in Exhibit 8.2, and the action steps for open space are listed in Exhibit 8.3 and are not prioritized. The assumption may be made, however, that parks, recreation facilities, trails, and open space are equally important and that, among these elements, one element is no more or no less a priority than another.

Exhibit 8.2: IMPLEMENTATION ACTION STEPS for Parks, Trails and Recreation Facilities (not prioritized)	
1	Analyze the feasibility of a second bond issue to accelerate the purchase or improvements of park, recreation facilities, recreation programs, trails, and open space parcels.
2	Prioritize the list of school/church opportunities with programming opportunities defined and integrated into proposed expenditure plans.
3	In park deficient areas of the city, identify specific park development opportunities with other partners. Explore opportunities for joint development of parks with landowners.
4	Identify specific parks sites or other park resources in need of maintenance, restoration, additions, and for water conservation opportunities.
5	Prepare a detailed analysis of the historic ditch system and explore the opportunity for the use of State Historic Funds to preserve ditches and improve trails.
6	Assist Adams County in developing strategies to expend county open space tax funds in Thornton.
7	Prepare an expenditure plan for each annual budget process for the parks and open space tax funds.
8	Revise the 5-year operating plans for parks, trails, recreation, and open space to address changes in programs and facilities recommended by this Master Plan or as existing facilities are renovated and updated.
9	Each year, develop a 5-year capital program for constructing park, trails and recreation facilities that will maintain current levels of service as new development occurs or as existing facilities are renovated and updated.
10	Review annually the action plan for connecting trail segments into continuous routes and incorporate plan proposals into the capital budget.
11	Annually review the inventory of the city's historical and cultural resources and incorporate these resources into parks whenever possible.
12	The city of Thornton should, to the extent possible, maintain an update-to-date database of city-owned, joint use and privately owned parks, playgrounds, trails, recreation facilities, and public right-of-ways including location, use, ownership, maintenance, size to reflect new improvements, facilities/parks upgrades, safety concerns and new acquisitions.
13	The city of Thornton should, to the extent possible, continue to explore opportunities for partnerships with local agencies, public and private entities and neighboring jurisdictions that would benefit Thornton residents, expand the city's parks, open space, trails and recreation system and complement and/or expand existing recreational programming.
14	Cash-in-lieu fees should be revisited to update current market values.
15	Maintain maps and GIS data of the city's parks, trails, and recreation facilities. Post revised and/or updated information on the city's website.
16	Monitor and update parks and open space maintenance standards to ensure that current maintenance regimes are adequate and meet expectations.
17	Expand the update interval for the Parks & Open Space Master Plan from three years to five years.

8. IMPLEMENTATION

Exhibit 8.3: IMPLEMENTATION ACTION STEPS for Open Space (Not prioritized)	
1	Analyze the feasibility of a second bond issue to accelerate the purchase and improvements of open space parcels.
2	Continue to contact property owners who own land that the city is interested in acquiring for open space.
3	Continue to monitor and update existing information on natural resources to better document significant wildlife and vegetation habitats.
4	Maintain maps and GIS data of the city's open space and open lands. Post revised and/or updated information on the city's website.
5	Increase awareness of the tax and estate planning benefits of donations of land to the city's open space program
6	Initiate and continue discussions with Adams County and surrounding municipalities regarding coordinated preservation of open space corridors that cross jurisdictional lines
7	Develop relationships with groups that provide funding for open space acquisition such as Adams County Open Space, Land Conservancy, Trust for Public Land, Great Outdoors Colorado; utilize these funding sources whenever possible.
8	Annually review the inventory of the city's historical and cultural resources and incorporate these resources into open space lands whenever possible.
9	The city of Thornton should, to the extent possible, maintain an update-to-date database of city-owned open space and open lands including location, use, ownership, maintenance, size to reflect new improvements, safety concerns and new acquisitions, with special consideration for maintenance necessary after initial acquisition.